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**RESERVE DETERMINATION STUDIES FOR SELECTED SURFACE WATER,
GROUNDWATER, ESTUARIES AND WETLANDS IN THE USUTU/MHLATUZE
WATER MANAGEMENT AREA
WP 10544**

RIVER RAPID EWRs

EXTRAPOLATION OF ENVIRONMENTAL WATER REQUIREMENTS

FINAL

APRIL 2015

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ABBREVIATIONS AND ACRONYMS

CD:RDM	Chief Directorate: Resource Directed Measures
DWA	Department of Water Affairs
EC	Ecological Category
EI	Ecological Importance
ES	Ecological Sensitivity
EWR	Ecological Water Requirement
LFH	Lower Foothill
LLZ	Lowland Zone
NWRCS	National Water Resources Classification System
PES	Present Ecological Status
REC	Recommended Ecological Category
WMA	Water Management Area
UFH	Upper Foothill

GLOSSARY OF TERMS

Ecological Category	Defines the ecological condition of a river in terms of the deviation of biophysical components from the reference condition. There are six Ecological Categories that range from A (natural) to F (critically modified).
EcoClassification	The determination and categorisation of the Present Ecological Status or various biophysical attributes of rivers relative to the natural and/or reference condition.
EcoStatus	The totality of features and characteristics of the river and its riparian areas that bear upon its ability to support an appropriate natural flora and fauna and its capacity to provide a variety of goods and services.
Ecological Water Requirements	The pattern (magnitude, timing and duration) and quality of flow needed to maintain an aquatic ecosystem in a particular condition (Ecological Category).
Ecological Reserve	The quantity and quality of water required to satisfy basic human needs by securing a basic water supply and in order to ensure ecologically sustainable development and use of water resources, as prescribed in the NWA.
EcoSpecs	Clear and measurable specifications of ecological attributes (e.g. water quality, flow, biological integrity) that defines the Ecological Category.
Present Ecological Status	The degree to which ecological conditions have been modified from reference conditions, based on water quality, biota and habitat information that is scored on a six point scale from A (natural) to F (critically modified).
Reference conditions	Natural ecological conditions prior to anthropogenic disturbance.

1 INTRODUCTION

1.1 Background to the study

The Chief Directorate: Resource Directed Measures issued an open tender invitation for the “Appointment of a Professional Service Provider to undertake Reserve Determinations for selected Surface water, Groundwater, Estuaries and Wetlands in the Usutu to Mhlatuze Basins”. The focus on this area was a result of the high conservation status and importance of various water resources in the basin and the significant development pressures in the area affecting the availability of water.

Preliminary Reserve determinations are required to assist the DWS in making informed decisions regarding the authorisations of future water use and the magnitude of the impacts of the proposed developments on the water resources in the WMA, and to provide the input data for Classification of the area’s water resources, and eventual gazetting of the Reserve (DWAF1999a).

DWS appointed Tlou Consulting to undertake the project in July 2013.

1.1.1 Study objectives

The objectives of the study are to:

- determine the Ecological Reserve (DWAF 1999a), at various levels of detail, for the Nyoni, Matigulu, Mlalazi, Mhlatuze, Mfolozi, Nyalazi, Hluhluwe, Mzinene, Mkuze, Assegai and Pongola Rivers;
- determine the Ecological Reserve, at an Intermediate level for the Pongola floodplain;
- determine the Ecological Reserve, at an Intermediate level for the St Lucia/Mfolozi, Estuary System;
- determine the Ecological Reserve, at a Rapid level for the Mlalazi Estuary;
- determine the Ecological Reserve, at a Rapid level for the Amatikulu Estuary;
- determine the Ecological Reserve, at an Intermediate level for Lake Sibaya;
- determine the Ecological Reserve, at a Rapid level for Kozi Lake and Estuary;
- classify the causal links between water supply and condition of key wetlands;

- incorporate existing EWR assessments on the Mhlatuze (river and estuary) and Nhlabane (lake and estuary) into study outputs;
- determine the groundwater contribution to the Ecological Reserve, with particular reference to the wetlands;
- determine the Basic Human Needs Reserve for the Usutu/Mhlatuze WMA;
- outline the socio-economic water use in the Usutu/Mhlatuze WMA;
- build the capacity of team members and stakeholders with respect to EWR determinations and the ecological Reserve.

1.2 This report

This report presents the results of the extrapolation of the Intermediate Level EWRs conducted in the course of this study (and documented in Volume 2 – River EWR Assessment Results, Report no. RDM/WMA6/CON/COMP/0713) to additional locations (termed nodes) that have a degree of ecological similarity.

The extrapolation activities are required under Step 4 of the Reserve determination process (Step 4 in Figure 1-1) as prescribed by the CD: RDM of DWS (DWA 1999a; Kleynhans et al. 2007).

Nodes were identified in accordance with the requirements of the Water Resources Classification System (WRCS; DWA 2006), and are documented in the River Delineation and Site Selection Report, RDM/WMA6/CON/COMP/0213, as part of this study.

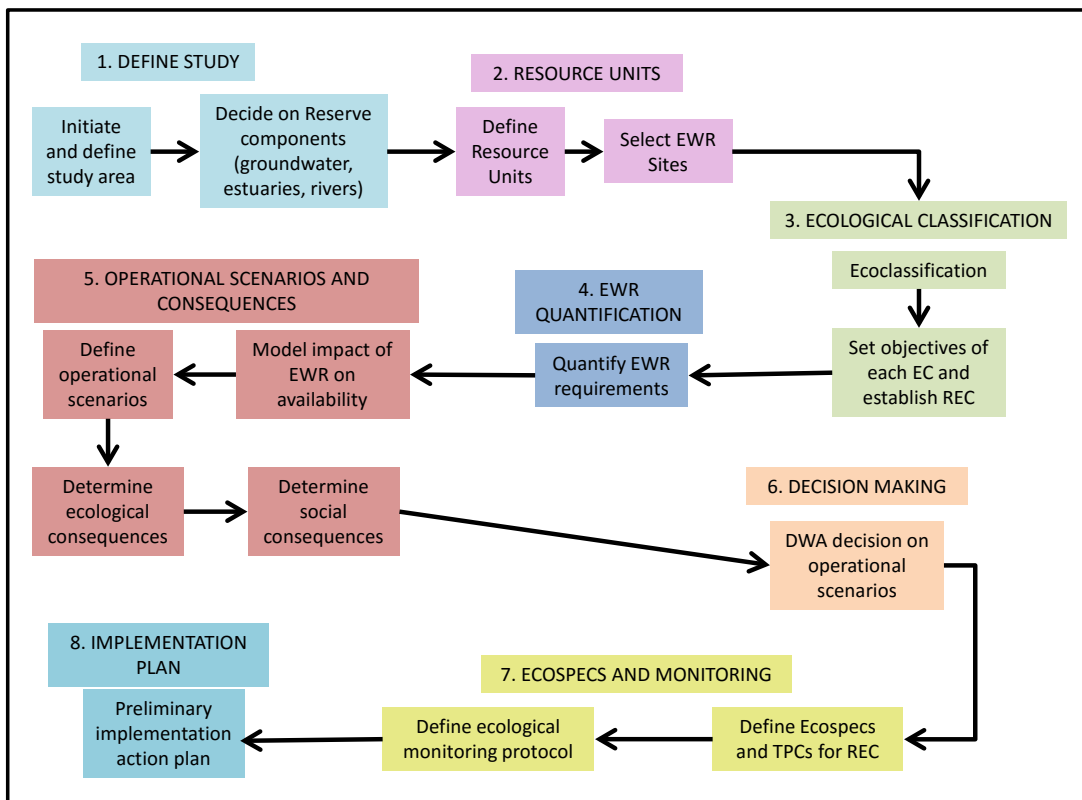


Figure 1-1 Generic procedure for the determination of the Ecological Reserve

2 NODES AND EWRS IN THE STUDY AREA

2.1 Catchments in the study area

The extent of the study area is shown in Figure 2-1. It comprises the following catchment areas, and main rivers (rivers in bold denote locations of Intermediate EWR determinations):

- Mhlatuze (W1), including:
 - Mhlatuze River;
 - **Matigulu River;**
 - Mfule River;
 - **Nseleni River;**
 - Mlalazi River.
- Mfolozi (W2), including:
 - Mfolozi River;
 - **White Mfolozi River;**
 - **Black Mfolozi River;**
 - Mvunyane River;
 - Nondweni River;
 - Hlonyane River;
 - SikweBezi River;
 - Mona River;
 - Msunduzi River.
- Mkuze (W3), including:
 - **Mkuze River;**
 - Nkongolwana River;
 - Msunduzi River;
 - Mzinene River;
 - Nzimane River;
 - Hluhluwe River;
 - Nylalazi River.
- Pongola (W4), including:
 - **Pongola River;**
 - Bivane River;
 - Manzana River;

- Mozana River;
- Ngwavuma River.
- Upper Usutu (W5), including:
 - **Assegaai River;**
 - Ohlelo River;
 - Ngwempisi River;
 - Usuthu River;
 - Bonnie Brook River.
- Lake Sibaya / Kosi (W7).

2.2 Location of the EWR sites and nodes

Application of the NWRCS node delineation process produced 49 river nodes for which EWR data are required for Classification (DWS 2014a). There are eight EWRs from the current study (Table 2-1) and four that were described from the previous Mhlatuze Reserve study (Table 2-2, DWAF 1999b). In accordance with the Terms of Reference for this study, EWR data for these nodes were extrapolated, where possible, from the twelve intermediate EWR sites and in instances where extrapolation from these EWR sites was not sensible the desktop model (Hughes and Hannart 2003) was used.

Nodes were grouped based on their similarity to one or more of the EWR sites using data about site physiography, climate, rainfall, geology and potential natural vegetation, summarised in the Ecoregion Level 1 and 2 coverages developed by Kleynhans et al. (2005). The nodes were further differentiated based on geomorphological zonation (Rowntree et al. 2000).

These data are summarised in Table 2-3.

Table 2-1 Locations of the eight Usutu Mhlatuze EWR sites (this study)

Quaternary	River name	Site Name	Location description	Latitude	Longitude
W51D	Assegai	AS1	Downstream of Heyshope Dam, near the Swaziland border.	27.062300	30.988800
W42E	Upper Pongola	UP1	Near Frischgewaagd and Bilayoni Townships.	27.364133	30.969617
W31J	Mkuze	MK1	Adjacent to Mkuze National Park, almost opposite Mantuma Camp.	27.592100	32.218000
W22C	Black Mfolozi	BM1	Downstream of W2H028.	27.938900	31.210300
W22C	Black Mfolozi	BM2	Near Basonhoek.	28.013900	31.324300
W21H	White Mfolozi	WM1	Downstream of the R34 at the confluence of the Mvutshini River.	28.231457	31.188324
W12H	Nseleni	NS1	Near Cwaka.	28.634100	31.930900
W11B	Matigulu	MA1	Downstream of old DWS gauging station.	29.020100	31.470400

Table 2-2 Locations of the Mhlatuze River EWR sites (DWAf, 1999b)

Quaternary	River name	Site Name	Location description	Latitude	Longitude
W12D	Mhlatuze	EWR Site 1	Just upstream from the bridge that crosses the river towards Stewarts Farm.	28.743050	31.605783
W12D	Mhlatuze	EWR Site 2	Just upstream from gauging weir W1H009.	28.746949	31.747449
W12F	Mhlatuze	EWR Site 3	Just downstream of the R102 road bridge.	28.845683	31.868050
W12F	Mhlatuze	EWR Site 4	Just downstream from the W1H032 weir.	28.803948	31.958456

EWR Sites 2 and 3, on the Mhlatuze River, were located in the same resource unit. EWR Site 4 was in the estuary and not used in the extrapolation process.

Table 2-3 Extrapolation guide for the Usutu Mhlatuze study area (Quat = Quaternary catchment; ER I = Ecoregion Level 1; ER II = Ecoregion Level II; GZ = Geomorphic Zone; HI = Hydrological Index; PES = Present Ecological State; EI = Ecological Importance; ES = Ecological Sensitivity).

NO.	TIER	NODE	X coordinate	Y coordinate	QUAT	ER I	ER II	GZ	RIVER	HI class	2012 PES*	2012 EI*	2012 ES*	Desktop/EWR site
1	i	Ni4	31,35625	-27.41635	W42L	4	4.06	UFH	Mozana	2	B	HIGH	HIGH	Desktop
3	i	Ni8	32,29197	-26.96020	W43F	3	3.08	LLZ	Ngwavuma	2	C	MODERATE	HIGH	Desktop
24	vii	Nvii2	30,48574	-26.74071	W53A	11	11.04	LFH	Ngwempisi	2	D	MODERATE	VERY HIGH	Desktop
21	iii	Niii4	30,59102	-26.86572	W52B	11	11.04	LLZ	Ohlelo	2	C	MODERATE	VERY HIGH	Desktop
23	vii	Nvii1	30,57825	-26.46128	W54B	11	11.04	LLZ	Usuthu	2	B	HIGH	VERY HIGH	Desktop
22	iv	Niv1	30,63386	-26.48266	W54C	11	11.04	UFH	Bonnie Brook	2	C	MODERATE	VERY HIGH	Desktop
25	i	Ni10	32,37049	-27.67097	W31J	13	13.01	LLZ	Mkuze	4	C	HIGH	VERY HIGH	Desktop
48	i	Ni2	30,70339	-27.28400	W42B	15	15.05	LLZ	Phongolo	2	B	HIGH	VERY HIGH	Desktop
30	i	Ni18	32,14562	-28.45770	W23A	13	13.03	LLZ	Mfolozi	3	B	HIGH	VERY HIGH	Desktop
34	iv	Niv9	32,41066	-28.42763	W23C	13	13.03	LLZ	Msunduzi	3	E	MODERATE	VERY HIGH	Desktop
35	iv	Niv10	31,95863	-28.76176	W12H	13	13.03	LLZ	Nseleni	3	D	HIGH	VERY HIGH	Desktop
36	vii	Nvii3	32,50882	-27.81470	W32B	13	13.03 13.02	LLZ	Mkuze	3		HIGH	VERY HIGH	Desktop
37	vii	Nvii6	32,00668	-28.80220	W12F	13	13.03	LLZ	Mhlatuze	3	N/A	N/A	N/A	Desktop
27	i	Ni12	32,35727	-27.86522	W32C	13	13.03	LLZ	Mzinene	5	B	HIGH	HIGH	Desktop
28	i	Ni14	32,33392	-28.18285	W32G	13	13.03	LLZ	Nylalazi	5	C	HIGH	VERY HIGH	Desktop
29	i	Ni15	32,34966	-28.03978	W32F	13	13.03	LLZ	Hluhluwe	5	D	MODERATE	VERY HIGH	Desktop
26	i	Ni11	32,36204	-27.67467	W31L	13	13.01	LFH	Msunduzi	4	B	HIGH	HIGH	Desktop
					W22C	14	14.04	LFH	Black Mfolozi	2	C	MODERATE	MODERATE	BM2
38	i	Ni5	30,73542	-27.53004	W41B	14	14.01	LFH	Bivane	2	C	HIGH	HIGH	BM2
2	i	Ni6	30,8561	-27.52753	W41D	14	14.01	UFH	Bivane	2	C	HIGH	HIGH	BM2
39	i	Ni9	31,21984	-27.67941	W31A	14	14.03	UFH	Nkongolwana	3	E	HIGH	VERY HIGH	BM2
40	iii	Niii10	31,23162	-27.97030	W22B	14	14.03	UFH	Hlonyane	3	B	HIGH	HIGH	BM2
46	v	Nv1	31,35589	-28.04783	W22C	14	14.04	LFH	Black Mfolozi	3	B	HIGH	HIGH	BM2
					W12H	14	14.05	LFH	Nseleni		C	MODERATE	MODERATE	NS1
32	i	Ni21	31,71411	-28.91608	W13A	14	14.05	LFH	Mlalazi	3	D	HIGH	VERY HIGH	NS1
33	iii	Niii12	32,16677	-28.47670	W23B	14	14.05	LFH	Msunduzi	3	E	MODERATE	VERY HIGH	NS1
					W21H	14	14.05	UFH	White Mfolozi	3	B/C	HIGH	HIGH	WM1
44	iv	Niv11	30,89285	-28.16235	W21E	14	14.02	LFH	Nondweni	3	C	MODERATE	HIGH	WM1
45	iv	Niv12	30,89737	-28.16019	W21D	14	14.02	LFH	Mvunyane	3	D	MODERATE	HIGH	WM1
41	iii	Niii13	31,25158	-28.64861	W12A	14	14.05	UFH	Mhlatuze	3	B	VERY HIGH	HIGH	WM1
42	iii	Niii14	31,62934	-28.65987	W12C	14	14.06	UFH	Mfule	3	B	HIGH	HIGH	WM1
						13	13.03	LFH	Mhlatuze			HIGH	HIGH	Mhlatuze 3
31	i	Ni19	31,83037	-28.82204	W12E	14	14.06	LFH	Mhlatuze	3	D	HIGH	VERY HIGH	Mhlatuze 3
						14	14.06	LFH	Mhlatuze			MODERATE	MODERATE	Mhlatuze 1
47	vii	Nvii5	31,41476	-28.77518	W12B	14	14.06	UFH	Mhlatuze	3	B	HIGH	HIGH	Mhlatuze 1
					W11B	17	17.01	UFH	Matigulu	3	B/C	MODERATE	MODERATE	MA1

NO.	TIER	NODE	X coordinate	Y coordinate	QUAT	ER I	ER II	GZ	RIVER	HI class	2012 PES*	2012 EI*	2012 ES*	Desktop/EWR site
49	i	Ni20	31,46986	-29.01161	W11A	17	17.01	UFH	Matigulu	3	C	HIGH	HIGH	MA1
					W31J	3	3.08	LFH	Mkuze	4	C	MODERATE	MODERATE	MK1
5	i	Ni17	31,97805	-28.34883	W22L	3	3.09	LFH	Black Mfolozi	3	B	HIGH	HIGH	MK1
18	vii	Nvii7	31,95639	-27.61173	W31G	3	3.09	LFH	Mkuze	3	C	HIGH	HIGH	MK1
10	iii	Niii11	31,97911	-28.35399	W21L	3	3.09	LFH	White Mfolozi	4	B	HIGH	VERY HIGH	MK1
16	iv	Niv8	31,80769	-28.21695	W22K	3	3.09	LFH	Mona	4	B	HIGH	HIGH	MK1
17	vii	Nvii4	32,0974	-28.10768	W32E	3	3.09	LFH	Nzimane	5	B	HIGH	HIGH	MK1
43	iv	Niv7	31,80621	-28.21650	W22J	14	14.04	LFH	Black Mfolozi	3	B	HIGH	HIGH	MK1
					W42E	3	3.1	UFH	Phongolo	2	C	MODERATE	MODERATE	UP1
8	iii	Niii8	31,7824	-27.36285	W44C	3	3.09	LFH	Phongolo	2	C	MODERATE	VERY HIGH	UP1
13	iv	Niv4	31,20912	-27.44075	W42G	3	3.1	LFH	Phongolo	2	B	HIGH	HIGH	UP1
14	iv	Niv5	31,35428	-27.41834	W42J	3	3.1	LFH	Phongolo	2	B	HIGH	VERY HIGH	UP1
6	iii	Niii6	31,09065	-27.35519	W42E	3	3.1	UFH	Phongolo	2	C	MODERATE	HIGH	UP1
7	iii	Niii7	31,20714	-27.44259	W41G	3	3.1	UFH	Bivane	2	B	HIGH	VERY HIGH	UP1
11	iv	Niv2	31,0501	-27.52279	W41F	3	3.1	UFH	Manzana	2	B	HIGH	HIGH	UP1
12	iv	Niv3	31,05372	-27.51596	W41E	3	3.1	UFH	Bivane	2	C	HIGH	HIGH	UP1
					W22C	3	3.1	UFH	Black Mfolozi	2	C	MODERATE	MODERATE	BM1
4	i	Ni16	31,47766	-27.96254	W22E	3	3.09	UFH	SikweBezi	3	C	HIGH	HIGH	BM1
9	iii	Niii9	31,43851	-27.70555	W31B	3	3.1	UFH	Mkuze	3	D	HIGH	HIGH	BM1
15	iv	Niv6	31,20504	-27.93534	W22A	3	3.1	UFH	Black Mfolozi	3	B	HIGH	HIGH	BM1
					W51D	4	4.06	LFH	Assegai	3	C	MODERATE	MODERATE	AS1
20	i	Ni3	30,89032	-27.30919	W42D	4	4.06	LFH	Phongolo	2	C	MODERATE	HIGH	AS1
19	i	Ni1	30,75479	-27.04733	W51C	4	4.06	LFH	Assegai	3	C	HIGH	VERY HIGH	AS1

* from DWA,2013

Geomorphic Zonation		Present Ecological State		Ecoregions	
LFH	LOWER FOOTHILLS	A	Natural	3	Lowveld
UFH	UPPER FOOTHILLS	B	Largely Natural	4	North Eastern Highlands
LLZ	LOWLAND ZONE	C	Moderately Modified	11	Highveld
		D	Largely Modified	13	Natal Coastal Plain
				14	North Eastern Uplands
				15	Eastern Escarpment Mountains
				17	North eastern Coastal Belt

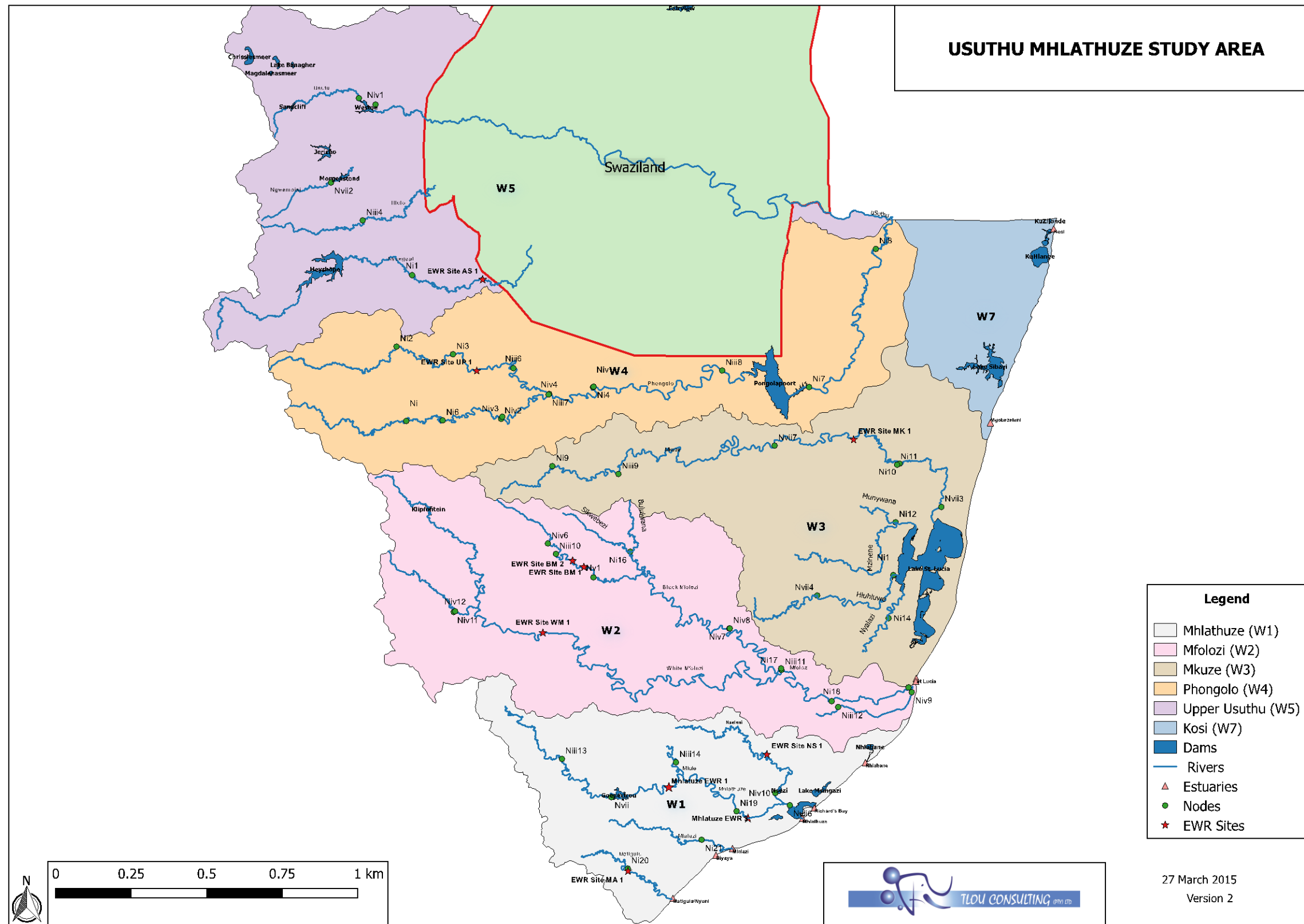


Figure 2-1 The location of the EWR sites and nodes in the study area

3 GENERATION OF EWR DATA

The extrapolation procedure was based on the hydrological extrapolation in the Desktop Reserve model (Hughes and Münster 2000). The results were calibrated using the results from the Intermediate Level EWR assessments (see Table 2-3) conducted during this study (refer to Rivers EWR Assessment Results Report; RDM/WMA6/CON/COMP/0713) and from the previous EWR assessment on the Mhlatuze (DWAf, 1999b). The assurance rules together with the time series of natural flows per node were used to construct representative time series' of EWR requirements (Appendix A). A short summary of the model follows, which unless otherwise indicated is taken directly from Hughes and Hannart (2003).

The Desktop Model is based on the assumption that total water requirements for a river decrease as the ecological category changes from A through to D. The model consists of three components; estimation of the maintenance/drought and high/low flows, estimation of the seasonal distribution of annual total flows based upon the natural flow regime separated into high/low flows, and estimation of the rules that combine the maintenance drought requirements into continuous assurance frequency curves. The final output of these magnitude data is a table of flows for each month of the year for a range of percentage assurances. The flows are expressed as volumes ($m^3 \times 10^6$) or as mean monthly flow rates ($m.s^{-1}$).

The frequency component of the estimated flows is based upon the assumption that drier areas with more variable flows have substantially greater maintenance flows but with lower levels of assurance. The numerical rules in the model that describe this function are set such that the maximum low flow value is a scaling factor, which varies with ecological category, such that lower categories have higher maximum values. These standardised settings for this maximum low flow value that increases from ecological category B through D created some problems with the validity of estimated (extrapolated) monthly flows that resulted in the generation of invalid data at some of the nodes that made use of extrapolated EWR data. In these cases the Reserve estimations for lower ecological categories had higher maintenance high flows than the class above i.e. flood volumes in the D class were higher for the corresponding month than the C class. In order to resolve this issue, since the floods are ostensibly the same and to avoid confusion about the slight variation in the DRIFT DSS calculations, the differences were removed in the hydrological summaries, i.e. where floods should be the same they have been allocated identical volumes, timing and durations.

At sites where there was no existing EWR data in close enough proximity to justify extrapolation of EWR data a straight desktop run, either Northern Natal, Eastern Escarpment or Zululand was used. All the data generated in this way produced valid comparative monthly flows between different ecological categories using the standard assurance level settings in the desktop for classes B through D.

The EWR data is presented in Appendix A. For each node the following data is presented in turn. A summary of the desktop estimate (*.tab) is followed by the assurance table (*.rul) and the finally the time series of monthly flows (*.mrv) for each determined ecological category. In most cases there are data for three ecological categories, B through D.

The hydrology used in the extrapolations are provided in Table 3-1. If there was contributing flows from tributaries upstream of the node, cumulative flows were used in the extrapolations.

Should the extrapolations need to be rerun using incremental flow at each node, the natural incremental hydrological timeseries' are available and provided in Appendix 2.

Table 3-1. Hydrology used for extrapolations

River	EWR node ID	MAR (Mill m ³ /a)	Location	Hydrology Used
Matigulu	Ni20	86	Comprises W11A	Streamflows generated using the WR2005 configuration used for the MA1 scenarios
Mhlatuze	Niii13	85	Comprises W12A	Streamflows obtained from WR2012
	Nvii5	166	Mhlatuze u/s Goedertrouw Dam excl KwaMazule tributary. Not on quat boundary	
	Niii14	53	Incremental contribution of Mfule tributary of Mhlatuze	
	Ni19	329	Mhlatuze_below_Mhlatuzane_confluence	Streamflows scaled so that they generate the same MAR as WRPM model from Mhlatuze WCDM model over period 1953-2003. Possible discontinuity as ACRU used for period from 1953-2003 (to get a more seasonal response) and WR2012 used from 1920-1952 and from 2004-2009.
	Niv10	134	Nseleni	
	Nvii6	506	Inflow to estuary u/s of Mzingwenya R (which is intercepted by a lake). Not on quat boundary	Streamflows obtained from WR2012
Mlalazi	Ni21	55	Comprises W13A	Streamflows based on those from the JMBRS system analysis. Intermediate values between calibration gauges were obtained by scaling the inflows using catchment areas
Pongola	Ni5	136	Bivane River down to and including W41C	
	Ni6	181	Bivane River down to and including W41D	
	Niv3	229	Bivane River down to and including W41E	
	Niv2	45	Tributary comprising W41F	
	Niii7	299	Bivane River down to and including W41G	
	Ni2	190	Pongola down to and including W42C	
	Ni3	267	Pongola down to and including W42D	
	Niii6	353	Pongola down to and including W42F	
	Niv4	392	Pongola down to and including W42G	
	Niv5	781	Pongola down to and including W42J	
	Ni4	87	Tributary comprising W42K and W42L	

River	EWR node ID	MAR (Mill m ³ /a)	Location	Hydrology Used
	Niii8	990	Pongola down to and including W44B	All flows generated using the ACRU Model
	Ni8	136	Ni8 : Ngwavuma tributary from W43A to W43F	
Usuthu	Ni1	213	Ni1 : Usuthu : Assegaai comprising W51A + W51B + W51C	
	Niii4	69	Niii4 : Usuthu : Hlelo including W52A & W52B	
	Nvii2	42	Nvii2 : Usuthu : Ngwempisi u/s Morgenstand Dam backwater (not on quat boundary)	
	Nvii1	36	Nvii1 on Usuthu u/s backwater of Westoe Dam & d/s W54A + portion of W54B (not on quat boundary)	
	Niv1	12	Niv1 : Usuthu : Incremental flow of Bonnie Brook tributary (W54C)	
Mkuze	Ni9	24	Ni9 : Mkuze : Incremental flow at W31A	
	Niii9	45	Niii9 : Mkuze : Cummulative flow at W31B	
	Niii9-INC	21	Niii9-INC : Mkuze : Incremental flow at W31B (Niii9-Ni9)	
	Nvii7	212	Nvii7 : Mkuze : Cummulative flow at W31G near gauge W3H008	
	Nvii7-INC	167	Nvii7-INC : Mkuze : Incremental flow at W31G near gauge W3H008 (Nvii7-Niii9)	
	Ni10	275	Ni10 : Mkuze : Cummulative flow at W31J	
	Ni10-INC	63	Ni10-INC : Mkuze : Incremental flow at W31J (Ni10-Nvii7)	
	Ni11	18	Ni11 : Mzunduzi : Cummulative flow at W31L	
	Nvii3	239	Nvii3 : Mkuze : Cummulative flow at W32B	
	Nvii3-INC	-54	Nvii3-INC : Mkuze : Incremental flow at W32B (Nvii3-Ni10-Ni11)	
Mzinene	Ni12	17	Ni12 : Mzinene : Incremental flow at W32C	

River	EWR node ID	MAR (Mill m ³ /a)	Location	Hydrology Used
Hluhluwe	Nvii4	7	Nvii4 : Hluhluwe : Cummulative flow at W32E (only 2/3 of W32E is included)	
	Ni15	13	Ni15 : Hluhluwe : Cummulative flow at W32F	
Nyalazi	Ni14	17	Ni14 : Nyalazi : Incremental flow at W32G	
Black Mfolozi	Niv6	24	Niv6 : Black Mfolozi : Incremental flow at W22A	
	Niii10	32	Niii19 : Hlonyane : Incremental flow at W22B (tributary of Black Mfolozi)	
	Nv1	78	Nv1 : Black Mfolozi : Cummulative flow at W22C	
	Nv1-INC	22	Nv1-INC : Black Mfolozi : Incremental flow at W22C (Nv1-Niv6-Niii10)	
	Ni16	67	Ni16 : Sikwebezi : Incremental flow at W22E (tributary of Black Mfolozi)	
	Niv7	291	Niv7 : Black Mfolozi : Cummulative flow at W22J	
	Niv7-INC	146	Niv7-INC : Black Mfolozi : Incremental flow at W22J (Niv7-Nv1-Ni16)	
	Niv8	25	Niv8 : Mona : Incremental flow at W22K (tributary of Black Mfolozi)	
	Ni17	328	Ni17 : Black Mfolozi : Cummulative flow at W22L	
Ni17-INC	12	Ni17-INC : Black Mfolozi : Incremental flow at W22L (Ni17-Niv7-Niv8)		
White Mfolozi	Niv11	31	Niv11 : Nondweni : Incremental flow at W21E (tributary of the White Mfolozi)	
	Niv12	30	Niv12 : Mvunyane : Incremental flow at W21D (tributary of the White Mfolozi)	
	Niii11	419	Niii11 : White Mfolozi : Cummulative flow at W21L	
	Niii11-INC	358	Niii11-INC : White Mfolozi : Incremental flow at W21L (Niii11-Niv11-Niv12)	

River	EWR node ID	MAR (Mill m ³ /a)	Location	Hydrology Used
Mfolozi	Ni18	772	Ni18 : Mfolozi : Cummulative flow at W23A	
	Ni18-INC	25	Ni18-INC : Mfolozi : Incremental flow at W23A (Ni18-Ni17-Niii11)	
	Nvii8	802	Nvii8 : Mfolozi : Cummulative flow at W23D (but excluding Msunduzi flow from W23C)	
	Nvii8-INC	30	Nvii8-INC : Mfolozi : Cummulative flow at W23D (excluding Msunduzi flow) (Nvii8-Ni18)	
	Niii12	21	Niii12 : Msunduzi : Incremental flow at W23B	
	Niv9	71	Niv9 : Msunduzi : Cummulative flow at W23C	
	Niv9-INC	50	Niv9-INC : Msunduzi : Incremental flow at W23C (Niv9-Niii12)	

Incremental flows have been provided in Appendix 2, for the nodes highlighted in green.

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Appendix A. EWR DATA

Appendix Table 1 Summary of EWR data for each node

NODE	River	Extrapolated from	Ecological Category	MAR (MCM)	Total IFR (MCM)	IFR %	Main Lowflow (MCM)	Main Lowflow In %	Drought Lowflow (MCM)	Drought Lowflow %	Maint Highflow (MCM)	Maint Highflow %
Ni1	Assegai	Asegai	B	212,841	92,777	43,59	74,655	35,08	28,666	13,47	18,123	8,51
	Assegai	Asegai	C	212,841	71,079	33,4	52,956	24,88	28,665	13,47	18,123	8,51
	Assegai	Asegai	D	212,841	41,071	19,30	28,666	13,47	28,666	13,47	12,405	5,83
Ni2	Phongolo	Desktop	B	189,511	60,956	32,16	38,431	20,28	10,437	5,51	22,525	11,89
	Phongolo	Desktop	C	189,511	40,746	21,50	22,342	11,79	10,437	5,51	18,404	9,71
	Phongolo	Desktop	D	189,511	26,599	14,04	10,897	5,75	10,437	5,51	15,702	8,29
Ni3	Phongolo	Asegai	B	267,285	116,509	43,59	93,751	35,08	35,998	13,47	22,758	8,51
	Phongolo	Asegai	C	267,285	89,260	33,4	66,502	24,88	35,998	13,47	22,758	8,51
	Phongolo	Asegai	D	267,285	51,576	19,30	35,998	13,47	35,998	13,47	15,578	5,83
Ni4	Mozana	Desktop	B	87,071	28,006	32,16	17,656	20,28	4,787	5,50	10,349	11,89
	Mozana	Desktop	C	87,071	18,720	21,50	10,265	11,79	4,787	5,50	8,456	9,71
	Mozana	Desktop	D	87,071	12,221	14,04	5,006	5,75	4,787	5,50	7,214	8,29
Ni5	Bivane	Black Mfolozi 2	B	135,619	54,814	40,42	31,705	23,38	3,147	2,32	23,109	17,04
	Bivane	Black Mfolozi 2	C	135,619	40,840	30,11	17,732	13,07	3,147	2,32	23,109	17,04
	Bivane	Black Mfolozi 2	D	135,619	25,019	18,45	3,147	2,32	3,147	2,32	21,872	16,13
Ni6	Bivane	Black Mfolozi 2	B	181,106	73,163	40,42	42,318	23,38	4,201	2,32	30,844	17,04
	Bivane	Black Mfolozi 2	C	181,106	54,511	30,11	23,667	13,07	4,201	2,32	30,844	17,04
	Bivane	Black Mfolozi 2	D	181,106	33,394	18,45	4,201	2,32	4,201	2,32	29,193	16,13
Ni8	Ngwavuma	Desktop	B	136,200	45,033	33,06	29,712	21,82	8,087	5,94	15,320	11,25
	Ngwavuma	Desktop	C	136,200	29,935	21,98	17,301	12,70	8,087	5,94	12,634	9,28
	Ngwavuma	Desktop	D	136,200	19,520	14,33	8,676	6,37	8,087	5,94	10,844	7,96

Ni9	Nkongolwana	Black Mfolozi 2	B	23,947	9,679	40,42	5,598	23,38	0,556	2,32	4,081	17,04
	Nkongolwana	Black Mfolozi 2	C	23,947	7,212	30,11	3,131	13,07	0,556	2,32	4,081	17,04
	Nkongolwana	Black Mfolozi 2	D	23,947	4,418	18,45	0,556	2,32	0,556	2,32	3,862	16,13
Ni10	Mkuze	Desktop	B	272,897	82,737	30,32	46,249	16,95	1,153	0,42	36,488	13,37
	Mkuze	Desktop	C	272,897	55,649	20,39	26,619	9,75	1,153	0,42	29,030	10,64
	Mkuze	Desktop	D	272,897	36,241	13,28	11,834	4,34	1,153	0,42	24,407	8,94
Ni11	Msunduzi	Desktop	B	17,873	5,097	28,52	2,459	13,76	0,000	0,000	2,638	14,76
	Msunduzi	Desktop	C	17,873	3,422	19,14	1,380	7,72	0,000	0,000	2,042	11,43
	Msunduzi	Desktop	D	17,873	2,208	12,35	0,513	2,87	0,000	0,000	1,695	9,48
Ni12	Mzinene	Desktop	B	17,594	4,876	27,71	2,176	12,37	0,000	0,000	2,700	15,35
	Mzinene	Desktop	C	17,594	3,268	18,57	1,196	6,80	0,000	0,000	2,072	11,78
	Mzinene	Desktop	D	17,594	2,099	11,93	0,384	2,18	0,000	0,000	1,714	9,74
Ni14	Nyalazi	Desktop	B	16,693	4,516	27,05	1,882	11,28	0,000	0,000	2,633	15,78
	Nyalazi	Desktop	C	16,693	3,022	18,11	1,011	6,06	0,000	0,000	2,011	12,05
	Nyalazi	Desktop	D	16,693	1,933	11,58	0,271	1,62	0,000	0,000	1,662	9,96
Ni15	Hluhluwe	Desktop	B	12,325	3,315	26,90	1,359	11,02	0,000	0,000	1,956	15,87
	Hluhluwe	Desktop	C	12,325	2,218	18,00	0,725	5,88	0,000	0,000	1,493	12,12
	Hluhluwe	Desktop	D	12,325	1,417	11,50	0,183	1,49	0,000	0,000	1,234	10,01
Ni16	Sikwebezi	Black Mfolozi	B	66,613	26,126	39,22	11,055	16,60	2,400	3,60	15,071	22,62
	Sikwebezi	Black Mfolozi 1	C	66,613	20,053	30,10	6,099	9,16	2,385	3,58	13,954	20,95
	Sikwebezi	Black Mfolozi 1	D	66,613	12,533	18,81	2,400	3,60	2,400	3,60	10,133	15,21
Ni17	Black Mfolozi	Mkuze	B	325,787	181,971	55,86	110,145	33,81	20,155	6,19	71,827	22,05
	Black Mfolozi	Mkuze	C	325,787	145,084	44,53	73,258	22,49	20,155	6,19	71,827	22,05
	Black Mfolozi	Mkuze	D	325,787	71,006	21,80	20,155	6,19	20,155	6,19	50,851	15,61
Ni18	Mfolozi	Desktop	B	767,368	227,312	29,62	120,402	15,69	5,325	0,69	106,910	13,93
	Mfolozi	Desktop	C	767,368	152,898	19,93	68,784	8,96	5,325	0,69	84,114	10,96

	Mfolozi	Desktop	D	767,368	99,289	12,94	28,960	3,77	5,325	0,69	70,329	9,16
Ni19	Mhlatuze	Mhlatuze 3	B	328,923	85,751	26,07	60,951	18,53	21,438	6,52	24,801	7,54
	Mhlatuze	Mhlatuze 3	C	328,923	68,302	20,77	43,503	13,23	21,438	6,52	24,799	7,54
	Mhlatuze	Mhlatuze 3	D	328,923	46,907	14,26	22,108	6,72	21,438	6,52	24,799	7,54
Ni20	Matigulu	Matigulu	B	85,76	63,188	73,68	48,097	56,08	6,805	7,93	15,091	17,60
	Matigulu	Matigulu	C	85,76	27,629	32,22	14,209	16,57	6,805	7,93	13,420	15,65
	Matigulu	Matigulu	D	85,76	15,254	17,79	6,805	7,93	6,805	7,93	8,450	9,85
Ni21	Mlalazi	Nseleni	B	54,939	27,589	50,22	19,787	36,02	0,866	1,58	7,802	14,20
	Mlalazi	Nseleni	C	54,939	25,355	46,15	19,235	35,01	0,866	1,58	6,120	11,14
	Mlalazi	Nseleni	D	54,939	8,392	15,27	2,272	4,14	2,272	4,14	6,120	11,14
Niii4	Ohlelo	Desktop	B	69,425	24,396	35,14	17,409	25,08	4,439	6,39	6,987	10,06
	Ohlelo	Desktop	C	69,425	15,960	22,99	10,135	14,60	4,439	6,39	5,825	8,39
	Ohlelo	Desktop	D	69,425	10,346	14,90	5,299	7,63	4,439	6,39	5,047	7,27
Niii6	Phongolo	Phongolo	B	352,893	260,605	73,85	185,211	52,48	61,790	17,51	75,395	21,36
	Phongolo	Phongolo	C	352,893	181,144	51,33	125,806	35,65	61,790	17,51	55,338	15,68
	Phongolo	Phongolo	D	352,893	104,230	29,54	61,790	17,51	61,790	17,51	42,439	12,03
Niii7	Bivane	Phongolo	B	299,057	220,849	73,85	156,956	52,48	52,364	17,51	63,893	21,36
	Bivane	Phongolo	C	299,057	153,509	51,33	106,614	35,65	52,364	17,51	46,896	15,68
	Bivane	Phongolo	D	299,057	88,329	29,54	52,364	17,51	52,364	17,51	35,965	12,03
Niii8	Phongolo	Mkuze	B	1006,848	743,540	73,85	528,429	52,48	176,295	17,51	215,111	21,36
	Phongolo	Mkuze	C	1006,849	449,115	44,61	226,403	22,49	62,289	6,19	222,712	22,12
	Phongolo	Mkuze	D	1006,85	219,445	21,80	62,289	6,19	62,289	6,19	157,156	15,61
Niii9	Mkuze	Black Mfolozi 1	B	45,285	17,761	39,22	7,516	16,60	1,631	3,60	10,246	22,62
	Mkuze	Black Mfolozi 1	C	45,285	13,632	30,10	4,146	9,16	1,621	3,58	9,486	20,95
	Mkuze	Black Mfolozi 1	D	45,285	8,520	18,81	1,631	3,60	1,631	3,60	6,889	15,21
Niii10	Hlonyane	Black Mfolozi 2	B	31,923	12,903	40,42	7,463	23,38	0,741	2,32	5,440	17,04

	Hlonyane	Black Mfolozi 2	C	31,923	9,613	30,11	4,174	13,07	0,741	2,32	5,440	17,04
	Hlonyane	Black Mfolozi 2	D	31,923	5,889	18,45	0,741	2,32	0,741	2,32	5,148	16,13
Niii11	White Mfolozi	Mkuze	B	416,687	232,745	55,86	140,877	33,81	25,778	6,19	91,868	22,05
	White Mfolozi	Mkuze	C	416,687	185,565	44,53	93,698	22,49	25,778	6,19	91,868	22,05
	White Mfolozi	Mkuze	D	416,687	90,818	21,80	25,778	6,19	25,778	6,19	65,040	15,61
Niii12	Msunduzi	Nseleni	B	21,143	10,617	50,22	7,615	36,02	0,333	1,58	3,002	14,20
	Msunduzi	Nseleni	C	21,143	9,757	46,15	7,402	35,01	0,333	1,58	2,355	11,14
	Msunduzi	Nseleni	D	21,143	3,229	15,27	0,874	4,14	0,874	4,14	2,355	11,14
Niii13	Mhlatuze	White Mfolozi	B	84,969	48,899	57,55	27,883	32,82	7,273	8,56	21,017	24,73
	Mhlatuze	White Mfolozi	C	84,969	42,714	50,27	21,698	25,54	7,273	8,56	21,017	24,73
	Mhlatuze	White Mfolozi	D	84,969	20,790	24,47	7,273	8,56	7,273	8,56	13,517	15,91
Niii14	Mfule	White Mfolozi	B	53,385	30,723	57,55	17,518	32,82	4,569	8,56	13,204	24,73
	Mfule	White Mfolozi	C	53,385	26,837	50,27	13,632	25,54	4,569	8,56	13,204	24,73
	Mfule	White Mfolozi	D	53,385	13,062	24,47	4,569	8,56	4,569	8,56	8,493	15,91
Niv1	Bonnie Brook	Desktop	B	11,971	4,399	36,75	3,276	27,36	1,011	8,44	1,124	9,39
	Bonnie Brook	Desktop	C	11,971	2,840	23,72	1,903	15,90	1,011	8,44	0,937	7,83
	Bonnie Brook	Desktop	D	11,971	1,830	15,28	1,015	8,48	1,011	8,44	0,814	6,80
Niv2	Manzana	Phongolo	B	44,804	33,087	73,85	23,515	52,48	7,845	17,51	9,572	21,36
	Manzana	Phongolo	C	44,804	22,998	51,33	15,973	35,65	7,845	17,51	7,026	15,68
	Manzana	Phongolo	D	44,804	13,233	29,54	7,845	17,51	7,845	17,51	5,388	12,03
Niv3	Bivane	Phongolo	B	229,202	169,262	73,85	120,294	52,48	40,133	17,51	48,969	21,36
	Bivane	Phongolo	C	229,202	117,652	51,33	81,711	35,65	40,133	17,51	35,941	15,68
	Bivane	Phongolo	D	229,202	67,697	29,54	40,133	17,51	40,133	17,51	27,564	12,03
Niv4	Phongolo	Phongolo	B	392,393	289,776	73,85	205,942	52,48	68,707	17,51	83,834	21,36
	Phongolo	Phongolo	C	392,393	201,420	51,33	139,888	35,65	68,707	17,51	61,532	15,68
	Phongolo	Phongolo	D	392,393	115,896	29,54	68,707	17,51	68,707	17,51	47,190	12,03

Niv5	Phongolo	Upper Pongolo	B	780,980	576,741	73,85	409,886	52,48	136,747	17,51	166,855	21,36
	Phongolo	Upper Pongolo	C	780,980	400,886	51,33	27,842	35,65	136,747	17,51	122,466	15,68
	Phongolo	Upper Pongolo	D	780,980	230,669	29,54	136,747	17,51	136,747	17,51	93,922	12,03
Niv6	Black Mfolozi	Black Mfolozi 1	B	24,285	9,525	39,22	4,030	16,60	0,875	3,60	5,494	22,62
	Black Mfolozi	Black Mfolozi 1	C	24,285	7,310	30,10	2,223	9,16	0,869	3,58	5,087	20,95
	Black Mfolozi	Black Mfolozi 1	D	24,285	4,569	18,81	0,875	3,60	0,875	3,60	3,694	15,21
Niv7	Black Mfolozi	Mkuze	B	288,623	161.213	55.86	97.58	33.81	17.856	6.19	63.633	22,05
	Black Mfolozi	Mkuze	C	288,623	128,534	44,53	64,901	22,49	17,856	6,19	63,633	22,05
	Black Mfolozi	Mkuze	D	288,623	128,534	44,53	64,901	22,49	17,856	6,19	63,633	22,05
Niv8	Mona	Mkuze	B	24,716	13,805	55,86	8,356	33,81	1,529	6,19	5,449	22,05
	Mona	Mkuze	C	24,716	11,007	44,53	5,558	22,49	1,529	6,19	5,449	22,05
	Mona	Mkuze	D	24,716	5,387	21,80	1,529	6,19	1,529	6,19	3,858	15,61
Niv9	Msunduzi	Desktop	B	71,637	2,112	29,48	11,064	15,44	0,000	0,000	10,058	14,04
	Msunduzi	Desktop	C	71,637	14,205	19,83	6,309	8,81	0,000	0,000	7,896	11,02
	Msunduzi	Desktop	D	71,637	9,218	12,87	2,623	3,66	0,000	0,000	6,595	9,21
Niv10	Nseleni	Desktop	B	133,782	40,309	30,13	22,217	16,61	5,385	4,03	18,093	13,52
	Nseleni	Desktop	C	133,782	27,116	20,27	12,764	9,54	5,385	4,03	14,351	10,73
	Nseleni	Desktop	D	133,782	17,647	13,19	5,600	4,19	5,385	4,03	12,048	9,01
Niv11	Nondweni	White Mfolozi	B	31,260	17,990	57,55	10,258	32,82	2,676	8,56	7,732	24,73
	Nondweni	White Mfolozi	C	31,260	15,715	50,27	7,983	25,54	2,676	8,56	7,732	24,73
	Nondweni	White Mfolozi	D	31,260	7,649	24,47	2,676	8,56	2,676	8,56	4,973	15,91
Niv12	Mvunyane	White Mfolozi	B	30,155	17,354	57,55	9,895	32,82	2,581	8,56	7,459	24,73
	Mvunyane	White Mfolozi	C	30,155	15,159	50,27	7,700	25,54	2,581	8,56	7,459	24,73
	Mvunyane	White Mfolozi	D	30,155	7,378	24,47	2,581	8,56	2,581	8,56	4,797	15,91
Nv1	Black Mfolozi	Black Mfolozi 2	B	78,371	31,676	40,42	18,322	23,38	1,819	2,32	13,354	17,04
	Black Mfolozi	Black Mfolozi 2	C	78,371	23,601	30,11	10,247	13,07	1,819	2,32	13,354	17,04

	Black Mfolozi	Black Mfolozi 2	D	78,371	14,458	18,45	1,819	2,32	1,819	2,32	12,639	16,13
Nvii1	Usuthu	Desktop	B	35,574	11,221	31,54	6,821	19,17	0,828	2,33	4,400	12,37
	Usuthu	Desktop	C	35,574	7,523	21,15	3,957	11,12	0,828	2,33	3,566	10,02
	Usuthu	Desktop	D	35,574	4,911	13,80	1,883	5,29	0,828	2,33	3,028	8,51
Nvii2	Ngwempisi	Desktop	B	41,938	14,289	34,07	9,834	23,45	2,564	6,11	4,456	10,62
	Ngwempisi	Desktop	C	41,938	9,429	22,48	5,728	13,66	2,564	6,11	3,700	8,82
	Ngwempisi	Desktop	D	41,938	6,133	14,63	2,940	7,01	2,564	6,11	3,193	7,61
Nvii3	Mkuze	Desktop	B	236,811	72,307	30,53	41,066	17,34	0,970	0,41	31,241	13,19
	Mkuze	Desktop	C	236,811	48,620	20,53	23,679	10,00	0,970	0,41	24,941	10,53
	Mkuze	Desktop	D	236,811	31,685	13,38	10,678	4,51	0,970	0,41	21,007	8,87
Nvii4	Nzimane	Mkuze	B	6,498	3,630	55,86	2,197	33,81	0,402	6,19	1,433	22,05
	Nzimane	Mkuze	C	6,498	2,894	44,53	1,461	22,49	0,402	6,19	1,433	22,05
	Nzimane	Mkuze	D	6,498	1,416	21,80	0,402	6,19	0,402	6,19	1,014	15,61
Nvii5	Mhlatuze	Mhlatuze 1	B	166,128	56,972	34,29	39,528	23,79	11,869	7,14	17,444	10,50
	Mhlatuze	Mhlatuze 1	C	166,128	49,928	30,05	34,213	20,59	10,417	6,27	15,715	9,46
	Mhlatuze	Mhlatuze 1	D	166,128	24,397	14,69	11,869	7,14	11,869	7,14	12,528	7,54
Nvii6	Mhlatuze	Desktop	B	505,609	164,273	32,49	105,387	20,84	30,234	5,98	58,886	11,65
	Mhlatuze	Desktop	C	505,609	109,604	12,13	61,314	12,13	30,234	5,98	48,289	9,55
	Mhlatuze	Desktop	D	505,609	71,530	14,15	30,234	5,98	30,234	5,98	41,295	8,17
Nvii7	Mkuze	Mkuze	B	209,887	117,235	55,86	70,96	33,81	12,985	6,19	46,274	22,05
	Mkuze	Mkuze	C	209,887	93,470	44,53	47,196	22,49	12,985	6,19	46,274	22,05
	Mkuze	Mkuze	D	209,887	45,745	21,80	12,985	6,19	12,985	6,19	32,761	15,61

A.1. Ni1 – Category B

Summary Table

Desktop Version 2, Generated on 2015-04-20

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni1

Annual Flows (Mill. cu. m or index values):

MAR = 212,841

S.Dev. = 112,372

CV = 0,528

Q75 = 4,870

Q75/MMF = 0,275

BFI Index = 0,420

CV(JJA+JFM) Index = 1,475

Ecological Category = B

Total IFR = 92,777 (43,59 %MAR)

Maint. Lowflow = 74,655 (35,08 %MAR)

Drought Lowflow = 28,666 (13,47 %MAR)

Maint. Highflow = 18,123 (8,51 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows			Modified Flows (IFR)				
	Mean	SD	CV	Low flows		High Flows		Total Flows
				Maint.	Drought	Maint.	Maint.	
Oct	10,193	13,244	1,299	3,800	1,581	0,990	4,790	
Nov	21,758	20,133	0,925	6,105	1,649	2,330	8,435	
Dec	33,950	25,148	0,741	11,086	3,677	4,409	15,495	
Jan	37,587	39,768	1,058	10,841	3,629	3,964	14,805	
Feb	34,423	32,239	0,937	8,998	3,002	3,395	12,394	
Mar	27,742	24,409	0,880	8,383	3,036	1,968	10,351	
Apr	16,696	11,810	0,707	5,717	2,052	0,927	6,644	
May	9,637	5,864	0,609	5,120	2,129	0,108	5,228	
Jun	6,539	3,041	0,465	4,273	1,956	0,000	4,273	
Jul	5,402	2,748	0,509	3,834	2,038	0,001	3,835	
Aug	4,429	2,558	0,578	3,496	2,010	0,003	3,499	
Sep	4,485	4,191	0,934	3,003	1,907	0,028	3,030	

Rule curve

Desktop Version 2, Generated on 2015-04-20

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni1

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	5.624	5.586	5.501	5.324	4.995	4.110	3.510	2.300	1.840	1.420
Nov	9.839	9.780	9.656	9.413	8.956	8.159	6.892	5.131	3.167	1.500
Dec	21.806	20.594	19.477	18.344	17.021	14.775	12.623	9.633	6.300	1.970
Jan	20.650	19.554	18.540	17.499	16.268	14.176	12.127	9.278	6.103	4.106
Feb	17.343	16.407	15.541	14.657	13.616	11.849	10.131	7.744	5.083	3.409
Mar	12.168	12.101	11.963	11.689	11.177	10.282	8.858	6.880	4.675	3.288
Apr	7.844	7.790	7.666	7.411	6.936	6.153	5.047	3.774	2.686	2.180
May	6.237	6.198	6.109	5.926	5.584	5.021	4.226	3.312	2.530	2.166
Jun	5.107	5.077	5.009	4.868	4.605	4.172	3.561	2.857	2.255	1.975
Jul	4.586	4.561	4.506	4.392	4.179	3.829	3.335	2.766	2.280	2.054
Aug	4.184	4.164	4.117	4.019	3.838	3.450	3.117	2.632	2.217	1.520
Sep	3.623	3.606	3.569	3.493	3.350	3.115	2.740	2.170	1.840	1.180

Reserve Flows without High Flows

Oct	4.541	4.513	4.448	4.316	4.069	3.662	3.088	2.300	1.840	1.420
Nov	7.290	7.248	7.161	6.988	6.665	6.100	5.201	3.952	2.560	1.500
Dec	13.243	13.172	13.024	12.731	12.182	11.224	9.700	7.582	5.222	1.970
Jan	12.951	12.882	12.737	12.452	11.917	10.983	9.498	7.434	5.134	3.687
Feb	10.749	10.691	10.572	10.334	9.890	9.114	7.880	6.165	4.253	3.050
Mar	10.015	9.964	9.855	9.642	9.241	8.542	7.430	5.885	4.163	3.079
Apr	6.830	6.785	6.681	6.467	6.069	5.412	4.485	3.418	2.506	2.082
May	6.119	6.081	5.994	5.816	5.483	4.935	4.161	3.270	2.509	2.154
Jun	5.107	5.077	5.009	4.868	4.605	4.172	3.561	2.857	2.255	1.975
Jul	4.585	4.560	4.505	4.391	4.179	3.829	3.335	2.766	2.280	2.053
Aug	4.181	4.160	4.113	4.016	3.835	3.450	3.116	2.631	2.216	1.520
Sep	3.593	3.577	3.540	3.465	3.324	3.093	2.740	2.170	1.840	1.180

Natural Duration curves

Oct	30.360	13.960	9.750	6.260	5.600	4.110	3.510	2.300	1.840	1.420
Nov	52.320	36.350	27.730	19.120	15.690	12.640	9.690	6.270	3.980	1.500
Dec	69.210	50.830	41.000	32.900	29.340	23.030	19.040	13.140	9.960	1.970
Jan	65.490	47.610	42.030	37.980	33.450	24.390	21.180	16.750	13.610	6.630
Feb	72.090	44.200	38.340	30.100	24.130	21.060	17.530	13.880	10.770	6.030
Mar	47.820	35.300	29.400	26.290	23.600	19.490	15.980	11.670	9.810	5.410
Apr	32.940	23.170	18.510	16.590	14.860	11.870	9.380	8.340	6.470	3.240
May	16.890	12.950	11.260	8.800	7.780	7.150	6.500	6.070	4.490	2.990
Jun	11.170	8.490	7.350	6.670	6.200	5.360	4.870	4.200	3.210	2.340
Jul	9.440	6.630	6.050	5.330	5.180	4.260	3.970	3.490	2.990	2.150
Aug	7.450	5.600	4.890	4.200	3.930	3.450	3.200	2.800	2.270	1.520
Sep	8.250	5.670	4.150	3.830	3.520	3.160	2.740	2.170	1.840	1.180

Hydrological time series

Total Runoff : Ni1													
Desktop (Version 2) Modified Flow Data for Ecological Category B													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	5.624	9.798	16.890	8.331	4.916	12.100	7.835	6.020	4.762	4.157	3.701	3.121	87.253
1921	5.370	9.839	20.792	7.001	5.817	5.607	2.686	2.762	2.539	2.270	4.045	3.623	72.352
1922	5.624	9.797	18.843	19.554	16.260	11.497	5.692	3.706	3.587	2.792	2.376	1.490	101.219
1923	1.980	1.880	4.605	9.278	12.085	12.168	7.844	6.174	4.943	4.451	3.932	3.433	72.772
1924	5.265	9.723	21.806	20.175	14.274	12.168	7.844	6.237	5.102	4.578	4.175	3.622	114.968
1925	5.280	5.131	5.677	10.653	11.785	11.906	7.691	5.926	4.745	4.279	3.845	3.545	80.461
1926	3.050	2.439	6.457	6.103	11.976	10.748	6.349	5.173	4.311	4.484	4.080	3.206	68.376
1927	5.473	5.353	12.619	14.534	9.462	6.880	3.105	2.908	2.880	2.363	2.160	2.060	69.798
1928	1.950	3.997	4.735	4.160	4.760	12.168	7.844	6.076	4.988	4.506	4.117	3.623	62.923
1929	5.622	9.825	18.479	18.052	15.410	9.970	4.323	3.593	3.531	3.044	2.632	1.980	96.462
1930	1.500	2.826	4.726	7.542	8.855	4.320	2.597	2.830	2.864	2.906	2.562	1.840	45.370
1931	1.520	3.338	7.171	4.106	7.744	11.238	6.548	6.032	5.077	4.535	4.119	3.368	64.796
1932	3.900	5.940	21.132	16.534	7.723	6.833	3.730	3.452	3.561	3.335	2.811	1.920	80.872
1933	1.960	9.819	21.806	20.650	15.541	10.408	7.687	6.220	5.062	4.574	4.184	3.610	111.522
1934	5.150	9.563	21.175	17.924	11.305	8.292	3.774	3.868	3.942	3.109	2.568	1.720	92.390
1935	1.810	1.500	9.274	19.964	15.910	10.519	6.886	6.231	5.107	4.579	4.160	3.581	89.519
1936	4.810	9.839	21.446	20.650	17.343	12.168	7.805	6.228	5.069	4.508	4.069	3.343	117.278
1937	3.640	2.246	15.772	14.910	10.729	7.136	7.791	6.237	5.086	4.573	4.178	3.595	85.894
1938	5.624	9.750	18.893	17.499	17.343	12.168	7.831	6.204	5.050	4.576	4.175	3.603	112.716
1939	5.532	9.839	19.784	14.176	6.310	5.804	4.944	6.057	5.107	4.586	4.181	3.612	89.930
1940	4.872	9.558	21.293	19.178	13.616	10.660	7.565	6.109	4.917	4.293	3.751	2.910	108.723
1941	3.070	5.072	11.352	12.988	7.985	12.035	7.737	5.825	5.054	4.549	4.110	3.596	83.372
1942	5.546	9.839	20.326	13.944	10.988	11.363	7.844	6.237	5.107	4.586	4.184	3.623	103.587
1943	5.600	9.541	17.021	18.556	17.343	12.168	7.235	5.634	4.868	4.392	3.905	3.377	109.642
1944	5.551	6.892	5.654	4.740	3.630	10.711	6.860	4.640	3.991	3.447	2.782	1.860	60.757
1945	1.460	1.300	1.970	20.136	15.178	11.858	7.567	5.634	4.187	3.829	3.000	2.060	78.181
1946	2.520	7.677	11.007	12.744	13.777	9.091	5.047	4.420	4.187	3.814	3.109	2.300	79.695
1947	4.737	8.946	19.477	17.059	15.543	12.099	7.810	6.126	4.914	4.399	3.788	3.186	108.084
1948	3.890	9.489	15.032	18.446	16.156	11.689	7.827	6.237	5.100	4.555	4.141	3.569	106.131
1949	4.370	5.980	20.681	18.540	11.804	10.138	6.841	5.943	4.914	4.455	4.019	2.900	100.585
1950	3.210	4.410	19.081	15.010	12.413	11.829	7.735	6.198	5.078	4.539	4.184	3.620	97.308
1951	5.581	7.338	15.790	12.435	5.251	4.056	3.366	3.537	3.587	3.966	3.640	2.520	71.066
1952	1.860	9.537	17.486	5.037	11.849	11.786	7.323	6.020	4.817	4.321	3.872	2.740	86.648
1953	2.230	9.552	12.306	6.000	14.971	11.177	6.073	5.795	4.655	4.126	3.660	3.517	84.063
1954	5.100	9.409	10.759	20.373	16.730	12.112	7.828	6.213	5.045	4.509	4.078	3.040	105.196
1955	5.265	6.934	17.805	9.917	15.686	12.034	6.603	5.768	4.862	4.279	3.838	3.504	96.496
1956	5.608	8.956	20.594	17.765	9.086	11.922	7.844	6.237	5.107	4.586	4.184	3.623	105.510
1957	5.624	9.210	9.389	17.578	14.661	4.986	6.000	5.958	4.424	3.936	3.117	3.350	88.235
1958	3.130	8.326	15.163	14.850	12.597	8.663	4.509	5.584	4.605	4.073	3.670	3.057	88.228
1959	3.510	7.299	12.439	6.128	13.942	10.719	7.364	6.158	4.959	4.378	3.912	3.115	83.925
1960	5.260	9.720	21.806	20.650	11.196	9.228	6.936	6.198	5.095	4.578	4.175	3.618	108.460
1961	5.415	8.964	19.019	20.270	15.277	7.789	5.713	5.459	4.502	3.936	3.259	2.610	102.212
1962	4.995	9.768	17.293	11.443	9.029	7.162	5.833	5.155	5.107	4.586	4.184	3.623	88.179
1963	5.514	9.839	18.344	18.021	12.684	4.574	2.875	2.830	2.857	2.467	2.140	1.290	83.435
1964	5.624	9.838	18.330	18.573	14.521	7.570	3.302	3.149	3.160	2.766	2.722	2.700	92.254
1965	3.080	4.735	8.798	10.595	10.131	5.725	2.288	2.530	2.486	2.467	2.303	1.850	56.989
1966	5.324	5.434	18.917	19.367	17.343	12.149	7.731	6.127	4.958	4.467	4.023	2.930	108.770
1967	4.120	9.664	18.322	10.168	6.208	10.848	7.334	5.146	4.172	3.693	3.174	2.190	85.038
1968	1.520	9.413	18.014	7.797	3.789	10.127	7.542	6.156	4.940	4.081	3.450	3.532	80.361
1969	5.624	9.510	18.645	16.868	16.006	8.858	4.172	5.728	4.700	4.179	3.972	2.620	100.883
1970	5.450	6.181	6.185	16.825	12.672	6.511	7.825	6.224	5.009	4.335	3.751	3.377	84.347
1971	5.615	9.824	21.806	20.426	16.265	12.082	7.790	6.233	5.098	4.561	4.141	3.298	117.140
1972	3.900	8.298	10.270	11.526	16.973	12.146	7.844	6.237	5.107	4.570	4.182	3.620	94.671
1973	5.407	9.057	16.000	19.025	16.407	11.661	7.480	6.185	5.036	4.561	4.150	3.510	108.479
1974	4.100	9.780	21.806	18.079	14.352	9.704	7.741	4.101	4.285	3.633	2.841	2.930	103.352
1975	3.900	9.132	21.806	19.933	16.967	11.291	7.555	6.164	5.079	4.582	4.179	3.537	114.124
1976	5.440	8.159	16.363	14.620	16.938	8.625	7.411	4.976	3.531	3.238	2.975	2.500	94.775
1977	3.670	7.848	13.958	16.268	15.047	11.963	6.153	5.678	4.595	4.222	3.371	3.364	96.136
1978	5.551	9.506	13.853	7.445	6.771	4.870	3.725	3.850	2.196	3.012	3.420	3.548	67.746
1979	5.382	9.273	13.985	14.192	17.072	12.115	4.944	2.787	2.539	2.270	2.217	2.170	88.947
1980	1.840	5.713	18.081	10.587	16.686	12.101	7.169	4.795	3.876	3.799	3.301	3.596	91.545
1981	4.755	8.080	7.708	15.513	8.769	4.323	2.285	2.249	2.039	2.532	1.490	1.180	60.923
1982	1.780	2.384	1.460	4.115	3.409	3.585	3.006	2.429	2.341	2.174	2.254	1.430	30.367
1983	2.570	9.731	19.487	20.650	17.343	11.548	7.520	4.278	3.956	4.586	4.124	3.623	109.417
1984	5.587	8.146	12.623	4.613	14.073	10.282	2.545	3.760	2.231	2.105	1.980	1.890	69.835
1985	5.572	9.362	13.905	15.174	15.317	10.484	7.048	4.908	3.427	3.303	2.120	1.810	92.431
1986	1.950	3.509	14.550	14.128	3.979	8.675	4.530	2.196	1.975	2.083	3.371	3.623	64.569
1987	5.624	9.839	20.026	17.959	11.175	11.820	5.128	5.271	2.918	4.414	4.037	3.324	101.533
1988	5.624	8.690	18.596	20.650	16.680	12.042	3.774	3.292	5.031	4.500	4.164	3.368	106.410
1989	5.275	9.656	20.014	13.397	7.242	9.741	2.295	5.119	4.254	3.465	2.440	3.337	86.236
1990	1.420	3.167	14.561	19.702	17.343	12.131	7.423	5.155	3.929	4.092	2.908	3.587	95.419
1991	4.839	6.248	6.300	9.769	4.570	3.640	2.411	2.227	2.039	2.174	1.520	1.060	46.797
1992	1.060	2.614	12.911	8.890	13.444	12.115	7.595	2.301	2.039	2.467	2.511	3.589	71.535
1993	5.621	8.535	16.512	16.352	16.414	11.255	6.606	5.021	3.279	2.280	3.885	3.377	99.138
1994	3.440	6.221	5.489	4.106	3.409	3.288	2.571	2.166	1.975	2.054	1.940	2.880	39.539
1995	4.110	8.648	21.806	20.650	17.343	12.168	7.844	6.237	5.103	4.586	4.184	3.608	116.286
1996	5.601	9.658	14.775	19.051	5.083	12.149	7.788	6.090	5.107	4.586	4.184	3.623	97.696
1997	5.586	9.805	19.951	20.650	14.696	11.793	3.790	2.399	2.733	2.481	3.450	2.220	99.556
1998	5.429	8.894	21.627	17.154	8.841	3.288	2.180	2.290	2.186	2.054	1.970	1.530	77.441
1999	4.730	4.532	21.806	20.650	17.343	12.168	7.844	6.237	5.107	4.586	4.184	3.616	112.803
2000	5.612	9.839	21.280	13.938	3.834	4.675	6.242	4.226	4.711	2.766	3.460	3.493	84.077
2001	5.501	9.839	19.995	12.127	14.415	11.932							

A.2. Ni1- Category C

Summary Table

Desktop Version 2, Generated on 2015-04-20

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni1

Annual Flows (Mill. cu. m or index values):

MAR = 212,841
 S.Dev. = 112,372
 CV = 0,528
 Q75 = 4,870
 Q75/MMF = 0,275
 BFI Index = 0,420
 CV(JJA+JFM) Index = 1,475

Ecological Category = C

Total IFR = 71,079 (33,40 %MAR)
 Maint. Lowflow = 52,956 (24,88 %MAR)
 Drought Lowflow = 28,665 (13,47 %MAR)
 Maint. Highflow = 18,123 (8,51 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
			CV	Maint.	Drought	Maint.	
Oct	10,193	13,244	1,299	3,114	1,581	0,990	4,104
Nov	21,758	20,133	0,925	3,923	1,650	2,330	6,253
Dec	33,950	25,148	0,741	5,907	3,677	4,409	10,315
Jan	37,587	39,768	1,058	6,360	3,629	3,964	10,324
Feb	34,423	32,239	0,937	5,754	3,002	3,395	9,150
Mar	27,742	24,409	0,880	5,809	3,036	1,968	7,777
Apr	16,696	11,810	0,707	4,710	2,052	0,927	5,637
May	9,637	5,864	0,609	4,302	2,129	0,108	4,410
Jun	6,539	3,041	0,465	3,659	1,956	0,000	3,659
Jul	5,402	2,748	0,509	3,554	2,038	0,001	3,555
Aug	4,429	2,558	0,578	3,121	2,010	0,003	3,124
Sep	4,485	4,191	0,934	2,744	1,907	0,028	2,772

Rule curve

Desktop Version 2, Generated on 2015-04-20

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni1

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	5.380	5.345	5.265	5.099	4.790	4.110	3.510	2.300	1.840	1.420
Nov	8.248	8.200	8.102	7.907	7.542	6.904	5.890	4.481	2.910	1.500
Dec	16.803	15.628	14.589	13.610	12.573	10.829	9.474	7.591	5.492	1.970
Jan	16.570	15.505	14.553	13.637	12.640	10.957	9.558	7.612	5.444	4.080
Feb	14.619	13.703	12.879	12.079	11.194	9.699	8.416	6.632	4.643	3.392
Mar	10.448	10.395	10.283	10.062	9.648	8.925	7.775	6.178	4.398	3.277
Apr	7.466	7.416	7.300	7.062	6.618	5.887	4.855	3.666	2.650	2.178
May	5.954	5.917	5.835	5.664	5.346	4.822	4.082	3.231	2.503	2.164
Jun	4.958	4.929	4.864	4.730	4.479	4.067	3.485	2.814	2.241	1.974
Jul	4.817	4.790	4.730	4.606	4.374	3.992	3.453	2.832	2.302	2.055
Aug	4.234	4.212	4.164	4.065	3.879	3.450	3.143	2.646	2.222	1.520
Sep	3.753	3.735	3.695	3.613	3.459	3.160	2.740	2.170	1.840	1.180

Reserve Flows without High Flows

Oct	4.218	4.193	4.136	4.018	3.798	3.435	2.924	2.300	1.831	1.420
Nov	5.468	5.439	5.380	5.263	5.044	4.662	4.054	3.208	2.266	1.500
Dec	8.241	8.207	8.136	7.996	7.734	7.277	6.550	5.540	4.414	1.970
Jan	8.871	8.832	8.751	8.590	8.289	7.764	6.929	5.769	4.475	3.662
Feb	8.024	7.987	7.909	7.756	7.467	6.964	6.164	5.052	3.813	3.033
Mar	8.100	8.063	7.984	7.829	7.539	7.031	6.224	5.103	3.854	3.067
Apr	6.379	6.338	6.244	6.050	5.689	5.095	4.255	3.289	2.463	2.079
May	5.827	5.792	5.712	5.546	5.238	4.730	4.012	3.187	2.481	2.153
Jun	4.958	4.929	4.864	4.730	4.479	4.067	3.485	2.814	2.241	1.974
Jul	4.816	4.789	4.729	4.605	4.373	3.991	3.452	2.832	2.302	2.055
Aug	4.230	4.209	4.161	4.061	3.876	3.450	3.141	2.645	2.221	1.520
Sep	3.720	3.703	3.664	3.583	3.431	3.160	2.740	2.170	1.840	1.180

Natural Duration curves

Oct	30.360	13.960	9.750	6.260	5.600	4.110	3.510	2.300	1.840	1.420
Nov	52.320	36.350	27.730	19.120	15.690	12.640	9.690	6.270	3.980	1.500
Dec	69.210	50.830	41.000	32.900	29.340	23.030	19.040	13.140	9.960	1.970
Jan	65.490	47.610	42.030	37.980	33.450	24.390	21.180	16.750	13.610	6.630
Feb	72.090	44.200	38.340	30.100	24.130	21.060	17.530	13.880	10.770	6.030
Mar	47.820	35.300	29.400	26.290	23.600	19.490	15.980	11.670	9.810	5.410
Apr	32.940	23.170	18.510	16.590	14.860	11.870	9.380	8.340	6.470	3.240
May	16.890	12.950	11.260	8.800	7.780	7.150	6.500	6.070	4.490	2.990
Jun	11.170	8.490	7.350	6.670	6.200	5.360	4.870	4.200	3.210	2.340
Jul	9.440	6.630	6.050	5.330	5.180	4.260	3.970	3.490	2.990	2.150
Aug	7.450	5.600	4.890	4.200	3.930	3.450	3.200	2.800	2.270	1.520
Sep	8.250	5.670	4.150	3.830	3.520	3.160	2.740	2.170	1.840	1.180

Hydrological time series

Total Runoff : Ni1
 Desktop (Version 2) Modified Flow Data for Ecological Category C

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	5.380	8.215	12.471	6.966	4.518	10.394	7.458	5.752	4.629	4.349	3.710	3.170	77.010
1921	5.142	8.248	15.820	6.057	5.191	5.150	2.650	2.719	2.512	2.292	4.091	3.753	63.625
1922	5.380	8.214	14.030	15.505	13.561	9.906	5.457	3.598	3.510	2.861	2.385	1.490	85.897
1923	1.980	1.880	4.424	7.612	9.899	10.448	7.466	5.895	4.802	4.669	3.975	3.548	66.600
1924	5.043	8.155	16.803	16.105	11.753	10.448	7.466	5.954	4.953	4.808	4.224	3.752	99.464
1925	5.057	4.481	5.100	8.551	9.652	10.237	7.323	5.664	4.613	4.482	3.886	3.670	72.715
1926	3.050	2.328	5.591	5.444	9.807	9.301	6.070	4.963	4.199	4.706	4.127	3.300	62.887
1927	5.238	4.659	9.471	11.245	7.916	6.178	3.041	2.855	2.836	2.392	2.160	2.060	60.053
1928	1.950	3.574	4.506	4.117	4.401	10.448	7.466	5.804	4.845	4.730	4.164	3.753	59.759
1929	5.379	8.236	13.723	14.117	12.758	8.673	4.179	3.493	3.456	3.135	2.646	1.980	81.776
1930	1.500	2.638	4.501	6.427	7.462	4.111	2.567	2.783	2.821	2.985	2.574	1.840	42.209
1931	1.520	3.047	6.040	4.080	6.632	9.697	6.256	5.763	4.929	4.762	4.167	3.479	60.372
1932	3.900	5.129	16.147	12.856	6.616	6.140	3.625	3.362	3.485	3.453	2.830	1.920	69.461
1933	1.960	8.232	16.803	16.570	12.879	9.027	7.320	5.938	4.915	4.804	4.234	3.739	96.420
1934	4.935	8.027	16.189	14.003	9.293	7.319	3.666	3.748	3.848	3.206	2.581	1.720	78.535
1935	1.810	1.500	7.364	15.901	13.226	9.117	6.572	5.948	4.958	4.809	4.208	3.708	79.120
1936	4.616	8.248	16.452	16.570	14.619	10.448	7.430	5.946	4.922	4.732	4.116	3.452	101.549
1937	3.640	2.173	11.603	11.548	8.863	6.385	7.417	5.954	4.938	4.803	4.227	3.723	75.273
1938	5.380	8.177	14.074	13.637	14.619	10.448	7.454	5.924	4.903	4.806	4.224	3.731	97.377
1939	5.293	8.248	14.870	10.957	5.560	5.309	4.758	5.786	4.958	4.817	4.230	3.741	78.527
1940	4.674	8.023	16.303	15.148	11.194	9.231	7.206	5.835	4.777	4.497	3.790	2.910	93.588
1941	3.070	4.435	8.673	10.146	6.812	10.341	7.366	5.570	4.907	4.777	4.157	3.724	73.977
1942	5.307	8.248	15.376	10.799	9.056	9.799	7.466	5.954	4.958	4.817	4.234	3.753	89.765
1943	5.358	8.010	12.573	14.568	14.619	10.448	6.898	5.393	4.730	4.606	3.948	3.489	94.639
1944	5.312	5.890	5.085	4.513	3.557	9.271	6.547	4.467	3.895	3.574	2.799	1.860	56.771
1945	1.460	1.300	1.970	16.067	12.546	10.198	7.208	5.393	4.082	3.992	3.023	2.060	69.298
1946	2.520	6.519	8.456	9.979	11.330	7.964	4.855	4.263	4.082	3.975	3.134	2.300	69.377
1947	4.548	7.533	14.589	13.281	12.881	10.393	7.434	5.850	4.774	4.614	3.828	3.270	92.995
1948	3.890	7.968	11.028	14.469	13.462	10.062	7.450	5.954	4.951	4.784	4.190	3.695	91.902
1949	4.370	5.161	15.712	14.553	9.666	8.809	6.530	5.680	4.774	4.674	4.065	2.900	86.894
1950	3.210	3.904	14.240	11.628	10.177	10.175	7.365	5.918	4.930	4.766	4.234	3.749	84.296
1951	5.339	6.247	11.617	9.768	4.768	3.898	3.285	3.441	3.510	4.141	3.640	2.520	62.174
1952	1.860	8.006	12.937	4.716	9.699	10.140	6.980	5.752	4.682	4.528	3.914	2.740	75.955
1953	2.230	8.018	9.274	5.374	12.358	9.648	5.813	5.542	4.527	4.316	3.660	3.639	74.399
1954	4.889	7.904	8.300	16.298	14.017	10.403	7.452	5.932	4.898	4.733	4.124	3.040	91.990
1955	5.043	5.924	13.188	8.049	13.016	10.340	6.308	5.517	4.725	4.482	3.879	3.625	84.094
1956	5.365	7.542	15.628	13.867	7.634	10.249	7.466	5.954	4.958	4.817	4.234	3.753	91.465
1957	5.380	7.745	7.437	13.705	12.082	4.649	5.745	5.694	4.308	4.108	3.143	3.459	77.454
1958	3.130	7.038	11.130	11.500	10.332	7.618	4.353	5.346	4.479	4.257	3.670	3.060	75.913
1959	3.510	6.216	9.358	5.461	11.471	9.278	7.019	5.880	4.817	4.590	3.955	3.160	74.716
1960	5.038	8.153	16.803	16.570	9.212	8.075	6.618	5.917	4.947	4.808	4.224	3.747	94.112
1961	5.184	7.548	14.185	16.197	12.637	6.912	5.476	5.229	4.381	4.108	3.287	2.610	87.755
1962	4.790	8.191	12.786	9.091	7.592	6.406	5.588	4.947	4.958	4.817	4.234	3.753	77.153
1963	5.277	8.248	13.610	14.089	10.405	4.316	2.827	2.783	2.814	2.506	2.140	1.290	70.304
1964	5.380	8.247	13.598	14.584	11.963	6.735	3.225	3.079	3.103	2.832	2.738	2.700	78.185
1965	3.080	4.165	7.065	8.512	8.416	5.245	2.278	2.503	2.461	2.506	2.310	1.850	50.390
1966	5.099	4.724	14.095	15.327	14.619	10.433	7.361	5.851	4.816	4.687	4.068	2.930	94.010
1967	4.120	8.108	13.592	8.220	5.483	9.382	6.990	4.938	4.067	3.843	3.200	2.190	74.135
1968	1.520	7.907	13.351	6.601	3.676	8.801	7.185	5.878	4.799	4.266	3.450	3.655	71.087
1969	5.380	7.985	13.863	13.127	13.318	7.775	4.038	5.480	4.570	4.374	4.017	2.620	86.546
1970	5.217	5.322	5.420	13.091	10.396	5.880	7.449	5.942	4.864	4.544	3.790	3.489	75.403
1971	5.372	8.236	16.803	16.351	13.566	10.379	7.416	5.950	4.949	4.790	4.190	3.403	101.405
1972	3.900	7.015	7.992	9.147	14.255	10.431	7.466	5.954	4.958	4.799	4.231	3.750	83.897
1973	5.177	7.623	11.780	15.003	13.703	10.039	7.127	5.906	4.891	4.789	4.198	3.632	93.865
1974	4.100	8.200	16.803	14.141	11.819	8.459	7.370	3.965	4.175	3.777	2.860	2.930	88.600
1975	3.900	7.682	16.803	15.871	14.248	9.740	7.196	5.886	4.931	4.812	4.228	3.661	98.959
1976	5.207	6.904	12.062	11.314	14.220	7.587	7.062	4.780	3.456	3.347	2.997	2.500	81.436
1977	3.670	6.655	10.314	12.640	12.426	10.283	5.887	5.433	4.470	4.420	3.380	3.474	83.052
1978	5.311	7.981	10.248	6.361	5.904	4.554	3.620	3.731	2.185	3.100	3.420	3.672	60.089
1979	5.153	7.795	10.331	10.970	14.352	10.405	4.758	2.743	2.512	2.292	2.222	2.170	75.703
1980	1.840	4.947	13.403	8.506	13.975	10.395	6.836	4.612	3.785	3.959	3.330	3.724	79.311
1981	4.565	6.841	6.379	12.033	7.397	4.113	2.275	2.241	2.035	2.577	1.490	1.180	53.127
1982	1.780	2.284	1.460	4.086	3.392	3.517	2.949	2.409	2.323	2.186	2.259	1.430	30.075
1983	2.570	8.161	14.598	16.570	14.619	9.948	7.164	4.130	3.862	4.817	4.172	3.753	94.364
1984	5.345	6.893	9.474	4.426	11.582	8.925	2.519	3.648	2.218	2.111	1.980	1.890	61.012
1985	5.332	7.866	10.281	11.760	12.674	9.089	6.723	4.717	3.357	3.418	2.120	1.810	79.146
1986	1.950	3.184	10.687	10.924	3.818	7.628	4.372	2.193	1.974	2.087	3.380	3.753	55.949
1987	5.380	8.248	15.094	14.033	9.196	10.167	4.930	5.055	2.872	4.629	4.082	3.431	87.117
1988	5.380	7.328	13.822	16.570	13.969	10.347	3.666	3.213	4.885	4.723	4.212	3.479	91.594
1989	5.052	8.102	15.082	10.425	6.257	8.488	2.285	4.913	4.145	3.595	2.450	3.445	74.240
1990	1.420	2.910	10.694	15.648	14.619	10.418	7.073	4.947	3.835	4.278	2.929	3.715	82.485
1991	4.644	5.375	5.492	7.948	4.260	3.562	2.393	2.221	2.035	2.186	1.520	1.060	42.695
1992	1.060	2.468	9.655	7.347	11.048	10.405	7.234	2.290	2.035	2.506	2.522	3.716	62.286
1993	5.378	7.205	12.178	12.708	13.710	9.711	6.310	4.822	3.216	2.302	3.927	3.489	84.956
1994	3.440	5.354	4.981	4.080	3.392	3.277	2.543	2.164	1.974	2.055	1.940	2.880	38.080
1995	4.110	7.295	16.803	16.570	14.619	10.448	7.466	5.954	4.954	4.817	4.234	3.736	101.006
1996	5.358	8.103	10.829	15.028	4.643	10.433	7.414	5.817	4.958	4.817	4.234	3.753	85.386
1997	5.345	8.221	15.023	16.570	12.113	10.145	3.681	2.381	2.697	2.522	3.450	2.220	84.368
1998	5.197	7.491	16.628	13.358	7.451	3.277	2.178	2.279	2.175	2.055	1.970	1.530	65.590
1999	4.541	4.002	16.803	16.570	14.619	10.448	7.466	5.954	4.958	4.817	4.234	3.746	98.157
2000	5.369	8.248	16.290	10.795	3.709	4.398	5.970	4.082	4.581	2.832	3.460	3.613	73.346
2001	5.265	8.248	15.064	9.558	11.873	10.258	5.388	4.527	2.730	2.880	4.224	3.735	83.750
2002	2.300												

Annual Flows (Mill. cu. m or index values):

MAR = 212,841
 S.Dev. = 112,372
 CV = 0,528
 Q75 = 4,870
 Q75/MMF = 0,275
 BFI Index = 0,420
 CV(JJA+JFM) Index = 1,475

Ecological Category = D

Total IFR = 41,071 (19,30 %MAR)
 Maint. Lowflow = 28,666 (13,47 %MAR)
 Drought Lowflow = 28,666 (13,47 %MAR)
 Maint. Highflow = 12,405 (5,83 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
			CV	Maint.	Drought	Maint.	
Oct	10,193	13,244	1,299	1,581	1,581	0,703	2,283
Nov	21,758	20,133	0,925	1,649	1,649	1,656	3,306
Dec	33,950	25,148	0,741	3,677	3,677	3,019	6,696
Jan	37,587	39,768	1,058	3,629	3,629	2,783	6,412
Feb	34,423	32,239	0,937	3,002	3,002	2,627	5,629
Mar	27,742	24,409	0,880	3,036	3,036	1,113	4,149
Apr	16,696	11,810	0,707	2,052	2,052	0,469	2,521
May	9,637	5,864	0,609	2,129	2,129	0,021	2,150
Jun	6,539	3,041	0,465	1,956	1,956	0,000	1,956
Jul	5,402	2,748	0,509	2,038	2,038	0,000	2,038
Aug	4,429	2,558	0,578	2,010	2,010	0,000	2,010
Sep	4,485	4,191	0,934	1,907	1,907	0,015	1,922

Rule curve

Desktop Version 2, Generated on 2015-03-09
 Summary of IFR rule curves (Desktop Version 2) for :
 Total Runoff : Ni1
 Regional Type : N.Natal
 Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	3.930	3.909	3.859	3.757	3.567	3.254	2.812	2.300	1.840	1.420
Nov	5.759	5.729	5.668	5.547	5.321	4.926	4.298	3.425	2.452	1.500
Dec	13.194	12.386	11.666	10.979	10.239	8.992	7.979	6.573	5.005	1.970
Jan	12.640	11.893	11.226	10.585	9.890	8.716	7.745	6.395	4.892	3.945
Feb	11.087	10.385	9.762	9.170	8.537	7.472	6.622	5.442	4.126	3.298
Mar	7.712	7.678	7.607	7.467	7.206	6.748	6.021	5.011	3.884	3.175
Apr	4.473	4.450	4.399	4.293	4.095	3.768	3.308	2.778	2.325	2.114
May	3.979	3.961	3.921	3.838	3.684	3.430	3.072	2.660	2.307	2.143
Jun	3.627	3.611	3.575	3.500	3.361	3.131	2.807	2.434	2.114	1.966
Jul	3.779	3.762	3.725	3.647	3.501	3.262	2.924	2.535	2.203	2.048
Aug	3.728	3.711	3.674	3.597	3.454	3.218	2.885	2.501	2.173	1.520
Sep	3.558	3.542	3.507	3.433	3.295	3.069	2.740	2.170	1.840	1.180

Reserve Flows without High Flows

Oct	2.931	2.918	2.889	2.829	2.716	2.530	2.268	1.967	1.709	1.420
Nov	3.289	3.276	3.251	3.201	3.107	2.943	2.681	2.319	1.914	1.500
Dec	7.331	7.304	7.247	7.135	6.926	6.560	5.978	5.169	4.267	1.970
Jan	7.235	7.208	7.152	7.042	6.835	6.474	5.899	5.101	4.211	3.651
Feb	5.985	5.963	5.917	5.825	5.654	5.355	4.880	4.220	3.484	3.021
Mar	6.052	6.030	5.983	5.891	5.718	5.415	4.935	4.267	3.523	3.055
Apr	3.806	3.789	3.751	3.673	3.526	3.285	2.945	2.554	2.219	2.063
May	3.949	3.932	3.892	3.811	3.659	3.409	3.056	2.650	2.302	2.141
Jun	3.627	3.611	3.575	3.500	3.361	3.131	2.807	2.434	2.114	1.966
Jul	3.779	3.762	3.725	3.647	3.501	3.262	2.924	2.535	2.203	2.048
Aug	3.728	3.711	3.674	3.597	3.454	3.218	2.885	2.501	2.173	1.520
Sep	3.538	3.522	3.487	3.414	3.278	3.054	2.738	2.170	1.840	1.180

Natural Duration curves

Oct	30.360	13.960	9.750	6.260	5.600	4.110	3.510	2.300	1.840	1.420
Nov	52.320	36.350	27.730	19.120	15.690	12.640	9.690	6.270	3.980	1.500
Dec	69.210	50.830	41.000	32.900	29.340	23.030	19.040	13.140	9.960	1.970
Jan	65.490	47.610	42.030	37.980	33.450	24.390	21.180	16.750	13.610	6.630
Feb	72.090	44.200	38.340	30.100	24.130	21.060	17.530	13.880	10.770	6.030
Mar	47.820	35.300	29.400	26.290	23.600	19.490	15.980	11.670	9.810	5.410
Apr	32.940	23.170	18.510	16.590	14.860	11.870	9.380	8.340	6.470	3.240
May	16.890	12.950	11.260	8.800	7.780	7.150	6.500	6.070	4.490	2.990
Jun	11.170	8.490	7.350	6.670	6.200	5.360	4.870	4.200	3.210	2.340
Jul	9.440	6.630	6.050	5.330	5.180	4.260	3.970	3.490	2.990	2.150
Aug	7.450	5.600	4.890	4.200	3.930	3.450	3.200	2.800	2.270	1.520
Sep	8.250	5.670	4.150	3.830	3.520	3.160	2.740	2.170	1.840	1.180

Hydrological time series

Total Runoff : Ni1

Desktop (Version 2) Modified Flow Data for Ecological Category D

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	3.930	5.738	10.166	5.947	4.043	7.677	4.469	3.881	3.444	3.486	3.346	3.075	59.202
1921	3.784	5.759	12.518	5.317	4.489	4.360	2.325	2.412	2.265	2.197	3.618	3.558	52.599
1922	3.930	5.738	11.275	11.893	10.277	7.369	3.577	2.838	2.821	2.553	2.299	1.490	66.060
1923	1.980	1.880	4.208	6.395	7.614	7.712	4.473	3.950	3.540	3.687	3.528	3.375	52.342

1924	3.723	5.701	13.194	12.314	8.937	7.712	4.473	3.979	3.624	3.774	3.721	3.557	74.708
1925	3.731	3.425	4.712	7.047	7.440	7.578	4.409	3.838	3.435	3.569	3.459	3.484	56.127
1926	2.516	2.091	5.079	4.892	7.548	6.986	3.850	3.499	3.205	3.710	3.645	3.157	50.178
1927	3.843	3.535	7.978	8.916	6.291	5.011	2.499	2.478	2.446	2.260	2.130	2.060	49.446
1928	1.950	2.863	4.269	3.971	3.966	7.712	4.473	3.906	3.564	3.725	3.674	3.558	47.631
1929	3.929	5.752	11.059	10.921	9.672	6.589	3.006	2.787	2.791	2.725	2.501	1.980	63.712
1930	1.500	2.283	4.265	5.573	5.991	3.703	2.287	2.443	2.438	2.631	2.446	1.840	37.399
1931	1.520	2.537	5.415	3.945	5.442	7.237	3.933	3.886	3.611	3.744	3.676	3.313	48.259
1932	3.078	3.826	12.743	10.040	5.431	4.986	2.759	2.723	2.807	2.924	2.643	1.920	55.881
1933	1.960	5.749	13.194	12.640	9.762	6.813	4.407	3.971	3.603	3.771	3.728	3.546	73.144
1934	3.656	5.622	12.772	10.841	7.202	5.732	2.778	2.910	3.009	2.769	2.451	1.720	61.463
1935	1.810	1.500	6.404	12.171	10.023	6.870	4.074	3.976	3.627	3.774	3.708	3.518	61.454
1936	3.460	5.759	12.953	12.640	11.087	7.712	4.456	3.975	3.607	3.726	3.637	3.289	76.299
1937	2.900	1.995	9.545	9.128	6.918	5.141	4.451	3.979	3.616	3.771	3.723	3.531	58.697
1938	3.930	5.715	11.306	10.585	11.087	7.712	4.467	3.964	3.597	3.772	3.721	3.539	73.394
1939	3.877	5.759	11.861	8.716	4.733	4.461	3.265	3.897	3.627	3.779	3.725	3.547	61.246
1940	3.496	5.619	12.850	11.643	8.537	6.942	4.357	3.921	3.526	3.579	3.385	2.910	70.765
1941	2.522	3.396	7.381	8.153	5.561	7.644	4.428	3.793	3.599	3.754	3.669	3.533	57.432
1942	3.885	5.759	12.212	8.605	7.046	7.301	4.473	3.979	3.627	3.779	3.728	3.558	67.951
1943	3.917	5.611	10.239	11.237	11.087	7.712	4.219	3.707	3.500	3.647	3.507	3.322	71.704
1944	3.888	4.298	4.701	4.246	3.407	6.967	4.063	3.259	3.035	3.001	2.619	1.860	45.344
1945	1.460	1.300	1.970	12.288	9.514	7.554	4.358	3.707	3.139	3.262	2.792	2.060	53.403
1946	2.365	4.687	7.219	8.037	8.635	6.140	3.308	3.160	3.139	3.252	2.878	2.300	55.121
1947	3.418	5.316	11.666	10.336	9.763	7.677	4.459	3.928	3.525	3.652	3.415	3.138	70.292
1948	3.071	5.585	9.134	11.167	10.202	7.467	4.466	3.979	3.623	3.758	3.694	3.507	69.653
1949	3.308	3.846	12.443	11.226	7.449	6.675	4.055	3.846	3.525	3.690	3.597	2.900	66.561
1950	2.614	3.068	11.422	9.183	7.812	7.539	4.428	3.961	3.612	3.747	3.728	3.555	64.669
1951	3.905	4.519	9.555	7.891	4.209	3.568	2.608	2.761	2.821	3.356	3.311	2.520	51.023
1952	1.860	5.609	10.499	4.386	7.472	7.517	4.256	3.881	3.473	3.598	3.481	2.740	58.772
1953	2.230	5.616	7.830	4.843	9.375	7.206	3.735	3.779	3.387	3.465	3.321	3.456	58.244
1954	3.628	5.545	7.102	12.450	10.626	7.684	4.466	3.968	3.594	3.727	3.643	3.002	69.435
1955	3.723	4.319	10.678	6.698	9.864	7.644	3.956	3.767	3.497	3.569	3.454	3.443	64.612
1956	3.921	5.321	12.386	10.746	6.105	7.586	4.473	3.979	3.627	3.779	3.728	3.558	69.207
1957	3.930	5.447	6.458	10.633	9.173	4.043	3.705	3.853	3.265	3.335	2.885	3.295	60.022
1958	2.562	5.009	9.207	9.094	7.923	5.921	3.084	3.684	3.361	3.428	3.326	3.013	59.612
1959	2.812	4.500	7.893	4.903	8.736	6.972	4.273	3.943	3.549	3.637	3.512	3.069	57.798
1960	3.720	5.700	13.194	12.640	7.149	6.210	4.095	3.961	3.621	3.774	3.721	3.553	71.336
1961	3.810	5.325	11.384	12.379	9.581	5.475	3.585	3.628	3.306	3.335	2.996	2.610	67.413
1962	3.567	5.724	10.391	7.421	6.077	5.155	3.635	3.491	3.627	3.779	3.728	3.558	60.152
1963	3.867	5.759	10.979	10.901	7.975	3.832	2.403	2.443	2.434	2.331	2.122	1.290	56.335
1964	3.930	5.758	10.971	11.248	9.087	5.363	2.581	2.586	2.594	2.535	2.572	2.700	61.926
1965	2.529	3.229	6.180	7.019	6.622	4.420	2.159	2.307	2.237	2.331	2.241	1.850	43.125
1966	3.757	3.575	11.321	11.768	11.087	7.702	4.426	3.929	3.548	3.698	3.600	2.930	71.341
1967	3.256	5.672	10.967	6.817	4.682	7.038	4.261	3.487	3.131	3.169	2.929	2.190	57.597
1968	1.520	5.547	10.794	5.694	3.486	6.670	4.347	3.942	3.538	3.434	3.218	3.471	55.661
1969	3.930	5.596	11.158	10.229	10.093	6.021	2.943	3.749	3.411	3.501	3.560	2.620	66.811
1970	3.830	3.946	4.951	10.204	7.968	4.822	4.465	3.973	3.575	3.608	3.385	3.322	58.049
1971	3.925	5.752	13.194	12.486	10.281	7.668	4.450	3.977	3.622	3.762	3.694	3.245	76.057
1972	3.078	4.995	6.872	7.460	10.807	7.701	4.473	3.979	3.627	3.768	3.726	3.556	64.041
1973	3.805	5.371	9.672	11.541	10.385	7.453	4.321	3.955	3.589	3.762	3.701	3.450	71.005
1974	3.245	5.729	13.194	10.938	8.985	6.453	4.430	3.015	3.191	3.128	2.667	2.930	67.905
1975	3.078	5.408	13.194	12.150	10.802	7.264	4.352	3.946	3.612	3.776	3.724	3.476	74.782
1976	3.824	4.926	9.873	8.964	10.780	5.902	4.293	3.410	2.791	2.858	2.772	2.500	62.894
1977	2.921	4.772	8.607	9.890	9.425	7.607	3.768	3.726	3.355	3.530	3.085	3.309	63.996
1978	3.888	5.594	8.558	5.527	4.960	3.983	2.757	2.902	2.083	2.703	3.161	3.486	49.604
1979	3.790	5.478	8.620	8.725	10.882	7.685	3.265	2.423	2.265	2.197	2.173	2.170	59.673
1980	1.840	3.714	10.831	7.015	10.593	7.678	4.192	3.329	2.974	3.241	3.030	3.532	61.969
1981	3.428	4.887	5.668	9.466	5.948	3.704	2.157	2.180	2.000	2.376	1.490	1.180	44.484
1982	1.780	2.064	1.460	3.950	3.298	3.327	2.458	2.262	2.160	2.131	2.202	1.430	28.521
1983	2.380	5.705	11.672	12.640	11.087	7.395	4.338	3.095	3.017	3.779	3.680	3.558	72.347
1984	3.909	4.920	7.979	4.185	8.815	6.748	2.266	2.862	2.102	2.084	1.980	1.890	49.739
1985	3.900	5.522	8.582	9.275	9.609	6.852	4.141	3.379	2.736	2.902	2.114	1.810	60.825
1986	1.950	2.621	8.885	8.693	3.580	5.928	3.093	2.157	1.966	2.069	3.085	3.558	47.584
1987	3.930	5.759	12.016	10.862	7.138	7.534	3.342	3.543	2.466	3.662	3.611	3.270	67.133
1988	3.930	5.189	11.128	12.640	10.588	7.648	2.778	2.651	3.586	3.720	3.711	3.313	70.884
1989	3.728	5.668	12.008	8.347	5.193	6.472	2.162	3.475	3.175	3.013	2.350	3.283	58.874
1990	1.420	2.452	8.891	11.993	11.087	7.693	4.297	3.491	3.002	3.442	2.719	3.524	64.011
1991	3.477	3.979	5.005	6.628	3.872	3.355	2.210	2.171	2.000	2.131	1.520	1.060	37.407
1992	1.060	2.178	8.115	6.211	8.433	7.685	4.369	2.204	2.000	2.331	2.405	3.526	50.517
1993	3.929	5.113	9.956	9.937	10.390	7.245	3.957	3.430	2.657	2.203	3.491	3.322	65.632
1994	2.766	3.966	4.624	3.945	3.298	3.175	2.277	2.143	1.966	2.048	1.940	2.880	35.028
1995	3.254	5.168	13.194	12.640	11.087	7.712	4.473	3.979	3.625	3.779	3.728	3.544	76.182
1996	3.917	5.669	8.992	11.558	4.126	7.702	4.450	3.912	3.627	3.779	3.728	3.558	65.018
1997	3.909	5.742	11.968	12.640	9.195	7.520	2.784	2.248	2.368	2.341	3.218	2.220	66.153
1998	3.817	5.290	13.074	10.390	5.984	3.175	2.114	2.199	2.078	2.048	1.970	1.530	53.670
1999	3.414	3.128	13.194	12.640	11.087	7.712	4.473	3.979	3.627	3.779	3.728	3.552	74.312
2000	3.923	5.759	12.841	8.603	3.508	3.884	3.805	3.072	3.417	2.535	3.223	3.433	58.004
2001	3.859	5.759	11.996	7.745	9.023	7.591	3.546	3.288	2.387	2.565	3.721	3.542	65.021
2002	2.300	1.982	5.979	10.098	5.698	3.338	2.114	2.143	2.000	2.076	1.920	1.620	41.269
2003	1.530	4.965	6.573	4.535	8.294	7.638	4.277	2.660	2.114	3.672	3.711	3.499	53.467
2004	2.300	5.747	6.679	11.506	9.170	7.706	4.399	3.575	2.206	3.001	3.642	3.295	63.226
Mean	3.158	4.640	9.449	9.104	7.902	6.443	3.707	3.369	3.077	3.212	3.150	2.929	60.139

A.4. Ni2 – Category B

Summary table

Desktop Version 2, Generated on 2015-03-30
 Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :
 Total Runoff : Ni2

Annual Flows (Mill. cu. m or index values):

BFI Index = 0,380
CV(JJA+JFM) Index = 2,321

Ecological Category = B

Total IFR = 60,956 (32,16 %MAR)
Maint. Lowflow = 38,431 (20,28 %MAR)
Drought Lowflow = 10,437 (5,51 %MAR)
Maint. Highflow = 22,525 (11,89 %MAR)

Monthly Distributions (Mill. cu. m.)
Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
			CV	Maint.	Drought	Maint.	
Oct	11,242	12,387	1,102	2,067	0,623	1,453	3,519
Nov	22,638	20,098	0,888	3,007	0,859	3,267	6,274
Dec	27,773	20,349	0,733	3,722	1,038	2,730	6,451
Jan	33,896	58,895	1,737	4,590	1,256	8,487	13,078
Feb	31,466	32,451	1,031	4,949	1,347	2,730	7,679
Mar	23,581	24,927	1,057	4,859	1,324	2,717	7,576
Apr	13,379	9,310	0,696	4,240	1,169	0,804	5,044
May	7,734	4,525	0,585	3,331	0,940	0,000	3,331
Jun	5,131	3,339	0,651	2,496	0,731	0,000	2,496
Jul	4,467	6,502	1,455	1,991	0,490	0,000	1,991
Aug	3,302	3,408	1,032	1,582	0,350	0,000	1,582
Sep	4,901	8,233	1,680	1,597	0,310	0,338	1,935

Rule curve

Desktop Version 2, Generated on 2015-03-30
Summary of IFR rule curves (Desktop Version 2) for :
Total Runoff : Ni2
Regional Type : N.Natal
Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	4.057	4.026	3.955	3.808	3.533	3.081	2.443	1.709	1.081	0.789
Nov	7.164	7.120	7.027	6.844	6.501	5.902	4.950	3.626	2.151	1.223
Dec	9.746	9.014	8.362	7.738	7.063	5.924	4.993	3.699	2.256	1.348
Jan	21.965	19.737	17.808	16.062	14.329	11.427	9.545	6.929	4.013	2.179
Feb	11.212	10.471	9.801	9.141	8.400	7.146	6.030	4.479	2.751	1.663
Mar	8.775	8.721	8.610	8.390	7.978	7.259	6.115	4.526	2.755	1.641
Apr	5.943	5.898	5.796	5.586	5.195	4.550	3.639	2.591	1.695	1.278
May	3.978	3.949	3.884	3.748	3.494	3.077	2.488	1.809	1.229	0.959
Jun	2.981	2.959	2.911	2.810	2.622	2.313	1.877	1.374	0.944	0.745
Jul	2.377	2.359	2.319	2.234	2.077	1.817	1.451	1.030	0.669	0.502
Aug	1.889	1.874	1.841	1.772	1.644	1.432	1.134	0.790	0.496	0.360
Sep	2.276	2.257	2.215	2.129	1.968	1.702	1.328	0.896	0.527	0.340

Reserve Flows without High Flows										
Oct	2.468	2.451	2.411	2.328	2.174	1.921	1.563	1.151	0.798	0.634
Nov	3.591	3.570	3.528	3.444	3.288	3.014	2.579	1.974	1.300	0.876
Dec	4.445	4.419	4.366	4.262	4.067	3.725	3.183	2.429	1.588	1.060
Jan	5.482	5.450	5.385	5.256	5.013	4.590	3.917	2.981	1.939	1.283
Feb	5.910	5.876	5.805	5.666	5.404	4.947	4.220	3.210	2.084	1.375
Mar	5.803	5.770	5.700	5.563	5.306	4.857	4.144	3.152	2.047	1.352
Apr	5.064	5.026	4.942	4.768	4.443	3.908	3.152	2.282	1.539	1.193
May	3.978	3.949	3.884	3.748	3.494	3.077	2.488	1.809	1.229	0.959
Jun	2.981	2.959	2.911	2.810	2.622	2.313	1.877	1.374	0.944	0.745
Jul	2.377	2.359	2.319	2.234	2.077	1.817	1.451	1.030	0.669	0.502
Aug	1.889	1.874	1.841	1.772	1.644	1.432	1.134	0.790	0.496	0.360
Sep	1.906	1.891	1.857	1.785	1.652	1.433	1.123	0.766	0.462	0.320

Natural Duration curves										
Oct	25.360	16.070	12.390	9.620	7.040	6.260	5.100	3.600	2.540	1.220
Nov	49.950	34.260	27.060	19.620	17.300	13.720	10.880	8.580	6.360	2.520
Dec	54.770	37.990	31.040	25.960	23.220	19.580	15.520	12.410	10.750	5.060
Jan	56.540	43.290	32.900	26.790	21.860	19.040	16.370	14.780	11.680	4.540
Feb	72.300	44.030	30.670	24.160	18.770	16.240	14.590	12.220	10.320	5.850
Mar	41.770	31.650	25.520	22.700	21.480	15.860	12.930	11.240	7.940	5.560
Apr	21.780	18.840	14.880	13.270	11.960	10.950	9.430	7.130	5.040	3.450
May	15.480	11.420	8.760	7.270	6.500	5.860	5.250	3.990	3.290	2.320
Jun	9.970	7.250	5.960	4.980	4.330	3.650	3.070	2.670	1.910	1.300
Jul	7.750	5.160	4.500	4.000	3.010	2.510	1.970	1.760	1.320	0.710
Aug	7.560	4.010	3.570	2.910	2.590	2.130	1.800	1.120	0.870	0.510
Sep	8.830	6.010	4.370	3.810	3.150	2.590	2.100	1.600	0.950	0.340

Hydrological time series

Total Runoff : Ni2													
Desktop (Version 2) Modified Flow Data for Ecological Category B													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	4.047	7.082	8.007	3.485	4.494	8.768	5.664	3.600	2.377	1.265	0.609	2.174	51.572
1921	3.976	7.164	9.746	14.687	5.638	3.504	1.593	1.097	1.230	0.910	1.882	2.078	53.504
1922	3.955	7.164	8.362	16.446	8.311	4.601	2.687	1.777	0.924	0.581	0.383	0.340	55.532
1923	2.683	3.446	9.427	7.229	8.821	8.607	5.676	3.834	2.637	1.474	0.904	2.268	57.005
1924	3.533	7.017	9.746	11.157	3.481	8.775	5.943	3.950	2.898	2.278	1.728	2.271	62.776
1925	3.772	3.689	3.501	8.782	3.549	8.680	3.784	2.400	2.226	1.371	0.507	2.217	44.478
1926	2.324	1.864	3.402	3.032	8.870	8.231	4.187	2.008	0.904	2.118	1.668	1.082	39.691
1927	3.992	5.876	6.816	21.934	6.940	2.961	1.546	0.959	0.745	0.490	0.490	2.056	54.804
1928	3.081	4.319	3.458	2.492	1.800	8.775	5.865	3.876	2.933	2.351	1.630	2.276	42.857
1929	4.057	7.034	6.597	18.504	9.141	6.431	2.687	1.516	0.837	0.550	1.087	1.226	59.668
1930	0.832	3.219	3.699	2.483	2.485	2.633	2.591	1.902	0.864	0.669	0.496	0.366	22.240

1931	0.789	1.223	1.687	2.179	10.471	8.653	5.706	3.970	2.976	2.325	1.383	0.896	42.259
1932	2.334	6.844	8.493	17.495	9.742	7.217	3.366	2.002	0.944	1.451	1.041	0.527	61.458
1933	1.193	7.163	9.746	21.965	7.983	8.687	5.929	3.978	2.981	2.377	1.889	2.259	76.152
1934	1.709	6.925	9.016	11.859	6.298	4.112	2.381	3.416	2.712	1.817	0.975	0.652	51.872
1935	0.940	1.223	2.183	20.100	9.097	8.688	5.188	3.978	2.981	2.336	1.425	1.958	60.098
1936	3.867	7.155	4.330	21.965	11.212	8.546	4.888	2.899	1.374	0.862	0.457	2.238	69.793
1937	3.594	2.123	7.541	7.480	5.192	3.841	5.943	3.954	2.959	2.372	1.867	1.764	48.630
1938	4.052	5.902	9.144	20.988	11.212	8.775	5.893	3.932	2.919	2.372	1.885	2.276	79.350
1939	3.892	7.164	7.876	18.607	4.697	7.265	5.694	3.949	2.981	2.377	1.883	2.238	68.625
1940	2.938	6.501	9.746	13.310	7.904	5.257	5.703	3.773	1.757	1.811	1.362	1.553	61.616
1941	1.720	4.610	3.876	11.115	6.498	8.561	3.962	3.941	2.980	2.372	1.834	2.129	53.598
1942	3.851	7.075	8.840	6.624	5.010	7.259	5.943	3.978	2.981	2.377	1.889	2.276	58.103
1943	4.026	7.124	8.511	17.563	11.211	8.056	3.444	1.468	2.939	2.353	1.464	2.272	70.431
1944	4.048	4.394	1.578	11.808	2.524	8.754	5.204	3.449	2.825	2.253	1.839	1.878	50.552
1945	1.314	1.289	1.348	10.711	9.813	8.417	5.943	2.956	2.372	2.077	1.716	2.247	50.204
1946	3.597	7.120	8.070	12.538	9.429	5.884	4.575	3.514	1.959	1.196	0.661	1.003	59.545
1947	3.394	6.938	7.316	19.793	11.212	8.775	5.943	3.818	2.862	0.709	1.841	2.234	74.833
1948	3.226	7.086	5.614	21.965	9.801	8.383	5.898	3.955	2.936	2.142	1.045	1.285	73.337
1949	3.446	6.550	8.635	15.577	6.782	8.667	5.931	3.942	2.938	2.351	1.885	2.237	68.942
1950	1.604	2.184	7.063	17.825	6.298	8.610	5.940	3.636	2.868	2.341	1.889	2.273	62.530
1951	4.046	4.309	6.872	2.947	3.122	1.701	1.695	1.363	2.266	1.988	1.744	1.595	33.648
1952	2.216	4.960	7.802	4.918	5.752	5.670	5.544	2.538	2.246	2.105	1.644	1.773	47.168
1953	2.025	5.540	5.367	8.131	9.161	8.356	5.928	3.978	2.963	2.368	1.807	1.982	57.609
1954	3.804	6.133	5.827	21.310	11.162	8.775	4.260	2.842	2.866	2.372	1.874	2.204	73.430
1955	2.827	3.626	8.065	14.504	11.212	8.757	4.907	3.494	2.854	2.167	1.772	2.151	66.338
1956	4.026	6.904	8.302	11.633	9.611	7.978	5.664	3.811	2.810	2.377	1.889	2.276	67.281
1957	4.057	6.924	2.151	19.737	9.479	4.526	5.195	3.636	2.139	1.466	0.938	2.039	62.288
1958	2.443	7.130	7.738	16.733	8.526	3.782	1.299	3.279	2.404	1.890	1.748	2.164	59.137
1959	2.508	6.235	7.220	4.013	9.577	7.468	5.817	3.887	2.386	1.265	1.602	2.167	54.144
1960	3.834	7.164	9.746	16.800	8.400	6.483	5.900	3.899	2.954	2.366	1.885	1.901	71.331
1961	3.209	6.502	5.093	6.929	3.541	4.310	2.351	2.351	1.829	1.869	1.474	1.561	41.019
1962	2.002	7.132	8.934	16.012	5.903	7.056	2.737	1.021	2.981	2.377	1.889	2.269	60.313
1963	3.232	6.878	3.218	19.377	6.788	1.641	2.040	1.146	1.274	1.854	1.672	1.488	50.407
1964	4.057	6.951	8.083	9.545	6.030	1.923	1.373	1.094	1.591	1.983	1.455	2.056	46.140
1965	1.515	1.739	1.446	14.965	10.113	2.690	1.323	1.452	1.374	1.672	1.268	1.408	40.965
1966	1.908	1.426	2.866	8.827	10.885	8.668	5.559	3.822	2.870	2.234	1.827	1.968	52.860
1967	1.081	6.940	6.300	2.644	1.663	5.471	3.180	2.488	2.622	2.259	1.854	2.174	38.676
1968	0.938	3.446	2.256	9.141	2.069	8.775	5.943	3.973	2.963	2.204	1.246	2.215	45.168
1969	4.057	6.573	6.459	4.341	3.046	1.906	1.278	1.009	0.977	0.612	0.870	1.302	32.433
1970	3.808	6.148	4.095	17.397	4.074	7.744	5.934	3.978	2.981	2.340	1.688	1.429	61.616
1971	3.890	7.103	9.632	21.965	11.085	8.757	5.850	3.969	2.973	2.316	1.478	0.669	79.689
1972	0.883	6.054	2.038	5.580	11.212	8.390	5.911	3.942	2.810	1.765	1.848	2.276	52.708
1973	3.921	7.013	7.447	21.965	7.146	6.994	5.518	3.778	2.454	2.286	1.796	0.726	71.044
1974	1.322	7.150	8.742	19.772	10.166	7.571	5.857	3.918	2.581	1.618	0.661	2.276	71.634
1975	3.243	6.529	9.746	17.808	10.693	8.721	5.882	3.978	2.974	2.257	1.432	0.674	73.938
1976	3.967	5.720	5.914	16.890	10.513	7.939	5.169	3.331	1.615	0.788	0.609	2.238	64.692
1977	3.081	3.172	4.293	21.965	9.835	8.086	5.796	3.884	2.609	1.994	1.773	2.173	68.663
1978	4.057	7.036	6.190	9.973	4.479	5.273	4.195	3.462	1.877	1.030	1.871	2.257	51.699
1979	3.999	6.536	5.924	19.207	10.409	6.824	2.118	1.508	1.110	0.527	0.391	2.206	60.760
1980	1.459	7.084	7.966	16.062	9.208	5.051	1.878	1.229	2.631	2.175	1.836	2.262	58.842
1981	3.578	6.176	2.313	11.633	1.939	7.858	5.222	3.396	1.482	0.850	0.443	0.429	45.320
1982	4.050	4.234	1.387	2.179	1.663	1.641	1.878	3.396	2.668	1.864	1.863	1.702	28.527
1983	2.588	7.164	6.953	21.965	9.425	8.740	5.821	3.748	2.911	2.377	1.889	2.276	75.857
1984	4.019	5.574	4.118	5.679	11.212	8.528	3.639	1.247	0.788	0.530	0.360	0.390	46.084
1985	3.705	2.775	4.993	19.083	9.100	7.640	5.416	3.553	2.336	1.712	0.790	0.464	61.567
1986	1.055	1.531	6.587	5.659	2.751	8.005	5.729	3.873	2.769	1.869	1.889	2.276	43.994
1987	4.057	7.027	4.593	11.427	10.084	8.164	4.626	2.356	2.726	2.300	1.858	1.830	61.049
1988	4.057	6.186	9.574	7.229	10.889	8.417	5.586	3.728	2.944	2.359	1.644	0.802	63.417
1989	3.481	7.164	8.689	14.329	5.632	6.115	4.354	3.077	1.274	0.587	1.134	0.825	56.660
1990	2.886	5.324	7.127	21.965	10.552	8.732	5.695	3.954	2.981	2.377	1.884	1.911	75.389
1991	2.341	2.151	5.570	9.559	8.448	3.284	1.554	1.021	0.745	0.502	0.350	0.310	35.835
1992	0.845	5.540	7.688	5.246	7.567	8.433	5.257	3.583	2.313	1.105	1.201	1.319	50.098
1993	4.057	6.562	9.139	14.215	6.722	8.724	5.144	2.102	1.044	0.540	0.391	0.395	59.034
1994	3.935	5.951	9.014	13.228	1.912	4.551	3.043	2.500	1.909	0.994	0.609	0.441	48.087
1995	4.034	7.143	9.746	21.606	11.212	8.775	5.909	3.971	2.969	2.365	1.870	1.065	80.664
1996	4.017	4.950	7.442	18.899	7.914	8.775	5.943	3.978	2.981	2.377	1.889	2.270	71.435
1997	4.033	7.162	4.548	16.450	8.152	7.434	3.612	2.564	1.577	0.808	0.388	0.507	57.234
1998	3.790	6.394	9.541	14.546	3.961	2.755	2.494	2.434	1.967	1.075	1.451	1.047	51.455
1999	3.342	2.600	9.746	20.969	11.212	8.761	5.943	3.978	2.979	2.311	1.313	1.644	74.799
2000	3.998	7.164	9.094	10.121	7.369	6.524	3.784	2.949	1.674	1.291	0.858	1.980	56.807
2001	3.883	7.164	5.153	8.153	2.329	2.118	1.487	0.989	0.749	2.319	1.881	1.214	38.350
2002	1.403	1.458	2.632	3.891	7.869	2.658	1.278	0.959	1.194	1.211	0.674	0.544	25.772
2003	0.789	3.668	1.348	11.043	10.384	8.642	4.550	1.809	0.790	2.367	1.875	1.328	48.592
2004	0.855	3.808	4.775	14.473	8.416	8.503	4.754	3.259	2.735	2.183	1.805	1.726	57.292

Mean 2.988 5.473 6.363 13.133 7.500 6.770 4.406 2.987 2.239 1.755 1.385 1.647 56.647

A.5. Ni2 – Category C

Summary table

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni2

Annual Flows (Mill. cu. m or index values):

MAR = 189,511

S.Dev. = 101,375

CV = 0,535

Q75 = 3,880

Q75/MMF = 0,246

BFI Index = 0,380

CV(JJA+JFM) Index = 2,321

Ecological Category = C

Total IFR = 40,746 (21,50 %MAR)

Maint. Lowflow = 22,342 (11,79 %MAR)

Drought Lowflow = 10,437 (5,51 %MAR)

Maint. Highflow = 18,404 (9,71 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		
			CV	Maint.	Drought	Maint.	Total Flows
Oct	11,242	12,387	1,102	1,239	0,623	1,187	2,426
Nov	22,638	20,098	0,888	1,754	0,859	2,669	4,424
Dec	27,773	20,349	0,733	2,146	1,038	2,230	4,377
Jan	33,896	58,895	1,737	2,622	1,256	6,934	9,557
Feb	31,466	32,451	1,031	2,819	1,347	2,230	5,049
Mar	23,581	24,927	1,057	2,770	1,324	2,220	4,990
Apr	13,379	9,310	0,696	2,430	1,169	0,657	3,087
May	7,734	4,525	0,585	1,932	0,940	0,000	1,932
Jun	5,131	3,339	0,651	1,475	0,731	0,000	1,475
Jul	4,467	6,502	1,455	1,198	0,490	0,000	1,198
Aug	3,302	3,408	1,032	0,974	0,350	0,000	0,974
Sep	4,901	8,233	1,680	0,982	0,310	0,276	1,258

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : N12

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	3.071	3.049	2.999	2.895	2.700	2.380	1.928	1.408	0.963	0.756
Nov	5.631	5.598	5.528	5.390	5.131	4.680	3.962	2.965	1.853	1.154
Dec	7.324	6.732	6.212	5.728	5.224	4.377	3.748	2.873	1.899	1.286
Jan	17.124	15.311	13.751	12.357	11.001	8.736	7.365	5.461	3.339	2.004
Feb	8.262	7.665	7.135	6.631	6.091	5.181	4.452	3.439	2.309	1.598
Mar	6.510	6.473	6.396	6.244	5.959	5.462	4.671	3.573	2.348	1.577
Apr	4.062	4.036	3.974	3.848	3.612	3.223	2.675	2.043	1.503	1.252
May	2.617	2.601	2.565	2.490	2.350	2.120	1.794	1.420	1.100	0.951
Jun	1.997	1.985	1.958	1.901	1.796	1.621	1.376	1.093	0.851	0.738
Jul	1.622	1.611	1.587	1.536	1.442	1.286	1.067	0.814	0.598	0.497
Aug	1.318	1.309	1.288	1.245	1.164	1.031	0.843	0.627	0.442	0.356
Sep	1.653	1.640	1.612	1.553	1.443	1.262	1.007	0.714	0.463	0.340

Reserve Flows without High Flows

Oct	1.679	1.669	1.646	1.599	1.511	1.366	1.161	0.925	0.723	0.629
Nov	2.446	2.434	2.410	2.361	2.270	2.111	1.858	1.507	1.115	0.869
Dec	2.993	2.978	2.948	2.888	2.776	2.580	2.269	1.836	1.354	1.051
Jan	3.656	3.638	3.601	3.528	3.390	3.150	2.767	2.236	1.644	1.272
Feb	3.930	3.911	3.871	3.792	3.644	3.385	2.973	2.401	1.764	1.363
Mar	3.862	3.843	3.803	3.726	3.580	3.326	2.922	2.360	1.734	1.340
Apr	3.292	3.272	3.226	3.131	2.954	2.662	2.250	1.776	1.370	1.182
May	2.617	2.601	2.565	2.490	2.350	2.120	1.794	1.420	1.100	0.951
Jun	1.997	1.985	1.958	1.901	1.796	1.621	1.376	1.093	0.851	0.738
Jul	1.622	1.611	1.587	1.536	1.442	1.286	1.067	0.814	0.598	0.497
Aug	1.318	1.309	1.288	1.245	1.164	1.031	0.843	0.627	0.442	0.356
Sep	1.329	1.319	1.297	1.252	1.167	1.027	0.829	0.601	0.407	0.316

Natural Duration curves

Oct	25.360	16.070	12.390	9.620	7.040	6.260	5.100	3.600	2.540	1.220
Nov	49.950	34.260	27.060	19.620	17.300	13.720	10.880	8.580	6.360	2.520
Dec	54.770	37.990	31.040	25.960	23.220	19.580	15.520	12.410	10.750	5.060
Jan	56.540	43.290	32.900	26.790	21.860	19.040	16.370	14.780	11.680	4.540
Feb	72.300	44.030	30.670	24.160	18.770	16.240	14.590	12.220	10.320	5.850
Mar	41.770	31.650	25.520	22.700	21.480	15.860	12.930	11.240	7.940	5.560
Apr	21.780	18.840	14.880	13.270	11.960	10.950	9.430	7.130	5.040	3.450
May	15.480	11.420	8.760	7.270	6.500	5.860	5.250	3.990	3.290	2.320
Jun	9.970	7.250	5.960	4.980	4.330	3.650	3.070	2.670	1.910	1.300
Jul	7.750	5.160	4.500	4.000	3.010	2.510	1.970	1.760	1.320	0.710
Aug	7.560	4.010	3.570	2.910	2.590	2.130	1.800	1.120	0.870	0.510
Sep	8.830	6.010	4.370	3.810	3.150	2.590	2.100	1.600	0.950	0.340

Hydrological time series

Total Runoff : N12

Desktop (Version 2) Modified Flow Data for Ecological Category C

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	3.064	5.569	5.935	2.954	3.448	6.506	3.895	2.408	1.657	0.955	0.513	1.584	38.488
1921	3.014	5.631	7.324	11.281	4.196	2.865	1.442	1.027	1.012	0.742	1.314	1.518	41.366
1922	2.999	5.631	6.212	12.662	6.027	3.624	2.101	1.402	0.840	0.545	0.371	0.340	42.754
1923	2.098	2.830	7.065	5.680	6.398	6.394	3.902	2.538	1.804	1.080	0.699	1.647	42.134
1924	2.700	5.520	7.324	8.539	2.786	6.510	4.062	2.602	1.951	1.562	1.217	1.649	46.424
1925	2.870	3.012	2.740	6.810	2.831	6.445	2.762	1.746	1.573	1.019	0.448	1.613	33.868
1926	1.844	1.637	2.673	2.624	6.434	6.135	3.005	1.530	0.828	1.467	1.179	0.840	30.196
1927	3.025	4.661	5.040	17.098	5.047	2.490	1.413	0.951	0.738	0.490	0.438	1.503	42.894
1928	2.380	3.487	2.711	2.231	1.688	6.510	4.016	2.561	1.971	1.607	1.155	1.653	31.970
1929	3.071	5.533	4.877	14.313	6.631	4.890	2.101	1.258	0.791	0.526	0.814	0.938	45.743
1930	0.787	2.658	2.873	2.225	2.135	2.264	2.043	1.471	0.806	0.598	0.442	0.353	18.655
1931	0.756	1.154	1.515	2.004	7.665	6.426	3.920	2.613	1.995	1.591	1.000	0.714	31.353
1932	1.851	5.390	6.316	13.501	7.090	5.433	2.510	1.526	0.851	1.067	0.785	0.463	46.782
1933	1.043	5.631	7.324	17.124	5.789	6.450	4.054	2.617	1.997	1.622	1.318	1.642	56.611
1934	1.408	5.451	6.734	9.073	4.627	3.286	1.916	2.307	1.846	1.286	0.744	0.548	39.225
1935	0.863	1.154	1.850	15.606	6.599	6.450	3.608	2.617	1.997	1.597	1.027	1.437	44.807
1936	2.937	5.624	3.300	17.124	8.262	6.352	3.427	2.022	1.093	0.713	0.417	1.627	52.898
1937	2.743	1.833	5.580	5.862	3.904	3.099	4.062	2.604	1.985	1.619	1.305	1.304	35.901
1938	3.068	4.680	6.837	16.328	8.262	6.510	4.033	2.592	1.963	1.619	1.316	1.653	58.860
1939	2.955	5.631	5.834	14.396	3.581	5.467	3.913	2.601	1.997	1.622	1.314	1.627	50.938

1940	2.279	5.131	7.324	10.206	5.732	4.078	3.918	2.504	1.309	1.283	0.987	1.161	45.911
1941	1.416	3.706	2.994	6.509	4.758	6.362	2.869	2.597	1.997	1.619	1.284	1.553	39.663
1942	2.925	5.564	6.593	5.239	3.786	5.462	4.062	2.617	1.997	1.622	1.318	1.653	42.840
1943	3.049	5.601	6.330	13.555	8.261	6.013	2.557	1.232	1.974	1.608	1.051	1.650	52.881
1944	3.065	3.544	1.442	9.033	2.160	6.496	3.617	2.325	1.910	1.547	1.287	1.382	37.808
1945	1.128	1.204	1.286	8.215	7.145	6.263	4.062	2.053	1.655	1.442	1.210	1.633	37.296
1946	2.745	5.598	5.984	9.603	6.848	4.512	3.239	2.361	1.422	0.914	0.546	0.786	44.557
1947	2.602	5.460	5.413	15.356	8.262	6.510	4.062	2.529	1.930	0.621	1.288	1.625	55.659
1948	2.483	5.572	4.167	17.124	7.135	6.240	4.036	2.605	1.972	1.481	0.788	0.979	54.580
1949	2.639	5.168	6.429	11.977	4.944	6.436	4.055	2.597	1.974	1.607	1.316	1.627	50.768
1950	1.334	1.878	5.224	13.765	4.627	6.396	4.061	2.428	1.934	1.600	1.318	1.651	46.217
1951	3.063	3.480	5.082	2.562	2.552	1.619	1.503	1.174	1.595	1.389	1.227	1.189	26.435
1952	1.767	3.970	5.777	3.997	4.271	4.363	3.822	1.822	1.584	1.459	1.164	1.311	35.307
1953	1.632	4.407	4.000	6.336	6.647	6.221	4.053	2.617	1.988	1.617	1.267	1.453	42.239
1954	2.892	4.854	4.311	16.590	8.221	6.510	3.048	1.990	1.933	1.619	1.309	1.604	54.883
1955	2.200	2.965	5.980	11.138	8.262	6.498	3.439	2.350	1.926	1.496	1.245	1.568	49.068
1956	3.049	5.435	6.165	8.896	6.989	5.959	3.895	2.525	1.901	1.622	1.318	1.653	49.408
1957	3.071	5.450	1.829	15.311	6.887	3.573	3.612	2.428	1.524	1.076	0.720	1.491	46.972
1958	1.928	5.606	5.728	12.890	6.184	3.058	1.265	2.231	1.673	1.330	1.230	1.577	44.698
1959	1.974	4.931	5.341	3.339	6.962	5.606	3.986	2.567	1.662	0.955	1.138	1.579	40.041
1960	2.913	5.631	7.324	12.943	6.091	4.925	4.037	2.574	1.983	1.615	1.316	1.398	52.750
1961	2.470	5.133	3.815	5.461	2.826	3.423	1.898	1.719	1.349	1.317	1.057	1.167	31.635
1962	1.616	5.607	6.668	12.318	4.369	5.322	2.131	0.985	1.997	1.622	1.318	1.648	45.601
1963	2.487	5.265	2.549	15.020	4.948	1.577	1.711	1.054	1.036	1.308	1.182	1.116	39.252
1964	3.071	5.470	5.994	7.365	4.452	1.773	1.309	1.025	1.215	1.386	1.045	1.503	35.609
1965	1.271	1.543	1.352	11.499	7.381	2.303	1.279	1.223	1.093	1.199	0.928	1.062	32.131
1966	1.549	1.307	2.311	6.843	7.998	6.436	3.832	2.531	1.935	1.536	1.279	1.443	39.001
1967	0.963	5.462	4.656	2.343	1.598	4.226	2.398	1.794	1.796	1.551	1.297	1.584	29.667
1968	0.862	2.830	1.899	7.071	1.863	6.510	4.062	2.614	1.987	1.518	0.914	1.612	33.744
1969	3.071	5.186	4.775	3.578	2.502	1.761	1.252	0.978	0.870	0.563	0.677	0.990	26.203
1970	2.895	4.865	3.141	13.422	3.174	5.798	4.057	2.617	1.997	1.600	1.192	1.077	45.835
1971	2.953	5.585	7.231	17.124	8.160	6.498	4.006	2.612	1.993	1.585	1.060	0.559	59.368
1972	0.823	4.795	1.752	4.480	8.262	6.244	4.043	2.597	1.901	1.255	1.293	1.653	39.097
1973	2.975	5.517	5.511	17.124	5.181	5.279	3.806	2.507	1.701	1.567	1.260	0.598	53.026
1974	1.134	5.620	6.514	15.340	7.423	5.678	4.011	2.584	1.772	1.167	0.546	1.653	53.441
1975	2.495	5.153	7.324	13.751	7.844	6.473	4.026	2.617	1.994	1.550	1.031	0.562	54.820
1976	3.007	4.543	4.370	13.016	7.698	5.932	3.596	2.260	1.228	0.669	0.513	1.627	48.460
1977	2.380	2.623	3.275	17.124	7.162	6.034	3.974	2.565	1.788	1.392	1.246	1.583	51.147
1978	3.071	5.534	4.574	7.677	3.439	4.089	3.009	2.332	1.376	0.814	1.307	1.640	38.863
1979	3.030	5.158	4.377	14.882	7.616	5.162	1.758	1.253	0.944	0.512	0.376	1.606	46.673
1980	1.231	5.571	5.903	12.357	6.682	3.935	1.614	1.100	1.800	1.501	1.285	1.644	44.622
1981	2.732	4.887	1.938	8.896	1.779	5.876	3.628	2.296	1.154	0.706	0.409	0.396	34.696
1982	3.066	3.423	1.313	2.004	1.598	1.577	1.614	2.296	1.822	1.314	1.302	1.262	22.591
1983	2.031	5.631	5.142	17.124	6.846	6.486	3.989	2.490	1.958	1.622	1.318	1.653	56.290
1984	3.044	4.433	3.157	4.551	8.262	6.340	2.675	1.110	0.763	0.514	0.356	0.369	35.573
1985	2.822	2.323	3.748	14.781	6.601	5.726	3.745	2.383	1.634	1.223	0.627	0.419	46.033
1986	0.945	1.386	4.870	4.537	2.309	5.978	3.933	2.559	1.878	1.317	1.318	1.653	32.685
1987	3.071	5.528	3.478	8.736	7.357	6.088	3.269	1.722	1.854	1.576	1.299	1.350	45.327
1988	3.071	4.894	7.184	5.680	8.001	6.263	3.848	2.479	1.977	1.611	1.164	0.649	46.823
1989	2.663	5.631	6.472	11.001	4.192	4.671	3.105	2.120	1.036	0.548	0.843	0.665	42.948
1990	2.242	4.245	5.271	17.124	7.730	6.481	3.913	2.604	1.997	1.622	1.316	1.404	55.950
1991	1.856	1.853	4.138	7.376	6.127	2.713	1.418	0.985	0.738	0.497	0.350	0.310	28.361
1992	0.796	4.407	5.691	4.236	5.487	6.274	3.650	2.399	1.621	0.859	0.886	1.002	37.308
1993	3.071	5.177	6.833	10.913	4.904	6.475	3.581	1.581	0.907	0.520	0.376	0.372	44.711
1994	2.985	4.717	6.732	10.141	1.761	3.590	2.315	1.801	1.394	0.792	0.513	0.404	37.146
1995	3.055	5.615	7.324	16.831	8.262	6.510	4.042	2.614	1.991	1.615	1.306	0.828	59.993
1996	3.043	3.962	5.507	14.632	5.739	6.510	4.062	2.617	1.997	1.622	1.318	1.649	52.661
1997	3.054	5.629	3.447	12.665	5.912	5.583	2.658	1.836	1.207	0.681	0.374	0.449	43.495
1998	2.882	5.051	7.158	11.171	3.100	2.348	1.984	1.765	1.427	0.841	1.043	0.816	39.586
1999	2.565	2.192	7.324	16.313	8.262	6.501	4.062	2.617	1.996	1.583	0.956	1.223	55.594
2000	3.029	5.631	6.797	7.785	5.343	4.954	2.762	2.049	1.262	0.971	0.670	1.452	42.705
2001	2.948	5.631	3.856	6.353	2.033	1.907	1.378	0.967	0.741	1.587	1.313	1.550	30.264
2002	1.191	1.331	2.153	3.250	5.707	2.280	1.252	0.951	0.991	0.923	0.554	0.474	21.057
2003	0.756	2.997	1.286	8.456	7.596	6.418	3.223	1.420	0.764	1.616	1.310	1.007	36.849
2004	0.803	3.102	3.600	11.114	6.103	6.322	3.346	2.221	1.859	1.506	1.265	1.279	42.520

Mean 2.314 4.357 4.791 10.206 5.550 5.124 3.137 2.070 1.580 1.248 1.002 1.225 42.602

A.6. Ni2 – Category D

Summary table

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni2

Annual Flows (Mill. cu. m or index values):

MAR = 189,511

S.Dev. = 101,375

CV = 0,535

Q75 = 3,880

Q75/MMF = 0,246

BFI Index = 0,380

CV(JJA+JFM) Index = 2,321

Ecological Category = D

Total IFR = 26,599 (14,04 %MAR)

Maint. Lowflow = 10,897 (5,75 %MAR)

Drought Lowflow = 10,437 (5,51 %MAR)

Maint. Highflow = 15,702 (8,29 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month Natural Flows Modified Flows (IFR)

Low flows High Flows Total Flows

Mean SD CV Maint. Drought Maint. Maint.

Oct 11,242 12,387 1,102 0,623 0,623 1,013 1,636

Nov 22,638 20,098 0,888 0,859 0,859 2,278 3,136

Dec	27,773	20,349	0,733	1,038	1,038	1,903	2,941
Jan	33,896	58,895	1,737	1,256	1,256	5,916	7,173
Feb	31,466	32,451	1,031	1,347	1,347	1,903	3,249
Mar	23,581	24,927	1,057	1,324	1,324	1,894	3,218
Apr	13,379	9,310	0,696	1,169	1,169	0,560	1,729
May	7,734	4,525	0,585	0,940	0,940	0,000	0,940
Jun	5,131	3,339	0,651	0,731	0,731	0,000	0,731
Jul	4,467	6,502	1,455	0,604	0,490	0,000	0,604
Aug	3,302	3,408	1,032	0,501	0,350	0,000	0,501
Sep	4,901	8,233	1,680	0,505	0,310	0,235	0,740

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : N12

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	2.595	2.577	2.536	2.453	2.297	2.040	1.677	1.259	0.902	0.736
Nov	5.109	5.079	5.016	4.893	4.662	4.260	3.619	2.729	1.736	1.112
Dec	5.766	5.266	4.832	4.438	4.044	3.385	2.950	2.345	1.670	1.246
Jan	13.996	12.455	11.136	9.971	8.860	7.008	5.966	4.518	2.904	1.889
Feb	6.380	5.878	5.439	5.036	4.625	3.935	3.451	2.778	2.028	1.556
Mar	5.464	5.435	5.374	5.253	5.026	4.630	4.001	3.126	2.151	1.538
Apr	2.964	2.947	2.910	2.832	2.687	2.448	2.110	1.722	1.390	1.235
May	1.744	1.736	1.719	1.683	1.616	1.505	1.350	1.170	1.017	0.945
Jun	1.355	1.349	1.335	1.308	1.255	1.170	1.049	0.909	0.790	0.734
Jul	1.119	1.113	1.100	1.071	1.019	0.932	0.810	0.670	0.550	0.494
Aug	0.929	0.923	0.910	0.885	0.836	0.757	0.645	0.515	0.405	0.354
Sep	1.270	1.261	1.241	1.199	1.121	0.992	0.810	0.601	0.423	0.339

Reserve Flows without High Flows										
Oct	1.155	1.150	1.139	1.115	1.070	0.997	0.894	0.775	0.673	0.626
Nov	1.712	1.706	1.693	1.667	1.618	1.532	1.396	1.207	0.997	0.864
Dec	2.070	2.063	2.047	2.015	1.956	1.852	1.688	1.460	1.205	1.045
Jan	2.505	2.496	2.477	2.438	2.367	2.242	2.043	1.766	1.458	1.264
Feb	2.685	2.675	2.654	2.613	2.536	2.402	2.189	1.893	1.563	1.355
Mar	2.640	2.630	2.610	2.569	2.494	2.362	2.152	1.861	1.537	1.332
Apr	2.167	2.158	2.136	2.091	2.008	1.871	1.677	1.454	1.263	1.175
May	1.744	1.736	1.719	1.683	1.616	1.505	1.350	1.170	1.017	0.945
Jun	1.355	1.349	1.335	1.308	1.255	1.170	1.049	0.909	0.790	0.734
Jul	1.119	1.113	1.100	1.071	1.019	0.932	0.810	0.670	0.550	0.494
Aug	0.929	0.923	0.910	0.885	0.836	0.757	0.645	0.515	0.405	0.354
Sep	0.935	0.929	0.916	0.888	0.836	0.750	0.628	0.489	0.369	0.314

Natural Duration curves										
Oct	25.360	16.070	12.390	9.620	7.040	6.260	5.100	3.600	2.540	1.220
Nov	49.950	34.260	27.060	19.620	17.300	13.720	10.880	8.580	6.360	5.250
Dec	54.770	37.990	31.040	25.960	23.220	19.580	15.520	12.410	10.750	5.060
Jan	56.540	43.290	32.900	26.790	21.860	19.040	16.370	14.780	11.680	4.540
Feb	72.300	44.030	30.670	24.160	18.770	16.240	14.590	12.220	10.320	5.850
Mar	41.770	31.650	25.520	22.700	21.480	15.860	12.930	11.240	7.940	5.560
Apr	21.780	18.840	14.880	13.270	11.960	10.950	9.430	7.130	5.040	3.450
May	15.480	11.420	8.760	7.270	6.500	5.860	5.250	3.990	3.290	2.320
Jun	9.970	7.250	5.960	4.980	4.330	3.650	3.070	2.670	1.910	1.300
Jul	7.750	5.160	4.500	4.000	3.010	2.510	1.970	1.760	1.320	0.710
Aug	7.560	4.010	3.570	2.910	2.590	2.130	1.800	1.120	0.870	0.510
Sep	8.830	6.010	4.370	3.810	3.150	2.590	2.100	1.600	0.950	0.340

Hydrological time series

Total Runoff : N12

Desktop (Version 2) Modified Flow Data for Ecological Category D

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	2.589	5.053	4.605	2.612	2.784	5.460	2.861	1.644	1.187	0.748	0.447	1.221	31.212
1921	2.549	5.109	5.766	9.090	3.281	2.563	1.352	0.982	0.869	0.630	0.926	1.174	34.290
1922	2.536	5.109	4.832	10.226	4.576	3.167	1.757	1.162	0.784	0.520	0.362	0.339	35.371
1923	1.813	2.608	5.547	4.684	4.858	5.372	2.865	1.706	1.259	0.818	0.558	1.266	33.354
1924	2.297	5.010	5.766	6.858	2.345	5.464	2.964	1.737	1.332	1.086	0.868	1.267	36.993
1925	2.433	2.771	2.252	5.544	2.374	5.412	2.164	1.326	1.146	0.784	0.409	1.241	27.856
1926	1.609	1.543	2.206	2.361	4.886	5.165	2.313	1.223	0.779	1.033	0.845	0.691	24.654
1927	2.558	4.242	3.901	13.974	3.846	2.265	1.335	0.945	0.734	0.490	0.403	1.163	35.856
1928	2.040	3.195	2.232	2.062	1.615	5.464	2.935	1.717	1.342	1.111	0.831	1.270	25.814
1929	2.595	5.021	3.775	11.610	5.036	4.174	1.757	1.093	0.760	0.510	0.627	0.761	37.719
1930	0.760	2.455	2.345	2.057	1.912	2.084	1.722	1.195	0.768	0.550	0.405	0.344	16.597
1931	0.736	1.112	1.404	1.889	5.878	5.397	2.876	1.742	1.354	1.102	0.738	0.601	24.829
1932	1.615	4.893	4.918	10.926	5.403	4.607	2.009	1.221	0.790	0.810	0.610	0.423	38.225
1933	0.966	5.108	5.766	13.996	4.396	5.416	2.959	1.744	1.355	1.119	0.929	1.262	45.015
1934	1.259	4.947	5.267	7.284	3.567	2.898	1.644	1.595	1.280	0.932	0.585	0.483	31.743
1935	0.822	1.112	1.636	12.705	5.011	5.416	2.684	1.744	1.355	1.105	0.754	1.116	35.462
1936	2.487	5.103	2.640	13.996	6.380	5.338	2.573	1.458	0.909	0.614	0.390	1.252	43.140
1937	2.331	1.718	4.323	4.823	3.087	2.749	2.964	1.738	1.349	1.117	0.920	1.022	28.141
1938	2.592	4.260	5.354	13.318	6.380	5.464	2.945	1.732	1.338	1.117	0.927	1.270	46.698
1939	2.501	5.109	4.523	11.680	2.873	4.634	2.872	1.736	1.355	1.119	0.926	1.252	40.579
1940	1.958	4.662	5.766	8.210	4.352	3.528	2.875	1.690	1.015	0.931	0.731	0.920	36.638
1941	1.266	3.390	2.428	6.835	3.654	5.347	2.230	1.734	1.355	1.117	0.908	1.199	31.462
1942	2.478	5.049	5.149	4.349	3.008	4.630	2.964	1.744	1.355	1.119	0.929	1.270	34.043
1943	2.577	5.081	4.930	10.972	6.380	5.069	2.038	1.080	1.343	1.111	0.769	1.268	42.618
1944	2.589	3.245	1.353	7.251	1.929	5.453	2.690	1.604	1.312	1.078	0.910	1.077	30.491
1945	1.034	1.157	1.246	6.612	5.447	5.268	2.964	1.474	1.186	1.019	0.863	1.256	29.525
1946	2.333	5.079	4.645	7.717	5.207	3.874	2.457	1.621	1.071	0.725	0.467	0.653	35.849
1947	2.218	4.956	4.192	12.494	6.380	5.464	2.964	1.701	1.322	0.563	0.910	1.250	44.414
1948	2.122	5.056	3.240	13.996	5.439	5.249	2.947	1.738	1.343	1.041	0.611	0.790	43.571

1949	2.247	4.695	5.012	9.660	3.777	5.405	2.959	1.734	1.343	1.111	0.927	1.251	40.123
1950	1.200	1.758	4.044	11.148	3.567	5.374	2.963	1.653	1.324	1.107	0.929	1.269	36.335
1951	2.588	3.188	3.934	2.314	2.189	1.571	1.390	1.052	1.157	0.990	0.874	0.940	22.186
1952	1.547	3.626	4.477	3.405	3.330	3.755	2.816	1.363	1.151	1.028	0.836	1.026	28.363
1953	1.439	4.016	3.125	5.183	5.048	5.234	2.958	1.744	1.350	1.116	0.898	1.128	33.239
1954	2.451	4.415	3.340	13.542	6.346	5.464	2.340	1.443	1.323	1.117	0.923	1.235	43.940
1955	1.895	2.729	4.642	8.973	6.380	5.455	2.580	1.616	1.320	1.049	0.885	1.209	38.733
1956	2.577	4.934	4.793	7.139	5.321	5.026	2.861	1.700	1.308	1.119	0.929	1.270	38.975
1957	2.595	4.947	1.621	12.455	5.239	3.126	2.687	1.653	1.121	0.815	0.571	1.155	37.986
1958	1.677	5.086	4.438	10.415	4.695	2.717	1.243	1.559	1.195	0.957	0.876	1.216	36.072
1959	1.714	4.484	4.136	2.904	5.299	4.745	2.917	1.720	1.190	0.748	0.821	1.217	31.895
1960	2.468	5.109	5.766	10.459	4.625	4.203	2.948	1.723	1.348	1.115	0.927	1.088	41.778
1961	2.112	4.663	2.996	4.518	2.371	3.007	1.633	1.313	1.035	0.950	0.772	0.924	26.296
1962	1.426	5.087	5.212	9.940	3.396	4.518	1.776	0.962	1.355	1.119	0.929	1.266	36.985
1963	2.125	4.782	2.120	12.208	3.780	1.538	1.518	0.995	0.881	0.945	0.847	0.888	32.627
1964	2.595	4.965	4.653	5.966	3.451	1.694	1.271	0.981	0.969	0.988	0.765	1.163	29.460
1965	1.149	1.459	1.292	9.268	5.641	2.116	1.252	1.076	0.909	0.884	0.695	0.849	26.590
1966	1.372	1.249	1.955	5.568	6.157	5.405	2.822	1.703	1.324	1.071	0.905	1.121	30.653
1967	0.902	4.958	3.603	2.147	1.556	3.646	1.940	1.350	1.255	1.080	0.916	1.221	24.572
1968	0.821	2.608	1.670	5.742	1.732	5.464	2.964	1.743	1.350	1.061	0.687	1.241	27.082
1969	2.595	4.711	3.695	3.086	2.156	1.684	1.235	0.959	0.799	0.531	0.545	0.798	22.794
1970	2.453	4.425	2.530	10.860	2.602	4.897	2.961	1.744	1.355	1.107	0.853	0.860	36.646
1971	2.500	5.068	5.687	13.996	6.294	5.454	2.929	1.742	1.353	1.099	0.774	0.491	47.387
1972	0.789	4.362	1.568	3.772	6.380	5.253	2.952	1.734	1.308	0.915	0.913	1.270	31.216
1973	2.517	5.007	4.268	13.996	3.935	4.484	2.806	1.691	1.209	1.089	0.894	0.519	42.415
1974	1.039	5.099	5.083	12.479	5.676	4.802	2.932	1.728	1.244	0.866	0.467	1.270	42.685
1975	2.132	4.681	5.766	11.136	6.028	5.435	2.941	1.744	1.353	1.079	0.757	0.494	43.546
1976	2.543	4.137	3.381	10.520	5.906	5.004	2.677	1.573	0.976	0.589	0.447	1.251	39.005
1977	2.040	2.423	2.623	13.996	5.461	5.085	2.910	1.719	1.252	0.991	0.885	1.220	40.605
1978	2.595	5.022	3.539	6.203	2.778	3.537	2.316	1.607	1.049	0.670	0.922	1.261	31.499
1979	2.562	4.686	3.385	12.092	5.837	4.391	1.547	1.090	0.836	0.502	0.365	1.236	38.530
1980	1.117	5.055	4.579	9.971	5.075	3.415	1.458	1.017	1.258	1.052	0.909	1.263	36.169
1981	2.322	4.444	1.697	7.139	1.676	4.960	2.697	1.590	0.939	0.610	0.385	0.375	28.833
1982	2.591	3.138	1.264	1.889	1.556	1.538	1.458	1.590	1.268	0.948	0.919	0.992	19.150
1983	1.759	5.109	3.981	13.996	5.205	5.445	2.919	1.683	1.335	1.119	0.929	1.270	44.749
1984	2.573	4.039	2.541	3.826	6.380	5.329	2.110	1.021	0.746	0.503	0.354	0.356	29.779
1985	2.395	2.156	2.950	12.006	5.013	4.840	2.769	1.632	1.176	0.897	0.515	0.392	36.740
1986	0.887	1.319	3.769	3.815	2.028	5.041	2.884	1.716	1.296	0.950	0.929	1.270	25.904
1987	2.595	5.016	2.763	7.008	5.622	5.128	2.476	1.315	1.284	1.093	0.917	1.054	36.271
1988	2.595	4.451	5.648	4.684	6.160	5.268	2.832	1.678	1.345	1.113	0.836	0.555	37.165
1989	2.267	5.109	5.047	8.860	3.278	4.001	2.375	1.505	0.881	0.522	0.645	0.567	35.058
1990	1.929	3.871	4.082	13.996	5.932	5.441	2.872	1.738	1.355	1.119	0.927	1.093	44.354
1991	1.619	1.736	3.220	5.974	4.651	2.442	1.338	0.962	0.734	0.494	0.350	0.310	23.830
1992	0.768	4.016	4.409	3.586	4.167	5.276	2.710	1.639	1.170	0.695	0.670	0.806	29.913
1993	2.595	4.703	5.351	8.788	3.751	5.436	2.668	1.248	0.817	0.507	0.365	0.358	36.588
1994	2.525	4.292	5.266	8.157	1.664	3.140	1.889	1.353	1.058	0.658	0.447	0.381	30.830
1995	2.582	5.094	5.766	13.747	6.380	5.464	2.951	1.742	1.352	1.115	0.921	0.683	47.798
1996	2.572	3.619	4.265	11.881	4.358	5.464	2.964	1.744	1.355	1.119	0.929	1.267	41.536
1997	2.581	5.107	2.742	10.228	4.488	4.727	2.100	1.370	0.965	0.596	0.364	0.413	35.681
1998	2.443	4.590	5.625	9.000	2.553	2.151	1.686	1.335	1.074	0.685	0.764	0.674	32.581
1999	2.188	2.038	5.766	13.306	6.380	5.457	2.964	1.744	1.354	1.097	0.712	0.964	43.970
2000	2.561	5.109	5.320	6.285	4.058	4.226	2.164	1.472	0.992	0.757	0.541	1.126	34.611
2001	2.496	5.109	3.025	5.196	1.845	1.801	1.313	0.953	0.736	1.100	0.925	1.196	25.694
2002	1.085	1.270	1.846	2.836	4.333	2.098	1.235	0.945	0.859	0.731	0.472	0.431	18.141
2003	0.736	2.757	1.246	6.795	5.821	5.391	2.448	1.170	0.747	1.116	0.923	0.810	29.959
2004	0.774	2.851	2.848	8.953	4.634	5.314	2.523	1.554	1.287	1.054	0.897	1.003	33.692
Mean	1.987	3.971	3.781	8.319	4.309	4.361	2.394	1.482	1.149	0.912	0.739	0.965	34.369

A.7. Ni3 – Category B

Summary table

Desktop Version 2, Generated on 2015-04-20

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni3

Annual Flows (Mill. cu. m or index values):

MAR = 267,285

S.Dev. = 142,976

CV = 0,535

Q75 = 5,470

Q75/MMF = 0,246

BFI Index = 0,380

CV(JJA+JFM) Index = 2,321

Ecological Category = B

Total IFR = 116,509 (43,59 %MAR)

Maint. Lowflow = 93,751 (35,08 %MAR)

Drought Lowflow = 35,998 (13,47 %MAR)

Maint. Highflow = 22,758 (8,51 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)			
	Mean	SD	Low flows	High Flows	Total Flows	
		CV	Maint.	Drought	Maint.	Maint.
Oct	15,857	17,471	1,102	4,771	1,985	1,244 6,015
Nov	31,929	28,346	0,888	7,667	2,071	2,926 10,592
Dec	39,171	28,700	0,733	13,922	4,618	5,537 19,459
Jan	47,807	83,064	1,737	13,614	4,557	4,978 18,593
Feb	44,379	45,768	1,031	11,300	3,770	4,264 15,564
Mar	33,259	35,156	1,057	10,527	3,812	2,471 12,998
Apr	18,870	13,131	0,696	7,179	2,577	1,164 8,343
May	10,908	6,381	0,585	6,429	2,674	0,136 6,565
Jun	7,237	4,710	0,651	5,365	2,456	0,000 5,365
Jul	6,300	9,170	1,456	4,815	2,559	0,001 4,816
Aug	4,656	4,805	1,032	4,390	2,524	0,004 4,394
Sep	6,913	11,612	1,680	3,771	2,395	0,035 3,805

Rule curve

Desktop Version 2, Generated on 2015-04-20

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni3

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	7.063	7.015	6.908	6.686	6.273	5.593	4.632	3.526	2.580	1.720
Nov	12.355	12.281	12.126	11.820	11.247	10.246	8.655	6.443	3.978	2.426
Dec	27.384	25.861	24.459	23.037	21.375	18.555	15.852	12.097	7.911	5.277
Jan	25.932	24.556	23.282	21.975	20.429	17.803	15.228	11.652	7.665	5.156
Feb	21.780	20.604	19.517	18.407	17.099	14.880	12.722	9.725	6.383	4.281
Mar	15.280	15.197	15.023	14.679	14.036	12.911	11.124	8.640	5.871	4.129
Apr	9.850	9.782	9.627	9.307	8.710	7.726	6.338	4.740	3.374	2.738
May	7.832	7.783	7.672	7.441	7.012	6.305	5.307	4.159	3.177	2.720
Jun	6.414	6.376	6.290	6.113	5.783	5.150	4.330	3.588	2.700	1.830
Jul	5.758	5.728	5.659	5.515	4.250	3.540	2.770	2.480	1.860	1.010
Aug	5.255	5.229	5.030	4.110	3.650	3.000	2.540	1.580	1.230	0.720
Sep	4.549	4.529	4.482	4.386	4.207	3.650	2.960	2.260	1.340	0.480

Reserve Flows without High Flows

Oct	5.702	5.667	5.586	5.420	5.110	4.599	3.878	3.048	2.338	1.720
Nov	9.155	9.103	8.993	8.776	8.370	7.660	6.531	4.963	3.215	2.116
Dec	16.631	16.541	16.356	15.988	15.298	14.095	12.181	9.522	6.558	4.693
Jan	16.264	16.177	15.995	15.637	14.965	13.792	11.928	9.336	6.448	4.630
Feb	13.499	13.426	13.276	12.978	12.420	11.445	9.895	7.741	5.341	3.831
Mar	12.577	12.512	12.376	12.108	11.605	10.727	9.331	7.390	5.228	3.867
Apr	8.577	8.520	8.390	8.122	7.621	6.797	5.633	4.293	3.147	2.615
May	7.684	7.636	7.528	7.303	6.885	6.197	5.225	4.107	3.150	2.705
Jun	6.414	6.376	6.290	6.113	5.783	5.150	4.330	3.588	2.700	1.830
Jul	5.757	5.727	5.658	5.515	4.250	3.540	2.770	2.480	1.860	1.010
Aug	5.251	5.225	5.030	4.110	3.650	3.000	2.540	1.580	1.230	0.720
Sep	4.512	4.491	4.446	4.351	4.174	3.650	2.960	2.260	1.340	0.480

Natural Duration curves

Oct	35.770	22.670	17.480	13.560	9.940	8.830	7.200	5.080	3.580	1.720
Nov	70.450	48.310	38.160	27.670	24.410	19.360	15.340	12.110	8.960	3.550
Dec	77.250	53.580	43.780	36.610	32.750	27.610	21.890	17.500	15.160	7.140
Jan	79.750	61.060	46.400	37.790	30.830	26.850	23.090	20.840	16.480	6.410
Feb	101.970	62.110	43.250	34.080	26.470	22.910	20.580	17.230	14.550	8.260
Mar	58.910	44.640	36.000	32.010	30.290	22.370	18.230	15.850	11.200	7.840
Apr	30.720	26.570	20.990	18.720	16.860	15.450	13.300	10.060	7.110	4.860
May	21.840	16.110	12.350	10.250	9.160	8.260	7.410	5.620	4.640	3.270
Jun	14.060	10.230	8.410	7.030	6.110	5.150	4.330	3.760	2.700	1.830
Jul	10.940	7.270	6.340	5.640	4.250	3.540	2.770	2.480	1.860	1.010
Aug	10.660	5.660	5.030	4.110	3.650	3.000	2.540	1.580	1.230	0.720
Sep	12.460	8.480	6.160	5.380	4.440	3.650	2.960	2.260	1.340	0.480

Hydrological time series

Total Runoff : Ni3
 Desktop (Version 2) Modified Flow Data for Ecological Category B

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	7.048	12.218	23.663	6.943	9.764	15.270	9.432	7.193	5.350	2.670	1.380	4.437	105.369
1921	6.941	12.355	27.384	20.747	11.954	7.042	3.221	2.952	3.260	2.190	5.242	4.329	107.617
1922	6.908	12.355	24.459	22.274	16.944	8.758	4.884	4.111	2.650	1.620	0.940	0.480	106.383
1923	4.985	6.140	26.723	12.075	17.840	15.018	9.438	7.587	5.808	2.830	1.860	4.541	114.846
1924	6.273	12.110	27.384	17.432	7.796	15.280	9.850	7.784	6.268	5.589	3.950	4.544	124.260
1925	6.635	6.544	11.515	14.186	7.919	15.133	6.559	5.156	4.960	2.730	1.240	4.484	87.061
1926	4.448	3.496	11.253	6.322	17.929	14.432	7.174	4.499	2.610	4.620	3.730	2.560	83.073
1927	6.964	10.201	20.766	25.912	14.478	6.180	3.145	2.720	1.390	0.690	1.220	4.304	97.971
1928	5.593	7.601	11.427	5.582	4.545	15.280	9.733	7.659	6.330	5.715	3.610	4.549	87.623
1929	7.063	12.138	20.223	23.754	18.407	11.621	4.889	3.669	2.470	1.540	2.400	2.800	110.973
1930	2.030	5.748	12.097	5.572	5.875	5.683	4.740	4.329	2.520	1.860	1.230	0.530	52.213
1931	1.720	2.426	6.262	5.156	20.604	15.091	9.489	7.818	6.406	5.670	2.910	2.260	85.813
1932	4.466	11.820	24.744	23.056	19.418	12.847	5.925	4.491	2.700	2.770	2.260	1.340	115.838
1933	2.748	12.354	27.384	25.932	16.364	15.143	9.829	7.832	6.414	5.758	5.255	4.531	139.545
1934	3.526	11.955	25.866	18.192	13.220	7.989	4.418	6.894	5.941	3.540	2.060	1.550	105.151
1935	2.367	2.426	7.702	24.782	18.329	15.145	8.710	7.832	6.414	5.689	2.990	4.195	106.581
1936	6.777	12.340	13.935	25.932	21.780	14.922	8.249	6.003	3.588	2.080	1.140	4.508	121.253
1937	6.365	3.936	22.550	12.401	11.102	7.566	9.850	7.791	6.376	5.750	5.216	3.830	102.733
1938	7.055	10.246	26.133	25.336	21.780	15.280	9.775	7.754	6.305	5.750	5.247	4.549	145.211
1939	6.814	12.355	23.358	23.825	10.141	12.921	9.471	7.783	6.414	5.758	5.243	4.507	128.591
1940	5.370	11.247	27.384	19.505	16.220	9.782	9.484	7.485	4.190	3.530	2.860	3.400	120.458
1941	3.539	8.092	12.615	17.376	13.624	14.946	6.831	7.769	6.412	5.749	4.920	4.386	106.260
1942	6.752	12.206	25.492	11.241	10.746	12.911	9.850	7.832	6.414	5.758	5.255	4.549	119.007
1943	7.016	12.288	24.783	23.106	21.778	14.159	6.043	3.592	6.341	5.718	3.100	4.545	132.469
1944	7.048	7.732	5.946	18.146	5.955	15.248	8.729	6.934	6.132	5.547	5.000	4.109	96.526
1945	2.935	2.538	5.277	16.824	19.537	14.722	9.850	6.098	5.330	4.250	3.910	4.518	95.790
1946	6.368	12.281	23.802	18.812	18.896	10.775	7.768	7.048	4.470	2.640	1.440	2.430	116.730
1947	6.065	11.977	21.999	24.590	21.780	15.280	9.850	7.560	6.204	1.890	5.030	4.504	136.729
1948	5.807	12.224	17.651	25.932	19.517	14.672	9.782	7.793	6.335	4.820	2.260	2.890	129.683
1949	6.132	11.326	25.055	21.542	14.176	15.113	9.832	7.770	6.339	5.715	5.248	4.507	132.755
1950	3.372	4.039	21.375	23.293	13.220	15.023	9.846	7.256	6.215	5.696	5.255	4.547	119.136
1951	7.046	7.584	20.903	6.203	7.116	4.223	3.374	3.414	5.040	4.010	4.010	3.480	76.402
1952	4.287	8.673	23.184	8.900	12.177	10.425	9.243	5.384	5.010	4.500	3.650	3.860	99.293
1953	4.003	9.641	16.935	13.295	18.441	14.631	9.827	7.832	6.383	5.743	4.460	4.224	115.415
1954	6.682	10.629	18.276	25.532	21.701	15.280	7.283	5.908	6.212	5.749	5.229	4.470	132.950
1955	5.210	6.443	23.792	20.587	21.780	15.254	8.270	7.012	6.190	5.050	4.110	4.410	128.107
1956	7.015	11.921	24.324	17.987	19.201	14.036	9.425	7.548	6.113	5.758	5.255	4.549	133.133
1957	7.063	11.955	7.613	24.556	18.979	8.640	8.710	7.252	4.780	2.800	1.950	4.287	108.585
1958	4.632	12.299	23.037	22.500	17.323	7.477	2.771	6.651	5.398	3.740	4.020	4.425	114.272
1959	4.723	10.801	21.763	7.665	19.141	13.238	9.658	7.677	5.369	2.680	3.530	4.428	110.672
1960	6.726	12.355	27.384	22.552	17.099	11.701	9.785	7.697	6.367	5.739	5.247	4.132	136.786
1961	5.777	11.249	16.145	11.652	7.909	8.302	4.374	5.068	4.270	3.680	3.130	3.410	84.966
1962	3.990	12.302	25.691	21.931	12.483	12.593	4.958	2.824	6.414	5.758	5.255	4.542	118.740
1963	5.819	11.543	10.728	24.323	14.194	4.129	3.899	3.040	3.410	3.630	3.750	3.270	91.735
1964	7.063	11.999	23.833	15.228	12.722	4.571	2.883	2.952	3.969	3.990	3.080	4.304	96.595
1965	3.235	3.290	5.561	20.995	20.027	5.768	2.807	3.554	3.588	3.190	2.700	3.120	77.834
1966	3.835	2.767	9.680	14.251	21.263	15.114	9.265	7.567	6.220	5.515	4.800	4.207	104.484
1967	2.580	11.980	19.488	5.792	4.281	10.131	5.640	5.307	5.783	5.560	5.194	4.436	86.173
1968	2.364	6.129	7.911	14.664	5.064	15.280	9.850	7.823	6.383	5.370	2.670	4.482	87.990
1969	7.063	11.367	19.883	8.114	6.959	4.543	2.738	2.806	2.720	1.710	1.770	2.920	72.592
1970	6.686	10.655	13.248	22.986	8.951	13.671	9.837	7.832	6.414	5.695	3.810	3.150	112.933
1971	6.811	12.254	27.148	25.932	21.580	15.253	9.709	7.817	6.400	5.655	3.140	1.580	143.279
1972	2.282	10.500	7.278	9.808	21.780	14.679	9.801	7.770	6.113	3.420	5.170	4.549	103.151
1973	6.857	12.103	22.318	25.932	14.880	12.501	9.201	7.492	5.488	5.603	4.350	1.750	128.475
1974	2.944	12.331	25.281	24.578	20.112	13.398	9.720	7.730	5.709	3.100	1.430	4.549	130.882
1975	5.838	11.291	27.384	23.282	20.958	15.197	9.758	7.832	6.402	5.552	3.000	1.590	138.083
1976	6.926	9.940	18.528	22.618	20.670	13.975	8.682	6.745	3.998	1.950	1.380	4.507	119.919
1977	5.593	5.681	13.823	25.932	19.574	14.208	9.627	7.672	5.760	4.020	4.110	4.436	120.434
1978	7.063	12.141	19.219	15.798	9.725	9.800	7.182	6.965	4.330	2.480	5.223	4.529	104.454
1979	6.975	11.305	18.555	24.212	20.503	12.232	4.024	3.650	2.840	1.340	1.000	4.472	111.108
1980	3.149	12.222	23.570	21.975	18.519	9.463	3.655	3.177	5.794	5.110	4.950	4.534	116.117
1981	6.341	10.702	8.075	17.994	4.814	13.848	8.751	6.855	3.770	2.060	1.120	0.860	85.191
1982	7.051	7.459	5.392	5.150	2.580	4.129	3.655	6.855	5.862	3.670	5.209	3.650	60.662
1983	4.851	12.355	21.106	25.932	18.889	15.226	9.664	7.441	6.290	5.758	5.255	4.549	137.318
1984	7.004	9.700	13.316	9.951	21.780	14.896	6.338	3.198	2.340	1.390	0.720	0.660	91.293
1985	6.533	5.020	15.852	24.133	18.333	13.508	9.047	7.115	5.220	3.290	1.580	1.040	110.670
1986	2.540	2.939	20.201	9.913	6.383	14.081	9.524	7.653	6.041	3.680	5.255	4.549	92.760
1987	7.063	12.126	14.698	17.803	19.979	14.328	7.845	5.080	5.962	5.627	5.201	4.040	119.752
1988	7.063	10.720	27.027	12.062	21.270	14.722	9.307	7.410	6.350	5.728	3.650	1.980	127.290
1989	6.193	12.355	25.169	20.429	11.954	11.124	7.423	6.305	3.410	1.630	2.540	2.040	110.573
1990	5.294	9.278	21.530	25.932	20.732	15.214	9.472	7.791	6.414	5.758	5.247	4.143	136.805
1991	4.481	3.978	17.528	15.257	17.185	6.700	3.158	2.828	1.830	1.010	0.490	0.440	74.884
1992	2.130	9.641	22.916	9.350	15.628	14.746	8.806	7.166	5.150	2.550	2.620	2.950	103.653
1993	7.063	11.346	26.123	20.330	14.060	15.202	8.640	4.654	2.770	1.510	1.000	0.690	113.387
1994	6.878	10.328	25.861	19.433	4.763	8.682	5.429	5.323	4.390	2.400	1.380	0.920	95.785
1995	7.028	12.319	27.384	25.713	21.780	15.280	9.799	7.820	6.393	5.738	5.221	2.520	146.994
1996	7.002	8.655	22.309	24.015	16.233	15.280	9.850	7.832	6.414	5.758	5.255	4.543	133.146
1997	7.025	12.351	14.568	22.278	16.663	13.187	6.294	5.446	3.936	1.960	0.980	1.250	105.938
1998	6.661	11.065	26.959	20.622	8.734	5.871	4.591	5.214	4.490	2.520	3.060	2.500	102.289
1999	5.979	4.726	27.384	25.324	21.780	15.259	9.850	7.832	6.410	5.646	2.760	3.560	136.511
2000	6.973	12.355	26.029	16.012	15.273	11.764	6.564	6.098	4.080	2.690	1.740	4.220	113.

MAR = 267,285
 S.Dev. = 142,976
 CV = 0,535
 Q75 = 5,470
 Q75/MMF = 0,246
 BFI Index = 0,380
 CV(JJA+JFM) Index = 2,321

Ecological Category = C

Total IFR = 89,260 (33,40 %MAR)
 Maint. Lowflow = 66,502 (24,88 %MAR)
 Drought Lowflow = 35,998 (13,47 %MAR)
 Maint. Highflow = 22,758 (8,51 %MAR)

Monthly Distributions (Mill. cu. m.)
 Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
			CV	Maint.	Drought	Maint.	
Oct	15,857	17,471	1,102	3,910	1,985	1,244	5,154
Nov	31,929	28,346	0,888	4,926	2,071	2,926	7,852
Dec	39,171	28,700	0,733	7,418	4,618	5,537	12,954
Jan	47,807	83,064	1,737	7,987	4,557	4,978	12,965
Feb	44,379	45,768	1,031	7,226	3,770	4,264	11,490
Mar	33,259	35,156	1,057	7,295	3,812	2,471	9,766
Apr	18,870	13,131	0,696	5,915	2,577	1,164	7,079
May	10,908	6,381	0,585	5,402	2,674	0,136	5,537
Jun	7,237	4,710	0,651	4,596	2,456	0,000	4,596
Jul	6,300	9,170	1,456	4,463	2,559	0,001	4,464
Aug	4,656	4,805	1,032	3,919	2,524	0,004	3,923
Sep	6,913	11,612	1,680	3,446	2,395	0,035	3,481

Rule curve

Desktop Version 2, Generated on 2015-04-20
 Summary of IFR rule curves (Desktop Version 2) for :
 Total Runoff : Ni3
 Regional Type : N.Natal
 Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	6.756	6.712	6.611	6.403	6.016	5.377	4.476	3.438	2.551	1.720
Nov	10.357	10.298	10.174	9.929	9.471	8.670	7.397	5.627	3.655	2.414
Dec	21.102	19.626	18.321	17.091	15.790	13.599	11.897	9.532	6.897	5.238
Jan	20.808	19.471	18.275	17.126	15.874	13.760	12.002	9.560	6.837	5.124
Feb	18.358	17.208	16.174	15.168	14.058	12.181	10.568	8.328	5.831	4.259
Mar	13.121	13.053	12.913	12.636	12.116	11.208	9.764	7.758	5.523	4.116
Apr	9.376	9.312	9.168	8.869	8.311	7.393	6.097	4.604	3.328	2.735
May	7.476	7.431	7.327	7.113	6.713	6.055	5.126	4.057	3.143	2.718
Jun	6.226	6.190	6.109	5.940	5.625	5.107	4.330	3.534	2.700	1.830
Jul	6.049	6.015	5.940	5.640	4.250	3.540	2.770	2.480	1.860	1.010
Aug	5.312	5.290	5.030	4.110	3.650	3.000	2.540	1.580	1.230	0.720
Sep	4.713	4.691	4.641	4.537	4.344	3.650	2.960	2.260	1.340	0.480

Reserve Flows without High Flows										
Oct	5.297	5.265	5.194	5.045	4.769	4.314	3.672	2.932	2.300	1.720
Nov	6.866	6.831	6.757	6.610	6.335	5.854	5.090	4.029	2.846	2.101
Dec	10.349	10.306	10.217	10.042	9.713	9.139	8.226	6.957	5.543	4.653
Jan	11.140	11.091	10.989	10.787	10.410	9.750	8.702	7.244	5.620	4.598
Feb	10.077	10.030	9.933	9.739	9.378	8.746	7.741	6.345	4.788	3.809
Mar	10.172	10.125	10.027	9.832	9.467	8.830	7.816	6.409	4.839	3.852
Apr	8.010	7.959	7.841	7.598	7.145	6.398	5.344	4.131	3.093	2.611
May	7.317	7.273	7.173	6.965	6.577	5.939	5.039	4.002	3.115	2.703
Jun	6.226	6.190	6.109	5.940	5.625	5.107	4.330	3.534	2.700	1.830
Jul	6.047	6.014	5.939	5.640	4.250	3.540	2.770	2.480	1.860	1.010
Aug	5.312	5.285	5.030	4.110	3.650	3.000	2.540	1.580	1.230	0.720
Sep	4.672	4.650	4.601	4.499	4.309	3.650	2.960	2.260	1.340	0.480

Natural Duration curves										
Oct	35.770	22.670	17.480	13.560	9.940	8.830	7.200	5.080	3.580	1.720
Nov	70.450	48.310	38.160	27.670	24.410	19.360	15.340	12.110	8.960	3.550
Dec	77.250	53.580	43.780	36.610	32.750	27.610	21.890	17.500	15.160	7.140
Jan	79.750	61.060	46.400	37.790	30.830	26.850	23.090	20.840	16.480	6.410
Feb	101.970	62.110	43.250	34.080	26.470	22.910	20.580	17.230	14.550	8.260
Mar	58.910	44.640	36.000	32.010	30.290	22.370	18.230	15.850	11.200	7.840
Apr	30.720	26.570	20.990	18.720	16.860	15.450	13.300	10.060	7.110	4.860
May	21.840	16.110	12.350	10.250	9.160	8.260	7.410	5.620	4.640	3.270
Jun	14.060	10.230	8.410	7.030	6.110	5.150	4.330	3.760	2.700	1.830
Jul	10.940	7.270	6.340	5.640	4.250	3.540	2.770	2.480	1.860	1.010
Aug	10.660	5.660	5.030	4.110	3.650	3.000	2.540	1.580	1.230	0.720
Sep	12.460	8.480	6.160	5.380	4.440	3.650	2.960	2.260	1.340	0.480

Hydrological time series

Total Runoff : Ni3

Desktop (Version 2) Modified Flow Data for Ecological Category C

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	6.742	10.248	17.619	6.344	8.358	13.113	8.985	6.882	5.215	2.670	1.380	4.592	92.147
1921	6.642	10.357	21.102	16.131	9.994	6.468	3.186	2.934	3.260	2.190	5.303	4.475	92.042
1922	6.611	10.357	18.321	17.383	13.926	7.853	4.739	4.012	2.650	1.620	0.940	0.480	88.893
1923	4.807	5.385	20.456	9.849	14.687	12.909	8.992	7.249	5.649	2.830	1.860	4.703	99.376
1924	6.016	10.161	21.102	13.507	6.886	13.121	9.376	7.432	6.088	5.864	3.950	4.707	108.208
1925	6.355	5.708	9.166	11.290	6.979	13.002	6.303	4.985	4.958	2.730	1.240	4.643	77.358

1926	4.304	3.269	9.001	5.920	14.763	12.436	6.877	4.374	2.610	4.620	3.730	2.560	74.463
1927	6.664	8.634	15.317	20.789	11.881	5.772	3.115	2.718	1.390	0.690	1.220	4.449	82.637
1928	5.377	6.554	9.111	5.415	4.457	13.121	9.266	7.315	6.147	6.001	3.610	4.713	81.085
1929	6.756	10.183	14.895	18.712	15.168	10.166	4.743	3.601	2.470	1.540	2.400	2.800	93.435
1930	2.030	5.071	9.532	5.408	5.451	5.370	4.604	4.215	2.520	1.860	1.230	0.530	47.822
1931	1.720	2.414	5.858	5.124	17.208	12.968	9.039	7.464	6.219	5.952	2.910	2.260	79.135
1932	4.321	9.929	18.582	18.073	16.083	11.156	5.711	4.367	2.700	2.770	2.260	1.340	97.291
1933	2.709	10.356	21.102	20.808	13.435	13.010	9.356	7.476	6.226	6.049	5.317	4.693	120.538
1934	3.438	10.037	19.630	14.074	10.940	7.233	4.304	6.604	5.776	3.540	2.060	1.550	89.185
1935	2.351	2.414	6.765	19.689	15.103	13.012	8.311	7.476	6.226	5.972	2.990	4.332	94.640
1936	6.488	10.345	10.689	20.808	18.358	12.831	7.881	5.774	3.534	2.080	1.140	4.668	104.598
1937	6.101	3.622	16.710	10.071	9.357	6.891	9.376	7.438	6.190	6.039	5.276	3.830	90.903
1938	6.749	8.670	19.888	20.225	18.358	13.121	9.306	7.404	6.123	6.039	5.309	4.713	125.903
1939	6.523	10.357	17.361	18.777	8.639	11.216	9.022	7.431	6.226	6.049	5.305	4.667	111.574
1940	5.168	9.471	21.102	15.130	13.314	8.680	9.035	7.154	4.179	3.530	2.860	3.400	103.022
1941	3.450	6.947	9.858	13.469	11.242	12.851	6.557	7.417	6.225	6.038	4.920	4.537	93.513
1942	6.465	10.238	19.278	9.279	9.091	11.208	9.376	7.476	6.226	6.049	5.317	4.713	104.716
1943	6.712	10.303	18.617	18.118	18.357	12.215	5.821	3.530	6.157	6.004	3.100	4.708	113.644
1944	6.743	6.658	5.659	14.036	5.511	13.095	8.329	6.640	5.958	5.770	5.000	4.180	87.579
1945	2.884	2.504	5.238	13.092	16.192	12.670	9.376	5.862	5.204	4.250	3.910	4.678	85.862
1946	6.105	10.298	17.742	14.573	15.605	9.482	7.432	6.746	4.470	2.640	1.440	2.430	98.962
1947	5.820	10.055	16.279	19.503	18.358	13.121	9.376	7.223	6.026	1.890	5.030	4.664	117.345
1948	5.578	10.253	13.029	20.808	16.174	12.630	9.312	7.440	6.151	4.820	2.260	2.890	111.345
1949	5.883	9.534	18.866	16.775	11.655	12.986	9.359	7.418	6.155	6.001	5.309	4.667	114.608
1950	3.294	3.704	15.790	18.286	10.940	12.913	9.372	6.940	6.037	5.980	5.317	4.710	103.282
1951	6.740	6.540	15.423	5.839	6.378	4.192	3.328	3.364	5.021	4.010	4.010	3.480	68.325
1952	4.152	7.411	17.215	7.681	10.161	9.200	8.809	5.198	4.997	4.500	3.650	3.860	86.833
1953	3.886	8.186	12.579	10.682	15.199	12.596	9.355	7.476	6.197	6.032	4.460	4.362	101.010
1954	6.399	8.976	13.423	20.417	18.281	13.121	6.979	5.686	6.034	6.038	5.290	4.627	115.270
1955	5.018	5.627	17.733	16.001	18.358	13.099	7.901	6.713	6.013	5.050	4.110	4.562	110.186
1956	6.712	10.010	18.202	13.909	15.884	12.116	8.979	7.212	5.940	6.049	5.317	4.713	115.041
1957	6.756	10.037	6.709	19.471	15.681	7.758	8.311	6.937	4.780	2.800	1.950	4.430	95.620
1958	4.476	10.312	17.091	17.577	14.247	6.819	2.766	6.377	5.258	3.740	4.020	4.579	97.263
1959	4.561	9.114	16.093	6.837	15.829	11.472	9.197	7.332	5.231	2.680	3.530	4.582	96.458
1960	6.440	10.357	21.102	17.623	14.058	10.230	9.315	7.351	6.182	6.028	5.309	4.240	118.234
1961	5.550	9.472	12.081	9.560	6.971	7.486	4.262	4.904	4.270	3.680	3.130	3.410	74.776
1962	3.873	10.315	19.466	17.090	10.389	10.951	4.808	2.814	6.226	6.049	5.317	4.704	102.001
1963	5.590	9.707	8.671	19.250	11.668	4.116	3.819	3.015	3.365	3.630	3.750	3.270	79.850
1964	6.756	10.072	17.769	12.002	10.568	4.473	2.870	2.934	3.897	3.990	3.080	4.449	82.860
1965	3.165	3.105	5.416	16.332	16.655	5.439	2.799	3.494	3.534	3.190	2.700	3.120	68.950
1966	3.728	2.686	8.011	11.335	17.850	12.986	8.830	7.229	6.042	5.640	4.800	4.344	93.481
1967	2.551	10.057	14.323	5.558	4.259	8.962	5.445	5.126	5.625	5.820	5.254	4.591	77.574
1968	2.348	5.376	6.897	11.617	4.845	13.121	9.376	7.468	6.197	5.730	2.670	4.641	79.924
1969	6.756	9.566	14.630	7.144	6.261	4.450	2.735	2.798	2.720	1.710	1.770	2.920	63.460
1970	6.403	8.997	10.257	18.010	7.750	11.821	9.363	7.476	6.226	5.979	3.810	3.150	99.243
1971	6.521	10.276	20.871	20.808	18.162	13.099	9.244	7.462	6.214	5.936	3.140	1.580	123.312
1972	2.272	8.873	6.498	8.301	18.358	12.636	9.330	7.419	5.940	3.420	5.170	4.713	92.929
1973	6.564	10.155	16.528	20.808	12.181	10.876	8.770	7.160	5.345	5.879	4.350	1.750	110.365
1974	2.892	10.338	19.079	19.492	16.736	11.601	9.254	7.382	5.555	3.100	1.430	4.713	111.571
1975	5.607	9.506	21.102	18.275	17.552	13.053	9.290	7.476	6.215	5.790	3.000	1.590	118.457
1976	6.628	8.425	13.582	17.682	17.272	12.066	8.285	6.465	3.925	1.950	1.380	4.667	102.327
1977	5.377	5.018	10.619	20.808	16.227	12.255	9.168	7.327	5.604	4.020	4.110	4.590	105.122
1978	6.756	10.186	14.115	12.392	8.328	8.695	6.884	6.669	4.330	2.480	5.284	4.691	90.809
1979	6.674	9.517	13.599	19.144	17.112	10.659	3.935	3.584	2.840	1.340	1.000	4.629	94.033
1980	3.085	10.251	17.540	17.126	15.268	8.423	3.591	3.143	5.635	5.110	4.950	4.697	98.818
1981	6.079	9.035	7.000	13.914	4.658	11.964	8.350	6.567	3.708	2.060	1.120	0.860	75.315
1982	6.746	6.440	5.310	5.124	2.580	4.116	3.591	6.567	5.700	3.670	5.269	3.650	58.763
1983	4.682	10.357	15.581	20.808	15.598	13.077	9.202	7.113	6.109	6.049	5.317	4.713	118.604
1984	6.701	8.233	10.300	8.399	18.358	12.810	6.097	3.163	2.340	1.390	0.720	0.660	79.171
1985	6.260	4.489	11.897	19.069	15.106	11.689	8.626	6.809	5.145	3.290	1.580	1.040	94.999
1986	2.514	2.824	14.878	8.373	5.831	12.152	9.071	7.310	5.871	3.680	5.317	4.713	82.533
1987	6.756	10.174	11.170	13.760	16.609	12.351	7.504	4.915	5.796	5.906	5.261	4.040	104.242
1988	6.756	9.049	20.753	9.840	17.857	12.670	8.869	7.083	6.166	6.015	3.650	1.980	110.689
1989	5.941	10.357	18.974	15.874	9.994	9.764	7.109	6.055	3.365	1.630	2.540	2.040	93.644
1990	5.097	7.895	15.911	20.808	17.333	13.068	9.023	7.438	6.226	6.049	5.308	4.270	118.425
1991	4.334	3.655	12.952	12.022	14.130	6.192	3.127	2.818	1.830	1.010	0.490	0.440	63.001
1992	2.130	8.186	16.997	7.988	12.813	12.689	8.401	6.856	5.107	2.550	2.620	2.950	89.287
1993	6.756	9.550	19.878	15.794	11.568	13.057	8.246	4.518	2.770	1.510	1.000	0.900	95.337
1994	6.583	8.735	19.626	15.072	4.619	7.792	5.248	5.141	4.390	2.400	1.380	0.920	81.905
1995	6.724	10.328	21.102	20.593	18.358	13.121	9.328	7.465	6.207	6.026	5.282	2.520	127.054
1996	6.700	7.397	16.521	18.957	13.325	13.121	9.376	7.476	6.226	6.049	5.317	4.706	115.170
1997	6.721	10.354	11.088	17.387	13.688	11.430	6.055	5.255	3.865	1.960	0.980	1.250	90.035
1998	6.380	9.325	20.687	16.030	7.588	5.523	4.465	5.040	4.490	2.520	3.060	2.500	87.606
1999	5.740	4.254	21.102	20.213	18.358	13.104	9.376	7.476	6.223	5.926	2.760	3.560	118.092
2000	6.672	10.357	19.787	12.538	12.513	10.281	6.308	5.862	4.024	2.690	1.740	4.358	97.130
2001	6.510	10.357	12.187	10.712	5.218	4.720	3.032	2.764	1.900	5.940	5.301	4.529	73.170
2002	3.004	2.729	7.583	6.718	13.261	5.403	2.735	1.770	3.130	2.660	1.450	1.360	51.804
2003	1.280	5.681	5.238	13.401	17.074	12.953	7.393	4.057	2.380	6.028	5.291	2.960	83.737
2004	2.210	5.862	11.498	15.980	14.082	12.778	7.679	6.348	5.813	5.190	4.430	3.730	95.601
Mean	5.227	8.096	14.568	14.466	12.770	10.591	7.189	5.904	4.931	4.156	3.445	3.534	94.877

A.9. Ni3 – Category D

Summary table

Desktop Version 2, Generated on 2015-03-09

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni3

Annual Flows (Mill. cu. m or index values):

MAR = 267,285

S.Dev. = 142,976

CV = 0,535

Q75 = 5,470

Q75/MMF = 0,246

BFI Index = 0,380

CV(JJA+JFM) Index = 2,321

Ecological Category = D

Total IFR = 51,576 (19,30 %MAR)

Maint. Lowflow = 35,998 (13,47 %MAR)

Drought Lowflow = 35,998 (13,47 %MAR)

Maint. Highflow = 15,578 (5,83 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
			Maint.	Drought	Maint.	Maint.	
Oct	15,857	17,471	1,102	1,985	1,985	0,882	2,867
Nov	31,929	28,346	0,888	2,071	2,071	2,080	4,151
Dec	39,171	28,700	0,733	4,618	4,618	3,791	8,409
Jan	47,807	83,064	1,737	4,557	4,557	3,495	8,052
Feb	44,379	45,768	1,031	3,770	3,770	3,299	7,069
Mar	33,259	35,156	1,057	3,812	3,812	1,398	5,210
Apr	18,870	13,131	0,696	2,577	2,577	0,589	3,166
May	10,908	6,381	0,585	2,674	2,674	0,026	2,700
Jun	7,237	4,710	0,651	2,456	2,456	0,000	2,456
Jul	6,300	9,170	1,456	2,559	2,559	0,000	2,559
Aug	4,656	4,805	1,032	2,524	2,524	0,000	2,524
Sep	6,913	11,612	1,680	2,395	2,395	0,018	2,414

Rule curve

Desktop Version 2, Generated on 2015-03-09

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni3

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	4.936	4.908	4.846	4.718	4.479	4.086	3.531	2.892	2.345	1.720
Nov	7.232	7.195	7.118	6.966	6.682	6.186	5.397	4.301	3.079	2.310
Dec	16.569	15.554	14.650	13.787	12.858	11.292	10.020	8.254	6.285	5.047
Jan	15.873	14.935	14.097	13.293	12.419	10.945	9.726	8.031	6.143	4.954
Feb	13.923	13.041	12.259	11.516	10.721	9.383	8.316	6.834	5.181	4.142
Mar	9.685	9.642	9.553	9.378	9.049	8.474	7.561	6.292	4.878	3.988
Apr	5.617	5.589	5.524	5.391	5.142	4.732	4.154	3.488	2.919	2.655
May	4.996	4.974	4.924	4.820	4.627	4.308	3.858	3.340	2.897	2.691
Jun	4.555	4.535	4.489	4.395	4.220	3.932	3.525	3.056	2.655	1.830
Jul	4.745	4.725	4.677	4.579	4.250	3.540	2.770	2.480	1.860	1.010
Aug	4.681	4.661	4.614	4.110	3.650	3.000	2.540	1.580	1.230	0.720
Sep	4.468	4.449	4.404	4.311	4.138	3.650	2.960	2.260	1.340	0.480

Reserve Flows without High Flows

Oct	3.681	3.665	3.628	3.552	3.411	3.178	2.849	2.470	2.146	1.720
Nov	4.130	4.115	4.083	4.020	3.902	3.695	3.367	2.912	2.404	2.084
Dec	9.206	9.172	9.101	8.961	8.697	8.238	7.507	6.491	5.359	4.646
Jan	9.086	9.052	8.982	8.843	8.583	8.130	7.408	6.406	5.288	4.585
Feb	7.516	7.488	7.430	7.315	7.101	6.725	6.128	5.299	4.375	3.793
Mar	7.600	7.572	7.514	7.398	7.180	6.801	6.197	5.359	4.424	3.836
Apr	4.779	4.758	4.711	4.612	4.428	4.126	3.699	3.207	2.786	2.591
May	4.959	4.938	4.888	4.786	4.595	4.281	3.838	3.328	2.891	2.688
Jun	4.555	4.535	4.489	4.395	4.220	3.932	3.525	3.056	2.655	1.830
Jul	4.745	4.725	4.677	4.579	4.250	3.540	2.770	2.480	1.860	1.010
Aug	4.681	4.661	4.614	4.110	3.650	3.000	2.540	1.580	1.230	0.720
Sep	4.442	4.423	4.379	4.287	4.116	3.650	2.960	2.260	1.340	0.480

Natural Duration curves

Oct	35.770	22.670	17.480	13.560	9.940	8.830	7.200	5.080	3.580	1.720
Nov	70.450	48.310	38.160	27.670	24.410	19.360	15.340	12.110	8.960	3.550
Dec	77.250	53.580	43.780	36.610	32.750	27.610	21.890	17.500	15.160	7.140
Jan	79.750	61.060	46.400	37.790	30.830	26.850	23.090	20.840	16.480	6.410
Feb	101.970	62.110	43.250	34.080	26.470	22.910	20.580	17.230	14.550	8.260
Mar	58.910	44.640	36.000	32.010	30.290	22.370	18.230	15.850	11.200	7.840
Apr	30.720	26.570	20.990	18.720	16.860	15.450	13.300	10.060	7.110	4.860
May	21.840	16.110	12.350	10.250	9.160	8.260	7.410	5.620	4.640	3.270
Jun	14.060	10.230	8.410	7.030	6.110	5.150	4.330	3.760	2.700	1.830
Jul	10.940	7.270	6.340	5.640	4.250	3.540	2.770	2.480	1.860	1.010
Aug	10.660	5.660	5.030	4.110	3.650	3.000	2.540	1.580	1.230	0.720
Sep	12.460	8.480	6.160	5.380	4.440	3.650	2.960	2.260	1.340	0.480

Hydrological time series

Total Runoff : Ni3
 Desktop (Version 2) Modified Flow Data for Ecological Category D

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	4.927	7.164	14.159	5.801	6.853	9.679	5.443	4.708	3.992	2.670	1.380	4.360	71.137
1921	4.865	7.232	16.569	12.599	7.936	5.476	2.856	2.796	2.922	2.190	4.671	4.256	74.367
1922	4.846	7.232	14.650	13.473	10.627	6.352	3.548	3.318	2.633	1.620	0.940	0.480	69.720
1923	3.735	4.151	16.126	8.232	11.171	9.551	5.445	4.886	4.234	2.830	1.860	4.460	76.680
1924	4.479	7.110	16.569	10.770	5.880	9.685	5.617	4.975	4.478	4.630	3.950	4.463	82.604
1925	4.689	4.351	7.980	9.232	5.941	9.609	4.246	3.790	3.849	2.730	1.240	4.406	62.062
1926	3.425	2.840	7.857	5.507	11.225	9.251	4.502	3.493	2.610	4.445	3.730	2.560	61.447
1927	4.879	6.164	12.520	15.860	9.184	5.035	2.824	2.691	1.390	0.690	1.220	4.232	66.689
1928	4.086	4.875	7.939	5.156	4.272	9.685	5.568	4.918	4.510	4.715	3.610	4.468	63.804
1929	4.936	7.124	12.218	14.403	11.516	7.815	3.550	3.119	2.470	1.540	2.400	2.800	73.892
1930	2.030	3.957	8.254	5.151	4.930	4.781	3.488	3.417	2.520	1.860	1.230	0.530	42.148
1931	1.720	2.310	5.510	4.954	13.041	9.588	5.467	4.990	4.551	4.685	2.910	2.260	61.986
1932	3.435	6.966	14.831	13.956	12.191	8.441	3.982	3.490	2.655	2.770	2.260	1.340	76.319
1933	2.443	7.231	16.569	15.873	10.278	9.615	5.608	4.996	4.555	4.745	4.681	4.451	91.045
1934	2.892	7.033	15.557	11.164	8.562	5.960	3.354	4.573	4.304	3.540	2.060	1.550	70.549
1935	2.222	2.310	6.187	15.088	11.469	9.615	5.142	4.996	4.555	4.698	2.990	4.127	73.399
1936	4.770	7.224	9.118	15.873	13.923	9.501	4.950	4.172	3.056	2.080	1.140	4.428	80.237
1937	4.532	3.059	13.515	8.386	7.515	5.744	5.617	4.978	4.535	4.739	4.650	3.830	71.100
1938	4.931	6.186	15.734	15.464	13.923	9.685	5.585	4.961	4.497	4.739	4.675	4.468	94.850
1939	4.792	7.232	13.978	14.449	7.039	8.479	5.459	4.974	4.555	4.745	4.672	4.428	84.803
1940	3.958	6.682	16.569	11.901	10.191	6.875	5.465	4.840	3.415	3.530	2.860	3.400	79.686
1941	2.899	5.119	8.498	10.743	8.762	9.514	4.360	4.968	4.554	4.739	4.605	4.311	73.071
1942	4.756	7.158	15.313	7.837	7.338	8.474	5.617	4.996	4.555	4.745	4.681	4.468	79.940
1943	4.909	7.198	14.856	13.987	13.922	9.112	4.031	3.085	4.516	4.718	3.100	4.464	87.897
1944	4.927	4.940	5.361	11.138	4.970	9.668	5.150	4.591	4.405	4.601	4.612	4.045	68.407
1945	2.550	2.366	5.047	10.482	12.273	9.400	5.617	4.214	3.986	4.250	3.910	4.438	68.532
1946	4.534	7.195	14.245	11.512	11.835	7.383	4.750	4.643	3.601	2.640	1.440	2.430	76.207
1947	4.359	7.044	13.207	14.958	13.923	9.685	5.617	4.873	4.444	1.890	4.614	4.425	89.038
1948	4.210	7.167	10.866	15.873	12.259	9.374	5.589	4.978	4.513	4.472	2.260	2.890	84.451
1949	4.398	6.722	15.029	13.048	9.035	9.599	5.609	4.968	4.515	4.715	4.676	4.427	86.741
1950	2.803	3.109	12.858	14.105	8.562	9.553	5.615	4.737	4.449	4.703	4.681	4.466	79.641
1951	4.926	4.866	12.596	5.451	5.543	4.036	2.919	3.004	3.884	4.010	4.010	3.480	58.725
1952	3.331	5.406	13.875	6.728	8.046	7.204	5.364	3.893	3.870	4.430	3.650	3.860	69.658
1953	3.167	5.886	10.530	8.810	11.538	9.353	5.607	4.996	4.538	4.735	4.460	4.155	77.776
1954	4.716	6.376	11.161	15.599	13.863	9.685	4.547	4.129	4.448	4.739	4.661	4.392	88.314
1955	3.865	4.301	14.239	12.508	13.923	9.671	4.959	4.627	4.436	4.502	4.110	4.334	85.474
1956	4.908	7.016	14.567	11.049	12.043	9.049	5.440	4.868	4.395	4.745	4.681	4.468	87.230
1957	4.936	7.033	6.145	14.935	11.892	6.292	5.142	4.735	3.770	2.800	1.950	4.215	73.845
1958	3.311	7.204	13.787	13.609	10.857	5.698	2.668	4.464	4.016	3.740	4.020	4.349	77.942
1959	3.584	6.461	13.075	6.143	12.003	8.641	5.537	4.926	4.001	2.680	3.530	4.351	74.931
1960	4.741	7.232	16.569	13.641	10.721	7.856	5.590	4.935	4.530	4.732	4.675	4.066	89.289
1961	4.192	6.683	10.158	8.031	5.936	6.120	3.336	3.750	3.478	3.680	3.130	3.410	61.904
1962	3.160	7.205	15.443	13.268	8.197	8.312	3.579	2.738	4.555	4.745	4.681	4.461	80.345
1963	4.217	6.829	7.611	14.780	9.043	3.988	3.138	2.835	2.962	3.630	3.750	3.270	66.053
1964	4.936	7.055	14.264	9.726	8.316	4.214	2.715	2.796	3.258	3.990	3.080	4.232	68.581
1965	2.723	2.738	5.180	12.739	12.621	4.825	2.683	3.067	3.056	3.190	2.700	3.120	58.644
1966	3.070	2.479	7.117	9.263	13.532	9.599	5.373	4.877	4.452	4.579	4.595	4.138	73.076
1967	2.345	7.046	11.810	5.256	4.142	7.054	3.863	3.858	4.220	4.610	4.633	4.359	63.196
1968	2.220	4.146	6.285	9.458	4.529	9.685	5.617	4.992	4.538	4.544	2.670	4.404	63.088
1969	4.936	6.742	12.029	6.356	5.466	4.199	2.655	2.730	2.677	1.710	1.770	2.920	54.189
1970	4.718	6.389	8.795	13.912	6.451	8.862	5.611	4.996	4.555	4.702	3.810	3.150	75.952
1971	4.790	7.181	16.411	15.873	13.772	9.671	5.558	4.989	4.548	4.675	3.140	1.580	92.188
1972	2.173	6.312	5.987	7.158	13.923	9.378	5.596	4.968	4.395	3.420	4.625	4.468	72.405
1973	4.817	7.106	13.385	15.873	9.383	8.265	5.346	4.843	4.064	4.639	4.350	1.750	83.822
1974	2.555	7.220	15.176	14.950	12.683	8.723	5.563	4.950	4.181	3.100	1.430	4.468	84.999
1975	4.228	6.704	16.569	14.097	13.305	9.642	5.578	4.996	4.548	4.605	3.000	1.590	88.863
1976	4.857	6.034	11.279	13.682	13.090	9.018	5.130	4.506	3.274	1.950	1.380	4.427	78.627
1977	4.086	3.923	9.066	15.873	12.299	9.137	5.524	4.924	4.208	4.020	4.110	4.359	81.529
1978	4.936	7.125	11.660	9.996	6.834	6.885	4.505	4.605	3.525	2.480	4.656	4.449	71.655
1979	4.885	6.711	11.292	14.706	12.968	8.127	3.190	3.111	2.809	1.340	1.000	4.394	74.533
1980	2.674	7.166	14.104	13.293	11.589	6.713	3.036	2.897	4.226	4.510	4.607	4.454	79.268
1981	4.518	6.412	6.363	11.052	4.405	8.953	5.159	4.556	3.153	2.060	1.120	0.860	58.612
1982	4.929	4.805	5.100	4.954	2.580	3.988	3.036	4.556	4.262	3.670	4.645	3.650	50.175
1983	3.658	7.232	12.709	15.873	11.830	9.657	5.539	4.820	4.489	4.745	4.681	4.468	89.703
1984	4.902	5.915	8.827	7.226	13.923	9.488	4.154	2.907	2.340	1.390	0.720	0.660	62.453
1985	4.630	3.596	10.020	14.654	11.471	8.779	5.282	4.673	3.953	3.290	1.580	1.040	72.967
1986	2.322	2.565	12.206	7.208	5.181	9.072	5.481	4.916	4.357	3.680	4.681	4.468	66.137
1987	4.936	7.118	9.477	10.945	12.586	9.198	4.782	3.755	4.315	4.656	4.639	3.994	80.401
1988	4.936	6.421	16.330	8.226	13.538	9.400	5.391	4.806	4.521	4.725	3.650	1.980	83.922
1989	4.433	7.232	15.103	12.419	7.936	7.561	4.606	4.308	2.962	1.630	2.540	2.040	72.770
1990	3.913	5.706	12.945	15.873	13.137	9.651	5.459	4.978	4.555	4.745	4.675	4.077	89.715
1991	3.444	3.079	10.808	9.739	10.774	5.301	2.829	2.740	1.830	1.010	0.490	0.440	52.484
1992	2.130	5.886	13.720	6.941	9.834	9.411	5.182	4.696	3.932	2.550	2.620	2.950	69.852
1993	4.936	6.731	15.727	12.364	8.977	9.644	5.113	3.563	2.732	1.510	1.000	0.690	72.988
1994	4.829	6.227	15.554	11.860	4.380	6.313	3.775	3.865	3.557	2.400	1.380	0.920	65.060
1995	4.916	7.214	16.569	15.723	13.923	9.685	5.595	4.991	4.544	4.731	4.654	2.520	95.065
1996	4.901	5.397	13.381	14.575	10.199	9.685	5.617	4.996	4.555	4.745	4.681	4.462	87.194
1997	4.914	7.230	9.416	13.476	10.458	8.615	4.136	3.920	3.241	1.960	0.980	1.250	69.595
1998	4.704	6.592	16.284	12.528	6.344	4.878	3.426	3.816	3.612	2.520	3.060	2.500	70.264
1999	4.309	3.450	16.569	15.456	13.923	9.674	5.617	4.996	4.553	4.669	2.760	3.560	89.536
2000	4.884	7.232	15.665	10.097	9.620	7.888	4.248	4.214	3.329	2.690	1.740	4.151	75.758
2001	4.784	7.232	10.237	8.831	4.776	4.370	2.787	2.714	1.900	4.677	4.669	4.304	61.280
2002	2.625	2.505	6.798	6.061	10.								

MAR = 87,071
 S.Dev. = 46,576
 CV = 0,535
 Q75 = 1,780
 Q75/MMF = 0,245
 BFI Index = 0,380
 CV(JJA+JFM) Index = 2,322

Ecological Category = B

Total IFR = 28,006 (32,16 %MAR)
 Maint. Lowflow = 17,656 (20,28 %MAR)
 Drought Lowflow = 4,787 (5,50 %MAR)
 Maint. Highflow = 10,349 (11,89 %MAR)

Monthly Distributions (Mill. cu. m.)
 Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
			CV	Maint.	Drought	Maint.	
Oct	5,166	5,691	1,102	0,950	0,286	0,668	1,617
Nov	10,401	9,233	0,888	1,381	0,395	1,501	2,882
Dec	12,761	9,350	0,733	1,710	0,477	1,254	2,964
Jan	15,574	27,059	1,737	2,109	0,577	3,899	6,009
Feb	14,457	14,910	1,031	2,274	0,619	1,254	3,528
Mar	10,834	11,452	1,057	2,233	0,608	1,248	3,481
Apr	6,147	4,278	0,696	1,948	0,537	0,369	2,317
May	3,553	2,079	0,585	1,530	0,432	0,000	1,530
Jun	2,358	1,534	0,651	1,147	0,336	0,000	1,147
Jul	2,052	2,987	1,456	0,915	0,220	0,000	0,915
Aug	1,517	1,565	1,032	0,727	0,160	0,000	0,727
Sep	2,252	3,783	1,679	0,734	0,140	0,155	0,889

Rule curve

Desktop Version 2, Generated on 2015-03-30
 Summary of IFR rule curves (Desktop Version 2) for :
 Total Runoff : N4
 Regional Type : N.Natal
 Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.864	1.850	1.817	1.749	1.623	1.416	1.123	0.785	0.497	0.362
Nov	3.292	3.271	3.229	3.144	2.987	2.712	2.274	1.666	0.988	0.562
Dec	4.478	4.142	3.842	3.555	3.245	2.722	2.294	1.699	1.036	0.619
Jan	10.092	9.068	8.182	7.380	6.583	5.250	4.385	3.184	1.844	1.001
Feb	5.151	4.811	4.503	4.200	3.859	3.283	2.770	2.058	1.264	0.764
Mar	4.031	4.007	3.956	3.855	3.666	3.335	2.810	2.080	1.266	0.754
Apr	2.730	2.710	2.663	2.567	2.387	2.090	1.672	1.190	0.779	0.587
May	1.828	1.814	1.784	1.722	1.605	1.414	1.143	0.831	0.565	0.441
Jun	1.369	1.360	1.337	1.291	1.205	1.063	0.862	0.631	0.434	0.342
Jul	1.092	1.084	1.065	1.026	0.953	0.833	0.664	0.469	0.303	0.225
Aug	0.867	0.861	0.845	0.814	0.755	0.657	0.520	0.362	0.227	0.164
Sep	1.045	1.037	1.018	0.978	0.904	0.781	0.609	0.410	0.240	0.160

Reserve Flows without High Flows										
Oct	1.134	1.126	1.108	1.070	0.999	0.882	0.718	0.529	0.367	0.291
Nov	1.650	1.640	1.621	1.583	1.511	1.385	1.185	0.907	0.597	0.402
Dec	2.042	2.030	2.006	1.958	1.868	1.712	1.462	1.116	0.730	0.487
Jan	2.519	2.504	2.474	2.415	2.303	2.109	1.800	1.370	0.891	0.589
Feb	2.715	2.700	2.667	2.603	2.483	2.273	1.939	1.475	0.957	0.632
Mar	2.666	2.651	2.619	2.556	2.438	2.232	1.904	1.448	0.941	0.621
Apr	2.326	2.309	2.270	2.190	2.041	1.795	1.448	1.049	0.707	0.548
May	1.828	1.814	1.784	1.722	1.605	1.414	1.143	0.831	0.565	0.441
Jun	1.369	1.360	1.337	1.291	1.205	1.063	0.862	0.631	0.434	0.342
Jul	1.092	1.084	1.065	1.026	0.953	0.833	0.664	0.469	0.303	0.225
Aug	0.867	0.861	0.845	0.814	0.755	0.657	0.520	0.362	0.227	0.164
Sep	0.876	0.869	0.853	0.820	0.758	0.657	0.515	0.350	0.210	0.145

Natural Duration curves										
Oct	11.650	7.380	5.690	4.420	3.240	2.880	2.340	1.660	1.170	0.560
Nov	22.950	15.740	12.430	9.010	7.950	6.300	5.000	3.940	2.920	1.160
Dec	25.160	17.450	14.260	11.930	10.670	9.000	7.130	5.700	4.940	2.330
Jan	25.980	19.890	15.110	12.310	10.040	8.750	7.520	6.790	5.370	2.090
Feb	33.220	20.230	14.090	11.100	8.620	7.460	6.700	5.610	4.740	2.690
Mar	19.190	14.540	11.730	10.430	9.870	7.290	5.940	5.160	3.650	2.550
Apr	10.010	8.660	6.840	6.100	5.490	5.030	4.330	3.280	2.320	1.580
May	7.110	5.250	4.020	3.340	2.980	2.690	2.410	1.830	1.510	1.060
Jun	4.580	3.330	2.740	2.290	1.990	1.680	1.410	1.230	0.880	0.600
Jul	3.560	2.370	2.060	1.840	1.390	1.150	0.900	0.810	0.600	0.330
Aug	3.470	1.840	1.640	1.340	1.190	0.980	0.830	0.520	0.400	0.230
Sep	4.060	2.760	2.010	1.750	1.450	1.190	0.960	0.740	0.440	0.160

Hydrological time series

Total Runoff : N4													
Desktop (Version 2) Modified Flow Data for Ecological Category B													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	1.860	3.254	3.679	1.600	2.065	4.028	2.604	1.654	1.090	0.553	0.279	0.999	23.666
1921	1.827	3.292	4.478	6.748	2.587	1.610	0.732	0.504	0.565	0.409	0.864	0.956	24.571
1922	1.817	3.292	3.842	7.554	3.820	2.117	1.232	0.815	0.421	0.265	0.174	0.160	25.509
1923	1.230	1.590	4.331	3.322	4.053	3.954	2.610	1.762	1.210	0.679	0.408	1.042	26.190
1924	1.623	3.224	4.478	5.124	1.599	4.031	2.730	1.815	1.331	1.046	0.794	1.043	28.840
1925	1.733	1.694	1.614	4.027	1.630	3.988	1.742	1.103	1.023	0.627	0.227	1.018	20.427

1926	1.068	0.857	1.572	1.393	4.076	3.781	1.924	0.923	0.415	0.971	0.766	0.496	18.241
1927	1.834	2.701	3.132	10.077	3.189	1.356	0.709	0.441	0.342	0.220	0.227	0.943	25.171
1928	1.416	1.985	1.586	1.145	0.827	4.031	2.695	1.781	1.348	1.080	0.750	1.045	19.689
1929	1.864	3.232	3.029	8.502	4.200	2.955	1.232	0.692	0.389	0.249	0.497	0.565	27.404
1930	0.381	1.485	1.699	1.141	1.140	1.209	1.190	0.880	0.395	0.303	0.227	0.164	10.215
1931	0.362	0.562	0.775	1.001	4.811	3.976	2.621	1.824	1.367	1.068	0.637	0.410	19.415
1932	1.071	3.144	3.902	8.038	4.476	3.316	1.549	0.923	0.434	0.664	0.473	0.240	28.230
1933	0.548	3.291	4.478	10.092	3.671	3.991	2.724	1.828	1.369	1.092	0.867	1.038	34.990
1934	0.785	3.182	4.143	5.447	2.907	1.889	1.094	1.572	1.245	0.833	0.445	0.297	23.837
1935	0.432	0.562	1.003	9.235	4.179	3.992	2.387	1.828	1.369	1.073	0.651	0.899	27.609
1936	1.777	3.287	1.982	10.092	5.151	3.926	2.251	1.334	0.631	0.391	0.206	1.028	32.058
1937	1.651	0.974	3.464	3.435	2.385	1.764	2.730	1.817	1.360	1.090	0.857	0.810	22.336
1938	1.862	2.712	4.201	9.643	5.151	4.031	2.707	1.807	1.341	1.090	0.865	1.045	36.456
1939	1.788	3.292	3.618	8.549	2.158	3.338	2.616	1.814	1.369	1.092	0.864	1.028	31.527
1940	1.344	2.987	4.478	6.118	3.631	2.415	2.620	1.734	0.814	0.833	0.623	0.713	28.312
1941	0.785	2.120	1.780	5.105	2.997	3.933	1.822	1.811	1.369	1.089	0.842	0.978	24.632
1942	1.770	3.251	4.063	3.047	2.300	3.335	2.730	1.828	1.369	1.092	0.867	1.045	26.697
1943	1.850	3.273	3.910	8.071	5.151	3.703	1.581	0.675	1.350	1.081	0.671	1.044	32.360
1944	1.860	2.020	0.725	5.426	1.159	4.022	2.393	1.585	1.299	1.034	0.844	0.861	23.229
1945	0.607	0.593	0.619	4.921	4.508	3.867	2.730	1.356	1.090	0.953	0.786	1.032	23.064
1946	1.652	3.271	3.708	5.757	4.332	2.711	2.103	1.615	0.902	0.539	0.303	0.458	27.352
1947	1.560	3.187	3.361	9.093	5.151	4.031	2.730	1.754	1.315	0.319	0.845	1.027	34.374
1948	1.479	3.256	2.578	10.092	4.503	3.851	2.710	1.817	1.349	0.982	0.478	0.591	33.687
1949	1.577	3.009	3.968	7.155	3.117	3.982	2.725	1.811	1.350	1.080	0.865	1.028	31.667
1950	0.739	1.007	3.245	8.190	2.907	3.956	2.729	1.673	1.318	1.075	0.867	1.044	28.750
1951	1.859	1.980	3.157	1.356	1.445	0.786	0.779	0.624	1.036	0.908	0.802	0.730	15.463
1952	1.016	2.279	3.584	2.266	2.642	2.612	2.546	1.168	1.029	0.966	0.755	0.814	21.679
1953	0.931	2.545	2.464	3.736	4.209	3.838	2.723	1.828	1.362	1.088	0.830	0.911	26.464
1954	1.748	2.818	2.677	9.791	5.128	4.031	1.960	1.306	1.317	1.089	0.861	1.013	33.741
1955	1.299	1.666	3.706	6.664	5.151	4.024	2.258	1.605	1.311	0.995	0.814	0.988	30.481
1956	1.850	3.172	3.815	5.343	4.416	3.666	2.604	1.751	1.291	1.092	0.867	1.045	30.913
1957	1.864	3.181	0.989	9.068	4.355	2.080	2.387	1.670	0.983	0.671	0.430	0.936	28.615
1958	1.123	3.276	3.555	7.687	3.918	1.738	0.597	1.506	1.104	0.868	0.802	0.995	27.170
1959	1.152	2.865	3.316	1.844	4.400	3.431	2.673	1.786	1.095	0.553	0.736	0.998	24.849
1960	1.761	3.292	4.478	7.719	3.859	2.980	2.711	1.791	1.357	1.087	0.865	0.871	32.772
1961	1.473	2.987	2.340	3.184	1.630	1.981	1.079	1.079	0.838	0.858	0.676	0.713	18.836
1962	0.918	3.277	4.106	7.355	2.715	3.241	1.255	0.469	1.369	1.092	0.867	1.042	27.708
1963	1.485	3.069	1.487	8.903	3.120	0.754	0.937	0.526	0.584	0.848	0.766	0.685	23.163
1964	1.864	3.193	3.715	4.385	2.770	0.884	0.631	0.504	0.731	0.908	0.667	0.943	21.196
1965	0.692	0.798	0.664	6.878	4.647	1.233	0.608	0.667	0.631	0.766	0.579	0.650	18.814
1966	0.870	0.656	1.317	4.072	5.001	3.983	2.555	1.756	1.319	1.026	0.839	0.904	24.295
1967	0.497	3.188	2.894	1.215	0.764	2.514	1.462	1.143	1.205	1.036	0.852	0.999	17.769
1968	0.430	1.580	1.036	4.206	0.950	4.031	2.730	1.825	1.361	1.011	0.567	1.018	20.747
1969	1.864	3.021	2.966	1.997	1.406	0.876	0.587	0.463	0.453	0.281	0.396	0.600	14.910
1970	1.749	2.825	1.882	7.995	1.878	3.558	2.726	1.828	1.369	1.075	0.774	0.657	28.316
1971	1.787	3.264	4.426	10.092	5.093	4.023	2.688	1.824	1.366	1.065	0.676	0.305	36.609
1972	0.404	2.782	0.937	2.567	5.151	3.855	2.715	1.811	1.291	0.809	0.849	1.045	24.216
1973	1.801	3.222	3.420	10.092	3.283	3.213	2.534	1.735	1.127	1.049	0.825	0.329	32.632
1974	0.607	3.285	4.018	9.085	4.671	3.479	2.691	1.800	1.186	0.744	0.303	1.045	32.914
1975	1.491	2.999	4.478	8.182	4.913	4.007	2.703	1.828	1.366	1.036	0.657	0.305	33.965
1976	1.823	2.627	2.716	7.762	4.830	3.648	2.380	1.533	0.743	0.351	0.279	1.028	29.719
1977	1.416	1.456	1.973	10.092	4.518	3.716	2.663	1.784	1.200	0.913	0.814	0.998	31.543
1978	1.864	3.233	2.844	4.574	2.058	2.432	1.924	1.592	0.862	0.469	0.859	1.037	23.748
1979	1.837	3.003	2.722	8.824	4.782	3.136	0.974	0.692	0.510	0.238	0.179	1.014	27.911
1980	0.669	3.255	3.660	7.380	4.231	2.322	0.858	0.565	1.208	0.998	0.843	1.039	27.028
1981	1.644	2.837	1.065	5.343	0.891	3.611	2.401	1.566	0.674	0.385	0.200	0.196	20.811
1982	1.861	1.946	0.637	1.001	0.764	0.754	0.858	1.566	1.225	0.853	0.856	0.781	13.101
1983	1.191	3.292	3.195	10.092	4.330	4.016	2.674	1.722	1.337	1.092	0.867	1.045	34.854
1984	1.846	2.561	1.892	2.616	5.151	3.918	1.672	0.573	0.362	0.239	0.164	0.179	21.173
1985	1.702	1.275	2.294	8.767	4.181	3.509	2.487	1.634	1.072	0.784	0.362	0.212	28.281
1986	0.485	0.705	3.026	2.606	1.264	3.679	2.632	1.779	1.274	0.858	0.867	1.045	20.220
1987	1.864	3.229	2.110	5.250	4.633	3.750	2.129	1.084	1.251	1.057	0.853	0.838	28.048
1988	1.864	2.843	4.399	3.322	5.003	3.867	2.567	1.712	1.353	1.084	0.755	0.367	29.135
1989	1.595	3.292	3.993	6.583	2.587	2.810	2.003	1.414	0.584	0.265	0.520	0.377	26.023
1990	1.325	2.443	3.275	10.092	4.848	4.012	2.616	1.816	1.369	1.092	0.865	0.875	34.630
1991	1.078	0.988	2.559	4.400	3.883	1.505	0.713	0.469	0.342	0.225	0.160	0.140	16.462
1992	0.389	2.545	3.533	2.410	3.477	3.873	2.416	1.647	1.063	0.497	0.544	0.609	23.004
1993	1.864	3.014	4.199	6.532	3.088	4.008	2.367	0.966	0.472	0.243	0.179	0.179	27.111
1994	1.808	2.735	4.142	6.077	0.878	2.092	1.398	1.155	0.878	0.451	0.279	0.201	22.095
1995	1.854	3.282	4.478	9.926	5.151	4.031	2.715	1.824	1.364	1.086	0.858	0.486	37.057
1996	1.846	2.274	3.417	8.684	3.636	4.031	2.730	1.828	1.369	1.092	0.867	1.043	32.819
1997	1.853	3.290	2.092	7.558	3.750	3.416	1.658	1.180	0.717	0.367	0.177	0.232	26.291
1998	1.742	2.937	4.383	6.685	1.825	1.266	1.146	1.118	0.902	0.483	0.667	0.477	23.631
1999	1.531	1.195	4.478	9.635	5.151	4.025	2.730	1.828	1.369	1.062	0.603	0.756	34.362
2000	1.837	3.292	4.179	4.646	3.387	2.996	1.742	1.356	0.767	0.590	0.391	0.909	26.090
2001	1.784	3.292	2.368	3.758	1.068	0.973	0.681	0.455	0.345	1.065	0.864	0.975	17.628
2002	0.646	0.670	1.208	1.788	3.616	1.221	0.587	0.441	0.549	0.553	0.303	0.240	11.822
2003	0.362	1.687	0.619	5.071	4.771	3.971	2.090	0.831	0.363	1.087	0.861	0.609	22.322
2004	0.393	1.750	2.193	6.650	3.868	3.906	2.187	1.499	1.256	1.002	0.828	0.791	26.324

Mean 1.373 2.515 2.924 6.035 3.447 3.111 2.025 1.373 1.028 0.803 0.635 0.756 26.023

A.11. Ni4 – Category C

Summary table

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni4

Annual Flows (Mill. cu. m or index values):

MAR = 87,071

S.Dev. = 46,576

CV = 0,535

Q75 = 1,780

Q75/MMF = 0,245

BFI Index = 0,380

CV(JJA+JFM) Index = 2,322

Total IFR = 18,720 (21,50 %MAR)
 Maint. Lowflow = 10,265 (11,79 %MAR)
 Drought Lowflow = 4,787 (5,50 %MAR)
 Maint. Highflow = 8,456 (9,71 %MAR)

Monthly Distributions (Mill. cu. m.)
 Distribution Type : N.Natal

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows	High Flows	Total Flows	
				Maint.	Drought	Maint.	Maint.
Oct	5,166	5,691	1,102	0,569	0,286	0,545	1,115
Nov	10,401	9,233	0,888	0,806	0,395	1,226	2,033
Dec	12,761	9,350	0,733	0,986	0,477	1,025	2,011
Jan	15,574	27,059	1,737	1,205	0,577	3,186	4,391
Feb	14,457	14,910	1,031	1,295	0,619	1,025	2,320
Mar	10,834	11,452	1,057	1,273	0,608	1,020	2,292
Apr	6,147	4,278	0,696	1,117	0,537	0,302	1,418
May	3,553	2,079	0,585	0,888	0,432	0,000	0,888
Jun	2,358	1,534	0,651	0,677	0,336	0,000	0,677
Jul	2,052	2,987	1,456	0,550	0,220	0,000	0,550
Aug	1,517	1,565	1,032	0,447	0,160	0,000	0,447
Sep	2,252	3,783	1,679	0,451	0,140	0,127	0,578

Rule curve

Desktop Version 2, Generated on 2015-03-30
 Summary of IFR rule curves (Desktop Version 2) for :
 Total Runoff : Ni4
 Regional Type : N.Natal
 Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.411	1.401	1.378	1.330	1.241	1.094	0.886	0.647	0.442	0.347
Nov	2.587	2.572	2.540	2.476	2.358	2.150	1.820	1.362	0.852	0.530
Dec	3.365	3.093	2.854	2.632	2.400	2.011	1.722	1.320	0.873	0.591
Jan	7.868	7.035	6.318	5.677	5.054	4.014	3.384	2.509	1.534	0.921
Feb	3.796	3.522	3.278	3.047	2.799	2.381	2.046	1.580	1.061	0.734
Mar	2.991	2.974	2.939	2.869	2.738	2.510	2.146	1.641	1.079	0.725
Apr	1.867	1.854	1.826	1.768	1.659	1.481	1.229	0.939	0.691	0.575
May	1.203	1.195	1.178	1.144	1.080	0.974	0.824	0.652	0.505	0.437
Jun	0.918	0.912	0.900	0.873	0.825	0.745	0.632	0.502	0.391	0.339
Jul	0.745	0.740	0.729	0.705	0.661	0.589	0.487	0.370	0.270	0.223
Aug	0.605	0.601	0.592	0.572	0.534	0.473	0.387	0.287	0.202	0.163
Sep	0.759	0.754	0.740	0.713	0.663	0.579	0.462	0.326	0.210	0.156

Reserve Flows without High Flows										
Oct	0.771	0.767	0.756	0.735	0.694	0.627	0.533	0.425	0.332	0.289
Nov	1.124	1.119	1.107	1.085	1.043	0.970	0.854	0.692	0.512	0.399
Dec	1.375	1.368	1.354	1.327	1.275	1.185	1.042	0.844	0.622	0.483
Jan	1.680	1.672	1.655	1.621	1.558	1.447	1.271	1.027	0.755	0.584
Feb	1.806	1.797	1.779	1.742	1.674	1.555	1.366	1.103	0.810	0.626
Mar	1.774	1.766	1.748	1.712	1.645	1.528	1.342	1.084	0.797	0.616
Apr	1.512	1.503	1.482	1.438	1.357	1.223	1.034	0.816	0.630	0.543
May	1.203	1.195	1.178	1.144	1.080	0.974	0.824	0.652	0.505	0.437
Jun	0.918	0.912	0.900	0.873	0.825	0.745	0.632	0.502	0.391	0.339
Jul	0.745	0.740	0.729	0.705	0.661	0.589	0.487	0.370	0.270	0.223
Aug	0.605	0.601	0.592	0.572	0.534	0.473	0.387	0.287	0.202	0.163
Sep	0.611	0.606	0.596	0.575	0.536	0.471	0.380	0.275	0.185	0.143

Natural Duration curves										
Oct	11.650	7.380	5.690	4.420	3.240	2.880	2.340	1.660	1.170	0.560
Nov	22.950	15.740	12.430	9.010	7.950	6.300	5.000	3.940	2.920	1.160
Dec	25.160	17.450	14.260	11.930	10.670	9.000	7.130	5.700	4.940	2.330
Jan	25.980	19.890	15.110	12.310	10.040	8.750	7.520	6.790	5.370	2.090
Feb	33.220	20.230	14.090	11.100	8.620	7.460	6.700	5.610	4.740	2.690
Mar	19.190	14.540	11.730	10.430	9.870	7.290	5.940	5.160	3.650	2.550
Apr	10.010	8.660	6.840	6.100	5.490	5.030	4.330	3.280	2.320	1.580
May	7.110	5.250	4.020	3.340	2.980	2.690	2.410	1.830	1.510	1.060
Jun	4.580	3.330	2.740	2.290	1.990	1.680	1.410	1.230	0.880	0.600
Jul	3.560	2.370	2.060	1.840	1.390	1.150	0.900	0.810	0.600	0.330
Aug	3.470	1.840	1.640	1.340	1.190	0.980	0.830	0.520	0.400	0.230
Sep	4.060	2.760	2.010	1.750	1.450	1.190	0.960	0.740	0.440	0.160

Hydrological time series

Total Runoff : Ni4

Desktop (Version 2) Modified Flow Data for Ecological Category C

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	1.408	2.559	2.727	1.356	1.585	2.989	1.790	1.106	0.760	0.421	0.235	0.728	17.664
1921	1.385	2.587	3.365	5.183	1.926	1.317	0.662	0.472	0.465	0.334	0.603	0.698	18.997
1922	1.378	2.587	2.854	5.816	2.770	1.667	0.964	0.643	0.384	0.247	0.169	0.156	19.636
1923	0.962	1.305	3.246	2.610	2.940	2.938	1.794	1.166	0.828	0.496	0.316	0.757	19.358
1924	1.241	2.536	3.365	3.922	1.280	2.991	1.867	1.195	0.896	0.717	0.559	0.758	21.328
1925	1.319	1.383	1.263	3.123	1.300	2.961	1.271	0.803	0.722	0.465	0.202	0.741	15.553
1926	0.847	0.752	1.234	1.206	2.957	2.818	1.381	0.703	0.380	0.672	0.542	0.385	13.876
1927	1.390	2.142	2.316	7.856	2.319	1.141	0.648	0.437	0.339	0.220	0.202	0.690	19.700
1928	1.094	1.603	1.244	1.025	0.775	2.991	1.845	1.176	0.905	0.738	0.532	0.759	14.687
1929	1.411	2.542	2.239	6.576	3.047	2.246	0.964	0.575	0.366	0.237	0.372	0.432	21.007
1930	0.361	1.226	1.320	1.023	0.980	1.039	0.939	0.679	0.369	0.270	0.202	0.159	8.566
1931	0.347	0.530	0.696	0.921	3.522	2.953	1.801	1.200	0.917	0.731	0.460	0.326	14.404
1932	0.849	2.476	2.902	6.202	3.258	2.496	1.155	0.703	0.391	0.487	0.357	0.210	21.487
1933	0.479	2.587	3.365	7.868	2.662	2.963	1.863	1.203	0.918	0.745	0.605	0.754	26.011
1934	0.647	2.504	3.094	4.167	2.135	1.509	0.880	1.061	0.848	0.589	0.339	0.249	18.023

1935	0.397	0.530	0.850	7.170	3.032	2.964	1.659	1.203	0.918	0.734	0.469	0.659	20.584
1936	1.349	2.584	1.511	7.868	3.796	2.918	1.578	0.930	0.502	0.323	0.189	0.748	24.296
1937	1.260	0.841	2.564	2.692	1.794	1.423	1.867	1.196	0.912	0.744	0.599	0.599	16.490
1938	1.410	2.150	3.141	7.502	3.796	2.991	1.853	1.191	0.902	0.744	0.604	0.759	27.043
1939	1.358	2.587	2.680	6.614	1.645	2.511	1.798	1.195	0.918	0.745	0.604	0.748	23.402
1940	1.043	2.358	3.365	4.691	2.633	1.873	1.800	1.151	0.605	0.589	0.452	0.532	21.093
1941	0.647	1.704	1.375	3.908	2.194	2.923	1.319	1.193	0.917	0.744	0.589	0.713	18.227
1942	1.344	2.556	3.030	2.410	1.738	2.510	1.867	1.203	0.918	0.745	0.605	0.759	19.684
1943	1.401	2.573	2.909	6.229	3.795	2.764	1.174	0.566	0.907	0.738	0.482	0.758	24.296
1944	1.408	1.629	0.662	4.151	0.992	2.985	1.663	1.069	0.878	0.710	0.591	0.634	17.372
1945	0.521	0.553	0.591	3.774	3.282	2.877	1.867	0.942	0.760	0.661	0.554	0.750	17.134
1946	1.261	2.572	2.750	4.409	3.147	2.078	1.489	1.085	0.655	0.412	0.250	0.359	20.466
1947	1.196	2.509	2.486	7.055	3.796	2.991	1.867	1.162	0.887	0.280	0.592	0.746	25.565
1948	1.139	2.560	1.914	7.868	3.278	2.867	1.854	1.197	0.906	0.679	0.360	0.450	25.071
1949	1.208	2.374	2.954	5.502	2.272	2.957	1.863	1.193	0.907	0.738	0.604	0.747	23.319
1950	0.614	0.866	2.400	6.324	2.135	2.939	1.866	1.117	0.888	0.735	0.605	0.759	21.247
1951	1.408	1.599	2.335	1.179	1.179	0.747	0.691	0.538	0.730	0.634	0.564	0.544	12.148
1952	0.811	1.824	2.654	1.842	1.962	2.010	1.755	0.838	0.726	0.669	0.534	0.602	16.227
1953	0.750	2.025	1.837	2.911	3.054	2.857	1.862	1.203	0.913	0.743	0.582	0.668	19.404
1954	1.329	2.231	1.980	7.623	3.777	2.991	1.402	0.914	0.888	0.744	0.601	0.737	25.218
1955	1.011	1.362	2.748	5.118	3.796	2.986	1.582	1.080	0.885	0.687	0.572	0.720	22.545
1956	1.401	2.497	2.833	4.086	3.212	2.738	1.790	1.160	0.873	0.745	0.605	0.759	22.701
1957	1.411	2.504	0.841	7.035	3.165	1.641	1.659	1.115	0.700	0.492	0.330	0.685	21.578
1958	0.886	2.575	2.632	5.922	2.842	1.405	0.581	1.025	0.768	0.610	0.564	0.725	20.535
1959	0.907	2.266	2.453	1.534	3.199	2.576	1.832	1.179	0.763	0.421	0.523	0.727	18.379
1960	1.338	2.587	3.365	5.947	2.799	2.264	1.855	1.182	0.911	0.742	0.604	0.640	24.235
1961	1.134	2.358	1.753	2.509	1.300	1.573	0.871	0.789	0.619	0.604	0.485	0.532	14.527
1962	0.741	2.576	3.065	5.658	2.010	2.444	0.978	0.452	0.918	0.745	0.605	0.757	20.950
1963	1.143	2.419	1.177	6.900	2.274	0.725	0.786	0.484	0.476	0.598	0.542	0.514	18.036
1964	1.411	2.513	2.755	3.384	2.046	0.814	0.601	0.472	0.558	0.634	0.479	0.690	16.358
1965	0.581	0.708	0.621	5.285	3.391	1.056	0.588	0.562	0.502	0.549	0.424	0.490	14.757
1966	0.707	0.601	1.062	3.156	3.674	2.957	1.761	1.163	0.889	0.705	0.587	0.663	17.925
1967	0.442	2.510	2.139	1.076	0.734	1.942	1.102	0.824	0.825	0.711	0.596	0.728	13.629
1968	0.395	1.298	0.873	3.254	0.856	2.991	1.867	1.201	0.913	0.696	0.417	0.740	15.500
1969	1.411	2.383	2.193	1.645	1.154	0.809	0.575	0.449	0.402	0.257	0.309	0.456	12.042
1970	1.330	2.236	1.443	6.168	1.462	2.664	1.864	1.203	0.918	0.735	0.547	0.495	21.063
1971	1.357	2.566	3.323	7.868	3.749	2.986	1.841	1.200	0.916	0.729	0.485	0.255	27.273
1972	0.377	2.203	0.806	2.060	3.796	2.869	1.858	1.193	0.873	0.575	0.594	0.759	17.962
1973	1.367	2.535	2.530	7.868	2.381	2.425	1.748	1.151	0.781	0.719	0.579	0.271	24.356
1974	0.521	2.582	2.994	7.048	3.410	2.609	1.843	1.187	0.815	0.536	0.250	0.759	24.554
1975	1.147	2.367	3.365	6.318	3.604	2.974	1.850	1.203	0.916	0.711	0.473	0.255	25.182
1976	1.382	2.087	2.007	5.981	3.537	2.726	1.656	1.040	0.565	0.299	0.235	0.747	22.261
1977	1.094	1.204	1.505	7.868	3.290	2.773	1.826	1.178	0.822	0.637	0.572	0.727	23.496
1978	1.411	2.543	2.102	3.521	1.580	1.885	1.381	1.072	0.632	0.370	0.600	0.754	17.851
1979	1.392	2.370	2.011	6.837	3.499	2.372	0.808	0.575	0.434	0.231	0.172	0.738	21.438
1980	0.565	2.560	2.712	5.677	3.070	1.809	0.738	0.505	0.827	0.689	0.590	0.755	20.497
1981	1.255	2.244	0.892	4.086	0.817	2.700	1.668	1.058	0.526	0.319	0.185	0.180	15.931
1982	1.409	1.573	0.603	0.921	0.734	0.725	0.738	1.058	0.836	0.601	0.598	0.579	10.375
1983	0.935	2.587	2.363	7.868	3.145	2.980	1.833	1.144	0.900	0.745	0.605	0.759	25.864
1984	1.399	2.036	1.450	2.096	3.796	2.913	1.229	0.510	0.350	0.231	0.163	0.169	16.342
1985	1.297	1.067	1.722	6.791	3.033	2.630	1.720	1.096	0.750	0.560	0.287	0.191	21.144
1986	0.434	0.638	2.237	2.089	1.061	2.747	1.807	1.176	0.864	0.604	0.605	0.759	15.022
1987	1.411	2.540	1.598	4.014	3.380	2.797	1.504	0.792	0.851	0.724	0.597	0.618	20.824
1988	1.411	2.250	3.301	2.610	3.676	2.877	1.768	1.139	0.908	0.740	0.534	0.297	21.511
1989	1.220	2.587	2.974	5.054	1.926	2.146	1.429	0.974	0.476	0.247	0.387	0.303	19.724
1990	1.029	1.948	2.422	7.868	3.552	2.978	1.798	1.196	0.918	0.745	0.604	0.643	25.700
1991	0.854	0.852	1.901	3.395	2.816	1.244	0.651	0.452	0.339	0.223	0.160	0.140	13.027
1992	0.366	2.025	2.615	1.946	2.521	2.882	1.677	1.103	0.745	0.387	0.402	0.462	17.131
1993	1.411	2.378	3.140	5.014	2.253	2.975	1.648	0.727	0.412	0.234	0.172	0.169	20.532
1994	1.372	2.168	3.093	4.659	0.809	1.650	1.064	0.831	0.641	0.359	0.235	0.184	17.065
1995	1.404	2.580	3.365	7.732	3.796	2.991	1.857	1.201	0.915	0.742	0.600	0.378	27.560
1996	1.398	1.820	2.529	6.724	2.637	2.991	1.867	1.203	0.918	0.745	0.605	0.758	24.194
1997	1.403	2.586	1.585	5.819	2.719	2.565	1.221	0.845	0.550	0.308	0.171	0.205	19.979
1998	1.325	2.320	3.289	5.134	1.428	1.079	0.912	0.811	0.655	0.379	0.479	0.372	18.180
1999	1.175	1.007	3.365	7.495	3.796	2.987	1.867	1.203	0.917	0.727	0.439	0.562	25.539
2000	1.392	2.587	3.123	3.574	2.456	2.275	1.271	0.942	0.578	0.443	0.305	0.666	19.613
2001	1.355	2.587	1.772	2.928	0.933	0.876	0.632	0.445	0.341	0.729	0.603	0.712	13.911
2002	0.548	0.612	0.988	1.493	2.622	1.048	0.575	0.437	0.456	0.421	0.250	0.210	9.660
2003	0.347	1.378	0.591	3.883	3.490	2.949	1.481	0.652	0.351	0.742	0.601	0.462	16.928
2004	0.369	1.425	1.654	5.107	2.805	2.905	1.539	1.021	0.854	0.691	0.581	0.586	19.536
Mean	1.063	2.002	2.201	4.689	2.550	2.354	1.441	0.951	0.726	0.571	0.459	0.562	19.571

A.12. Ni4 – Category D

Summary table

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni4

Annual Flows (Mill. cu. m or index values):

MAR = 87,071

S.Dev. = 46,576

CV = 0,535

Q75 = 1,780

Q75/MMF = 0,245

BFI Index = 0,380

CV(JJA+JFM) Index = 2,322

Ecological Category = D

Total IFR = 12,221 (14,04 %MAR)

Maint. Lowflow = 5,006 (5,75 %MAR)

Drought Lowflow = 4,787 (5,50 %MAR)

Maint. Highflow = 7,214 (8,29 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows	High Flows	Total Flows	
				Maint.	Drought	Maint.	Maint.
Oct	5,166	5,691	1,102	0,286	0,286	0,465	0,751
Nov	10,401	9,233	0,888	0,395	0,395	1,046	1,441
Dec	12,761	9,350	0,733	0,477	0,477	0,874	1,351
Jan	15,574	27,059	1,737	0,577	0,577	2,718	3,296
Feb	14,457	14,910	1,031	0,619	0,619	0,874	1,493
Mar	10,834	11,452	1,057	0,608	0,608	0,870	1,478
Apr	6,147	4,278	0,696	0,537	0,537	0,258	0,794
May	3,553	2,079	0,585	0,432	0,432	0,000	0,432
Jun	2,358	1,534	0,651	0,336	0,336	0,000	0,336
Jul	2,052	2,987	1,456	0,277	0,220	0,000	0,277
Aug	1,517	1,565	1,032	0,230	0,160	0,000	0,230
Sep	2,252	3,783	1,679	0,232	0,140	0,108	0,340

Rule curve

Desktop Version 2, Generated on 2015-03-30
 Summary of IFR rule curves (Desktop Version 2) for :
 Total Runoff : Ni4
 Regional Type : N.Natal
 Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.192	1.184	1.165	1.127	1.055	0.937	0.770	0.578	0.414	0.338
Nov	2.347	2.333	2.305	2.248	2.142	1.957	1.663	1.254	0.798	0.511
Dec	2.649	2.419	2.220	2.039	1.858	1.555	1.355	1.077	0.767	0.572
Jan	6.430	5.723	5.117	4.581	4.071	3.220	2.741	2.076	1.334	0.868
Feb	2.931	2.701	2.499	2.314	2.125	1.808	1.585	1.276	0.932	0.715
Mar	2.510	2.497	2.469	2.413	2.309	2.127	1.838	1.436	0.988	0.707
Apr	1.362	1.354	1.337	1.301	1.234	1.125	0.970	0.791	0.639	0.568
May	0.801	0.798	0.790	0.773	0.742	0.692	0.620	0.538	0.467	0.434
Jun	0.622	0.620	0.614	0.601	0.577	0.537	0.482	0.418	0.363	0.337
Jul	0.514	0.511	0.505	0.492	0.467	0.427	0.370	0.304	0.248	0.222
Aug	0.426	0.424	0.418	0.406	0.384	0.347	0.296	0.236	0.185	0.162
Sep	0.583	0.579	0.570	0.551	0.514	0.455	0.371	0.275	0.192	0.154

Reserve Flows without High Flows

Oct	0.531	0.528	0.523	0.512	0.492	0.458	0.411	0.356	0.309	0.288
Nov	0.787	0.784	0.778	0.766	0.743	0.704	0.641	0.555	0.458	0.397
Dec	0.951	0.948	0.940	0.926	0.899	0.851	0.776	0.671	0.554	0.480
Jan	1.151	1.147	1.138	1.120	1.087	1.030	0.939	0.812	0.670	0.581
Feb	1.233	1.229	1.219	1.201	1.165	1.104	1.006	0.870	0.718	0.623
Mar	1.213	1.208	1.199	1.180	1.146	1.085	0.989	0.855	0.706	0.612
Apr	0.996	0.991	0.981	0.961	0.923	0.859	0.771	0.668	0.580	0.540
May	0.801	0.798	0.790	0.773	0.742	0.692	0.620	0.538	0.467	0.434
Jun	0.622	0.620	0.614	0.601	0.577	0.537	0.482	0.418	0.363	0.337
Jul	0.514	0.511	0.505	0.492	0.467	0.427	0.370	0.304	0.248	0.222
Aug	0.426	0.424	0.418	0.406	0.384	0.347	0.296	0.236	0.185	0.162
Sep	0.430	0.427	0.421	0.408	0.383	0.344	0.287	0.223	0.168	0.142

Natural Duration curves

Oct	11.650	7.380	5.690	4.420	3.240	2.880	2.340	1.660	1.170	0.560
Nov	22.950	15.740	12.430	9.010	7.950	6.300	5.000	3.940	2.920	1.160
Dec	25.160	17.450	14.260	11.930	10.670	9.000	7.130	5.700	4.940	2.330
Jan	25.980	19.890	15.110	12.310	10.040	8.750	7.520	6.790	5.370	2.090
Feb	33.220	20.230	14.090	11.100	8.620	7.460	6.700	5.610	4.740	2.690
Mar	19.190	14.540	11.730	10.430	9.870	7.290	5.940	5.160	3.650	2.550
Apr	10.010	8.660	6.840	6.100	5.490	5.030	4.330	3.280	2.320	1.580
May	7.110	5.250	4.020	3.340	2.980	2.690	2.410	1.830	1.510	1.060
Jun	4.580	3.330	2.740	2.290	1.990	1.680	1.410	1.230	0.880	0.600
Jul	3.560	2.370	2.060	1.840	1.390	1.150	0.900	0.810	0.600	0.330
Aug	3.470	1.840	1.640	1.340	1.190	0.980	0.830	0.520	0.400	0.230
Sep	4.060	2.760	2.010	1.750	1.450	1.190	0.960	0.740	0.440	0.160

Hydrological time series

Total Runoff : Ni4

Desktop (Version 2) Modified Flow Data for Ecological Category D

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	1.190	2.322	2.116	1.199	1.279	2.509	1.315	0.755	0.545	0.332	0.205	0.561	14.328
1921	1.171	2.347	2.649	4.177	1.506	1.178	0.621	0.451	0.399	0.284	0.425	0.540	15.748
1922	1.165	2.347	2.220	4.697	2.103	1.457	0.807	0.533	0.359	0.235	0.165	0.154	16.242
1923	0.832	1.202	2.548	2.152	2.232	2.468	1.317	0.784	0.578	0.375	0.253	0.582	15.324
1924	1.055	2.302	2.649	3.150	1.077	2.510	1.362	0.798	0.612	0.499	0.399	0.582	16.995
1925	1.118	1.272	1.038	2.543	1.090	2.487	0.995	0.610	0.526	0.357	0.185	0.570	12.792
1926	0.739	0.709	1.018	1.085	2.245	2.372	1.063	0.562	0.358	0.473	0.388	0.316	11.329
1927	1.175	1.950	1.793	6.420	1.767	1.038	0.613	0.434	0.337	0.220	0.185	0.534	16.466
1928	0.937	1.468	1.024	0.947	0.742	2.510	1.349	0.789	0.616	0.510	0.382	0.583	11.859
1929	1.192	2.307	1.733	5.334	2.314	1.918	0.807	0.501	0.350	0.230	0.287	0.350	17.322
1930	0.349	1.132	1.077	0.945	0.878	0.957	0.791	0.551	0.352	0.248	0.185	0.155	7.620
1931	0.338	0.511	0.645	0.868	2.701	2.480	1.321	0.800	0.622	0.506	0.340	0.275	11.406
1932	0.741	2.248	2.260	5.020	2.482	2.117	0.924	0.562	0.363	0.370	0.278	0.192	17.556
1933	0.443	2.347	2.649	6.430	2.021	2.488	1.359	0.801	0.622	0.514	0.426	0.580	20.683
1934	0.578	2.273	2.420	3.345	1.645	1.331	0.755	0.734	0.588	0.427	0.267	0.220	14.583
1935	0.378	0.511	0.752	5.838	2.302	2.489	1.234	0.801	0.622	0.508	0.345	0.512	16.291
1936	1.142	2.344	1.209	6.430	2.931	2.453	1.184	0.671	0.418	0.278	0.177	0.575	19.813
1937	1.071	0.788	1.986	2.215	1.418	1.263	1.362	0.798	0.620	0.513	0.422	0.469	12.925
1938	1.191	1.957	2.460	6.119	2.931	2.510	1.353	0.796	0.615	0.513	0.426	0.583	21.455
1939	1.149	2.347	2.078	5.366	1.320	2.129	1.319	0.798	0.622	0.514	0.425	0.575	18.643
1940	0.897	2.142	2.649	3.774	1.999	1.621	1.321	0.776	0.468	0.427	0.334	0.422	16.831
1941	0.578	1.559	1.115	3.139	1.684	2.456	1.025	0.797	0.622	0.513	0.417	0.551	14.457
1942	1.138	2.320	2.366	2.000	1.381	2.127	1.362	0.801	0.622	0.514	0.426	0.583	15.642
1943	1.184	2.335	2.265	5.042	2.931	2.330	0.936	0.496	0.617	0.510	0.353	0.583	19.581

1944	1.190	1.492	0.622	3.332	0.886	2.505	1.237	0.737	0.603	0.494	0.418	0.494	14.009
1945	0.477	0.532	0.572	3.038	2.502	2.420	1.362	0.676	0.545	0.467	0.396	0.577	13.564
1946	1.072	2.333	2.134	3.543	2.393	1.784	1.129	0.745	0.493	0.328	0.214	0.298	16.465
1947	1.019	2.277	1.926	5.740	2.931	2.510	1.362	0.782	0.607	0.253	0.418	0.574	20.400
1948	0.973	2.323	1.488	6.430	2.499	2.411	1.354	0.798	0.617	0.477	0.280	0.363	20.014
1949	1.029	2.157	2.303	4.437	1.736	2.483	1.360	0.797	0.617	0.510	0.426	0.575	18.429
1950	0.552	0.810	1.858	5.122	1.645	2.469	1.361	0.760	0.608	0.508	0.426	0.583	16.703
1951	1.189	1.465	1.807	1.064	1.010	0.725	0.639	0.483	0.530	0.452	0.402	0.430	10.196
1952	0.710	1.666	2.057	1.568	1.530	1.730	1.293	0.627	0.528	0.472	0.384	0.471	13.035
1953	0.661	1.845	1.435	2.382	2.319	2.404	1.359	0.801	0.620	0.513	0.412	0.518	15.269
1954	1.126	2.029	1.534	6.222	2.916	2.510	1.076	0.663	0.608	0.513	0.424	0.568	20.190
1955	0.871	1.254	2.133	4.123	2.931	2.506	1.187	0.742	0.606	0.481	0.406	0.556	17.796
1956	1.184	2.267	2.203	3.279	2.445	2.309	1.315	0.781	0.601	0.514	0.426	0.583	17.907
1957	1.192	2.273	0.745	5.723	2.407	1.436	1.234	0.759	0.515	0.372	0.262	0.530	17.449
1958	0.770	2.337	2.039	4.785	2.158	1.248	0.571	0.716	0.549	0.439	0.402	0.559	16.572
1959	0.787	2.060	1.900	1.334	2.435	2.180	1.340	0.790	0.546	0.332	0.377	0.560	14.643
1960	1.134	2.347	2.649	4.805	2.125	1.932	1.354	0.792	0.619	0.512	0.426	0.498	19.194
1961	0.970	2.142	1.377	2.076	1.090	1.382	0.750	0.603	0.475	0.435	0.354	0.422	12.076
1962	0.654	2.337	2.396	4.566	1.562	2.075	0.815	0.442	0.622	0.514	0.426	0.582	16.991
1963	0.977	2.197	0.978	5.609	1.737	0.707	0.697	0.457	0.405	0.432	0.388	0.408	14.991
1964	1.192	2.281	2.139	2.741	1.585	0.778	0.584	0.451	0.445	0.452	0.351	0.534	13.533
1965	0.526	0.670	0.593	4.260	2.592	0.971	0.575	0.494	0.418	0.404	0.318	0.391	12.211
1966	0.627	0.574	0.898	2.567	2.829	2.484	1.297	0.782	0.608	0.492	0.416	0.514	14.088
1967	0.414	2.278	1.655	0.986	0.715	1.675	0.892	0.620	0.577	0.495	0.420	0.561	11.289
1968	0.376	1.196	0.767	2.642	0.795	2.510	1.362	0.801	0.620	0.487	0.313	0.570	12.440
1969	1.192	2.165	1.697	1.419	0.993	0.774	0.568	0.440	0.368	0.241	0.249	0.367	10.473
1970	1.127	2.033	1.162	4.991	1.198	2.250	1.360	0.801	0.622	0.508	0.391	0.395	16.840
1971	1.149	2.328	2.613	6.430	2.892	2.506	1.346	0.800	0.622	0.505	0.354	0.224	21.769
1972	0.362	2.004	0.721	1.734	2.931	2.413	1.356	0.797	0.601	0.419	0.419	0.583	14.341
1973	1.157	2.300	1.960	6.430	1.808	2.060	1.289	0.777	0.555	0.500	0.411	0.235	19.482
1974	0.477	2.343	2.336	5.734	2.608	2.206	1.347	0.794	0.572	0.397	0.214	0.583	19.611
1975	0.980	2.150	2.649	5.117	2.770	2.497	1.351	0.801	0.622	0.495	0.347	0.224	20.003
1976	1.169	1.900	1.553	4.834	2.713	2.299	1.232	0.723	0.449	0.264	0.205	0.575	17.916
1977	0.937	1.112	1.205	6.430	2.509	2.337	1.337	0.790	0.575	0.454	0.406	0.560	18.653
1978	1.192	2.307	1.626	2.845	1.276	1.630	1.063	0.739	0.482	0.304	0.423	0.579	14.468
1979	1.177	2.153	1.555	5.555	2.682	2.017	0.711	0.501	0.384	0.226	0.167	0.568	17.696
1980	0.513	2.322	2.104	4.581	2.332	1.570	0.668	0.467	0.578	0.482	0.417	0.580	16.615
1981	1.067	2.041	0.781	3.279	0.770	2.279	1.240	0.732	0.430	0.276	0.175	0.170	13.238
1982	1.190	1.442	0.581	0.868	0.715	0.707	0.668	0.732	0.582	0.434	0.422	0.455	8.795
1983	0.809	2.347	1.829	6.430	2.391	2.502	1.341	0.773	0.614	0.514	0.426	0.583	20.561
1984	1.182	1.855	1.167	1.762	2.931	2.448	0.970	0.469	0.343	0.226	0.162	0.162	13.678
1985	1.100	0.990	1.355	5.516	2.303	2.223	1.272	0.750	0.540	0.410	0.236	0.178	16.875
1986	0.408	0.607	1.731	1.756	0.932	2.317	1.325	0.788	0.596	0.435	0.426	0.583	11.905
1987	1.192	2.305	1.269	3.220	2.583	2.356	1.139	0.604	0.590	0.502	0.421	0.482	16.663
1988	1.192	2.046	2.595	2.152	2.830	2.420	1.301	0.771	0.618	0.511	0.384	0.254	17.074
1989	1.039	2.347	2.320	4.071	1.506	1.838	1.092	0.692	0.405	0.235	0.296	0.258	16.099
1990	0.886	1.776	1.875	6.430	2.726	2.500	1.319	0.798	0.622	0.514	0.426	0.501	20.374
1991	0.745	0.798	1.479	2.749	2.138	1.120	0.614	0.442	0.337	0.222	0.160	0.140	10.944
1992	0.353	1.845	2.026	1.648	1.915	2.423	1.245	0.753	0.537	0.314	0.305	0.371	13.735
1993	1.192	2.160	2.459	4.038	1.723	2.498	1.227	0.573	0.373	0.228	0.167	0.162	16.801
1994	1.160	1.973	2.419	3.748	0.764	1.443	0.868	0.623	0.486	0.298	0.205	0.173	14.161
1995	1.186	2.340	2.649	6.315	2.931	2.510	1.356	0.800	0.621	0.512	0.423	0.312	21.957
1996	1.182	1.663	1.959	5.459	2.002	2.510	1.362	0.801	0.622	0.514	0.426	0.582	19.083
1997	1.186	2.346	1.261	4.699	2.065	2.172	0.964	0.630	0.441	0.270	0.167	0.188	16.388
1998	1.123	2.108	2.584	4.136	1.175	0.988	0.775	0.614	0.493	0.309	0.351	0.307	14.963
1999	1.003	0.937	2.649	6.114	2.931	2.507	1.362	0.801	0.622	0.504	0.327	0.442	20.199
2000	1.177	2.347	2.444	2.885	1.865	1.941	0.995	0.676	0.455	0.345	0.247	0.517	15.895
2001	1.147	2.347	1.390	2.394	0.846	0.827	0.602	0.438	0.338	0.505	0.425	0.549	11.810
2002	0.499	0.584	0.848	1.303	1.991	0.964	0.568	0.434	0.395	0.332	0.214	0.192	8.324
2003	0.338	1.268	0.572	3.120	2.674	2.477	1.125	0.538	0.343	0.512	0.424	0.371	13.763
2004	0.355	1.310	1.308	4.114	2.129	2.442	1.160	0.714	0.591	0.484	0.412	0.460	15.479

Mean 0.913 1.824 1.737 3.823 1.980 2.004 1.100 0.681 0.528 0.417 0.339 0.443 15.788

A.13. Ni5 – Category B

Summary table

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni5

Annual Flows (Mill. cu. m or index values):

MAR = 135.619
 S.Dev. = 70.672
 CV = 0.521
 Q75 = 3.020
 Q75/MMF = 0.267
 BFI Index = 0.430
 CV(JJA+JFM) Index = 1.475

Ecological Category = B

Total IFR = 54.814 (40.42 %MAR)
 Maint. Lowflow = 31.705 (23.38 %MAR)
 Drought Lowflow = 3.147 (2.32 %MAR)
 Maint. Highflow = 23.109 (17.04 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
	Mean	SD	CV	Maint.	Drought	Maint.	
Oct	7.646	10.609	1.388	1.855	0.186	2.089	3.944
Nov	14.240	12.184	0.856	2.849	0.213	1.552	4.401
Dec	20.259	15.093	0.745	5.173	0.434	4.958	10.131
Jan	22.648	23.203	1.025	5.641	0.422	4.769	10.410
Feb	21.510	17.274	0.803	5.319	0.395	5.363	10.683
Mar	17.270	11.825	0.685	4.762	0.403	2.407	7.169

Apr	11.052	7.445	0.674	2.641	0.271	0.466	3.106
May	6.450	3.822	0.593	0.958	0.185	0.188	1.145
Jun	4.291	2.288	0.533	0.711	0.161	0.000	0.711
Jul	3.546	2.288	0.645	0.640	0.161	0.842	1.483
Aug	3.063	2.247	0.734	0.577	0.162	0.154	0.731
Sep	3.643	5.281	1.450	0.578	0.154	0.322	0.900

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni5

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	4.498	4.459	4.370	4.187	3.844	3.280	2.485	1.568	0.785	0.421
Nov	5.096	5.061	4.988	4.843	4.572	4.098	3.345	2.298	1.132	0.398
Dec	15.801	14.475	13.297	12.177	10.977	8.954	7.334	5.083	2.573	0.994
Jan	15.992	14.711	13.566	12.464	11.265	9.240	7.556	5.215	2.606	0.965
Feb	16.762	15.330	14.060	12.856	11.572	9.410	7.698	5.319	2.667	0.999
Mar	8.314	8.257	8.138	7.903	7.463	6.695	5.473	3.775	1.883	0.692
Apr	3.660	3.628	3.556	3.406	3.127	2.668	2.020	1.273	0.635	0.338
May	1.349	1.338	1.313	1.262	1.166	1.009	0.787	0.531	0.312	0.211
Jun	0.849	0.842	0.827	0.797	0.739	0.645	0.511	0.358	0.226	0.165
Jul	1.686	1.672	1.641	1.576	1.456	1.258	0.979	0.657	0.382	0.254
Aug	0.857	0.851	0.836	0.806	0.749	0.655	0.524	0.372	0.242	0.182
Sep	1.042	1.034	1.016	0.977	0.906	0.788	0.622	0.431	0.267	0.191

Reserve Flows without High Flows

Oct	2.213	2.194	2.150	2.059	1.890	1.612	1.218	0.766	0.379	0.199
Nov	3.399	3.376	3.326	3.229	3.046	2.727	2.219	1.514	0.728	0.233
Dec	6.171	6.129	6.040	5.864	5.535	4.960	4.046	2.776	1.361	0.470
Jan	6.730	6.683	6.585	6.392	6.030	5.398	4.393	2.997	1.440	0.461
Feb	6.346	6.302	6.210	6.027	5.686	5.090	4.142	2.824	1.356	0.432
Mar	5.681	5.642	5.561	5.399	5.096	4.567	3.726	2.558	1.256	0.436
Apr	3.151	3.123	3.061	2.932	2.692	2.296	1.737	1.094	0.545	0.289
May	1.143	1.134	1.113	1.071	0.991	0.859	0.673	0.459	0.276	0.191
Jun	0.849	0.842	0.827	0.797	0.739	0.645	0.511	0.358	0.226	0.165
Jul	0.765	0.759	0.746	0.719	0.668	0.585	0.468	0.333	0.218	0.165
Aug	0.689	0.684	0.673	0.649	0.605	0.533	0.430	0.313	0.212	0.166
Sep	0.691	0.686	0.674	0.650	0.605	0.531	0.427	0.307	0.205	0.157

Natural Duration curves

Oct	16.760	10.870	7.750	6.260	5.150	3.740	2.830	2.110	1.450	0.580
Nov	32.520	22.550	18.100	12.080	10.140	8.620	7.340	5.420	3.210	1.510
Dec	45.840	27.230	22.830	19.960	16.940	14.940	11.880	8.860	6.060	1.570
Jan	43.630	30.830	23.110	21.460	17.130	15.730	13.720	10.440	6.570	3.300
Feb	45.720	28.740	24.010	22.060	17.870	13.630	10.980	8.110	6.670	3.390
Mar	36.070	25.800	21.420	16.450	14.090	11.600	10.790	8.320	6.030	3.160
Apr	21.910	14.480	13.040	11.390	10.100	8.520	6.480	4.740	4.000	1.840
May	11.430	8.270	7.640	6.730	6.010	5.190	4.390	3.500	2.410	1.420
Jun	7.270	5.840	5.360	4.570	3.830	3.330	2.910	2.260	1.750	1.000
Jul	6.530	4.760	4.250	3.420	2.940	2.710	2.350	1.900	1.410	0.820
Aug	6.920	3.860	3.230	2.770	2.400	2.150	1.870	1.690	1.220	0.660
Sep	6.870	5.200	3.350	2.880	2.510	2.050	1.710	1.360	1.000	0.490

Hydrological time series

Total Runoff : Ni5

Desktop (Version 2) Modified Flow Data for Ecological Category B

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	4.498	5.070	13.022	6.845	5.531	7.513	3.374	1.227	0.773	1.469	0.667	1.016	51.003
1921	4.423	5.096	15.801	13.566	11.615	6.991	2.758	1.263	0.818	1.624	0.857	1.042	65.856
1922	4.498	5.096	15.801	15.992	14.966	8.075	3.610	1.332	0.797	1.476	0.749	0.740	73.132
1923	3.516	4.235	12.567	13.247	10.557	7.903	3.504	1.338	0.842	1.609	0.763	1.029	61.111
1924	4.042	5.053	14.449	10.296	8.012	8.314	3.660	1.349	0.848	1.683	0.854	1.037	59.595
1925	4.122	2.615	5.640	4.097	8.538	4.716	1.504	0.559	0.604	1.336	0.631	0.977	35.337
1926	3.532	1.625	1.268	1.082	2.667	3.775	2.157	0.817	0.441	0.796	0.603	0.662	19.426
1927	4.224	3.330	5.083	10.093	9.410	4.420	2.187	0.851	0.511	0.695	0.359	0.916	42.078
1928	3.324	2.130	2.522	1.168	1.128	7.920	3.520	1.209	0.814	1.665	0.836	1.042	27.279
1929	4.466	4.988	9.177	13.591	12.133	7.925	3.404	1.151	0.637	0.796	0.500	0.819	59.586
1930	1.581	2.877	4.855	2.573	1.766	0.994	0.499	0.396	0.277	0.533	0.332	0.330	17.013
1931	0.504	0.398	1.262	0.965	2.646	6.012	2.668	1.057	0.763	1.479	0.640	0.501	18.894
1932	1.258	1.132	11.021	6.882	3.718	1.254	0.947	0.661	0.424	1.405	0.813	0.791	30.303
1933	1.593	3.488	15.801	15.511	11.047	4.555	2.929	1.319	0.818	1.679	0.857	1.040	60.640
1934	4.094	4.832	11.676	9.963	8.759	6.673	2.772	1.288	0.841	1.634	0.806	0.765	54.105
1935	1.568	0.549	3.634	13.462	12.856	7.612	2.767	1.333	0.849	1.674	0.826	0.814	47.943
1936	3.024	5.009	9.238	15.079	15.330	8.052	3.489	1.267	0.739	1.147	0.500	0.883	63.757
1937	2.964	0.840	11.617	7.566	6.133	3.678	2.647	1.262	0.812	1.680	0.852	1.012	41.052
1938	4.339	4.664	8.923	8.631	15.757	8.283	3.634	1.333	0.827	1.648	0.849	1.027	59.917
1939	4.417	5.033	12.890	12.940	9.355	4.404	2.410	1.326	0.849	1.686	0.855	1.029	57.194
1940	3.408	3.345	10.350	6.094	4.059	1.883	2.291	1.187	0.740	1.154	0.567	0.622	35.699
1941	1.354	1.215	1.618	3.709	6.725	8.027	3.591	1.298	0.818	1.624	0.825	0.997	31.801
1942	4.017	4.952	13.297	12.918	10.338	7.167	3.650	1.349	0.849	1.686	0.857	1.042	62.121
1943	4.464	4.917	10.390	6.411	12.482	7.551	2.420	0.931	0.811	1.681	0.845	1.025	53.930
1944	4.072	2.929	2.573	1.432	0.999	2.683	1.969	0.787	0.441	0.657	0.312	0.343	19.197
1945	0.555	0.398	0.994	11.650	8.870	3.358	1.595	0.614	0.358	0.533	0.278	0.447	29.649
1946	1.963	4.861	12.389	8.608	7.167	3.003	1.550	0.834	0.694	1.456	0.655	0.564	43.745
1947	1.279	4.006	4.501	2.800	2.947	6.821	3.127	1.166	0.696	0.996	0.372	0.642	29.354
1948	3.560	4.351	6.812	6.309	5.888	7.204	3.369	1.313	0.830	1.587	0.719	0.722	42.664
1949	3.869	2.650	3.651	2.285	1.145	3.986	2.462	0.970	0.707	1.310	0.670	0.528	24.234
1950	0.914	2.214	8.954	9.717	6.412	6.230	3.420	1.340	0.397	1.050	0.857	1.039	42.545
1951	4.490	4.098	7.966	5.215	2.103	0.692	1.125	0.234	0.165	0.579	0.188	0.191	27.047
1952	0.380	4.401	5.007	2.108	13.001	8.022	3.406	0.641	0.277	0.283	0.214	0.258	37.999

1953	0.448	4.164	6.818	3.851	11.358	6.315	1.963	0.920	0.364	0.400	0.196	0.316	37.112
1954	4.201	5.065	7.260	10.411	12.148	8.303	3.430	1.227	0.810	1.576	0.745	0.622	55.800
1955	3.832	4.535	12.177	8.372	16.762	8.314	3.627	1.333	0.837	1.623	0.821	1.021	63.254
1956	4.495	5.070	14.164	10.166	11.348	8.080	3.649	1.349	0.849	1.686	0.857	1.042	62.754
1957	4.498	5.044	8.034	14.711	13.533	6.957	2.854	1.267	0.782	1.459	0.655	0.906	60.700
1958	3.804	5.096	14.475	9.949	12.969	5.125	1.816	0.767	0.511	1.592	0.310	0.989	57.403
1959	4.370	4.957	12.772	5.249	10.639	6.874	3.081	1.291	0.843	1.361	0.824	0.910	53.172
1960	4.429	5.085	15.801	15.868	13.873	7.744	3.659	1.341	0.848	1.672	0.851	1.034	72.206
1961	4.153	4.164	7.045	14.047	13.810	5.473	1.867	0.781	0.430	1.293	0.734	0.857	54.652
1962	2.741	5.085	15.801	14.783	10.042	7.640	3.628	1.345	0.849	1.686	0.857	1.040	65.498
1963	4.365	5.094	8.744	12.351	11.363	2.472	0.603	0.421	0.310	0.661	0.409	0.550	47.344
1964	4.498	5.096	14.817	13.118	11.572	2.430	0.670	0.296	0.534	0.979	0.524	0.850	55.384
1965	1.963	3.575	3.329	12.615	15.793	4.894	0.880	0.641	0.675	0.737	0.612	0.960	46.676
1966	3.548	0.919	9.147	12.464	16.762	8.291	3.594	1.193	0.735	1.405	0.700	0.772	59.530
1967	2.969	5.061	13.790	11.866	9.388	8.139	3.025	0.962	0.549	1.212	0.749	0.513	58.224
1968	0.751	4.593	9.359	11.971	8.734	8.199	3.660	1.348	0.832	1.650	0.835	0.991	52.923
1969	4.498	4.843	10.977	11.265	14.553	7.690	1.312	0.531	0.403	0.796	0.776	0.852	58.496
1970	4.446	4.822	13.464	15.691	11.640	5.214	3.640	1.349	0.847	1.670	0.839	0.997	64.620
1971	4.368	5.012	15.222	15.992	16.762	8.314	3.660	1.345	0.847	1.672	0.846	0.925	74.964
1972	2.137	1.765	6.117	4.666	16.394	8.314	3.660	1.349	0.846	1.674	0.857	1.042	48.822
1973	4.486	4.889	12.659	14.448	15.215	7.685	3.628	1.318	0.835	1.686	0.856	0.948	68.654
1974	1.963	5.046	13.994	14.372	15.927	8.295	3.653	1.344	0.844	1.658	0.821	1.042	68.959
1975	4.281	5.026	15.801	15.433	16.762	8.314	3.660	1.349	0.849	1.686	0.853	0.999	75.012
1976	4.365	4.668	15.256	15.992	16.319	8.138	3.556	1.296	0.645	1.327	0.663	0.906	73.131
1977	4.445	3.915	8.339	15.992	16.762	8.296	3.599	1.304	0.799	1.609	0.836	1.003	66.899
1978	4.498	4.921	14.354	5.345	3.868	0.955	0.374	0.222	0.179	0.488	0.781	1.028	37.012
1979	3.844	4.077	8.361	11.506	13.450	6.695	0.752	0.312	0.225	0.461	0.265	0.431	50.378
1980	0.785	1.688	10.279	11.425	15.179	6.883	0.635	0.417	0.324	0.607	0.391	1.035	49.647
1981	3.054	2.298	2.045	8.196	1.725	5.807	0.623	0.269	0.226	0.331	0.208	0.248	25.029
1982	1.043	0.882	0.994	0.965	0.999	0.692	0.338	0.215	0.194	0.267	0.235	0.208	7.031
1983	2.485	5.096	12.915	15.992	16.762	8.233	3.650	1.342	0.841	1.685	0.857	1.042	70.900
1984	4.464	4.663	8.056	9.240	15.978	8.235	3.369	1.149	0.679	1.005	0.437	0.365	57.640
1985	3.280	4.572	5.292	14.068	14.060	8.023	3.595	1.240	0.756	1.258	0.500	0.365	57.010
1986	2.253	1.144	3.594	6.291	3.788	7.463	2.020	0.324	0.764	0.357	0.766	1.042	29.805
1987	4.498	5.096	13.726	13.296	14.159	8.260	3.339	1.009	0.699	1.641	0.761	0.788	67.273
1988	4.487	4.129	15.450	15.282	16.142	8.281	2.746	1.059	0.839	1.569	0.763	0.409	71.156
1989	1.086	5.093	14.629	8.354	4.856	7.302	1.273	0.495	0.246	0.382	0.242	0.267	44.227
1990	0.657	0.521	6.028	15.992	16.762	8.257	3.242	1.028	0.739	1.456	0.524	0.550	55.755
1991	4.378	3.600	11.529	10.223	11.621	1.823	0.403	0.211	0.166	0.254	0.182	0.191	44.583
1992	0.421	3.812	1.395	1.381	4.665	6.526	1.066	0.290	0.178	0.280	0.189	0.235	20.438
1993	4.498	4.866	10.926	13.609	14.591	8.256	3.483	1.047	0.592	0.933	0.589	0.321	63.709
1994	4.201	2.779	11.923	2.964	1.422	1.231	0.635	0.437	0.213	0.354	0.213	0.209	26.581
1995	1.832	4.946	15.801	15.992	16.762	8.314	3.660	1.349	0.849	1.686	0.855	0.941	72.986
1996	4.459	4.580	11.041	12.721	5.319	8.304	3.660	1.347	0.849	1.686	0.857	1.042	55.865
1997	4.462	5.096	14.631	14.965	13.147	8.144	3.408	1.116	0.724	1.219	0.574	0.443	67.930
1998	2.673	4.176	14.883	11.489	6.616	1.536	0.406	0.261	0.185	0.339	0.292	0.251	43.108
1999	0.725	0.584	15.801	15.992	16.136	8.199	3.660	1.349	0.849	1.683	0.851	1.025	66.855
2000	4.378	5.096	15.395	8.975	7.698	2.894	3.571	1.238	0.635	0.948	0.428	1.036	52.292
2001	4.187	5.070	12.555	8.600	13.373	6.051	1.118	0.331	0.292	1.466	0.844	1.040	54.926
2002	2.775	0.748	7.334	4.969	7.127	0.932	0.338	0.211	0.165	0.254	0.182	0.206	25.241
2003	0.439	2.813	1.679	2.606	15.168	8.314	3.235	0.745	0.346	1.430	0.821	0.970	38.567
2004	1.086	2.416	11.581	14.526	12.669	8.314	3.541	1.055	0.435	1.657	0.850	0.986	59.116
Mean	3.145	3.762	9.792	9.922	10.336	6.178	2.576	0.973	0.623	1.209	0.635	0.761	49.911

A.14. Ni5 – Category C

Summary table

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni5

Annual Flows (Mill. cu. m or index values):

MAR = 135.619

S.Dev. = 70.672

CV = 0.521

Q75 = 3.020

Q75/MMF = 0.267

BFI Index = 0.430

CV(JJA+JFM) Index = 1.475

Ecological Category = C

Total IFR = 40.840 (30.11 %MAR)

Maint. Lowflow = 17.732 (13.07 %MAR)

Drought Lowflow = 3.147 (2.32 %MAR)

Maint. Highflow = 23.109 (17.04 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows			Modified Flows (IFR)		
	Mean	SD	CV	Low flows	High Flows	Total Flows
Oct	7.646	10.609	1.388	0.937	0.186	2.089
Nov	14.240	12.184	0.856	1.223	0.213	1.552
Dec	20.259	15.093	0.745	3.153	0.434	4.958
Jan	22.648	23.203	1.025	3.294	0.422	4.769
Feb	21.510	17.274	0.803	3.086	0.395	5.363
Mar	17.270	11.825	0.685	2.871	0.403	2.407
Apr	11.052	7.445	0.674	1.656	0.271	0.466
May	6.450	3.822	0.593	0.358	0.185	0.188
Jun	4.291	2.288	0.533	0.309	0.161	0.000
Jul	3.546	2.288	0.645	0.299	0.161	0.842
Aug	3.063	2.247	0.734	0.281	0.162	0.154
Sep	3.643	5.281	1.450	0.265	0.154	0.322

Rule curve

Desktop Version 2, Generated on 09/04/2015
 Summary of IFR rule curves (Desktop Version 2) for :
 Total Runoff : Ni5
 Regional Type : N.Natal
 Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	3.718	3.686	3.614	3.466	3.188	2.732	2.087	1.345	0.711	0.416
Nov	3.554	3.530	3.481	3.384	3.201	2.882	2.374	1.669	0.883	0.388
Dec	14.019	12.706	11.556	10.490	9.392	7.548	6.212	4.355	2.285	0.983
Jan	13.848	12.583	11.471	10.435	9.358	7.548	6.206	4.340	2.260	0.951
Feb	14.713	13.295	12.057	10.916	9.750	7.793	6.408	4.482	2.336	0.986
Mar	6.867	6.821	6.725	6.534	6.177	5.554	4.562	3.185	1.649	0.683
Apr	2.786	2.762	2.709	2.599	2.393	2.053	1.575	1.023	0.552	0.333
May	0.706	0.701	0.690	0.667	0.626	0.557	0.459	0.347	0.251	0.207
Jun	0.419	0.416	0.410	0.399	0.377	0.342	0.292	0.235	0.185	0.162
Jul	1.393	1.382	1.357	1.306	1.210	1.052	0.830	0.573	0.354	0.252
Aug	0.561	0.557	0.549	0.532	0.500	0.447	0.373	0.287	0.214	0.180
Sep	0.737	0.731	0.720	0.695	0.649	0.573	0.466	0.343	0.238	0.189

Reserve Flows without High Flows										
Month	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.267	1.257	1.233	1.185	1.095	0.946	0.737	0.495	0.289	0.193
Nov	1.703	1.692	1.669	1.623	1.538	1.388	1.151	0.821	0.454	0.222
Dec	4.389	4.360	4.298	4.177	3.950	3.554	2.924	2.049	1.073	0.459
Jan	4.585	4.554	4.490	4.362	4.123	3.706	3.043	2.121	1.094	0.448
Feb	4.296	4.267	4.207	4.088	3.864	3.473	2.851	1.988	1.025	0.419
Mar	3.996	3.970	3.914	3.804	3.598	3.238	2.665	1.870	0.984	0.426
Apr	2.240	2.221	2.178	2.090	1.926	1.655	1.274	0.834	0.458	0.283
May	0.485	0.483	0.476	0.463	0.437	0.396	0.338	0.271	0.213	0.187
Jun	0.419	0.416	0.410	0.399	0.377	0.342	0.292	0.235	0.185	0.162
Jul	0.405	0.403	0.398	0.387	0.366	0.333	0.285	0.231	0.184	0.162
Aug	0.380	0.378	0.374	0.364	0.346	0.316	0.273	0.225	0.183	0.164
Sep	0.359	0.357	0.353	0.344	0.327	0.298	0.258	0.213	0.173	0.155

Natural Duration curves										
Month	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	16.760	10.870	7.750	6.260	5.150	3.740	2.830	2.110	1.450	0.580
Nov	32.520	22.550	18.100	12.080	10.140	8.620	7.340	5.420	3.210	1.510
Dec	45.840	27.230	22.830	19.960	16.940	14.940	11.880	8.860	6.060	1.570
Jan	43.630	30.830	23.110	21.460	17.130	15.730	13.720	10.440	6.570	3.300
Feb	45.720	28.740	24.010	22.060	17.870	13.630	10.980	8.110	6.670	3.390
Mar	36.070	25.800	21.420	16.450	14.090	11.600	10.790	8.320	6.030	3.160
Apr	21.910	14.480	13.040	11.390	10.100	8.520	6.480	4.740	4.000	1.840
May	11.430	8.270	7.640	6.730	6.010	5.190	4.390	3.500	2.410	1.420
Jun	7.270	5.840	5.360	4.570	3.830	3.330	2.910	2.260	1.750	1.000
Jul	6.530	4.760	4.250	3.420	2.940	2.710	2.350	1.900	1.410	0.820
Aug	6.920	3.860	3.230	2.770	2.400	2.150	1.870	1.690	1.220	0.660
Sep	6.870	5.200	3.350	2.880	2.510	2.050	1.710	1.360	1.000	0.490

Hydrological time series

Total Runoff : Ni5													
Desktop (Version 2) Modified Flow Data for Ecological Category C													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	3.718	3.536	11.293	5.639	4.654	6.218	2.575	0.652	0.390	1.220	0.453	0.720	41.067
1921	3.657	3.554	14.019	11.471	9.789	5.794	2.120	0.668	0.407	1.344	0.561	0.737	54.121
1922	3.718	3.554	14.019	13.848	12.939	6.674	2.749	0.698	0.399	1.226	0.500	0.542	60.867
1923	2.923	2.974	10.858	11.168	8.832	6.534	2.671	0.701	0.416	1.332	0.507	0.728	49.644
1924	3.348	3.525	12.680	8.492	6.662	6.867	2.786	0.706	0.418	1.391	0.559	0.733	48.168
1925	3.413	1.882	4.815	3.448	7.087	3.948	1.194	0.359	0.327	1.114	0.433	0.695	28.716
1926	2.936	1.215	1.209	1.044	2.336	3.185	1.676	0.473	0.266	0.684	0.417	0.492	15.933
1927	3.496	2.364	4.355	8.311	7.793	3.708	1.698	0.487	0.292	0.604	0.280	0.655	34.043
1928	2.768	1.555	2.243	1.114	1.091	6.548	2.682	0.644	0.406	1.376	0.549	0.737	21.713
1929	3.692	3.481	7.751	11.495	10.259	6.552	2.597	0.619	0.339	0.684	0.359	0.593	48.422
1930	1.356	2.059	4.167	2.233	1.607	0.928	0.452	0.288	0.204	0.475	0.265	0.279	14.312
1931	0.483	0.388	1.204	0.951	2.319	5.000	2.053	0.578	0.386	1.228	0.438	0.389	15.418
1932	1.094	0.883	9.432	5.668	3.186	1.139	0.782	0.404	0.259	1.169	0.536	0.575	25.128
1933	1.366	2.471	14.019	13.371	9.275	3.818	2.247	0.693	0.407	1.388	0.561	0.735	50.349
1934	3.391	3.376	10.032	8.195	7.267	5.537	2.131	0.679	0.416	1.352	0.532	0.559	43.464
1935	1.345	0.490	3.160	11.372	10.916	6.298	2.126	0.699	0.419	1.384	0.543	0.590	39.342
1936	2.524	3.495	7.807	12.945	13.295	6.655	2.660	0.670	0.377	0.964	0.359	0.634	52.386
1937	2.475	0.686	9.978	6.206	5.141	3.106	2.038	0.667	0.405	1.389	0.558	0.717	33.366
1938	3.589	3.263	7.523	7.063	13.717	6.843	2.767	0.699	0.410	1.363	0.556	0.727	48.521
1939	3.652	3.511	11.166	10.877	7.749	3.695	1.863	0.696	0.419	1.393	0.560	0.728	46.308
1940	2.836	2.374	8.821	5.040	3.463	1.649	1.775	0.635	0.378	0.969	0.397	0.466	28.802
1941	1.172	0.939	1.498	3.139	5.620	6.635	2.735	0.683	0.407	1.344	0.543	0.708	25.421
1942	3.328	3.457	11.556	10.856	8.633	5.937	2.779	0.706	0.419	1.393	0.561	0.737	50.361
1943	3.690	3.433	8.858	5.293	10.577	6.248	1.870	0.523	0.404	1.390	0.554	0.726	43.566
1944	3.373	2.094	2.285	1.324	0.986	2.298	1.537	0.459	0.266	0.573	0.253	0.287	15.736
1945	0.524	0.388	0.983	9.704	7.356	2.846	1.261	0.383	0.235	0.475	0.234	0.354	24.743
1946	1.665	3.396	10.690	7.044	5.978	2.558	1.227	0.480	0.360	1.210	0.447	0.429	35.486
1947	1.111	2.820	3.876	2.414	2.563	5.656	2.393	0.626	0.361	0.844	0.287	0.479	23.429
1948	2.959	3.052	5.781	5.212	4.943	5.967	2.571	0.690	0.411	1.315	0.483	0.531	33.914
1949	3.208	1.906	3.174	2.004	1.105	3.356	1.901	0.540	0.365	1.094	0.455	0.406	19.514
1950	0.815	1.612	7.548	7.975	5.367	5.177	2.609	0.702	0.249	0.886	0.561	0.734	34.236
1951	3.711	2.882	6.733	4.340	1.879	0.683	0.914	0.217	0.162	0.511	0.183	0.189	22.406
1952	0.380	3.085	4.292	1.863	11.053	6.631	2.599	0.395	0.204	0.275	0.198	0.233	31.208
1953	0.438	2.926	5.786	3.252	9.556	5.245	1.533	0.518	0.237	0.368	0.188	0.269	30.317
1954	3.478	3.533	6.151	8.595	10.273	6.859	2.616	0.652	0.404	1.306	0.498	0.466	44.832
1955	3.179	3.176	10.490	6.856	14.713	6.867	2.762	0.699	0.414	1.343	0.540	0.723	51.762
1956	3.716	3.536	12.401	8.376	9.547	6.678	2.778	0.706	0.419	1.393	0.561	0.737	50.847
1957	3.718	3.519	6.789	12.583	11.554	5.767	2.191	0.670	0.393	1.212	0.447	0.649	49.492
1958	3.156	3.554	12.706	8.182	11.022	4.280	1.424	0.450	0.292	1.318	0.252	0.702	47.340
1959	3.614	3.460	11.053	4.367	8.906	5.699	2.358	0.680	0.416	1.135	0.542	0.651	42.882

1960	3.662	3.547	14.019	13.725	11.878	6.406	2.786	0.702	0.418	1.382	0.557	0.731	59.813
1961	3.438	2.926	5.974	11.934	11.819	4.562	1.462	0.457	0.262	1.080	0.491	0.618	45.022
1962	2.295	3.546	14.019	12.654	8.366	6.321	2.762	0.704	0.419	1.393	0.561	0.735	53.775
1963	3.610	3.553	7.375	10.333	9.561	2.127	0.529	0.299	0.217	0.577	0.308	0.420	38.908
1964	3.718	3.554	13.044	11.046	9.750	2.093	0.578	0.244	0.301	0.830	0.373	0.613	46.143
1965	1.665	2.529	2.909	10.575	13.752	4.093	0.733	0.395	0.353	0.637	0.423	0.684	38.749
1966	2.949	0.739	7.724	10.435	14.713	6.849	2.737	0.637	0.376	1.169	0.472	0.563	49.363
1967	2.479	3.530	12.035	9.898	7.775	6.726	2.317	0.536	0.306	1.016	0.500	0.396	47.515
1968	0.683	3.215	7.917	9.992	7.246	6.775	2.786	0.705	0.412	1.364	0.548	0.704	42.348
1969	3.718	3.384	9.392	9.358	12.535	6.362	1.052	0.347	0.251	0.684	0.515	0.614	48.213
1970	3.676	3.369	11.718	13.550	9.811	4.353	2.771	0.706	0.418	1.381	0.551	0.708	53.011
1971	3.612	3.497	13.444	13.848	14.713	6.867	2.786	0.704	0.418	1.382	0.554	0.661	62.488
1972	1.806	1.310	5.208	3.902	14.347	6.867	2.786	0.706	0.418	1.384	0.561	0.737	40.031
1973	3.708	3.415	10.945	12.325	13.183	6.357	2.762	0.692	0.413	1.393	0.560	0.676	56.431
1974	1.665	3.520	12.234	12.251	13.885	6.852	2.781	0.703	0.417	1.371	0.540	0.737	56.958
1975	3.542	3.507	14.019	13.294	14.713	6.867	2.786	0.706	0.419	1.393	0.558	0.709	62.513
1976	3.610	3.266	13.478	13.848	14.273	6.725	2.709	0.682	0.342	1.107	0.451	0.649	61.142
1977	3.675	2.758	7.041	13.848	14.713	6.853	2.741	0.686	0.400	1.332	0.549	0.711	55.307
1978	3.718	3.436	12.587	4.443	3.308	0.896	0.359	0.212	0.168	0.438	0.518	0.727	30.811
1979	3.188	2.867	7.059	9.574	11.475	5.554	0.638	0.251	0.185	0.417	0.227	0.343	41.779
1980	0.711	1.258	8.756	9.502	13.148	5.706	0.552	0.297	0.222	0.533	0.298	0.732	41.715
1981	2.549	1.669	1.849	6.716	1.573	4.833	0.543	0.232	0.185	0.314	0.195	0.226	20.884
1982	0.920	0.715	0.983	0.951	0.986	0.683	0.333	0.209	0.173	0.263	0.210	0.200	6.624
1983	2.087	3.554	11.189	13.848	14.713	6.802	2.779	0.703	0.415	1.393	0.561	0.737	58.780
1984	3.690	3.262	6.808	7.548	13.935	6.803	2.571	0.618	0.355	0.851	0.324	0.301	47.067
1985	2.732	3.201	4.527	11.955	12.057	6.632	2.738	0.658	0.384	1.052	0.359	0.301	46.597
1986	1.900	0.891	3.128	5.197	3.243	6.177	1.575	0.256	0.387	0.334	0.509	0.737	24.333
1987	3.718	3.554	11.973	11.215	12.154	6.824	2.549	0.557	0.363	1.357	0.507	0.573	55.342
1988	3.709	2.903	13.670	13.145	14.097	6.841	2.111	0.578	0.415	1.300	0.507	0.329	59.607
1989	0.955	3.552	12.858	6.842	4.108	6.047	1.023	0.331	0.193	0.354	0.214	0.238	36.716
1990	0.607	0.471	5.135	13.848	14.713	6.821	2.477	0.565	0.377	1.210	0.373	0.420	47.017
1991	3.621	2.546	9.898	8.427	9.795	1.601	0.380	0.207	0.163	0.252	0.180	0.189	37.259
1992	0.416	2.689	1.313	1.283	3.953	5.417	0.870	0.242	0.167	0.273	0.184	0.218	17.025
1993	3.718	3.399	9.346	11.512	12.572	6.820	2.655	0.573	0.322	0.793	0.409	0.272	52.394
1994	3.478	1.993	10.258	2.545	1.328	1.120	0.552	0.306	0.180	0.332	0.198	0.200	22.490
1995	1.559	3.453	14.019	13.848	14.713	6.867	2.786	0.706	0.419	1.393	0.560	0.671	60.993
1996	3.686	3.206	9.451	10.673	4.482	6.860	2.786	0.705	0.419	1.393	0.561	0.737	44.959
1997	3.689	3.554	12.860	12.833	11.189	6.730	2.600	0.604	0.372	1.021	0.401	0.351	56.204
1998	2.240	2.934	13.109	9.559	5.532	1.368	0.383	0.229	0.170	0.320	0.242	0.228	36.314
1999	0.663	0.514	14.019	13.848	14.092	6.775	2.786	0.706	0.419	1.391	0.557	0.726	56.494
2000	3.621	3.554	13.616	7.337	6.408	2.470	2.721	0.657	0.338	0.805	0.319	0.733	42.577
2001	3.466	3.536	10.846	7.038	11.402	5.031	0.908	0.260	0.210	1.218	0.553	0.735	45.204
2002	2.323	0.624	6.212	4.144	5.945	0.878	0.333	0.207	0.162	0.252	0.180	0.199	21.459
2003	0.431	2.016	1.548	2.260	13.138	6.867	2.472	0.441	0.230	1.190	0.540	0.690	31.823
2004	0.955	1.748	9.945	12.402	10.746	6.867	2.698	0.577	0.264	1.370	0.557	0.701	48.830

Mean 2.622 2.655 8.502 8.384 8.857 5.134 1.985 0.541 0.334 1.013 0.436 0.556 41.019

A.15. Ni5 – Category D

Summary table

Desktop Version 2, Generated on 2015-03-26

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni5

Annual Flows (Mill. cu. m or index values):

MAR = 135,619
 S.Dev. = 70,672
 CV = 0,521
 Q75 = 3,020
 Q75/MMF = 0,267
 BFI Index = 0,430
 CV(JJA+JFM) Index = 1,475

Ecological Category = D

Total IFR = 25,019 (18,45 %MAR)
 Maint. Lowflow = 3,147 (2,32 %MAR)
 Drought Lowflow = 3,147 (2,32 %MAR)
 Maint. Highflow = 21,872 (16,13 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows	High Flows	Total Flows	
				Maint.	Drought	Maint.	Maint.
Oct	7,646	10,609	1,388	0,186	0,186	1,800	1,986
Nov	14,240	12,184	0,856	0,213	0,213	1,381	1,594
Dec	20,259	15,093	0,745	0,434	0,434	4,768	5,202
Jan	22,648	23,203	1,025	0,422	0,422	4,565	4,987
Feb	21,510	17,274	0,803	0,395	0,395	5,315	5,710
Mar	17,270	11,825	0,685	0,403	0,403	2,289	2,693
Apr	11,052	7,445	0,674	0,271	0,271	0,306	0,577
May	6,450	3,822	0,593	0,185	0,185	0,145	0,330
Jun	4,291	2,288	0,533	0,161	0,161	0,000	0,161
Jul	3,546	2,288	0,645	0,161	0,161	0,846	1,007
Aug	3,063	2,247	0,734	0,162	0,162	0,155	0,317
Sep	3,643	5,281	1,450	0,154	0,154	0,300	0,454

Rule curve

Desktop Version 2, Generated on 2015-03-26

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni5

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	2.904	2.880	2.825	2.712	2.500	2.151	1.659	1.092	0.607	0.382
Nov	2.484	2.468	2.435	2.370	2.247	2.034	1.694	1.222	0.696	0.364
Dec	10.126	8.889	7.835	6.914	6.051	4.616	3.868	2.828	1.670	0.941
Jan	9.707	8.522	7.513	6.630	5.805	4.430	3.713	2.716	1.605	0.906
Feb	11.111	9.732	8.558	7.534	6.578	4.986	4.167	3.027	1.758	0.959
Mar	4.218	4.192	4.136	4.026	3.821	3.461	2.890	2.096	1.212	0.655
Apr	0.937	0.931	0.918	0.889	0.836	0.749	0.625	0.483	0.362	0.305
May	0.549	0.546	0.538	0.523	0.494	0.445	0.378	0.299	0.233	0.202
Jun	0.298	0.297	0.294	0.288	0.276	0.257	0.231	0.200	0.174	0.162
Jul	1.501	1.490	1.462	1.406	1.301	1.129	0.885	0.605	0.365	0.253
Aug	0.521	0.518	0.511	0.495	0.467	0.419	0.353	0.276	0.210	0.180
Sep	0.712	0.707	0.696	0.672	0.628	0.555	0.453	0.335	0.234	0.187

Reserve Flows without High Flows

Oct	0.345	0.344	0.340	0.333	0.320	0.298	0.267	0.232	0.201	0.187
Nov	0.425	0.423	0.420	0.413	0.401	0.380	0.346	0.299	0.247	0.214
Dec	0.866	0.863	0.856	0.843	0.818	0.775	0.706	0.611	0.504	0.437
Jan	0.841	0.838	0.831	0.818	0.794	0.752	0.686	0.593	0.489	0.424
Feb	0.787	0.785	0.778	0.766	0.744	0.705	0.642	0.555	0.458	0.397
Mar	0.804	0.801	0.795	0.783	0.760	0.720	0.656	0.567	0.468	0.406
Apr	0.502	0.500	0.495	0.485	0.465	0.434	0.389	0.337	0.293	0.272
May	0.343	0.341	0.338	0.331	0.318	0.296	0.265	0.230	0.200	0.186
Jun	0.298	0.297	0.294	0.288	0.276	0.257	0.231	0.200	0.174	0.162
Jul	0.298	0.297	0.294	0.288	0.276	0.257	0.231	0.200	0.174	0.162
Aug	0.301	0.300	0.297	0.290	0.279	0.260	0.233	0.202	0.175	0.163
Sep	0.285	0.284	0.281	0.275	0.264	0.246	0.221	0.191	0.166	0.155

Natural Duration curves

Oct	16.760	10.870	7.750	6.260	5.150	3.740	2.830	2.110	1.450	0.580
Nov	32.520	22.550	18.100	12.080	10.140	8.620	7.340	5.420	3.210	1.510
Dec	45.840	27.230	22.830	19.960	16.940	14.940	11.880	8.860	6.060	1.570
Jan	43.630	30.830	23.110	21.460	17.130	15.730	13.720	10.440	6.570	3.300
Feb	45.720	28.740	24.010	22.060	17.870	13.630	10.980	8.110	6.670	3.390
Mar	36.070	25.800	21.420	16.450	14.090	11.600	10.790	8.320	6.030	3.160
Apr	21.910	14.480	13.040	11.390	10.100	8.520	6.480	4.740	4.000	1.840
May	11.430	8.270	7.640	6.730	6.010	5.190	4.390	3.500	2.410	1.420
Jun	7.270	5.840	5.360	4.570	3.830	3.330	2.910	2.260	1.750	1.000
Jul	6.530	4.760	4.250	3.420	2.940	2.710	2.350	1.900	1.410	0.820
Aug	6.920	3.860	3.230	2.770	2.400	2.150	1.870	1.690	1.220	0.660
Sep	6.870	5.200	3.350	2.880	2.510	2.050	1.710	1.360	1.000	0.490

Hydrological time series

Total Runoff : Ni5

Desktop (Version 2) Modified Flow Data for Ecological Category D

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	2.904	2.472	7.604	3.410	3.129	3.844	0.883	0.512	0.283	1.312	0.425	0.696	27.474
1921	2.858	2.484	10.126	7.513	6.610	3.600	0.766	0.523	0.292	1.447	0.521	0.712	37.453
1922	2.904	2.484	10.126	9.707	9.391	4.107	0.928	0.544	0.288	1.319	0.467	0.526	42.791
1923	2.297	2.096	7.224	7.251	5.831	4.026	0.908	0.546	0.297	1.435	0.474	0.704	33.088
1924	2.622	2.465	8.865	5.147	4.317	4.218	0.937	0.549	0.298	1.499	0.520	0.709	32.146
1925	2.671	1.365	3.086	2.240	4.569	2.536	0.527	0.308	0.249	1.196	0.407	0.672	19.826
1926	2.307	0.918	1.067	0.956	1.758	2.096	0.652	0.387	0.217	0.726	0.393	0.478	11.954
1927	2.735	1.687	2.828	5.009	4.986	2.398	0.657	0.397	0.231	0.638	0.269	0.634	22.470
1928	2.178	1.146	1.646	0.993	1.021	4.034	0.911	0.506	0.291	1.483	0.511	0.712	15.433
1929	2.884	2.435	4.774	7.535	6.995	4.037	0.889	0.489	0.256	0.726	0.341	0.574	31.934
1930	1.100	1.483	2.723	1.591	1.326	0.796	0.336	0.258	0.184	0.497	0.256	0.273	10.823
1931	0.433	0.364	1.064	0.906	1.748	3.142	0.749	0.460	0.281	1.321	0.412	0.378	11.259
1932	0.900	0.696	6.083	3.426	2.261	0.918	0.421	0.339	0.213	1.256	0.499	0.557	17.568
1933	1.108	1.759	10.126	9.258	6.191	2.461	0.799	0.540	0.292	1.496	0.521	0.711	35.262
1934	2.654	2.365	6.554	4.921	4.675	3.452	0.769	0.531	0.297	1.456	0.495	0.541	28.709
1935	1.092	0.433	2.159	7.427	7.534	3.890	0.768	0.545	0.298	1.491	0.506	0.571	26.714
1936	1.992	2.445	4.487	8.860	9.732	4.096	0.905	0.524	0.276	1.032	0.341	0.614	35.634
1937	1.955	0.564	6.511	3.713	3.417	2.051	0.745	0.523	0.291	1.497	0.519	0.693	22.478
1938	2.806	2.289	4.602	4.170	10.141	4.204	0.933	0.545	0.294	1.469	0.517	0.703	32.672
1939	2.854	2.455	7.492	6.998	4.960	2.390	0.700	0.542	0.298	1.501	0.521	0.704	31.417
1940	2.230	1.694	5.606	3.090	2.424	1.212	0.677	0.500	0.276	1.037	0.375	0.453	19.575
1941	0.959	0.733	1.229	2.075	3.701	4.084	0.924	0.534	0.292	1.447	0.505	0.684	17.168
1942	2.607	2.419	7.835	6.981	5.670	3.682	0.936	0.549	0.298	1.501	0.521	0.712	33.712
1943	2.883	2.403	5.635	3.225	7.256	3.862	0.702	0.422	0.291	1.498	0.515	0.702	29.393
1944	2.641	1.506	1.670	1.105	0.959	1.586	0.616	0.378	0.217	0.605	0.246	0.281	11.808
1945	0.465	0.364	0.941	6.070	4.728	1.901	0.545	0.325	0.200	0.497	0.229	0.345	16.609
1946	1.336	2.378	7.083	4.160	3.913	1.735	0.536	0.392	0.267	1.301	0.419	0.417	23.938
1947	0.913	1.992	2.560	1.688	1.892	3.521	0.836	0.494	0.268	0.901	0.276	0.465	15.804
1948	2.324	2.148	3.627	3.182	3.300	3.699	0.882	0.538	0.294	1.416	0.452	0.515	22.377
1949	2.515	1.381	2.167	1.469	1.029	2.195	0.710	0.434	0.270	1.174	0.427	0.395	14.164
1950	0.687	1.184	4.616	4.754	3.551	3.244	0.892	0.547	0.208	0.947	0.521	0.710	21.861
1951	2.899	2.034	4.160	2.716	1.488	0.655	0.455	0.209	0.162	0.537	0.183	0.187	15.683
1952	0.380	2.170	2.793	1.393	7.654	4.082	0.889	0.333	0.184	0.279	0.196	0.229	20.583
1953	0.399	2.063	3.630	2.135	6.420	3.284	0.615	0.418	0.201	0.380	0.187	0.264	19.997
1954	2.721	2.470	3.834	5.225	7.007	4.213	0.894	0.512	0.290	1.406	0.465	0.453	29.490
1955	2.492	2.231	6.914	4.060	11.111	4.218	0.931	0.545	0.296	1.447	0.503	0.699	35.447
1956	2.903	2.472	8.607	5.058	6.413	4.109	0.935	0.549	0.298	1.501	0.521	0.712	34.080
1957	2.904	2.460	4.191	8.522	8.100	3.584	0.784	0.524	0.285	1.304	0.419	0.628	33.706
1958	2.475	2.484	8.889	4.911	7.627	2.728	0.587	0.371	0.231	1.419	0.245	0.679	32.646
1959	2.825	2.421	7.393	2.730	5.891	3.545	0.827	0.532	0.297	1.219	0.505	0.630	28.816
1960	2.862	2.479	10.126	9.590	8.395	3.952	0.937	0.547	0.298	1.490	0.518	0.707	41.903
1961	2.691	2.063	3.735	7.928	8.341	2.890	0.596	0.376	0.215	1.159	0.459	0.598	31.050
1962	1.817	2.479	10.126	8.588	5.452	3.904	0.931	0.548	0.298	1.501	0.521	0.711	36.878
1963	2.822	2.483	4.519	6.552	6.424	1.487	0.356	0.266	0.191	0.608	0.295	0.408	26.411
1964	2.904	2.484	9.206	7.145	6.578	1.467	0.369	0.228	0.235	0.885	0.353	0.593	32.447
1965	1.336	1.798	2.019	6.747	10.175	2.619	0.409	0.333	0.263	0.674	0.398	0.661	27.433
1966	2.317	0.599	4.752	6.630	11.111	4.208	0.925	0.502	0.276	1.256	0.442	0.546	33.564
1967	1.958	2.468	8.269	6.219	4.976	4.137	0.817	0.431	0.238	1.089	0.467	0.386	31.454
1968	0.586	2.257	4.903	6.291	4.662	4.165	0.937	0.549	0.295	1.470	0.510	0.681	27.307
1969	2.904	2.370	6.051	5.805									

1970	2.872	2.360	7.982	9.426	6.628	2.769	0.934	0.549	0.298	1.488	0.513	0.684	36.503
1971	2.824	2.446	9.582	9.707	11.111	4.218	0.937	0.548	0.298	1.490	0.516	0.640	44.316
1972	1.444	0.981	3.306	2.482	10.754	4.218	0.937	0.549	0.298	1.492	0.521	0.712	27.695
1973	2.897	2.391	7.298	8.286	9.625	3.924	0.931	0.540	0.296	1.501	0.521	0.654	38.864
1974	1.336	2.461	8.453	8.218	10.303	4.210	0.936	0.548	0.297	1.478	0.503	0.712	39.456
1975	2.770	2.452	10.126	9.185	11.111	4.218	0.937	0.549	0.298	1.501	0.519	0.686	44.354
1976	2.822	2.291	9.614	9.707	10.681	4.136	0.918	0.533	0.257	1.189	0.423	0.628	43.200
1977	2.871	1.951	4.332	9.707	11.111	4.210	0.926	0.536	0.288	1.435	0.511	0.688	38.565
1978	2.904	2.405	8.779	2.771	2.332	0.778	0.312	0.205	0.164	0.457	0.483	0.703	22.295
1979	2.500	2.024	4.342	5.971	8.027	3.461	0.384	0.233	0.174	0.434	0.222	0.335	28.106
1980	0.607	0.947	5.556	5.915	9.591	3.549	0.362	0.264	0.193	0.561	0.285	0.708	28.540
1981	2.011	1.222	1.426	3.985	1.306	3.046	0.360	0.219	0.174	0.321	0.193	0.222	14.485
1982	0.767	0.583	0.941	0.906	0.959	0.655	0.305	0.203	0.167	0.265	0.207	0.197	6.155
1983	1.659	2.484	7.513	9.707	11.111	4.181	0.936	0.547	0.297	1.501	0.521	0.712	41.168
1984	2.883	2.288	4.201	4.430	10.352	4.181	0.882	0.488	0.264	0.908	0.309	0.294	31.483
1985	2.151	2.247	2.925	7.947	8.558	4.083	0.925	0.516	0.280	1.129	0.341	0.294	31.397
1986	1.515	0.701	2.141	3.174	2.294	3.821	0.625	0.236	0.281	0.343	0.475	0.712	16.320
1987	2.904	2.484	8.212	7.291	8.649	4.193	0.876	0.445	0.268	1.462	0.473	0.555	37.815
1988	2.897	2.048	9.796	9.047	10.509	4.203	0.764	0.461	0.296	1.400	0.474	0.321	42.215
1989	0.794	2.482	9.032	4.053	2.806	3.746	0.483	0.289	0.178	0.365	0.210	0.234	24.671
1990	0.528	0.420	3.265	9.707	11.111	4.192	0.858	0.451	0.276	1.301	0.353	0.408	32.870
1991	2.830	1.809	6.448	5.098	6.614	1.184	0.318	0.202	0.162	0.253	0.180	0.187	25.285
1992	0.382	1.905	1.126	1.084	2.714	3.382	0.444	0.226	0.164	0.276	0.184	0.214	12.101
1993	2.904	2.380	6.016	7.550	9.041	4.191	0.904	0.457	0.247	0.845	0.386	0.267	35.188
1994	2.721	1.439	6.731	1.758	1.161	0.907	0.362	0.271	0.171	0.341	0.196	0.198	16.254
1995	1.255	2.416	10.126	9.707	11.111	4.218	0.937	0.549	0.298	1.501	0.520	0.650	43.290
1996	2.880	2.251	6.097	6.829	3.027	4.214	0.937	0.549	0.298	1.501	0.521	0.712	29.819
1997	2.882	2.484	9.033	8.755	7.774	4.139	0.890	0.478	0.273	1.095	0.378	0.343	38.525
1998	1.775	2.069	9.267	9.599	3.649	1.050	0.318	0.217	0.166	0.327	0.236	0.224	25.257
1999	0.570	0.448	10.126	9.707	10.504	4.165	0.937	0.549	0.298	1.499	0.518	0.702	40.025
2000	2.830	2.484	9.744	4.317	4.167	1.684	0.921	0.515	0.255	0.859	0.304	0.708	28.789
2001	2.712	2.472	7.215	4.157	7.961	3.160	0.454	0.238	0.187	1.310	0.515	0.711	31.091
2002	1.839	0.523	3.868	2.611	3.893	0.767	0.305	0.202	0.162	0.253	0.180	0.196	14.798
2003	0.393	1.454	1.257	1.605	9.581	4.218	0.857	0.365	0.198	1.279	0.503	0.667	22.378
2004	0.794	1.275	6.485	8.356	7.395	4.218	0.915	0.459	0.216	1.477	0.518	0.678	32.785
Mean	2.067	1.882	5.752	5.485	6.275	3.220	0.731	0.435	0.253	1.086	0.409	0.538	28.133

A.16. Ni6 – Category B

Summary table

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :
Total Runoff : Ni6

Annual Flows (Mill. cu. m or index values):

MAR = 181.016
S.Dev. = 94.328
CV = 0.521
Q75 = 4.030
Q75/MMF = 0.267
BFI Index = 0.430
CV(JJA+JFM) Index = 1.475

Ecological Category = B

Total IFR = 73.163 (40.42 %MAR)
Maint. Lowflow = 42.318 (23.38 %MAR)
Drought Lowflow = 4.201 (2.32 %MAR)
Maint. Highflow = 30.844 (17.04 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
			CV	Maint.	Drought	Maint.	
Oct	10.206	14.160	1.387	2.476	0.249	2.788	5.264
Nov	19.006	16.262	0.856	3.803	0.284	2.071	5.874
Dec	27.041	20.145	0.745	6.904	0.580	6.618	13.522
Jan	30.228	30.971	1.025	7.529	0.563	6.366	13.895
Feb	28.710	23.057	0.803	7.100	0.527	7.158	14.259
Mar	23.051	15.782	0.685	6.356	0.538	3.212	9.568
Apr	14.752	9.937	0.674	3.525	0.362	0.621	4.146
May	8.609	5.101	0.593	1.278	0.247	0.250	1.529
Jun	5.728	3.053	0.533	0.949	0.215	0.000	0.949
Jul	4.734	3.054	0.645	0.855	0.215	1.124	1.979
Aug	4.088	2.999	0.734	0.770	0.217	0.205	0.975
Sep	4.863	7.049	1.450	0.772	0.205	0.429	1.201

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni6

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	6.004	5.952	5.833	5.588	5.131	4.379	3.316	2.093	1.048	0.562
Nov	6.802	6.755	6.658	6.464	6.102	5.470	4.465	3.068	1.511	0.531
Dec	21.091	19.321	17.748	16.253	14.652	11.952	9.789	6.784	3.434	1.327
Jan	21.346	19.635	18.107	16.637	15.035	12.333	10.085	6.961	3.479	1.288

Feb	22.373	20.461	18.766	17.159	15.446	12.560	10.275	7.099	3.560	1.333
Mar	11.096	11.020	10.862	10.548	9.961	8.936	7.305	5.039	2.513	0.924
Apr	4.885	4.842	4.746	4.546	4.174	3.561	2.696	1.699	0.848	0.452
May	1.800	1.785	1.752	1.684	1.556	1.346	1.050	0.709	0.417	0.281
Jun	1.133	1.124	1.104	1.063	0.987	0.860	0.682	0.477	0.302	0.220
Jul	2.250	2.232	2.190	2.104	1.944	1.679	1.306	0.877	0.510	0.339
Aug	1.144	1.135	1.116	1.075	1.000	0.875	0.699	0.496	0.323	0.243
Sep	1.391	1.380	1.356	1.305	1.209	1.052	0.830	0.575	0.357	0.255

Reserve Flows without High Flows

Oct	2.954	2.928	2.870	2.749	2.523	2.151	1.626	1.022	0.506	0.265
Nov	4.537	4.506	4.440	4.309	4.065	3.639	2.962	2.020	0.971	0.311
Dec	8.237	8.180	8.061	7.827	7.388	6.621	5.401	3.706	1.817	0.628
Jan	8.982	8.920	8.789	8.531	8.048	7.205	5.864	4.000	1.923	0.616
Feb	8.470	8.411	8.288	8.045	7.589	6.793	5.528	3.770	1.810	0.577
Mar	7.583	7.531	7.422	7.206	6.802	6.096	4.974	3.414	1.676	0.583
Apr	4.205	4.169	4.085	3.913	3.593	3.065	2.319	1.461	0.727	0.386
May	1.526	1.514	1.486	1.429	1.322	1.146	0.898	0.613	0.368	0.255
Jun	1.133	1.124	1.104	1.063	0.987	0.860	0.682	0.477	0.302	0.220
Jul	1.021	1.013	0.996	0.959	0.892	0.781	0.625	0.445	0.291	0.220
Aug	0.920	0.913	0.898	0.866	0.808	0.711	0.575	0.418	0.283	0.221
Sep	0.922	0.915	0.899	0.867	0.808	0.709	0.570	0.410	0.273	0.210

Natural Duration curves

Oct	22.370	14.510	10.340	8.360	6.880	4.990	3.780	2.820	1.940	0.780
Nov	43.410	30.100	24.160	16.120	13.530	11.510	9.790	7.230	4.280	2.010
Dec	61.180	36.340	30.470	26.640	22.610	19.940	15.860	11.820	8.090	2.100
Jan	58.230	41.150	30.840	28.640	22.860	20.990	18.310	13.930	8.770	4.400
Feb	61.020	38.360	32.050	29.440	23.850	18.190	14.650	10.830	8.900	4.530
Mar	48.150	34.430	28.590	21.960	18.810	15.480	14.400	11.100	8.050	4.220
Apr	29.240	19.320	17.410	15.200	13.480	11.370	8.650	6.330	5.340	2.460
May	15.260	11.040	10.200	8.980	8.020	6.930	5.860	4.670	3.220	1.890
Jun	9.700	7.790	7.160	6.100	5.110	4.440	3.880	3.020	2.340	1.340
Jul	8.710	6.360	5.680	4.560	3.920	3.620	3.130	2.540	1.880	1.100
Aug	9.230	5.150	4.310	3.700	3.210	2.870	2.500	2.250	1.630	0.880
Sep	9.170	6.940	4.470	3.850	3.350	2.740	2.280	1.820	1.340	0.650

Hydrological time series

Total Runoff : Ni6

Desktop (Version 2) Modified Flow Data for Ecological Category B

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	6.004	6.767	17.384	9.135	7.380	10.026	4.503	1.639	1.031	1.961	0.890	1.356	68.075
1921	5.904	6.802	21.091	18.107	15.504	9.330	3.683	1.687	1.092	2.167	1.144	1.391	87.902
1922	6.004	6.802	21.091	21.346	19.976	10.778	4.819	1.778	1.063	1.971	1.000	0.989	97.616
1923	4.693	5.655	16.771	17.683	14.095	10.548	4.677	1.785	1.124	2.147	1.017	1.373	81.569
1924	5.393	6.745	19.288	13.749	10.696	11.096	4.885	1.800	1.132	2.246	1.139	1.384	79.554
1925	5.502	3.488	7.524	5.474	11.394	6.295	2.005	0.749	0.807	1.785	0.841	1.305	47.168
1926	4.713	2.169	1.693	1.446	3.560	5.039	2.878	1.092	0.589	1.077	0.805	0.888	25.947
1927	5.639	4.450	6.784	13.475	12.560	5.897	2.919	1.136	0.682	0.929	0.479	1.223	56.172
1928	4.438	2.850	3.363	1.560	1.503	10.570	4.698	1.613	1.086	2.222	1.117	1.391	36.412
1929	5.961	6.658	12.245	18.143	16.194	10.578	4.544	1.537	0.853	1.077	0.661	1.093	79.544
1930	2.106	3.841	6.480	3.437	2.353	1.327	0.666	0.529	0.366	0.714	0.443	0.441	22.703
1931	0.672	0.531	1.684	1.288	3.532	8.021	3.561	1.410	1.018	1.974	0.854	0.668	25.214
1932	1.682	1.511	14.711	9.190	4.962	1.674	1.264	0.882	0.566	1.873	1.085	1.055	40.454
1933	2.125	4.662	21.091	20.702	14.742	6.080	3.910	1.761	1.091	2.241	1.144	1.388	80.937
1934	5.461	6.451	15.586	13.316	11.692	8.914	3.700	1.719	1.123	2.180	1.075	1.020	72.237
1935	2.093	0.733	4.850	17.972	17.159	10.161	3.692	1.780	1.133	2.234	1.102	1.086	63.995
1936	4.036	6.686	12.336	20.127	20.461	10.747	4.656	1.692	0.987	1.531	0.668	1.178	85.105
1937	3.956	1.127	15.506	10.085	8.188	4.912	3.535	1.684	1.084	2.242	1.138	1.350	54.807
1938	5.793	6.225	11.909	11.526	21.031	11.056	4.850	1.780	1.104	2.200	1.133	1.371	79.980
1939	5.895	6.717	17.207	17.272	12.493	5.881	3.216	1.770	1.133	2.250	1.142	1.374	76.351
1940	4.550	4.465	13.822	8.138	5.420	2.513	3.056	1.584	0.987	1.537	0.760	0.830	47.663
1941	1.809	1.625	2.156	4.950	8.981	10.714	4.793	1.732	1.091	2.167	1.101	1.332	42.450
1942	5.359	6.610	17.748	17.250	13.799	9.564	4.871	1.800	1.133	2.250	1.144	1.391	82.920
1943	5.958	6.563	13.873	8.563	16.660	10.077	3.232	1.242	1.083	2.244	1.128	1.369	71.991
1944	5.434	3.913	3.434	1.911	1.333	3.580	2.628	1.050	0.589	0.877	0.419	0.458	25.625
1945	0.741	0.531	1.327	15.551	11.836	4.482	2.129	0.816	0.477	0.714	0.371	0.596	39.570
1946	2.621	6.488	16.535	11.494	9.567	4.005	2.067	1.114	0.926	1.944	0.875	0.750	58.387
1947	1.703	5.346	6.007	3.737	3.957	9.105	4.174	1.556	0.300	1.332	0.496	0.849	39.194
1948	4.753	5.808	9.088	8.424	7.863	9.613	4.496	1.752	1.107	2.119	0.959	0.964	56.947
1949	5.162	3.535	4.867	3.049	1.529	5.319	3.287	1.294	0.943	1.750	0.893	0.707	32.335
1950	1.212	2.962	11.952	12.983	8.559	8.316	4.565	1.788	0.531	1.401	1.144	1.386	56.800
1951	5.993	5.470	10.630	6.961	2.808	0.924	1.500	0.312	0.220	0.773	0.251	0.255	36.097
1952	0.500	5.874	6.683	2.813	17.357	10.707	4.546	0.856	0.369	0.378	0.286	0.344	50.713
1953	0.597	5.558	9.094	5.144	15.161	8.423	2.616	1.228	0.487	0.536	0.261	0.421	49.526
1954	5.607	6.761	9.691	13.894	16.215	11.082	4.579	1.637	1.081	2.104	0.992	0.830	74.473
1955	5.111	6.055	16.253	11.172	22.373	11.096	4.842	1.780	1.117	2.166	1.096	1.363	84.425
1956	6.000	6.767	18.908	13.576	15.150	10.785	4.870	1.800	1.133	2.250	1.144	1.391	83.775
1957	6.004	6.733	10.732	19.635	18.065	9.287	3.811	1.692	1.043	1.949	0.875	1.209	81.034
1958	5.075	6.802	19.321	13.287	17.309	6.840	2.424	1.022	0.686	2.125	0.414	1.320	76.625
1959	5.833	6.617	17.045	7.012	14.202	9.173	4.113	1.724	1.125	1.820	1.100	1.215	70.978
1960	5.912	6.787	21.091	21.179	18.516	10.336	4.884	1.790	1.132	2.232	1.135	1.380	96.375
1961	5.542	5.558	9.402	18.749	18.426	7.305	2.492	1.042	0.577	1.723	1.978	1.145	72.937
1962	3.662	6.787	21.091	19.732	13.406	10.196	4.842	1.795	1.133	2.250	1.144	1.389	87.427
1963	5.827	6.799	11.671	16.487	15.171	3.287	0.805	0.563	0.414	0.881	0.549	0.736	63.192
1964	6.004	6.802	19.777	17.512	15.446	3.246	0.894	0.395	0.717	1.306	0.699	1.134	73.933
1965	2.621	4.773	4.437	16.841	21.079	6.536	1.175	0.856	0.902	0.985	0.817	1.282	62.303
1966	4.733	1.230	12.205	16.637	22.373	11.067	4.797	1.592	0.983	1.873	0.934	1.029	79.452
1967	3.966	6.755	18.407	15.839	12.538	10.863	4.037	1.283	0.736	1.615	1.000	0.685	77.724
1968	0.997	6.130	12.498	15.980	11.656	10.944	4.885	1.799	1.111	2.202	1.115	1.323	70.639
1969	6.004	6.464	14.652	15.035	19.424	10.265	1.748	0.709	0.538	1.062	1.035	1.137	78.073
1970	5.935	6.437	17.973	20.943	15.538	6.965	4.858	1.800	1.130	2.229	1.121	1.331	86.260
1971	5.830	6.689	20.317	21.346	22.373	11.096	4.885	1.796	1.130	2.231	1.129	1.234	100.058
1972	2.795	2.358	8.165	6.230	21.882	11.096	4.885	1.800	1.130	2.235	1.144	1.391	65.112
1973	5.987	6.526	16.897	19.284	20.305	10.256	4.842	1.760	1.115	2.250	1.142	1.264	91.628
1974	2.621	6.735	18.679	19.183	21.258	11.072	4.876	1.794	1.126	2.214	1.096	1.391	92.043
1975	5.714	6.708	21.091	20.600	22.373	11.096	4.885	1.800</					

1976	5.827	6.231	20.364	21.346	21.782	10.862	4.746	1.729	0.860	1.776	0.886	1.209	97.619
1977	5.932	5.223	11.130	21.346	22.373	11.073	4.804	1.740	1.067	2.148	1.116	1.339	89.291
1978	6.004	6.568	19.160	7.135	5.167	1.274	0.500	0.297	0.239	0.651	1.041	1.372	49.408
1979	5.131	5.438	11.161	15.357	17.947	8.936	1.000	0.417	0.299	0.616	0.352	0.575	67.228
1980	1.048	2.253	13.721	15.251	20.263	9.188	0.848	0.555	0.430	0.809	0.523	1.382	66.272
1981	4.077	3.068	2.734	10.935	2.298	7.753	0.830	0.359	0.302	0.441	0.278	0.330	33.405
1982	1.390	1.182	1.327	1.288	1.333	0.924	0.452	0.287	0.258	0.357	0.313	0.277	9.387
1983	3.316	6.802	17.237	21.346	22.373	10.989	4.872	1.791	1.122	2.249	1.144	1.391	94.633
1984	5.958	6.224	10.755	12.333	21.327	10.991	4.496	1.533	0.906	1.350	0.584	0.488	76.945
1985	4.379	6.102	7.070	18.778	18.766	10.709	4.798	1.656	1.010	1.679	0.661	0.488	76.096
1986	2.969	1.526	4.801	8.397	5.056	9.961	2.696	0.429	1.020	0.477	1.021	1.391	39.743
1987	6.004	6.802	18.323	17.751	18.898	11.024	4.457	1.346	0.934	2.190	1.015	1.052	89.797
1988	5.989	5.511	20.622	20.398	21.545	11.053	3.665	1.414	1.120	2.097	1.017	0.545	94.975
1989	1.450	6.797	19.526	11.154	6.481	9.745	1.699	0.661	0.326	0.510	0.323	0.357	59.030
1990	0.877	0.696	8.047	21.346	22.373	11.020	4.328	1.371	0.987	1.946	0.699	0.736	74.426
1991	5.844	4.810	15.391	13.663	15.510	2.435	0.538	0.281	0.222	0.339	0.243	0.255	59.532
1992	0.562	5.088	1.861	1.844	6.228	8.700	1.419	0.388	0.238	0.375	0.252	0.314	27.269
1993	6.004	6.494	14.581	18.168	19.475	11.019	4.649	1.398	0.790	1.261	0.782	0.426	85.047
1994	5.607	3.710	15.915	3.960	1.898	1.642	0.848	0.583	0.284	0.472	0.285	0.278	35.482
1995	2.445	6.802	21.091	21.346	22.373	11.096	4.885	1.800	1.133	2.250	1.141	1.255	97.417
1996	5.952	6.114	14.735	16.985	7.099	11.084	4.885	1.798	1.133	2.250	1.144	1.391	74.570
1997	5.956	6.802	19.528	19.975	17.545	10.870	4.549	1.491	0.968	1.628	0.767	0.588	90.666
1998	3.576	5.573	19.865	15.335	8.838	2.052	0.542	0.348	0.246	0.454	0.390	0.335	57.554
1999	0.962	0.779	21.091	21.346	21.538	10.944	4.885	1.800	1.133	2.247	1.136	1.369	89.229
2000	5.844	6.802	20.548	11.980	10.275	3.862	4.767	1.652	0.848	1.276	0.566	1.383	69.803
2001	5.588	6.767	16.756	11.479	17.850	8.085	1.493	0.444	0.390	1.959	1.126	1.388	73.324
2002	3.714	0.999	9.789	6.638	9.512	1.242	0.452	0.281	0.220	0.339	0.243	0.275	33.703
2003	0.585	3.755	2.247	3.479	20.247	11.096	4.319	0.994	0.461	1.917	1.096	1.293	51.490
2004	1.450	3.231	15.458	19.388	16.911	11.096	4.726	1.408	0.583	2.212	1.134	1.316	78.915

Mean 4.196 5.022 13.070 13.246 13.796 8.246 3.438 1.299 0.831 1.615 0.848 1.015 66.621

A.17. Ni6 – Category C

Summary table

Desktop Version 2, Generated on 2015-03-26
Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni6

Annual Flows (Mill. cu. m or index values):

MAR = 181,016
S.Dev. = 94,328
CV = 0,521
Q75 = 4,030
Q75/MMF = 0,267
BFI Index = 0,430
CV(JJA+JFM) Index = 1,475

Ecological Category = C

Total IFR = 54,511 (30,11 %MAR)
Maint. Lowflow = 23,667 (13,07 %MAR)
Drought Lowflow = 4,201 (2,32 %MAR)
Maint. Highflow = 30,844 (17,04 %MAR)

Monthly Distributions (Mill. cu. m.)
Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
			CV	Maint.	Drought	Maint.	
Oct	10,206	14,160	1,387	1,250	0,249	2,788	4,039
Nov	19,006	16,262	0,856	1,632	0,284	2,071	3,704
Dec	27,041	20,145	0,745	4,208	0,580	6,618	10,826
Jan	30,228	30,971	1,025	4,396	0,563	6,366	10,762
Feb	28,710	23,057	0,803	4,120	0,527	7,158	11,278
Mar	23,051	15,782	0,685	3,832	0,538	3,212	7,044
Apr	14,752	9,937	0,674	2,210	0,362	0,621	2,832
May	8,609	5,101	0,593	0,478	0,247	0,250	0,729
Jun	5,728	3,053	0,533	0,412	0,215	0,000	0,412
Jul	4,734	3,054	0,645	0,399	0,215	1,124	1,523
Aug	4,088	2,999	0,734	0,375	0,217	0,205	0,580
Sep	4,863	7,049	1,450	0,354	0,205	0,429	0,783

Rule curve

Desktop Version 2, Generated on 09/04/2015
Summary of IFR rule curves (Desktop Version 2) for :
Total Runoff : Ni6
Regional Type : N.Natal
Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	4.963	4.920	4.824	4.626	4.256	3.646	2.786	1.796	0.949	0.555
Nov	4.744	4.712	4.646	4.516	4.272	3.846	3.169	2.227	1.178	0.518
Dec	18.712	16.959	15.424	14.002	12.537	10.075	8.291	5.813	3.050	1.312
Jan	18.484	16.794	15.310	13.928	12.491	10.075	8.283	5.792	3.016	1.270
Feb	19.638	17.746	16.093	14.570	13.014	10.402	8.553	5.983	3.118	1.316
Mar	9.166	9.105	8.976	8.722	8.245	7.413	6.090	4.251	2.201	0.912
Apr	3.719	3.687	3.616	3.468	3.193	2.741	2.102	1.366	0.737	0.444
May	0.942	0.935	0.921	0.891	0.835	0.743	0.613	0.463	0.335	0.276
Jun	0.559	0.555	0.548	0.532	0.504	0.457	0.390	0.313	0.247	0.217
Jul	1.860	1.845	1.812	1.743	1.615	1.405	1.107	0.765	0.473	0.337
Aug	0.749	0.744	0.733	0.710	0.667	0.597	0.498	0.383	0.286	0.240
Sep	0.983	0.976	0.960	0.927	0.866	0.765	0.623	0.458	0.318	0.253

Reserve Flows without High Flows

Oct	1.691	1.677	1.646	1.582	1.461	1.263	0.983	0.661	0.386	0.258
Nov	2.273	2.258	2.227	2.166	2.052	1.853	1.536	1.096	0.605	0.297
Dec	5.858	5.819	5.737	5.575	5.273	4.744	3.903	2.735	1.432	0.613
Jan	6.120	6.079	5.993	5.822	5.504	4.947	4.062	2.832	1.460	0.598
Feb	5.735	5.696	5.615	5.456	5.157	4.635	3.806	2.653	1.368	0.560
Mar	5.334	5.298	5.224	5.077	4.802	4.322	3.558	2.496	1.313	0.568
Apr	2.990	2.965	2.908	2.790	2.571	2.210	1.700	1.113	0.611	0.378
May	0.648	0.644	0.635	0.617	0.584	0.529	0.451	0.361	0.285	0.249
Jun	0.559	0.555	0.548	0.532	0.504	0.457	0.390	0.313	0.247	0.217
Jul	0.541	0.538	0.531	0.516	0.489	0.444	0.381	0.308	0.246	0.217
Aug	0.508	0.505	0.499	0.486	0.461	0.421	0.365	0.300	0.244	0.218
Sep	0.480	0.477	0.471	0.459	0.436	0.398	0.345	0.284	0.231	0.207

Natural Duration curves

Oct	22.370	14.510	10.340	8.360	6.880	4.990	3.780	2.820	1.940	0.780
Nov	43.410	30.100	24.160	16.120	13.530	11.510	9.790	7.230	4.280	2.010
Dec	61.180	36.340	30.470	26.640	22.610	19.940	15.860	11.820	8.090	2.100
Jan	58.230	41.150	30.840	28.640	22.860	20.990	18.310	13.930	8.770	4.400
Feb	61.020	38.360	32.050	29.440	23.850	18.190	14.650	10.830	8.900	4.530
Mar	48.150	34.430	28.590	21.960	18.810	15.480	14.400	11.100	8.050	4.220
Apr	29.240	19.320	17.410	15.200	13.480	11.370	8.650	6.330	5.340	2.460
May	15.260	11.040	10.200	8.980	8.020	6.930	5.860	4.670	3.220	1.890
Jun	9.700	7.790	7.160	6.100	5.110	4.440	3.880	3.020	2.340	1.340
Jul	8.710	6.360	5.680	4.560	3.920	3.620	3.130	2.540	1.880	1.100
Aug	9.230	5.150	4.310	3.700	3.210	2.870	2.500	2.250	1.630	0.880
Sep	9.170	6.940	4.470	3.850	3.350	2.740	2.280	1.820	1.340	0.650

Hydrological time series

Total Runoff :

Ni6

Desktop (Version 2) Modified Flow Data for Ecological Category C

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	4.963	4.720	15.075	7.525	6.210	8.298	3.436	0.871	0.521	1.629	0.605	0.960	54.813
1921	4.882	4.744	18.712	15.310	13.067	7.733	2.831	0.892	0.543	1.793	0.749	0.983	72.239
1922	4.963	4.744	18.712	18.484	17.271	8.908	3.670	0.932	0.532	1.637	0.667	0.724	81.244
1923	3.901	3.971	14.490	14.909	11.791	8.722	3.565	0.935	0.555	1.778	0.677	0.971	66.264
1924	4.468	4.705	16.927	11.341	8.893	9.166	3.719	0.942	0.558	1.856	0.746	0.979	64.300
1925	4.556	2.511	6.423	4.607	9.458	5.270	1.592	0.481	0.437	1.489	0.578	0.927	38.328
1926	3.917	1.622	1.614	1.396	3.118	4.251	2.236	0.631	0.355	0.925	0.557	0.659	21.281
1927	4.667	3.159	5.813	11.095	10.402	4.947	2.266	0.651	0.390	0.806	0.373	0.875	45.445
1928	3.695	2.081	2.991	1.487	1.453	8.739	3.581	0.860	0.541	1.837	0.733	0.983	28.981
1929	4.928	4.646	10.343	15.345	13.693	8.746	3.467	0.826	0.454	0.925	0.476	0.792	64.640
1930	1.806	2.749	5.562	2.983	2.141	1.239	0.603	0.385	0.271	0.636	0.353	0.372	19.099
1931	0.645	0.518	1.607	1.270	3.096	6.671	2.741	0.771	0.516	1.639	0.585	0.518	20.576
1932	1.462	1.178	12.591	7.569	4.253	1.520	1.044	0.539	0.346	1.559	0.715	0.767	33.545
1933	1.821	3.302	18.712	17.846	12.377	5.096	2.998	0.925	0.543	1.853	0.748	0.981	67.201
1934	4.523	4.507	13.391	10.953	9.699	7.395	2.844	0.906	0.555	1.804	0.710	0.745	58.032
1935	1.796	0.654	4.218	15.182	14.570	8.407	2.837	0.933	0.559	1.847	0.725	0.787	52.514
1936	3.369	4.665	10.426	17.278	17.746	8.883	3.550	0.894	0.504	1.286	0.480	0.846	69.928
1937	3.304	0.920	13.318	8.283	6.864	4.148	2.721	0.891	0.540	1.853	0.745	0.957	44.545
1938	4.792	4.355	10.040	9.431	18.309	9.134	3.693	0.933	0.548	1.820	0.742	0.970	64.767
1939	4.875	4.687	14.905	14.518	10.348	4.934	2.486	0.928	0.559	1.860	0.747	0.972	61.819
1940	3.785	3.169	11.781	6.730	4.624	2.201	2.368	0.847	0.504	1.292	0.532	0.623	38.455
1941	1.565	1.255	1.995	4.190	7.505	8.856	3.650	0.912	0.543	1.793	0.724	0.945	33.934
1942	4.441	4.614	15.424	14.497	11.523	7.923	3.709	0.942	0.559	1.860	0.749	0.983	67.223
1943	4.925	4.583	11.827	7.069	14.116	8.339	2.498	0.697	0.540	1.855	0.740	0.969	58.157
1944	4.501	2.797	3.050	1.767	1.316	3.067	2.051	0.613	0.355	0.765	0.339	0.383	21.005
1945	0.700	0.518	1.312	12.953	9.816	3.799	1.683	0.510	0.313	0.636	0.312	0.472	33.024
1946	2.223	4.532	14.268	9.406	7.979	3.412	1.637	0.641	0.481	1.615	0.597	0.571	47.363
1947	1.480	3.763	5.172	3.223	3.440	7.550	3.193	0.835	0.483	1.128	0.383	0.635	31.284
1948	3.949	4.074	7.713	6.959	6.600	7.963	3.432	0.921	0.549	1.755	0.644	0.708	45.268
1949	4.281	2.542	4.232	2.674	1.474	4.478	2.538	0.720	0.488	1.461	0.607	0.543	26.038
1950	1.082	2.156	10.075	10.656	7.164	6.910	3.483	0.936	0.333	1.183	0.749	0.980	45.707
1951	4.954	3.846	8.985	5.792	2.510	0.912	1.219	0.289	0.217	0.682	0.245	0.253	29.903
1952	0.500	4.118	5.729	2.486	14.756	8.850	3.468	0.528	0.273	0.368	0.265	0.310	41.650
1953	0.584	3.905	7.718	4.344	12.756	6.997	2.043	0.691	0.317	0.494	0.251	0.359	40.458
1954	4.641	4.716	8.210	11.470	13.713	9.155	3.492	0.870	0.539	1.743	0.663	0.623	59.836
1955	4.240	4.241	14.002	9.149	19.638	9.166	3.687	0.933	0.553	1.793	0.721	0.965	69.086
1956	4.960	4.720	16.555	11.186	12.746	8.914	3.707	0.942	0.559	1.860	0.749	0.983	67.880
1957	4.963	4.697	9.069	16.794	15.424	7.698	2.925	0.894	0.525	1.619	0.597	0.866	66.071
1958	4.211	4.744	16.959	10.928	14.711	5.712	1.901	0.601	0.391	1.760	0.337	0.937	63.191
1959	4.824	4.619	14.750	5.833	11.888	7.605	3.148	0.908	0.556	1.517	0.724	0.870	57.242
1960	4.888	4.734	18.712	18.319	15.855	8.549	3.718	0.937	0.558	1.845	0.744	0.976	79.834
1961	4.588	3.905	7.972	15.929	15.768	6.090	1.951	0.609	0.350	1.440	0.655	0.825	60.082
1962	3.066	4.734	18.712	16.890	11.168	8.436	3.687	0.940	0.559	1.860	0.749	0.982	71.780
1963	4.819	4.742	9.844	13.793	12.765	2.830	0.706	0.399	0.289	0.769	0.413	0.562	51.931
1964	4.963	4.744	17.410	14.745	13.014	2.796	0.771	0.326	0.403	1.107	0.498	0.818	61.595
1965	2.223	3.377	3.877	14.117	18.356	5.466	0.979	0.528	0.472	0.851	0.564	0.913	51.722
1966	3.933	0.989	10.306	13.928	19.638	9.142	3.653	0.851	0.502	1.559	0.630	0.751	65.882
1967	3.312	4.712	16.063	13.212	10.384	8.977	3.093	0.715	0.410	1.353	0.667	0.529	63.427
1968	0.907	4.291	10.573	13.338	9.670	9.042	3.719	0.941	0.550	1.821	0.732	0.939	56.525
1969	4.963	4.516	12.537	12.491	16.731	8.492	1.402	0.463	0.336	0.913	0.687	0.820	64.349
1970	4.907	4.497	15.642	18.085	13.098	5.814	3.699	0.942	0.558	1.843	0.735	0.944	70.763
1971	4.822	4.668	17.944	18.484	19.638	9.166	3.719	0.940	0.558	1.845	0.740	0.882	83.405
1972	2.364	1.749	6.952	5.210	19.151	9.166	3.719	0.942	0.557	1.847	0.749	0.983	53.389
1973	4.949	4.558	14.608	16.451	17.593	8.484	3.687	0.924	0.552	1.860	0.748	0.902	75.315
1974	2.223	4.698	16.330	16.353	18.533	9.146	3.712	0.939	0.556	1.831	0.721	0.983	76.025
1975	4.728	4.681	18.712	17.744	19.638	9.166	3.719	0.942	0.559	1.860	0.745	0.946	83.438
1976	4.819	4.359	17.990	18.484	19.052	8.976	3.616	0.911	0.457	1.482	0.603	0.866	81.614
1977	4.905	3.679	9.397	18.484	19.638	9.147	3.659	0.916	0.534	1.778	0.733	0.950	73.819
1978	4.963	4.586	16.802	5.932	4.418	1.196	0.480	0.283	0.224	0.585	0.691	0.971	41.130
1979	4.256	3.824	9.423	12.779	15.311	7.413	0.849	0.335	0.246	0.557	0.302	0.458	55.754
1980	0.949	1.678	11.688	12.684	17.552	7.618	0.737	0.396	0.295	0.711	0.398	0.977	55.685
1981	3.402	2.227	2.473	8.961	2.097	6.453	0.724	0.310	0.247	0.418	0.260	0.301	27.873

1986	2.504	1.189	4.177	6.937	4.329	8.245	2.102	0.340	0.516	0.446	0.679	0.983	32.448
1987	4.963	4.744	15.982	14.973	16.221	9.108	3.403	0.743	0.484	1.812	0.676	0.765	73.872
1988	4.951	3.874	18.246	17.546	18.816	9.131	2.818	0.772	0.554	1.737	0.677	0.439	79.560
1989	1.274	4.740	17.163	9.135	5.483	8.070	1.366	0.442	0.256	0.473	0.286	0.318	49.006
1990	0.811	0.629	6.854	18.484	19.638	9.105	3.307	0.754	0.504	1.617	0.498	0.562	62.761
1991	4.833	3.402	13.213	11.263	13.073	2.138	0.508	0.276	0.217	0.337	0.240	0.253	49.753
1992	0.555	3.589	1.753	1.713	5.277	7.222	1.159	0.323	0.223	0.365	0.246	0.291	22.715
1993	4.963	4.536	12.472	15.369	16.781	9.104	3.544	0.766	0.430	1.071	0.544	0.362	69.942
1994	4.641	2.660	13.693	3.400	1.773	1.494	0.737	0.408	0.241	0.442	0.264	0.268	30.021
1995	2.080	4.609	18.712	18.484	19.638	9.166	3.719	0.942	0.559	1.860	0.747	0.896	81.409
1996	4.920	4.280	12.613	14.251	5.983	9.156	3.719	0.941	0.559	1.860	0.749	0.983	60.012
1997	4.924	4.744	17.164	17.129	14.932	8.983	3.470	0.806	0.497	1.364	0.536	0.467	75.015
1998	2.996	3.916	17.498	12.759	7.390	1.827	0.511	0.305	0.226	0.428	0.323	0.304	48.484
1999	0.880	0.686	18.712	18.484	18.809	9.042	3.719	0.942	0.559	1.857	0.744	0.969	75.401
2000	4.833	4.744	18.174	9.794	8.553	3.296	3.631	0.877	0.452	1.083	0.423	0.978	56.836
2001	4.626	4.720	14.475	9.394	15.218	6.723	1.213	0.347	0.280	1.627	0.738	0.981	60.344
2002	3.108	0.833	8.291	5.535	7.935	1.170	0.444	0.276	0.217	0.337	0.240	0.265	28.651
2003	0.574	2.690	2.071	3.016	17.537	9.166	3.301	0.588	0.307	1.594	0.721	0.920	42.486
2004	1.274	2.338	13.275	16.553	14.345	9.166	3.601	0.770	0.353	1.829	0.743	0.935	65.181
Mean	3.499	3.544	11.348	11.192	11.822	6.853	2.650	0.722	0.446	1.353	0.581	0.741	54.752

A.18. Ni6 – Category D

Summary table

Desktop Version 2, Generated on 2015-03-26

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni6

Annual Flows (Mill. cu. m or index values):

MAR = 181,016

S.Dev. = 94,328

CV = 0,521

Q75 = 4,030

Q75/MMF = 0,267

BFI Index = 0,430

CV(JJA+JFM) Index = 1,475

Ecological Category = D

Total IFR = 33,394 (18,45 %MAR)

Maint. Lowflow = 4,201 (2,32 %MAR)

Drought Lowflow = 4,201 (2,32 %MAR)

Maint. Highflow = 29,193 (16,13 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows	High Flows	Total Flows	
Oct	10,206	14,160	1,387	0,249	0,249	2,402	2,651
Nov	19,006	16,262	0,856	0,284	0,284	1,843	2,128
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Jan	30,228	30,971	1,025	0,563	0,563	6,093	6,656
Feb	28,710	23,057	0,803	0,527	0,527	7,094	7,622
Mar	23,051	15,782	0,685	0,538	0,538	3,056	3,594
Apr	14,752	9,937	0,674	0,362	0,362	0,409	0,770
May	8,609	5,101	0,593	0,247	0,247	0,194	0,441
Jun	5,728	3,053	0,533	0,215	0,215	0,000	0,215
Jul	4,734	3,054	0,645	0,215	0,215	1,130	1,344
Aug	4,088	2,999	0,734	0,217	0,217	0,207	0,424
Sep	4,863	7,049	1,450	0,205	0,205	0,401	0,606

Rule curve

Desktop Version 2, Generated on 2015-03-26

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni6

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	3.876	3.844	3.771	3.619	3.337	2.871	2.214	1.458	0.811	0.510
Nov	3.316	3.294	3.250	3.163	3.000	2.715	2.261	1.631	0.928	0.486
Dec	13.516	11.865	10.458	9.228	8.077	6.161	5.163	3.775	2.229	1.256
Jan	12.956	11.374	10.028	8.850	7.748	5.912	4.955	3.625	2.143	1.210
Feb	14.830	12.990	11.423	10.056	8.780	6.656	5.561	4.041	2.346	1.280
Mar	5.631	5.595	5.521	5.374	5.100	4.620	3.858	2.798	1.617	0.874
Apr	1.251	1.243	1.225	1.187	1.116	0.999	0.835	0.645	0.483	0.408
May	0.733	0.729	0.719	0.698	0.659	0.595	0.504	0.400	0.310	0.269
Jun	0.398	0.396	0.392	0.384	0.369	0.344	0.308	0.267	0.232	0.216
Jul	2.004	1.988	1.952	1.877	1.737	1.507	1.181	0.807	0.487	0.338
Aug	0.696	0.692	0.682	0.661	0.623	0.560	0.471	0.368	0.281	0.240
Sep	0.951	0.944	0.929	0.897	0.838	0.741	0.605	0.447	0.312	0.250

Month	0.461	0.459	0.454	0.445	0.427	0.398	0.357	0.309	0.269	0.250
Oct	0.461	0.459	0.454	0.445	0.427	0.398	0.357	0.309	0.269	0.250
Nov	0.567	0.565	0.560	0.552	0.535	0.507	0.462	0.400	0.330	0.286
Dec	1.156	1.152	1.143	1.125	1.092	1.035	0.943	0.815	0.673	0.584
Jan	1.122	1.118	1.110	1.092	1.060	1.004	0.915	0.791	0.653	0.566
Feb	1.051	1.047	1.039	1.023	0.993	0.940	0.857	0.741	0.612	0.530
Mar	1.074	1.070	1.061	1.045	1.014	0.961	0.875	0.757	0.625	0.542

Apr	0.670	0.667	0.661	0.647	0.621	0.579	0.519	0.450	0.391	0.363
May	0.457	0.455	0.451	0.441	0.424	0.395	0.354	0.307	0.267	0.248
Jun	0.398	0.396	0.392	0.384	0.369	0.344	0.308	0.267	0.232	0.216
Jul	0.398	0.396	0.392	0.384	0.369	0.344	0.308	0.267	0.232	0.216
Aug	0.402	0.400	0.396	0.388	0.372	0.347	0.311	0.269	0.234	0.218
Sep	0.381	0.379	0.375	0.367	0.353	0.329	0.295	0.255	0.222	0.206

Natural Duration curves

Oct	22.370	14.510	10.340	8.360	6.880	4.990	3.780	2.820	1.940	0.780
Nov	43.410	30.100	24.160	16.120	13.530	11.510	9.790	7.230	4.280	2.010
Dec	61.180	36.340	30.470	26.640	22.610	19.940	15.860	11.820	8.090	2.100
Jan	58.230	41.150	30.840	28.640	22.860	20.990	18.310	13.930	8.770	4.400
Feb	61.020	38.360	32.050	29.440	23.850	18.190	14.650	10.830	8.900	4.530
Mar	48.150	34.430	28.590	21.960	18.810	15.480	14.400	11.100	8.050	4.220
Apr	29.240	19.320	17.410	15.200	13.480	11.370	8.650	6.330	5.340	2.460
May	15.260	11.040	10.200	8.980	8.020	6.930	5.860	4.670	3.220	1.890
Jun	9.700	7.790	7.160	6.100	5.110	4.440	3.880	3.020	2.340	1.340
Jul	8.710	6.360	5.680	4.560	3.920	3.620	3.130	2.540	1.880	1.100
Aug	9.230	5.150	4.310	3.700	3.210	2.870	2.500	2.250	1.630	0.880
Sep	9.170	6.940	4.470	3.850	3.350	2.740	2.280	1.820	1.340	0.650

Hydrological time series

Total Runoff : N16

Desktop (Version 2) Modified Flow Data for Ecological Category D

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	3.876	3.300	10.151	4.551	4.175	5.130	1.179	0.684	0.378	1.752	0.567	0.929	36.672
1921	3.815	3.316	13.516	10.028	8.823	4.804	1.023	0.699	0.390	1.931	0.696	0.951	49.991
1922	3.876	3.316	13.516	12.956	12.536	5.482	1.239	0.726	0.384	1.761	0.623	0.702	57.117
1923	3.066	2.798	9.641	9.679	7.785	5.374	1.212	0.729	0.396	1.915	0.631	0.939	44.165
1924	3.499	3.290	11.835	6.874	5.763	5.631	1.251	0.733	0.398	2.000	0.694	0.947	42.914
1925	3.566	1.820	4.117	2.992	6.097	3.385	0.703	0.412	0.333	1.599	0.543	0.897	26.465
1926	3.078	1.225	1.425	1.277	2.346	2.798	0.869	0.517	0.289	0.982	0.524	0.640	15.970
1927	3.651	2.254	3.775	6.688	6.656	3.199	0.877	0.530	0.308	0.852	0.359	0.847	29.997
1928	2.908	1.533	2.196	1.326	1.361	5.384	1.216	0.676	0.389	1.979	0.682	0.951	20.600
1929	3.850	3.250	6.369	10.059	9.337	5.388	1.186	0.653	0.342	0.982	0.451	0.767	42.634
1930	1.465	1.980	3.635	2.125	1.768	1.063	0.449	0.345	0.245	0.665	0.341	0.364	14.444
1931	0.578	0.486	1.421	1.210	2.333	4.193	0.999	0.614	0.375	1.763	0.549	0.505	15.026
1932	1.203	0.928	8.120	4.574	3.018	1.225	0.562	0.453	0.285	1.676	0.666	0.743	23.452
1933	1.477	2.350	13.516	12.355	8.262	3.285	1.066	0.721	0.390	1.996	0.696	0.949	47.063
1934	3.541	3.157	8.748	6.580	6.240	4.610	1.026	0.708	0.396	1.943	0.661	0.722	38.332
1935	1.458	0.578	2.882	9.917	10.056	5.193	1.024	0.727	0.398	1.991	0.675	0.762	35.659
1936	2.659	3.263	6.434	11.826	12.990	5.467	1.208	0.700	0.369	1.377	0.455	0.819	47.567
1937	2.610	0.755	8.691	4.955	4.562	2.739	0.994	0.698	0.388	1.997	0.693	0.925	30.008
1938	3.746	3.055	6.141	5.569	13.535	5.612	1.245	0.727	0.392	1.961	0.691	0.938	43.612
1939	3.809	3.277	10.002	9.341	6.624	3.192	0.934	0.724	0.398	2.004	0.695	0.940	41.940
1940	2.977	2.261	7.489	4.126	3.237	1.617	0.903	0.667	0.369	1.383	0.501	0.605	26.135
1941	1.281	0.980	1.638	2.769	4.942	5.452	1.234	0.712	0.390	1.931	0.674	0.914	22.918
1942	3.478	3.229	10.458	9.323	7.568	4.914	1.249	0.733	0.398	2.004	0.696	0.951	45.000
1943	3.848	3.208	7.525	4.307	9.684	5.154	0.937	0.563	0.388	1.999	0.688	0.937	39.236
1944	3.524	2.012	2.229	1.475	1.280	2.116	0.822	0.504	0.289	0.807	0.329	0.375	15.761
1945	0.621	0.486	1.256	8.102	6.309	2.538	0.727	0.432	0.267	0.665	0.305	0.460	22.168
1946	1.784	3.174	9.453	5.555	5.222	2.315	0.715	0.524	0.357	1.737	0.560	0.555	31.950
1947	1.216	2.659	3.416	2.253	2.536	4.699	1.116	0.659	0.358	1.204	0.368	0.616	21.100
1948	3.103	2.867	4.839	4.248	4.406	4.937	1.177	0.719	0.393	1.890	0.602	0.687	29.868
1949	3.356	1.842	2.890	1.960	1.373	2.929	0.947	0.579	0.360	1.568	0.569	0.528	18.901
1950	0.912	1.583	6.161	6.354	4.740	4.330	1.190	0.730	0.278	1.264	0.696	0.948	29.186
1951	3.870	2.715	5.551	3.625	1.986	0.874	0.607	0.278	0.216	0.716	0.244	0.250	20.932
1952	0.500	2.897	3.728	1.859	10.219	5.448	1.187	0.445	0.246	0.372	0.262	0.305	27.467
1953	0.532	2.754	4.842	2.852	8.570	4.380	0.820	0.558	0.269	0.510	0.249	0.352	26.688
1954	3.631	3.297	5.117	6.972	9.353	5.624	1.193	0.683	0.388	1.877	0.619	0.605	39.359
1955	3.324	2.979	9.228	5.418	14.830	5.631	1.243	0.727	0.395	1.931	0.672	0.933	47.310
1956	3.874	3.300	11.491	6.756	8.562	5.485	1.248	0.733	0.398	2.004	0.696	0.951	45.499
1957	3.876	3.284	5.598	11.374	10.813	4.784	1.047	0.700	0.380	1.741	0.560	0.838	44.997
1958	3.302	3.316	11.865	6.560	10.180	3.640	0.783	0.495	0.309	1.895	0.327	0.907	43.578
1959	3.771	3.232	9.865	3.647	7.864	4.731	1.104	0.710	0.396	1.629	0.674	0.842	38.465
1960	3.819	3.309	13.516	12.800	11.206	5.275	1.251	0.730	0.398	1.988	0.692	0.944	55.928
1961	3.591	2.754	4.984	10.582	11.127	3.858	0.796	0.501	0.287	1.545	0.612	0.799	41.435
1962	2.428	3.309	13.516	11.463	7.279	5.209	1.243	0.732	0.398	2.004	0.696	0.949	49.226
1963	3.767	3.314	6.032	8.747	8.577	1.979	0.475	0.355	0.255	0.811	0.395	0.546	35.253
1964	3.876	3.316	12.288	9.538	8.780	1.960	0.492	0.304	0.315	1.181	0.471	0.792	43.312
1965	1.784	2.400	2.692	9.008	13.581	3.498	0.545	0.445	0.352	0.901	0.531	0.883	36.618
1966	3.090	0.802	6.341	8.850	14.830	5.617	1.234	0.670	0.368	1.676	0.590	0.727	44.794
1967	2.616	3.294	11.037	8.301	6.645	5.521	1.090	0.575	0.319	1.450	0.623	0.515	41.986
1968	0.779	3.012	6.549	8.398	6.222	5.559	1.251	0.733	0.394	1.962	0.681	0.909	36.449
1969	3.876	3.163	8.077	7.748	12.021	5.242	0.654	0.400	0.279	0.968	0.641	0.794	43.863
1970	3.834	3.151	10.655	12.580	8.848	3.699	1.246	0.733	0.398	1.986	0.684	0.913	48.727
1971	3.769	3.264	12.789	12.956	14.830	5.631	1.251	0.732	0.398	1.988	0.688	0.854	59.150
1972	1.891	1.311	4.413	3.314	14.354	5.631	1.251	0.733	0.397	1.991	0.696	0.951	36.933
1973	3.866	3.191	9.741	11.060	12.843	5.237	1.243	0.721	0.394	2.004	0.695	0.872	51.869
1974	1.784	3.285	11.283	10.970	13.752	5.619	1.250	0.731	0.397	1.973	0.672	0.951	52.665
1975	3.697	3.273	13.516	12.260	14.830	5.631	1.251	0.733	0.398	2.004	0.693	0.915	59.202
1976	3.767	3.058	12.833	12.956	14.257	5.521	1.225	0.712	0.344	1.591	0.565	0.838	57.666
1977	3.832	2.603	5.782	12.956	14.830	5.619	1.236	0.715	0.385	1.915	0.682	0.918	51.473
1978	3.876	3.210	11.719	3.700	3.115	1.038	0.417	0.274	0.219	0.610	0.644	0.939	29.761
1979	3.337	2.700	5.796	7.969	10.710	4.620	0.512	0.310	0.231	0.579	0.295	0.447	37.507
1980	0.811	1.263	7.417	7.896	12.804	4.738	0.483	0.353	0.258	0.748	0.382	0.945	38.098
1981	2.684	1.631	1.905	5.317	1.742	4.067	0.480	0.293	0.232	0.427	0.258	0.296	19.332
1982	1.023	0.780	1.256	1.210	1.280	0.874	0.408	0.271	0.223	0.354	0.276	0.263	8.216
1983	2.214	3.316	10.027	12.956	14.830	5.580	1.249	0.730	0.396	2.004	0.696	0.951	54.948
1984	3.848	3.055	5.609	9.912	13.818	5.581	1.177	0.652	0.353	1.219	0.413	0.394	42.030
1985	2.871	3.000	3.907	10.608	11.423	5.449	1.235	0.689	0.373	1.507	0.451	0.394	41.907
1986	1.999	0.936	2.860	4.236	3.062	5.100	0.835	0.314	0.375	0.458	0.634	0.951	21.759
1987	3.876	3.316	10.963	9.735	11.543	5.597							

1993	3.876	3.177	8.027	10.080	12.067	5.594	1.206	0.610	0.329	1.141	0.513	0.355	46.978
1994	3.631	1.920	8.985	2.347	1.550	1.210	0.483	0.361	0.229	0.454	0.261	0.264	21.696
1995	1.675	3.225	13.516	12.956	14.830	5.631	1.251	0.733	0.398	2.004	0.695	0.867	57.780
1996	3.844	3.005	8.137	9.119	4.041	5.625	1.251	0.733	0.398	2.004	0.696	0.951	39.803
1997	3.847	3.316	12.057	11.686	10.374	5.525	1.187	0.639	0.365	1.462	0.505	0.455	51.417
1998	2.374	2.761	12.370	7.954	4.873	1.402	0.425	0.289	0.221	0.438	0.315	0.299	33.721
1999	0.758	0.599	13.516	12.956	14.020	5.559	1.251	0.733	0.398	2.001	0.692	0.937	53.420
2000	3.778	3.316	13.006	5.762	5.561	2.248	1.229	0.688	0.341	1.155	0.404	0.946	38.433
2001	3.619	3.300	9.628	5.549	10.626	4.223	0.606	0.319	0.250	1.750	0.687	0.949	41.504
2002	2.460	0.698	5.163	3.488	5.196	1.023	0.408	0.269	0.216	0.338	0.240	0.262	19.759
2003	0.524	1.941	1.680	2.143	12.790	5.631	1.144	0.487	0.264	1.714	0.672	0.890	29.878
2004	1.059	1.705	8.657	11.153	9.871	5.631	1.221	0.613	0.288	1.971	0.691	0.905	43.765
Mean	2.759	2.512	7.678	7.322	8.376	4.298	0.976	0.580	0.338	1.450	0.546	0.719	37.552

A.19. Ni8 – Category B

Summary table

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni8

Annual Flows (Mill. cu. m or index values):

MAR = 136,200

S.Dev. = 115,775

CV = 0,850

Q75 = 4,250

Q75/MMF = 0,374

BFI Index = 0,479

CV(JJA+JFM) Index = 2,463

Ecological Category = B

Total IFR = 45,033 (33,06 %MAR)

Maint. Lowflow = 29,712 (21,82 %MAR)

Drought Lowflow = 8,087 (5,94 %MAR)

Maint. Highflow = 15,320 (11,25 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : E.Escarp

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows	High Flows	Total Flows	
				Maint.	Drought	Maint.	Maint.
Oct	6,730	4,713	0,700	1,878	0,574	0,591	2,469
Nov	10,777	8,079	0,750	2,149	0,641	1,324	3,473
Dec	14,925	9,825	0,658	2,485	0,725	2,045	4,529
Jan	19,572	43,880	2,242	2,905	0,830	1,923	4,828
Feb	24,885	38,789	1,559	3,392	0,951	6,472	9,864
Mar	21,161	41,174	1,946	3,409	0,500	1,923	5,331
Apr	11,463	17,045	1,487	2,971	0,846	1,042	4,013
May	7,074	3,664	0,518	2,555	0,743	0,000	2,555
Jun	5,524	2,594	0,470	2,240	0,664	0,000	2,240
Jul	5,124	3,202	0,625	2,083	0,625	0,000	2,083
Aug	4,506	2,474	0,549	1,892	0,577	0,000	1,892
Sep	4,457	3,184	0,714	1,755	0,410	0,000	1,755

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni8

Regional Type : E.Escarp

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	2.890	2.883	2.857	2.803	2.697	2.504	2.179	1.701	1.124	0.705
Nov	4.014	3.999	3.958	3.874	3.714	3.426	2.954	2.271	1.460	0.875
Dec	5.204	5.180	5.123	5.008	4.791	4.405	3.779	2.881	1.823	1.062
Jan	7.204	6.688	6.228	5.788	5.316	4.521	3.876	2.966	1.910	1.155
Feb	16.621	14.940	13.489	12.195	10.938	8.826	7.524	5.656	3.456	1.874
Mar	7.802	7.293	6.830	6.379	5.879	5.020	4.250	3.135	1.812	0.857
Apr	4.688	4.677	4.634	4.545	4.370	4.049	3.512	2.719	1.764	1.069
May	3.051	3.047	3.023	2.973	2.871	2.681	2.354	1.862	1.259	0.817
Jun	2.675	2.673	2.653	2.611	2.526	2.363	2.081	1.651	1.120	0.730
Jul	2.488	2.488	2.472	2.436	2.362	2.218	1.961	1.562	1.060	0.687
Aug	2.260	2.258	2.241	2.206	2.135	1.998	1.762	1.403	0.959	0.632
Sep	2.095	2.092	2.075	2.038	1.964	1.825	1.586	1.227	0.787	0.464

Reserve Flows without High Flows										
Oct	2.243	2.238	2.219	2.179	2.101	1.958	1.718	1.364	0.937	0.627
Nov	2.566	2.557	2.533	2.483	2.388	2.217	1.936	1.531	1.049	0.702
Dec	2.967	2.955	2.925	2.865	2.751	2.549	2.220	1.749	1.194	0.795
Jan	3.469	3.450	3.411	3.335	3.194	2.949	2.558	2.007	1.367	0.910
Feb	4.051	4.034	3.992	3.909	3.751	3.472	3.018	2.366	1.599	1.047
Mar	4.068	4.051	4.006	3.913	3.737	3.420	2.900	2.148	1.256	0.611
Apr	3.548	3.540	3.509	3.445	3.318	3.086	2.698	2.125	1.434	0.932
May	3.051	3.047	3.023	2.973	2.871	2.681	2.354	1.862	1.259	0.817
Jun	2.675	2.673	2.653	2.611	2.526	2.363	2.081	1.651	1.120	0.730
Jul	2.488	2.488	2.472	2.436	2.362	2.218	1.961	1.562	1.060	0.687
Aug	2.260	2.258	2.241	2.206	2.135	1.998	1.762	1.403	0.959	0.632
Sep	2.095	2.092	2.075	2.038	1.964	1.825	1.586	1.227	0.787	0.464

Natural Duration curves

Oct	13.750	9.620	7.750	6.450	5.500	4.470	3.970	3.230	2.580	1.940
Nov	21.790	16.460	12.760	9.780	9.180	7.450	5.790	4.700	3.120	2.680
Dec	29.310	23.500	19.130	14.270	12.380	9.800	8.250	6.400	5.450	3.400
Jan	30.140	22.500	17.950	15.420	12.630	10.220	8.510	7.570	6.050	4.570
Feb	53.690	30.530	20.070	14.170	12.230	9.720	7.860	6.520	5.780	2.030
Mar	39.090	25.070	19.670	13.190	11.270	9.840	8.520	6.410	5.570	2.230
Apr	18.060	12.630	11.280	9.860	8.460	7.730	6.740	5.210	4.340	2.650
May	11.280	9.040	8.540	7.320	6.080	5.680	5.110	4.420	3.580	1.590
Jun	8.890	7.450	6.350	5.680	4.980	4.400	4.020	3.630	3.080	1.200
Jul	8.310	6.600	6.120	4.750	4.420	3.880	3.470	3.330	3.070	1.260
Aug	7.540	5.580	5.000	4.540	3.910	3.480	3.230	2.960	2.620	1.140
Sep	6.840	5.470	4.890	4.120	3.840	3.400	3.120	2.580	2.180	0.760

Hydrological time series

Total Runoff :

N18

Desktop (Version 2) Modified Flow Data for Ecological Category B

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	2.887	3.958	4.710	3.137	3.230	7.040	4.687	2.998	2.630	2.380	1.975	1.935	41.569
1921	2.812	4.005	5.204	6.228	8.643	3.933	2.986	1.579	1.783	2.134	2.125	1.977	43.410
1922	2.890	4.014	5.045	6.688	13.259	6.319	4.403	2.681	1.996	1.321	1.127	2.086	50.530
1923	1.010	1.075	5.201	5.978	7.032	5.020	4.168	2.814	2.498	2.218	1.911	2.086	41.011
1924	2.815	3.877	5.204	6.843	10.173	7.802	4.688	3.051	2.675	2.482	2.241	2.095	53.947
1925	2.830	2.954	2.624	3.990	6.619	3.654	2.895	1.706	1.854	1.800	1.153	1.923	34.001
1926	2.158	1.811	1.228	1.174	7.727	5.050	3.831	2.075	1.472	2.274	2.178	1.958	32.936
1927	2.876	3.874	4.405	5.412	8.885	2.129	1.764	1.255	1.067	0.946	0.880	1.535	35.030
1928	1.842	2.288	1.773	3.429	6.524	6.523	4.584	2.762	2.509	2.439	2.159	2.090	38.920
1929	2.883	3.900	4.366	6.339	12.512	5.026	3.090	1.862	1.542	1.133	1.607	1.746	46.006
1930	1.375	2.599	4.674	3.652	3.456	1.487	2.719	2.040	1.611	1.913	1.881	1.922	28.611
1931	0.882	1.043	2.340	1.443	5.656	3.542	4.075	3.030	2.674	2.482	2.225	1.948	31.341
1932	2.265	3.813	5.092	6.551	13.289	6.379	4.317	2.665	2.081	1.961	1.762	1.296	51.472
1933	1.658	4.008	5.177	6.541	11.567	5.410	4.487	3.036	2.673	2.488	2.260	2.094	51.398
1934	2.515	2.564	4.751	4.591	5.527	1.217	1.600	1.692	2.430	2.383	2.125	1.472	32.867
1935	1.124	0.797	0.961	5.998	11.858	6.565	4.591	3.048	2.674	2.480	2.228	2.017	44.342
1936	2.718	4.014	5.204	7.183	16.621	7.802	4.634	2.973	2.558	2.306	1.998	2.073	60.885
1937	2.641	2.027	4.461	4.521	7.334	1.812	4.636	3.049	2.664	2.473	2.251	2.059	39.928
1938	2.866	3.563	5.201	6.827	16.621	7.802	4.688	3.051	2.669	2.488	2.259	2.094	60.129
1939	2.803	4.014	5.119	6.466	11.483	6.830	4.688	3.051	2.675	2.488	2.260	2.095	53.971
1940	2.781	3.883	4.346	3.387	4.730	1.199	2.833	2.362	1.818	1.562	1.572	1.396	31.870
1941	1.553	2.265	1.823	4.460	6.316	2.630	2.303	2.311	2.675	2.488	2.260	2.095	33.179
1942	2.869	4.014	5.184	5.502	8.310	4.855	4.688	3.051	2.675	2.488	2.260	2.095	47.991
1943	2.890	4.000	4.808	6.376	15.957	7.293	4.545	2.907	2.627	2.464	2.187	2.043	58.096
1944	2.697	3.249	2.881	2.887	6.255	6.714	4.677	2.957	2.527	2.184	1.445	0.864	39.338
1945	1.270	0.940	1.062	7.204	15.349	6.666	4.465	2.805	2.307	1.562	1.102	1.029	45.761
1946	1.925	3.329	4.169	4.851	10.938	4.888	3.966	2.857	2.444	2.245	1.946	1.574	45.132
1947	2.418	3.538	4.934	4.277	12.449	6.283	4.234	2.700	2.187	1.281	0.959	1.586	46.844
1948	2.265	3.712	3.679	5.959	10.930	4.366	4.438	3.021	2.673	2.471	2.208	2.047	47.770
1949	2.526	3.858	5.139	5.522	7.365	4.080	3.848	2.618	2.223	1.562	1.881	1.421	42.046
1950	1.492	1.396	5.199	5.955	5.161	2.385	4.335	2.993	2.634	2.459	2.260	2.095	38.363
1951	2.890	3.666	3.734	2.535	3.013	1.080	1.592	1.307	1.334	1.124	2.024	1.318	26.615
1952	0.811	3.818	4.853	4.137	7.524	4.490	3.837	2.504	1.981	1.281	1.272	1.620	38.128
1953	2.066	3.917	3.779	1.880	11.696	5.488	3.415	2.848	2.583	2.341	2.068	2.095	44.177
1954	2.883	3.983	4.480	7.143	14.101	7.033	4.688	3.051	2.675	2.486	2.221	1.792	56.536
1955	2.888	3.999	5.157	5.328	14.940	7.047	4.497	2.921	2.582	2.412	2.135	1.969	55.875
1956	2.748	3.346	4.791	4.447	12.942	6.565	4.677	3.051	2.670	2.488	2.260	2.095	52.080
1957	2.890	3.983	3.845	6.811	13.489	5.290	3.512	2.449	2.259	2.011	1.324	1.736	49.599
1958	2.179	4.014	5.104	6.075	11.988	5.428	3.814	2.848	2.575	2.365	2.046	1.882	50.316
1959	2.719	3.180	3.504	2.068	12.195	6.051	4.597	3.037	2.650	2.418	2.136	2.017	46.573
1960	2.857	4.013	5.204	6.667	12.091	5.879	4.657	3.043	2.675	2.488	2.260	2.092	53.925
1961	2.846	3.945	5.050	3.820	2.322	4.250	3.328	2.878	2.540	2.436	2.191	1.964	37.572
1962	2.488	3.957	5.153	3.876	4.407	4.607	4.370	2.263	2.675	2.488	2.260	2.095	40.638
1963	2.872	3.856	3.343	4.884	9.962	1.162	3.242	1.942	1.896	1.441	0.726	0.557	35.883
1964	2.648	3.950	4.679	1.679	8.140	0.857	1.069	0.830	0.873	0.794	0.711	0.729	26.961
1965	0.789	1.268	1.302	7.000	14.163	3.135	1.478	1.259	1.036	0.874	0.884	0.617	33.805
1966	0.705	1.460	2.280	2.365	14.686	7.326	4.578	2.990	2.544	2.362	1.837	1.653	44.786
1967	1.633	3.980	4.327	1.372	6.194	7.024	4.247	2.299	1.730	1.751	1.403	0.845	36.806
1968	1.110	2.610	1.280	4.755	1.663	6.359	4.688	3.051	2.633	2.455	1.693	0.979	33.277
1969	2.890	4.014	5.180	3.792	10.274	3.563	2.318	2.559	2.052	2.154	2.090	1.746	42.633
1970	2.871	2.615	1.316	4.571	2.650	3.135	4.433	3.044	2.081	1.060	0.851	0.748	29.374
1971	2.870	3.491	5.100	5.994	15.887	7.740	4.688	3.051	2.671	2.488	2.247	2.014	58.242
1972	2.534	3.589	2.919	2.705	16.065	4.731	4.551	2.595	2.526	2.362	2.250	2.095	48.921
1973	2.890	4.004	5.142	7.204	14.367	7.802	4.675	3.001	2.498	2.480	2.258	2.054	58.375
1974	2.504	3.951	5.186	7.204	15.445	7.303	4.688	3.051	2.675	2.488	2.258	2.095	58.847
1975	2.850	3.714	5.182	7.204	15.936	7.386	4.688	3.051	2.675	2.488	2.260	2.092	59.526
1976	2.874	3.707	1.969	3.123	14.947	6.119	4.049	2.931	2.611	2.439	2.141	1.831	48.742
1977	1.784	2.197	5.008	7.204	12.957	7.457	4.688	3.045	2.653	2.488	2.249	2.086	53.817
1978	2.890	3.980	5.067	3.387	2.328	3.780	4.448	2.354	1.363	1.751	1.958	2.001	35.306
1979	2.147	3.765	3.952	1.910	8.671	4.102	2.426	1.132	1.334	2.250	2.206	1.923	35.818
1980	0.910	3.099	4.976	6.420	16.621	5.146	1.190	2.233	1.651	1.462	1.272	2.084	47.066
1981	1.701	3.813	1.184	1.155	1.874	0.884	1.112	0.955	0.776	0.710	0.590	0.464	15.218
1982	2.792	3.144	2.383	1.054	2.233	0.500	0.978	0.759	0.730	0.639	2.221	2.060	19.493
1983	2.504	4.014	5.123	7.204	16.621	7.026	4.684	3.031	2.673	2.488	2.260	2.095	59.722
1984	2.890	3.979	4.464	4.673	16.621	7.802	4.598	2.867	2.322	2.036	1.311	1.053	54.617
1985	2.233	2.749	1.823	5.539	9.962	4.747	4.216	2.871	2.436	2.231	1.762	1.227	41.797
1986	0.825	0.940	2.909	2.966	3.694	6.142	4.634	3.000	2.613	2.352	2.258	2.095	34.428
1987	2.890	4.013	4.881	4.640	14.088	6.873	4.671	3.018	2.663	2.481	2.259	2.082	54.559
1988	2.890	3.999	5.183	5.959	16.621	7.802	4.664	2.999	2.675	2.488	2.260	2.082	59.623
1989	2.843	4.014	5.204	6.168	12.629	6.366	4.598	3.048	2.655	2.462	2.240	2.038	54.264
1990	2.141	1.316	3.167	6.979	15.812	7.584	3.912	3.051	2.675	2.488	2.254	2.058	53.438
1991	1.333	3.426	3.910	1.460	9.483	3.491	2.179	1.749	0.842	0.787	0.641	0.495	29.797
1992	0.650	1.488	5.011	2.734	11.172	6.988							

2000	2.831	4.014	5.164	5.227	13.536	6.647	4.615	3.023	2.639	2.450	2.135	1.825	54.106
2001	2.556	4.014	5.176	5.460	8.130	1.131	1.268	1.100	1.120	1.133	2.231	2.075	35.396
2002	2.383	1.976	4.801	5.788	13.605	6.575	3.198	1.408	1.353	1.961	2.256	2.087	47.391
2003	2.504	2.572	2.297	1.368	7.814	5.074	4.335	2.888	2.506	2.387	2.153	1.863	37.761
2004	1.742	1.766	2.171	5.759	12.739	6.708	4.656	2.923	2.388	1.913	1.607	1.305	45.677
Mean	2.328	3.188	4.084	4.802	10.163	5.184	3.757	2.491	2.194	2.043	1.856	1.682	43.773

A.20. Ni8 – Category C

Summary table

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni8

Annual Flows (Mill. cu. m or index values):

MAR = 136,200

S.Dev. = 115,775

CV = 0,850

Q75 = 4,250

Q75/MMF = 0,374

BFI Index = 0,479

CV(JJA+JFM) Index = 2,463

Ecological Category = C

Total IFR = 29,935 (21,98 %MAR)

Maint. Lowflow = 17,301 (12,70 %MAR)

Drought Lowflow = 8,087 (5,94 %MAR)

Maint. Highflow = 12,634 (9,28 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : E.Escarp

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows	High Flows	Total Flows	
				Maint.	Drought	Maint.	Maint.
Oct	6,730	4,713	0,700	1,120	0,574	0,487	1,607
Nov	10,777	8,079	0,750	1,266	0,641	1,092	2,357
Dec	14,925	9,825	0,658	1,446	0,725	1,686	3,133
Jan	19,572	43,880	2,242	1,673	0,830	1,586	3,258
Feb	24,885	38,789	1,559	1,935	0,951	5,337	7,272
Mar	21,161	41,174	1,946	1,944	0,500	1,586	3,529
Apr	11,463	17,045	1,487	1,708	0,846	0,859	2,568
May	7,074	3,664	0,518	1,484	0,743	0,000	1,484
Jun	5,524	2,594	0,470	1,315	0,664	0,000	1,315
Jul	5,124	3,202	0,625	1,230	0,625	0,000	1,230
Aug	4,506	2,474	0,549	1,127	0,577	0,000	1,127
Sep	4,457	3,184	0,714	1,054	0,410	0,000	1,054

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni8

Regional Type : E.Escarp

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	2.143	2.138	2.121	2.085	2.014	1.883	1.665	1.342	0.954	0.671
Nov	3.067	3.057	3.027	2.967	2.853	2.647	2.309	1.821	1.241	0.823
Dec	4.029	4.012	3.969	3.885	3.726	3.443	2.984	2.325	1.549	0.991
Jan	5.412	4.991	4.622	4.279	3.925	3.333	2.900	2.291	1.583	1.077
Feb	13.064	11.682	10.496	9.451	8.456	6.787	5.832	4.462	2.848	1.687
Mar	5.787	5.370	4.998	4.645	4.269	3.626	3.098	2.334	1.426	0.772
Apr	3.407	3.400	3.371	3.312	3.196	2.984	2.628	2.104	1.471	1.011
May	2.070	2.067	2.054	2.025	1.966	1.857	1.669	1.386	1.039	0.785
Jun	1.833	1.832	1.821	1.796	1.746	1.652	1.488	1.238	0.929	0.702
Jul	1.715	1.715	1.706	1.685	1.642	1.557	1.407	1.174	0.880	0.661
Aug	1.572	1.571	1.561	1.540	1.498	1.418	1.278	1.066	0.803	0.610
Sep	1.468	1.467	1.456	1.432	1.386	1.298	1.149	0.923	0.647	0.444

Reserve Flows without High Flows

Oct	1.562	1.558	1.547	1.524	1.477	1.393	1.251	1.041	0.789	0.605
Nov	1.765	1.759	1.745	1.716	1.660	1.561	1.397	1.160	0.879	0.677
Dec	2.017	2.010	1.992	1.958	1.892	1.776	1.586	1.315	0.995	0.765
Jan	2.332	2.321	2.299	2.256	2.176	2.036	1.813	1.500	1.136	0.876
Feb	2.698	2.688	2.665	2.618	2.529	2.372	2.116	1.749	1.316	1.005
Mar	2.707	2.697	2.669	2.612	2.503	2.307	1.985	1.520	0.967	0.569
Apr	2.382	2.377	2.360	2.323	2.251	2.119	1.899	1.573	1.180	0.895
May	2.070	2.067	2.054	2.025	1.966	1.857	1.669	1.386	1.039	0.785
Jun	1.833	1.832	1.821	1.796	1.746	1.652	1.488	1.238	0.929	0.702
Jul	1.715	1.715	1.706	1.685	1.642	1.557	1.407	1.174	0.880	0.661
Aug	1.572	1.571	1.561	1.540	1.498	1.418	1.278	1.066	0.803	0.610
Sep	1.468	1.467	1.456	1.432	1.386	1.298	1.149	0.923	0.647	0.444

Natural Duration curves

Oct	13.750	9.620	7.750	6.450	5.500	4.470	3.970	3.230	2.580	1.940
Nov	21.790	16.460	12.760	9.780	9.180	7.450	5.790	4.700	3.120	2.680
Dec	29.310	23.500	19.130	14.270	12.380	9.800	8.250	6.400	5.450	3.400
Jan	30.140	22.500	17.950	15.420	12.630	10.220	8.510	7.570	6.050	4.570
Feb	53.690	30.530	20.070	14.170	12.230	9.720	7.860	6.520	5.780	2.030
Mar	39.090	25.070	19.670	13.190	11.270	9.840	8.520	6.410	5.570	2.230

Apr	18.060	12.630	11.280	9.860	8.460	7.730	6.740	5.210	4.340	2.650
May	11.280	9.040	8.540	7.320	6.080	5.680	5.110	4.420	3.580	1.590
Jun	8.890	7.450	6.350	5.680	4.980	4.400	4.020	3.630	3.080	1.200
Jul	8.310	6.600	6.120	4.750	4.420	3.880	3.470	3.330	3.070	1.260
Aug	7.540	5.580	5.000	4.540	3.910	3.480	3.230	2.960	2.620	1.140
Sep	6.840	5.470	4.890	4.120	3.840	3.400	3.120	2.580	2.180	0.760

Hydrological time series

Total Runoff : N18												C	
Desktop (Version 2) Modified Flow Data for Ecological Category												C	
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	2.141	3.027	3.667	2.406	2.682	5.166	3.407	2.039	1.807	1.652	1.404	1.368	30.766
1921	2.091	3.061	4.029	4.622	6.653	2.881	2.280	1.223	1.315	1.508	1.492	1.394	32.549
1922	2.143	3.067	3.912	4.991	10.310	4.600	3.219	1.857	1.438	1.032	0.903	0.647	38.119
1923	0.877	0.966	4.027	4.425	5.471	3.626	3.063	1.933	1.730	1.557	1.366	1.463	30.503
1924	2.093	2.969	4.029	5.117	7.851	5.787	3.407	2.070	1.833	1.712	1.561	1.468	39.898
1925	2.103	2.309	2.136	2.977	5.168	2.689	2.220	1.296	1.356	1.313	0.918	1.360	25.845
1926	1.650	1.492	1.113	1.090	5.981	3.648	2.840	1.509	1.134	1.590	1.524	1.382	24.952
1927	2.134	2.967	3.443	3.998	6.834	1.644	1.471	1.037	0.898	0.813	0.756	1.117	27.112
1928	1.437	1.833	1.512	2.601	5.098	4.757	3.338	1.903	1.737	1.687	1.512	1.465	28.880
1929	2.139	2.986	3.414	4.711	9.705	3.630	2.349	1.386	1.174	0.923	1.186	1.249	34.852
1930	1.123	2.056	3.640	2.751	2.848	1.204	2.104	1.488	1.215	1.379	1.348	0.908	22.062
1931	0.790	0.943	1.928	1.270	4.462	2.613	3.002	2.057	1.833	1.712	1.551	1.376	23.537
1932	1.722	2.923	3.947	4.881	10.334	4.645	3.161	1.848	1.488	1.407	1.278	0.967	38.601
1933	1.313	3.063	4.009	4.873	8.953	3.918	3.274	2.061	1.832	1.715	1.572	1.468	38.051
1934	1.891	2.030	3.696	3.384	4.367	1.018	1.362	1.288	1.691	1.654	1.492	1.077	24.952
1935	0.954	0.767	0.917	4.441	9.184	4.789	3.343	2.068	1.833	1.711	1.554	1.419	32.979
1936	2.028	3.067	4.029	5.395	13.064	5.787	3.371	2.025	1.765	1.609	1.418	1.454	45.011
1937	1.976	1.647	3.484	3.333	5.692	1.426	3.373	2.068	1.827	1.707	1.567	1.445	29.544
1938	2.127	2.744	4.027	5.104	13.064	5.787	3.407	2.070	1.830	1.715	1.572	1.468	44.915
1939	2.085	3.067	3.966	4.812	8.887	4.998	3.407	2.070	1.833	1.715	1.572	1.468	39.880
1940	2.070	2.974	3.400	2.573	3.782	1.006	2.179	1.673	1.335	1.174	1.166	1.029	24.360
1941	1.243	1.817	1.549	3.292	4.946	1.987	1.828	1.644	1.833	1.715	1.572	1.468	24.894
1942	2.129	3.067	4.014	4.065	6.466	3.513	3.407	2.070	1.833	1.715	1.572	1.468	35.319
1943	2.143	3.057	3.739	4.740	12.517	5.370	3.312	1.986	1.805	1.702	1.529	1.436	43.336
1944	2.014	2.520	2.325	2.238	4.901	4.906	3.400	2.016	1.747	1.538	1.091	0.695	29.390
1945	1.052	0.870	0.991	5.412	12.018	4.869	3.259	1.928	1.619	1.174	0.887	0.799	34.877
1946	1.493	2.577	3.270	3.579	8.456	3.535	2.929	1.958	1.699	1.573	1.387	1.141	33.596
1947	1.825	2.727	3.831	3.169	9.655	4.573	3.106	1.867	1.550	1.009	0.803	1.149	35.263
1948	1.722	2.851	2.910	4.411	8.449	3.178	3.242	2.052	1.832	1.706	1.542	1.438	35.333
1949	1.898	2.956	3.981	4.080	5.715	2.982	2.851	1.821	1.570	1.174	1.348	1.045	31.421
1950	1.201	1.195	4.025	4.407	4.098	1.819	3.173	2.036	1.809	1.699	1.572	1.468	28.504
1951	2.143	2.818	2.951	2.002	2.522	0.924	1.357	1.067	1.054	1.502	1.433	0.980	20.753
1952	0.743	2.927	3.771	3.076	5.832	3.263	2.844	1.755	1.430	1.009	0.988	1.170	28.806
1953	1.588	2.998	2.984	1.563	9.056	3.977	2.564	1.952	1.780	1.629	1.459	1.468	33.018
1954	2.138	3.045	3.498	5.362	10.995	5.160	3.407	2.070	1.833	1.714	1.549	1.278	42.050
1955	2.142	3.057	3.994	3.934	11.682	5.172	3.281	1.994	1.779	1.671	1.498	1.389	41.594
1956	2.048	2.590	3.726	3.283	10.053	4.789	3.400	2.070	1.830	1.715	1.572	1.468	38.544
1957	2.143	3.045	3.032	5.091	10.496	3.828	2.628	1.723	1.591	1.436	1.019	1.243	37.277
1958	1.665	3.067	3.955	4.501	9.287	3.932	2.828	1.952	1.775	1.643	1.446	1.334	37.385
1959	2.029	2.471	2.782	1.689	9.451	4.398	3.347	2.061	1.819	1.675	1.499	1.419	34.640
1960	2.121	3.066	4.029	4.974	9.369	4.269	3.387	2.065	1.833	1.715	1.572	1.467	39.866
1961	2.114	3.018	3.916	2.863	2.016	3.098	2.507	1.970	1.755	1.685	1.532	1.386	27.859
1962	1.873	3.026	3.991	2.900	3.545	3.342	3.196	1.616	1.833	1.715	1.572	1.468	30.080
1963	2.131	2.954	2.664	3.603	7.685	0.981	2.449	1.432	1.380	1.103	0.665	0.502	27.550
1964	1.981	3.022	3.644	1.429	6.427	0.772	1.011	0.793	0.785	0.724	0.657	0.611	21.853
1965	0.728	1.104	1.167	5.246	11.046	2.334	1.282	1.039	0.880	0.771	0.758	0.540	26.894
1966	0.671	1.241	1.884	1.888	11.474	5.397	3.334	2.034	1.642	1.322	1.191	1.191	33.836
1967	1.297	3.043	3.385	1.223	4.856	5.153	3.115	1.637	1.284	1.284	1.066	0.683	28.027
1968	0.944	2.063	1.151	3.507	1.532	4.630	3.407	2.070	1.809	1.696	1.237	0.767	24.814
1969	2.143	3.067	4.012	2.844	7.931	2.627	1.838	1.787	1.471	1.520	1.472	1.249	31.960
1970	2.130	2.067	1.177	3.370	2.256	2.334	3.239	2.065	1.488	0.880	0.739	0.622	22.366
1971	2.130	2.693	3.952	4.438	12.460	5.736	3.407	2.069	1.831	1.715	1.565	1.418	43.414
1972	1.903	2.763	2.352	2.116	12.606	3.427	3.317	1.807	1.746	1.642	1.566	1.468	36.715
1973	2.143	3.060	3.983	5.412	11.213	5.787	3.398	2.041	1.730	1.711	1.571	1.442	43.492
1974	1.883	3.022	4.015	5.412	12.096	5.379	3.407	2.070	1.833	1.715	1.571	1.468	43.872
1975	2.117	2.853	4.012	5.412	12.499	5.446	3.407	2.070	1.833	1.715	1.572	1.467	44.403
1976	2.133	2.848	1.656	2.396	11.687	4.449	2.984	2.000	1.796	1.687	1.502	1.302	36.442
1977	1.398	1.768	3.885	5.412	10.065	5.504	3.407	2.066	1.821	1.715	1.566	1.463	40.070
1978	2.143	3.043	3.928	2.573	2.020	2.776	3.248	1.669	1.070	1.284	1.394	1.409	26.557
1979	1.643	2.889	3.110	1.583	6.673	2.997	1.909	0.967	1.054	1.576	1.540	1.360	27.301
1980	0.810	2.413	3.862	4.776	13.064	3.720	1.091	1.599	1.238	1.115	0.988	1.461	36.137
1981	1.342	2.923	1.080	1.077	1.687	0.790	1.039	0.865	0.729	0.675	0.585	0.444	13.237
1982	2.077	2.445	1.960	1.010	1.950	0.500	0.950	0.752	0.702	0.633	1.549	1.447	15.976
1983	1.883	3.067	3.969	5.412	13.064	5.154	3.404	2.058	1.832	1.715	1.572	1.468	44.600
1984	2.143	3.042	3.486	3.446	13.064	5.787	3.348	1.963	1.628	1.451	1.011	0.814	41.184
1985	1.701	2.162	1.549	4.093	7.685	3.439	3.095	1.966	1.694	1.565	1.278	0.923	31.149
1986	0.752	0.870	2.346	2.291	3.022	4.467	3.371	2.040	1.797	1.636	1.571	1.468	25.630
1987	2.143	3.066	3.792	3.421	10.985	5.033	3.396	2.050	1.826	1.712	1.572	1.460	40.455
1988	2.143	3.057	4.014	4.411	13.064	5.787	3.391	2.040	1.833	1.715	1.572	1.460	44.487
1989	2.111	3.067	4.029	4.575	9.800	4.636	3.347	2.067	1.821	1.700	1.560	1.432	40.147
1990	1.639	1.138	2.535	5.228	12.398	5.608	2.893	2.070	1.833	1.715	1.569	1.445	40.070
1991	1.094	2.647	3.080	1.282	7.306	2.578	1.746	1.321	0.767	0.720	0.615	0.464	23.619
1992	0.634	1.261	3.887	2.135	8.640	5.124	1.508	0.853	0.767	0.755	0.679	0.477	26.720
1993	2.143	0.823	3.731	1.656	3.371	2.188	1.396	0.785	0.673	0.661	0.610	0.410	18.447
1994	2.140	2.858	3.547	3.227	4.351	1.550	2.093	1.519	1.611	1.502	1.147	0.783	26.329
1995	2.014	2.048	4.029	5.412	13.064	5.787	3.407	2.070	1.833	1.715	1.572	1.401	44.352
1996	1.990	1.821	2.631	3.925	6.787	5.670	3.400	2.067	1.816	1.706	1.561	1.468	34.841
1997	2.143	3.034	4.028	5.023	7.279	5.647	2.871	1.191	1.652	1.611			

A.21. Ni8 – Category D

Summary table

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni8

Annual Flows (Mill. cu. m or index values):

MAR = 136,200
 S.Dev. = 115,775
 CV = 0,850
 Q75 = 4,250
 Q75/MMF = 0,374
 BFI Index = 0,479
 CV(JJA+JFM) Index = 2,463

Ecological Category = D

Total IFR = 19,520 (14,33 %MAR)
 Maint. Lowflow = 8,676 (6,37 %MAR)
 Drought Lowflow = 8,087 (5,94 %MAR)
 Maint. Highflow = 10,844 (7,96 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : E.Escarp

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows Maint.	High Flows Drought Maint.	Total Flows Maint.	Total Flows
Oct	6,730	4,713	0,700	0,574	0,574	0,418	0,992
Nov	10,777	8,079	0,750	0,641	0,641	0,937	1,579
Dec	14,925	9,825	0,658	0,725	0,725	1,447	2,173
Jan	19,572	43,880	2,242	0,830	0,830	1,361	2,191
Feb	24,885	38,789	1,559	0,951	0,951	4,581	5,532
Mar	21,161	41,174	1,946	0,955	0,500	1,361	2,316
Apr	11,463	17,045	1,487	0,846	0,846	0,738	1,584
May	7,074	3,664	0,518	0,743	0,743	0,000	0,743
Jun	5,524	2,594	0,470	0,664	0,664	0,000	0,664
Jul	5,124	3,202	0,625	0,625	0,625	0,000	0,625
Aug	4,506	2,474	0,549	0,577	0,577	0,000	0,577
Sep	4,457	3,184	0,714	0,543	0,410	0,000	0,543

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni8

Regional Type : E.Escarp

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.768	1.765	1.752	1.724	1.670	1.571	1.406	1.161	0.867	0.652
Nov	2.677	2.667	2.643	2.593	2.496	2.324	2.041	1.632	1.146	0.796
Dec	3.604	3.589	3.552	3.479	3.340	3.093	2.693	2.118	1.441	0.955
Jan	4.298	3.940	3.630	3.349	3.070	2.605	2.303	1.877	1.382	1.028
Feb	10.794	9.611	8.601	7.718	6.892	5.510	4.771	3.711	2.463	1.566
Mar	4.545	4.190	3.876	3.587	3.288	2.780	2.398	1.846	1.191	0.718
Apr	2.787	2.782	2.760	2.716	2.628	2.468	2.200	1.804	1.326	0.979
May	1.481	1.479	1.472	1.456	1.423	1.362	1.258	1.100	0.908	0.766
Jun	1.324	1.323	1.317	1.303	1.275	1.222	1.129	0.988	0.814	0.686
Jul	1.246	1.246	1.241	1.229	1.204	1.156	1.071	0.938	0.770	0.646
Aug	1.151	1.151	1.145	1.133	1.109	1.062	0.982	0.859	0.708	0.596
Sep	1.082	1.081	1.074	1.060	1.030	0.975	0.879	0.736	0.560	0.432

Reserve Flows without High Flows

Oct	1.144	1.143	1.136	1.122	1.096	1.047	0.965	0.844	0.698	0.592
Nov	1.279	1.276	1.268	1.251	1.220	1.163	1.070	0.936	0.776	0.661
Dec	1.446	1.442	1.432	1.413	1.376	1.311	1.206	1.054	0.876	0.747
Jan	1.655	1.649	1.636	1.613	1.568	1.492	1.370	1.198	0.998	0.855
Feb	1.896	1.891	1.879	1.853	1.805	1.720	1.581	1.383	1.149	0.980
Mar	1.902	1.895	1.877	1.841	1.772	1.647	1.443	1.148	0.797	0.544
Apr	1.687	1.685	1.675	1.655	1.616	1.544	1.423	1.244	1.029	0.873
May	1.481	1.479	1.472	1.456	1.423	1.362	1.258	1.100	0.908	0.766
Jun	1.324	1.323	1.317	1.303	1.275	1.222	1.129	0.988	0.814	0.686
Jul	1.246	1.246	1.241	1.229	1.204	1.156	1.071	0.938	0.770	0.646
Aug	1.151	1.151	1.145	1.133	1.109	1.062	0.982	0.859	0.708	0.596
Sep	1.082	1.081	1.074	1.060	1.030	0.975	0.879	0.736	0.560	0.432

Natural Duration curves

Oct	13.750	9.620	7.750	6.450	5.500	4.470	3.970	3.230	2.580	1.940
Nov	21.790	16.460	12.760	9.780	9.180	7.450	5.790	4.700	3.120	2.680
Dec	29.310	23.500	19.130	14.270	12.380	9.800	8.250	6.400	5.450	3.400
Jan	30.140	22.500	17.950	15.420	12.630	10.220	8.510	7.570	6.050	4.570
Feb	53.690	30.530	20.070	14.170	12.230	9.720	7.860	6.520	5.780	2.030
Mar	39.090	25.070	19.670	13.190	11.270	9.840	8.520	6.410	5.570	2.230
Apr	18.060	12.630	11.280	9.860	8.460	7.730	6.740	5.210	4.340	2.650
May	11.280	9.040	8.540	7.320	6.080	5.680	5.110	4.420	3.580	1.590
Jun	8.890	7.450	6.350	5.680	4.980	4.400	4.020	3.630	3.080	1.200
Jul	8.310	6.600	6.120	4.750	4.420	3.880	3.470	3.330	3.070	1.260
Aug	7.540	5.580	5.000	4.540	3.910	3.480	3.230	2.960	2.620	1.140
Sep	6.840	5.470	4.890	4.120	3.840	3.400	3.120	2.580	2.180	0.760

Hydrological time series

Total Runoff : Ni8
 Desktop (Version 2) Modified Flow Data for Ecological Category D

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	1.767	2.643	3.288	1.957	2.335	4.017	2.787	1.464	1.309	1.210	1.054	1.019	24.850
1921	1.729	2.671	3.604	3.630	5.406	2.241	1.937	1.010	1.031	1.128	1.105	1.035	26.528
1922	1.768	2.677	3.502	3.940	8.443	3.551	2.645	1.362	1.101	0.857	0.765	0.560	31.172
1923	0.808	0.916	3.602	3.468	4.492	2.780	2.527	1.405	1.266	1.156	1.032	1.079	24.531
1924	1.730	2.594	3.604	4.047	6.391	4.545	2.787	1.481	1.324	1.244	1.145	1.082	31.976
1925	1.738	2.041	1.953	2.356	4.258	2.103	1.891	1.051	1.055	1.017	0.774	1.014	21.251
1926	1.395	1.357	1.061	1.037	4.886	2.798	2.359	1.169	0.929	1.175	1.123	1.028	20.316
1927	1.762	2.593	3.093	3.127	5.549	1.348	1.326	0.907	0.796	0.732	0.681	0.859	22.772
1928	1.233	1.642	1.409	2.093	4.204	3.678	2.735	1.388	1.270	1.230	1.117	1.080	23.079
1929	1.765	2.608	3.068	3.704	7.932	2.783	1.989	1.100	0.952	0.795	0.929	0.943	28.569
1930	0.995	1.829	3.265	2.198	2.463	1.030	1.804	1.157	0.975	1.054	1.022	0.726	18.519
1931	0.743	0.896	1.772	1.163	3.711	2.048	2.481	1.474	1.324	1.244	1.139	1.024	19.020
1932	1.449	2.556	3.533	3.847	8.463	3.587	2.602	1.357	1.129	1.071	0.982	0.764	31.339
1933	1.139	2.672	3.587	3.840	7.305	3.011	2.687	1.476	1.324	1.246	1.151	1.082	30.520
1934	1.577	1.808	3.314	2.646	3.638	0.896	1.245	1.046	1.244	1.211	1.105	0.834	20.564
1935	0.867	0.749	0.890	3.481	7.497	3.704	2.739	1.480	1.324	1.244	1.141	1.051	26.165
1936	1.681	2.677	3.604	4.283	10.794	4.545	2.760	1.456	1.286	1.186	1.062	1.073	36.407
1937	1.641	1.486	3.129	2.605	4.663	1.191	2.761	1.480	1.320	1.241	1.148	1.068	23.734
1938	1.756	2.406	3.602	4.036	10.794	4.545	2.787	1.481	1.322	1.246	1.151	1.082	36.209
1939	1.724	2.677	3.550	3.789	7.250	3.876	2.787	1.481	1.324	1.246	1.151	1.082	31.937
1940	1.713	2.598	3.056	2.074	3.186	0.887	1.861	1.260	1.043	0.938	0.917	0.803	20.335
1941	1.086	1.629	1.441	2.576	4.086	1.596	1.596	1.244	1.324	1.246	1.151	1.082	20.058
1942	1.758	2.676	3.591	3.180	5.261	2.698	2.787	1.481	1.324	1.246	1.151	1.082	28.237
1943	1.768	2.668	3.351	3.729	10.325	4.190	2.716	1.434	1.308	1.238	1.127	1.062	34.916
1944	1.670	2.218	2.118	1.839	4.051	3.801	2.782	1.451	1.276	1.145	0.874	0.591	23.815
1945	0.941	0.835	0.955	4.298	9.898	3.769	2.676	1.402	1.203	0.938	0.756	0.657	28.328
1946	1.276	2.266	2.942	2.798	6.892	2.714	2.427	1.419	1.248	1.165	1.044	0.874	27.065
1947	1.527	2.391	3.431	2.490	7.890	3.529	2.560	1.368	1.164	0.844	0.708	0.879	28.782
1948	1.449	2.495	2.629	3.456	6.887	2.456	2.663	1.471	1.323	1.241	1.134	1.063	28.267
1949	1.583	2.583	3.562	3.192	4.681	2.314	2.368	1.342	1.176	0.938	1.022	0.814	25.575
1950	1.054	1.108	3.601	3.453	3.430	1.475	2.611	1.462	1.311	1.237	1.151	1.082	22.975
1951	1.768	2.468	2.664	1.675	2.212	0.828	1.240	0.923	0.884	1.125	1.071	0.772	17.630
1952	0.707	2.559	3.380	2.425	4.771	2.517	2.362	1.306	1.096	0.844	0.814	0.893	23.674
1953	1.348	2.618	2.693	1.368	7.390	3.057	2.151	1.415	1.294	1.197	1.086	1.082	26.700
1954	1.765	2.657	3.141	4.255	9.025	4.013	2.787	1.481	1.324	1.246	1.138	0.961	33.794
1955	1.768	2.667	3.574	3.077	9.611	4.022	2.692	1.439	1.294	1.221	1.109	1.032	33.506
1956	1.696	2.276	3.340	2.570	8.225	3.704	2.782	1.481	1.323	1.246	1.151	1.082	30.876
1957	1.768	2.658	2.735	4.025	8.601	2.940	2.200	1.288	1.187	1.087	0.832	0.939	30.260
1958	1.406	2.676	3.540	3.531	7.582	3.021	2.350	1.415	1.291	1.205	1.078	0.997	30.094
1959	1.681	2.177	2.516	1.456	7.718	3.390	2.742	1.476	1.316	1.223	1.109	1.051	27.857
1960	1.752	2.676	3.604	3.926	7.650	3.288	2.772	1.478	1.324	1.246	1.151	1.081	31.948
1961	1.746	2.635	3.506	2.277	1.820	2.398	2.108	1.425	1.280	1.229	1.128	1.030	22.582
1962	1.563	2.642	3.571	2.303	3.003	2.575	2.628	1.229	1.324	1.246	1.151	1.082	24.318
1963	1.759	2.581	2.414	2.817	6.253	0.869	2.065	1.126	1.069	0.897	0.628	0.469	22.947
1964	1.645	2.638	3.268	1.274	5.231	0.718	0.979	0.770	0.733	0.681	0.623	0.537	19.099
1965	0.695	1.031	1.108	4.156	9.068	1.846	1.184	0.908	0.786	0.708	0.682	0.493	22.665
1966	0.652	1.146	1.734	1.595	9.433	4.212	2.732	1.461	1.281	1.204	1.007	0.906	27.365
1967	1.127	2.656	3.043	1.130	4.017	4.007	2.567	1.240	1.014	1.001	0.859	0.583	23.243
1968	0.859	1.835	1.094	2.742	1.446	3.574	2.787	1.481	1.310	1.235	0.958	0.637	19.960
1969	1.768	2.677	3.589	2.263	6.457	2.058	1.603	1.323	1.120	1.135	1.094	0.943	26.030
1970	1.759	1.838	1.117	2.634	2.006	1.846	2.660	1.478	1.129	0.770	0.671	0.545	18.453
1971	1.758	2.363	3.537	3.478	10.276	4.501	2.787	1.480	1.323	1.246	1.147	1.050	34.949
1972	1.587	2.422	2.142	1.754	10.401	2.636	2.719	1.335	1.275	1.204	1.148	1.082	29.706
1973	1.768	2.670	3.565	4.298	9.211	4.545	2.781	1.465	1.266	1.244	1.151	1.066	35.029
1974	1.571	2.638	3.593	4.298	9.965	4.197	2.787	1.481	1.324	1.246	1.151	1.082	35.334
1975	1.748	2.496	3.590	4.298	10.310	4.255	2.787	1.481	1.324	1.246	1.151	1.081	35.768
1976	1.761	2.492	1.535	1.950	9.616	3.431	2.468	1.442	1.303	1.230	1.111	1.077	29.316
1977	1.204	1.588	3.479	4.298	8.235	4.303	2.787	1.479	1.317	1.246	1.148	1.079	32.163
1978	1.768	2.656	3.517	2.074	1.823	2.165	2.668	1.258	0.893	1.001	1.048	1.045	21.915
1979	1.389	2.527	2.803	1.382	5.422	2.325	1.657	0.867	0.884	1.167	1.133	1.014	22.570
1980	0.757	2.128	3.458	3.758	10.794	2.854	1.040	1.219	0.988	0.904	0.814	1.078	29.794
1981	1.161	2.556	1.033	1.028	1.566	0.731	1.001	0.810	0.701	0.653	0.582	0.432	12.253
1982	1.718	2.155	1.800	0.981	1.769	0.500	0.934	0.748	0.686	0.630	1.138	1.069	14.127
1983	1.571	2.677	3.552	4.298	10.794	4.007	2.785	1.474	1.323	1.246	1.151	1.082	35.962
1984	1.768	2.655	3.131	2.694	10.794	4.545	2.742	1.422	1.208	1.096	0.828	0.667	33.550
1985	1.433	1.918	1.441	3.202	6.253	2.645	2.551	1.423	1.246	1.161	0.982	0.736	24.991
1986	0.714	0.835	2.136	1.877	2.598	3.445	2.760	1.464	1.304	1.201	1.151	1.082	20.566
1987	1.768	2.675	3.397	2.675	9.016	3.906	2.779	1.470	1.320	1.244	1.151	1.077	32.478
1988	1.768	2.667	3.591	3.456	10.794	4.545	2.775	1.464	1.324	1.246	1.151	1.077	35.860
1989	1.744	2.677	3.604	3.591	8.012	3.579	2.742	1.479	1.317	1.237	1.145	1.060	32.187
1990	1.386	1.060	2.301	4.141	10.223	4.392	2.400	1.481	1.324	1.246	1.150	1.067	32.170
1991	0.973	2.324	2.777	1.171	5.939	2.023	1.534	1.064	0.722	0.679	0.599	0.444	20.250
1992	0.624	1.163	3.481	1.768	7.045	3.982	1.354	0.804	0.722	0.699	0.636	0.452	22.731
1993	1.768	0.796	3.344	1.433	2.868	1.741	1.270	0.766	0.669	0.646	0.596	0.410	16.307
1994	1.766	2.501	3.184	2.531	3.626	1.280	1.796	1.174	1.198	1.125	0.906	0.647	21.735
1995	1.670	1.823	3.604	4.298	10.794	4.545	2.787	1.481	1.324	1.246	1.151	1.040	35.763
1996	1.652	1.632	2.385	3.070	5.510	4.445	2.782	1.479	1.314	1.241	1.145	1.082	27.737
1997	1.768	2.648	3.603	3.967	5.917	4.425	2.383	0.992	1.222	1.187	1.076	0.919	30.108
1998	1.738	2.315	3.604	2.482	1.979	1.491	1.410	0.807	0.779	0.735	0.877	0.554	18.772
1999	1.708	2.362	3.604	4.298	10.794	4.545	2.787	1.481	1.324	1.246	1.151	1.067	36.367
2000	1.739	2.677	3.579	3.018	8.633	3.757	2.751	1.472	1.312	1.233	1.109	0.975	32.254
2001	1.598	2.677	3.586	3.155	5.215	0.854	1.079	0.857	0.814	0.795	1.142	1.074	22.845
2002	1.509	1.455	3.347	3.349	8.681	3.710	2.043	0.955	0.890	1.071	1.150	1.079	29.239
2003	1.571												

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni9

Annual Flows (Mill. cu. m or index values):

MAR = 23.947
 S.Dev. = 26.119
 CV = 1.091
 Q75 = 0.026
 Q75/MMF = 0.013
 BFI Index = 0.309
 CV(JJA+JFM) Index = 4.413

Ecological Category = B

Total IFR = 9.679 (40.42 %MAR)
 Maint. Lowflow = 5.598 (23.38 %MAR)
 Drought Lowflow = 0.556 (2.32 %MAR)
 Maint. Highflow = 4.081 (17.04 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
			CV	Maint.	Drought	Maint.	
Oct	1.626	5.171	3.181	0.328	0.033	0.369	0.696
Nov	2.055	3.450	1.679	0.503	0.038	0.274	0.777
Dec	3.749	4.701	1.254	0.913	0.077	0.876	1.789
Jan	3.731	6.021	1.614	0.996	0.074	0.842	1.838
Feb	5.018	8.713	1.736	0.939	0.070	0.947	1.886
Mar	2.242	3.673	1.638	0.841	0.071	0.425	1.266
Apr	1.240	2.235	1.802	0.466	0.048	0.082	0.548
May	0.943	1.837	1.947	0.169	0.033	0.033	0.202
Jun	0.454	0.835	1.839	0.126	0.028	0.000	0.126
Jul	1.189	4.550	3.828	0.113	0.028	0.149	0.262
Aug	0.623	1.610	2.583	0.102	0.029	0.027	0.129
Sep	1.079	3.380	3.133	0.102	0.027	0.057	0.159

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni9

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.794	0.787	0.481	0.283	0.127	0.041	0.019	0.004	0.000	0.000
Nov	0.900	0.894	0.881	0.855	0.567	0.246	0.093	0.011	0.000	0.000
Dec	2.790	2.556	2.348	2.150	1.813	1.182	0.735	0.388	0.153	0.004
Jan	2.824	2.598	2.395	2.201	1.989	1.335	0.817	0.425	0.063	0.000
Feb	2.960	2.707	2.483	2.270	1.690	1.518	0.869	0.507	0.078	0.000
Mar	1.468	1.458	1.437	1.078	0.645	0.448	0.265	0.063	0.011	0.000
Apr	0.646	0.641	0.628	0.601	0.239	0.112	0.060	0.022	0.000	0.000
May	0.238	0.236	0.232	0.223	0.175	0.078	0.026	0.007	0.000	0.000
Jun	0.150	0.149	0.146	0.141	0.075	0.037	0.015	0.004	0.000	0.000
Jul	0.298	0.295	0.290	0.145	0.063	0.022	0.011	0.004	0.000	0.000
Aug	0.151	0.150	0.148	0.093	0.045	0.019	0.007	0.004	0.000	0.000
Sep	0.184	0.183	0.179	0.173	0.067	0.037	0.015	0.004	0.000	0.000

Reserve Flows without High Flows

Oct	0.391	0.387	0.380	0.283	0.127	0.041	0.019	0.004	0.000	0.000
Nov	0.600	0.596	0.587	0.570	0.538	0.246	0.093	0.011	0.000	0.000
Dec	1.090	1.082	1.066	1.035	0.977	0.876	0.714	0.388	0.153	0.004
Jan	1.188	1.180	1.163	1.129	1.065	0.953	0.776	0.425	0.063	0.000
Feb	1.121	1.113	1.096	1.064	1.004	0.899	0.731	0.499	0.078	0.000
Mar	1.003	0.996	0.982	0.953	0.645	0.448	0.265	0.063	0.011	0.000
Apr	0.556	0.551	0.540	0.518	0.239	0.112	0.060	0.022	0.000	0.000
May	0.202	0.200	0.197	0.189	0.175	0.078	0.026	0.007	0.000	0.000
Jun	0.150	0.149	0.146	0.141	0.075	0.037	0.015	0.004	0.000	0.000
Jul	0.135	0.134	0.132	0.127	0.063	0.022	0.011	0.004	0.000	0.000
Aug	0.122	0.121	0.119	0.093	0.045	0.019	0.007	0.004	0.000	0.000
Sep	0.122	0.121	0.119	0.115	0.067	0.037	0.015	0.004	0.000	0.000

Natural Duration curves

Oct	3.618	1.022	0.481	0.283	0.127	0.041	0.019	0.004	0.000	0.000
Nov	7.758	3.126	1.466	0.921	0.567	0.246	0.093	0.011	0.000	0.000
Dec	9.776	6.662	4.592	2.835	1.813	1.182	0.735	0.388	0.153	0.004
Jan	8.393	5.576	4.125	3.178	2.148	1.335	0.817	0.425	0.063	0.000
Feb	14.226	8.799	4.252	2.645	1.690	1.518	0.869	0.507	0.078	0.000
Mar	7.736	4.248	1.693	1.078	0.645	0.448	0.265	0.063	0.011	0.000
Apr	3.670	2.134	1.276	0.612	0.239	0.112	0.060	0.022	0.000	0.000
May	3.062	1.216	0.750	0.377	0.175	0.078	0.026	0.007	0.000	0.000
Jun	1.585	0.712	0.429	0.175	0.075	0.037	0.015	0.004	0.000	0.000
Jul	1.824	0.962	0.425	0.145	0.063	0.022	0.011	0.004	0.000	0.000
Aug	1.667	0.537	0.228	0.093	0.045	0.019	0.007	0.004	0.000	0.000
Sep	2.219	0.933	0.448	0.194	0.067	0.037	0.015	0.004	0.000	0.000

Hydrological time series

Total Runoff : Ni9

Desktop (Version 2) Modified Flow Data for Ecological Category B

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.792	0.876	1.112	0.022	0.011	0.007	0.004	0.004	0.000	0.000	0.000	0.184	3.012
1921	0.630	0.900	2.645	2.323	2.159	1.328	0.578	0.222	0.143	0.134	0.151	0.176	11.388
1922	0.201	0.898	2.603	2.673	2.228	1.078	0.601	0.223	0.143	0.142	0.086	0.052	10.928

1923	0.380	0.868	1.600	1.935	0.347	0.265	0.004	0.000	0.000	0.000	0.000	0.071	5.470
1924	0.131	0.857	2.107	0.317	2.318	1.468	0.646	0.237	0.150	0.293	0.149	0.174	8.848
1925	0.149	0.104	0.601	0.914	0.164	0.090	0.007	0.004	0.004	0.000	0.000	0.056	2.093
1926	0.000	0.000	0.925	0.582	0.507	0.097	0.000	0.000	0.000	0.004	0.000	0.000	2.115
1927	0.000	0.093	0.325	2.225	0.683	0.586	0.201	0.000	0.000	0.000	0.000	0.182	4.295
1928	0.004	0.041	0.004	0.000	1.119	1.216	0.093	0.060	0.034	0.022	0.015	0.067	2.675
1929	0.119	0.093	0.388	2.462	1.865	1.449	0.067	0.041	0.026	0.015	0.011	0.007	6.543
1930	0.004	0.015	1.839	0.026	0.160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.044
1931	0.000	0.000	0.026	0.026	2.483	1.442	0.019	0.011	0.007	0.004	0.004	0.000	4.022
1932	0.000	0.000	2.150	0.201	0.037	0.034	0.048	0.000	0.000	0.298	0.000	0.000	2.768
1933	0.000	0.000	2.790	2.335	0.448	0.306	0.220	0.116	0.067	0.290	0.151	0.184	6.907
1934	0.790	0.817	1.082	0.373	0.869	0.131	0.071	0.045	0.026	0.019	0.011	0.007	4.241
1935	0.004	0.004	1.436	2.233	2.380	0.112	0.063	0.225	0.071	0.041	0.026	0.015	6.610
1936	0.011	0.586	0.388	2.201	2.502	1.097	0.474	0.216	0.141	0.112	0.067	0.041	7.835
1937	0.026	0.015	2.119	0.198	0.440	0.448	0.075	0.015	0.007	0.007	0.004	0.004	3.358
1938	0.026	0.168	1.813	1.596	2.842	1.454	0.635	0.235	0.148	0.288	0.148	0.134	9.486
1939	0.269	0.851	0.515	1.861	0.496	0.328	0.045	0.238	0.037	0.041	0.026	0.022	4.729
1940	0.022	0.075	1.514	0.063	0.056	0.011	0.045	0.004	0.004	0.000	0.000	0.000	1.794
1941	0.000	0.000	1.182	0.220	0.817	0.407	0.056	0.034	0.022	0.015	0.007	0.004	2.764
1942	0.075	0.850	2.539	1.276	1.473	0.470	0.112	0.236	0.148	0.298	0.151	0.184	7.812
1943	0.787	0.567	0.623	1.067	1.641	0.280	0.048	0.030	0.037	0.011	0.007	0.041	5.139
1944	0.019	0.011	0.041	0.019	0.004	0.026	0.187	0.011	0.000	0.000	0.000	0.000	0.318
1945	0.000	0.000	0.000	2.395	0.078	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.473
1946	0.000	0.448	2.556	1.868	0.947	0.656	0.603	0.218	0.138	0.090	0.056	0.034	7.613
1947	0.022	0.011	0.007	0.041	0.757	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.883
1948	0.000	0.000	0.339	0.019	0.004	0.627	0.015	0.022	0.000	0.000	0.000	0.000	1.026
1949	0.019	0.004	0.037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.060
1950	0.004	0.000	1.171	0.000	1.671	0.645	0.000	0.000	0.000	0.000	0.093	0.000	3.584
1951	0.000	0.000	2.235	0.817	0.011	0.004	0.000	0.000	0.000	0.000	0.000	0.000	3.067
1952	0.000	0.022	1.880	0.433	2.960	0.466	0.060	0.015	0.007	0.004	0.004	0.004	5.855
1953	0.000	0.000	0.239	0.187	2.104	0.007	0.265	0.212	0.037	0.022	0.015	0.177	3.265
1954	0.086	0.004	0.392	0.563	0.526	0.780	0.045	0.026	0.015	0.011	0.007	0.004	2.459
1955	0.090	0.209	0.750	1.976	2.960	1.468	0.646	0.238	0.150	0.295	0.150	0.183	9.116
1956	0.548	0.900	2.304	2.006	2.730	1.439	0.616	0.227	0.141	0.298	0.151	0.184	11.545
1957	0.794	0.900	2.688	2.598	2.881	1.431	0.615	0.228	0.144	0.187	0.112	0.067	12.645
1958	0.041	0.900	2.445	1.772	2.270	0.664	0.276	0.229	0.104	0.063	0.041	0.183	8.988
1959	0.466	0.119	2.317	0.530	1.690	0.295	0.641	0.164	0.022	0.015	0.007	0.015	6.281
1960	0.060	0.735	2.790	2.824	2.710	1.465	0.629	0.233	0.147	0.286	0.146	0.183	12.208
1961	0.790	0.638	1.492	2.480	0.172	0.821	0.086	0.045	0.026	0.015	0.011	0.007	6.584
1962	0.004	0.567	2.790	2.798	2.404	1.458	0.646	0.238	0.150	0.295	0.150	0.177	11.678
1963	0.216	0.138	0.153	2.110	0.944	0.045	0.030	0.019	0.011	0.007	0.004	0.004	3.681
1964	0.455	0.899	2.691	2.125	1.197	0.750	0.444	0.215	0.140	0.190	0.063	0.037	9.206
1965	0.037	0.877	0.231	0.392	2.585	0.004	0.000	0.000	0.000	0.000	0.015	0.019	4.160
1966	0.000	0.321	0.947	1.335	2.578	1.460	0.624	0.231	0.146	0.269	0.145	0.097	8.153
1967	0.067	0.884	2.232	1.238	0.067	0.205	0.022	0.011	0.007	0.004	0.004	0.000	4.741
1968	0.000	0.213	2.790	2.558	1.649	1.029	0.602	0.223	0.143	0.138	0.086	0.116	9.547
1969	0.436	0.090	0.131	0.545	1.835	0.015	0.007	0.004	0.004	0.000	0.000	0.182	3.249
1970	0.792	0.399	0.228	2.824	1.734	1.235	0.644	0.238	0.150	0.298	0.151	0.181	8.874
1971	0.481	0.436	2.363	2.700	2.960	1.468	0.645	0.237	0.149	0.293	0.149	0.173	12.056
1972	0.142	0.086	0.172	2.475	2.960	1.468	0.646	0.238	0.150	0.297	0.151	0.184	8.970
1973	0.794	0.891	2.177	2.736	2.622	0.679	0.399	0.212	0.138	0.296	0.060	0.034	11.038
1974	0.030	0.894	0.310	1.231	2.349	1.439	0.145	0.093	0.056	0.034	0.022	0.184	6.788
1975	0.794	0.900	2.772	2.643	2.361	1.369	0.635	0.238	0.150	0.298	0.151	0.181	12.492
1976	0.455	0.889	2.632	2.588	2.960	1.468	0.646	0.238	0.150	0.294	0.150	0.184	12.653
1977	0.794	0.881	2.128	2.824	2.658	1.448	0.631	0.234	0.147	0.287	0.147	0.142	12.320
1978	0.794	0.896	2.411	2.028	2.707	0.623	0.276	0.175	0.104	0.298	0.150	0.183	10.644
1979	0.638	0.373	1.153	2.364	0.761	0.063	0.037	0.026	0.015	0.007	0.004	0.004	5.445
1980	0.004	0.000	0.477	1.701	2.223	0.026	0.000	0.000	0.007	0.015	0.011	0.180	4.644
1981	0.112	0.855	2.058	2.477	2.307	0.448	0.153	0.090	0.052	0.034	0.019	0.011	8.616
1982	0.358	0.824	0.004	0.727	0.000	0.000	0.000	0.078	0.011	0.000	0.000	0.000	2.002
1983	0.000	0.895	2.286	2.824	2.960	1.468	0.646	0.238	0.150	0.298	0.151	0.184	12.100
1984	0.793	0.869	1.347	2.543	2.960	1.465	0.643	0.237	0.149	0.293	0.149	0.173	11.619
1985	0.474	0.854	0.504	2.229	1.593	0.209	0.097	0.060	0.037	0.022	0.015	0.007	6.100
1986	0.004	0.004	2.790	0.425	0.112	0.022	0.015	0.007	0.004	0.004	0.144	0.184	3.716
1987	0.794	0.899	2.348	2.184	2.442	1.449	0.642	0.236	0.149	0.297	0.148	0.182	11.770
1988	0.783	0.860	2.116	0.500	1.637	0.310	0.142	0.086	0.075	0.034	0.019	0.011	6.573
1989	0.022	0.868	2.403	2.481	1.630	0.843	0.496	0.217	0.141	0.116	0.071	0.041	9.330
1990	0.026	0.015	2.505	2.696	2.903	1.457	0.638	0.236	0.149	0.290	0.148	0.160	11.223
1991	0.175	0.250	2.252	0.175	1.011	0.030	0.007	0.004	0.004	0.000	0.000	0.000	3.908
1992	0.000	0.007	0.735	2.095	2.189	0.000	0.616	0.000	0.000	0.000	0.000	0.183	5.826
1993	0.794	0.899	2.699	2.824	2.525	1.458	0.632	0.234	0.148	0.287	0.147	0.123	12.769
1994	0.788	0.884	2.790	2.285	0.556	0.392	0.239	0.145	0.086	0.052	0.034	0.019	8.270
1995	0.724	0.287	2.790	2.824	2.960	1.468	0.646	0.238	0.150	0.297	0.151	0.179	12.714
1996	0.785	0.246	1.209	0.623	0.571	1.466	0.646	0.238	0.150	0.296	0.151	0.179	6.560
1997	0.283	0.877	2.165	2.824	1.537	1.468	0.605	0.228	0.144	0.145	0.090	0.052	10.417
1998	0.086	0.183	2.456	1.989	1.447	0.556	0.628	0.211	0.116	0.071	0.045	0.026	7.814
1999	0.015	0.011	2.435	2.725	2.960	1.462	0.645	0.238	0.150	0.297	0.151	0.180	11.269
2000	0.339	0.900	2.790	2.824	2.576	1.464	0.639	0.236	0.149	0.290	0.148	0.184	12.540
2001	0.792	0.893	1.637	2.098	2.872	1.437	0.636	0.233	0.147	0.298	0.151	0.184	11.378
2002	0.794	0.887	1.986	0.850	2.724	0.261	0.153	0.097	0.056	0.037	0.022	0.015	7.883
2003	0.007	0.894	0.649	1.611	2.552	1.468	0.646	0.238	0.150	0.298	0.151	0.184	8.847
2004	0.790	0.900	1.320	0.940	2.849	1.466	0.644	0.237	0.149	0.293	0.149	0.173	9.909
2005	0.127	0.881	0.060	2.735	2.363	1.427	0.620	0.224	0.143	0.142	0.145	0.052	8.919
2006	0.783	0.894	2.790	2.362	1.414	0.347	0.205	0.131	0.078	0.048	0.030	0.181	9.263
2007	0.794	0.900	2.572	2.156	1.518	1.164	0.645	0.238	0.150	0.295	0.150	0.176</	

CV(JJA+JFM) Index = 4.413

Ecological Category = C

Total IFR = 7.212 (30.11 %MAR)
 Maint. Lowflow = 3.131 (13.07 %MAR)
 Drought Lowflow = 0.556 (2.32 %MAR)
 Maint. Highflow = 4.081 (17.04 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows	High Flows	Total Flows	
				Maint.	Drought	Maint.	Maint.
Oct	1.626	5.171	3.181	0.165	0.033	0.369	0.534
Nov	2.055	3.450	1.679	0.216	0.038	0.274	0.490
Dec	3.749	4.701	1.254	0.557	0.077	0.876	1.432
Jan	3.731	6.021	1.614	0.582	0.074	0.842	1.424
Feb	5.018	8.713	1.736	0.545	0.070	0.947	1.492
Mar	2.242	3.673	1.638	0.507	0.071	0.425	0.932
Apr	1.240	2.235	1.802	0.292	0.048	0.082	0.375
May	0.943	1.837	1.947	0.063	0.033	0.033	0.096
Jun	0.454	0.835	1.839	0.055	0.028	0.000	0.055
Jul	1.189	4.550	3.828	0.053	0.028	0.149	0.202
Aug	0.623	1.610	2.583	0.050	0.029	0.027	0.077
Sep	1.079	3.380	3.133	0.047	0.027	0.057	0.104

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : N9

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.657	0.651	0.481	0.283	0.127	0.041	0.019	0.004	0.000	0.000
Nov	0.628	0.623	0.615	0.597	0.565	0.246	0.093	0.011	0.000	0.000
Dec	2.475	2.244	2.041	1.852	1.659	1.182	0.735	0.388	0.153	0.004
Jan	2.445	2.222	2.025	1.843	1.652	1.333	0.817	0.425	0.063	0.000
Feb	2.598	2.348	2.129	1.928	1.690	1.376	0.869	0.507	0.078	0.000
Mar	1.213	1.204	1.187	1.078	0.645	0.448	0.265	0.063	0.011	0.000
Apr	0.492	0.488	0.478	0.459	0.239	0.112	0.060	0.022	0.000	0.000
May	0.125	0.124	0.122	0.118	0.110	0.078	0.026	0.007	0.000	0.000
Jun	0.074	0.073	0.072	0.070	0.067	0.037	0.015	0.004	0.000	0.000
Jul	0.246	0.244	0.240	0.145	0.063	0.022	0.011	0.004	0.000	0.000
Aug	0.099	0.098	0.097	0.093	0.045	0.019	0.007	0.004	0.000	0.000
Sep	0.130	0.129	0.127	0.123	0.067	0.037	0.015	0.004	0.000	0.000

Reserve Flows without High Flows

Oct	0.224	0.222	0.218	0.209	0.127	0.041	0.019	0.004	0.000	0.000
Nov	0.301	0.299	0.295	0.287	0.272	0.245	0.093	0.011	0.000	0.000
Dec	0.775	0.770	0.759	0.738	0.698	0.628	0.516	0.362	0.153	0.004
Jan	0.810	0.804	0.793	0.770	0.728	0.654	0.537	0.375	0.063	0.000
Feb	0.759	0.754	0.743	0.722	0.682	0.613	0.503	0.351	0.078	0.000
Mar	0.706	0.701	0.691	0.672	0.635	0.448	0.265	0.063	0.011	0.000
Apr	0.396	0.392	0.385	0.369	0.239	0.112	0.060	0.022	0.000	0.000
May	0.086	0.085	0.084	0.082	0.077	0.070	0.026	0.007	0.000	0.000
Jun	0.074	0.073	0.072	0.070	0.067	0.037	0.015	0.004	0.000	0.000
Jul	0.072	0.071	0.070	0.068	0.063	0.022	0.011	0.004	0.000	0.000
Aug	0.067	0.067	0.066	0.064	0.045	0.019	0.007	0.004	0.000	0.000
Sep	0.063	0.063	0.062	0.061	0.058	0.037	0.015	0.004	0.000	0.000

Natural Duration curves

Oct	3.618	1.022	0.481	0.283	0.127	0.041	0.019	0.004	0.000	0.000
Nov	7.758	3.126	1.466	0.921	0.567	0.246	0.093	0.011	0.000	0.000
Dec	9.776	6.662	4.592	2.835	1.813	1.182	0.735	0.388	0.153	0.004
Jan	8.393	5.576	4.125	3.178	2.148	1.335	0.817	0.425	0.063	0.000
Feb	14.226	8.799	4.252	2.645	1.690	1.518	0.869	0.507	0.078	0.000
Mar	7.736	4.248	1.693	1.078	0.645	0.448	0.265	0.063	0.011	0.000
Apr	3.670	2.134	1.276	0.612	0.239	0.112	0.060	0.022	0.000	0.000
May	3.062	1.216	0.750	0.377	0.175	0.078	0.026	0.007	0.000	0.000
Jun	1.585	0.712	0.429	0.175	0.075	0.037	0.015	0.004	0.000	0.000
Jul	1.824	0.962	0.425	0.145	0.063	0.022	0.011	0.004	0.000	0.000
Aug	1.667	0.537	0.228	0.093	0.045	0.019	0.007	0.004	0.000	0.000
Sep	2.219	0.933	0.448	0.194	0.067	0.037	0.015	0.004	0.000	0.000

Hydrological time series

Total Runoff : N9

Desktop (Version 2) Modified Flow Data for Ecological Category C

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.655	0.612	1.112	0.022	0.011	0.007	0.004	0.004	0.000	0.000	0.000	0.130	2.556
1921	0.630	0.628	2.332	1.957	1.826	1.174	0.456	0.117	0.071	0.134	0.099	0.125	9.549
1922	0.201	0.626	2.290	2.296	1.890	1.078	0.459	0.118	0.072	0.142	0.086	0.052	9.308
1923	0.380	0.606	1.549	1.604	0.347	0.265	0.004	0.000	0.000	0.000	0.000	0.071	4.826
1924	0.131	0.599	1.813	0.317	1.973	1.213	0.492	0.124	0.074	0.243	0.098	0.124	7.199
1925	0.149	0.104	0.601	0.914	0.164	0.090	0.007	0.004	0.004	0.000	0.000	0.000	2.093
1926	0.000	0.000	0.925	0.582	0.507	0.097	0.000	0.000	0.000	0.004	0.000	0.000	2.115
1927	0.000	0.093	0.325	1.865	0.683	0.586	0.201	0.000	0.000	0.000	0.000	0.129	3.881
1928	0.004	0.041	0.004	0.000	1.119	1.169	0.093	0.060	0.034	0.022	0.015	0.067	2.628
1929	0.119	0.093	0.388	2.089	1.759	1.197	0.067	0.041	0.026	0.015	0.011	0.007	5.813
1930	0.004	0.015	1.663	0.026	0.160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.868
1931	0.000	0.000	0.026	0.026	2.129	1.192	0.019	0.011	0.007	0.004	0.004	0.000	3.418
1932	0.000	0.000	1.852	0.201	0.037	0.034	0.048	0.000	0.000	0.246	0.000	0.000	2.418

1933	0.000	0.000	2.475	1.968	0.448	0.306	0.220	0.103	0.065	0.240	0.099	0.130	6.055
1934	0.653	0.588	1.082	0.373	0.869	0.131	0.071	0.045	0.026	0.019	0.011	0.007	3.875
1935	0.004	0.004	1.436	1.872	2.031	0.112	0.063	0.119	0.066	0.041	0.026	0.015	5.789
1936	0.011	0.567	0.388	1.843	2.147	1.097	0.445	0.115	0.070	0.112	0.067	0.041	6.904
1937	0.026	0.015	1.824	0.198	0.440	0.448	0.075	0.015	0.007	0.007	0.004	0.004	3.063
1938	0.026	0.168	1.659	1.435	2.482	1.201	0.483	0.123	0.073	0.238	0.097	0.119	8.104
1939	0.269	0.594	0.515	1.540	0.496	0.328	0.045	0.125	0.037	0.041	0.026	0.022	4.038
1940	0.022	0.075	1.504	0.063	0.056	0.011	0.045	0.004	0.004	0.000	0.000	0.000	1.784
1941	0.000	0.000	1.182	0.220	0.817	0.407	0.056	0.034	0.022	0.015	0.007	0.004	2.764
1942	0.075	0.594	2.227	1.276	1.363	0.470	0.112	0.123	0.073	0.246	0.099	0.130	6.789
1943	0.651	0.565	0.623	1.067	1.623	0.280	0.048	0.030	0.037	0.011	0.007	0.041	4.983
1944	0.019	0.011	0.041	0.019	0.004	0.026	0.187	0.011	0.000	0.000	0.000	0.000	0.318
1945	0.000	0.000	0.000	2.025	0.078	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.103
1946	0.000	0.448	2.244	1.544	0.947	0.656	0.460	0.116	0.069	0.090	0.056	0.034	6.664
1947	0.022	0.011	0.007	0.041	0.757	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.883
1948	0.000	0.000	0.339	0.019	0.004	0.627	0.015	0.022	0.000	0.000	0.000	0.000	1.026
1949	0.019	0.004	0.037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.060
1950	0.004	0.000	1.171	0.000	1.671	0.645	0.000	0.000	0.000	0.000	0.093	0.000	3.584
1951	0.000	0.000	1.933	0.817	0.011	0.004	0.000	0.000	0.000	0.000	0.000	0.000	2.765
1952	0.000	0.022	1.671	0.433	2.598	0.466	0.060	0.015	0.007	0.004	0.004	0.004	5.284
1953	0.000	0.000	0.239	0.187	1.811	0.007	0.265	0.113	0.037	0.022	0.015	0.126	2.822
1954	0.086	0.004	0.392	0.563	0.526	0.780	0.045	0.026	0.015	0.011	0.007	0.004	2.459
1955	0.090	0.209	0.750	1.641	2.598	1.213	0.492	0.125	0.074	0.244	0.099	0.129	7.663
1956	0.548	0.628	1.998	1.668	2.370	1.189	0.469	0.120	0.071	0.246	0.099	0.130	9.536
1957	0.657	0.628	2.374	2.222	2.520	1.182	0.469	0.120	0.072	0.187	0.094	0.067	10.592
1958	0.041	0.628	2.135	1.505	1.928	0.664	0.276	0.120	0.068	0.063	0.041	0.130	7.598
1959	0.466	0.119	2.011	0.530	1.690	0.295	0.488	0.109	0.022	0.015	0.007	0.015	5.767
1960	0.060	0.581	2.475	2.445	2.351	1.210	0.479	0.122	0.073	0.236	0.096	0.130	10.258
1961	0.653	0.572	1.492	2.107	0.172	0.821	0.086	0.045	0.026	0.015	0.011	0.007	6.007
1962	0.004	0.565	2.475	2.420	2.054	1.204	0.492	0.124	0.074	0.244	0.098	0.125	9.882
1963	0.216	0.138	0.153	1.761	0.944	0.045	0.030	0.019	0.011	0.007	0.004	0.004	3.332
1964	0.455	0.627	2.377	1.774	1.197	0.750	0.442	0.114	0.070	0.190	0.063	0.037	8.098
1965	0.037	0.612	0.231	0.392	2.228	0.004	0.000	0.000	0.000	0.000	0.015	0.019	3.538
1966	0.000	0.321	0.947	1.333	2.222	1.206	0.475	0.122	0.072	0.235	0.095	0.097	7.126
1967	0.067	0.617	1.929	1.238	0.067	0.205	0.022	0.011	0.007	0.004	0.004	0.000	4.171
1968	0.000	0.213	2.475	2.183	1.639	1.029	0.459	0.118	0.071	0.138	0.086	0.116	8.528
1969	0.436	0.090	0.131	0.545	1.753	0.015	0.007	0.004	0.004	0.000	0.000	0.129	3.114
1970	0.655	0.399	0.228	2.445	1.731	1.171	0.490	0.125	0.074	0.246	0.099	0.128	7.791
1971	0.481	0.436	2.055	2.323	2.598	1.213	0.491	0.124	0.074	0.242	0.098	0.123	10.258
1972	0.142	0.086	0.172	2.102	2.598	1.213	0.492	0.125	0.074	0.246	0.099	0.130	7.478
1973	0.657	0.621	1.877	2.358	2.265	0.679	0.399	0.113	0.069	0.245	0.060	0.034	9.377
1974	0.030	0.624	0.310	1.231	2.002	1.189	0.145	0.093	0.056	0.034	0.022	0.130	5.866
1975	0.657	0.628	2.457	2.266	2.013	1.176	0.484	0.125	0.074	0.246	0.099	0.128	10.352
1976	0.455	0.620	2.319	2.213	2.598	1.213	0.492	0.124	0.074	0.243	0.098	0.130	10.578
1977	0.657	0.615	1.832	2.445	2.300	1.196	0.481	0.123	0.073	0.237	0.096	0.119	10.174
1978	0.657	0.625	2.101	1.687	2.348	0.623	0.276	0.110	0.068	0.246	0.098	0.129	8.968
1979	0.638	0.373	1.153	1.995	0.761	0.063	0.037	0.026	0.015	0.007	0.004	0.004	5.076
1980	0.004	0.000	0.477	1.477	1.885	0.026	0.000	0.000	0.007	0.015	0.011	0.127	4.029
1981	0.112	0.597	1.768	2.104	1.962	0.448	0.153	0.090	0.052	0.034	0.019	0.011	7.351
1982	0.358	0.589	0.004	0.727	0.000	0.000	0.000	0.078	0.011	0.000	0.000	0.000	1.767
1983	0.000	0.624	1.981	2.445	2.598	1.213	0.492	0.125	0.074	0.246	0.099	0.130	10.027
1984	0.655	0.607	1.347	2.169	2.598	1.210	0.489	0.124	0.074	0.242	0.098	0.123	9.735
1985	0.474	0.596	0.504	1.868	1.527	0.209	0.097	0.060	0.037	0.022	0.015	0.007	5.417
1986	0.004	0.004	2.475	0.425	0.112	0.022	0.015	0.007	0.004	0.004	0.095	0.130	3.298
1987	0.657	0.627	2.041	1.827	2.090	1.197	0.489	0.124	0.073	0.246	0.097	0.129	9.596
1988	0.647	0.601	1.821	0.500	1.615	0.310	0.142	0.086	0.067	0.034	0.019	0.011	5.853
1989	0.022	0.606	2.093	2.108	1.601	0.843	0.448	0.116	0.071	0.116	0.071	0.041	8.136
1990	0.026	0.015	2.194	2.318	2.541	1.204	0.486	0.124	0.073	0.240	0.097	0.121	9.439
1991	0.175	0.250	1.949	0.175	1.011	0.030	0.007	0.004	0.004	0.000	0.000	0.000	3.605
1992	0.000	0.007	0.735	1.747	1.854	0.000	0.470	0.000	0.000	0.000	0.000	0.129	4.943
1993	0.657	0.627	2.385	2.445	2.170	1.205	0.481	0.123	0.073	0.237	0.096	0.118	10.617
1994	0.651	0.617	2.475	1.921	0.556	0.392	0.239	0.107	0.067	0.052	0.034	0.019	7.130
1995	0.645	0.287	2.475	2.445	2.598	1.213	0.492	0.125	0.074	0.245	0.099	0.127	10.825
1996	0.649	0.246	1.209	0.623	0.571	1.211	0.492	0.125	0.074	0.245	0.099	0.127	5.670
1997	0.283	0.612	1.866	2.445	1.414	1.213	0.461	0.120	0.072	0.145	0.090	0.052	8.774
1998	0.086	0.183	2.145	1.652	1.356	0.556	0.478	0.113	0.068	0.071	0.045	0.026	6.780
1999	0.015	0.011	1.125	2.347	2.598	1.208	0.491	0.125	0.074	0.245	0.099	0.127	9.465
2000	0.339	0.628	2.475	2.445	2.220	1.209	0.487	0.124	0.073	0.240	0.097	0.130	10.468
2001	0.655	0.623	1.568	1.750	2.511	1.187	0.484	0.122	0.073	0.246	0.099	0.130	9.449
2002	0.657	0.619	1.702	0.850	2.365	0.261	0.153	0.097	0.056	0.037	0.022	0.015	6.834
2003	0.007	0.623	0.649	1.441	2.197	1.213	0.492	0.124	0.074	0.246	0.099	0.130	7.295
2004	0.653	0.628	1.320	0.940	2.488	1.211	0.491	0.124	0.074	0.242	0.098	0.123	8.390
2005	0.127	0.615	0.060	2.357	2.015	1.180	0.473	0.118	0.072	0.142	0.095	0.052	7.305
2006	0.647	0.623	2.475	1.994	1.346	0.347	0.205	0.105	0.067	0.048	0.030	0.128	8.016
2007	0.657	0.628	2.259	1.803	1.376	1.163	0.491	0.124	0.074	0.244	0.098	0.125	9.042
2008	0.201	0.628	0.918	1.279	0.757	0.220	0.104	0.067	0.037	0.245	0.099	0.130	4.684
2009	0.650	0.624	0.421	2.445	1.420	0.623	0.491	0.122	0.072	0.235	0.095	0.097	7.296
Mean	0.263	0.362	1.381	1.392	1.468	0.658	0.259	0.076	0.044	0.112	0.050	0.069	6.135

A.24. Ni9 – Category D

Summary table

Desktop Version 2, Generated on 2015-03-26

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :
Total Runoff : Ni9

Annual Flows (Mill. cu. m or index values):

MAR = 23,947

S.Dev. = 26,119

CV = 1,091

Q75 = 0,026

Q75/MMF = 0,013

BFI Index = 0,309

CV(JJA+JFM) Index = 4,413

Ecological Category = D

Total IFR = 4,418 (18,45 %MAR)

Maint. Lowflow = 0,556 (2,32 %MAR)

Drought Lowflow = 0,556 (2,32 %MAR)

Maint. Highflow = 3,862 (16,13 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows Maint.	High Flows Drought Maint.	Total Flows Maint.	
Oct	1,626	5,171	3,181	0,033	0,033	0,318	0,351
Nov	2,055	3,450	1,679	0,038	0,038	0,244	0,281
Dec	3,749	4,701	1,254	0,077	0,077	0,842	0,919
Jan	3,731	6,021	1,614	0,074	0,074	0,806	0,881
Feb	5,018	8,713	1,736	0,070	0,070	0,939	1,008
Mar	2,242	3,673	1,638	0,071	0,071	0,404	0,476
Apr	1,240	2,235	1,802	0,048	0,048	0,054	0,102
May	0,943	1,837	1,947	0,033	0,033	0,026	0,058
Jun	0,454	0,835	1,839	0,028	0,028	0,000	0,028
Jul	1,189	4,550	3,828	0,028	0,028	0,149	0,178
Aug	0,623	1,610	2,583	0,029	0,029	0,027	0,056
Sep	1,079	3,380	3,133	0,027	0,027	0,053	0,080

Rule curve

Desktop Version 2, Generated on 2015-03-26

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : N19

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.513	0.509	0.481	0.283	0.127	0.041	0.019	0.004	0.000	0.000
Nov	0.439	0.436	0.430	0.418	0.397	0.246	0.093	0.011	0.000	0.000
Dec	1.788	1.570	1.384	1.221	1.069	0.815	0.683	0.388	0.153	0.004
Jan	1.714	1.505	1.327	1.171	1.025	0.782	0.656	0.425	0.063	0.000
Feb	1.962	1.718	1.511	1.330	1.162	0.880	0.736	0.507	0.078	0.000
Mar	0.745	0.740	0.730	0.711	0.645	0.448	0.265	0.063	0.011	0.000
Apr	0.166	0.164	0.162	0.157	0.148	0.112	0.060	0.022	0.000	0.000
May	0.097	0.096	0.095	0.092	0.087	0.078	0.026	0.007	0.000	0.000
Jun	0.053	0.052	0.052	0.051	0.049	0.037	0.015	0.004	0.000	0.000
Jul	0.265	0.263	0.258	0.145	0.063	0.022	0.011	0.004	0.000	0.000
Aug	0.092	0.091	0.090	0.087	0.045	0.019	0.007	0.004	0.000	0.000
Sep	0.126	0.125	0.123	0.119	0.067	0.037	0.015	0.004	0.000	0.000

Reserve Flows without High Flows

Oct	0.061	0.061	0.060	0.059	0.057	0.041	0.019	0.004	0.000	0.000
Nov	0.075	0.075	0.074	0.073	0.071	0.067	0.061	0.011	0.000	0.000
Dec	0.153	0.152	0.151	0.149	0.145	0.137	0.125	0.108	0.089	0.004
Jan	0.148	0.148	0.147	0.145	0.140	0.133	0.121	0.105	0.063	0.000
Feb	0.139	0.139	0.137	0.135	0.131	0.124	0.113	0.098	0.078	0.000
Mar	0.142	0.142	0.140	0.138	0.134	0.127	0.116	0.063	0.011	0.000
Apr	0.089	0.088	0.087	0.086	0.082	0.077	0.060	0.022	0.000	0.000
May	0.061	0.060	0.060	0.058	0.056	0.052	0.026	0.007	0.000	0.000
Jun	0.053	0.052	0.052	0.051	0.049	0.037	0.015	0.004	0.000	0.000
Jul	0.053	0.052	0.052	0.051	0.049	0.022	0.011	0.004	0.000	0.000
Aug	0.053	0.053	0.052	0.051	0.045	0.019	0.007	0.004	0.000	0.000
Sep	0.050	0.050	0.050	0.049	0.047	0.037	0.015	0.004	0.000	0.000

Natural Duration curves

Oct	3.618	1.022	0.481	0.283	0.127	0.041	0.019	0.004	0.000	0.000
Nov	7.758	3.126	1.466	0.921	0.567	0.246	0.093	0.011	0.000	0.000
Dec	9.776	6.662	4.592	2.835	1.813	1.182	0.735	0.388	0.153	0.004
Jan	8.393	5.576	4.125	3.178	2.148	1.335	0.817	0.425	0.063	0.000
Feb	14.226	8.799	4.252	2.645	1.690	1.518	0.869	0.507	0.078	0.000
Mar	7.736	4.248	1.693	1.078	0.645	0.448	0.265	0.063	0.011	0.000
Apr	3.670	2.134	1.276	0.612	0.239	0.112	0.060	0.022	0.000	0.000
May	3.062	1.216	0.750	0.377	0.175	0.078	0.026	0.007	0.000	0.000
Jun	1.585	0.712	0.429	0.175	0.075	0.037	0.015	0.004	0.000	0.000
Jul	1.824	0.962	0.425	0.145	0.063	0.022	0.011	0.004	0.000	0.000
Aug	1.667	0.537	0.228	0.093	0.045	0.019	0.007	0.004	0.000	0.000
Sep	2.219	0.933	0.448	0.194	0.067	0.037	0.015	0.004	0.000	0.000

Hydrological time series

Total Runoff : N19

Desktop (Version 2) Modified Flow Data for Ecological Category D

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.512	0.428	0.780	0.022	0.011	0.007	0.004	0.004	0.000	0.000	0.000	0.126	1.893
1921	0.502	0.439	1.652	1.267	1.247	0.723	0.156	0.092	0.051	0.134	0.092	0.121	6.476
1922	0.201	0.438	1.613	1.574	1.299	0.711	0.157	0.092	0.051	0.142	0.086	0.052	6.416
1923	0.380	0.424	0.983	0.988	0.347	0.265	0.004	0.000	0.000	0.000	0.000	0.071	3.463
1924	0.131	0.419	1.190	0.317	1.370	0.745	0.166	0.097	0.053	0.261	0.091	0.120	4.959
1925	0.149	0.104	0.601	0.674	0.164	0.090	0.007	0.004	0.004	0.000	0.000	0.056	1.853
1926	0.000	0.000	0.728	0.573	0.507	0.097	0.000	0.000	0.000	0.004	0.000	0.000	1.909
1927	0.000	0.093	0.325	1.189	0.627	0.586	0.143	0.000	0.000	0.000	0.000	0.124	3.088
1928	0.004	0.041	0.004	0.000	0.804	0.720	0.093	0.060	0.034	0.022	0.015	0.067	1.864
1929	0.119	0.093	0.388	1.384	1.192	0.736	0.067	0.041	0.026	0.015	0.011	0.007	4.079
1930	0.004	0.015	1.072	0.026	0.160	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.277
1931	0.000	0.000	0.026	0.026	1.511	0.733	0.019	0.011	0.007	0.004	0.004	0.000	2.341
1932	0.000	0.000	1.221	0.201	0.037	0.034	0.048	0.000	0.000	0.265	0.000	0.000	1.806
1933	0.000	0.000	1.788	1.277	0.448	0.306	0.145	0.082	0.048	0.258	0.092	0.126	4.571
1934	0.510	0.412	0.765	0.373	0.736	0.131	0.071	0.045	0.026	0.019	0.011	0.007	3.106
1935	0.004	0.004	0.917	1.196	1.422	0.112	0.063	0.093	0.048	0.041	0.026	0.015	3.941
1936	0.011	0.398	0.388	1.171	1.528	0.712	0.154	0.090	0.051	0.112	0.067	0.041	4.723
1937	0.026	0.015	1.199	0.198	0.440	0.448	0.075	0.015	0.007	0.007	0.004	0.004	2.438
1938	0.026	0.168	1.069	0.860	1.848	0.738	0.163	0.096	0.052	0.257	0.090	0.115	5.483
1939	0.269	0.416	0.515	0.939	0.496	0.328	0.045	0.097	0.037	0.041	0.026	0.022	3.232
1940	0.022	0.075	0.948	0.063	0.056	0.011	0.045	0.004	0.004	0.000	0.000	0.000	1.228
1941	0.000	0.000	0.815	0.220	0.705	0.407	0.056	0.034	0.022	0.015	0.007	0.004	2.285
1942	0.075	0.416	1.554	0.755	0.873	0.470	0.112	0.096	0.052	0.265	0.092	0.126	4.887

1943	0.509	0.397	0.623	0.703	1.081	0.280	0.048	0.030	0.037	0.011	0.007	0.041	3.767
1944	0.019	0.011	0.041	0.019	0.004	0.026	0.141	0.011	0.000	0.000	0.000	0.000	0.272
1945	0.000	0.000	0.000	1.327	0.078	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.405
1946	0.000	0.383	1.570	0.943	0.757	0.656	0.157	0.091	0.050	0.090	0.056	0.034	4.787
1947	0.022	0.011	0.007	0.041	0.670	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.796
1948	0.000	0.000	0.339	0.019	0.004	0.627	0.015	0.022	0.000	0.000	0.000	0.000	1.026
1949	0.019	0.004	0.037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.060
1950	0.004	0.000	0.810	0.000	1.130	0.645	0.000	0.000	0.000	0.000	0.087	0.000	2.676
1951	0.000	0.000	1.289	0.656	0.011	0.004	0.000	0.000	0.000	0.000	0.000	0.000	1.959
1952	0.000	0.022	1.079	0.433	1.962	0.466	0.060	0.015	0.007	0.004	0.004	0.004	4.055
1953	0.000	0.000	0.239	0.187	1.235	0.007	0.148	0.089	0.037	0.022	0.015	0.122	2.101
1954	0.086	0.004	0.392	0.563	0.526	0.686	0.045	0.026	0.015	0.011	0.007	0.004	2.365
1955	0.090	0.209	0.687	1.016	1.962	0.745	0.166	0.097	0.053	0.263	0.092	0.125	5.503
1956	0.500	0.439	1.346	1.037	1.740	0.731	0.160	0.094	0.051	0.265	0.092	0.126	6.581
1957	0.513	0.439	1.692	1.505	1.886	0.727	0.160	0.094	0.052	0.187	0.088	0.067	7.408
1958	0.041	0.439	1.469	0.913	1.330	0.664	0.149	0.094	0.049	0.063	0.041	0.125	5.377
1959	0.466	0.119	1.357	0.530	1.162	0.295	0.164	0.086	0.022	0.015	0.007	0.015	4.238
1960	0.060	0.407	1.788	1.714	1.722	0.743	0.162	0.095	0.052	0.255	0.089	0.125	7.213
1961	0.510	0.401	0.940	1.400	1.172	0.689	0.086	0.045	0.026	0.015	0.011	0.007	4.302
1962	0.004	0.397	1.788	1.690	1.443	0.740	0.166	0.097	0.053	0.263	0.092	0.121	6.853
1963	0.216	0.138	0.153	1.109	0.756	0.045	0.030	0.019	0.011	0.007	0.004	0.004	2.492
1964	0.455	0.438	1.695	1.119	0.825	0.683	0.153	0.090	0.051	0.190	0.063	0.037	5.799
1965	0.037	0.428	0.231	0.392	1.604	0.004	0.000	0.000	0.000	0.000	0.015	0.019	2.731
1966	0.000	0.321	0.733	0.782	1.598	0.741	0.161	0.095	0.052	0.253	0.089	0.097	4.923
1967	0.067	0.431	1.286	0.737	0.067	0.205	0.022	0.011	0.007	0.004	0.004	0.000	2.841
1968	0.000	0.213	1.788	1.469	1.095	0.707	0.157	0.092	0.051	0.138	0.086	0.114	5.911
1969	0.436	0.090	0.131	0.545	1.187	0.015	0.007	0.004	0.004	0.000	0.000	0.124	2.543
1970	0.512	0.377	0.228	1.714	1.169	0.721	0.165	0.097	0.053	0.265	0.092	0.124	5.517
1971	0.481	0.381	1.397	1.599	1.962	0.745	0.165	0.097	0.053	0.261	0.091	0.119	7.351
1972	0.142	0.086	0.172	1.395	1.962	0.745	0.166	0.097	0.053	0.265	0.092	0.126	5.300
1973	0.513	0.435	1.242	1.632	1.639	0.678	0.152	0.089	0.050	0.264	0.060	0.034	6.787
1974	0.030	0.436	0.310	0.734	1.396	0.731	0.136	0.080	0.047	0.034	0.022	0.126	4.082
1975	0.513	0.439	1.771	1.546	1.406	0.724	0.163	0.097	0.053	0.265	0.092	0.124	7.192
1976	0.455	0.434	1.640	1.496	1.962	0.745	0.166	0.097	0.053	0.262	0.091	0.126	7.526
1977	0.513	0.430	1.205	1.714	1.673	0.735	0.163	0.096	0.052	0.256	0.090	0.116	7.041
1978	0.513	0.437	1.438	1.051	1.718	0.623	0.149	0.087	0.049	0.265	0.091	0.125	6.548
1979	0.502	0.373	0.801	1.300	0.673	0.063	0.037	0.026	0.015	0.007	0.004	0.004	3.805
1980	0.004	0.000	0.477	0.891	1.295	0.026	0.000	0.000	0.007	0.015	0.011	0.123	2.850
1981	0.112	0.418	1.155	1.397	1.360	0.448	0.137	0.080	0.047	0.034	0.019	0.011	5.219
1982	0.358	0.413	0.004	0.624	0.000	0.000	0.000	0.078	0.011	0.000	0.000	0.000	1.488
1983	0.000	0.436	1.331	1.714	1.962	0.745	0.166	0.097	0.053	0.265	0.092	0.126	6.987
1984	0.512	0.425	0.881	1.456	1.962	0.744	0.165	0.097	0.053	0.261	0.091	0.119	6.764
1985	0.474	0.418	0.504	1.192	1.003	0.209	0.097	0.060	0.037	0.022	0.015	0.007	4.038
1986	0.004	0.004	1.788	0.425	0.112	0.022	0.015	0.007	0.004	0.004	0.089	0.126	2.599
1987	0.513	0.438	1.384	1.159	1.475	0.736	0.165	0.096	0.052	0.265	0.091	0.124	6.498
1988	0.506	0.421	1.196	0.500	1.075	0.310	0.136	0.079	0.049	0.034	0.019	0.011	4.336
1989	0.022	0.424	1.431	1.401	1.063	0.691	0.154	0.091	0.051	0.116	0.071	0.041	5.557
1990	0.026	0.015	1.523	1.595	1.907	0.740	0.164	0.096	0.052	0.259	0.090	0.117	6.584
1991	0.175	0.250	1.303	0.175	0.775	0.030	0.007	0.004	0.004	0.000	0.000	0.000	2.722
1992	0.000	0.007	0.683	1.098	1.270	0.000	0.160	0.000	0.000	0.000	0.000	0.125	3.343
1993	0.513	0.438	1.702	1.714	1.549	0.740	0.163	0.096	0.052	0.256	0.090	0.114	7.427
1994	0.509	0.431	1.788	1.236	0.556	0.392	0.148	0.085	0.049	0.052	0.034	0.019	5.298
1995	0.504	0.287	1.788	1.714	1.962	0.745	0.166	0.097	0.053	0.265	0.092	0.123	7.794
1996	0.507	0.246	0.826	0.588	0.568	0.744	0.166	0.097	0.053	0.264	0.092	0.123	4.272
1997	0.283	0.428	1.233	1.714	0.912	0.745	0.158	0.094	0.051	0.145	0.087	0.052	5.901
1998	0.086	0.183	1.479	1.025	0.868	0.556	0.162	0.089	0.050	0.071	0.045	0.026	4.639
1999	0.015	0.011	1.460	1.622	1.962	0.742	0.165	0.097	0.053	0.264	0.092	0.123	6.607
2000	0.339	0.439	1.788	1.714	1.596	0.743	0.164	0.096	0.052	0.259	0.090	0.126	7.407
2001	0.511	0.436	0.998	1.100	1.877	0.730	0.164	0.095	0.052	0.265	0.092	0.126	6.446
2002	0.513	0.433	1.103	0.862	1.735	0.261	0.137	0.080	0.047	0.037	0.022	0.015	5.046
2003	0.007	0.436	0.646	0.865	1.575	0.745	0.166	0.097	0.053	0.265	0.092	0.126	5.071
2004	0.510	0.439	0.871	0.679	1.855	0.744	0.165	0.097	0.053	0.261	0.091	0.119	5.881
2005	0.127	0.430	0.060	1.631	1.407	0.726	0.161	0.093	0.051	0.142	0.089	0.052	4.968
2006	0.506	0.436	1.788	1.299	0.863	0.347	0.144	0.083	0.049	0.048	0.030	0.124	5.716
2007	0.513	0.439	1.584	1.140	0.880	0.716	0.165	0.097	0.053	0.263	0.092	0.121	6.063
2008	0.201	0.439	0.726	0.756	0.670	0.220	0.104	0.067	0.037	0.264	0.092	0.125	3.702
2009	0.508	0.436	0.421	1.714	0.916	0.623	0.165	0.095	0.052	0.253	0.089	0.097	5.370
Mean	0.223	0.267	0.980	0.946	1.071	0.467	0.107	0.062	0.033	0.119	0.048	0.068	4.389

A.25. Ni10 – Category B

Summary table

Desktop Version 2, Generated on 2015-03-30
 Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :
 Total Runoff : Ni10

Annual Flows (Mill. cu. m or index values):
 MAR = 272,897
 S.Dev. = 213,184
 CV = 0,781
 Q75 = 2,024
 Q75/MMF = 0,089
 BFI Index = 0,326
 CV(JJA+JFM) Index = 3,085

Ecological Category = B

Total IFR = 82,737 (30,32 %MAR)
 Maint. Lowflow = 46,249 (16,95 %MAR)
 Drought Lowflow = 1,153 (0,42 %MAR)
 Maint. Highflow = 36,488 (13,37 %MAR)

Monthly Distributions (Mill. cu. m.)
 Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
			CV	Maint.	Drought	Maint.	
Oct	14,081	30,396	2,159	2,326	0,000	1,963	4,289
Nov	20,928	25,840	1,235	2,935	0,000	3,066	6,001
Dec	32,525	41,562	1,278	3,975	0,175	5,368	9,344
Jan	41,991	58,824	1,401	5,080	0,768	2,684	7,764

Feb	58,457	96,385	1,649	6,798	0,035	15,913	22,711
Mar	36,691	40,969	1,117	6,114	0,035	4,861	10,975
Apr	19,930	27,019	1,356	5,049	0,000	1,586	6,635
May	17,072	32,125	1,882	4,301	0,070	0,000	4,301
Jun	7,516	9,883	1,315	3,013	0,035	0,000	3,013
Jul	9,109	22,310	2,449	2,679	0,035	0,000	2,679
Aug	4,385	5,813	1,326	1,919	0,000	0,000	1,919
Sep	10,212	25,365	2,484	2,058	0,000	1,046	3,105

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni10

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	4.921	4.875	4.773	4.562	3.211	1.710	1.222	0.524	0.175	0.035
Nov	6.853	6.805	6.703	6.503	6.127	5.471	4.428	2.443	1.012	0.070
Dec	15.168	13.744	12.495	11.332	10.127	8.102	6.610	4.536	2.225	0.770
Jan	11.276	10.542	9.870	9.197	8.421	7.107	5.881	4.178	2.279	1.085
Feb	39.013	34.834	31.214	27.936	24.678	19.222	14.030	10.732	5.228	0.628
Mar	12.608	12.518	12.331	11.960	11.267	10.056	7.329	4.816	2.473	0.279
Apr	7.756	7.683	7.519	7.179	6.545	5.501	4.027	2.331	0.881	0.035
May	5.130	5.082	4.972	4.746	4.323	3.628	2.338	1.517	0.551	0.102
Jun	3.594	3.560	3.483	3.323	2.967	1.850	1.396	0.942	0.373	0.057
Jul	3.195	3.165	3.097	2.955	2.652	1.780	1.117	0.698	0.335	0.055
Aug	2.289	2.267	2.217	2.115	1.924	1.187	0.803	0.419	0.209	0.014
Sep	3.599	3.566	3.490	3.246	2.338	1.501	0.803	0.384	0.209	0.070

Reserve Flows without High Flows

Oct	2.773	2.747	2.687	2.563	2.331	1.710	1.222	0.524	0.175	0.017
Nov	3.500	3.474	3.420	3.312	3.112	2.761	2.204	1.429	0.565	0.022
Dec	4.741	4.707	4.637	4.497	4.235	3.777	3.050	2.039	0.912	0.204
Jan	6.062	6.023	5.941	5.779	5.475	4.945	4.101	2.929	1.623	0.801
Feb	8.107	8.047	7.922	7.675	7.212	6.403	5.117	3.330	1.339	0.086
Mar	7.291	7.237	7.125	6.903	6.486	5.759	4.604	2.997	1.207	0.080
Apr	6.021	5.964	5.833	5.564	5.061	4.234	3.066	1.722	0.572	0.035
May	5.130	5.082	4.972	4.746	4.323	3.628	2.338	1.517	0.551	0.102
Jun	3.594	3.560	3.483	3.323	2.967	1.850	1.396	0.942	0.373	0.057
Jul	3.195	3.165	3.097	2.955	2.652	1.780	1.117	0.698	0.335	0.055
Aug	2.289	2.267	2.217	2.115	1.924	1.187	0.803	0.419	0.209	0.014
Sep	2.455	2.431	2.378	2.268	2.063	1.501	0.803	0.384	0.209	0.015

Natural Duration curves

Oct	34.760	15.880	9.563	4.956	3.211	1.710	1.222	0.524	0.175	0.035
Nov	55.700	33.923	24.325	16.473	12.494	8.934	4.502	2.443	1.012	0.070
Dec	69.486	46.661	28.967	24.919	21.219	15.216	12.599	8.655	4.851	1.082
Jan	106.271	55.037	47.359	35.214	23.383	16.961	11.517	7.259	5.200	1.117
Feb	170.382	70.393	43.381	31.201	25.163	20.731	14.030	10.749	5.584	0.628
Mar	101.734	79.293	40.868	31.305	16.124	12.634	7.329	4.816	2.827	0.279
Apr	49.593	33.225	21.813	13.471	9.458	6.247	4.572	3.176	1.850	0.035
May	44.253	25.163	15.426	8.934	4.956	3.874	2.338	1.745	0.873	0.244
Jun	25.617	11.517	8.481	5.235	2.967	1.850	1.396	0.942	0.524	0.105
Jul	20.870	8.725	6.282	4.153	2.652	1.780	1.117	0.698	0.349	0.070
Aug	13.018	7.504	4.188	3.211	2.024	1.187	0.803	0.419	0.209	0.035
Sep	17.555	7.992	4.467	3.246	2.338	1.501	0.803	0.384	0.209	0.070

Hydrological time series

Total Runoff : Ni10

Desktop (Version 2) Modified Flow Data for Ecological Category B

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	4.645	3.106	3.202	1.224	2.024	0.279	0.035	0.493	0.057	0.055	0.014	3.547	18.681
1921	3.211	6.853	14.743	8.838	16.717	9.324	4.840	3.696	1.850	1.187	2.255	0.873	74.387
1922	1.745	6.735	13.092	11.276	32.714	11.858	7.184	4.672	3.278	2.765	1.872	1.117	98.306
1923	1.187	6.821	12.725	6.413	15.216	11.724	4.963	3.174	1.850	1.187	0.698	3.586	69.545
1924	4.875	6.750	13.399	10.984	33.541	12.608	7.756	5.130	3.594	3.195	2.289	3.568	107.688
1925	4.921	6.837	10.127	5.907	6.212	8.655	1.438	4.862	1.536	0.977	0.593	0.384	52.449
1926	0.279	0.279	3.704	0.768	0.628	11.597	1.438	1.318	0.942	0.768	0.384	0.209	22.314
1927	4.911	6.786	10.843	11.276	25.262	10.625	6.057	4.099	2.722	1.710	1.047	3.522	88.860
1928	1.396	3.281	8.102	3.082	39.013	12.427	7.625	4.949	3.453	3.028	2.075	3.599	92.031
1929	4.885	5.548	6.156	11.276	29.186	12.562	7.549	4.856	3.411	2.969	2.019	1.536	91.953
1930	0.977	3.281	8.691	1.388	6.108	1.073	3.935	0.837	0.733	0.454	0.384	0.175	28.035
1931	0.105	4.428	8.679	3.541	30.787	3.220	7.756	5.130	3.594	3.188	2.271	3.503	76.201
1932	3.106	6.302	8.926	11.121	36.666	12.137	6.925	4.538	3.177	2.985	1.571	0.977	98.432
1933	3.804	6.703	14.235	6.970	6.875	4.432	1.694	2.004	0.569	0.768	2.167	2.338	52.559
1934	1.536	2.443	6.610	1.517	6.352	0.279	0.105	0.070	0.035	0.035	0.000	0.000	18.982
1935	0.000	0.000	0.852	9.492	10.732	10.116	5.501	4.867	3.227	2.338	1.431	0.838	49.394
1936	0.524	6.853	13.753	9.876	39.013	12.554	7.727	5.047	3.541	3.134	2.204	3.141	107.367
1937	1.710	1.012	15.168	10.186	27.936	10.952	6.545	4.077	2.967	2.765	1.187	0.733	85.238
1938	1.082	4.472	15.168	11.276	39.013	12.467	7.612	4.972	3.488	3.165	2.267	3.430	108.411
1939	2.687	6.853	10.445	8.421	8.551	12.608	7.756	5.130	3.594	3.195	2.283	3.566	75.088
1940	4.459	6.805	10.275	10.674	5.793	9.598	6.125	2.234	1.326	2.784	0.838	0.314	61.224
1941	0.175	0.489	15.168	9.682	24.790	11.691	2.331	1.734	3.594	2.982	2.025	1.850	76.511
1942	1.640	5.696	7.762	5.291	7.294	12.432	7.756	5.130	3.594	3.195	2.289	3.588	65.666
1943	4.701	6.056	2.225	7.893	37.069	10.056	5.637	3.830	3.319	1.571	0.942	3.561	86.860
1944	4.188	2.303	10.207	3.286	21.025	12.388	6.853	4.405	3.081	2.129	1.291	0.768	71.925
1945	0.768	0.279	7.146	9.951	34.200	10.770	6.216	4.189	2.792	1.780	1.082	3.414	82.587
1946	0.419	0.803	7.461	9.176	29.322	12.608	7.475	4.807	3.372	2.894	1.969	1.605	81.911
1947	1.536	6.011	12.515	2.380	23.002	5.444	0.698	0.319	0.238	0.161	0.061	2.408	54.772
1948	0.140	2.967	3.625	10.860	20.468	7.329	7.756	5.130	3.574	3.156	2.235	3.246	70.484
1949	1.954	1.326	15.168	7.107	14.030	7.120	0.973	1.467	0.634	0.419	0.244	0.140	50.583
1950	0.105	0.070	4.100	4.938	2.234	4.607	0.411	0.136	0.129	0.097	2.289	3.587	22.704
1951	4.620	3.734	11.819	1.569	1.815	1.166	0.334	0.102	0.081	2.338	0.140	0.070	27.789
1952	0.105	2.024	13.744	6.704	19.222	6.491	4.914	1.788	1.117	0.698	0.419	1.326	58.553
1953	0.279	6.845	4.799	2.581	24.678	11.340	5.404	5.117	3.362	2.802	1.924	3.484	72.615
1954	4.730	4.716	2.960	9.050	31.220	12.347	7.525	4.924	3.405	2.955	2.002	1.501	87.336

1955	4.475	3.734	5.609	2.279	38.064	12.518	7.683	5.009	3.523	3.097	2.167	2.897	91.056
1956	2.059	6.625	8.034	4.280	30.797	10.492	3.109	2.338	1.256	3.195	2.285	3.599	78.069
1957	4.921	6.853	13.360	10.433	36.296	9.574	5.558	3.433	2.129	1.326	0.803	0.489	95.174
1958	4.817	6.797	11.938	6.671	16.892	1.633	0.633	4.256	0.503	0.384	0.209	3.430	58.163
1959	2.373	2.443	8.220	1.091	18.038	4.363	2.871	0.922	0.437	0.335	0.209	0.209	41.511
1960	0.244	5.462	14.648	9.653	35.790	12.578	7.645	5.082	3.587	3.159	2.228	3.554	103.629
1961	4.877	6.619	3.492	4.178	17.872	9.004	3.430	1.171	0.768	0.489	0.489	0.419	52.807
1962	0.663	1.466	12.954	8.627	24.828	12.578	7.519	4.831	3.412	3.195	2.289	3.591	85.953
1963	4.849	6.239	2.715	11.234	11.412	5.305	6.832	3.174	1.745	1.117	0.663	0.384	55.669
1964	4.882	6.777	11.150	4.961	26.297	3.173	0.950	0.837	0.733	0.524	0.803	0.907	61.993
1965	2.059	2.024	0.770	10.571	22.659	6.701	2.908	2.338	1.396	0.873	0.558	0.314	53.172
1966	0.209	1.885	7.535	5.760	39.013	12.608	7.590	4.991	3.478	3.039	2.098	1.989	90.194
1967	1.222	5.992	4.767	4.303	3.490	12.235	4.397	2.199	1.291	0.838	0.489	0.279	41.502
1968	0.489	0.873	8.962	9.479	13.855	12.150	6.567	5.115	3.542	3.101	2.167	2.827	69.126
1969	4.906	6.308	5.489	3.158	7.434	3.733	0.881	0.636	0.319	0.248	0.244	3.141	36.498
1970	4.827	6.196	1.139	7.971	3.560	2.753	7.068	5.030	3.513	3.067	2.146	1.989	49.260
1971	4.670	6.196	8.856	9.827	39.013	12.583	7.715	5.092	3.583	3.172	2.255	3.387	106.349
1972	2.373	6.361	1.850	6.641	28.335	10.274	7.262	4.597	3.131	2.059	1.952	3.599	78.436
1973	4.921	6.845	13.015	10.143	23.603	12.231	4.286	2.897	1.710	2.949	0.663	0.384	83.647
1974	0.279	6.660	10.298	9.406	37.824	12.608	7.754	5.049	3.551	3.133	2.217	3.599	102.377
1975	4.921	6.797	14.835	10.957	34.754	11.960	7.405	5.115	3.560	3.133	2.217	2.513	108.166
1976	4.812	4.529	11.467	9.197	39.013	12.608	7.756	5.097	3.572	3.165	2.243	3.599	107.057
1977	4.921	6.570	14.545	11.276	30.818	12.600	7.624	4.970	3.483	3.051	2.118	2.373	104.347
1978	4.921	6.756	9.539	6.490	15.147	4.816	7.046	3.359	1.815	2.925	1.187	1.571	65.571
1979	1.361	0.768	1.051	5.360	31.952	6.422	1.630	1.517	1.012	0.663	0.384	3.410	55.530
1980	0.593	6.503	6.758	4.961	18.488	9.951	1.694	5.130	3.594	3.195	2.282	3.599	66.747
1981	4.914	6.811	8.102	5.881	12.075	11.401	0.724	0.551	0.373	0.335	0.209	0.105	51.482
1982	1.431	2.059	0.175	1.085	0.035	0.035	0.000	4.394	1.431	0.454	0.384	0.175	11.657
1983	0.140	6.848	12.287	11.276	39.013	12.529	7.733	5.048	3.591	3.195	2.289	3.599	107.548
1984	4.874	5.471	6.276	9.865	39.013	12.470	7.696	5.022	3.530	3.109	2.185	2.478	101.990
1985	3.734	5.075	2.225	8.243	12.843	6.701	0.881	0.464	0.319	0.248	0.140	0.140	41.012
1986	0.593	2.757	12.495	10.155	5.228	10.104	7.605	4.431	3.086	2.164	2.152	3.599	64.368
1987	4.921	6.819	12.396	8.350	31.741	12.608	7.756	5.111	3.583	3.179	2.253	3.528	102.243
1988	4.880	6.595	11.332	4.025	31.214	12.608	7.179	4.560	3.205	2.652	1.605	0.942	90.797
1989	1.501	6.853	15.168	9.870	22.229	12.176	7.413	4.746	3.325	2.814	1.924	1.187	89.206
1990	1.222	4.630	8.891	11.276	34.834	12.334	7.135	5.130	3.594	3.190	2.277	3.530	98.041
1991	4.785	3.316	4.536	1.711	11.412	2.473	3.063	0.204	0.183	0.119	0.045	0.070	31.916
1992	0.035	0.803	10.139	2.380	11.238	12.485	7.362	4.323	2.862	1.815	1.082	1.815	56.338
1993	4.921	6.612	10.684	8.171	26.335	7.783	5.932	1.896	1.082	0.698	0.419	0.244	74.776
1994	4.675	6.430	13.952	7.593	3.001	1.539	7.684	5.130	3.594	3.181	2.267	3.490	62.537
1995	3.734	6.522	15.168	11.276	39.013	12.599	7.736	5.107	3.565	3.194	2.257	3.383	113.554
1996	4.921	6.739	11.829	8.586	12.773	12.035	7.756	5.116	3.580	3.173	2.283	3.577	82.368
1997	4.872	6.826	13.515	10.308	25.299	11.796	5.921	4.189	2.792	1.745	1.047	0.628	88.939
1998	4.499	5.273	11.684	9.069	29.658	12.001	5.955	3.238	1.885	1.187	1.924	0.524	86.895
1999	0.733	5.703	14.222	10.542	37.725	12.608	7.756	5.130	3.594	3.186	2.272	3.589	107.059
2000	4.859	6.853	15.168	9.376	28.488	11.267	7.755	5.039	3.485	3.053	2.115	3.599	101.055
2001	4.562	6.853	15.168	9.057	22.400	8.969	5.330	3.408	2.094	3.195	2.289	3.590	86.915
2002	4.603	6.076	7.479	1.388	23.561	0.962	0.360	0.102	0.106	0.076	0.030	0.070	44.812
2003	0.035	5.806	1.457	11.276	37.180	12.171	7.353	4.742	3.323	3.195	2.289	3.541	92.369
2004	3.699	6.127	6.036	8.435	26.825	11.616	2.985	2.164	1.256	0.803	1.929	0.384	72.260
2005	0.175	6.605	1.495	7.600	18.701	11.170	4.027	1.418	0.942	2.094	2.289	1.954	58.470
2006	4.706	6.167	15.168	7.550	25.017	1.260	4.729	0.435	1.012	0.454	0.140	0.803	67.441
2007	4.908	6.853	12.407	6.286	4.851	3.979	7.242	3.875	2.338	1.466	0.907	0.524	55.637
2008	0.349	6.853	5.063	10.155	33.517	12.331	3.476	3.628	1.815	2.338	2.289	3.430	85.243
2009	4.773	5.162	1.476	10.642	11.552	5.968	6.920	2.548	1.501	0.942	0.558	0.349	52.391
Mean	2.812	4.947	9.073	7.403	22.341	9.137	5.268	3.495	2.321	2.028	1.444	2.049	72.320

A.26. Ni10 – Category C

Summary table

Desktop Version 2, Generated on 2015-03-30
Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :
Total Runoff : Ni10

Annual Flows (Mill. cu. m or index values):
MAR = 272,897
S.Dev. = 213,184
CV = 0,781
Q75 = 2,024
Q75/MMF = 0,089
BFI Index = 0,326
CV(JJA+JFM) Index = 3,085

Ecological Category = C

Total IFR = 55,649 (20,39 %MAR)
Maint. Lowflow = 26,619 (9,75 %MAR)
Drought Lowflow = 1,153 (0,42 %MAR)
Maint. Highflow = 29,030 (10,64 %MAR)

Monthly Distributions (Mill. cu. m.)
Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
			Maint.	Drought	Maint.	Maint.	
Oct	14,081	30,396	2,159	1,389	0,000	1,562	2,951
Nov	20,928	25,840	1,235	1,720	0,000	2,439	4,159
Dec	32,525	41,562	1,278	2,284	0,175	4,271	6,555
Jan	41,991	58,824	1,401	2,883	0,768	2,136	5,019
Feb	58,457	96,385	1,649	3,815	0,035	12,660	16,475
Mar	36,691	40,969	1,117	3,444	0,035	3,867	7,311
Apr	19,930	27,019	1,356	2,866	0,000	1,262	4,128
May	17,072	32,125	1,882	2,461	0,070	0,000	2,461
Jun	7,516	9,883	1,315	1,762	0,035	0,000	1,762
Jul	9,109	22,310	2,449	1,581	0,035	0,000	1,581
Aug	4,385	5,813	1,326	1,169	0,000	0,000	1,169
Sep	10,212	25,365	2,484	1,244	0,000	0,832	2,077

Rule curve

Desktop Version 2, Generated on 2015-03-30
Summary of IFR rule curves (Desktop Version 2) for :
Total Runoff : Ni10
Regional Type : N.Natal
Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	3.710	3.676	3.599	3.440	3.144	1.710	1.222	0.524	0.175	0.035
Nov	5.303	5.265	5.187	5.032	4.742	4.235	3.429	2.309	1.012	0.070
Dec	11.474	10.346	9.361	8.456	7.533	5.985	4.898	3.388	1.704	0.645
Jan	8.163	7.586	7.067	6.561	5.999	5.050	4.229	3.087	1.815	1.014
Feb	29.896	26.580	23.718	21.145	18.619	14.393	11.750	8.076	3.981	0.628
Mar	9.405	9.338	9.199	8.924	8.409	7.509	6.078	4.089	1.873	0.279
Apr	5.354	5.304	5.191	4.957	4.521	3.803	2.789	1.621	0.623	0.035
May	3.326	3.295	3.225	3.079	2.807	2.360	1.728	1.001	0.379	0.090
Jun	2.382	2.360	2.309	2.204	2.008	1.685	1.230	0.706	0.258	0.050
Jul	2.137	2.117	2.072	1.978	1.802	1.513	1.106	0.636	0.235	0.048
Aug	1.580	1.565	1.531	1.460	1.328	1.111	0.803	0.419	0.150	0.010
Sep	2.659	2.634	2.578	2.463	2.248	1.501	0.803	0.384	0.209	0.070

Reserve Flows without High Flows

Oct	1.878	1.860	1.819	1.735	1.578	1.320	0.956	0.524	0.175	0.012
Nov	2.393	2.375	2.338	2.265	2.127	1.888	1.506	0.977	0.386	0.015
Dec	3.178	3.156	3.110	3.018	2.845	2.544	2.066	1.401	0.660	0.194
Jan	4.016	3.991	3.941	3.842	3.655	3.330	2.813	2.094	1.292	0.788
Feb	5.308	5.268	5.187	5.025	4.723	4.195	3.355	2.187	0.887	0.068
Mar	4.791	4.756	4.682	4.537	4.264	3.787	3.030	1.977	0.803	0.065
Apr	3.874	3.837	3.753	3.580	3.256	2.724	1.973	1.108	0.368	0.024
May	3.326	3.295	3.225	3.079	2.807	2.360	1.728	1.001	0.379	0.090
Jun	2.382	2.360	2.309	2.204	2.008	1.685	1.230	0.706	0.258	0.050
Jul	2.137	2.117	2.072	1.978	1.802	1.513	1.106	0.636	0.235	0.048
Aug	1.580	1.565	1.531	1.460	1.328	1.111	0.803	0.419	0.150	0.010
Sep	1.682	1.666	1.629	1.554	1.414	1.183	0.803	0.384	0.160	0.011

Natural Duration curves

Oct	34.760	15.880	9.563	4.956	3.211	1.710	1.222	0.524	0.175	0.035
Nov	55.700	33.923	24.325	16.473	12.494	8.934	4.502	2.443	1.012	0.070
Dec	69.486	46.661	28.967	24.919	21.219	15.216	12.599	8.655	4.851	1.082
Jan	106.271	55.037	47.359	35.214	23.383	16.961	11.517	7.259	5.200	1.117
Feb	170.382	70.393	43.381	31.201	25.163	20.731	14.030	10.749	5.584	0.628
Mar	101.734	79.293	40.868	31.305	16.124	12.634	7.329	4.816	2.827	0.279
Apr	49.593	33.225	21.813	13.471	9.458	6.247	4.572	3.176	1.850	0.035
May	44.253	25.163	15.426	8.934	4.956	3.874	2.338	1.745	0.873	0.244
Jun	25.617	11.517	8.481	5.235	2.967	1.850	1.396	0.942	0.524	0.105
Jul	20.870	8.725	6.282	4.153	2.652	1.780	1.117	0.698	0.349	0.070
Aug	13.018	7.504	4.188	3.211	2.024	1.187	0.803	0.419	0.209	0.035
Sep	17.555	7.992	4.467	3.246	2.338	1.501	0.803	0.384	0.209	0.070

Hydrological time series

Total Runoff : Ni10													
Desktop (Version 2) Modified Flow Data for Ecological Category C													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	3.503	2.716	2.416	1.107	1.973	0.279	0.035	0.342	0.050	0.048	0.010	2.621	15.099
1921	3.144	5.303	11.137	6.301	12.684	6.965	3.348	2.403	1.685	1.155	1.557	0.873	56.555
1922	1.745	5.211	9.831	8.163	24.902	8.848	4.961	3.031	2.174	1.851	1.292	1.117	73.127
1923	1.187	5.278	9.542	4.585	12.162	8.749	3.432	2.068	1.685	1.155	0.698	2.649	53.191
1924	3.676	5.223	10.074	7.933	25.557	9.405	5.354	3.326	2.382	2.137	1.580	2.636	79.284
1925	3.710	5.291	7.533	4.246	5.396	6.630	1.007	3.154	1.340	0.977	0.593	0.384	40.262
1926	0.279	0.279	2.782	0.768	0.628	8.654	1.007	0.873	0.706	0.768	0.266	0.209	17.219
1927	3.703	5.251	8.082	8.163	19.071	7.932	4.185	2.663	1.937	1.477	0.989	2.602	66.055
1928	1.396	2.824	5.985	2.352	29.896	9.271	5.264	3.210	2.290	2.026	1.433	2.659	68.606
1929	3.684	4.295	4.568	8.163	22.123	9.372	5.212	3.150	2.262	1.986	1.394	1.536	67.744
1930	0.977	2.824	6.435	1.217	5.162	0.832	2.725	0.564	0.500	0.389	0.266	0.175	22.065
1931	0.105	3.429	6.426	2.660	23.382	2.428	5.354	3.326	2.382	2.132	1.568	2.588	55.780
1932	3.106	4.877	6.615	8.041	28.033	9.055	4.783	2.946	2.107	1.997	1.211	0.977	73.749
1933	3.245	5.187	10.734	4.959	5.993	3.620	1.183	1.315	0.387	0.768	1.496	2.248	41.134
1934	1.536	2.309	4.898	1.304	5.712	0.279	0.105	0.070	0.035	0.035	0.000	0.000	16.283
1935	0.000	0.000	0.704	6.781	8.076	7.554	3.803	3.157	2.140	1.698	1.174	0.838	35.925
1936	0.524	5.303	10.353	7.072	29.896	9.366	5.334	3.273	2.347	2.096	1.521	2.438	79.524
1937	1.710	1.012	11.474	7.310	21.145	8.175	4.521	2.649	2.008	1.851	1.111	0.733	63.698
1938	1.082	3.463	11.474	8.163	29.896	9.301	5.255	3.225	2.313	2.117	1.565	2.534	80.387
1939	2.687	5.303	7.777	5.999	6.894	9.405	5.354	3.326	2.382	2.137	1.576	2.634	55.475
1940	3.363	5.265	7.646	7.690	4.452	7.168	4.232	1.574	1.155	1.863	0.831	0.314	45.556
1941	0.175	0.475	11.474	6.925	18.706	8.724	1.621	1.141	2.382	1.995	1.398	1.850	56.865
1942	1.640	4.409	5.737	3.833	6.218	9.274	5.354	3.326	2.382	2.137	1.580	2.651	48.542
1943	3.546	4.687	1.704	5.618	28.353	7.509	3.896	2.490	2.201	1.405	0.910	2.631	64.948
1944	3.310	2.068	7.594	2.489	15.790	9.242	4.733	2.860	2.044	1.629	1.138	0.768	53.666
1945	0.768	0.279	5.289	7.130	26.078	8.040	4.295	2.720	1.957	1.513	1.020	2.522	61.611
1946	0.419	0.803	5.518	6.546	22.229	9.405	5.161	3.119	2.236	1.937	1.359	1.605	60.338
1947	1.536	4.652	9.377	1.882	17.321	4.447	0.497	0.230	0.169	0.119	0.042	2.265	42.537
1948	0.140	2.631	2.724	7.836	15.358	6.078	5.354	3.326	2.369	2.111	1.543	2.463	51.933
1949	1.954	1.225	11.474	5.050	11.750	5.830	0.687	0.969	0.430	0.338	0.173	0.140	40.020
1950	0.105	0.070	3.070	3.597	2.058	3.834	0.300	0.112	0.087	0.076	1.580	2.650	17.550
1951	3.484	3.048	8.834	1.338	1.815	0.901	0.247	0.090	0.066	1.698	0.097	0.070	21.689
1952	0.105	1.589	10.346	4.780	14.393	5.085	3.399	1.176	0.932	0.636	0.419	1.326	44.186
1953	0.279	5.297	3.579	2.017	18.619	8.463	3.736	3.318	2.229	1.876	1.328	2.574	53.314
1954	3.567	3.651	2.240	6.455	23.723	9.211	5.195	3.194	2.258	1.978	1.382	1.501	64.355
1955	3.375	3.048	4.169	1.815	29.143	9.338	5.304	3.248	2.336	2.072	1.496	2.380	67.725
1956	2.059	5.126	5.936	3.156	23.390	7.833	2.156	1.728	1.081	2.137	1.577	2.659	58.838
1957	3.710	5.303	10.043	7.502	27.739	7.150	3.842	2.234	1.766	1.253	0.803	0.489	71.834
1958	3.632	5.260	8.926	4.758	12.745	1.248	0.453	2.764	0.344	0.286	0.150	2.534	43.101
1959	2.373	2.309	6.075	1.018	13.512	3.535	1.992	0.618	0.300	0.235	0.150	0.209	32.328
1960	0.244	4.228	11.062	6.903	27.338	9.383	5.278	3.295	2.378	2.113	1.538	2.625	76.385
1961	3.677	5.122	2.627	3.087	13.389	6.776	2.377	0.778	0.534	0.425	0.489	0.419	39.700
1962	0.663	1.298	9.723	6.148	18.735	9.383	5.191	3.134	2.263	2.137	1.580	2.652	62.908
1963	3.656	4.828	2.061	8.130	9.470	4.367	4.718	2.068	1.504	1.106	0.663	0.384	42.956
1964	3.681	5.244	8.316	3.612	19.874	2.393	0.671	0.564	0.500	0.460	0.803	0.907	47.024
1965	2.059	1.589	0.645	7.610	17.055	5.334	2.018	1.728	1.230	0.873	0.558	0.314	41.012
1966	0.209	1.516	5.572	4.147	29.896	9.405	5.240	3.237	2.306	2.033	1.448	1.989	66.999
1967	1.222	4.638	3.566	3.171	2.779	9.128	3.043	1.522	1.118	0.838	0.489	0.279	31.783
1968	0.489	0.873	6.642	6.771	11.609	9.065	4.536	3.317	2.348	2.074	1.496	2.364	51.585
1969	3.700	4.882	4.082	2.403	6.294	2.809	0.623	0.434	0.222	0.177	0.173	2.438	28.238
1970	3.640	4.795	0.914	5.674	2.820	2.080	4.881	3.262	2.329	2.052	1.481	1.989	35.917
1971	3.522	4.795	6.561	7.035	29.896	9.387	5.326	3.302	2.375	2.121	1.556	2.502	78.380
1972	2.373	4.923	1.431	4.738	21.457	7.671	5.014	2.984	2.077	1.606	1.348	2.659	58.280
1973	3.710	5.297	9.771	7.277	17.786	9.125	2.966	1.946	1.477	1.974	0.663	0.384	62.375
1974	0.279	5.154	7.664	6.716	28.952	9.405	5.353	3.274	2.354	2.096	1.531	2.659	75.436
1975	3.710	5.260	11.210	7.912	26.516	8.924	5.113	3.316	2.360	2.096	1.531	2.290	80.237
1976	3.629	3.507	8.561	6.561	29.896	9.405	5.354	3.305	2.368	2.117	1.549	2.659	78.909
1977	3.710	5.084	10.980	8.163	23.406	9.400	5.263	3.223	2.309	2.041	1.462	2.256	77.298
1978	3.710	5.228	7.083	4.636	12.138	4.089	4.866	2.187	1.625	1.957	1.111	1.571	50.202
1979	1.361	0.768	0.849	3.880	24.301	5.003	1.139	1.001	0.797	0.601	0.266	2.519	42.484
1980	0.593	5.032	5.006	3.612	13.847	7.431	1.183	3.326	2.382	2.137	1.575	2.659	48.783
1981	3.706	5.270	5.985	4.229	10.183	8.508	0.515	0.379	0.258	0.235	0.150	0.105	39.524
1982	1.431	1.649	0.175	1.014	0.035	0.035	0.000	2.853	1.258	0.389	0.266	0.175	9.279
1983	0.140	5.299	9.199	8.163	29.896	9.347	5.338	3.274	2.380	2.137	1.580	2.659	79.413
1984	3.675	4.235	4.655	7.063	29.896	9.303	5.313	3.257	2.340	2.080	1.509	2.281	75.607
1985	3.233	3.929	1.704	5.871	10.799	5.334	0.623	0.324	0.222	0.177	0.097	0.140	32.451
1986	0.593	2.502	9.361	7.286	3.981	7.545	5.251	2.876	2.047	1.641	1.486	2.659	47.227
1987	3.710	5.276	9.285	5.948	24.133	9.405	5.354	3.314	2.375	2.126	1.555	2.606	75.088
1988	3.680	5.103	8.456	2.985	23.718	9.405	4.957	2.960	2.125	1.802	1.219	0.942	67.353
1989	1.501	5.303	11.474	7.067	16.722	9.084	5.118	3.079	2.205	1.884	1.328	1.187	65.953
1990	1.222	3.585	6.588	8.163	26.580	9.202	4.927	3.326	2.382	2.134	1.572	2.608	72.288
1991	3.608	2.841	3.388	1.434	9.470	1.873	2.125	0.156	0.133	0.091	0.031	0.070	25.219
1992	0.035	0.803	7.542	1.882	9.104	9.314	5.083	2.807	1.978	1.525	1.020	1.815	42.908
1993	3.710	5.116	7.960	5.819	19.903	6.267	4.099	1.245	0.887	0.636	0.419	0.244	56.306
1994	3.526	4.976	10.511	5.401	2.499	1.179	5.305	3.326	2.382	2.128	1.565	2.578	45.375
1995	3.233	5.047	11.474	8.163	29.896	9.399	5.340	3.312	2.363	2.136	1.558	2.500	84.421
1996	3.710	5.215	8.841	6.119	10.743	8.980	5.354	3.318	2.373	2.123	1.576	2.643	60.993
1997	3.674	5.282	10.165	7.405	19.101	8.802	4.091	2.720	1.957	1.495	0.989	0.628	66.311
1998	3.393	4.082	8.729	6.468	22.493	8.954	4.115	2.108	1.696	1.155	1.328	0.524	65.046
1999	0.733	4.414	10.724	7.586	28.874	9.405	5.354	3.326	2.382	2.131	1.569	2.651	79.150
2000	3.664	5.303	11.474	6.694	21.577	8.409	5.353	3.268	2.310	2.042	1.460	2.659	74.213
2001	3.440	5.303	11.474	6.460	16.855	6.761	3.685	2.218	1.756	2.137	1.580	2.652	64.321
2002	3.472	4.702	5.531	1.217	17.754	0.749	0.264	0.090	0.082	0.06			

S.Dev. = 213,184
 CV = 0,781
 Q75 = 2,024
 Q75/MMF = 0,089
 BFI Index = 0,326
 CV(JJA+JFM) Index = 3,085

Ecological Category = D

Total IFR = 36,241 (13,28 %MAR)
 Maint. Lowflow = 11,834 (4,34 %MAR)
 Drought Lowflow = 1,153 (0,42 %MAR)
 Maint. Highflow = 24,407 (8,94 %MAR)

Monthly Distributions (Mill. cu. m.)
 Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
		CV	Maint.	Drought	Maint.	Maint.	
Oct	14,081	30,396	2,159	0,640	0,000	1,313	1,953
Nov	20,928	25,840	1,235	0,778	0,000	2,051	2,829
Dec	32,525	41,562	1,278	1,014	0,175	3,591	4,605
Jan	41,991	58,824	1,401	1,264	0,768	1,796	3,059
Feb	58,457	96,385	1,649	1,653	0,035	10,644	12,297
Mar	36,691	40,969	1,117	1,498	0,035	3,251	4,749
Apr	19,930	27,019	1,356	1,257	0,000	1,061	2,318
May	17,072	32,125	1,882	1,087	0,070	0,000	1,087
Jun	7,516	9,883	1,315	0,796	0,035	0,000	0,796
Jul	9,109	22,310	2,449	0,720	0,035	0,000	0,720
Aug	4,385	5,813	1,326	0,548	0,000	0,000	0,548
Sep	10,212	25,365	2,484	0,580	0,000	0,700	1,280

Rule curve

Desktop Version 2, Generated on 2015-03-30
 Summary of IFR rule curves (Desktop Version 2) for :
 Total Runoff : Ni10
 Regional Type : N.Natal
 Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	3.050	3.022	2.959	2.829	2.585	1.710	1.222	0.524	0.175	0.035
Nov	4.605	4.572	4.504	4.369	4.117	3.676	2.975	2.001	0.916	0.070
Dec	8.990	8.047	7.230	6.489	5.753	4.520	3.715	2.597	1.350	0.566
Jan	6.004	5.526	5.104	4.709	4.293	3.594	3.059	2.317	1.489	0.969
Feb	23.958	21.179	18.791	16.664	14.607	11.174	9.139	6.313	3.162	0.628
Mar	7.826	7.770	7.655	7.426	6.998	6.250	5.060	3.408	1.566	0.279
Apr	3.831	3.796	3.715	3.548	3.237	2.726	2.003	1.171	0.460	0.035
May	2.010	1.992	1.950	1.863	1.701	1.435	1.058	0.625	0.254	0.082
Jun	1.471	1.458	1.426	1.362	1.242	1.045	0.766	0.446	0.171	0.044
Jul	1.331	1.319	1.291	1.233	1.125	0.947	0.695	0.406	0.158	0.043
Aug	1.013	1.003	0.981	0.936	0.852	0.712	0.516	0.290	0.096	0.006
Sep	2.066	2.047	2.004	1.915	1.748	1.474	0.803	0.384	0.209	0.070

Reserve Flows without High Flows

Oct	1.183	1.172	1.146	1.093	0.995	0.832	0.603	0.338	0.112	0.007
Nov	1.546	1.535	1.511	1.464	1.375	1.220	0.974	0.631	0.250	0.010
Dec	2.016	2.002	1.973	1.917	1.811	1.627	1.334	0.926	0.472	0.187
Jan	2.516	2.503	2.476	2.423	2.322	2.147	1.869	1.482	1.050	0.779
Feb	3.285	3.261	3.211	3.111	2.925	2.599	2.081	1.362	0.560	0.055
Mar	2.977	2.955	2.910	2.820	2.651	2.356	1.887	1.236	0.510	0.053
Apr	2.323	2.301	2.250	2.146	1.953	1.633	1.183	0.664	0.221	0.015
May	2.010	1.992	1.950	1.863	1.701	1.435	1.058	0.625	0.254	0.082
Jun	1.471	1.458	1.426	1.362	1.242	1.045	0.766	0.446	0.171	0.044
Jul	1.331	1.319	1.291	1.233	1.125	0.947	0.695	0.406	0.158	0.043
Aug	1.013	1.003	0.981	0.936	0.852	0.712	0.516	0.290	0.096	0.006
Sep	1.071	1.061	1.038	0.990	0.901	0.753	0.546	0.306	0.102	0.007

Natural Duration curves

Oct	34.760	15.880	9.563	4.956	3.211	1.710	1.222	0.524	0.175	0.035
Nov	55.700	33.923	24.325	16.473	12.494	8.934	4.502	2.443	1.012	0.070
Dec	69.486	46.661	28.967	24.919	21.219	15.216	12.599	8.655	4.851	1.082
Jan	106.271	55.037	47.359	35.214	23.383	16.961	11.517	7.259	5.200	1.117
Feb	170.382	70.393	43.381	31.201	25.163	20.731	14.030	10.749	5.584	0.628
Mar	101.734	79.293	40.868	31.305	16.124	12.634	7.329	4.816	2.827	0.279
Apr	49.593	33.225	21.813	13.471	9.458	6.247	4.572	3.176	1.850	0.035
May	44.253	25.163	15.426	8.934	4.956	3.874	2.338	1.745	0.873	0.244
Jun	25.617	11.517	8.481	5.235	2.967	1.850	1.396	0.942	0.524	0.105
Jul	20.870	8.725	6.282	4.153	2.652	1.780	1.117	0.698	0.349	0.070
Aug	13.018	7.504	4.188	3.211	2.024	1.187	0.803	0.419	0.209	0.035
Sep	17.555	7.992	4.467	3.246	2.338	1.501	0.803	0.384	0.209	0.070

Hydrological time series

Total Runoff : Ni10

Desktop (Version 2) Modified Flow Data for Ecological Category D

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	2.880	2.355	1.877	1.029	1.616	0.279	0.035	0.232	0.044	0.043	0.006	2.037	12.434
1921	2.585	4.605	8.708	4.516	9.859	5.798	2.402	1.460	1.045	0.726	0.998	0.873	43.574
1922	1.745	4.525	7.618	6.004	19.777	7.363	3.551	1.835	1.344	1.155	0.829	1.117	56.861
1923	1.187	4.583	7.379	3.291	9.457	7.280	2.462	1.260	1.045	0.726	0.461	2.059	41.190
1924	3.022	4.535	7.820	5.812	20.324	7.826	3.831	2.010	1.471	1.331	1.013	2.049	61.046
1925	3.050	4.594	5.753	3.070	4.251	5.520	0.733	1.908	0.834	0.622	0.406	0.384	31.124
1926	0.279	0.279	2.148	0.768	0.628	7.201	0.733	0.549	0.446	0.489	0.171	0.209	13.900
1927	3.044	4.560	6.190	6.004	14.976	6.601	2.998	1.615	1.199	0.924	0.634	2.022	50.768

1928	1.396	2.449	4.520	1.839	23.958	7.714	3.767	1.941	1.415	1.263	0.919	2.066	53.247
1929	3.028	3.728	3.470	6.004	17.469	7.798	3.730	1.905	1.398	1.238	0.894	1.485	52.147
1930	0.977	2.449	4.878	1.101	4.070	0.701	1.958	0.364	0.319	0.253	0.171	0.175	17.416
1931	0.105	2.975	4.871	2.039	18.512	2.027	3.831	2.010	1.471	1.328	1.005	2.011	42.187
1932	2.557	4.234	5.022	5.902	22.396	7.535	3.424	1.784	1.303	1.245	0.776	0.977	57.155
1933	2.668	4.504	8.371	3.534	4.710	3.018	0.859	0.812	0.250	0.489	0.959	1.748	31.922
1934	1.536	2.001	3.715	1.157	4.493	0.279	0.105	0.070	0.035	0.035	0.000	0.000	13.427
1935	0.000	0.000	0.609	4.878	6.313	6.287	2.726	1.910	1.323	1.061	0.753	0.838	26.698
1936	0.524	4.605	8.052	5.108	23.958	7.793	3.817	1.979	1.450	1.306	0.975	1.895	61.463
1937	1.710	0.916	8.990	5.300	16.664	6.803	3.237	1.607	1.242	1.155	0.712	0.733	49.069
1938	1.082	3.004	8.990	6.004	23.958	7.739	3.761	1.950	1.429	1.319	1.003	1.970	62.208
1939	2.445	4.605	5.947	4.293	5.403	7.826	3.831	2.010	1.471	1.331	1.010	2.047	42.221
1940	2.765	4.572	5.843	5.611	3.524	5.967	3.032	0.966	0.721	1.163	0.533	0.314	35.010
1941	0.175	0.406	8.990	4.992	14.679	7.259	1.171	0.708	1.471	1.244	0.896	1.588	43.580
1942	1.640	3.827	4.336	2.802	4.883	7.717	3.831	2.010	1.471	1.331	1.013	2.060	36.923
1943	2.915	4.069	1.350	4.012	22.664	6.250	2.792	1.512	1.360	0.880	0.583	2.045	50.432
1944	2.721	1.792	5.802	1.928	12.309	7.690	3.389	1.732	1.264	1.018	0.730	0.768	41.143
1945	0.768	0.279	4.004	5.155	20.759	6.691	3.076	1.649	1.211	0.947	0.654	1.961	47.154
1946	0.419	0.712	4.174	4.698	17.557	7.826	3.694	1.887	1.382	1.208	0.872	1.508	45.935
1947	1.536	4.039	7.243	1.533	13.553	3.705	0.371	0.165	0.117	0.087	0.027	1.761	34.136
1948	0.140	2.281	2.105	5.732	11.958	5.060	3.831	2.010	1.463	1.315	0.989	1.915	38.800
1949	1.954	1.058	8.990	3.594	9.139	4.855	0.506	0.606	0.277	0.222	0.111	0.140	31.451
1950	0.105	0.070	2.362	2.648	1.682	3.196	0.230	0.095	0.073	0.061	1.013	2.060	13.594
1951	2.865	2.644	6.796	1.180	1.551	0.759	0.192	0.082	0.054	1.061	0.062	0.070	17.315
1952	0.105	1.374	8.047	3.418	11.174	4.235	2.438	0.729	0.584	0.406	0.290	1.326	34.125
1953	0.279	4.599	2.738	1.621	14.607	7.043	2.678	2.005	1.378	1.170	0.852	2.001	40.971
1954	2.933	3.168	1.747	4.630	18.795	7.664	3.718	1.932	1.395	1.233	0.886	1.474	49.575
1955	2.775	2.644	3.175	1.489	23.326	7.770	3.796	1.964	1.443	1.291	0.959	1.851	52.483
1956	2.059	4.451	4.483	2.361	18.519	6.519	1.553	1.058	0.675	1.331	1.011	2.066	46.087
1957	3.050	4.605	7.795	5.457	22.150	5.952	2.753	1.360	1.094	0.786	0.516	0.489	56.006
1958	2.986	4.567	6.872	3.403	9.906	1.047	0.339	1.675	0.224	0.190	0.096	1.970	33.276
1959	2.361	2.001	4.591	0.971	10.496	2.948	1.436	0.397	0.197	0.158	0.096	0.209	25.862
1960	0.244	3.670	8.645	4.975	21.813	7.807	3.777	1.992	1.468	1.317	0.986	2.041	58.735
1961	3.023	4.447	2.034	2.317	10.400	5.640	1.710	0.492	0.340	0.275	0.339	0.419	31.437
1962	0.663	1.121	7.529	4.403	14.702	7.807	3.715	1.896	1.398	1.331	1.013	2.062	47.641
1963	3.006	4.192	1.614	5.976	7.385	3.639	3.378	1.260	0.934	0.695	0.442	0.384	32.907
1964	3.026	4.553	6.378	2.658	15.629	1.998	0.494	0.364	0.319	0.297	0.516	0.907	37.141
1965	2.059	1.374	0.566	5.545	13.337	4.442	1.454	1.058	0.766	0.567	0.387	0.314	31.870
1966	0.209	1.311	4.214	3.006	23.958	7.826	3.750	1.957	1.425	1.267	0.929	1.634	51.486
1967	1.222	4.026	2.721	2.371	2.237	7.596	2.184	0.935	0.698	0.549	0.339	0.279	25.157
1968	0.489	0.780	5.043	4.871	9.031	7.543	3.248	2.005	1.450	1.293	0.959	1.838	38.551
1969	3.041	4.239	3.111	1.872	4.941	2.344	0.460	0.287	0.150	0.122	0.111	1.895	22.574
1970	2.992	4.163	0.765	4.054	2.268	1.739	3.494	1.972	1.439	1.279	0.950	1.634	26.748
1971	2.896	4.163	4.979	5.079	23.958	7.811	3.811	1.996	1.467	1.322	0.998	1.945	60.424
1972	2.361	4.274	1.148	3.391	16.921	6.384	3.589	1.806	1.285	1.004	0.864	2.066	45.093
1973	3.050	4.599	7.568	5.273	13.931	7.593	2.130	1.188	0.917	1.230	0.442	0.384	48.306
1974	0.279	4.475	8.587	4.829	23.166	7.826	3.830	1.979	1.454	1.306	0.981	2.066	58.049
1975	3.050	4.567	8.769	5.795	21.126	7.426	3.659	2.005	1.458	1.306	0.981	1.780	61.921
1976	2.983	3.043	6.574	4.709	23.958	7.826	3.831	1.998	1.462	1.319	0.993	2.066	60.762
1977	3.050	4.414	8.576	6.004	18.532	7.821	3.766	1.949	1.426	1.272	0.938	1.755	59.504
1978	3.050	4.539	5.394	3.324	9.438	3.408	3.483	1.331	1.008	1.220	0.712	1.497	38.407
1979	1.361	0.678	0.717	2.832	19.276	4.167	0.827	0.625	0.501	0.384	0.171	1.958	33.498
1980	0.593	4.369	3.795	2.658	10.753	6.185	0.859	2.010	1.471	1.331	1.010	2.066	37.102
1981	3.046	4.576	4.520	3.059	7.934	7.080	0.383	0.254	0.171	0.158	0.096	0.105	31.385
1982	1.431	1.427	0.175	0.969	0.035	0.035	0.000	1.728	0.783	0.253	0.171	0.175	7.182
1983	0.140	4.601	7.096	6.004	23.958	7.777	3.820	1.979	1.470	1.331	1.013	2.066	61.256
1984	3.021	3.676	3.535	5.101	23.958	7.741	3.802	1.969	1.446	1.296	0.967	1.774	58.286
1985	2.658	3.410	1.350	4.198	8.408	4.442	0.460	0.221	0.150	0.122	0.062	0.140	25.621
1986	0.593	2.169	7.230	5.280	3.162	6.279	3.757	1.742	1.266	1.025	0.953	2.066	35.523
1987	3.050	4.581	7.167	4.255	19.137	7.826	3.831	2.003	1.467	1.325	0.997	2.026	57.664
1988	3.025	4.431	6.489	2.250	18.791	7.826	3.548	1.792	1.314	1.125	0.782	0.942	52.315
1989	1.501	4.605	8.990	5.104	13.066	7.559	3.663	1.863	1.363	1.175	0.852	1.187	50.928
1990	1.222	3.110	5.000	6.004	21.179	7.657	3.527	2.010	1.471	1.329	1.008	2.027	55.544
1991	2.966	2.464	2.597	1.242	7.385	1.566	1.530	0.121	0.095	0.069	0.020	0.070	20.125
1992	0.035	0.712	5.760	1.533	7.104	7.750	3.638	1.701	1.224	0.954	0.654	1.577	32.641
1993	3.050	4.442	6.093	4.160	15.653	5.218	2.937	0.770	0.556	0.406	0.290	0.244	43.819
1994	2.899	4.320	8.184	3.852	2.021	0.989	3.796	2.010	1.471	1.326	1.003	2.004	33.877
1995	2.658	4.382	8.990	6.004	23.958	7.820	3.821	2.002	1.460	1.331	0.999	1.943	65.368
1996	3.050	4.528	6.802	4.381	8.364	7.472	3.831	2.005	1.466	1.322	1.011	2.054	46.288
1997	3.020	4.587	7.896	5.378	15.000	7.324	2.931	1.649	1.211	0.936	0.634	0.628	51.195
1998	2.790	3.543	6.711	4.640	17.776	7.451	2.948	1.285	1.051	0.726	0.852	0.524	50.296
1999	0.733	3.832	8.363	5.526	23.100	7.826	3.831	2.010	1.471	1.328	1.006	2.061	61.086
2000	3.012	4.605	8.990	4.811	17.020	6.998	3.831	1.975	1.427	1.273	0.936	2.066	56.944
2001	2.829	4.605	8.990	4.634	13.174	5.628	2.642	1.350	1.088	1.331	1.013	2.061	49.345
2002	2.854	4.082	4.184	1.101	13.905	0.632	0.205	0.082	0.064	0.052	0.013	0.070	27.243
2003	0.035	3.901	0.936	6.004	22.737	7.556	3.634	1.862	1.362	1.331	1.013	2.034	52.404
2004	2.653	4.117	3.406	4.300	15.962	7.213	1.492	0.904	0.675	0.531	0.854	0.384	42.492
2005	0.175	4.438	0.956	3.856	10.875	6.938	2.003	0.587	0.446	1.011	1.013	1.622	33.920
2006	2.918	4.143	8.990	3.829	14.821	0.817	2.347	0.210	0.501	0.253	0.062	0.803	39.695
2007	3.042	4.605	7.174	3.236	2.946	2.558	3.579	1.529	1.131	0.847	0.566	0.524	31.736
2008	0.349	4.605	2.881	5.280	20.308	7.655	1.733	1.435	1.008	1.061	1.013	1.970	49.296
2009	2.959	3.468	0.946	5.591	7.612	3.953	3.421	1.107	0.817	0.603	0.387	0.349	31.213
Mean	1.941	3.374	5.253	3.916	13.579	5.733	2.611	1.389	1.007	0.907	0.680	1.342	41.732

A.28. Ni11 – Category B

Summary table

Desktop Version 2, Generated on 2015-03-30

Maint. Lowflow = 2,459 (13,76 %MAR)
 Drought Lowflow = 0,000 (0,00 %MAR)
 Maint. Highflow = 2,638 (14,76 %MAR)

Monthly Distributions (Mill. cu. m.)
 Distribution Type : N.Natal

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows	High Flows	Total Flows	
				Maint.	Drought	Maint.	Maint.
Oct	0,979	3,607	3,683	0,131	0,000	0,149	0,280
Nov	0,992	2,814	2,837	0,136	0,000	0,150	0,285
Dec	0,997	2,678	2,685	0,137	0,000	0,289	0,426
Jan	2,814	6,970	2,477	0,251	0,000	0,145	0,396
Feb	4,950	12,854	2,597	0,419	0,000	1,350	1,770
Mar	2,560	4,472	1,747	0,341	0,000	0,377	0,718
Apr	1,103	2,310	2,094	0,260	0,000	0,092	0,351
May	1,441	4,395	3,050	0,252	0,000	0,000	0,252
Jun	0,578	1,192	2,061	0,176	0,000	0,000	0,176
Jul	0,468	1,402	2,995	0,139	0,000	0,000	0,139
Aug	0,252	0,502	1,990	0,103	0,000	0,000	0,103
Sep	0,739	2,787	3,773	0,115	0,000	0,086	0,201

Rule curve

Desktop Version 2, Generated on 2015-03-30
 Summary of IFR rule curves (Desktop Version 2) for :
 Total Runoff : Ni11
 Regional Type : N.Natal
 Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.319	0.316	0.179	0.083	0.036	0.012	0.000	0.000	0.000	0.000
Nov	0.325	0.323	0.318	0.274	0.107	0.060	0.024	0.000	0.000	0.000
Dec	0.725	0.649	0.548	0.333	0.155	0.071	0.036	0.012	0.000	0.000
Jan	0.580	0.541	0.504	0.468	0.322	0.179	0.083	0.036	0.012	0.000
Feb	3.123	2.770	2.465	0.929	0.476	0.298	0.167	0.060	0.012	0.000
Mar	0.819	0.813	0.801	0.777	0.453	0.167	0.071	0.036	0.000	0.000
Apr	0.410	0.406	0.398	0.380	0.179	0.036	0.012	0.000	0.000	0.000
May	0.300	0.297	0.291	0.250	0.131	0.024	0.012	0.000	0.000	0.000
Jun	0.210	0.208	0.204	0.155	0.071	0.012	0.000	0.000	0.000	0.000
Jul	0.166	0.164	0.161	0.095	0.048	0.012	0.000	0.000	0.000	0.000
Aug	0.123	0.121	0.119	0.083	0.036	0.012	0.000	0.000	0.000	0.000
Sep	0.231	0.229	0.143	0.048	0.036	0.012	0.000	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.156	0.154	0.151	0.083	0.036	0.012	0.000	0.000	0.000	0.000
Nov	0.162	0.161	0.158	0.153	0.107	0.060	0.024	0.000	0.000	0.000
Dec	0.163	0.162	0.159	0.154	0.145	0.071	0.036	0.012	0.000	0.000
Jan	0.299	0.297	0.292	0.283	0.266	0.179	0.083	0.036	0.012	0.000
Feb	0.500	0.496	0.489	0.473	0.445	0.298	0.167	0.060	0.012	0.000
Mar	0.407	0.403	0.397	0.385	0.361	0.167	0.071	0.036	0.000	0.000
Apr	0.310	0.307	0.300	0.286	0.179	0.036	0.012	0.000	0.000	0.000
May	0.300	0.297	0.291	0.250	0.131	0.024	0.012	0.000	0.000	0.000
Jun	0.210	0.208	0.204	0.155	0.071	0.012	0.000	0.000	0.000	0.000
Jul	0.166	0.164	0.161	0.095	0.048	0.012	0.000	0.000	0.000	0.000
Aug	0.123	0.121	0.119	0.083	0.036	0.012	0.000	0.000	0.000	0.000
Sep	0.138	0.136	0.133	0.048	0.036	0.012	0.000	0.000	0.000	0.000

Natural Duration curves

Oct	1.667	0.572	0.179	0.083	0.036	0.012	0.000	0.000	0.000	0.000
Nov	2.108	0.869	0.536	0.274	0.107	0.060	0.024	0.000	0.000	0.000
Dec	3.406	1.393	0.548	0.333	0.155	0.071	0.036	0.012	0.000	0.000
Jan	5.872	2.966	1.572	0.881	0.322	0.179	0.083	0.036	0.012	0.000
Feb	13.470	5.038	2.501	0.929	0.476	0.298	0.167	0.060	0.012	0.000
Mar	8.837	4.955	2.096	0.917	0.453	0.167	0.071	0.036	0.000	0.000
Apr	3.359	1.858	0.834	0.381	0.179	0.036	0.012	0.000	0.000	0.000
May	2.835	1.298	0.464	0.250	0.131	0.024	0.012	0.000	0.000	0.000
Jun	1.703	0.822	0.345	0.155	0.071	0.012	0.000	0.000	0.000	0.000
Jul	1.072	0.524	0.226	0.095	0.048	0.012	0.000	0.000	0.000	0.000
Aug	0.727	0.381	0.191	0.083	0.036	0.012	0.000	0.000	0.000	0.000
Sep	1.251	0.345	0.143	0.048	0.036	0.012	0.000	0.000	0.000	0.000

Hydrological time series

Total Runoff : Ni11
 Desktop (Version 2) Modified Flow Data for Ecological Category B

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.318	0.060	0.036	0.024	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.462
1921	0.000	0.107	0.012	0.000	0.322	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.441
1922	0.000	0.000	0.000	0.434	0.191	0.167	0.000	0.000	0.000	0.000	0.000	0.000	0.792
1923	0.000	0.024	0.000	0.000	0.262	0.000	0.000	0.000	0.000	0.000	0.000	0.231	0.517
1924	0.316	0.238	0.155	0.520	2.509	0.816	0.410	0.300	0.210	0.166	0.122	0.229	5.990
1925	0.286	0.314	0.214	0.131	0.071	0.048	0.036	0.024	0.012	0.012	0.000	0.000	1.148
1926	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1927	0.000	0.036	0.071	0.167	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.286
1928	0.000	0.000	0.000	0.000	0.095	0.095	0.000	0.000	0.000	0.000	0.000	0.000	0.190
1929	0.000	0.000	0.000	0.580	2.901	0.811	0.407	0.298	0.208	0.164	0.121	0.191	5.682
1930	0.119	0.071	0.048	0.024	0.012	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.298
1931	0.000	0.325	0.333	0.060	3.123	0.770	0.406	0.288	0.191	0.119	0.071	0.048	5.735
1932	0.024	0.012	0.725	0.484	0.298	0.765	0.000	0.000	0.000	0.000	0.000	0.000	2.308
1933	0.000	0.000	0.048	0.179	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.227
1934	0.000	0.000	0.155	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.155
1935	0.000	0.000	0.000	0.542	0.786	0.777	0.000	0.000	0.000	0.000	0.000	0.000	2.105
1936	0.000	0.325	0.632	0.554	2.458	0.738	0.369	0.226	0.131	0.083	0.048	0.036	5.601
1937	0.024	0.012	0.725	0.490	0.655	0.703	0.274	0.167	0.095	0.060	0.036	0.024	3.265

1938	0.012	0.012	0.656	0.530	3.123	0.813	0.409	0.299	0.209	0.165	0.121	0.227	6.577
1939	0.143	0.321	0.060	0.563	0.667	0.789	0.388	0.191	0.207	0.161	0.117	0.095	3.702
1940	0.060	0.324	0.725	0.036	0.167	0.703	0.012	0.000	0.000	0.000	0.000	0.000	2.027
1941	0.000	0.000	0.673	0.479	0.584	0.167	0.095	0.060	0.210	0.163	0.119	0.131	2.682
1942	0.083	0.238	0.071	0.024	0.107	0.813	0.410	0.300	0.210	0.166	0.123	0.231	2.776
1943	0.318	0.318	0.333	0.191	1.191	0.071	0.048	0.024	0.095	0.012	0.012	0.000	2.612
1944	0.000	0.000	0.024	0.479	2.770	0.107	0.036	0.024	0.012	0.012	0.000	0.000	3.463
1945	0.000	0.000	0.000	0.515	0.834	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.349
1946	0.000	0.000	0.000	0.083	2.516	0.817	0.000	0.000	0.000	0.000	0.000	0.000	3.416
1947	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1948	0.000	0.000	0.000	0.580	2.919	0.778	0.410	0.300	0.210	0.166	0.123	0.230	5.716
1949	0.310	0.191	0.675	0.131	0.060	0.036	0.024	0.012	0.012	0.000	0.000	0.000	1.451
1950	0.000	0.000	0.167	0.451	0.012	0.071	0.012	0.012	0.000	0.000	0.123	0.231	1.079
1951	0.316	0.313	0.692	0.191	0.929	0.060	0.036	0.024	0.012	0.012	0.000	0.000	2.586
1952	0.000	0.048	0.725	0.429	0.226	0.322	0.095	0.226	0.036	0.024	0.012	0.012	2.155
1953	0.000	0.071	0.012	0.012	0.322	0.048	0.000	0.298	0.095	0.048	0.024	0.048	0.978
1954	0.286	0.143	0.095	0.572	2.591	0.777	0.389	0.284	0.191	0.119	0.071	0.048	5.567
1955	0.179	0.107	0.060	0.036	2.968	0.813	0.407	0.297	0.207	0.163	0.120	0.167	5.524
1956	0.107	0.322	0.725	0.554	2.002	0.107	0.048	0.024	0.012	0.012	0.012	0.231	2.356
1957	0.319	0.323	0.500	0.580	3.123	0.809	0.407	0.297	0.208	0.164	0.120	0.179	7.029
1958	0.318	0.131	0.725	0.504	0.024	0.012	0.012	0.012	0.000	0.000	0.000	0.048	1.786
1959	0.083	0.095	0.071	0.036	2.666	0.238	0.095	0.060	0.036	0.024	0.012	0.012	3.428
1960	0.000	0.325	0.512	0.262	0.298	0.819	0.399	0.284	0.210	0.166	0.122	0.228	3.624
1961	0.179	0.315	0.071	0.036	0.024	0.131	0.024	0.000	0.000	0.000	0.000	0.012	0.792
1962	0.000	0.325	0.012	0.500	0.024	0.819	0.381	0.250	0.155	0.166	0.123	0.231	2.986
1963	0.318	0.320	0.357	0.580	0.464	0.310	0.286	0.262	0.155	0.095	0.060	0.036	3.243
1964	0.319	0.315	0.131	0.036	0.024	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.849
1965	0.000	0.000	0.000	0.576	2.465	0.453	0.262	0.167	0.095	0.060	0.036	0.024	4.139
1966	0.012	0.012	0.000	0.036	3.084	0.807	0.357	0.294	0.201	0.158	0.095	0.060	5.117
1967	0.036	0.024	0.012	0.095	0.345	0.214	0.000	0.000	0.000	0.000	0.000	0.000	0.726
1968	0.000	0.000	0.000	0.531	0.214	0.804	0.398	0.285	0.200	0.143	0.083	0.048	2.706
1969	0.060	0.048	0.024	0.012	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.168
1970	0.000	0.060	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.060
1971	0.000	0.321	0.012	0.481	3.123	0.819	0.410	0.300	0.210	0.166	0.122	0.229	6.193
1972	0.238	0.320	0.131	0.060	0.322	0.048	0.024	0.012	0.012	0.012	0.000	0.231	1.410
1973	0.319	0.325	0.633	0.541	1.703	0.811	0.389	0.282	0.179	0.119	0.071	0.036	5.408
1974	0.024	0.024	0.012	0.504	3.123	0.819	0.409	0.298	0.208	0.164	0.121	0.231	5.937
1975	0.319	0.319	0.631	0.580	2.481	0.536	0.397	0.202	0.119	0.071	0.048	0.024	5.727
1976	0.319	0.155	0.131	0.274	3.123	0.817	0.409	0.299	0.209	0.165	0.121	0.231	6.254
1977	0.319	0.325	0.649	0.457	0.417	0.819	0.409	0.298	0.208	0.165	0.121	0.202	4.389
1978	0.179	0.274	0.071	0.036	0.024	0.012	0.410	0.291	0.071	0.048	0.024	0.012	1.452
1979	0.012	0.000	0.650	0.436	3.099	0.798	0.402	0.293	0.204	0.161	0.116	0.229	6.399
1980	0.107	0.071	0.191	0.437	0.238	0.202	0.036	0.300	0.210	0.166	0.123	0.231	2.312
1981	0.319	0.325	0.476	0.417	0.155	0.131	0.060	0.036	0.024	0.012	0.012	0.000	1.967
1982	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012
1983	0.000	0.318	0.036	0.580	3.123	0.819	0.410	0.300	0.210	0.166	0.123	0.231	6.316
1984	0.316	0.314	0.214	0.580	3.123	0.819	0.410	0.300	0.210	0.166	0.122	0.229	6.804
1985	0.319	0.325	0.560	0.250	0.405	0.202	0.060	0.036	0.024	0.012	0.012	0.000	2.206
1986	0.000	0.000	0.524	0.539	0.155	0.808	0.385	0.179	0.107	0.060	0.122	0.231	3.110
1987	0.319	0.325	0.713	0.509	1.894	0.819	0.410	0.300	0.210	0.166	0.123	0.230	6.016
1988	0.314	0.298	0.548	0.119	2.832	0.819	0.406	0.296	0.206	0.163	0.120	0.143	6.263
1989	0.083	0.325	0.725	0.580	2.634	0.801	0.403	0.294	0.205	0.161	0.118	0.095	6.425
1990	0.060	0.036	0.214	0.485	0.917	0.799	0.345	0.300	0.210	0.166	0.123	0.231	3.886
1991	0.319	0.318	0.524	0.202	0.119	0.071	0.391	0.060	0.036	0.024	0.012	0.012	2.088
1992	0.000	0.095	0.695	0.083	2.287	0.815	0.410	0.287	0.200	0.143	0.083	0.048	5.145
1993	0.319	0.325	0.692	0.513	0.703	0.512	0.322	0.179	0.107	0.060	0.036	0.024	3.792
1994	0.191	0.321	0.610	0.167	0.083	0.060	0.410	0.300	0.210	0.166	0.123	0.230	2.872
1995	0.314	0.226	0.464	0.214	2.591	0.631	0.202	0.131	0.071	0.048	0.024	0.012	4.928
1996	0.319	0.325	0.095	0.060	0.381	0.789	0.380	0.036	0.024	0.012	0.117	0.024	2.561
1997	0.012	0.324	0.725	0.575	2.037	0.781	0.391	0.286	0.200	0.143	0.083	0.048	5.605
1998	0.036	0.048	0.202	0.528	3.028	0.817	0.406	0.295	0.205	0.162	0.119	0.119	5.966
1999	0.071	0.202	0.589	0.443	2.049	0.819	0.398	0.300	0.210	0.165	0.121	0.226	5.593
2000	0.143	0.325	0.725	0.559	2.697	0.799	0.404	0.294	0.206	0.163	0.119	0.119	6.554
2001	0.071	0.048	0.024	0.083	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.250
2002	0.000	0.000	0.642	0.000	0.000	0.071	0.000	0.000	0.000	0.000	0.000	0.000	0.713
2003	0.000	0.024	0.000	0.580	3.123	0.803	0.402	0.292	0.204	0.161	0.116	0.083	5.788
2004	0.048	0.036	0.024	0.012	0.488	0.310	0.000	0.000	0.000	0.000	0.000	0.000	0.918
2005	0.000	0.325	0.060	0.322	0.476	0.024	0.012	0.000	0.000	0.000	0.122	0.048	1.389
2006	0.036	0.322	0.602	0.286	0.095	0.036	0.024	0.012	0.012	0.000	0.000	0.000	1.425
2007	0.000	0.095	0.191	0.048	0.238	0.060	0.179	0.012	0.012	0.000	0.000	0.000	0.835
2008	0.000	0.324	0.131	0.468	1.965	0.806	0.012	0.012	0.012	0.012	0.000	0.060	3.801
2009	0.143	0.012	0.083	0.083	2.862	0.262	0.024	0.000	0.000	0.000	0.000	0.000	3.469
Mean	0.113	0.159	0.283	0.299	1.187	0.429	0.199	0.141	0.095	0.071	0.054	0.082	3.112

A.29. Ni11 – Category C

Summary table

Desktop Version 2, Generated on 2015-03-30
 Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :
 Total Runoff : Ni11

Annual Flows (Mill. cu. m or index values):

- MAR = 17,873
- S.Dev. = 24,872
- CV = 1,392
- Q75 = 0,000
- Q75/MMF = 0,000
- BFI Index = 0,284
- CV(JJA+JFM) Index = 4,622

Ecological Category = C

- Total IFR = 3,422 (19,14 %MAR)
- Maint. Lowflow = 1,380 (7,72 %MAR)
- Drought Lowflow = 0,000 (0,00 %MAR)
- Maint. Highflow = 2,042 (11,43 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows	Modified Flows (IFR)
	Low flows	High Flows Total Flows

	Mean	SD	CV	Maint.	Drought	Maint.	Maint.
Oct	0,979	3,607	3,683	0,076	0,000	0,116	0,191
Nov	0,992	2,814	2,837	0,078	0,000	0,116	0,194
Dec	0,997	2,678	2,685	0,079	0,000	0,224	0,303
Jan	2,814	6,970	2,477	0,139	0,000	0,112	0,251
Feb	4,950	12,854	2,597	0,228	0,000	1,045	1,274
Mar	2,560	4,472	1,747	0,187	0,000	0,292	0,479
Apr	1,103	2,310	2,094	0,144	0,000	0,071	0,215
May	1,441	4,395	3,050	0,140	0,000	0,000	0,140
Jun	0,578	1,192	2,061	0,100	0,000	0,000	0,100
Jul	0,468	1,402	2,995	0,080	0,000	0,000	0,080
Aug	0,252	0,502	1,990	0,061	0,000	0,000	0,061
Sep	0,739	2,787	3,773	0,068	0,000	0,066	0,134

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni11

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.238	0.236	0.179	0.083	0.036	0.012	0.000	0.000	0.000	0.000
Nov	0.247	0.245	0.242	0.235	0.107	0.060	0.024	0.000	0.000	0.000
Dec	0.545	0.486	0.435	0.333	0.155	0.071	0.036	0.012	0.000	0.000
Jan	0.411	0.381	0.353	0.326	0.295	0.179	0.083	0.036	0.012	0.000
Feb	2.348	2.075	1.841	0.929	0.476	0.298	0.167	0.060	0.012	0.000
Mar	0.608	0.604	0.595	0.577	0.453	0.167	0.071	0.036	0.000	0.000
Apr	0.278	0.275	0.269	0.257	0.179	0.036	0.012	0.000	0.000	0.000
May	0.189	0.187	0.183	0.174	0.131	0.024	0.012	0.000	0.000	0.000
Jun	0.135	0.134	0.131	0.125	0.071	0.012	0.000	0.000	0.000	0.000
Jul	0.108	0.107	0.105	0.095	0.048	0.012	0.000	0.000	0.000	0.000
Aug	0.082	0.082	0.080	0.076	0.036	0.012	0.000	0.000	0.000	0.000
Sep	0.169	0.168	0.143	0.048	0.036	0.012	0.000	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.102	0.101	0.099	0.083	0.036	0.012	0.000	0.000	0.000	0.000
Nov	0.109	0.108	0.107	0.103	0.097	0.060	0.024	0.000	0.000	0.000
Dec	0.110	0.109	0.107	0.104	0.098	0.071	0.036	0.012	0.000	0.000
Jan	0.194	0.192	0.189	0.183	0.172	0.153	0.083	0.036	0.012	0.000
Feb	0.318	0.315	0.310	0.301	0.282	0.251	0.167	0.060	0.012	0.000
Mar	0.260	0.258	0.254	0.246	0.231	0.167	0.071	0.036	0.000	0.000
Apr	0.195	0.193	0.189	0.180	0.164	0.036	0.012	0.000	0.000	0.000
May	0.189	0.187	0.183	0.174	0.131	0.024	0.012	0.000	0.000	0.000
Jun	0.135	0.134	0.131	0.125	0.071	0.012	0.000	0.000	0.000	0.000
Jul	0.108	0.107	0.105	0.095	0.048	0.012	0.000	0.000	0.000	0.000
Aug	0.082	0.082	0.080	0.076	0.036	0.012	0.000	0.000	0.000	0.000
Sep	0.091	0.091	0.089	0.048	0.036	0.012	0.000	0.000	0.000	0.000

Natural Duration curves

Oct	1.667	0.572	0.179	0.083	0.036	0.012	0.000	0.000	0.000	0.000
Nov	2.108	0.869	0.536	0.274	0.107	0.060	0.024	0.000	0.000	0.000
Dec	3.406	1.393	0.548	0.333	0.155	0.071	0.036	0.012	0.000	0.000
Jan	5.872	2.966	1.572	0.881	0.322	0.179	0.083	0.036	0.012	0.000
Feb	13.470	5.038	2.501	0.929	0.476	0.298	0.167	0.060	0.012	0.000
Mar	8.837	4.955	2.096	0.917	0.453	0.167	0.071	0.036	0.000	0.000
Apr	3.359	1.858	0.834	0.381	0.179	0.036	0.012	0.000	0.000	0.000
May	2.835	1.298	0.464	0.250	0.131	0.024	0.012	0.000	0.000	0.000
Jun	1.703	0.822	0.345	0.155	0.071	0.012	0.000	0.000	0.000	0.000
Jul	1.072	0.524	0.226	0.095	0.048	0.012	0.000	0.000	0.000	0.000
Aug	0.727	0.381	0.191	0.083	0.036	0.012	0.000	0.000	0.000	0.000
Sep	1.251	0.345	0.143	0.048	0.036	0.012	0.000	0.000	0.000	0.000

Hydrological time series

Total Runoff : Ni11

Desktop (Version 2) Modified Flow Data for Ecological Category C

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.237	0.060	0.036	0.024	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.381
1921	0.000	0.107	0.012	0.000	0.322	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.441
1922	0.000	0.000	0.000	0.302	0.191	0.167	0.000	0.000	0.000	0.000	0.000	0.000	0.660
1923	0.000	0.024	0.000	0.000	0.262	0.000	0.000	0.000	0.000	0.000	0.000	0.169	0.455
1924	0.235	0.232	0.155	0.365	1.875	0.606	0.278	0.189	0.135	0.108	0.082	0.167	4.427
1925	0.234	0.238	0.214	0.131	0.071	0.048	0.036	0.024	0.012	0.012	0.000	0.000	1.020
1926	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1927	0.000	0.036	0.071	0.167	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.286
1928	0.000	0.000	0.000	0.000	0.095	0.095	0.000	0.000	0.000	0.000	0.000	0.000	0.190
1929	0.000	0.000	0.000	0.411	2.177	0.602	0.276	0.187	0.134	0.107	0.081	0.166	4.141
1930	0.119	0.071	0.048	0.024	0.012	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.298
1931	0.000	0.247	0.333	0.060	2.348	0.572	0.275	0.181	0.128	0.101	0.071	0.048	4.365
1932	0.024	0.012	0.545	0.338	0.298	0.568	0.000	0.000	0.000	0.000	0.000	0.000	1.785
1933	0.000	0.000	0.048	0.179	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.227
1934	0.000	0.000	0.155	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.155
1935	0.000	0.000	0.000	0.382	0.786	0.577	0.000	0.000	0.000	0.000	0.000	0.000	1.745
1936	0.000	0.247	0.473	0.391	1.835	0.564	0.256	0.171	0.121	0.083	0.048	0.036	4.227
1937	0.024	0.012	0.545	0.343	0.655	0.562	0.245	0.163	0.095	0.060	0.036	0.024	2.764
1938	0.012	0.012	0.492	0.373	2.348	0.604	0.277	0.188	0.134	0.108	0.082	0.166	4.796
1939	0.143	0.244	0.060	0.398	0.667	0.586	0.263	0.167	0.133	0.105	0.079	0.095	2.939
1940	0.060	0.246	0.545	0.036	0.167	0.562	0.012	0.000	0.000	0.000	0.000	0.000	1.628
1941	0.000	0.000	0.505	0.335	0.584	0.167	0.095	0.060	0.135	0.106	0.080	0.131	2.198
1942	0.083	0.232	0.071	0.024	0.107	0.604	0.278	0.189	0.135	0.108	0.082	0.169	2.082
1943	0.237	0.241	0.333	0.191	1.191	0.071	0.048	0.024	0.095	0.012	0.012	0.000	2.455
1944	0.000	0.000	0.024	0.334	2.075	0.107	0.036	0.024	0.012	0.012	0.000	0.000	2.624
1945	0.000	0.000	0.000	0.361	0.834	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.195
1946	0.000	0.000	0.000	0.083	1.880	0.607	0.000	0.000	0.000	0.000	0.000	0.000	2.569
1947	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1948	0.000	0.000	0.000	0.411	2.190	0.578	0.278	0.189	0.135	0.108	0.082	0.168	4.140

1949	0.234	0.191	0.507	0.131	0.060	0.036	0.024	0.012	0.012	0.000	0.000	0.000	1.206
1950	0.000	0.000	0.167	0.314	0.012	0.071	0.012	0.012	0.000	0.000	0.082	0.169	0.840
1951	0.236	0.238	0.520	0.191	0.929	0.060	0.036	0.024	0.012	0.012	0.000	0.000	2.257
1952	0.000	0.048	0.545	0.301	0.226	0.322	0.095	0.171	0.036	0.024	0.012	0.012	1.792
1953	0.000	0.071	0.012	0.012	0.322	0.048	0.000	0.187	0.095	0.048	0.024	0.048	0.867
1954	0.234	0.143	0.095	0.405	1.937	0.577	0.264	0.179	0.128	0.101	0.071	0.048	4.182
1955	0.179	0.107	0.060	0.036	2.228	0.604	0.276	0.187	0.133	0.107	0.081	0.165	4.162
1956	0.107	0.245	0.545	0.391	0.202	0.107	0.048	0.024	0.012	0.012	0.012	0.169	1.874
1957	0.238	0.245	0.418	0.411	2.348	0.600	0.276	0.187	0.133	0.107	0.081	0.165	5.210
1958	0.237	0.131	0.545	0.353	0.024	0.012	0.012	0.012	0.000	0.000	0.000	0.048	1.374
1959	0.083	0.095	0.071	0.036	1.995	0.238	0.095	0.060	0.036	0.024	0.012	0.012	2.757
1960	0.000	0.247	0.422	0.262	0.298	0.608	0.270	0.179	0.135	0.108	0.082	0.167	2.778
1961	0.179	0.240	0.071	0.036	0.024	0.131	0.024	0.000	0.000	0.000	0.000	0.012	0.717
1962	0.000	0.247	0.012	0.350	0.024	0.608	0.258	0.174	0.125	0.108	0.082	0.169	2.159
1963	0.237	0.243	0.357	0.411	0.464	0.310	0.247	0.175	0.125	0.095	0.060	0.036	2.760
1964	0.238	0.239	0.131	0.036	0.024	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.692
1965	0.000	0.000	0.000	0.408	1.841	0.453	0.244	0.163	0.095	0.060	0.036	0.024	3.324
1966	0.012	0.012	0.000	0.036	2.318	0.599	0.255	0.185	0.129	0.103	0.077	0.060	3.786
1967	0.036	0.024	0.012	0.095	0.345	0.214	0.000	0.000	0.000	0.000	0.000	0.000	0.726
1968	0.000	0.000	0.000	0.374	0.214	0.597	0.269	0.179	0.128	0.103	0.076	0.048	1.989
1969	0.060	0.048	0.024	0.012	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.168
1970	0.000	0.060	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.060
1971	0.000	0.244	0.012	0.336	2.348	0.608	0.278	0.189	0.135	0.108	0.082	0.168	4.508
1972	0.232	0.243	0.131	0.060	0.322	0.048	0.024	0.012	0.012	0.012	0.000	0.169	1.265
1973	0.238	0.247	0.474	0.381	1.697	0.602	0.263	0.178	0.127	0.101	0.071	0.036	4.416
1974	0.024	0.024	0.012	0.353	2.348	0.608	0.277	0.187	0.134	0.107	0.081	0.169	4.325
1975	0.238	0.242	0.472	0.411	1.853	0.536	0.269	0.168	0.119	0.071	0.048	0.024	4.452
1976	0.238	0.155	0.131	0.274	2.348	0.607	0.277	0.188	0.134	0.108	0.082	0.169	4.711
1977	0.238	0.247	0.486	0.318	0.417	0.608	0.277	0.187	0.134	0.108	0.081	0.166	3.268
1978	0.179	0.235	0.071	0.036	0.024	0.012	0.278	0.183	0.071	0.048	0.024	0.012	1.172
1979	0.012	0.000	0.487	0.303	2.330	0.593	0.272	0.184	0.131	0.105	0.078	0.168	4.662
1980	0.107	0.071	0.191	0.304	0.238	0.202	0.036	0.189	0.135	0.108	0.082	0.169	1.832
1981	0.238	0.247	0.409	0.301	0.155	0.131	0.060	0.036	0.024	0.012	0.012	0.000	1.624
1982	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012
1983	0.000	0.242	0.036	0.411	2.348	0.608	0.278	0.189	0.135	0.108	0.082	0.169	4.607
1984	0.236	0.238	0.214	0.411	2.348	0.608	0.278	0.189	0.135	0.108	0.082	0.168	5.016
1985	0.238	0.247	0.436	0.250	0.405	0.202	0.060	0.036	0.024	0.012	0.012	0.000	1.922
1986	0.000	0.000	0.426	0.380	0.155	0.600	0.261	0.165	0.107	0.060	0.082	0.169	2.405
1987	0.238	0.247	0.535	0.357	1.713	0.608	0.278	0.189	0.135	0.108	0.082	0.168	4.659
1988	0.234	0.236	0.435	0.119	2.123	0.608	0.275	0.186	0.132	0.106	0.080	0.143	4.679
1989	0.083	0.247	0.545	0.411	1.970	0.595	0.273	0.185	0.131	0.105	0.079	0.095	4.721
1990	0.060	0.036	0.214	0.339	0.917	0.594	0.253	0.189	0.135	0.108	0.082	0.169	3.096
1991	0.238	0.242	0.426	0.202	0.119	0.071	0.265	0.060	0.036	0.024	0.012	0.012	1.707
1992	0.000	0.095	0.522	0.083	1.792	0.605	0.278	0.180	0.128	0.103	0.076	0.048	3.910
1993	0.238	0.247	0.519	0.360	0.703	0.512	0.251	0.165	0.107	0.060	0.036	0.024	3.222
1994	0.191	0.244	0.456	0.167	0.083	0.060	0.278	0.189	0.135	0.108	0.082	0.169	2.162
1995	0.234	0.226	0.407	0.214	1.937	0.557	0.202	0.131	0.071	0.048	0.024	0.012	4.063
1996	0.238	0.247	0.095	0.060	0.381	0.586	0.257	0.036	0.024	0.012	0.078	0.024	2.038
1997	0.012	0.246	0.545	0.407	1.736	0.580	0.265	0.180	0.128	0.103	0.076	0.048	4.326
1998	0.036	0.048	0.202	0.372	2.275	0.607	0.275	0.186	0.132	0.106	0.080	0.119	4.436
1999	0.071	0.202	0.440	0.308	1.738	0.608	0.270	0.189	0.135	0.108	0.082	0.166	4.316
2000	0.143	0.247	0.545	0.395	2.019	0.593	0.274	0.185	0.133	0.106	0.080	0.119	4.840
2001	0.071	0.048	0.024	0.083	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.250
2002	0.000	0.000	0.480	0.000	0.000	0.071	0.000	0.000	0.000	0.000	0.000	0.000	0.551
2003	0.000	0.024	0.000	0.411	2.348	0.596	0.272	0.184	0.131	0.105	0.078	0.083	4.233
2004	0.048	0.036	0.024	0.012	0.488	0.310	0.000	0.000	0.000	0.000	0.000	0.000	0.918
2005	0.000	0.247	0.060	0.295	0.476	0.024	0.012	0.000	0.000	0.000	0.082	0.048	1.244
2006	0.036	0.245	0.450	0.282	0.095	0.036	0.024	0.012	0.012	0.000	0.000	0.000	1.192
2007	0.000	0.095	0.191	0.048	0.238	0.060	0.179	0.012	0.012	0.000	0.000	0.000	0.835
2008	0.000	0.246	0.131	0.326	1.719	0.599	0.012	0.012	0.012	0.012	0.000	0.060	3.129
2009	0.143	0.012	0.083	0.083	2.147	0.262	0.024	0.000	0.000	0.000	0.000	0.000	2.754
Mean	0.092	0.129	0.228	0.224	0.947	0.336	0.142	0.096	0.067	0.051	0.039	0.066	2.415

A.30. Ni11 – Category D

Summary table

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni11

Annual Flows (Mill. cu. m or index values):

MAR = 17,873

S.Dev. = 24,872

CV = 1,392

Q75 = 0,000

Q75/MMF = 0,000

BFI Index = 0,284

CV(JJA+JFM) Index = 4,622

Ecological Category = D

Total IFR = 2,208 (12,35 %MAR)

Maint. Lowflow = 0,513 (2,87 %MAR)

Drought Lowflow = 0,000 (0,00 %MAR)

Maint. Highflow = 1,695 (9,48 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows	High Flows	Total Flows	
				Maint.	Drought	Maint.	Maint.
Oct	0,979	3,607	3,683	0,029	0,000	0,096	0,125
Nov	0,992	2,814	2,837	0,030	0,000	0,096	0,126
Dec	0,997	2,678	2,685	0,030	0,000	0,186	0,216
Jan	2,814	6,970	2,477	0,051	0,000	0,093	0,144
Feb	4,950	12,854	2,597	0,082	0,000	0,868	0,950
Mar	2,560	4,472	1,747	0,068	0,000	0,242	0,310
Apr	1,103	2,310	2,094	0,053	0,000	0,059	0,112
May	1,441	4,395	3,050	0,051	0,000	0,000	0,051
Jun	0,578	1,192	2,061	0,037	0,000	0,000	0,037

Jul	0,468	1,402	2,995	0,031	0,000	0,000	0,031
Aug	0,252	0,502	1,990	0,024	0,000	0,000	0,024
Sep	0,739	2,787	3,773	0,026	0,000	0,055	0,081

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni11

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.190	0.188	0.179	0.083	0.036	0.012	0.000	0.000	0.000	0.000
Nov	0.203	0.202	0.199	0.193	0.107	0.060	0.024	0.000	0.000	0.000
Dec	0.421	0.373	0.331	0.294	0.155	0.071	0.036	0.012	0.000	0.000
Jan	0.283	0.258	0.236	0.215	0.193	0.155	0.083	0.036	0.012	0.000
Feb	1.849	1.623	1.430	0.929	0.476	0.298	0.167	0.060	0.012	0.000
Mar	0.496	0.492	0.485	0.471	0.444	0.167	0.071	0.036	0.000	0.000
Apr	0.181	0.180	0.176	0.168	0.153	0.036	0.012	0.000	0.000	0.000
May	0.095	0.094	0.092	0.088	0.080	0.024	0.012	0.000	0.000	0.000
Jun	0.069	0.069	0.067	0.064	0.058	0.012	0.000	0.000	0.000	0.000
Jul	0.057	0.056	0.055	0.052	0.048	0.012	0.000	0.000	0.000	0.000
Aug	0.044	0.044	0.043	0.041	0.036	0.012	0.000	0.000	0.000	0.000
Sep	0.127	0.125	0.123	0.048	0.036	0.012	0.000	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.054	0.053	0.052	0.050	0.036	0.012	0.000	0.000	0.000	0.000
Nov	0.060	0.059	0.058	0.056	0.053	0.047	0.024	0.000	0.000	0.000
Dec	0.060	0.059	0.059	0.057	0.053	0.047	0.036	0.012	0.000	0.000
Jan	0.102	0.101	0.100	0.096	0.091	0.080	0.064	0.036	0.012	0.000
Feb	0.164	0.162	0.160	0.155	0.145	0.129	0.103	0.060	0.012	0.000
Mar	0.135	0.134	0.132	0.128	0.120	0.106	0.071	0.036	0.000	0.000
Apr	0.098	0.097	0.095	0.090	0.082	0.036	0.012	0.000	0.000	0.000
May	0.095	0.094	0.092	0.088	0.080	0.024	0.012	0.000	0.000	0.000
Jun	0.069	0.069	0.067	0.064	0.058	0.012	0.000	0.000	0.000	0.000
Jul	0.057	0.056	0.055	0.052	0.048	0.012	0.000	0.000	0.000	0.000
Aug	0.044	0.044	0.043	0.041	0.036	0.012	0.000	0.000	0.000	0.000
Sep	0.049	0.048	0.047	0.045	0.036	0.012	0.000	0.000	0.000	0.000

Natural Duration curves

Oct	1.667	0.572	0.179	0.083	0.036	0.012	0.000	0.000	0.000	0.000
Nov	2.108	0.869	0.536	0.274	0.107	0.060	0.024	0.000	0.000	0.000
Dec	3.406	1.393	0.548	0.333	0.155	0.071	0.036	0.012	0.000	0.000
Jan	5.872	2.966	1.572	0.881	0.322	0.179	0.083	0.036	0.012	0.000
Feb	13.470	5.038	2.501	0.929	0.476	0.298	0.167	0.060	0.012	0.000
Mar	8.837	4.955	2.096	0.917	0.453	0.167	0.071	0.036	0.000	0.000
Apr	3.359	1.858	0.834	0.381	0.179	0.036	0.012	0.000	0.000	0.000
May	2.835	1.298	0.464	0.250	0.131	0.024	0.012	0.000	0.000	0.000
Jun	1.703	0.822	0.345	0.155	0.071	0.012	0.000	0.000	0.000	0.000
Jul	1.072	0.524	0.226	0.095	0.048	0.012	0.000	0.000	0.000	0.000
Aug	0.727	0.381	0.191	0.083	0.036	0.012	0.000	0.000	0.000	0.000
Sep	1.251	0.345	0.143	0.048	0.036	0.012	0.000	0.000	0.000	0.000

Hydrological time series

Total Runoff : Ni11

Desktop (Version 2) Modified Flow Data for Ecological Category D

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.190	0.060	0.036	0.024	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.334
1921	0.000	0.107	0.012	0.000	0.322	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.441
1922	0.000	0.000	0.000	0.197	0.191	0.167	0.000	0.000	0.000	0.000	0.000	0.000	0.555
1923	0.000	0.024	0.000	0.000	0.262	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.413
1924	0.188	0.190	0.155	0.245	1.458	0.494	0.181	0.095	0.069	0.057	0.044	0.125	3.301
1925	0.187	0.196	0.214	0.131	0.071	0.048	0.036	0.024	0.012	0.012	0.000	0.000	0.930
1926	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1927	0.000	0.036	0.071	0.152	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.271
1928	0.000	0.000	0.000	0.000	0.095	0.095	0.000	0.000	0.000	0.000	0.000	0.000	0.190
1929	0.000	0.000	0.000	0.283	1.707	0.491	0.180	0.094	0.069	0.056	0.044	0.124	3.047
1930	0.119	0.071	0.048	0.024	0.012	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.298
1931	0.000	0.203	0.294	0.060	1.849	0.466	0.180	0.091	0.066	0.053	0.040	0.048	3.349
1932	0.024	0.012	0.421	0.224	0.298	0.464	0.000	0.000	0.000	0.000	0.000	0.000	1.443
1933	0.000	0.000	0.048	0.155	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.203
1934	0.000	0.000	0.155	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.155
1935	0.000	0.000	0.000	0.259	0.786	0.471	0.000	0.000	0.000	0.000	0.000	0.000	1.515
1936	0.000	0.203	0.362	0.266	1.425	0.460	0.167	0.086	0.062	0.051	0.038	0.036	3.157
1937	0.024	0.012	0.421	0.227	0.655	0.458	0.160	0.082	0.060	0.049	0.036	0.024	2.209
1938	0.012	0.012	0.377	0.251	1.849	0.492	0.181	0.095	0.069	0.056	0.044	0.125	3.563
1939	0.143	0.200	0.060	0.272	0.667	0.478	0.172	0.084	0.068	0.055	0.042	0.095	2.336
1940	0.060	0.202	0.421	0.036	0.167	0.458	0.012	0.000	0.000	0.000	0.000	0.000	1.356
1941	0.000	0.000	0.388	0.221	0.584	0.167	0.095	0.060	0.069	0.055	0.043	0.122	1.805
1942	0.083	0.190	0.071	0.024	0.107	0.492	0.181	0.095	0.069	0.057	0.044	0.127	1.541
1943	0.189	0.198	0.294	0.158	1.191	0.071	0.048	0.024	0.060	0.012	0.012	0.000	2.257
1944	0.000	0.000	0.024	0.221	1.623	0.107	0.036	0.024	0.012	0.012	0.000	0.000	2.059
1945	0.000	0.000	0.000	0.242	0.834	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.076
1946	0.000	0.000	0.000	0.083	1.462	0.495	0.000	0.000	0.000	0.000	0.000	0.000	2.040
1947	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1948	0.000	0.000	0.000	0.283	1.718	0.471	0.181	0.095	0.069	0.057	0.044	0.126	3.044
1949	0.187	0.187	0.389	0.131	0.060	0.036	0.024	0.012	0.012	0.000	0.000	0.000	1.038
1950	0.000	0.000	0.167	0.206	0.012	0.071	0.012	0.012	0.000	0.000	0.044	0.127	0.651
1951	0.188	0.195	0.400	0.158	0.929	0.060	0.036	0.024	0.012	0.012	0.000	0.000	2.015
1952	0.000	0.048	0.421	0.197	0.226	0.322	0.095	0.086	0.036	0.024	0.012	0.012	1.479
1953	0.000	0.071	0.012	0.012	0.322	0.048	0.000	0.094	0.060	0.048	0.024	0.048	0.739
1954	0.187	0.143	0.095	0.277	1.509	0.471	0.172	0.090	0.066	0.053	0.040	0.048	3.151
1955	0.179	0.107	0.060	0.036	1.749	0.493	0.180	0.094	0.068	0.056	0.043	0.123	3.189
1956	0.107	0.201	0.421	0.266	0.202	0.107	0.048	0.024	0.012	0.012	0.012	0.126	1.538
1957	0.190	0.202	0.316	0.283	1.849	0.490	0.180	0.094	0.068	0.056	0.043	0.124	3.895
1958	0.189	0.131	0.421	0.236	0.024	0.012	0.012	0.012	0.000	0.000	0.000	0.048	1.085

1959	0.083	0.095	0.071	0.036	1.557	0.238	0.095	0.060	0.036	0.024	0.012	0.012	2.319
1960	0.000	0.203	0.320	0.177	0.298	0.496	0.176	0.090	0.069	0.057	0.044	0.125	2.054
1961	0.179	0.197	0.071	0.036	0.024	0.131	0.024	0.000	0.000	0.000	0.000	0.012	0.674
1962	0.000	0.203	0.012	0.233	0.024	0.496	0.169	0.088	0.064	0.057	0.044	0.127	1.516
1963	0.190	0.199	0.296	0.283	0.464	0.310	0.161	0.088	0.064	0.052	0.039	0.036	2.182
1964	0.190	0.196	0.131	0.036	0.024	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.601
1965	0.000	0.000	0.000	0.280	1.430	0.444	0.159	0.082	0.060	0.049	0.036	0.024	2.564
1966	0.012	0.012	0.000	0.036	1.824	0.489	0.166	0.093	0.066	0.054	0.041	0.060	2.854
1967	0.036	0.024	0.012	0.095	0.345	0.214	0.000	0.000	0.000	0.000	0.000	0.000	0.726
1968	0.000	0.000	0.000	0.252	0.214	0.487	0.176	0.090	0.066	0.054	0.041	0.048	1.428
1969	0.060	0.048	0.024	0.012	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.168
1970	0.000	0.060	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.060
1971	0.000	0.200	0.012	0.222	1.849	0.496	0.181	0.095	0.069	0.057	0.044	0.126	3.351
1972	0.186	0.199	0.131	0.060	0.322	0.048	0.024	0.012	0.012	0.012	0.000	0.127	1.133
1973	0.190	0.203	0.363	0.258	1.313	0.491	0.172	0.089	0.065	0.053	0.040	0.036	3.273
1974	0.024	0.024	0.012	0.236	1.849	0.496	0.181	0.094	0.069	0.056	0.044	0.127	3.210
1975	0.190	0.199	0.361	0.283	1.440	0.448	0.176	0.085	0.062	0.050	0.038	0.024	3.355
1976	0.190	0.155	0.131	0.180	1.849	0.495	0.181	0.095	0.069	0.056	0.044	0.127	3.571
1977	0.190	0.203	0.373	0.209	0.417	0.496	0.181	0.094	0.069	0.056	0.044	0.124	2.456
1978	0.179	0.193	0.071	0.036	0.024	0.012	0.181	0.092	0.058	0.048	0.024	0.012	0.930
1979	0.012	0.000	0.373	0.198	1.834	0.483	0.178	0.093	0.067	0.055	0.042	0.125	3.460
1980	0.107	0.071	0.191	0.199	0.238	0.202	0.036	0.095	0.069	0.057	0.044	0.127	1.435
1981	0.190	0.203	0.309	0.196	0.155	0.131	0.060	0.036	0.024	0.012	0.012	0.000	1.329
1982	0.000	0.000	0.000	0.000	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.012
1983	0.000	0.199	0.036	0.283	1.849	0.496	0.181	0.095	0.069	0.057	0.044	0.127	3.435
1984	0.188	0.196	0.214	0.283	1.849	0.496	0.181	0.095	0.069	0.057	0.044	0.126	3.797
1985	0.190	0.203	0.331	0.174	0.405	0.202	0.060	0.036	0.024	0.012	0.012	0.000	1.649
1986	0.000	0.000	0.324	0.257	0.155	0.489	0.171	0.083	0.061	0.049	0.044	0.127	1.758
1987	0.190	0.203	0.413	0.238	1.326	0.496	0.181	0.095	0.069	0.057	0.044	0.126	3.438
1988	0.187	0.194	0.331	0.119	1.663	0.496	0.180	0.094	0.068	0.056	0.043	0.123	3.552
1989	0.083	0.203	0.421	0.283	1.537	0.485	0.178	0.093	0.067	0.055	0.042	0.095	3.543
1990	0.060	0.036	0.214	0.224	0.917	0.484	0.165	0.095	0.069	0.057	0.044	0.127	2.493
1991	0.190	0.198	0.324	0.161	0.119	0.071	0.173	0.060	0.036	0.024	0.012	0.012	1.380
1992	0.000	0.095	0.402	0.083	1.390	0.494	0.181	0.091	0.066	0.054	0.041	0.048	2.944
1993	0.190	0.203	0.400	0.241	0.703	0.447	0.164	0.083	0.061	0.049	0.036	0.024	2.600
1994	0.185	0.200	0.348	0.152	0.083	0.060	0.181	0.095	0.069	0.057	0.044	0.126	1.601
1995	0.187	0.189	0.308	0.164	1.509	0.454	0.155	0.080	0.058	0.048	0.024	0.012	3.189
1996	0.190	0.202	0.095	0.060	0.381	0.478	0.168	0.036	0.024	0.012	0.042	0.024	1.713
1997	0.012	0.202	0.421	0.279	1.344	0.473	0.173	0.091	0.066	0.054	0.041	0.048	3.204
1998	0.036	0.048	0.202	0.250	1.788	0.495	0.180	0.093	0.068	0.055	0.043	0.119	3.377
1999	0.071	0.188	0.334	0.202	1.346	0.496	0.176	0.095	0.069	0.056	0.044	0.124	3.202
2000	0.143	0.203	0.421	0.269	1.577	0.484	0.179	0.093	0.068	0.055	0.043	0.119	3.655
2001	0.071	0.048	0.024	0.083	0.012	0.012	0.000	0.000	0.000	0.000	0.000	0.000	0.250
2002	0.000	0.000	0.368	0.000	0.000	0.071	0.000	0.000	0.000	0.000	0.000	0.000	0.439
2003	0.000	0.024	0.000	0.283	1.849	0.486	0.178	0.093	0.067	0.055	0.042	0.083	3.159
2004	0.048	0.036	0.024	0.012	0.488	0.310	0.000	0.000	0.000	0.000	0.000	0.000	0.918
2005	0.000	0.202	0.060	0.193	0.476	0.024	0.012	0.000	0.000	0.000	0.044	0.048	1.059
2006	0.036	0.201	0.343	0.183	0.095	0.036	0.024	0.012	0.012	0.000	0.000	0.000	0.942
2007	0.000	0.095	0.191	0.048	0.238	0.060	0.153	0.012	0.012	0.000	0.000	0.000	0.809
2008	0.000	0.202	0.131	0.215	1.331	0.488	0.012	0.012	0.012	0.012	0.000	0.060	2.475
2009	0.143	0.012	0.083	0.083	1.682	0.262	0.024	0.000	0.000	0.000	0.000	0.000	2.289
Mean	0.078	0.110	0.184	0.158	0.776	0.283	0.097	0.051	0.037	0.029	0.023	0.054	1.880

A.31. Ni12 – Category B

Summary table

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : ni12

Annual Flows (Mill. cu. m or index values):

MAR = 17,594

S.Dev. = 27,482

CV = 1,562

Q75 = 0,000

Q75/MMF = 0,000

BFI Index = 0,255

CV(JJA+JFM) Index = 5,564

Ecological Category = B

Total IFR = 4,876 (27,71 %MAR)

Maint. Lowflow = 2,176 (12,37 %MAR)

Drought Lowflow = 0,000 (0,00 %MAR)

Maint. Highflow = 2,700 (15,35 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows	Drought	High Flows	Total Flows
Oct	1,663	6,540	3,933	0,180	0,000	0,319	0,499
Nov	1,363	4,859	3,565	0,166	0,000	0,252	0,418
Dec	1,064	2,978	2,800	0,150	0,000	0,234	0,383
Jan	1,779	5,313	2,988	0,195	0,000	0,117	0,311
Feb	3,517	7,930	2,255	0,328	0,000	1,094	1,422
Mar	1,229	2,357	1,917	0,196	0,000	0,117	0,313
Apr	0,986	3,863	3,919	0,170	0,000	0,131	0,301
May	2,263	8,905	3,935	0,252	0,000	0,000	0,252
Jun	0,568	1,710	3,008	0,146	0,000	0,000	0,146
Jul	0,448	1,703	3,799	0,114	0,000	0,000	0,114
Aug	0,183	0,499	2,725	0,068	0,000	0,005	0,073
Sep	2,531	11,301	4,464	0,212	0,000	0,432	0,644

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : ni12

Regional Type : Zululand

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.554	0.346	0.074	0.022	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.468	0.467	0.236	0.044	0.015	0.000	0.000	0.000	0.000	0.000
Dec	0.666	0.591	0.361	0.118	0.022	0.007	0.000	0.000	0.000	0.000
Jan	0.477	0.439	0.406	0.374	0.162	0.015	0.000	0.000	0.000	0.000
Feb	2.681	2.327	1.879	0.509	0.133	0.081	0.022	0.000	0.000	0.000
Mar	0.475	0.437	0.402	0.221	0.044	0.007	0.000	0.000	0.000	0.000
Apr	0.339	0.337	0.111	0.037	0.007	0.000	0.000	0.000	0.000	0.000
May	0.293	0.291	0.125	0.022	0.000	0.000	0.000	0.000	0.000	0.000
Jun	0.168	0.167	0.044	0.007	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.130	0.129	0.029	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.084	0.084	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.712	0.317	0.044	0.007	0.000	0.000	0.000	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.209	0.208	0.074	0.022	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.194	0.194	0.191	0.044	0.015	0.000	0.000	0.000	0.000	0.000
Dec	0.177	0.177	0.174	0.118	0.022	0.007	0.000	0.000	0.000	0.000
Jan	0.232	0.232	0.229	0.223	0.162	0.015	0.000	0.000	0.000	0.000
Feb	0.388	0.388	0.382	0.370	0.133	0.081	0.022	0.000	0.000	0.000
Mar	0.230	0.230	0.226	0.219	0.044	0.007	0.000	0.000	0.000	0.000
Apr	0.198	0.197	0.111	0.037	0.007	0.000	0.000	0.000	0.000	0.000
May	0.293	0.291	0.125	0.022	0.000	0.000	0.000	0.000	0.000	0.000
Jun	0.168	0.167	0.044	0.007	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.130	0.129	0.029	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.079	0.078	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.246	0.245	0.044	0.007	0.000	0.000	0.000	0.000	0.000	0.000

Natural Duration curves

Oct	2.145	0.346	0.074	0.022	0.000	0.000	0.000	0.000	0.000	0.000
Nov	2.277	0.700	0.236	0.044	0.015	0.000	0.000	0.000	0.000	0.000
Dec	3.442	0.958	0.361	0.118	0.022	0.007	0.000	0.000	0.000	0.000
Jan	4.171	1.975	0.973	0.435	0.162	0.015	0.000	0.000	0.000	0.000
Feb	13.752	4.282	1.879	0.509	0.133	0.081	0.022	0.000	0.000	0.000
Mar	4.282	2.137	0.737	0.221	0.044	0.007	0.000	0.000	0.000	0.000
Apr	2.174	0.442	0.111	0.037	0.007	0.000	0.000	0.000	0.000	0.000
May	2.513	1.091	0.125	0.022	0.000	0.000	0.000	0.000	0.000	0.000
Jun	1.415	0.332	0.044	0.007	0.000	0.000	0.000	0.000	0.000	0.000
Jul	1.164	0.251	0.029	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.700	0.155	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	1.857	0.317	0.044	0.007	0.000	0.000	0.000	0.000	0.000	0.000

Hydrological time series

Total Runoff : ni12

Desktop (Version 2) Modified Flow Data for Ecological Category B

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.464	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.464
1921	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1922	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007
1923	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1924	0.000	0.000	0.000	0.394	0.509	0.029	0.052	0.103	0.022	0.015	0.007	0.007	1.138
1925	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1926	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1927	0.000	0.000	0.000	0.192	0.000	0.000	0.000	0.293	0.125	0.081	0.044	0.029	0.764
1928	0.015	0.007	0.617	0.388	0.000	0.402	0.000	0.000	0.000	0.000	0.000	0.000	1.429
1929	0.000	0.000	0.000	0.477	0.029	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.520
1930	0.000	0.000	0.000	0.000	0.074	0.429	0.339	0.000	0.000	0.000	0.000	0.000	0.842
1931	0.000	0.468	0.544	0.118	2.681	0.473	0.339	0.293	0.168	0.130	0.084	0.712	6.010
1932	0.554	0.467	0.442	0.394	2.283	0.258	0.059	0.037	0.022	0.015	0.007	0.007	4.544
1933	0.074	0.467	0.214	0.455	0.685	0.007	0.000	0.293	0.168	0.000	0.000	0.000	2.363
1934	0.000	0.000	0.118	0.000	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.140
1935	0.000	0.044	0.000	0.420	0.133	0.475	0.338	0.292	0.167	0.128	0.083	0.059	2.138
1936	0.037	0.468	0.586	0.460	1.666	0.403	0.199	0.081	0.044	0.029	0.015	0.007	3.994
1937	0.007	0.044	0.666	0.466	1.879	0.395	0.335	0.228	0.133	0.129	0.052	0.029	4.363
1938	0.022	0.015	0.666	0.477	2.681	0.475	0.339	0.293	0.168	0.130	0.084	0.693	6.043
1939	0.346	0.464	0.125	0.427	2.236	0.475	0.339	0.293	0.168	0.130	0.084	0.516	5.602
1940	0.324	0.468	0.613	0.111	0.044	0.029	0.015	0.007	0.007	0.007	0.000	0.000	1.624
1941	0.000	0.000	0.074	0.445	2.557	0.430	0.000	0.293	0.168	0.130	0.084	0.712	4.892
1942	0.457	0.467	0.591	0.103	1.916	0.454	0.339	0.292	0.168	0.129	0.084	0.147	5.147
1943	0.088	0.199	0.258	0.022	2.367	0.007	0.007	0.000	0.000	0.000	0.000	0.712	3.660
1944	0.007	0.000	0.243	0.170	2.537	0.444	0.338	0.290	0.167	0.129	0.084	0.088	4.497
1945	0.059	0.037	0.022	0.287	1.452	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1.864
1946	0.000	0.000	0.000	0.000	0.398	0.417	0.044	0.000	0.000	0.000	0.000	0.000	0.859
1947	0.000	0.000	0.081	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.037	0.118
1948	0.000	0.037	0.000	0.460	2.077	0.399	0.339	0.293	0.168	0.130	0.084	0.712	4.698
1949	0.479	0.280	0.630	0.477	0.059	0.044	0.037	0.015	0.007	0.007	0.000	0.000	2.035
1950	0.000	0.000	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.015
1951	0.000	0.000	0.000	0.044	0.103	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.147
1952	0.000	0.467	0.633	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.100
1953	0.000	0.000	0.000	0.000	0.096	0.000	0.000	0.289	0.007	0.000	0.000	0.000	0.392
1954	0.554	0.000	0.000	0.409	1.363	0.037	0.000	0.000	0.000	0.000	0.000	0.000	2.362
1955	0.000	0.000	0.000	0.000	0.118	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.118
1956	0.000	0.000	0.666	0.395	0.361	0.206	0.066	0.037	0.022	0.015	0.007	0.712	2.488
1957	0.133	0.015	0.007	0.429	0.155	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.739
1958	0.000	0.000	0.332	0.000	0.096	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.428
1959	0.000	0.236	0.302	0.000	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.560
1960	0.000	0.000	0.635	0.258	0.096	0.393	0.007	0.000	0.000	0.000	0.000	0.000	1.390
1961	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1962	0.000	0.468	0.007	0.000	1.164	0.155	0.000	0.000	0.000	0.130	0.084	0.413	2.421
1963	0.265	0.155	0.547	0.477	0.037	0.022	0.015	0.007	0.007	0.000	0.000	0.000	1.532
1964	0.022	0.007	0.000	0.000	0.037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.066
1965	0.000	0.000	0.000	0.059	2.216	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.275
1966	0.000	0.000	0.000	0.000	0.516	0.162	0.000	0.000	0.000	0.000	0.000	0.712	1.390
1967	0.052	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.052
1968	0.000	0.000	0.000	0.000	0.125	0.458	0.338	0.037	0.000	0.000	0.000	0.000	0.958
1969	0.265	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.265

1970	0.000	0.464	0.000	0.000	0.000	0.000	0.000	0.291	0.000	0.000	0.000	0.000	0.754
1971	0.000	0.000	0.571	0.364	2.681	0.088	0.000	0.000	0.000	0.000	0.000	0.000	3.703
1972	0.000	0.228	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.712	0.962
1973	0.554	0.468	0.553	0.374	0.287	0.280	0.103	0.066	0.037	0.022	0.015	0.007	2.765
1974	0.007	0.037	0.000	0.468	2.279	0.446	0.000	0.000	0.000	0.000	0.000	0.712	3.949
1975	0.554	0.467	0.666	0.477	2.527	0.273	0.096	0.059	0.037	0.022	0.015	0.007	5.199
1976	0.007	0.000	0.000	0.385	2.681	0.475	0.339	0.293	0.168	0.130	0.084	0.383	4.944
1977	0.155	0.081	0.052	0.029	0.015	0.427	0.007	0.007	0.000	0.000	0.000	0.000	0.773
1978	0.000	0.000	0.000	0.000	0.000	0.000	0.081	0.007	0.000	0.000	0.000	0.000	0.088
1979	0.000	0.000	0.044	0.000	2.123	0.081	0.337	0.000	0.000	0.000	0.000	0.015	2.599
1980	0.000	0.000	0.000	0.302	0.560	0.044	0.000	0.293	0.168	0.130	0.084	0.712	2.294
1981	0.554	0.468	0.567	0.388	0.494	0.221	0.111	0.074	0.044	0.029	0.015	0.007	2.971
1982	0.007	0.000	0.000	0.000	0.273	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.280
1983	0.000	0.467	0.590	0.477	2.681	0.403	0.337	0.273	0.162	0.103	0.059	0.037	5.588
1984	0.022	0.015	0.007	0.477	2.681	0.475	0.339	0.293	0.168	0.130	0.084	0.317	5.007
1985	0.554	0.468	0.666	0.477	2.327	0.421	0.338	0.289	0.166	0.128	0.081	0.044	5.957
1986	0.029	0.015	0.007	0.015	0.007	0.437	0.000	0.000	0.000	0.000	0.084	0.712	1.306
1987	0.554	0.468	0.666	0.458	2.681	0.475	0.339	0.293	0.168	0.130	0.084	0.280	6.594
1988	0.554	0.466	0.603	0.295	2.681	0.468	0.339	0.292	0.168	0.129	0.084	0.184	6.263
1989	0.118	0.468	0.666	0.477	2.153	0.475	0.339	0.291	0.168	0.129	0.084	0.147	5.514
1990	0.096	0.052	0.037	0.439	0.081	0.475	0.335	0.293	0.168	0.130	0.084	0.712	2.902
1991	0.554	0.427	0.280	0.162	0.096	0.111	0.037	0.022	0.015	0.007	0.007	0.000	1.718
1992	0.000	0.000	0.361	0.000	2.476	0.118	0.000	0.000	0.000	0.000	0.000	0.000	2.955
1993	0.554	0.468	0.635	0.402	0.486	0.384	0.273	0.125	0.074	0.044	0.029	0.015	3.487
1994	0.554	0.015	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.576
1995	0.000	0.066	0.066	0.469	2.681	0.468	0.339	0.292	0.168	0.129	0.084	0.184	4.947
1996	0.516	0.081	0.666	0.381	0.022	0.118	0.007	0.007	0.000	0.000	0.000	0.712	2.511
1997	0.398	0.468	0.666	0.425	2.341	0.408	0.337	0.280	0.162	0.103	0.066	0.037	5.692
1998	0.022	0.015	0.007	0.228	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.279
1999	0.000	0.332	0.059	0.000	2.523	0.475	0.339	0.293	0.168	0.129	0.084	0.712	5.114
2000	0.554	0.468	0.660	0.433	1.201	0.399	0.336	0.258	0.155	0.096	0.059	0.066	4.685
2001	0.022	0.015	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.051
2002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	0.000	0.000	0.000	0.417	0.103	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.527
2004	0.000	0.000	0.000	0.406	2.356	0.457	0.044	0.000	0.000	0.000	0.000	0.000	3.263
2005	0.000	0.467	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.467
2006	0.000	0.468	0.015	0.407	0.206	0.000	0.000	0.000	0.167	0.000	0.000	0.000	1.263
2007	0.000	0.000	0.295	0.007	0.000	0.037	0.029	0.000	0.000	0.000	0.000	0.000	0.368
2008	0.000	0.000	0.000	0.074	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.096
2009	0.000	0.133	0.015	0.007	0.066	0.022	0.332	0.000	0.000	0.000	0.000	0.000	0.575
Mean	0.124	0.148	0.212	0.206	0.873	0.183	0.104	0.091	0.049	0.035	0.023	0.145	2.194

A.32. Ni12 – Category C

Summary table

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : ni12

Annual Flows (Mill. cu. m or index values):

MAR = 17,594

S.Dev. = 27,482

CV = 1,562

Q75 = 0,000

Q75/MMF = 0,000

BFI Index = 0,255

CV(JJA+JFM) Index = 5,564

Ecological Category = C

Total IFR = 3,268 (18,57 %MAR)

Maint. Lowflow = 1,196 (6,80 %MAR)

Drought Lowflow = 0,000 (0,00 %MAR)

Maint. Highflow = 2,072 (11,78 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows	High Flows	Total Flows	
				Maint.	Drought	Maint.	Maint.
Oct	1,663	6,540	3,933	0,099	0,000	0,245	0,344
Nov	1,363	4,859	3,565	0,091	0,000	0,193	0,285
Dec	1,064	2,978	2,800	0,083	0,000	0,179	0,262
Jan	1,779	5,313	2,988	0,107	0,000	0,090	0,196
Feb	3,517	7,930	2,255	0,179	0,000	0,839	1,018
Mar	1,229	2,357	1,917	0,108	0,000	0,090	0,197
Apr	0,986	3,863	3,919	0,094	0,000	0,100	0,194
May	2,263	8,905	3,935	0,138	0,000	0,000	0,138
Jun	0,568	1,710	3,008	0,081	0,000	0,000	0,081
Jul	0,448	1,703	3,799	0,063	0,000	0,000	0,063
Aug	0,183	0,499	2,725	0,039	0,000	0,004	0,043
Sep	2,531	11,301	4,464	0,116	0,000	0,331	0,448

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : ni12

Regional Type : Zululand

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.414	0.346	0.074	0.022	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.347	0.346	0.236	0.044	0.015	0.000	0.000	0.000	0.000	0.000
Dec	0.486	0.428	0.361	0.118	0.022	0.007	0.000	0.000	0.000	0.000

Jan	0.332	0.303	0.278	0.255	0.162	0.015	0.000	0.000	0.000	0.000
Feb	1.999	1.728	1.503	0.509	0.133	0.081	0.022	0.000	0.000	0.000
Mar	0.331	0.302	0.276	0.221	0.044	0.007	0.000	0.000	0.000	0.000
Apr	0.240	0.239	0.111	0.037	0.007	0.000	0.000	0.000	0.000	0.000
May	0.182	0.181	0.125	0.022	0.000	0.000	0.000	0.000	0.000	0.000
Jun	0.106	0.105	0.044	0.007	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.082	0.081	0.029	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.056	0.055	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.537	0.317	0.044	0.007	0.000	0.000	0.000	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.131	0.130	0.074	0.022	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.122	0.121	0.120	0.044	0.015	0.000	0.000	0.000	0.000	0.000
Dec	0.111	0.111	0.109	0.106	0.022	0.007	0.000	0.000	0.000	0.000
Jan	0.144	0.144	0.143	0.139	0.130	0.015	0.000	0.000	0.000	0.000
Feb	0.240	0.239	0.236	0.229	0.133	0.081	0.022	0.000	0.000	0.000
Mar	0.143	0.143	0.141	0.136	0.044	0.007	0.000	0.000	0.000	0.000
Apr	0.124	0.123	0.111	0.037	0.007	0.000	0.000	0.000	0.000	0.000
May	0.182	0.181	0.125	0.022	0.000	0.000	0.000	0.000	0.000	0.000
Jun	0.106	0.105	0.044	0.007	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.082	0.081	0.029	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.051	0.051	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.153	0.152	0.044	0.007	0.000	0.000	0.000	0.000	0.000	0.000

Natural Duration curves

Oct	2.145	0.346	0.074	0.022	0.000	0.000	0.000	0.000	0.000	0.000
Nov	2.277	0.700	0.236	0.044	0.015	0.000	0.000	0.000	0.000	0.000
Dec	3.442	0.958	0.361	0.118	0.022	0.007	0.000	0.000	0.000	0.000
Jan	4.171	1.975	0.973	0.435	0.162	0.015	0.000	0.000	0.000	0.000
Feb	13.752	4.282	1.879	0.509	0.133	0.081	0.022	0.000	0.000	0.000
Mar	4.282	2.137	0.737	0.221	0.044	0.007	0.000	0.000	0.000	0.000
Apr	2.174	0.442	0.111	0.037	0.007	0.000	0.000	0.000	0.000	0.000
May	2.513	1.091	0.125	0.022	0.000	0.000	0.000	0.000	0.000	0.000
Jun	1.415	0.332	0.044	0.007	0.000	0.000	0.000	0.000	0.000	0.000
Jul	1.164	0.251	0.029	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.700	0.155	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	1.857	0.317	0.044	0.007	0.000	0.000	0.000	0.000	0.000	0.000

Hydrological time series

Total Runoff : ni12

Desktop (Version 2) Modified Flow Data for Ecological Category C

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.414	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.414
1921	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1922	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007
1923	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1924	0.000	0.000	0.000	0.269	0.509	0.029	0.052	0.103	0.022	0.015	0.007	0.007	1.013
1925	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1926	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1927	0.000	0.000	0.000	0.192	0.000	0.000	0.000	0.182	0.104	0.080	0.044	0.029	0.631
1928	0.015	0.007	0.449	0.265	0.000	0.276	0.000	0.000	0.000	0.000	0.000	0.000	1.011
1929	0.000	0.000	0.000	0.332	0.029	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.375
1930	0.000	0.000	0.000	0.000	0.074	0.296	0.240	0.000	0.000	0.000	0.000	0.000	0.610
1931	0.000	0.347	0.393	0.118	1.999	0.330	0.240	0.182	0.106	0.082	0.056	0.537	4.389
1932	0.414	0.346	0.384	0.269	1.694	0.254	0.059	0.037	0.022	0.015	0.007	0.007	3.508
1933	0.074	0.346	0.214	0.315	0.685	0.007	0.000	0.182	0.106	0.000	0.000	0.000	1.929
1934	0.000	0.000	0.118	0.000	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.140
1935	0.000	0.044	0.000	0.289	0.133	0.331	0.239	0.181	0.105	0.081	0.055	0.059	1.517
1936	0.007	0.347	0.425	0.319	1.469	0.276	0.199	0.081	0.044	0.029	0.015	0.007	3.248
1937	0.007	0.044	0.486	0.324	1.503	0.271	0.237	0.179	0.104	0.082	0.052	0.029	3.317
1938	0.022	0.015	0.486	0.332	1.999	0.331	0.240	0.182	0.106	0.082	0.056	0.537	4.388
1939	0.346	0.344	0.125	0.294	1.658	0.331	0.240	0.182	0.106	0.082	0.056	0.516	4.279
1940	0.324	0.347	0.445	0.111	0.044	0.029	0.015	0.007	0.007	0.007	0.000	0.000	1.336
1941	0.000	0.000	0.074	0.308	1.904	0.297	0.000	0.182	0.106	0.082	0.056	0.537	3.545
1942	0.414	0.346	0.428	0.103	1.506	0.315	0.240	0.181	0.105	0.082	0.055	0.147	3.924
1943	0.088	0.199	0.258	0.022	1.759	0.007	0.007	0.000	0.000	0.000	0.000	0.537	2.877
1944	0.007	0.000	0.243	0.170	1.889	0.308	0.239	0.180	0.105	0.081	0.055	0.088	3.366
1945	0.059	0.037	0.022	0.231	1.436	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1.791
1946	0.000	0.000	0.000	0.000	0.398	0.287	0.044	0.000	0.000	0.000	0.000	0.000	0.729
1947	0.000	0.000	0.081	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.037	0.118
1948	0.000	0.037	0.000	0.319	1.537	0.274	0.240	0.182	0.106	0.082	0.056	0.537	3.368
1949	0.414	0.280	0.459	0.332	0.059	0.044	0.037	0.015	0.007	0.007	0.000	0.000	1.654
1950	0.000	0.000	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.015
1951	0.000	0.000	0.000	0.044	0.103	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.147
1952	0.000	0.346	0.461	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.807
1953	0.000	0.000	0.000	0.000	0.096	0.000	0.000	0.179	0.007	0.000	0.000	0.000	0.282
1954	0.414	0.000	0.000	0.280	1.363	0.037	0.000	0.000	0.000	0.000	0.000	0.000	2.095
1955	0.000	0.000	0.000	0.000	0.118	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.118
1956	0.000	0.000	0.486	0.270	0.361	0.206	0.066	0.037	0.022	0.015	0.007	0.537	2.008
1957	0.133	0.015	0.007	0.296	0.155	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.606
1958	0.000	0.000	0.332	0.000	0.096	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.428
1959	0.000	0.236	0.302	0.000	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.560
1960	0.000	0.000	0.462	0.226	0.096	0.269	0.007	0.000	0.000	0.000	0.000	0.000	1.061
1961	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1962	0.000	0.347	0.007	0.000	1.164	0.155	0.000	0.000	0.000	0.082	0.056	0.413	2.223
1963	0.265	0.155	0.395	0.332	0.037	0.022	0.015	0.007	0.007	0.000	0.000	0.000	1.235
1964	0.022	0.007	0.000	0.000	0.037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.066
1965	0.000	0.000	0.000	0.059	1.642	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.701
1966	0.000	0.000	0.000	0.000	0.516	0.162	0.000	0.000	0.000	0.000	0.000	0.537	1.215
1967	0.052	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.052
1968	0.000	0.000	0.000	0.000	0.125	0.318	0.239	0.037	0.000	0.000	0.000	0.000	0.720
1969	0.265	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.265
1970	0.000	0.344	0.000	0.000	0.000	0.000	0.000	0.180	0.000	0.000	0.000	0.000	0.524
1971	0.000	0.000	0.413	0.247	1.999	0.088	0.000	0.000	0.000	0.000	0.000	0.000	2.747
1972	0.000	0.228	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.537	0.787
1973	0.414	0.347	0.399	0.255	0.287	0.255	0.103	0.066	0.037	0.022	0.015	0.007	2.207
1974	0.007	0.037	0.000	0.326	1.691	0.309	0.000	0.000	0.000	0.000	0.000	0.537	2.907
1975	0.414	0.346	0.486	0.332	1.881	0.254	0.096	0.059	0.037	0.022	0.015	0.007	3.950
1976	0.007	0.000	0.000</										

1980	0.000	0.000	0.000	0.233	0.560	0.044	0.000	0.182	0.106	0.082	0.056	0.537	1.800
1981	0.414	0.347	0.410	0.265	0.494	0.221	0.111	0.074	0.044	0.029	0.015	0.007	2.431
1982	0.007	0.000	0.000	0.000	0.273	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.280
1983	0.000	0.346	0.427	0.332	1.999	0.277	0.239	0.179	0.104	0.081	0.055	0.037	4.076
1984	0.022	0.015	0.007	0.332	1.999	0.331	0.240	0.182	0.106	0.082	0.055	0.317	3.689
1985	0.414	0.347	0.486	0.332	1.728	0.290	0.239	0.179	0.104	0.081	0.055	0.044	4.300
1986	0.029	0.015	0.007	0.015	0.007	0.302	0.000	0.000	0.000	0.000	0.056	0.537	0.968
1987	0.414	0.347	0.486	0.318	1.999	0.331	0.240	0.182	0.106	0.082	0.055	0.280	4.840
1988	0.414	0.346	0.438	0.232	1.999	0.326	0.240	0.181	0.106	0.082	0.055	0.184	4.603
1989	0.118	0.347	0.486	0.332	1.594	0.331	0.240	0.181	0.105	0.082	0.055	0.147	4.019
1990	0.096	0.052	0.037	0.303	0.081	0.331	0.237	0.182	0.106	0.082	0.056	0.537	2.100
1991	0.414	0.343	0.280	0.162	0.096	0.111	0.037	0.022	0.015	0.007	0.007	0.000	1.495
1992	0.000	0.000	0.361	0.000	1.842	0.118	0.000	0.000	0.000	0.000	0.000	0.000	2.321
1993	0.414	0.347	0.462	0.275	0.486	0.262	0.237	0.125	0.074	0.044	0.029	0.015	2.770
1994	0.414	0.015	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.436
1995	0.000	0.066	0.066	0.326	1.999	0.326	0.240	0.181	0.106	0.082	0.055	0.184	3.632
1996	0.414	0.081	0.486	0.260	0.022	0.118	0.007	0.007	0.000	0.000	0.000	0.537	1.933
1997	0.398	0.347	0.486	0.293	1.738	0.280	0.239	0.179	0.104	0.081	0.055	0.037	4.237
1998	0.022	0.015	0.007	0.221	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.272
1999	0.000	0.332	0.059	0.000	1.878	0.331	0.240	0.182	0.106	0.082	0.055	0.537	3.802
2000	0.414	0.347	0.481	0.299	1.201	0.274	0.238	0.179	0.104	0.081	0.055	0.066	3.739
2001	0.022	0.015	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.051
2002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	0.000	0.000	0.000	0.287	1.103	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.397
2004	0.000	0.000	0.000	0.278	1.750	0.318	0.044	0.000	0.000	0.000	0.000	0.000	2.390
2005	0.000	0.346	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.346
2006	0.000	0.347	0.015	0.279	0.206	0.000	0.000	0.000	0.105	0.000	0.000	0.000	0.952
2007	0.000	0.000	0.295	0.007	0.000	0.037	0.029	0.000	0.000	0.000	0.000	0.000	0.368
2008	0.000	0.000	0.000	0.074	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.096
2009	0.000	0.133	0.015	0.007	0.066	0.022	0.237	0.000	0.000	0.000	0.000	0.000	0.480
Mean	0.103	0.116	0.164	0.148	0.687	0.134	0.078	0.060	0.033	0.024	0.016	0.118	1.682

A.33. Ni12 – Category D

Summary table

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : ni12

Annual Flows (Mill. cu. m or index values):

MAR = 17,594

S.Dev. = 27,482

CV = 1,562

Q75 = 0,000

Q75/MMF = 0,000

BFI Index = 0,255

CV(JJA+JFM) Index = 5,564

Ecological Category = D

Total IFR = 2,099 (11,93 %MAR)

Maint. Lowflow = 0,384 (2,18 %MAR)

Drought Lowflow = 0,000 (0,00 %MAR)

Maint. Highflow = 1,714 (9,74 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows	High Flows	Total Flows	
				Maint.	Drought	Maint.	Maint.
Oct	1,663	6,540	3,933	0,032	0,000	0,203	0,235
Nov	1,363	4,859	3,565	0,029	0,000	0,160	0,189
Dec	1,064	2,978	2,800	0,027	0,000	0,148	0,175
Jan	1,779	5,313	2,988	0,034	0,000	0,074	0,108
Feb	3,517	7,930	2,255	0,057	0,000	0,694	0,751
Mar	1,229	2,357	1,917	0,035	0,000	0,074	0,109
Apr	0,986	3,863	3,919	0,030	0,000	0,083	0,113
May	2,263	8,905	3,935	0,044	0,000	0,000	0,044
Jun	0,568	1,710	3,008	0,026	0,000	0,000	0,026
Jul	0,448	1,703	3,799	0,021	0,000	0,000	0,021
Aug	0,183	0,499	2,725	0,013	0,000	0,003	0,016
Sep	2,531	11,301	4,464	0,037	0,000	0,274	0,311

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : ni12

Regional Type : Zululand

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.343	0.342	0.074	0.022	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.280	0.279	0.236	0.044	0.015	0.000	0.000	0.000	0.000	0.000
Dec	0.360	0.312	0.272	0.118	0.022	0.007	0.000	0.000	0.000	0.000
Jan	0.219	0.195	0.175	0.157	0.124	0.015	0.000	0.000	0.000	0.000
Feb	1.560	1.336	1.150	0.509	0.133	0.081	0.022	0.000	0.000	0.000
Mar	0.219	0.194	0.174	0.155	0.044	0.007	0.000	0.000	0.000	0.000
Apr	0.171	0.171	0.111	0.037	0.007	0.000	0.000	0.000	0.000	0.000
May	0.080	0.079	0.078	0.022	0.000	0.000	0.000	0.000	0.000	0.000
Jun	0.047	0.047	0.044	0.007	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.037	0.037	0.029	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.028	0.028	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.453	0.317	0.044	0.007	0.000	0.000	0.000	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.058	0.058	0.057	0.022	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.054	0.054	0.053	0.044	0.015	0.000	0.000	0.000	0.000	0.000
Dec	0.049	0.049	0.048	0.047	0.022	0.007	0.000	0.000	0.000	0.000
Jan	0.063	0.063	0.063	0.061	0.057	0.015	0.000	0.000	0.000	0.000
Feb	0.104	0.104	0.103	0.100	0.093	0.080	0.022	0.000	0.000	0.000
Mar	0.063	0.063	0.062	0.060	0.044	0.007	0.000	0.000	0.000	0.000
Apr	0.055	0.055	0.054	0.037	0.007	0.000	0.000	0.000	0.000	0.000
May	0.080	0.079	0.078	0.022	0.000	0.000	0.000	0.000	0.000	0.000
Jun	0.047	0.047	0.044	0.007	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.037	0.037	0.029	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.023	0.023	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.068	0.067	0.044	0.007	0.000	0.000	0.000	0.000	0.000	0.000

Natural Duration curves

Oct	2.145	0.346	0.074	0.022	0.000	0.000	0.000	0.000	0.000	0.000
Nov	2.277	0.700	0.236	0.044	0.015	0.000	0.000	0.000	0.000	0.000
Dec	3.442	0.958	0.361	0.118	0.022	0.007	0.000	0.000	0.000	0.000
Jan	4.171	1.975	0.973	0.435	0.162	0.015	0.000	0.000	0.000	0.000
Feb	13.752	4.282	1.879	0.509	0.133	0.081	0.022	0.000	0.000	0.000
Mar	4.282	2.137	0.737	0.221	0.044	0.007	0.000	0.000	0.000	0.000
Apr	2.174	0.442	0.111	0.037	0.007	0.000	0.000	0.000	0.000	0.000
May	2.513	1.091	0.125	0.022	0.000	0.000	0.000	0.000	0.000	0.000
Jun	1.415	0.332	0.044	0.007	0.000	0.000	0.000	0.000	0.000	0.000
Jul	1.164	0.251	0.029	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.700	0.155	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	1.857	0.317	0.044	0.007	0.000	0.000	0.000	0.000	0.000	0.000

Hydrological time series

Total Runoff : ni12

Desktop (Version 2) Modified Flow Data for Ecological Category D

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.343	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.343
1921	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1922	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007
1923	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1924	0.000	0.000	0.000	0.168	0.509	0.029	0.052	0.077	0.022	0.015	0.007	0.007	0.886
1925	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1926	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1927	0.000	0.000	0.000	0.127	0.000	0.000	0.000	0.080	0.046	0.036	0.028	0.029	0.346
1928	0.015	0.007	0.329	0.164	0.000	0.174	0.000	0.000	0.000	0.000	0.000	0.000	0.689
1929	0.000	0.000	0.000	0.219	0.029	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.262
1930	0.000	0.000	0.000	0.000	0.074	0.190	0.171	0.000	0.000	0.000	0.000	0.000	0.435
1931	0.000	0.280	0.283	0.118	1.560	0.217	0.171	0.080	0.047	0.037	0.028	0.453	3.275
1932	0.343	0.279	0.276	0.168	1.308	0.157	0.059	0.037	0.022	0.015	0.007	0.007	2.677
1933	0.074	0.279	0.214	0.205	0.685	0.007	0.000	0.080	0.047	0.000	0.000	0.000	1.591
1934	0.000	0.000	0.118	0.000	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.140
1935	0.000	0.044	0.000	0.183	0.133	0.219	0.171	0.080	0.047	0.037	0.028	0.059	0.999
1936	0.037	0.280	0.309	0.208	1.123	0.174	0.169	0.077	0.044	0.029	0.015	0.007	2.471
1937	0.007	0.044	0.360	0.212	1.150	0.170	0.170	0.078	0.046	0.037	0.028	0.029	2.331
1938	0.022	0.015	0.360	0.219	1.560	0.219	0.171	0.080	0.047	0.037	0.028	0.453	3.210
1939	0.342	0.277	0.125	0.187	1.278	0.219	0.171	0.080	0.047	0.037	0.028	0.452	3.243
1940	0.324	0.280	0.326	0.111	0.044	0.029	0.015	0.007	0.007	0.007	0.000	0.000	1.150
1941	0.000	0.000	0.074	0.199	1.481	0.190	0.000	0.080	0.047	0.037	0.028	0.453	2.589
1942	0.343	0.279	0.312	0.103	1.153	0.205	0.171	0.080	0.047	0.037	0.028	0.147	2.906
1943	0.088	0.199	0.252	0.022	1.361	0.007	0.007	0.000	0.000	0.000	0.000	0.453	2.389
1944	0.007	0.000	0.243	0.125	1.469	0.199	0.171	0.079	0.047	0.037	0.028	0.088	2.493
1945	0.059	0.037	0.022	0.139	1.096	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1.360
1946	0.000	0.000	0.000	0.000	0.398	0.182	0.044	0.000	0.000	0.000	0.000	0.000	0.624
1947	0.000	0.000	0.081	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.037	0.118
1948	0.000	0.037	0.000	0.208	1.178	0.172	0.171	0.080	0.047	0.037	0.028	0.453	2.412
1949	0.343	0.276	0.337	0.219	0.059	0.044	0.037	0.015	0.007	0.007	0.000	0.000	1.343
1950	0.000	0.000	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.015
1951	0.000	0.000	0.000	0.044	0.103	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.147
1952	0.000	0.279	0.338	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.618
1953	0.000	0.000	0.000	0.000	0.096	0.000	0.000	0.079	0.007	0.000	0.000	0.000	0.182
1954	0.343	0.000	0.000	0.176	1.084	0.037	0.000	0.000	0.000	0.000	0.000	0.000	1.641
1955	0.000	0.000	0.000	0.000	0.118	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.118
1956	0.000	0.000	0.360	0.168	0.361	0.152	0.066	0.037	0.022	0.015	0.007	0.453	1.642
1957	0.133	0.015	0.007	0.189	0.155	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.499
1958	0.000	0.000	0.266	0.000	0.096	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.362
1959	0.000	0.236	0.261	0.000	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.519
1960	0.000	0.000	0.340	0.135	0.096	0.169	0.007	0.000	0.000	0.000	0.000	0.000	0.747
1961	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1962	0.000	0.280	0.007	0.000	1.059	0.143	0.000	0.000	0.000	0.037	0.028	0.413	1.967
1963	0.265	0.155	0.285	0.219	0.037	0.022	0.015	0.007	0.007	0.000	0.000	0.000	1.011
1964	0.022	0.007	0.000	0.000	0.037	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.066
1965	0.000	0.000	0.000	0.059	1.265	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.324
1966	0.000	0.000	0.000	0.000	0.516	0.144	0.000	0.000	0.000	0.000	0.000	0.453	1.113
1967	0.052	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.052
1968	0.000	0.000	0.000	0.000	0.125	0.208	0.171	0.037	0.000	0.000	0.000	0.000	0.541
1969	0.265	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.265
1970	0.000	0.278	0.000	0.000	0.000	0.000	0.000	0.079	0.000	0.000	0.000	0.000	0.357
1971	0.000	0.000	0.299	0.151	1.560	0.088	0.000	0.000	0.000	0.000	0.000	0.000	2.099
1972	0.000	0.228	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.453	0.703
1973	0.343	0.280	0.288	0.157	0.287	0.158	0.103	0.066	0.037	0.022	0.015	0.007	1.762
1974	0.007	0.037	0.000	0.213	1.305	0.200	0.000	0.000	0.000	0.000	0.000	0.453	2.216
1975	0.343	0.279	0.360	0.219	1.462	0.157	0.096	0.059	0.037	0.022	0.015	0.007	3.056
1976	0.007	0.000	0.000	0.163	1.560	0.219	0.171	0.080	0.047	0.037	0.028	0.383	2.695
1977	0.155	0.081	0.052	0.029	0.015	0.188	0.007	0.007	0.000	0.000	0.000	0.000	0.534
1978	0.000	0.000	0.000	0.000	0.000	0.000	0.081	0.007	0.000	0.000	0.000	0.000	0.088
1979	0.000	0.000	0.044	0.000	1.207	0.081	0.170	0.000	0.000	0.000	0.000	0.015	1.517
1980	0.000	0.000	0.000	0.141	0.560	0.044	0.000	0.080	0.047	0.037	0.028	0.453	1.390
1981	0.343	0.280	0.297	0.164	0.494	0.155	0.111	0.074	0.044	0.029	0.015	0.007	2.013
1982	0.007	0.000	0.000	0.000	0.273	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.280
1983	0.000	0.280	0.311	0.219	1.560	0.174	0.171	0.079	0.046	0.036</			

1990	0.096	0.052	0.037	0.195	0.081	0.219	0.170	0.080	0.047	0.037	0.028	0.453	1.494
1991	0.343	0.277	0.256	0.124	0.096	0.111	0.037	0.022	0.015	0.007	0.007	0.000	1.295
1992	0.000	0.000	0.272	0.000	1.430	0.118	0.000	0.000	0.000	0.000	0.000	0.000	1.820
1993	0.343	0.280	0.340	0.172	0.486	0.163	0.169	0.078	0.046	0.036	0.027	0.015	2.156
1994	0.343	0.015	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.365
1995	0.000	0.066	0.066	0.214	1.560	0.214	0.171	0.080	0.047	0.037	0.028	0.184	2.667
1996	0.343	0.081	0.360	0.161	0.022	0.118	0.007	0.007	0.000	0.000	0.000	0.000	1.552
1997	0.342	0.280	0.360	0.186	1.344	0.177	0.171	0.079	0.046	0.036	0.028	0.037	3.086
1998	0.022	0.015	0.007	0.132	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.183
1999	0.000	0.276	0.059	0.000	1.460	0.219	0.171	0.080	0.047	0.037	0.028	0.453	2.830
2000	0.343	0.280	0.356	0.191	1.064	0.172	0.170	0.079	0.046	0.036	0.028	0.066	2.831
2001	0.022	0.015	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.051
2002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2003	0.000	0.000	0.000	0.181	0.103	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.291
2004	0.000	0.000	0.000	0.175	1.354	0.207	0.044	0.000	0.000	0.000	0.000	0.000	1.780
2005	0.000	0.279	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.279
2006	0.000	0.280	0.015	0.176	0.206	0.000	0.000	0.000	0.047	0.000	0.000	0.000	0.723
2007	0.000	0.000	0.259	0.007	0.000	0.037	0.029	0.000	0.000	0.000	0.000	0.000	0.332
2008	0.000	0.000	0.000	0.074	0.022	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.096
2009	0.000	0.133	0.015	0.007	0.066	0.022	0.169	0.000	0.000	0.000	0.000	0.000	0.412
Mean	0.089	0.098	0.127	0.097	0.552	0.091	0.059	0.030	0.017	0.012	0.009	0.104	1.284

A.34. Ni14 – Category B

Summary table

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni14

Annual Flows (Mill. cu. m or index values):

MAR = 16,693
 S.Dev. = 40,884
 CV = 2,449
 Q75 = 0,000
 Q75/MMF = 0,000
 BFI Index = 0,256
 CV(JJA+JFM) Index = 7,317

Ecological Category = B

Total IFR = 4,516 (27,05 %MAR)
 Maint. Lowflow = 1,882 (11,28 %MAR)
 Drought Lowflow = 0,000 (0,00 %MAR)
 Maint. Highflow = 2,633 (15,78 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
			CV	Maint.	Drought	Maint.	
Oct	0,919	3,970	4,320	0,093	0,000	0,178	0,271
Nov	1,047	4,072	3,890	0,105	0,000	0,204	0,309
Dec	1,060	3,461	3,264	0,114	0,000	0,290	0,404
Jan	1,141	2,930	2,569	0,121	0,000	0,145	0,266
Feb	2,697	8,188	3,036	0,228	0,000	0,145	0,373
Mar	4,480	26,618	5,942	0,367	0,000	1,347	1,715
Apr	1,221	4,521	3,703	0,196	0,000	0,165	0,362
May	1,766	5,886	3,333	0,229	0,000	0,000	0,229
Jun	0,642	2,061	3,208	0,151	0,000	0,000	0,151
Jul	0,577	2,391	4,147	0,116	0,000	0,000	0,116
Aug	0,232	0,708	3,051	0,070	0,000	0,010	0,081
Sep	0,911	4,884	5,363	0,092	0,000	0,147	0,239

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni14

Regional Type : Zululand

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.300	0.236	0.072	0.013	0.007	0.000	0.000	0.000	0.000	0.000
Nov	0.344	0.344	0.098	0.046	0.020	0.007	0.000	0.000	0.000	0.000
Dec	0.743	0.649	0.544	0.164	0.039	0.020	0.007	0.000	0.000	0.000
Jan	0.449	0.402	0.362	0.308	0.190	0.039	0.007	0.000	0.000	0.000
Feb	0.573	0.526	0.484	0.255	0.105	0.026	0.007	0.000	0.000	0.000
Mar	3.255	2.024	0.635	0.321	0.157	0.026	0.000	0.000	0.000	0.000
Apr	0.406	0.405	0.301	0.105	0.026	0.000	0.000	0.000	0.000	0.000
May	0.266	0.264	0.259	0.072	0.007	0.000	0.000	0.000	0.000	0.000
Jun	0.174	0.173	0.170	0.072	0.013	0.000	0.000	0.000	0.000	0.000
Jul	0.133	0.132	0.092	0.026	0.007	0.000	0.000	0.000	0.000	0.000
Aug	0.092	0.092	0.090	0.033	0.007	0.000	0.000	0.000	0.000	0.000
Sep	0.266	0.223	0.079	0.020	0.007	0.000	0.000	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.108	0.107	0.072	0.013	0.007	0.000	0.000	0.000	0.000	0.000
Nov	0.123	0.123	0.098	0.046	0.020	0.007	0.000	0.000	0.000	0.000
Dec	0.134	0.134	0.132	0.128	0.039	0.020	0.007	0.000	0.000	0.000
Jan	0.145	0.145	0.143	0.139	0.130	0.039	0.007	0.000	0.000	0.000
Feb	0.269	0.269	0.265	0.255	0.105	0.026	0.007	0.000	0.000	0.000
Mar	0.431	0.430	0.424	0.321	0.157	0.026	0.000	0.000	0.000	0.000
Apr	0.228	0.227	0.223	0.105	0.026	0.000	0.000	0.000	0.000	0.000

May	0.266	0.264	0.259	0.072	0.007	0.000	0.000	0.000	0.000	0.000
Jun	0.174	0.173	0.170	0.072	0.013	0.000	0.000	0.000	0.000	0.000
Jul	0.133	0.132	0.092	0.026	0.007	0.000	0.000	0.000	0.000	0.000
Aug	0.081	0.080	0.079	0.033	0.007	0.000	0.000	0.000	0.000	0.000
Sep	0.107	0.107	0.079	0.020	0.007	0.000	0.000	0.000	0.000	0.000

Natural Duration curves

Oct	1.579	0.236	0.072	0.013	0.007	0.000	0.000	0.000	0.000	0.000
Nov	1.552	0.576	0.098	0.046	0.020	0.007	0.000	0.000	0.000	0.000
Dec	2.692	0.753	0.544	0.164	0.039	0.020	0.007	0.000	0.000	0.000
Jan	3.059	1.133	0.478	0.308	0.190	0.039	0.007	0.000	0.000	0.000
Feb	5.306	2.011	0.969	0.255	0.105	0.026	0.007	0.000	0.000	0.000
Mar	6.229	2.024	0.635	0.321	0.157	0.026	0.000	0.000	0.000	0.000
Apr	1.906	0.727	0.301	0.105	0.026	0.000	0.000	0.000	0.000	0.000
May	2.620	0.701	0.282	0.072	0.007	0.000	0.000	0.000	0.000	0.000
Jun	1.644	0.485	0.170	0.072	0.013	0.000	0.000	0.000	0.000	0.000
Jul	0.976	0.282	0.092	0.026	0.007	0.000	0.000	0.000	0.000	0.000
Aug	0.550	0.203	0.105	0.033	0.007	0.000	0.000	0.000	0.000	0.000
Sep	0.838	0.223	0.079	0.020	0.007	0.000	0.000	0.000	0.000	0.000

Hydrological time series

Total Runoff : Ni14

Desktop (Version 2) Modified Flow Data for Ecological Category B

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL	
1920	0.026	0.013	0.013	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.118	0.184
1921	0.000	0.007	0.627	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.634
1922	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1923	0.000	0.000	0.000	0.000	0.488	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.488
1924	0.000	0.066	0.164	0.039	0.573	3.255	0.406	0.266	0.174	0.133	0.092	0.266	0.266	5.435
1925	0.300	0.344	0.347	0.210	0.118	0.079	0.046	0.033	0.020	0.013	0.007	0.007	0.007	1.524
1926	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007
1927	0.000	0.000	0.000	0.007	0.066	0.000	0.000	0.264	0.000	0.000	0.000	0.000	0.000	0.337
1928	0.000	0.000	0.026	0.039	0.000	3.041	0.406	0.266	0.172	0.131	0.091	0.079	0.079	4.251
1929	0.046	0.026	0.020	0.449	0.547	2.024	0.406	0.264	0.173	0.132	0.091	0.105	0.105	4.283
1930	0.066	0.039	0.026	0.013	0.007	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.191
1931	0.000	0.344	0.066	0.000	0.573	3.137	0.406	0.266	0.174	0.133	0.092	0.266	0.266	5.458
1932	0.300	0.344	0.557	0.333	0.506	0.170	0.079	0.046	0.026	0.020	0.013	0.007	0.007	2.402
1933	0.007	0.000	0.000	0.000	0.177	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.184
1934	0.000	0.000	0.190	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.210
1935	0.000	0.000	0.000	0.092	0.098	0.026	0.000	0.265	0.164	0.072	0.039	0.026	0.026	0.782
1936	0.013	0.066	0.007	0.223	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.316
1937	0.000	0.079	0.732	0.362	0.046	0.478	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.697
1938	0.000	0.000	0.131	0.308	0.526	0.072	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.037
1939	0.000	0.000	0.000	0.026	0.020	0.740	0.405	0.266	0.174	0.133	0.092	0.266	0.266	2.123
1940	0.299	0.344	0.743	0.428	0.492	0.773	0.403	0.260	0.170	0.105	0.066	0.039	0.039	4.121
1941	0.026	0.013	0.544	0.210	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.806
1942	0.000	0.000	0.341	0.000	0.000	3.255	0.406	0.266	0.174	0.132	0.092	0.223	0.223	4.889
1943	0.144	0.085	0.098	0.066	0.486	0.020	0.007	0.007	0.174	0.013	0.000	0.000	0.000	1.101
1944	0.000	0.033	0.039	0.391	0.553	1.500	0.405	0.262	0.172	0.130	0.090	0.059	0.059	3.633
1945	0.039	0.020	0.229	0.379	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.681
1946	0.000	0.000	0.000	0.000	0.216	0.524	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.740
1947	0.000	0.000	0.000	0.190	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.236
1948	0.000	0.000	0.000	0.427	0.521	0.020	0.406	0.266	0.174	0.133	0.092	0.265	0.265	2.305
1949	0.203	0.124	0.701	0.242	0.026	0.321	0.405	0.007	0.007	0.000	0.000	0.000	0.000	2.036
1950	0.000	0.000	0.026	0.026	0.000	2.975	0.059	0.000	0.000	0.000	0.033	0.000	0.000	3.119
1951	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1952	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007
1953	0.000	0.000	0.000	0.000	0.360	0.039	0.000	0.266	0.046	0.000	0.000	0.000	0.000	0.711
1954	0.000	0.000	0.000	0.124	0.118	0.583	0.249	0.157	0.092	0.059	0.033	0.020	0.020	1.435
1955	0.013	0.007	0.007	0.000	0.255	3.255	0.085	0.000	0.000	0.000	0.000	0.000	0.000	3.622
1956	0.000	0.111	0.743	0.449	0.573	3.061	0.328	0.203	0.124	0.079	0.046	0.266	0.266	5.983
1957	0.300	0.236	0.743	0.449	0.484	0.052	0.026	0.020	0.013	0.007	0.007	0.000	0.000	2.337
1958	0.000	0.000	0.000	0.203	0.000	0.000	0.000	0.264	0.000	0.000	0.000	0.000	0.000	0.467
1959	0.000	0.000	0.000	0.000	0.124	0.282	0.360	0.026	0.000	0.000	0.000	0.000	0.000	0.792
1960	0.000	0.216	0.328	0.144	0.000	0.000	0.000	0.000	0.173	0.132	0.092	0.164	0.164	1.249
1961	0.105	0.059	0.039	0.026	0.013	0.969	0.007	0.000	0.000	0.000	0.000	0.000	0.000	1.225
1962	0.000	0.000	0.646	0.000	0.000	0.026	0.000	0.000	0.000	0.133	0.092	0.266	0.266	1.162
1963	0.300	0.344	0.590	0.337	0.203	0.138	0.242	0.052	0.033	0.020	0.013	0.007	0.007	2.279
1964	0.300	0.344	0.649	0.358	0.255	0.177	0.105	0.066	0.039	0.026	0.092	0.144	0.144	2.556
1965	0.007	0.033	0.020	0.378	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.438
1966	0.000	0.000	0.039	0.000	0.098	0.557	0.404	0.000	0.000	0.000	0.000	0.000	0.000	1.098
1967	0.000	0.000	0.000	0.000	0.474	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.474
1968	0.000	0.000	0.663	0.000	0.000	3.201	0.406	0.263	0.172	0.131	0.091	0.085	0.085	5.013
1969	0.111	0.033	0.020	0.013	0.013	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.197
1970	0.000	0.242	0.000	0.000	0.000	0.000	0.000	0.266	0.174	0.133	0.092	0.265	0.265	1.172
1971	0.170	0.098	0.743	0.407	0.573	3.255	0.406	0.266	0.174	0.132	0.092	0.249	0.249	6.566
1972	0.157	0.344	0.124	0.039	0.105	0.013	0.007	0.007	0.000	0.000	0.092	0.266	0.266	1.154
1973	0.300	0.344	0.655	0.362	0.269	0.183	0.111	0.072	0.039	0.026	0.013	0.007	0.007	2.382
1974	0.007	0.344	0.013	0.449	0.561	1.186	0.405	0.259	0.170	0.105	0.066	0.223	0.223	3.789
1975	0.085	0.013	0.695	0.431	0.527	3.255	0.406	0.266	0.174	0.133	0.092	0.262	0.262	6.339
1976	0.164	0.098	0.550	0.346	0.573	3.255	0.406	0.266	0.174	0.133	0.092	0.266	0.266	6.324
1977	0.236	0.138	0.576	0.449	0.470	0.380	0.223	0.144	0.085	0.052	0.033	0.020	0.020	2.806
1978	0.013	0.007	0.007	0.000	0.000	0.026	0.092	0.007	0.000	0.000	0.000	0.000	0.000	0.152
1979	0.000	0.000	0.275	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.266	0.266	0.541
1980	0.000	0.000	0.000	0.066	0.026	0.000	0.000	0.266	0.174	0.133	0.092	0.266	0.266	1.023
1981	0.300	0.344	0.439	0.301	0.151	2.260	0.105	0.039	0.020	0.013	0.007	0.007	0.007	3.986
1982	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.026	0.000	0.000	0.000	0.026
1983	0.000	0.344	0.550	0.449	0.573	1.972	0.406	0.264	0.173	0.133	0.091	0.092	0.092	5.048
1984	0.059	0.033	0.020	0.449	0.573	3.255	0.406	0.266	0.174	0.133	0.092	0.266	0.266	5.727

2000	0.039	0.344	0.743	0.449	0.518	1.225	0.405	0.262	0.172	0.130	0.090	0.266	4.642
2001	0.300	0.344	0.716	0.385	0.400	0.269	0.157	0.098	0.174	0.133	0.039	0.013	3.029
2002	0.013	0.007	0.007	0.301	0.026	0.203	0.013	0.000	0.000	0.000	0.000	0.000	0.570
2003	0.000	0.066	0.000	0.449	0.502	0.635	0.373	0.236	0.138	0.092	0.052	0.033	2.576
2004	0.020	0.013	0.007	0.190	0.558	0.026	0.000	0.000	0.000	0.000	0.000	0.000	0.814
2005	0.000	0.000	0.000	0.433	0.000	0.000	0.000	0.000	0.000	0.000	0.092	0.000	0.525
2006	0.000	0.000	0.033	0.000	0.000	0.000	0.334	0.000	0.174	0.000	0.000	0.000	0.541
2007	0.007	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.174	0.033	0.000	0.000	0.227
2008	0.000	0.000	0.000	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020
2009	0.000	0.000	0.000	0.105	0.573	1.677	0.046	0.000	0.000	0.000	0.000	0.000	2.401
Mean	0.078	0.099	0.243	0.193	0.222	0.806	0.145	0.099	0.067	0.046	0.034	0.070	2.100

A.35. Ni14 – Category C

Summary table

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni14

Annual Flows (Mill. cu. m or index values):

MAR = 16,693
 S.Dev. = 40,884
 CV = 2,449
 Q75 = 0,000
 Q75/MMF = 0,000
 BFI Index = 0,256
 CV(JJA+JFM) Index = 7,317

Ecological Category = C

Total IFR = 3,022 (18,11 %MAR)
 Maint. Lowflow = 1,011 (6,06 %MAR)
 Drought Lowflow = 0,000 (0,00 %MAR)
 Maint. Highflow = 2,011 (12,05 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows Maint.	High Flows Drought	Total Flows Maint.	Total Flows Maint.
Oct	0,919	3,970	4,320	0,051	0,000	0,136	0,187
Nov	1,047	4,072	3,890	0,057	0,000	0,156	0,213
Dec	1,060	3,461	3,264	0,062	0,000	0,222	0,283
Jan	1,141	2,930	2,569	0,066	0,000	0,111	0,176
Feb	2,697	8,188	3,036	0,121	0,000	0,111	0,232
Mar	4,480	26,618	5,942	0,194	0,000	1,029	1,224
Apr	1,221	4,521	3,703	0,105	0,000	0,126	0,231
May	1,766	5,886	3,333	0,122	0,000	0,000	0,122
Jun	0,642	2,061	3,208	0,081	0,000	0,000	0,081
Jul	0,577	2,391	4,147	0,063	0,000	0,000	0,063
Aug	0,232	0,708	3,051	0,039	0,000	0,008	0,047
Sep	0,911	4,884	5,363	0,050	0,000	0,112	0,163

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni14

Regional Type : Zululand

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.225	0.224	0.072	0.013	0.007	0.000	0.000	0.000	0.000	0.000
Nov	0.257	0.257	0.098	0.046	0.020	0.007	0.000	0.000	0.000	0.000
Dec	0.547	0.476	0.416	0.164	0.039	0.020	0.007	0.000	0.000	0.000
Jan	0.321	0.285	0.255	0.229	0.180	0.039	0.007	0.000	0.000	0.000
Feb	0.395	0.359	0.328	0.255	0.105	0.026	0.007	0.000	0.000	0.000
Mar	2.416	2.024	0.635	0.321	0.157	0.026	0.000	0.000	0.000	0.000
Apr	0.285	0.284	0.279	0.105	0.026	0.000	0.000	0.000	0.000	0.000
May	0.161	0.160	0.157	0.072	0.007	0.000	0.000	0.000	0.000	0.000
Jun	0.107	0.106	0.104	0.072	0.013	0.000	0.000	0.000	0.000	0.000
Jul	0.082	0.081	0.079	0.026	0.007	0.000	0.000	0.000	0.000	0.000
Aug	0.060	0.060	0.059	0.033	0.007	0.000	0.000	0.000	0.000	0.000
Sep	0.197	0.196	0.079	0.020	0.007	0.000	0.000	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.067	0.067	0.066	0.013	0.007	0.000	0.000	0.000	0.000	0.000
Nov	0.076	0.076	0.075	0.046	0.020	0.007	0.000	0.000	0.000	0.000
Dec	0.083	0.082	0.081	0.079	0.039	0.020	0.007	0.000	0.000	0.000
Jan	0.089	0.089	0.088	0.085	0.080	0.039	0.007	0.000	0.000	0.000
Feb	0.163	0.162	0.160	0.155	0.105	0.026	0.007	0.000	0.000	0.000
Mar	0.259	0.258	0.255	0.246	0.157	0.026	0.000	0.000	0.000	0.000
Apr	0.138	0.138	0.136	0.105	0.026	0.000	0.000	0.000	0.000	0.000
May	0.161	0.160	0.157	0.072	0.007	0.000	0.000	0.000	0.000	0.000
Jun	0.107	0.106	0.104	0.072	0.013	0.000	0.000	0.000	0.000	0.000
Jul	0.082	0.081	0.079	0.026	0.007	0.000	0.000	0.000	0.000	0.000
Aug	0.051	0.051	0.050	0.033	0.007	0.000	0.000	0.000	0.000	0.000
Sep	0.067	0.066	0.065	0.020	0.007	0.000	0.000	0.000	0.000	0.000

Natural Duration curves

Oct	1.579	0.236	0.072	0.013	0.007	0.000	0.000	0.000	0.000	0.000
Nov	1.552	0.576	0.098	0.046	0.020	0.007	0.000	0.000	0.000	0.000
Dec	2.692	0.753	0.544	0.164	0.039	0.020	0.007	0.000	0.000	0.000
Jan	3.059	1.133	0.478	0.308	0.190	0.039	0.007	0.000	0.000	0.000
Feb	5.306	2.011	0.969	0.255	0.105	0.026	0.007	0.000	0.000	0.000
Mar	6.229	2.024	0.635	0.321	0.157	0.026	0.000	0.000	0.000	0.000
Apr	1.906	0.727	0.301	0.105	0.026	0.000	0.000	0.000	0.000	0.000
May	2.620	0.701	0.282	0.072	0.007	0.000	0.000	0.000	0.000	0.000
Jun	1.644	0.485	0.170	0.072	0.013	0.000	0.000	0.000	0.000	0.000
Jul	0.976	0.282	0.092	0.026	0.007	0.000	0.000	0.000	0.000	0.000
Aug	0.550	0.203	0.105	0.033	0.007	0.000	0.000	0.000	0.000	0.000
Sep	0.838	0.223	0.079	0.020	0.007	0.000	0.000	0.000	0.000	0.000

Hydrological time series

Total Runoff : Ni14															
Desktop (Version 2) Modified Flow Data for Ecological Category C															
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL		
1920	0.026	0.013	0.013	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.118	0.184	
1921	0.000	0.007	0.459	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.466	
1922	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
1923	0.000	0.000	0.000	0.000	0.330	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.330	
1924	0.000	0.066	0.164	0.039	0.395	2.416	0.285	0.161	0.107	0.082	0.060	0.197	3.972		
1925	0.225	0.257	0.347	0.188	0.118	0.079	0.046	0.033	0.020	0.013	0.007	0.007	1.339		
1926	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007	
1927	0.000	0.000	0.000	0.007	0.066	0.000	0.000	0.160	0.000	0.000	0.000	0.000	0.233		
1928	0.000	0.000	0.026	0.039	0.000	2.253	0.285	0.161	0.105	0.081	0.059	0.079	3.088		
1929	0.046	0.026	0.020	0.321	0.375	2.024	0.285	0.160	0.106	0.081	0.059	0.105	3.608		
1930	0.066	0.039	0.026	0.013	0.007	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.191		
1931	0.000	0.257	0.066	0.000	0.395	2.326	0.285	0.161	0.107	0.082	0.060	0.197	3.936		
1932	0.225	0.257	0.426	0.233	0.344	0.170	0.079	0.046	0.026	0.020	0.013	0.007	1.846		
1933	0.007	0.000	0.000	0.000	0.177	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.184		
1934	0.000	0.000	0.190	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.210		
1935	0.000	0.000	0.000	0.092	0.098	0.026	0.000	0.161	0.104	0.072	0.039	0.026	0.617		
1936	0.013	0.066	0.007	0.193	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.286		
1937	0.000	0.079	0.539	0.255	0.046	0.478	0.000	0.000	0.000	0.000	0.000	0.000	1.397		
1938	0.000	0.000	0.131	0.229	0.359	0.072	0.000	0.000	0.000	0.000	0.000	0.000	0.791		
1939	0.000	0.000	0.000	0.026	0.020	0.740	0.284	0.161	0.107	0.082	0.060	0.197	1.677		
1940	0.224	0.257	0.547	0.305	0.333	0.773	0.282	0.157	0.104	0.080	0.058	0.039	3.160		
1941	0.026	0.013	0.416	0.188	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.656		
1942	0.000	0.000	0.341	0.000	0.000	2.416	0.285	0.161	0.106	0.082	0.060	0.196	3.646		
1943	0.144	0.085	0.098	0.066	0.329	0.020	0.007	0.007	0.107	0.013	0.000	0.000	0.876		
1944	0.000	0.033	0.039	0.277	0.379	1.500	0.284	0.159	0.105	0.080	0.059	0.059	2.973		
1945	0.039	0.020	0.229	0.268	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.570		
1946	0.000	0.000	0.000	0.000	0.216	0.524	0.000	0.000	0.000	0.000	0.000	0.000	0.740		
1947	0.000	0.000	0.000	0.180	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.226		
1948	0.000	0.000	0.000	0.304	0.355	0.020	0.285	0.161	0.107	0.082	0.060	0.196	1.570		
1949	0.203	0.124	0.516	0.201	0.026	0.321	0.284	0.007	0.007	0.000	0.000	0.000	1.688		
1950	0.000	0.000	0.026	0.026	0.000	2.203	0.059	0.000	0.000	0.000	0.033	0.000	2.347		
1951	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
1952	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007		
1953	0.000	0.000	0.000	0.000	0.311	0.039	0.000	0.161	0.046	0.000	0.000	0.000	0.557		
1954	0.000	0.000	0.000	0.124	0.118	0.583	0.249	0.154	0.092	0.059	0.033	0.020	1.432		
1955	0.013	0.007	0.007	0.000	0.255	2.416	0.085	0.000	0.000	0.000	0.000	0.000	2.783		
1956	0.000	0.111	0.547	0.321	0.395	2.268	0.280	0.155	0.102	0.079	0.046	0.196	4.501		
1957	0.225	0.236	0.547	0.321	0.328	0.052	0.026	0.020	0.013	0.007	0.007	0.000	1.782		
1958	0.000	0.000	0.000	0.185	0.000	0.000	0.000	0.160	0.000	0.000	0.000	0.000	0.345		
1959	0.000	0.000	0.000	0.000	0.124	0.282	0.281	0.026	0.000	0.000	0.000	0.000	0.713		
1960	0.000	0.216	0.328	0.144	0.000	0.000	0.000	0.000	0.106	0.081	0.060	0.164	1.099		
1961	0.105	0.059	0.039	0.026	0.013	0.969	0.007	0.007	0.000	0.000	0.000	0.000	1.225		
1962	0.000	0.000	0.473	0.000	0.000	0.026	0.000	0.000	0.000	0.082	0.060	0.197	0.838		
1963	0.225	0.257	0.443	0.236	0.203	0.138	0.242	0.052	0.033	0.020	0.013	0.007	1.869		
1964	0.225	0.257	0.476	0.252	0.255	0.177	0.105	0.066	0.039	0.026	0.060	0.144	2.082		
1965	0.007	0.033	0.020	0.267	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.327		
1966	0.000	0.000	0.039	0.000	0.098	0.557	0.283	0.000	0.000	0.000	0.000	0.000	0.977		
1967	0.000	0.000	0.000	0.000	0.320	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.320		
1968	0.000	0.000	0.486	0.000	0.000	2.375	0.285	0.160	0.105	0.081	0.059	0.085	3.636		
1969	0.111	0.033	0.020	0.013	0.013	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.197		
1970	0.000	0.242	0.000	0.000	0.000	0.000	0.000	0.161	0.107	0.082	0.060	0.196	0.847		
1971	0.170	0.098	0.547	0.289	0.395	2.416	0.285	0.161	0.107	0.082	0.060	0.196	4.806		
1972	0.157	0.257	0.124	0.039	0.105	0.013	0.007	0.007	0.000	0.000	0.060	0.197	0.966		
1973	0.225	0.257	0.480	0.255	0.269	0.183	0.111	0.072	0.039	0.026	0.013	0.007	1.938		
1974	0.007	0.257	0.013	0.321	0.386	1.186	0.284	0.157	0.104	0.080	0.058	0.196	3.048		
1975	0.085	0.013	0.511	0.307	0.360	2.416	0.285	0.161	0.107	0.082	0.060	0.196	4.582		
1976	0.164	0.098	0.421	0.243	0.395	2.416	0.285	0.161	0.107	0.082	0.060	0.196	4.628		
1977	0.224	0.138	0.440	0.321	0.317	0.380	0.223	0.144	0.085	0.052	0.033	0.020	2.377		
1978	0.013	0.007	0.007	0.000	0.000	0.026	0.092	0.007	0.000	0.000	0.000	0.000	0.152		
1979	0.000	0.000	0.275	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.197	0.472		
1980	0.000	0.000	0.000	0.066	0.026	0.000	0.000	0.161	0.107	0.082	0.060	0.197	0.699		
1981	0.225	0.257	0.404	0.226	0.151	2.108	0.105	0.039	0.020	0.013	0.007	0.007	3.562		
1982	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.026	0.000	0.000	0.026		
1983	0.000	0.257	0.421	0.321	0.395	1.972	0.285	0.160	0.106	0.082	0.060	0.092	4.150		
1984	0.059	0.033	0.020	0.321	0.395	2.416	0.285	0.161	0.107	0.082	0.060	0.196	4.136		
1985	0.225	0.257	0.527	0.274	0.314	0.321	0.190	0.118	0.072	0.046	0.026	0.013	2.383		
1986	0.013	0.007	0.275	0.285	0.000	2.416	0.007	0.000	0.000	0.000	0.060	0.197	3.260		
1987	0.225	0.257	0.547	0.303	0.395	2.235	0.285	0.160	0.106	0.081	0.060	0.118	4.773		
1988	0.072	0.046	0.491	0.232	0.366	0.400	0.236	0.151	0.092	0.059	0.033	0.020	2.198		
1989	0.013	0.257	0.547	0.318	0.345	2.331	0.285	0.159	0.105	0.080	0.059	0.066	4.567		
1990	0.224	0.026	0.033	0.251	0.039	0.308	0.007	0.161	0.107	0.082	0.060	0.197	1.494		
1991	0.224	0.170	0.111	0.066	0.039	0.026	0.013	0.007	0.007	0.007	0.000	0.000	0.670		
1992	0.000	0.000	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020		
1993	0.225	0.257	0.460	0.243	0.229	0.157	0.092	0.059	0.033	0.020	0.013	0.007	1.795		
1994	0.224	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.238		
1995	0.000	0.072	0.046	0.262	0.384	0.295	0.000	0.000	0.000	0.000	0.000	0.000	1.059		
1996	0.225	0.039	0.000	0.000	0.000	0.000	0.183	0.000	0.000	0.000	0.000	0.000	0.447		
1997	0.000	0.257	0.547	0.290	0.377	0.537	0.279	0.155	0.102	0.072	0.046	0.026	2.689		
1998	0.013	0.007	0.118	0.283	0.275	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.696		
1999	0.2														

A.36. Ni14 – Category D

Summary table

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni14

Annual Flows (Mill. cu. m or index values):

MAR = 16,693
 S.Dev. = 40,884
 CV = 2,449
 Q75 = 0,000
 Q75/MMF = 0,000
 BFI Index = 0,256
 CV(JJA+JFM) Index = 7,317

Ecological Category = D

Total IFR = 1,933 (11,58 %MAR)
 Maint. Lowflow = 0,271 (1,62 %MAR)
 Drought Lowflow = 0,000 (0,00 %MAR)
 Maint. Highflow = 1,662 (9,96 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows Maint.	High Flows Drought	Total Flows Maint.	Total Flows Maint.
Oct	0,919	3,970	4,320	0,014	0,000	0,113	0,126
Nov	1,047	4,072	3,890	0,016	0,000	0,129	0,144
Dec	1,060	3,461	3,264	0,017	0,000	0,183	0,200
Jan	1,141	2,930	2,569	0,018	0,000	0,092	0,109
Feb	2,697	8,188	3,036	0,032	0,000	0,092	0,124
Mar	4,480	26,618	5,942	0,051	0,000	0,850	0,902
Apr	1,221	4,521	3,703	0,028	0,000	0,104	0,132
May	1,766	5,886	3,333	0,032	0,000	0,000	0,032
Jun	0,642	2,061	3,208	0,022	0,000	0,000	0,022
Jul	0,577	2,391	4,147	0,017	0,000	0,000	0,017
Aug	0,232	0,708	3,051	0,011	0,000	0,007	0,017
Sep	0,911	4,884	5,363	0,014	0,000	0,093	0,107

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni14

Regional Type : Zululand

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.183	0.183	0.072	0.013	0.007	0.000	0.000	0.000	0.000	0.000
Nov	0.210	0.210	0.098	0.046	0.020	0.007	0.000	0.000	0.000	0.000
Dec	0.415	0.356	0.307	0.164	0.039	0.020	0.007	0.000	0.000	0.000
Jan	0.225	0.195	0.171	0.150	0.112	0.039	0.007	0.000	0.000	0.000
Feb	0.251	0.222	0.197	0.174	0.105	0.026	0.007	0.000	0.000	0.000
Mar	1.876	1.601	0.635	0.321	0.157	0.026	0.000	0.000	0.000	0.000
Apr	0.198	0.197	0.194	0.105	0.026	0.000	0.000	0.000	0.000	0.000
May	0.059	0.058	0.057	0.055	0.007	0.000	0.000	0.000	0.000	0.000
Jun	0.039	0.039	0.038	0.037	0.013	0.000	0.000	0.000	0.000	0.000
Jul	0.031	0.030	0.030	0.026	0.007	0.000	0.000	0.000	0.000	0.000
Aug	0.029	0.029	0.028	0.027	0.007	0.000	0.000	0.000	0.000	0.000
Sep	0.156	0.155	0.079	0.020	0.007	0.000	0.000	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.025	0.025	0.025	0.013	0.007	0.000	0.000	0.000	0.000	0.000
Nov	0.028	0.028	0.028	0.027	0.020	0.007	0.000	0.000	0.000	0.000
Dec	0.031	0.031	0.030	0.029	0.027	0.020	0.007	0.000	0.000	0.000
Jan	0.033	0.033	0.032	0.031	0.029	0.025	0.007	0.000	0.000	0.000
Feb	0.059	0.059	0.058	0.056	0.052	0.026	0.007	0.000	0.000	0.000
Mar	0.094	0.093	0.092	0.089	0.082	0.026	0.000	0.000	0.000	0.000
Apr	0.051	0.051	0.050	0.048	0.026	0.000	0.000	0.000	0.000	0.000
May	0.059	0.058	0.057	0.055	0.007	0.000	0.000	0.000	0.000	0.000
Jun	0.039	0.039	0.038	0.037	0.013	0.000	0.000	0.000	0.000	0.000
Jul	0.031	0.030	0.030	0.026	0.007	0.000	0.000	0.000	0.000	0.000
Aug	0.019	0.019	0.019	0.018	0.007	0.000	0.000	0.000	0.000	0.000
Sep	0.025	0.025	0.024	0.020	0.007	0.000	0.000	0.000	0.000	0.000

Natural Duration curves

Oct	1.579	0.236	0.072	0.013	0.007	0.000	0.000	0.000	0.000	0.000
Nov	1.552	0.576	0.098	0.046	0.020	0.007	0.000	0.000	0.000	0.000
Dec	2.692	0.753	0.544	0.164	0.039	0.020	0.007	0.000	0.000	0.000
Jan	3.059	1.133	0.478	0.308	0.190	0.039	0.007	0.000	0.000	0.000
Feb	5.306	2.011	0.969	0.255	0.105	0.026	0.007	0.000	0.000	0.000
Mar	6.229	2.024	0.635	0.321	0.157	0.026	0.000	0.000	0.000	0.000
Apr	1.906	0.727	0.301	0.105	0.026	0.000	0.000	0.000	0.000	0.000
May	2.620	0.701	0.282	0.072	0.007	0.000	0.000	0.000	0.000	0.000
Jun	1.644	0.485	0.170	0.072	0.013	0.000	0.000	0.000	0.000	0.000
Jul	0.976	0.282	0.092	0.026	0.007	0.000	0.000	0.000	0.000	0.000
Aug	0.550	0.203	0.105	0.033	0.007	0.000	0.000	0.000	0.000	0.000
Sep	0.838	0.223	0.079	0.020	0.007	0.000	0.000	0.000	0.000	0.000

Hydrological time series

Total Runoff : Ni14															
Desktop (Version 2) Modified Flow Data for Ecological Category D															
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL		
1920	0.026	0.013	0.013	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.118	0.184	
1921	0.000	0.007	0.342	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.349	
1922	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
1923	0.000	0.000	0.000	0.000	0.199	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.199	
1924	0.000	0.066	0.164	0.039	0.251	1.876	0.198	0.059	0.039	0.031	0.029	0.156	2.907		
1925	0.183	0.210	0.289	0.119	0.118	0.079	0.046	0.033	0.020	0.013	0.007	0.007	1.124		
1926	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.007	
1927	0.000	0.000	0.000	0.007	0.066	0.000	0.000	0.058	0.000	0.000	0.000	0.000	0.131		
1928	0.000	0.000	0.026	0.039	0.000	1.741	0.197	0.059	0.039	0.030	0.028	0.079	2.239		
1929	0.046	0.026	0.020	0.225	0.234	1.601	0.198	0.058	0.039	0.030	0.028	0.105	2.611		
1930	0.066	0.039	0.026	0.013	0.007	0.020	0.020	0.000	0.000	0.000	0.000	0.000	0.191		
1931	0.000	0.210	0.066	0.000	0.251	1.801	0.198	0.059	0.039	0.031	0.029	0.156	2.840		
1932	0.183	0.210	0.315	0.154	0.209	0.170	0.079	0.046	0.026	0.020	0.013	0.007	1.433		
1933	0.007	0.000	0.000	0.000	0.154	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.161		
1934	0.000	0.000	0.190	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.210		
1935	0.000	0.000	0.000	0.092	0.098	0.026	0.000	0.059	0.038	0.029	0.027	0.026	0.395		
1936	0.013	0.066	0.007	0.123	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.216		
1937	0.000	0.079	0.408	0.171	0.046	0.478	0.000	0.000	0.000	0.000	0.000	0.000	1.182		
1938	0.000	0.000	0.131	0.150	0.222	0.072	0.000	0.000	0.000	0.000	0.000	0.000	0.575		
1939	0.000	0.000	0.000	0.026	0.020	0.740	0.197	0.059	0.039	0.031	0.029	0.156	1.296		
1940	0.183	0.210	0.415	0.212	0.201	0.773	0.196	0.057	0.038	0.030	0.028	0.039	2.381		
1941	0.026	0.013	0.307	0.119	0.013	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.477		
1942	0.000	0.000	0.288	0.000	0.000	1.876	0.198	0.059	0.039	0.031	0.029	0.155	2.674		
1943	0.144	0.085	0.098	0.066	0.198	0.020	0.007	0.007	0.039	0.013	0.000	0.000	0.677		
1944	0.000	0.033	0.039	0.189	0.238	1.500	0.197	0.058	0.039	0.030	0.028	0.059	2.409		
1945	0.039	0.020	0.229	0.181	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.483		
1946	0.000	0.000	0.000	0.000	0.164	0.524	0.000	0.000	0.000	0.000	0.000	0.000	0.688		
1947	0.000	0.000	0.000	0.112	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.158		
1948	0.000	0.000	0.000	0.211	0.219	0.020	0.198	0.059	0.039	0.031	0.029	0.155	0.960		
1949	0.182	0.124	0.388	0.129	0.026	0.321	0.197	0.007	0.007	0.000	0.000	0.000	1.381		
1950	0.000	0.000	0.026	0.026	0.000	1.700	0.059	0.000	0.000	0.000	0.027	0.000	1.838		
1951	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
1952	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007		
1953	0.000	0.000	0.000	0.000	0.184	0.039	0.000	0.059	0.035	0.000	0.000	0.000	0.317		
1954	0.000	0.000	0.000	0.106	0.118	0.583	0.192	0.056	0.037	0.029	0.027	0.020	1.169		
1955	0.013	0.007	0.007	0.000	0.174	1.876	0.085	0.000	0.000	0.000	0.000	0.000	2.163		
1956	0.000	0.111	0.415	0.225	0.251	1.754	0.194	0.057	0.038	0.029	0.027	0.155	3.257		
1957	0.183	0.209	0.415	0.225	0.197	0.052	0.026	0.020	0.013	0.007	0.007	0.000	1.353		
1958	0.000	0.000	0.000	0.116	0.000	0.000	0.000	0.058	0.000	0.000	0.000	0.000	0.175		
1959	0.000	0.000	0.000	0.000	0.124	0.282	0.195	0.026	0.000	0.000	0.000	0.000	0.627		
1960	0.000	0.209	0.287	0.108	0.000	0.000	0.000	0.000	0.039	0.030	0.029	0.154	0.856		
1961	0.105	0.059	0.039	0.026	0.013	0.969	0.007	0.007	0.000	0.000	0.000	0.000	1.225		
1962	0.000	0.000	0.353	0.000	0.000	0.026	0.000	0.000	0.000	0.031	0.029	0.156	0.594		
1963	0.183	0.210	0.329	0.156	0.161	0.138	0.192	0.052	0.033	0.020	0.013	0.007	1.494		
1964	0.183	0.210	0.356	0.168	0.174	0.177	0.105	0.055	0.035	0.026	0.029	0.144	1.662		
1965	0.007	0.033	0.020	0.180	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.240		
1966	0.000	0.000	0.039	0.000	0.098	0.557	0.197	0.000	0.000	0.000	0.000	0.000	0.891		
1967	0.000	0.000	0.000	0.000	0.191	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.191		
1968	0.000	0.000	0.364	0.000	0.000	1.842	0.198	0.058	0.039	0.030	0.028	0.085	2.645		
1969	0.111	0.033	0.020	0.013	0.013	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.197		
1970	0.000	0.209	0.000	0.000	0.000	0.000	0.000	0.059	0.039	0.031	0.029	0.155	0.521		
1971	0.170	0.098	0.415	0.199	0.251	1.876	0.198	0.059	0.039	0.031	0.029	0.155	3.519		
1972	0.157	0.210	0.124	0.039	0.105	0.013	0.007	0.007	0.000	0.000	0.029	0.156	0.846		
1973	0.183	0.210	0.359	0.171	0.176	0.183	0.111	0.055	0.035	0.026	0.013	0.007	1.530		
1974	0.007	0.210	0.013	0.225	0.243	1.186	0.197	0.057	0.038	0.030	0.028	0.155	2.389		
1975	0.085	0.013	0.385	0.214	0.222	1.876	0.198	0.059	0.039	0.031	0.029	0.155	3.304		
1976	0.164	0.098	0.310	0.161	0.251	1.876	0.198	0.059	0.039	0.031	0.029	0.155	3.372		
1977	0.183	0.138	0.327	0.225	0.189	0.380	0.192	0.056	0.037	0.029	0.027	0.020	1.801		
1978	0.013	0.007	0.007	0.000	0.000	0.026	0.092	0.007	0.000	0.000	0.000	0.000	0.152		
1979	0.000	0.000	0.275	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.156	0.431		
1980	0.000	0.000	0.000	0.066	0.026	0.000	0.000	0.059	0.039	0.031	0.029	0.156	0.405		
1981	0.183	0.210	0.297	0.148	0.147	1.622	0.105	0.039	0.020	0.013	0.007	0.007	2.798		
1982	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.026	0.000	0.000	0.026		
1983	0.000	0.210	0.310	0.225	0.251	1.592	0.198	0.058	0.039	0.031	0.029	0.092	3.035		
1984	0.059	0.033	0.020	0.225	0.251	1.876	0.198	0.059	0.039	0.031	0.029	0.155	2.975		
1985	0.183	0.210	0.398	0.186	0.186	0.321	0.190	0.056	0.037	0.029	0.026	0.013	1.835		
1986	0.013	0.007	0.275	0.195	0.000	1.876	0.007	0.000	0.000	0.000	0.028	0.156	2.557		
1987	0.183	0.210	0.415	0.210	0.251	1.727	0.198	0.058	0.039	0.030	0.029	0.118	3.468		
1988	0.072	0.046	0.368	0.153	0.227	0.400	0.192	0.056	0.037	0.029	0.027	0.020	1.627		
1989	0.013	0.210	0.415	0.223	0.211	1.806	0.198	0.058	0.039	0.030	0.028	0.066	3.296		
1990	0.183	0.026	0.033	0.167	0.039	0.308	0.007	0.059	0.039	0.031	0.029	0.155	1.076		
1991	0.183	0.170	0.111	0.066	0.039	0.026	0.013	0.007	0.007	0.007	0.000	0.000	0.629		
1992	0.000	0.000	0.020	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020		
1993	0.183	0.210	0.343	0.161	0.168	0.157	0.092	0.054	0.033	0.020	0.013	0.007	1.441		
1994	0.183	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.000	0.000	0.000	0.197		
1995	0.000	0.072	0.046	0.176	0.242	0.295	0.000	0.000	0.000	0.000	0.000	0.000	0.831		
1996	0.183	0.039	0.000	0.000	0.000	0.000	0.183	0.000	0.000	0.000	0.000	0.000	0.405		
1997	0.000	0.210	0.415	0.199	0.237	0.537	0.194	0.057	0.038	0.029	0.027	0.026	1.968		
1998	0.013	0.007	0.118	0.193	0.176	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.508		
1999	0.1														

A.37. Ni15 – Category B**Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni15

Annual Flows (Mill. cu. m or index values):

MAR = 12,325

S.Dev. = 20,157

CV = 1,635

Q75 = 0,000

Q75/MMF = 0,000

BFI Index = 0,249

CV(JJA+JFM) Index = 7,601

Ecological Category = B

Total IFR = 3,315 (26,90 %MAR)

Maint. Lowflow = 1,359 (11,02 %MAR)

Drought Lowflow = 0,000 (0,00 %MAR)

Maint. Highflow = 1,956 (15,87 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows	High Flows	Total Flows	
				Maint.	Drought	Maint.	Maint.
Oct	0,869	3,516	4,047	0,082	0,000	0,172	0,255
Nov	0,865	2,693	3,115	0,085	0,000	0,170	0,255
Dec	0,756	2,255	2,983	0,082	0,000	0,283	0,365
Jan	2,188	6,009	2,747	0,178	0,000	0,142	0,319
Feb	2,644	7,961	3,011	0,228	0,000	0,858	1,085
Mar	1,857	7,647	4,118	0,206	0,000	0,142	0,348
Apr	0,743	2,448	3,295	0,125	0,000	0,098	0,223
May	0,881	2,925	3,321	0,126	0,000	0,000	0,126
Jun	0,306	0,804	2,626	0,074	0,000	0,000	0,074
Jul	0,527	3,457	6,564	0,072	0,000	0,000	0,072
Aug	0,166	0,620	3,738	0,043	0,000	0,010	0,054
Sep	0,525	2,680	5,102	0,058	0,000	0,082	0,140

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni15

Regional Type : Zululand

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.281	0.258	0.055	0.009	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.284	0.283	0.184	0.074	0.018	0.000	0.000	0.000	0.000	0.000
Dec	0.690	0.598	0.350	0.240	0.111	0.046	0.018	0.000	0.000	0.000
Jan	0.509	0.463	0.423	0.350	0.148	0.065	0.018	0.000	0.000	0.000
Feb	2.067	1.790	0.977	0.526	0.240	0.055	0.028	0.009	0.000	0.000
Mar	0.539	0.493	0.452	0.295	0.129	0.046	0.009	0.000	0.000	0.000
Apr	0.251	0.250	0.148	0.037	0.009	0.000	0.000	0.000	0.000	0.000
May	0.146	0.145	0.143	0.037	0.009	0.000	0.000	0.000	0.000	0.000
Jun	0.086	0.085	0.037	0.009	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.082	0.082	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.061	0.061	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.156	0.155	0.046	0.009	0.000	0.000	0.000	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.095	0.095	0.055	0.009	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.099	0.099	0.098	0.074	0.018	0.000	0.000	0.000	0.000	0.000
Dec	0.096	0.096	0.095	0.092	0.085	0.046	0.018	0.000	0.000	0.000
Jan	0.212	0.212	0.209	0.203	0.148	0.065	0.018	0.000	0.000	0.000
Feb	0.269	0.269	0.265	0.257	0.239	0.055	0.028	0.009	0.000	0.000
Mar	0.242	0.242	0.238	0.230	0.129	0.046	0.009	0.000	0.000	0.000
Apr	0.145	0.145	0.142	0.037	0.009	0.000	0.000	0.000	0.000	0.000
May	0.146	0.145	0.143	0.037	0.009	0.000	0.000	0.000	0.000	0.000
Jun	0.086	0.085	0.037	0.009	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.082	0.082	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.050	0.050	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.067	0.067	0.046	0.009	0.000	0.000	0.000	0.000	0.000	0.000

Natural Duration curves

Oct	1.438	0.258	0.055	0.009	0.000	0.000	0.000	0.000	0.000	0.000
Nov	1.899	0.452	0.184	0.074	0.018	0.000	0.000	0.000	0.000	0.000
Dec	2.397	0.728	0.350	0.240	0.111	0.046	0.018	0.000	0.000	0.000
Jan	4.038	2.167	0.774	0.350	0.148	0.065	0.018	0.000	0.000	0.000
Feb	6.030	2.628	0.977	0.526	0.240	0.055	0.028	0.009	0.000	0.000
Mar	4.564	1.779	0.894	0.295	0.129	0.046	0.009	0.000	0.000	0.000
Apr	2.075	0.562	0.148	0.037	0.009	0.000	0.000	0.000	0.000	0.000
May	1.881	0.433	0.184	0.037	0.009	0.000	0.000	0.000	0.000	0.000
Jun	1.189	0.212	0.037	0.009	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.756	0.138	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.452	0.129	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.452	0.231	0.046	0.009	0.000	0.000	0.000	0.000	0.000	0.000

Hydrological time series

Total Runoff : Ni15															
Desktop (Version 2) Modified Flow Data for Ecological Category B															
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL		
1920	0.281	0.055	0.037	0.037	0.009	0.028	0.009	0.000	0.000	0.000	0.000	0.111	0.567		
1921	0.000	0.184	0.387	0.000	0.148	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.719		
1922	0.009	0.000	0.009	0.323	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.341		
1923	0.000	0.000	0.000	0.000	0.572	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.581		
1924	0.009	0.283	0.203	0.464	2.067	0.539	0.251	0.146	0.086	0.082	0.061	0.156	4.347		
1925	0.240	0.138	0.092	0.055	0.028	0.018	0.009	0.009	0.000	0.000	0.000	0.000	0.589		
1926	0.000	0.000	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.018		
1927	0.009	0.000	0.009	0.018	0.009	0.000	0.000	0.142	0.000	0.000	0.000	0.000	0.187		
1928	0.000	0.000	0.138	0.046	0.000	0.429	0.055	0.143	0.018	0.009	0.009	0.009	0.857		
1929	0.000	0.000	0.000	0.509	2.018	0.534	0.251	0.146	0.086	0.082	0.061	0.154	3.841		
1930	0.111	0.065	0.037	0.028	0.018	0.074	0.065	0.000	0.000	0.000	0.000	0.000	0.398		
1931	0.000	0.284	0.240	0.000	2.067	0.463	0.251	0.146	0.086	0.082	0.061	0.156	3.835		
1932	0.267	0.157	0.690	0.427	0.618	0.445	0.009	0.009	0.009	0.000	0.000	0.000	2.632		
1933	0.000	0.000	0.000	0.055	0.120	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.295		
1934	0.000	0.000	0.277	0.009	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.295		
1935	0.000	0.000	0.000	0.464	0.526	0.431	0.000	0.144	0.009	0.000	0.000	0.000	1.575		
1936	0.000	0.284	0.323	0.488	0.959	0.157	0.055	0.028	0.018	0.009	0.009	0.000	2.330		
1937	0.000	0.240	0.690	0.423	0.258	0.429	0.092	0.055	0.037	0.018	0.009	0.009	2.261		
1938	0.009	0.000	0.074	0.323	2.067	0.498	0.251	0.146	0.086	0.082	0.061	0.092	3.687		
1939	0.055	0.283	0.018	0.495	0.562	0.471	0.055	0.146	0.086	0.082	0.061	0.156	2.471		
1940	0.258	0.284	0.690	0.404	0.415	0.452	0.157	0.092	0.055	0.037	0.018	0.009	2.870		
1941	0.009	0.009	0.350	0.402	0.231	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1.010		
1942	0.000	0.092	0.184	0.009	0.028	0.539	0.251	0.146	0.086	0.082	0.061	0.156	1.634		
1943	0.281	0.283	0.304	0.212	1.171	0.092	0.037	0.018	0.086	0.018	0.009	0.018	2.529		
1944	0.000	0.129	0.203	0.440	1.943	0.415	0.055	0.037	0.018	0.009	0.009	0.009	3.267		
1945	0.000	0.000	0.101	0.470	0.396	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.967		
1946	0.000	0.000	0.000	0.046	1.790	0.539	0.000	0.000	0.000	0.000	0.000	0.000	2.374		
1947	0.000	0.000	0.009	0.175	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.230		
1948	0.000	0.009	0.000	0.509	1.981	0.101	0.251	0.146	0.086	0.082	0.061	0.155	3.381		
1949	0.166	0.101	0.627	0.148	0.018	0.138	0.248	0.009	0.000	0.000	0.000	0.000	1.455		
1950	0.000	0.000	0.055	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.060	0.000	0.115		
1951	0.000	0.000	0.000	0.018	0.516	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.543		
1952	0.000	0.000	0.018	0.000	0.000	0.000	0.000	0.144	0.000	0.000	0.000	0.000	0.162		
1953	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.146	0.028	0.000	0.000	0.000	0.174		
1954	0.267	0.000	0.000	0.463	1.736	0.065	0.000	0.000	0.000	0.000	0.000	0.000	2.531		
1955	0.000	0.000	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.009		
1956	0.000	0.000	0.690	0.492	0.037	0.018	0.000	0.000	0.000	0.000	0.000	0.156	1.392		
1957	0.281	0.281	0.313	0.509	2.067	0.519	0.251	0.146	0.086	0.082	0.061	0.120	4.716		
1958	0.281	0.055	0.690	0.437	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1.481		
1959	0.000	0.000	0.046	0.000	0.987	0.138	0.250	0.055	0.000	0.000	0.000	0.000	1.476		
1960	0.000	0.284	0.598	0.231	0.018	0.000	0.000	0.000	0.009	0.000	0.000	0.000	1.140		
1961	0.000	0.000	0.000	0.009	0.000	0.513	0.009	0.000	0.000	0.000	0.000	0.000	0.531		
1962	0.065	0.284	0.009	0.000	0.000	0.473	0.009	0.000	0.000	0.082	0.061	0.156	1.139		
1963	0.281	0.284	0.605	0.509	0.240	0.157	0.120	0.055	0.037	0.018	0.009	0.009	2.323		
1964	0.281	0.283	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.061	0.055	0.680		
1965	0.000	0.000	0.000	0.470	1.549	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.019		
1966	0.000	0.028	0.000	0.065	2.067	0.415	0.000	0.000	0.000	0.000	0.000	0.000	2.575		
1967	0.000	0.000	0.000	0.000	0.424	0.194	0.000	0.000	0.000	0.000	0.000	0.000	0.618		
1968	0.000	0.009	0.231	0.000	0.028	0.539	0.251	0.144	0.085	0.081	0.060	0.037	1.465		
1969	0.028	0.018	0.009	0.009	0.000	0.000	0.000	0.146	0.000	0.000	0.000	0.018	0.228		
1970	0.018	0.000	0.000	0.000	0.111	0.129	0.009	0.144	0.000	0.000	0.000	0.000	0.411		
1971	0.000	0.000	0.037	0.240	2.067	0.539	0.251	0.146	0.086	0.082	0.061	0.155	3.664		
1972	0.157	0.283	0.111	0.037	0.018	0.018	0.009	0.009	0.000	0.000	0.061	0.156	0.859		
1973	0.281	0.284	0.631	0.426	0.360	0.249	0.148	0.092	0.055	0.037	0.018	0.009	2.590		
1974	0.009	0.283	0.240	0.393	1.943	0.537	0.000	0.000	0.000	0.000	0.000	0.156	3.561		
1975	0.074	0.000	0.157	0.509	0.977	0.539	0.251	0.146	0.086	0.082	0.061	0.092	2.972		
1976	0.055	0.037	0.055	0.129	2.067	0.491	0.249	0.144	0.085	0.081	0.055	0.037	3.485		
1977	0.018	0.009	0.129	0.423	0.046	0.046	0.009	0.009	0.000	0.000	0.000	0.000	0.689		
1978	0.000	0.000	0.000	0.000	0.000	0.000	0.251	0.144	0.000	0.000	0.000	0.000	0.394		
1979	0.000	0.000	0.659	0.393	0.175	0.000	0.000	0.000	0.000	0.000	0.000	0.156	1.383		
1980	0.000	0.000	0.378	0.092	0.000	0.000	0.000	0.146	0.086	0.082	0.061	0.156	1.001		
1981	0.277	0.284	0.111	0.065	0.037	0.472	0.037	0.009	0.009	0.000	0.000	0.000	1.301		
1982	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
1983	0.000	0.281	0.443	0.509	2.067	0.539	0.251	0.146	0.086	0.082	0.061	0.155	4.620		
1984	0.184	0.111	0.074	0.509	2.067	0.539	0.251	0.146	0.086	0.082	0.061	0.155	4.264		
1985	0.281	0.284	0.341	0.129	0.157	0.065	0.028	0.018	0.009	0.009	0.000	0.000	1.321		
1986	0.000	0.000	0.489	0.451	0.000	0.512	0.009	0.000	0.000	0.000	0.061	0.156	1.677		
1987	0.281	0.284	0.690	0.456	1.919	0.493	0.250	0.145	0.085	0.082	0.060	0.046	4.790		
1988	0.028	0.018	0.489	0.046	0.535	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1.125		
1989	0.000	0.284	0.690	0.509	1.852	0.518	0.251	0.146	0.085	0.082	0.060	0.074	4.551		
1990	0.065	0.028	0.018	0.286	0.028	0.469	0.249	0.146	0.086	0.082	0.061	0.156	1.674		
1991	0.281	0.267	0.452	0.111	0.055	0.065	0.028	0.018	0.009	0.009	0.000	0.000	1.295		
1992	0.000	0.018	0.651	0.000	0.821	0.460	0.250	0.000	0.000	0.000	0.000	0.000	2.199		
1993	0.281	0.284	0.690	0.450	0.728	0.426	0.248	0.143	0.085	0.074	0.046	0.028	3.482		
1994	0.281	0.074	0.009	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.373		
1995	0.000	0.009	0.046	0.350	1.660	0.240	0.000	0.000	0.000	0.000	0.000	0.000	2.305		
1996	0.281	0.074	0.341	0.018	0.231	0.065	0.250	0.000	0.000	0.000	0.000	0.156	1.416		
1997	0.000	0.283	0.663	0.419	1.217	0.295	0.166	0.111	0.065	0.037	0.028	0.018	3.302		
1998	0.009	0.249	0.396	0.453	0.443	0.000	0.000	0.000	0.000	0.000	0.000	0.046	1.596		
1999	0.281	0.083	0.240	0.332	0.645	0.539	0.037	0.000	0.000	0.000	0.000	0.			

A.38. Ni15 – Category C

Summary table

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :
Total Runoff : Ni15

Annual Flows (Mill. cu. m or index values):

MAR = 12,325
S.Dev. = 20,157
CV = 1,635
Q75 = 0,000
Q75/MMF = 0,000
BFI Index = 0,249
CV(JJA+JFM) Index = 7,601

Ecological Category = C

Total IFR = 2,218 (18,00 %MAR)
Maint. Lowflow = 0,725 (5,88 %MAR)
Drought Lowflow = 0,000 (0,00 %MAR)
Maint. Highflow = 1,493 (12,12 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows	High Flows	Total Flows	
				Maint.	Drought	Maint.	Maint.
Oct	0,869	3,516	4,047	0,044	0,000	0,132	0,176
Nov	0,865	2,693	3,115	0,046	0,000	0,130	0,175
Dec	0,756	2,255	2,983	0,044	0,000	0,216	0,260
Jan	2,188	6,009	2,747	0,094	0,000	0,108	0,202
Feb	2,644	7,961	3,011	0,120	0,000	0,655	0,775
Mar	1,857	7,647	4,118	0,109	0,000	0,108	0,217
Apr	0,743	2,448	3,295	0,067	0,000	0,074	0,141
May	0,881	2,925	3,321	0,067	0,000	0,000	0,067
Jun	0,306	0,804	2,626	0,040	0,000	0,000	0,040
Jul	0,527	3,457	6,564	0,039	0,000	0,000	0,039
Aug	0,166	0,620	3,738	0,024	0,000	0,008	0,032
Sep	0,525	2,680	5,102	0,031	0,000	0,063	0,094

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni15

Regional Type : Zululand

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.211	0.210	0.055	0.009	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.212	0.211	0.184	0.074	0.018	0.000	0.000	0.000	0.000	0.000
Dec	0.512	0.442	0.350	0.240	0.111	0.046	0.018	0.000	0.000	0.000
Jan	0.354	0.319	0.289	0.262	0.148	0.065	0.018	0.000	0.000	0.000
Feb	1.533	1.322	0.977	0.526	0.240	0.055	0.028	0.009	0.000	0.000
Mar	0.372	0.336	0.306	0.277	0.129	0.046	0.009	0.000	0.000	0.000
Apr	0.174	0.174	0.148	0.037	0.009	0.000	0.000	0.000	0.000	0.000
May	0.089	0.088	0.086	0.037	0.009	0.000	0.000	0.000	0.000	0.000
Jun	0.053	0.052	0.037	0.009	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.051	0.050	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.040	0.040	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.114	0.114	0.046	0.009	0.000	0.000	0.000	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.058	0.058	0.055	0.009	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.061	0.061	0.060	0.058	0.018	0.000	0.000	0.000	0.000	0.000
Dec	0.059	0.059	0.058	0.056	0.052	0.045	0.018	0.000	0.000	0.000
Jan	0.127	0.127	0.126	0.122	0.114	0.065	0.018	0.000	0.000	0.000
Feb	0.161	0.161	0.159	0.154	0.143	0.055	0.028	0.009	0.000	0.000
Mar	0.145	0.145	0.143	0.138	0.128	0.046	0.009	0.000	0.000	0.000
Apr	0.088	0.088	0.086	0.037	0.009	0.000	0.000	0.000	0.000	0.000
May	0.089	0.088	0.086	0.037	0.009	0.000	0.000	0.000	0.000	0.000
Jun	0.053	0.052	0.037	0.009	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.051	0.050	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.031	0.031	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.042	0.041	0.041	0.009	0.000	0.000	0.000	0.000	0.000	0.000

Natural Duration curves

Oct	1.438	0.258	0.055	0.009	0.000	0.000	0.000	0.000	0.000	0.000
Nov	1.899	0.452	0.184	0.074	0.018	0.000	0.000	0.000	0.000	0.000
Dec	2.397	0.728	0.350	0.240	0.111	0.046	0.018	0.000	0.000	0.000
Jan	4.038	2.167	0.774	0.350	0.148	0.065	0.018	0.000	0.000	0.000
Feb	6.030	2.628	0.977	0.526	0.240	0.055	0.028	0.009	0.000	0.000
Mar	4.564	1.779	0.894	0.295	0.129	0.046	0.009	0.000	0.000	0.000
Apr	2.075	0.562	0.148	0.037	0.009	0.000	0.000	0.000	0.000	0.000
May	1.881	0.433	0.184	0.037	0.009	0.000	0.000	0.000	0.000	0.000
Jun	1.189	0.212	0.037	0.009	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.756	0.138	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.452	0.129	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.452	0.231	0.046	0.009	0.000	0.000	0.000	0.000	0.000	0.000

Hydrological time series

Total Runoff : Ni15															
Desktop (Version 2) Modified Flow Data for Ecological Category C															
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL		
1920	0.211	0.055	0.037	0.037	0.009	0.028	0.009	0.000	0.000	0.000	0.000	0.111	0.497		
1921	0.000	0.184	0.387	0.000	0.148	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.719		
1922	0.009	0.000	0.009	0.255	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.273		
1923	0.000	0.000	0.000	0.000	0.572	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.581		
1924	0.009	0.211	0.203	0.320	1.533	0.372	0.174	0.089	0.053	0.051	0.040	0.114	3.169		
1925	0.210	0.138	0.092	0.055	0.028	0.018	0.009	0.009	0.000	0.000	0.000	0.000	0.559		
1926	0.000	0.000	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.018		
1927	0.009	0.000	0.009	0.018	0.009	0.000	0.000	0.086	0.000	0.000	0.000	0.000	0.131		
1928	0.000	0.000	0.138	0.046	0.000	0.289	0.055	0.087	0.018	0.009	0.009	0.009	0.660		
1929	0.000	0.000	0.000	0.354	1.496	0.368	0.174	0.088	0.053	0.051	0.040	0.113	2.737		
1930	0.111	0.065	0.037	0.028	0.018	0.074	0.065	0.000	0.000	0.000	0.000	0.000	0.398		
1931	0.000	0.212	0.240	0.000	1.533	0.314	0.174	0.089	0.053	0.051	0.040	0.114	2.820		
1932	0.210	0.157	0.512	0.292	0.618	0.301	0.009	0.009	0.009	0.000	0.000	0.000	2.117		
1933	0.000	0.000	0.055	0.120	0.120	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.295		
1934	0.000	0.000	0.277	0.009	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.295		
1935	0.000	0.000	0.000	0.320	0.526	0.291	0.000	0.087	0.009	0.000	0.000	0.000	1.233		
1936	0.000	0.212	0.323	0.338	0.959	0.157	0.055	0.028	0.018	0.009	0.009	0.000	2.108		
1937	0.000	0.209	0.512	0.289	0.258	0.289	0.092	0.055	0.037	0.018	0.009	0.009	1.777		
1938	0.009	0.000	0.074	0.255	1.533	0.340	0.174	0.088	0.052	0.050	0.040	0.092	2.709		
1939	0.055	0.211	0.018	0.343	0.562	0.321	0.055	0.089	0.053	0.051	0.040	0.114	1.911		
1940	0.210	0.212	0.512	0.275	0.415	0.306	0.157	0.085	0.052	0.037	0.018	0.009	2.286		
1941	0.009	0.009	0.350	0.273	0.231	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.881		
1942	0.000	0.092	0.184	0.009	0.028	0.372	0.174	0.089	0.053	0.051	0.040	0.114	1.205		
1943	0.211	0.211	0.304	0.212	1.171	0.092	0.037	0.018	0.053	0.018	0.009	0.018	2.353		
1944	0.000	0.129	0.203	0.301	1.439	0.282	0.055	0.037	0.018	0.009	0.009	0.009	2.491		
1945	0.000	0.000	0.101	0.324	0.396	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.821		
1946	0.000	0.000	0.000	0.046	1.322	0.372	0.000	0.000	0.000	0.000	0.000	0.000	1.739		
1947	0.000	0.000	0.009	0.175	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.230		
1948	0.000	0.009	0.000	0.354	1.468	0.101	0.174	0.089	0.053	0.051	0.040	0.114	2.452		
1949	0.166	0.101	0.464	0.148	0.018	0.138	0.172	0.009	0.000	0.000	0.000	0.000	1.216		
1950	0.000	0.000	0.055	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.040	0.000	0.095		
1951	0.000	0.000	0.000	0.018	0.516	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.543		
1952	0.000	0.000	0.018	0.000	0.000	0.000	0.000	0.087	0.000	0.000	0.000	0.000	0.105		
1953	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.088	0.028	0.000	0.000	0.000	0.116		
1954	0.210	0.000	0.000	0.319	1.281	0.065	0.000	0.000	0.000	0.000	0.000	0.000	1.875		
1955	0.000	0.000	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.009		
1956	0.000	0.000	0.512	0.341	0.037	0.018	0.000	0.000	0.000	0.000	0.000	0.114	1.022		
1957	0.211	0.210	0.313	0.354	1.533	0.357	0.174	0.088	0.053	0.051	0.040	0.113	3.496		
1958	0.211	0.055	0.512	0.299	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1.095		
1959	0.000	0.000	0.046	0.000	0.987	0.138	0.174	0.055	0.000	0.000	0.000	0.000	1.400		
1960	0.000	0.212	0.442	0.231	0.018	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.911		
1961	0.000	0.000	0.000	0.009	0.000	0.352	0.009	0.000	0.000	0.000	0.000	0.000	0.370		
1962	0.065	0.212	0.009	0.000	0.000	0.322	0.009	0.000	0.000	0.051	0.040	0.114	0.822		
1963	0.211	0.212	0.447	0.354	0.240	0.157	0.120	0.055	0.037	0.018	0.009	0.009	1.868		
1964	0.211	0.211	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.040	0.055	0.517		
1965	0.000	0.000	0.000	0.324	1.242	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.566		
1966	0.000	0.028	0.000	0.065	1.533	0.282	0.000	0.000	0.000	0.000	0.000	0.000	1.908		
1967	0.000	0.000	0.000	0.000	0.424	0.194	0.000	0.000	0.000	0.000	0.000	0.000	0.618		
1968	0.000	0.009	0.231	0.000	0.028	0.372	0.174	0.087	0.052	0.050	0.040	0.037	1.080		
1969	0.028	0.018	0.009	0.009	0.000	0.000	0.000	0.088	0.000	0.000	0.000	0.018	0.170		
1970	0.018	0.000	0.000	0.000	0.111	0.129	0.009	0.087	0.000	0.000	0.000	0.000	0.354		
1971	0.000	0.000	0.037	0.235	1.533	0.372	0.174	0.089	0.053	0.051	0.040	0.114	2.697		
1972	0.157	0.211	0.111	0.037	0.018	0.018	0.009	0.009	0.000	0.000	0.040	0.114	0.725		
1973	0.211	0.212	0.467	0.291	0.360	0.249	0.148	0.085	0.052	0.037	0.018	0.009	2.138		
1974	0.009	0.211	0.240	0.266	1.439	0.370	0.000	0.000	0.000	0.000	0.000	0.114	2.650		
1975	0.074	0.000	0.157	0.354	0.977	0.372	0.174	0.088	0.052	0.050	0.040	0.092	2.431		
1976	0.055	0.037	0.055	0.129	1.533	0.335	0.173	0.087	0.052	0.050	0.040	0.037	2.584		
1977	0.018	0.009	0.129	0.289	0.046	0.046	0.009	0.009	0.000	0.000	0.000	0.000	0.555		
1978	0.000	0.000	0.000	0.000	0.000	0.000	0.174	0.087	0.000	0.000	0.000	0.000	0.261		
1979	0.000	0.000	0.488	0.266	0.175	0.000	0.000	0.000	0.000	0.000	0.000	0.114	1.044		
1980	0.000	0.000	0.378	0.092	0.000	0.000	0.000	0.089	0.053	0.051	0.040	0.114	0.816		
1981	0.210	0.212	0.111	0.065	0.037	0.321	0.037	0.009	0.009	0.000	0.000	0.000	1.011		
1982	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
1983	0.000	0.210	0.412	0.354	1.533	0.372	0.174	0.089	0.053	0.051	0.040	0.114	3.401		
1984	0.184	0.111	0.074	0.354	1.533	0.372	0.174	0.089	0.053	0.051	0.040	0.114	3.148		
1985	0.211	0.212	0.341	0.129	0.157	0.065	0.028	0.018	0.009	0.009	0.000	0.000	1.178		
1986	0.000	0.000	0.417	0.310	0.000	0.351	0.009	0.000	0.000	0.000	0.040	0.114	1.241		
1987	0.211	0.212	0.512	0.314	1.420	0.336	0.174	0.088	0.052	0.050	0.040	0.046	3.454		
1988	0.028	0.018	0.417	0.046	0.535	0.009	0.000	0.000	0.000	0.000	0.000	0.000	1.053		
1989	0.000	0.212	0.512	0.354	1.370	0.356	0.174	0.088	0.052	0.050	0.040	0.074	3.282		
1990	0.065	0.028	0.018	0.246	0.028	0.318	0.173	0.089	0.053	0.051	0.040	0.114	1.223		
1991	0.211	0.209	0.413	0.111	0.055	0.065	0.028	0.018	0.009	0.009	0.000	0.000	1.129		
1992	0.000	0.018	0.482	0.000	0.821	0.312	0.173	0.000	0.000	0.000	0.000	0.000	1.807		
1993	0.211	0.212	0.512	0.309	0.728	0.287	0.172	0.086	0.052	0.050	0.040	0.028	2.686		
1994	0.211	0.074	0.009	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.303		
1995	0.000	0.009	0.046	0.262	1.250	0.240	0.000	0.000	0.000	0.000	0.000	0.000	1.807		
1996	0.211	0.074	0.341	0.018	0.231	0.065	0.174	0.000	0.000	0.000	0.000	0.114	1.228		
1997	0.000	0.211	0.491	0.285	1.217	0.277	0.166	0.085	0.052	0.037	0.028	0.018	2.868		
1998	0.009	0.209	0.396	0.311	0.443	0.000	0.000	0.000	0.000	0.000	0.000	0.046	1.414		
1999	0.211	0.083	0.240	0.257	0.645	0.372	0.037	0.000	0.000	0.000	0.000	0.			

A.39. Ni15 – Category D**Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni15

Annual Flows (Mill. cu. m or index values):

MAR = 12,325

S.Dev. = 20,157

CV = 1,635

Q75 = 0,000

Q75/MMF = 0,000

BFI Index = 0,249

CV(JJA+JFM) Index = 7,601

Ecological Category = D

Total IFR = 1,417 (11,50 %MAR)

Maint. Lowflow = 0,183 (1,49 %MAR)

Drought Lowflow = 0,000 (0,00 %MAR)

Maint. Highflow = 1,234 (10,01 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows Maint.	High Flows Drought	Total Flows Maint.	Total Flows Maint.
Oct	0,869	3,516	4,047	0,011	0,000	0,109	0,120
Nov	0,865	2,693	3,115	0,012	0,000	0,107	0,119
Dec	0,756	2,255	2,983	0,011	0,000	0,179	0,190
Jan	2,188	6,009	2,747	0,024	0,000	0,089	0,113
Feb	2,644	7,961	3,011	0,030	0,000	0,541	0,571
Mar	1,857	7,647	4,118	0,027	0,000	0,089	0,117
Apr	0,743	2,448	3,295	0,017	0,000	0,062	0,078
May	0,881	2,925	3,321	0,017	0,000	0,000	0,017
Jun	0,306	0,804	2,626	0,010	0,000	0,000	0,010
Jul	0,527	3,457	6,564	0,010	0,000	0,000	0,010
Aug	0,166	0,620	3,738	0,006	0,000	0,006	0,013
Sep	0,525	2,680	5,102	0,008	0,000	0,052	0,060

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni15

Regional Type : Zululand

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.174	0.173	0.055	0.009	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.173	0.172	0.170	0.074	0.018	0.000	0.000	0.000	0.000	0.000
Dec	0.395	0.337	0.290	0.240	0.111	0.046	0.018	0.000	0.000	0.000
Jan	0.231	0.202	0.178	0.157	0.120	0.065	0.018	0.000	0.000	0.000
Feb	1.189	1.014	0.870	0.526	0.240	0.055	0.028	0.009	0.000	0.000
Mar	0.237	0.208	0.184	0.162	0.123	0.046	0.009	0.000	0.000	0.000
Apr	0.117	0.117	0.115	0.037	0.009	0.000	0.000	0.000	0.000	0.000
May	0.031	0.031	0.030	0.029	0.009	0.000	0.000	0.000	0.000	0.000
Jun	0.019	0.018	0.018	0.009	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.018	0.018	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.020	0.020	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.088	0.087	0.046	0.009	0.000	0.000	0.000	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.020	0.020	0.020	0.009	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.021	0.021	0.021	0.020	0.018	0.000	0.000	0.000	0.000	0.000
Dec	0.021	0.021	0.020	0.020	0.018	0.016	0.012	0.000	0.000	0.000
Jan	0.044	0.044	0.043	0.042	0.039	0.034	0.018	0.000	0.000	0.000
Feb	0.055	0.055	0.054	0.053	0.049	0.042	0.028	0.009	0.000	0.000
Mar	0.050	0.050	0.049	0.047	0.044	0.038	0.009	0.000	0.000	0.000
Apr	0.031	0.030	0.030	0.029	0.009	0.000	0.000	0.000	0.000	0.000
May	0.031	0.031	0.030	0.029	0.009	0.000	0.000	0.000	0.000	0.000
Jun	0.019	0.018	0.018	0.009	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.018	0.018	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.011	0.011	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.015	0.015	0.014	0.009	0.000	0.000	0.000	0.000	0.000	0.000

Natural Duration curves

Oct	1.438	0.258	0.055	0.009	0.000	0.000	0.000	0.000	0.000	0.000
Nov	1.899	0.452	0.184	0.074	0.018	0.000	0.000	0.000	0.000	0.000
Dec	2.397	0.728	0.350	0.240	0.111	0.046	0.018	0.000	0.000	0.000
Jan	4.038	2.167	0.774	0.350	0.148	0.065	0.018	0.000	0.000	0.000
Feb	6.030	2.628	0.977	0.526	0.240	0.055	0.028	0.009	0.000	0.000
Mar	4.564	1.779	0.894	0.295	0.129	0.046	0.009	0.000	0.000	0.000
Apr	2.075	0.562	0.148	0.037	0.009	0.000	0.000	0.000	0.000	0.000
May	1.881	0.433	0.184	0.037	0.009	0.000	0.000	0.000	0.000	0.000
Jun	1.189	0.212	0.037	0.009	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.756	0.138	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.452	0.129	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.452	0.231	0.046	0.009	0.000	0.000	0.000	0.000	0.000	0.000

Hydrological time series

Total Runoff : Ni15															
Desktop (Version 2) Modified Flow Data for Ecological Category D															
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL		
1920	0.174	0.055	0.037	0.009	0.028	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.087	0.435	
1921	0.000	0.170	0.305	0.000	0.148	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.623	
1922	0.009	0.000	0.009	0.152	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.170	
1923	0.000	0.000	0.000	0.000	0.572	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.581	
1924	0.009	0.172	0.203	0.203	1.189	0.237	0.117	0.031	0.019	0.018	0.020	0.000	0.088	2.305	
1925	0.173	0.138	0.092	0.055	0.028	0.018	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.522	
1926	0.000	0.000	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.018	
1927	0.009	0.000	0.009	0.018	0.009	0.000	0.000	0.030	0.000	0.000	0.000	0.000	0.000	0.075	
1928	0.000	0.000	0.138	0.046	0.000	0.171	0.055	0.030	0.018	0.009	0.009	0.009	0.009	0.485	
1929	0.000	0.000	0.000	0.231	1.158	0.234	0.117	0.031	0.019	0.018	0.020	0.000	0.087	1.915	
1930	0.111	0.065	0.037	0.028	0.018	0.074	0.065	0.000	0.000	0.000	0.000	0.000	0.000	0.398	
1931	0.000	0.173	0.240	0.000	1.189	0.190	0.117	0.031	0.019	0.018	0.020	0.000	0.088	2.084	
1932	0.173	0.157	0.395	0.180	0.618	0.180	0.009	0.009	0.009	0.000	0.000	0.000	0.000	1.730	
1933	0.000	0.000	0.055	0.115	0.120	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.290	
1934	0.000	0.000	0.259	0.009	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.277	
1935	0.000	0.000	0.000	0.203	0.526	0.172	0.000	0.030	0.009	0.000	0.000	0.000	0.000	0.940	
1936	0.000	0.173	0.276	0.218	0.867	0.130	0.055	0.028	0.018	0.009	0.009	0.000	0.000	1.782	
1937	0.000	0.170	0.395	0.178	0.258	0.171	0.092	0.029	0.018	0.017	0.009	0.009	0.009	1.347	
1938	0.009	0.000	0.074	0.152	1.189	0.211	0.117	0.031	0.019	0.018	0.020	0.000	0.087	1.926	
1939	0.055	0.172	0.018	0.222	0.562	0.195	0.055	0.031	0.019	0.018	0.020	0.000	0.088	1.455	
1940	0.173	0.173	0.395	0.167	0.415	0.184	0.115	0.030	0.018	0.018	0.018	0.009	0.009	1.713	
1941	0.009	0.009	0.290	0.166	0.231	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.714	
1942	0.000	0.092	0.184	0.009	0.028	0.237	0.117	0.031	0.019	0.018	0.020	0.000	0.088	0.843	
1943	0.174	0.172	0.266	0.132	0.918	0.092	0.037	0.018	0.019	0.017	0.009	0.018	0.018	1.871	
1944	0.000	0.129	0.203	0.188	1.111	0.166	0.055	0.029	0.018	0.009	0.009	0.009	0.009	1.925	
1945	0.000	0.000	0.101	0.206	0.396	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.703	
1946	0.000	0.000	0.000	0.046	1.014	0.237	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.297	
1947	0.000	0.000	0.009	0.125	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.180	
1948	0.000	0.009	0.000	0.231	1.135	0.101	0.117	0.031	0.019	0.018	0.020	0.000	0.087	1.768	
1949	0.166	0.101	0.355	0.120	0.018	0.125	0.116	0.009	0.000	0.000	0.000	0.000	0.000	1.010	
1950	0.000	0.000	0.055	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.000	0.000	0.075	
1951	0.000	0.000	0.000	0.018	0.516	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.543	
1952	0.000	0.000	0.018	0.000	0.000	0.000	0.000	0.030	0.000	0.000	0.000	0.000	0.000	0.048	
1953	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.031	0.018	0.000	0.000	0.000	0.000	0.049	
1954	0.173	0.000	0.000	0.202	0.981	0.065	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.421	
1955	0.000	0.000	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	
1956	0.000	0.000	0.395	0.220	0.037	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.088	0.758	
1957	0.174	0.171	0.271	0.231	1.189	0.225	0.117	0.031	0.019	0.018	0.020	0.000	0.087	2.551	
1958	0.174	0.055	0.395	0.186	0.009	0.009	0.000	0.055	0.000	0.000	0.000	0.000	0.000	0.828	
1959	0.000	0.000	0.046	0.000	0.873	0.125	0.117	0.029	0.000	0.000	0.000	0.000	0.000	1.190	
1960	0.000	0.173	0.337	0.135	0.018	0.000	0.000	0.000	0.009	0.000	0.000	0.000	0.000	0.672	
1961	0.000	0.000	0.000	0.009	0.000	0.221	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.239	
1962	0.065	0.173	0.009	0.000	0.000	0.196	0.009	0.000	0.000	0.018	0.020	0.000	0.088	0.578	
1963	0.174	0.173	0.341	0.231	0.240	0.130	0.114	0.029	0.018	0.017	0.009	0.009	0.009	1.485	
1964	0.174	0.172	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.020	0.055	0.000	0.421	
1965	0.000	0.000	0.000	0.206	0.949	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.155	
1966	0.000	0.028	0.000	0.065	1.189	0.166	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.448	
1967	0.000	0.000	0.000	0.000	0.424	0.138	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.562	
1968	0.000	0.009	0.231	0.000	0.028	0.237	0.117	0.030	0.018	0.018	0.020	0.037	0.000	0.746	
1969	0.028	0.018	0.009	0.009	0.000	0.000	0.000	0.031	0.000	0.000	0.000	0.018	0.018	0.113	
1970	0.018	0.000	0.000	0.000	0.111	0.123	0.009	0.030	0.000	0.000	0.000	0.000	0.000	0.292	
1971	0.000	0.000	0.037	0.137	1.189	0.237	0.117	0.031	0.019	0.018	0.020	0.000	0.087	1.892	
1972	0.157	0.172	0.111	0.037	0.018	0.018	0.009	0.009	0.000	0.000	0.020	0.000	0.088	0.640	
1973	0.174	0.173	0.358	0.179	0.360	0.151	0.115	0.030	0.018	0.018	0.018	0.009	0.009	1.602	
1974	0.009	0.172	0.240	0.161	1.111	0.236	0.000	0.000	0.000	0.000	0.000	0.000	0.088	2.016	
1975	0.074	0.000	0.157	0.231	0.870	0.237	0.117	0.031	0.019	0.018	0.020	0.000	0.087	1.860	
1976	0.055	0.037	0.055	0.116	1.189	0.207	0.116	0.030	0.018	0.018	0.020	0.037	0.000	1.899	
1977	0.018	0.009	0.129	0.178	0.046	0.046	0.009	0.009	0.000	0.000	0.000	0.000	0.000	0.444	
1978	0.000	0.000	0.000	0.000	0.000	0.000	0.117	0.030	0.000	0.000	0.000	0.000	0.000	0.147	
1979	0.000	0.000	0.376	0.161	0.175	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.088	0.799	
1980	0.000	0.000	0.301	0.092	0.000	0.000	0.000	0.031	0.019	0.018	0.020	0.088	0.000	0.569	
1981	0.173	0.173	0.111	0.065	0.037	0.196	0.037	0.009	0.009	0.000	0.000	0.000	0.000	0.809	
1982	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
1983	0.000	0.171	0.313	0.231	1.189	0.237	0.117	0.031	0.019	0.018	0.020	0.087	0.000	2.433	
1984	0.172	0.111	0.074	0.231	1.189	0.237	0.117	0.031	0.019	0.018	0.020	0.087	0.000	2.306	
1985	0.174	0.173	0.285	0.116	0.157	0.065	0.028	0.018	0.009	0.009	0.000	0.000	0.000	1.033	
1986	0.000	0.000	0.317	0.195	0.000	0.220	0.009	0.000	0.000	0.000	0.020	0.088	0.000	0.848	
1987	0.174	0.173	0.395	0.198	1.095	0.208	0.117	0.030	0.018	0.018	0.020	0.046	0.000	2.492	
1988	0.028	0.018	0.317	0.046	0.535	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.953	
1989	0.000	0.173	0.395	0.231	1.054	0.224	0.117	0.031	0.019	0.018	0.020	0.074	0.000	2.354	
1990	0.065	0.028	0.018	0.145	0.028	0.194	0.116	0.031	0.019	0.018	0.020	0.088	0.000	0.770	
1991	0.174	0.171	0.314	0.111	0.055	0.065	0.028	0.018	0.009	0.009	0.000	0.000	0.000	0.953	
1992	0.000	0.018	0.370	0.000	0.821	0.188	0.117	0.000	0.000	0.000	0.000	0.000	0.000	1.514	
1993	0.174	0.173	0.395	0.194	0.728	0.169	0.116	0.030	0.018	0.018	0.020	0.028	0.000	2.062	
1994	0.174	0.074	0.009	0.000	0.009	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.266	
1995	0.000	0.009	0.046	0.157	0.956	0.149	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.317	
1996	0.174	0.074	0.285	0.0											

A.40. Ni16 – Category B**Summary table**

Desktop Version 2, Generated on 2015-03-11

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni16

Annual Flows (Mill. cu. m or index values):

MAR = 66,613

S.Dev. = 69,476

CV = 1,043

Q75 = 0,195

Q75/MMF = 0,035

BFI Index = 0,304

CV(JJA+JFM) Index = 4,181

Ecological Category = B

Total IFR = 26,126 (39,22 %MAR)

Maint. Lowflow = 11,055 (16,60 %MAR)

Drought Lowflow = 2,400 (3,60 %MAR)

Maint. Highflow = 15,071 (22,62 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)			
	Mean	SD	Low flows	High Flows	Total Flows	
	Mean	SD	Maint.	Drought	Maint.	Maint.
Oct	3,900	7,776	1,994	0,507	0,128	1,465 1,972
Nov	5,144	7,301	1,419	0,666	0,151	1,427 2,094
Dec	9,555	12,149	1,271	1,813	0,386	3,121 4,934
Jan	11,151	17,236	1,546	2,054	0,411	2,691 4,745
Feb	11,524	20,980	1,821	1,838	0,367	3,527 5,365
Mar	8,226	16,401	1,994	1,727	0,365	1,188 2,915
Apr	3,454	4,935	1,429	0,903	0,147	0,713 1,616
May	2,483	3,889	1,566	0,384	0,099	0,254 0,637
Jun	1,300	2,182	1,679	0,323	0,092	0,000 0,323
Jul	5,074	18,062	3,560	0,310	0,090	0,298 0,608
Aug	1,425	2,771	1,945	0,277	0,086	0,149 0,425
Sep	3,378	8,176	2,420	0,254	0,080	0,239 0,493

Rule curve

Desktop Version 2, Generated on 2015-03-11

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni16

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	2.208	2.189	2.148	1.902	1.004	0.735	0.311	0.101	0.008	0.000
Nov	2.357	2.341	2.309	2.246	2.128	1.665	1.171	0.303	0.031	0.000
Dec	8.225	7.404	6.691	6.042	5.392	3.342	2.182	0.988	0.070	0.000
Jan	7.678	6.967	6.344	5.769	4.808	3.236	2.003	0.852	0.054	0.000
Feb	9.045	8.118	7.315	6.587	5.528	3.703	2.871	1.097	0.062	0.000
Mar	3.361	3.340	3.295	3.207	3.042	2.338	1.031	0.541	0.016	0.000
Apr	1.857	1.842	1.806	1.733	1.596	1.276	0.556	0.198	0.039	0.000
May	0.735	0.730	0.716	0.689	0.638	0.541	0.288	0.089	0.004	0.000
Jun	0.385	0.383	0.376	0.363	0.339	0.296	0.175	0.054	0.004	0.000
Jul	0.696	0.690	0.678	0.652	0.393	0.206	0.109	0.043	0.000	0.000
Aug	0.493	0.489	0.481	0.463	0.272	0.159	0.086	0.047	0.008	0.000
Sep	0.564	0.560	0.550	0.529	0.358	0.195	0.066	0.039	0.004	0.000

Reserve Flows without High Flows

Oct	0.606	0.601	0.591	0.569	0.529	0.464	0.311	0.101	0.008	0.000
Nov	0.796	0.791	0.781	0.761	0.724	0.660	0.557	0.303	0.031	0.000
Dec	2.164	2.151	2.123	2.069	1.967	1.789	1.505	0.988	0.070	0.000
Jan	2.452	2.437	2.405	2.343	2.225	2.021	1.696	0.852	0.054	0.000
Feb	2.194	2.181	2.152	2.096	1.991	1.808	1.517	1.097	0.062	0.000
Mar	2.062	2.049	2.023	1.971	1.873	1.703	1.031	0.541	0.016	0.000
Apr	1.078	1.069	1.049	1.007	0.930	0.802	0.556	0.198	0.039	0.000
May	0.458	0.455	0.447	0.431	0.401	0.351	0.282	0.089	0.004	0.000
Jun	0.385	0.383	0.376	0.363	0.339	0.296	0.175	0.054	0.004	0.000
Jul	0.370	0.368	0.362	0.349	0.326	0.206	0.109	0.043	0.000	0.000
Aug	0.330	0.328	0.323	0.312	0.272	0.159	0.086	0.047	0.008	0.000
Sep	0.303	0.301	0.296	0.286	0.267	0.195	0.066	0.039	0.004	0.000

Natural Duration curves

Oct	10.647	5.629	2.871	1.902	1.004	0.735	0.311	0.101	0.008	0.000
Nov	13.973	7.251	5.073	3.742	2.953	1.665	1.171	0.303	0.031	0.000
Dec	23.616	16.042	11.771	7.103	5.648	3.342	2.182	0.988	0.070	0.000
Jan	27.887	16.957	13.950	7.099	4.808	3.236	2.003	0.852	0.054	0.000
Feb	27.440	15.292	10.950	8.052	5.528	3.703	2.871	1.097	0.062	0.000
Mar	19.777	11.997	6.967	4.761	3.478	2.338	1.031	0.541	0.016	0.000
Apr	7.854	6.131	4.291	2.672	1.852	1.276	0.556	0.198	0.039	0.000
May	8.542	3.832	2.420	1.424	0.864	0.541	0.288	0.089	0.004	0.000
Jun	3.252	2.128	1.233	0.899	0.510	0.296	0.175	0.054	0.004	0.000
Jul	12.440	1.953	1.078	0.661	0.393	0.206	0.109	0.043	0.000	0.000
Aug	5.932	1.747	0.665	0.572	0.272	0.159	0.086	0.047	0.008	0.000
Sep	10.841	4.952	1.902	0.934	0.358	0.195	0.066	0.039	0.004	0.000

Hydrological time series

Total Runoff : Ni16															
Desktop (Version 2) Modified Flow Data for Ecological Category B															
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL		
1920	2.202	2.255	3.342	0.914	0.552	1.575	0.222	0.128	0.074	0.047	0.027	0.560	11.897		
1921	2.150	2.357	7.342	6.250	6.172	3.109	1.303	0.623	0.333	0.300	0.493	0.550	30.981		
1922	2.194	2.357	7.980	7.678	8.648	3.331	1.825	0.715	0.376	0.658	0.452	0.280	36.495		
1923	0.941	2.280	7.434	4.629	7.029	3.361	1.854	0.732	0.384	0.685	0.483	0.498	30.311		
1924	0.743	2.357	8.225	7.678	9.045	3.361	1.857	0.735	0.385	0.696	0.493	0.550	36.127		
1925	1.276	0.755	0.478	0.307	0.218	0.113	0.066	0.043	0.023	0.016	0.008	0.004	3.307		
1926	0.004	0.004	0.000	0.000	0.019	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.043		
1927	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
1928	0.000	0.000	0.000	0.019	0.019	1.288	1.039	0.556	0.305	0.206	0.124	0.074	3.630		
1929	0.051	0.031	0.027	0.047	0.008	0.004	0.004	0.004	0.000	0.000	0.000	0.000	0.176		
1930	0.000	0.000	0.035	0.027	0.000	0.000	0.175	0.268	0.159	0.101	0.066	0.043	0.874		
1931	0.027	0.016	0.012	0.035	3.116	3.279	1.796	0.713	0.370	0.652	0.401	0.237	10.654		
1932	0.152	0.089	0.058	0.035	0.019	0.016	0.008	0.004	0.004	0.568	0.000	0.000	0.953		
1933	0.023	2.188	4.310	5.438	2.548	3.221	0.245	0.152	0.089	0.054	0.463	0.066	18.797		
1934	0.844	1.970	6.865	0.634	6.889	0.541	1.010	0.058	0.035	0.023	0.012	0.008	17.980		
1935	0.004	0.004	0.136	7.315	7.037	3.151	1.646	0.735	0.385	0.688	0.485	0.510	22.097		
1936	0.385	2.356	6.106	6.967	9.045	3.296	1.788	0.703	0.366	0.687	0.377	0.550	32.625		
1937	0.163	0.082	6.691	0.751	8.118	1.789	1.842	0.195	0.385	0.694	0.486	0.541	21.738		
1938	2.181	2.339	7.404	2.567	2.058	3.360	1.798	0.734	0.380	0.695	0.493	0.560	24.569		
1939	1.999	2.357	7.421	6.523	6.616	2.704	1.857	0.723	0.378	0.667	0.464	0.563	32.273		
1940	2.179	2.336	7.057	6.014	5.240	3.174	1.696	0.570	0.310	0.226	0.136	0.198	29.136		
1941	0.086	1.074	2.742	2.956	2.879	0.012	0.004	0.136	0.376	0.004	0.000	0.556	10.825		
1942	2.166	2.326	7.079	6.982	6.895	3.361	1.855	0.731	0.383	0.696	0.493	0.564	33.531		
1943	2.204	2.166	5.505	1.206	5.878	1.031	0.428	0.268	0.312	0.105	0.062	0.564	19.729		
1944	2.189	2.052	2.754	3.236	6.200	3.361	1.807	0.710	0.376	0.658	0.452	0.284	24.080		
1945	0.175	0.105	7.236	7.678	8.501	3.218	1.453	0.638	0.339	0.323	0.195	0.117	29.978		
1946	0.482	0.513	0.292	5.625	7.648	3.361	1.857	0.731	0.385	0.682	0.482	0.521	22.580		
1947	0.323	2.357	8.225	4.944	3.583	3.303	1.739	0.436	0.257	0.163	0.097	0.529	25.956		
1948	0.778	2.246	6.021	5.362	3.801	0.615	1.817	0.735	0.140	0.093	0.058	0.210	21.878		
1949	1.120	1.171	5.398	6.009	3.147	3.293	1.389	0.721	0.296	0.171	0.105	0.062	22.882		
1950	0.101	0.027	6.042	0.852	0.062	3.274	0.070	0.000	0.000	0.000	0.493	0.539	11.461		
1951	2.106	0.370	5.987	1.673	1.642	2.924	0.039	0.039	0.031	0.694	0.140	0.004	15.649		
1952	0.004	0.202	6.148	6.047	5.528	3.015	1.733	0.567	0.175	0.109	0.066	0.039	23.632		
1953	0.171	2.326	0.210	0.420	6.979	3.132	0.198	0.735	0.371	0.576	0.354	0.560	16.032		
1954	2.203	2.350	6.189	5.814	8.905	3.347	1.853	0.726	0.380	0.678	0.481	0.393	33.319		
1955	1.984	0.513	2.377	0.937	8.192	3.295	1.737	0.697	0.364	0.580	0.354	0.543	21.573		
1956	0.268	1.245	4.960	4.808	2.980	1.517	0.762	0.362	0.214	0.696	0.493	0.564	18.869		
1957	2.208	2.357	6.738	6.603	7.345	2.963	1.538	0.650	0.343	0.370	0.222	0.342	31.680		
1958	1.136	2.343	6.735	5.022	2.548	1.194	0.704	0.613	0.268	0.171	0.105	0.555	21.394		
1959	1.595	1.330	6.317	0.673	6.287	2.855	1.315	0.689	0.351	0.447	0.272	0.532	22.663		
1960	0.132	2.341	6.987	7.367	8.163	3.302	1.841	0.730	0.384	0.678	0.477	0.563	32.964		
1961	2.172	1.653	1.050	1.996	0.327	3.117	1.810	0.614	0.280	0.179	0.109	0.066	13.373		
1962	0.051	1.665	8.039	4.800	3.248	3.197	1.857	0.732	0.385	0.696	0.493	0.562	25.725		
1963	2.148	1.603	0.988	6.426	0.436	0.265	1.838	0.109	0.070	0.043	0.027	0.016	13.968		
1964	2.207	2.354	6.530	2.455	9.045	0.860	0.673	0.296	0.343	0.113	0.206	0.086	25.168		
1965	2.106	0.303	0.642	0.307	6.498	0.047	0.004	0.004	0.000	0.000	0.086	0.054	10.051		
1966	0.000	2.277	6.344	2.003	8.638	3.318	1.846	0.727	0.380	0.677	0.475	0.515	27.201		
1967	0.572	2.352	6.622	4.746	1.887	3.361	1.709	0.695	0.363	0.568	0.464	0.202	23.541		
1968	1.046	1.994	5.289	5.614	1.097	3.340	1.662	0.728	0.381	0.678	0.481	0.533	22.843		
1969	2.208	2.322	2.571	2.517	4.415	0.556	1.699	0.459	0.124	0.078	0.485	0.560	17.994		
1970	2.208	2.314	2.540	1.428	0.794	0.548	0.821	0.735	0.385	0.692	0.491	0.519	13.474		
1971	1.902	0.300	2.381	6.895	9.045	3.345	1.848	0.735	0.385	0.694	0.491	0.540	28.562		
1972	0.836	1.435	0.910	1.000	8.002	1.447	1.493	0.541	0.303	0.202	0.489	0.564	17.222		
1973	2.208	2.128	1.630	6.760	3.100	3.042	0.475	0.300	0.179	0.693	0.070	0.039	20.624		
1974	0.346	2.160	7.865	7.678	9.045	3.347	1.852	0.726	0.380	0.677	0.475	0.564	35.115		
1975	2.194	2.118	4.839	7.368	7.424	3.361	1.857	0.735	0.385	0.688	0.485	0.508	31.962		
1976	1.369	2.077	7.682	6.443	9.045	3.361	1.857	0.735	0.385	0.690	0.486	0.541	34.672		
1977	0.739	0.276	1.319	7.646	7.985	3.126	1.771	0.667	0.351	0.659	0.268	0.327	25.133		
1978	2.114	1.564	5.724	5.422	4.715	0.661	1.826	0.720	0.379	0.676	0.472	0.554	24.827		
1979	2.159	1.315	1.369	4.606	3.703	0.195	0.113	0.074	0.043	0.027	0.016	0.559	14.179		
1980	0.735	2.102	2.182	5.592	1.455	0.008	0.210	0.640	0.385	0.694	0.492	0.564	15.058		
1981	2.199	2.309	5.168	2.571	5.567	3.138	0.436	0.288	0.171	0.109	0.066	0.039	22.062		
1982	0.673	1.630	0.016	0.510	0.004	0.047	0.000	0.000	0.000	0.000	0.019	0.000	2.899		
1983	0.467	2.347	5.769	7.678	9.045	3.354	1.857	0.733	0.383	0.696	0.493	0.563	33.387		
1984	2.176	2.053	1.813	6.979	9.045	3.207	1.647	0.683	0.357	0.506	0.307	0.506	29.278		
1985	2.106	2.237	1.587	5.769	4.283	0.727	0.202	0.016	0.008	0.004	0.004	0.004	16.947		
1986	2.105	2.279	6.632	6.080	3.808	2.097	1.777	0.671	0.346	0.389	0.492	0.564	27.239		
1987	2.208	2.357	8.225	6.032	7.379	3.340	1.846	0.723	0.379	0.685	0.468	0.358	34.000		
1988	0.945	2.326	5.392	2.003	4.824	2.486	1.485	0.577	0.320	0.233	0.144	0.086	20.822		
1989	0.054	2.352	8.225	5.899	6.036	2.965	1.854	0.640	0.334	0.307	0.187	0.109	28.962		
1990	0.622	2.342	5.745	4.528	7.708	3.357	1.756	0.734	0.363	0.568	0.331	0.195	28.250		
1991	0.124	0.074	2.614	0.054	7.123	3.215	0.089	0.004	0.004	0.000	0.000	0.000	13.300		
1992	0.000	0.000	0.000	0.000	0.163	0.016	0.008	0.004	0.000	0.000	0.000	0.000	0.191		
1993	2.208	2.287	5.702	4.341	2.871	1.537	0.669	0.401	0.237	0.148	0.241	0.054	20.696		
1994	0.883	0.315	3.454	3.112	0.004	0.004	1.620	0.648	0.035	0.023	0.016	0.008	10.123		
1995	0.311	2.334	8.225	7.678	9.045	3.361	1.857	0.735	0.385	0.696	0.492	0.544	35.664		
1996	2.208	2.176	8.225	7.678	6.860	3.361	1.857	0.716	0.385	0.696	0.493	0.564	35.221		
1997	2.208	2.357	8.225	6.813	6.587	3.325	1.596	0.691	0.355	0.424	0.257	0.152	32.990		
1998	2.208	2.260	8.207	6.847	3.552	3.338	1.233	0.589	0.318	0.253	0.159	0.13			

A.41. Ni16 – Category C

Summary table

Desktop Version 2, Generated on 2015-03-11

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni16

Annual Flows (Mill. cu. m or index values):

MAR = 66,613
 S.Dev. = 69,476
 CV = 1,043
 Q75 = 0,195
 Q75/MMF = 0,035
 BFI Index = 0,304
 CV(JJA+JFM) Index = 4,181

Ecological Category = C

Total IFR = 20,053 (30,10 %MAR)
 Maint. Lowflow = 6,099 (9,16 %MAR)
 Drought Lowflow = 2,385 (3,58 %MAR)
 Maint. Highflow = 13,954 (20,95 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
		CV	Maint.	Drought	Maint.	Maint.	
Oct	3,900	7,776	1,994	0,319	0,128	1,308	1,626
Nov	5,144	7,301	1,419	0,402	0,151	1,295	1,698
Dec	9,555	12,149	1,271	0,985	0,386	2,888	3,873
Jan	11,151	17,236	1,546	1,073	0,411	2,551	3,624
Feb	11,524	20,980	1,821	0,983	0,367	3,347	4,330
Mar	8,226	16,401	1,994	0,947	0,365	1,079	2,027
Apr	3,454	4,935	1,429	0,442	0,147	0,587	1,029
May	2,483	3,889	1,566	0,224	0,084	0,241	0,465
Jun	1,300	2,182	1,679	0,195	0,092	0,000	0,195
Jul	5,074	18,062	3,560	0,189	0,090	0,298	0,486
Aug	1,425	2,771	1,945	0,178	0,086	0,149	0,327
Sep	3,378	8,176	2,420	0,161	0,080	0,212	0,373

Rule curve

Desktop Version 2, Generated on 2015-03-11

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni16

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.966	1.949	1.912	1.836	1.004	0.735	0.311	0.101	0.008	0.000
Nov	2.106	2.093	2.064	2.008	1.904	1.665	1.171	0.303	0.031	0.000
Dec	6.982	6.227	5.577	4.997	4.433	3.342	2.182	0.988	0.070	0.000
Jan	6.449	5.781	5.204	4.685	4.175	3.236	2.003	0.852	0.054	0.000
Feb	7.870	6.996	6.246	5.578	4.932	3.703	2.871	1.097	0.062	0.000
Mar	2.608	2.592	2.559	2.494	2.371	2.157	1.031	0.541	0.016	0.000
Apr	1.287	1.277	1.253	1.205	1.115	0.966	0.556	0.198	0.039	0.000
May	0.586	0.582	0.571	0.550	0.510	0.444	0.288	0.089	0.004	0.000
Jun	0.264	0.262	0.259	0.251	0.237	0.213	0.175	0.054	0.004	0.000
Jul	0.605	0.600	0.590	0.568	0.393	0.206	0.109	0.043	0.000	0.000
Aug	0.416	0.413	0.406	0.392	0.272	0.159	0.086	0.047	0.008	0.000
Sep	0.467	0.463	0.456	0.439	0.358	0.195	0.066	0.039	0.004	0.000

Reserve Flows without High Flows

Oct	0.431	0.428	0.422	0.408	0.383	0.341	0.282	0.101	0.008	0.000
Nov	0.561	0.558	0.551	0.539	0.515	0.474	0.409	0.303	0.031	0.000
Dec	1.373	1.365	1.350	1.320	1.263	1.164	1.007	0.789	0.070	0.000
Jan	1.495	1.487	1.471	1.437	1.375	1.266	1.094	0.852	0.054	0.000
Feb	1.370	1.362	1.347	1.316	1.259	1.158	0.998	0.776	0.062	0.000
Mar	1.320	1.313	1.298	1.269	1.214	1.118	0.966	0.541	0.016	0.000
Apr	0.599	0.594	0.584	0.564	0.527	0.464	0.377	0.198	0.039	0.000
May	0.304	0.302	0.297	0.287	0.269	0.238	0.196	0.089	0.004	0.000
Jun	0.264	0.262	0.259	0.251	0.237	0.213	0.175	0.054	0.004	0.000
Jul	0.255	0.254	0.250	0.243	0.229	0.206	0.109	0.043	0.000	0.000
Aug	0.241	0.240	0.236	0.229	0.217	0.159	0.086	0.047	0.008	0.000
Sep	0.219	0.217	0.214	0.208	0.196	0.177	0.066	0.039	0.004	0.000

Natural Duration curves

Oct	10.647	5.629	2.871	1.902	1.004	0.735	0.311	0.101	0.008	0.000
Nov	13.973	7.251	5.073	3.742	2.953	1.665	1.171	0.303	0.031	0.000
Dec	23.616	16.042	11.771	7.103	5.648	3.342	2.182	0.988	0.070	0.000
Jan	27.887	16.957	13.950	7.099	4.808	3.236	2.003	0.852	0.054	0.000
Feb	27.440	15.292	10.950	8.052	5.528	3.703	2.871	1.097	0.062	0.000
Mar	19.777	11.997	6.967	4.761	3.478	2.338	1.031	0.541	0.016	0.000
Apr	7.854	6.131	4.291	2.672	1.852	1.276	0.556	0.198	0.039	0.000
May	8.542	3.832	2.420	1.424	0.864	0.541	0.288	0.089	0.004	0.000
Jun	3.252	2.128	1.233	0.899	0.510	0.296	0.175	0.054	0.004	0.000
Jul	12.440	1.953	1.078	0.661	0.393	0.206	0.109	0.043	0.000	0.000
Aug	5.932	1.747	0.665	0.572	0.272	0.159	0.086	0.047	0.008	0.000
Sep	10.841	4.952	1.902	0.934	0.358	0.195	0.066	0.039	0.004	0.000

Hydrological time series

Total Runoff : Ni16															
Desktop (Version 2) Modified Flow Data for Ecological Category C															
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL		
1920	1.961	2.016	3.342	0.914	0.552	1.575	0.222	0.128	0.074	0.047	0.027	0.463	11.321		
1921	1.915	2.106	6.170	5.119	5.208	2.421	0.973	0.498	0.233	0.300	0.416	0.456	25.814		
1922	1.953	2.106	6.756	6.449	7.496	2.585	1.266	0.571	0.259	0.573	0.383	0.280	30.677		
1923	0.941	2.039	6.255	4.077	5.982	2.608	1.285	0.584	0.263	0.595	0.408	0.416	25.452		
1924	0.743	2.106	6.982	6.449	7.870	2.608	1.287	0.586	0.264	0.605	0.416	0.456	30.372		
1925	1.276	0.755	0.478	0.307	0.218	0.113	0.066	0.043	0.023	0.016	0.008	0.004	3.307		
1926	0.004	0.004	0.000	0.000	0.019	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.043		
1927	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
1928	0.000	0.000	0.000	0.019	0.019	1.288	0.928	0.447	0.217	0.206	0.124	0.074	3.322		
1929	0.051	0.031	0.027	0.047	0.008	0.004	0.004	0.004	0.000	0.000	0.000	0.000	0.176		
1930	0.000	0.000	0.035	0.027	0.000	0.000	0.175	0.268	0.159	0.101	0.066	0.043	0.874		
1931	0.027	0.016	0.012	0.035	3.116	2.547	1.247	0.569	0.255	0.568	0.377	0.237	9.005		
1932	0.152	0.089	0.058	0.035	0.019	0.016	0.008	0.004	0.004	0.554	0.000	0.000	0.939		
1933	0.023	1.957	3.886	4.398	2.548	2.504	0.245	0.152	0.089	0.054	0.392	0.066	16.314		
1934	0.844	1.764	5.735	0.634	5.853	0.541	1.101	0.058	0.035	0.023	0.012	0.008	15.608		
1935	0.004	0.004	0.136	6.108	5.989	2.452	1.148	0.586	0.264	0.598	0.410	0.424	18.122		
1936	0.385	2.105	5.054	5.781	7.870	2.560	1.241	0.561	0.253	0.597	0.375	0.456	27.237		
1937	0.163	0.082	5.577	0.751	6.996	1.789	1.277	0.195	0.264	0.603	0.410	0.449	18.557		
1938	1.942	2.090	6.227	2.567	2.058	2.607	1.248	0.585	0.261	0.604	0.416	0.464	21.068		
1939	1.843	2.106	6.243	5.369	5.604	2.226	1.287	0.577	0.260	0.580	0.392	0.466	26.953		
1940	1.940	2.087	5.910	4.904	4.762	2.469	1.181	0.457	0.220	0.226	0.136	0.198	24.490		
1941	0.086	1.074	2.742	2.956	2.879	0.012	0.004	0.136	0.258	0.004	0.000	0.460	10.612		
1942	1.929	2.079	5.930	5.795	5.858	2.608	1.286	0.583	0.262	0.605	0.416	0.467	27.817		
1943	1.963	1.937	4.531	1.206	5.022	1.031	0.428	0.268	0.221	0.105	0.062	0.467	17.240		
1944	1.949	1.837	2.754	3.236	5.232	2.608	1.254	0.567	0.258	0.573	0.383	0.284	20.935		
1945	0.175	0.105	6.073	6.449	7.357	2.502	1.020	0.510	0.237	0.323	0.195	0.117	25.063		
1946	0.482	0.513	0.292	4.560	6.556	2.608	1.287	0.583	0.264	0.593	0.407	0.432	18.578		
1947	0.323	2.106	6.982	4.205	3.583	2.565	1.209	0.423	0.204	0.163	0.097	0.439	22.299		
1948	0.778	2.008	4.979	4.333	3.801	0.615	1.261	0.586	0.140	0.093	0.058	0.210	18.862		
1949	1.120	1.171	4.438	4.899	3.147	2.557	0.995	0.575	0.213	0.171	0.105	0.062	19.454		
1950	0.101	0.027	4.997	0.852	0.062	2.543	0.070	0.000	0.000	0.000	0.416	0.447	9.515		
1951	1.875	0.370	4.949	1.673	1.642	2.284	0.039	0.039	0.031	0.603	0.140	0.004	13.649		
1952	0.004	0.202	5.091	4.934	4.932	2.351	1.205	0.455	0.175	0.109	0.066	0.039	19.562		
1953	0.171	2.079	0.210	0.420	5.935	2.438	0.198	0.586	0.256	0.555	0.354	0.463	13.665		
1954	1.961	2.100	5.127	4.725	7.738	2.597	1.284	0.579	0.261	0.590	0.406	0.393	27.762		
1955	1.842	0.513	2.377	0.937	7.066	2.559	1.207	0.556	0.251	0.556	0.354	0.450	18.669		
1956	0.268	1.245	4.152	4.175	2.980	1.517	0.762	0.362	0.192	0.605	0.415	0.467	17.140		
1957	1.966	2.106	5.620	5.443	6.274	2.313	1.076	0.520	0.239	0.370	0.222	0.342	26.490		
1958	1.136	2.094	5.617	4.222	2.548	1.194	0.704	0.491	0.207	0.171	0.105	0.460	18.949		
1959	1.595	1.330	5.241	0.673	5.310	2.254	0.976	0.550	0.244	0.447	0.272	0.441	19.334		
1960	0.132	2.093	5.846	6.156	7.039	2.564	1.276	0.582	0.263	0.590	0.403	0.466	27.408		
1961	1.934	1.653	1.050	1.996	0.327	2.426	1.256	0.492	0.209	0.179	0.109	0.066	11.698		
1962	0.051	1.665	6.810	4.170	3.248	2.486	1.287	0.584	0.264	0.605	0.416	0.465	22.051		
1963	1.912	1.603	0.988	5.280	0.436	0.265	1.274	0.109	0.070	0.043	0.027	0.016	12.023		
1964	1.965	2.104	5.433	2.455	7.870	0.860	0.673	0.296	0.239	0.113	0.206	0.086	22.299		
1965	1.875	0.303	0.642	0.307	5.498	0.047	0.004	0.004	0.000	0.000	0.086	0.054	8.820		
1966	0.000	2.036	5.266	2.003	7.486	2.576	1.279	0.580	0.261	0.588	0.401	0.428	22.904		
1967	0.572	2.102	5.515	4.141	1.887	2.608	1.189	0.554	0.251	0.554	0.392	0.202	19.967		
1968	1.046	1.785	4.344	4.551	1.097	2.592	1.158	0.581	0.261	0.590	0.406	0.442	18.853		
1969	1.966	2.075	2.571	2.517	4.275	0.556	1.182	0.427	0.124	0.078	0.409	0.464	16.645		
1970	1.966	2.068	2.540	1.428	0.794	0.548	0.821	0.586	0.263	0.601	0.414	0.431	12.461		
1971	1.836	0.300	2.381	5.714	7.870	2.596	1.281	0.586	0.264	0.603	0.414	0.448	24.294		
1972	0.836	1.435	0.910	1.000	6.888	1.447	1.046	0.444	0.216	0.202	0.413	0.467	15.304		
1973	1.966	1.904	1.630	5.588	3.100	2.371	0.475	0.300	0.179	0.602	0.070	0.039	18.224		
1974	0.346	1.932	6.650	6.449	7.870	2.597	1.283	0.579	0.261	0.589	0.401	0.467	29.425		
1975	1.953	1.895	4.103	6.157	6.347	2.608	1.287	0.586	0.264	0.598	0.410	0.422	26.629		
1976	1.369	1.858	6.482	5.295	7.870	2.608	1.287	0.586	0.264	0.600	0.410	0.448	29.078		
1977	0.739	0.276	1.319	6.419	6.872	2.433	1.230	0.533	0.244	0.573	0.268	0.327	21.233		
1978	1.883	1.564	4.721	4.385	4.452	0.661	1.266	0.574	0.260	0.588	0.399	0.459	21.212		
1979	1.922	1.315	1.369	4.065	3.703	0.195	0.113	0.074	0.043	0.027	0.016	0.463	13.305		
1980	0.735	1.880	2.182	4.532	1.455	0.008	0.210	0.512	0.264	0.603	0.415	0.467	13.262		
1981	1.958	2.064	4.239	2.571	4.942	2.442	0.436	0.288	0.171	0.109	0.066	0.039	19.326		
1982	0.673	1.630	0.016	0.510	0.004	0.047	0.000	0.000	0.000	0.000	0.019	0.000	2.899		
1983	0.467	2.097	4.760	6.449	7.870	2.603	1.287	0.585	0.263	0.605	0.416	0.466	27.868		
1984	1.938	1.837	1.813	5.793	7.870	2.494	1.148	0.545	0.247	0.506	0.307	0.421	24.919		
1985	1.876	2.000	1.587	4.685	4.197	0.727	0.202	0.016	0.008	0.004	0.004	0.004	15.309		
1986	1.875	2.037	5.524	4.964	3.808	2.097	1.234	0.536	0.241	0.389	0.415	0.467	23.586		
1987	1.966	2.106	6.982	4.920	6.306	2.592	1.279	0.577	0.260	0.595	0.396	0.358	28.337		
1988	0.945	2.079	4.433	2.003	4.516	2.185	1.041	0.462	0.226	0.233	0.144	0.086	18.354		
1989	0.054	2.102	6.982	4.802	5.086	2.314	1.285	0.511	0.234	0.307	0.187	0.109	23.973		
1990	0.622	2.093	4.739	4.023	6.612	2.604	1.220	0.585	0.251	0.554	0.331	0.195	23.830		
1991	0.124	0.074	2.614	0.054	0.668	2.499	0.089	0.004	0.004	0.000	0.000	0.000	11.531		
1992	0.000	0.000	0.000	0.000	0.163	0.016	0.008	0.004	0.000	0.000	0.000	0.000	0.191		
1993	1.966	2.044	4.702	3.921	2.871	1.537	0.669	0.401	0.200	0.148	0.241	0.054	18.754		
1994	0.883	0.315	3.454	3.112	0.004	0.004	1.131	0.518	0.035	0.023	0.016	0.008	9.503		
1995	0.311	2.086	6.982	6.449	7.870	2.608	1.287	0.586	0.264	0.605	0.415	0.451	29.914		
1996	1.966	1.946	6.982	6.449	5.827	2.608	1.287	0.571	0.264	0.605	0.416	0.467	29.387		
1997	1.966	2.106	6.982	5.638	5.578	2.581	1.115	0.551	0.246	0.424	0.257	0.152	27.596		
1998	1.966	2.021	6.965	5.669	3.552	2.590	0.959	0.472	0.225	0.253	0.159	0.136			

A.42. Ni16 – Category D**Summary table**

Desktop Version 2, Generated on 2015-03-11

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni16

Annual Flows (Mill. cu. m or index values):

MAR = 66,613
 S.Dev. = 69,476
 CV = 1,043
 Q75 = 0,195
 Q75/MMF = 0,035
 BFI Index = 0,304
 CV(JJA+JFM) Index = 4,181

Ecological Category = D

Total IFR = 12,533 (18,81 %MAR)
 Maint. Lowflow = 2,400 (3,60 %MAR)
 Drought Lowflow = 2,400 (3,60 %MAR)
 Maint. Highflow = 10,133 (15,21 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
		CV	Maint.	Drought	Maint.	Maint.	
Oct	3,900	7,776	1,994	0,128	0,128	0,941	1,069
Nov	5,144	7,301	1,419	0,151	0,151	0,884	1,035
Dec	9,555	12,149	1,271	0,386	0,386	2,102	2,488
Jan	11,151	17,236	1,546	0,411	0,411	1,807	2,217
Feb	11,524	20,980	1,821	0,367	0,367	2,523	2,890
Mar	8,226	16,401	1,994	0,365	0,365	0,811	1,176
Apr	3,454	4,935	1,429	0,147	0,147	0,333	0,480
May	2,483	3,889	1,566	0,099	0,099	0,101	0,199
Jun	1,300	2,182	1,679	0,092	0,092	0,000	0,092
Jul	5,074	18,062	3,560	0,090	0,090	0,300	0,390
Aug	1,425	2,771	1,945	0,086	0,086	0,149	0,235
Sep	3,378	8,176	2,420	0,080	0,080	0,182	0,262

Rule curve

Desktop Version 2, Generated on 2015-03-11

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni16

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.575	1.562	1.533	1.472	1.004	0.735	0.311	0.101	0.008	0.000
Nov	1.620	1.609	1.588	1.546	1.467	1.328	1.108	0.303	0.031	0.000
Dec	4.852	4.305	3.837	3.425	3.034	2.381	2.021	0.988	0.070	0.000
Jan	4.328	3.857	3.454	3.097	2.757	2.188	1.866	0.852	0.054	0.000
Feb	5.632	4.976	4.416	3.925	3.460	2.687	2.269	1.097	0.062	0.000
Mar	1.937	1.925	1.902	1.857	1.771	1.622	1.031	0.541	0.016	0.000
Apr	0.746	0.740	0.728	0.703	0.656	0.578	0.468	0.198	0.039	0.000
May	0.326	0.324	0.319	0.309	0.291	0.261	0.219	0.089	0.004	0.000
Jun	0.171	0.170	0.169	0.165	0.158	0.148	0.132	0.054	0.004	0.000
Jul	0.593	0.589	0.578	0.557	0.393	0.206	0.109	0.043	0.000	0.000
Aug	0.371	0.368	0.362	0.350	0.272	0.159	0.086	0.047	0.008	0.000
Sep	0.407	0.404	0.397	0.383	0.358	0.195	0.066	0.039	0.004	0.000

Reserve Flows without High Flows

Oct	0.237	0.236	0.234	0.229	0.220	0.205	0.183	0.101	0.008	0.000
Nov	0.301	0.300	0.297	0.293	0.284	0.269	0.245	0.212	0.031	0.000
Dec	0.769	0.766	0.760	0.748	0.726	0.688	0.627	0.542	0.070	0.000
Jan	0.819	0.816	0.810	0.797	0.774	0.733	0.668	0.577	0.054	0.000
Feb	0.731	0.729	0.723	0.712	0.691	0.654	0.596	0.516	0.062	0.000
Mar	0.727	0.724	0.719	0.708	0.687	0.651	0.593	0.513	0.016	0.000
Apr	0.272	0.271	0.268	0.263	0.252	0.235	0.211	0.183	0.039	0.000
May	0.183	0.182	0.180	0.176	0.169	0.158	0.141	0.089	0.004	0.000
Jun	0.171	0.170	0.169	0.165	0.158	0.148	0.132	0.054	0.004	0.000
Jul	0.167	0.166	0.165	0.161	0.155	0.144	0.109	0.043	0.000	0.000
Aug	0.159	0.159	0.157	0.154	0.148	0.138	0.086	0.047	0.008	0.000
Sep	0.148	0.147	0.146	0.143	0.137	0.128	0.066	0.039	0.004	0.000

Natural Duration curves

Oct	10.647	5.629	2.871	1.902	1.004	0.735	0.311	0.101	0.008	0.000
Nov	13.973	7.251	5.073	3.742	2.953	1.665	1.171	0.303	0.031	0.000
Dec	23.616	16.042	11.771	7.103	5.648	3.342	2.182	0.988	0.070	0.000
Jan	27.887	16.957	13.950	7.099	4.808	3.236	2.003	0.852	0.054	0.000
Feb	27.440	15.292	10.950	8.052	5.528	3.703	2.871	1.097	0.062	0.000
Mar	19.777	11.997	6.967	4.761	3.478	2.338	1.031	0.541	0.016	0.000
Apr	7.854	6.131	4.291	2.672	1.852	1.276	0.556	0.198	0.039	0.000
May	8.542	3.832	2.420	1.424	0.864	0.541	0.288	0.089	0.004	0.000
Jun	3.252	2.128	1.233	0.899	0.510	0.296	0.175	0.054	0.004	0.000
Jul	12.440	1.953	1.078	0.661	0.393	0.206	0.109	0.043	0.000	0.000
Aug	5.932	1.747	0.665	0.572	0.272	0.159	0.086	0.047	0.008	0.000
Sep	10.841	4.952	1.902	0.934	0.358	0.195	0.066	0.039	0.004	0.000

Hydrological time series

Total Runoff : Ni16															
Desktop (Version 2) Modified Flow Data for Ecological Category D															
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL		
1920	1.571	1.551	2.381	0.914	0.552	1.536	0.222	0.128	0.074	0.047	0.027	0.404	9.407		
1921	1.535	1.620	4.263	3.395	3.658	1.806	0.582	0.286	0.157	0.300	0.371	0.397	18.369		
1922	1.565	1.620	4.688	4.328	5.351	1.921	0.735	0.319	0.169	0.562	0.343	0.280	21.878		
1923	0.941	1.569	4.325	2.692	4.221	1.937	0.745	0.325	0.171	0.584	0.364	0.364	18.235		
1924	0.743	1.620	4.852	4.328	5.632	1.937	0.746	0.326	0.171	0.593	0.371	0.398	21.715		
1925	1.276	0.755	0.478	0.307	0.218	0.113	0.066	0.043	0.023	0.016	0.008	0.004	3.307		
1926	0.004	0.004	0.000	0.000	0.019	0.019	0.016	0.000	0.000	0.000	0.000	0.000	0.043		
1927	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		
1928	0.000	0.000	0.000	0.019	0.019	1.288	0.558	0.263	0.149	0.206	0.124	0.074	2.700		
1929	0.051	0.031	0.027	0.047	0.008	0.004	0.004	0.004	0.000	0.000	0.000	0.000	0.176		
1930	0.000	0.000	0.035	0.027	0.000	0.000	0.175	0.215	0.130	0.101	0.066	0.043	0.792		
1931	0.027	0.016	0.012	0.035	2.499	1.894	0.725	0.318	0.167	0.557	0.338	0.237	6.824		
1932	0.152	0.089	0.058	0.035	0.019	0.016	0.008	0.004	0.004	0.544	0.000	0.000	0.929		
1933	0.023	1.507	2.655	2.906	2.167	1.864	0.245	0.152	0.089	0.054	0.350	0.066	12.078		
1934	0.844	1.361	3.950	0.634	4.126	0.541	1.101	0.058	0.035	0.023	0.012	0.008	11.693		
1935	0.004	0.004	0.136	4.087	4.227	1.827	0.673	0.326	0.171	0.587	0.366	0.371	12.777		
1936	0.385	1.619	3.465	3.857	5.632	1.903	0.722	0.314	0.166	0.586	0.336	0.398	19.382		
1937	0.163	0.082	3.837	0.751	4.976	1.560	0.740	0.195	0.171	0.592	0.366	0.391	13.825		
1938	1.556	1.608	4.305	2.064	2.010	1.936	0.725	0.325	0.169	0.593	0.371	0.404	16.066		
1939	1.478	1.620	4.316	3.569	3.944	1.670	0.746	0.321	0.169	0.569	0.351	0.406	19.159		
1940	1.555	1.606	4.076	3.247	3.338	1.840	0.690	0.267	0.151	0.226	0.136	0.198	17.329		
1941	0.086	1.074	2.268	2.137	2.277	0.012	0.004	0.136	0.168	0.004	0.000	0.401	8.568		
1942	1.546	1.599	4.090	3.867	4.130	1.937	0.745	0.324	0.170	0.593	0.371	0.407	19.779		
1943	1.572	1.492	3.102	1.206	3.525	1.031	0.428	0.215	0.151	0.105	0.062	0.407	13.296		
1944	1.562	1.416	2.271	2.188	3.676	1.937	0.728	0.317	0.168	0.562	0.343	0.284	15.452		
1945	0.175	0.105	4.194	4.328	5.246	1.862	0.606	0.291	0.158	0.323	0.195	0.117	17.601		
1946	0.482	0.513	0.292	3.014	4.647	1.937	0.746	0.324	0.171	0.582	0.363	0.378	13.449		
1947	0.323	1.620	4.852	2.777	2.653	1.906	0.705	0.251	0.144	0.163	0.097	0.383	15.874		
1948	0.778	1.546	3.412	2.862	2.729	0.615	0.732	0.326	0.126	0.093	0.058	0.210	13.487		
1949	1.120	1.108	3.037	3.244	2.528	1.901	0.593	0.321	0.148	0.171	0.105	0.062	14.338		
1950	0.101	0.027	3.425	0.852	0.062	1.891	0.070	0.000	0.000	0.000	0.371	0.390	7.189		
1951	1.503	0.370	3.391	1.673	1.642	1.710	0.039	0.039	0.031	0.592	0.140	0.004	11.135		
1952	0.004	0.202	3.491	3.267	3.460	1.757	0.703	0.266	0.132	0.109	0.066	0.039	13.497		
1953	0.171	1.599	0.210	0.420	4.187	1.818	0.198	0.326	0.167	0.545	0.334	0.404	10.378		
1954	1.571	1.615	3.517	3.125	5.533	1.929	0.744	0.323	0.170	0.579	0.362	0.359	19.827		
1955	1.477	0.513	2.122	0.937	5.028	1.902	0.704	0.312	0.165	0.545	0.334	0.393	14.433		
1956	0.268	1.134	2.839	2.757	2.372	1.517	0.534	0.244	0.138	0.593	0.370	0.407	13.174		
1957	1.575	1.620	3.867	3.620	4.437	1.730	0.636	0.295	0.160	0.370	0.222	0.342	18.874		
1958	1.136	1.610	3.866	2.788	2.167	1.194	0.516	0.282	0.145	0.171	0.105	0.401	14.380		
1959	1.434	1.164	3.597	0.673	3.732	1.690	0.583	0.309	0.162	0.447	0.272	0.385	14.448		
1960	0.132	1.609	4.030	4.121	5.008	1.906	0.740	0.324	0.171	0.578	0.360	0.406	19.384		
1961	1.550	1.318	1.050	1.864	0.327	1.810	0.729	0.283	0.146	0.179	0.109	0.066	9.431		
1962	0.051	1.328	4.727	2.754	2.557	1.852	0.746	0.324	0.171	0.593	0.371	0.405	15.879		
1963	1.533	1.277	0.988	3.507	0.436	0.265	0.739	0.109	0.070	0.043	0.027	0.016	9.009		
1964	1.574	1.618	3.734	2.025	5.632	0.860	0.506	0.222	0.160	0.113	0.206	0.086	16.735		
1965	1.503	0.303	0.642	0.307	3.867	0.047	0.004	0.004	0.000	0.000	0.086	0.054	6.818		
1966	0.000	1.566	3.615	1.866	5.344	1.914	0.742	0.323	0.170	0.577	0.358	0.374	16.848		
1967	0.572	1.616	3.792	2.734	1.887	1.937	0.695	0.311	0.165	0.544	0.351	0.202	14.806		
1968	1.046	1.377	2.972	3.008	1.097	1.926	0.678	0.323	0.170	0.579	0.362	0.386	13.923		
1969	1.575	1.596	2.222	2.047	2.989	0.556	0.691	0.254	0.124	0.078	0.365	0.404	12.900		
1970	1.575	1.591	2.206	1.428	0.794	0.548	0.539	0.326	0.171	0.590	0.369	0.377	10.513		
1971	1.472	0.300	2.124	3.810	5.632	1.928	0.743	0.326	0.171	0.592	0.369	0.391	17.858		
1972	0.836	1.200	0.910	1.000	4.895	1.447	0.620	0.261	0.149	0.202	0.368	0.407	12.295		
1973	1.575	1.467	1.630	3.722	2.484	1.771	0.449	0.223	0.133	0.591	0.070	0.039	14.155		
1974	0.346	1.488	4.611	4.328	5.632	1.929	0.744	0.322	0.170	0.578	0.358	0.407	20.913		
1975	1.565	1.460	2.805	4.121	4.492	1.937	0.746	0.326	0.171	0.587	0.366	0.369	18.943		
1976	1.369	1.432	4.489	3.518	5.632	1.937	0.746	0.326	0.171	0.589	0.366	0.391	20.965		
1977	0.739	0.276	1.319	4.306	4.883	1.815	0.716	0.301	0.162	0.563	0.268	0.327	15.675		
1978	1.509	1.245	3.233	2.897	3.116	0.661	0.735	0.320	0.169	0.577	0.357	0.400	15.219		
1979	1.541	1.158	1.369	2.684	2.687	0.195	0.113	0.074	0.043	0.027	0.016	0.403	10.310		
1980	0.735	1.449	2.021	2.995	1.455	0.008	0.210	0.292	0.171	0.591	0.370	0.407	10.704		
1981	1.569	1.588	2.899	2.066	3.468	1.821	0.436	0.219	0.132	0.109	0.066	0.039	14.411		
1982	0.673	1.299	0.016	0.510	0.004	0.047	0.000	0.000	0.000	0.000	0.019	0.000	2.568		
1983	0.467	1.613	3.260	4.328	5.632	1.933	0.746	0.325	0.170	0.593	0.371	0.406	19.845		
1984	1.553	1.416	1.813	3.865	5.632	1.857	0.673	0.307	0.163	0.506	0.307	0.368	18.461		
1985	1.504	1.540	1.587	3.097	2.933	0.727	0.202	0.016	0.008	0.004	0.004	0.004	11.625		
1986	1.503	1.567	3.799	3.288	2.732	1.595	0.718	0.303	0.160	0.389	0.370	0.407	16.831		
1987	1.575	1.620	4.852	3.258	4.461	1.925	0.742	0.321	0.169	0.584	0.354	0.358	20.218		
1988	0.945	1.599	3.034	1.866	3.162	1.641	0.617	0.269	0.154	0.233	0.144	0.086	13.750		
1989	0.054	1.616	4.852	3.177	3.571	1.731	0.745	0.292	0.157	0.307	0.187	0.109	16.798		
1990	0.622	1.610	3.246	2.655	4.689	1.934	0.711	0.325	0.165	0.544	0.331	0.195	17.027		
1991	0.124	0.074	2.244	0.054	4.285	1.861	0.089	0.004	0.004	0.000	0.000	0.000	8.739		
1992	0.000	0.000	0.000	0.000	0.163	0.016	0.008	0.004	0.000	0.000	0.000	0.000	0.191		
1993	1.575	1.573	3.220	2.588	2.269	1.532	0.504	0.248	0.142	0.148	0.241	0.054	14.094		
1994	0.883	0.315	2.413	2.165	0.004	0.004	0.664	0.295	0.035	0.023	0.016	0.008	6.825		
1995	0.311	1.605	4.852	4.328	5.632	1.937	0.746	0.326	0.171	0.593	0.370	0.393	21.262		
1996	1.575	1.499	4.852	4.328	4.107	1.936	0.746	0.319	0.171	0.593	0.371	0.407	20.903		
1997	1.575	1.620	4.852	3.757	3.925	1.918	0.656	0.310	0.163	0.424	0.257	0.152	19.607		
1998	1.575	1.555	4.839	3.779	2.644	1.924	0.574	0.274	0.153	0.253	0.159	0.136	17.866		
1999	1.276	0.513	4.852	3.998	4.416	1									

A.43. Ni17 – Category B**Summary table**

Desktop Version 2, Generated on 10/04/15
 Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :
 Total Runoff : Ni17

Annual Flows (Mill. cu. m or index values):

MAR = 325.787
 S.Dev. = 351.543
 CV = 1.079
 Q75 = 1.693
 Q75/MMF = 0.062
 BFI Index = 0.314
 CV(JJA+JFM) Index = 4.353

Ecological Category = B

Total IFR = 181.971 (55.86 %MAR)
 Maint. Lowflow = 110.145 (33.81 %MAR)
 Drought Lowflow = 20.155 (6.19 %MAR)
 Maint. Highflow = 71.827 (22.05 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)			
	Mean	SD	Low flows	High Flows	Total Flows	
		CV	Maint.	Drought	Maint.	Maint.
Oct	23.648	59.289	2.507	6.797	0.970	4.676 11.473
Nov	22.928	31.368	1.368	10.479	1.108	7.530 18.008
Dec	41.718	54.832	1.314	13.739	3.109	9.470 23.209
Jan	48.166	71.583	1.486	15.191	3.139	11.717 26.909
Feb	54.200	94.953	1.752	14.761	2.926	17.429 32.190
Mar	41.576	93.030	2.238	15.590	3.085	12.103 27.693
Apr	17.471	31.274	1.790	11.029	1.076	3.077 14.106
May	12.070	19.529	1.618	8.578	1.097	2.169 10.747
Jun	6.073	9.385	1.545	4.288	1.021	0.000 4.288
Jul	30.344	120.920	3.985	3.882	0.958	1.697 5.579
Aug	7.756	15.935	2.055	3.227	0.868	0.000 3.227
Sep	19.837	64.223	3.238	2.582	0.798	1.960 4.541

Rule curve

Desktop Version 2, Generated on 10/04/15
 Summary of IFR rule curves (Desktop Version 2) for :
 Total Runoff : Ni17
 Regional Type : N.Natal
 Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	13.226	13.114	12.858	8.899	4.468	2.558	1.765	0.793	0.216	0.000
Nov	20.738	20.598	20.306	18.844	11.313	8.431	4.071	2.990	0.937	0.036
Dec	34.796	32.246	29.960	27.749	25.323	17.799	12.250	8.935	4.756	0.180
Jan	40.892	37.748	34.942	32.251	20.609	14.808	10.809	6.738	3.351	0.396
Feb	51.471	46.850	42.795	36.426	23.564	20.177	14.412	6.918	3.891	0.360
Mar	31.847	31.642	31.216	20.357	16.069	10.052	5.909	3.747	1.693	0.252
Apr	16.524	16.379	14.556	11.277	9.044	5.260	4.035	1.802	0.613	0.216
May	12.609	12.501	11.638	7.314	4.900	2.450	1.657	0.685	0.252	0.036
Jun	5.120	5.081	4.992	4.071	2.882	1.802	1.081	0.396	0.144	0.000
Jul	6.492	6.441	5.441	3.279	2.234	1.441	0.829	0.504	0.108	0.000
Aug	3.854	3.825	3.351	2.270	1.477	0.937	0.576	0.360	0.144	0.000
Sep	5.227	5.186	5.095	4.035	2.342	1.513	0.865	0.360	0.180	0.000

Reserve Flows without High Flows

Oct	8.112	8.044	7.889	7.570	4.468	2.558	1.765	0.793	0.216	0.000
Nov	12.503	12.418	12.242	11.893	11.239	8.431	4.071	2.990	0.937	0.036
Dec	16.403	16.305	16.099	15.692	14.929	13.597	11.479	8.536	4.756	0.180
Jan	18.135	18.024	17.792	17.332	16.472	14.808	10.809	6.738	3.351	0.396
Feb	17.621	17.511	17.284	16.834	15.991	14.519	12.178	6.918	3.891	0.360
Mar	18.610	18.495	18.254	17.779	16.069	10.052	5.909	3.747	1.693	0.252
Apr	13.158	13.043	12.781	11.277	9.044	5.260	4.035	1.802	0.613	0.216
May	10.237	10.149	9.951	7.314	4.900	2.450	1.657	0.685	0.252	0.036
Jun	5.120	5.081	4.992	4.071	2.882	1.802	1.081	0.396	0.144	0.000
Jul	4.636	4.601	4.521	3.279	2.234	1.441	0.829	0.504	0.108	0.000
Aug	3.854	3.825	3.351	2.270	1.477	0.937	0.576	0.360	0.144	0.000
Sep	3.083	3.062	3.012	2.910	2.342	1.513	0.865	0.360	0.180	0.000

Natural Duration curves

Oct	51.595	25.725	13.367	8.899	4.468	2.558	1.765	0.793	0.216	0.000
Nov	53.937	35.237	24.392	18.844	11.313	8.431	4.071	2.990	0.937	0.036
Dec	112.378	60.314	46.407	29.509	26.410	17.799	12.250	8.935	4.756	0.180
Jan	129.888	77.897	56.243	33.436	20.609	14.808	10.809	6.738	3.351	0.396
Feb	123.115	72.636	52.316	36.426	23.564	20.177	14.412	6.918	3.891	0.360
Mar	92.669	59.558	37.183	20.357	16.069	10.052	5.909	3.747	1.693	0.252
Apr	39.165	27.311	14.556	11.277	9.044	5.260	4.035	1.802	0.613	0.216
May	39.777	15.745	11.638	7.314	4.900	2.450	1.657	0.685	0.252	0.036
Jun	17.114	8.827	6.161	4.071	2.882	1.802	1.081	0.396	0.144	0.000
Jul	39.669	12.322	5.441	3.279	2.234	1.441	0.829	0.504	0.108	0.000
Aug	27.671	8.035	3.351	2.270	1.477	0.937	0.576	0.360	0.144	0.000
Sep	48.460	17.042	9.080	4.035	2.342	1.513	0.865	0.360	0.180	0.000

Hydrological time series

Total Runoff : Ni17
 Desktop (Version 2) Modified Flow Data for Ecological Category B

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	13.070	9.008	7.963	1.621	6.557	3.747	0.576	0.288	0.180	0.108	0.072	5.182	48.373
1921	7.386	20.738	31.644	32.850	42.499	12.250	4.900	3.027	1.802	1.117	3.853	5.003	167.068
1922	12.841	20.641	30.599	40.892	42.937	21.978	10.701	5.621	3.099	1.982	1.189	0.721	193.201
1923	2.558	8.755	30.447	14.520	23.383	31.529	16.114	9.944	4.952	3.351	2.018	1.874	149.445
1924	1.765	20.738	31.684	40.892	51.471	31.847	16.524	12.609	5.120	6.492	3.854	5.143	228.138
1925	9.044	4.936	4.756	3.351	1.333	1.693	0.504	0.252	0.144	0.108	0.072	5.083	31.276
1926	0.036	0.036	1.045	1.081	4.684	3.207	0.613	0.000	0.000	0.829	0.108	0.180	11.819
1927	1.549	7.999	5.801	6.341	6.918	2.090	0.901	0.072	0.036	0.036	0.000	1.910	33.653
1928	0.000	0.576	0.757	1.657	3.135	15.781	2.846	1.657	1.009	0.613	0.360	2.810	31.201
1929	2.090	1.621	2.198	40.892	25.041	31.642	11.926	6.341	3.747	2.378	1.441	0.865	130.182
1930	0.540	0.396	9.682	0.396	0.360	0.072	0.396	0.468	0.252	0.216	0.288	0.180	13.256
1931	0.108	1.261	0.180	0.108	51.471	31.072	11.458	12.070	5.062	4.792	2.882	1.693	122.157
1932	1.081	0.757	12.070	7.638	26.734	2.594	1.369	0.649	0.396	6.197	0.144	0.108	59.737
1933	0.108	8.359	27.749	19.708	5.008	8.575	1.189	0.324	0.180	1.009	3.788	2.594	78.592
1934	2.630	3.927	28.956	5.513	24.140	0.937	0.216	0.144	1.153	0.036	0.036	0.000	67.688
1935	0.000	0.000	1.910	38.529	21.186	31.847	16.524	12.609	5.120	6.416	3.805	4.035	141.981
1936	2.522	20.625	26.085	35.405	49.448	21.438	10.953	5.981	3.567	5.729	1.369	3.171	186.294
1937	0.540	0.504	28.055	2.342	37.399	3.387	11.277	0.649	5.083	6.477	3.795	4.252	103.760
1938	11.169	19.871	30.937	10.413	21.438	31.408	6.954	9.548	2.990	6.482	3.854	5.187	160.251
1939	13.046	20.728	29.960	33.413	19.853	7.927	16.491	12.609	5.114	6.393	3.790	5.178	174.503
1940	9.296	16.141	30.969	26.410	11.962	11.061	4.972	1.621	0.973	0.613	0.360	0.540	114.918
1941	0.649	1.982	6.810	9.944	36.426	6.557	1.802	1.261	4.939	0.793	0.468	4.792	76.423
1942	12.858	16.394	33.237	34.932	19.708	31.224	16.469	12.571	5.107	6.492	3.854	5.227	198.073
1943	13.191	16.574	22.231	6.990	23.203	4.107	1.946	1.225	1.729	1.369	0.829	5.227	98.620
1944	13.197	18.844	15.205	15.061	19.961	31.847	16.316	12.385	5.039	4.684	2.846	1.693	157.078
1945	1.081	0.649	29.633	37.748	44.484	11.277	5.260	2.486	1.477	0.937	0.576	0.324	135.932
1946	0.793	1.946	7.602	15.925	38.876	31.847	16.444	12.502	5.091	5.296	3.207	2.342	141.871
1947	1.261	20.684	34.796	21.258	14.412	20.357	10.593	2.018	1.189	0.757	0.468	1.405	129.198
1948	1.297	6.702	17.583	12.863	9.944	1.982	16.106	12.604	2.090	1.333	0.829	0.685	84.018
1949	2.198	2.990	21.582	25.725	4.540	16.466	2.306	4.107	0.360	0.216	0.144	0.072	80.706
1950	0.252	0.036	17.294	8.251	1.910	14.304	1.333	0.072	0.000	0.000	3.852	5.111	52.415
1951	8.899	3.639	26.000	6.017	23.095	7.206	0.324	0.216	0.144	6.475	1.117	0.360	83.493
1952	0.216	1.910	19.744	17.799	36.174	8.395	4.792	1.117	0.468	0.288	0.180	0.108	104.918
1953	0.252	12.322	0.757	1.369	22.771	8.467	1.369	12.575	4.936	3.207	1.946	5.186	75.157
1954	13.125	20.423	18.159	32.716	48.311	31.792	16.478	12.469	5.057	5.044	3.063	1.802	208.439
1955	4.252	1.549	6.485	3.855	48.073	31.485	16.247	11.890	5.015	4.288	2.594	4.612	140.346
1956	1.765	20.176	27.354	17.799	22.951	5.693	16.357	12.502	4.992	6.492	3.854	5.227	145.162
1957	13.226	20.738	34.020	36.597	46.850	18.087	10.557	5.945	3.531	2.234	1.333	1.045	194.164
1958	2.810	20.023	25.577	21.798	9.296	3.891	2.126	2.450	0.793	0.504	0.324	5.160	94.752
1959	4.756	2.270	29.065	2.162	39.273	9.620	16.224	5.765	2.450	1.549	0.937	1.657	115.728
1960	0.576	20.466	32.847	40.718	42.795	22.519	12.683	8.071	4.923	2.630	1.585	5.214	195.027
1961	12.928	8.323	6.521	9.404	2.414	13.763	12.106	2.378	0.793	0.504	0.468	0.216	69.818
1962	0.144	3.711	34.796	21.798	27.239	18.051	16.501	11.097	5.083	6.492	3.854	5.226	153.992
1963	13.074	12.971	8.431	40.259	7.350	3.603	13.439	1.802	1.081	0.685	0.396	0.252	103.343
1964	13.180	20.738	29.513	14.088	49.621	5.044	3.207	1.802	2.414	1.477	0.576	0.937	142.597
1965	7.062	3.459	2.414	6.593	27.527	0.432	0.216	0.144	0.072	0.036	0.180	0.144	48.279
1966	0.000	11.133	33.822	12.863	45.209	31.190	16.238	11.638	4.995	3.747	2.270	1.729	174.834
1967	3.531	20.482	28.062	14.376	4.612	31.847	14.556	8.791	4.903	3.279	3.785	1.189	139.412
1968	2.234	3.891	25.661	20.609	3.891	31.725	10.160	8.503	4.720	2.846	1.729	3.063	119.032
1969	13.202	20.350	11.854	11.458	15.421	2.774	5.188	1.405	0.576	0.360	2.126	5.192	89.906
1970	13.226	19.896	11.530	32.526	6.666	4.468	8.467	12.609	5.095	6.413	3.825	3.351	128.072
1971	4.468	2.306	13.944	35.481	51.471	31.825	16.501	12.598	5.119	6.476	3.829	5.003	109.022
1972	3.351	3.423	2.630	6.738	42.734	14.520	16.161	7.026	3.711	1.982	3.803	5.227	111.306
1973	13.226	20.461	28.140	35.063	19.564	11.782	3.927	2.306	1.369	6.476	0.540	0.360	143.214
1974	0.685	9.908	33.684	40.067	50.548	31.847	16.406	12.501	5.081	5.513	3.351	5.227	214.818
1975	13.226	20.573	28.707	38.421	41.298	31.691	16.524	12.609	5.120	6.455	3.825	5.006	223.456
1976	5.477	8.287	32.246	34.942	51.471	31.847	16.524	12.609	5.120	6.441	3.817	5.119	213.900
1977	12.879	4.071	8.215	40.892	42.167	16.934	9.944	4.900	2.882	2.846	1.117	0.937	147.784
1978	11.277	9.260	26.028	15.709	20.105	9.296	10.485	4.396	2.594	5.441	1.729	5.082	121.403
1979	7.638	3.783	18.339	17.763	20.177	0.793	0.360	0.216	0.144	0.072	0.036	5.095	74.416
1980	1.477	20.598	14.988	17.835	15.277	0.288	3.351	12.609	5.120	6.452	3.835	5.227	107.056
1981	13.187	20.047	21.186	13.980	21.222	18.664	6.305	3.603	2.126	1.333	0.829	0.504	122.985
1982	2.306	4.864	0.144	4.288	2.090	0.252	0.000	0.288	0.036	0.000	0.504	0.000	14.772
1983	1.910	20.707	25.351	40.892	51.471	31.847	16.524	12.578	5.112	6.492	3.854	5.224	221.961
1984	13.013	11.313	8.971	36.616	51.471	27.923	12.719	7.782	4.792	2.918	1.765	1.549	180.832
1985	13.135	20.687	15.277	29.869	34.120	5.332	1.297	0.685	0.396	0.252	0.144	0.108	121.303
1986	4.576	8.431	30.921	32.251	12.935	5.909	6.413	9.944	1.982	1.946	3.845	5.227	124.379
1987	13.226	20.738	34.796	36.294	45.427	31.463	16.385	12.446	5.054	6.447	3.243	3.171	228.691
1988	13.194	20.738	34.796	33.572	43.568	17.186	9.044	5.116	3.243	1.910	1.153	5.206	188.726
1989	4.252	20.698	34.796	36.119	45.753	31.739	16.524	12.393	5.000	4.035	2.450	1.441	215.200
1990	8.359	20.306	27.382	24.572	43.348	31.427	6.882	12.539	4.071	2.486	1.477	0.865	183.714
1991	1.621	3.531	12.250	0.468	50.610	18.339	4.107	2.486	1.477	0.937	0.576	0.324	96.726
1992	2.378	0.793	13.836	3.639	3.063	1.189	4.035	0.036	0.000	0.000	0.000	1.513	30.482
1993	13.226	20.692	30.095	33.641	18.231	16.069	7.710	3.351	1.982	1.261	0.937	0.432	147.627
1994	4.720	9.260	22.375	9.764	0.324	21.366	4.107	1.369	0.216	0.144	0.072	0.036	73.753
1995	9.764	20.457	34.796	40.892	51.471	31.847	16.524	12.609	5.120	6.492	3.847	5.100	238.918
1996	13.226	14.268	32.420	38.872	47.597	31.780	16.524	12.351	5.120	6.492	3.854	5.227	227.731
1997	13.226	20.738	34.796	39.520	34.985	31.437	11.638	7.314	4.179	2.522	1.549	0.901	202.805
1998	13.226	14.844	33.162	36.619	10.989	31.216	5.801	2.342	1.333	0.829	0.504	0.360	151.225
1999	2.882	0.937	34.796	40.892	51.471	31.798	16.524	12.609	5.120	6.400	3.796	5.182	212.405
2000	12.946	20.738	34.796	34.787	23.564	21.005</							

A.44. Ni17 – Category C**Summary table**

Desktop Version 2, Generated on 2015-04-21

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni17

Annual Flows (Mill. cu. m or index values):

MAR = 325,787

S.Dev. = 351,543

CV = 1,079

Q75 = 1,693

Q75/MMF = 0,062

BFI Index = 0,355

CV(JJA+JFM) Index = 4,353

Ecological Category = C

Total IFR = 145,084 (44,53 %MAR)

Maint. Lowflow = 73,258 (22,49 %MAR)

Drought Lowflow = 20,155 (6,19 %MAR)

Maint. Highflow = 71,827 (22,05 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
	Mean	SD	CV	Maint.	Drought	Maint.	Maint.
Oct	23,648	59,289	2,507	4,670	0,970	4,676	9,346
Nov	22,928	31,368	1,368	6,633	1,108	7,530	14,163
Dec	41,718	54,832	1,314	10,155	3,109	9,470	19,625
Jan	48,166	71,583	1,486	10,699	3,139	11,717	22,416
Feb	54,200	94,953	1,752	10,089	2,926	17,429	27,518
Mar	41,576	93,030	2,238	10,183	3,085	12,103	22,286
Apr	17,471	31,274	1,790	6,818	1,076	3,077	9,895
May	12,070	19,529	1,618	5,518	1,097	2,169	7,687
Jun	6,073	9,385	1,545	2,714	1,021	0,000	2,714
Jul	30,344	120,920	3,985	2,563	0,958	1,697	4,260
Aug	7,756	15,935	2,055	2,358	0,868	0,000	2,358
Sep	19,837	64,223	3,238	0,859	0,798	1,960	2,818

Rule curve

Desktop Version 2, Generated on 2015-04-21

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni17

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	11.803	11.705	11.480	8.899	4.468	2.558	1.765	0.793	0.216	0.000
Nov	18.219	18.097	17.844	17.343	11.313	8.431	4.071	2.990	0.937	0.036
Dec	32.540	30.007	27.756	25.614	23.317	17.799	12.250	8.935	4.756	0.180
Jan	37.661	34.541	31.785	29.193	20.609	14.808	10.809	6.738	3.351	0.396
Feb	47.904	43.310	39.310	35.649	23.564	20.177	14.412	6.918	3.891	0.360
Mar	28.626	28.445	28.069	20.357	16.069	10.052	5.909	3.747	1.693	0.252
Apr	12.831	12.722	12.474	11.277	9.044	5.260	4.035	1.802	0.613	0.216
May	10.009	9.926	9.738	7.314	4.900	2.450	1.657	0.685	0.252	0.036
Jun	3.674	3.649	3.592	3.473	2.882	1.802	1.081	0.396	0.144	0.000
Jul	5.460	5.419	5.325	3.279	2.234	1.441	0.829	0.504	0.108	0.000
Aug	3.192	3.170	3.120	2.270	1.477	0.937	0.576	0.360	0.144	0.000
Sep	3.464	3.441	3.387	3.277	2.342	1.513	0.865	0.360	0.180	0.000

Reserve Flows without High Flows

Oct	6.317	6.266	6.151	5.911	4.468	2.558	1.765	0.793	0.216	0.000
Nov	9.235	9.175	9.049	8.800	8.334	7.520	4.071	2.990	0.937	0.036
Dec	14.147	14.065	13.894	13.556	12.923	11.817	10.059	7.615	4.756	0.180
Jan	14.904	14.817	14.635	14.274	13.599	12.421	10.546	6.738	3.351	0.396
Feb	14.054	13.971	13.799	13.458	12.820	11.705	9.932	6.918	3.891	0.360
Mar	14.187	14.104	13.932	13.592	12.955	10.052	5.909	3.747	1.693	0.252
Apr	9.221	9.143	8.967	8.602	7.923	5.260	4.035	1.802	0.613	0.216
May	7.464	7.404	7.266	6.981	4.900	2.450	1.657	0.685	0.252	0.036
Jun	3.674	3.649	3.592	3.473	2.882	1.802	1.081	0.396	0.144	0.000
Jul	3.469	3.445	3.391	3.279	2.234	1.441	0.829	0.504	0.108	0.000
Aug	3.192	3.170	3.120	2.270	1.477	0.937	0.576	0.360	0.144	0.000
Sep	1.165	1.162	1.154	1.137	1.107	1.056	0.865	0.360	0.180	0.000

Natural Duration curves

Oct	51.595	25.725	13.367	8.899	4.468	2.558	1.765	0.793	0.216	0.000
Nov	53.937	35.237	24.392	18.844	11.313	8.431	4.071	2.990	0.937	0.036
Dec	112.378	60.314	46.407	29.509	26.410	17.799	12.250	8.935	4.756	0.180
Jan	129.888	77.897	56.243	33.436	20.609	14.808	10.809	6.738	3.351	0.396
Feb	123.115	72.636	52.316	36.426	23.564	20.177	14.412	6.918	3.891	0.360
Mar	92.669	59.558	37.183	20.357	16.069	10.052	5.909	3.747	1.693	0.252
Apr	39.165	27.311	14.556	11.277	9.044	5.260	4.035	1.802	0.613	0.216
May	39.777	15.745	11.638	7.314	4.900	2.450	1.657	0.685	0.252	0.036
Jun	17.114	8.827	6.161	4.071	2.882	1.802	1.081	0.396	0.144	0.000
Jul	39.669	12.322	5.441	3.279	2.234	1.441	0.829	0.504	0.108	0.000
Aug	27.671	8.035	3.351	2.270	1.477	0.937	0.576	0.360	0.144	0.000
Sep	48.460	17.042	9.080	4.035	2.342	1.513	0.865	0.360	0.180	0.000

Hydrological time series

Total Runoff : Ni17
 Desktop (Version 2) Modified Flow Data for Ecological Category C

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	11.666	9.008	7.963	1.621	6.557	3.747	0.576	0.288	0.180	0.108	0.072	3.438	45.225
1921	7.386	18.219	29.412	29.766	39.021	12.250	4.900	3.027	1.802	1.117	3.191	3.334	153.425
1922	11.464	18.135	28.383	37.661	39.450	21.978	10.701	5.621	3.099	1.982	1.189	0.721	180.383
1923	2.558	8.755	28.234	14.520	23.383	28.345	12.521	9.625	3.566	3.351	2.018	1.874	138.750
1924	1.765	18.219	29.452	37.661	47.904	28.626	12.831	10.009	3.674	5.460	3.192	3.415	202.209
1925	9.044	4.936	4.756	3.351	1.333	1.693	0.504	0.252	0.144	0.108	0.072	3.380	29.573
1926	0.036	0.036	1.045	1.081	4.684	3.207	0.613	0.000	0.000	0.829	0.108	0.180	11.819
1927	1.549	7.999	5.801	6.341	6.918	2.090	0.901	0.072	0.036	0.036	0.000	1.910	33.653
1928	0.000	0.576	0.757	1.657	3.135	15.781	2.846	1.657	1.009	0.613	0.360	2.810	31.201
1929	2.090	1.621	2.198	37.661	25.041	28.445	11.926	6.341	3.412	2.378	1.441	0.865	123.420
1930	0.540	0.396	9.692	0.396	0.360	0.072	0.396	0.468	0.252	0.216	0.288	0.180	13.256
1931	0.108	1.261	0.180	0.108	47.904	27.942	11.458	9.782	3.637	4.792	2.882	1.693	111.746
1932	1.081	0.757	12.070	7.638	26.734	2.594	1.369	0.649	0.396	5.334	0.144	0.108	58.874
1933	0.108	8.359	25.614	19.708	5.008	8.575	1.189	0.324	0.180	1.009	3.141	2.594	75.809
1934	2.630	3.927	26.779	5.513	24.140	0.937	0.216	0.144	1.153	0.036	0.036	0.000	65.511
1935	0.000	0.000	1.910	35.315	21.186	28.626	12.831	10.009	3.674	5.399	3.155	3.277	125.382
1936	2.522	18.121	24.038	32.238	45.890	21.438	10.953	5.981	3.379	5.329	1.369	3.171	174.429
1937	0.540	0.504	25.900	2.342	36.155	3.387	11.277	0.649	3.651	5.448	3.146	3.289	96.296
1938	11.169	17.467	28.714	10.413	21.438	28.239	6.954	9.548	2.990	5.453	3.192	3.441	149.018
1939	11.645	18.210	27.756	30.304	19.853	7.927	12.806	10.009	3.671	5.381	3.143	3.436	154.140
1940	9.296	16.141	28.746	26.410	11.962	11.061	4.972	1.621	0.973	0.613	0.360	0.540	112.695
1941	0.649	1.982	6.810	9.944	35.649	6.557	1.802	1.261	3.557	0.793	0.468	3.318	72.790
1942	11.480	16.394	30.989	31.775	19.708	28.076	12.790	9.980	3.666	5.460	3.192	3.464	176.975
1943	11.772	16.574	21.438	6.990	23.203	4.107	1.946	1.225	1.729	1.369	0.829	3.464	94.647
1944	11.778	17.343	15.205	15.061	19.961	28.626	12.674	9.837	3.622	4.684	2.846	1.693	143.329
1945	1.081	0.649	27.438	34.541	40.971	11.277	5.260	2.486	1.477	0.937	0.576	0.324	127.016
1946	0.793	1.946	7.602	15.925	36.922	28.626	12.770	9.927	3.656	5.296	3.105	2.342	128.910
1947	1.261	18.172	32.540	21.258	14.412	20.357	10.593	2.018	1.189	0.757	0.468	1.405	124.430
1948	1.297	6.702	17.583	12.863	9.944	1.982	12.515	10.005	2.090	1.333	0.829	0.685	77.828
1949	2.198	2.990	21.147	25.725	4.540	16.466	2.306	4.107	0.360	0.216	0.144	0.072	80.271
1950	0.252	0.036	17.294	8.251	1.910	14.304	1.333	0.072	0.000	0.000	3.191	3.397	50.040
1951	8.899	3.639	23.958	6.017	23.095	7.206	0.324	0.216	0.144	5.447	1.117	0.360	80.422
1952	0.216	1.910	19.744	28.786	35.577	8.395	4.792	1.117	0.468	0.288	0.180	0.108	101.580
1953	0.252	12.322	0.757	1.369	22.771	8.467	1.369	9.983	3.555	3.207	1.946	3.441	69.439
1954	11.714	17.946	18.159	29.637	44.761	28.578	12.796	9.901	3.633	5.044	3.063	1.802	187.035
1955	4.252	1.549	6.485	3.855	44.525	28.306	12.621	9.763	3.607	4.288	2.594	3.308	125.153
1956	1.765	17.732	25.240	17.799	22.951	5.693	12.705	9.927	3.592	5.460	3.192	3.464	129.519
1957	11.803	18.219	31.768	33.407	43.310	18.087	10.557	5.945	3.372	2.234	1.333	1.045	181.081
1958	2.810	17.599	23.557	21.798	9.296	3.891	2.126	2.450	0.793	0.504	0.324	3.425	88.574
1959	4.756	2.270	26.885	2.162	37.128	9.620	12.604	5.765	2.450	1.549	0.937	1.657	107.783
1960	0.576	17.983	30.603	37.488	39.310	22.519	12.283	8.071	3.547	2.630	1.585	3.457	180.052
1961	11.541	8.323	6.521	9.404	2.414	13.763	12.106	2.378	0.793	0.504	0.468	0.216	68.431
1962	0.144	3.711	32.540	21.798	27.239	18.051	12.814	9.702	3.651	5.460	3.192	3.464	141.766
1963	11.670	12.971	8.431	37.032	7.350	3.603	12.360	1.802	1.081	0.685	0.576	0.252	97.632
1964	11.763	18.219	27.320	14.088	46.062	5.044	3.207	1.802	2.414	1.477	0.396	0.937	132.909
1965	7.062	3.459	2.414	6.593	27.527	0.432	0.216	0.144	0.072	0.036	0.180	0.144	48.279
1966	0.000	11.133	31.571	12.863	41.688	28.046	12.615	9.738	3.593	3.747	2.270	1.729	158.992
1967	3.531	17.997	25.915	14.376	4.612	28.626	12.474	8.791	3.534	3.279	3.139	1.189	127.462
1968	2.234	3.891	23.637	20.609	3.891	28.518	10.160	8.503	3.508	2.846	1.729	3.063	112.590
1969	11.782	17.883	11.854	11.458	15.421	2.774	5.188	1.405	0.576	0.360	2.126	3.444	84.271
1970	11.803	17.489	11.530	29.456	6.666	4.468	8.467	10.009	3.658	5.397	3.170	3.193	115.307
1971	4.468	2.306	13.944	32.312	47.904	28.607	12.813	10.001	3.674	5.448	3.173	3.334	167.984
1972	3.351	3.423	2.630	6.738	39.251	14.520	12.556	7.026	3.406	1.982	3.153	3.464	101.500
1973	11.803	17.978	25.990	31.904	19.564	11.782	3.927	2.306	1.369	5.447	0.540	0.360	132.971
1974	0.685	9.908	31.434	36.840	46.986	28.626	12.742	9.926	3.649	5.326	3.120	3.464	192.706
1975	11.803	18.076	26.536	35.207	37.850	28.488	12.831	10.009	3.674	5.430	3.172	3.335	196.413
1976	5.477	8.287	30.007	31.785	47.904	28.626	12.831	10.009	3.674	5.419	3.164	3.402	190.584
1977	11.498	4.071	8.215	37.661	38.698	16.934	9.944	4.900	2.882	2.846	1.117	0.937	139.703
1978	11.277	9.260	23.985	15.709	20.105	9.296	10.485	4.396	2.594	5.325	1.729	3.380	117.541
1979	7.638	3.783	18.339	17.763	20.177	0.793	0.360	0.216	0.144	0.072	0.036	3.387	72.708
1980	1.477	18.097	14.988	17.835	15.277	0.288	3.351	10.009	3.674	5.428	3.178	3.464	97.066
1981	11.769	17.619	20.969	13.980	21.222	18.664	6.305	3.603	2.126	1.333	0.829	0.504	118.923
1982	2.306	4.864	0.144	4.288	2.090	0.252	0.000	0.288	0.036	0.000	0.504	0.000	14.772
1983	1.910	18.191	23.344	37.661	47.904	28.626	12.831	9.985	3.669	5.460	3.192	3.463	196.237
1984	11.616	11.313	8.971	33.425	47.904	27.847	12.287	7.782	3.512	2.918	1.765	1.549	170.890
1985	11.723	18.175	15.277	28.433	34.120	5.332	1.297	0.685	0.396	0.252	0.144	0.108	115.942
1986	4.576	8.431	28.698	29.193	12.935	5.909	6.413	9.625	1.982	1.946	3.185	3.464	116.358
1987	11.803	18.219	32.540	33.109	41.902	28.287	12.726	9.884	3.632	5.424	3.109	3.171	203.806
1988	11.775	18.219	32.540	30.458	40.070	17.186	9.044	5.116	3.243	1.910	1.153	3.452	174.167
1989	4.252	18.184	32.540	32.936	42.225	28.531	12.831	9.843	3.597	4.035	2.450	1.441	192.864
1990	8.359	17.844	25.266	24.572	39.853	28.256	6.882	9.955	3.473	2.486	1.477	0.865	169.288
1991	1.621	3.531	12.250	0.468	47.047	18.339	4.107	2.486	1.477	0.937	0.576	0.324	93.163
1992	2.378	0.793	13.836	3.639	3.063	1.189	4.035	0.036	0.000	0.000	0.000	1.513	30.482
1993	11.803	18.179	27.888	30.525	18.231	16.069	7.710	3.351	1.982	1.261	0.937	0.432	138.368
1994	4.720	9.260	21.503	9.764	0.324	21.366	4.107	1.369	0.216	0.144	0.072	0.036	72.881
1995	9.764	17.975	32.540	37.661	47.904	28.626	12.831	10.009	3.674	5.460	3.187	3.390	213.022
1996	11.803	14.268	30.179	35.655	44.052	28.567	12.831	9.811	3.674	5.460	3.192	3.464	202.957
1997	11.803	18.219	32.540	36.297	34.985	28.264	11.638	7.314	3.479	2.522	1.549	0.901	189.510
1998	11.803	14.844	30.915	33.429	10.989	28.069	5.801	2.342	1.333	0.829	0.504	0.360	141.219
1999	2.882	0.937	32.540	37.661	47.904	28.583	12.831	10.009	3.674	5.386	3.147	3.438	188.992
2000	11.557	18.219	32.540	31.635	23.564	21.005	8.287	4.972	2.918				

A.45. Ni17 – Category D**Summary table**

Desktop Version 2, Generated on 2015-03-09

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni17

Annual Flows (Mill. cu. m or index values):

MAR = 325,787

S.Dev. = 351,543

CV = 1,079

Q75 = 1,693

Q75/MMF = 0,062

BFI Index = 0,314

CV(JJA+JFM) Index = 4,353

Ecological Category = D

Total IFR = 71,006 (21,80 %MAR)

Maint. Lowflow = 20,155 (6,19 %MAR)

Drought Lowflow = 20,155 (6,19 %MAR)

Maint. Highflow = 50,851 (15,61 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)			
	Mean	SD	Low flows	High Flows	Total Flows	
	Mean	SD	Maint.	Drought	Maint.	Maint.
Oct	23,648	59,289	2,507	0,970	0,970	3,439 4,409
Nov	22,928	31,368	1,368	1,108	1,108	4,908 6,016
Dec	41,718	54,832	1,314	3,109	3,109	5,836 8,945
Jan	48,166	71,583	1,486	3,139	3,139	7,758 10,896
Feb	54,200	94,953	1,752	2,926	2,926	13,716 16,641
Mar	41,576	93,030	2,238	3,085	3,085	7,552 10,637
Apr	17,471	31,274	1,790	1,076	1,076	2,294 3,370
May	12,070	19,529	1,618	1,097	1,097	1,773 2,870
Jun	6,073	9,385	1,545	1,021	1,021	0,000 1,021
Jul	30,344	120,920	3,985	0,958	0,958	1,716 2,674
Aug	7,756	15,935	2,055	0,868	0,868	0,000 0,868
Sep	19,837	64,223	3,238	0,798	0,798	1,860 2,658

Rule curve

Desktop Version 2, Generated on 2015-03-09

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni17

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	6.687	6.636	6.520	6.279	4.468	2.558	1.765	0.793	0.216	0.000
Nov	9.528	9.469	9.346	9.103	8.648	7.854	4.071	2.990	0.937	0.036
Dec	17.533	16.000	14.670	13.464	12.261	10.248	8.924	7.085	4.756	0.180
Jan	21.325	19.293	17.541	15.968	14.426	11.848	10.246	6.738	3.351	0.396
Feb	32.471	28.900	25.842	23.141	20.565	16.268	13.851	6.918	3.891	0.360
Mar	17.413	17.312	17.102	16.686	15.908	10.052	5.909	3.747	1.693	0.252
Apr	5.257	5.220	5.134	4.957	4.628	4.085	3.318	1.802	0.613	0.216
May	4.555	4.524	4.453	4.306	4.033	2.450	1.657	0.685	0.252	0.036
Jun	1.893	1.884	1.866	1.827	1.754	1.634	1.081	0.396	0.144	0.000
Jul	4.216	4.187	4.120	3.279	2.234	1.441	0.829	0.504	0.108	0.000
Aug	1.610	1.603	1.587	1.553	1.477	0.937	0.576	0.360	0.144	0.000
Sep	4.125	4.095	4.027	3.886	2.342	1.513	0.865	0.360	0.180	0.000

Reserve Flows without High Flows

Oct	1.798	1.791	1.773	1.736	1.666	1.553	1.392	0.793	0.216	0.000
Nov	2.209	2.201	2.184	2.150	2.087	1.977	1.801	1.558	0.937	0.036
Dec	6.199	6.176	6.128	6.033	5.856	5.546	5.054	4.370	3.608	0.180
Jan	6.258	6.234	6.186	6.091	5.912	5.599	5.102	4.412	3.351	0.396
Feb	5.833	5.811	5.766	5.677	5.511	5.219	4.756	4.113	3.395	0.360
Mar	6.151	6.129	6.081	5.987	5.811	5.504	5.016	3.747	1.693	0.252
Apr	1.996	1.987	1.967	1.926	1.849	1.723	1.545	1.339	0.613	0.216
May	2.035	2.026	2.006	1.964	1.886	1.757	1.575	0.685	0.252	0.036
Jun	1.893	1.884	1.866	1.827	1.754	1.634	1.081	0.396	0.144	0.000
Jul	1.777	1.769	1.751	1.714	1.646	1.441	0.829	0.504	0.108	0.000
Aug	1.610	1.603	1.587	1.553	1.477	0.937	0.576	0.360	0.144	0.000
Sep	1.480	1.474	1.459	1.429	1.372	1.278	0.865	0.360	0.180	0.000

Natural Duration curves

Oct	51.595	25.725	13.367	8.899	4.468	2.558	1.765	0.793	0.216	0.000
Nov	53.937	35.237	24.392	18.844	11.313	8.431	4.071	2.990	0.937	0.036
Dec	112.378	60.314	46.407	29.509	26.410	17.799	12.250	8.935	4.756	0.180
Jan	129.888	77.897	56.243	33.436	20.609	14.808	10.809	6.738	3.351	0.396
Feb	123.115	72.636	52.316	36.426	23.564	20.177	14.412	6.918	3.891	0.360
Mar	92.669	59.558	37.183	20.357	16.069	10.052	5.909	3.747	1.693	0.252
Apr	39.165	27.311	14.556	11.277	9.044	5.260	4.035	1.802	0.613	0.216
May	39.777	15.745	11.638	7.314	4.900	2.450	1.657	0.685	0.252	0.036
Jun	17.114	8.827	6.161	4.071	2.882	1.802	1.081	0.396	0.144	0.000
Jul	39.669	12.322	5.441	3.279	2.234	1.441	0.829	0.504	0.108	0.000
Aug	27.671	8.035	3.351	2.270	1.477	0.937	0.576	0.360	0.144	0.000
Sep	48.460	17.042	9.080	4.035	2.342	1.513	0.865	0.360	0.180	0.000

Hydrological time series

Total Runoff : Ni17
 Desktop (Version 2) Modified Flow Data for Ecological Category D

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	6.616	8.013	6.543	1.621	6.557	3.747	0.576	0.288	0.180	0.108	0.072	4.092	38.414
1921	6.126	9.528	15.646	16.310	25.627	12.250	3.780	3.027	1.634	1.117	1.609	3.959	100.613
1922	6.512	9.487	15.037	21.325	25.948	16.899	4.872	4.114	1.767	1.982	1.189	0.721	109.853
1923	2.558	7.943	14.949	11.637	20.335	17.257	5.150	4.411	1.857	3.351	1.534	1.874	92.856
1924	1.765	9.528	15.669	21.325	32.471	17.413	5.257	4.555	1.893	4.216	1.610	4.063	119.766
1925	6.300	4.936	4.756	3.351	1.333	1.693	0.504	0.252	0.144	0.108	0.072	4.018	27.468
1926	0.036	0.036	1.045	1.081	4.684	3.207	0.613	0.000	0.000	0.829	0.108	0.180	11.819
1927	1.549	7.374	5.475	6.341	6.918	2.090	0.901	0.072	0.036	0.036	0.000	1.910	32.702
1928	0.000	0.576	0.757	1.657	3.135	15.781	2.816	1.657	1.009	0.613	0.360	2.810	31.171
1929	2.090	1.621	2.198	21.325	20.860	17.312	5.028	4.196	1.807	2.378	1.441	0.865	81.121
1930	0.540	0.396	7.338	0.396	0.360	0.072	0.396	0.468	0.252	0.216	0.288	0.180	10.902
1931	1.018	1.261	0.180	0.108	32.471	17.031	4.977	4.470	1.880	4.082	1.572	1.693	69.834
1932	1.081	0.757	8.698	7.638	21.200	2.594	1.369	0.649	0.396	4.126	0.144	0.108	48.760
1933	0.108	7.774	13.464	14.026	5.008	8.575	1.189	0.324	0.180	1.009	1.594	2.594	55.844
1934	2.630	3.927	14.112	5.513	20.680	0.937	0.216	0.144	1.153	0.036	0.036	0.000	49.384
1935	0.000	0.000	1.910	19.796	17.548	17.413	5.257	4.555	1.893	4.173	1.598	3.886	78.030
1936	2.522	9.480	12.639	17.826	30.901	16.828	4.909	4.155	1.796	4.122	1.369	3.171	109.719
1937	0.540	0.504	13.627	2.342	23.508	3.387	4.957	0.649	1.885	4.207	1.595	3.901	61.104
1938	6.449	9.163	15.231	10.060	17.868	17.197	4.328	4.401	1.760	4.211	1.610	4.096	96.372
1939	6.605	9.523	14.670	16.631	15.634	7.927	5.249	4.555	1.892	4.159	1.594	4.089	92.529
1940	6.336	8.940	15.249	15.124	11.962	11.061	3.841	1.621	0.973	0.613	0.360	0.540	76.620
1941	0.649	1.982	5.901	9.840	23.141	6.557	1.802	1.261	1.854	0.793	0.468	3.939	58.186
1942	6.520	8.955	16.593	17.535	15.350	17.106	5.243	4.544	1.890	4.216	1.610	4.125	103.687
1943	6.671	8.966	11.284	6.990	20.107	4.107	1.946	1.225	1.623	1.369	0.829	4.125	69.242
1944	6.674	9.103	9.745	11.961	15.845	17.413	5.203	4.490	1.875	4.076	1.571	1.693	89.650
1945	1.081	0.649	14.488	19.293	27.103	11.277	4.085	2.486	1.477	0.937	0.576	0.324	83.776
1946	0.793	1.946	6.342	12.345	24.067	17.413	5.237	4.524	1.887	4.111	1.582	2.342	82.589
1947	1.261	9.505	17.533	14.504	13.851	16.686	4.856	2.018	1.189	0.757	0.468	1.405	84.034
1948	1.297	6.702	10.206	10.890	9.944	1.982	5.148	4.554	1.666	1.333	0.829	0.685	55.236
1949	2.198	2.990	11.132	15.041	4.540	15.980	2.306	3.887	0.360	0.216	0.144	0.072	58.866
1950	0.252	0.036	10.150	8.251	1.910	14.304	1.333	0.072	0.000	0.000	1.609	4.040	41.957
1951	6.279	3.639	12.597	6.017	19.970	7.206	0.324	0.216	0.144	4.207	1.117	0.360	62.076
1952	0.216	1.910	10.703	15.738	23.090	8.395	3.722	1.117	0.468	0.288	0.180	0.108	65.935
1953	0.252	8.709	0.757	1.369	19.559	8.467	1.369	4.546	1.854	3.207	1.528	4.095	55.712
1954	6.641	9.395	10.332	16.233	30.025	17.386	5.246	4.515	1.879	4.097	1.577	1.802	109.129
1955	4.252	1.549	5.764	3.855	29.842	17.235	5.185	4.463	1.871	4.053	1.563	3.926	83.557
1956	1.765	9.292	13.268	13.178	19.787	5.693	5.214	4.525	1.866	4.216	1.610	4.125	84.537
1957	6.687	9.528	17.064	18.568	28.900	16.274	4.851	4.151	1.793	2.234	1.333	1.045	112.428
1958	2.810	9.227	12.387	14.569	9.296	3.891	2.126	2.450	0.793	0.504	0.324	4.075	62.453
1959	4.756	2.270	14.173	2.162	24.217	9.620	5.179	4.131	1.706	1.549	0.937	1.657	72.357
1960	0.576	9.413	16.359	21.212	25.842	16.906	5.068	4.345	1.851	2.630	1.500	4.116	109.819
1961	6.552	7.734	5.779	9.404	2.414	13.763	5.048	2.378	0.793	0.504	0.468	0.216	55.053
1962	0.144	0.711	17.533	14.569	21.301	16.268	5.252	4.440	1.885	4.216	1.610	4.124	95.052
1963	6.618	8.748	6.804	20.913	7.350	3.603	5.095	1.802	1.081	0.685	0.396	0.252	63.348
1964	6.666	9.528	14.421	11.319	31.035	5.044	2.969	1.802	1.702	1.477	0.576	0.937	87.476
1965	6.094	3.459	2.414	6.593	21.358	0.432	0.216	0.144	0.072	0.036	0.180	0.144	41.142
1966	0.000	8.599	16.944	10.890	27.653	17.089	5.183	4.453	1.866	3.747	1.553	1.729	99.706
1967	3.531	9.420	13.630	11.531	4.612	17.413	5.134	4.382	1.847	3.279	1.593	1.189	77.561
1968	2.234	3.891	12.429	14.426	3.891	17.353	4.792	4.367	1.838	2.846	1.511	3.063	72.642
1969	6.676	9.365	8.427	10.450	14.136	2.774	4.024	1.405	0.576	0.360	1.542	4.099	63.835
1970	6.687	9.174	8.020	16.125	6.666	4.468	4.545	4.555	1.888	4.171	1.603	3.351	71.253
1971	4.468	2.306	9.394	17.873	32.471	17.402	5.251	4.552	1.893	4.207	1.604	3.959	105.382
1972	3.351	3.423	2.630	6.738	25.798	14.520	5.163	4.274	1.804	1.982	1.597	4.125	75.405
1973	6.687	9.411	13.672	17.616	15.309	11.782	3.273	2.306	1.369	4.207	0.540	0.360	86.532
1974	0.685	8.261	16.861	20.788	31.755	17.413	5.227	4.524	1.884	4.120	1.587	4.125	117.230
1975	6.687	9.459	13.974	19.726	24.754	17.336	5.257	4.555	1.893	4.195	1.603	3.961	113.401
1976	5.477	7.694	16.000	17.541	32.471	17.413	5.257	4.555	1.893	4.187	1.601	4.045	118.135
1977	6.529	4.071	6.684	21.325	25.386	16.065	4.761	4.033	1.754	2.846	1.117	0.937	95.506
1978	6.452	8.082	12.611	12.249	16.127	9.296	4.840	3.940	1.722	4.120	1.511	4.018	84.968
1979	6.152	3.783	10.374	13.162	16.268	0.793	0.360	0.216	0.144	0.072	0.036	4.027	55.387
1980	1.477	9.469	9.684	13.194	14.096	0.288	3.029	4.555	1.893	4.193	1.605	4.125	67.608
1981	6.670	9.237	11.040	11.240	17.594	16.379	4.235	3.603	1.670	1.333	0.829	0.504	84.332
1982	2.306	4.864	0.144	4.288	2.090	0.252	0.000	0.288	0.036	0.000	0.504	0.000	14.772
1983	1.910	1.915	12.275	21.325	32.471	17.413	5.257	4.547	1.891	4.216	1.610	4.123	116.553
1984	6.591	8.648	7.097	18.579	32.471	16.978	5.070	4.330	1.839	2.918	1.514	1.549	107.585
1985	6.646	9.506	9.759	15.539	22.679	5.332	1.297	0.685	0.396	0.252	0.144	0.108	72.343
1986	4.576	7.854	15.221	15.968	12.935	5.909	4.250	4.411	1.654	1.946	1.608	4.125	80.456
1987	6.687	9.528	17.533	18.376	27.818	17.224	5.221	4.508	1.879	4.190	1.583	3.171	117.720
1988	6.673	9.528	17.533	16.725	26.419	16.111	4.628	4.057	1.776	1.910	1.153	4.110	110.622
1989	4.252	9.511	17.533	18.266	28.066	17.360	5.257	4.493	1.867	4.035	1.559	1.441	113.640
1990	6.225	9.346	13.282	14.903	26.254	17.206	4.317	4.535	1.827	2.486	1.477	0.865	102.723
1991	1.621	3.531	8.924	0.468	31.803	16.320	3.357	2.486	1.477	0.937	0.576	0.324	71.823
1992	2.378	0.793	9.364	3.639	3.063	1.189	3.318	0.036	0.000	0.000	0.000	1.513	25.294
1993	6.687	9.508	14.747	16.766	14.932	15.908	4.436	3.351	1.654	1.261	0.937	0.432	90.620
1994	4.720	8.082	11.318	9.755	0.324	16.819	3.357	1.369	0.216	0.144	0.072	0.036	56.211
1995	6.403	9.410	17.533	21.325	32.471	17.413	5.257	4.555	1.893	4.216	1.608	4.031	126.116
1996	6.687	8.827	16.104	20.016	29.475	17.380	5.257	4.481	1.893	4.216	1.610	4.125	120.071
1997	6.687	9.528	17.533	20.433	22.852	17.211	4.997	4.306	1.828	2.522	1.497	0.901	110.296
1998	6.687	8.862	16.548	18.581	10.989	17.102	4.162	2.342	1.333	0.829	0.504	0.360	88.300
1999	2.882	0.937	17.533	21.325	32.471	17.389	5.257	4.555	1.893	4.163	1.595	4.092	114.093
2000	0.560	9.528	17.533	17.449	20.565	16.771	4.519	4.041	1.756	1.838	1.117	4.125	105.801
2001	0.316	8.529	7.930	6.738	12.971	4.396	3.029	0.793	0.685	4.216			

A.46. Ni18 – Category B**Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni18

Annual Flows (Mill. cu. m or index values):

MAR = 767,368
 S.Dev. = 724,654
 CV = 0,944
 Q75 = 5,979
 Q75/MMF = 0,093
 BFI Index = 0,333
 CV(JJA+JFM) Index = 3,834

Ecological Category = B

Total IFR = 227,312 (29,62 %MAR)
 Maint. Lowflow = 120,402 (15,69 %MAR)
 Drought Lowflow = 5,325 (0,69 %MAR)
 Maint. Highflow = 106,910 (13,93 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows	High Flows	Total Flows	
				Maint.	Drought	Maint.	Maint.
Oct	56,251	137,762	2,449	7,642	0,000	8,478	16,119
Nov	58,708	76,463	1,302	8,400	0,000	8,618	17,018
Dec	102,018	108,428	1,063	11,634	0,561	18,165	29,799
Jan	117,866	153,910	1,306	13,770	0,467	9,082	22,852
Feb	130,374	207,608	1,592	16,011	3,270	41,699	57,710
Mar	93,996	166,380	1,770	14,999	0,561	12,745	27,744
Apr	42,051	62,747	1,492	11,486	0,187	2,898	14,383
May	31,179	46,287	1,485	9,347	0,093	0,000	9,347
Jun	15,856	19,504	1,230	6,817	0,000	0,000	6,817
Jul	55,609	211,755	3,808	8,230	0,000	0,000	8,230
Aug	18,993	34,103	1,796	5,478	0,093	0,000	5,478
Sep	44,465	142,519	3,205	6,589	0,093	5,227	11,815

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni18

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	18.384	18.217	17.838	17.053	15.590	8.314	4.391	2.429	1.121	0.093
Nov	19.442	19.304	19.017	18.447	17.381	15.520	12.560	7.847	2.896	0.467
Dec	49.156	44.355	40.160	36.292	32.337	25.699	20.990	14.446	7.152	1.028
Jan	34.063	31.593	29.351	27.133	24.622	20.371	16.535	11.205	5.264	1.526
Feb	100.100	89.188	79.785	71.357	63.124	49.360	40.895	29.133	14.667	3.550
Mar	31.829	31.606	31.142	30.223	28.502	25.497	20.719	14.080	6.679	2.023
Apr	16.867	16.711	16.356	15.622	14.255	12.003	8.824	5.164	2.035	0.579
May	11.147	11.042	10.802	10.308	9.385	7.867	5.722	3.254	1.144	0.162
Jun	8.129	8.052	7.876	7.512	6.834	5.717	3.737	2.325	0.773	0.051
Jul	9.814	9.721	9.508	9.069	7.380	5.792	4.297	2.055	0.841	0.061
Aug	6.533	6.472	6.333	6.044	4.858	3.643	2.896	1.214	0.561	0.093
Sep	13.574	13.451	13.170	9.996	7.007	4.391	2.616	1.682	0.747	0.187

Reserve Flows without High Flows

Oct	9.112	9.025	8.828	8.420	7.660	6.408	4.391	2.429	0.866	0.057
Nov	10.016	9.942	9.787	9.480	8.905	7.902	6.306	4.089	1.618	0.063
Dec	13.876	13.777	13.571	13.163	12.400	11.066	8.944	5.997	2.711	0.644
Jan	16.423	16.304	16.057	15.569	14.653	13.055	10.513	6.981	3.044	0.567
Feb	19.113	18.996	18.750	18.265	17.356	15.769	13.245	9.738	5.829	3.369
Mar	17.890	17.761	17.493	16.962	15.968	14.232	11.471	7.635	3.360	0.669
Apr	13.698	13.569	13.276	12.671	11.544	9.688	7.067	4.050	1.471	0.272
May	11.147	11.042	10.802	10.308	9.385	7.867	5.722	3.254	1.144	0.162
Jun	8.129	8.052	7.876	7.512	6.834	5.717	3.737	2.325	0.773	0.051
Jul	9.814	9.721	9.508	9.069	7.380	5.792	4.297	2.055	0.841	0.061
Aug	6.533	6.472	6.333	6.044	4.858	3.643	2.896	1.214	0.561	0.093
Sep	7.858	7.784	7.616	7.268	6.620	4.391	2.616	1.682	0.747	0.142

Natural Duration curves

Oct	104.257	66.889	39.890	23.635	16.068	8.314	4.391	2.429	1.121	0.093
Nov	150.033	80.715	61.844	51.661	33.164	21.393	13.359	7.847	2.896	0.467
Dec	247.376	153.302	119.204	90.524	65.955	51.101	39.704	32.790	13.172	1.028
Jan	316.227	162.271	141.812	93.046	63.245	54.370	40.264	27.279	16.162	3.830
Feb	237.660	169.184	129.760	91.085	70.065	55.211	44.001	29.334	14.667	3.550
Mar	204.216	141.344	86.507	60.536	46.430	31.576	22.701	15.881	9.716	2.055
Apr	86.320	58.294	43.814	28.773	26.251	18.123	12.612	7.847	3.457	0.654
May	92.206	38.676	28.306	17.937	15.041	10.276	6.446	3.737	2.055	0.561
Jun	44.935	23.729	16.722	12.705	8.688	7.380	3.737	2.616	1.214	0.187
Jul	62.685	30.362	17.376	10.276	7.380	5.792	4.297	2.055	0.841	0.187
Aug	56.893	26.344	12.145	7.941	4.858	3.643	2.896	1.214	0.561	0.093
Sep	111.637	39.236	24.289	9.996	7.007	4.391	2.616	1.682	0.747	0.187

Hydrological time series

Total Runoff : Ni18													
Desktop (Version 2) Modified Flow Data for Ecological Category B													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	18.243	17.425	17.579	2.474	12.705	6.679	3.237	1.955	1.170	0.841	0.561	13.535	96.404
1921	17.456	19.442	47.053	27.988	74.528	26.348	9.568	7.329	4.852	3.270	6.533	12.940	257.307
1922	17.053	19.413	46.716	34.063	81.948	30.261	15.761	9.802	6.960	5.979	3.643	2.149	273.748
1923	12.331	17.116	37.639	22.206	46.143	31.187	15.876	10.320	7.133	6.353	3.830	6.633	216.766
1924	15.590	19.413	40.912	32.979	100.100	31.829	16.867	11.147	8.129	9.814	6.533	13.170	306.483
1925	15.698	9.996	6.518	3.585	3.270	2.707	0.769	0.162	0.215	0.061	0.093	12.921	55.995
1926	0.187	0.467	3.727	1.886	10.370	4.308	1.399	0.487	0.277	2.336	0.561	0.280	26.283
1927	2.429	12.941	7.152	11.205	14.667	4.528	1.643	0.162	0.132	0.061	0.093	4.951	59.515
1928	0.093	1.028	1.028	1.526	7.847	25.330	5.164	3.862	2.325	2.055	1.121	7.007	58.385
1929	7.193	5.138	4.361	34.063	54.900	31.397	15.622	9.504	6.754	5.418	3.270	1.962	179.582
1930	1.214	1.028	10.574	2.344	3.550	0.561	0.579	0.385	0.215	0.260	0.374	0.187	21.271
1931	0.093	1.775	0.561	0.467	100.100	31.047	15.999	11.064	8.087	9.508	6.203	5.885	190.789
1932	3.737	2.336	14.614	5.074	46.332	7.991	3.623	2.214	1.369	9.521	0.561	0.374	97.746
1933	0.280	13.211	40.602	18.499	31.669	20.421	3.574	1.955	1.369	5.792	6.429	12.879	156.680
1934	8.314	10.337	31.168	4.045	37.876	2.023	0.674	0.162	2.325	0.061	0.093	0.093	97.172
1935	0.000	0.000	5.926	30.686	45.133	31.829	16.867	11.147	8.128	9.601	6.347	7.941	173.604
1936	4.951	19.267	30.792	28.519	88.959	28.912	13.504	8.820	6.115	8.646	2.989	4.204	245.680
1937	1.121	0.934	36.625	21.311	67.478	9.807	11.728	2.734	7.699	9.724	6.333	7.847	183.341
1938	17.958	18.302	40.160	26.401	62.432	31.067	11.233	9.980	5.519	9.790	6.514	13.317	252.672
1939	17.806	19.391	35.645	25.826	40.895	28.776	16.492	11.147	8.129	9.765	6.407	13.319	233.597
1940	15.662	17.189	39.360	25.511	56.545	22.497	15.420	8.820	5.551	4.297	2.616	1.962	215.431
1941	1.588	4.951	10.235	20.506	77.302	27.973	12.728	8.283	7.876	6.259	3.830	6.913	188.443
1942	16.493	17.446	45.330	27.856	40.789	30.223	16.542	11.080	8.078	9.814	6.533	13.574	243.758
1943	18.366	18.970	34.307	9.907	67.881	15.069	8.711	4.786	6.036	6.353	3.830	13.558	207.775
1944	18.303	17.898	25.824	11.066	45.234	31.829	16.571	10.773	7.839	9.069	5.751	3.643	203.800
1945	2.336	1.401	32.337	30.298	74.094	21.904	8.542	5.722	3.830	2.429	1.495	0.841	185.230
1946	2.149	6.330	19.915	12.406	55.073	31.829	16.568	10.802	7.868	8.805	5.654	3.830	181.230
1947	11.678	19.017	47.510	16.535	31.669	25.535	10.737	3.254	2.006	1.401	0.841	1.682	171.865
1948	4.391	12.074	15.114	15.357	21.563	14.822	16.086	11.116	7.149	6.726	4.017	2.616	131.031
1949	4.110	5.800	25.187	16.306	15.975	24.296	2.377	4.318	0.463	0.467	0.280	0.187	99.767
1950	1.682	1.588	27.285	5.264	24.389	27.878	2.035	0.739	0.463	0.467	6.532	13.457	111.778
1951	17.416	13.123	37.639	11.349	42.611	13.592	2.377	1.955	1.170	9.620	2.055	0.841	153.746
1952	0.561	6.330	26.701	20.371	74.905	20.719	15.786	9.355	5.717	4.484	5.232	2.429	192.591
1953	1.401	15.520	3.133	2.474	46.521	9.605	1.839	11.042	7.669	8.034	4.858	13.324	125.420
1954	18.005	18.590	21.929	25.488	90.620	31.792	16.852	11.049	8.020	9.322	6.068	4.858	262.593
1955	8.595	4.764	9.518	5.543	98.529	31.606	16.712	10.928	7.944	9.159	5.865	9.529	218.692
1956	5.138	19.275	34.698	20.684	71.357	20.520	16.396	10.931	7.581	9.814	6.533	13.574	236.502
1957	18.384	19.442	47.659	31.593	93.111	27.992	14.458	10.159	7.086	6.446	3.924	2.616	282.870
1958	5.232	19.063	32.969	17.015	48.556	14.080	5.164	6.829	2.989	1.962	1.121	13.234	168.213
1959	9.342	15.286	40.268	10.185	64.624	21.904	16.437	9.653	5.717	4.671	2.803	9.155	210.045
1960	3.083	18.447	46.828	34.063	83.673	30.693	15.369	10.308	8.072	9.415	6.044	13.484	279.480
1961	17.636	14.723	9.231	15.750	14.013	26.669	14.305	6.460	3.363	2.149	1.775	0.841	126.915
1962	2.616	14.442	49.156	26.944	60.700	29.459	16.758	10.562	7.995	9.814	6.533	13.562	248.542
1963	18.037	19.224	23.711	32.989	25.600	11.517	12.986	4.318	2.989	1.868	1.121	11.491	165.852
1964	18.369	19.442	44.383	22.922	87.547	16.307	8.149	5.999	6.435	5.792	2.336	5.979	243.660
1965	17.362	12.560	5.038	23.548	66.710	5.742	3.334	2.474	1.608	1.121	1.121	0.747	141.364
1966	0.280	14.395	41.940	17.757	89.188	31.142	16.356	10.601	7.610	8.805	5.138	3.457	246.669
1967	8.128	19.344	37.938	18.913	32.790	31.719	16.015	10.381	7.322	7.380	6.289	2.616	198.835
1968	3.363	7.287	41.905	25.401	27.820	31.777	16.711	10.868	7.885	9.084	5.768	7.567	195.435
1969	18.332	19.017	14.446	19.781	66.600	23.681	9.142	7.013	3.363	2.149	6.533	13.516	203.573
1970	18.384	19.074	17.453	28.969	21.496	22.299	14.255	11.147	8.105	9.655	6.412	8.968	186.216
1971	11.771	7.847	36.292	32.260	100.100	31.829	16.867	11.114	8.109	9.785	6.406	9.996	282.375
1972	10.650	7.660	7.976	16.143	99.098	31.168	16.867	11.061	8.052	9.295	6.517	13.574	238.060
1973	18.384	19.165	33.164	30.252	64.514	25.497	9.727	7.392	5.089	9.755	2.149	1.401	226.492
1974	1.495	18.006	47.173	33.168	99.679	31.802	16.733	10.939	7.958	9.167	5.882	13.574	295.576
1975	18.384	19.349	39.428	33.207	78.511	31.756	16.867	11.147	8.129	9.790	6.436	12.888	285.892
1976	17.935	16.495	43.147	29.698	100.100	31.829	16.867	11.147	8.129	9.671	6.391	13.379	304.788
1977	18.041	12.767	20.926	34.063	78.727	29.163	15.116	9.623	6.944	8.620	3.643	2.616	240.249
1978	18.148	17.554	33.856	18.983	59.142	17.131	12.003	7.108	4.662	5.582	6.327	13.329	217.824
1979	17.187	11.935	28.412	21.490	45.335	3.204	0.910	0.487	0.277	0.260	0.187	13.106	142.790
1980	4.204	19.036	31.711	25.755	57.410	9.605	7.755	11.147	8.129	9.787	6.472	13.574	204.586
1981	18.311	18.718	25.670	20.371	49.360	29.687	14.407	9.237	6.355	5.138	3.083	1.868	202.205
1982	6.726	12.945	3.252	7.273	4.297	5.411	0.187	0.436	0.051	2.616	3.176	1.588	47.957
1983	4.204	19.442	38.669	34.063	100.100	31.829	16.867	11.130	8.129	9.814	6.533	13.574	294.356
1984	18.092	17.086	11.152	31.618	100.100	31.393	16.579	10.868	8.103	9.721	6.306	8.128	269.145
1985	18.217	19.397	23.909	26.133	72.527	24.268	4.779	3.254	3.457	1.401	0.841	0.561	198.744
1986	6.072	11.310	44.355	27.312	38.829	29.995	14.177	10.734	7.765	9.332	6.507	13.574	219.962
1987	18.384	19.442	49.156	32.452	84.837	31.382	16.762	10.943	7.968	9.772	6.107	12.879	300.083
1988	18.248	19.442	49.156	28.342	85.200	30.324	15.470	9.832	7.039	6.072	3.737	13.451	286.313
1989	9.435	19.442	49.156	30.629	79.785	31.684	16.862	10.916	7.817	8.990	5.735	3.643	274.094
1990	16.511	17.742	34.833	28.101	95.308	31.513	16.173	11.140	8.040	9.309	6.044	4.671	279.384
1991	5.885	7.847	25.699	7.775	92.856	27.349	6.742	4.786	3.270	2.055	1.214	0.747	186.226
1992	3.457	2.896	14.174	8.377	18.964	2.023	5.503	0.093	0.000	0.000	0.093	5.138	60.718
1993	18.384	19.415	44.075	29.467	65.100	29.904	13.582	8.492	5.650	4.578	2.896	1.682	243.225
1994	16.872	15.712	34.848	13.655	4.297	27.142	5.841	3.167	2.989	1.495	0.934	0.561	127.512
1995	16.565	18.502	49.156	34.063	100.100	31.829	16.867	11.147	8.129	9.814	6.501	13.052	315.726
1996	18.384	16.613	38.385	29.107	79.699	31.607	16.864	10.788	8.129	9.814	6.533	13.574	279.498
1997	18.384	19.442	49.156	32.995	63.124	31.471	15.521	9.980	7.023	6.072	3.643	2.149	258.961
1998	18.384	17.056	43.043	29.351	39.941	30.802	10.737	5.814	3.737	2.336	1.495	1.121	203.819
1999	17.737	8.688	49.156	34.063	100.100</								

A.47. Ni18 – Category C

Summary table

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni18

Annual Flows (Mill. cu. m or index values):

MAR = 767,368
 S.Dev. = 724,654
 CV = 0,944
 Q75 = 5,979
 Q75/MMF = 0,093
 BFI Index = 0,333
 CV(JJA+JFM) Index = 3,834

Ecological Category = C

Total IFR = 152,898 (19,93 %MAR)
 Maint. Lowflow = 68,784 (8,96 %MAR)
 Drought Lowflow = 5,325 (0,69 %MAR)
 Maint. Highflow = 84,114 (10,96 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows Maint.	High Flows Drought	Total Flows Maint.	Total Flows Maint.
Oct	56,251	137,762	2,449	4,452	0,000	6,670	11,122
Nov	58,708	76,463	1,302	4,857	0,000	6,780	11,638
Dec	102,018	108,428	1,063	6,588	0,561	14,292	20,880
Jan	117,866	153,910	1,306	7,732	0,467	7,146	14,878
Feb	130,374	207,608	1,592	8,932	3,270	32,807	41,739
Mar	93,996	166,380	1,770	8,390	0,561	10,027	18,417
Apr	42,051	62,747	1,492	6,509	0,187	2,280	8,789
May	31,179	46,287	1,485	5,365	0,093	0,000	5,365
Jun	15,856	19,504	1,230	4,010	0,000	0,000	4,010
Jul	55,609	211,755	3,808	4,767	0,000	0,000	4,767
Aug	18,993	34,103	1,796	3,294	0,093	0,000	3,294
Sep	44,465	142,519	3,205	3,888	0,093	4,112	8,000

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni18

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	13.842	13.716	13.431	12.841	11.742	8.314	4.391	2.429	1.121	0.093
Nov	14.848	14.742	14.523	14.089	13.276	11.857	9.599	6.463	2.896	0.467
Dec	36.927	33.163	29.891	26.905	23.901	18.865	15.458	10.723	5.445	1.028
Jan	24.638	22.712	20.983	19.307	17.461	14.343	11.686	7.992	3.876	1.286
Feb	76.164	67.604	60.257	53.726	47.437	36.938	30.802	22.275	12.771	3.550
Mar	23.639	23.475	23.133	22.457	21.191	18.979	15.462	10.576	5.129	1.702
Apr	11.473	11.368	11.128	10.633	9.711	8.191	6.046	3.577	1.466	0.484
May	7.251	7.183	7.028	6.707	6.110	5.127	3.738	2.140	0.773	0.138
Jun	5.420	5.368	5.251	5.008	4.556	3.811	2.760	1.550	0.515	0.034
Jul	6.442	6.381	6.241	5.953	5.415	4.530	3.281	1.842	0.612	0.040
Aug	4.452	4.411	4.316	4.121	3.757	3.158	2.313	1.214	0.507	0.093
Sep	10.080	9.989	9.781	9.353	7.007	4.391	2.616	1.682	0.747	0.187

Reserve Flows without High Flows

Oct	6.016	5.959	5.829	5.559	5.058	4.231	3.064	1.720	0.572	0.038
Nov	6.758	6.708	6.603	6.396	6.008	5.331	4.255	2.759	1.091	0.042
Dec	9.170	9.106	8.972	8.709	8.215	7.352	5.981	4.075	1.951	0.615
Jan	10.760	10.683	10.524	10.208	9.618	8.587	6.947	4.669	2.129	0.531
Feb	12.446	12.378	12.236	11.955	11.429	10.509	9.047	7.016	4.752	3.327
Mar	11.676	11.593	11.421	11.081	10.443	9.329	7.559	5.098	2.356	0.631
Apr	8.798	8.716	8.530	8.144	7.426	6.243	4.572	2.649	1.005	0.241
May	7.251	7.183	7.028	6.707	6.110	5.127	3.738	2.140	0.773	0.138
Jun	5.420	5.368	5.251	5.008	4.556	3.811	2.760	1.550	0.515	0.034
Jul	6.442	6.381	6.241	5.953	5.415	4.530	3.281	1.842	0.612	0.040
Aug	4.452	4.411	4.316	4.121	3.757	3.158	2.313	1.214	0.507	0.093
Sep	5.255	5.206	5.094	4.863	4.433	3.723	2.616	1.569	0.584	0.125

Natural Duration curves

Oct	104.257	66.889	39.890	23.635	16.068	8.314	4.391	2.429	1.121	0.093
Nov	150.033	80.715	61.844	51.661	33.164	21.393	13.359	7.847	2.896	0.467
Dec	247.376	153.302	119.204	90.524	65.955	51.101	39.704	32.790	13.172	1.028
Jan	316.227	162.271	141.812	93.046	63.245	54.370	40.264	27.279	16.162	3.830
Feb	237.660	169.184	129.760	91.085	70.065	55.211	44.001	29.334	14.667	3.550
Mar	204.216	141.344	86.507	60.536	46.430	31.576	22.701	15.881	9.716	2.055
Apr	86.320	58.294	43.814	28.773	26.251	18.123	12.612	7.847	3.457	0.654
May	92.206	38.676	28.306	17.937	15.041	10.276	6.446	3.737	2.055	0.561
Jun	44.935	23.729	16.722	12.705	8.688	7.380	3.737	2.616	1.214	0.187
Jul	62.685	30.362	17.376	10.276	7.380	5.792	4.297	2.055	0.841	0.187
Aug	56.893	26.344	12.145	7.941	4.858	3.643	2.896	1.214	0.561	0.093
Sep	111.637	39.236	24.289	9.996	7.007	4.391	2.616	1.682	0.747	0.187

Hydrological time series

Total Runoff : Ni18													
Desktop (Version 2) Modified Flow Data for Ecological Category C													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	13.735	13.309	12.990	1.943	11.488	5.129	2.277	1.299	0.780	0.612	0.507	10.051	74.120
1921	13.144	14.848	35.277	19.948	56.175	19.605	6.549	4.779	3.235	2.852	4.452	9.611	190.474
1922	12.841	14.825	35.013	24.638	61.944	22.485	10.727	6.380	4.640	4.635	3.158	2.149	203.435
1923	10.870	13.073	27.941	15.689	34.606	23.167	10.805	6.715	4.756	4.843	3.251	6.633	162.348
1924	11.742	14.825	30.477	23.791	76.164	23.639	11.473	7.251	5.420	6.442	4.452	9.781	225.458
1925	11.823	7.690	4.986	2.713	3.270	2.205	0.612	0.138	0.143	0.040	0.093	9.597	43.311
1926	0.187	0.467	2.966	1.535	9.960	3.383	1.037	0.348	0.185	2.336	0.507	0.280	23.192
1927	2.429	9.547	5.445	7.992	12.771	3.545	1.202	0.138	0.088	0.040	0.093	4.951	48.242
1928	0.093	1.028	1.028	1.286	7.847	18.856	3.577	2.533	1.550	1.842	1.121	7.007	47.768
1929	7.193	4.041	3.426	24.638	41.164	23.321	10.633	6.187	4.503	4.132	2.890	1.962	134.090
1930	1.214	1.028	7.921	1.853	3.550	0.561	0.484	0.282	0.143	0.170	0.358	0.187	17.752
1931	0.093	1.775	0.561	0.467	76.164	23.063	10.888	7.197	5.392	6.241	4.229	5.885	141.955
1932	3.737	2.336	10.844	3.745	34.743	6.094	2.538	1.467	0.913	6.250	0.507	0.374	73.547
1933	0.280	10.096	30.235	13.046	24.923	15.243	2.505	1.299	0.913	4.530	4.381	9.566	117.017
1934	8.314	7.904	23.014	3.032	28.613	1.702	0.548	0.138	1.550	0.040	0.093	0.093	75.041
1935	0.000	0.000	4.558	22.010	33.874	23.639	11.473	7.251	5.419	6.302	4.326	7.941	126.792
1936	4.951	14.714	22.729	20.351	67.425	21.493	9.204	5.744	4.077	5.675	2.482	4.204	183.049
1937	1.121	0.934	27.162	15.033	50.763	7.431	8.006	1.803	5.133	6.383	4.316	7.847	135.932
1938	13.521	13.978	29.891	18.769	46.909	23.078	7.672	6.495	3.679	6.426	4.439	9.890	184.749
1939	13.407	14.809	26.414	18.346	30.802	21.392	11.220	7.251	5.420	6.410	4.366	9.892	169.728
1940	11.796	13.130	29.273	18.115	42.419	16.771	10.497	5.744	3.701	3.281	2.129	1.962	158.816
1941	1.588	3.951	7.675	14.442	58.328	20.801	8.680	5.397	5.251	4.791	3.251	6.913	141.068
1942	12.420	13.325	33.927	19.849	30.725	22.457	11.254	7.207	5.386	6.442	4.452	10.080	177.625
1943	13.828	14.488	25.397	7.093	51.071	11.304	5.970	3.132	4.024	4.843	3.251	10.068	154.469
1944	13.780	13.670	18.960	7.896	33.947	23.639	11.273	7.009	5.226	5.953	3.923	3.643	148.920
1945	2.336	1.401	23.901	21.710	55.840	16.334	5.857	3.738	2.792	2.429	1.480	0.841	138.659
1946	2.149	4.848	14.681	8.824	41.296	23.639	11.271	7.028	5.246	5.780	3.857	3.830	132.448
1947	10.717	14.523	35.635	11.686	24.923	19.007	7.338	2.140	1.337	1.017	0.747	1.682	130.751
1948	4.391	9.228	11.207	10.869	16.788	11.122	10.946	7.231	4.766	5.051	3.343	2.616	97.558
1949	4.110	4.444	18.495	11.527	13.457	18.095	1.697	2.829	0.308	0.318	0.280	0.187	75.748
1950	1.682	1.588	20.069	3.876	18.837	20.732	1.466	0.511	0.308	0.318	4.451	9.993	83.831
1951	13.114	10.028	27.941	8.092	32.045	10.217	1.697	1.299	0.780	6.315	1.759	0.841	114.128
1952	0.561	4.848	19.625	14.343	56.466	15.462	10.744	6.091	3.811	3.418	3.802	2.429	141.601
1953	1.401	11.857	2.537	1.943	34.880	7.282	1.334	7.183	5.113	5.537	3.757	9.895	92.719
1954	13.557	14.197	16.138	18.098	68.726	23.612	11.463	7.188	5.347	6.119	4.137	4.858	193.440
1955	8.595	3.862	7.157	4.069	74.931	23.475	11.368	7.109	5.296	6.012	4.000	9.228	165.102
1956	5.138	14.720	25.694	14.573	53.726	15.316	11.156	7.111	5.054	6.442	4.452	10.080	173.462
1957	13.842	14.848	35.752	22.712	70.680	20.815	9.848	6.611	4.724	4.895	3.297	2.616	210.638
1958	5.232	14.558	24.381	12.018	36.355	10.576	3.577	4.454	2.072	1.716	1.121	9.829	125.889
1959	9.342	11.678	29.976	7.286	48.583	16.334	11.183	6.283	3.811	3.554	2.252	9.128	159.411
1960	3.083	14.089	35.101	24.638	63.289	22.803	10.462	6.707	5.382	6.180	4.121	10.014	205.869
1961	13.279	11.249	6.949	11.141	12.343	19.841	9.745	4.216	2.416	2.050	1.620	0.841	95.690
1962	2.616	11.035	36.927	19.168	45.588	21.895	11.399	6.872	5.330	6.442	4.452	10.071	181.796
1963	13.581	14.681	17.427	23.799	19.715	8.689	8.855	2.829	2.072	1.589	1.121	9.459	123.817
1964	13.830	14.848	33.185	16.214	66.320	12.215	5.591	3.917	4.290	4.530	1.944	5.979	182.864
1965	13.073	9.599	3.915	16.673	50.176	4.439	2.343	1.635	1.072	0.815	1.121	0.747	105.608
1966	0.280	10.999	31.277	12.532	67.604	23.133	11.128	6.897	5.074	5.780	3.790	3.457	181.951
1967	8.128	14.772	28.171	13.333	26.194	23.558	10.898	6.755	4.882	5.415	4.287	2.616	149.010
1968	3.363	5.858	31.249	18.034	21.324	23.601	11.368	7.070	5.257	5.963	3.934	7.567	144.587
1969	13.802	14.523	10.723	13.934	50.092	17.643	6.261	4.574	2.416	2.050	4.452	10.037	150.507
1970	13.842	14.567	12.899	20.693	16.739	16.625	9.711	7.251	5.404	6.338	4.370	8.968	137.405
1971	10.739	6.463	26.905	23.231	76.164	23.639	11.473	7.229	5.406	6.423	4.366	9.353	211.391
1972	10.477	6.261	6.041	11.413	75.378	23.153	11.473	7.195	5.368	6.101	4.441	10.080	177.381
1973	13.842	14.636	24.529	21.675	48.499	18.979	6.656	4.820	3.393	6.404	1.821	1.401	166.655
1974	1.495	13.752	35.371	23.939	75.834	23.619	11.383	7.116	5.306	6.017	4.011	10.080	217.923
1975	13.842	14.776	29.325	23.969	59.267	23.585	11.473	7.251	5.420	6.426	4.386	9.573	209.293
1976	13.504	12.600	32.220	21.249	76.164	23.639	11.473	7.251	5.420	6.348	4.356	9.935	224.159
1977	13.583	9.757	15.412	24.638	59.435	21.677	10.292	6.264	4.630	5.658	3.158	2.616	177.121
1978	13.664	13.407	25.055	13.381	44.400	12.822	8.191	4.635	3.108	6.289	4.313	9.899	159.164
1979	12.942	9.122	20.924	15.164	34.020	2.571	0.707	0.348	0.185	0.170	0.187	9.734	106.075
1980	4.204	14.538	23.426	18.294	43.079	7.282	5.325	7.251	5.420	6.425	4.411	10.080	149.734
1981	13.786	14.295	18.845	14.343	36.938	22.063	9.813	6.014	4.237	3.896	2.653	1.868	148.751
1982	6.726	9.893	2.623	5.268	4.297	4.195	0.187	0.315	0.034	2.579	2.822	1.588	40.526
1983	4.204	14.848	28.738	24.638	76.164	23.639	11.473	7.240	5.420	6.442	4.452	10.080	217.338
1984	13.622	13.051	8.339	22.731	76.164	23.318	11.279	7.070	5.402	6.381	4.298	8.128	199.783
1985	13.716	14.813	17.570	18.572	54.630	18.074	3.317	2.140	2.502	1.017	0.747	0.561	147.661
1986	6.072	8.646	33.163	19.441	29.304	22.289	9.658	6.983	5.177	6.125	4.434	10.080	161.374
1987	13.842	14.848	36.927	23.380	64.200	23.310	11.402	7.118	5.312	6.414	4.163	9.566	220.483
1988	13.739	14.848	36.927	20.216	64.483	22.532	10.531	6.399	4.693	4.686	3.205	9.989	212.248
1989	9.435	14.848	36.927	21.966	60.257	23.532	11.470	7.101	5.212	5.901	3.912	3.643	204.203
1990	12.434	13.551	25.797	20.034	72.402	23.407	11.005	7.246	5.360	6.110	4.121	4.671	206.138
1991	5.885	6.463	18.865	5.616	70.480	20.342	4.642	3.132	2.330	1.842	1.214	0.747	141.558
1992	3.457	2.896	10.526	6.033	15.025	1.702	3.806	0.093	0.000	0.000	0.093	5.138	48.769
1993	13.842	14.827	32.945	21.072	48.947	22.222	9.257	5.532	3.767	3.486	2.313	1.682	179.891
1994	12.705	12.003	25.809	9.690	4.297	20.189	4.034	2.083	2.072	1.085	0.827	0.561	95.355
1995	12.475	14.130	36.927	24.638	76.164	23.639	11.473	7.251	5.420	6.442	4.430	9.694	232.684
1996	13.842	12.690	28.517	20.797	60.190	23.476	11.471	7.018	5.420	6.442	4.452	10.080	204.395
1997	13.842	14.848	36.927	23.803	47.437	23.376	10.565	6.495	4.682	4.686	3.158	2.149	191.969
1998	13.842	13.028	32.138	20.983	30.110	22.884	7.338	3.798	2.760	2.336	1.480	1.121	151.817
1999	13.355	6.943	36.927	24.638	76.164	23.639	11.473	7.251	5.420	6.360	4.357	9.805	226.332
2000													

A.48. Ni18 – Category D**Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni18

Annual Flows (Mill. cu. m or index values):

MAR = 767,368
 S.Dev. = 724,654
 CV = 0,944
 Q75 = 5,979
 Q75/MMF = 0,093
 BFI Index = 0,333
 CV(JJA+JFM) Index = 3,834

Ecological Category = D

Total IFR = 99,289 (12,94 %MAR)
 Maint. Lowflow = 28,960 (3,77 %MAR)
 Drought Lowflow = 5,325 (0,69 %MAR)
 Maint. Highflow = 70,329 (9,16 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows Maint.	High Flows Drought	Total Flows Maint.	Total Flows Maint.
Oct	56,251	137,762	2,449	1,910	0,000	5,577	7,487
Nov	58,708	76,463	1,302	2,069	0,000	5,669	7,739
Dec	102,018	108,428	1,063	2,750	0,561	11,949	14,700
Jan	117,866	153,910	1,306	3,200	0,467	5,975	9,174
Feb	130,374	207,608	1,592	3,672	3,270	27,431	31,102
Mar	93,996	166,380	1,770	3,458	0,561	8,384	11,842
Apr	42,051	62,747	1,492	2,719	0,187	1,906	4,625
May	31,179	46,287	1,485	2,269	0,093	0,000	2,269
Jun	15,856	19,504	1,230	1,736	0,000	0,000	1,736
Jul	55,609	211,755	3,808	2,034	0,000	0,000	2,034
Aug	18,993	34,103	1,796	1,455	0,093	0,000	1,455
Sep	44,465	142,519	3,205	1,688	0,093	3,438	5,127

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni18

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	11.458	11.354	11.118	10.631	9.721	8.223	4.391	2.429	1.121	0.093
Nov	12.567	12.478	12.292	11.925	11.236	10.034	8.122	5.466	2.505	0.467
Dec	28.677	25.548	22.848	20.421	18.040	14.059	11.575	8.123	4.275	1.028
Jan	17.966	16.376	14.972	13.654	12.266	9.931	8.140	5.653	2.880	1.135
Feb	60.593	53.462	47.375	42.026	36.976	28.560	24.007	17.681	10.629	3.550
Mar	19.379	19.246	18.967	18.417	17.385	15.584	12.720	8.739	4.303	1.512
Apr	7.737	7.667	7.507	7.178	6.564	5.553	4.125	2.482	1.077	0.424
May	4.194	4.155	4.066	3.883	3.541	2.977	2.182	1.266	0.483	0.119
Jun	3.209	3.179	3.109	2.966	2.698	2.257	1.634	0.918	0.305	0.020
Jul	3.759	3.723	3.642	3.474	3.160	2.644	1.914	1.075	0.357	0.024
Aug	2.689	2.664	2.608	2.492	2.275	1.919	1.415	0.835	0.340	0.093
Sep	8.009	7.937	7.773	7.434	6.802	4.391	2.616	1.682	0.747	0.187

Reserve Flows without High Flows

Oct	3.530	3.497	3.420	3.262	2.968	2.483	1.798	1.010	0.336	0.022
Nov	4.113	4.082	4.019	3.893	3.657	3.245	2.590	1.679	0.664	0.026
Dec	5.469	5.433	5.357	5.207	4.925	4.433	3.651	2.565	1.354	0.592
Jan	6.362	6.318	6.227	6.047	5.708	5.118	4.179	2.874	1.419	0.504
Feb	7.318	7.287	7.225	7.101	6.869	6.463	5.818	4.922	3.924	3.295
Mar	6.877	6.830	6.732	6.539	6.177	5.544	4.538	3.140	1.581	0.601
Apr	5.027	4.981	4.876	4.659	4.256	3.590	2.652	1.571	0.647	0.217
May	4.194	4.155	4.066	3.883	3.541	2.977	2.182	1.266	0.483	0.119
Jun	3.209	3.179	3.109	2.966	2.698	2.257	1.634	0.918	0.305	0.020
Jul	3.759	3.723	3.642	3.474	3.160	2.644	1.914	1.075	0.357	0.024
Aug	2.689	2.664	2.608	2.492	2.275	1.919	1.415	0.835	0.340	0.093
Sep	3.121	3.092	3.027	2.891	2.639	2.223	1.635	0.959	0.381	0.112

Natural Duration curves

Oct	104.257	66.889	39.890	23.635	16.068	8.314	4.391	2.429	1.121	0.093
Nov	150.033	80.715	61.844	51.661	33.164	21.393	13.359	7.847	2.896	0.467
Dec	247.376	153.302	119.204	90.524	65.955	51.101	39.704	32.790	13.172	1.028
Jan	316.227	162.271	141.812	93.046	63.245	54.370	40.264	27.279	16.162	3.830
Feb	237.660	169.184	129.760	91.085	70.065	55.211	44.001	29.334	14.667	3.550
Mar	204.216	141.344	86.507	60.536	46.430	31.576	22.701	15.881	9.716	2.055
Apr	86.320	58.294	43.814	28.773	26.251	18.123	12.612	7.847	3.457	0.654
May	92.206	38.676	28.306	17.937	15.041	10.276	6.446	3.737	2.055	0.561
Jun	44.935	23.729	16.722	12.705	8.688	7.380	3.737	2.616	1.214	0.187
Jul	62.685	30.362	17.376	10.276	7.380	5.792	4.297	2.055	0.841	0.187
Aug	56.893	26.344	12.145	7.941	4.858	3.643	2.896	1.214	0.561	0.093
Sep	111.637	39.236	24.289	9.996	7.007	4.391	2.616	1.682	0.747	0.187

Hydrological time series

Total Runoff : Ni18
 Desktop (Version 2) Modified Flow Data for Ecological Category D

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	11.370	11.264	9.776	1.577	9.676	4.303	1.617	0.784	0.462	0.357	0.340	7.986	59.513
1921	10.881	12.567	27.303	14.153	44.023	16.094	4.460	2.778	1.915	1.664	2.689	7.638	146.166
1922	10.631	12.548	27.084	17.966	48.770	18.439	7.241	3.695	2.748	2.704	1.919	2.149	155.894
1923	8.999	11.064	21.258	10.939	26.830	18.995	7.292	3.887	2.816	2.826	1.974	6.633	123.513
1924	9.721	12.548	23.329	17.265	60.593	19.379	7.737	4.194	3.209	3.759	2.689	7.773	172.197
1925	9.789	6.506	3.940	2.096	3.270	1.922	0.509	0.119	0.085	0.024	0.093	7.627	35.978
1926	0.187	0.467	2.468	1.303	8.542	2.881	0.792	0.239	0.109	1.437	0.340	0.280	19.045
1927	2.429	8.078	4.275	5.653	10.629	3.013	0.901	0.119	0.052	0.024	0.093	4.951	40.216
1928	0.093	1.028	1.028	1.135	7.317	15.483	2.482	1.491	0.918	1.075	0.734	6.802	39.587
1929	7.193	3.415	2.803	17.966	31.948	19.120	7.178	3.585	2.667	2.411	1.759	1.962	102.006
1930	1.214	1.028	6.080	1.516	3.550	0.561	0.424	0.201	0.085	0.099	0.251	0.187	15.197
1931	0.093	1.671	0.561	0.467	60.593	18.910	7.347	4.163	3.193	3.642	2.556	5.885	109.081
1932	3.737	2.088	8.211	2.791	26.931	5.089	1.790	0.880	0.541	3.647	0.340	0.374	56.420
1933	0.280	8.543	23.130	9.057	19.645	12.541	1.769	0.784	0.541	2.644	2.647	7.603	89.182
1934	8.223	6.687	17.339	2.311	22.383	1.512	0.466	0.119	0.918	0.024	0.093	0.093	60.167
1935	0.000	0.000	3.628	15.803	26.287	19.379	7.737	4.194	3.209	3.677	2.614	7.000	93.528
1936	4.951	12.454	17.114	14.471	53.314	17.631	6.227	3.331	2.414	3.312	1.516	4.204	140.938
1937	1.121	0.934	20.628	10.447	39.647	6.178	5.429	1.073	3.039	3.725	2.608	6.980	101.810
1938	11.193	11.831	22.848	13.249	36.553	18.923	5.207	3.761	2.179	3.750	2.681	7.859	140.034
1939	11.099	12.534	20.032	12.932	24.007	17.549	7.568	4.194	3.209	3.740	2.638	7.860	127.363
1940	9.766	11.112	22.342	12.758	32.953	13.785	7.087	3.331	2.192	1.914	1.305	1.962	120.508
1941	1.588	3.339	5.901	10.005	45.790	17.068	5.878	3.132	3.109	2.795	1.974	6.765	107.345
1942	10.283	11.278	26.182	14.076	23.950	18.417	7.591	4.169	3.189	3.759	2.689	8.009	133.592
1943	11.447	12.262	19.226	5.047	39.894	9.333	4.075	1.834	2.383	2.826	1.974	8.000	118.300
1944	11.408	11.570	14.134	5.588	26.341	19.379	7.604	4.056	3.095	3.474	2.374	3.643	112.665
1945	2.336	1.392	18.040	15.559	43.749	13.430	3.999	2.182	1.653	1.460	0.919	0.841	105.560
1946	2.149	4.099	11.008	6.213	32.054	19.379	7.603	4.066	3.106	3.373	2.335	3.830	99.214
1947	8.873	12.292	27.602	8.140	19.645	15.606	4.985	1.266	0.792	0.594	0.483	1.682	101.960
1948	4.391	7.808	8.475	7.590	13.609	9.184	7.386	4.183	2.822	2.947	2.029	2.616	73.042
1949	4.110	3.756	13.790	8.034	11.138	14.864	1.231	1.661	0.183	0.185	0.206	0.187	59.343
1950	1.682	1.531	15.011	2.880	15.129	17.011	1.077	0.333	0.183	0.185	2.688	7.940	65.651
1951	10.856	8.485	21.258	5.720	24.930	8.447	1.231	0.784	0.462	3.685	1.085	0.841	87.784
1952	0.561	4.099	14.660	9.931	44.261	12.720	7.252	3.530	2.257	1.994	2.302	2.429	105.994
1953	1.401	10.034	2.154	1.577	27.033	6.057	0.989	4.155	3.028	3.231	2.275	7.863	69.799
1954	11.223	12.016	12.071	12.745	54.397	19.357	7.730	4.158	3.166	3.571	2.502	4.858	147.793
1955	8.278	3.263	5.523	3.010	59.565	19.246	7.667	4.113	3.136	3.508	2.420	7.335	127.064
1956	5.138	12.459	19.461	10.103	42.026	12.600	7.526	4.114	2.993	3.759	2.689	8.009	130.878
1957	11.458	12.567	27.699	16.376	56.022	17.079	6.655	3.828	2.798	2.856	2.001	2.616	161.956
1958	5.232	12.322	18.421	8.364	28.128	8.739	2.482	2.592	1.227	1.002	0.734	7.810	97.053
1959	8.422	9.883	22.917	5.176	37.896	13.430	7.544	3.640	2.257	2.074	1.379	7.256	121.874
1960	3.083	11.925	27.157	17.966	49.882	18.698	7.064	3.883	3.187	3.606	2.492	7.957	156.900
1961	10.993	9.519	5.372	7.774	10.311	16.286	6.587	2.455	1.431	1.196	1.002	0.841	73.767
1962	2.616	9.338	28.677	13.549	35.494	17.959	7.688	3.977	3.156	3.759	2.689	8.002	136.906
1963	11.242	12.426	13.011	17.271	15.781	7.203	5.994	1.661	1.227	0.927	0.734	7.519	94.996
1964	11.449	12.567	25.566	11.332	52.397	10.074	3.822	2.284	2.540	2.644	1.196	5.979	141.851
1965	10.823	8.122	3.159	11.676	39.175	3.741	1.660	0.976	0.635	0.475	0.734	0.747	81.925
1966	0.280	9.307	23.987	8.711	53.462	18.967	7.507	3.992	3.005	3.373	2.295	3.457	138.343
1967	8.128	12.503	21.444	9.250	20.588	19.313	7.354	3.910	2.891	3.160	2.591	2.616	113.749
1968	3.363	4.953	23.965	12.697	16.975	19.348	7.667	4.091	3.113	3.479	2.381	6.921	108.952
1969	11.426	12.292	8.123	9.655	39.108	14.495	4.268	2.661	1.431	1.196	2.689	7.975	115.319
1970	11.458	12.329	9.709	14.742	13.573	13.667	6.564	4.194	3.200	3.698	2.640	7.217	102.992
1971	8.891	5.466	20.421	16.804	60.593	19.379	7.737	4.182	3.201	3.748	2.638	7.434	160.494
1972	8.675	5.295	4.710	7.957	59.937	18.983	7.737	4.162	3.179	3.560	2.682	8.009	134.886
1973	11.458	12.388	18.538	15.530	37.829	15.584	4.531	2.801	2.009	3.737	1.122	1.401	126.929
1974	1.495	11.639	27.382	17.387	60.317	19.363	7.677	4.117	3.142	3.511	2.426	8.009	166.466
1975	11.458	12.507	22.385	17.412	46.562	19.336	7.737	4.194	3.209	3.750	2.650	7.608	158.809
1976	11.179	10.664	24.768	15.187	60.593	19.379	7.737	4.194	3.209	3.704	2.632	7.895	171.141
1977	11.245	8.256	11.541	17.966	46.700	17.781	6.951	3.629	2.742	3.302	1.919	2.616	134.647
1978	11.312	11.347	18.955	9.283	34.541	10.569	5.553	2.696	1.840	3.670	2.606	7.866	120.237
1979	10.714	7.718	15.687	10.546	26.395	2.220	0.572	0.239	0.109	0.099	0.162	7.736	82.198
1980	4.204	12.305	17.665	12.893	33.482	6.057	3.645	4.194	3.209	3.749	2.664	8.009	112.077
1981	11.413	12.099	14.044	9.931	28.560	18.095	6.632	3.486	2.509	2.273	1.618	1.868	112.529
1982	6.726	8.371	2.217	3.817	4.297	3.543	0.187	0.220	0.020	1.505	1.718	1.588	34.209
1983	4.204	12.567	21.906	17.966	60.593	19.379	7.737	4.188	3.209	3.759	2.689	8.009	166.207
1984	11.276	11.045	6.385	16.392	60.593	19.118	7.608	4.091	3.199	3.723	2.597	7.039	153.067
1985	11.354	12.538	13.115	13.101	42.763	14.847	2.309	1.266	1.482	0.594	0.483	0.561	114.413
1986	6.072	7.315	25.548	13.759	22.896	18.280	6.529	4.041	3.066	3.574	2.679	8.009	121.767
1987	11.458	12.567	28.677	16.926	50.637	19.111	7.690	4.118	3.146	3.743	2.517	7.603	168.195
1988	11.374	12.567	28.677	14.364	50.873	18.478	7.110	3.706	2.779	2.735	1.946	7.937	162.546
1989	8.440	12.567	28.677	15.767	47.375	19.292	7.735	4.108	3.086	3.443	2.367	3.643	156.503
1990	10.294	11.469	19.543	14.219	57.456	19.190	7.425	4.192	3.174	3.565	2.492	4.671	157.690
1991	5.885	5.466	14.059	4.052	55.856	16.694	3.191	1.834	1.380	1.075	0.835	0.747	111.074
1992	3.457	2.505	7.979	4.333	12.301	1.512	2.634	0.093	0.000	0.000	0.093	5.138	40.045
1993	11.458	12.550	25.367	15.044	38.188	18.225	6.262	3.209	2.231	2.034	1.415	1.682	137.666
1994	10.518	10.158	19.552	6.796	4.297	16.569	2.786	1.233	1.227	0.633	0.530	0.561	74.862
1995	10.327	11.960	28.677	17.966	60.593	19.379	7.737	4.194	3.209	3.759	2.676	7.704	178.183
1996	11.458	10.740	21.726	14.825	47.320	19.246	7.736	4.061	3.209	3.759	2.689	8.009	154.779
1997	11.458	12.567	28.677	17.275	36.976	19.165	7.133	3.761	2.773	2.735	1.919	2.149	146.588
1998	11.458	11.026	24.700	14.972	23.494	18.764	4.985	2.216	1.634	1.437	0.919	1.121	116.727
1999	11.056	5.873	28.677	17.966	60.593	19.379	7.737	4.194	3.209	3.711	2.633	7.792	172.821
2000	10.901	12.567	28.677	16.012	36.976	18.531	6.390	3.541	2.698	2.470	1.799		

A.49. Ni19 – Category B**Summary table**

Desktop Version 2, Generated on 2015-03-31

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni19

Annual Flows (Mill. cu. m or index values):

MAR = 328,923
 S.Dev. = 231,736
 CV = 0,705
 Q75 = 12,190
 Q75/MMF = 0,445
 BFI Index = 0,557
 CV(JJA+JFM) Index = 2,656

Ecological Category = B

Total IFR = 85,751 (26,07 %MAR)
 Maint. Lowflow = 60,951 (18,53 %MAR)
 Drought Lowflow = 21,438 (6,52 %MAR)
 Maint. Highflow = 24,801 (7,54 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
	CV	Maint.	Drought	Maint.	Maint.		
Oct	25,748	32,066	1,245	3,153	1,681	1,576	4,729
Nov	30,792	22,857	0,742	4,098	2,207	2,942	7,041
Dec	30,976	28,612	0,924	5,675	2,522	2,732	8,407
Jan	32,294	48,851	1,513	6,726	2,207	2,837	9,563
Feb	41,207	63,809	1,548	7,671	2,207	10,509	18,180
Mar	39,998	85,502	2,138	8,407	2,207	2,417	10,824
Apr	28,080	32,402	1,154	6,831	1,892	0,420	7,251
May	22,288	18,138	0,814	5,675	1,681	0,000	5,675
Jun	18,510	13,550	0,732	4,309	1,366	0,000	4,309
Jul	19,433	24,737	1,273	3,363	1,156	0,000	3,363
Aug	16,445	12,563	0,764	2,522	1,051	0,000	2,522
Sep	23,151	61,419	2,653	2,522	1,261	1,366	3,888

Rule curve

Desktop Version 2, Generated on 2015-03-31

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni19

Regional Type : Zululand

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	5.377	5.362	5.305	5.176	4.916	4.457	3.768	2.935	2.201	1.861
Nov	8.009	7.996	7.918	7.735	7.353	6.659	5.588	4.266	3.083	2.536
Dec	12.453	11.565	10.787	10.052	8.689	7.864	6.574	4.962	3.509	2.837
Jan	13.981	13.069	12.256	11.474	9.998	8.995	7.380	5.312	3.419	2.543
Feb	31.111	27.709	24.838	22.309	17.689	15.668	12.510	8.562	5.006	3.360
Mar	14.938	14.139	13.388	12.598	11.106	9.867	7.957	5.597	3.487	2.510
Apr	8.407	8.381	8.276	8.040	7.564	6.724	5.463	3.940	2.597	1.974
May	6.608	6.579	6.488	6.292	5.910	5.254	4.295	3.159	2.171	1.712
Jun	4.975	4.949	4.879	4.730	4.442	3.957	3.255	2.431	1.719	1.389
Jul	3.850	3.825	3.766	3.646	3.421	3.051	2.528	1.926	1.412	1.173
Aug	2.914	2.901	2.864	2.787	2.639	2.388	2.026	1.601	1.233	1.063
Sep	4.414	4.396	4.341	4.220	3.986	3.585	2.998	2.302	1.697	1.417

Reserve Flows without High Flows

Oct	3.676	3.668	3.636	3.563	3.416	3.157	2.769	2.300	1.886	1.694
Nov	4.820	4.814	4.777	4.690	4.509	4.179	3.671	3.044	2.483	2.223
Dec	6.726	6.720	6.664	6.531	6.250	5.728	4.912	3.892	2.974	2.548
Jan	8.034	8.034	7.967	7.801	7.437	6.738	5.613	4.172	2.854	2.243
Feb	9.086	9.076	8.984	8.767	8.305	7.451	6.117	4.449	2.946	2.250
Mar	9.872	9.855	9.745	9.491	8.960	7.993	6.503	4.663	3.017	2.255
Apr	7.954	7.929	7.831	7.609	7.164	6.377	5.197	3.770	2.512	1.929
May	6.608	6.579	6.488	6.292	5.910	5.254	4.295	3.159	2.171	1.712
Jun	4.975	4.949	4.879	4.730	4.442	3.957	3.255	2.431	1.719	1.389
Jul	3.850	3.825	3.766	3.646	3.421	3.051	2.528	1.926	1.412	1.173
Aug	2.914	2.901	2.864	2.787	2.639	2.388	2.026	1.601	1.233	1.063
Sep	2.940	2.930	2.899	2.832	2.702	2.479	2.152	1.765	1.428	1.272

Natural Duration curves

Oct	42.020	30.120	22.840	20.580	18.410	15.780	14.060	11.930	9.850	6.200
Nov	60.790	40.260	30.740	27.900	25.720	22.210	16.620	15.020	12.010	8.230
Dec	55.680	41.270	34.070	26.650	24.210	20.400	17.380	15.300	12.870	7.650
Jan	54.600	38.760	32.870	26.480	22.980	20.790	16.550	15.010	11.790	7.790
Feb	63.980	42.910	36.550	29.060	24.960	21.690	16.870	14.460	11.500	7.460
Mar	65.870	42.170	34.200	28.110	23.020	20.280	16.680	13.670	10.660	7.310
Apr	46.750	38.030	28.400	25.550	18.930	17.070	15.260	12.490	10.030	7.600
May	37.100	28.850	24.750	18.110	16.630	14.170	13.000	11.630	8.680	6.550
Jun	31.390	25.320	20.040	17.720	14.260	12.510	11.190	10.380	8.950	5.550
Jul	29.430	21.960	20.310	16.880	13.420	12.080	10.690	9.630	8.360	5.270
Aug	27.710	21.340	17.380	14.540	13.030	11.920	10.690	9.770	8.130	5.080
Sep	29.530	21.240	18.000	15.070	13.690	11.550	10.330	9.600	8.280	4.640

Hydrological time series

Total Runoff : Ni19

Desktop (Version 2) Modified Flow Data for Ecological Category B													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	5.220	7.735	10.370	11.704	10.706	10.595	7.797	5.337	4.040	2.663	1.833	3.251	81.250
1921	3.111	8.009	11.789	11.544	12.510	9.521	4.605	4.056	3.471	2.528	2.124	2.692	75.960
1922	3.525	7.112	7.051	8.102	13.675	3.027	2.597	1.989	1.532	1.235	1.071	1.417	52.333
1923	1.861	2.564	4.737	3.115	4.274	6.038	4.436	2.982	2.120	1.571	1.291	2.881	37.870
1924	3.436	8.009	12.453	13.915	29.598	14.938	8.407	6.608	4.975	3.850	2.914	4.396	113.499
1925	5.377	7.921	8.133	4.097	4.611	7.141	6.190	3.140	4.337	3.404	2.102	3.737	60.191
1926	5.243	7.728	8.974	6.843	10.299	12.220	7.731	4.566	4.337	3.360	2.830	3.986	78.116
1927	4.898	6.058	5.341	9.563	18.433	10.726	6.231	4.713	3.679	2.520	1.889	2.552	76.602
1928	2.969	2.742	2.837	2.599	3.500	9.319	8.143	6.279	4.797	3.818	2.883	4.400	54.287
1929	5.377	8.009	10.787	12.805	27.812	12.625	8.298	6.403	4.480	3.302	2.689	4.252	106.838
1930	4.554	5.116	6.142	6.436	5.906	3.094	2.254	1.997	1.511	1.308	1.099	1.445	40.861
1931	1.932	2.657	2.985	2.543	31.111	14.938	8.407	6.608	4.975	3.850	2.913	4.371	87.290
1932	4.619	5.588	7.485	7.390	9.236	5.597	3.116	2.364	1.583	1.369	1.171	1.480	50.988
1933	1.861	4.476	9.309	13.572	27.709	13.388	8.342	6.562	4.930	3.824	2.911	4.395	101.281
1934	4.678	6.811	12.453	13.845	23.976	12.630	7.661	6.292	4.975	3.833	2.889	4.348	104.390
1935	3.723	3.373	2.935	8.376	23.375	13.617	8.304	6.599	4.975	3.802	2.858	4.198	86.135
1936	5.026	8.007	10.632	8.192	26.014	12.953	7.275	5.643	3.908	3.407	2.293	3.417	97.766
1937	2.677	3.083	9.254	11.293	23.564	13.792	8.276	6.565	4.798	3.844	2.910	4.305	94.361
1938	5.142	6.659	7.912	10.031	31.111	14.938	8.407	6.605	4.973	3.841	2.911	4.413	106.943
1939	5.376	8.009	12.385	12.595	15.952	5.358	6.972	6.608	4.975	3.850	2.914	4.414	89.408
1940	5.339	7.577	11.573	12.352	12.579	6.632	6.075	5.173	2.570	2.013	1.300	1.697	74.881
1941	2.073	3.036	3.314	5.520	14.801	11.106	8.222	6.312	4.807	3.607	2.804	4.370	69.972
1942	5.324	7.960	12.453	13.981	24.838	14.171	8.407	6.608	4.975	3.850	2.914	4.414	109.896
1943	5.377	8.009	11.173	5.853	14.358	12.070	4.851	3.652	4.442	3.717	2.717	4.398	80.617
1944	5.362	7.758	7.485	3.846	11.961	14.938	8.407	6.429	4.730	3.422	2.508	2.342	79.188
1945	2.137	2.536	2.837	10.420	14.738	4.828	3.860	2.447	1.768	1.358	1.135	1.464	49.526
1946	2.450	5.420	4.523	3.404	16.113	13.726	8.257	6.367	4.826	3.722	2.796	4.092	75.695
1947	4.298	7.373	11.708	12.634	18.094	11.909	7.918	6.114	3.829	2.690	1.506	1.896	89.969
1948	2.652	4.217	4.073	4.853	15.718	12.879	8.384	6.608	4.942	3.809	2.787	4.192	75.111
1949	4.989	7.777	12.453	13.870	23.534	13.095	8.163	6.173	4.642	3.451	2.469	2.998	103.615
1950	2.108	2.536	3.464	3.419	3.360	2.510	2.012	1.764	1.441	1.215	2.542	4.346	30.716
1951	5.176	4.356	3.852	6.358	6.386	4.305	2.886	2.539	2.431	3.051	2.524	1.899	45.762
1952	2.205	3.542	7.864	11.816	26.418	12.223	6.936	3.942	1.939	1.536	1.384	2.142	81.946
1953	2.935	6.639	8.187	4.663	18.230	12.598	7.234	6.549	4.967	3.778	2.884	4.399	83.062
1954	5.377	8.009	11.110	12.256	26.325	14.221	8.385	6.536	4.890	3.669	2.784	3.609	107.170
1955	4.187	7.353	10.944	10.483	31.111	14.779	8.273	6.186	4.862	3.646	2.727	4.122	108.673
1956	5.162	7.818	12.453	13.981	26.608	13.557	8.396	6.606	4.728	3.825	2.905	4.414	110.453
1957	5.377	8.009	11.273	13.069	29.963	13.270	8.121	6.556	4.612	3.541	2.417	3.585	109.793
1958	3.768	4.511	5.358	9.732	18.827	9.622	3.236	4.930	4.148	1.926	1.601	3.164	70.823
1959	4.082	4.232	7.365	6.227	10.074	11.912	8.341	6.599	4.895	3.642	2.831	4.285	74.486
1960	4.955	8.004	12.453	13.981	29.725	13.767	8.407	6.608	4.975	3.848	2.889	4.397	114.010
1961	5.336	7.848	8.890	8.394	8.562	6.876	7.379	4.876	3.408	2.087	2.190	2.721	68.567
1962	3.299	6.708	10.076	12.677	22.309	13.146	8.398	6.511	4.949	3.850	2.914	4.414	99.252
1963	5.324	7.913	6.574	11.242	20.483	5.885	6.724	6.217	4.256	3.349	2.323	3.108	83.399
1964	5.140	7.509	8.477	8.359	7.431	3.487	2.222	2.121	1.994	2.838	2.607	4.181	56.367
1965	5.200	7.877	9.555	12.145	27.234	10.952	4.983	4.814	3.957	2.591	1.744	3.085	94.136
1966	2.485	3.121	5.061	8.995	29.133	14.590	8.407	6.608	4.916	3.766	2.856	3.866	93.805
1967	4.484	7.721	8.689	7.817	9.880	10.414	7.564	3.134	3.129	2.087	2.433	4.226	71.579
1968	4.306	5.773	8.616	10.158	7.239	13.715	8.407	6.603	4.962	3.765	2.874	4.298	80.715
1969	5.377	7.918	9.938	5.312	5.206	4.327	2.775	3.371	3.643	1.834	1.796	4.022	53.518
1970	5.352	8.005	10.291	11.913	22.542	8.275	7.575	6.608	4.975	3.850	2.914	4.412	96.712
1971	5.375	7.831	8.529	13.100	31.111	14.938	8.328	6.588	4.974	3.837	2.888	4.183	111.681
1972	4.058	5.015	4.732	4.156	14.447	10.002	7.433	6.184	3.868	3.070	2.801	4.414	70.180
1973	5.377	7.987	10.807	13.325	25.911	9.867	7.792	5.910	4.727	3.459	2.600	2.604	100.365
1974	2.108	3.621	8.325	13.981	30.329	14.276	8.363	6.606	4.837	3.650	2.666	4.412	103.174
1975	5.366	7.548	11.372	13.981	31.111	14.938	8.407	6.608	4.972	3.708	2.866	3.938	114.814
1976	5.283	7.225	9.890	13.981	31.111	14.938	8.407	5.782	4.585	2.843	2.710	4.372	111.127
1977	5.348	7.330	10.183	13.297	28.877	14.139	8.381	6.506	4.763	3.668	2.864	4.370	109.726
1978	5.371	7.997	10.670	9.906	11.590	4.436	4.611	5.254	3.255	2.456	2.388	4.283	72.215
1979	4.748	3.802	5.846	5.450	5.566	2.726	1.974	1.796	1.437	1.173	1.063	3.426	39.007
1980	4.187	6.151	5.671	8.765	23.268	9.125	3.450	6.295	4.956	3.837	2.914	4.414	83.033
1981	5.377	8.009	11.695	11.154	18.917	10.799	8.180	6.253	4.442	2.876	2.070	1.931	91.702
1982	4.123	4.846	3.082	2.803	3.360	2.510	1.974	1.712	1.389	1.213	1.375	1.996	30.382
1983	2.584	6.865	10.607	13.981	31.111	14.938	8.407	6.579	4.930	3.850	2.914	4.413	111.178
1984	5.333	7.869	6.355	8.465	31.111	14.708	7.302	4.957	3.247	2.975	1.518	2.302	96.143
1985	5.377	7.985	8.991	9.705	15.668	8.780	5.067	3.244	2.398	1.926	1.263	1.652	72.055
1986	2.201	2.976	7.129	11.474	16.669	9.912	7.884	5.910	4.879	3.762	2.914	4.414	80.125
1987	5.377	8.009	12.330	11.651	25.665	14.724	8.407	6.413	4.824	3.770	2.896	4.355	108.420
1988	5.337	7.964	12.060	11.893	24.929	13.410	5.463	5.531	4.087	3.428	2.026	2.499	98.628
1989	2.415	8.009	12.352	12.138	12.103	11.396	7.980	6.021	4.251	2.981	2.725	3.958	86.329
1990	4.457	5.724	5.934	9.998	23.739	14.354	8.334	6.470	4.970	3.842	2.903	4.296	95.020
1991	5.250	6.243	3.926	3.691	4.526	2.699	2.036	1.712	1.389	1.173	1.063	1.417	35.124
1992	1.870	2.808	3.509	2.734	3.722	2.843	2.353	1.815	1.463	1.227	1.101	1.528	26.976
1993	5.377	8.009	11.565	13.075	17.689	9.867	6.361	3.159	2.314	1.610	1.807	2.047	82.879
1994	4.619	6.819	4.962	3.066	3.565	2.702	6.344	6.394	4.942	3.847	2.904	4.341	54.504
1995	5.279	7.989	12.453	13.981	31.111	14.938	8.407	6.488	4.896	3.790	2.901	3.945	116.177
1996	4.916	6.659	6.664	9.947	23.356	11.681	8.040	6.534	4.962	3.850	2.912	4.414	93.934
1997	5.377	8.009	12.453	9.393	15.786	8.987	5.716	5.571	3.399	2.415	1.453	1.804	80.363
1998	3.740	6.291	7.116	9.357	16.360	8.669	4.004	3.892	3.077	2.222	1.655	2.677	69.061
1999	4.558	6.378	10.704	13.981	28.920	13.707	8.332	6.607	4.975	3.797	2.827	4.220	109.007
2000	5.026	8.009	12.453	12.523	14.669	7.417	4.188	3.128	1.719	1.412	1.159	3.534	75.236
2001	5.250	7.645	11.287	12.833	15.965	6.009	3.940	2.552	1.807	3.850	2.914	4.414	78.466

A.50. Ni19 - Category C

Summary table

Desktop Version 2, Generated on 2015-03-31
Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :
Total Runoff : Ni19

Annual Flows (Mill. cu. m or index values):

MAR = 328,923
S.Dev. = 231,736
CV = 0,705
Q75 = 12,190
Q75/MMF = 0,445
BFI Index = 0,557
CV(JJA+JFM) Index = 2,656

Ecological Category = C

Total IFR = 73,195 (22,25 %MAR)
Maint. Lowflow = 43,503 (13,23 %MAR)
Drought Lowflow = 22,108 (6,72 %MAR)
Maint. Highflow = 29,692 (9,03 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
	CV	Maint.	Drought	Maint.	Maint.		
Oct	25,748	32,066	1,245	3,420	1,748	2,369	5,789
Nov	30,792	22,857	0,742	3,628	1,844	3,177	6,805
Dec	30,976	28,612	0,924	3,705	1,879	3,723	7,428
Jan	32,294	48,851	1,513	3,747	1,898	1,861	5,608
Feb	41,207	63,809	1,548	4,027	2,026	10,632	14,659
Mar	39,998	85,502	2,138	4,113	2,066	4,529	8,642
Apr	28,080	32,402	1,154	3,910	1,973	1,823	5,733
May	22,288	18,138	0,814	3,675	1,865	0,000	3,675
Jun	18,510	13,550	0,732	3,426	1,751	0,000	3,426
Jul	19,433	24,737	1,273	3,351	1,717	0,000	3,351
Aug	16,445	12,563	0,764	3,205	1,650	0,000	3,205
Sep	23,151	61,419	2,653	3,296	1,691	1,578	4,874

Rule curve

Desktop Version 2, Generated on 2015-03-31
Summary of IFR rule curves (Desktop Version 2) for :
Total Runoff : Ni19
Regional Type : Zululand
Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	7.275	7.254	7.168	6.975	6.586	5.899	4.869	3.624	2.527	2.018
Nov	8.538	8.524	8.433	8.221	7.780	6.975	5.736	4.205	2.836	2.202
Dec	12.785	11.579	10.553	9.636	7.955	7.156	5.908	4.348	2.942	2.292
Jan	8.976	8.378	7.853	7.358	6.430	5.849	4.914	3.717	2.622	2.114
Feb	27.699	24.263	21.405	18.959	14.524	12.923	10.420	7.293	4.475	3.170
Mar	14.982	13.510	12.259	11.142	9.104	8.161	6.709	4.914	3.309	2.566
Apr	7.292	7.271	7.188	7.000	6.623	5.956	4.956	3.747	2.681	2.187
May	4.869	4.851	4.796	4.676	4.443	4.043	3.458	2.766	2.163	1.884
Jun	4.505	4.485	4.432	4.318	4.098	3.728	3.192	2.564	2.021	1.768
Jul	4.373	4.348	4.290	4.171	3.950	3.585	3.070	2.477	1.969	1.734
Aug	4.214	4.196	4.146	4.040	3.836	3.491	2.992	2.407	1.901	1.666
Sep	6.195	6.168	6.089	5.916	5.578	5.000	4.154	3.152	2.280	1.876

Reserve Flows without High Flows

Oct	4.531	4.520	4.475	4.373	4.168	3.807	3.265	2.611	2.033	1.765
Nov	4.843	4.836	4.793	4.693	4.486	4.108	3.525	2.805	2.161	1.863
Dec	4.982	4.978	4.936	4.838	4.630	4.245	3.643	2.890	2.212	1.898
Jan	5.076	5.076	5.039	4.949	4.750	4.369	3.755	2.970	2.251	1.918
Feb	5.415	5.410	5.365	5.258	5.031	4.610	3.952	3.130	2.390	2.047
Mar	5.490	5.482	5.433	5.320	5.082	4.651	3.985	3.163	2.428	2.087
Apr	5.180	5.167	5.115	4.998	4.762	4.346	3.722	2.967	2.301	1.993
May	4.869	4.851	4.796	4.676	4.443	4.043	3.458	2.766	2.163	1.884
Jun	4.505	4.485	4.432	4.318	4.098	3.728	3.192	2.564	2.021	1.768
Jul	4.373	4.348	4.290	4.171	3.950	3.585	3.070	2.477	1.969	1.734
Aug	4.214	4.196	4.146	4.040	3.836	3.491	2.992	2.407	1.901	1.666
Sep	4.367	4.351	4.302	4.195	3.987	3.631	3.110	2.494	1.957	1.708

Natural Duration curves

Oct	42.020	30.120	22.840	20.580	18.410	15.780	14.060	11.930	9.850	6.200
Nov	60.790	40.260	30.740	27.900	25.720	22.210	16.620	15.020	12.010	8.230
Dec	55.680	41.270	34.070	26.650	24.210	20.400	17.380	15.300	12.870	7.650
Jan	54.600	38.760	32.870	26.480	22.980	20.790	16.550	15.010	11.790	7.790
Feb	63.980	42.910	36.550	29.060	24.960	21.690	16.870	14.460	11.500	7.460
Mar	65.870	42.170	34.200	28.110	23.020	20.280	16.680	13.670	10.660	7.310
Apr	46.750	38.030	28.400	25.550	18.930	17.070	15.260	12.490	10.030	7.600
May	37.100	28.850	24.750	18.110	16.630	14.170	13.000	11.630	8.680	6.550
Jun	31.390	25.320	20.040	17.720	14.260	12.510	11.190	10.380	8.950	5.550
Jul	29.430	21.960	20.310	16.880	13.420	12.080	10.690	9.630	8.360	5.270
Aug	27.710	21.340	17.380	14.540	13.030	11.920	10.690	9.770	8.130	5.080
Sep	29.530	21.240	18.000	15.070	13.690	11.550	10.330	9.600	8.280	4.640

Hydrological time series

Total Runoff : Ni19													
Desktop (Version 2) Modified Flow Data for Ecological Category C													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	7.042	8.221	10.025	7.502	8.991	8.715	6.807	4.093	3.791	3.203	2.727	4.519	75.636
1921	3.888	8.538	11.883	7.402	10.420	7.899	4.275	3.312	3.357	3.070	3.128	3.713	70.885
1922	4.506	7.500	6.369	5.333	11.343	2.959	2.681	2.053	1.878	1.795	1.677	1.876	49.972
1923	2.018	2.234	4.130	2.445	3.894	5.249	4.141	2.658	2.326	2.126	1.981	3.986	37.189
1924	4.373	8.538	12.785	8.933	26.169	14.982	7.292	4.869	4.505	4.373	4.214	6.168	107.202
1925	7.275	8.437	7.416	3.014	4.162	6.088	5.532	2.754	4.018	3.933	3.097	5.219	60.947
1926	7.076	8.213	8.306	4.603	8.668	10.626	6.755	3.624	4.018	3.890	4.099	5.578	75.456
1927	6.560	6.280	4.715	6.178	15.238	8.815	5.565	3.713	3.516	3.062	2.803	3.512	69.956
1928	3.675	2.441	2.292	2.147	3.281	7.745	7.082	4.668	4.369	4.341	4.172	6.174	52.387
1929	7.275	8.538	10.553	8.207	24.366	11.178	7.205	4.744	4.127	3.833	3.905	5.962	99.893
1930	6.046	5.189	5.489	4.368	5.188	3.010	2.409	2.057	1.861	1.866	1.716	1.917	41.117
1931	2.124	2.342	2.435	2.114	27.699	14.982	7.292	4.869	4.505	4.373	4.213	6.133	83.081
1932	6.142	5.736	6.790	4.914	7.826	4.914	3.093	2.281	1.917	1.927	1.815	1.967	49.323
1933	2.018	4.448	8.719	8.709	24.263	12.259	7.240	4.840	4.470	4.348	4.211	6.167	91.692
1934	6.231	7.152	12.785	8.887	20.564	11.184	6.700	4.676	4.505	4.356	4.180	6.100	97.319
1935	4.803	3.172	2.386	5.491	19.978	12.627	7.210	4.863	4.505	4.326	4.137	5.884	79.381
1936	6.751	8.536	10.358	5.963	22.569	11.615	6.393	4.280	3.690	3.936	3.360	4.758	92.210
1937	3.237	2.836	8.651	7.244	20.163	12.917	7.188	4.843	4.370	4.367	4.209	6.038	86.062
1938	6.925	6.975	7.202	6.451	27.699	14.982	7.292	4.867	4.503	4.364	4.211	6.193	101.664
1939	7.274	8.538	12.692	8.070	13.148	4.732	6.153	4.869	4.505	4.373	4.214	6.195	84.764
1940	7.219	8.039	11.590	7.914	10.476	5.701	5.442	3.994	2.670	2.562	1.992	2.280	69.879
1941	2.335	2.781	2.754	3.838	12.236	9.104	7.145	4.688	4.377	4.134	4.063	6.132	63.585
1942	7.197	8.482	12.785	8.976	21.405	13.568	7.292	4.869	4.505	4.373	4.214	6.195	103.862
1943	7.275	8.538	11.058	4.030	11.885	10.421	4.470	3.067	4.098	4.241	3.944	6.172	79.200
1944	7.254	8.248	6.790	2.869	9.986	14.982	7.292	4.759	4.318	3.951	3.655	3.209	77.313
1945	2.431	2.202	2.292	6.695	12.186	4.329	3.684	2.332	2.057	1.916	1.766	1.944	43.833
1946	2.899	5.541	3.923	2.613	13.276	12.804	7.173	4.722	4.391	4.247	4.052	5.730	71.369
1947	5.662	7.802	11.773	8.096	14.914	10.201	6.904	4.567	3.631	3.229	2.277	2.567	81.622
1948	3.200	4.148	3.488	3.451	12.962	11.516	7.273	4.869	4.479	4.332	4.040	5.874	69.633
1949	6.695	8.270	12.785	8.903	20.133	11.826	7.098	4.604	4.251	3.979	3.603	4.154	96.302
1950	2.387	2.202	2.898	2.622	3.170	2.566	2.217	1.915	1.808	1.775	3.702	6.097	33.359
1951	6.975	4.309	3.274	4.323	5.568	3.931	2.911	2.388	2.564	3.585	3.677	2.571	46.076
1952	2.532	3.366	7.156	7.572	22.973	10.630	6.124	3.243	2.188	2.091	2.109	2.921	72.906
1953	3.624	6.953	7.468	3.341	15.043	11.142	6.361	4.833	4.498	4.302	4.173	6.173	77.912
1954	7.275	8.538	10.975	7.853	22.880	13.658	7.274	4.825	4.440	4.194	4.036	5.035	100.983
1955	5.496	7.780	10.758	6.735	27.699	14.686	7.185	4.611	4.419	4.171	3.958	5.774	103.271
1956	6.955	8.317	12.785	8.976	23.162	12.531	7.283	4.867	4.316	4.348	4.202	6.195	103.938
1957	7.275	8.538	11.192	8.378	26.537	12.085	7.065	4.837	4.228	4.068	3.531	5.000	102.734
1958	4.869	4.489	4.731	6.276	15.617	7.975	3.189	3.846	3.874	2.477	2.407	4.393	64.142
1959	5.340	4.166	6.673	4.247	8.491	10.205	7.239	4.863	4.444	4.168	4.101	6.009	69.945
1960	6.645	8.533	12.785	8.976	26.297	12.875	7.292	4.869	4.505	4.371	4.181	6.170	107.498
1961	7.214	8.352	8.203	5.501	7.293	5.887	6.476	3.813	3.309	2.635	3.218	3.755	65.655
1962	4.168	7.033	9.665	8.124	18.959	11.901	7.285	4.809	4.485	4.373	4.214	6.195	91.211
1963	7.197	8.428	5.908	7.212	17.207	5.133	5.956	4.630	3.956	3.879	3.401	4.314	77.220
1964	6.921	7.960	7.749	5.481	6.396	3.309	2.384	2.133	2.230	3.375	3.792	5.859	57.591
1965	7.011	8.386	9.023	7.782	23.787	8.987	4.575	3.775	3.728	3.132	2.604	4.279	87.068
1966	2.951	2.879	4.443	5.848	25.699	14.330	7.292	4.869	4.460	4.290	4.135	5.405	86.604
1967	5.941	8.205	7.955	5.168	8.336	8.578	6.623	2.751	3.096	2.635	3.553	5.924	68.763
1968	5.674	5.950	7.883	6.531	6.244	12.785	7.292	4.865	4.495	4.290	4.159	6.027	76.195
1969	7.275	8.433	7.227	3.717	4.633	3.947	2.823	2.895	3.488	2.386	2.676	5.630	55.131
1970	7.238	8.534	9.928	7.634	19.182	6.951	6.631	4.869	4.505	4.373	4.214	6.192	90.251
1971	7.272	8.333	7.799	8.399	27.699	14.982	7.229	4.856	4.504	4.360	4.179	5.862	105.474
1972	5.303	5.072	4.125	3.048	11.955	8.265	6.519	4.610	3.660	3.604	4.059	6.195	66.415
1973	7.275	8.513	10.580	8.547	22.467	8.161	6.803	4.443	4.316	3.987	3.783	3.587	92.462
1974	2.387	3.458	7.602	8.976	26.907	13.759	7.257	4.867	4.400	4.176	3.874	6.191	93.855
1975	7.259	8.005	11.323	8.976	27.699	14.982	7.292	4.869	4.503	4.232	4.149	5.508	108.797
1976	7.136	7.631	9.436	8.976	27.699	14.982	7.292	4.365	4.207	3.380	3.933	6.134	105.171
1977	7.232	7.752	7.976	8.528	25.441	13.510	7.271	4.807	4.343	4.194	4.146	6.131	103.150
1978	7.266	8.525	10.405	6.377	9.692	4.030	4.279	4.043	3.192	2.998	3.491	6.006	70.304
1979	6.335	3.668	5.203	3.798	4.918	2.730	2.187	1.935	1.805	1.734	1.666	4.771	40.750
1980	5.496	6.387	5.034	5.716	19.876	7.597	3.358	4.678	4.491	4.360	4.214	6.195	77.402
1981	7.275	8.538	11.756	7.156	15.703	8.870	7.112	4.652	4.098	3.412	3.052	2.617	84.243
1982	5.400	4.877	2.529	2.265	3.170	2.566	2.187	1.884	1.768	1.773	2.096	2.711	33.225
1983	3.099	7.214	10.325	8.976	27.699	14.982	7.292	4.851	4.470	4.373	4.214	6.193	103.689
1984	7.210	8.377	5.696	5.543	27.699	14.552	6.415	3.862	3.186	3.510	2.293	3.152	91.495
1985	7.275	8.511	8.327	6.260	12.923	7.334	4.641	2.818	2.538	2.477	1.942	2.216	67.262
1986	2.527	2.711	6.444	7.358	13.716	8.196	6.877	4.443	4.432	4.287	4.214	6.195	71.400
1987	7.275	8.538	12.618	7.469	22.224	14.583	7.292	4.750	4.389	4.294	4.190	6.109	103.730
1988	7.216	8.487	12.249	7.622	21.495	12.295	4.956	4.212	3.827	3.957	2.992	3.436	92.744
1989	2.846	8.538	12.648	7.777	10.098	9.500	6.953	4.511	3.952	3.516	3.955	5.538	79.833
1990	5.899	5.893	5.288	6.430	20.332	13.901	7.234	4.785	4.501	4.365	4.200	6.025	88.852
1991	7.086	6.494	3.345	2.779	4.094	2.709	2.237	1.884	1.768	1.734	1.666	1.876	37.673
1992	2.031	2.517	2.942	2.225	3.457	2.819	2.488	1.947	1.825	1.787	1.719	2.037	27.795
1993	7.275	8.538	11.579	8.382	14.524	8.161	5.668	2.766	2.474	2.164	2.691	2.785	77.009
1994	6.142	7.161	4.348	2.417	3.333	2.712	5.655	4.738	4.479	4.370	4.201	6.089	55.644
1995	7.129	8.515	12.785	8.976	27.699	14.982	7.292	4.796	4.444	4.314	4.196	5.519	110.648
1996	6.586	6.975	5.995	6.401	19.960	9.889	7.000	4.823	4.495	4.373	4.212	6.195	86.903
1997	7.275	8.538	12.785	6.080	13.016	7.492	5.157	4.236	3.302	2.958	2.204	2.434	75.479
1998	4.827	6.550	6.433	6.059	13.471	7.250	3.798	3.213	3.056	2.768	2.482	3.692	63.600
1999	6.051	6.650	10.449	8.976	25.484	12.773	7.232	4.868	4.505	4.320	4.095	5.916	101.319
2000	6.751	8.538	12.785	8.024	12.131	6.298	3.944	2.747	2.021	1.969	1.799	4.926	71.934
2001	7.086	8.118	11.210	8.225	13.158	5.227	3.747	2.396	2.087	4.373	4.214	6.195	76.037
2002	7.275	8.434	6.915										

A.51. Ni19 - Category D

Summary table

Desktop Version 2, Generated on 2015-03-31
 Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :
 Total Runoff : Ni19

Annual Flows (Mill. cu. m or index values):

MAR = 328,923
 S.Dev. = 231,736
 CV = 0,705
 Q75 = 12,190
 Q75/MMF = 0,445
 BFI Index = 0,557
 CV(JJA+JFM) Index = 2,656

Ecological Category = D

Total IFR = 47,674 (14,49 %MAR)
 Maint. Lowflow = 22,108 (6,72 %MAR)
 Drought Lowflow = 22,108 (6,72 %MAR)
 Maint. Highflow = 25,566 (7,77 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
	Mean	SD	CV	Maint.	Drought	Maint.	Maint.
Oct	25,748	32,066	1,245	1,748	1,748	2,040	3,788
Nov	30,792	22,857	0,742	1,844	1,844	2,736	4,580
Dec	30,976	28,612	0,924	1,879	1,879	3,205	5,084
Jan	32,294	48,851	1,513	1,898	1,898	1,603	3,501
Feb	41,207	63,809	1,548	2,026	2,026	9,154	11,180
Mar	39,998	85,502	2,138	2,066	2,066	3,899	5,965
Apr	28,080	32,402	1,154	1,973	1,973	1,570	3,543
May	22,288	18,138	0,814	1,865	1,865	0,000	1,865
Jun	18,510	13,550	0,732	1,751	1,751	0,000	1,751
Jul	19,433	24,737	1,273	1,717	1,717	0,000	1,717
Aug	16,445	12,563	0,764	1,650	1,650	0,000	1,650
Sep	23,151	61,419	2,653	1,691	1,691	1,359	3,050

Rule curve

Desktop Version 2, Generated on 2015-03-31
 Summary of IFR rule curves (Desktop Version 2) for :
 Total Runoff : Ni19

Regional Type : Zululand

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	6.060	6.043	5.976	5.826	5.524	4.991	4.192	3.225	2.373	1.978
Nov	7.246	7.234	7.161	6.991	6.636	5.989	4.992	3.761	2.660	2.150
Dec	10.184	9.147	8.278	7.523	6.148	5.595	4.731	3.651	2.678	2.227
Jan	6.880	6.364	5.925	5.530	4.801	4.434	3.844	3.089	2.398	2.077
Feb	22.923	19.966	17.522	15.454	11.717	10.488	8.568	6.167	4.005	3.003
Mar	11.963	10.697	9.638	8.718	7.047	6.390	5.377	4.126	3.007	2.489
Apr	5.809	5.794	5.734	5.600	5.330	4.852	4.136	3.270	2.507	2.153
May	3.403	3.394	3.366	3.304	3.185	2.980	2.681	2.326	2.018	1.875
Jun	3.178	3.168	3.140	3.081	2.967	2.775	2.498	2.172	1.891	1.760
Jul	3.099	3.086	3.056	2.994	2.879	2.689	2.421	2.112	1.848	1.726
Aug	2.995	2.985	2.959	2.903	2.796	2.615	2.354	2.047	1.782	1.658
Sep	4.998	4.978	4.920	4.794	4.548	4.126	3.509	2.778	2.142	1.847

Reserve Flows without High Flows

Oct	3.190	3.184	3.161	3.108	3.002	2.815	2.534	2.195	1.896	1.757
Nov	3.383	3.380	3.358	3.307	3.200	3.006	2.707	2.337	2.007	1.854
Dec	3.466	3.464	3.443	3.393	3.286	3.089	2.781	2.396	2.049	1.889
Jan	3.520	3.520	3.501	3.455	3.354	3.159	2.846	2.445	2.078	1.908
Feb	3.737	3.735	3.712	3.658	3.543	3.331	2.999	2.584	2.210	2.037
Mar	3.791	3.787	3.762	3.705	3.585	3.368	3.033	2.619	2.248	2.077
Apr	3.600	3.594	3.567	3.508	3.388	3.177	2.860	2.477	2.140	1.983
May	3.403	3.394	3.366	3.304	3.185	2.980	2.681	2.326	2.018	1.875
Jun	3.178	3.168	3.140	3.081	2.967	2.775	2.498	2.172	1.891	1.760
Jul	3.099	3.086	3.056	2.994	2.879	2.689	2.421	2.112	1.848	1.726
Aug	2.995	2.985	2.959	2.903	2.796	2.615	2.354	2.047	1.782	1.658
Sep	3.086	3.077	3.052	2.996	2.888	2.702	2.431	2.109	1.830	1.700

Natural Duration curves

Oct	42.020	30.120	22.840	20.580	18.410	15.780	14.060	11.930	9.850	6.200
Nov	60.790	40.260	30.740	27.900	25.720	22.210	16.620	15.020	12.010	8.230
Dec	55.680	41.270	34.070	26.650	24.210	20.400	17.380	15.300	12.870	7.650
Jan	54.600	38.760	32.870	26.480	22.980	20.790	16.550	15.010	11.790	7.790
Feb	63.980	42.910	36.550	29.060	24.960	21.690	16.870	14.460	11.500	7.460
Mar	65.870	42.170	34.200	28.110	23.020	20.280	16.680	13.670	10.660	7.310
Apr	46.750	38.030	28.400	25.550	18.930	17.070	15.260	12.490	10.030	7.600
May	37.100	28.850	24.750	18.110	16.630	14.170	13.000	11.630	8.680	6.550
Jun	31.390	25.320	20.040	17.720	14.260	12.510	11.190	10.380	8.950	5.550
Jul	29.430	21.960	20.310	16.880	13.420	12.080	10.690	9.630	8.360	5.270
Aug	27.710	21.340	17.380	14.540	13.030	11.920	10.690	9.770	8.130	5.080
Sep	29.530	21.240	18.000	15.070	13.690	11.550	10.330	9.600	8.280	4.640

Hydrological time series

Total Runoff : Ni19													
Desktop (Version 2) Modified Flow Data for Ecological Category D													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	5.878	6.991	7.839	5.643	7.470	6.776	5.462	3.006	2.808	2.490	2.214	3.775	60.354
1921	3.429	7.246	9.407	5.565	8.568	6.207	3.648	2.606	2.583	2.421	2.425	3.187	57.292
1922	3.910	6.411	5.051	4.108	9.276	2.763	2.507	1.961	1.817	1.758	1.664	1.847	43.072
1923	1.978	2.176	3.500	2.286	3.559	4.360	3.552	2.271	2.049	1.930	1.823	3.386	32.871
1924	3.806	7.246	10.184	6.842	21.606	11.963	5.809	3.403	3.178	3.099	2.995	4.978	85.108
1925	6.060	7.164	5.775	2.645	3.765	4.945	4.549	2.320	2.925	2.870	2.409	4.286	49.713
1926	5.905	6.984	6.435	3.648	7.223	8.294	5.424	2.766	2.925	2.848	2.934	4.548	59.935
1927	5.504	5.430	3.905	4.642	12.319	6.846	4.572	2.812	2.665	2.417	2.255	3.040	56.406
1928	3.264	2.342	2.227	2.098	3.089	6.100	5.659	3.300	3.108	3.082	2.973	4.982	42.224
1929	6.060	7.246	8.278	6.220	20.056	8.747	5.747	3.339	2.982	2.818	2.832	4.828	79.151
1930	5.105	4.552	4.441	3.500	4.552	2.798	2.312	1.963	1.808	1.795	1.685	1.876	36.388
1931	2.060	2.262	2.327	2.077	22.923	11.963	5.809	3.403	3.178	3.099	2.994	4.953	67.048
1932	5.180	4.992	5.341	3.844	6.577	4.126	2.802	2.078	1.837	1.826	1.737	1.913	42.253
1933	1.978	3.956	6.773	6.649	19.966	9.638	5.772	3.389	3.160	3.086	2.993	4.978	72.338
1934	5.249	6.131	10.184	6.803	16.808	8.752	5.385	3.304	3.178	3.090	2.976	4.929	76.788
1935	4.140	2.930	2.293	4.208	16.312	9.948	5.750	3.400	3.178	3.074	2.954	4.771	62.958
1936	5.652	7.244	8.116	4.506	18.516	9.103	5.165	3.102	2.756	2.872	2.547	3.949	73.528
1937	2.924	2.660	6.717	5.441	16.468	10.194	5.734	3.390	3.108	3.096	2.992	4.883	67.607
1938	5.787	5.989	5.627	4.817	22.923	11.963	5.809	3.402	3.177	3.095	2.993	4.996	80.578
1939	6.059	7.246	10.103	6.105	10.661	3.999	4.993	3.403	3.178	3.099	2.995	4.998	66.839
1940	6.016	6.844	9.156	5.975	8.610	4.675	4.484	2.955	2.227	2.157	1.830	2.142	57.071
1941	2.224	2.615	2.547	3.165	9.961	7.047	5.704	3.311	3.111	2.974	2.915	4.952	50.527
1942	5.999	7.201	10.184	6.880	17.522	10.747	5.809	3.403	3.178	3.099	2.995	4.998	82.014
1943	6.060	7.246	8.704	3.286	9.692	8.127	3.788	2.480	2.967	3.030	2.853	4.981	63.214
1944	6.043	7.013	5.341	2.554	8.234	11.963	5.809	3.347	3.081	2.879	2.701	2.819	61.784
1945	2.298	2.150	2.227	5.009	9.923	3.718	3.225	2.104	1.910	1.821	1.711	1.896	37.991
1946	2.661	4.835	3.357	2.392	10.759	10.098	5.724	3.328	3.119	3.033	2.909	4.658	56.873
1947	4.807	6.654	9.313	6.127	12.045	7.946	5.531	3.249	2.725	2.504	1.979	2.351	65.230
1948	2.896	3.715	3.055	2.921	10.518	9.022	5.796	3.403	3.165	3.078	2.903	4.764	55.236
1949	5.609	7.030	10.184	6.817	16.443	9.278	5.670	3.267	3.046	2.894	2.674	3.509	76.422
1950	2.264	2.150	2.648	2.398	3.003	2.489	2.174	1.891	1.780	1.747	2.726	4.926	30.196
1951	5.826	3.845	2.908	3.471	4.844	3.440	2.671	2.133	2.172	2.689	2.713	2.354	39.066
1952	2.377	3.086	5.595	5.698	18.862	8.298	4.973	2.571	1.978	1.912	1.890	2.609	59.848
1953	3.225	5.971	5.811	2.852	12.155	8.718	5.142	3.385	3.174	3.062	2.973	4.981	61.448
1954	6.060	7.246	8.633	5.925	18.782	10.825	5.797	3.381	3.144	3.006	2.901	4.152	79.849
1955	4.678	6.636	8.450	5.040	22.923	11.707	5.733	3.271	3.133	2.994	2.860	4.691	82.117
1956	5.811	7.068	10.184	6.880	19.024	9.868	5.803	3.402	3.080	3.086	2.988	4.998	82.191
1957	6.060	7.246	8.818	6.364	21.923	9.494	5.646	3.387	3.034	2.940	2.636	4.126	81.674
1958	4.192	3.989	3.916	4.704	12.638	6.261	2.870	2.879	2.851	2.112	2.047	3.683	52.141
1959	4.557	3.729	5.261	3.423	7.087	7.950	5.771	3.400	3.146	2.992	2.935	4.862	55.114
1960	5.570	7.241	10.184	6.880	21.716	10.158	5.809	3.403	3.178	3.098	2.977	4.980	85.194
1961	6.012	7.096	6.351	4.215	6.167	4.804	5.224	2.862	2.558	2.195	2.472	3.218	53.174
1962	3.647	6.035	7.546	6.150	15.454	9.341	5.804	3.373	3.168	3.099	2.995	4.998	71.609
1963	5.998	7.157	4.731	5.416	13.978	4.279	4.852	3.281	2.894	2.842	2.568	3.625	61.620
1964	5.785	6.781	6.006	4.202	5.479	3.007	2.294	2.002	1.999	2.580	2.773	4.753	47.660
1965	5.854	7.123	7.021	5.867	19.559	6.966	3.863	2.843	2.775	2.453	2.150	3.600	70.076
1966	2.702	2.695	3.717	4.434	21.202	11.401	5.809	3.403	3.155	3.056	2.953	4.422	68.949
1967	5.024	6.978	6.148	4.004	6.968	6.680	5.330	2.319	2.448	2.195	2.648	4.800	55.541
1968	4.816	5.165	6.099	4.880	5.363	10.082	5.809	3.401	3.173	3.056	2.965	4.875	59.683
1969	6.060	7.161	5.644	3.089	4.126	3.452	2.808	2.392	2.651	2.065	2.188	4.585	46.022
1970	6.030	7.242	7.760	5.748	15.642	5.546	5.336	3.403	3.178	3.099	2.995	4.996	70.975
1971	6.057	7.081	6.041	6.382	22.923	11.963	5.764	3.397	3.177	3.092	2.976	4.755	83.607
1972	4.529	4.458	3.497	2.667	9.746	6.462	5.255	3.271	2.740	2.699	2.913	4.998	53.233
1973	6.060	7.225	8.300	6.510	18.428	6.390	5.459	3.185	3.080	2.898	2.768	3.095	73.399
1974	2.264	3.160	5.904	6.880	22.242	10.912	5.784	3.403	3.123	2.996	2.816	4.995	74.479
1975	6.047	6.816	8.929	6.880	22.923	11.963	5.809	3.403	3.177	3.026	2.960	4.497	86.430
1976	5.951	6.516	7.359	6.880	22.923	11.963	5.809	3.145	3.024	2.582	2.847	4.953	83.953
1977	6.026	6.613	7.653	6.494	20.980	10.697	5.794	3.371	3.094	3.006	2.959	4.951	81.639
1978	6.053	7.235	8.155	4.767	8.008	3.510	3.651	2.980	2.498	2.384	2.615	4.860	56.716
1979	5.330	3.329	4.243	3.140	4.345	2.603	2.153	1.901	1.779	1.726	1.658	3.959	36.165
1980	4.678	5.516	4.126	4.350	16.225	5.997	2.992	3.305	3.170	3.092	2.995	4.998	61.445
1981	6.060	7.246	9.298	5.372	12.711	6.884	5.680	3.292	2.967	2.599	2.385	2.387	66.881
1982	4.604	4.301	2.391	2.173	3.003	2.489	2.153	1.875	1.760	1.746	1.884	2.456	30.834
1983	2.817	6.180	8.088	6.880	22.923	11.963	5.809	3.394	3.160	3.099	2.995	4.996	82.305
1984	6.009	7.116	4.584	4.241	22.923	11.592	5.181	2.888	2.495	2.650	1.987	2.778	74.444
1985	6.060	7.224	6.452	4.694	10.488	5.814	3.911	2.353	2.159	2.112	1.803	2.094	55.163
1986	2.373	2.560	5.102	5.530	11.097	6.414	5.512	3.185	3.140	3.054	2.995	4.998	55.959
1987	6.060	7.246	10.039	5.617	18.221	11.618	5.809	3.342	3.118	3.058	2.982	4.935	82.044
1988	6.014	7.204	9.722	5.738	17.599	9.669	4.136	3.067	2.827	2.882	2.354	2.985	74.196
1989	2.621	7.246	10.065	5.864	8.320	7.372	5.566	3.220	2.891	2.653	2.858	4.518	63.195
1990	4.991	5.118	4.302	4.801	16.612	11.033	5.767	3.360	3.176	3.095	2.987	4.874	70.116
1991	5.913	5.602	2.957	2.497	3.713	2.589	2.188	1.875	1.760	1.726	1.658	1.847	34.323
1992	1.988	2.404	2.678	2.147	3.224	2.665	2.368	1.907	1.789	1.754	1.686	1.964	26.574
1993	6.060	7.246	9.147	6.368	11.717	6.390	4.646	2.326	2.126	1.950	2.196	2.510	62.681
1994	5.180	6.138	3.651	2.268	3.128	2.590	4.636	3.336	3.165	3.098	2.987	4.920	45.098
1995	5.946	7.227	10.184	6.880	22.923	11.963	5.809	3.366	3.146	3.068	2.985	4.505	88.002
1996	5.524	5.989	4.791	4.782	16.296	7.691	5.600	3.380	3.173	3.099	2.993	4.998	68.316
1997	6.060	7.246	10.184	4.580	10.560	5.924	4.280	3.079	2.555	2.363	1.940	2.254	61.023
1998	4.159	5.647	5.094	4.566	10.909	5.755	3.307	2.555	2.427	2.264	2.086	3.172	51.942
1999	5.109	5.727	8.191	6.880	21.017	10.071	5.766	3.403	3.178	3.072	2.932	4.794	80.140
2000	5.652	7.246	10.184	6.067	9.881	5.091	3.411	2.317	1.891	1.848	1.728	4.072	59.387
2001	5.913	6.908	8.833	6.236	10.669	4.344	3.270	2.137	1.925	3.099	2.995	4.998	61.325
2002	6.060	7.162	5.428	2.759	5.619	3.165	2.232	1.966	1.857				

A.52. Ni20 – Category B**Summary table**

Desktop Version 2, Generated on 2015-03-31

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni20

Annual Flows (Mill. cu. m or index values):

MAR = 85,760

S.Dev. = 62,929

CV = 0,734

Q75 = 1,600

Q75/MMF = 0,224

BFI Index = 0,365

CV(JJA+JFM) Index = 3,476

Ecological Category = B

Total IFR = 63,188 (73,68 %MAR)

Maint. Lowflow = 48,097 (56,08 %MAR)

Drought Lowflow = 6,805 (7,93 %MAR)

Maint. Highflow = 15,091 (17,60 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows Maint.	High Flows Drought	Total Flows Maint.	Total Flows Maint.
Oct	8,842	11,823	1,337	6,486	0,798	2,411	8,896
Nov	9,979	12,564	1,259	5,620	0,781	2,154	7,774
Dec	7,905	10,828	1,370	4,708	0,807	1,818	6,526
Jan	6,881	10,434	1,516	4,366	0,782	1,578	5,943
Feb	10,247	17,976	1,754	4,849	0,702	2,498	7,347
Mar	11,176	19,380	1,734	6,414	0,758	1,734	8,148
Apr	6,763	10,031	1,483	3,861	0,236	0,952	4,812
May	6,098	12,435	2,039	3,129	0,242	0,405	3,535
Jun	4,708	11,786	2,504	2,321	0,382	0,155	2,476
Jul	3,706	6,167	1,664	2,037	0,401	0,257	2,294
Aug	2,958	3,716	1,256	1,789	0,395	0,376	2,165
Sep	6,497	18,483	2,845	2,517	0,519	0,754	3,271

Rule curve

Desktop Version 2, Generated on 2015-03-31

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni20

Regional Type : Zululand

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	10.146	10.110	9.962	5.470	3.690	2.890	2.330	2.000	1.580	0.690
Nov	8.930	8.912	8.799	7.600	5.270	4.300	2.920	2.560	1.835	0.710
Dec	9.383	8.789	7.040	4.500	3.600	2.750	2.420	2.140	1.675	1.000
Jan	8.517	8.010	5.650	4.070	3.040	2.360	2.120	1.680	1.370	0.950
Feb	10.974	10.161	6.080	4.380	3.160	2.490	2.010	1.510	1.180	0.720
Mar	11.160	10.584	8.460	4.420	3.830	3.410	2.140	1.480	0.990	0.570
Apr	5.517	5.496	5.412	3.930	2.560	2.290	1.830	1.370	0.863	0.364
May	4.077	4.054	3.985	2.570	2.040	1.730	1.600	1.320	0.660	0.307
Jun	2.844	2.827	2.740	2.230	1.970	1.660	1.310	1.120	0.637	0.413
Jul	2.605	2.584	2.537	2.080	1.840	1.540	1.320	1.050	0.634	0.441
Aug	2.469	2.454	2.415	2.270	1.930	1.620	1.350	1.034	0.632	0.446
Sep	3.743	3.724	3.490	2.770	2.350	2.040	1.680	1.320	0.907	0.614

Reserve Flows without High Flows

Oct	7.546	7.519	7.409	5.470	3.690	2.890	2.330	2.000	1.489	0.690
Nov	6.595	6.582	6.499	6.306	5.270	4.300	2.920	2.560	1.395	0.710
Dec	5.572	5.565	5.502	4.500	3.600	2.750	2.420	2.140	1.319	0.837
Jan	5.211	5.211	5.160	4.070	3.040	2.360	2.120	1.680	1.273	0.809
Feb	5.738	5.731	5.664	4.380	3.160	2.490	2.010	1.510	1.180	0.720
Mar	7.526	7.511	7.414	4.420	3.830	3.410	2.140	1.480	0.990	0.570
Apr	4.490	4.473	4.404	3.930	2.560	2.290	1.830	1.370	0.672	0.263
May	3.640	3.619	3.557	2.570	2.040	1.730	1.600	1.261	0.580	0.264
Jun	2.678	2.662	2.617	2.230	1.970	1.660	1.310	1.060	0.607	0.397
Jul	2.331	2.312	2.271	2.080	1.840	1.540	1.320	0.953	0.585	0.414
Aug	2.065	2.053	2.020	1.951	1.818	1.594	1.269	0.888	0.559	0.406
Sep	2.930	2.916	2.871	2.770	2.350	2.040	1.680	1.242	0.759	0.534

Natural Duration curves

Oct	19.960	14.510	10.050	5.470	3.690	2.890	2.330	2.000	1.580	0.690
Nov	22.160	16.080	9.220	7.600	5.270	4.300	2.920	2.560	2.020	0.710
Dec	22.970	10.750	7.040	4.500	3.600	2.750	2.420	2.140	1.830	1.000
Jan	19.120	11.950	5.650	4.070	3.040	2.360	2.120	1.680	1.370	0.950
Feb	40.470	12.760	6.080	4.380	3.160	2.490	2.010	1.510	1.180	0.720
Mar	34.110	20.460	8.460	4.420	3.830	3.410	2.140	1.480	0.990	0.570
Apr	15.970	10.340	5.640	3.930	2.560	2.290	1.830	1.370	1.200	0.550
May	12.950	6.030	4.260	2.570	2.040	1.730	1.600	1.320	1.100	0.560
Jun	8.780	4.060	2.740	2.230	1.970	1.660	1.310	1.160	0.870	0.550
Jul	6.290	4.220	2.780	2.080	1.840	1.540	1.320	1.110	0.780	0.590
Aug	6.360	3.640	2.780	2.270	1.930	1.620	1.350	1.070	0.930	0.570
Sep	13.650	4.470	3.490	2.770	2.350	2.040	1.680	1.320	1.030	0.820

Hydrological time series

Total Runoff : Ni20
 Desktop (Version 2) Modified Flow Data for Ecological Category B

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	2.320	2.210	2.680	4.020	3.090	3.330	3.520	2.620	2.090	1.510	1.155	2.180	30.725
1921	9.962	8.930	9.383	5.630	0.990	0.760	0.855	1.890	2.110	1.850	2.410	3.040	47.810
1922	10.130	8.930	7.170	8.517	10.161	4.020	1.840	0.758	0.464	0.441	0.446	0.530	53.406
1923	0.560	0.710	1.171	1.680	1.740	2.060	2.030	1.870	1.870	1.540	1.610	3.743	20.584
1924	10.106	8.930	8.713	8.390	10.169	11.160	5.517	4.077	2.844	2.599	2.459	3.710	78.673
1925	10.023	8.842	4.500	1.110	0.870	10.584	5.470	1.530	2.320	2.562	1.950	1.990	51.751
1926	10.061	6.670	3.600	2.920	2.820	11.160	5.517	2.490	2.290	1.950	2.130	1.830	53.437
1927	2.150	1.345	1.336	2.140	4.910	3.570	2.500	3.985	2.813	2.080	2.030	1.770	30.629
1928	1.470	1.184	1.040	1.520	1.600	10.936	5.501	2.230	2.290	2.584	2.454	3.490	36.299
1929	4.860	4.300	2.020	8.297	6.080	1.290	1.232	1.320	1.310	1.560	2.381	3.741	38.392
1930	6.230	7.120	4.750	2.280	1.180	0.960	1.330	1.320	1.120	1.320	1.128	1.029	29.767
1931	1.520	1.220	1.105	0.950	10.974	10.657	5.517	4.077	2.844	2.370	1.490	1.530	44.255
1932	2.190	2.610	2.560	2.620	2.300	1.950	1.440	0.611	0.526	0.634	0.787	0.832	19.059
1933	1.290	2.350	8.991	7.800	10.081	6.530	5.517	4.076	2.841	2.605	2.469	3.708	58.257
1934	2.300	1.451	9.251	7.765	4.380	3.450	2.200	4.077	2.844	2.605	2.469	3.728	46.520
1935	2.750	1.614	1.000	2.200	10.717	10.275	3.360	4.077	2.844	2.531	1.760	2.160	45.289
1936	4.700	8.930	9.110	1.320	4.380	3.620	2.350	1.550	1.260	1.670	1.880	1.600	42.370
1937	1.630	3.320	6.890	4.860	9.904	4.420	1.360	1.300	1.910	2.605	2.469	2.970	43.638
1938	2.690	2.640	2.640	2.130	10.696	10.266	3.940	3.989	2.835	2.602	2.466	3.743	50.637
1939	10.038	8.930	8.805	2.420	1.300	0.930	1.550	4.077	2.844	2.605	2.440	2.700	48.640
1940	2.230	7.600	9.178	6.020	1.010	1.040	1.650	1.340	1.120	1.360	1.220	1.640	35.408
1941	1.830	2.490	2.930	2.650	1.880	4.190	3.990	3.989	2.827	2.523	2.412	2.870	34.581
1942	2.890	8.930	9.383	8.290	2.270	10.998	5.517	4.077	2.827	2.605	2.469	3.742	63.998
1943	10.140	8.744	3.280	1.370	1.450	2.690	2.320	1.520	2.844	2.605	2.455	3.743	43.161
1944	10.110	3.720	2.130	1.259	2.490	11.160	5.517	1.730	1.174	0.781	0.601	0.658	41.329
1945	1.190	1.173	1.208	1.890	1.640	1.170	1.710	1.830	1.320	0.794	0.555	0.614	15.094
1946	2.020	2.430	2.320	2.120	2.120	3.980	5.494	4.037	2.710	2.537	2.100	2.320	34.188
1947	3.430	8.150	7.040	3.990	2.490	2.210	2.210	1.570	0.764	0.485	0.529	0.907	33.776
1948	1.750	2.670	2.720	2.100	3.380	4.050	5.517	4.076	2.770	2.541	1.930	1.680	35.183
1949	10.146	8.913	9.383	8.270	4.620	4.780	2.920	1.990	2.330	2.110	1.700	1.350	58.513
1950	0.930	0.640	0.990	1.450	1.410	1.680	1.500	0.807	1.420	1.570	2.469	3.735	18.601
1951	10.041	4.990	2.250	2.470	1.540	0.950	0.797	3.982	2.825	2.552	2.370	1.430	36.198
1952	1.060	1.835	2.420	2.360	3.990	4.230	2.320	1.720	1.580	1.260	0.886	1.190	24.850
1953	1.720	5.270	8.567	4.560	3.040	3.830	3.830	4.029	2.841	2.578	2.348	3.743	46.356
1954	10.146	8.916	1.538	2.450	2.750	3.270	4.340	2.880	1.980	1.310	0.632	1.310	41.522
1955	3.320	8.860	6.090	1.410	10.974	10.429	2.450	1.620	1.660	1.600	1.910	2.710	53.033
1956	3.940	4.760	9.383	8.040	3.120	4.430	5.476	4.028	1.970	1.680	1.780	3.743	52.349
1957	10.146	8.745	3.670	8.234	10.528	7.090	5.486	4.034	2.070	1.460	0.787	1.840	64.091
1958	2.980	2.630	2.140	1.970	1.940	1.220	0.438	1.470	1.970	1.350	1.810	3.390	23.308
1959	7.940	4.910	2.860	1.650	2.030	3.550	5.498	4.054	2.740	1.780	1.660	2.340	41.012
1960	3.140	8.930	9.383	8.517	3.510	2.140	5.517	4.069	2.806	2.562	2.130	2.560	55.264
1961	5.450	6.380	3.910	2.210	1.510	1.840	1.830	1.320	0.667	0.485	0.960	1.320	27.881
1962	2.330	8.815	5.940	4.010	3.160	10.767	5.496	2.470	2.844	2.605	2.469	2.150	53.057
1963	2.070	3.350	2.300	8.493	8.450	2.060	1.760	1.730	1.260	1.120	1.128	1.150	34.870
1964	2.820	4.510	2.660	1.340	0.730	0.530	0.364	0.307	1.290	2.410	2.447	3.713	23.121
1965	10.091	7.380	3.370	5.600	4.170	1.950	0.863	1.700	1.940	1.640	1.520	1.950	42.174
1966	2.220	2.230	2.090	4.070	4.780	11.072	5.517	4.074	1.820	1.520	1.380	0.847	41.620
1967	1.580	2.770	1.675	1.600	2.380	3.550	2.560	1.460	0.823	0.831	1.840	3.703	24.772
1968	3.690	2.920	4.210	2.600	1.170	10.910	5.503	3.974	2.500	1.790	1.230	1.900	42.397
1969	10.146	8.751	2.610	1.680	1.320	1.140	0.716	1.600	1.790	1.490	1.420	2.350	35.014
1970	10.146	8.912	5.310	3.040	4.160	3.940	3.930	4.077	2.844	2.584	2.464	3.724	55.133
1971	10.042	5.730	2.120	2.000	10.974	10.901	5.412	4.077	2.844	2.584	2.436	1.960	61.079
1972	1.800	2.200	3.390	3.940	3.950	4.690	4.250	2.680	1.550	0.952	2.374	3.743	35.519
1973	10.146	8.160	4.320	8.517	9.994	3.410	2.540	2.570	2.230	1.940	1.620	1.080	56.527
1974	0.690	1.547	2.770	7.796	10.615	8.260	2.490	2.420	1.770	1.480	1.250	3.743	44.830
1975	9.190	4.490	8.789	8.517	10.568	11.160	5.517	4.058	2.785	1.950	2.270	2.370	71.664
1976	10.146	8.799	3.630	8.517	10.974	11.160	5.457	1.860	1.001	0.767	1.350	3.727	67.389
1977	10.110	8.160	7.190	8.093	6.340	10.591	5.517	4.022	2.140	1.920	2.354	3.697	70.133
1978	10.146	8.871	4.150	2.930	2.160	1.460	1.360	1.740	1.790	1.940	2.437	3.687	42.672
1979	3.550	2.560	2.570	2.090	1.250	0.720	0.364	0.323	0.436	0.441	0.488	3.743	18.534
1980	6.750	7.020	4.390	8.517	10.733	8.460	1.920	4.074	2.841	2.594	2.469	3.743	63.511
1981	6.850	8.889	6.320	2.140	1.830	2.350	2.580	1.650	0.823	0.611	0.477	0.680	35.201
1982	2.550	2.660	1.373	0.900	0.720	0.570	0.438	0.421	0.464	1.050	2.425	3.080	16.651
1983	2.860	8.915	7.810	8.517	10.974	11.160	5.454	3.890	2.330	2.605	2.468	3.360	70.343
1984	3.420	5.270	3.480	5.650	10.974	10.563	1.410	0.339	0.575	1.130	0.812	0.816	44.439
1985	10.146	8.930	2.750	2.160	2.090	2.280	2.510	1.670	1.061	0.855	0.576	0.801	35.829
1986	1.970	2.590	8.555	8.010	4.920	3.250	3.460	2.240	2.813	2.582	2.466	3.743	46.599
1987	10.146	8.913	8.628	3.310	10.974	11.160	5.456	1.680	1.520	1.910	2.380	2.770	68.847
1988	4.040	8.930	9.260	4.750	10.161	5.660	1.360	0.653	1.174	1.240	1.034	1.090	49.351
1989	2.000	8.930	9.383	3.360	1.400	3.620	4.580	3.100	1.780	1.120	2.110	2.870	44.253
1990	9.510	5.060	2.950	4.620	10.233	11.160	5.517	1.950	2.120	2.509	2.439	3.300	61.368
1991	5.490	4.090	2.030	1.079	0.770	0.630	0.475	0.307	0.413	0.441	0.488	0.658	16.871
1992	1.360	2.600	2.190	1.310	1.080	1.240	1.279	0.660	0.538	0.519	0.632	1.680	15.088
1993	10.133	7.780	9.121	6.870	2.010	1.570	0.955	0.400	0.413	0.577	1.390	1.470	42.689
1994	4.850	4.300	2.290	0.970	0.380	0.860	5.511	4.064	2.844	2.604	2.457	2.210	33.340
1995	4.320	5.540	9.383	8.517	10.974	10.495	3.720	2.040	1.350	2.591	2.466	2.460	63.856
1996	2.670	3.720	2.240	1.870	1.730	1.480	2.100	2.850	2.805	2.563	2.427	3.692	30.147
1997	7.350	8.930	9.041	2.070	5.690	3.680	2.270	2.230	1.470	0.952	0.710	1.140	45.533
1998	1.990	1.939	2.210	4.900	6.440	3.510	1.530	0.953	1.200	1.120	1.220	2.390	29.402
1999	10.146	8.862	2.060	7.741	5.630	8.750	5.405	4.056	2.828	2.230	1.340	1.520	60.569
2000	3.370	8.930	9.383	7.783	2.770	1.930	1.370	1.041	0.637	0.477	0.446	2.220	40.357
2001	10.146	8.884	5.380	3.720	3.000	8.650	4.770	1.830	1.250	2.605	2.469	3.725	56.429
2002	3.590	3.230	2.020	1.530	1.440	0.990	0.541	0.386	1.280	1.840	1.560	2.040	20.447

MAR = 85,760
 S.Dev. = 62,929
 CV = 0,734
 Q75 = 1,600
 Q75/MMF = 0,224
 BFI Index = 0,365
 CV(JJA+JFM) Index = 3,476

Ecological Category = C

Total IFR = 27,629 (32,22 %MAR)
 Maint. Lowflow = 14,209 (16,57 %MAR)
 Drought Lowflow = 6,805 (7,93 %MAR)
 Maint. Highflow = 13,420 (15,65 %MAR)

Monthly Distributions (Mill. cu. m.)
 Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
			CV	Maint.	Drought	Maint.	
Oct	8,842	11,823	1,337	1,510	0,798	2,361	3,872
Nov	9,979	12,564	1,259	1,518	0,781	1,438	2,956
Dec	7,905	10,828	1,370	1,492	0,807	1,880	3,373
Jan	6,881	10,434	1,516	1,413	0,782	0,935	2,347
Feb	10,247	17,976	1,754	1,257	0,702	2,192	3,449
Mar	11,176	19,380	1,734	1,344	0,758	2,283	3,627
Apr	6,763	10,031	1,483	1,002	0,236	0,805	1,807
May	6,098	12,435	2,039	0,995	0,242	0,821	1,816
Jun	4,708	11,786	2,504	0,846	0,382	0,279	1,125
Jul	3,706	6,167	1,664	0,878	0,401	0,313	1,191
Aug	2,958	3,716	1,256	0,860	0,395	0,000	0,860
Sep	6,497	18,483	2,845	1,093	0,519	0,113	1,205

Rule curve

Desktop Version 2, Generated on 2015-03-31

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni20

Regional Type : Zululand

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	4.736	4.721	4.661	4.526	3.690	2.890	2.330	2.000	1.413	0.690
Nov	3.699	3.693	3.653	3.561	3.369	3.019	2.480	1.814	1.218	0.710
Dec	5.948	5.340	4.826	4.374	3.550	2.750	2.420	1.934	1.305	1.000
Jan	3.873	3.573	3.314	3.079	2.642	2.360	2.026	1.539	1.094	0.888
Feb	6.285	5.576	4.983	4.380	3.160	2.490	2.010	1.510	1.180	0.720
Mar	6.580	5.839	5.218	4.420	3.698	3.310	2.140	1.480	0.990	0.570
Apr	2.258	2.251	2.219	2.148	2.005	1.753	1.375	0.919	0.516	0.329
May	2.268	2.256	2.220	2.143	1.992	1.730	1.355	0.907	0.518	0.337
Jun	1.434	1.426	1.407	1.364	1.283	1.145	0.946	0.712	0.510	0.417
Jul	1.505	1.495	1.472	1.424	1.334	1.187	0.979	0.739	0.535	0.439
Aug	1.131	1.126	1.111	1.081	1.022	0.923	0.780	0.613	0.467	0.400
Sep	1.578	1.572	1.552	1.511	1.429	1.290	1.086	0.845	0.634	0.537

Reserve Flows without High Flows

Oct	2.001	1.996	1.977	1.933	1.844	1.688	1.454	1.171	0.921	0.690
Nov	2.027	2.024	2.006	1.965	1.878	1.721	1.479	1.180	0.912	0.710
Dec	2.007	2.005	1.989	1.951	1.871	1.722	1.489	1.198	0.936	0.814
Jan	1.914	1.914	1.901	1.869	1.798	1.662	1.444	1.164	0.907	0.789
Feb	1.690	1.689	1.676	1.644	1.578	1.456	1.264	1.024	0.808	0.708
Mar	1.795	1.792	1.778	1.743	1.671	1.541	1.339	1.090	0.867	0.570
Apr	1.326	1.322	1.304	1.264	1.184	1.043	0.831	0.574	0.348	0.243
May	1.317	1.310	1.290	1.248	1.164	1.021	0.812	0.565	0.349	0.249
Jun	1.112	1.107	1.093	1.063	1.005	0.906	0.764	0.598	0.454	0.387
Jul	1.146	1.139	1.123	1.089	1.027	0.925	0.781	0.614	0.472	0.406
Aug	1.131	1.126	1.111	1.081	1.022	0.923	0.780	0.613	0.467	0.400
Sep	1.447	1.442	1.425	1.388	1.316	1.192	1.012	0.798	0.611	0.525

Natural Duration curves

Oct	19.960	14.510	10.050	5.470	3.690	2.890	2.330	2.000	1.580	0.690
Nov	22.160	16.080	9.220	7.600	5.270	4.300	2.920	2.560	2.020	0.710
Dec	22.970	10.750	7.040	4.500	3.600	2.750	2.420	2.140	1.830	1.000
Jan	19.120	11.950	5.650	4.070	3.040	2.360	2.120	1.680	1.370	0.950
Feb	40.470	12.760	6.080	4.380	3.160	2.490	2.010	1.510	1.180	0.720
Mar	34.110	20.460	8.460	4.420	3.830	3.410	2.140	1.480	0.990	0.570
Apr	15.970	10.340	5.640	3.930	2.560	2.290	1.830	1.370	1.200	0.550
May	12.950	6.030	4.260	2.570	2.040	1.730	1.600	1.320	1.100	0.560
Jun	8.780	4.060	2.740	2.230	1.970	1.660	1.310	1.160	0.870	0.550
Jul	6.290	4.220	2.780	2.080	1.840	1.540	1.320	1.110	0.780	0.590
Aug	6.360	3.640	2.780	2.270	1.930	1.620	1.350	1.070	0.930	0.570
Sep	13.650	4.470	3.490	2.770	2.350	2.040	1.680	1.320	1.030	0.820

Hydrological time series

Total Runoff : Ni20

Desktop (Version 2) Modified Flow Data for Ecological Category C

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	2.320	1.449	2.680	3.058	3.090	3.284	2.105	2.149	1.320	1.146	0.656	1.353	24.610
1921	4.661	3.699	5.948	3.311	0.990	0.760	0.513	1.867	1.327	1.338	1.110	1.532	27.056
1922	4.729	3.699	4.862	3.873	5.576	4.014	1.384	0.568	0.438	0.439	0.400	0.530	30.513
1923	0.560	0.710	1.077	1.539	1.740	2.060	1.546	1.850	1.238	1.187	0.919	1.578	16.005
1924	4.720	3.699	5.266	3.798	5.583	6.580	2.258	2.268	1.434	1.502	1.127	1.567	39.802
1925	4.686	3.669	4.374	0.933	0.870	5.839	2.241	1.219	1.386	1.484	1.026	1.261	28.988

1926	4.702	3.485	3.550	2.600	2.820	6.580	2.258	2.120	1.379	1.375	1.057	1.170	33.095
1927	2.150	1.047	1.152	2.140	4.715	3.458	1.949	2.220	1.421	1.424	1.040	1.137	23.851
1928	1.335	0.990	1.022	1.267	1.600	6.285	2.252	2.046	1.379	1.495	1.126	1.552	22.350
1929	4.433	3.019	1.537	3.743	4.983	1.290	0.654	0.907	0.946	1.197	1.099	1.577	25.385
1930	4.565	3.522	4.429	2.280	1.180	0.960	0.795	0.907	0.712	0.979	0.646	0.675	21.650
1931	1.371	1.003	1.047	0.888	6.285	5.931	2.258	2.268	1.434	1.446	0.867	0.958	25.755
1932	2.190	2.022	2.560	2.496	2.300	1.950	1.006	0.492	0.464	0.535	0.523	0.609	17.148
1933	1.207	1.595	5.545	3.454	5.510	5.002	2.258	2.267	1.432	1.505	1.131	1.566	32.473
1934	2.300	1.084	5.812	3.435	4.380	3.347	1.683	2.268	1.434	1.505	1.131	1.573	29.951
1935	2.750	1.141	1.000	2.200	6.060	5.483	2.089	2.268	1.434	1.469	0.968	1.344	28.204
1936	4.408	3.699	5.666	1.043	4.380	3.504	1.809	1.258	0.836	1.251	1.006	1.018	29.879
1937	1.501	2.787	4.803	3.196	5.364	4.420	0.888	0.877	1.256	1.505	1.131	1.527	29.254
1938	2.690	2.119	2.640	2.084	6.041	5.472	2.149	2.223	1.430	1.504	1.130	1.578	31.059
1939	4.692	3.699	5.356	2.420	1.300	0.930	1.135	2.268	1.434	1.505	1.120	1.497	27.357
1940	2.230	3.561	5.737	3.328	1.010	1.040	1.221	0.933	0.712	1.010	0.685	1.052	22.520
1941	1.830	1.741	2.930	2.506	1.880	4.190	2.155	2.223	1.427	1.465	1.110	1.519	24.975
1942	2.890	3.699	5.948	3.739	2.270	6.367	2.258	2.268	1.426	1.505	1.131	1.577	35.079
1943	4.734	3.634	3.280	1.094	1.450	2.690	1.781	1.199	1.434	1.505	1.126	1.578	25.505
1944	4.721	2.891	1.899	0.983	2.490	6.580	2.258	1.730	0.735	0.607	0.456	0.552	25.902
1945	1.137	0.987	1.094	1.695	1.640	1.170	1.272	1.817	0.953	0.613	0.439	0.537	13.354
1946	2.020	1.678	2.320	2.026	2.120	3.948	2.250	2.247	1.405	1.472	1.052	1.416	23.953
1947	3.430	3.609	4.826	3.045	2.490	2.210	1.691	1.297	0.564	0.461	0.430	0.634	24.687
1948	1.710	2.157	2.720	1.989	3.380	4.050	2.258	2.267	1.407	1.473	1.022	1.086	25.522
1949	4.736	3.693	5.948	3.727	4.599	4.744	2.043	1.950	1.387	1.426	0.949	0.860	36.063
1950	0.930	0.640	0.990	1.186	1.410	1.680	1.081	0.593	1.029	1.202	1.131	1.575	13.446
1951	4.694	3.268	2.242	2.444	1.540	0.950	0.491	2.219	1.426	1.479	1.095	0.902	22.750
1952	1.060	1.218	2.420	2.360	3.990	4.230	1.781	1.704	1.112	0.936	0.559	0.772	22.141
1953	1.658	3.369	5.126	3.151	3.040	3.698	2.138	2.243	1.432	1.492	1.087	1.578	30.013
1954	4.736	3.694	1.243	2.437	2.750	3.265	2.187	2.183	1.286	0.972	0.467	0.839	26.059
1955	3.320	3.675	4.677	1.140	6.285	5.660	1.903	1.413	1.145	1.216	1.016	1.499	32.948
1956	3.940	3.185	5.948	3.590	3.120	4.430	2.243	2.242	1.283	1.256	0.974	1.578	33.790
1957	4.736	3.635	3.614	3.705	5.895	5.065	2.247	2.246	1.314	1.089	0.523	1.176	35.244
1958	2.980	2.106	1.934	1.754	1.940	1.220	0.357	1.102	1.283	1.002	0.984	1.548	18.210
1959	4.619	3.239	2.860	1.488	2.030	3.440	2.251	2.256	1.407	1.305	0.936	1.425	27.255
1960	3.140	3.699	5.948	3.873	3.510	2.140	2.258	2.264	1.418	1.484	1.057	1.470	32.261
1961	4.523	3.461	3.834	2.210	1.510	1.840	1.375	0.907	0.523	0.461	0.586	0.845	22.075
1962	2.330	3.659	4.653	3.053	3.160	6.071	2.251	2.115	1.434	1.505	1.131	1.339	32.700
1963	2.070	2.810	2.300	3.858	5.225	2.060	1.315	1.730	0.836	0.791	0.646	0.749	24.391
1964	2.820	3.095	2.660	1.064	0.730	0.530	0.329	0.337	0.902	1.449	1.123	1.568	16.606
1965	4.714	3.543	3.370	3.306	4.170	1.950	0.516	1.644	1.269	1.236	0.880	1.238	27.837
1966	2.220	1.470	1.759	3.079	4.685	6.465	2.258	2.266	1.216	1.159	0.799	0.614	27.990
1967	1.413	2.286	1.305	1.403	2.380	3.440	2.005	1.089	0.588	0.631	0.994	1.565	19.099
1968	3.690	2.480	4.109	2.489	1.170	6.251	2.253	2.215	1.395	1.310	0.692	1.210	29.263
1969	4.736	3.637	2.610	1.539	1.320	1.140	0.461	1.355	1.203	1.118	0.824	1.429	21.372
1970	4.736	3.693	4.550	2.642	4.160	3.881	2.148	2.268	1.434	1.495	1.129	1.572	33.707
1971	4.694	3.407	1.864	1.809	6.285	6.239	2.219	2.268	1.433	1.495	1.119	1.244	34.077
1972	1.800	1.437	3.390	3.024	3.950	4.690	2.185	2.157	1.099	0.691	1.097	1.578	27.098
1973	4.736	3.610	4.210	3.873	5.438	3.310	1.987	2.143	1.364	1.372	0.923	0.702	33.668
1974	0.690	1.117	2.770	3.452	5.970	5.196	1.940	2.100	1.194	1.104	0.707	1.578	27.818
1975	4.644	3.088	5.340	3.873	5.929	6.580	2.258	2.258	1.409	1.375	1.081	1.433	39.268
1976	4.736	3.653	3.577	3.873	6.285	6.580	2.236	1.842	0.663	0.600	0.780	1.572	36.399
1977	4.721	3.610	4.867	3.622	5.010	5.847	2.258	2.239	1.336	1.364	1.089	1.563	37.527
1978	4.736	3.679	4.054	2.604	2.160	1.460	0.888	1.740	1.203	1.372	1.120	1.559	26.573
1979	3.550	1.814	2.570	1.971	1.250	0.720	0.329	0.345	0.426	0.439	0.415	1.578	15.407
1980	4.592	3.513	4.274	3.873	6.073	5.218	1.452	2.266	1.432	1.500	1.131	1.578	36.903
1981	4.597	3.685	4.713	2.140	1.830	2.350	2.007	1.499	0.588	0.523	0.411	0.559	24.903
1982	2.550	2.145	1.168	0.888	0.720	0.570	0.357	0.395	0.438	0.739	1.115	1.534	12.619
1983	2.860	3.694	5.036	3.873	6.285	6.580	2.235	2.210	1.387	1.505	1.131	1.547	38.342
1984	3.420	3.369	3.480	3.314	6.285	5.815	0.968	0.353	0.484	0.843	0.532	0.604	29.468
1985	4.736	3.699	2.750	2.160	2.090	2.280	1.959	1.556	0.688	0.643	0.447	0.599	23.607
1986	1.970	1.939	5.114	3.573	4.717	3.250	2.099	2.049	1.420	1.494	1.130	1.578	30.332
1987	4.736	3.693	5.185	2.756	6.285	6.580	2.235	1.585	1.087	1.360	1.099	1.511	38.112
1988	4.040	3.699	5.821	3.179	5.576	4.905	0.888	0.514	0.735	0.922	0.613	0.716	31.607
1989	2.000	3.699	5.948	2.777	1.400	3.504	2.193	2.189	1.198	0.791	1.053	1.519	28.273
1990	4.650	3.293	2.950	3.160	5.639	6.580	2.258	1.917	1.330	1.458	1.120	1.544	35.900
1991	4.527	2.973	1.549	0.922	0.770	0.630	0.371	0.337	0.417	0.439	0.415	0.552	13.901
1992	1.257	1.981	2.074	1.033	1.080	1.240	0.671	0.518	0.469	0.478	0.467	1.086	12.354
1993	4.731	3.577	5.677	3.360	2.010	1.570	0.550	0.385	0.417	0.506	0.805	0.923	24.511
1994	4.431	3.019	2.290	0.891	0.380	0.860	2.256	2.261	1.434	1.505	1.127	1.366	21.820
1995	4.320	3.391	5.948	3.873	6.285	5.736	2.126	1.992	0.976	1.498	1.130	1.451	38.727
1996	2.670	2.891	2.214	1.680	1.730	1.480	1.606	2.179	1.417	1.485	1.116	1.561	22.028
1997	4.607	3.699	5.596	1.935	4.894	3.560	1.738	2.046	1.066	0.691	0.495	0.744	31.072
1998	1.990	1.254	2.130	3.202	5.020	3.403	1.118	0.668	0.757	0.791	0.685	1.437	22.455
1999	4.736	3.676	1.654	3.440	4.880	5.242	2.216	2.257	1.427	1.435	0.773	0.949	32.666
2000	3.370	3.699	5.948	3.424	2.770	1.930	0.919	0.713	0.510	0.457	0.400	1.371	25.532
2001	4.736	3.683	4.565	2.930	3.000	5.233	2.198	1.817	0.813	1.505	1.131	1.572	33.184
2002	3.590	2.718	1.537	1.284	1.440	0.990	0.395	0.377	0.880	1.334	0.897	1.290	16.732
2003	2.490	2.511	2.330	1.725	3.280	4.080	1.753	0.788	0.464	0.943	1.046	1.344	22.754
2004	4.526	3.571	4.485	3.098	4.480	4.970	2.149	2.072	1.371	1.460	1.111	1.441	34.735
Mean	3.375	2.849	3.556	2.568	3.451	3.679	1.662	1.655	1.104	1.153	0.894	1.248	27.194

A.54. Ni20 – Category D

Summary table

Desktop Version 2, Generated on 2015-03-31

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni20

Annual Flows (Mill. cu. m or index values):

MAR = 85,760

S.Dev. = 62,929

CV = 0,734

Q75 = 1,600

Q75/MMF = 0,224

BFI Index = 0,365

CV(JJA+JFM) Index = 3,476

Total IFR = 15,254 (17,79 %MAR)
 Maint. Lowflow = 6,805 (7,93 %MAR)
 Drought Lowflow = 6,805 (7,93 %MAR)
 Maint. Highflow = 8,450 (9,85 %MAR)

Monthly Distributions (Mill. cu. m.)
 Distribution Type : Zululand

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows Maint.	High Flows Drought	Total Flows Maint.	Total Flows Maint.
Oct	8,842	11,823	1,337	0,798	0,798	1,250	2,048
Nov	9,979	12,564	1,259	0,781	0,781	0,690	1,471
Dec	7,905	10,828	1,370	0,807	0,807	1,328	2,135
Jan	6,881	10,434	1,516	0,782	0,782	0,332	1,114
Feb	10,247	17,976	1,754	0,702	0,702	1,636	2,338
Mar	11,176	19,380	1,734	0,758	0,758	1,437	2,194
Apr	6,763	10,031	1,483	0,236	0,236	0,377	0,614
May	6,098	12,435	2,039	0,242	0,242	0,681	0,924
Jun	4,708	11,786	2,504	0,382	0,382	0,285	0,667
Jul	3,706	6,167	1,664	0,401	0,401	0,319	0,720
Aug	2,958	3,716	1,256	0,395	0,395	0,000	0,395
Sep	6,497	18,483	2,845	0,519	0,519	0,115	0,634

Rule curve

Desktop Version 2, Generated on 2015-03-31
 Summary of IFR rule curves (Desktop Version 2) for :
 Total Runoff : Ni20
 Regional Type : Zululand
 Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	3.214	3.205	3.167	3.084	2.915	2.618	2.172	1.633	1.157	0.690
Nov	2.407	2.403	2.381	2.329	2.222	2.025	1.723	1.349	1.014	0.710
Dec	4.272	3.843	3.482	3.168	2.597	2.365	2.002	1.549	1.141	0.951
Jan	2.146	2.039	1.944	1.853	1.681	1.565	1.379	1.140	0.922	0.821
Feb	4.724	4.196	3.755	3.376	2.689	2.434	2.010	1.510	1.087	0.720
Mar	4.401	3.935	3.545	3.206	2.591	2.349	1.976	1.480	0.990	0.570
Apr	0.962	0.959	0.948	0.923	0.873	0.783	0.649	0.487	0.345	0.278
May	1.401	1.394	1.374	1.331	1.246	1.101	0.889	0.638	0.419	0.317
Jun	1.093	1.088	1.075	1.047	0.992	0.900	0.768	0.612	0.478	0.415
Jul	1.170	1.163	1.147	1.114	1.053	0.951	0.809	0.644	0.503	0.438
Aug	0.718	0.715	0.709	0.696	0.670	0.627	0.564	0.491	0.427	0.397
Sep	1.109	1.105	1.095	1.072	1.027	0.950	0.837	0.704	0.588	0.534

Reserve Flows without High Flows										
Oct	1.456	1.453	1.443	1.419	1.370	1.285	1.157	1.002	0.865	0.690
Nov	1.433	1.431	1.422	1.400	1.355	1.273	1.146	0.990	0.850	0.710
Dec	1.489	1.488	1.478	1.457	1.411	1.327	1.194	1.029	0.880	0.811
Jan	1.450	1.450	1.442	1.423	1.381	1.301	1.172	1.007	0.856	0.786
Feb	1.295	1.295	1.287	1.268	1.228	1.155	1.039	0.896	0.766	0.706
Mar	1.390	1.389	1.380	1.359	1.315	1.235	1.112	0.960	0.824	0.570
Apr	0.431	0.431	0.428	0.420	0.406	0.381	0.343	0.297	0.256	0.238
May	0.442	0.441	0.438	0.430	0.414	0.388	0.349	0.302	0.262	0.244
Jun	0.694	0.692	0.686	0.673	0.648	0.606	0.545	0.474	0.413	0.384
Jul	0.725	0.722	0.715	0.700	0.673	0.629	0.566	0.494	0.432	0.403
Aug	0.718	0.715	0.709	0.696	0.670	0.627	0.564	0.491	0.427	0.397
Sep	0.947	0.945	0.937	0.920	0.887	0.830	0.746	0.648	0.562	0.522

Natural Duration curves										
Oct	19.960	14.510	10.050	5.470	3.690	2.890	2.330	2.000	1.580	0.690
Nov	22.160	16.080	9.220	7.600	5.270	4.300	2.920	2.560	2.020	0.710
Dec	22.970	10.750	7.040	4.500	3.600	2.750	2.420	2.140	1.830	1.000
Jan	19.120	11.950	5.650	4.070	3.040	2.360	2.120	1.680	1.370	0.950
Feb	40.470	12.760	6.080	4.380	3.160	2.490	2.010	1.510	1.180	0.720
Mar	34.110	20.460	8.460	4.420	3.830	3.410	2.140	1.480	0.990	0.570
Apr	15.970	10.340	5.640	3.930	2.560	2.290	1.830	1.370	1.200	0.550
May	12.950	6.030	4.260	2.570	2.040	1.730	1.600	1.320	1.100	0.560
Jun	8.780	4.060	2.740	2.230	1.970	1.660	1.310	1.160	0.870	0.550
Jul	6.290	4.220	2.780	2.080	1.840	1.540	1.320	1.110	0.780	0.590
Aug	6.360	3.640	2.780	2.270	1.930	1.620	1.350	1.070	0.930	0.570
Sep	13.650	4.470	3.490	2.770	2.350	2.040	1.680	1.320	1.030	0.820

Hydrological time series

Total Runoff : Ni20

Desktop (Version 2) Modified Flow Data for Ecological Category D

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	2.150	1.144	2.276	1.845	2.662	2.333	0.908	1.334	1.017	0.923	0.510	0.985	18.087
1921	3.167	2.407	4.272	1.943	0.987	0.760	0.344	1.176	1.022	1.055	0.708	1.084	18.925
1922	3.210	2.407	3.507	2.146	4.196	2.789	0.652	0.447	0.429	0.438	0.397	0.530	21.148
1923	0.560	0.710	0.993	1.140	1.740	1.878	0.710	1.167	0.963	0.951	0.625	1.109	12.545
1924	3.204	2.407	3.791	2.119	4.201	4.401	0.962	1.401	1.093	1.168	0.716	1.103	26.565
1925	3.183	2.390	3.168	0.843	0.870	3.935	0.956	0.812	1.061	1.156	0.672	0.934	19.980
1926	3.192	2.286	2.597	1.661	2.559	4.401	0.962	1.318	1.056	1.081	0.685	0.884	22.684
1927	1.819	0.918	1.041	1.437	3.556	2.441	0.853	1.374	1.084	1.114	0.678	0.865	17.180
1928	1.109	0.887	0.957	1.007	1.600	4.216	0.960	1.276	1.056	1.163	0.715	1.095	16.043
1929	3.026	2.025	1.291	2.099	3.755	1.290	0.394	0.638	0.768	0.958	0.704	1.108	18.056
1930	3.108	2.307	3.206	1.537	1.087	0.960	0.444	0.638	0.612	0.809	0.505	0.610	15.822
1931	1.131	0.894	0.974	0.821	4.724	3.994	0.962	1.401	1.093	1.129	0.602	0.767	18.491
1932	1.868	1.466	2.144	1.610	2.300	1.742	0.518	0.405	0.446	0.503	0.451	0.574	14.028
1933	1.030	1.226	3.988	1.996	4.146	3.409	0.962	1.400	1.092	1.170	0.718	1.102	22.240
1934	2.107	0.939	4.176	1.989	3.376	2.372	0.758	1.401	1.093	1.170	0.718	1.106	21.204
1935	2.496	0.971	0.951	1.508	4.556	3.711	0.902	1.401	1.093	1.145	0.646	0.980	20.361

1936	3.011	2.407	4.073	0.897	3.376	2.470	0.803	0.834	0.694	0.995	0.663	0.800	21.024
1937	1.212	1.895	3.466	1.899	4.037	3.206	0.476	0.621	0.975	1.170	0.718	1.080	20.754
1938	2.444	1.520	2.225	1.408	4.542	3.704	0.924	1.375	1.090	1.169	0.717	1.109	22.227
1939	3.187	2.407	3.854	1.576	1.236	0.930	0.564	1.401	1.093	1.170	0.713	1.064	19.195
1940	1.955	2.329	4.123	1.949	0.998	1.040	0.595	0.652	0.612	0.830	0.522	0.818	16.424
1941	1.435	1.308	2.414	1.615	1.880	2.966	0.926	1.375	1.088	1.142	0.709	1.076	17.934
1942	2.618	2.407	4.272	2.098	2.270	4.268	0.962	1.401	1.088	1.170	0.718	1.108	24.380
1943	3.212	2.370	2.510	0.922	1.449	2.204	0.793	0.801	1.093	1.170	0.715	1.109	18.350
1944	3.205	1.954	1.526	0.868	2.434	4.401	0.962	1.101	0.627	0.553	0.422	0.542	18.595
1945	0.986	0.885	1.004	1.217	1.640	1.170	0.613	1.148	0.773	0.557	0.415	0.534	10.942
1946	1.658	1.273	1.853	1.379	2.120	2.747	0.959	1.389	1.074	1.147	0.683	1.019	17.301
1947	2.819	2.356	3.482	1.840	2.434	2.005	0.761	0.856	0.513	0.453	0.411	0.588	18.518
1948	1.341	1.542	2.327	1.361	2.813	2.820	0.962	1.400	1.076	1.148	0.670	0.837	18.298
1949	3.214	2.404	4.272	2.094	3.471	3.247	0.886	1.223	1.062	1.116	0.638	0.713	24.338
1950	0.930	0.640	0.951	0.967	1.391	1.605	0.545	0.461	0.823	0.962	0.718	1.107	11.101
1951	3.187	2.165	1.748	1.584	1.540	0.950	0.336	1.374	1.088	1.152	0.702	0.736	16.562
1952	0.974	1.014	2.002	1.565	3.157	3.008	0.793	1.084	0.878	0.779	0.467	0.664	16.386
1953	1.309	2.222	3.692	1.882	2.643	2.591	0.919	1.387	1.092	1.161	0.699	1.109	20.705
1954	3.214	2.404	1.100	1.581	2.533	2.321	0.937	1.353	0.994	0.804	0.427	0.701	18.369
1955	2.778	2.393	3.378	0.945	4.724	3.823	0.836	0.921	0.900	0.972	0.667	1.065	23.403
1956	2.939	2.118	4.272	2.045	2.674	3.207	0.957	1.387	0.992	0.999	0.649	1.109	23.348
1957	3.214	2.371	2.642	2.086	4.433	3.449	0.958	1.388	1.013	0.884	0.451	0.887	23.775
1958	2.652	1.513	1.549	1.246	1.940	1.220	0.288	0.747	0.992	0.825	0.653	1.092	14.717
1959	3.141	2.149	2.395	1.115	2.030	2.429	0.960	1.394	1.075	1.032	0.632	1.024	19.378
1960	2.711	2.407	4.272	2.146	2.886	1.976	0.962	1.398	1.082	1.156	0.685	1.049	22.731
1961	3.082	2.273	2.794	1.512	1.510	1.677	0.649	0.638	0.486	0.453	0.479	0.704	16.256
1962	2.172	2.384	3.361	1.843	2.689	4.081	0.959	1.315	1.093	1.170	0.718	0.977	22.763
1963	1.720	1.908	1.823	2.141	3.935	1.878	0.628	1.101	0.694	0.680	0.505	0.651	17.663
1964	2.557	2.068	2.250	0.907	0.730	0.530	0.278	0.317	0.738	1.131	0.714	1.103	13.325
1965	3.200	2.319	2.534	1.941	3.258	1.742	0.345	1.051	0.983	0.985	0.608	0.921	19.888
1966	1.933	1.156	1.435	1.853	3.534	4.329	0.962	1.400	0.948	0.932	0.572	0.577	19.632
1967	1.157	1.614	1.141	1.074	2.380	2.429	0.873	0.739	0.529	0.570	0.657	1.101	14.265
1968	2.915	1.723	2.984	1.606	1.082	4.195	0.960	1.371	1.067	1.036	0.526	0.905	20.370
1969	3.214	2.372	2.194	1.140	1.261	1.140	0.325	0.889	0.939	0.904	0.583	1.027	15.989
1970	3.214	2.403	3.290	1.681	3.252	2.705	0.923	1.401	1.093	1.163	0.717	1.105	22.948
1971	3.188	2.243	1.504	1.273	4.724	4.187	0.948	1.401	1.093	1.163	0.712	0.924	23.360
1972	1.400	1.137	2.540	1.831	3.134	3.237	0.936	1.339	0.870	0.611	0.703	1.109	18.846
1973	3.214	2.357	3.054	2.146	4.093	2.349	0.866	1.331	1.047	1.078	0.627	0.625	22.786
1974	0.690	0.958	2.371	1.995	4.489	3.531	0.849	1.307	0.933	0.895	0.532	1.109	19.658
1975	3.157	2.064	3.843	2.146	4.458	4.401	0.962	1.395	1.077	1.081	0.696	1.029	26.308
1976	3.214	2.381	2.616	2.146	4.724	4.401	0.954	1.162	0.579	0.548	0.564	1.106	24.396
1977	3.205	2.357	3.511	2.056	3.775	3.941	0.962	1.385	1.028	1.073	0.699	1.100	25.092
1978	3.214	2.395	2.946	1.662	2.160	1.460	0.476	1.106	0.939	1.078	0.713	1.098	19.248
1979	2.863	1.349	2.154	1.352	1.174	0.720	0.278	0.322	0.421	0.438	0.404	1.109	12.585
1980	3.124	2.303	3.099	2.146	4.566	3.545	0.677	1.400	1.092	1.166	0.718	1.109	24.944
1981	3.128	2.399	3.403	1.437	1.830	2.063	0.873	0.969	0.529	0.496	0.402	0.546	18.076
1982	2.338	1.534	1.052	0.821	0.720	0.570	0.288	0.350	0.429	0.644	0.711	1.085	10.543
1983	2.592	2.404	3.629	2.146	4.724	4.401	0.954	1.369	1.062	1.170	0.718	1.091	26.260
1984	2.815	2.222	2.564	1.944	4.724	3.920	0.505	0.327	0.460	0.715	0.455	0.571	21.223
1985	3.214	2.407	2.365	1.494	2.090	2.034	0.856	1.001	0.596	0.578	0.418	0.569	17.622
1986	1.598	1.419	3.684	2.039	3.558	2.317	0.906	1.278	1.084	1.162	0.717	1.109	20.871
1987	3.214	2.404	3.734	1.726	4.724	4.401	0.954	1.017	0.862	1.071	0.704	1.072	25.882
1988	2.949	2.407	4.182	1.893	4.196	3.348	0.476	0.417	0.627	0.769	0.491	0.633	22.387
1989	1.633	2.407	4.272	1.735	1.377	2.470	0.939	1.357	0.936	0.680	0.684	1.076	19.564
1990	3.161	2.179	2.420	1.885	4.242	4.401	0.962	1.204	1.024	1.138	0.713	1.090	24.419
1991	3.084	1.999	1.299	0.838	0.770	0.630	0.293	0.317	0.415	0.438	0.404	0.542	11.031
1992	1.061	1.442	1.640	0.892	1.034	1.240	0.400	0.419	0.450	0.464	0.427	0.837	10.307
1993	3.211	2.338	4.081	1.961	2.010	1.556	0.357	0.344	0.415	0.484	0.575	0.747	18.079
1994	3.025	2.025	1.808	0.823	0.380	0.860	0.961	1.397	1.093	1.170	0.716	0.992	15.250
1995	2.975	2.234	4.272	2.146	4.724	3.871	0.915	1.246	0.788	1.165	0.717	1.039	26.093
1996	2.428	1.954	1.730	1.210	1.730	1.480	0.731	1.351	1.082	1.156	0.711	1.099	16.662
1997	3.134	2.407	4.024	1.335	3.689	2.504	0.778	1.276	0.848	0.611	0.439	0.648	21.693
1998	1.621	1.035	1.676	1.901	3.782	2.406	0.558	0.503	0.642	0.680	0.522	1.031	16.358
1999	3.214	2.394	1.367	1.984	3.679	3.560	0.947	1.395	1.089	1.122	0.561	0.762	22.072
2000	2.796	2.407	4.272	1.992	2.540	1.718	0.487	0.528	0.478	0.450	0.397	0.995	19.062
2001	3.214	2.398	3.300	1.795	2.628	3.555	0.941	1.148	0.680	1.170	0.718	1.105	22.650
2002	2.878	1.856	1.291	1.015	1.435	0.990	0.302	0.340	0.724	1.053	0.615	0.950	13.449
2003	2.293	1.740	1.868	1.231	2.757	2.851	0.783	0.570	0.446	0.784	0.681	0.980	16.984
2004	3.084	2.335	3.245	1.861	3.416	3.389	0.924	1.291	1.051	1.139	0.709	1.033	23.476
Mean	2.503	1.929	2.675	1.606	2.808	2.652	0.751	1.057	0.873	0.928	0.614	0.927	19.323

A.55. Ni21 – Category B

Summary table

Desktop Version 2, Generated on 2015-03-26

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni21

Annual Flows (Mill. cu. m or index values):

MAR = 54,939

S.Dev. = 53,878

CV = 0,981

Q75 = 0,580

Q75/MMF = 0,127

BFI Index = 0,305

CV(JJA+JFM) Index = 4,439

Ecological Category = B

Total IFR = 27,589 (50,22 %MAR)

Maint. Lowflow = 19,787 (36,02 %MAR)

Drought Lowflow = 0,866 (1,58 %MAR)

Maint. Highflow = 7,802 (14,20 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows			Modified Flows (IFR)				
	Mean	SD	CV	Low flows		High Flows		Total Flows
				Maint.	Drought Maint.	Maint.	Maint.	
Oct	4,857	8,468	1,743	1,786	0,044	0,797	2,583	
Nov	5,400	8,387	1,553	1,644	0,044	0,814	2,459	
Dec	4,767	10,589	2,221	2,929	0,132	1,542	4,471	
Jan	4,087	9,265	2,267	3,820	0,130	1,139	4,960	
Feb	7,279	14,405	1,979	2,756	0,123	1,211	3,968	
Mar	7,934	18,093	2,280	1,776	0,128	0,823	2,599	
Apr	5,296	9,994	1,887	0,855	0,043	0,301	1,157	
May	3,984	8,625	2,165	1,559	0,046	0,394	1,952	
Jun	3,058	6,721	2,198	0,736	0,043	0,229	0,965	
Jul	2,678	7,307	2,729	0,587	0,044	0,152	0,739	
Aug	1,848	3,446	1,864	0,441	0,044	0,094	0,536	
Sep	3,750	14,492	3,865	0,897	0,043	0,305	1,201	

Rule curve

Desktop Version 2, Generated on 2015-03-31
 Summary of IFR rule curves (Desktop Version 2) for :
 Total Runoff : Ni20
 Regional Type : Zululand
 Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	10.146	10.110	9.962	5.470	3.690	2.890	2.330	2.000	1.580	0.690
Nov	8.930	8.912	8.799	7.600	5.270	4.300	2.920	2.560	1.835	0.710
Dec	9.383	8.789	7.040	4.500	3.600	2.750	2.420	2.140	1.675	1.000
Jan	8.517	8.010	5.650	4.070	3.040	2.360	2.120	1.680	1.370	0.950
Feb	10.974	10.161	6.080	4.380	3.160	2.490	2.010	1.510	1.180	0.720
Mar	11.160	10.584	8.460	4.420	3.830	3.410	2.140	1.480	0.990	0.570
Apr	5.517	5.496	5.412	3.930	2.560	2.290	1.830	1.370	0.863	0.364
May	4.077	4.054	3.985	2.570	2.040	1.730	1.600	1.320	0.660	0.307
Jun	2.844	2.827	2.740	2.230	1.970	1.660	1.310	1.120	0.637	0.413
Jul	2.605	2.584	2.537	2.080	1.840	1.540	1.320	1.050	0.634	0.441
Aug	2.469	2.454	2.415	2.270	1.930	1.620	1.350	1.034	0.632	0.446
Sep	3.743	3.724	3.490	2.770	2.350	2.040	1.680	1.320	0.907	0.614

Reserve Flows without High Flows

Oct	7.546	7.519	7.409	5.470	3.690	2.890	2.330	2.000	1.489	0.690
Nov	6.595	6.582	6.499	6.306	5.270	4.300	2.920	2.560	1.395	0.710
Dec	5.572	5.565	5.502	4.500	3.600	2.750	2.420	2.140	1.319	0.837
Jan	5.211	5.211	5.160	4.070	3.040	2.360	2.120	1.680	1.273	0.809
Feb	5.738	5.731	5.664	4.380	3.160	2.490	2.010	1.510	1.180	0.720
Mar	7.526	7.511	7.414	4.420	3.830	3.410	2.140	1.480	0.990	0.570
Apr	4.490	4.473	4.404	3.930	2.560	2.290	1.830	1.370	0.672	0.263
May	3.640	3.619	3.557	2.570	2.040	1.730	1.600	1.261	0.580	0.264
Jun	2.678	2.662	2.617	2.230	1.970	1.660	1.310	1.060	0.607	0.397
Jul	2.331	2.312	2.271	2.080	1.840	1.540	1.320	0.953	0.585	0.414
Aug	2.065	2.053	2.020	1.951	1.818	1.594	1.269	0.888	0.559	0.406
Sep	2.930	2.916	2.871	2.770	2.350	2.040	1.680	1.242	0.759	0.534

Natural Duration curves

Oct	19.960	14.510	10.050	5.470	3.690	2.890	2.330	2.000	1.580	0.690
Nov	22.160	16.080	9.220	7.600	5.270	4.300	2.920	2.560	2.020	0.710
Dec	22.970	10.750	7.040	4.500	3.600	2.750	2.420	2.140	1.830	1.000
Jan	19.120	11.950	5.650	4.070	3.040	2.360	2.120	1.680	1.370	0.950
Feb	40.470	12.760	6.080	4.380	3.160	2.490	2.010	1.510	1.180	0.720
Mar	34.110	20.460	8.460	4.420	3.830	3.410	2.140	1.480	0.990	0.570
Apr	15.970	10.340	5.640	3.930	2.560	2.290	1.830	1.370	1.200	0.550
May	12.950	6.030	4.260	2.570	2.040	1.730	1.600	1.320	1.100	0.560
Jun	8.780	4.060	2.740	2.230	1.970	1.660	1.310	1.160	0.870	0.550
Jul	6.290	4.220	2.780	2.080	1.840	1.540	1.320	1.110	0.780	0.590
Aug	6.360	3.640	2.780	2.270	1.930	1.620	1.350	1.070	0.930	0.570
Sep	13.650	4.470	3.490	2.770	2.350	2.040	1.680	1.320	1.030	0.820

Hydrological time series

Total Runoff : Ni20

Desktop (Version 2) Modified Flow Data for Ecological Category B

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	2.320	2.210	2.680	4.020	3.090	3.330	3.520	2.620	2.090	1.510	1.155	2.180	30.725
1921	9.962	8.930	9.383	5.630	0.990	0.760	0.855	1.890	2.110	1.850	2.410	3.040	47.810
1922	10.130	8.930	7.170	8.517	10.161	4.020	1.840	0.758	0.464	0.441	0.446	0.530	53.406
1923	0.560	0.710	1.171	1.680	1.740	2.060	2.030	1.870	1.870	1.540	1.610	3.743	20.584
1924	10.106	8.930	8.713	8.390	10.169	11.160	5.517	4.077	2.844	2.599	2.459	3.710	78.673
1925	10.023	8.842	4.500	1.110	0.870	10.584	5.470	1.530	2.320	2.562	1.950	1.990	51.751
1926	10.061	6.670	3.600	2.920	2.820	11.160	5.517	2.490	2.290	1.950	2.130	1.830	53.437
1927	2.150	1.345	1.336	2.140	4.910	3.570	2.500	3.985	2.813	2.080	2.030	1.770	30.629
1928	1.470	1.184	1.040	1.520	1.600	10.936	5.501	2.230	2.290	2.584	2.454	3.490	36.299
1929	4.860	4.300	2.020	8.297	6.080	1.290	1.232	1.320	1.310	1.560	2.381	3.741	38.392
1930	6.230	7.120	4.750	2.280	1.180	0.960	1.330	1.320	1.120	1.320	1.128	1.029	29.767
1931	1.520	1.220	1.105	0.950	10.974	10.657	5.517	4.077	2.844	2.370	1.490	1.530	44.255
1932	2.190	2.610	2.560	2.620	2.300	1.950	1.440	0.611	0.526	0.634	0.787	0.832	19.059
1933	1.290	2.350	8.991	7.800	10.081	6.530	5.517	4.076	2.841	2.605	2.469	3.708	58.257
1934	2.300	1.451	9.251	7.765	4.380	3.450	2.200	4.077	2.844	2.605	2.469	3.728	46.520
1935	2.750	1.614	1.000	2.200	10.717	10.275	3.360	4.077	2.844	2.531	1.760	2.160	45.289
1936	4.700	8.930	9.110	1.320	4.380	3.620	2.350	1.550	1.260	1.670	1.880	1.600	42.370
1937	1.630	3.320	6.890	4.860	9.904	4.420	1.360	1.300	1.910	2.605	2.469	2.970	43.638
1938	2.690	2.640	2.640	2.130	10.696	10.266	3.940	3.989	2.835	2.602	2.466	3.743	50.637
1939	10.038	8.930	8.805	2.420	1.300	0.930	1.550	4.077	2.844	2.605	2.440	2.700	48.640
1940	2.230	7.600	9.178	6.020	1.010	1.040	1.650	1.340	1.120	1.360	1.220	1.640	35.408
1941	1.830	2.490	2.930	2.650	1.880	4.190	3.990	3.989	2.827	2.523	2.412	2.870	34.581
1942	2.890	8.930	9.383	8.290	2.270	10.998	5.517	4.077	2.827	2.605	2.469	3.742	63.998
1943	10.140	8.744	3.280	1.370	1.450	2.690	2.320	1.520	2.844	2.605	2.455	3.743	43.161

1944	10.110	3.720	2.130	1.259	2.490	11.160	5.517	1.730	1.174	0.781	0.601	0.658	41.329
1945	1.190	1.173	1.208	1.890	1.640	1.170	1.710	1.830	1.320	0.794	0.555	0.614	15.094
1946	2.020	2.430	2.320	2.120	2.120	3.980	5.494	4.037	2.710	2.537	2.100	2.320	34.188
1947	3.430	8.150	7.040	3.990	2.490	2.210	2.210	1.570	0.764	0.485	0.529	0.907	33.776
1948	1.750	2.670	2.720	2.100	3.380	4.050	5.517	4.076	2.770	2.541	1.930	1.680	35.183
1949	10.146	8.913	9.383	8.270	4.620	4.780	2.920	1.990	2.330	2.110	1.700	1.350	58.513
1950	0.930	0.640	0.990	1.450	1.410	1.680	1.500	0.807	1.420	1.570	2.469	3.735	18.601
1951	10.041	4.990	2.250	2.470	1.540	0.950	0.797	3.982	2.825	2.552	2.370	1.430	36.198
1952	1.060	1.835	2.420	2.360	3.990	4.230	2.320	1.720	1.580	1.260	0.886	1.190	24.850
1953	1.720	5.270	8.567	4.560	3.040	3.830	3.830	4.029	2.841	2.578	2.348	3.743	46.356
1954	10.146	8.916	1.538	2.450	2.750	3.270	4.340	2.880	1.980	1.310	0.632	1.310	41.522
1955	3.320	8.860	6.090	1.410	10.974	10.429	2.450	1.620	1.660	1.600	1.910	2.710	53.033
1956	3.940	4.760	9.383	8.040	3.120	4.430	5.476	4.028	1.970	1.680	1.780	3.743	52.349
1957	10.146	8.745	3.670	8.234	10.528	7.090	5.486	4.034	2.070	1.460	0.787	1.840	64.091
1958	2.980	2.630	2.140	1.970	1.940	1.220	0.438	1.470	1.970	1.350	1.810	3.390	23.308
1959	7.940	4.910	2.860	1.650	2.030	3.550	5.498	4.054	2.740	1.780	1.660	2.340	41.012
1960	3.140	8.930	9.383	8.517	3.510	2.140	5.517	4.069	2.806	2.562	2.130	2.560	55.264
1961	5.450	6.380	3.910	2.210	1.510	1.840	1.830	1.320	0.667	0.485	0.960	1.320	27.881
1962	2.330	8.815	5.940	4.010	3.160	10.767	5.496	2.470	2.844	2.605	2.469	2.150	53.057
1963	2.070	3.350	2.300	8.493	8.450	2.060	1.760	1.730	1.260	1.120	1.128	1.150	34.870
1964	2.820	4.510	2.660	1.340	0.730	0.530	0.364	0.307	1.290	2.410	2.447	3.713	23.121
1965	10.091	7.380	3.370	5.600	4.170	1.950	0.863	1.700	1.940	1.640	1.520	1.950	42.174
1966	2.220	2.230	2.090	4.070	4.780	11.072	5.517	4.074	1.820	1.520	1.380	0.847	41.620
1967	1.580	2.770	1.675	1.600	2.380	3.550	2.560	1.460	0.823	0.831	1.840	3.703	24.772
1968	3.690	2.920	4.210	2.600	1.170	10.910	5.503	3.974	2.500	1.790	1.230	1.900	42.397
1969	10.146	8.751	2.610	1.680	1.320	1.140	0.716	1.600	1.790	1.490	1.420	2.350	35.014
1970	10.146	8.912	5.310	3.040	4.160	3.940	3.930	4.077	2.844	2.584	2.464	3.724	55.133
1971	10.042	5.730	2.120	2.000	10.974	10.901	5.412	4.077	2.844	2.584	2.436	1.960	61.079
1972	1.800	2.200	3.390	3.940	3.950	4.690	4.250	2.680	1.550	0.952	2.374	3.743	35.519
1973	10.146	8.160	4.320	8.517	9.994	3.410	2.540	2.570	2.230	1.940	1.620	1.080	56.527
1974	0.690	1.547	2.770	7.796	10.615	8.260	2.490	2.420	1.770	1.480	1.250	3.743	44.830
1975	9.190	4.490	8.789	8.517	10.568	11.160	5.517	4.058	2.785	1.950	2.270	2.370	71.664
1976	10.146	8.799	3.630	8.517	10.974	11.160	5.457	1.860	1.001	0.767	1.350	3.727	67.389
1977	10.110	8.160	7.190	8.093	6.340	10.591	5.517	4.022	2.140	1.920	2.354	3.697	70.133
1978	10.146	8.871	4.150	2.930	2.160	1.460	1.360	1.740	1.790	1.940	2.437	3.687	42.672
1979	3.550	2.560	2.570	2.090	1.250	0.720	0.364	0.323	0.436	0.441	0.488	3.743	18.534
1980	6.750	7.020	4.390	8.517	10.733	8.460	1.920	4.074	2.841	2.594	2.469	3.743	63.511
1981	6.850	8.889	6.320	2.140	1.830	2.350	2.580	1.650	0.823	0.611	0.477	0.680	35.201
1982	2.550	2.660	1.373	0.900	0.720	0.570	0.438	0.421	0.464	1.050	2.425	3.080	16.651
1983	2.860	8.915	7.810	8.517	10.974	11.160	5.454	3.890	2.330	2.605	2.468	3.360	70.343
1984	3.420	5.270	3.480	5.650	10.974	10.563	1.410	0.339	0.575	1.130	0.812	0.816	44.439
1985	10.146	8.930	2.750	2.160	2.090	2.280	2.510	1.670	1.061	0.855	0.576	0.801	35.829
1986	1.970	2.590	8.555	8.010	4.920	3.250	3.460	2.240	2.813	2.582	2.466	3.743	46.599
1987	10.146	8.913	8.628	3.310	10.974	11.160	5.456	1.680	1.520	1.910	2.380	2.770	68.847
1988	4.040	8.930	9.260	4.750	10.161	5.660	1.360	0.653	1.174	1.240	1.034	1.090	49.351
1989	2.000	8.930	9.383	3.360	1.400	3.620	4.580	3.100	1.780	1.120	2.110	2.870	44.253
1990	9.510	5.060	2.950	4.620	10.233	11.160	5.517	1.950	2.120	2.509	2.439	3.300	61.368
1991	5.490	4.090	2.030	1.079	0.770	0.630	0.475	0.307	0.413	0.441	0.488	0.658	16.871
1992	1.360	2.600	2.190	1.310	1.080	1.240	1.279	0.660	0.538	0.519	0.632	1.680	15.088
1993	10.133	7.780	9.121	6.870	2.010	1.570	0.955	0.400	0.413	0.577	1.390	1.470	42.689
1994	4.850	4.300	2.290	0.970	0.380	0.860	5.511	4.064	2.844	2.604	2.457	2.210	33.340
1995	4.320	5.540	9.383	8.517	10.974	10.495	3.720	2.040	1.350	2.591	2.466	2.460	63.856
1996	2.670	3.720	2.240	1.870	1.730	1.480	2.100	2.850	2.805	2.563	2.427	3.692	30.147
1997	7.350	8.930	9.041	2.070	5.690	3.680	2.270	2.230	1.470	0.952	0.710	1.140	45.533
1998	1.990	1.939	2.210	4.900	6.440	3.510	1.530	0.953	1.200	1.120	1.220	2.390	29.402
1999	10.146	8.862	2.060	7.741	5.630	8.750	5.405	4.056	2.828	2.230	1.340	1.520	60.569
2000	3.370	8.930	9.383	7.783	2.770	1.930	1.370	1.041	0.637	0.477	0.446	2.220	40.357
2001	10.146	8.884	5.380	3.720	3.000	8.650	4.770	1.830	1.250	2.605	2.469	3.725	56.429
2002	3.590	3.230	2.020	1.530	1.440	0.990	0.541	0.386	1.280	1.840	1.560	2.040	20.447
2003	2.490	2.960	2.330	1.930	3.280	4.080	2.290	1.187	0.526	1.270	2.070	2.160	26.573
2004	5.470	7.710	5.010	4.200	4.480	6.240	3.940	2.320	2.260	2.514	2.415	2.410	48.969
Mean	5.271	5.525	4.684	4.154	4.704	5.123	3.169	2.391	1.864	1.756	1.745	2.401	42.788

A.56. Ni21 – Category C

Summary table

Desktop Version 2, Generated on 2015-03-26

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni21

Annual Flows (Mill. cu. m or index values):

MAR = 54,939

S.Dev. = 53,878

CV = 0,981

Q75 = 0,580

Q75/MMF = 0,127

BFI Index = 0,305

CV(JJA+JFM) Index = 4,439

Ecological Category = C

Total IFR = 25,355 (46,15 %MAR)

Maint. Lowflow = 19,235 (35,01 %MAR)

Drought Lowflow = 0,866 (1,58 %MAR)

Maint. Highflow = 6,120 (11,14 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
			CV	Maint.	Drought	Maint.	
Oct	4,857	8,468	1,743	1,651	0,044	0,869	2,520
Nov	5,400	8,387	1,553	1,843	0,044	0,460	2,303
Dec	4,767	10,589	2,221	3,123	0,132	1,382	4,505
Jan	4,087	9,265	2,267	2,815	0,130	1,242	4,057
Feb	7,279	14,405	1,979	2,325	0,123	1,003	3,328

Mar	7,934	18,093	2,280	2,057	0,128	0,472	2,529
Apr	5,296	9,994	1,887	1,090	0,043	0,195	1,285
May	3,984	8,625	2,165	0,980	0,046	0,298	1,278
Jun	3,058	6,721	2,198	0,934	0,043	0,044	0,979
Jul	2,678	7,307	2,729	0,919	0,044	0,111	1,030
Aug	1,848	3,446	1,864	0,712	0,044	0,000	0,712
Sep	3,750	14,492	3,865	0,787	0,043	0,043	0,830

Rule curve

Desktop Version 2, Generated on 2015-03-26

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni21

Regional Type : Zululand

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	3.189	3.177	3.127	2.380	1.020	0.890	0.790	0.650	0.440	0.151
Nov	2.989	2.983	2.942	2.845	1.800	0.990	0.780	0.670	0.397	0.109
Dec	7.087	5.590	2.500	0.980	0.880	0.750	0.630	0.570	0.430	0.303
Jan	6.408	5.040	3.620	0.890	0.720	0.630	0.570	0.480	0.390	0.260
Feb	5.222	4.894	4.589	1.970	0.870	0.700	0.590	0.510	0.390	0.240
Mar	3.729	3.571	3.408	3.217	1.300	0.810	0.710	0.590	0.380	0.195
Apr	1.667	1.660	1.634	1.530	0.970	0.820	0.640	0.550	0.227	0.072
May	1.641	1.631	1.300	0.940	0.820	0.730	0.580	0.540	0.231	0.086
Jun	1.277	1.268	1.020	0.900	0.740	0.680	0.620	0.410	0.168	0.055
Jul	1.324	1.312	1.040	0.870	0.770	0.670	0.570	0.418	0.176	0.064
Aug	0.934	0.928	0.910	0.830	0.740	0.660	0.510	0.307	0.132	0.050
Sep	1.090	1.084	1.060	0.910	0.810	0.720	0.600	0.360	0.151	0.054

Reserve Flows without High Flows

Oct	2.182	2.174	2.139	2.061	1.020	0.890	0.790	0.650	0.263	0.058
Nov	2.454	2.449	2.414	2.334	1.800	0.990	0.780	0.670	0.299	0.060
Dec	4.190	4.184	2.500	0.980	0.880	0.750	0.630	0.570	0.430	0.157
Jan	3.805	3.805	3.620	0.890	0.720	0.630	0.570	0.480	0.390	0.153
Feb	3.120	3.116	3.076	1.970	0.870	0.700	0.590	0.510	0.390	0.142
Mar	2.739	2.734	2.696	2.609	1.300	0.810	0.710	0.590	0.380	0.145
Apr	1.441	1.435	1.412	1.361	0.970	0.820	0.640	0.476	0.186	0.052
May	1.296	1.288	1.266	0.940	0.820	0.730	0.580	0.421	0.170	0.054
Jun	1.226	1.217	1.020	0.900	0.740	0.680	0.620	0.392	0.159	0.050
Jul	1.196	1.185	1.040	0.870	0.770	0.670	0.570	0.374	0.154	0.052
Aug	0.934	0.928	0.910	0.830	0.740	0.660	0.510	0.307	0.132	0.050
Sep	1.040	1.034	1.016	0.910	0.810	0.720	0.572	0.342	0.142	0.049

Natural Duration curves

Oct	12.560	7.180	5.110	2.380	1.020	0.890	0.790	0.650	0.440	0.330
Nov	15.420	7.990	5.490	3.070	1.800	0.990	0.780	0.670	0.510	0.390
Dec	13.720	5.590	2.500	0.980	0.880	0.750	0.630	0.570	0.430	0.320
Jan	11.480	5.040	3.620	0.890	0.720	0.630	0.570	0.480	0.390	0.260
Feb	19.820	11.860	5.290	1.970	0.870	0.700	0.590	0.510	0.390	0.240
Mar	23.000	12.460	5.500	3.630	1.300	0.810	0.710	0.590	0.380	0.260
Apr	18.750	6.620	3.420	1.530	0.970	0.820	0.640	0.550	0.390	0.270
May	12.510	6.040	1.300	0.940	0.820	0.730	0.580	0.540	0.400	0.230
Jun	8.320	3.770	1.020	0.900	0.740	0.680	0.620	0.500	0.390	0.240
Jul	6.620	1.320	1.040	0.870	0.770	0.670	0.570	0.480	0.410	0.230
Aug	5.680	1.250	1.030	0.830	0.740	0.660	0.600	0.520	0.390	0.250
Sep	5.890	1.850	1.060	0.910	0.810	0.720	0.630	0.520	0.430	0.290

Hydrological time series

Total Runoff : Ni21

Desktop (Version 2) Modified Flow Data for Ecological Category C

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.960	1.110	1.190	1.370	1.010	2.880	1.579	1.300	1.020	0.870	0.800	1.040	15.129
1921	3.164	2.989	7.087	4.090	0.700	0.770	0.790	0.840	0.900	0.800	0.898	0.940	23.969
1922	1.430	2.984	3.270	6.408	4.589	0.740	0.590	0.540	0.336	0.418	0.258	0.151	21.714
1923	0.216	0.141	0.520	0.500	0.500	0.760	0.900	0.820	0.760	0.720	0.670	1.075	7.581
1924	1.160	2.989	7.087	4.850	5.222	3.729	1.667	1.641	1.276	1.220	0.922	1.069	32.832
1925	3.131	2.420	0.910	0.650	0.520	2.530	1.380	0.670	0.680	0.680	0.366	0.561	14.498
1926	0.910	1.030	0.930	0.800	0.740	3.564	1.644	0.730	0.680	0.710	0.750	0.650	13.139
1927	0.730	0.610	0.500	0.700	1.250	0.960	0.750	0.940	0.930	0.710	0.562	0.360	9.002
1928	0.490	0.109	0.270	0.470	0.520	3.729	1.667	0.900	0.990	1.160	0.932	1.089	12.326
1929	3.079	1.660	0.630	6.408	4.564	0.560	0.550	0.550	0.620	0.730	0.820	1.060	21.231
1930	1.010	0.860	0.770	0.480	0.370	0.430	0.434	0.272	0.155	0.299	0.165	0.075	5.320
1931	0.440	0.330	0.470	0.390	5.222	3.729	1.667	1.641	1.275	0.880	0.614	0.464	17.122
1932	0.630	0.780	0.930	0.930	0.870	0.730	0.512	0.221	0.118	0.114	0.125	0.113	6.074
1933	0.273	0.560	0.750	6.207	4.718	2.520	1.070	1.620	1.275	1.324	0.933	1.040	22.290
1934	0.770	0.730	7.087	5.040	0.750	0.710	0.640	1.619	1.277	1.324	0.934	1.088	21.970
1935	0.800	0.580	0.430	0.570	4.999	3.423	1.020	1.641	1.274	1.100	0.870	0.850	17.556
1936	1.110	2.989	6.740	0.590	4.550	3.338	1.584	0.880	0.700	0.770	0.810	0.740	24.802
1937	0.630	0.760	6.951	4.470	4.859	3.295	0.570	0.580	0.740	1.324	0.933	0.990	26.102
1938	0.890	0.690	0.630	0.610	5.150	3.571	1.620	1.640	1.268	1.313	0.924	1.090	19.396
1939	3.161	2.989	5.090	0.690	0.510	0.680	1.080	1.641	1.277	1.324	0.928	1.075	20.445
1940	1.020	2.989	6.748	1.450	0.600	0.590	0.630	0.540	0.507	0.580	0.307	0.464	16.426
1941	0.560	0.680	0.720	4.500	1.970	3.480	1.633	1.040	1.090	1.000	0.900	1.030	18.603
1942	0.970	2.923	7.087	6.229	0.660	3.724	1.667	1.640	0.980	1.324	0.934	1.089	29.228
1943	3.187	2.896	1.080	0.630	0.650	0.950	0.860	0.650	1.277	1.322	0.930	1.090	15.521
1944	3.179	2.891	1.640	0.600	0.850	3.729	1.664	0.780	0.660	0.560	0.322	0.253	17.127
1945	0.460	0.172	0.410	0.570	0.550	0.620	0.820	0.750	0.570	0.223	0.119	0.075	5.339
1946	0.440	0.195	0.380	0.380	4.603	3.491	1.634	1.090	1.010	1.190	0.922	1.067	16.402
1947	1.020	1.240	0.980	0.820	0.850	0.840	0.840	0.690	0.248	0.133	0.081	0.072	7.813
1948	0.273	0.330	0.380	0.300	0.510	0.630	1.667	1.633	0.710	0.670	0.366	0.464	7.933
1949	3.053	1.820	7.087	6.181	1.600	1.210	0.970	0.820	0.770	0.660	0.395	0.253	24.819
1950	0.207	0.109	0.303	0.380	0.300	0.350	0.227	0.180	0.181	0.418	0.934	1.089	4.678
1951	3.163	2.370	0.500	0.500	0.400	0.370	0.269	0.650	0.770	0.770	0.670	0.178	10.610
1952	0.151	0.141	0.460	0.390	0.390	0.490	0.355	0.160	0.099	0.089	0.068	0.253	3.045
1953	0.810	2.989	5.590	0.660	4.962	3.366	1.637	1.640	1.269	1.080	0.850	1.090	25.944
1954	3.189	2.989	0.620	0.760	0.870	3.661	1.658	1.080	0.880	0.660	0.588	0.770	17.726
1955	3.092	2.964	2.500	0.560	5.222	3.703	1.648	0.950	1.120	1.070	0.918	1.084	24.830

1956	3.127	2.983	7.087	6.408	4.689	3.350	1.667	1.634	0.930	0.990	0.919	1.090	34.876
1957	3.189	2.985	0.960	6.408	5.084	3.217	1.634	1.606	0.890	0.920	0.830	1.082	28.805
1958	1.380	1.050	0.760	0.700	0.570	0.400	0.107	0.272	0.410	0.223	0.395	0.890	7.156
1959	3.130	2.340	0.840	0.580	2.120	2.780	1.667	1.631	1.020	0.800	0.720	0.740	18.368
1960	0.750	2.989	7.087	6.408	4.828	3.292	1.667	1.639	1.277	1.324	0.928	1.075	33.265
1961	3.177	2.942	1.560	0.790	0.670	0.750	0.980	0.960	0.730	0.600	0.670	0.700	14.529
1962	0.830	2.901	1.920	0.890	0.810	3.306	1.624	1.110	1.277	1.324	0.934	0.790	17.716
1963	0.840	0.990	0.780	4.580	2.070	0.700	0.920	0.920	0.620	0.650	0.680	0.523	14.273
1964	3.179	2.856	0.850	0.490	0.340	0.248	0.100	0.231	0.710	0.950	0.934	1.090	11.978
1965	3.189	2.965	0.680	3.200	1.730	0.670	0.481	0.540	0.580	0.550	0.649	0.820	16.054
1966	0.760	0.590	0.430	0.470	0.630	3.607	1.667	1.641	0.720	0.770	0.840	0.640	12.765
1967	0.720	0.930	0.600	0.440	0.660	3.020	1.530	0.449	0.336	0.418	0.588	0.820	10.511
1968	0.870	0.890	0.900	0.590	0.280	3.729	1.667	1.618	1.258	0.830	0.452	0.650	13.734
1969	3.163	2.690	0.600	0.440	0.370	0.380	0.355	0.650	0.780	0.590	0.258	0.360	10.636
1970	3.189	2.988	2.560	0.680	0.900	3.408	1.658	1.641	1.277	1.324	0.933	1.070	21.629
1971	3.189	2.896	0.860	1.720	5.222	3.610	1.190	1.641	1.273	1.312	0.912	0.720	24.544
1972	0.660	0.750	0.850	0.820	0.810	0.730	0.850	0.920	0.650	0.550	0.934	1.090	9.614
1973	3.189	1.070	0.900	6.254	3.080	0.770	0.680	0.910	1.140	0.970	0.750	0.386	20.100
1974	0.330	0.610	0.730	4.240	5.222	3.479	0.870	0.780	0.620	0.570	0.395	1.090	18.936
1975	3.077	0.980	0.970	6.408	4.966	3.729	1.667	1.631	1.258	0.930	0.905	0.910	27.431
1976	3.081	2.030	6.828	6.180	5.222	3.729	1.648	0.740	0.620	0.580	0.614	0.940	32.213
1977	1.190	1.130	1.040	6.408	4.725	1.160	1.667	1.627	0.940	1.040	0.923	1.075	22.925
1978	3.189	2.952	0.740	0.550	0.470	0.380	0.355	0.690	0.880	0.780	0.780	1.020	12.787
1979	1.130	0.990	0.850	0.650	0.450	0.261	0.072	0.102	0.080	0.076	0.055	1.090	5.807
1980	2.390	0.690	0.490	0.600	1.210	0.850	0.580	1.641	1.277	1.313	0.933	1.090	13.064
1981	3.128	2.977	2.920	0.590	0.540	0.710	0.820	0.750	0.610	0.389	0.132	0.122	13.688
1982	0.650	0.670	0.390	0.260	0.240	0.195	0.072	0.086	0.055	0.158	0.800	0.890	4.465
1983	2.380	2.989	6.020	6.408	5.222	3.729	1.662	1.617	0.970	1.324	0.934	1.084	34.339
1984	0.950	0.990	0.880	3.620	5.222	3.606	0.590	0.352	0.532	0.760	0.740	0.770	19.012
1985	3.189	2.989	0.660	0.540	0.530	0.570	0.660	0.560	0.459	0.439	0.199	0.204	11.000
1986	0.570	0.570	4.940	6.408	3.670	3.299	1.592	0.750	1.277	1.323	0.934	1.090	26.423
1987	3.189	2.845	1.120	0.670	4.894	3.716	1.659	0.770	0.820	0.870	0.840	0.880	22.273
1988	3.154	2.953	7.087	6.297	5.042	3.410	0.670	0.670	0.730	0.800	0.710	0.730	32.252
1989	0.950	2.989	7.083	0.760	0.660	3.366	1.606	0.960	0.710	0.540	0.830	1.040	21.495
1990	3.189	2.898	0.900	1.080	5.077	3.729	1.660	1.631	1.264	1.130	0.910	0.890	24.359
1991	0.940	0.840	0.570	0.380	0.270	0.221	0.141	0.118	0.055	0.064	0.050	0.054	3.703
1992	0.151	0.397	0.510	0.370	0.360	0.350	0.086	0.086	0.055	0.064	0.050	0.085	2.563
1993	3.189	2.949	0.720	0.760	0.510	0.410	0.175	0.113	0.080	0.083	0.165	0.231	9.386
1994	3.074	1.890	0.590	0.220	0.180	1.300	1.667	1.640	1.277	1.320	0.908	0.670	14.736
1995	0.790	2.901	7.048	6.376	5.222	3.617	1.614	0.870	0.700	1.318	0.932	0.720	32.108
1996	0.750	0.820	0.580	0.606	2.770	0.810	0.810	1.020	1.170	1.230	0.916	1.088	18.025
1997	3.178	2.989	6.888	0.560	0.680	0.630	0.560	0.521	0.194	0.176	0.199	0.178	16.754
1998	0.630	0.770	0.730	2.420	5.187	3.434	0.590	0.521	0.298	0.520	0.660	0.810	16.570
1999	3.189	2.965	0.580	0.810	4.779	3.552	1.661	1.641	1.270	0.820	0.510	0.600	22.378
2000	0.880	2.989	7.087	3.870	1.100	0.830	0.690	0.650	0.459	0.269	0.125	0.670	19.620
2001	3.189	2.980	3.340	3.630	1.600	0.740	0.620	0.377	0.261	1.324	0.934	1.084	20.078
2002	0.990	0.960	0.720	0.490	0.440	0.360	0.158	0.221	0.590	0.790	0.510	0.600	6.829
2003	0.630	0.477	0.360	0.440	4.610	3.155	1.080	0.580	0.168	0.520	0.649	0.660	13.328
2004	0.650	0.750	0.590	0.470	0.700	1.540	0.990	0.550	0.660	0.640	0.258	0.085	7.883
2005	0.216	0.330	0.370	0.270	0.550	0.860	1.660	1.617	0.970	0.720	0.730	0.800	9.094
2006	1.080	2.060	5.570	2.210	0.400	0.195	0.192	0.292	1.276	1.317	0.700	0.581	15.873
2007	2.830	2.989	3.730	0.420	0.430	0.570	0.870	0.810	0.640	0.540	0.219	0.581	14.628
2008	0.790	0.560	0.390	0.480	4.470	1.950	0.550	0.560	0.373	0.176	0.452	0.810	11.561
2009	0.850	1.800	1.160	0.720	0.590	0.640	0.730	0.580	0.161	0.114	0.059	0.054	7.458
Mean	1.689	1.750	2.268	2.174	2.219	1.966	1.034	0.924	0.770	0.774	0.639	0.729	16.935

A.57. *Ni21 – Category D***Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Ni21

Annual Flows (Mill. cu. m or index values):

MAR = 54.939

S.Dev. = 53.878

CV = 0.981

Q75 = 0.580

Q75/MMF = 0.127

BFI Index = 0.312

CV(JJA+JFM) Index = 4.439

Ecological Category = D

Total IFR = 8.392 (15.27 %MAR)

Maint. Lowflow = 2.272 (4.14 %MAR)

Drought Lowflow = 2.272 (4.14 %MAR)

Maint. Highflow = 6.120 (11.14 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	4.857	8.468	1.743	0.119	0.119	0.869	0.988
Nov	5.400	8.387	1.553	0.115	0.115	0.460	0.576
Dec	4.767	10.589	2.221	0.353	0.353	1.382	1.735
Jan	4.087	9.265	2.267	0.348	0.348	1.242	1.590
Feb	7.279	14.405	1.979	0.298	0.298	1.003	1.301
Mar	7.934	18.093	2.280	0.344	0.344	0.472	0.816
Apr	5.296	9.994	1.887	0.111	0.111	0.195	0.306
May	3.984	8.625	2.165	0.124	0.124	0.298	0.421
Jun	3.058	6.721	2.198	0.111	0.111	0.044	0.155
Jul	2.678	7.307	2.729	0.119	0.119	0.111	0.230
Aug	1.848	3.446	1.864	0.119	0.119	0.000	0.119
Sep	3.750	14.492	3.865	0.111	0.111	0.043	0.154

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Ni21

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.457	1.445	1.418	1.362	1.020	0.890	0.790	0.564	0.325	0.214
Nov	0.916	0.911	0.899	0.876	0.832	0.757	0.637	0.469	0.283	0.166
Dec	3.388	3.028	2.500	0.980	0.880	0.750	0.630	0.570	0.430	0.320
Jan	3.107	2.783	2.505	0.890	0.720	0.630	0.570	0.480	0.390	0.260
Feb	2.541	2.280	2.055	1.855	0.870	0.700	0.590	0.510	0.390	0.240
Mar	1.389	1.382	1.367	1.336	1.279	0.810	0.710	0.590	0.380	0.260
Apr	0.483	0.480	0.472	0.456	0.427	0.378	0.310	0.231	0.164	0.133
May	0.653	0.648	0.637	0.615	0.573	0.505	0.408	0.296	0.201	0.157
Jun	0.269	0.267	0.264	0.257	0.244	0.223	0.194	0.159	0.130	0.116
Jul	0.379	0.377	0.371	0.360	0.339	0.305	0.257	0.201	0.154	0.132
Aug	0.221	0.220	0.218	0.213	0.205	0.191	0.171	0.148	0.129	0.120
Sep	0.266	0.265	0.262	0.255	0.242	0.222	0.192	0.158	0.130	0.116

Reserve Flows without High Flows

Oct	0.221	0.220	0.218	0.213	0.205	0.191	0.171	0.148	0.129	0.120
Nov	0.230	0.229	0.227	0.224	0.217	0.206	0.187	0.162	0.134	0.116
Dec	0.703	0.701	0.695	0.685	0.665	0.629	0.574	0.496	0.409	0.320
Jan	0.694	0.692	0.686	0.676	0.656	0.621	0.566	0.480	0.390	0.260
Feb	0.594	0.592	0.587	0.578	0.561	0.532	0.484	0.419	0.346	0.240
Mar	0.685	0.683	0.677	0.667	0.647	0.613	0.559	0.483	0.380	0.260
Apr	0.206	0.205	0.203	0.198	0.191	0.177	0.159	0.138	0.120	0.111
May	0.229	0.228	0.226	0.221	0.213	0.198	0.178	0.154	0.134	0.124
Jun	0.206	0.205	0.203	0.198	0.191	0.177	0.159	0.138	0.120	0.111
Jul	0.221	0.220	0.218	0.213	0.205	0.191	0.171	0.148	0.129	0.120
Aug	0.221	0.220	0.218	0.213	0.205	0.191	0.171	0.148	0.129	0.120
Sep	0.206	0.205	0.203	0.198	0.191	0.177	0.159	0.138	0.120	0.111

Natural Duration curves

Oct	12.560	7.180	5.110	2.380	1.020	0.890	0.790	0.650	0.440	0.330
Nov	15.420	7.990	5.490	3.070	1.800	0.990	0.780	0.670	0.510	0.390
Dec	13.720	5.590	2.500	0.980	0.880	0.750	0.630	0.570	0.430	0.320
Jan	11.480	5.040	3.620	0.890	0.720	0.630	0.570	0.480	0.390	0.260
Feb	19.820	11.860	5.290	1.970	0.870	0.700	0.590	0.510	0.390	0.240
Mar	23.000	12.460	5.500	3.630	1.300	0.810	0.710	0.590	0.380	0.260
Apr	18.750	6.620	3.420	1.530	0.970	0.820	0.640	0.550	0.390	0.270
May	12.510	6.040	1.300	0.940	0.820	0.730	0.580	0.540	0.400	0.230
Jun	8.320	3.770	1.020	0.900	0.740	0.680	0.620	0.500	0.390	0.240
Jul	6.620	1.320	1.040	0.870	0.770	0.670	0.570	0.480	0.410	0.230
Aug	5.680	1.250	1.030	0.830	0.740	0.660	0.600	0.520	0.390	0.250
Sep	5.890	1.850	1.060	0.910	0.810	0.720	0.630	0.520	0.430	0.290

Hydrological time series

Total Runoff : Ni21

Desktop (Version 2) Modified Flow Data for Ecological Category D													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.960	0.768	1.190	1.370	1.010	1.318	0.457	0.637	0.264	0.360	0.210	0.260	8.804
1921	1.438	0.916	3.388	2.592	0.700	0.770	0.369	0.580	0.257	0.346	0.216	0.256	11.828
1922	1.289	0.911	2.836	3.107	2.055	0.740	0.265	0.296	0.150	0.201	0.143	0.130	12.123
1923	0.239	0.181	0.520	0.500	0.500	0.760	0.404	0.573	0.246	0.322	0.192	0.263	4.702
1924	1.160	0.916	3.388	2.744	2.541	1.389	0.483	0.653	0.269	0.375	0.219	0.262	14.401
1925	1.420	0.854	0.910	0.650	0.520	1.309	0.448	0.466	0.223	0.309	0.155	0.187	7.450
1926	0.910	0.761	0.930	0.800	0.740	1.381	0.475	0.505	0.223	0.319	0.206	0.204	7.453
1927	0.684	0.405	0.500	0.700	1.250	0.960	0.357	0.615	0.259	0.319	0.177	0.158	6.384
1928	0.360	0.166	0.270	0.470	0.520	1.389	0.482	0.601	0.262	0.375	0.221	0.266	5.382
1929	1.393	0.819	0.630	3.107	2.039	0.560	0.231	0.344	0.194	0.326	0.212	0.262	10.117
1930	1.010	0.676	0.770	0.480	0.370	0.430	0.206	0.213	0.128	0.178	0.133	0.119	4.713
1931	0.325	0.257	0.470	0.390	2.541	1.389	0.483	0.653	0.268	0.361	0.183	0.173	7.494
1932	0.527	0.637	0.930	0.930	0.870	0.730	0.222	0.198	0.124	0.142	0.128	0.124	5.561
1933	0.261	0.349	0.750	2.946	2.148	1.309	0.432	0.644	0.268	0.379	0.221	0.260	9.965
1934	0.770	0.546	3.388	2.783	0.750	0.710	0.310	0.643	0.269	0.379	0.221	0.266	11.035
1935	0.800	0.373	0.430	0.570	2.364	1.368	0.429	0.653	0.268	0.373	0.216	0.247	8.091
1936	1.110	0.916	3.112	0.590	2.029	1.356	0.458	0.594	0.230	0.339	0.211	0.226	11.173
1937	0.527	0.600	3.280	2.666	2.253	1.350	0.248	0.408	0.244	0.379	0.221	0.257	12.434
1938	0.890	0.495	0.630	0.610	2.485	1.382	0.468	0.651	0.267	0.377	0.220	0.266	8.741
1939	1.436	0.915	2.988	0.690	0.510	0.680	0.432	0.653	0.269	0.379	0.220	0.263	9.935
1940	1.020	0.916	3.118	1.450	0.600	0.590	0.301	0.296	0.171	0.261	0.148	0.173	9.045
1941	0.410	0.482	0.720	2.672	1.855	1.375	0.472	0.627	0.265	0.369	0.217	0.259	9.723
1942	0.970	0.894	3.388	2.964	0.660	1.389	0.483	0.652	0.261	0.379	0.221	0.266	12.528
1943	1.451	0.887	1.080	0.630	0.650	0.950	0.391	0.453	0.269	0.379	0.220	0.266	7.627
1944	1.446	0.886	1.640	0.600	0.850	1.389	0.481	0.543	0.215	0.246	0.150	0.144	8.591
1945	0.339	0.196	0.410	0.570	0.550	0.620	0.378	0.520	0.180	0.163	0.127	0.119	4.172
1946	0.325	0.205	0.380	0.380	2.065	1.376	0.472	0.629	0.263	0.375	0.219	0.262	6.951
1947	1.020	0.780	0.980	0.820	0.850	0.840	0.385	0.479	0.140	0.145	0.123	0.119	6.681
1948	0.261	0.257	0.380	0.300	0.510	0.630	0.483	0.649	0.234	0.305	0.155	0.173	4.336
1949	1.380	0.833	3.388	2.925	1.600	1.210	0.427	0.573	0.247	0.299	0.158	0.144	13.184
1950	0.236	0.166	0.320	0.380	0.300	0.350	0.164	0.185	0.132	0.201	0.221	0.266	2.921
1951	1.437	0.852	0.500	0.500	0.400	0.370	0.173	0.453	0.247	0.339	0.192	0.133	5.596
1952	0.214	0.181	0.460	0.390	0.390	0.490	0.190	0.179	0.122	0.137	0.122	0.144	3.018
1953	0.810	0.916	3.028	0.660	2.334	1.360	0.473	0.652	0.267	0.373	0.214	0.266	11.355
1954	1.457	0.914	0.620	0.760	0.870	1.387	0.479	0.629	0.256	0.299	0.180	0.233	8.083
1955	1.399	0.905	2.500	0.560	2.541	1.388	0.476	0.616	0.266	0.372	0.219	0.265	11.508
1956	1.418	0.911	3.388	3.107	1.227	1.358	0.483	0.649	0.259	0.369	0.219	0.266	14.554
1957	1.457	0.912	0.960	3.107	2.431	1.336	0.472	0.638	0.256	0.365	0.213	0.265	12.412
1958	1.285	0.762	0.760	0.700	0.570	0.400	0.140	0.213	0.159	0.163	0.158	0.252	5.563
1959	1.419	0.851	0.840	0.580	1.866	1.315	0.482	0.648	0.264	0.346	0.201	0.226	9.039
1960	0.737	0.916	3.388	3.107	2.231	1.349	0.483	0.651	0.269	0.379	0.220	0.264	13.993
1961	1.445	0.899	1.560	0.790	0.670	0.750	0.427	0.618	0.241	0.269	0.192	0.218	8.079
1962	0.830	0.889	1.920	0.890	0.810	1.352	0.469	0.630	0.269	0.379	0.221	0.238	8.896
1963	0.840	0.757	0.780	2.689	1.862	0.700	0.411	0.608	0.194	0.292	0.194	0.181	9.508
1964	1.446	0.878	0.850	0.490	0.340	0.300	0.138	0.201	0.234	0.367	0.221	0.266	5.731
1965	1.457	0.905	0.680	2.477	1.730	0.670	0.215	0.296	0.182	0.236	0.187	0.244	9.279
1966	0.760	0.383	0.430	0.470	0.630	1.384	0.483	0.653	0.237	0.339	0.214	0.198	6.182
1967	0.669	0.711	0.600	0.440	0.660	1.321	0.456	0.267	0.150	0.201	0.180	0.244	5.899
1968	0.870	0.691	0.900	0.590	0.280	1.389	0.482	0.643	0.266	0.352	0.165	0.204	6.832
1969	1.437	0.863	0.600	0.440	0.370	0.380	0.190	0.453	0.248	0.265	0.143	0.158	5.546
1970	1.457	0.913	2.560	0.680	0.900	1.367	0.479	0.653	0.269	0.379	0.221	0.263	10.139
1971	1.453	0.888	0.860	1.720	2.541	1.384	0.438	0.653	0.268	0.377	0.218	0.222	11.021
1972	0.579	0.582	0.850	0.820	0.810	0.730	0.388	0.608	0.211	0.236	0.221	0.266	6.302
1973	1.453	0.764	0.900	2.984	1.939	0.770	0.328	0.604	0.266	0.368	0.206	0.162	10.745
1974	0.282	0.405	0.730	2.619	2.541	1.375	0.394	0.543	0.194	0.257	0.158	0.266	9.764
1975	1.392	0.749	0.970	3.107	2.337	1.389	0.483	0.648	0.266	0.366	0.217	0.255	12.179
1976	1.394	0.840	3.182	2.924	2.541	1.389	0.476	0.512	0.194	0.261	0.183	0.256	14.152
1977	1.190	0.770	1.040	3.107	2.153	1.160	0.482	0.646	0.259	0.371	0.219	0.263	11.661
1978	1.457	0.902	0.740	0.550	0.470	0.380	0.190	0.479	0.256	0.341	0.209	0.258	6.231
1979	1.130	0.757	0.850	0.650	0.450	0.310	0.133	0.162	0.119	0.134	0.120	0.266	5.081
1980	1.362	0.495	0.490	0.600	1.210	0.850	0.257	0.653	0.269	0.377	0.221	0.266	7.049
1981	1.418	0.909	2.783	0.590	0.540	0.710	0.378	0.520	0.191	0.196	0.129	0.126	8.488
1982	0.564	0.469	0.390	0.260	0.240	0.220	0.133	0.157	0.116	0.150	0.210	0.252	3.162
1983	1.362	0.916	3.045	3.107	2.541	1.389	0.480	0.642	0.261	0.379	0.221	0.265	14.609
1984	0.950	0.757	0.880	2.505	2.541	1.384	0.265	0.238	0.174	0.336	0.205	0.233	10.467
1985	1.457	0.915	0.660	0.540	0.530	0.570	0.319	0.365	0.165	0.205	0.136	0.137	6.000
1986	0.417	0.362	2.976	3.107	1.970	1.350	0.460	0.520	0.269	0.379	0.221	0.266	12.297
1987	1.457	0.876	1.120	0.670	2.280	1.389	0.479	0.535	0.251	0.360	0.214	0.251	9.881
1988	1.432	0.902	3.388	3.018	2.398	1.367	0.324	0.466	0.241	0.346	0.199	0.224	14.304
1989	0.950	0.916	3.385	0.760	0.660	1.360	0.464	0.618	0.234	0.225	0.213	0.260	10.046
1990	1.454	0.888	0.900	1.080	2.426	1.389	0.480	0.648	0.267	0.374	0.218	0.252	10.376
1991	0.940	0.666	0.570	0.380	0.270	0.280	0.147	0.167	0.116	0.132	0.120	0.116	3.904
1992	0.214	0.283	0.510	0.370	0.360	0.350	0.135	0.157	0.116	0.132	0.120	0.120	2.867
1993	1.457	0.901	0.720	0.760	0.510	0.410	0.154	0.165	0.119	0.136	0.133	0.141	5.604
1994	1.390	0.836	0.590	0.220	0.180	1.279	0.483	0.651	0.269	0.378	0.218	0.212	6.705
1995	0.790	0.889	3.357	3.081	2.541	1.385	0.466	0.590	0.230	0.378	0.221	0.222	14.150
1996	0.737	0.656	0.580	2.894	1.915	0.810	0.375	0.626	0.266	0.375	0.219	0.266	9.720
1997	1.445	0.916	3.230	0.560	0.680	0.630	0.240	0.289	0.133	0.154	0.136	0.133	8.546
1998	0.527	0.619	0.730	2.420	2.514	1.369	0.265	0.289	0.146	0.221	0.191	0.242	9.533
1999	1.457	0.905	0.580	0.810	2.193	1.380	0.480	0.653	0.268	0.350	0.171	0.192	9.439
2000	0.880	0.916	3.388	2.551	1.100	0.830	0.333	0.453	0.165	0.172	0.128	0.212	11.129
2001	1.453	0.910	2.846	2.506	1.600	0.740	0.292	0.245	0.141	0.379	0.221	0.265	11.598
2002	0.990	0.734	0.720	0.490	0.440	0.360	0.150	0.198	0.185	0.344	0.171	0.192	4.974
2003	0.527	0.309	0.360	0.440	2.070	1.326	0.432	0.408	0.130	0.221	0.187		

A.58. *Niii4 – Category B***Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii4

Annual Flows (Mill. cu. m or index values):

MAR = 69,425

S.Dev. = 34,155

CV = 0,492

Q75 = 1,410

Q75/MMF = 0,244

BFI Index = 0,401

CV(JJA+JFM) Index = 1,493

Ecological Category = B

Total IFR = 24,396 (35,14 %MAR)

Maint. Lowflow = 17,409 (25,08 %MAR)

Drought Lowflow = 4,439 (6,39 %MAR)

Maint. Highflow = 6,987 (10,06 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	3,341	4,985	1,492	0,909	0,060	0,331	1,240
Nov	7,242	7,074	0,977	1,272	0,393	0,880	2,151
Dec	11,156	8,578	0,769	1,719	0,280	0,913	2,631
Jan	12,293	8,517	0,693	2,025	0,597	2,692	4,716
Feb	11,494	9,258	0,805	2,165	0,635	0,913	3,078
Mar	8,878	7,098	0,799	2,132	0,626	0,902	3,034
Apr	5,552	3,479	0,627	1,917	0,568	0,325	2,242
May	3,205	2,192	0,684	1,569	0,474	0,000	1,569
Jun	2,016	1,049	0,520	1,208	0,376	0,000	1,208
Jul	1,739	1,488	0,856	1,006	0,321	0,000	1,006
Aug	1,267	1,022	0,806	0,793	0,110	0,000	0,793
Sep	1,243	1,526	1,228	0,695	0,000	0,033	0,728

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii4

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1,447	1,434	1,404	1,344	1,231	1,045	0,782	0,480	0,222	0,102
Nov	2,481	2,466	2,435	2,374	2,259	2,059	1,740	1,297	0,804	0,450
Dec	3,824	3,575	3,347	3,119	2,857	2,413	2,000	1,428	0,789	0,387
Jan	7,646	6,936	6,316	5,748	5,170	4,202	3,528	2,592	1,549	0,892
Feb	4,359	4,108	3,877	3,644	3,371	2,909	2,469	1,856	1,173	0,743
Mar	3,532	3,511	3,468	3,382	3,220	2,938	2,489	1,866	1,171	0,734
Apr	2,644	2,625	2,581	2,489	2,319	2,038	1,641	1,185	0,794	0,613
May	1,874	1,861	1,831	1,768	1,651	1,459	1,187	0,874	0,607	0,482
Jun	1,443	1,432	1,409	1,362	1,273	1,126	0,919	0,681	0,477	0,383
Jul	1,202	1,193	1,174	1,135	1,061	0,940	0,770	0,573	0,405	0,327
Aug	0,946	0,938	0,920	0,883	0,813	0,698	0,536	0,349	0,189	0,115
Sep	0,865	0,856	0,838	0,799	0,727	0,609	0,442	0,250	0,085	0,009

Reserve Flows without High Flows

Oct	1,085	1,075	1,053	1,007	0,921	0,781	0,582	0,353	0,157	0,066
Nov	1,519	1,510	1,493	1,458	1,394	1,281	1,102	0,853	0,575	0,400
Dec	2,051	2,038	2,011	1,956	1,855	1,677	1,395	1,003	0,566	0,291
Jan	2,418	2,404	2,376	2,320	2,216	2,033	1,743	1,340	0,891	0,608
Feb	2,586	2,571	2,541	2,481	2,370	2,174	1,863	1,431	0,950	0,647
Mar	2,546	2,532	2,502	2,444	2,333	2,141	1,835	1,410	0,936	0,638
Apr	2,289	2,273	2,236	2,158	2,015	1,778	1,444	1,060	0,731	0,578
May	1,874	1,861	1,831	1,768	1,651	1,459	1,187	0,874	0,607	0,482
Jun	1,443	1,432	1,409	1,362	1,273	1,126	0,919	0,681	0,477	0,383
Jul	1,202	1,193	1,174	1,135	1,061	0,940	0,770	0,573	0,405	0,327
Aug	0,946	0,938	0,920	0,883	0,813	0,698	0,536	0,349	0,189	0,115
Sep	0,828	0,821	0,803	0,765	0,696	0,583	0,422	0,237	0,079	0,005

Natural Duration curves

Oct	9,520	4,390	3,190	2,080	1,710	1,380	0,880	0,630	0,480	0,130
Nov	16,700	12,150	8,310	6,110	5,280	4,370	3,100	1,840	1,220	0,450
Dec	22,960	16,780	13,770	10,410	9,020	7,070	5,950	4,940	3,260	0,480
Jan	24,840	17,310	15,050	12,050	10,970	8,560	7,150	4,980	3,860	2,040
Feb	23,560	16,990	13,480	10,700	8,950	7,140	5,530	4,660	3,710	1,720
Mar	15,830	12,460	10,650	9,520	7,310	6,040	5,190	3,770	2,260	1,600
Apr	10,200	8,450	6,950	5,860	5,120	4,050	3,000	2,640	2,110	0,930
May	6,390	4,510	3,930	2,820	2,480	2,200	2,030	1,680	1,240	0,620
Jun	3,380	2,920	2,410	2,170	1,740	1,650	1,440	1,160	0,870	0,460
Jul	2,730	2,250	1,840	1,710	1,560	1,270	1,150	0,820	0,710	0,350
Aug	2,190	1,680	1,390	1,150	1,060	0,940	0,760	0,670	0,470	0,220
Sep	2,190	1,770	1,280	1,120	0,910	0,660	0,580	0,450	0,360	0,080

Hydrological time series

Total Runoff : Niii4

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	1.447	2.481	3.662	6.574	2.909	3.442	2.642	1.839	1.398	1.125	0.844	0.623	28.984
1921	1.367	2.481	3.824	7.646	3.574	2.220	1.537	1.107	0.928	0.707	0.717	0.738	26.845
1922	1.447	2.481	3.575	7.045	4.031	2.152	0.857	0.701	0.534	0.384	0.132	0.022	23.360
1923	0.102	0.584	1.029	3.745	3.183	3.271	2.521	1.727	1.256	0.889	0.633	0.542	19.483
1924	0.923	1.938	1.667	1.549	1.077	3.493	2.644	1.871	1.443	1.202	0.946	0.859	19.611
1925	1.255	1.699	0.778	0.892	1.173	2.192	1.537	1.116	1.240	0.986	0.765	0.865	14.499
1926	1.400	1.297	0.489	5.154	4.111	3.526	2.626	1.801	1.345	1.158	0.920	0.727	24.556
1927	1.442	2.390	2.545	4.133	0.844	2.767	2.489	1.596	1.240	0.872	0.536	0.387	21.242
1928	0.321	1.281	1.850	3.946	3.371	3.516	2.644	1.861	1.413	1.174	0.901	0.860	23.139
1929	1.447	2.481	3.525	5.748	3.544	2.377	1.185	1.009	0.765	0.618	0.318	0.169	23.185
1930	0.121	0.543	0.465	2.592	2.463	1.486	1.044	1.318	0.946	0.906	0.698	0.442	13.024
1931	0.222	0.938	0.789	1.106	0.879	2.149	2.040	1.651	1.376	1.105	0.883	0.642	13.780
1932	0.610	1.113	2.992	4.700	1.786	2.489	1.880	1.521	1.175	0.915	0.668	0.332	20.182
1933	0.154	2.399	3.619	7.335	3.975	3.013	2.516	1.870	1.440	1.199	0.946	0.863	29.330
1934	1.328	2.410	3.656	6.936	3.320	3.147	2.208	1.624	1.126	0.749	0.397	0.148	27.050
1935	0.264	0.450	1.272	5.978	3.752	2.767	2.038	1.859	1.443	1.199	0.939	0.815	22.777
1936	1.261	2.481	3.824	7.646	4.359	3.532	2.581	1.827	1.407	1.110	0.813	0.609	31.452
1937	0.610	0.599	3.119	6.008	2.781	2.203	2.566	1.874	1.441	1.193	0.940	0.838	24.173
1938	1.447	2.473	2.268	3.374	4.359	3.532	2.625	1.818	1.409	1.184	0.937	0.847	26.274
1939	1.420	2.481	3.716	5.042	2.742	1.791	1.641	1.768	1.443	1.202	0.946	0.857	25.047
1940	1.141	2.374	3.797	7.567	3.815	3.481	2.631	1.866	1.421	1.155	0.883	0.675	30.805
1941	0.782	1.113	2.256	5.443	3.119	3.176	2.581	1.651	1.291	1.016	0.813	0.713	23.953
1942	1.377	2.463	3.305	3.825	3.116	3.220	2.644	1.874	1.443	1.202	0.946	0.865	26.280
1943	1.437	2.428	2.992	5.267	4.359	3.532	2.466	1.717	1.328	1.053	0.775	0.731	28.085
1944	1.401	2.076	1.059	2.912	2.469	2.790	2.351	1.644	1.240	0.847	0.430	0.148	19.367
1945	0.154	0.450	0.387	6.627	4.243	3.512	2.644	1.800	1.312	0.982	0.671	0.332	23.116
1946	0.401	1.832	1.868	4.012	3.366	2.767	1.723	1.521	1.142	0.821	0.633	0.285	20.372
1947	0.774	2.259	3.350	6.316	3.712	3.507	2.644	1.866	1.418	1.143	0.867	0.647	28.502
1948	0.662	2.224	2.413	6.336	4.087	3.207	2.602	1.873	1.442	1.188	0.930	0.799	27.763
1949	0.983	1.163	3.202	6.636	3.504	3.076	2.077	1.758	1.386	1.135	0.894	0.689	26.502
1950	1.045	1.501	2.613	5.470	3.877	3.450	2.542	1.854	1.430	1.192	0.946	0.865	26.784
1951	1.447	2.120	3.264	2.093	1.027	1.171	0.932	0.710	0.784	1.066	0.844	0.661	16.119
1952	0.532	2.444	3.083	2.902	3.747	3.515	2.627	1.789	1.366	1.162	0.931	0.819	24.916
1953	1.079	2.405	3.219	5.753	4.359	3.511	2.452	1.838	1.423	1.186	0.937	0.865	29.027
1954	1.436	2.430	1.691	7.646	4.359	3.532	2.644	1.874	1.443	1.202	0.946	0.854	30.058
1955	1.423	1.983	2.761	5.748	3.673	3.521	2.610	1.864	1.430	1.195	0.938	0.862	28.008
1956	1.422	2.435	3.824	4.817	2.070	3.527	2.626	1.860	1.433	1.202	0.946	0.865	27.025
1957	1.447	2.348	2.045	5.288	3.065	1.866	2.413	1.720	1.337	1.158	0.918	0.865	24.468
1958	1.298	2.270	3.130	4.202	2.603	1.999	0.716	1.772	1.207	1.091	0.765	0.839	21.891
1959	1.135	2.255	2.720	1.313	1.856	3.033	2.319	1.813	1.362	1.135	0.929	0.819	20.688
1960	1.344	2.387	3.824	5.989	3.625	3.449	2.644	1.874	1.443	1.196	0.944	0.857	29.576
1961	1.372	2.028	3.692	7.238	3.628	2.938	1.679	1.441	1.126	0.991	0.883	0.761	27.777
1962	1.407	2.470	3.445	3.392	1.173	1.352	1.382	0.788	1.400	1.202	0.946	0.856	19.811
1963	1.365	2.477	2.400	3.625	2.808	0.870	0.682	1.054	0.597	0.573	0.381	0.250	17.082
1964	1.445	2.481	2.891	6.225	3.449	1.649	0.794	0.683	0.839	0.940	0.536	0.442	22.374
1965	0.940	1.013	0.512	2.209	2.909	0.757	0.613	0.511	0.477	0.388	0.220	0.133	10.683
1966	1.325	0.804	3.088	3.960	4.201	3.426	2.536	1.847	1.324	1.187	0.909	0.817	25.426
1967	1.040	2.476	3.188	3.022	0.839	3.286	2.258	1.125	0.999	0.965	0.765	0.542	20.507
1968	0.420	2.455	3.085	1.651	1.462	3.387	2.618	1.874	1.435	1.139	0.927	0.863	21.317
1969	1.447	2.262	3.232	5.454	4.250	2.667	1.271	1.318	1.126	1.036	0.859	0.799	25.721
1970	1.395	2.265	0.778	4.777	2.598	1.310	1.953	1.220	0.919	0.940	0.746	0.772	19.671
1971	1.304	2.453	3.824	7.646	4.093	3.532	2.356	1.867	1.436	1.200	0.945	0.865	31.521
1972	1.158	2.022	1.483	1.248	4.108	3.532	2.644	1.874	1.432	1.180	0.946	0.856	22.486
1973	1.428	2.440	3.565	6.746	4.302	3.382	2.561	1.848	1.433	1.202	0.938	0.812	30.656
1974	1.203	2.479	3.824	7.619	3.969	3.490	2.545	1.784	1.366	1.169	0.918	0.830	31.197
1975	1.231	2.476	3.824	7.582	3.967	3.316	2.621	1.874	1.443	1.202	0.944	0.839	31.317
1976	1.375	1.749	2.023	3.528	4.026	3.285	2.026	0.874	0.765	0.658	0.660	0.456	21.424
1977	0.222	1.682	1.156	5.646	3.172	3.468	2.295	1.675	1.091	1.061	0.803	0.852	23.124
1978	1.443	2.228	1.381	1.990	1.299	0.870	0.654	0.568	0.477	0.470	0.456	0.741	12.579
1979	1.203	2.288	3.098	3.421	4.359	3.422	2.048	0.796	0.681	0.562	0.349	0.609	22.835
1980	0.361	2.070	1.428	2.179	3.384	3.397	1.332	0.892	0.709	0.672	0.536	0.785	17.744
1981	1.118	1.740	1.059	5.050	1.013	0.845	0.640	0.498	0.383	0.340	0.115	0.029	12.829
1982	0.121	0.410	0.280	0.892	0.743	0.738	1.295	0.488	0.395	0.345	0.251	0.045	6.003
1983	0.264	2.473	3.288	7.646	4.359	3.122	2.434	1.187	1.273	1.125	0.902	0.865	28.937
1984	1.437	2.412	2.340	1.413	3.644	2.864	0.944	1.423	0.475	0.390	0.170	0.085	17.598
1985	1.240	1.938	2.000	5.208	3.870	3.087	2.604	1.507	0.911	0.672	0.337	0.101	23.475
1986	0.739	0.671	2.100	4.588	1.631	1.736	1.589	0.607	0.475	0.365	0.536	0.865	15.903
1987	1.447	2.481	3.443	3.389	2.240	3.320	1.906	0.946	1.044	0.770	0.137	0.285	21.407
1988	1.444	2.059	2.599	5.082	3.771	3.450	1.704	1.351	1.431	1.194	0.794	0.499	25.378
1989	0.907	2.222	2.597	1.059	0.743	1.974	1.103	0.973	0.556	0.405	0.257	0.273	13.069
1990	0.610	0.908	1.868	7.646	4.287	3.491	2.388	1.831	1.091	0.795	0.483	0.351	25.748
1991	0.480	1.311	0.639	0.977	2.583	0.734	1.056	0.482	0.383	0.527	0.110	0.000	9.282
1992	0.129	0.572	3.418	7.053	2.138	3.526	2.638	1.459	0.625	0.493	0.189	0.057	22.297
1993	1.434	2.335	2.567	6.487	4.117	3.492	2.082	0.765	0.632	0.550	0.257	0.189	24.907
1994	0.166	1.473	0.480	0.977	0.852	0.734	0.765	0.552	0.414	0.345	0.117	0.009	6.882
1995	0.844	2.123	3.824	7.646	4.359	3.532	2.641	1.874	1.439	1.199	0.939	0.727	31.147
1996	1.436	2.451	2.449	5.170	1.736	3.470	2.527	1.758	1.398	1.176	0.917	0.848	25.335
1997	1.420	2.463	3.347	6.811	3.733	3.224	1.524	0.725	0.597	0.437	0.161	0.485	24.928
1998	1.040	1.478	3.464	6.960	1.621	0.948	0.633	0.518	0.393	0.327	0.128	0.026	17.536
1999	1.180	1.559	3.771	7.646	4.329	3.526	2.644	1.874	1.443	1.201	0.939	0.838	30.951
2000	1.409	2.471	3.821	6.204	2.297	1.465	1.179	1.576	1.283	0.583	0.205	0.082	22.575
2001	1.404	2.466	2.857	1.888	1.934	2.861	0.760	0.588	0.465	0.437	0.509	0.542	16.712
2002	0.341	0.626	1.212	6.180	3.050	0.982	0.613	0.482	0.404	0.327	0.132	0.022	14.371
2003	0.060	2.360	1.675	2.136	2.377	3.532	2.606	1.682	0.831				

MAR = 69,425
 S.Dev. = 34,155
 CV = 0,492
 Q75 = 1,410
 Q75/MMF = 0,244
 BFI Index = 0,401
 CV(JJA+JFM) Index = 1,493

Ecological Category = C

Total IFR = 15,960 (22,99 %MAR)
 Maint. Lowflow = 10,135 (14,60 %MAR)
 Drought Lowflow = 4,439 (6,39 %MAR)
 Maint. Highflow = 5,825 (8,39 %MAR)

Monthly Distributions (Mill. cu. m.)
 Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
			CV	Maint.	Drought	Maint.	
Oct	3,341	4,985	1,492	0,547	0,060	0,276	0,823
Nov	7,242	7,074	0,977	0,746	0,393	0,733	1,479
Dec	11,156	8,578	0,769	0,992	0,280	0,761	1,753
Jan	12,293	8,517	0,693	1,160	0,597	2,244	3,404
Feb	11,494	9,258	0,805	1,237	0,635	0,761	1,998
Mar	8,878	7,098	0,799	1,219	0,626	0,752	1,971
Apr	5,552	3,479	0,627	1,101	0,568	0,271	1,372
May	3,205	2,192	0,684	0,910	0,474	0,000	0,910
Jun	2,016	1,049	0,520	0,711	0,376	0,000	0,711
Jul	1,739	1,488	0,856	0,600	0,321	0,000	0,600
Aug	1,267	1,022	0,806	0,483	0,110	0,000	0,483
Sep	1,243	1,526	1,228	0,429	0,000	0,028	0,456

Rule curve

Desktop Version 2, Generated on 2015-03-30
 Summary of IFR rule curves (Desktop Version 2) for :
 Total Runoff : Niii4
 Regional Type : N.Natal
 Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.063	1.054	1.033	0.989	0.908	0.774	0.584	0.367	0.180	0.094
Nov	1.915	1.905	1.882	1.838	1.755	1.610	1.379	1.058	0.700	0.450
Dec	2.860	2.655	2.470	2.292	2.095	1.762	1.478	1.084	0.644	0.367
Jan	5.976	5.388	4.879	4.420	3.967	3.210	2.728	2.057	1.310	0.840
Feb	3.203	2.998	2.814	2.636	2.440	2.108	1.826	1.434	0.997	0.722
Mar	2.597	2.583	2.553	2.495	2.387	2.197	1.895	1.475	1.007	0.713
Apr	1.809	1.797	1.771	1.717	1.615	1.449	1.213	0.942	0.710	0.602
May	1.233	1.225	1.209	1.175	1.112	1.007	0.860	0.691	0.546	0.478
Jun	0.963	0.958	0.945	0.919	0.870	0.789	0.675	0.544	0.432	0.380
Jul	0.813	0.808	0.798	0.776	0.735	0.667	0.572	0.462	0.368	0.324
Aug	0.653	0.648	0.636	0.612	0.567	0.492	0.387	0.265	0.162	0.113
Sep	0.612	0.606	0.593	0.566	0.515	0.431	0.313	0.177	0.061	0.007

Reserve Flows without High Flows										
Oct	0.740	0.733	0.718	0.688	0.631	0.538	0.406	0.254	0.125	0.064
Nov	1.040	1.036	1.026	1.006	0.969	0.904	0.801	0.657	0.498	0.397
Dec	1.382	1.373	1.356	1.323	1.259	1.149	0.974	0.730	0.458	0.287
Jan	1.618	1.610	1.594	1.563	1.504	1.402	1.239	1.014	0.762	0.603
Feb	1.725	1.717	1.700	1.667	1.604	1.495	1.321	1.080	0.811	0.642
Mar	1.700	1.692	1.675	1.642	1.581	1.473	1.302	1.064	0.799	0.633
Apr	1.491	1.482	1.462	1.421	1.344	1.217	1.038	0.832	0.655	0.573
May	1.233	1.225	1.209	1.175	1.112	1.007	0.860	0.691	0.546	0.478
Jun	0.963	0.958	0.945	0.919	0.870	0.789	0.675	0.544	0.432	0.380
Jul	0.813	0.808	0.798	0.776	0.735	0.667	0.572	0.462	0.368	0.324
Aug	0.653	0.648	0.636	0.612	0.567	0.492	0.387	0.265	0.162	0.113
Sep	0.580	0.574	0.562	0.536	0.487	0.408	0.295	0.166	0.055	0.004

Natural Duration curves										
Oct	9.520	4.390	3.190	2.080	1.710	1.380	0.880	0.630	0.480	0.130
Nov	16.700	12.150	8.310	6.110	5.280	4.370	3.100	1.840	1.220	0.450
Dec	22.960	16.780	13.770	10.410	9.020	7.070	5.950	4.940	3.260	0.480
Jan	24.840	17.310	15.050	12.050	10.970	8.560	7.150	4.980	3.860	2.040
Feb	23.560	16.990	13.480	10.700	8.950	7.140	5.530	4.660	3.710	1.720
Mar	15.830	12.460	10.650	9.520	7.310	6.040	5.190	3.770	2.260	1.600
Apr	10.200	8.450	6.950	5.860	5.120	4.050	3.000	2.640	2.110	0.930
May	6.390	4.510	3.930	2.820	2.480	2.200	2.030	1.680	1.240	0.620
Jun	3.380	2.920	2.410	2.170	1.740	1.650	1.440	1.160	0.870	0.460
Jul	2.730	2.250	1.840	1.710	1.560	1.270	1.150	0.820	0.710	0.350
Aug	2.190	1.680	1.390	1.150	1.060	0.940	0.760	0.670	0.470	0.220
Sep	2.190	1.770	1.280	1.120	0.910	0.660	0.580	0.450	0.360	0.080

Hydrological time series

Total Runoff : Niii4													
Desktop (Version 2) Modified Flow Data for Ecological Category C													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	1.063	1.915	2.728	5.089	2.108	2.536	1.807	1.213	0.939	0.770	0.587	0.441	21.195
1921	1.006	1.915	2.860	5.976	2.586	1.713	1.151	0.817	0.680	0.537	0.505	0.522	20.267
1922	1.063	1.915	2.655	5.478	2.936	1.668	0.747	0.597	0.463	0.356	0.124	0.016	18.019
1923	0.094	0.541	0.809	2.883	2.304	2.421	1.736	1.153	0.861	0.639	0.450	0.384	14.273
1924	0.686	1.522	1.249	1.310	0.935	2.570	1.809	1.231	0.963	0.813	0.653	0.608	14.349
1925	0.925	1.349	0.636	0.840	0.997	1.694	1.151	0.822	0.852	0.693	0.536	0.612	11.107
1926	1.030	1.058	0.437	3.955	3.001	2.592	1.798	1.193	0.910	0.788	0.636	0.515	17.913

1927	1.060	1.850	1.861	3.160	0.786	2.082	1.717	1.082	0.852	0.629	0.387	0.274	15.740
1928	0.252	1.046	1.375	3.027	2.440	2.586	1.809	1.225	0.947	0.798	0.624	0.608	16.736
1929	1.063	1.915	2.614	4.420	2.564	1.819	0.942	0.764	0.590	0.487	0.245	0.120	17.544
1930	0.107	0.511	0.421	2.057	1.822	1.219	0.858	0.931	0.690	0.648	0.492	0.313	10.071
1931	0.180	0.798	0.644	0.993	0.809	1.665	1.450	1.112	0.927	0.759	0.612	0.455	10.404
1932	0.460	0.924	2.197	3.600	1.389	1.895	1.355	1.041	0.816	0.653	0.472	0.236	15.038
1933	0.131	1.856	2.691	5.718	2.892	2.247	1.733	1.230	0.962	0.812	0.653	0.611	21.536
1934	0.978	1.864	2.721	5.388	2.403	2.337	1.550	1.097	0.789	0.560	0.297	0.105	20.089
1935	0.211	0.450	0.977	4.604	2.717	2.082	1.449	1.224	0.963	0.812	0.649	0.577	16.715
1936	0.930	1.915	2.860	5.976	3.203	2.597	1.771	1.207	0.944	0.762	0.567	0.431	23.163
1937	0.460	0.552	2.292	4.629	2.026	1.702	1.762	1.233	0.962	0.808	0.650	0.593	17.669
1938	1.063	1.910	1.663	2.617	3.203	2.597	1.797	1.202	0.945	0.803	0.647	0.600	19.048
1939	1.044	1.915	2.770	3.867	2.001	1.424	1.213	1.175	0.963	0.813	0.653	0.606	18.446
1940	0.843	1.838	2.837	5.910	2.766	2.562	1.801	1.228	0.952	0.787	0.612	0.478	22.614
1941	0.584	0.924	1.654	4.181	2.258	2.357	1.771	1.112	0.880	0.709	0.567	0.505	17.503
1942	1.013	1.903	2.437	2.940	2.257	2.387	1.809	1.233	0.963	0.813	0.653	0.612	19.019
1943	1.056	1.877	2.197	4.043	3.203	2.597	1.703	1.147	0.900	0.730	0.542	0.517	20.513
1944	1.030	1.622	0.830	2.287	1.826	2.097	1.635	1.108	0.852	0.615	0.318	0.105	14.324
1945	0.131	0.450	0.367	5.133	3.108	2.583	1.809	1.192	0.891	0.690	0.475	0.236	17.067
1946	0.309	1.445	1.387	3.074	2.436	2.082	1.262	1.041	0.798	0.600	0.450	0.202	15.087
1947	0.578	1.755	2.473	4.879	2.687	2.580	1.808	1.228	0.949	0.780	0.602	0.458	20.778
1948	0.498	1.729	1.762	4.895	2.982	2.378	1.784	1.232	0.963	0.806	0.643	0.566	20.236
1949	0.729	0.961	2.356	5.141	2.535	2.289	1.472	1.169	0.932	0.776	0.619	0.488	19.468
1950	0.774	1.205	1.912	4.202	2.814	2.542	1.748	1.221	0.956	0.807	0.653	0.612	19.448
1951	1.063	1.654	2.405	1.700	0.904	1.007	0.792	0.602	0.600	0.737	0.587	0.468	12.519
1952	0.404	1.889	2.265	2.279	2.713	2.585	1.799	1.186	0.921	0.791	0.643	0.580	18.055
1953	0.798	1.861	2.369	4.425	3.203	2.583	1.695	1.213	0.952	0.804	0.648	0.612	21.162
1954	1.055	1.879	1.265	5.976	3.203	2.597	1.809	1.233	0.963	0.813	0.653	0.605	22.051
1955	1.046	1.555	2.023	4.420	2.658	2.589	1.789	1.227	0.956	0.809	0.648	0.610	20.331
1956	1.045	1.882	2.860	3.691	1.571	2.593	1.798	1.225	0.958	0.813	0.653	0.612	19.701
1957	1.063	1.819	1.509	4.060	2.220	1.475	1.671	1.149	0.905	0.788	0.635	0.612	17.906
1958	0.956	1.763	2.300	3.210	1.912	1.564	0.663	1.177	0.834	0.751	0.536	0.594	16.260
1959	0.839	1.752	1.992	1.141	1.434	2.261	1.615	1.199	0.919	0.776	0.642	0.580	15.150
1960	0.989	1.847	2.860	4.614	2.623	2.541	1.809	1.233	0.963	0.810	0.652	0.606	21.546
1961	1.010	1.588	2.751	5.638	2.625	2.197	1.235	0.998	0.789	0.695	0.612	0.539	20.676
1962	1.035	1.907	2.549	2.630	0.997	1.129	1.059	0.644	0.940	0.813	0.653	0.606	14.962
1963	1.005	1.912	1.754	2.797	2.044	0.805	0.643	0.788	0.498	0.462	0.286	0.177	13.170
1964	1.062	1.915	2.120	4.805	2.496	1.329	0.710	0.587	0.631	0.667	0.387	0.313	17.022
1965	0.698	0.852	0.453	1.783	2.108	0.729	0.602	0.494	0.432	0.359	0.182	0.094	8.786
1966	0.976	0.700	2.269	3.037	3.074	2.525	1.745	1.218	0.898	0.805	0.629	0.579	18.454
1967	0.770	1.912	2.346	2.365	0.783	2.431	1.580	0.826	0.719	0.681	0.536	0.384	15.333
1968	0.324	1.897	2.266	1.383	1.182	2.499	1.793	1.233	0.959	0.778	0.641	0.611	15.565
1969	1.063	1.757	2.380	4.190	3.114	2.014	0.993	0.931	0.789	0.721	0.597	0.566	19.114
1970	1.026	1.759	0.636	3.659	1.909	1.101	1.398	0.878	0.675	0.667	0.523	0.546	14.777
1971	0.960	1.895	2.860	5.976	2.986	2.597	1.637	1.229	0.960	0.812	0.652	0.612	23.177
1972	0.855	1.583	1.122	1.095	2.998	2.597	1.809	1.233	0.958	0.801	0.653	0.606	16.310
1973	1.050	1.886	2.647	5.231	3.156	2.495	1.760	1.218	0.958	0.813	0.648	0.575	22.437
1974	0.887	1.914	2.860	5.954	2.887	2.569	1.750	1.184	0.921	0.795	0.635	0.588	22.943
1975	0.908	1.912	2.860	5.923	2.885	2.451	1.795	1.233	0.963	0.813	0.652	0.594	22.987
1976	1.011	1.385	1.494	2.728	2.932	2.430	1.442	0.691	0.590	0.509	0.467	0.323	16.002
1977	0.180	1.336	0.897	4.341	2.297	2.553	1.601	1.125	0.769	0.735	0.561	0.603	16.998
1978	1.061	1.732	1.052	1.626	1.078	0.805	0.627	0.525	0.432	0.404	0.335	0.525	10.201
1979	0.887	1.776	2.276	2.651	3.203	2.523	1.455	0.648	0.544	0.456	0.265	0.431	17.115
1980	0.281	1.618	1.084	1.761	2.449	2.505	1.030	0.700	0.559	0.517	0.387	0.556	13.446
1981	0.826	1.379	0.830	3.873	0.894	0.788	0.618	0.487	0.380	0.331	0.113	0.021	10.541
1982	0.107	0.410	0.280	0.840	0.722	0.716	1.008	0.481	0.386	0.334	0.202	0.032	5.519
1983	0.211	1.910	2.424	5.976	3.203	2.321	1.684	0.860	0.870	0.770	0.625	0.612	21.465
1984	1.056	1.865	1.712	1.213	2.636	2.147	0.799	0.988	0.430	0.360	0.149	0.061	13.417
1985	0.914	1.522	1.478	3.997	2.809	2.297	1.785	1.033	0.671	0.517	0.257	0.072	17.352
1986	0.553	0.604	1.547	3.512	1.290	1.388	1.182	0.546	0.430	0.346	0.387	0.612	12.397
1987	1.063	1.915	2.548	2.628	1.680	2.454	1.370	0.730	0.744	0.572	0.127	0.202	16.033
1988	1.062	1.610	1.902	3.898	2.732	2.541	1.250	0.949	0.957	0.809	0.554	0.354	18.618
1989	0.674	1.728	1.900	0.959	0.722	1.548	0.893	0.744	0.475	0.368	0.206	0.194	10.411
1990	0.460	0.776	1.387	5.976	3.144	2.569	1.656	1.209	0.769	0.586	0.352	0.249	19.134
1991	0.367	1.068	0.541	0.900	1.899	0.713	0.865	0.478	0.380	0.436	0.110	0.000	7.758
1992	0.113	0.533	2.528	5.485	1.614	2.592	1.805	1.007	0.513	0.417	0.162	0.041	16.810
1993	1.054	1.810	1.878	5.019	3.006	2.570	1.475	0.631	0.517	0.449	0.206	0.134	18.748
1994	0.140	1.185	0.431	0.900	0.792	0.713	0.692	0.516	0.397	0.334	0.114	0.007	6.222
1995	0.629	1.656	2.860	5.976	3.203	2.597	1.807	1.233	0.961	0.812	0.648	0.515	22.896
1996	1.056	1.894	1.789	3.967	1.357	2.555	1.739	1.169	0.939	0.799	0.634	0.600	18.499
1997	1.044	1.903	2.470	5.285	2.703	2.389	1.144	0.610	0.498	0.386	0.143	0.344	18.918
1998	0.770	1.189	2.565	5.408	1.284	0.857	0.614	0.498	0.385	0.324	0.122	0.019	14.035
1999	0.871	1.248	2.816	5.976	3.179	2.593	1.809	1.233	0.963	0.813	0.649	0.593	22.742
2000	1.036	1.909	2.857	4.788	1.717	1.205	0.938	1.071	0.875	0.468	0.172	0.058	17.094
2001	1.033	1.905	2.095	1.553	1.484	2.145	0.690	0.535	0.425	0.386	0.369	0.384	13.004
2002	0.266	0.571	0.935	4.768	2.209	0.880	0.602	0.478	0.391	0.324	0.124	0.016	11.567
2003	0.060	1.828	1.254	1.731	1.768	2.597	1.786	1.128	0.627	0.748	0.623	0.580	14.729
2004	0.467	1.370	1.318	2.337	1.459	2.427	1.578	1.002	0.605	0.501	0.318	0.105	13.487
Mean	0.747	1.510	1.877	3.698	2.225	2.066	1.413	0.987	0.772	0.652	0.477	0.411	16.834

A.60. *Niii4 – Category D***Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii4

Annual Flows (Mill. cu. m or index values):

MAR = 69,425

S.Dev. = 34,155

CV = 0,492

Q75 = 1,410

Q75/MMF = 0,244

BFI Index = 0,401

CV(JJA+JFM) Index = 1,493

Ecological Category = D

Total IFR = 10,346 (14,90 %MAR)

Maint. Lowflow = 5,299 (7,63 %MAR)

Drought Lowflow = 4,439 (6,39 %MAR)

Maint. Highflow = 5,047 (7,27 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	3,341	4,985	1,492	0,295	0,060	0,239	0,534
Nov	7,242	7,074	0,977	0,393	0,393	0,635	1,029
Dec	11,156	8,578	0,769	0,514	0,280	0,659	1,173
Jan	12,293	8,517	0,693	0,597	0,597	1,944	2,541
Feb	11,494	9,258	0,805	0,635	0,635	0,659	1,294
Mar	8,878	7,098	0,799	0,626	0,626	0,651	1,277
Apr	5,552	3,479	0,627	0,568	0,568	0,235	0,802
May	3,205	2,192	0,684	0,474	0,474	0,000	0,474
Jun	2,016	1,049	0,520	0,376	0,376	0,000	0,376
Jul	1,739	1,488	0,856	0,321	0,321	0,000	0,321
Aug	1,267	1,022	0,806	0,264	0,110	0,000	0,264
Sep	1,243	1,526	1,228	0,237	0,000	0,024	0,261

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii4

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.886	0.878	0.861	0.825	0.758	0.648	0.492	0.313	0.160	0.089
Nov	1.731	1.722	1.702	1.663	1.590	1.462	1.259	0.977	0.663	0.450
Dec	2.304	2.128	1.972	1.823	1.665	1.398	1.185	0.890	0.561	0.354
Jan	4.966	4.459	4.022	3.634	3.258	2.631	2.260	1.743	1.168	0.806
Feb	2.546	2.371	2.216	2.072	1.920	1.664	1.469	1.199	0.898	0.708
Mar	2.219	2.208	2.184	2.137	2.050	1.896	1.653	1.315	0.938	0.701
Apr	1.386	1.379	1.362	1.326	1.260	1.150	0.996	0.819	0.667	0.596
May	0.879	0.875	0.866	0.848	0.814	0.758	0.680	0.589	0.512	0.476
Jun	0.697	0.694	0.687	0.673	0.646	0.602	0.539	0.468	0.406	0.378
Jul	0.596	0.593	0.587	0.575	0.552	0.514	0.461	0.400	0.347	0.323
Aug	0.488	0.484	0.476	0.459	0.428	0.376	0.303	0.218	0.146	0.112
Sep	0.472	0.468	0.457	0.436	0.397	0.333	0.242	0.137	0.047	0.005

Reserve Flows without High Flows

Oct	0.546	0.541	0.531	0.509	0.468	0.402	0.307	0.199	0.106	0.063
Nov	0.784	0.781	0.775	0.763	0.740	0.701	0.639	0.553	0.456	0.396
Dec	1.023	1.018	1.006	0.984	0.941	0.867	0.748	0.584	0.400	0.285
Jan	1.190	1.186	1.176	1.158	1.124	1.065	0.970	0.839	0.693	0.601
Feb	1.266	1.261	1.251	1.232	1.196	1.133	1.032	0.892	0.737	0.639
Mar	1.248	1.243	1.234	1.215	1.179	1.117	1.018	0.880	0.726	0.630
Apr	1.053	1.048	1.038	1.016	0.976	0.909	0.815	0.706	0.614	0.571
May	0.879	0.875	0.866	0.848	0.814	0.758	0.680	0.589	0.512	0.476
Jun	0.697	0.694	0.687	0.673	0.646	0.602	0.539	0.468	0.406	0.378
Jul	0.596	0.593	0.587	0.575	0.552	0.514	0.461	0.400	0.347	0.323
Aug	0.488	0.484	0.476	0.459	0.428	0.376	0.303	0.218	0.146	0.112
Sep	0.438	0.434	0.425	0.405	0.368	0.308	0.223	0.125	0.042	0.003

Natural Duration curves

Oct	9.520	4.390	3.190	2.080	1.710	1.380	0.880	0.630	0.480	0.130
Nov	16.700	12.150	8.310	6.110	5.280	4.370	3.100	1.840	1.220	0.450
Dec	22.960	16.780	13.770	10.410	9.020	7.070	5.950	4.940	3.260	0.480
Jan	24.840	17.310	15.050	12.050	10.970	8.560	7.150	4.980	3.860	2.040
Feb	23.560	16.990	13.480	10.700	8.950	7.140	5.530	4.660	3.710	1.720
Mar	15.830	12.460	10.650	9.520	7.310	6.040	5.190	3.770	2.260	1.600
Apr	10.200	8.450	6.950	5.860	5.120	4.050	3.000	2.640	2.110	0.930
May	6.390	4.510	3.930	2.820	2.480	2.200	2.030	1.680	1.240	0.620
Jun	3.380	2.920	2.410	2.170	1.740	1.650	1.440	1.160	0.870	0.460
Jul	2.730	2.250	1.840	1.710	1.560	1.270	1.150	0.820	0.710	0.350
Aug	2.190	1.680	1.390	1.150	1.060	0.940	0.760	0.670	0.470	0.220
Sep	2.190	1.770	1.280	1.120	0.910	0.660	0.580	0.450	0.360	0.080

Hydrological time series

Total Runoff : Nii4													
Desktop (Version 2) Modified Flow Data for Ecological Category D													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.886	1.731	2.189	4.202	1.664	2.170	1.385	0.868	0.684	0.572	0.442	0.340	17.133
1921	0.838	1.731	2.304	4.966	2.032	1.507	0.956	0.657	0.542	0.442	0.384	0.403	16.763
1922	0.886	1.731	2.128	4.536	2.319	1.470	0.691	0.539	0.424	0.341	0.120	0.013	15.198
1923	0.089	0.522	0.685	2.379	1.815	2.077	1.338	0.836	0.641	0.499	0.347	0.296	11.524
1924	0.576	1.385	1.013	1.168	0.856	2.198	1.386	0.877	0.697	0.596	0.488	0.469	11.709
1925	0.772	1.233	0.555	0.806	0.898	1.492	0.956	0.659	0.636	0.529	0.406	0.472	9.414
1926	0.858	0.977	0.407	3.248	2.373	2.215	1.379	0.857	0.668	0.582	0.476	0.397	14.438
1927	0.883	1.674	1.477	2.593	0.753	1.804	1.326	0.798	0.636	0.493	0.303	0.212	12.951
1928	0.219	0.966	1.108	2.490	1.920	2.210	1.386	0.875	0.688	0.587	0.467	0.469	13.386
1929	0.886	1.731	2.093	3.634	2.016	1.592	0.819	0.628	0.493	0.414	0.204	0.093	14.603
1930	0.100	0.496	0.394	1.743	1.467	1.109	0.764	0.718	0.547	0.504	0.376	0.242	8.460
1931	0.160	0.748	0.561	0.924	0.768	1.468	1.151	0.814	0.677	0.566	0.459	0.351	8.648
1932	0.390	0.860	1.747	2.954	1.168	1.653	1.089	0.776	0.616	0.506	0.362	0.182	12.304
1933	0.120	1.679	2.159	4.743	2.281	1.937	1.336	0.877	0.696	0.595	0.488	0.471	17.384
1934	0.816	1.686	2.185	4.459	1.891	2.010	1.217	0.806	0.602	0.455	0.240	0.081	16.447
1935	0.185	0.450	0.810	3.789	2.137	1.804	1.150	0.874	0.697	0.595	0.485	0.445	13.422
1936	0.776	1.731	2.304	4.966	2.546	2.219	1.362	0.865	0.686	0.567	0.428	0.333	18.784
1937	0.390	0.532	1.823	3.810	1.607	1.498	1.356	0.879	0.697	0.593	0.485	0.457	14.127
1938	0.886	1.726	1.323	2.175	2.546	2.219	1.379	0.862	0.687	0.590	0.484	0.463	15.340
1939	0.870	1.731	2.227	3.175	1.590	1.274	0.996	0.848	0.697	0.596	0.488	0.468	14.960
1940	0.704	1.663	2.285	4.909	2.177	2.191	1.381	0.876	0.691	0.581	0.459	0.369	18.287
1941	0.492	0.860	1.317	3.436	1.780	2.025	1.362	0.814	0.651	0.538	0.428	0.390	14.092
1942	0.844	1.720	1.944	2.423	1.778	2.050	1.386	0.879	0.697	0.596	0.488	0.472	15.277
1943	0.880	1.698	1.747	3.321	2.546	2.219	1.317	0.833	0.663	0.550	0.410	0.399	16.583
1944	0.858	1.474	0.700	1.920	1.469	1.816	1.272	0.812	0.636	0.485	0.254	0.081	11.779
1945	0.120	0.450	0.354	4.240	2.465	2.208	1.386	0.857	0.658	0.527	0.364	0.182	13.812
1946	0.266	1.318	1.117	2.526	1.917	1.804	1.028	0.776	0.607	0.477	0.347	0.156	12.339
1947	0.487	1.590	1.974	4.022	2.113	2.205	1.386	0.876	0.690	0.578	0.452	0.353	16.726
1948	0.421	1.568	1.398	4.036	2.357	2.042	1.370	0.878	0.697	0.592	0.481	0.436	16.275
1949	0.611	0.892	1.876	4.247	1.993	1.971	1.166	0.845	0.680	0.575	0.464	0.377	15.697
1950	0.648	1.107	1.518	3.453	2.216	2.175	1.346	0.873	0.693	0.593	0.488	0.472	15.582
1951	0.886	1.502	1.917	1.468	0.834	0.938	0.720	0.542	0.499	0.554	0.442	0.361	10.661
1952	0.344	1.708	1.802	1.914	2.134	2.210	1.380	0.854	0.674	0.584	0.481	0.447	14.530
1953	0.668	1.683	1.887	3.638	2.546	2.208	1.312	0.868	0.691	0.591	0.484	0.472	17.047
1954	0.879	1.699	1.026	4.966	2.546	2.219	1.386	0.879	0.697	0.596	0.488	0.467	17.848
1955	0.872	1.414	1.607	3.634	2.089	2.213	1.373	0.875	0.693	0.594	0.484	0.471	16.320
1956	0.871	1.702	2.304	3.029	1.293	2.216	1.379	0.874	0.694	0.596	0.488	0.472	15.919
1957	0.886	1.646	1.208	3.335	1.750	1.315	1.296	0.834	0.665	0.582	0.475	0.472	14.465
1958	0.798	1.597	1.830	2.631	1.529	1.387	0.636	0.849	0.626	0.561	0.406	0.458	13.308
1959	0.701	1.587	1.583	1.038	1.199	1.948	1.260	0.861	0.673	0.575	0.480	0.447	12.352
1960	0.825	1.672	2.304	3.797	2.061	2.174	1.386	0.879	0.697	0.594	0.487	0.468	17.343
1961	0.842	1.443	2.211	4.674	2.063	1.896	1.011	0.753	0.602	0.530	0.459	0.416	16.900
1962	0.862	1.724	2.038	2.184	0.898	1.036	0.895	0.565	0.684	0.596	0.488	0.467	12.438
1963	0.838	1.729	1.391	2.313	1.619	0.775	0.623	0.641	0.443	0.400	0.233	0.137	11.140
1964	0.885	1.731	1.685	3.959	1.963	1.197	0.667	0.534	0.515	0.514	0.303	0.242	14.195
1965	0.586	0.795	0.419	1.532	1.664	0.713	0.596	0.484	0.406	0.342	0.160	0.073	7.771
1966	0.814	0.663	1.805	2.498	2.436	2.161	1.344	0.871	0.661	0.591	0.471	0.446	14.761
1967	0.645	1.728	1.868	1.981	0.751	2.085	1.236	0.662	0.564	0.522	0.406	0.296	12.744
1968	0.278	1.715	1.803	1.224	1.025	2.140	1.376	0.879	0.695	0.576	0.479	0.472	12.662
1969	0.886	1.592	1.896	3.443	2.470	1.750	0.852	0.718	0.602	0.544	0.449	0.436	15.636
1970	0.855	1.594	0.555	3.003	1.526	1.013	1.117	0.689	0.539	0.514	0.397	0.422	12.226
1971	0.801	1.713	2.304	4.966	2.361	2.219	1.274	0.876	0.695	0.595	0.487	0.472	18.765
1972	0.714	1.439	0.919	1.002	2.371	2.219	1.386	0.879	0.694	0.589	0.488	0.468	13.168
1973	0.875	1.705	2.122	4.324	2.506	2.137	1.354	0.871	0.694	0.596	0.484	0.443	18.111
1974	0.741	1.730	2.304	4.947	2.277	2.196	1.347	0.853	0.674	0.586	0.475	0.453	18.584
1975	0.758	1.728	2.304	4.920	2.275	2.102	1.377	0.879	0.697	0.596	0.487	0.458	18.581
1976	0.843	1.265	1.197	2.260	2.315	2.085	1.146	0.589	0.493	0.426	0.359	0.249	13.227
1977	0.160	1.222	0.750	3.568	1.809	2.184	1.250	0.821	0.591	0.552	0.423	0.465	13.797
1978	0.883	1.570	0.866	1.411	0.954	0.775	0.612	0.501	0.406	0.368	0.266	0.405	9.018
1979	0.741	1.609	1.811	2.200	2.546	2.159	1.154	0.567	0.468	0.396	0.218	0.333	14.202
1980	0.242	1.469	0.890	1.515	1.926	2.145	0.876	0.595	0.476	0.431	0.303	0.429	11.298
1981	0.691	1.259	0.700	3.180	0.827	0.761	0.607	0.481	0.378	0.327	0.112	0.017	9.340
1982	0.100	0.410	0.280	0.806	0.708	0.703	0.862	0.478	0.382	0.329	0.174	0.025	5.256
1983	0.185	1.726	1.933	4.966	2.546	1.997	1.304	0.680	0.646	0.572	0.468	0.472	17.496
1984	0.880	1.687	1.361	1.093	2.072	1.856	0.725	0.748	0.406	0.343	0.137	0.047	11.355
1985	0.763	1.385	1.185	3.283	2.212	1.977	1.371	0.772	0.537	0.431	0.213	0.056	14.184
1986	0.467	0.578	1.237	2.881	1.100	1.245	0.976	0.512	0.406	0.335	0.303	0.472	10.510
1987	0.886	1.731	2.037	2.183	1.369	2.104	1.099	0.610	0.577	0.461	0.122	0.156	13.335
1988	0.884	1.462	1.510	3.201	2.149	2.174	1.021	0.727	0.694	0.594	0.419	0.273	15.108
1989	0.566	1.566	1.509	0.898	0.708	1.374	0.787	0.618	0.430	0.347	0.176	0.150	9.128
1990	0.390	0.729	1.117	4.966	2.495	2.196	1.286	0.866	0.591	0.469	0.279	0.192	15.578
1991	0.313	0.986	0.484	0.852	1.520	0.701	0.768	0.476	0.378	0.386	0.110	0.000	6.974
1992	0.105	0.515	2.020	4.542	1.323	2.215	1.384	0.758	0.451	0.375	0.146	0.032	13.867
1993	0.878	1.638	1.491	4.142	2.378	2.197	1.168	0.558	0.453	0.393	0.176	0.104	15.575
1994	0.127	1.089	0.402	0.852	0.757	0.701	0.655	0.496	0.387	0.329	0.113	0.005	5.913
1995	0.529	1.503	2.304	4.966	2.546	2.219	1.385	0.879	0.696	0.595	0.485	0.397	18.504
1996	0.879	1.712	1.420	3.258	1.146	2.185	1.341	0.845	0.684	0.588	0.475	0.463	14.996
1997	0.870	1.720	1.972	4.370	2.126	2.052	0.951	0.546	0.443	0.357	0.133	0.265	15.804
1998	0.645	1.092	2.051	4.476	1.096	0.817	0.604	0.487	0.381	0.323	0.118	0.015	12.104
1999	0.728	1.144	2.267	4.966	2.526	2.216	1.386	0.879	0.697	0.596	0.485	0.457	18.346
2000	0.864	1.725	2.302	3.945	1.394	1.097	0.816	0.792	0.649	0.403	0.153	0.045	14.186
2001	0.861	1.722	1.665	1.355	1.233	1.855	0.653	0.507	0.403	0.357	0.291	0.296	11.198
2002	0.231	0.549	0.779	3.928	1.742	0.835	0.596	0.476	0.384	0.323	0.120	0.013	9.976
2003	0.060	1.654	1.018	1.492	1								

A.61. *Niii6 – Category B***Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii6

Annual Flows (Mill. cu. m or index values):

MAR = 352.893

S.Dev. = 188.773

CV = 0.535

Q75 = 7.230

Q75/MMF = 0.246

BFI Index = 0.380

CV(JJA+JFM) Index = 2.321

Ecological Category = B

Total IFR = 260.605 (73.85 %MAR)

Maint. Lowflow = 185.211 (52.48 %MAR)

Drought Lowflow = 61.790 (17.51 %MAR)

Maint. Highflow = 75.395 (21.36 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	20.936	23.066	1.102	12.209	2.204	6.514	18.722
Nov	42.156	37.425	0.888	20.259	8.792	12.335	32.594
Dec	51.716	37.893	0.733	24.186	8.708	14.333	38.519
Jan	63.120	109.669	1.737	29.006	10.706	13.378	42.384
Feb	58.593	60.428	1.031	27.804	8.581	13.102	40.907
Mar	43.912	46.417	1.057	22.722	7.831	8.847	31.569
Apr	24.912	17.336	0.696	15.887	5.647	3.223	19.110
May	14.401	8.426	0.585	10.735	5.516	0.858	11.593
Jun	9.554	6.218	0.651	7.108	0.958	0.367	7.475
Jul	8.317	12.108	1.456	5.636	0.993	0.941	6.577
Aug	6.148	6.344	1.032	4.485	0.934	0.279	4.763
Sep	9.127	15.331	1.680	5.174	0.919	1.217	6.392

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii6

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	21.697	21.517	21.109	17.910	13.120	11.660	9.500	6.710	4.646	2.270
Nov	37.704	37.499	37.070	36.222	32.220	25.550	20.250	15.980	11.830	4.680
Dec	56.734	52.874	49.413	46.065	42.389	36.181	28.900	23.100	15.472	9.420
Jan	60.640	56.999	53.690	49.890	40.700	35.450	30.490	26.706	17.845	8.460
Feb	58.657	55.082	51.824	44.990	34.950	30.250	27.170	22.750	15.761	10.118
Mar	36.821	36.612	36.177	35.316	33.704	29.540	24.080	20.190	13.255	8.892
Apr	22.505	22.348	21.990	21.250	19.870	17.598	14.391	10.698	7.541	6.073
May	13.774	13.696	13.519	13.153	12.100	10.910	9.764	7.420	6.130	4.310
Jun	8.883	8.808	8.637	8.284	7.626	6.542	5.012	3.251	1.745	1.044
Jul	7.757	7.693	7.549	7.250	5.610	4.670	3.660	2.994	1.721	1.128
Aug	5.659	5.614	5.512	5.302	4.830	3.970	3.350	2.090	1.408	0.950
Sep	7.507	7.446	7.306	7.016	5.860	4.820	3.900	2.890	1.656	0.630

Reserve Flows without High Flows

Oct	14.572	14.454	14.187	13.633	12.601	10.902	8.503	5.741	3.379	2.270
Nov	24.214	24.099	23.860	23.388	22.503	20.958	18.502	15.088	11.283	4.680
Dec	28.896	28.746	28.434	27.815	26.657	24.635	21.419	16.950	11.968	8.834
Jan	34.656	34.478	34.108	33.374	32.000	29.601	25.785	20.484	14.574	8.460
Feb	33.210	33.027	32.646	31.891	30.478	28.011	24.087	18.635	12.558	8.735
Mar	27.145	27.001	26.702	26.111	25.003	23.068	19.991	15.716	10.951	7.952
Apr	18.980	18.853	18.564	17.967	16.855	15.023	12.437	9.460	6.914	5.731
May	12.835	12.765	12.607	12.279	11.669	10.663	9.244	7.420	6.130	4.310
Jun	8.482	8.410	8.247	7.911	7.283	6.249	4.790	3.110	1.673	1.005
Jul	6.727	6.673	6.548	6.292	5.610	4.670	3.660	2.632	1.538	1.028
Aug	5.354	5.312	5.216	5.018	4.649	3.970	3.185	2.090	1.354	0.950
Sep	6.176	6.126	6.012	5.777	5.338	4.616	3.596	2.422	1.419	0.630

Natural Duration curves

Oct	47.220	29.930	23.080	17.910	13.120	11.660	9.500	6.710	4.720	2.270
Nov	93.010	63.790	50.390	36.530	32.220	25.550	20.250	15.980	11.830	4.680
Dec	101.990	70.740	57.800	48.340	43.240	36.460	28.900	23.100	20.020	9.420
Jan	105.290	80.620	61.260	49.890	40.700	35.450	30.490	27.520	21.760	8.460
Feb	134.640	82.000	57.110	44.990	34.950	30.250	27.170	22.750	19.210	10.900
Mar	77.780	58.940	47.530	42.270	40.000	29.540	24.080	20.930	14.790	10.350
Apr	40.560	35.080	27.710	24.710	22.260	20.390	17.560	13.280	9.390	6.420
May	28.830	21.270	16.310	13.540	12.100	10.910	9.780	7.420	6.130	4.310
Jun	18.560	13.500	11.100	9.280	8.060	6.800	5.720	4.970	3.560	2.420
Jul	14.440	9.600	8.370	7.450	5.610	4.670	3.660	3.270	2.450	1.330
Aug	14.080	7.470	6.640	5.420	4.830	3.970	3.350	2.090	1.630	0.950
Sep	16.450	11.200	8.140	7.100	5.860	4.820	3.900	2.980	1.760	0.630

Hydrological time series

Total Runoff : Niii6

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	21.640	37.325	47.515	16.232	22.800	36.796	21.538	12.700	6.766	3.530	1.753	7.170	235.765
1921	21.233	37.704	56.734	42.590	25.950	15.740	7.185	5.420	2.753	2.574	5.637	6.710	230.231
1922	21.109	37.704	49.413	51.154	34.610	20.493	11.036	7.350	1.667	1.402	1.065	0.630	237.634
1923	10.380	15.630	55.051	27.620	40.640	36.164	21.561	13.385	7.680	3.730	2.450	7.481	241.771
1924	13.120	37.023	56.734	34.130	19.552	36.821	22.505	13.698	8.594	7.403	5.169	7.491	262.240
1925	17.300	16.140	22.495	29.850	19.887	36.453	14.899	9.440	6.238	3.610	1.425	7.310	185.046
1926	8.840	10.290	22.020	14.866	41.320	34.691	16.321	8.020	1.590	6.090	4.930	3.380	172.358
1927	21.323	25.330	41.043	60.588	29.020	14.027	7.007	4.310	1.044	0.910	1.387	6.530	212.520
1928	11.660	17.910	22.322	13.217	10.828	36.821	22.233	13.497	8.716	7.665	4.760	7.507	177.138
1929	21.697	37.102	39.843	54.908	44.990	25.220	11.044	6.740	1.371	1.303	3.170	3.690	251.079
1930	2.680	15.180	23.100	13.193	14.382	12.777	10.698	7.720	1.448	1.721	1.408	0.700	105.007
1931	2.270	3.950	12.259	8.460	55.082	36.346	21.670	13.752	8.868	7.571	3.840	2.890	176.958
1932	8.890	36.222	50.110	53.117	51.530	29.260	13.427	8.010	1.745	3.660	2.980	1.656	260.606
1933	5.230	37.701	56.734	60.640	33.390	36.479	22.456	13.774	8.883	7.757	5.659	7.453	296.154
1934	6.710	36.596	52.884	36.230	27.380	18.562	9.956	11.890	7.944	4.670	2.710	2.050	217.582
1935	3.600	4.680	15.053	57.596	44.400	36.482	19.870	13.774	8.883	7.611	3.950	5.830	221.730
1936	19.960	37.663	27.167	60.640	58.657	35.923	18.813	10.440	3.251	2.403	1.273	7.383	283.573
1937	14.180	11.690	44.984	28.340	24.580	17.450	22.505	13.708	8.808	7.738	5.591	5.060	204.634
1938	21.668	25.550	53.560	59.056	58.657	36.821	22.330	13.650	8.667	7.738	5.645	7.507	320.852
1939	20.753	37.704	46.807	55.088	23.310	29.620	21.630	13.696	8.883	7.757	5.639	7.381	278.268
1940	11.240	32.220	56.734	38.860	33.080	23.049	21.661	13.220	4.589	4.660	3.780	4.490	247.583
1941	6.730	19.000	24.410	33.930	27.550	35.984	15.529	13.673	8.880	7.737	5.492	7.016	205.931
1942	19.400	37.292	51.958	25.792	24.110	29.540	22.505	13.774	8.883	7.757	5.659	7.507	254.176
1943	21.518	37.518	50.203	53.243	58.651	34.009	13.702	6.630	8.737	7.672	4.100	7.495	303.479
1944	21.643	18.190	11.648	36.140	14.599	36.740	19.915	11.970	8.326	7.317	5.508	5.520	197.516
1945	5.780	5.670	8.850	31.960	51.881	35.417	22.505	10.590	6.749	5.610	5.129	7.412	197.553
1946	14.220	37.499	47.851	37.470	49.996	23.810	17.695	12.210	5.314	3.480	1.900	3.210	254.655
1947	12.670	36.656	43.766	57.088	58.657	36.821	22.505	13.341	8.465	1.871	5.512	7.369	304.722
1948	12.120	37.342	32.470	60.640	51.824	35.295	22.348	13.711	8.727	6.360	2.990	3.810	287.636
1949	12.820	32.830	50.868	47.320	28.090	36.402	22.463	13.675	8.734	7.665	5.646	7.379	273.893
1950	6.470	11.980	42.389	53.719	27.380	36.177	22.496	12.855	8.486	7.625	5.659	7.500	242.735
1951	21.632	17.870	41.345	14.605	17.710	9.120	7.541	6.410	6.372	5.290	5.216	4.590	157.700
1952	8.240	20.300	46.407	20.599	26.300	23.570	21.109	9.850	6.323	5.950	4.820	5.100	198.568
1953	7.200	22.410	30.860	29.320	45.400	35.189	22.452	13.774	8.822	7.725	5.410	5.980	234.541
1954	17.850	28.110	35.220	59.577	58.416	36.821	16.582	10.300	8.481	7.737	5.614	7.268	291.976
1955	10.930	15.980	47.822	41.640	58.657	36.754	18.862	12.100	8.437	6.670	5.302	7.094	270.248
1956	21.517	36.500	49.092	35.820	50.891	33.704	21.526	13.322	8.284	7.757	5.659	7.507	291.578
1957	21.697	36.594	14.888	56.999	50.240	20.190	19.870	12.850	5.933	3.700	2.580	6.410	251.950
1958	9.500	37.547	46.065	51.710	36.670	17.150	6.149	11.480	6.852	4.940	5.222	7.141	240.427
1959	9.730	29.250	43.239	17.845	50.718	31.704	22.061	13.527	6.800	3.540	4.670	7.147	240.231
1960	18.800	37.704	56.734	51.842	34.950	25.410	22.354	13.560	8.791	7.717	5.645	5.600	289.107
1961	12.060	32.240	29.430	26.706	19.866	19.334	9.850	9.250	4.834	4.850	4.130	4.500	177.050
1962	7.180	37.556	52.448	49.630	26.790	28.170	11.209	5.000	8.883	7.757	5.659	7.484	247.765
1963	12.150	34.450	20.942	56.389	28.140	8.892	8.755	5.680	2.896	4.790	4.960	4.320	192.364
1964	21.697	36.716	47.925	30.490	27.170	9.999	6.407	5.410	4.010	5.270	4.060	6.530	205.684
1965	6.260	9.620	10.901	44.070	53.346	12.990	6.231	6.590	3.251	4.210	3.570	4.120	165.158
1966	7.020	7.660	18.914	29.890	57.081	36.404	21.154	13.352	8.496	7.250	5.470	5.860	218.550
1967	4.646	36.665	38.223	13.683	10.118	23.350	12.772	9.764	7.626	7.341	5.554	7.169	176.911
1968	3.580	15.620	15.472	30.150	12.222	36.821	22.505	13.759	8.821	7.090	3.530	7.306	176.876
1969	21.697	33.130	39.102	18.836	17.320	9.911	6.073	4.880	1.841	1.532	2.340	3.860	160.521
1970	17.910	28.280	25.845	52.941	21.750	32.786	22.474	13.774	8.883	7.625	5.030	4.170	241.466
1971	20.742	37.422	56.133	60.640	58.048	36.753	22.178	13.749	8.857	7.540	4.150	2.090	328.302
1972	3.140	27.250	14.243	22.616	58.657	35.316	22.391	13.676	8.284	4.510	5.536	7.507	223.127
1973	20.915	37.004	44.479	60.640	30.250	27.770	21.002	13.234	7.041	7.434	5.375	2.310	277.454
1974	5.810	37.637	51.426	57.055	53.600	32.108	22.204	13.612	7.488	4.090	1.880	7.507	294.418
1975	12.190	32.560	56.734	53.690	56.155	36.612	22.291	13.774	8.859	7.329	3.970	2.100	306.265
1976	21.178	23.970	36.124	52.010	55.282	33.548	19.797	11.640	4.077	2.172	1.753	7.380	268.931
1977	11.660	15.090	26.974	60.640	51.984	34.130	21.990	13.519	7.583	5.310	5.304	7.165	261.349
1978	21.697	37.110	37.637	31.010	22.750	23.118	16.349	12.010	5.012	2.994	5.603	7.446	222.735
1979	21.363	32.670	36.181	56.100	54.781	26.630	9.037	6.720	2.324	1.218	1.086	7.275	255.384
1980	6.120	37.336	47.297	49.890	46.350	22.258	8.180	6.130	7.653	6.750	5.499	7.462	250.924
1981	13.900	28.590	15.783	35.830	11.550	33.233	19.966	11.830	3.605	2.369	1.242	1.140	179.038
1982	21.654	17.590	10.280	6.800	3.410	8.892	8.180	11.830	7.782	4.840	5.578	4.820	111.656
1983	10.040	37.704	41.794	60.640	49.974	36.685	22.075	13.153	8.637	7.757	5.659	7.507	301.626
1984	21.475	22.710	25.983	22.921	58.657	35.857	14.391	6.160	1.193	1.230	0.950	0.880	212.407
1985	16.130	14.310	28.900	55.892	44.430	32.380	20.647	12.440	6.619	4.340	2.090	1.370	239.548
1986	4.503	8.500	39.798	22.841	15.761	33.810	21.751	13.490	8.144	4.860	5.659	7.507	186.624
1987	21.697	37.070	28.090	35.450	53.203	34.428	17.877	9.270	7.987	7.483	5.566	5.330	263.451
1988	21.697	28.720	55.826	27.620	57.104	35.423	21.250	13.101	8.756	7.693	4.830	2.574	284.593
1989	12.950	37.704	51.152	40.700	25.950	24.080	16.898	10.910	2.896	1.422	3.350	2.651	230.663
1990	11.090	21.620	42.735	60.640	55.473	36.656	21.632	13.708	8.883	7.757	5.645	5.640	291.478
1991	8.950	11.830	31.920	30.510	35.610	15.322	7.044	5.020	1.044	1.128	0.650	0.580	149.609
1992	2.820	22.400	45.798	21.590	31.830	35.480	20.095	12.610	6.542	3.262	3.460	3.900	209.787
1993	21.697	32.970	53.535	40.510	27.740	36.625	19.700	8.300	2.066	1.263	1.086	0.910	246.401
1994	20.995	26.100	52.874	38.720	11.409	20.295	12.290	9.782	5.123	2.880	1.736	1.210	203.414
1995	21.566	37.604	56.734	60.057	58.657	36.821	22.386	13.755	8.842	7.714	5.600	3.330	333.066
1996	21.467	20.250	44.450	55.583	33.120	36.821	22.505	13.774	8.883	7.757	5.659	7.488	277.757
1997	21.556	37.693	27.990	51.161	34.030	31.575	14.287	9.900	3.934	2.210	1.078	1.593	237.008
1998	17.610	31.020	55.652	41.860	21.480	13.255	10.359	9.570	5.330	3.155	4.050	3.300	216.640
1999	12.490	13.610	56.734	59									

A.62. *Niii6 – Category C***Summary table**

Desktop Version 2, Generated on 2015-03-10

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii6

Annual Flows (Mill. cu. m or index values):

MAR = 352,893

S.Dev. = 188,773

CV = 0,535

Q75 = 7,230

Q75/MMF = 0,246

BFI Index = 0,380

CV(JJA+JFM) Index = 2,321

Ecological Category = C

Total IFR = 181,144 (51,33 %MAR)

Maint. Lowflow = 125,806 (35,65 %MAR)

Drought Lowflow = 61,790 (17,51 %MAR)

Maint. Highflow = 55,338 (15,68 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	20,936	23,066	1,102	7,959	2,204	5,307	13,266
Nov	42,156	37,425	0,888	14,738	8,792	9,110	23,848
Dec	51,716	37,893	0,733	16,251	8,708	10,347	26,598
Jan	63,120	109,669	1,737	19,188	10,706	10,691	29,879
Feb	58,593	60,428	1,031	18,336	8,581	10,572	28,908
Mar	43,912	46,417	1,057	15,725	7,831	6,338	22,063
Apr	24,912	17,336	0,696	10,753	5,647	2,088	12,841
May	14,401	8,426	0,585	9,022	5,516	0,156	9,179
Jun	9,554	6,218	0,651	4,031	0,958	0,000	4,031
Jul	8,317	12,108	1,456	3,533	0,993	0,634	4,167
Aug	6,148	6,344	1,032	3,094	0,934	0,000	3,094
Sep	9,127	15,331	1,680	3,177	0,919	0,094	3,271

Rule curve

Desktop Version 2, Generated on 2015-03-10

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii6

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	16.996	16.860	16.552	15.913	13.120	11.660	9.500	6.710	4.090	2.270
Nov	31.428	31.266	30.930	30.265	29.018	25.550	20.250	15.980	11.830	4.680
Dec	42.759	39.977	37.489	35.090	32.472	28.053	24.355	19.218	13.491	9.420
Jan	47.525	44.639	42.042	39.514	36.715	31.985	27.904	22.233	15.913	8.460
Feb	46.096	43.234	40.649	38.115	34.950	30.250	26.283	20.431	13.908	9.803
Mar	29.488	29.332	29.007	28.363	27.157	25.050	21.701	17.048	11.861	8.597
Apr	17.017	16.911	16.669	16.169	15.238	13.705	11.540	9.048	6.917	5.926
May	12.411	12.346	12.197	11.889	11.315	10.370	9.035	7.420	6.130	4.310
Jun	5.454	5.411	5.314	5.113	4.738	4.120	3.248	2.244	1.386	0.986
Jul	5.525	5.482	5.385	5.185	4.812	4.198	3.332	2.334	1.481	1.084
Aug	4.187	4.156	4.085	3.940	3.669	3.222	2.591	1.864	1.243	0.950
Sep	4.410	4.376	4.301	4.145	3.855	3.377	2.701	1.924	1.259	0.630

Reserve Flows without High Flows

Oct	10.770	10.688	10.503	10.119	9.405	8.228	6.566	4.653	3.018	2.257
Nov	20.559	20.471	20.289	19.929	19.254	18.075	16.200	13.596	10.693	4.680
Dec	22.663	22.560	22.344	21.916	21.115	19.717	17.494	14.405	10.962	8.795
Jan	26.762	26.643	26.394	25.903	24.981	23.373	20.815	17.261	13.299	8.460
Feb	25.564	25.437	25.175	24.654	23.680	21.979	19.273	15.514	11.324	8.687
Mar	21.927	21.822	21.604	21.172	20.363	18.951	16.706	13.586	10.108	7.920
Apr	14.568	14.483	14.289	13.890	13.146	11.920	10.190	8.198	6.495	5.703
May	12.228	12.164	12.018	11.718	11.158	10.236	8.934	7.420	6.130	4.310
Jun	5.454	5.411	5.314	5.113	4.738	4.120	3.248	2.244	1.386	0.986
Jul	4.780	4.744	4.662	4.493	4.177	3.656	2.922	2.076	1.353	1.016
Aug	4.187	4.156	4.085	3.940	3.669	3.222	2.591	1.864	1.243	0.950
Sep	4.299	4.267	4.194	4.042	3.761	3.296	2.640	1.886	1.240	0.630

Natural Duration curves

Oct	47.220	29.930	23.080	17.910	13.120	11.660	9.500	6.710	4.720	2.270
Nov	93.010	63.790	50.390	36.530	32.220	25.550	20.250	15.980	11.830	4.680
Dec	101.990	70.740	57.800	48.340	43.240	36.460	28.900	23.100	20.020	9.420
Jan	105.290	80.620	61.260	49.890	40.700	35.450	30.490	27.520	21.760	8.460
Feb	134.640	82.000	57.110	44.990	34.950	30.250	27.170	22.750	19.210	10.900
Mar	77.780	58.940	47.530	42.270	40.000	29.540	24.080	20.930	14.790	10.350
Apr	40.560	35.080	27.710	24.710	22.260	20.390	17.560	13.280	9.390	6.420
May	28.830	21.270	16.310	13.540	12.100	10.910	9.780	7.420	6.130	4.310
Jun	18.560	13.500	11.100	9.280	8.060	6.800	5.720	4.970	3.560	2.420
Jul	14.440	9.600	8.370	7.450	6.610	5.670	4.780	4.070	3.270	2.450
Aug	14.080	7.470	6.640	5.420	4.830	3.970	3.350	2.090	1.630	0.950
Sep	16.450	11.200	8.140	7.100	5.860	4.820	3.900	2.980	1.760	0.630

Hydrological time series

Total Runoff : Niii6

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	16.954	31.130	36.128	14.763	20.505	29.469	16.364	11.554	4.247	2.840	1.482	4.228	189.663
1921	16.646	31.428	42.759	37.291	24.794	14.053	6.677	5.420	1.960	2.052	4.172	4.054	191.305
1922	16.552	31.428	37.489	40.085	34.610	17.274	9.275	7.350	1.342	1.267	1.006	0.630	198.308
1923	10.380	15.630	41.546	22.885	36.888	28.997	16.379	12.084	4.768	3.398	2.094	4.395	199.445
1924	13.120	30.893	42.759	31.398	16.665	29.488	17.017	12.347	5.289	5.288	3.848	4.401	212.514
1925	15.762	16.140	18.429	26.228	16.909	29.213	11.883	8.835	3.946	3.143	1.255	4.303	156.045
1926	8.840	10.290	18.095	13.788	37.080	27.895	12.843	7.951	1.297	4.910	3.715	2.259	148.963
1927	16.714	25.330	31.514	47.484	29.020	12.437	6.556	4.310	0.986	0.910	1.229	4.012	180.503
1928	11.660	17.910	18.308	12.612	10.320	29.488	16.833	12.178	5.359	5.463	3.632	4.410	148.174
1929	16.996	30.955	30.660	42.994	38.115	22.630	9.281	6.740	1.173	1.201	2.494	2.523	205.762
1930	2.680	15.180	19.218	12.595	12.904	11.503	9.048	7.720	1.217	1.481	1.243	0.700	95.488
1931	2.270	3.950	11.232	8.460	43.234	29.133	16.453	12.393	5.445	5.400	3.119	1.924	143.013
1932	8.890	30.265	37.989	41.599	40.419	24.928	10.889	7.943	1.386	3.332	2.392	1.259	211.291
1933	4.580	31.425	42.759	47.525	33.390	29.232	16.983	12.411	5.454	5.525	4.187	4.380	237.853
1934	6.710	30.558	39.985	32.688	27.245	15.830	8.547	11.148	4.919	4.198	2.247	1.484	185.559
1935	3.485	4.680	13.196	45.112	37.949	29.235	15.238	12.411	5.454	5.427	3.206	3.841	179.234
1936	16.173	31.395	21.715	47.525	46.096	28.817	14.525	9.960	2.244	1.938	1.149	4.343	225.881
1937	14.180	11.690	34.320	23.421	23.121	15.040	17.017	12.356	5.411	5.512	4.140	3.487	169.695
1938	16.975	25.550	40.472	46.268	46.096	29.488	16.899	12.307	5.331	5.512	4.178	4.410	253.486
1939	16.282	31.428	35.621	43.135	21.254	25.067	16.426	12.346	5.454	5.525	4.173	4.342	221.053
1940	11.240	29.018	42.759	35.057	33.080	19.186	16.447	11.945	3.007	4.191	3.072	3.108	212.111
1941	6.730	19.000	19.925	31.309	27.550	28.862	12.308	12.327	5.452	5.511	4.071	4.145	177.192
1942	16.102	31.104	39.318	21.581	22.430	25.050	17.017	12.411	5.454	5.525	4.187	4.410	204.589
1943	16.861	31.282	38.056	41.697	46.092	27.385	11.075	6.630	5.371	5.468	3.289	4.403	237.608
1944	16.956	18.190	10.802	32.607	13.063	29.428	15.269	11.212	5.137	5.230	4.083	3.698	165.673
1945	5.108	5.670	8.850	30.434	40.695	28.438	17.017	10.091	4.238	4.812	3.820	4.358	163.531
1946	14.220	31.266	36.369	33.805	39.218	21.009	13.770	11.359	3.420	2.710	1.585	2.117	210.847
1947	12.670	30.605	33.453	44.709	46.096	29.488	17.017	12.047	5.216	1.582	4.085	4.335	241.304
1948	12.120	31.143	26.818	47.525	40.649	28.347	16.911	12.358	5.365	4.964	2.397	2.625	231.223
1949	12.820	29.195	38.534	38.731	28.090	29.175	16.989	12.328	5.369	5.463	4.178	4.341	225.213
1950	6.366	11.980	32.472	42.065	27.245	29.007	17.011	11.638	5.228	5.436	4.187	4.406	197.040
1951	16.947	17.870	31.729	13.602	15.325	8.768	6.917	6.410	4.023	4.603	3.880	3.189	133.263
1952	8.240	20.300	35.335	17.877	25.221	20.393	16.074	9.143	3.995	4.881	3.663	3.505	168.629
1953	7.200	22.410	25.843	24.839	38.192	28.267	16.981	12.411	5.419	5.503	4.015	3.883	194.964
1954	15.898	27.677	27.669	46.682	45.903	29.488	13.019	9.839	5.225	5.511	4.156	4.281	235.348
1955	10.930	15.980	36.348	37.001	46.096	29.438	14.558	11.315	5.200	5.027	3.940	4.187	220.021
1956	16.860	30.483	37.258	32.318	39.918	27.157	16.356	12.031	5.113	5.525	4.187	4.410	231.615
1957	16.996	30.556	13.081	44.639	39.408	17.048	15.238	11.634	3.773	3.370	2.177	3.984	201.903
1958	9.500	31.305	35.090	40.511	35.769	14.867	5.977	10.822	4.296	4.375	3.885	4.212	200.609
1959	9.730	28.049	33.078	15.913	39.783	25.661	16.717	12.204	4.267	2.878	3.585	4.216	196.080
1960	16.026	31.428	42.759	40.612	34.950	22.784	16.915	12.231	5.402	5.498	4.178	3.735	252.518
1961	12.060	29.024	24.758	22.233	16.894	16.407	8.475	8.722	3.146	4.316	3.305	3.116	136.457
1962	7.180	31.312	39.671	39.435	25.819	24.451	9.392	5.000	5.454	5.525	4.187	4.397	201.823
1963	12.150	29.663	17.337	44.159	28.140	8.597	7.736	5.680	2.042	4.277	3.728	2.991	166.499
1964	16.996	30.652	36.422	27.904	26.283	9.425	6.151	5.410	2.677	4.590	3.268	4.012	173.791
1965	5.975	9.620	10.277	37.742	41.852	11.662	6.032	6.590	2.244	3.853	2.869	2.853	141.569
1966	7.020	7.660	15.911	26.332	44.832	29.176	16.105	12.056	5.234	5.185	4.056	3.855	177.422
1967	4.090	30.612	29.506	12.945	9.803	19.828	10.448	9.035	4.738	5.246	4.114	4.227	144.593
1968	3.474	15.620	13.491	27.014	11.333	29.488	17.017	12.399	5.419	5.112	2.818	4.301	147.486
1969	16.996	29.281	30.132	16.620	15.042	9.359	5.926	4.880	1.441	1.354	2.024	2.667	135.722
1970	15.913	27.733	20.785	41.462	18.906	26.470	16.996	12.411	5.454	5.436	3.761	2.887	198.214
1971	16.274	31.207	42.326	47.525	45.608	29.437	16.796	12.391	5.439	5.380	3.315	1.515	257.212
1972	3.140	27.250	12.627	19.316	46.096	28.363	16.940	12.329	5.113	4.078	4.102	4.410	183.763
1973	16.405	30.879	33.961	47.525	30.250	24.276	16.002	11.957	4.404	5.308	3.991	1.616	226.574
1974	5.137	31.375	38.936	44.683	42.055	25.963	16.814	12.275	4.659	3.740	1.570	4.410	231.615
1975	12.190	29.117	42.759	42.042	44.092	29.332	16.873	12.411	5.441	5.238	3.222	1.520	244.235
1976	16.604	23.970	28.012	40.742	43.393	27.040	15.189	10.949	2.715	1.783	1.482	4.341	216.221
1977	11.660	15.090	21.579	47.525	40.776	27.475	16.669	12.197	4.713	4.617	3.941	4.225	210.467
1978	16.996	30.962	29.089	28.799	20.431	19.238	12.862	11.243	3.248	2.334	4.149	4.376	183.727
1979	16.743	29.148	28.053	43.931	42.994	23.778	7.927	6.720	1.716	1.144	1.020	4.285	207.458
1980	5.714	31.139	35.972	39.514	38.370	18.595	7.348	6.130	4.753	5.043	4.076	4.385	201.038
1981	13.900	27.834	13.710	32.327	10.845	26.804	15.303	11.100	2.446	1.915	1.128	1.085	158.397
1982	16.964	17.590	10.044	6.800	3.410	8.597	7.348	11.100	4.827	4.310	4.131	3.377	98.497
1983	10.040	31.428	32.049	47.525	39.201	29.387	16.727	11.889	5.314	5.525	4.187	4.410	237.680
1984	16.829	22.710	20.882	19.534	46.096	28.767	11.540	6.160	1.071	1.152	0.950	0.880	176.571
1985	15.471	14.310	24.355	43.768	37.957	26.166	15.763	11.450	4.164	3.951	1.864	1.150	200.369
1986	3.982	8.500	30.627	19.476	13.908	27.236	16.508	12.172	5.033	4.323	4.187	4.410	150.362
1987	16.996	30.930	22.783	31.985	41.738	27.699	13.893	8.734	4.944	5.341	4.122	3.611	212.777
1988	16.996	27.876	42.104	22.885	44.850	28.443	16.169	11.845	5.382	5.482	3.669	1.754	227.455
1989	12.950	31.428	38.738	36.715	24.794	21.701	13.232	10.370	2.042	1.281	2.591	1.795	197.637
1990	11.090	21.620	32.719	47.525	43.546	29.365	16.428	12.356	5.454	5.525	4.177	3.754	233.558
1991	8.950	11.830	26.648	27.939	35.470	13.407	6.581	5.020	0.986	1.084	0.650	0.580	139.144
1992	2.820	22.400	34.900	18.584	31.830	28.485	15.390	11.518	4.120	2.513	2.730	2.701	177.992
1993	16.996	29.235	40.454	36.544	27.740	29.341	15.123	8.162	1.569	1.174	1.020	0.910	208.268
1994	16.465	26.100	39.977	34.931	10.742	17.127	10.122	9.051	3.311	2.258	1.470	1.105	172.659
1995	16.897	31.349	42.759	47.063	46.096	29.488	16.936	12.395	5.431	5.496	4.146	2.217	260.276
1996	16.823	20.250	33.940	43.525	33.120	29.488	17.017	12.411	5.454	5.525	4.187	4.399	226.139
1997	16.890	31.419	22.588	40.091	34.030	25.564	11.470	9.221	2.634	1.809	1.015	1.226	197.956
1998	15.839	28.627	41.979	37.068	18.495	11.861	8.819	8.911	3.429	2.441	3.263	2.192	182.924
1999	12.490	13.610	42.759	46.243	4								

Annual Flows (Mill. cu. m or index values):

MAR = 352,893
 S.Dev. = 188,773
 CV = 0,535
 Q75 = 7,230
 Q75/MMF = 0,246
 BFI Index = 0,380
 CV(JJA+JFM) Index = 2,321

Ecological Category = D

Total IFR = 104,230 (29,54 %MAR)
 Maint. Lowflow = 61,790 (17,51 %MAR)
 Drought Lowflow = 61,790 (17,51 %MAR)
 Maint. Highflow = 42,439 (12,03 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)			
	Mean	SD	Low flows	High Flows	Total Flows	
		CV	Maint.	Drought	Maint.	Maint.
Oct	20,936	23,066	1,102	2,204	2,204	4,288 6,492
Nov	42,156	37,425	0,888	8,792	8,792	7,185 15,977
Dec	51,716	37,893	0,733	8,708	8,708	7,901 16,609
Jan	63,120	109,669	1,737	10,706	10,706	7,883 18,589
Feb	58,593	60,428	1,031	8,581	8,581	8,996 17,577
Mar	43,912	46,417	1,057	7,831	7,831	4,383 12,215
Apr	24,912	17,336	0,696	5,647	5,647	0,933 6,580
May	14,401	8,426	0,585	5,516	5,516	0,099 5,615
Jun	9,554	6,218	0,651	0,958	0,958	0,000 0,958
Jul	8,317	12,108	1,456	0,993	0,993	0,649 1,642
Aug	6,148	6,344	1,032	0,934	0,934	0,000 0,934
Sep	9,127	15,331	1,680	0,919	0,919	0,122 1,041

Rule curve

Desktop Version 2, Generated on 2015-03-10

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii6

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	10.183	10.111	9.948	9.610	8.980	7.942	6.478	4.792	3.350	2.270
Nov	28.244	28.105	27.815	27.241	26.166	24.289	20.250	15.980	11.830	4.680
Dec	32.707	30.597	28.728	26.958	25.074	21.899	19.395	15.916	12.037	9.420
Jan	36.656	34.536	32.640	30.813	28.818	25.450	22.632	18.716	14.352	8.460
Feb	34.580	32.188	30.081	28.106	26.036	22.555	19.915	16.246	12.157	9.584
Mar	22.150	22.047	21.832	21.407	20.611	19.220	17.009	13.936	10.512	8.357
Apr	11.799	11.741	11.610	11.339	10.834	10.001	8.826	7.473	6.316	5.778
May	10.372	10.325	10.220	10.004	9.599	8.934	7.994	6.912	5.987	4.310
Jun	1.777	1.769	1.752	1.715	1.647	1.534	1.375	1.193	1.036	0.963
Jul	2.764	2.747	2.710	2.634	2.492	2.257	1.926	1.545	1.220	1.068
Aug	1.732	1.724	1.707	1.671	1.605	1.495	1.340	1.162	1.010	0.939
Sep	1.879	1.869	1.849	1.807	1.728	1.597	1.414	1.202	1.021	0.630

Reserve Flows without High Flows

Oct	4.087	4.069	4.029	3.944	3.787	3.528	3.163	2.742	2.383	2.216
Nov	17.529	17.464	17.329	17.062	16.560	15.685	14.293	12.359	10.203	4.680
Dec	17.361	17.297	17.163	16.898	16.401	15.535	14.156	12.241	10.105	8.762
Jan	21.346	21.267	21.102	20.776	20.166	19.100	17.405	15.050	12.425	8.460
Feb	17.108	17.044	16.912	16.651	16.162	15.308	13.949	12.062	9.958	8.634
Mar	15.614	15.556	15.436	15.197	14.751	13.971	12.731	11.009	9.088	7.880
Apr	10.473	10.427	10.323	10.107	9.704	9.041	8.105	7.027	6.106	5.677
May	10.231	10.186	10.084	9.873	9.479	8.832	7.917	6.865	5.964	4.310
Jun	1.777	1.769	1.752	1.715	1.647	1.534	1.375	1.193	1.036	0.963
Jul	1.841	1.833	1.814	1.776	1.706	1.589	1.425	1.235	1.073	0.998
Aug	1.732	1.724	1.707	1.671	1.605	1.495	1.340	1.162	1.010	0.939
Sep	1.705	1.697	1.680	1.645	1.580	1.472	1.319	1.144	0.994	0.630

Natural Duration curves

Oct	47.220	29.930	23.080	17.910	13.120	11.660	9.500	6.710	4.720	2.270
Nov	93.010	63.790	50.390	36.530	32.220	25.550	20.250	15.980	11.830	4.680
Dec	101.990	70.740	57.800	48.340	43.240	36.460	28.900	23.100	20.020	9.420
Jan	105.290	80.620	61.260	49.890	40.700	35.450	30.490	27.520	21.760	8.460
Feb	134.640	82.000	57.110	44.990	34.950	30.250	27.170	22.750	19.210	10.900
Mar	77.780	58.940	47.530	42.270	40.000	29.540	24.080	20.930	14.790	10.350
Apr	40.560	35.080	27.710	24.710	22.260	20.390	17.560	13.280	9.390	6.420
May	28.830	21.270	16.310	13.540	12.100	10.910	9.780	7.420	6.130	4.310
Jun	18.560	13.500	11.100	9.280	8.060	6.800	5.720	4.970	3.560	2.420
Jul	14.440	9.600	8.370	7.450	5.610	4.670	3.660	3.270	2.450	1.330
Aug	14.080	7.470	6.640	5.420	4.830	3.970	3.350	2.090	1.630	0.950
Sep	16.450	11.200	8.140	7.100	5.860	4.820	3.900	2.980	1.760	0.630

Hydrological time series

Total Runoff : Niii6

Desktop (Version 2) Modified Flow Data for Ecological Category D

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	10.161	27.987	27.719	13.557	16.292	22.138	11.445	9.768	1.557	1.738	1.068	1.829	145.260
1921	9.998	28.244	32.707	29.228	18.981	11.959	6.186	5.420	1.141	1.438	1.728	1.782	148.811
1922	9.948	28.244	28.728	31.224	25.784	14.086	7.597	6.864	1.028	1.138	0.951	0.630	156.223
1923	7.020	15.630	31.785	19.166	27.209	21.826	11.453	10.141	1.652	1.952	1.219	1.875	150.928
1924	8.980	27.783	32.707	25.045	13.885	22.150	11.799	10.326	1.747	2.673	1.649	1.876	160.621
1925	9.530	16.140	15.381	21.474	14.038	21.969	9.012	7.852	1.503	1.854	1.013	1.850	121.616

1926	6.203	10.290	15.155	12.884	27.349	21.099	9.533	7.230	1.020	2.529	1.616	1.293	116.202
1927	10.034	24.210	24.385	36.625	22.063	10.892	6.121	4.310	0.963	0.910	1.006	1.770	143.291
1928	7.942	17.910	15.299	12.072	9.908	22.150	11.700	10.207	1.760	2.740	1.596	1.879	115.164
1929	10.183	27.836	23.772	33.334	28.106	17.622	7.600	6.445	0.997	1.113	1.317	1.365	159.690
1930	2.680	15.180	15.916	12.061	11.528	10.275	7.473	7.071	1.005	1.220	1.010	0.700	86.118
1931	2.270	3.950	10.507	8.460	32.188	21.916	11.493	10.359	1.776	2.716	1.470	1.202	108.307
1932	6.224	27.241	29.103	32.319	29.899	19.139	8.473	7.225	1.036	1.926	1.292	1.021	164.897
1933	3.610	28.242	32.707	36.656	24.881	21.981	11.781	10.372	1.777	2.764	1.732	1.871	178.372
1934	4.792	27.493	30.603	25.950	20.518	13.133	7.201	9.482	1.680	2.257	1.256	1.083	145.448
1935	3.030	4.680	11.837	34.883	27.984	21.983	10.834	10.372	1.777	2.726	1.491	1.724	133.321
1936	9.747	28.216	17.607	36.656	34.580	21.707	10.446	8.645	1.193	1.394	0.987	1.860	173.038
1937	9.119	11.690	26.404	19.536	17.932	12.611	11.799	10.333	1.769	2.759	1.720	1.627	127.300
1938	10.172	24.289	30.972	35.731	34.580	22.150	11.735	10.298	1.755	2.759	1.730	1.879	188.050
1939	9.805	28.244	27.347	33.436	16.762	19.231	11.478	10.325	1.777	2.764	1.729	1.860	164.759
1940	7.607	26.166	32.707	27.637	24.651	15.349	11.490	10.043	1.331	2.254	1.459	1.524	162.219
1941	4.822	19.000	16.395	24.984	21.006	21.737	9.243	10.312	1.777	2.758	1.704	1.807	135.544
1942	9.710	27.965	30.101	18.266	17.499	19.220	11.799	10.372	1.777	2.764	1.732	1.879	153.083
1943	10.112	28.118	29.153	32.390	34.577	20.762	8.574	6.370	1.762	2.742	1.512	1.877	177.946
1944	10.162	18.190	10.215	25.893	11.627	22.110	10.850	9.527	1.719	2.651	1.706	1.685	126.336
1945	3.889	5.670	8.850	24.379	30.117	21.457	11.799	8.737	1.556	2.492	1.642	1.864	122.453
1946	9.125	28.105	27.897	26.746	28.951	16.552	10.037	9.630	1.407	1.689	1.094	1.255	162.486
1947	8.660	27.534	25.779	34.588	34.580	22.150	11.799	10.115	1.734	1.258	1.707	1.858	181.764
1948	8.269	27.998	21.063	36.656	30.081	21.397	11.741	10.334	1.761	2.550	1.293	1.393	174.536
1949	8.767	26.318	29.510	30.255	21.692	21.944	11.784	10.313	1.762	2.740	1.730	1.860	168.673
1950	4.555	11.980	25.074	32.657	20.518	21.832	11.796	9.827	1.736	2.730	1.732	1.877	146.313
1951	10.157	17.870	24.540	12.756	13.045	8.469	6.316	6.203	1.517	2.412	1.657	1.546	106.489
1952	5.953	20.300	27.138	15.708	19.249	16.145	11.288	8.070	1.511	2.518	1.603	1.632	131.115
1953	5.519	22.410	20.403	20.516	28.165	21.344	11.780	10.372	1.771	2.755	1.690	1.735	148.459
1954	9.602	25.010	21.640	36.036	34.418	22.150	9.629	8.559	1.736	2.758	1.724	1.844	175.105
1955	7.360	15.980	27.882	29.022	34.580	22.117	10.464	9.599	1.731	2.574	1.671	1.818	164.798
1956	10.111	27.429	28.557	25.687	29.504	20.611	11.440	10.104	1.715	2.764	1.732	1.879	171.533
1957	10.183	27.492	11.759	34.536	29.102	13.936	10.834	9.824	1.471	1.941	1.239	1.763	154.079
1958	6.478	28.138	26.958	31.531	26.391	12.496	5.806	9.252	1.566	2.325	1.658	1.825	154.424
1959	6.620	25.330	25.510	14.352	29.397	19.623	11.636	10.225	1.561	1.753	1.584	1.826	149.418
1960	9.670	28.244	32.707	31.603	26.036	17.724	11.744	10.245	1.768	2.753	1.730	1.695	175.918
1961	8.227	26.171	19.668	18.716	14.029	13.514	7.162	7.773	1.357	2.302	1.516	1.527	121.961
1962	5.489	28.144	30.366	30.756	19.624	18.825	7.660	5.000	1.777	2.764	1.732	1.875	154.012
1963	8.291	26.722	14.642	34.185	21.712	8.357	6.761	5.680	1.156	2.287	1.619	1.492	132.903
1964	10.183	27.575	27.937	22.632	19.915	8.903	5.901	5.410	1.271	2.407	1.507	1.770	135.411
1965	4.348	9.620	9.860	29.549	31.054	10.381	5.836	6.342	1.193	2.125	1.409	1.455	113.172
1966	5.252	7.660	13.676	21.547	33.519	21.944	11.304	10.121	1.737	2.634	1.700	1.728	132.822
1967	3.350	27.541	22.944	12.302	9.584	15.772	8.233	7.994	1.647	2.657	1.714	1.829	115.566
1968	3.024	15.620	12.037	22.017	10.543	22.150	11.799	10.363	1.771	2.606	1.396	1.849	115.176
1969	10.183	26.393	23.393	14.840	12.868	8.860	5.778	4.880	1.046	1.171	1.201	1.404	112.018
1970	9.610	25.057	16.977	32.220	15.290	20.158	11.788	10.372	1.777	2.730	1.627	1.464	149.070
1971	9.801	28.053	32.378	36.656	34.171	22.117	11.679	10.357	1.775	2.708	1.518	1.091	192.302
1972	2.898	24.768	11.452	16.702	34.580	21.407	11.758	10.313	1.715	2.211	1.711	1.879	141.394
1973	9.870	27.770	26.145	36.656	22.555	18.709	11.248	10.051	1.586	2.681	1.684	1.118	170.074
1974	3.904	28.198	29.813	34.569	31.220	19.823	11.689	10.276	1.632	2.082	1.090	1.879	176.174
1975	8.319	26.251	32.707	32.640	32.903	22.047	11.721	10.372	1.775	2.654	1.495	1.092	183.976
1976	9.976	23.719	21.872	31.698	32.321	20.534	10.807	9.342	1.278	1.335	1.068	1.860	165.810
1977	7.942	15.090	17.515	36.656	30.183	20.821	11.610	10.220	1.642	2.417	1.672	1.828	157.597
1978	10.183	27.842	22.644	23.250	16.246	15.382	9.543	9.549	1.375	1.545	1.723	1.869	141.153
1979	10.049	26.278	21.899	34.019	31.991	18.380	6.865	6.432	1.096	1.091	0.955	1.845	160.900
1980	4.210	27.994	27.604	30.813	28.301	14.958	6.550	5.987	1.650	2.580	1.705	1.872	154.224
1981	9.083	25.145	12.185	25.694	10.237	20.378	10.869	9.448	1.229	1.385	0.981	0.974	127.608
1982	10.166	17.590	9.702	6.800	3.410	8.357	6.550	9.448	1.663	2.300	1.718	1.597	79.302
1983	6.811	28.244	24.769	36.656	28.938	22.083	11.642	10.004	1.752	2.764	1.732	1.879	177.272
1984	10.095	22.710	17.043	16.852	34.580	21.674	8.826	6.010	0.979	1.094	0.939	0.880	141.682
1985	9.376	14.310	19.395	33.899	27.990	19.957	11.118	9.695	1.542	2.163	1.162	0.992	151.599
1986	3.293	8.500	23.749	16.812	12.157	20.663	11.523	10.203	1.701	2.305	1.732	1.879	114.516
1987	10.183	27.815	18.330	25.450	30.960	20.969	10.104	7.782	1.684	2.693	1.716	1.661	159.347
1988	10.183	25.181	32.209	19.166	33.534	21.460	11.339	9.973	1.764	2.747	1.605	1.156	170.318
1989	8.859	28.244	29.664	28.818	18.981	17.009	9.745	8.934	1.156	1.143	1.340	1.167	155.059
1990	7.487	21.620	25.251	36.656	32.448	22.069	11.479	10.332	1.777	2.764	1.730	1.700	175.314
1991	6.249	11.830	20.948	22.656	26.172	11.532	6.134	5.020	0.963	1.068	0.650	0.580	113.803
1992	2.811	22.400	26.821	16.196	23.725	21.488	10.916	9.742	1.534	1.614	1.374	1.414	140.037
1993	10.183	26.353	30.958	28.696	21.552	22.053	10.771	7.378	1.070	1.103	0.955	0.910	161.982
1994	9.902	24.444	30.597	27.548	10.173	13.989	8.056	8.005	1.387	1.516	1.065	0.979	137.661
1995	10.131	28.176	32.707	36.316	34.580	22.150	11.755	10.360	1.773	2.753	1.722	1.282	193.706
1996	10.091	20.250	26.130	33.721	24.681	22.150	11.799	10.372	1.777	2.764	1.732	1.876	167.343
1997	10.127	28.236	18.199	31.228	25.355	19.559	8.788	8.124	1.263	1.345	0.954	1.012	154.191
1998	9.570	25.828	32.114	29.070	15.032	10.512	7.349	7.906	1.408	1.586	1.505	1.275	143.157
1999	8.532	13.610	32.707	35.713	34.580	22.124	11.799	10.372	1.777	2.704	1.433	1.569	176.921
2000	10.047	28.244	30.828	23.500	23.162	17.799	9.016	8.737	1.299	1.782	1.195	1.734	157.343
2001	9.784	28.244	19.822	20.534	11.156	9.279	6.045	4.650	0.965	2.710	1.728	1.803	116.719
2002	4.082	8.110	13.042	14.163	24.562	10.326	5.430	2.340	1.127	1.710	1.101	1.030	87.021
2003	1.690	16.090	9.420	24.876	31.913	21.894	10.001	6.912	0.980	2.754	1.725	1.414	129.669
2004	2.832	16.450	18.804	28.987	26.082	21.625	10.264	9.230	1.688	2.588	1.688	1.610	141.847
Mean	7.711	22.386	23.240	26.458	24.097	18.274	9.812	8.693	1.507	2.199	1.467	1.559	147.403

A.64. *Niii7 – Category B***Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii7

Annual Flows (Mill. cu. m or index values):

MAR = 299.057

S.Dev. = 148.150

CV = 0.495

Q75 = 6.680

Q75/MMF = 0.268

BFI Index = 0.416

CV(JJA+JFM) Index = 1.658

Ecological Category = B

Total IFR = 220.849 (73.85 %MAR)

Maint. Lowflow = 156.956 (52.48 %MAR)

Drought Lowflow = 52.364 (17.51 %MAR)

Maint. Highflow = 63.893 (21.36 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	17.209	21.336	1.240	10.346	1.868	5.520	15.866
Nov	33.107	26.575	0.803	17.168	7.451	10.453	27.621
Dec	44.340	31.137	0.702	20.497	7.379	12.147	32.643
Jan	51.342	65.689	1.279	24.581	9.073	11.338	35.918
Feb	48.310	38.150	0.790	23.563	7.272	11.103	34.666
Mar	37.739	27.958	0.741	19.256	6.637	7.498	26.753
Apr	23.085	13.573	0.588	13.463	4.786	2.732	16.195
May	13.426	7.309	0.544	9.097	4.675	0.727	9.824
Jun	8.923	4.802	0.538	6.024	0.812	0.311	6.334
Jul	7.516	6.481	0.862	4.776	0.841	0.798	5.574
Aug	6.144	4.687	0.763	3.801	0.791	0.236	4.037
Sep	7.915	11.871	1.500	4.385	0.779	1.032	5.417

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii7

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	18.387	18.235	17.889	14.110	12.120	9.250	7.140	5.450	3.937	1.720
Nov	31.952	31.778	31.415	30.696	22.570	19.290	17.330	13.280	9.620	3.330
Dec	48.079	44.808	41.875	39.037	35.922	30.661	26.205	20.013	13.112	5.540
Jan	51.389	48.303	45.499	42.718	38.640	33.790	29.369	22.632	15.122	7.130
Feb	49.709	46.679	43.918	41.163	36.750	31.430	25.930	20.957	13.357	8.575
Mar	31.204	31.027	30.658	29.929	28.562	26.176	22.382	17.110	11.233	7.536
Apr	19.072	18.938	18.635	18.008	16.839	14.913	12.195	9.066	6.391	5.147
May	11.673	11.606	11.457	11.147	10.569	9.617	8.274	6.728	5.406	3.570
Jun	7.528	7.464	7.319	7.020	6.463	5.544	4.247	2.755	1.479	0.885
Jul	6.573	6.519	6.397	6.144	5.673	4.896	3.799	2.537	1.458	0.956
Aug	4.795	4.757	4.671	4.493	4.161	3.614	2.842	1.953	1.193	0.840
Sep	6.362	6.310	6.191	5.830	5.110	4.540	3.673	2.449	1.403	0.916

Reserve Flows without High Flows

Oct	12.349	12.249	12.022	11.553	10.679	9.239	7.140	4.865	2.864	1.720
Nov	20.520	20.423	20.220	19.820	19.070	17.761	15.679	12.786	9.562	3.330
Dec	24.488	24.361	24.096	23.572	22.590	20.877	18.151	14.364	10.143	5.540
Jan	29.369	29.218	28.904	28.283	27.118	25.085	21.852	17.359	12.351	7.130
Feb	28.144	27.989	27.666	27.026	25.829	23.738	20.413	15.793	10.643	7.402
Mar	23.004	22.882	22.629	22.127	21.188	19.549	16.941	13.318	9.280	6.739
Apr	16.084	15.977	15.732	15.226	14.284	12.731	10.540	8.017	5.860	4.856
May	10.877	10.818	10.684	10.406	9.889	9.036	7.833	6.448	5.264	3.570
Jun	7.188	7.127	6.989	6.704	6.172	5.296	4.059	2.635	1.418	0.852
Jul	5.701	5.655	5.549	5.332	4.926	4.259	3.316	2.231	1.303	0.872
Aug	4.537	4.501	4.420	4.253	3.940	3.425	2.699	1.863	1.147	0.815
Sep	5.234	5.191	5.095	4.895	4.524	3.912	3.048	2.053	1.202	0.807

Natural Duration curves

Oct	32.840	24.210	18.340	14.110	12.120	9.250	7.140	5.450	3.990	1.720
Nov	67.890	50.940	41.850	32.040	22.570	19.290	17.330	13.280	9.620	3.330
Dec	86.870	57.590	48.580	44.170	39.090	30.680	26.470	23.000	15.650	5.540
Jan	85.110	63.030	54.030	43.650	38.640	33.790	30.980	24.090	20.500	7.130
Feb	107.990	69.890	49.010	41.540	36.750	31.430	25.930	21.820	17.220	9.760
Mar	69.990	54.490	43.810	35.410	30.720	27.890	24.320	18.980	13.170	7.730
Apr	42.690	28.820	26.130	23.660	22.110	19.680	15.720	12.150	8.750	5.600
May	23.980	17.780	16.070	13.550	12.890	10.170	8.770	7.610	6.040	3.570
Jun	15.170	12.180	11.120	9.110	7.920	6.720	5.730	4.830	4.000	2.620
Jul	13.850	9.640	8.160	6.870	6.210	5.060	4.590	3.790	2.960	2.200
Aug	14.280	8.010	6.130	5.540	4.610	4.100	3.650	3.120	2.750	1.520
Sep	15.950	9.600	6.790	5.830	5.110	4.540	3.780	3.040	2.240	1.310

Hydrological time series

Total Runoff : Niii7

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	18.387	31.778	41.008	22.732	15.258	30.658	17.774	10.569	6.523	4.970	2.404	6.196	208.258
1921	18.118	31.952	48.079	42.966	32.720	19.533	11.494	9.852	6.725	5.751	4.795	6.362	238.346
1922	18.368	31.952	48.079	50.839	43.918	29.221	17.646	11.007	5.965	4.074	2.741	2.077	265.886
1923	9.250	17.330	44.979	39.510	34.800	30.175	18.450	11.457	7.174	5.758	3.657	6.310	228.850
1924	12.120	31.636	46.433	33.390	22.250	31.204	19.072	11.660	7.482	6.532	4.757	6.346	232.881
1925	13.870	12.990	16.992	18.975	23.670	28.276	10.415	7.143	5.157	4.459	2.145	6.142	150.235
1926	8.790	9.390	9.871	11.214	22.720	23.146	12.144	8.175	2.801	4.737	3.818	3.050	119.855
1927	17.420	18.220	23.930	46.684	27.900	15.218	9.066	6.728	2.356	1.458	1.176	5.600	175.756
1928	8.040	12.910	13.112	10.790	8.575	31.117	18.870	11.178	7.319	6.471	4.585	6.362	140.328
1929	18.360	31.351	32.588	45.596	41.032	28.562	14.977	9.621	3.673	2.341	2.370	4.059	234.530
1930	3.599	13.210	15.925	11.596	10.264	8.096	6.391	5.503	1.105	1.501	1.105	1.027	79.323
1931	2.260	3.330	9.482	7.130	36.290	28.685	15.048	11.466	7.383	6.149	3.601	2.449	133.273
1932	5.410	16.500	38.602	37.060	28.270	13.213	8.558	6.861	2.801	4.896	4.218	2.889	169.278
1933	4.620	31.305	48.079	51.389	33.640	28.427	18.513	11.652	7.497	6.562	4.795	6.344	252.823
1934	10.190	30.250	41.900	33.790	26.570	19.333	12.348	11.112	7.205	6.197	4.161	2.816	205.873
1935	3.993	4.450	13.406	47.164	42.369	30.140	14.638	11.648	7.528	6.490	4.411	4.820	191.056
1936	10.990	31.808	29.530	51.389	48.130	30.364	17.895	10.464	5.582	3.343	1.485	6.050	247.030
1937	8.890	7.560	36.744	25.728	17.196	13.717	18.945	11.535	7.400	6.557	4.762	6.016	165.051
1938	18.199	22.960	39.894	43.933	49.709	31.204	18.989	11.586	7.300	6.519	4.760	6.324	261.377
1939	17.889	31.896	40.267	45.117	25.930	20.214	14.073	11.608	7.528	6.573	4.785	6.254	232.134
1940	9.180	20.570	45.411	27.132	18.909	13.059	13.831	10.569	5.735	4.499	3.243	3.673	175.812
1941	4.800	10.920	12.377	19.801	21.479	30.302	18.288	11.541	7.488	6.461	4.673	6.130	154.260
1942	14.110	31.415	43.425	38.460	28.680	25.743	19.072	11.673	7.528	6.573	4.795	6.362	237.836
1943	18.251	31.535	38.154	36.550	46.993	29.212	12.195	8.274	7.322	6.532	4.655	6.295	245.968
1944	18.070	14.410	10.071	14.325	8.976	28.529	12.390	9.015	5.636	4.916	3.625	2.977	132.940
1945	3.288	3.270	4.810	35.410	36.670	22.382	18.794	7.779	3.387	2.945	2.296	5.210	146.242
1946	8.420	31.064	39.800	32.375	30.630	14.543	11.154	9.617	5.575	4.916	2.337	2.742	193.173
1947	6.690	25.840	24.633	36.260	45.747	30.833	18.818	10.586	6.500	2.840	4.011	5.210	217.968
1948	9.980	30.696	23.227	45.485	30.610	28.880	18.794	11.606	7.397	6.144	3.614	3.398	219.833
1949	11.270	18.610	31.331	22.632	11.287	26.176	17.683	11.147	7.020	6.108	4.667	5.060	172.991
1950	4.210	11.090	32.995	41.678	19.849	28.670	18.938	11.466	5.492	5.673	4.795	6.349	191.207
1951	18.339	17.490	30.661	15.122	11.136	7.536	7.419	4.780	1.020	2.976	1.207	1.185	118.871
1952	2.950	19.590	28.210	12.670	38.610	28.801	17.797	7.543	2.661	1.873	1.458	2.389	164.552
1953	3.166	19.290	22.375	17.222	38.480	27.382	16.165	11.571	6.463	5.220	1.895	3.105	172.334
1954	14.420	31.228	27.480	45.608	46.679	31.204	16.839	10.286	7.123	6.410	4.529	4.930	246.735
1955	10.490	18.730	39.247	33.480	49.709	31.204	18.730	11.306	7.225	6.298	4.522	6.198	237.138
1956	18.364	31.624	43.646	33.830	41.012	30.337	18.983	11.652	7.505	6.573	4.795	6.362	254.684
1957	18.387	31.466	20.129	49.021	43.698	21.515	14.913	11.024	6.477	4.977	3.011	5.490	230.108
1958	9.920	31.952	43.108	39.530	41.361	17.620	8.106	8.811	4.988	5.851	2.842	6.113	220.202
1959	13.600	30.745	38.872	18.518	39.250	25.522	17.540	11.321	7.152	4.499	4.479	5.830	217.328
1960	18.070	31.941	48.079	50.030	41.970	27.382	19.062	11.609	7.508	6.531	4.762	6.263	273.208
1961	12.240	22.570	22.398	41.578	38.390	18.744	9.275	8.369	3.898	5.051	4.075	4.610	191.198
1962	6.380	31.880	48.079	47.255	28.810	27.525	18.199	11.367	7.528	6.573	4.795	6.348	244.739
1963	14.330	31.813	26.205	45.499	32.720	8.474	6.224	5.233	2.075	3.082	3.440	3.343	182.438
1964	18.387	31.895	44.808	40.070	32.940	8.880	5.442	4.910	4.247	4.349	3.286	5.240	204.454
1965	5.750	13.510	10.138	42.718	46.153	16.224	5.429	6.405	5.028	3.163	3.307	5.110	162.935
1966	8.230	6.380	27.550	38.640	49.709	31.124	18.635	10.849	6.673	5.758	4.354	6.600	212.502
1967	5.750	31.603	40.413	31.721	20.957	30.034	13.952	9.108	5.544	5.591	4.493	4.540	203.707
1968	2.820	18.950	27.180	36.350	23.110	31.146	19.072	11.673	7.464	6.395	4.465	6.191	194.816
1969	18.387	27.200	33.908	28.673	41.681	22.110	6.237	5.914	2.567	2.447	3.743	4.313	197.178
1970	18.099	25.380	36.615	50.047	31.430	24.734	19.030	11.673	7.528	6.476	4.671	5.550	241.233
1971	17.260	31.642	47.061	51.389	49.406	31.204	19.072	11.662	7.518	6.461	4.676	4.114	281.465
1972	4.740	15.340	16.029	18.296	49.300	31.169	19.072	11.673	7.446	6.365	4.795	6.362	190.587
1973	18.249	30.920	39.037	50.931	43.645	27.685	18.845	11.326	7.110	6.573	4.784	4.410	263.516
1974	5.600	31.819	44.607	48.422	46.530	30.967	19.038	11.624	7.235	6.242	4.022	6.362	262.466
1975	13.030	30.992	48.079	49.910	49.709	31.204	19.072	11.673	7.528	6.561	4.738	4.900	277.395
1976	17.889	22.470	44.500	50.195	47.949	30.506	18.431	11.155	4.882	3.799	2.370	6.072	260.219
1977	17.340	16.100	25.402	51.389	48.269	31.051	18.844	11.364	6.931	6.144	4.671	6.174	243.679
1978	18.387	31.104	41.875	23.067	13.357	10.912	7.631	5.894	1.287	1.639	4.597	6.277	166.027
1979	15.940	22.380	29.350	43.719	45.086	22.467	7.259	5.166	1.020	1.070	0.920	4.490	198.868
1980	3.937	25.450	35.922	40.330	44.565	21.763	6.301	5.275	3.723	3.909	4.011	6.333	201.520
1981	9.040	16.800	11.452	29.962	9.788	25.875	9.752	6.262	1.632	1.050	0.872	0.983	123.469
1982	13.950	9.620	5.540	6.680	2.670	4.970	5.147	5.389	2.755	1.332	3.414	1.896	63.362
1983	7.140	31.952	38.731	51.389	49.709	31.019	19.011	11.571	7.395	6.573	4.795	6.362	265.648
1984	18.246	22.000	22.859	27.577	49.709	30.822	15.832	9.083	4.198	2.537	1.158	1.155	205.176
1985	10.380	18.320	18.692	46.988	43.229	29.929	18.597	10.604	6.302	4.903	1.983	1.283	211.209
1986	5.230	7.160	20.013	23.293	12.365	29.005	13.316	8.076	6.762	1.918	4.763	6.362	138.265
1987	18.387	31.915	38.044	41.754	44.451	30.849	16.506	9.261	6.332	6.413	4.524	4.520	252.956
1988	18.387	21.250	47.673	47.669	48.392	30.977	15.167	10.177	7.445	6.326	4.275	2.027	259.765
1989	6.540	31.952	45.141	33.140	15.798	24.613	10.032	7.321	1.393	1.081	1.193	1.403	179.607
1990	5.450	9.950	27.720	51.389	48.638	31.047	17.186	11.256	7.508	6.537	4.479	3.960	225.119
1991	13.510	14.310	33.458	31.700	35.970	10.976	5.248	3.570	0.885	0.956	0.840	0.840	152.263
1992	1.720	18.290	19.569	12.181	19.097	27.618	10.578	6.523	1.938	1.035	0.938	1.805	121.293
1993	18.387	28.890	41.686	42.874	42.848	31.022	18.014	9.134	3.398	2.507	1.749	1.057	241.566
1994	15.930	16.510	42.148	20.125	9.468	11.233	8.089	6.436	1.969	1.280	0.894	0.916	134.999
1995	13.570	31.663	48.079	51.389	49.709	31.204	19.065	11.673	7.525	6.573	4.783	4.700	279.932
1996	18.235	20.390	35.391	45.329	21.270	31.204	19.072	11.673	7.528	6.573	4.795	6.352	227.811
1997	18.250	31.952	40.896	48.303	41.163	30.342	16.007	9.904	5.575	3.489	1.661	1.805	249.349
1998	9.820	22.220	46.653	37.940	16.569	8.709	5.415	5.406	1.415	1.259	1.953	1.604	158.962
1999	6.020	7.630	48.079	51.389	49.709	31.027	19.07						

MAR = 299,057
 S.Dev. = 148,150
 CV = 0,495
 Q75 = 6,680
 Q75/MMF = 0,268
 BFI Index = 0,416
 CV(JJA+JFM) Index = 1,658

Ecological Category = C

Total IFR = 153,509 (51,33 %MAR)
 Maint. Lowflow = 106,614 (35,65 %MAR)
 Drought Lowflow = 52,364 (17,51 %MAR)
 Maint. Highflow = 46,896 (15,68 %MAR)

Monthly Distributions (Mill. cu. m.)
 Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
			CV	Maint.	Drought	Maint.	
Oct	17,209	21,336	1,240	6,744	1,868	4,498	11,242
Nov	33,107	26,575	0,803	12,489	7,451	7,720	20,210
Dec	44,340	31,137	0,702	13,772	7,379	8,769	22,540
Jan	51,342	65,689	1,279	16,261	9,073	9,060	25,321
Feb	48,310	38,150	0,790	15,539	7,272	8,959	24,498
Mar	37,739	27,958	0,741	13,326	6,637	5,371	18,697
Apr	23,085	13,573	0,588	9,112	4,786	1,769	10,882
May	13,426	7,309	0,544	7,646	4,675	0,133	7,778
Jun	8,923	4,802	0,538	3,416	0,812	0,000	3,416
Jul	7,516	6,481	0,862	2,994	0,841	0,538	3,531
Aug	6,144	4,687	0,763	2,622	0,791	0,000	2,622
Sep	7,915	11,871	1,500	2,692	0,779	0,080	2,772

Rule curve

Desktop Version 2, Generated on 2015-03-11
 Summary of IFR rule curves (Desktop Version 2) for :
 Total Runoff : Niii7
 Regional Type : N.Natal
 Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	14.404	14.288	14.027	13.486	12.120	9.250	7.140	5.450	3.466	1.720
Nov	26.633	26.497	26.212	25.648	22.570	19.290	17.330	13.280	9.620	3.330
Dec	36.236	33.878	31.770	29.737	27.518	23.773	20.640	16.286	11.433	5.540
Jan	40.275	37.829	35.629	33.486	31.114	27.105	23.647	18.842	13.485	7.130
Feb	39.064	36.638	34.448	32.300	29.901	25.843	22.274	17.314	11.786	8.308
Mar	24.990	24.857	24.582	24.036	23.014	21.229	18.391	14.447	10.051	7.285
Apr	14.421	14.331	14.126	13.703	12.914	11.614	9.779	7.667	5.862	5.022
May	10.518	10.462	10.336	10.075	9.589	8.788	7.657	6.355	5.242	3.570
Jun	4.622	4.586	4.503	4.333	4.015	3.491	2.752	1.902	1.174	0.836
Jul	4.682	4.646	4.564	4.394	4.078	3.558	2.823	1.978	1.255	0.919
Aug	3.548	3.522	3.462	3.339	3.109	2.730	2.195	1.580	1.053	0.809
Sep	3.737	3.709	3.645	3.513	3.267	2.861	2.289	1.631	1.067	0.805

Reserve Flows without High Flows										
Oct	9.127	9.057	8.900	8.575	7.970	6.972	5.564	3.943	2.558	1.720
Nov	17.422	17.348	17.194	16.888	16.316	15.317	13.729	11.522	9.061	3.330
Dec	19.206	19.118	18.935	18.573	17.894	16.709	14.825	12.208	9.289	5.540
Jan	22.680	22.578	22.368	21.951	21.170	19.807	17.640	14.628	11.271	7.130
Feb	21.664	21.557	21.334	20.893	20.068	18.626	16.333	13.147	9.596	7.362
Mar	18.582	18.493	18.308	17.942	17.257	16.060	14.157	11.513	8.566	6.711
Apr	12.345	12.273	12.109	11.771	11.140	10.102	8.635	6.947	5.504	4.833
May	10.362	10.308	10.185	9.930	9.456	8.674	7.571	6.301	5.215	3.570
Jun	4.622	4.586	4.503	4.333	4.015	3.491	2.752	1.902	1.174	0.836
Jul	4.051	4.020	3.951	3.807	3.540	3.098	2.476	1.759	1.146	0.861
Aug	3.548	3.522	3.462	3.339	3.109	2.730	2.195	1.580	1.053	0.809
Sep	3.643	3.616	3.554	3.426	3.187	2.793	2.238	1.598	1.051	0.797

Natural Duration curves										
Oct	32.840	24.210	18.340	14.110	12.120	9.250	7.140	5.450	3.990	1.720
Nov	67.890	50.940	41.850	32.040	22.570	19.290	17.330	13.280	9.620	3.330
Dec	86.870	57.590	48.580	44.170	39.090	30.680	26.470	23.000	15.650	5.540
Jan	85.110	63.030	54.030	43.650	38.640	33.790	30.980	24.090	20.500	7.130
Feb	107.990	69.890	49.010	41.540	36.750	31.430	25.930	21.820	17.220	9.760
Mar	69.990	54.490	43.810	35.410	30.720	27.890	24.320	18.980	13.170	7.730
Apr	42.690	28.820	26.130	23.660	22.110	19.680	15.720	12.150	8.750	5.600
May	23.980	17.780	16.070	13.550	12.890	10.170	8.770	7.610	6.040	3.570
Jun	15.170	12.180	11.120	9.110	7.920	6.720	5.730	4.830	4.000	2.620
Jul	13.850	9.640	8.160	6.870	6.210	5.060	4.590	3.790	2.960	2.200
Aug	14.280	8.010	6.130	5.540	4.610	4.100	3.650	3.120	2.750	1.520
Sep	15.950	9.600	6.790	5.830	5.110	4.540	3.780	3.040	2.240	1.310

Hydrological time series

Total Runoff : Niii7
 Desktop (Version 2) Modified Flow Data for Ecological Category C

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	14.404	26.497	31.148	18.913	13.169	24.582	13.545	9.589	4.050	3.608	1.892	3.648	165.042
1921	14.200	26.633	36.236	33.676	26.827	16.259	9.306	8.985	4.164	4.131	3.548	3.737	187.703
1922	14.389	26.633	36.236	39.839	34.448	23.506	13.458	9.957	3.731	3.008	2.125	1.430	208.761
1923	9.250	17.330	34.002	31.526	28.414	24.220	14.001	10.336	4.420	4.136	2.760	3.709	184.103
1924	12.120	26.386	35.049	26.713	18.403	24.990	14.421	10.507	4.596	4.654	3.522	3.728	185.089
1925	13.364	12.990	14.162	16.233	20.387	22.799	8.578	6.704	3.271	3.266	1.712	3.619	127.085
1926	8.790	9.390	9.154	10.697	19.593	18.962	9.745	7.574	1.928	3.452	2.871	1.954	104.110

1927	13.926	18.220	19.040	36.555	23.859	13.032	7.667	6.355	1.674	1.255	1.041	3.434	146.059
1928	9.040	12.910	11.433	10.579	8.308	24.925	14.285	10.102	4.503	4.613	3.402	3.737	117.836
1929	14.384	26.161	25.145	35.704	32.200	23.014	11.657	8.791	2.425	1.846	1.869	2.497	185.692
1930	3.210	13.210	13.411	10.970	9.536	7.705	5.862	5.324	0.961	1.283	0.992	0.865	73.331
1931	2.260	3.330	8.881	7.130	29.550	23.105	11.705	10.344	4.540	4.397	2.721	1.631	109.593
1932	5.410	16.500	29.427	29.808	24.157	11.532	7.324	6.467	1.928	3.558	3.148	1.867	141.127
1933	4.353	26.125	36.236	40.275	27.529	22.913	14.044	10.501	4.604	4.674	3.548	3.727	198.529
1934	10.190	25.448	31.788	27.105	22.789	16.110	9.883	10.046	4.438	4.430	3.109	1.828	167.164
1935	3.508	4.450	11.640	36.932	33.235	24.194	11.428	10.497	4.622	4.626	3.282	3.061	151.474
1936	10.990	26.520	23.310	40.275	37.798	24.361	13.626	9.500	3.513	2.517	1.256	3.569	197.237
1937	8.890	7.560	28.104	21.050	14.579	11.909	14.336	10.402	4.549	4.671	3.525	3.550	133.125
1938	14.262	22.960	30.350	34.416	39.064	24.990	14.365	10.445	4.492	4.646	3.523	3.716	207.230
1939	14.027	26.589	30.616	35.333	22.274	16.769	11.047	10.464	4.622	4.682	3.541	3.678	183.642
1940	9.180	20.570	34.313	22.051	15.825	11.417	10.884	9.589	3.600	3.292	2.473	2.289	145.484
1941	4.661	10.920	10.916	16.822	17.694	24.315	13.892	10.407	4.599	4.607	3.463	3.612	125.909
1942	13.486	26.212	32.884	30.965	24.486	20.905	14.421	10.518	4.622	4.682	3.548	3.737	190.466
1943	14.301	26.306	29.108	29.387	36.889	23.500	9.779	7.657	4.505	4.654	3.451	3.701	193.237
1944	14.164	14.410	9.295	12.916	8.600	22.988	9.911	8.280	3.544	3.572	2.737	1.915	112.332
1945	2.975	3.270	4.810	28.444	29.840	18.391	14.234	7.240	2.262	2.251	1.817	3.301	118.835
1946	8.420	25.936	30.283	25.791	25.448	12.527	9.077	8.788	3.509	3.572	1.845	1.788	156.983
1947	6.690	24.956	19.534	29.147	35.896	24.712	14.250	9.603	4.036	2.180	3.005	3.301	177.311
1948	9.980	25.648	18.546	35.618	25.438	23.251	14.234	10.462	4.548	4.394	2.730	2.141	176.990
1949	11.270	18.610	24.250	18.842	10.280	21.229	13.484	10.075	4.333	4.370	3.459	3.231	143.433
1950	3.776	11.090	25.434	32.705	16.509	23.094	14.331	10.344	3.462	4.078	3.548	3.730	152.101
1951	14.367	17.490	23.773	13.485	10.171	7.285	6.556	4.780	0.913	2.272	1.063	0.950	103.105
1952	2.719	19.590	22.779	11.736	30.833	23.192	13.560	7.042	1.848	1.533	1.236	1.598	137.667
1953	2.883	19.290	17.947	14.983	30.768	22.131	12.459	10.432	4.015	3.775	1.539	1.984	142.204
1954	13.533	26.065	22.209	35.714	36.638	24.990	12.914	9.350	4.391	4.572	3.364	3.139	196.878
1955	10.490	18.730	29.887	26.801	39.064	24.990	14.190	10.209	4.449	4.497	3.359	3.648	190.316
1956	14.386	26.375	33.043	27.138	32.185	24.341	14.361	10.500	4.609	4.682	3.548	3.737	198.907
1957	14.404	26.252	16.367	38.397	34.276	17.742	11.614	9.972	4.023	3.612	2.312	3.397	182.367
1958	9.920	26.633	32.655	31.535	32.453	14.829	7.019	8.109	3.175	4.198	2.195	3.603	176.325
1959	13.227	25.686	29.619	15.907	31.153	20.739	13.387	10.222	4.408	3.292	3.329	3.513	174.483
1960	14.164	26.625	36.236	39.196	32.926	22.131	14.414	10.465	4.611	4.653	3.525	3.684	212.629
1961	12.240	22.570	17.963	32.629	30.722	15.669	7.809	7.737	2.553	3.662	3.049	2.911	159.515
1962	6.380	26.576	36.236	37.004	24.551	22.238	13.832	10.261	4.622	4.682	3.548	3.729	193.659
1963	13.519	26.524	20.640	35.629	26.827	7.987	5.749	5.097	1.514	2.342	2.610	2.112	150.550
1964	14.404	26.589	33.878	31.791	26.995	8.291	5.221	4.842	2.752	3.192	2.503	3.311	163.769
1965	5.750	13.510	9.342	33.486	36.220	13.784	5.213	6.083	3.197	2.397	2.517	3.267	134.766
1966	8.230	6.380	22.318	31.114	39.064	24.930	14.126	9.825	4.135	4.136	3.242	2.904	170.404
1967	5.750	26.359	30.722	25.324	17.314	24.115	10.965	8.359	3.491	4.024	3.339	2.861	162.624
1968	2.620	18.950	21.743	29.221	19.919	24.946	14.421	10.518	4.586	4.563	3.319	3.645	158.451
1969	14.404	25.108	26.084	23.151	32.701	18.187	5.758	5.670	1.795	1.917	2.819	2.634	160.227
1970	14.186	24.905	28.012	39.209	25.843	20.150	14.393	10.518	4.622	4.617	3.462	3.417	193.334
1971	13.909	26.390	35.502	40.275	38.821	24.990	14.421	10.509	4.617	4.607	3.466	2.527	220.032
1972	4.558	15.340	13.484	15.749	38.737	24.964	14.421	10.518	4.575	4.542	3.548	3.737	154.173
1973	14.300	25.823	29.737	39.911	34.234	22.358	14.268	10.226	4.384	4.682	3.540	2.697	206.160
1974	5.600	26.528	33.734	37.923	36.519	24.813	14.398	10.477	4.455	4.460	3.012	3.737	205.656
1975	12.938	25.880	36.236	39.101	39.064	24.990	14.421	10.518	4.622	4.673	3.508	3.117	219.069
1976	14.027	22.470	33.657	39.327	37.653	24.468	13.988	10.082	3.114	2.823	1.869	3.581	207.059
1977	13.917	16.100	20.075	40.275	37.909	24.875	14.267	10.258	4.282	4.394	3.462	3.636	193.451
1978	14.404	25.967	31.770	19.152	11.786	9.811	6.699	5.654	1.065	1.376	3.411	3.691	134.785
1979	13.765	22.380	23.238	34.253	35.371	18.454	6.448	5.040	0.913	0.995	0.864	2.798	164.519
1980	3.466	24.913	27.518	31.914	34.959	17.927	5.801	5.132	2.454	2.897	3.005	3.721	163.708
1981	9.040	16.800	10.266	24.070	9.190	21.004	8.131	5.963	1.262	0.981	0.831	0.841	108.379
1982	13.405	9.620	5.540	6.680	2.670	4.970	5.022	5.228	1.902	1.171	2.591	1.333	60.130
1983	7.140	26.633	29.519	40.275	39.064	24.852	14.380	10.432	4.547	4.682	3.548	3.737	208.809
1984	14.297	22.000	18.287	22.369	39.064	24.704	12.234	8.338	2.724	1.978	1.029	0.934	167.957
1985	10.380	18.320	15.357	36.794	33.908	24.036	14.100	9.618	3.923	3.562	1.601	1.003	172.602
1986	5.230	7.160	16.286	19.313	11.065	23.345	10.536	7.490	4.186	1.563	3.526	3.737	113.437
1987	14.404	26.604	29.030	32.762	34.869	24.724	12.689	8.488	3.941	4.574	3.361	2.836	198.280
1988	14.404	21.250	35.943	37.330	38.008	24.820	11.785	9.259	4.575	4.516	3.188	1.403	206.481
1989	6.540	26.633	34.119	26.468	13.562	20.060	8.319	6.854	1.126	1.002	1.053	1.067	146.803
1990	5.450	9.950	22.582	40.275	38.205	24.872	13.148	10.167	4.611	4.658	3.329	2.444	179.691
1991	13.182	14.310	25.764	25.310	29.306	9.859	5.090	3.570	0.836	0.919	0.809	0.805	129.759
1992	1.720	18.290	15.974	11.387	15.962	22.307	8.688	6.183	1.436	0.972	0.877	1.284	105.078
1993	14.404	25.296	31.634	33.606	33.610	24.854	13.707	8.380	2.268	1.958	1.438	0.881	192.036
1994	13.764	16.510	31.966	17.053	8.958	10.051	7.008	6.109	1.454	1.135	0.846	0.805	115.659
1995	13.212	26.406	36.236	40.275	39.064	24.990	14.416	10.518	4.620	4.682	3.540	2.975	220.935
1996	14.288	20.390	27.140	35.497	17.542	24.990	14.421	10.518	4.622	4.682	3.548	3.731	181.369
1997	14.300	26.633	31.068	37.829	32.300	24.345	12.352	9.029	3.509	2.616	1.377	1.284	196.642
1998	9.820	22.220	35.208	30.536	14.123	8.163	5.203	5.242	1.138	1.121	1.580	1.176	135.529
1999	6.020	7.630	36.236	40.275	39.064	24.857	14.421	10.518	4.622	4.670	3.494	3.568	195.376
2000	14.185	26.633	35.324	23.647	21.531	12.897	13.703	9.409	3.099	2.506	1.539	3.700	168.174
2001	13.655	26.633	27.135	22.613	29.901	14.447	6.031	4.836	0.905	4.351	3.511	3.717	157.736
2002	6.010	6.150	16.263	13.938	21.122	7.667	4.280	2.190	0.836	0.919	0.809	0.826	81.009
2003	1.500	13.280	8.867	13.295	36.024	24.970	12.304	6.917	1.174	4.481	3.494	3.260	129.565
2004	2.637	12.870	25.323	35.125	31.724	24.969	13.920	9.056	3.440	4.564	3.505	3.445	170.577
Mean	10.086	20.165	25.085	28.288	27.042	20.039	11.315	8.571	3.376	3.429	2.652	2.774	162.821

A.66. Niii7 – Category D

Summary table

Desktop Version 2, Generated on 2015-03-11
 Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :
 Total Runoff : Niii7

Total IFR = 88,329 (29,54 %MAR)
 Maint. Lowflow = 52,364 (17,51 %MAR)
 Drought Lowflow = 52,364 (17,51 %MAR)
 Maint. Highflow = 35,965 (12,03 %MAR)

Monthly Distributions (Mill. cu. m.)
 Distribution Type : N.Natal

Month	Natural Flows			Modified Flows (IFR)			
	Mean	SD	CV	Low flows Maint.	High Flows Drought Maint.	Total Flows Maint.	Total Flows
Oct	17,209	21,336	1,240	1,868	1,868	3,634	5,501
Nov	33,107	26,575	0,803	7,451	7,451	6,089	13,540
Dec	44,340	31,137	0,702	7,379	7,379	6,696	14,075
Jan	51,342	65,689	1,279	9,073	9,073	6,680	15,753
Feb	48,310	38,150	0,790	7,272	7,272	7,624	14,896
Mar	37,739	27,958	0,741	6,637	6,637	3,715	10,351
Apr	23,085	13,573	0,588	4,786	4,786	0,790	5,576
May	13,426	7,309	0,544	4,675	4,675	0,084	4,759
Jun	8,923	4,802	0,538	0,812	0,812	0,000	0,812
Jul	7,516	6,481	0,862	0,841	0,841	0,550	1,391
Aug	6,144	4,687	0,763	0,791	0,791	0,000	0,791
Sep	7,915	11,871	1,500	0,779	0,779	0,104	0,883

Rule curve

Desktop Version 2, Generated on 2015-03-11
 Summary of IFR rule curves (Desktop Version 2) for :
 Total Runoff : Niii7
 Regional Type : N.Natal
 Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	8.630	8.569	8.430	8.144	7.610	6.731	5.490	4.061	2.839	1.720
Nov	23.935	23.817	23.571	23.085	22.174	19.290	17.330	13.280	9.620	3.330
Dec	27.717	25.930	24.345	22.845	21.249	18.559	16.436	13.488	10.201	5.540
Jan	31.064	29.268	27.661	26.112	24.421	21.567	19.179	15.861	12.162	7.130
Feb	29.305	27.278	25.492	23.818	22.064	19.114	16.877	13.768	10.302	8.122
Mar	18.771	18.684	18.502	18.141	17.467	16.288	14.414	11.810	8.908	7.082
Apr	9.999	9.950	9.839	9.609	9.181	8.475	7.480	6.333	5.353	4.897
May	8.789	8.750	8.661	8.477	8.135	7.571	6.774	5.857	5.073	3.570
Jun	1.506	1.500	1.485	1.453	1.396	1.300	1.166	1.011	0.878	0.816
Jul	2.342	2.328	2.297	2.232	2.112	1.913	1.632	1.310	1.034	0.905
Aug	1.468	1.461	1.447	1.416	1.360	1.267	1.136	0.985	0.856	0.796
Sep	1.592	1.584	1.567	1.531	1.464	1.354	1.198	1.019	0.866	0.794

Reserve Flows without High Flows										
Oct	3.464	3.449	3.414	3.343	3.209	2.990	2.681	2.324	2.019	1.720
Nov	14.855	14.800	14.686	14.459	14.034	13.292	12.113	10.474	8.647	3.330
Dec	14.713	14.658	14.545	14.320	13.899	13.165	11.997	10.373	8.564	5.540
Jan	18.089	18.022	17.883	17.607	17.089	16.186	14.750	12.754	10.529	7.130
Feb	14.498	14.444	14.332	14.111	13.696	12.973	11.821	10.222	8.439	7.317
Mar	13.232	13.183	13.081	12.879	12.500	11.840	10.789	9.329	7.702	6.678
Apr	8.876	8.837	8.748	8.565	8.224	7.662	6.869	5.955	5.174	4.811
May	8.670	8.632	8.545	8.367	8.033	7.484	6.709	5.817	5.055	3.570
Jun	1.506	1.500	1.485	1.453	1.396	1.300	1.166	1.011	0.878	0.816
Jul	1.560	1.553	1.538	1.505	1.445	1.347	1.207	1.047	0.909	0.846
Aug	1.468	1.461	1.447	1.416	1.360	1.267	1.136	0.985	0.856	0.796
Sep	1.445	1.438	1.424	1.394	1.339	1.247	1.118	0.969	0.842	0.783

Natural Duration curves										
Oct	32.840	24.210	18.340	14.110	12.120	9.250	7.140	5.450	3.990	1.720
Nov	67.890	50.940	41.850	32.040	22.570	19.290	17.330	13.280	9.620	3.330
Dec	86.870	57.590	48.580	44.170	39.090	30.680	26.470	23.000	15.650	5.540
Jan	85.110	63.030	54.030	43.650	38.640	33.790	30.980	24.090	20.500	7.130
Feb	107.990	69.890	49.010	41.540	36.750	31.430	25.930	21.820	17.220	9.760
Mar	69.990	54.490	43.810	35.410	30.720	27.890	24.320	18.980	13.170	7.730
Apr	42.690	28.820	26.130	23.660	22.110	19.680	15.720	12.150	8.750	5.600
May	23.980	17.780	16.070	13.550	12.890	10.170	8.770	7.610	6.040	3.570
Jun	15.170	12.180	11.120	9.110	7.920	6.720	5.730	4.830	4.000	2.620
Jul	13.850	9.640	8.160	6.870	6.210	5.060	4.590	3.790	2.960	2.200
Aug	14.280	8.010	6.130	5.540	4.610	4.100	3.650	3.120	2.750	1.520
Sep	15.950	9.600	6.790	5.830	5.110	4.540	3.780	3.040	2.240	1.310

Hydrological time series

Total Runoff : Niii7

Desktop (Version 2) Modified Flow Data for Ecological Category D

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	8.630	23.817	23.884	15.910	11.169	18.502	9.524	8.135	1.402	1.932	1.061	1.568	125.534
1921	8.522	23.935	27.717	26.249	19.829	13.007	7.222	7.710	1.423	2.132	1.468	1.592	140.806
1922	8.622	23.935	27.717	30.743	25.492	17.792	9.477	8.394	1.344	1.703	1.119	0.964	157.301
1923	6.731	17.330	26.023	24.715	20.983	18.263	9.771	8.661	1.469	2.133	1.274	1.584	138.939
1924	7.610	23.721	26.816	21.297	14.450	18.771	9.999	8.782	1.501	2.331	1.461	1.590	138.330
1925	8.079	12.990	12.049	14.060	15.694	17.325	6.827	6.103	1.260	1.801	1.017	1.560	98.766
1926	6.194	9.390	8.657	10.237	15.197	14.792	7.461	6.716	1.015	1.872	1.302	1.107	83.938
1927	8.377	18.220	15.353	28.336	17.870	10.876	6.333	5.857	0.969	1.034	0.853	1.510	115.587
1928	6.443	12.910	10.201	10.156	8.122	18.728	9.925	8.496	1.485	2.316	1.432	1.592	91.804
1929	8.619	23.528	19.544	27.716	23.745	17.467	8.499	7.573	1.106	1.259	1.056	1.255	141.365
1930	2.704	13.210	11.541	10.425	8.892	7.359	5.353	5.131	0.839	1.044	0.841	0.811	68.150
1931	2.260	3.330	8.472	7.130	21.809	17.527	8.525	8.667	1.491	2.233	1.265	1.019	83.728
1932	4.025	16.500	22.622	23.492	18.057	9.886	6.147	5.936	1.015	1.913	1.370	1.083	112.046
1933	3.309	23.497	27.717	31.064	20.340	17.400	9.794	8.777	1.503	2.339	1.468	1.589	148.797
1934	7.019	22.913	24.359	21.567	17.200	12.909	7.536	8.457	1.473	2.246	1.360	1.073	128.110
1935	2.862	4.450	10.341	28.611	24.535	18.246	8.374	8.775	1.506	2.321	1.402	1.408	112.830

1936	7.264	23.837	18.245	31.064	28.244	18.356	9.568	8.073	1.304	1.516	0.905	1.546	149.922
1937	6.237	7.560	21.670	17.386	12.053	10.135	9.953	8.708	1.493	2.338	1.462	1.541	100.535
1938	8.555	22.212	23.295	26.782	29.305	18.771	9.969	8.738	1.482	2.328	1.462	1.586	154.485
1939	8.430	23.897	23.490	27.446	16.877	13.344	8.168	8.751	1.506	2.342	1.466	1.576	137.293
1940	6.635	20.570	26.259	18.078	12.834	9.810	8.079	8.135	1.320	1.811	1.204	1.198	115.932
1941	3.472	10.920	9.850	14.466	14.006	18.326	9.712	8.711	1.502	2.313	1.447	1.558	96.284
1942	8.144	23.571	25.180	24.316	18.264	16.074	9.999	8.789	1.506	2.342	1.468	1.592	141.245
1943	8.575	23.653	22.393	23.192	27.487	17.787	7.480	6.774	1.485	2.331	1.444	1.582	144.182
1944	8.503	14.410	8.753	11.769	8.305	17.450	7.551	7.213	1.310	1.918	1.269	1.096	89.547
1945	2.579	3.270	4.810	22.521	22.020	14.414	9.897	6.480	1.076	1.414	1.043	1.473	90.999
1946	6.036	23.334	23.246	20.660	18.867	10.542	7.098	7.571	1.303	1.918	1.050	1.062	122.686
1947	5.166	22.489	15.687	23.021	26.669	18.588	9.906	8.145	1.399	1.387	1.334	1.473	135.265
1948	6.954	23.085	15.018	27.653	18.861	17.623	9.897	8.750	1.493	2.232	1.267	1.158	133.992
1949	7.350	18.610	18.901	15.861	9.359	16.288	9.490	8.477	1.453	2.223	1.446	1.454	110.913
1950	3.003	11.090	19.752	25.555	13.263	17.520	9.950	8.667	1.295	2.112	1.468	1.590	115.264
1951	8.611	17.490	18.559	12.162	9.290	7.082	5.730	4.780	0.830	1.422	0.858	0.834	87.646
1952	2.444	19.590	17.886	10.955	22.745	17.585	9.532	6.341	1.001	1.140	0.901	1.010	111.127
1953	2.530	19.290	14.612	13.196	22.698	16.884	8.934	8.729	1.396	1.996	0.975	1.115	112.355
1954	8.169	23.445	17.499	27.723	27.278	18.771	9.181	7.967	1.464	2.300	1.423	1.429	146.649
1955	7.111	18.730	22.955	21.358	29.305	18.771	9.874	8.572	1.475	2.271	1.421	1.568	143.411
1956	8.621	23.712	25.300	21.591	23.734	18.343	9.967	8.777	1.504	2.342	1.468	1.592	146.950
1957	8.630	23.606	13.542	29.685	25.356	13.986	8.475	8.405	1.397	1.934	1.165	1.499	137.679
1958	6.936	23.935	25.008	24.722	23.935	12.062	5.981	7.093	1.242	2.157	1.136	1.556	135.763
1959	8.007	23.118	22.761	13.834	22.980	15.965	9.438	8.581	1.467	1.811	1.414	1.531	130.907
1960	8.503	23.928	27.717	30.270	24.297	16.884	9.995	8.752	1.504	2.331	1.462	1.578	157.221
1961	7.642	22.174	14.623	25.501	22.665	12.617	6.410	6.831	1.129	1.953	1.345	1.367	124.258
1962	4.943	23.886	27.717	28.664	18.304	16.954	9.679	8.608	1.506	2.342	1.468	1.590	145.662
1963	8.162	23.841	16.436	27.661	19.829	7.545	5.292	4.971	0.940	1.449	1.237	1.150	118.513
1964	8.630	23.896	25.930	24.904	19.951	7.746	5.005	4.792	1.166	1.773	1.211	1.476	126.480
1965	4.391	13.510	8.784	26.112	26.934	11.373	5.001	5.666	1.247	1.470	1.215	1.464	107.166
1966	5.955	6.380	17.573	24.421	29.305	18.732	9.839	8.301	1.417	2.133	1.393	1.365	126.815
1967	4.391	23.698	23.568	20.338	13.768	18.194	8.123	7.269	1.300	2.091	1.416	1.354	125.510
1968	2.391	18.950	17.184	23.074	15.401	18.743	9.999	8.789	1.500	2.296	1.412	1.567	121.305
1969	8.630	22.620	20.219	18.836	24.126	14.280	5.296	5.375	0.991	1.286	1.289	1.292	124.239
1970	8.514	22.444	21.604	30.280	19.114	15.576	9.984	8.789	1.506	2.317	1.447	1.505	143.081
1971	8.368	23.725	27.160	31.064	29.101	18.771	9.999	8.783	1.505	2.313	1.448	1.263	163.499
1972	3.418	15.340	11.590	13.725	29.030	18.754	9.999	8.789	1.498	2.289	1.468	1.592	117.491
1973	8.575	23.237	22.845	30.796	25.323	17.034	9.916	8.584	1.463	2.342	1.466	1.309	152.889
1974	4.226	23.845	25.821	29.336	27.180	18.654	9.987	8.761	1.476	2.257	1.336	1.592	154.471
1975	7.854	23.285	27.717	30.201	29.305	18.771	9.999	8.789	1.506	2.339	1.458	1.423	162.648
1976	8.430	22.126	25.763	30.367	28.123	18.427	9.764	8.483	1.231	1.632	1.056	1.549	156.951
1977	8.372	16.100	16.054	31.064	28.336	18.696	9.916	8.606	1.444	2.232	1.447	1.564	143.831
1978	8.630	23.361	24.345	16.075	10.302	8.750	5.807	5.363	0.858	1.080	1.434	1.579	107.585
1979	8.292	22.082	18.196	26.664	26.237	14.456	5.671	4.931	0.830	0.934	0.809	1.337	130.441
1980	2.839	22.451	21.249	24.992	25.905	14.108	5.320	4.996	1.111	1.661	1.334	1.588	127.553
1981	6.443	16.800	9.410	19.472	8.675	16.140	6.584	5.581	0.894	0.929	0.801	0.804	92.533
1982	8.101	9.620	5.540	6.680	2.670	4.970	4.897	5.064	1.011	1.001	1.233	0.938	51.724
1983	5.490	23.935	22.688	31.064	29.305	18.680	9.977	8.729	1.492	2.342	1.468	1.592	156.762
1984	8.574	21.898	14.843	18.297	29.305	18.582	8.812	7.254	1.160	1.310	0.850	0.829	131.713
1985	7.077	18.320	12.858	28.510	25.066	18.141	9.825	8.156	1.379	1.915	0.990	0.848	133.085
1986	3.861	7.160	13.488	16.187	9.850	17.685	7.890	6.657	1.427	1.151	1.462	1.592	88.410
1987	8.630	23.910	22.336	25.596	25.832	18.596	9.059	7.359	1.382	2.301	1.422	1.347	147.769
1988	8.630	21.250	27.495	28.903	28.418	18.659	8.568	7.903	1.498	2.279	1.379	0.957	155.938
1989	5.058	23.935	26.111	21.127	11.416	15.516	6.687	6.209	0.869	0.937	0.856	0.866	119.587
1990	4.061	9.950	17.752	31.064	28.584	18.694	9.308	8.542	1.504	2.333	1.414	1.240	134.446
1991	7.983	14.310	19.988	20.328	21.632	8.781	4.934	3.570	0.816	0.905	0.796	0.794	104.837
1992	1.720	18.290	13.276	10.713	12.920	17.000	6.887	5.736	0.926	0.925	0.812	0.925	90.130
1993	8.630	22.782	24.245	26.198	24.831	18.681	9.611	7.284	1.077	1.302	0.950	0.815	146.407
1994	8.291	16.510	24.492	14.626	8.529	8.908	5.975	5.684	0.929	0.988	0.805	0.794	96.532
1995	7.999	23.739	27.717	31.064	29.305	18.771	9.997	8.789	1.506	2.342	1.466	1.385	164.080
1996	8.569	20.390	20.977	27.566	13.911	18.771	9.999	8.789	1.506	2.342	1.468	1.590	135.878
1997	8.575	23.935	23.825	29.268	23.818	18.346	8.876	7.741	1.303	1.553	0.935	0.925	149.099
1998	6.905	22.005	26.936	24.010	11.767	7.661	4.995	5.073	0.871	0.983	0.985	0.895	113.087
1999	4.684	7.630	27.717	31.064	29.305	18.684	9.999	8.789	1.506	2.338	1.455	1.546	144.717
2000	8.514	23.935	27.024	19.179	16.411	10.787	9.609	8.008	1.229	1.511	0.975	1.582	128.766
2001	8.234	23.935	20.973	18.465	22.064	11.810	5.445	4.787	0.829	2.216	1.459	1.586	121.804
2002	4.677	6.150	13.472	12.475	16.154	7.334	4.280	2.190	0.816	0.905	0.796	0.800	70.050
2003	1.500	13.280	8.463	12.031	26.773	18.758	8.850	6.253	0.878	2.265	1.454	1.462	101.968
2004	2.400	12.870	19.672	27.296	23.397	18.757	9.727	7.759	1.291	2.297	1.457	1.512	128.436
Mean	6.514	18.900	19.660	22.497	20.466	15.495	8.310	7.406	1.279	1.863	1.248	1.330	124.970

A.67. Nii8 – Category B

Summary table

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nii8

Annual Flows (Mill. cu. m or index values):

MAR = 1006.848

S.Dev. = 517.165

CV = 0.514

Q75 = 21.710

Q75/MMF = 0.259

BFI Index = 0.392

CV(JJA+JFM) Index = 2.086

Ecological Category = B

Total IFR = 743.540 (73.85 %MAR)

Maint. Lowflow = 528.429 (52.48 %MAR)

Drought Lowflow = 176.295 (17.51 %MAR)

Maint. Highflow = 215.111 (21.36 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	CV	Low flows	High Flows	Total Flows	
			Maint.	Drought	Maint.	Maint.	
Oct	59.200	66.932	1.131	34.833	6.288	18.585	53.418
Nov	117.659	99.647	0.847	57.801	25.085	35.192	92.993
Dec	148.066	105.307	0.711	69.007	24.845	40.894	109.901
Jan	177.940	284.406	1.598	82.758	30.547	38.170	120.928
Feb	165.829	155.350	0.937	79.330	24.482	37.382	116.712
Mar	125.811	118.692	0.943	64.829	22.344	25.242	90.071
Apr	73.052	45.907	0.628	45.327	16.112	9.196	54.523
May	42.309	23.472	0.555	30.627	15.739	2.448	33.075
Jun	28.086	16.938	0.603	20.280	2.734	1.046	21.326
Jul	24.199	30.429	1.257	16.081	2.832	2.685	18.766
Aug	18.476	16.990	0.920	12.796	2.664	0.795	13.591
Sep	26.222	42.320	1.614	14.762	2.623	3.474	18.236

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niih8

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	61.903	61.391	60.227	51.020	37.470	32.430	27.690	18.290	13.256	6.820
Nov	107.575	106.988	105.766	103.347	87.230	69.990	53.320	46.360	34.930	13.840
Dec	161.869	150.855	140.983	131.428	120.941	103.229	88.227	67.380	44.143	26.160
Jan	173.013	162.624	153.184	143.820	116.990	101.830	93.590	76.196	50.913	24.100
Feb	167.356	157.157	147.859	132.680	109.790	88.330	82.120	70.556	44.969	28.869
Mar	105.056	104.460	103.218	100.762	96.162	86.000	75.355	57.604	37.819	25.370
Apr	64.210	63.761	62.739	60.628	56.692	50.209	41.058	30.523	21.516	17.327
May	39.298	39.076	38.571	37.528	35.583	30.840	27.857	22.651	18.200	13.640
Jun	25.344	25.130	24.643	23.635	21.758	18.665	14.300	9.275	4.978	2.980
Jul	22.131	21.949	21.537	20.685	17.010	14.310	12.400	8.542	4.909	3.219
Aug	16.145	16.017	15.727	15.127	14.009	12.168	9.568	6.576	4.018	2.828
Sep	21.419	21.244	20.844	20.018	16.510	13.910	12.110	8.246	4.723	3.085

Reserve Flows without High Flows

Oct	41.577	41.240	40.476	38.897	35.953	31.104	24.259	16.379	9.642	6.509
Nov	69.084	68.757	68.076	66.729	64.204	59.796	52.787	43.048	32.191	13.840
Dec	82.445	82.017	81.125	79.361	76.056	70.286	61.110	48.359	34.147	25.205
Jan	98.879	98.371	97.313	95.220	91.300	84.454	73.569	58.443	41.582	24.100
Feb	94.753	94.230	93.143	90.990	86.959	79.919	68.725	53.169	35.831	24.922
Mar	77.447	77.038	76.185	74.497	71.335	65.815	57.037	44.839	31.243	22.689
Apr	54.152	53.789	52.966	51.263	48.090	42.863	35.484	26.990	19.727	16.350
May	36.621	36.422	35.969	35.035	33.293	30.423	26.373	21.710	17.724	13.640
Jun	24.200	23.995	23.531	22.570	20.779	17.830	13.666	8.873	4.774	2.868
Jul	19.194	19.038	18.683	17.951	16.586	14.310	11.164	7.511	4.387	2.934
Aug	15.275	15.155	14.882	14.317	13.265	11.533	9.087	6.271	3.863	2.743
Sep	17.620	17.477	17.153	16.481	15.230	13.169	10.260	6.911	4.048	2.716

Natural Duration curves

Oct	125.820	82.810	68.830	51.020	37.470	32.430	27.690	18.290	15.100	6.820
Nov	253.980	168.560	144.090	113.130	87.230	69.990	53.320	46.360	34.930	13.840
Dec	275.900	200.660	167.610	136.700	124.100	104.050	91.210	71.560	58.320	26.160
Jan	293.870	209.550	192.200	146.750	116.990	101.830	93.590	81.480	64.940	24.100
Feb	353.430	241.480	152.050	132.680	109.790	88.330	82.120	71.150	57.720	37.570
Mar	213.460	163.340	136.360	125.480	112.760	86.000	75.410	59.510	46.030	28.750
Apr	126.890	101.790	81.780	70.680	66.400	59.910	51.790	40.470	28.720	21.500
May	81.650	60.590	48.130	40.810	36.980	30.840	28.130	23.760	18.940	13.640
Jun	52.400	38.550	34.270	26.890	24.570	19.570	17.000	15.300	11.900	8.180
Jul	40.450	28.670	25.870	21.490	17.010	14.310	12.400	9.690	8.260	4.780
Aug	37.850	23.500	19.160	16.540	14.310	12.600	10.100	7.710	5.930	4.560
Sep	43.510	31.500	23.000	20.790	16.510	13.910	12.110	9.050	5.700	3.140

Hydrological time series

Total Runoff : Niih8

Desktop (Version 2) Modified Flow Data for Ecological Category B

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	61.762	106.922	135.958	52.291	58.461	104.835	61.712	36.284	20.292	11.693	5.845	20.518	676.573
1921	60.839	107.575	161.869	130.520	84.770	48.934	25.909	19.911	14.606	10.814	16.135	21.190	703.073
1922	61.173	107.575	152.587	151.830	118.430	75.355	38.794	27.857	8.225	6.117	4.271	3.587	755.801
1923	30.070	48.680	157.067	95.620	116.310	102.539	61.915	38.373	23.635	13.810	7.866	21.304	717.190
1924	38.430	105.949	161.728	101.830	55.783	105.056	64.210	39.160	24.662	21.485	15.580	21.372	755.246
1925	48.570	45.360	57.626	76.196	58.910	102.553	36.778	25.268	18.665	11.254	5.001	20.844	507.026
1926	26.510	30.030	44.143	39.041	105.600	94.724	44.782	23.451	4.860	17.240	13.869	9.992	454.242
1927	60.834	69.020	108.105	170.410	86.110	40.557	22.744	16.260	2.980	3.219	4.018	18.700	602.957
1928	32.430	48.830	49.473	37.644	28.869	105.056	63.276	38.366	24.899	21.858	14.591	21.419	486.711
1929	61.903	105.766	112.822	154.668	131.580	81.300	34.260	22.571	5.276	4.050	9.192	11.540	734.928
1930	9.120	43.650	56.746	38.045	37.002	28.528	27.530	19.830	3.434	4.347	3.837	3.085	275.155
1931	6.820	11.260	33.232	24.100	152.224	101.477	60.628	39.228	25.250	21.123	11.460	8.215	495.017
1932	23.250	89.780	140.983	145.705	140.820	74.632	32.608	22.651	5.217	12.400	10.321	5.543	703.909
1933	13.256	107.466	161.869	173.013	100.620	103.084	63.768	39.298	25.344	22.131	16.145	21.309	847.303
1934	23.650	103.554	145.132	106.460	81.490	57.604	30.523	35.771	23.858	16.470	9.487	5.897	639.895
1935	10.869	13.840	42.032	165.318	133.330	103.860	54.204	39.298	25.344	21.754	12.846	16.510	639.206
1936	51.020	107.431	80.887	173.013	167.356	101.884	56.692	33.540	13.223	8.642	4.077	21.054	818.818
1937	37.330	31.010	129.497	80.841	67.285	46.181	64.210	39.091	25.130	22.081	15.985	16.240	574.882
1938	61.790	74.210	150.855	166.575	167.356	105.056	63.761	38.903	24.643	22.074	16.103	21.419	912.744
1939	59.414	107.541	134.428	155.815	72.680	81.980	58.761	39.076	25.344	22.131	16.108	21.113	794.390
1940	31.730	85.200	161.869	106.950	87.180	61.092	58.871	37.528	16.973	14.310	11.133	12.790	685.626
1941	18.290	49.020	53.964	90.220	77.230	102.018	51.907	38.948	25.304	22.045	15.727	20.018	564.692
1942	53.020	106.582	145.472	92.510	77.040	86.640	64.210	39.298	25.344	22.131	16.145	21.419	749.813
1943	61.486	107.055	141.051	145.820	165.574	96.628	36.378	20.405	24.951	21.950	14.009	21.363	856.671
1944	61.391	50.900	33.823	91.480	34.476	104.460	51.098	33.870	22.575	20.289	15.332	14.470	534.163

1945	13.256	14.640	22.560	99.500	147.368	95.162	64.210	29.610	18.586	15.310	13.471	21.081	554.754	
1946	36.940	106.936	135.944	107.610	132.680	65.010	45.687	34.372	17.582	10.448	6.014	9.194	708.418	
1947	32.100	103.347	114.289	157.915	167.356	105.056	63.969	37.837	23.684	6.039	15.435	20.766	847.793	
1948	34.300	106.398	87.646	171.545	142.645	97.521	63.485	39.123	24.957	19.620	9.568	11.270	808.079	
1949	36.990	84.450	140.032	118.990	70.197	100.762	63.695	38.836	24.671	21.456	16.067	20.774	736.922	
1950	17.180	35.120	118.317	147.911	76.210	101.010	63.996	37.792	23.077	21.141	16.145	21.414	679.313	
1951	61.746	53.320	113.017	46.480	41.018	25.370	21.048	17.470	13.969	14.690	13.008	11.160	432.294	
1952	19.790	60.300	123.521	49.485	91.360	78.810	61.324	27.465	16.928	15.280	12.168	13.200	569.631	
1953	17.860	64.230	83.367	73.692	129.530	96.512	63.524	39.294	24.984	21.787	14.315	15.460	644.556	
1954	50.230	96.630	96.606	168.495	163.642	105.056	51.807	32.740	24.153	22.020	15.879	20.044	847.303	
1955	32.420	50.780	135.567	116.990	167.356	105.001	59.487	36.751	24.185	20.491	15.127	20.450	784.605	
1956	61.742	104.566	141.108	105.680	145.925	98.686	62.739	38.674	24.460	22.131	16.145	21.419	843.274	
1957	61.903	104.583	49.788	165.760	147.859	65.590	54.624	36.751	19.296	12.590	7.713	18.350	744.809	
1958	28.970	107.383	134.918	143.820	115.540	49.564	18.286	32.590	19.339	16.360	13.988	20.237	700.995	
1959	33.120	91.610	128.349	50.913	143.469	90.071	62.718	38.565	21.758	10.375	14.285	19.918	705.149	
1960	56.270	107.575	161.869	151.419	113.470	80.280	64.069	38.731	25.161	22.019	16.104	19.752	856.721	
1961	36.430	87.230	80.124	97.030	79.370	59.321	28.213	26.543	13.927	15.030	12.394	13.630	549.243	
1962	20.780	107.274	154.751	146.431	146.431	82.530	86.000	41.058	24.001	25.344	22.131	16.145	21.364	747.810
1963	38.690	104.109	67.380	162.624	89.170	26.600	23.025	17.030	7.196	13.770	13.578	12.270	575.442	
1964	61.903	106.250	140.231	101.230	87.420	27.055	18.209	15.760	11.442	15.470	11.646	18.340	614.957	
1965	18.320	32.800	32.029	132.040	150.991	39.880	17.611	19.040	11.399	12.630	10.663	13.380	490.782	
1966	22.310	21.730	67.508	98.590	162.924	104.202	61.951	37.950	23.874	20.611	15.448	16.350	653.448	
1967	13.694	104.905	120.941	60.085	31.636	83.280	37.101	29.590	20.719	20.685	15.761	19.330	557.727	
1968	10.250	50.290	59.933	96.820	44.969	105.056	64.200	39.281	25.168	20.838	12.115	20.864	549.782	
1969	61.903	93.660	113.255	67.517	82.120	37.819	17.327	16.090	4.938	4.909	7.733	12.110	519.382	
1970	55.470	82.110	89.633	153.184	75.060	92.229	64.083	39.298	25.344	21.760	14.967	13.910	727.048	
1971	58.910	106.988	161.507	173.013	166.819	104.990	63.897	39.262	25.277	21.537	14.094	7.193	943.487	
1972	10.746	69.990	42.604	61.599	167.356	103.984	64.210	39.163	24.270	17.010	16.109	21.419	638.460	
1973	60.227	105.106	131.428	173.013	108.840	85.380	62.044	38.064	21.879	22.078	15.903	8.246	832.208	
1974	17.250	107.370	146.170	165.200	151.794	99.095	63.697	38.845	23.409	15.480	7.121	21.419	856.850	
1975	37.470	101.545	161.869	157.173	160.965	104.918	64.210	39.298	25.343	21.672	14.455	8.351	897.271	
1976	60.033	70.530	125.469	151.922	157.793	99.088	59.423	35.583	13.637	8.588	5.831	21.023	808.920	
1977	40.740	46.360	76.960	173.013	152.101	103.232	62.795	38.571	22.090	17.510	15.245	20.443	769.061	
1978	61.903	105.643	121.590	84.070	55.617	57.443	35.066	30.370	9.275	8.542	15.883	21.244	606.645	
1979	60.826	87.900	101.486	159.297	153.856	77.810	24.978	18.200	4.171	3.415	2.905	19.900	714.744	
1980	16.270	105.586	133.265	140.400	143.620	68.940	21.516	17.683	20.032	18.190	15.383	21.308	722.193	
1981	36.920	74.150	41.856	103.140	32.953	93.613	48.161	30.580	8.245	4.463	2.881	3.535	480.498	
1982	61.463	44.910	26.160	20.330	9.500	23.800	19.426	29.720	19.915	12.550	15.548	12.160	295.482	
1983	27.280	107.575	125.094	173.013	157.157	104.690	63.238	38.173	24.585	22.131	16.145	21.419	890.501	
1984	61.411	67.540	73.688	73.906	167.356	103.218	46.576	20.713	4.978	3.604	2.828	3.414	629.232	
1985	42.730	47.020	75.418	162.158	136.030	94.063	61.669	36.040	19.878	13.790	6.056	4.155	699.006	
1986	12.762	24.210	103.229	67.333	41.482	96.162	59.404	37.497	23.441	13.130	16.145	21.419	516.214	
1987	61.903	106.813	97.527	113.230	149.558	102.168	53.335	28.630	22.316	21.283	15.792	15.220	787.776	
1988	61.903	78.840	161.869	116.700	160.975	103.378	59.607	36.461	25.066	21.746	14.159	6.403	847.108	
1989	32.510	107.575	147.330	114.770	70.556	74.417	42.429	29.890	6.856	3.525	8.537	6.077	644.473	
1990	27.690	53.310	113.255	173.013	158.658	104.656	61.479	39.032	25.344	22.131	16.017	15.360	809.944	
1991	31.450	38.040	97.847	93.310	107.390	35.308	18.279	13.640	2.980	3.219	2.340	2.020	445.824	
1992	7.380	63.220	116.259	49.873	84.760	96.936	49.331	32.560	16.341	6.596	7.948	10.022	541.226	
1993	61.903	95.020	151.182	125.810	101.380	104.600	58.200	24.896	6.629	4.066	3.624	3.371	740.681	
1994	59.474	68.850	145.478	100.040	32.070	51.439	30.656	25.210	10.304	6.306	3.443	3.458	536.728	
1995	61.033	107.240	161.869	173.013	167.356	105.056	64.091	39.298	25.253	22.088	16.032	11.380	953.708	
1996	61.372	61.010	126.434	158.839	88.330	105.056	64.210	39.298	25.344	22.131	16.145	21.376	789.547	
1997	61.519	107.575	102.424	148.293	109.790	93.523	46.567	30.840	15.014	8.087	3.492	4.723	731.847	
1998	45.150	84.430	160.038	121.900	55.513	32.224	26.445	23.805	10.390	7.548	10.910	8.075	586.429	
1999	31.070	34.930	161.869	171.841	167.356	104.860	64.210	39.298	25.344	21.755	13.406	15.620	851.561	
2000	60.984	107.575	154.284	93.590	87.370	68.840	50.209	33.510	14.300	9.890	6.576	20.320	707.448	
2001	56.330	107.575	96.290	86.621	72.860	33.677	19.460	14.170	3.045	21.051	16.039	21.068	548.186	
2002	18.040	22.430	56.834	49.873	90.650	28.554	15.180	6.880	3.994	6.678	3.098	4.317	306.529	
2003	4.900	45.570	28.970	84.836	154.306	104.386	52.167	21.581	3.426	21.949	15.925	12.930	550.946	
2004	9.020	45.870	88.227	135.840	110.930	104.070	56.562	34.020	21.585	20.759	15.642	15.500	658.024	
Mean	39.531	77.115	109.196	116.560	108.486	82.477	48.702	31.367	18.002	15.406	11.796	15.069	673.706	

A.68. *Niii8 – Category C***Summary table**

Desktop Version 2, Generated on 2015-03-09

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii8

Annual Flows (Mill. cu. m or index values):

MAR = 1006,848

S.Dev. = 517,165

CV = 0,514

Q75 = 21,710

Q75/MMF = 0,259

BFI Index = 0,392

CV(JJA+JFM) Index = 2,086

Ecological Category = C

Total IFR = 449,115 (44,61 %MAR)

Maint. Lowflow = 226,403 (22,49 %MAR)

Drought Lowflow = 62,289 (6,19 %MAR)

Maint. Highflow = 222,712 (22,12 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	59,200	66,932	1,131	14,433	2,997	14,451	28,884
Nov	117,659	99,647	0,847	20,500	3,425	23,270	43,770
Dec	148,066	105,307	0,711	31,384	9,608	29,268	60,651
Jan	177,940	284,406	1,598	33,065	9,700	36,212	69,277
Feb	165,829	155,350	0,937	31,179	9,042	54,595	85,774
Mar	125,811	118,692	0,943	31,471	9,535	37,403	68,875
Apr	73,052	45,907	0,628	21,070	3,326	9,510	30,580
May	42,309	23,472	0,555	17,053	3,392	6,703	23,756
Jun	28,086	16,938	0,603	8,388	3,154	0,000	8,388
Jul	24,199	30,429	1,257	7,920	2,960	5,245	13,165
Aug	18,476	16,990	0,920	7,288	2,683	0,000	7,288
Sep	26,222	42,320	1,614	2,653	2,467	6,056	8,709

Rule curve

Desktop Version 2, Generated on 2015-03-09

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii8

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	36.479	36.173	35.479	34.046	31.373	26.971	20.757	13.603	7.487	4.642
Nov	56.305	55.929	55.147	53.598	50.698	45.633	37.580	26.389	13.916	6.068
Dec	100.565	92.736	85.780	79.160	72.062	60.098	50.494	37.148	22.272	12.912
Jan	116.392	106.748	98.232	90.220	81.774	67.557	56.605	41.387	24.424	13.751
Feb	149.468	135.080	122.558	111.105	99.542	80.154	66.897	48.475	27.942	15.022
Mar	88.470	87.911	86.747	84.444	80.130	72.597	60.618	43.973	25.420	13.746
Apr	39.653	39.316	38.550	36.967	34.015	29.155	22.293	14.393	7.639	4.498
May	30.932	30.676	30.094	28.892	26.650	22.958	17.746	11.746	6.616	4.230
Jun	11.356	11.277	11.100	10.733	10.049	8.922	7.331	5.499	3.934	3.205
Jul	16.875	16.748	16.458	15.858	14.741	12.901	10.304	7.314	4.757	3.569
Aug	9.866	9.797	9.642	9.320	8.721	7.734	6.341	4.737	3.365	2.728
Sep	10.706	10.634	10.468	10.127	9.490	8.441	6.960	5.256	3.798	3.120

Reserve Flows without High Flows

Oct	19.524	19.367	19.009	18.269	16.890	14.619	11.414	7.723	4.568	3.100
Nov	28.541	28.355	27.966	27.196	25.755	23.239	19.238	13.678	7.481	3.582
Dec	43.722	43.469	42.941	41.896	39.938	36.521	31.087	23.535	15.118	9.822
Jan	46.062	45.791	45.229	44.115	42.029	38.386	32.593	24.544	15.572	9.927
Feb	43.434	43.178	42.646	41.592	39.619	36.174	30.695	23.082	14.596	9.257
Mar	43.844	43.589	43.058	42.007	40.038	36.601	31.136	23.541	15.076	9.750
Apr	28.496	28.256	27.711	26.585	24.485	21.026	16.144	10.524	5.718	3.483
May	23.068	22.881	22.455	21.574	19.932	17.229	13.412	9.018	5.262	3.515
Jun	11.356	11.277	11.100	10.733	10.049	8.922	7.331	5.499	3.934	3.205
Jul	10.722	10.648	10.480	10.133	9.485	8.419	6.913	5.180	3.698	3.009
Aug	9.866	9.797	9.642	9.320	8.721	7.734	6.341	4.737	3.365	2.728
Sep	3.601	3.591	3.566	3.515	3.421	3.265	3.045	2.791	2.575	2.474

Natural Duration curves

Oct	125.820	82.810	68.830	51.020	37.470	32.430	27.690	18.290	15.100	6.820
Nov	253.980	168.560	144.090	113.130	87.230	69.990	53.320	46.360	34.930	13.840
Dec	275.900	200.660	167.610	136.700	124.100	104.050	91.210	71.560	58.320	26.160
Jan	293.870	209.550	192.200	146.750	116.990	101.830	93.590	81.480	64.940	24.100
Feb	353.430	241.480	152.050	132.680	109.790	88.330	82.120	71.150	57.720	37.570
Mar	213.460	163.340	136.360	125.480	112.760	86.000	75.410	59.510	46.030	28.750
Apr	126.890	101.790	81.780	70.680	66.400	59.910	51.790	40.470	28.720	21.500
May	81.650	60.590	48.130	40.810	36.980	30.840	28.130	23.760	18.940	13.640
Jun	52.400	38.550	34.270	26.890	24.570	19.570	17.000	15.300	11.900	8.180
Jul	40.450	28.670	25.870	21.490	17.010	14.310	12.400	9.690	8.260	4.780
Aug	37.850	23.500	19.160	16.540	14.310	12.600	10.100	7.710	5.930	4.560
Sep	43.510	31.500	23.000	20.790	16.510	13.910	12.110	9.050	5.700	3.140

Hydrological time series

Total Runoff : Niii8

Desktop (Version 2) Modified Flow Data for Ecological Category C	YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	36.394	55.887	82.283	25.349	38.769	88.263	37.780	27.458	9.514	9.531	4.345	10.333	425.906	
1921	35.844	56.305	100.565	85.614	72.356	35.843	10.933	8.588	7.442	8.913	9.861	10.611	442.875	
1922	36.043	56.305	93.965	97.057	103.906	60.618	20.595	17.746	5.117	5.608	3.501	3.328	503.790	
1923	23.125	30.875	97.146	59.362	102.836	86.110	37.932	29.866	10.733	12.463	5.428	10.659	506.534	
1924	31.562	55.264	100.465	67.557	36.620	88.470	39.653	30.773	11.107	16.421	9.563	10.687	498.143	
1925	33.562	23.732	30.904	41.387	39.130	86.123	19.083	14.763	8.922	9.222	3.892	10.468	321.188	
1926	19.865	11.620	22.272	16.459	95.757	78.781	25.085	12.669	3.891	14.799	8.646	5.978	315.820	
1927	35.842	45.118	63.392	113.962	75.116	27.987	8.560	4.882	3.205	3.569	3.365	9.816	394.814	
1928	26.971	31.165	25.684	15.522	15.022	88.470	38.953	29.857	11.193	16.683	9.033	10.706	319.260	
1929	36.479	55.147	66.578	99.556	110.549	68.044	17.195	11.653	4.042	4.153	6.139	6.666	486.201	
1930	5.289	19.188	30.340	15.791	21.548	16.708	12.149	8.495	3.371	4.362	3.269	3.120	143.630	
1931	4.642	6.068	15.287	13.751	128.344	85.114	36.967	30.852	11.321	16.166	7.355	5.243	361.110	
1932	17.399	50.983	85.780	91.804	114.277	59.940	15.957	11.746	4.021	10.304	6.744	4.137	473.092	
1933	7.487	56.235	100.565	116.392	91.257	86.621	39.322	30.932	11.355	16.875	9.866	10.661	577.569	
1934	17.702	53.731	88.693	71.899	65.836	43.973	14.393	26.867	10.814	14.373	6.297	4.284	418.860	
1935	6.065	6.068	20.920	109.238	111.358	87.349	32.150	30.932	11.356	16.610	8.098	9.490	449.633	
1936	34.046	56.212	45.795	116.392	149.468	85.496	34.015	24.581	6.938	7.384	3.397	10.555	574.281	
1937	31.251	12.079	77.853	44.503	45.850	33.261	39.653	30.693	11.277	16.840	9.780	9.381	362.423	
1938	36.411	46.873	92.736	110.400	149.468	88.470	39.316	30.476	11.100	16.835	9.844	10.706	642.635	
1939	34.995	56.283	81.226	100.578	51.035	68.703	35.567	30.676	11.356	16.875	9.846	10.580	507.720	
1940	25.204	50.102	100.565	72.358	77.544	47.244	35.650	28.892	8.305	12.901	7.179	7.699	473.644	
1941	13.603	31.532	28.559	51.106	58.659	85.621	30.428	30.529	11.341	16.815	9.642	10.127	377.963	
1942	34.323	55.670	88.933	54.843	58.339	72.777	39.653	30.932	11.356	16.875	9.866	10.706	484.274	
1943	36.230	55.972	85.828	91.900	146.932	80.567	18.784	9.158	11.212	16.748	8.721	10.683	572.736	
1944	36.173	34.177	15.665	53.162	19.521	87.911	29.821	24.780	10.346	15.579	9.430	8.667	345.232	
1945	7.487	6.253	12.912	64.564	121.937	79.192	39.653	20.666	8.893	13.583	8.432	10.566	394.139	
1946	30.910	55.896	82.273	72.977	111.105	50.918	25.764	25.255	8.527	8.655	4.435	5.648	482.363	
1947	26.138	53.598	67.569	102.464	149.468	88.470	39.472	29.248	10.750	5.552	9.486	10.436	592.652	
1948	28.604	55.552	50.122	115.022	115.964	81.405	39.109	30.730	11.215	15.392	6.341	6.527	555.982	
1949	30.954	49.881	85.119	82.342	48.187	84.444	39.267	30.400	11.110	16.401	9.824	10.439	498.367	
1950	11.534	14.031	70.290	93.656	56.941	84.676	39.493	29.197	10.529	16.179	9.866	10.704	447.096	
1951	36.385	37.580	66.709	21.450	24.771	13.746	7.288	5.775	7.210	13.160	8.184	6.470	248.729	
1952	14.754	40.774	73.808	23.466	82.891	64.905	37.489	17.294	8.288	13.562	7.734	8.014	392.981	
1953	12.802	42.573	47.383	39.707	109.513	80.459	39.138	30.927	11.224	16.634	8.885	9.066	448.311	
1954	33.890	51.751	55.858	112.175	144.184	88.470	30.353	24.100	10.921	16.797	9.724	10.137	588.360	
1955	26.946	34.008	82.011	81.774	149.468	88.418	36.112	27.996	10.933	15.721	9.320	10.306	573.013	
1956	36.382	54.379	85.868	71.167	120.111	82.497	38.550	30.213	11.033	16.875	9.866	10.706	567.648	
1957	36.479	54.390	25.886	109.647	122.558	51.623	32.465	27.996	9.151	10.711	5.346	9.764	496.015	
1958	22.303	56.182	81.564	90.220	102.447	36.434	5.218	24.010	9.167	14.298	8.710	10.217	460.497	
1959	27.574	51.188	77.076	24.424	117.006	74.418	38.534	30.087	10.049	8.603	8.869	10.085	477.913	
1960	34.774	56.305	100.565	96.700	101.401	66.758	39.547	30.279	11.289	16.797	9.844	10.017	574.277	
1961	30.465	50.698	45.306	61.276	62.264	45.583	12.661	16.232	7.195	13.392	7.855	8.273	361.201	
1962	15.514	56.112	95.502	92.414	67.742	72.597	22.293	13.302	11.356	16.875	9.866	10.684	484.255	
1963	31.614	54.086	37.148	106.748	80.913	14.899	8.771	5.380	4.742	12.428	8.490	7.134	372.353	
1964	36.479	55.457	85.257	66.786	78.089	15.326	5.160	4.699	6.289	13.692	7.454	9.762	384.450	
1965	13.626	12.918	14.517	86.045	126.997	27.352	4.711	7.584	6.273	10.797	6.927	8.122	325.570	
1966	16.688	7.897	37.230	63.395	143.161	87.670	37.959	29.379	10.820	15.806	9.492	9.425	468.921	
1967	7.748	54.596	72.062	30.577	17.242	69.962	19.326	20.627	9.670	15.858	9.660	9.910	337.238	
1968	5.705	33.319	32.380	60.991	27.942	88.470	39.645	30.912	11.291	15.966	7.706	10.477	364.803	
1969	36.479	51.418	66.871	35.564	66.897	25.420	4.498	4.773	3.919	4.757	5.357	6.960	312.912	
1970	34.663	49.194	51.394	98.232	55.017	76.442	39.558	30.932	11.356	16.614	9.234	8.441	481.078	
1971	34.926	55.929	100.307	116.392	148.704	88.409	39.419	30.890	11.331	16.458	8.767	4.820	656.351	
1972	5.991	45.633	21.286	31.593	149.468	87.465	39.653	30.776	10.964	14.741	9.847	10.706	458.126	
1973	35.479	54.725	79.160	116.392	98.684	71.996	38.029	29.510	10.093	16.838	9.736	5.256	565.896	
1974	11.665	56.174	89.426	109.129	127.757	82.880	39.268	30.410	10.650	13.699	5.029	10.706	586.794	
1975	31.373	52.445	100.565	101.789	140.417	88.341	39.653	30.932	11.355	16.553	8.960	5.299	627.683	
1976	35.364	45.792	75.126	97.137	135.972	82.873	36.063	26.650	7.089	7.346	4.337	10.542	564.294	
1977	32.018	26.389	43.281	116.392	128.177	86.760	38.592	30.094	10.169	14.866	9.384	10.302	546.425	
1978	36.479	55.068	72.501	46.669	36.487	43.822	17.800	22.087	5.499	7.314	9.725	10.634	364.086	
1979	35.837	50.773	58.982	103.721	130.574	63.644	10.235	6.616	3.640	3.706	2.769	10.078	480.574	
1980	9.838	55.032	80.425	88.418	117.197	54.691	7.639	6.021	9.420	15.035	9.458	10.660	463.834	
1981	30.893	46.855	20.807	68.785	18.300	77.740	27.619	22.476	5.124	4.444	2.756	3.307	329.106	
1982	36.216	22.536	12.912	13.751	9.500	13.746	6.072	20.883	9.377	10.625	9.546	7.015	172.180	
1983	20.447	56.305	74.873	116.392	135.080	88.127	38.924	29.636	11.079	16.875	9.866	10.706	608.311	
1984	36.185	44.332	41.186	39.850	149.468	86.747	26.430	9.512	3.934	3.839	2.728	3.256	447.467	
1985	32.411	27.666	42.294	106.324	112.410	78.162	37.748	27.177	9.363	12.446	4.458	3.563	494.020	
1986	7.193	8.893	60.098	35.440	25.143	80.130	36.050	28.857	10.662	11.868	9.866	10.706	324.905	
1987	36.479	55.817	56.448	78.248	124.802	85.762	31.499	18.733	10.252	16.279	9.677	9.869	532.964	
1988	36.479	48.233	100.565	81.502	140.431	86.897	36.201	27.663	11.254	16.605	8.802	4.493	599.124	
1989	27.041	56.305	90.246	79.692	48.475	59.739	23.321	21.198	4.618	3.784	5.788	4.358	424.564	
1990	20.757	37.566	66.871	116.392	137.183	88.095	37.605	30.625	11.356	16.875	9.797	9.026	582.148	
1991	24.498	15.796	56.653	56.148	97.374	23.065	5.212	4.230	3.205	3.569	2.340	2.020	294.110	
1992	4.800	42.111	68.899	23.726	72.335	80.855	28.496	23.992	8.075	5.944	5.472	5.991	370.697	
1993	36.479	51.570	92.968	84.277	91.944	88.043	35.146	14.333	4.535	4.165	3.154	3.239	509.853	
1994	35.031	45.028	88.937	65.257	17.591	38.191	14.493	14.695	5.875	5.740	3.057	3.274	337.170	
1995	35.960	56.090	100.565	116.392	149.468	88.470	39.564	30.932	11.322	16.845	9.805	6.584	661.998	
1996	36.162	41.099	75.780	103.305	80.154	88.470	39.653	30.932	11.356	16.875	9.866	10.689	544.341	
1997	36.250	56.305	59.582	93.987	99.542	77.655	26.423	22.95						

A.69. *Niii8 – Category D***Summary table**

Desktop Version 2, Generated on 2015-03-09

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii8

Annual Flows (Mill. cu. m or index values):

MAR = 1006,848

S.Dev. = 517,165

CV = 0,514

Q75 = 21,710

Q75/MMF = 0,259

BFI Index = 0,392

CV(JJA+JFM) Index = 2,086

Ecological Category = D

Total IFR = 219,445 (21,80 %MAR)

Maint. Lowflow = 62,289 (6,19 %MAR)

Drought Lowflow = 62,289 (6,19 %MAR)

Maint. Highflow = 157,156 (15,61 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	59,200	66,932	1,131	2,997	2,997	10,628	13,625
Nov	117,659	99,647	0,847	3,425	3,425	15,167	18,592
Dec	148,066	105,307	0,711	9,608	9,608	18,036	27,645
Jan	177,940	284,406	1,598	9,700	9,700	23,975	33,675
Feb	165,829	155,350	0,937	9,042	9,042	42,388	51,430
Mar	125,811	118,692	0,943	9,535	9,535	23,340	32,875
Apr	73,052	45,907	0,628	3,326	3,326	7,090	10,416
May	42,309	23,472	0,555	3,392	3,392	5,479	8,870
Jun	28,086	16,938	0,603	3,154	3,154	0,000	3,154
Jul	24,199	30,429	1,257	2,960	2,960	5,303	8,263
Aug	18,476	16,990	0,920	2,683	2,683	0,000	2,683
Sep	26,222	42,320	1,614	2,467	2,467	5,749	8,216

Rule curve

Desktop Version 2, Generated on 2015-03-09

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii8

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	20.668	20.509	20.150	19.406	18.021	15.739	12.518	8.809	5.638	4.164
Nov	29.446	29.264	28.884	28.134	26.728	24.273	20.369	14.945	8.899	5.095
Dec	54.187	49.447	45.338	41.610	37.894	31.671	27.580	21.895	15.559	11.573
Jan	65.904	59.626	54.211	49.349	44.585	36.618	31.667	24.786	17.117	12.292
Feb	100.353	89.314	79.866	71.516	63.555	50.277	42.807	32.426	20.855	13.574
Mar	53.816	53.504	52.855	51.570	49.163	44.961	38.279	28.993	18.644	12.132
Apr	16.248	16.132	15.867	15.321	14.302	12.624	10.255	7.527	5.196	4.111
May	14.079	13.982	13.763	13.309	12.463	11.070	9.103	6.839	4.903	4.003
Jun	5.850	5.824	5.766	5.645	5.420	5.050	4.527	3.925	3.410	3.171
Jul	13.030	12.939	12.732	12.305	11.509	10.199	8.348	6.218	4.397	3.550
Aug	4.975	4.953	4.904	4.801	4.610	4.295	3.850	3.338	2.901	2.697
Sep	12.748	12.656	12.446	12.011	11.201	9.868	7.985	5.818	3.964	3.103

Reserve Flows without High Flows

Oct	5.558	5.534	5.478	5.364	5.150	4.798	4.301	3.729	3.240	3.013
Nov	6.828	6.802	6.750	6.645	6.450	6.109	5.567	4.814	3.974	3.446
Dec	19.157	19.086	18.938	18.645	18.098	17.141	15.620	13.506	11.151	9.668
Jan	19.339	19.267	19.118	18.823	18.270	17.304	15.769	13.635	11.257	9.760
Feb	18.027	17.960	17.821	17.546	17.031	16.131	14.699	12.710	10.493	9.098
Mar	19.011	18.941	18.794	18.504	17.960	17.011	15.501	13.404	11.066	9.595
Apr	6.168	6.141	6.080	5.952	5.715	5.325	4.773	4.139	3.596	3.344
May	6.290	6.263	6.200	6.070	5.828	5.430	4.868	4.221	3.667	3.410
Jun	5.850	5.824	5.766	5.645	5.420	5.050	4.527	3.925	3.410	3.171
Jul	5.490	5.466	5.411	5.298	5.087	4.740	4.249	3.684	3.201	2.976
Aug	4.975	4.953	4.904	4.801	4.610	4.295	3.850	3.338	2.901	2.697
Sep	4.575	4.555	4.510	4.415	4.239	3.950	3.541	3.070	2.667	2.480

Natural Duration curves

Oct	125.820	82.810	68.830	51.020	37.470	32.430	27.690	18.290	15.100	6.820
Nov	253.980	168.560	144.090	113.130	87.230	69.990	53.320	46.360	34.930	13.840
Dec	275.900	200.660	167.610	136.700	124.100	104.050	91.210	71.560	58.320	26.160
Jan	293.870	209.550	192.200	146.750	116.990	101.830	93.590	81.480	64.940	24.100
Feb	353.430	241.480	152.050	132.680	109.790	88.330	82.120	71.150	57.720	37.570
Mar	213.460	163.340	136.360	125.480	112.760	86.000	75.410	59.510	46.030	28.750
Apr	126.890	101.790	81.780	70.680	66.400	59.910	51.790	40.470	28.720	21.500
May	81.650	60.590	48.130	40.810	36.980	30.840	28.130	23.760	18.940	13.640
Jun	52.400	38.550	34.270	26.890	24.570	19.570	17.000	15.300	11.900	8.180
Jul	40.450	28.670	25.870	21.490	17.010	14.310	12.400	9.690	8.260	4.780
Aug	37.850	23.500	19.160	16.540	14.310	12.600	10.100	7.710	5.930	4.560
Sep	43.510	31.500	23.000	20.790	16.510	13.910	12.110	9.050	5.700	3.140

Hydrological time series

Total Runoff : Niii8

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	20.624	29.243	43.342	17.535	26.956	53.700	15.601	12.768	5.244	7.798	3.213	12.274	248.299
1921	20.339	29.446	54.187	46.751	45.883	24.458	6.333	5.647	4.563	7.357	4.974	12.627	262.565
1922	20.442	29.446	50.189	53.489	66.560	38.279	9.669	9.103	3.799	5.003	2.944	3.367	292.288
1923	13.745	17.119	52.108	32.913	65.823	52.499	15.654	13.676	5.645	9.887	3.559	12.688	295.315
1924	18.119	28.941	54.126	36.618	25.745	53.816	16.248	14.019	5.768	12.706	4.879	12.724	283.707
1925	19.156	13.657	19.236	24.786	27.159	52.506	9.147	7.977	5.050	7.577	3.069	12.446	201.766
1926	12.055	7.786	15.559	13.516	60.963	48.411	11.219	7.187	3.396	11.550	4.586	6.736	202.964
1927	20.337	24.023	33.384	64.315	47.438	20.076	5.514	4.249	3.171	3.550	2.901	11.616	240.574
1928	15.739	17.260	17.013	13.092	13.574	53.816	16.006	13.673	5.796	12.893	4.709	12.748	196.320
1929	20.668	28.884	35.042	55.044	71.134	42.421	8.495	6.804	3.446	3.967	3.786	7.611	287.301
1930	4.499	11.454	18.996	13.214	17.252	13.784	6.752	5.612	3.225	4.116	2.870	3.103	104.877
1931	4.164	5.095	12.584	12.292	84.206	51.943	15.321	14.048	5.838	12.524	4.174	5.801	227.990
1932	10.777	26.866	45.338	50.293	73.798	37.901	8.067	6.839	3.439	8.348	3.979	4.395	280.041
1933	5.638	29.412	54.187	65.904	57.881	52.784	16.134	14.079	5.850	13.030	4.975	12.690	332.563
1934	10.934	28.198	47.041	39.051	42.209	28.993	7.527	12.545	5.672	11.247	3.836	4.582	241.835
1935	4.901	5.095	14.983	61.241	71.698	53.190	13.658	14.079	5.850	12.841	4.411	11.201	273.148
1936	19.406	29.401	25.578	65.904	100.353	52.157	14.302	11.682	4.398	6.269	2.911	12.556	344.917
1937	17.958	8.008	40.926	26.195	30.946	23.018	16.248	13.989	5.824	13.005	4.948	11.063	212.127
1938	20.633	24.874	49.447	61.995	100.353	53.816	16.132	13.907	5.766	13.001	4.968	12.748	377.639
1939	19.899	29.435	42.753	55.688	33.868	42.789	14.837	13.982	5.850	13.030	4.969	12.587	289.686
1940	14.823	26.439	54.187	39.309	48.806	30.818	14.866	13.309	4.847	10.199	4.118	8.925	270.645
1941	8.809	17.438	18.237	29.180	38.165	52.226	13.063	13.927	5.845	12.987	4.904	12.011	226.792
1942	19.550	29.138	47.184	30.870	37.984	45.061	16.248	14.079	5.850	13.030	4.975	12.748	276.717
1943	20.539	29.284	45.366	50.351	98.401	49.407	9.043	5.862	5.802	12.939	4.610	12.719	344.324
1944	20.509	18.720	12.745	30.110	16.109	53.504	12.854	11.757	5.518	12.106	4.836	10.155	208.923
1945	5.638	5.184	11.573	35.265	79.408	48.640	16.248	10.205	5.040	10.684	4.518	12.570	244.974
1946	17.781	29.247	43.337	39.655	71.516	32.868	11.453	11.936	4.920	7.174	3.242	6.317	279.446
1947	15.307	28.134	35.557	56.883	100.353	53.816	16.186	13.443	5.651	4.964	4.854	12.405	347.551
1948	16.586	29.090	27.422	65.008	75.012	49.874	16.060	14.002	5.803	11.973	3.850	7.434	322.105
1949	17.804	26.332	44.961	44.905	32.263	51.570	16.115	13.878	5.769	12.691	4.962	12.409	283.658
1950	7.736	8.954	36.972	51.398	37.196	51.699	16.193	13.424	5.578	12.533	4.975	12.746	259.405
1951	20.619	20.369	35.110	15.772	19.068	12.132	5.074	4.586	4.487	10.383	4.439	7.362	159.401
1952	9.406	21.918	38.808	16.684	52.152	40.670	15.501	8.932	4.842	10.670	4.295	9.325	233.202
1953	8.393	22.789	26.255	24.027	70.421	49.347	16.070	14.077	5.806	12.857	4.662	10.663	265.368
1954	19.326	27.238	29.865	63.147	96.287	53.816	13.037	11.501	5.707	12.974	4.930	12.025	349.852
1955	15.726	18.638	43.187	44.585	100.353	53.787	15.025	12.971	5.711	12.207	4.801	12.239	339.230
1956	20.618	28.512	45.390	38.641	78.065	50.484	15.867	13.807	5.744	13.030	4.975	12.748	327.880
1957	20.668	28.517	17.098	61.507	79.866	33.261	13.766	12.971	5.125	8.638	3.533	11.550	296.500
1958	13.178	29.386	42.940	49.349	65.555	24.788	4.360	11.467	5.130	11.194	4.606	12.126	274.078
1959	16.051	26.966	40.519	17.117	75.779	45.977	15.862	13.760	5.420	7.137	4.657	11.958	281.202
1960	19.784	29.446	54.187	53.269	64.835	41.704	16.211	13.832	5.828	12.974	4.968	11.871	328.910
1961	17.550	26.728	25.370	33.778	40.196	29.892	6.929	8.532	4.482	10.548	4.334	9.654	217.993
1962	9.800	29.352	51.116	50.657	43.282	44.961	10.255	7.426	5.850	13.030	4.975	12.719	283.422
1963	18.146	28.370	21.895	59.626	50.797	12.775	5.586	4.437	3.676	9.862	4.536	8.206	227.912
1964	20.668	29.034	45.040	36.269	49.113	13.013	4.340	4.180	4.184	10.762	4.206	11.548	232.357
1965	8.821	8.415	12.256	46.994	82.966	19.722	4.185	5.268	4.179	8.699	4.037	9.462	215.006
1966	10.408	5.981	21.930	34.736	95.500	53.369	15.663	13.493	5.673	12.268	4.856	11.119	284.997
1967	5.774	28.617	37.894	19.899	14.825	43.491	9.230	10.190	5.296	12.305	4.910	11.735	204.166
1968	4.714	18.304	19.865	33.650	20.855	53.816	16.245	14.071	5.828	12.382	4.286	12.456	216.471
1969	20.668	27.077	35.194	22.154	42.807	18.644	4.111	4.208	3.406	4.397	3.536	7.985	194.185
1970	19.727	25.999	27.963	54.211	36.112	47.106	16.215	14.079	5.850	12.844	4.774	9.868	274.747
1971	19.863	29.264	54.030	65.904	99.765	53.781	16.167	14.063	5.841	12.732	4.624	5.263	381.298
1972	4.863	24.273	15.139	20.358	100.353	53.255	16.248	14.020	5.721	11.509	4.969	12.748	283.458
1973	20.150	28.680	41.610	65.904	62.967	44.626	15.687	13.542	5.435	13.003	4.934	5.818	322.354
1974	7.804	29.382	47.478	61.171	83.761	50.697	16.115	13.882	5.618	10.767	3.431	12.748	342.854
1975	18.021	27.575	54.187	56.451	93.399	53.744	16.248	14.079	5.849	12.800	4.686	5.873	362.911
1976	20.090	24.350	39.498	53.538	89.997	50.694	15.009	12.463	4.447	6.242	3.211	12.540	332.078
1977	18.355	14.945	24.508	65.904	84.079	52.862	15.882	13.763	5.460	11.598	4.821	12.234	324.411
1978	20.668	28.846	38.124	27.174	25.670	28.909	8.703	10.741	3.925	6.218	4.930	12.656	216.566
1979	20.335	26.764	31.195	57.688	85.897	39.967	6.092	4.903	3.314	3.648	2.710	11.949	294.462
1980	6.857	28.828	42.310	48.332	75.919	34.973	5.196	4.679	5.213	11.719	4.845	12.690	281.561
1981	17.772	24.865	14.936	37.306	15.421	47.830	12.093	10.888	3.802	4.174	2.706	3.339	195.132
1982	20.532	13.077	11.573	12.292	9.500	12.132	4.655	10.287	5.199	8.577	4.873	8.054	120.751
1983	12.357	29.446	39.366	65.904	89.314	53.625	15.996	13.590	5.759	13.030	4.975	12.748	356.109
1984	20.516	23.642	23.616	24.091	100.353	52.855	11.683	5.996	3.410	3.743	2.697	3.276	275.877
1985	18.559	15.563	24.087	59.354	72.455	48.065	15.590	12.662	5.195	9.874	3.249	3.665	288.320
1986	5.486	6.464	31.671	22.098	19.278	49.163	15.004	13.296	5.622	9.462	4.975	12.748	195.266
1987	20.668	29.209	30.116	42.609	81.547	52.305	13.433	9.475	5.487	12.605	4.915	10.540	312.908
1988	20.668	25.533	54.187	44.432	93.410	52.938	15.056	12.845	5.816	12.837	4.636	4.848	347.206
1989	15.775	29.446	47.965	43.418	32.426	37.788	10.609	10.406	6.335	3.704	3.674	4.677	243.523
1990	12.518	20.363	35.194	65.904	90.924	53.606	15.541	13.963	5.850	13.030	4.953	10.612	342.456
1991	14.457	9.810	30.203	31.460	62.070	17.330	4.358	4.003	3.171	3.550	2.340	2.020	184.773
1992	4.245	22.565	36.249	16.802	45.871	49.568	12.396	11.460	4.771	5.243	3.573	6.752	219.496
1993	20.668	27.151	49.587	45.997	58.352	53.577	14.692	7.815	3.608	3.975	2.833	3.253	291.507
1994	19.917	23.979	47.187	35.578	15.022	25.768	7.562	7.952	4.048	5.097	2.802	3.299	198.212
1995	20.399	29.342	54.187	65.904	100.353	53.816	16.217	14.079	5.839	13.008	4.956	7.506	385.605
1996	20.504	22.075	39.840	57.421	50.277	53.816	16.248	14.079	5.850	13.030	4.975	12.726	310.840
1997	20.549	29.446	31.451	51.601	63.555	47.783	11.681	11.070	4.612	5.990	2.811	3.964	284.513
1998	18.066	26.329	53.394	45.371	25.623	15.717	6.472	7.341					

A.70. Niii9 – Category B**Summary table**

Desktop Version 2, Generated on 2015-03-11

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii9

Annual Flows (Mill. cu. m or index values):

MAR = 45,285

S.Dev. = 50,421

CV = 1,113

Q75 = 0,143

Q75/MMF = 0,038

BFI Index = 0,315

CV(JJA+JFM) Index = 4,242

Ecological Category = B

Total IFR = 17,761 (39,22 %MAR)

Maint. Lowflow = 7,516 (16,60 %MAR)

Drought Lowflow = 1,631 (3,60 %MAR)

Maint. Highflow = 10,246 (22,62 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	2,547	7,214	2,833	0,345	0,087	0,996	1,341
Nov	3,325	4,806	1,446	0,453	0,103	0,970	1,423
Dec	6,688	7,732	1,156	1,232	0,262	2,121	3,354
Jan	7,147	12,345	1,727	1,396	0,279	1,829	3,226
Feb	9,481	17,827	1,880	1,250	0,249	2,398	3,647
Mar	4,952	8,653	1,747	1,174	0,248	0,808	1,982
Apr	2,335	3,814	1,633	0,614	0,100	0,484	1,098
May	1,650	2,639	1,600	0,261	0,067	0,172	0,433
Jun	0,813	1,239	1,525	0,219	0,063	0,000	0,219
Jul	3,391	11,956	3,525	0,211	0,061	0,202	0,413
Aug	1,141	2,647	2,320	0,188	0,058	0,101	0,289
Sep	1,815	5,318	2,930	0,172	0,054	0,162	0,335

Rule curve

Desktop Version 2, Generated on 2015-03-11

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii9

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.501	1.488	1.047	0.728	0.401	0.204	0.116	0.034	0.007	0.000
Nov	1.602	1.592	1.570	1.527	1.421	1.000	0.571	0.279	0.034	0.000
Dec	5.592	5.033	4.549	4.108	3.666	2.829	1.809	1.074	0.435	0.007
Jan	5.220	4.736	4.313	3.922	3.521	2.848	1.945	1.122	0.408	0.027
Feb	6.149	5.519	4.973	4.478	3.986	2.999	2.176	1.469	0.503	0.034
Mar	2.285	2.271	2.240	2.180	1.666	1.217	0.687	0.496	0.156	0.000
Apr	1.263	1.252	1.228	1.178	1.085	0.694	0.279	0.102	0.027	0.000
May	0.500	0.496	0.487	0.468	0.434	0.258	0.116	0.061	0.000	0.000
Jun	0.262	0.260	0.256	0.247	0.230	0.150	0.068	0.027	0.000	0.000
Jul	0.473	0.469	0.461	0.443	0.360	0.170	0.054	0.020	0.007	0.000
Aug	0.335	0.333	0.327	0.279	0.197	0.102	0.034	0.014	0.000	0.000
Sep	0.384	0.381	0.374	0.360	0.211	0.129	0.061	0.020	0.007	0.000

Reserve Flows without High Flows

Oct	0.412	0.409	0.402	0.387	0.360	0.204	0.116	0.034	0.007	0.000
Nov	0.541	0.538	0.531	0.517	0.492	0.448	0.379	0.279	0.034	0.000
Dec	1.471	1.462	1.444	1.407	1.337	1.216	1.023	0.756	0.435	0.007
Jan	1.667	1.656	1.635	1.592	1.513	1.374	1.153	0.846	0.408	0.027
Feb	1.492	1.482	1.463	1.425	1.354	1.229	1.031	0.756	0.450	0.034
Mar	1.402	1.393	1.375	1.340	1.274	1.158	0.687	0.496	0.156	0.000
Apr	0.733	0.727	0.713	0.685	0.632	0.545	0.279	0.102	0.027	0.000
May	0.311	0.309	0.304	0.293	0.272	0.239	0.116	0.061	0.000	0.000
Jun	0.262	0.260	0.256	0.247	0.230	0.150	0.068	0.027	0.000	0.000
Jul	0.252	0.250	0.246	0.237	0.221	0.170	0.054	0.020	0.007	0.000
Aug	0.225	0.223	0.219	0.212	0.197	0.102	0.034	0.014	0.000	0.000
Sep	0.206	0.204	0.201	0.194	0.182	0.129	0.061	0.020	0.007	0.000

Natural Duration curves

Oct	4.937	2.434	1.047	0.728	0.401	0.204	0.116	0.034	0.007	0.000
Nov	10.975	4.434	3.454	1.897	1.421	1.000	0.571	0.279	0.034	0.000
Dec	16.293	11.669	7.840	5.664	4.468	2.829	1.809	1.074	0.435	0.007
Jan	14.035	11.138	8.133	5.229	4.080	3.203	1.945	1.122	0.408	0.027
Feb	20.257	13.450	8.310	5.073	4.155	2.999	2.176	1.469	0.503	0.034
Mar	11.601	7.446	4.563	2.652	1.666	1.217	0.687	0.496	0.156	0.000
Apr	5.841	3.210	2.217	1.557	1.142	0.694	0.279	0.102	0.027	0.000
May	5.488	2.584	1.319	0.966	0.544	0.258	0.116	0.061	0.000	0.000
Jun	2.788	1.278	0.782	0.571	0.286	0.150	0.068	0.027	0.000	0.000
Jul	2.972	1.850	0.877	0.510	0.360	0.170	0.054	0.020	0.007	0.000
Aug	3.502	1.068	0.462	0.279	0.197	0.102	0.034	0.014	0.000	0.000
Sep	3.495	1.680	1.074	0.374	0.211	0.129	0.061	0.020	0.007	0.000

Hydrological time series

Total Runoff : Niii9

Desktop (Version 2) Modified Flow Data for Ecological Category B														
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL	
1920	1.494	1.536	1.455	0.027	0.034	0.088	0.007	0.000	0.000	0.000	0.000	0.000	0.383	5.023
1921	1.047	1.602	5.330	4.125	3.849	2.155	1.057	0.443	0.236	0.245	0.335	0.340	20.765	
1922	0.728	1.599	5.069	5.220	4.876	2.191	1.181	0.468	0.247	0.360	0.218	0.129	22.286	
1923	0.476	1.504	4.414	3.443	3.986	2.267	1.226	0.483	0.254	0.434	0.286	0.238	19.011	
1924	0.252	1.602	4.690	5.008	6.149	2.285	1.263	0.500	0.262	0.473	0.335	0.379	23.198	
1925	0.932	0.571	0.891	1.095	0.265	0.156	0.048	0.027	0.020	0.014	0.007	0.054	4.080	
1926	0.000	0.000	0.925	0.578	0.503	0.095	0.000	0.000	0.000	0.007	0.000	0.000	2.108	
1927	0.000	0.095	0.326	2.863	0.680	0.585	0.204	0.000	0.000	0.000	0.000	0.366	5.119	
1928	0.000	0.041	0.007	0.000	1.115	1.217	0.095	0.061	0.034	0.020	0.014	0.068	2.672	
1929	0.116	0.095	0.388	3.628	1.863	2.183	0.068	0.041	0.027	0.014	0.007	0.007	8.437	
1930	0.007	0.014	1.836	0.027	0.163	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.047	
1931	0.000	0.000	0.027	0.027	4.037	2.121	0.020	0.014	0.007	0.007	0.000	0.000	6.259	
1932	0.000	0.000	2.829	0.204	0.034	0.034	0.048	0.000	0.000	0.469	0.000	0.000	3.618	
1933	0.000	0.524	5.592	3.716	0.864	0.979	0.224	0.116	0.068	0.422	0.335	0.383	13.222	
1934	1.408	1.000	3.967	0.408	3.986	0.170	0.075	0.048	0.027	0.014	0.007	0.007	11.117	
1935	0.007	0.000	1.455	4.620	4.478	0.449	0.224	0.499	0.262	0.463	0.330	0.360	13.147	
1936	0.238	1.587	3.666	4.459	5.905	2.230	1.215	0.482	0.254	0.453	0.279	0.211	20.978	
1937	0.102	0.061	4.108	0.558	4.630	0.734	1.158	0.224	0.136	0.457	0.054	0.041	12.263	
1938	0.279	1.555	4.633	2.353	5.199	2.273	1.199	0.479	0.252	0.471	0.335	0.377	19.406	
1939	1.013	1.582	3.703	3.982	2.530	1.013	1.259	0.500	0.260	0.459	0.328	0.372	17.003	
1940	0.388	1.414	3.666	1.618	0.762	0.544	0.218	0.041	0.027	0.014	0.007	0.007	8.706	
1941	0.007	0.211	1.809	0.687	1.516	0.408	0.054	0.034	0.020	0.014	0.007	0.082	4.849	
1942	0.367	1.401	4.750	3.935	2.509	2.198	1.078	0.492	0.259	0.473	0.335	0.383	18.181	
1943	1.488	1.238	1.870	1.319	2.999	0.496	0.143	0.095	0.075	0.034	0.020	0.381	10.158	
1944	1.421	0.809	0.755	0.816	2.176	2.283	1.245	0.488	0.257	0.445	0.320	0.190	11.205	
1945	0.116	0.068	4.032	5.095	4.694	1.476	0.619	0.388	0.219	0.143	0.088	0.054	16.992	
1946	0.041	0.503	4.291	3.150	4.102	2.285	1.261	0.496	0.260	0.461	0.329	0.313	17.493	
1947	0.197	1.593	5.592	2.853	2.788	2.180	0.714	0.333	0.197	0.122	0.075	0.061	16.705	
1948	0.054	0.632	2.475	1.115	0.714	0.687	1.157	0.499	0.256	0.440	0.299	0.177	8.505	
1949	0.170	0.109	1.251	1.945	0.177	1.544	0.102	0.156	0.007	0.000	0.000	0.000	5.461	
1950	0.007	0.000	3.008	0.136	1.680	1.972	0.014	0.000	0.000	0.000	0.129	0.000	6.946	
1951	0.068	0.000	3.831	1.122	0.476	0.592	0.000	0.000	0.000	0.466	0.041	0.000	6.596	
1952	0.000	0.027	3.325	3.297	5.872	1.666	0.401	0.116	0.068	0.048	0.027	0.020	14.867	
1953	0.007	1.374	0.245	0.211	4.489	0.925	0.292	0.485	0.249	0.388	0.231	0.375	9.271	
1954	0.728	0.564	0.707	1.754	5.010	2.240	1.213	0.476	0.251	0.426	0.258	0.156	13.783	
1955	0.258	0.279	1.074	2.142	6.149	2.285	1.263	0.499	0.262	0.466	0.331	0.374	15.381	
1956	0.626	1.602	3.638	2.441	5.080	1.965	0.945	0.416	0.190	0.473	0.335	0.384	18.095	
1957	1.501	1.602	5.347	4.533	5.711	2.147	1.140	0.454	0.241	0.299	0.184	0.109	23.268	
1958	0.122	1.600	4.277	1.938	2.754	0.666	0.279	0.434	0.109	0.068	0.041	0.378	12.665	
1959	0.551	0.279	4.295	0.592	3.695	0.666	1.229	0.231	0.061	0.041	0.020	0.041	11.700	
1960	0.061	1.462	5.108	5.220	5.262	2.261	1.142	0.462	0.244	0.333	0.197	0.382	22.134	
1961	1.475	0.707	1.550	3.734	0.190	1.510	0.864	0.109	0.027	0.020	0.014	0.007	10.207	
1962	0.007	0.714	5.592	4.480	4.245	2.245	1.263	0.497	0.261	0.473	0.335	0.384	20.495	
1963	1.478	1.074	0.748	4.070	1.176	0.197	1.148	0.163	0.095	0.061	0.041	0.020	10.271	
1964	1.489	1.602	5.033	3.307	5.860	1.204	0.694	0.413	0.226	0.252	0.102	0.061	20.243	
1965	0.272	1.421	0.367	0.401	4.973	0.014	0.000	0.000	0.000	0.000	0.014	0.020	7.482	
1966	0.000	1.122	3.207	1.775	5.379	2.271	1.241	0.492	0.258	0.453	0.323	0.218	16.740	
1967	0.143	1.559	3.947	1.992	0.415	2.274	1.174	0.466	0.246	0.347	0.211	0.122	12.896	
1968	0.129	0.510	5.519	4.128	1.809	2.220	1.099	0.446	0.237	0.258	0.156	0.163	16.674	
1969	1.488	1.504	1.088	1.326	3.414	0.238	0.503	0.088	0.054	0.034	0.020	0.381	10.139	
1970	1.499	1.490	1.027	5.008	1.999	1.414	1.243	0.500	0.262	0.473	0.334	0.374	15.624	
1971	0.755	0.551	3.909	4.855	6.149	2.285	1.263	0.499	0.262	0.472	0.334	0.367	21.701	
1972	0.551	0.442	0.415	3.727	6.149	2.285	1.263	0.500	0.262	0.470	0.334	0.384	16.781	
1973	1.501	1.585	3.395	4.953	4.872	1.938	0.768	0.421	0.230	0.472	0.109	0.068	20.313	
1974	0.054	1.586	4.389	4.652	5.519	2.256	1.213	0.478	0.252	0.429	0.265	0.384	21.476	
1975	1.501	1.602	4.934	5.072	4.300	2.255	1.260	0.500	0.262	0.472	0.333	0.367	22.857	
1976	0.592	1.558	5.424	4.489	6.149	2.285	1.263	0.500	0.262	0.469	0.333	0.383	23.706	
1977	1.501	1.477	3.020	5.220	5.434	2.211	1.230	0.487	0.256	0.443	0.299	0.197	21.774	
1978	1.498	1.592	4.412	3.223	5.141	0.687	0.979	0.272	0.163	0.473	0.330	0.374	19.144	
1979	0.660	0.381	1.217	3.692	1.646	0.068	0.041	0.027	0.014	0.007	0.007	0.231	7.991	
1980	0.034	0.700	1.027	2.848	2.774	0.027	0.007	0.000	0.129	0.014	0.014	0.381	7.955	
1981	1.013	1.471	3.257	3.765	4.423	1.190	0.204	0.116	0.068	0.048	0.027	0.014	15.596	
1982	0.401	0.918	0.007	0.802	0.000	0.000	0.000	0.075	0.014	0.000	0.000	0.000	2.217	
1983	0.007	1.595	4.163	5.220	6.149	2.285	1.263	0.500	0.262	0.473	0.335	0.384	22.635	
1984	1.497	1.537	1.904	4.695	6.149	2.280	1.257	0.496	0.261	0.462	0.330	0.347	21.214	
1985	0.789	1.481	1.102	3.922	3.400	0.510	0.136	0.088	0.048	0.034	0.020	0.014	11.544	
1986	0.238	0.728	5.499	3.239	1.034	0.462	0.435	0.150	0.088	0.054	0.184	0.384	12.495	
1987	1.501	1.602	4.993	3.882	4.699	2.250	1.254	0.493	0.260	0.470	0.327	0.370	22.102	
1988	0.918	1.549	3.691	1.394	2.931	0.721	0.374	0.211	0.150	0.082	0.048	0.027	12.096	
1989	0.034	1.572	5.592	4.313	3.631	2.033	1.232	0.447	0.238	0.265	0.156	0.095	19.607	
1990	0.068	1.527	4.549	4.173	5.855	2.277	1.228	0.493	0.256	0.444	0.313	0.184	21.366	
1991	0.190	0.258	3.497	0.177	4.505	1.251	0.027	0.007	0.000	0.000	0.000	0.000	9.912	
1992	0.000	0.007	0.734	2.659	2.332	0.000	0.959	0.000	0.000	0.000	0.000	0.375	7.066	
1993	1.501	1.597	4.845	4.736	4.456	2.239	1.177	0.468	0.247	0.360	0.218	0.129	21.974	
1994	1.095	1.495	4.901	3.521	0.558	0.394	0.428	0.163	0.088	0.054	0.034	0.020	12.751	
1995	0.721	1.319	5.592	5.220	6.149	2.285	1.263	0.500	0.262	0.473	0.335	0.379	24.497	
1996	1.501	1.238	4.623	4.345	3.114	2.285	1.263	0.498	0.262	0.467	0.332	0.383	20.310	
1997	1.501	1.602	5.592	5.220	4.234	2.285	1.178	0.471	0.247	0.354	0.211	0.129	23.024	
1998	1.486	0.755	5.178	4.088	2.496	2.213	1.199	0.423	0.226	0.170	0.102	0.061	18.398	
1999	0.095	0.034	5.592	4.981	6.149	2.266	1.257	0.500	0.262	0.470	0.333	0.377	22.316	
2000	1.475	1.602	5.592	5.220	4.687	2.271	1.241	0.491	0.258	0.451	0.323	0.384	23.994	
2001	1.491	1.577	2.285	2.807	5.258	1.788	1.204	0.460	0.243	0.473	0.335	0.384	18.304	
2002	1.501	1.566	2.536	1.238	5.711	0.408	0.224	0.143	0.082	0.054	0.034	0.020	13.517	
2003	0.014	1.581	1.639	5.220	5.920	2.283	1.260</							

A.71. Niii9 – Category C**Summary table**

Desktop Version 2, Generated on 2015-03-11

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii9

Annual Flows (Mill. cu. m or index values):

MAR = 45,285

S.Dev. = 50,421

CV = 1,113

Q75 = 0,143

Q75/MMF = 0,038

BFI Index = 0,315

CV(JJA+JFM) Index = 4,242

Ecological Category = C

Total IFR = 13,632 (30,10 %MAR)

Maint. Lowflow = 4,146 (9,16 %MAR)

Drought Lowflow = 1,621 (3,58 %MAR)

Maint. Highflow = 9,486 (20,95 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	2,547	7,214	2,833	0,217	0,087	0,889	1,106
Nov	3,325	4,806	1,446	0,274	0,103	0,881	1,154
Dec	6,688	7,732	1,156	0,670	0,262	1,963	2,633
Jan	7,147	12,345	1,727	0,729	0,279	1,734	2,463
Feb	9,481	17,827	1,880	0,668	0,249	2,275	2,944
Mar	4,952	8,653	1,747	0,644	0,248	0,734	1,378
Apr	2,335	3,814	1,633	0,301	0,100	0,399	0,700
May	1,650	2,639	1,600	0,152	0,057	0,164	0,316
Jun	0,813	1,239	1,525	0,133	0,063	0,000	0,133
Jul	3,391	11,956	3,525	0,128	0,061	0,202	0,331
Aug	1,141	2,647	2,320	0,121	0,058	0,101	0,222
Sep	1,815	5,318	2,930	0,110	0,054	0,144	0,254

Rule curve

Desktop Version 2, Generated on 2015-03-11

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii9

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.336	1.325	1.047	0.728	0.401	0.204	0.116	0.034	0.007	0.000
Nov	1.432	1.423	1.403	1.365	1.294	1.000	0.571	0.279	0.034	0.000
Dec	4.746	4.233	3.792	3.397	3.014	2.373	1.809	1.074	0.435	0.007
Jan	4.384	3.930	3.538	3.185	2.838	2.258	1.893	1.122	0.408	0.027
Feb	5.350	4.756	4.246	3.792	3.353	2.620	2.176	1.469	0.503	0.034
Mar	1.773	1.762	1.740	1.695	1.612	1.217	0.687	0.496	0.156	0.000
Apr	0.875	0.868	0.852	0.819	0.758	0.657	0.279	0.102	0.027	0.000
May	0.399	0.396	0.388	0.374	0.347	0.258	0.116	0.061	0.000	0.000
Jun	0.179	0.178	0.176	0.171	0.161	0.145	0.068	0.027	0.000	0.000
Jul	0.411	0.408	0.401	0.386	0.359	0.170	0.054	0.020	0.007	0.000
Aug	0.283	0.281	0.276	0.266	0.197	0.102	0.034	0.014	0.000	0.000
Sep	0.317	0.315	0.310	0.299	0.211	0.129	0.061	0.020	0.007	0.000

Reserve Flows without High Flows

Oct	0.293	0.291	0.287	0.278	0.260	0.204	0.116	0.034	0.007	0.000
Nov	0.381	0.379	0.375	0.366	0.350	0.322	0.278	0.216	0.034	0.000
Dec	0.933	0.928	0.918	0.897	0.859	0.792	0.685	0.536	0.371	0.007
Jan	1.017	1.011	1.000	0.977	0.935	0.861	0.744	0.580	0.398	0.027
Feb	0.931	0.926	0.916	0.895	0.856	0.787	0.679	0.528	0.359	0.034
Mar	0.898	0.893	0.883	0.863	0.825	0.760	0.657	0.496	0.156	0.000
Apr	0.407	0.404	0.397	0.384	0.358	0.316	0.256	0.102	0.027	0.000
May	0.206	0.205	0.202	0.195	0.183	0.162	0.116	0.061	0.000	0.000
Jun	0.179	0.178	0.176	0.171	0.161	0.145	0.068	0.027	0.000	0.000
Jul	0.174	0.173	0.170	0.165	0.156	0.140	0.054	0.020	0.007	0.000
Aug	0.164	0.163	0.161	0.156	0.147	0.102	0.034	0.014	0.000	0.000
Sep	0.149	0.148	0.146	0.141	0.134	0.121	0.061	0.020	0.007	0.000

Natural Duration curves

Oct	4.937	2.434	1.047	0.728	0.401	0.204	0.116	0.034	0.007	0.000
Nov	10.975	4.434	3.454	1.897	1.421	1.000	0.571	0.279	0.034	0.000
Dec	16.293	11.669	7.840	5.664	4.468	2.829	1.809	1.074	0.435	0.007
Jan	14.035	11.138	8.133	5.229	4.080	3.203	1.945	1.122	0.408	0.027
Feb	20.257	13.450	8.310	5.073	4.155	2.999	2.176	1.469	0.503	0.034
Mar	11.601	7.446	4.563	2.652	1.666	1.217	0.687	0.496	0.156	0.000
Apr	5.841	3.210	2.217	1.557	1.142	0.694	0.279	0.102	0.027	0.000
May	5.488	2.584	1.319	0.966	0.544	0.258	0.116	0.061	0.000	0.000
Jun	2.788	1.278	0.782	0.571	0.286	0.150	0.068	0.027	0.000	0.000
Jul	2.972	1.850	0.877	0.510	0.360	0.170	0.054	0.020	0.007	0.000
Aug	3.502	1.068	0.462	0.279	0.197	0.102	0.034	0.014	0.000	0.000
Sep	3.495	1.680	1.074	0.374	0.211	0.129	0.061	0.020	0.007	0.000

Hydrological time series

Total Runoff : Niii9

Desktop (Version 2) Modified Flow Data for Ecological Category C													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	1.330	1.373	1.455	0.027	0.034	0.088	0.007	0.000	0.000	0.000	0.000	0.317	4.630
1921	1.047	1.432	4.506	3.367	3.232	1.676	0.740	0.354	0.164	0.245	0.283	0.294	17.339
1922	0.728	1.429	4.266	4.384	4.157	1.703	0.821	0.374	0.171	0.359	0.218	0.129	18.737
1923	0.476	1.345	3.670	2.771	3.353	1.760	0.851	0.385	0.175	0.379	0.267	0.238	15.669
1924	0.252	1.432	3.920	4.185	5.350	1.773	0.875	0.399	0.179	0.411	0.283	0.313	19.372
1925	0.932	0.571	0.891	1.095	0.265	0.156	0.048	0.027	0.020	0.014	0.007	0.054	4.080
1926	0.000	0.000	0.925	0.578	0.503	0.095	0.000	0.000	0.000	0.007	0.000	0.000	2.108
1927	0.000	0.095	0.326	2.271	0.680	0.585	0.204	0.000	0.000	0.000	0.000	0.304	4.465
1928	0.000	0.041	0.007	0.000	1.115	1.217	0.095	0.061	0.034	0.020	0.014	0.068	2.672
1929	0.116	0.095	0.388	2.930	1.863	1.697	0.068	0.041	0.027	0.014	0.007	0.007	7.254
1930	0.007	0.014	1.836	0.027	0.163	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.047
1931	0.000	0.000	0.027	0.027	3.398	1.651	0.020	0.014	0.007	0.007	0.000	0.000	5.151
1932	0.000	0.000	2.373	0.204	0.034	0.034	0.048	0.000	0.000	0.408	0.000	0.000	3.101
1933	0.000	0.524	4.746	3.006	0.864	0.979	0.224	0.116	0.068	0.370	0.283	0.317	11.497
1934	1.308	1.000	3.275	0.408	3.353	0.170	0.075	0.048	0.027	0.014	0.007	0.007	9.693
1935	0.007	0.000	1.455	3.822	3.792	0.449	0.224	0.398	0.179	0.403	0.279	0.299	11.306
1936	0.238	1.419	3.014	3.673	5.120	1.732	0.844	0.384	0.174	0.394	0.266	0.211	17.469
1937	0.102	0.061	3.397	0.558	3.930	0.734	0.806	0.224	0.136	0.397	0.054	0.041	10.440
1938	0.279	1.390	3.868	2.079	4.457	1.764	0.833	0.382	0.174	0.410	0.282	0.312	16.230
1939	1.013	1.414	3.046	3.239	2.352	1.013	0.873	0.399	0.178	0.400	0.277	0.309	14.512
1940	0.388	1.292	3.014	1.618	0.762	0.544	0.218	0.041	0.027	0.014	0.007	0.007	7.932
1941	0.007	0.211	1.809	0.687	1.516	0.408	0.054	0.034	0.020	0.014	0.007	0.082	4.849
1942	0.367	1.288	3.974	3.196	2.342	1.709	0.753	0.393	0.178	0.411	0.283	0.317	15.211
1943	1.325	1.238	1.870	1.319	2.620	0.496	0.143	0.095	0.075	0.034	0.020	0.315	9.550
1944	1.309	0.809	0.755	0.816	2.176	1.771	0.864	0.390	0.176	0.387	0.272	0.190	9.914
1945	0.116	0.068	3.332	4.267	3.989	1.476	0.619	0.322	0.154	0.143	0.088	0.054	14.628
1946	0.041	0.503	3.560	2.518	3.457	1.773	0.874	0.396	0.178	0.401	0.278	0.291	14.269
1947	0.197	1.424	4.746	2.262	2.479	1.695	0.661	0.314	0.150	0.122	0.075	0.061	14.187
1948	0.054	0.632	2.278	1.115	0.714	0.687	0.805	0.398	0.176	0.383	0.269	0.177	7.688
1949	0.170	0.109	1.251	1.893	0.177	1.544	0.102	0.156	0.007	0.000	0.000	0.000	5.409
1950	0.007	0.000	2.445	0.136	1.680	1.638	0.014	0.000	0.000	0.000	0.129	0.000	6.049
1951	0.068	0.000	3.157	1.122	0.476	0.592	0.000	0.000	0.000	0.405	0.041	0.000	5.861
1952	0.000	0.027	2.719	2.645	5.089	1.612	0.401	0.116	0.068	0.048	0.027	0.020	12.772
1953	0.007	1.280	0.245	0.211	3.802	0.925	0.292	0.387	0.172	0.364	0.231	0.310	8.226
1954	0.728	0.564	0.707	1.754	4.280	1.740	0.842	0.380	0.173	0.371	0.258	0.156	11.953
1955	0.258	0.279	1.074	1.983	5.350	1.773	0.875	0.398	0.179	0.405	0.280	0.310	13.164
1956	0.626	1.432	2.990	2.119	4.346	1.637	0.713	0.333	0.150	0.411	0.283	0.317	15.357
1957	1.336	1.432	4.521	3.741	4.937	1.671	0.794	0.363	0.167	0.299	0.184	0.109	19.553
1958	0.122	1.430	3.547	1.890	2.456	0.666	0.279	0.347	0.109	0.068	0.041	0.313	11.267
1959	0.551	0.279	3.563	0.592	3.094	0.666	0.852	0.231	0.061	0.041	0.020	0.041	9.992
1960	0.061	1.307	4.302	4.384	4.516	1.755	0.795	0.369	0.169	0.333	0.197	0.317	18.505
1961	1.313	0.707	1.550	3.023	0.190	1.510	0.695	0.109	0.027	0.020	0.014	0.007	9.165
1962	0.007	0.714	4.746	3.692	3.584	1.743	0.875	0.396	0.179	0.411	0.283	0.317	16.948
1963	1.316	1.074	0.748	3.318	1.176	0.197	0.799	0.163	0.095	0.061	0.041	0.020	9.008
1964	1.326	1.432	4.233	2.653	5.078	1.204	0.657	0.331	0.158	0.252	0.102	0.061	17.487
1965	0.272	1.294	0.367	0.401	4.246	0.014	0.000	0.000	0.000	0.000	0.014	0.020	6.628
1966	0.000	1.122	2.617	1.775	4.625	1.763	0.861	0.392	0.177	0.394	0.273	0.218	14.217
1967	0.143	1.394	3.258	1.915	0.415	1.765	0.816	0.372	0.170	0.347	0.211	0.122	10.927
1968	0.129	0.510	4.679	3.369	1.809	1.725	0.767	0.356	0.165	0.258	0.156	0.163	14.087
1969	1.325	1.345	1.088	1.326	2.883	0.238	0.503	0.088	0.054	0.034	0.020	0.316	9.220
1970	1.335	1.333	1.027	4.185	1.999	1.414	0.862	0.399	0.179	0.411	0.282	0.310	13.736
1971	0.755	0.551	3.225	4.042	5.350	1.773	0.875	0.398	0.179	0.410	0.281	0.304	18.145
1972	0.551	0.442	0.415	3.017	5.350	1.773	0.875	0.399	0.179	0.408	0.282	0.317	14.008
1973	1.336	1.417	2.780	4.133	4.153	1.635	0.673	0.337	0.161	0.410	0.109	0.068	17.213
1974	0.054	1.417	3.648	3.852	4.756	1.751	0.842	0.381	0.174	0.374	0.263	0.317	17.831
1975	1.336	1.432	4.143	4.245	3.633	1.751	0.873	0.399	0.179	0.410	0.281	0.304	18.985
1976	0.592	1.393	4.593	3.700	5.350	1.773	0.875	0.399	0.179	0.407	0.281	0.317	19.858
1977	1.336	1.321	2.456	4.384	4.676	1.718	0.853	0.388	0.176	0.386	0.269	0.197	18.161
1978	1.334	1.423	3.669	2.581	4.403	0.687	0.721	0.272	0.146	0.411	0.278	0.310	16.235
1979	0.660	0.381	1.217	2.986	1.646	0.068	0.041	0.027	0.014	0.007	0.007	0.231	7.285
1980	0.034	0.700	1.027	2.258	2.469	0.027	0.007	0.000	0.129	0.014	0.014	0.316	6.994
1981	1.013	1.315	2.660	3.049	3.743	1.190	0.204	0.116	0.068	0.048	0.027	0.014	13.448
1982	0.401	0.918	0.007	0.802	0.000	0.000	0.000	0.075	0.014	0.000	0.000	0.000	2.217
1983	0.007	1.425	3.446	4.384	5.350	1.773	0.875	0.399	0.179	0.411	0.283	0.317	18.850
1984	1.333	1.374	1.904	3.892	5.350	1.769	0.871	0.395	0.179	0.402	0.279	0.295	18.043
1985	0.789	1.325	1.102	3.185	2.874	0.510	0.136	0.088	0.048	0.034	0.020	0.014	10.125
1986	0.238	0.728	4.661	2.595	1.034	0.462	0.435	0.150	0.088	0.054	0.184	0.317	10.947
1987	1.336	1.432	4.197	3.150	3.994	1.747	0.869	0.394	0.178	0.408	0.276	0.307	18.287
1988	0.918	1.385	3.036	1.394	2.575	0.721	0.374	0.211	0.145	0.082	0.048	0.027	10.915
1989	0.034	1.405	4.746	3.538	3.038	1.643	0.854	0.357	0.165	0.265	0.156	0.095	16.297
1990	0.068	1.365	3.792	3.411	5.073	1.767	0.852	0.393	0.176	0.387	0.271	0.184	17.738
1991	0.190	0.258	2.868	0.177	3.816	1.251	0.027	0.007	0.000	0.000	0.000	0.000	8.594
1992	0.000	0.007	0.734	2.159	2.260	0.000	0.716	0.000	0.000	0.000	0.000	0.310	6.187
1993	1.336	1.428	4.061	3.930	3.772	1.739	0.818	0.374	0.171	0.359	0.218	0.129	18.334
1994	1.095	1.337	4.113	2.838	0.558	0.394	0.428	0.163	0.088	0.054	0.034	0.020	11.121
1995	0.721	1.264	4.746	4.384	5.350	1.773	0.875	0.399	0.179	0.411	0.282	0.314	20.699
1996	1.336	1.238	3.859	3.568	2.693	1.773	0.875	0.397	0.179	0.406	0.280	0.317	16.921
1997	1.336	1.432	4.746	4.384	3.574	1.773	0.819	0.376	0.171	0.354	0.211	0.129	19.306
1998	1.323	0.755	4.366	3.334	2.336	1.720	0.833	0.338	0.158	0.170	0.102	0.061	15.496
1999	0.095	0.034	4.746	4.160	5.350	1.759	0.871	0.399	0.179	0.409	0.281	0.313	18.595
2000	1.313	1.432	4.746	4.384	3.983	1.762	0.860	0.392	0.177	0.392	0.273	0.317	20.032
2001	1.328	1.409	2.226	2.227	4.512	1.622	0.836	0.367	0.169	0.411	0.283	0.317	15.707
2002	1.336	1.400	2.294	1.238	4.937	0.408	0.224	0.143	0.082	0.054	0.034	0.020	12.170
2003	0.014	1.413	1.639	4.384	5.134	1.771	0.873	0.396	0.1				

A.72. Niii9 – Category D**Summary table**

Desktop Version 2, Generated on 2015-03-11

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii9

Annual Flows (Mill. cu. m or index values):

MAR = 45,285

S.Dev. = 50,421

CV = 1,113

Q75 = 0,143

Q75/MMF = 0,038

BFI Index = 0,315

CV(JJA+JFM) Index = 4,242

Ecological Category = D

Total IFR = 8,520 (18,81 %MAR)

Maint. Lowflow = 1,631 (3,60 %MAR)

Drought Lowflow = 1,631 (3,60 %MAR)

Maint. Highflow = 6,889 (15,21 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	2,547	7,214	2,833	0,087	0,087	0,640	0,727
Nov	3,325	4,806	1,446	0,103	0,103	0,601	0,704
Dec	6,688	7,732	1,156	0,262	0,262	1,429	1,691
Jan	7,147	12,345	1,727	0,279	0,279	1,228	1,507
Feb	9,481	17,827	1,880	0,249	0,249	1,715	1,965
Mar	4,952	8,653	1,747	0,248	0,248	0,551	0,799
Apr	2,335	3,814	1,633	0,100	0,100	0,227	0,326
May	1,650	2,639	1,600	0,067	0,067	0,068	0,135
Jun	0,813	1,239	1,525	0,063	0,063	0,000	0,063
Jul	3,391	11,956	3,525	0,061	0,061	0,204	0,265
Aug	1,141	2,647	2,320	0,058	0,058	0,101	0,160
Sep	1,815	5,318	2,930	0,054	0,054	0,124	0,178

Rule curve

Desktop Version 2, Generated on 2015-03-11

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii9

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.071	1.062	1.042	0.728	0.401	0.204	0.116	0.034	0.007	0.000
Nov	1.101	1.094	1.080	1.051	0.997	0.903	0.571	0.279	0.034	0.000
Dec	3.298	2.926	2.608	2.328	2.062	1.619	1.374	1.033	0.435	0.007
Jan	2.942	2.622	2.348	2.106	1.874	1.488	1.268	0.964	0.408	0.027
Feb	3.829	3.383	3.002	2.668	2.352	1.827	1.543	1.148	0.503	0.034
Mar	1.317	1.309	1.293	1.262	1.204	1.103	0.687	0.496	0.156	0.000
Apr	0.507	0.503	0.495	0.478	0.446	0.393	0.279	0.102	0.027	0.000
May	0.221	0.220	0.217	0.210	0.198	0.178	0.116	0.061	0.000	0.000
Jun	0.116	0.116	0.115	0.112	0.108	0.100	0.068	0.027	0.000	0.000
Jul	0.403	0.400	0.393	0.379	0.352	0.170	0.054	0.020	0.007	0.000
Aug	0.252	0.250	0.246	0.238	0.197	0.102	0.034	0.014	0.000	0.000
Sep	0.277	0.275	0.270	0.261	0.211	0.129	0.061	0.020	0.007	0.000

Reserve Flows without High Flows

Oct	0.161	0.160	0.159	0.156	0.149	0.139	0.116	0.034	0.007	0.000
Nov	0.205	0.204	0.202	0.199	0.193	0.183	0.167	0.144	0.034	0.000
Dec	0.523	0.521	0.517	0.509	0.494	0.468	0.426	0.369	0.304	0.007
Jan	0.557	0.555	0.550	0.542	0.526	0.498	0.454	0.393	0.324	0.027
Feb	0.497	0.495	0.491	0.484	0.470	0.445	0.405	0.350	0.289	0.034
Mar	0.494	0.492	0.489	0.481	0.467	0.442	0.403	0.348	0.156	0.000
Apr	0.185	0.184	0.182	0.178	0.171	0.160	0.143	0.102	0.027	0.000
May	0.124	0.124	0.122	0.120	0.115	0.107	0.096	0.061	0.000	0.000
Jun	0.116	0.116	0.115	0.112	0.108	0.100	0.068	0.027	0.000	0.000
Jul	0.114	0.113	0.112	0.110	0.105	0.098	0.054	0.020	0.007	0.000
Aug	0.108	0.108	0.107	0.105	0.100	0.094	0.034	0.014	0.000	0.000
Sep	0.100	0.100	0.099	0.097	0.093	0.087	0.061	0.020	0.007	0.000

Natural Duration curves

Oct	4.937	2.434	1.047	0.728	0.401	0.204	0.116	0.034	0.007	0.000
Nov	10.975	4.434	3.454	1.897	1.421	1.000	0.571	0.279	0.034	0.000
Dec	16.293	11.669	7.840	5.664	4.468	2.829	1.809	1.074	0.435	0.007
Jan	14.035	11.138	8.133	5.229	4.080	3.203	1.945	1.122	0.408	0.027
Feb	20.257	13.450	8.310	5.073	4.155	2.999	2.176	1.469	0.503	0.034
Mar	11.601	7.446	4.563	2.652	1.666	1.217	0.687	0.496	0.156	0.000
Apr	5.841	3.210	2.217	1.557	1.142	0.694	0.279	0.102	0.027	0.000
May	5.488	2.584	1.319	0.966	0.544	0.258	0.116	0.061	0.000	0.000
Jun	2.788	1.278	0.782	0.571	0.286	0.150	0.068	0.027	0.000	0.000
Jul	2.972	1.850	0.877	0.510	0.360	0.170	0.054	0.020	0.007	0.000
Aug	3.502	1.068	0.462	0.279	0.197	0.102	0.034	0.014	0.000	0.000
Sep	3.495	1.680	1.074	0.374	0.211	0.129	0.061	0.020	0.007	0.000

Hydrological time series

Total Runoff : Niii9

Desktop (Version 2) Modified Flow Data for Ecological Category D													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	1.066	1.057	1.257	0.027	0.034	0.088	0.007	0.000	0.000	0.000	0.000	0.276	3.811
1921	1.042	1.101	3.123	2.230	2.266	1.249	0.436	0.201	0.109	0.245	0.252	0.257	12.512
1922	0.728	1.099	2.950	2.942	2.936	1.268	0.479	0.210	0.112	0.352	0.218	0.129	13.423
1923	0.476	1.036	2.522	1.829	2.352	1.307	0.494	0.215	0.114	0.372	0.239	0.238	11.195
1924	0.252	1.101	2.700	2.801	3.829	1.317	0.507	0.221	0.116	0.403	0.252	0.273	13.774
1925	0.932	0.571	0.891	0.952	0.265	0.156	0.048	0.027	0.020	0.014	0.007	0.054	3.937
1926	0.000	0.000	0.925	0.578	0.503	0.095	0.000	0.000	0.000	0.007	0.000	0.000	2.108
1927	0.000	0.095	0.326	1.496	0.680	0.585	0.204	0.000	0.000	0.000	0.000	0.265	3.651
1928	0.000	0.041	0.007	0.000	1.021	1.103	0.095	0.061	0.034	0.020	0.014	0.068	2.464
1929	0.116	0.095	0.388	1.936	1.408	1.264	0.068	0.041	0.027	0.014	0.007	0.007	5.371
1930	0.007	0.014	1.382	0.027	0.163	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.593
1931	0.000	0.000	0.027	0.027	2.385	1.231	0.020	0.014	0.007	0.007	0.000	0.000	3.718
1932	0.000	0.000	1.619	0.204	0.034	0.034	0.048	0.000	0.000	0.400	0.000	0.000	2.339
1933	0.000	0.524	3.298	1.986	0.864	0.979	0.224	0.116	0.068	0.363	0.252	0.276	8.951
1934	1.048	0.903	2.244	0.408	2.352	0.170	0.075	0.048	0.027	0.014	0.007	0.007	7.304
1935	0.007	0.000	1.257	2.546	2.668	0.449	0.224	0.221	0.116	0.395	0.249	0.261	8.393
1936	0.238	1.091	2.062	2.442	3.656	1.288	0.491	0.215	0.114	0.386	0.238	0.211	12.432
1937	0.102	0.061	2.328	0.558	2.769	0.734	0.471	0.174	0.099	0.390	0.054	0.041	7.781
1938	0.279	1.070	2.664	1.380	3.159	1.310	0.485	0.214	0.114	0.402	0.252	0.272	11.600
1939	1.013	1.088	2.085	2.142	1.651	1.013	0.506	0.221	0.116	0.392	0.247	0.269	10.743
1940	0.388	0.995	2.062	1.171	0.762	0.544	0.218	0.041	0.027	0.014	0.007	0.007	6.236
1941	0.007	0.211	1.374	0.687	1.189	0.408	0.054	0.034	0.020	0.014	0.007	0.082	4.087
1942	0.367	0.993	2.739	2.114	1.644	1.272	0.443	0.219	0.115	0.403	0.252	0.277	10.838
1943	1.062	0.956	1.393	1.065	1.827	0.496	0.143	0.095	0.075	0.034	0.020	0.275	7.441
1944	1.049	0.809	0.755	0.816	1.543	1.315	0.501	0.217	0.115	0.380	0.243	0.190	7.932
1945	0.116	0.068	2.283	2.859	2.812	1.161	0.385	0.187	0.105	0.143	0.088	0.054	10.260
1946	0.041	0.503	2.443	1.661	2.427	1.317	0.506	0.220	0.116	0.393	0.248	0.254	10.129
1947	0.197	1.095	3.298	1.491	1.734	1.262	0.395	0.183	0.103	0.122	0.075	0.061	10.016
1948	0.054	0.632	1.558	0.961	0.714	0.687	0.470	0.221	0.115	0.376	0.241	0.177	6.206
1949	0.170	0.109	1.190	1.268	0.177	1.177	0.102	0.156	0.007	0.000	0.000	0.000	4.356
1950	0.007	0.000	1.668	0.136	1.330	1.222	0.014	0.000	0.000	0.000	0.129	0.000	4.506
1951	0.068	0.000	2.162	0.964	0.476	0.592	0.000	0.000	0.000	0.397	0.041	0.000	4.700
1952	0.000	0.027	1.858	1.745	3.633	1.204	0.355	0.116	0.068	0.048	0.027	0.020	9.101
1953	0.007	0.987	0.245	0.211	2.675	0.925	0.292	0.216	0.113	0.357	0.229	0.271	6.528
1954	0.728	0.564	0.707	1.211	3.028	1.293	0.490	0.213	0.113	0.364	0.234	0.156	9.102
1955	0.258	0.279	1.033	1.322	3.829	1.317	0.507	0.221	0.116	0.398	0.249	0.270	9.799
1956	0.626	1.101	2.045	1.404	3.076	1.222	0.422	0.192	0.103	0.403	0.252	0.277	11.124
1957	1.071	1.101	3.135	2.490	3.518	1.245	0.465	0.205	0.111	0.299	0.184	0.109	13.932
1958	0.122	1.100	2.434	1.266	1.719	0.666	0.279	0.198	0.097	0.068	0.041	0.273	8.263
1959	0.551	0.279	2.445	0.592	2.167	0.666	0.495	0.174	0.061	0.041	0.020	0.041	7.533
1960	0.061	1.007	2.976	2.942	3.203	1.304	0.465	0.208	0.111	0.333	0.197	0.276	13.084
1961	1.052	0.707	1.288	1.997	0.190	1.169	0.413	0.109	0.027	0.020	0.014	0.007	6.994
1962	0.007	0.714	3.298	2.456	2.518	1.296	0.507	0.220	0.116	0.403	0.252	0.277	12.064
1963	1.054	0.920	0.748	2.196	1.043	0.197	0.467	0.163	0.095	0.061	0.041	0.020	7.006
1964	1.062	1.101	2.926	1.751	3.624	1.099	0.393	0.191	0.107	0.252	0.102	0.061	12.668
1965	0.272	0.997	0.367	0.401	3.002	0.014	0.000	0.000	0.000	0.000	0.014	0.020	5.087
1966	0.000	0.930	1.788	1.218	3.285	1.309	0.499	0.218	0.115	0.386	0.244	0.218	10.212
1967	0.143	1.073	2.231	1.281	0.415	1.311	0.476	0.209	0.112	0.347	0.211	0.122	7.932
1968	0.129	0.510	3.249	2.232	1.385	1.283	0.451	0.202	0.110	0.258	0.156	0.163	10.128
1969	1.062	1.036	1.046	1.069	2.015	0.238	0.372	0.088	0.054	0.034	0.020	0.275	7.308
1970	1.070	1.026	1.001	2.801	1.467	1.147	0.500	0.221	0.116	0.403	0.252	0.270	10.275
1971	0.755	0.551	2.209	2.701	3.829	1.317	0.507	0.221	0.116	0.402	0.251	0.266	13.124
1972	0.551	0.442	0.415	1.993	3.829	1.316	0.507	0.221	0.116	0.400	0.251	0.277	10.320
1973	1.071	1.090	1.900	2.765	2.933	1.220	0.402	0.194	0.108	0.403	0.109	0.068	12.262
1974	0.054	1.090	2.506	2.567	3.383	1.301	0.490	0.214	0.114	0.367	0.236	0.277	12.598
1975	1.071	1.101	2.861	2.844	2.554	1.301	0.506	0.221	0.116	0.402	0.251	0.265	13.493
1976	0.592	1.072	3.186	2.461	3.829	1.317	0.507	0.221	0.116	0.400	0.250	0.276	14.227
1977	1.071	1.017	1.676	2.942	3.323	1.278	0.496	0.217	0.115	0.379	0.241	0.197	12.951
1978	1.069	1.094	2.521	1.703	3.119	0.687	0.426	0.179	0.101	0.403	0.249	0.270	11.821
1979	0.660	0.381	1.160	1.973	1.300	0.068	0.041	0.027	0.014	0.007	0.007	0.231	5.869
1980	0.034	0.700	1.001	1.488	1.728	0.027	0.007	0.000	0.099	0.014	0.014	0.275	5.386
1981	1.013	1.013	1.817	2.015	2.633	1.094	0.204	0.116	0.068	0.048	0.027	0.014	10.063
1982	0.401	0.886	0.007	0.802	0.000	0.000	0.000	0.075	0.014	0.000	0.000	0.000	2.185
1983	0.007	1.096	2.363	2.942	3.829	1.317	0.507	0.221	0.116	0.403	0.252	0.277	13.300
1984	1.068	1.057	1.404	2.595	3.829	1.314	0.505	0.220	0.116	0.394	0.249	0.258	13.009
1985	0.789	1.020	1.058	2.106	2.009	0.510	0.136	0.088	0.048	0.034	0.020	0.014	7.832
1986	0.238	0.728	3.236	1.712	0.992	0.462	0.364	0.150	0.088	0.054	0.184	0.277	8.485
1987	1.071	1.101	2.900	2.082	2.816	1.298	0.504	0.219	0.116	0.400	0.246	0.268	13.022
1988	0.918	1.066	2.077	1.104	1.797	0.721	0.347	0.172	0.100	0.082	0.048	0.027	8.459
1989	0.034	1.081	3.298	2.348	2.126	1.226	0.496	0.203	0.110	0.265	0.156	0.095	11.438
1990	0.068	1.051	2.608	2.260	3.620	1.312	0.495	0.219	0.115	0.379	0.242	0.184	12.554
1991	0.190	0.258	1.961	0.177	2.686	1.110	0.027	0.007	0.000	0.000	0.000	0.000	6.416
1992	0.000	0.007	0.734	1.428	1.590	0.000	0.424	0.000	0.000	0.000	0.000	0.271	4.454
1993	1.071	1.098	2.802	2.622	2.654	1.293	0.477	0.210	0.112	0.352	0.218	0.129	13.038
1994	1.043	1.029	2.839	1.874	0.558	0.394	0.363	0.163	0.088	0.054	0.034	0.020	8.460
1995	0.721	0.974	3.298	2.942	3.829	1.317	0.507	0.221	0.116	0.403	0.252	0.274	14.854
1996	1.071	0.956	2.657	2.369	1.879	1.317	0.507	0.221	0.116	0.398	0.250	0.276	12.016
1997	1.071	1.101	3.298	2.942	2.511	1.317	0.478	0.211	0.112	0.351	0.211	0.129	13.732
1998	1.060	0.755	3.022	2.207	1.640	1.279	0.485	0.194	0.107	0.170	0.102	0.061	11.083
1999	0.095	0.034	3.298	2.784	3.829	1.306	0.505	0.221	0.116	0.401	0.251	0.272	13.113
2000	1.053	1.101	3.298	2.942	2.808	1.309	0.499	0.218	0.115	0.385	0.244	0.277	14.249
2001	1.064	1.084	1.526	1.469	3.200	1.211	0.487	0.207	0.111	0.403	0.252	0.277	11.291
2002	1.071	1.077	1.569	1.023	3.518	0.408	0.224	0.143	0.082	0.054	0.034	0.020	9.223
2003	0.014	1.087	1.318	2.942	3.666	1.315	0.506	0.220	0.116	0.403</			

A.73. *Niii10 – Category B***Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii10

Annual Flows (Mill. cu. m or index values):

MAR = 31.923

S.Dev. = 40.537

CV = 1.270

Q75 = 0.044

Q75/MMF = 0.017

BFI Index = 0.293

CV(JJA+JFM) Index = 4.850

Ecological Category = B

Total IFR = 12.903 (40.42 %MAR)

Maint. Lowflow = 7.463 (23.38 %MAR)

Drought Lowflow = 0.741 (2.32 %MAR)

Maint. Highflow = 5.440 (17.04 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	1.748	4.101	2.345	0.437	0.044	0.492	0.928
Nov	1.934	3.299	1.706	0.671	0.050	0.365	1.036
Dec	5.263	7.156	1.360	1.218	0.102	1.167	2.385
Jan	5.561	9.854	1.772	1.328	0.099	1.123	2.451
Feb	5.853	12.737	2.176	1.252	0.093	1.262	2.515
Mar	3.461	7.813	2.257	1.121	0.095	0.566	1.687
Apr	1.390	2.898	2.085	0.622	0.064	0.110	0.731
May	0.790	1.513	1.915	0.225	0.043	0.044	0.270
Jun	0.397	0.742	1.870	0.167	0.038	0.000	0.167
Jul	3.560	13.965	3.922	0.151	0.038	0.198	0.349
Aug	0.721	1.838	2.551	0.136	0.038	0.036	0.172
Sep	1.245	3.431	2.757	0.136	0.036	0.076	0.212

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii10

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.059	1.050	0.955	0.616	0.308	0.188	0.087	0.017	0.000	0.000
Nov	1.200	1.191	1.174	1.140	0.928	0.536	0.194	0.070	0.000	0.000
Dec	3.719	3.407	3.130	2.866	2.584	1.755	1.119	0.425	0.020	0.000
Jan	3.764	3.463	3.193	2.934	2.137	1.551	0.821	0.405	0.020	0.000
Feb	3.946	3.608	3.310	3.026	2.355	1.642	0.955	0.429	0.013	0.000
Mar	1.957	1.944	1.916	1.635	1.116	0.673	0.335	0.087	0.003	0.000
Apr	0.861	0.854	0.837	0.802	0.600	0.248	0.097	0.013	0.000	0.000
May	0.317	0.315	0.309	0.297	0.248	0.154	0.037	0.003	0.000	0.000
Jun	0.200	0.198	0.195	0.188	0.144	0.084	0.020	0.000	0.000	0.000
Jul	0.397	0.394	0.386	0.268	0.141	0.077	0.020	0.003	0.000	0.000
Aug	0.202	0.200	0.197	0.161	0.087	0.047	0.013	0.003	0.000	0.000
Sep	0.245	0.243	0.239	0.198	0.127	0.057	0.027	0.003	0.000	0.000

Reserve Flows without High Flows

Oct	0.521	0.516	0.506	0.485	0.308	0.188	0.087	0.017	0.000	0.000
Nov	0.800	0.795	0.783	0.760	0.717	0.536	0.194	0.070	0.000	0.000
Dec	1.453	1.443	1.422	1.380	1.303	1.168	0.952	0.425	0.020	0.000
Jan	1.584	1.573	1.550	1.505	1.419	1.271	0.821	0.405	0.020	0.000
Feb	1.494	1.483	1.462	1.419	1.338	1.198	0.955	0.429	0.013	0.000
Mar	1.337	1.328	1.309	1.271	1.116	0.673	0.335	0.087	0.003	0.000
Apr	0.742	0.735	0.720	0.690	0.600	0.248	0.097	0.013	0.000	0.000
May	0.269	0.267	0.262	0.252	0.233	0.154	0.037	0.003	0.000	0.000
Jun	0.200	0.198	0.195	0.188	0.144	0.084	0.020	0.000	0.000	0.000
Jul	0.180	0.179	0.176	0.169	0.141	0.077	0.020	0.003	0.000	0.000
Aug	0.162	0.161	0.158	0.153	0.087	0.047	0.013	0.003	0.000	0.000
Sep	0.163	0.161	0.159	0.153	0.127	0.057	0.027	0.003	0.000	0.000

Natural Duration curves

Oct	4.784	1.906	0.955	0.616	0.308	0.188	0.087	0.017	0.000	0.000
Nov	4.479	3.002	1.715	1.179	0.928	0.536	0.194	0.070	0.000	0.000
Dec	12.794	8.770	5.645	4.070	2.703	1.755	1.119	0.425	0.020	0.000
Jan	14.037	8.228	6.104	3.618	2.137	1.551	0.821	0.405	0.020	0.000
Feb	14.569	6.918	4.626	3.072	2.355	1.642	0.955	0.429	0.013	0.000
Mar	7.869	4.157	3.105	1.635	1.116	0.673	0.335	0.087	0.003	0.000
Apr	3.451	1.993	1.189	0.844	0.600	0.248	0.097	0.013	0.000	0.000
May	2.382	1.146	0.720	0.425	0.248	0.154	0.037	0.003	0.000	0.000
Jun	1.015	0.643	0.425	0.248	0.144	0.084	0.020	0.000	0.000	0.000
Jul	4.080	0.811	0.429	0.268	0.141	0.077	0.020	0.003	0.000	0.000
Aug	2.918	0.345	0.251	0.161	0.087	0.047	0.013	0.003	0.000	0.000
Sep	3.628	1.759	0.462	0.198	0.127	0.057	0.027	0.003	0.000	0.000

Hydrological time series

Total Runoff : Niii10

Desktop (Version 2) Modified Flow Data for Ecological Category B													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	1.056	1.022	0.998	0.070	0.070	0.141	0.013	0.010	0.007	0.003	0.003	0.241	3.635
1921	1.034	1.200	3.311	3.075	2.318	1.441	0.603	0.291	0.184	0.141	0.200	0.054	13.850
1922	1.046	1.200	3.433	3.764	3.763	1.930	0.846	0.312	0.197	0.358	0.193	0.127	17.169
1923	0.298	1.022	3.480	2.838	3.310	1.957	0.855	0.315	0.199	0.388	0.199	0.171	15.032
1924	0.194	1.200	3.583	3.764	3.946	1.957	0.861	0.317	0.200	0.397	0.202	0.243	16.864
1925	0.955	0.566	0.358	0.218	0.127	0.084	0.050	0.030	0.020	0.010	0.007	0.003	2.428
1926	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003
1927	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1928	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1929	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1930	0.000	0.000	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.003	0.029
1931	0.003	0.003	0.003	0.003	0.013	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.031
1932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.379	0.000	0.000	0.379
1933	0.000	0.724	1.755	1.993	0.724	0.972	0.003	0.000	0.000	0.000	0.000	0.000	6.171
1934	0.201	0.328	3.320	1.101	3.148	0.057	0.000	0.000	0.000	0.000	0.000	0.000	7.155
1935	0.000	0.000	0.097	3.601	2.355	0.395	0.184	0.317	0.200	0.390	0.200	0.208	7.948
1936	0.131	1.198	2.945	3.437	3.946	1.921	0.845	0.312	0.197	0.394	0.194	0.236	15.756
1937	0.087	0.050	3.192	0.533	3.629	0.402	0.845	0.131	0.094	0.396	0.199	0.214	9.771
1938	1.040	1.195	3.406	1.464	0.864	1.951	0.154	0.157	0.057	0.397	0.202	0.244	11.131
1939	1.036	1.197	3.276	3.289	2.997	1.005	0.861	0.317	0.200	0.393	0.201	0.244	15.017
1940	0.948	1.174	3.240	2.968	1.816	1.273	0.570	0.241	0.144	0.090	0.054	0.034	12.551
1941	0.020	0.281	1.119	1.049	0.955	0.003	0.000	0.000	0.000	0.000	0.000	0.237	3.664
1942	0.841	0.958	3.107	3.272	1.618	1.930	0.837	0.309	0.195	0.397	0.202	0.245	13.911
1943	1.056	1.161	2.584	0.536	1.859	0.281	0.121	0.077	0.047	0.030	0.017	0.245	8.014
1944	1.051	1.102	1.417	1.437	2.693	1.957	0.859	0.316	0.199	0.389	0.199	0.188	11.808
1945	0.117	0.070	3.452	3.764	3.798	1.876	0.744	0.299	0.189	0.174	0.107	0.064	14.655
1946	0.104	0.077	0.218	2.813	3.240	1.957	0.861	0.317	0.200	0.394	0.201	0.236	10.618
1947	0.188	1.200	3.719	2.957	2.422	1.920	0.805	0.291	0.184	0.141	0.087	0.134	14.048
1948	0.178	0.861	2.885	2.188	1.243	0.087	0.848	0.317	0.196	0.335	0.192	0.124	9.454
1949	0.302	0.111	2.623	2.960	0.298	1.891	0.137	0.094	0.003	0.003	0.000	0.000	8.422
1950	0.003	0.000	2.866	0.405	0.023	1.859	0.020	0.000	0.000	0.000	0.161	0.003	5.340
1951	0.439	0.003	2.868	0.693	0.637	0.841	0.003	0.000	0.000	0.396	0.200	0.137	6.217
1952	0.087	0.054	3.006	3.161	2.787	1.712	0.637	0.211	0.124	0.080	0.047	0.027	11.932
1953	0.030	1.179	0.020	0.121	3.126	1.243	0.044	0.305	0.020	0.003	0.003	0.242	6.336
1954	1.056	1.197	2.107	2.788	3.861	1.949	0.859	0.317	0.200	0.390	0.200	0.198	15.121
1955	0.529	0.090	1.042	0.124	3.572	1.932	0.844	0.312	0.197	0.362	0.193	0.221	9.419
1956	0.094	0.151	1.350	0.496	0.576	0.137	0.007	0.003	0.003	0.397	0.202	0.245	3.661
1957	1.059	1.200	3.407	3.423	3.435	1.447	0.802	0.302	0.191	0.201	0.121	0.074	15.661
1958	0.342	1.158	2.562	0.901	0.492	0.218	0.127	0.080	0.047	0.030	0.020	0.239	6.216
1959	0.432	0.265	3.069	0.161	2.640	0.335	0.030	0.017	0.010	0.007	0.003	0.087	7.056
1960	0.003	1.156	2.980	3.558	3.563	1.899	0.833	0.309	0.195	0.268	0.161	0.243	15.167
1961	0.727	0.342	0.302	0.620	0.074	1.018	0.820	0.097	0.013	0.007	0.003	0.003	4.026
1962	0.003	0.231	3.702	2.137	1.642	1.243	0.859	0.308	0.194	0.397	0.202	0.245	11.162
1963	1.051	1.140	0.747	3.236	0.449	0.288	0.849	0.188	0.111	0.070	0.044	0.027	8.200
1964	1.058	1.200	3.130	1.652	3.946	0.673	0.379	0.238	0.141	0.087	0.054	0.030	12.588
1965	0.851	0.020	0.412	0.057	3.089	0.017	0.000	0.000	0.000	0.000	0.000	0.000	4.446
1966	0.000	1.079	3.090	1.028	3.759	1.924	0.847	0.313	0.198	0.381	0.195	0.154	12.967
1967	0.124	1.193	3.148	2.100	1.012	1.957	0.853	0.314	0.198	0.385	0.197	0.147	11.628
1968	0.342	0.442	2.456	2.822	0.429	1.936	0.583	0.280	0.174	0.111	0.067	0.074	9.716
1969	1.059	1.197	1.826	1.511	2.231	0.412	0.710	0.154	0.090	0.057	0.034	0.243	9.524
1970	1.059	1.191	1.608	0.931	0.519	0.358	0.228	0.315	0.188	0.394	0.201	0.239	7.232
1971	0.714	0.194	1.270	3.453	3.946	1.957	0.861	0.317	0.200	0.396	0.202	0.241	13.751
1972	0.616	0.529	0.563	0.459	3.583	1.075	0.667	0.294	0.186	0.151	0.094	0.245	8.462
1973	1.059	1.185	1.317	3.463	2.402	1.889	0.600	0.291	0.184	0.396	0.087	0.054	12.927
1974	0.087	0.891	3.675	3.764	3.946	1.953	0.860	0.317	0.200	0.390	0.200	0.245	16.528
1975	1.055	1.130	2.614	3.710	3.358	1.956	0.861	0.317	0.200	0.394	0.201	0.235	16.031
1976	0.358	0.660	3.627	3.193	3.946	1.957	0.861	0.317	0.200	0.394	0.201	0.239	15.954
1977	0.308	0.171	0.831	3.764	3.608	1.524	0.830	0.303	0.192	0.386	0.127	0.077	12.122
1978	0.469	0.084	2.778	2.379	1.930	0.101	0.811	0.023	0.007	0.003	0.003	0.235	8.822
1979	0.288	0.137	0.425	1.621	1.296	0.020	0.013	0.007	0.003	0.003	0.003	0.241	4.057
1980	0.117	0.905	1.142	2.730	0.536	0.003	0.007	0.003	0.199	0.044	0.027	0.245	5.958
1981	1.050	1.149	2.509	0.821	2.660	1.116	0.097	0.060	0.037	0.023	0.013	0.007	9.541
1982	0.191	0.436	0.013	0.188	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.831
1983	0.080	1.192	2.849	3.764	3.946	1.957	0.861	0.317	0.200	0.397	0.202	0.245	16.010
1984	1.050	1.135	0.941	3.493	3.946	1.944	0.854	0.315	0.199	0.387	0.197	0.181	14.640
1985	0.894	1.183	1.528	2.934	2.318	0.439	0.087	0.057	0.034	0.020	0.013	0.007	9.514
1986	0.821	1.141	3.246	3.180	1.621	0.791	0.720	0.265	0.154	0.097	0.064	0.245	12.346
1987	1.059	1.200	3.719	3.046	3.281	1.944	0.854	0.315	0.199	0.390	0.198	0.164	16.370
1988	0.305	1.183	2.697	1.390	1.856	0.606	0.345	0.188	0.111	0.070	0.044	0.023	8.818
1989	0.017	1.192	3.719	3.125	2.978	1.635	0.858	0.302	0.191	0.198	0.121	0.070	14.407
1990	0.141	1.187	2.722	1.551	3.357	1.953	0.221	0.297	0.084	0.050	0.030	0.020	11.612
1991	0.013	0.007	1.608	0.020	3.410	1.635	0.030	0.000	0.000	0.000	0.000	0.000	6.723
1992	0.000	0.000	0.000	0.000	0.044	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.044
1993	1.059	1.184	2.760	2.513	1.109	0.633	0.332	0.208	0.124	0.077	0.047	0.027	10.073
1994	0.194	0.067	2.023	1.722	0.003	0.003	0.312	0.023	0.003	0.000	0.000	0.000	4.350
1995	0.027	1.159	3.719	3.764	3.946	1.957	0.861	0.317	0.200	0.397	0.202	0.243	16.793
1996	1.059	1.163	3.719	3.732	3.274	1.957	0.861	0.311	0.197	0.365	0.201	0.245	17.085
1997	1.059	1.200	3.719	3.513	3.239	1.934	0.832	0.309	0.195	0.268	0.164	0.097	16.529
1998	1.059	1.180	3.719	3.458	1.779	1.945	0.724	0.297	0.188	0.157	0.097	0.057	14.660
1999	0.345	0.070	3.719	3.633	3.516	1.913	0.854	0.317	0.198	0.384	0.196	0.243	15.389
2000	1.054	1.200	3.719	3.306	3.040	1.897	0.814	0.305	0.193	0.228	0.137	0.245	16.139
2001	1.034	0.663	1.055	0.513	0.211	0.097	0.057	0.037	0.020	0.397	0.202	0.245	4.531
2002	1.049	1.175	0.663	0.630	3.634	0.191	0.090	0.057	0.034	0.020	0.013	0.007	7.562
2003	0.003	0.955	1.980	3.764	3.943	1.916	0.834	0.309	0.195	0.397			

A.74. *Niii10 – Category C***Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii1

Annual Flows (Mill. cu. m or index values):

MAR = 31.923

S.Dev. = 40.537

CV = 1.270

Q75 = 0.044

Q75/MMF = 0.017

BFI Index = 0.293

CV(JJA+JFM) Index = 4.850

Ecological Category = C

Total IFR = 9.613 (30.11 %MAR)

Maint. Lowflow = 4.174 (13.07 %MAR)

Drought Lowflow = 0.741 (2.32 %MAR)

Maint. Highflow = 5.440 (17.04 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	1.748	4.101	2.345	0.220	0.044	0.492	0.712
Nov	1.934	3.299	1.706	0.288	0.050	0.365	0.653
Dec	5.263	7.156	1.360	0.742	0.102	1.167	1.909
Jan	5.561	9.854	1.772	0.775	0.099	1.123	1.898
Feb	5.853	12.737	2.176	0.727	0.093	1.262	1.989
Mar	3.461	7.813	2.257	0.676	0.095	0.566	1.242
Apr	1.390	2.898	2.085	0.390	0.064	0.110	0.499
May	0.790	1.513	1.915	0.084	0.043	0.044	0.129
Jun	0.397	0.742	1.870	0.073	0.038	0.000	0.073
Jul	3.560	13.965	3.922	0.070	0.038	0.198	0.269
Aug	0.721	1.838	2.551	0.066	0.038	0.036	0.102
Sep	1.245	3.431	2.757	0.062	0.036	0.076	0.138

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii10

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.875	0.868	0.851	0.616	0.308	0.188	0.087	0.017	0.000	0.000
Nov	0.837	0.831	0.819	0.796	0.753	0.536	0.194	0.070	0.000	0.000
Dec	3.300	2.991	2.720	2.469	2.211	1.755	1.119	0.425	0.020	0.000
Jan	3.260	2.962	2.700	2.456	2.137	1.551	0.821	0.405	0.020	0.000
Feb	3.463	3.130	2.838	2.570	2.295	1.642	0.955	0.429	0.013	0.000
Mar	1.617	1.606	1.583	1.538	1.116	0.673	0.335	0.087	0.003	0.000
Apr	0.656	0.650	0.638	0.612	0.563	0.248	0.097	0.013	0.000	0.000
May	0.166	0.165	0.162	0.157	0.147	0.131	0.037	0.003	0.000	0.000
Jun	0.099	0.098	0.097	0.094	0.089	0.081	0.020	0.000	0.000	0.000
Jul	0.328	0.325	0.320	0.268	0.141	0.077	0.020	0.003	0.000	0.000
Aug	0.132	0.131	0.129	0.125	0.087	0.047	0.013	0.003	0.000	0.000
Sep	0.173	0.172	0.169	0.164	0.127	0.057	0.027	0.003	0.000	0.000

Reserve Flows without High Flows

Oct	0.298	0.296	0.290	0.279	0.258	0.188	0.087	0.017	0.000	0.000
Nov	0.401	0.398	0.393	0.382	0.362	0.327	0.194	0.070	0.000	0.000
Dec	1.033	1.026	1.012	0.983	0.930	0.837	0.688	0.425	0.020	0.000
Jan	1.079	1.072	1.057	1.027	0.971	0.872	0.716	0.405	0.020	0.000
Feb	1.011	1.005	0.990	0.962	0.909	0.817	0.671	0.429	0.013	0.000
Mar	0.941	0.934	0.921	0.895	0.847	0.673	0.335	0.087	0.003	0.000
Apr	0.527	0.523	0.513	0.492	0.453	0.248	0.097	0.013	0.000	0.000
May	0.114	0.114	0.112	0.109	0.103	0.093	0.037	0.003	0.000	0.000
Jun	0.099	0.098	0.097	0.094	0.089	0.081	0.020	0.000	0.000	0.000
Jul	0.095	0.095	0.094	0.091	0.086	0.077	0.020	0.003	0.000	0.000
Aug	0.090	0.089	0.088	0.086	0.081	0.047	0.013	0.003	0.000	0.000
Sep	0.085	0.084	0.083	0.081	0.077	0.057	0.027	0.003	0.000	0.000

Natural Duration curves

Oct	4.784	1.906	0.955	0.616	0.308	0.188	0.087	0.017	0.000	0.000
Nov	4.479	3.002	1.715	1.179	0.928	0.536	0.194	0.070	0.000	0.000
Dec	12.794	8.770	5.645	4.070	2.703	1.755	1.119	0.425	0.020	0.000
Jan	14.037	8.228	6.104	3.618	2.137	1.551	0.821	0.405	0.020	0.000
Feb	14.569	6.918	4.626	3.072	2.355	1.642	0.955	0.429	0.013	0.000
Mar	7.869	4.157	3.105	1.635	1.116	0.673	0.335	0.087	0.003	0.000
Apr	3.451	1.993	1.189	0.844	0.600	0.248	0.097	0.013	0.000	0.000
May	2.382	1.146	0.720	0.425	0.248	0.154	0.037	0.003	0.000	0.000
Jun	1.015	0.643	0.425	0.248	0.144	0.084	0.020	0.000	0.000	0.000
Jul	4.080	0.811	0.429	0.268	0.141	0.077	0.020	0.003	0.000	0.000
Aug	2.918	0.345	0.251	0.161	0.087	0.047	0.013	0.003	0.000	0.000
Sep	3.628	1.759	0.462	0.198	0.127	0.057	0.027	0.003	0.000	0.000

Hydrological time series

Total Runoff : Niii10

Desktop (Version 2) Modified Flow Data for Ecological Category C													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.873	0.770	0.998	0.070	0.070	0.141	0.013	0.010	0.007	0.003	0.003	0.171	3.129
1921	0.855	0.837	2.896	2.588	2.271	1.441	0.564	0.154	0.093	0.141	0.131	0.054	12.024
1922	0.865	0.837	3.016	3.260	3.282	1.595	0.644	0.164	0.097	0.313	0.127	0.127	14.327
1923	0.298	0.770	3.063	2.370	2.838	1.617	0.651	0.165	0.098	0.321	0.130	0.159	12.480
1924	0.194	0.837	3.165	3.260	3.463	1.617	0.656	0.166	0.099	0.328	0.132	0.172	14.087
1925	0.851	0.566	0.358	0.218	0.127	0.084	0.050	0.030	0.020	0.010	0.007	0.003	2.324
1926	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003
1927	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1928	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1929	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1930	0.000	0.000	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.003	0.029
1931	0.003	0.003	0.003	0.003	0.013	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.031
1932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.315	0.000	0.000	0.315
1933	0.000	0.714	1.755	1.993	0.724	0.972	0.003	0.000	0.000	0.000	0.000	0.000	6.161
1934	0.201	0.328	2.905	0.101	2.684	0.057	0.000	0.000	0.000	0.000	0.000	0.000	6.276
1935	0.000	0.000	0.097	3.098	2.295	0.395	0.184	0.166	0.099	0.323	0.131	0.164	6.952
1936	0.131	0.836	2.543	2.936	3.463	1.588	0.644	0.164	0.098	0.326	0.128	0.168	13.023
1937	0.087	0.050	2.780	0.533	3.150	0.402	0.644	0.128	0.082	0.327	0.130	0.164	8.477
1938	0.860	0.833	2.990	1.464	0.864	1.612	0.154	0.132	0.057	0.328	0.132	0.172	9.598
1939	0.857	0.835	2.863	2.792	2.543	1.005	0.656	0.166	0.099	0.325	0.131	0.172	12.444
1940	0.850	0.819	2.827	2.487	1.816	1.273	0.556	0.146	0.089	0.090	0.054	0.034	11.041
1941	0.020	0.281	1.119	1.049	0.955	0.003	0.000	0.000	0.000	0.000	0.000	0.168	3.595
1942	0.834	0.759	2.698	2.776	1.618	1.595	0.638	0.163	0.097	0.328	0.132	0.173	11.809
1943	0.873	0.810	2.211	0.536	1.859	0.281	0.121	0.077	0.047	0.030	0.017	0.173	7.035
1944	0.869	0.783	1.417	1.437	2.424	1.617	0.654	0.166	0.098	0.322	0.131	0.162	10.080
1945	0.117	0.070	0.305	3.260	3.317	1.559	0.592	0.158	0.094	0.174	0.107	0.064	12.547
1946	0.104	0.077	0.218	2.347	2.772	1.617	0.656	0.166	0.099	0.325	0.131	0.167	8.679
1947	0.188	0.837	3.300	2.477	2.321	1.586	0.614	0.155	0.093	0.141	0.087	0.134	11.932
1948	0.178	0.741	2.486	2.188	1.243	0.087	0.646	0.166	0.097	0.312	0.127	0.124	8.394
1949	0.302	0.111	2.246	2.480	0.298	1.563	0.137	0.094	0.003	0.003	0.000	0.000	7.238
1950	0.003	0.000	2.469	0.405	0.023	1.558	0.020	0.000	0.000	0.000	0.125	0.003	4.606
1951	0.439	0.003	2.471	0.693	0.637	0.841	0.003	0.000	0.000	0.328	0.131	0.137	5.682
1952	0.087	0.054	2.601	2.669	2.460	1.545	0.571	0.141	0.086	0.080	0.047	0.027	10.368
1953	0.030	0.823	0.020	0.121	2.663	1.243	0.044	0.161	0.020	0.003	0.003	0.172	5.302
1954	0.873	0.835	1.938	2.325	3.379	1.610	0.654	0.166	0.098	0.323	0.131	0.164	12.495
1955	0.529	0.090	1.042	0.124	3.094	1.596	0.643	0.164	0.097	0.313	0.127	0.165	7.986
1956	0.094	0.151	1.350	0.496	0.576	0.137	0.007	0.003	0.003	0.328	0.132	0.173	3.450
1957	0.875	0.837	2.991	2.923	2.959	1.447	0.612	0.159	0.095	0.201	0.121	0.074	13.294
1958	0.342	0.809	2.191	0.901	0.492	0.218	0.127	0.080	0.047	0.030	0.020	0.169	5.426
1959	0.432	0.265	2.661	0.161	2.404	0.335	0.030	0.017	0.010	0.007	0.003	0.087	6.412
1960	0.003	0.807	2.576	3.056	3.085	1.570	0.635	0.162	0.097	0.268	0.125	0.172	12.555
1961	0.727	0.342	0.302	0.620	0.074	1.018	0.625	0.097	0.013	0.007	0.003	0.003	3.831
1962	0.003	0.231	3.282	2.137	1.642	1.243	0.654	0.162	0.096	0.328	0.132	0.173	10.084
1963	0.869	0.796	0.747	2.741	0.449	0.288	0.646	0.137	0.084	0.070	0.044	0.027	6.899
1964	0.875	0.837	2.720	1.652	3.463	0.673	0.379	0.146	0.088	0.087	0.054	0.030	11.004
1965	0.835	0.020	0.412	0.057	2.629	0.017	0.000	0.000	0.000	0.000	0.000	0.000	3.970
1966	0.000	0.779	2.681	1.028	3.279	1.590	0.645	0.164	0.098	0.315	0.128	0.154	10.861
1967	0.124	0.832	2.738	2.100	1.012	1.617	0.649	0.165	0.098	0.318	0.129	0.147	9.929
1968	0.342	0.442	2.098	2.356	0.429	1.600	0.559	0.150	0.090	0.111	0.067	0.074	8.318
1969	0.875	0.835	1.809	1.511	2.215	0.412	0.585	0.131	0.081	0.057	0.034	0.172	8.718
1970	0.875	0.831	1.608	0.931	0.519	0.358	0.228	0.165	0.094	0.326	0.132	0.170	6.236
1971	0.714	0.194	1.270	2.952	3.463	1.617	0.656	0.166	0.099	0.327	0.132	0.171	11.760
1972	0.616	0.529	0.563	0.459	3.105	1.075	0.576	0.156	0.093	0.151	0.094	0.173	7.591
1973	0.875	0.827	1.317	2.962	2.313	1.561	0.563	0.155	0.093	0.327	0.087	0.054	11.134
1974	0.087	0.746	3.256	3.260	3.463	1.613	0.655	0.166	0.098	0.323	0.131	0.173	13.971
1975	0.872	0.790	2.239	3.205	2.885	1.616	0.656	0.166	0.099	0.325	0.131	0.167	13.151
1976	0.358	0.660	3.208	2.700	3.463	1.617	0.656	0.166	0.099	0.326	0.132	0.169	13.553
1977	0.308	0.171	0.831	3.260	3.130	1.520	0.633	0.160	0.095	0.320	0.122	0.077	10.626
1978	0.469	0.084	2.388	2.244	1.930	0.101	0.618	0.023	0.007	0.003	0.003	0.167	8.037
1979	0.288	0.137	0.425	1.621	1.296	0.020	0.013	0.007	0.003	0.003	0.003	0.170	3.986
1980	0.117	0.749	1.142	2.304	0.536	0.003	0.007	0.003	0.098	0.044	0.027	0.173	5.204
1981	0.868	0.803	2.142	0.821	2.412	1.116	0.097	0.060	0.037	0.023	0.013	0.007	8.398
1982	0.191	0.436	0.013	0.188	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.831
1983	0.080	0.831	2.454	3.260	3.463	1.617	0.656	0.166	0.099	0.328	0.132	0.173	13.258
1984	0.868	0.793	0.941	2.991	3.463	1.606	0.650	0.165	0.098	0.320	0.130	0.161	12.185
1985	0.842	0.825	1.528	2.456	2.271	0.439	0.087	0.057	0.034	0.020	0.013	0.007	8.580
1986	0.821	0.797	2.833	2.688	1.621	0.791	0.587	0.148	0.089	0.097	0.064	0.173	10.710
1987	0.875	0.837	3.300	2.560	2.811	1.606	0.651	0.165	0.098	0.323	0.130	0.158	13.514
1988	0.305	0.826	2.314	1.390	1.856	0.606	0.345	0.137	0.084	0.070	0.044	0.023	8.000
1989	0.017	0.832	3.300	2.636	2.534	1.538	0.653	0.159	0.095	0.198	0.121	0.070	12.152
1990	0.141	0.828	2.337	1.551	2.884	1.613	0.221	0.157	0.081	0.050	0.030	0.020	9.913
1991	0.013	0.007	1.608	0.020	2.935	1.538	0.030	0.000	0.000	0.000	0.000	0.000	6.151
1992	0.000	0.000	0.000	0.000	0.044	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.044
1993	0.875	0.826	2.372	2.267	1.109	0.633	0.332	0.140	0.086	0.077	0.047	0.027	8.792
1994	0.194	0.067	1.900	1.722	0.003	0.003	0.312	0.023	0.003	0.000	0.000	0.000	4.227
1995	0.027	0.809	3.300	3.260	3.463	1.617	0.656	0.166	0.099	0.328	0.132	0.172	14.028
1996	0.875	0.812	3.300	3.228	2.804	1.616	0.656	0.163	0.097	0.314	0.132	0.173	14.171
1997	0.875	0.837	3.300	3.011	2.771	1.598	0.634	0.162	0.097	0.268	0.125	0.097	13.775
1998	0.875	0.823	3.300	2.958	1.779	1.607	0.588	0.157	0.094	0.157	0.097	0.057	12.492
1999	0.345	0.070	3.300	3.129	3.039	1.581	0.650	0.166	0.098	0.318	0.129	0.172	12.997
2000	0.871	0.837	3.300	2.809	2.582	1.568	0.621	0.161	0.096	0.228	0.123	0.173	13.369
2001	0.855	0.663	1.055	0.513	0.211	0.097	0.057	0.037	0.020	0.328	0.132	0.173	4.142
2002	0.867	0.820	0.663	0.630	3.155	0.191	0.090	0.057	0.034	0.020	0.013	0.007	6.547
2003	0.003	0.758	1.880	3.260	3.461	1.583	0.635	0.162	0.097	0.328	0.		

A.75. *Niii10 – Category D***Summary table**

Desktop Version 2, Generated on 2015-03-26

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii10

Annual Flows (Mill. cu. m or index values):

MAR = 31,923

S.Dev. = 40,537

CV = 1,270

Q75 = 0,044

Q75/MMF = 0,017

BFI Index = 0,293

CV(JJA+JFM) Index = 4,850

Ecological Category = D

Total IFR = 5,889 (18,45 %MAR)

Maint. Lowflow = 0,741 (2,32 %MAR)

Drought Lowflow = 0,741 (2,32 %MAR)

Maint. Highflow = 5,148 (16,13 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	1,748	4,101	2,345	0,044	0,044	0,424	0,468
Nov	1,934	3,299	1,706	0,050	0,050	0,325	0,375
Dec	5,263	7,156	1,360	0,102	0,102	1,122	1,225
Jan	5,561	9,854	1,772	0,099	0,099	1,075	1,174
Feb	5,853	12,737	2,176	0,093	0,093	1,251	1,344
Mar	3,461	7,813	2,257	0,095	0,095	0,539	0,634
Apr	1,390	2,898	2,085	0,064	0,064	0,072	0,136
May	0,790	1,513	1,915	0,043	0,043	0,034	0,078
Jun	0,397	0,742	1,870	0,038	0,038	0,000	0,038
Jul	3,560	13,965	3,922	0,038	0,038	0,199	0,237
Aug	0,721	1,838	2,551	0,038	0,038	0,037	0,075
Sep	1,245	3,431	2,757	0,036	0,036	0,071	0,107

Rule curve

Desktop Version 2, Generated on 2015-03-26

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii10

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.684	0.678	0.665	0.616	0.308	0.188	0.087	0.017	0.000	0.000
Nov	0.585	0.581	0.573	0.558	0.529	0.479	0.194	0.070	0.000	0.000
Dec	2.384	2.092	1.844	1.627	1.424	1.087	0.910	0.425	0.020	0.000
Jan	2.285	2.006	1.768	1.561	1.366	1.043	0.821	0.405	0.020	0.000
Feb	2.615	2.291	2.015	1.773	1.548	1.174	0.955	0.429	0.013	0.000
Mar	0.993	0.987	0.974	0.948	0.899	0.673	0.335	0.087	0.003	0.000
Apr	0.221	0.219	0.216	0.209	0.197	0.176	0.097	0.013	0.000	0.000
May	0.129	0.129	0.127	0.123	0.116	0.105	0.037	0.003	0.000	0.000
Jun	0.070	0.070	0.069	0.068	0.065	0.061	0.020	0.000	0.000	0.000
Jul	0.353	0.351	0.344	0.268	0.141	0.077	0.020	0.003	0.000	0.000
Aug	0.123	0.122	0.120	0.117	0.087	0.047	0.013	0.003	0.000	0.000
Sep	0.168	0.166	0.164	0.158	0.127	0.057	0.027	0.003	0.000	0.000

Reserve Flows without High Flows

Oct	0.081	0.081	0.080	0.078	0.075	0.070	0.063	0.017	0.000	0.000
Nov	0.100	0.100	0.099	0.097	0.094	0.089	0.082	0.070	0.000	0.000
Dec	0.204	0.203	0.202	0.198	0.193	0.182	0.166	0.144	0.020	0.000
Jan	0.198	0.197	0.196	0.193	0.187	0.177	0.161	0.140	0.020	0.000
Feb	0.185	0.185	0.183	0.180	0.175	0.166	0.151	0.131	0.013	0.000
Mar	0.189	0.189	0.187	0.184	0.179	0.169	0.154	0.087	0.003	0.000
Apr	0.118	0.118	0.117	0.114	0.110	0.102	0.091	0.013	0.000	0.000
May	0.081	0.080	0.080	0.078	0.075	0.070	0.037	0.003	0.000	0.000
Jun	0.070	0.070	0.069	0.068	0.065	0.061	0.020	0.000	0.000	0.000
Jul	0.070	0.070	0.069	0.068	0.065	0.061	0.020	0.003	0.000	0.000
Aug	0.071	0.071	0.070	0.068	0.066	0.047	0.013	0.003	0.000	0.000
Sep	0.067	0.067	0.066	0.065	0.062	0.057	0.027	0.003	0.000	0.000

Natural Duration curves

Oct	4.784	1.906	0.955	0.616	0.308	0.188	0.087	0.017	0.000	0.000
Nov	4.479	3.002	1.715	1.179	0.928	0.536	0.194	0.070	0.000	0.000
Dec	12.794	8.770	5.645	4.070	2.703	1.755	1.119	0.425	0.020	0.000
Jan	14.037	8.228	6.104	3.618	2.137	1.551	0.821	0.405	0.020	0.000
Feb	14.569	6.918	4.626	3.072	2.355	1.642	0.955	0.429	0.013	0.000
Mar	7.869	4.157	3.105	1.635	1.116	0.673	0.335	0.087	0.003	0.000
Apr	3.451	1.993	1.189	0.844	0.600	0.248	0.097	0.013	0.000	0.000
May	2.382	1.146	0.720	0.425	0.248	0.154	0.037	0.003	0.000	0.000
Jun	1.015	0.643	0.425	0.248	0.144	0.084	0.020	0.000	0.000	0.000
Jul	4.080	0.811	0.429	0.268	0.141	0.077	0.020	0.003	0.000	0.000
Aug	2.918	0.345	0.251	0.161	0.087	0.047	0.013	0.003	0.000	0.000
Sep	3.628	1.759	0.462	0.198	0.127	0.057	0.027	0.003	0.000	0.000

Hydrological time series

Total Runoff : Niii10

Desktop (Version 2) Modified Flow Data for Ecological Category D													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.682	0.540	0.855	0.070	0.070	0.141	0.013	0.010	0.007	0.003	0.003	0.165	2.559
1921	0.668	0.585	2.005	1.671	1.529	0.930	0.197	0.121	0.067	0.141	0.122	0.054	8.089
1922	0.676	0.585	2.116	2.285	2.439	0.980	0.218	0.128	0.070	0.337	0.118	0.127	10.078
1923	0.298	0.540	2.160	1.495	2.015	0.993	0.219	0.129	0.070	0.345	0.121	0.154	8.539
1924	0.194	0.585	2.255	2.285	2.615	0.993	0.221	0.129	0.070	0.353	0.123	0.166	9.990
1925	0.665	0.483	0.358	0.218	0.127	0.084	0.050	0.030	0.020	0.010	0.007	0.003	2.055
1926	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003
1927	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1928	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1929	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1930	0.000	0.000	0.023	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.003	0.029
1931	0.003	0.003	0.003	0.003	0.013	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.031
1932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.339	0.000	0.000	0.339
1933	0.000	0.503	1.087	1.287	0.724	0.872	0.003	0.000	0.000	0.000	0.000	0.000	4.475
1934	0.201	0.328	2.013	1.101	1.874	0.057	0.000	0.000	0.000	0.000	0.000	0.000	4.574
1935	0.000	0.000	0.097	2.133	1.548	0.395	0.168	0.129	0.070	0.348	0.122	0.159	5.170
1936	0.131	0.584	1.690	1.983	2.615	0.976	0.218	0.128	0.070	0.351	0.119	0.162	9.026
1937	0.087	0.050	1.898	0.533	2.310	0.402	0.218	0.103	0.061	0.353	0.121	0.159	6.295
1938	0.672	0.583	2.092	1.008	0.864	0.990	0.154	0.105	0.057	0.353	0.123	0.167	7.168
1939	0.670	0.584	1.974	1.851	1.751	0.878	0.221	0.129	0.070	0.350	0.122	0.167	8.767
1940	0.664	0.573	1.941	1.587	1.265	0.914	0.195	0.115	0.065	0.090	0.054	0.034	7.497
1941	0.020	0.281	0.910	0.916	0.955	0.003	0.000	0.000	0.000	0.000	0.000	0.162	3.248
1942	0.652	0.532	1.825	1.837	1.169	0.980	0.216	0.127	0.069	0.353	0.123	0.168	8.051
1943	0.682	0.567	1.424	0.536	1.288	0.281	0.121	0.077	0.047	0.030	0.017	0.168	5.238
1944	0.679	0.549	1.020	0.997	1.654	0.993	0.220	0.129	0.070	0.347	0.122	0.157	6.937
1945	0.117	0.070	2.134	2.285	2.472	0.960	0.204	0.124	0.068	0.174	0.107	0.064	8.779
1946	0.104	0.077	0.218	1.477	1.954	0.993	0.221	0.129	0.070	0.351	0.122	0.162	5.878
1947	0.188	0.585	2.384	1.578	1.569	0.976	0.210	0.121	0.067	0.141	0.087	0.134	8.040
1948	0.178	0.520	1.642	1.373	1.100	0.087	0.218	0.129	0.069	0.335	0.118	0.124	5.895
1949	0.302	0.111	1.452	1.581	0.298	0.962	0.137	0.094	0.003	0.003	0.000	0.000	4.943
1950	0.003	0.000	1.627	0.405	0.023	0.959	0.020	0.000	0.000	0.000	0.117	0.003	3.157
1951	0.439	0.003	1.628	0.693	0.637	0.841	0.003	0.000	0.000	0.353	0.122	0.137	4.856
1952	0.087	0.054	1.740	1.741	1.684	0.952	0.199	0.112	0.064	0.080	0.047	0.027	6.786
1953	0.030	0.575	0.020	0.121	1.856	0.911	0.044	0.125	0.020	0.003	0.003	0.166	3.874
1954	0.682	0.584	1.212	1.460	2.533	0.989	0.220	0.129	0.070	0.348	0.122	0.158	8.507
1955	0.529	0.090	0.875	0.124	2.257	0.981	0.217	0.128	0.070	0.338	0.118	0.159	5.887
1956	0.094	0.151	0.995	0.496	0.576	0.137	0.007	0.003	0.003	0.353	0.123	0.168	3.106
1957	0.684	0.585	2.092	1.970	2.128	0.930	0.209	0.125	0.068	0.201	0.113	0.074	9.180
1958	0.342	0.566	1.409	0.889	0.492	0.218	0.127	0.080	0.047	0.030	0.020	0.164	4.384
1959	0.432	0.265	1.793	0.161	1.638	0.335	0.030	0.017	0.010	0.007	0.003	0.087	4.777
1960	0.003	0.565	1.718	2.093	2.248	0.966	0.215	0.127	0.069	0.268	0.117	0.166	8.555
1961	0.645	0.342	0.302	0.620	0.074	0.881	0.213	0.097	0.013	0.007	0.003	0.003	3.199
1962	0.003	0.231	2.367	1.366	1.174	0.911	0.220	0.126	0.069	0.353	0.123	0.168	7.112
1963	0.679	0.558	0.747	1.805	0.449	0.288	0.218	0.109	0.063	0.070	0.044	0.027	5.057
1964	0.683	0.585	1.844	1.098	2.615	0.673	0.184	0.115	0.065	0.087	0.054	0.030	8.034
1965	0.653	0.020	0.412	0.057	1.825	0.017	0.000	0.000	0.000	0.000	0.000	0.000	2.985
1966	0.000	0.546	1.810	0.912	2.435	0.977	0.218	0.128	0.070	0.340	0.119	0.152	7.708
1967	0.124	0.582	1.860	1.346	1.004	0.993	0.219	0.128	0.070	0.343	0.120	0.147	6.937
1968	0.342	0.442	1.336	1.484	0.429	0.983	0.196	0.118	0.066	0.111	0.067	0.074	5.648
1969	0.684	0.584	1.112	1.027	1.483	0.412	0.202	0.105	0.061	0.057	0.034	0.166	5.927
1970	0.684	0.581	1.057	0.894	0.519	0.358	0.174	0.129	0.068	0.351	0.123	0.164	5.101
1971	0.644	0.194	0.966	1.997	2.615	0.993	0.221	0.129	0.070	0.353	0.123	0.165	8.470
1972	0.616	0.478	0.563	0.459	2.267	0.892	0.200	0.122	0.067	0.151	0.094	0.168	6.076
1973	0.684	0.578	0.983	2.006	1.563	0.961	0.197	0.121	0.067	0.353	0.087	0.054	7.654
1974	0.087	0.524	2.342	2.285	2.615	0.991	0.220	0.129	0.070	0.348	0.122	0.168	9.901
1975	0.681	0.553	1.446	2.234	2.058	0.993	0.221	0.129	0.070	0.351	0.122	0.161	9.020
1976	0.358	0.495	2.297	1.768	2.615	0.993	0.221	0.129	0.070	0.351	0.123	0.164	9.584
1977	0.308	0.171	0.778	2.285	2.291	0.937	0.215	0.125	0.069	0.344	0.113	0.077	7.713
1978	0.469	0.084	1.564	1.398	1.325	0.101	0.211	0.023	0.007	0.003	0.003	0.161	5.349
1979	0.288	0.137	0.425	1.081	1.110	0.020	0.013	0.007	0.003	0.003	0.003	0.165	3.255
1980	0.117	0.526	0.919	1.444	0.536	0.003	0.007	0.003	0.070	0.044	0.027	0.168	3.864
1981	0.678	0.562	1.371	0.821	1.644	0.899	0.097	0.060	0.037	0.023	0.013	0.007	6.212
1982	0.191	0.436	0.013	0.188	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.831
1983	0.080	0.581	1.615	2.285	2.615	0.993	0.221	0.129	0.070	0.353	0.123	0.168	9.233
1984	0.678	0.556	0.829	2.033	2.615	0.987	0.219	0.129	0.070	0.344	0.121	0.156	8.736
1985	0.658	0.577	1.042	1.561	1.529	0.439	0.087	0.057	0.034	0.020	0.013	0.007	6.024
1986	0.651	0.558	1.946	1.758	1.170	0.791	0.203	0.117	0.065	0.097	0.064	0.168	7.588
1987	0.684	0.585	2.384	1.647	1.990	0.987	0.219	0.129	0.070	0.348	0.121	0.153	9.316
1988	0.305	0.577	1.506	0.979	1.286	0.606	0.182	0.109	0.063	0.070	0.044	0.023	5.749
1989	0.017	0.581	2.384	1.712	1.744	0.948	0.220	0.125	0.068	0.198	0.113	0.070	8.180
1990	0.141	0.579	1.523	1.043	2.058	0.991	0.173	0.123	0.061	0.050	0.030	0.020	6.791
1991	0.013	0.007	1.057	0.020	2.106	0.948	0.030	0.000	0.000	0.000	0.000	0.000	4.181
1992	0.000	0.000	0.000	0.000	0.044	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.044
1993	0.684	0.578	1.551	1.416	1.045	0.633	0.181	0.111	0.064	0.077	0.047	0.027	6.413
1994	0.194	0.067	1.182	1.137	0.003	0.003	0.180	0.023	0.003	0.000	0.000	0.000	2.792
1995	0.027	0.566	2.384	2.285	2.615	0.993	0.221	0.129	0.070	0.353	0.123	0.166	9.933
1996	0.684	0.568	2.384	2.255	1.984	0.993	0.221	0.127	0.070	0.338	0.123	0.168	9.912
1997	0.684	0.585	2.384	2.052	1.953	0.982	0.215	0.127	0.069	0.268	0.117	0.097	9.532
1998	0.684	0.576	2.384	2.002	1.246	0.988	0.203	0.123	0.068	0.157	0.097	0.057	8.583
1999	0.345	0.070	2.384	2.162	2.204	0.972	0.219	0.129	0.070	0.342	0.120	0.167	9.185
2000	0.680	0.585	2.384	1.866	1.785	0.965	0.212	0.126	0.069	0.228	0.114	0.168	9.181
2001	0.669	0.495	0.881	0.513	0.211	0.097	0.057	0.037	0.020	0.353	0.123	0.168	3.623
2002	0.677	0.573	0.663	0.630	2.316	0.191	0.090	0.057	0.034	0.020	0.013	0.007	5.271
2003	0.003	0.532	1.167	2.285	2.613	0.974	0.215	0.127	0.069	0.353	0.123	0.167	8.628
2													

A.76. *Niii11 – Category B***Summary table**

Desktop Version 2, Generated on 10/04/15

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii11

Annual Flows (Mill. cu. m or index values):

MAR = 416.687

S.Dev. = 363.584

CV = 0.873

Q75 = 3.618

Q75/MMF = 0.104

BFI Index = 0.338

CV(JJA+JFM) Index = 3.565

Ecological Category = B

Total IFR = 232.745 (55.86 %MAR)

Maint. Lowflow = 140.877 (33.81 %MAR)

Drought Lowflow = 25.778 (6.19 %MAR)

Maint. Highflow = 91.868 (22.05 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	29.588	71.747	2.425	8.694	1.240	5.981	14.675
Nov	34.392	46.383	1.349	13.403	1.417	9.630	23.033
Dec	59.103	55.902	0.946	17.573	3.976	12.112	29.685
Jan	67.681	81.680	1.207	19.430	4.014	14.986	34.417
Feb	72.496	105.555	1.456	18.880	3.742	22.292	41.172
Mar	48.487	74.928	1.545	19.940	3.946	15.479	35.419
Apr	23.060	31.643	1.372	14.106	1.376	3.936	18.042
May	16.606	23.190	1.397	10.972	1.404	2.774	13.746
Jun	8.569	9.626	1.123	5.484	1.305	0.000	5.484
Jul	23.721	85.521	3.605	4.966	1.225	2.171	7.136
Aug	10.612	18.668	1.759	4.128	1.110	0.000	4.128
Sep	22.372	67.243	3.006	3.302	1.021	2.506	5.808

Rule curve

Desktop Version 2, Generated on 10/04/15

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii11

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	16.916	16.773	16.446	10.800	7.129	4.362	2.181	1.277	0.638	0.053
Nov	26.525	26.345	25.971	25.232	19.152	11.491	8.033	3.990	1.543	0.426
Dec	44.505	41.243	38.320	35.492	32.389	27.148	22.714	16.552	8.565	0.372
Jan	52.302	48.280	44.692	41.249	37.517	31.219	23.993	18.815	7.874	2.128
Feb	65.832	59.922	54.735	49.913	44.920	31.335	24.259	21.386	11.438	2.234
Mar	40.733	40.471	39.926	36.921	28.356	17.556	13.300	11.119	7.235	0.851
Apr	21.134	20.950	20.530	18.514	15.694	10.055	7.395	4.150	1.915	0.266
May	16.127	15.989	15.641	11.066	9.682	7.288	3.937	2.128	1.117	0.160
Jun	6.548	6.498	6.385	6.150	5.713	4.469	2.341	1.436	0.745	0.106
Jul	8.303	8.238	8.089	5.639	4.203	3.671	2.766	1.330	0.479	0.053
Aug	4.929	4.893	4.810	4.628	2.926	2.234	1.649	0.851	0.319	0.053
Sep	6.685	6.633	6.516	5.692	3.618	2.341	1.490	1.011	0.372	0.053

Reserve Flows without High Flows

Oct	10.375	10.288	10.090	9.682	7.129	4.362	2.181	1.277	0.638	0.053
Nov	15.991	15.883	15.657	15.211	14.375	11.491	8.033	3.990	1.543	0.426
Dec	20.980	20.854	20.591	20.070	19.094	17.391	14.682	10.918	6.723	0.372
Jan	23.195	23.053	22.756	22.168	21.068	19.146	16.091	11.845	7.112	2.128
Feb	22.537	22.397	22.106	21.531	20.452	18.570	15.575	11.415	6.777	2.234
Mar	23.803	23.655	23.348	22.740	21.600	17.556	13.300	11.119	7.153	0.851
Apr	16.830	16.682	16.348	15.656	14.367	10.055	7.395	4.150	1.915	0.266
May	13.093	12.981	12.728	11.066	9.682	7.288	3.937	2.128	1.117	0.160
Jun	6.548	6.498	6.385	6.150	5.713	4.469	2.341	1.436	0.745	0.106
Jul	5.929	5.884	5.782	5.572	4.203	3.671	2.766	1.330	0.479	0.053
Aug	4.929	4.893	4.810	4.628	2.926	2.234	1.649	0.851	0.319	0.053
Sep	3.944	3.916	3.853	3.722	3.478	2.341	1.490	1.011	0.372	0.053

Natural Duration curves

Oct	61.765	37.559	18.992	10.800	7.129	4.362	2.181	1.277	0.638	0.053
Nov	91.504	57.935	35.697	26.866	19.152	11.491	8.033	3.990	1.543	0.426
Dec	125.180	98.899	75.650	55.913	40.060	30.484	23.142	16.811	8.565	0.372
Jan	161.356	94.536	73.895	57.456	47.295	37.240	23.993	18.939	7.874	2.128
Feb	142.842	92.196	72.512	56.286	47.667	31.335	24.259	21.386	11.438	2.234
Mar	104.591	72.512	41.390	36.921	28.356	17.556	13.300	11.119	7.235	0.851
Apr	49.476	30.324	21.759	18.514	15.694	10.055	7.395	4.150	1.915	0.266
May	44.635	20.695	15.641	11.066	9.682	7.288	3.937	2.128	1.117	0.160
Jun	22.716	13.406	8.991	6.437	5.746	4.469	2.341	1.436	0.745	0.106
Jul	22.131	13.353	8.565	5.639	4.203	3.671	2.766	1.330	0.479	0.053
Aug	31.814	13.300	7.076	4.628	2.926	2.234	1.649	0.851	0.319	0.053
Sep	64.478	20.748	9.842	5.692	3.618	2.341	1.490	1.011	0.372	0.053

Hydrological time series

Total Runoff : Niii11

Desktop (Version 2) Modified Flow Data for Ecological Category B													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	16.882	24.844	24.806	4.948	6.118	5.958	3.458	2.075	1.224	0.798	0.479	6.669	98.259
1921	16.446	26.525	44.236	44.352	49.851	23.514	9.044	5.639	3.352	2.128	4.929	6.525	236.541
1922	10.534	26.525	44.505	52.302	58.342	38.889	19.684	10.746	6.117	4.043	2.447	1.436	275.569
1923	9.789	22.716	34.523	35.217	25.430	39.102	15.322	8.246	4.735	2.979	1.809	4.735	204.604
1924	14.311	26.350	37.688	46.197	62.376	40.733	21.134	16.127	6.548	8.303	4.918	6.578	291.263
1925	7.448	5.001	6.916	6.969	1.915	1.170	0.426	0.266	0.160	0.106	0.053	5.692	36.122
1926	0.160	0.426	4.575	3.777	5.426	2.075	1.170	0.585	0.319	1.330	0.319	0.106	20.268
1927	0.798	5.214	7.342	20.695	7.661	3.937	1.809	0.479	0.266	0.160	0.106	3.032	51.499
1928	0.053	0.479	0.266	2.128	4.682	15.268	5.001	2.873	1.649	1.490	0.745	4.150	38.784
1929	5.054	3.564	4.788	52.302	32.558	40.208	15.694	8.299	4.416	2.766	1.702	1.011	172.362
1930	0.638	0.532	12.296	5.799	3.192	0.426	0.266	0.160	0.106	0.053	0.053	0.000	23.521
1931	0.000	0.532	0.372	0.372	65.832	39.995	14.790	15.954	6.511	8.058	4.678	2.873	159.967
1932	1.809	1.117	18.912	7.714	21.386	8.193	3.405	1.915	1.117	8.179	0.426	0.266	74.438
1933	0.160	7.076	40.927	28.189	26.653	13.885	3.618	2.022	1.224	4.735	4.897	6.541	139.927
1934	5.692	6.384	24.494	6.437	14.524	1.117	0.585	0.372	1.436	0.160	0.106	0.053	61.360
1935	0.053	0.000	8.565	42.736	26.653	40.733	21.134	16.098	6.548	8.167	4.788	3.884	179.359
1936	2.447	26.113	29.652	42.067	56.420	28.356	12.555	7.288	4.309	3.086	1.649	1.064	215.005
1937	0.638	0.426	36.609	39.979	42.924	9.257	6.384	2.500	5.267	8.130	4.770	3.618	160.502
1938	16.655	25.409	36.984	44.692	45.043	36.442	9.842	7.395	3.777	8.172	4.893	6.475	245.777
1939	16.151	26.431	32.389	31.219	24.206	39.603	16.811	16.127	6.548	8.297	4.865	6.507	229.155
1940	6.650	15.481	36.050	37.517	46.831	13.300	20.620	11.651	5.847	3.671	2.234	1.383	201.235
1941	0.904	2.979	14.172	35.884	58.053	37.240	18.992	10.374	6.457	5.480	3.352	2.128	196.015
1942	7.395	17.822	40.859	38.943	24.100	22.929	20.530	16.073	6.523	8.303	4.929	6.685	215.092
1943	16.916	26.187	35.492	17.692	50.703	12.821	10.480	4.309	4.469	4.841	2.926	6.671	193.507
1944	16.857	23.248	30.234	11.917	28.090	40.693	20.914	15.109	6.373	5.586	3.352	2.022	204.396
1945	1.277	0.745	21.762	43.833	45.382	12.555	6.916	3.937	2.341	1.490	0.904	0.532	141.675
1946	1.383	4.416	27.148	13.672	22.504	40.733	20.635	12.449	6.150	4.096	2.500	1.490	157.176
1947	10.427	20.695	38.934	19.017	17.290	11.385	5.426	1.702	1.011	0.638	0.372	0.266	127.163
1948	3.032	6.065	15.336	23.993	12.342	14.736	17.822	16.083	6.347	5.373	3.245	1.915	126.289
1949	1.915	2.979	25.463	13.885	11.438	11.119	1.277	0.904	0.372	0.213	0.106	0.053	69.724
1950	1.436	1.490	30.933	7.874	22.982	28.994	2.128	1.277	0.745	0.479	4.928	6.657	109.923
1951	16.184	11.491	38.144	21.546	22.504	8.352	3.352	2.128	1.224	5.214	0.904	0.479	131.522
1952	0.319	4.469	28.836	22.876	54.735	14.364	20.751	13.885	6.217	4.203	4.727	2.288	177.671
1953	1.117	9.097	2.554	5.160	26.919	3.937	1.702	13.566	6.362	4.841	2.926	6.493	84.674
1954	16.373	25.174	22.714	31.219	59.922	40.733	21.134	16.042	6.501	8.089	4.732	3.086	255.718
1955	4.362	3.245	12.586	12.768	65.832	40.647	21.039	15.973	6.460	7.129	4.309	4.894	199.245
1956	3.352	26.307	34.659	28.189	44.920	10.587	19.312	15.824	6.231	8.303	4.929	6.685	209.297
1957	16.916	26.525	42.787	46.034	63.326	24.632	15.268	11.066	6.117	4.043	2.447	1.490	260.650
1958	2.288	26.127	32.992	19.631	43.170	12.023	5.692	5.107	2.234	1.436	0.851	6.525	158.076
1959	4.469	18.620	39.907	23.036	34.420	13.460	20.420	8.565	4.256	2.713	1.649	6.379	177.894
1960	2.128	21.120	42.467	52.302	58.993	39.603	15.322	9.682	6.231	5.799	3.511	6.604	263.761
1961	15.694	10.906	11.651	27.913	11.491	13.513	6.331	1.915	0.958	0.638	0.638	0.266	101.914
1962	2.181	10.108	44.505	42.672	39.740	30.111	20.800	12.236	6.422	8.303	4.929	6.674	228.681
1963	16.495	26.379	25.275	48.847	18.141	9.842	7.980	3.139	1.862	1.170	0.692	6.579	166.401
1964	16.890	26.525	42.747	35.517	52.583	12.768	7.927	4.735	5.682	4.203	1.543	4.841	215.960
1965	11.332	8.140	5.001	39.021	47.016	7.448	3.990	2.607	1.649	1.011	0.904	0.638	128.757
1966	0.266	8.033	36.717	29.246	62.782	40.094	20.512	12.874	6.271	4.682	2.820	1.649	225.945
1967	3.298	26.466	37.955	30.802	22.504	40.413	18.992	10.853	6.150	4.043	4.770	1.490	207.736
1968	1.170	3.352	43.266	39.197	24.259	40.627	21.028	15.917	6.444	6.544	3.990	4.150	209.945
1969	16.845	25.971	19.013	33.651	51.972	22.131	7.927	5.214	2.713	1.756	4.929	6.655	198.778
1970	16.916	26.165	20.906	48.280	14.790	17.556	17.556	16.127	6.547	8.238	4.847	5.001	202.928
1971	6.703	5.373	38.320	50.761	65.832	40.733	21.111	16.083	6.533	8.226	4.821	4.575	269.071
1972	7.129	3.511	12.405	27.936	65.832	40.497	21.134	16.109	6.536	8.150	4.923	6.685	220.848
1973	16.916	26.114	30.787	47.510	48.280	19.312	10.055	6.278	3.724	8.224	1.436	0.904	219.541
1974	0.692	25.652	43.083	49.780	63.245	40.658	20.953	15.824	6.385	5.692	3.458	6.685	282.107
1975	16.916	26.420	39.026	51.410	55.970	40.445	21.134	16.127	6.548	8.303	4.880	6.379	293.559
1976	16.773	19.046	39.766	46.599	65.832	40.733	21.134	16.127	6.547	8.240	4.828	6.633	292.259
1977	16.666	9.736	27.206	52.302	55.437	33.197	16.492	10.214	5.881	3.830	2.341	1.543	234.845
1978	16.878	25.232	33.878	30.422	43.881	9.736	7.501	3.618	2.128	8.277	4.859	6.624	193.033
1979	16.118	8.672	31.690	32.285	24.898	2.979	0.958	0.585	0.372	0.213	0.160	2.341	121.271
1980	2.500	25.248	33.701	41.249	45.382	11.970	7.395	16.127	6.548	8.269	4.879	6.685	209.953
1981	16.854	25.634	25.968	31.385	33.516	30.111	19.578	10.640	5.780	3.671	2.234	1.330	206.702
1982	4.362	9.470	3.618	15.268	2.234	7.235	0.160	0.532	0.106	0.053	1.543	0.798	45.379
1983	1.809	26.525	39.548	52.302	65.832	40.733	21.134	16.127	6.548	8.303	4.929	6.685	290.476
1984	16.618	19.152	13.961	48.102	65.832	40.571	21.048	15.989	6.492	7.714	4.628	2.766	262.873
1985	16.541	26.345	24.963	38.337	51.523	21.440	4.469	2.820	1.649	1.064	0.638	0.372	190.161
1986	1.436	3.298	41.243	38.767	27.238	32.080	18.088	15.841	6.332	8.121	4.910	6.685	204.038
1987	16.916	26.525	44.505	50.935	53.418	40.173	20.950	15.791	6.389	8.290	4.688	6.496	295.075
1988	16.642	26.466	44.505	44.692	58.435	39.398	18.514	10.800	6.150	3.990	2.447	6.601	278.640
1989	5.160	26.525	44.505	46.670	51.879	40.448	21.087	15.896	6.385	5.639	3.405	2.022	269.621
1990	6.012	14.896	34.450	46.048	65.734	40.421	20.826	16.118	6.498	8.058	4.688	2.926	266.676
1991	3.671	3.990	31.602	19.737	56.896	19.312	5.001	3.032	1.809	1.117	0.692	0.426	147.286
1992	1.011	2.075	15.706	17.887	15.588	0.851	4.150	0.106	0.053	0.000	0.053	3.618	61.098
1993	16.916	26.512	41.787	48.633	49.913	39.926	15.800	8.725	5.107	3.245	1.968	1.170	259.702
1994	7.554	11.066	35.913	21.759	3.352	17.237	1.915	1.117	0.745	0.479	0.266	0.160	101.563
1995	10.108	24.259	44.505	52.302	65.832	40.733	21.134	16.127	6.548	8.303	4.904	6.516	301.272
1996	16.871	13.619	33.326	37.575	46.461	40.471	21.076	15.641	6.532	8.303	4.916	6.681	251.472
1997	16.916	26.525	44.505	50.547	30.803	40.520	16.386	9.310	5.426	3.405	2.075	1.224	247.642
1998	16.867	14.045	39.241	44.432	31.335	32.292	10.161	4.150	2.394	1.490	0.958	0.532	197.897
1999	1.968	1.543	44.246	52.302	65.832	40.733	21.134	16.127	6.548	8.282	4.854	6.398	26

A.77. *Niii11 – Category C***Summary table**

Desktop Version 2, Generated on 10/04/15
 Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :
 Total Runoff : Niii11

Annual Flows (Mill. cu. m or index values):

MAR = 416.687
 S.Dev. = 363.584
 CV = 0.873
 Q75 = 3.618
 Q75/MMF = 0.104
 BFI Index = 0.338
 CV(JJA+JFM) Index = 3.565

Ecological Category = C

Total IFR = 185.565 (44.53 %MAR)
 Maint. Lowflow = 93.698 (22.49 %MAR)
 Drought Lowflow = 25.778 (6.19 %MAR)
 Maint. Highflow = 91.868 (22.05 %MAR)

Monthly Distributions (Mill. cu. m.)
 Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
			CV	Maint.	Drought	Maint.	
Oct	29.588	71.747	2.425	5.973	1.240	5.981	11.954
Nov	34.392	46.383	1.349	8.484	1.417	9.630	18.114
Dec	59.103	55.902	0.946	12.988	3.976	12.112	25.101
Jan	67.681	81.680	1.207	13.684	4.014	14.986	28.670
Feb	72.496	105.555	1.456	12.904	3.742	22.292	35.195
Mar	48.487	74.928	1.545	13.025	3.946	15.479	28.504
Apr	23.060	31.643	1.372	8.720	1.376	3.936	12.655
May	16.606	23.190	1.397	7.058	1.404	2.774	9.832
Jun	8.569	9.626	1.123	3.471	1.305	0.000	3.471
Jul	23.721	85.521	3.605	3.278	1.225	2.171	5.448
Aug	10.612	18.668	1.759	3.016	1.110	0.000	3.016
Sep	22.372	67.243	3.006	1.098	1.021	2.506	3.604

Rule curve

Desktop Version 2, Generated on 10/04/15
 Summary of IFR rule curves (Desktop Version 2) for :
 Total Runoff : Niii11
 Regional Type : N.Natal
 Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	15.097	14.970	14.683	10.800	7.129	4.362	2.181	1.277	0.638	0.053
Nov	23.302	23.147	22.823	22.182	19.152	11.491	8.033	3.990	1.543	0.426
Dec	41.619	38.379	35.500	32.761	29.823	24.872	20.897	15.374	8.565	0.372
Jan	48.169	44.178	40.654	37.338	33.842	27.959	23.426	17.128	7.874	2.128
Feb	61.270	55.394	50.278	45.596	40.864	31.335	24.259	19.921	11.438	2.234
Mar	36.614	36.382	35.901	34.947	28.356	17.556	13.300	11.119	7.235	0.851
Apr	16.411	16.271	15.954	15.299	14.077	10.055	7.395	4.150	1.915	0.266
May	12.801	12.695	12.455	11.066	9.682	7.288	3.937	2.128	1.117	0.160
Jun	4.700	4.667	4.594	4.442	4.159	3.692	2.341	1.436	0.745	0.106
Jul	6.984	6.931	6.811	5.639	4.203	3.671	2.766	1.330	0.479	0.053
Aug	4.083	4.055	3.990	3.857	2.926	2.234	1.649	0.851	0.319	0.053
Sep	4.431	4.401	4.332	4.191	3.618	2.341	1.490	1.011	0.372	0.053

Reserve Flows without High Flows

Oct	8.080	8.015	7.867	7.561	6.990	4.362	2.181	1.277	0.638	0.053
Nov	11.812	11.735	11.574	11.255	10.659	9.618	7.962	3.990	1.543	0.426
Dec	18.095	17.990	17.771	17.339	16.529	15.114	12.865	9.740	6.257	0.372
Jan	19.063	18.951	18.718	18.257	17.394	15.886	13.489	10.158	6.445	2.128
Feb	17.975	17.869	17.649	17.213	16.397	14.971	12.703	9.553	6.041	2.234
Mar	18.145	18.039	17.820	17.385	16.570	15.148	12.886	9.743	6.239	0.851
Apr	11.793	11.694	11.468	11.002	10.133	8.702	6.681	4.150	1.915	0.266
May	9.547	9.469	9.293	8.928	8.249	7.130	3.937	2.128	1.117	0.160
Jun	4.700	4.667	4.594	4.442	4.159	3.692	2.341	1.436	0.745	0.106
Jul	4.437	4.407	4.337	4.193	3.925	3.484	2.766	1.330	0.479	0.053
Aug	4.083	4.055	3.990	3.857	2.926	2.234	1.649	0.851	0.319	0.053
Sep	4.490	4.486	4.476	4.455	4.146	3.351	2.260	1.011	0.372	0.053

Natural Duration curves

Oct	61.765	37.559	18.992	10.800	7.129	4.362	2.181	1.277	0.638	0.053
Nov	91.504	57.935	35.697	26.866	19.152	11.491	8.033	3.990	1.543	0.426
Dec	125.180	98.899	75.650	55.913	40.060	30.484	23.142	16.811	8.565	0.372
Jan	161.356	94.536	73.895	57.456	47.295	37.240	23.993	18.939	7.874	2.128
Feb	142.842	92.196	72.512	56.286	47.667	31.335	24.259	21.386	11.438	2.234
Mar	104.591	72.512	41.390	36.921	28.356	17.556	13.300	11.119	7.235	0.851
Apr	49.476	30.324	21.759	18.514	15.694	10.055	7.395	4.150	1.915	0.266
May	44.635	20.695	15.641	11.066	9.682	7.288	3.937	2.128	1.117	0.160
Jun	22.716	13.406	8.991	6.437	5.746	4.469	2.341	1.436	0.745	0.106
Jul	22.131	13.353	8.565	5.639	4.203	3.671	2.766	1.330	0.479	0.053
Aug	31.814	13.300	7.076	4.628	2.926	2.234	1.649	0.851	0.319	0.053
Sep	64.478	20.748	9.842	5.692	3.618	2.341	1.490	1.011	0.372	0.053

Hydrological time series

Total Runoff : Niii11

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	15.066	21.867	22.773	4.948	6.118	5.958	3.458	2.075	1.224	0.798	0.479	4.421	89.185
1921	14.683	23.302	41.351	40.325	45.537	23.514	9.044	5.639	3.313	2.128	4.083	4.337	217.257
1922	10.534	23.302	41.619	48.169	53.832	35.220	15.684	10.746	4.420	4.043	2.447	1.436	251.453
1923	9.789	21.536	31.844	31.694	25.430	35.250	13.945	8.246	3.789	2.979	1.809	4.069	190.381
1924	14.266	23.151	34.885	42.126	57.831	36.614	16.411	12.801	4.700	6.984	4.074	4.368	258.211
1925	7.448	5.001	6.916	6.969	1.915	1.170	0.426	0.266	0.160	0.106	0.053	4.191	34.621
1926	0.160	0.426	4.575	3.777	5.426	2.075	1.170	0.585	0.319	1.330	0.319	0.106	20.268
1927	0.798	5.214	7.342	20.022	7.661	3.937	1.809	0.479	0.266	0.160	0.106	3.032	50.826
1928	0.053	0.479	0.266	2.128	4.682	15.268	5.001	2.873	1.649	1.490	0.745	3.995	38.629
1929	5.054	3.564	4.788	48.169	32.558	36.150	14.077	8.299	3.672	2.766	1.702	1.011	161.810
1930	0.638	0.532	11.560	5.799	3.192	0.426	0.266	0.160	0.106	0.053	0.053	0.000	22.785
1931	0.000	0.532	0.372	0.372	61.270	35.961	13.755	12.669	4.675	6.786	3.888	2.873	143.153
1932	1.809	1.117	17.489	7.714	19.921	8.193	3.405	1.915	1.117	6.883	0.426	0.266	70.255
1933	0.160	7.076	38.067	25.313	26.653	13.885	3.618	2.022	1.224	4.735	4.058	4.347	131.158
1934	5.692	6.384	22.493	6.437	14.524	1.117	0.585	0.372	1.436	0.160	0.106	0.053	59.359
1935	0.053	0.000	8.565	38.760	26.653	36.614	16.411	12.779	4.700	6.874	3.973	3.884	159.265
1936	2.447	22.945	27.237	38.120	51.934	28.356	12.555	7.288	3.632	3.086	1.649	1.064	200.313
1937	0.638	0.426	33.837	36.148	38.977	9.257	6.384	2.500	3.984	6.844	3.959	3.618	146.572
1938	14.866	22.335	34.200	40.654	40.981	34.847	9.842	7.395	3.430	6.878	4.055	4.308	223.792
1939	14.424	23.221	29.823	27.959	24.206	35.616	14.561	12.801	4.700	6.979	4.033	4.327	202.650
1940	6.650	15.481	33.299	33.842	42.675	13.300	16.022	11.651	4.245	3.671	2.234	1.383	184.454
1941	0.904	2.979	13.241	32.317	53.546	34.992	15.500	10.374	4.640	5.480	3.352	2.128	179.454
1942	7.395	17.822	38.000	35.178	24.100	22.929	15.954	12.760	4.683	6.984	4.083	4.431	194.319
1943	15.097	23.010	32.761	16.147	46.358	12.821	10.480	4.309	3.692	4.841	2.926	4.422	176.864
1944	15.044	21.619	27.787	11.917	28.090	36.578	16.245	12.414	4.586	5.586	3.352	2.022	185.241
1945	1.277	0.745	20.044	39.823	41.302	12.555	6.916	3.937	2.341	1.490	0.904	0.532	131.866
1946	1.383	4.416	24.872	12.970	22.356	36.614	16.033	12.213	4.442	4.096	2.500	1.490	143.383
1947	10.427	20.695	36.103	17.304	16.898	11.385	5.426	1.702	1.011	0.638	0.372	0.266	122.228
1948	3.032	6.065	14.284	23.426	12.342	14.736	14.999	12.768	4.569	5.373	3.245	1.915	116.755
1949	1.915	2.979	23.361	13.075	11.438	11.119	1.277	0.904	0.372	0.213	0.106	0.053	66.812
1950	1.436	1.490	28.448	7.874	22.982	28.994	2.128	1.277	0.745	0.479	4.082	4.414	104.349
1951	14.453	11.491	35.329	20.901	22.356	8.352	3.352	2.128	1.224	5.214	0.904	0.479	126.182
1952	0.319	4.469	26.467	22.273	50.278	14.364	16.121	12.321	4.485	4.203	3.926	2.288	161.514
1953	1.117	9.097	2.554	5.160	26.919	3.937	1.702	12.297	4.579	4.841	2.926	4.319	79.448
1954	14.618	22.132	20.897	27.959	55.394	36.614	16.411	12.736	4.669	6.811	3.929	3.086	225.256
1955	4.362	3.245	11.819	12.524	61.270	36.538	16.339	12.683	4.642	6.725	3.811	4.090	178.048
1956	3.352	23.114	31.972	25.313	40.864	10.587	15.635	12.569	4.494	6.984	4.083	4.431	183.397
1957	15.097	23.302	39.911	41.966	58.775	24.632	13.925	11.066	4.420	4.043	2.447	1.490	241.074
1958	2.288	22.958	30.395	18.269	39.209	12.023	5.692	5.107	2.234	1.436	0.851	4.337	144.799
1959	4.469	18.620	37.060	22.439	34.420	13.460	15.871	8.565	3.612	2.713	1.649	4.252	167.129
1960	2.128	21.120	39.593	48.169	54.475	35.616	13.945	9.682	4.494	5.799	3.511	4.384	242.915
1961	14.336	10.906	11.104	25.072	11.491	13.513	6.331	1.915	0.958	0.638	0.638	0.266	97.168
1962	2.181	10.108	41.619	38.699	37.012	30.111	16.158	12.173	4.618	6.984	4.083	4.424	208.171
1963	14.726	23.176	23.193	44.740	17.526	9.842	7.980	3.139	1.862	1.170	0.692	4.369	152.415
1964	15.073	23.302	39.871	31.975	48.179	12.768	7.927	4.735	4.139	4.203	1.543	4.083	197.797
1965	11.332	8.140	5.001	35.252	42.850	7.448	3.990	2.607	1.649	1.011	0.904	0.638	120.822
1966	0.266	8.033	33.940	26.236	58.234	36.049	15.940	12.245	4.520	4.682	2.820	1.649	204.615
1967	3.298	23.251	35.145	27.595	22.356	36.331	15.500	10.853	4.442	4.043	3.959	1.490	188.263
1968	1.170	3.352	40.386	35.416	24.259	36.520	16.330	12.640	4.632	6.544	3.764	3.995	189.010
1969	15.034	22.823	17.580	30.231	47.583	22.131	7.927	5.214	2.713	1.756	4.083	4.413	181.489
1970	15.097	22.990	19.276	44.178	14.790	17.556	14.884	12.801	4.699	6.931	4.019	4.103	181.325
1971	6.703	5.373	35.500	46.638	61.270	36.614	16.393	12.768	4.689	6.922	3.999	4.049	240.918
1972	7.129	3.511	11.657	25.092	61.270	36.405	16.411	12.788	4.692	6.860	4.078	4.431	194.324
1973	15.097	22.947	28.310	43.420	44.048	19.312	10.055	6.278	4.166	6.920	1.436	0.904	202.142
1974	0.692	22.546	40.204	45.665	58.695	36.547	16.274	12.569	4.594	5.692	3.458	4.431	251.365
1975	15.097	23.212	36.194	47.283	51.492	36.359	16.411	12.801	4.700	6.983	4.045	4.252	258.828
1976	14.970	19.046	36.921	42.522	61.270	36.614	16.411	12.801	4.699	6.933	4.004	4.401	260.592
1977	14.876	9.736	24.926	48.169	50.968	33.197	14.423	10.214	4.268	3.830	2.341	1.543	218.491
1978	15.063	22.182	31.233	27.263	39.882	9.736	7.501	3.618	2.128	6.963	4.029	4.395	173.992
1979	14.395	8.672	29.163	28.955	24.898	2.979	0.958	0.585	0.372	0.213	0.160	2.341	113.690
1980	2.500	22.196	31.065	37.338	41.302	11.970	7.395	12.801	4.700	6.956	4.044	4.431	186.698
1981	15.042	22.531	23.814	28.114	33.516	30.111	15.670	10.640	4.202	3.671	2.234	1.330	190.875
1982	4.362	9.470	3.618	14.184	2.234	7.235	0.160	0.532	0.106	0.053	1.543	0.798	44.295
1983	1.809	23.302	36.706	48.169	61.270	36.614	16.411	12.801	4.700	6.984	4.083	4.431	257.279
1984	14.834	19.152	13.051	44.003	61.270	36.471	16.345	12.695	4.663	6.760	3.857	2.766	235.869
1985	14.767	23.147	22.913	34.611	47.150	21.440	4.469	2.820	1.649	1.064	0.638	0.372	175.038
1986	1.436	3.298	38.379	35.014	27.238	32.080	15.114	12.581	4.559	6.837	4.068	4.431	185.035
1987	15.097	23.302	41.619	46.810	48.993	36.119	16.271	12.543	4.597	6.973	3.895	4.320	260.540
1988	14.855	23.252	41.619	40.654	53.924	35.435	15.299	10.800	4.442	3.990	2.447	4.382	251.098
1989	5.160	23.302	41.619	42.592	47.494	36.362	16.375	12.624	4.594	5.639	3.405	2.022	241.188
1990	6.012	14.896	31.775	41.990	61.173	36.338	16.177	12.795	4.667	6.786	3.895	2.926	239.420
1991	3.671	3.990	29.080	18.443	52.403	19.312	5.001	3.032	1.809	1.117	0.692	0.426	138.976
1992	1.011	2.075	14.616	16.317	15.588	0.851	4.150	0.106	0.053	0.000	0.053	3.618	58.438
1993	15.097	23.291	38.919	44.528	45.596	35.901	14.123	8.725	3.925	3.245	1.968	1.170	236.487
1994	7.554	11.066	33.166	21.121	3.352	17.237	1.915	1.117	0.745	0.479	0.266	0.160	98.178
1995	10.108	21.776	41.619	48.169	61.270	36.614	16.411	12.801	4.700	6.984	4.064	4.332	268.848
1996	15.057	13.619	30.710	33.897	42.324	36.382	16.367	12.455	4.689	6.984	4.073	4.428	220.985
1997	15.097	23.302	41.619	46.424	30.803	36.426	14.377	9.310	4.042	3.405	2.075	1.224	228.104
1998	15.053	14.045	36.404	40.402	31.335	32.292	10.161	4.150	2.394	1.490	0.958	0.532	189.217
1999	1.968	1.543	41.362	48.169	61.270	36.614	16.411	12.801	4.700	6.967	4.024	4.264	240.093
2000	10.427												

A.78. *Niii11 – Category D***Summary table**

Desktop Version 2, Generated on 2015-03-09

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii11

Annual Flows (Mill. cu. m or index values):

MAR = 416,687

S.Dev. = 363,584

CV = 0,873

Q75 = 3,618

Q75/MMF = 0,104

BFI Index = 0,338

CV(JJA+JFM) Index = 3,565

Ecological Category = D

Total IFR = 90,818 (21,80 %MAR)

Maint. Lowflow = 25,778 (6,19 %MAR)

Drought Lowflow = 25,778 (6,19 %MAR)

Maint. Highflow = 65,040 (15,61 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	29,588	71,747	2,425	1,240	1,240	4,398	5,639
Nov	34,392	46,383	1,349	1,417	1,417	6,277	7,694
Dec	59,103	55,902	0,946	3,976	3,976	7,464	11,441
Jan	67,681	81,680	1,207	4,014	4,014	9,922	13,937
Feb	72,496	105,555	1,456	3,742	3,742	17,543	21,285
Mar	48,487	74,928	1,545	3,946	3,946	9,659	13,605
Apr	23,060	31,643	1,372	1,376	1,376	2,934	4,311
May	16,606	23,190	1,397	1,404	1,404	2,267	3,671
Jun	8,569	9,626	1,123	1,305	1,305	0,000	1,305
Jul	23,721	85,521	3,605	1,225	1,225	2,195	3,420
Aug	10,612	18,668	1,759	1,110	1,110	0,000	1,110
Sep	22,372	67,243	3,006	1,021	1,021	2,379	3,400

Rule curve

Desktop Version 2, Generated on 2015-03-09

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii11

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	8.553	8.488	8.339	8.031	7.129	4.362	2.181	1.277	0.638	0.053
Nov	12.186	12.111	11.954	11.643	11.061	10.045	8.033	3.990	1.543	0.426
Dec	22.425	20.464	18.763	17.220	15.683	13.107	11.414	9.061	6.439	0.372
Jan	27.274	24.676	22.435	20.423	18.452	15.154	13.105	10.258	7.084	2.128
Feb	41.532	36.963	33.053	29.597	26.303	20.807	17.716	13.419	8.631	2.234
Mar	22.272	22.143	21.874	21.342	20.346	17.556	13.300	11.119	7.235	0.851
Apr	6.724	6.676	6.567	6.341	5.919	5.224	4.244	3.115	1.915	0.266
May	5.827	5.787	5.696	5.508	5.158	4.581	3.767	2.128	1.117	0.160
Jun	2.421	2.410	2.386	2.336	2.243	2.090	1.873	1.436	0.745	0.106
Jul	5.392	5.355	5.269	5.093	4.203	3.671	2.766	1.330	0.479	0.053
Aug	2.059	2.050	2.029	1.987	1.908	1.777	1.593	0.851	0.319	0.053
Sep	5.276	5.238	5.151	4.971	3.618	2.341	1.490	1.011	0.372	0.053

Reserve Flows without High Flows

Oct	2.300	2.290	2.267	2.220	2.131	1.986	1.780	1.277	0.638	0.053
Nov	2.826	2.815	2.793	2.750	2.669	2.528	2.304	1.992	1.543	0.426
Dec	7.928	7.899	7.838	7.716	7.490	7.094	6.464	5.590	4.615	0.372
Jan	8.003	7.974	7.912	7.790	7.561	7.161	6.526	5.643	4.659	2.128
Feb	7.461	7.433	7.375	7.262	7.048	6.676	6.083	5.260	4.343	2.234
Mar	7.868	7.839	7.778	7.658	7.433	7.040	6.415	5.547	4.580	0.851
Apr	2.553	2.541	2.516	2.463	2.365	2.204	1.975	1.713	1.488	0.266
May	2.603	2.592	2.566	2.512	2.412	2.247	2.015	1.747	1.117	0.160
Jun	2.421	2.410	2.386	2.336	2.243	2.090	1.873	1.436	0.745	0.106
Jul	2.272	2.262	2.240	2.193	2.105	1.961	1.758	1.330	0.479	0.053
Aug	2.059	2.050	2.029	1.987	1.908	1.777	1.593	0.851	0.319	0.053
Sep	1.893	1.885	1.866	1.827	1.754	1.635	1.465	1.011	0.372	0.053

Natural Duration curves

Oct	61.765	37.559	18.992	10.800	7.129	4.362	2.181	1.277	0.638	0.053
Nov	91.504	57.935	35.697	26.866	19.152	11.491	8.033	3.990	1.543	0.426
Dec	125.180	98.899	75.650	55.913	40.060	30.484	23.142	16.811	8.565	0.372
Jan	161.356	94.536	73.895	57.456	47.295	37.240	23.993	18.939	7.874	2.128
Feb	142.842	92.196	72.512	56.286	47.667	31.335	24.259	21.386	11.438	2.234
Mar	104.591	72.512	41.390	36.921	28.356	17.556	13.300	11.119	7.235	0.851
Apr	49.476	30.324	21.759	18.514	15.694	10.055	7.395	4.150	1.915	0.266
May	44.635	20.695	15.641	11.066	9.682	7.288	3.937	2.128	1.117	0.160
Jun	22.716	13.406	8.991	6.437	5.746	4.469	2.341	1.436	0.745	0.106
Jul	22.131	13.353	8.565	5.639	4.203	3.671	2.766	1.330	0.479	0.053
Aug	31.814	13.300	7.076	4.628	2.926	2.234	1.649	0.851	0.319	0.053
Sep	64.478	20.748	9.842	5.692	3.618	2.341	1.490	1.011	0.372	0.053

Hydrological time series

Total Runoff : Niii11

Desktop (Version 2) Modified Flow Data for Ecological Category D													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	8.538	11.491	12.213	4.948	6.118	5.958	2.600	2.075	1.224	0.798	0.479	5.264	61.705
1921	8.339	12.186	22.262	22.233	29.556	19.567	4.834	4.336	1.965	2.128	2.059	5.157	134.623
1922	7.990	12.186	22.425	27.274	35.763	21.495	6.473	5.427	2.329	4.043	1.818	1.436	148.659
1923	7.874	11.330	16.741	17.248	18.559	21.511	5.873	4.812	2.122	2.979	1.627	4.735	115.410
1924	8.123	12.113	18.412	23.362	38.853	22.272	6.724	5.827	2.421	5.392	2.056	5.196	150.752
1925	7.448	5.001	5.930	6.587	1.915	1.170	0.426	0.266	0.160	0.106	0.053	4.971	34.033
1926	0.160	0.426	4.575	3.777	5.426	2.075	1.170	0.585	0.319	1.330	0.319	0.106	20.268
1927	0.798	5.214	6.062	11.566	7.374	3.937	1.809	0.479	0.266	0.160	0.106	3.032	40.803
1928	0.053	0.479	0.266	2.128	4.682	15.268	3.440	2.873	1.649	1.490	0.745	4.150	37.223
1929	5.054	3.564	4.788	27.274	21.219	22.013	5.919	4.825	2.083	2.766	1.604	1.011	102.120
1930	0.638	0.532	7.437	5.799	3.192	0.426	0.266	0.160	0.106	0.053	0.053	0.000	18.662
1931	0.000	0.532	0.372	0.372	41.532	21.908	5.807	5.776	2.413	5.251	1.997	2.873	88.833
1932	1.809	1.117	9.962	6.996	13.419	8.193	2.561	1.915	1.117	5.321	0.426	0.266	53.102
1933	0.160	7.076	20.278	13.958	19.441	13.885	2.719	2.022	1.224	4.735	2.051	5.169	92.719
1934	5.692	6.384	12.094	6.295	10.494	1.117	0.585	0.372	1.436	0.160	0.106	0.053	44.788
1935	0.053	0.000	6.439	21.271	19.441	22.272	6.724	5.818	2.421	5.314	2.024	3.884	95.661
1936	2.447	12.013	14.338	20.889	34.309	20.346	5.532	4.581	2.070	3.086	1.593	1.064	122.269
1937	0.638	0.426	17.816	19.752	24.996	9.257	3.914	2.500	2.186	5.293	2.019	3.618	92.415
1938	8.434	11.718	18.021	22.435	26.384	21.287	5.142	4.607	2.004	5.317	2.050	5.120	132.519
1939	8.204	12.147	15.683	15.154	17.619	21.715	6.086	5.827	2.421	5.389	2.043	5.144	117.432
1940	6.650	10.575	17.518	18.452	27.564	13.300	6.590	5.549	2.272	3.671	1.777	1.383	115.300
1941	0.904	2.979	8.153	17.597	35.543	21.367	6.410	5.333	2.401	5.056	1.928	2.128	109.799
1942	7.395	10.885	20.238	19.205	17.427	19.472	6.567	5.811	2.415	5.392	2.059	5.276	122.143
1943	8.553	12.045	17.220	9.814	30.152	12.821	5.277	3.923	2.090	4.841	1.908	5.265	113.909
1944	8.526	11.370	14.624	7.986	19.944	22.252	6.667	5.680	2.384	5.080	1.928	2.022	108.463
1945	1.277	0.745	11.051	21.925	26.608	12.555	4.088	3.767	1.873	1.490	0.904	0.532	86.814
1946	1.383	4.416	13.107	8.378	14.802	22.272	6.594	5.604	2.336	4.096	1.828	1.490	86.306
1947	7.973	11.178	19.116	10.338	11.703	11.385	3.602	1.702	1.011	0.638	0.372	0.266	79.283
1948	3.032	6.065	8.597	13.105	9.177	14.736	6.237	5.814	2.378	5.032	1.923	1.915	78.010
1949	1.915	2.979	12.464	8.425	8.631	11.119	1.277	0.904	0.372	0.213	0.106	0.053	48.454
1950	1.436	1.490	14.967	7.084	15.394	20.421	2.128	1.277	0.745	0.479	2.059	5.255	72.734
1951	8.219	10.045	18.666	11.964	14.802	8.352	2.521	2.128	1.224	4.995	0.904	0.479	84.300
1952	0.319	4.469	13.937	12.584	33.053	14.364	6.624	5.645	2.350	4.203	2.009	2.288	101.845
1953	1.117	9.056	2.554	5.160	19.632	3.937	1.702	5.636	2.381	4.841	1.908	5.133	63.058
1954	8.305	11.619	11.414	15.154	36.963	22.272	6.724	5.802	2.411	5.269	2.010	3.086	131.030
1955	4.362	3.245	7.548	8.176	41.532	22.230	6.700	5.782	2.402	5.208	1.972	4.842	113.998
1956	3.352	12.095	16.808	13.958	26.303	10.587	6.457	5.739	2.353	5.392	2.059	5.276	110.378
1957	8.553	12.186	21.388	23.262	39.586	19.747	5.866	5.508	2.329	4.043	1.818	1.490	145.775
1958	2.288	12.019	15.982	10.774	25.157	12.023	3.689	4.257	1.845	1.436	0.851	5.157	95.477
1959	4.469	10.991	19.679	12.659	21.845	13.460	6.538	4.889	2.063	2.713	1.593	5.049	105.948
1960	2.128	11.210	21.196	27.274	36.257	21.715	5.873	5.158	2.353	5.109	1.935	5.216	145.424
1961	8.159	9.841	7.243	13.849	8.663	13.513	3.897	1.915	0.958	0.638	0.638	0.266	69.580
1962	2.181	9.562	22.425	21.235	23.635	20.550	6.637	5.590	2.394	5.392	2.059	5.267	126.928
1963	8.361	12.125	12.392	25.041	12.059	9.842	4.453	3.139	1.746	1.170	0.692	5.198	96.218
1964	8.541	12.186	21.364	17.405	31.488	12.768	4.434	4.101	2.237	4.203	1.543	4.833	125.104
1965	8.045	8.140	5.001	19.246	27.686	7.448	2.996	2.607	1.649	1.011	0.904	0.638	85.371
1966	0.266	8.033	17.873	14.376	39.166	21.957	6.562	5.617	2.362	4.682	1.888	1.649	124.430
1967	3.298	12.162	18.561	14.990	14.802	22.114	6.410	5.454	2.336	4.043	2.019	1.490	107.679
1968	1.170	3.352	21.676	19.339	17.716	22.220	6.697	5.766	2.399	5.183	1.957	4.150	111.624
1969	8.521	11.954	10.001	16.428	31.044	19.344	4.434	4.273	1.907	1.756	2.059	5.254	116.975
1970	8.553	12.035	10.724	24.676	10.655	17.556	6.197	5.827	2.421	5.355	2.039	4.859	110.896
1971	6.703	5.373	18.763	26.273	41.532	22.272	6.718	5.814	2.418	5.348	2.032	4.575	147.821
1972	7.129	3.511	7.478	13.859	41.532	22.156	6.724	5.821	2.418	5.304	2.058	5.276	123.266
1973	8.553	12.014	14.896	24.191	28.519	18.890	5.224	4.431	1.999	5.347	1.436	0.904	126.404
1974	0.692	11.820	21.565	25.641	39.523	22.235	6.677	5.739	2.386	5.098	1.933	5.276	148.583
1975	8.553	12.142	19.169	26.695	33.974	22.130	6.724	5.827	2.421	5.392	2.047	5.049	150.122
1976	8.488	11.047	19.596	23.616	41.532	22.272	6.724	5.827	2.421	5.356	2.034	5.238	154.150
1977	8.439	9.431	13.135	27.274	33.576	20.909	6.038	5.292	2.279	3.830	1.798	1.543	133.546
1978	8.536	11.643	16.421	14.840	25.623	9.736	4.282	3.608	1.817	5.377	2.042	5.230	109.153
1979	8.189	8.672	15.339	15.713	18.176	2.979	0.958	0.585	0.372	0.213	0.160	2.341	73.697
1980	2.500	11.650	16.333	20.423	26.608	11.970	4.244	5.827	2.421	5.373	2.047	5.276	114.670
1981	8.525	11.812	12.657	15.242	21.541	20.550	6.469	5.400	2.257	3.671	1.777	1.330	111.231
1982	4.362	9.275	3.618	8.927	2.234	7.235	0.160	0.532	0.106	0.053	1.543	0.798	38.843
1983	1.809	12.186	19.468	27.274	41.532	22.272	6.724	5.827	2.421	5.392	2.059	5.276	152.240
1984	8.417	11.061	8.072	24.564	41.532	22.192	6.702	5.787	2.409	5.233	1.987	2.766	140.722
1985	8.382	12.111	12.273	18.885	30.728	19.233	3.237	2.820	1.649	1.064	0.638	0.372	111.392
1986	1.436	3.298	20.464	19.112	19.717	20.779	6.277	5.743	2.375	5.287	2.054	5.276	111.819
1987	8.553	12.186	22.425	26.386	32.095	21.996	6.676	5.729	2.387	5.385	1.999	5.135	150.953
1988	8.428	12.162	22.425	22.435	35.833	21.614	6.341	5.441	2.336	3.990	1.818	5.214	148.037
1989	5.160	12.186	22.425	23.661	30.979	22.131	6.712	5.760	2.386	5.093	1.930	2.022	140.445
1990	6.012	10.497	16.704	23.271	41.456	22.118	6.644	5.824	2.410	5.251	1.999	2.926	145.112
1991	3.671	3.990	15.296	10.853	34.665	18.890	3.440	3.032	1.732	1.117	0.692	0.426	97.803
1992	1.011	2.075	8.739	9.891	10.989	0.851	3.115	0.106	0.053	0.000	0.053	3.618	40.501
1993	8.553	12.181	20.789	24.903	29.597	21.874	5.935	4.927	2.166	3.245	1.660	1.170	137.001
1994	7.524	9.897	17.445	12.063	3.352	17.237	1.915	1.117	0.745	0.479	0.266	0.160	72.200
1995	7.923	11.447	22.425	27.274	41.532	22.272	6.724	5.827	2.421	5.392	2.053	5.151	160.441
1996	8.533	10.328	16.147	18.482	27.319	22.143	6.709	5.696	2.417	5.392	2.056	5.273	130.495
1997	8.553	12.186	22.425	26.134	20.666	22.167	6.022	5.068	2.205	3.405	1.682	1.224	131.738
1998	8.531	10.384	19.292	22.281	20.807	20.804	5.237	3.857	1.878	1.490	0.958	0.532	116.051
1999	1.968	1.543	22.269	27.274	41.532	22.272	6.724	5.827	2.421	5.380	2.040	5.063	144.313
2000	7.973	12.186	22.425	25.086	25.891	21.672	6.046	5.239	2.250	3.618	1.777	5.276	139.440

A.79. *Niii12 – Category B***Summary table**

Desktop Version 2, Generated on 2015-03-26

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii12

Annual Flows (Mill. cu. m or index values):

MAR = 21,143

S.Dev. = 22,860

CV = 1,081

Q75 = 0,043

Q75/MMF = 0,024

BFI Index = 0,272

CV(JJA+JFM) Index = 5,318

Ecological Category = B

Total IFR = 10,617 (50,22 %MAR)

Maint. Lowflow = 7,615 (36,02 %MAR)

Drought Lowflow = 0,333 (1,58 %MAR)

Maint. Highflow = 3,002 (14,20 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	1,087	2,677	2,463	0,687	0,017	0,307	0,994
Nov	1,419	2,932	2,066	0,633	0,017	0,313	0,946
Dec	1,636	4,211	2,574	1,127	0,051	0,593	1,720
Jan	1,468	2,289	1,559	1,470	0,050	0,439	1,909
Feb	4,306	11,731	2,724	1,061	0,047	0,466	1,527
Mar	3,617	8,758	2,421	0,683	0,049	0,317	1,000
Apr	1,802	3,021	1,676	0,329	0,016	0,116	0,445
May	2,123	4,714	2,221	0,600	0,018	0,151	0,751
Jun	0,877	1,511	1,723	0,283	0,016	0,088	0,371
Jul	1,271	6,356	5,001	0,226	0,017	0,059	0,284
Aug	0,557	1,404	2,523	0,170	0,017	0,036	0,206
Sep	0,980	3,712	3,786	0,345	0,016	0,117	0,462

Rule curve

Desktop Version 2, Generated on 2015-03-26

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii12

Regional Type : Zululand

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.130	1.126	0.493	0.207	0.133	0.082	0.033	0.016	0.002	0.000
Nov	1.082	1.079	0.801	0.480	0.357	0.162	0.062	0.041	0.008	0.000
Dec	2.577	1.675	1.209	0.626	0.404	0.211	0.098	0.045	0.023	0.000
Jan	2.673	2.532	1.488	1.000	0.657	0.322	0.127	0.029	0.006	0.000
Feb	2.232	2.080	1.940	1.548	0.796	0.411	0.133	0.066	0.021	0.000
Mar	1.466	1.361	1.267	1.152	0.831	0.390	0.164	0.066	0.014	0.002
Apr	0.508	0.506	0.498	0.481	0.445	0.255	0.072	0.027	0.004	0.000
May	0.861	0.856	0.841	0.657	0.449	0.146	0.062	0.008	0.002	0.000
Jun	0.421	0.418	0.411	0.394	0.265	0.148	0.086	0.021	0.002	0.000
Jul	0.321	0.318	0.312	0.261	0.142	0.090	0.053	0.016	0.000	0.000
Aug	0.235	0.233	0.229	0.220	0.140	0.070	0.035	0.010	0.002	0.000
Sep	0.528	0.525	0.312	0.238	0.144	0.076	0.029	0.016	0.002	0.000

Reserve Flows without High Flows

Oct	0.799	0.796	0.493	0.207	0.133	0.082	0.033	0.016	0.002	0.000
Nov	0.742	0.740	0.730	0.480	0.357	0.162	0.062	0.041	0.008	0.000
Dec	1.333	1.331	1.209	0.626	0.404	0.211	0.098	0.045	0.023	0.000
Jan	1.754	1.754	1.488	1.000	0.657	0.322	0.127	0.029	0.006	0.000
Feb	1.255	1.253	1.237	1.199	0.796	0.411	0.133	0.066	0.021	0.000
Mar	0.802	0.800	0.789	0.764	0.712	0.390	0.164	0.066	0.014	0.002
Apr	0.383	0.381	0.375	0.362	0.335	0.255	0.072	0.027	0.004	0.000
May	0.698	0.693	0.681	0.654	0.449	0.146	0.062	0.008	0.002	0.000
Jun	0.326	0.324	0.318	0.305	0.265	0.148	0.086	0.021	0.002	0.000
Jul	0.258	0.256	0.251	0.240	0.142	0.090	0.053	0.016	0.000	0.000
Aug	0.196	0.195	0.191	0.184	0.140	0.070	0.035	0.010	0.002	0.000
Sep	0.401	0.399	0.312	0.238	0.144	0.076	0.029	0.016	0.002	0.000

Natural Duration curves

Oct	3.342	1.500	0.493	0.207	0.133	0.082	0.033	0.016	0.002	0.000
Nov	4.226	1.841	0.801	0.480	0.357	0.162	0.062	0.041	0.008	0.000
Dec	4.510	1.675	1.209	0.626	0.404	0.211	0.098	0.045	0.023	0.000
Jan	3.781	2.594	1.488	1.000	0.657	0.322	0.127	0.029	0.006	0.000
Feb	9.352	4.803	2.034	1.548	0.796	0.411	0.133	0.066	0.021	0.000
Mar	8.832	5.425	3.114	1.152	0.831	0.390	0.164	0.066	0.014	0.002
Apr	5.903	3.208	1.404	1.035	0.507	0.255	0.072	0.027	0.004	0.000
May	6.527	2.330	1.371	0.657	0.449	0.146	0.062	0.008	0.002	0.000
Jun	2.356	1.256	0.897	0.491	0.265	0.148	0.086	0.021	0.002	0.000
Jul	2.566	0.846	0.567	0.261	0.142	0.090	0.053	0.016	0.000	0.000
Aug	1.578	0.657	0.349	0.220	0.140	0.070	0.035	0.010	0.002	0.000
Sep	2.480	0.673	0.312	0.238	0.144	0.076	0.029	0.016	0.002	0.000

Hydrological time series

Total Runoff : Niii12

Desktop (Version 2) Modified Flow Data for Ecological Category B													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.021	0.527	0.456	0.265	0.002	1.240	0.506	0.673	0.381	0.252	0.152	0.528	5.003
1921	0.216	1.082	2.577	1.613	0.796	0.831	0.324	0.203	0.121	0.076	0.076	0.027	7.941
1922	1.123	0.228	0.023	1.975	0.162	0.002	0.002	0.000	0.000	0.000	0.000	0.000	3.515
1923	0.000	0.010	0.039	0.008	1.654	0.057	0.010	0.006	0.004	0.002	0.002	0.000	1.792
1924	0.000	0.554	1.702	0.558	2.165	1.466	0.508	0.861	0.421	0.321	0.235	0.526	9.315
1925	0.503	0.263	0.174	0.111	0.060	1.243	0.508	0.825	0.394	0.301	0.187	0.111	4.680
1926	0.207	0.041	2.577	0.443	0.027	1.034	0.033	0.004	0.002	0.000	0.000	0.000	4.368
1927	0.000	0.000	0.006	0.589	0.133	0.018	0.004	0.861	0.191	0.121	0.072	0.043	2.038
1928	0.027	0.020	0.041	1.000	0.006	1.466	0.505	0.850	0.407	0.309	0.227	0.179	5.036
1929	0.113	0.066	0.043	2.673	1.935	0.831	0.437	0.300	0.177	0.113	0.068	0.041	6.797
1930	0.025	0.016	0.025	0.006	0.879	0.014	0.012	0.000	0.000	0.000	0.000	0.000	0.977
1931	0.000	0.357	0.265	0.021	2.232	1.326	0.508	0.861	0.421	0.321	0.235	0.526	7.072
1932	0.673	0.408	0.382	0.850	0.318	0.057	0.027	0.018	0.010	0.006	0.004	0.002	2.755
1933	0.023	0.006	0.045	0.657	0.961	1.270	0.255	0.115	0.084	0.041	0.025	0.016	3.498
1934	0.010	1.082	2.498	0.002	0.014	0.195	0.027	0.851	0.420	0.318	0.232	0.304	5.953
1935	0.191	0.117	0.072	1.541	1.416	0.647	0.027	0.861	0.419	0.314	0.231	0.238	6.074
1936	0.150	1.082	1.361	0.753	2.028	1.202	0.499	0.495	0.230	0.142	0.088	0.051	8.080
1937	0.033	1.081	2.577	1.059	1.945	0.345	0.176	0.111	0.403	0.062	0.025	0.016	7.832
1938	0.010	0.006	0.739	0.004	2.205	1.306	0.481	0.850	0.411	0.311	0.228	0.526	7.077
1939	0.209	1.081	0.240	0.478	0.472	1.382	0.505	0.861	0.421	0.321	0.235	0.525	6.730
1940	0.493	1.082	1.269	0.733	0.411	0.318	0.170	0.105	0.062	0.039	0.023	0.014	4.719
1941	0.020	0.480	1.905	2.610	1.831	1.222	0.055	0.033	0.121	0.012	0.008	0.004	8.301
1942	0.002	0.055	1.416	0.018	0.029	1.420	0.507	0.860	0.421	0.318	0.234	0.351	5.631
1943	0.316	1.081	1.523	0.066	0.121	0.837	0.012	0.008	0.419	0.105	0.070	0.528	5.086
1944	1.126	1.081	0.819	0.322	2.057	1.466	0.502	0.832	0.400	0.306	0.222	0.142	9.275
1945	0.090	0.053	0.626	1.026	0.020	1.347	0.259	0.162	0.096	0.060	0.037	0.021	3.797
1946	0.014	0.008	0.144	0.004	2.163	1.466	0.476	0.601	0.355	0.269	0.137	0.312	5.949
1947	0.098	0.222	0.045	1.113	0.801	0.070	0.447	0.004	0.002	0.000	0.000	0.029	2.831
1948	0.000	0.031	0.000	0.189	1.933	0.166	0.508	0.861	0.398	0.305	0.220	0.131	4.742
1949	0.082	0.057	2.577	2.564	0.152	1.267	0.508	0.062	0.027	0.018	0.010	0.006	7.329
1950	0.150	0.012	0.131	0.133	0.000	0.066	0.000	0.000	0.000	0.000	0.235	0.174	0.901
1951	0.096	0.057	1.234	0.021	0.372	0.710	0.226	0.567	0.401	0.305	0.221	0.133	4.342
1952	0.084	0.049	1.580	0.025	0.066	0.008	0.004	0.002	0.002	0.053	0.000	0.523	2.396
1953	0.074	0.470	0.035	0.000	2.232	1.282	0.500	0.861	0.417	0.314	0.231	0.527	6.943
1954	1.130	1.079	0.844	1.488	1.548	1.360	0.478	0.614	0.363	0.230	0.138	0.082	9.355
1955	0.055	0.162	0.530	0.012	2.115	1.466	0.507	0.848	0.411	0.312	0.229	0.203	6.848
1956	1.123	1.082	2.577	2.673	1.679	1.143	0.497	0.688	0.216	0.215	0.084	0.528	12.503
1957	1.130	1.078	0.938	2.673	2.042	0.250	0.488	0.456	0.269	0.172	0.103	0.060	9.659
1958	0.039	0.023	0.597	0.265	0.025	0.004	0.002	0.002	0.000	0.000	0.000	0.312	1.269
1959	0.123	0.002	1.236	0.004	0.589	0.164	0.507	0.836	0.383	0.261	0.158	0.094	4.357
1960	0.059	1.082	2.577	2.673	2.195	0.965	0.508	0.856	0.421	0.320	0.235	0.511	12.400
1961	0.583	0.423	0.160	0.306	0.041	1.198	0.304	0.047	0.023	0.016	0.010	0.006	3.117
1962	0.004	0.055	0.014	0.000	0.398	0.396	0.445	0.004	0.418	0.321	0.235	0.528	2.818
1963	1.127	0.801	0.503	0.694	0.228	0.101	0.072	0.037	0.021	0.037	0.010	0.006	3.637
1964	1.130	0.903	1.188	0.129	0.072	0.051	0.029	0.021	0.020	0.008	0.193	0.254	3.998
1965	1.130	0.482	0.281	2.673	0.525	0.244	0.144	0.092	0.055	0.035	0.021	0.012	5.694
1966	0.008	0.004	0.029	0.002	0.008	0.123	0.508	0.263	0.129	0.121	0.051	0.029	1.275
1967	0.632	0.408	0.014	1.017	1.940	0.006	0.000	0.000	0.127	0.000	0.068	0.000	3.302
1968	0.000	0.004	0.000	0.000	0.000	1.465	0.508	0.856	0.416	0.315	0.231	0.275	4.071
1969	1.126	0.133	0.060	0.113	0.047	1.214	0.008	0.857	0.148	0.092	0.057	0.199	4.053
1970	1.130	1.073	0.805	2.166	0.751	0.548	0.492	0.861	0.421	0.321	0.233	0.404	9.205
1971	0.443	0.150	0.166	2.665	2.232	1.390	0.505	0.856	0.421	0.319	0.232	0.328	9.706
1972	0.207	0.137	0.345	1.451	0.105	0.027	0.244	0.008	0.004	0.002	0.235	0.528	3.292
1973	1.130	1.078	0.513	2.537	0.181	0.113	0.066	0.841	0.148	0.090	0.055	0.033	6.784
1974	0.020	0.671	0.316	2.631	2.135	1.356	0.483	0.657	0.380	0.244	0.148	0.527	9.568
1975	0.809	0.374	0.718	2.673	1.720	1.466	0.508	0.854	0.414	0.316	0.230	0.228	10.309
1976	0.191	0.254	2.561	0.881	2.232	1.466	0.508	0.857	0.417	0.316	0.232	0.261	10.174
1977	0.166	0.585	0.074	2.673	1.223	1.305	0.508	0.849	0.410	0.316	0.228	0.201	8.538
1978	0.250	0.074	0.047	0.029	0.021	0.012	0.448	0.838	0.365	0.230	0.140	0.267	2.721
1979	0.053	0.936	0.154	0.012	0.027	0.004	0.002	0.002	0.002	0.000	0.000	0.528	1.720
1980	0.074	0.347	0.123	2.532	1.990	1.106	0.455	0.861	0.421	0.321	0.235	0.528	8.992
1981	1.130	1.073	1.209	0.579	0.480	1.147	0.481	0.127	0.076	0.047	0.029	0.018	6.396
1982	0.010	0.008	0.004	0.002	0.002	0.000	0.000	0.000	0.000	0.094	0.209	0.144	0.473
1983	0.111	0.560	0.326	1.349	2.232	1.369	0.508	0.845	0.415	0.321	0.235	0.527	8.798
1984	0.667	0.419	0.930	2.563	2.232	1.264	0.498	0.801	0.421	0.320	0.221	0.135	10.470
1985	1.130	1.082	0.499	0.335	0.240	0.121	0.068	0.043	0.419	0.016	0.010	0.006	3.969
1986	0.004	0.002	1.739	2.602	0.852	1.037	0.351	0.527	0.421	0.320	0.235	0.528	8.618
1987	1.130	1.082	1.747	0.842	2.157	1.438	0.504	0.836	0.403	0.307	0.225	0.158	10.830
1988	0.156	0.059	2.577	0.351	2.184	0.821	0.440	0.306	0.181	0.115	0.070	0.076	7.335
1989	0.027	1.082	2.577	1.219	0.456	1.423	0.464	0.449	0.265	0.168	0.235	0.527	8.891
1990	1.126	0.045	1.675	0.127	2.080	1.076	0.041	0.861	0.411	0.312	0.229	0.207	8.190
1991	0.133	0.078	0.055	0.029	0.018	0.168	0.062	0.057	0.002	0.002	0.000	0.000	0.604
1992	0.000	0.569	0.287	0.029	0.078	0.062	0.000	0.000	0.000	0.000	0.000	0.000	1.025
1993	1.130	0.431	0.404	1.728	0.111	0.064	0.039	0.021	0.014	0.008	0.006	0.004	3.960
1994	1.130	0.035	0.018	0.010	0.072	1.409	0.508	0.861	0.421	0.320	0.235	0.522	5.541
1995	0.341	0.400	1.406	0.897	2.042	1.212	0.465	0.507	0.300	0.318	0.233	0.382	8.503
1996	1.130	0.244	0.179	2.673	1.726	0.131	0.170	0.062	0.043	0.082	0.012	0.255	6.707
1997	0.111	1.082	2.577	1.447	0.920	0.503	0.296	0.187	0.111	0.074	0.043	0.025	7.375
1998	0.016	1.082	2.547	2.521	2.232	1.152	0.455	0.411	0.244	0.320	0.168	0.125	11.272
1999	1.130	1.076	0.556	0.316	2.232	1.361	0.500	0.861	0.421	0.320	0.234	0.503	9.510
2000	0.296	1.082	2.385	2.496	0.735	0.390	0.230	0.146	0.086	0.055	0.033	0.528	8.461
2001	1.128	0.599	0.406	2.640	0.690	0.232	0.138	0.088	0.051	0.321	0.232	0.294	6.819
2002	0.185	0.131	0.070	0.084	0.066	0.018	0.010	0.006	0.004	0.002	0.002	0.000	0.578
2003	0.000	0.062	0.000	2.673	2.232	1.466	0.506	0.848	0.410	0.321	0.233	0.525	9.275

A.80. *Niii12 – Category C***Summary table**

Desktop Version 2, Generated on 2015-03-26

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii12

Annual Flows (Mill. cu. m or index values):

MAR = 21,143

S.Dev. = 22,860

CV = 1,081

Q75 = 0,043

Q75/MMF = 0,024

BFI Index = 0,272

CV(JJA+JFM) Index = 5,318

Ecological Category = C

Total IFR = 9,757 (46,15 %MAR)

Maint. Lowflow = 7,402 (35,01 %MAR)

Drought Lowflow = 0,333 (1,58 %MAR)

Maint. Highflow = 2,355 (11,14 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	1,087	2,677	2,463	0,635	0,017	0,334	0,970
Nov	1,419	2,932	2,066	0,709	0,017	0,177	0,886
Dec	1,636	4,211	2,574	1,202	0,051	0,532	1,734
Jan	1,468	2,289	1,559	1,083	0,050	0,478	1,561
Feb	4,306	11,731	2,724	0,895	0,047	0,386	1,281
Mar	3,617	8,758	2,421	0,791	0,049	0,182	0,973
Apr	1,802	3,021	1,676	0,419	0,016	0,075	0,494
May	2,123	4,714	2,221	0,377	0,018	0,115	0,492
Jun	0,877	1,511	1,723	0,360	0,016	0,017	0,377
Jul	1,271	6,356	5,001	0,354	0,017	0,043	0,396
Aug	0,557	1,404	2,523	0,274	0,017	0,000	0,274
Sep	0,980	3,712	3,786	0,303	0,016	0,016	0,319

Rule curve

Desktop Version 2, Generated on 2015-03-26

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii12

Regional Type : Zululand

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.227	1.223	0.493	0.207	0.133	0.082	0.033	0.016	0.002	0.000
Nov	1.150	1.148	0.801	0.480	0.357	0.162	0.062	0.041	0.008	0.000
Dec	2.727	1.675	1.209	0.626	0.404	0.211	0.098	0.045	0.023	0.000
Jan	2.466	2.312	1.488	1.000	0.657	0.322	0.127	0.029	0.006	0.000
Feb	2.009	1.883	1.766	1.548	0.796	0.411	0.133	0.066	0.021	0.000
Mar	1.435	1.374	1.312	1.152	0.831	0.390	0.164	0.066	0.014	0.002
Apr	0.641	0.639	0.629	0.606	0.507	0.255	0.072	0.027	0.004	0.000
May	0.631	0.628	0.617	0.593	0.449	0.146	0.062	0.008	0.002	0.000
Jun	0.491	0.488	0.479	0.459	0.265	0.148	0.086	0.021	0.002	0.000
Jul	0.510	0.505	0.494	0.261	0.142	0.090	0.053	0.016	0.000	0.000
Aug	0.359	0.357	0.349	0.220	0.140	0.070	0.035	0.010	0.002	0.000
Sep	0.419	0.417	0.312	0.238	0.144	0.076	0.029	0.016	0.002	0.000

Reserve Flows without High Flows

Oct	0.840	0.837	0.493	0.207	0.133	0.082	0.033	0.016	0.002	0.000
Nov	0.944	0.942	0.801	0.480	0.357	0.162	0.062	0.041	0.008	0.000
Dec	1.612	1.610	1.209	0.626	0.404	0.211	0.098	0.045	0.023	0.000
Jan	1.464	1.464	1.448	1.000	0.657	0.322	0.127	0.029	0.006	0.000
Feb	1.201	1.199	1.184	1.147	0.796	0.411	0.133	0.066	0.021	0.000
Mar	1.054	1.052	1.038	1.004	0.831	0.390	0.164	0.066	0.014	0.002
Apr	0.554	0.552	0.544	0.524	0.484	0.255	0.072	0.027	0.004	0.000
May	0.499	0.496	0.487	0.468	0.431	0.146	0.062	0.008	0.002	0.000
Jun	0.472	0.468	0.460	0.441	0.265	0.148	0.086	0.021	0.002	0.000
Jul	0.460	0.456	0.447	0.261	0.142	0.090	0.053	0.016	0.000	0.000
Aug	0.359	0.357	0.349	0.220	0.140	0.070	0.035	0.010	0.002	0.000
Sep	0.400	0.398	0.312	0.238	0.144	0.076	0.029	0.016	0.002	0.000

Natural Duration curves

Oct	3.342	1.500	0.493	0.207	0.133	0.082	0.033	0.016	0.002	0.000
Nov	4.226	1.841	0.801	0.480	0.357	0.162	0.062	0.041	0.008	0.000
Dec	4.510	1.675	1.209	0.626	0.404	0.211	0.098	0.045	0.023	0.000
Jan	3.781	2.594	1.488	1.000	0.657	0.322	0.127	0.029	0.006	0.000
Feb	9.352	4.803	2.034	1.548	0.796	0.411	0.133	0.066	0.021	0.000
Mar	8.832	5.425	3.114	1.152	0.831	0.390	0.164	0.066	0.014	0.002
Apr	5.903	3.208	1.404	1.035	0.507	0.255	0.072	0.027	0.004	0.000
May	6.527	2.330	1.371	0.657	0.449	0.146	0.062	0.008	0.002	0.000
Jun	2.356	1.256	0.897	0.491	0.265	0.148	0.086	0.021	0.002	0.000
Jul	2.566	0.846	0.567	0.261	0.142	0.090	0.053	0.016	0.000	0.000
Aug	1.578	0.657	0.349	0.220	0.140	0.070	0.035	0.010	0.002	0.000
Sep	2.480	0.673	0.312	0.238	0.144	0.076	0.029	0.016	0.002	0.000

Hydrological time series

Total Runoff : Niii12

Desktop (Version 2) Modified Flow Data for Ecological Category C													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.021	0.527	0.456	0.265	0.002	1.292	0.639	0.594	0.398	0.252	0.152	0.419	5.017
1921	0.216	1.150	2.727	1.613	0.796	0.831	0.324	0.203	0.121	0.076	0.076	0.027	8.161
1922	1.220	0.228	0.023	1.975	0.162	0.002	0.002	0.000	0.000	0.000	0.000	0.000	3.612
1923	0.000	0.010	0.039	0.008	1.654	0.057	0.010	0.006	0.004	0.002	0.002	0.000	1.792
1924	0.000	0.554	1.702	0.558	1.954	1.435	0.641	0.631	0.491	0.510	0.359	0.418	9.254
1925	0.503	0.263	0.174	0.111	0.060	1.294	0.641	0.605	0.459	0.310	0.187	0.111	4.719
1926	0.207	0.041	2.727	0.443	0.027	1.034	0.033	0.004	0.002	0.000	0.000	0.000	4.518
1927	0.000	0.000	0.006	0.589	0.133	0.018	0.004	0.631	0.191	0.121	0.072	0.043	1.808
1928	0.027	0.020	0.041	1.000	0.006	1.435	0.638	0.623	0.474	0.491	0.304	0.179	5.238
1929	0.113	0.066	0.043	2.466	1.761	0.831	0.474	0.300	0.177	0.113	0.068	0.041	6.453
1930	0.025	0.016	0.025	0.006	0.879	0.014	0.012	0.000	0.000	0.000	0.000	0.000	0.977
1931	0.000	0.357	0.265	0.021	2.009	1.351	0.641	0.631	0.491	0.510	0.359	0.418	7.055
1932	0.673	0.408	0.382	0.850	0.318	0.057	0.027	0.018	0.010	0.006	0.004	0.002	2.755
1933	0.023	0.006	0.045	0.657	0.961	1.314	0.255	0.115	0.084	0.041	0.025	0.016	3.542
1934	0.010	1.150	2.547	0.002	0.014	0.195	0.027	0.624	0.490	0.505	0.355	0.304	6.224
1935	0.191	0.117	0.072	1.541	1.416	0.647	0.027	0.631	0.489	0.499	0.353	0.238	6.221
1936	0.150	1.150	1.361	0.753	1.840	1.263	0.630	0.495	0.230	0.142	0.088	0.051	8.153
1937	0.033	1.149	2.727	1.059	1.770	0.345	0.176	0.111	0.469	0.062	0.025	0.016	7.943
1938	0.010	0.006	0.739	0.004	1.987	1.339	0.607	0.624	0.479	0.493	0.330	0.418	7.036
1939	0.209	1.150	0.240	0.478	0.472	1.386	0.638	0.631	0.491	0.510	0.359	0.418	6.982
1940	0.493	1.150	1.269	0.733	0.411	0.318	0.170	0.105	0.062	0.039	0.023	0.014	4.787
1941	0.020	0.480	1.905	2.397	1.722	1.279	0.055	0.033	0.121	0.012	0.008	0.004	8.036
1942	0.002	0.055	1.416	0.018	0.029	1.409	0.640	0.631	0.491	0.505	0.358	0.351	5.905
1943	0.316	1.150	1.523	0.066	0.121	0.837	0.012	0.008	0.488	0.105	0.070	0.419	5.116
1944	1.223	1.149	0.819	0.322	1.865	1.435	0.634	0.610	0.466	0.394	0.240	0.142	9.300
1945	0.090	0.053	0.626	1.026	0.020	1.365	0.259	0.162	0.096	0.060	0.037	0.021	3.815
1946	0.014	0.008	0.144	0.004	1.953	1.435	0.600	0.580	0.355	0.269	0.137	0.312	5.812
1947	0.098	0.222	0.045	1.113	0.801	0.070	0.532	0.004	0.002	0.000	0.000	0.029	2.916
1948	0.000	0.031	0.000	0.189	1.760	0.166	0.641	0.631	0.464	0.365	0.220	0.131	4.598
1949	0.082	0.057	2.727	2.348	0.152	1.312	0.641	0.062	0.027	0.018	0.010	0.006	7.442
1950	0.150	0.012	0.131	0.133	0.000	0.066	0.000	0.000	0.000	0.000	0.359	0.174	1.025
1951	0.096	0.057	1.234	0.021	0.372	0.710	0.226	0.567	0.467	0.371	0.224	0.133	4.478
1952	0.084	0.049	1.580	0.025	0.066	0.008	0.004	0.002	0.002	0.053	0.000	0.416	2.289
1953	0.074	0.470	0.035	0.000	2.009	1.322	0.631	0.631	0.487	0.499	0.353	0.419	6.931
1954	1.227	1.148	0.844	1.488	1.548	1.373	0.603	0.583	0.363	0.230	0.138	0.082	9.628
1955	0.055	0.162	0.530	0.012	1.912	1.435	0.640	0.622	0.479	0.494	0.343	0.203	6.888
1956	1.160	1.150	2.727	2.466	1.679	1.143	0.627	0.595	0.216	0.215	0.084	0.419	12.482
1957	1.227	1.147	0.938	2.466	1.852	0.250	0.616	0.456	0.269	0.172	0.103	0.060	9.556
1958	0.039	0.023	0.597	0.265	0.025	0.004	0.002	0.002	0.000	0.000	0.000	0.312	1.269
1959	0.123	0.002	1.236	0.004	0.589	0.164	0.640	0.613	0.413	0.261	0.158	0.094	4.297
1960	0.059	1.150	2.727	2.466	1.979	0.965	0.641	0.628	0.491	0.508	0.359	0.415	12.389
1961	0.583	0.423	0.160	0.306	0.041	1.259	0.304	0.047	0.023	0.016	0.010	0.006	3.178
1962	0.004	0.055	0.014	0.000	0.398	0.396	0.507	0.004	0.488	0.510	0.359	0.419	3.154
1963	1.224	0.801	0.503	0.694	0.228	0.101	0.072	0.037	0.021	0.037	0.010	0.006	3.734
1964	1.227	0.903	1.188	0.129	0.072	0.051	0.029	0.021	0.020	0.008	0.193	0.254	4.095
1965	1.227	0.482	0.281	2.466	0.525	0.244	0.144	0.092	0.055	0.035	0.021	0.012	5.584
1966	0.008	0.004	0.029	0.002	0.008	0.123	0.641	0.263	0.129	0.121	0.051	0.029	1.408
1967	0.632	0.408	0.014	0.107	1.766	0.006	0.000	0.000	0.127	0.000	0.068	0.000	3.128
1968	0.000	0.004	0.000	0.000	0.000	1.435	0.641	0.628	0.485	0.500	0.354	0.275	4.322
1969	1.223	0.133	0.060	0.113	0.047	1.272	0.008	0.628	0.148	0.092	0.057	0.199	3.980
1970	1.227	1.141	0.805	2.166	0.751	0.548	0.621	0.631	0.491	0.510	0.357	0.404	9.653
1971	0.443	0.150	0.166	2.458	2.009	1.391	0.638	0.628	0.491	0.506	0.356	0.328	9.563
1972	0.207	0.137	0.345	1.451	0.105	0.027	0.244	0.008	0.004	0.002	0.359	0.419	3.309
1973	1.227	1.146	0.513	2.318	0.181	0.113	0.066	0.617	0.148	0.090	0.055	0.033	6.507
1974	0.020	0.671	0.316	2.421	1.929	1.370	0.610	0.593	0.386	0.244	0.148	0.419	9.127
1975	0.809	0.374	0.718	2.466	1.699	1.435	0.641	0.627	0.482	0.502	0.352	0.228	10.333
1976	0.191	0.254	2.713	0.881	2.009	1.435	0.641	0.628	0.487	0.501	0.354	0.261	10.357
1977	0.166	0.585	0.074	2.466	1.223	1.338	0.641	0.623	0.478	0.502	0.335	0.201	8.632
1978	0.250	0.074	0.047	0.029	0.021	0.012	0.542	0.615	0.365	0.230	0.140	0.267	2.592
1979	0.053	0.936	0.154	0.012	0.027	0.004	0.002	0.002	0.002	0.000	0.000	0.419	1.611
1980	0.074	0.347	0.123	2.312	1.808	1.106	0.573	0.631	0.491	0.510	0.359	0.419	8.755
1981	1.227	1.141	1.209	0.579	0.480	1.147	0.606	0.127	0.076	0.047	0.029	0.018	6.687
1982	0.010	0.008	0.004	0.002	0.002	0.000	0.000	0.000	0.000	0.094	0.209	0.144	0.473
1983	0.111	0.560	0.326	1.349	2.009	1.379	0.641	0.620	0.484	0.510	0.359	0.419	8.768
1984	0.667	0.419	0.930	2.346	2.009	1.310	0.629	0.603	0.491	0.508	0.228	0.135	10.275
1985	1.227	1.150	0.499	0.335	0.240	0.121	0.068	0.043	0.489	0.516	0.010	0.006	4.205
1986	0.004	0.002	1.739	2.389	0.852	1.037	0.351	0.527	0.491	0.509	0.359	0.419	8.680
1987	1.227	1.150	1.747	0.842	1.948	1.419	0.636	0.614	0.470	0.441	0.267	0.158	10.920
1988	0.156	0.059	2.727	0.351	1.970	0.821	0.484	0.306	0.181	0.115	0.070	0.076	7.316
1989	0.027	1.150	2.727	1.219	0.456	1.411	0.585	0.449	0.265	0.168	0.359	0.419	9.236
1990	1.223	0.045	1.675	0.127	1.883	1.076	0.041	0.631	0.479	0.495	0.349	0.207	8.232
1991	0.133	0.078	0.055	0.029	0.018	0.168	0.062	0.057	0.002	0.002	0.000	0.000	0.604
1992	0.000	0.569	0.287	0.029	0.078	0.062	0.000	0.000	0.000	0.000	0.000	0.000	1.025
1993	1.227	0.431	0.404	1.728	0.111	0.064	0.039	0.021	0.014	0.008	0.006	0.004	4.057
1994	1.227	0.035	0.018	0.010	0.072	1.403	0.641	0.631	0.491	0.508	0.359	0.415	5.811
1995	0.341	0.400	1.406	0.897	1.852	1.271	0.586	0.507	0.300	0.504	0.357	0.382	8.803
1996	1.227	0.244	0.179	2.466	1.700	0.131	0.170	0.062	0.043	0.082	0.012	0.255	6.571
1997	0.111	1.150	2.727	1.447	0.920	0.503	0.296	0.187	0.111	0.074	0.043	0.025	7.595
1998	0.016	1.150	2.701	2.304	2.009	1.152	0.573	0.411	0.244	0.508	0.168	0.125	11.362
1999	1.227	1.144	0.556	0.316	2.009	1.374	0.632	0.631	0.491	0.508	0.358	0.415	9.662
2000	0.296	1.150	2.385	2.301	0.735	0.390	0.230	0.146	0.086	0.055	0.033	0.419	8.226
2001	1.225	0.599	0.406	2.431	0.690	0.232	0.138	0.088	0.051	0.510	0.355	0.294	7.019
2002	0.185	0.131	0.070	0.084	0.066	0.018	0.010	0.006	0.004	0.002	0.002	0.000	0.578
2003	0.000	0.062	0.000	2.466	2.009	1.435	0.640	0.622	0.479	0.510	0.357	0.417	8.996

A.81. Niii12 – Category D**Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii12

Annual Flows (Mill. cu. m or index values):

MAR = 21.143

S.Dev. = 22.860

CV = 1.081

Q75 = 0.043

Q75/MMF = 0.024

BFI Index = 0.281

CV(JJA+JFM) Index = 5.318

Ecological Category = D

Total IFR = 3.229 (15.27 %MAR)

Maint. Lowflow = 0.874 (4.14 %MAR)

Drought Lowflow = 0.874 (4.14 %MAR)

Maint. Highflow = 2.355 (11.14 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	1.087	2.677	2.463	0.046	0.046	0.334	0.380
Nov	1.419	2.932	2.066	0.044	0.044	0.177	0.221
Dec	1.636	4.211	2.574	0.136	0.136	0.532	0.668
Jan	1.468	2.289	1.559	0.134	0.134	0.478	0.612
Feb	4.306	11.731	2.724	0.115	0.115	0.386	0.501
Mar	3.617	8.758	2.421	0.132	0.132	0.182	0.314
Apr	1.802	3.021	1.676	0.043	0.043	0.075	0.118
May	2.123	4.714	2.221	0.048	0.048	0.115	0.162
Jun	0.877	1.511	1.723	0.043	0.043	0.017	0.060
Jul	1.271	6.356	5.001	0.046	0.046	0.043	0.089
Aug	0.557	1.404	2.523	0.046	0.046	0.000	0.046
Sep	0.980	3.712	3.786	0.043	0.043	0.016	0.059

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii12

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.561	0.556	0.493	0.207	0.133	0.082	0.033	0.016	0.002	0.000
Nov	0.353	0.350	0.346	0.337	0.320	0.162	0.062	0.041	0.008	0.000
Dec	1.304	1.165	1.046	0.626	0.404	0.211	0.098	0.045	0.023	0.000
Jan	1.196	1.071	0.964	0.869	0.657	0.322	0.127	0.029	0.006	0.000
Feb	0.978	0.877	0.791	0.714	0.639	0.411	0.133	0.066	0.021	0.000
Mar	0.535	0.532	0.526	0.514	0.492	0.390	0.164	0.066	0.014	0.002
Apr	0.186	0.185	0.182	0.176	0.164	0.146	0.072	0.027	0.004	0.000
May	0.251	0.249	0.245	0.237	0.221	0.146	0.062	0.008	0.002	0.000
Jun	0.103	0.103	0.102	0.099	0.094	0.086	0.074	0.021	0.002	0.000
Jul	0.146	0.145	0.143	0.139	0.131	0.090	0.053	0.016	0.000	0.000
Aug	0.085	0.085	0.084	0.082	0.079	0.070	0.035	0.010	0.002	0.000
Sep	0.103	0.102	0.101	0.098	0.093	0.076	0.029	0.016	0.002	0.000

Reserve Flows without High Flows

Oct	0.085	0.085	0.084	0.082	0.079	0.073	0.033	0.016	0.002	0.000
Nov	0.088	0.088	0.087	0.086	0.084	0.079	0.062	0.041	0.008	0.000
Dec	0.271	0.270	0.268	0.264	0.256	0.211	0.098	0.045	0.023	0.000
Jan	0.267	0.266	0.264	0.260	0.252	0.239	0.127	0.029	0.006	0.000
Feb	0.229	0.228	0.226	0.223	0.216	0.205	0.133	0.066	0.021	0.000
Mar	0.264	0.263	0.261	0.257	0.249	0.236	0.164	0.066	0.014	0.002
Apr	0.079	0.079	0.078	0.076	0.073	0.068	0.061	0.027	0.004	0.000
May	0.088	0.088	0.087	0.085	0.082	0.076	0.062	0.008	0.002	0.000
Jun	0.079	0.079	0.078	0.076	0.073	0.068	0.061	0.021	0.002	0.000
Jul	0.085	0.085	0.084	0.082	0.079	0.073	0.053	0.016	0.000	0.000
Aug	0.085	0.085	0.084	0.082	0.079	0.070	0.035	0.010	0.002	0.000
Sep	0.079	0.079	0.078	0.076	0.073	0.068	0.029	0.016	0.002	0.000

Natural Duration curves

Oct	3.342	1.500	0.493	0.207	0.133	0.082	0.033	0.016	0.002	0.000
Nov	4.226	1.841	0.801	0.480	0.357	0.162	0.062	0.041	0.008	0.000
Dec	4.510	1.675	1.209	0.626	0.404	0.211	0.098	0.045	0.023	0.000
Jan	3.781	2.594	1.488	1.000	0.657	0.322	0.127	0.029	0.006	0.000
Feb	9.352	4.803	2.034	1.548	0.796	0.411	0.133	0.066	0.021	0.000
Mar	8.832	5.425	3.114	1.152	0.831	0.390	0.164	0.066	0.014	0.002
Apr	5.903	3.208	1.404	1.035	0.507	0.255	0.072	0.027	0.004	0.000
May	6.527	2.330	1.371	0.657	0.449	0.146	0.062	0.008	0.002	0.000
Jun	2.356	1.256	0.897	0.491	0.265	0.148	0.086	0.021	0.002	0.000
Jul	2.566	0.846	0.567	0.261	0.142	0.090	0.053	0.016	0.000	0.000
Aug	1.578	0.657	0.349	0.220	0.140	0.070	0.035	0.010	0.002	0.000
Sep	2.480	0.673	0.312	0.238	0.144	0.076	0.029	0.016	0.002	0.000

Hydrological time series

Total Runoff : Niii12

Desktop (Version 2) Modified Flow Data for Ecological Category D													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.021	0.340	0.456	0.265	0.002	0.523	0.185	0.237	0.097	0.138	0.079	0.103	2.445
1921	0.216	0.353	1.304	0.977	0.639	0.492	0.151	0.199	0.081	0.076	0.074	0.027	4.589
1922	0.554	0.228	0.023	1.014	0.162	0.002	0.002	0.000	0.000	0.000	0.000	0.000	1.985
1923	0.000	0.010	0.039	0.008	0.734	0.057	0.010	0.006	0.004	0.002	0.002	0.000	0.872
1924	0.000	0.341	1.168	0.558	0.934	0.535	0.186	0.251	0.103	0.146	0.085	0.102	4.409
1925	0.503	0.263	0.174	0.111	0.060	0.523	0.185	0.241	0.099	0.140	0.081	0.089	2.469
1926	0.207	0.041	1.304	0.443	0.027	0.506	0.033	0.004	0.002	0.000	0.000	0.000	2.567
1927	0.000	0.000	0.006	0.589	0.133	0.018	0.004	0.251	0.089	0.121	0.072	0.043	1.326
1928	0.027	0.020	0.041	0.869	0.006	0.535	0.184	0.248	0.101	0.142	0.083	0.095	2.351
1929	0.113	0.066	0.043	1.196	0.788	0.492	0.162	0.208	0.088	0.113	0.068	0.041	3.377
1930	0.025	0.016	0.025	0.006	0.648	0.014	0.012	0.000	0.000	0.000	0.000	0.000	0.746
1931	0.000	0.320	0.265	0.021	0.978	0.530	0.186	0.251	0.103	0.146	0.085	0.102	2.988
1932	0.551	0.327	0.382	0.829	0.318	0.057	0.027	0.018	0.010	0.006	0.004	0.002	2.531
1933	0.023	0.006	0.045	0.657	0.656	0.526	0.146	0.115	0.074	0.041	0.025	0.016	2.330
1934	0.010	0.352	1.248	0.002	0.014	0.195	0.027	0.248	0.103	0.145	0.084	0.100	2.529
1935	0.191	0.117	0.072	0.969	0.701	0.476	0.027	0.251	0.103	0.144	0.084	0.098	3.233
1936	0.150	0.353	1.095	0.753	0.845	0.518	0.182	0.224	0.092	0.131	0.075	0.051	4.468
1937	0.033	0.351	1.304	0.887	0.794	0.345	0.135	0.111	0.100	0.062	0.025	0.016	4.163
1938	0.010	0.006	0.739	0.004	0.960	0.529	0.176	0.248	0.102	0.143	0.084	0.102	3.102
1939	0.209	0.351	0.240	0.478	0.472	0.533	0.184	0.251	0.103	0.146	0.085	0.102	3.155
1940	0.493	0.353	1.066	0.733	0.411	0.318	0.134	0.105	0.062	0.039	0.023	0.014	3.750
1941	0.020	0.337	1.190	1.141	0.762	0.521	0.055	0.033	0.081	0.012	0.008	0.004	4.165
1942	0.002	0.055	1.108	0.018	0.029	0.534	0.185	0.251	0.103	0.145	0.085	0.101	2.615
1943	0.316	0.352	1.131	0.066	0.121	0.492	0.012	0.008	0.103	0.105	0.070	0.103	2.879
1944	0.556	0.351	0.819	0.322	0.863	0.535	0.183	0.243	0.100	0.141	0.082	0.093	4.289
1945	0.090	0.053	0.626	0.877	0.020	0.531	0.146	0.162	0.076	0.060	0.037	0.021	2.699
1946	0.014	0.008	0.144	0.004	0.933	0.535	0.174	0.232	0.096	0.139	0.079	0.101	2.458
1947	0.098	0.222	0.045	0.904	0.640	0.070	0.165	0.004	0.002	0.000	0.000	0.029	2.178
1948	0.000	0.031	0.000	0.189	0.787	0.166	0.186	0.251	0.100	0.141	0.082	0.092	2.024
1949	0.082	0.057	1.304	1.100	0.152	0.526	0.186	0.062	0.027	0.018	0.010	0.006	3.530
1950	0.150	0.012	0.131	0.133	0.000	0.066	0.000	0.000	0.000	0.000	0.085	0.095	0.672
1951	0.096	0.057	1.054	0.021	0.372	0.482	0.142	0.230	0.100	0.141	0.082	0.082	2.868
1952	0.084	0.049	1.144	0.025	0.066	0.008	0.004	0.002	0.002	0.053	0.000	0.102	1.539
1953	0.074	0.336	0.035	0.000	0.978	0.527	0.182	0.251	0.103	0.144	0.084	0.102	2.816
1954	0.559	0.350	0.844	0.964	0.714	0.532	0.175	0.233	0.096	0.137	0.079	0.082	4.764
1955	0.055	0.162	0.530	0.012	0.901	0.535	0.185	0.247	0.102	0.143	0.084	0.096	3.051
1956	0.554	0.353	1.304	1.196	0.738	0.514	0.181	0.237	0.091	0.136	0.074	0.103	5.480
1957	0.561	0.350	0.938	1.196	0.854	0.250	0.178	0.221	0.094	0.133	0.076	0.060	4.910
1958	0.039	0.023	0.597	0.265	0.025	0.004	0.002	0.002	0.000	0.000	0.000	0.101	1.058
1959	0.123	0.002	1.055	0.004	0.573	0.164	0.185	0.244	0.097	0.139	0.080	0.087	2.753
1960	0.059	0.353	1.304	1.196	0.954	0.501	0.186	0.249	0.103	0.146	0.085	0.102	5.237
1961	0.548	0.329	0.160	0.306	0.041	0.518	0.149	0.047	0.023	0.016	0.010	0.006	2.154
1962	0.004	0.055	0.014	0.000	0.398	0.396	0.164	0.004	0.103	0.146	0.085	0.103	1.472
1963	0.557	0.346	0.503	0.694	0.228	0.101	0.072	0.037	0.021	0.037	0.010	0.006	2.612
1964	0.559	0.346	1.043	0.129	0.072	0.051	0.029	0.021	0.020	0.008	0.081	0.099	2.458
1965	0.561	0.337	0.281	1.196	0.525	0.244	0.130	0.092	0.055	0.035	0.021	0.012	3.489
1966	0.008	0.004	0.029	0.002	0.008	0.123	0.186	0.204	0.083	0.121	0.051	0.029	0.848
1967	0.550	0.327	0.014	0.107	0.791	0.006	0.000	0.000	0.082	0.000	0.068	0.000	1.945
1968	0.000	0.004	0.000	0.000	0.000	0.535	0.186	0.249	0.103	0.144	0.084	0.100	1.404
1969	0.556	0.133	0.060	0.113	0.047	0.520	0.008	0.250	0.086	0.092	0.057	0.096	2.018
1970	0.561	0.348	0.805	1.031	0.625	0.467	0.179	0.251	0.103	0.146	0.085	0.101	4.704
1971	0.443	0.150	0.166	1.189	0.978	0.533	0.184	0.249	0.103	0.145	0.084	0.101	4.326
1972	0.207	0.137	0.345	0.958	0.105	0.027	0.144	0.008	0.004	0.002	0.085	0.103	2.125
1973	0.561	0.350	0.513	1.075	0.181	0.113	0.066	0.245	0.086	0.090	0.055	0.033	3.368
1974	0.020	0.344	0.316	1.159	0.914	0.532	0.176	0.237	0.097	0.137	0.079	0.102	4.113
1975	0.552	0.323	0.718	1.196	0.746	0.535	0.186	0.249	0.102	0.144	0.084	0.098	4.932
1976	0.191	0.254	1.293	0.837	0.978	0.535	0.186	0.250	0.103	0.144	0.084	0.099	4.953
1977	0.166	0.342	0.074	1.196	0.682	0.529	0.185	0.247	0.101	0.144	0.084	0.096	3.847
1978	0.250	0.074	0.047	0.029	0.021	0.012	0.165	0.244	0.096	0.137	0.079	0.099	1.253
1979	0.053	0.346	0.154	0.012	0.027	0.004	0.002	0.002	0.002	0.000	0.000	0.103	0.705
1980	0.074	0.319	0.123	1.071	0.821	0.511	0.167	0.251	0.103	0.146	0.085	0.103	3.774
1981	0.561	0.348	1.046	0.579	0.480	0.514	0.176	0.127	0.072	0.047	0.029	0.018	3.997
1982	0.010	0.008	0.004	0.002	0.002	0.000	0.000	0.000	0.000	0.094	0.082	0.093	0.295
1983	0.111	0.342	0.326	0.942	0.978	0.532	0.185	0.246	0.102	0.146	0.085	0.102	4.099
1984	0.551	0.329	0.930	1.099	0.978	0.526	0.182	0.240	0.103	0.146	0.082	0.092	5.257
1985	0.560	0.353	0.499	0.335	0.240	0.121	0.068	0.043	0.103	0.016	0.010	0.006	2.354
1986	0.004	0.002	1.172	1.134	0.645	0.506	0.153	0.227	0.103	0.146	0.085	0.103	4.279
1987	0.561	0.352	1.173	0.827	0.929	0.534	0.184	0.244	0.100	0.142	0.083	0.094	5.222
1988	0.156	0.059	1.304	0.351	0.946	0.491	0.163	0.208	0.088	0.115	0.070	0.076	4.027
1989	0.027	0.352	1.304	0.922	0.456	0.534	0.170	0.221	0.094	0.132	0.085	0.102	4.400
1990	0.556	0.045	1.165	0.127	0.877	0.509	0.041	0.251	0.102	0.143	0.084	0.097	3.997
1991	0.133	0.078	0.055	0.029	0.018	0.168	0.062	0.057	0.002	0.002	0.000	0.000	0.604
1992	0.000	0.342	0.287	0.029	0.078	0.062	0.000	0.000	0.000	0.000	0.000	0.000	0.798
1993	0.561	0.330	0.404	0.989	0.111	0.064	0.039	0.021	0.014	0.008	0.006	0.004	2.551
1994	0.559	0.035	0.018	0.010	0.072	0.533	0.186	0.251	0.103	0.146	0.085	0.102	2.100
1995	0.341	0.326	1.105	0.841	0.853	0.520	0.171	0.225	0.095	0.145	0.085	0.101	4.808
1996	0.561	0.244	0.179	1.196	0.747	0.131	0.134	0.062	0.043	0.082	0.012	0.099	3.489
1997	0.111	0.353	1.304	0.958	0.652	0.463	0.149	0.187	0.079	0.074	0.043	0.025	4.397
1998	0.016	0.353	1.283	1.064	0.978	0.514	0.167	0.217	0.093	0.146	0.080	0.091	5.001
1999	0.561	0.349	0.556	0.316	0.978	0.532	0.182	0.251	0.103	0.146	0.085	0.102	4.161
2000	0.296	0.353	1.243	1.062	0.620	0.390	0.142	0.146	0.074	0.055	0.033	0.103	4.517
2001	0.557	0.342	0.406	1.167	0.605	0.232	0.129	0.088	0.051	0.146	0.084	0.100	3.909
2002	0.185	0.131	0.070	0.084	0.066	0.018	0.010	0.006	0.004	0.002	0.002	0.000	0.578
2003	0.000	0.062	0.000	1.196	0.978	0.535	0.185	0.247	0.102	0.146	0.085	0.102	3.636
20													

A.82. Niii13 – Category B**Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii13

Annual Flows (Mill. cu. m or index values):

MAR = 84.969

S.Dev. = 48.154

CV = 0.567

Q75 = 2.890

Q75/MMF = 0.408

BFI Index = 0.524

CV(JJA+JFM) Index = 2.250

Ecological Category = B

Total IFR = 48.899 (57.55 %MAR)

Maint. Lowflow = 27.883 (32.82 %MAR)

Drought Lowflow = 7.273 (8.56 %MAR)

Maint. Highflow = 21.017 (24.73 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	6.562	6.971	1.062	1.463	0.269	1.569	3.032
Nov	9.183	7.192	0.783	2.078	0.382	2.038	4.115
Dec	8.983	7.111	0.792	4.580	1.412	4.156	8.736
Jan	9.622	14.763	1.534	4.979	1.125	5.193	10.172
Feb	11.213	12.929	1.153	4.599	1.176	4.911	9.510
Mar	9.698	11.361	1.172	4.410	1.406	1.906	6.316
Apr	6.916	5.262	0.761	2.039	0.271	0.325	2.364
May	5.402	4.590	0.850	1.462	0.274	0.057	1.520
Jun	4.158	3.074	0.739	0.645	0.236	0.000	0.645
Jul	4.352	5.521	1.269	0.551	0.242	0.430	0.981
Aug	3.703	3.269	0.883	0.573	0.244	0.103	0.676
Sep	5.177	11.424	2.207	0.504	0.235	0.329	0.833

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii13

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	3.462	3.433	3.368	3.232	2.979	2.561	1.972	1.294	0.715	0.445
Nov	4.709	4.678	4.614	4.488	4.251	3.838	3.182	2.269	1.252	0.612
Dec	13.542	12.240	10.530	8.680	7.260	5.930	4.800	4.270	3.083	1.670
Jan	16.031	12.160	9.820	7.810	6.800	5.700	4.910	3.850	2.930	1.704
Feb	15.029	13.726	10.260	8.810	7.510	6.320	4.500	3.630	2.930	1.720
Mar	7.352	7.309	7.220	7.044	6.714	5.500	4.680	3.430	2.526	1.633
Apr	2.789	2.765	2.711	2.600	2.393	2.051	1.569	1.015	0.540	0.320
May	1.808	1.794	1.760	1.692	1.565	1.354	1.058	0.717	0.425	0.289
Jun	0.770	0.765	0.754	0.730	0.685	0.612	0.508	0.389	0.287	0.239
Jul	1.129	1.121	1.102	1.064	0.994	0.878	0.714	0.526	0.365	0.290
Aug	0.797	0.792	0.780	0.756	0.711	0.636	0.531	0.410	0.306	0.258
Sep	0.963	0.956	0.941	0.910	0.852	0.757	0.622	0.467	0.334	0.273

Reserve Flows without High Flows

Oct	1.746	1.732	1.700	1.634	1.511	1.308	1.021	0.691	0.410	0.278
Nov	2.480	2.464	2.432	2.368	2.247	2.037	1.703	1.239	0.721	0.395
Dec	5.470	5.440	5.377	5.253	5.020	4.613	3.967	3.069	2.067	1.437
Jan	5.945	5.909	5.834	5.687	5.410	4.927	4.160	3.093	1.903	1.155
Feb	5.492	5.460	5.393	5.261	5.013	4.581	3.893	2.938	1.873	1.203
Mar	5.268	5.239	5.179	5.061	4.839	4.452	3.837	2.983	2.030	1.431
Apr	2.433	2.412	2.365	2.269	2.088	1.791	1.372	0.889	0.477	0.285
May	1.746	1.732	1.700	1.634	1.511	1.309	1.023	0.695	0.414	0.283
Jun	0.770	0.765	0.754	0.730	0.685	0.612	0.508	0.389	0.287	0.239
Jul	0.659	0.655	0.646	0.627	0.592	0.535	0.454	0.361	0.281	0.244
Aug	0.685	0.681	0.671	0.651	0.615	0.554	0.469	0.370	0.286	0.247
Sep	0.603	0.599	0.591	0.575	0.544	0.494	0.423	0.341	0.270	0.238

Natural Duration curves

Oct	12.860	7.980	6.430	5.580	4.700	4.120	3.440	2.890	2.300	1.240
Nov	18.820	13.650	9.920	8.080	7.000	6.050	4.740	4.110	3.350	1.700
Dec	16.820	12.240	10.530	8.680	7.260	5.930	4.800	4.270	3.220	1.670
Jan	16.630	12.160	9.820	7.810	6.800	5.700	4.910	3.850	2.930	1.800
Feb	21.380	14.120	10.260	8.810	7.510	6.320	4.500	3.630	2.930	1.720
Mar	18.820	12.440	10.150	8.170	6.860	5.500	4.680	3.430	2.740	1.760
Apr	13.100	9.690	8.320	6.810	5.460	4.400	3.840	3.050	2.430	1.760
May	10.170	7.140	5.860	4.760	3.980	3.490	2.910	2.700	2.100	1.530
Jun	7.260	5.690	4.110	3.490	3.100	2.890	2.620	2.450	1.870	1.300
Jul	6.620	5.100	4.280	3.360	2.920	2.680	2.380	2.200	1.880	1.170
Aug	6.380	4.100	3.440	3.110	2.920	2.530	2.380	2.140	1.750	1.150
Sep	7.240	4.740	4.070	3.420	3.080	2.550	2.260	2.040	1.790	1.200

Hydrological time series

Total Runoff : Niii13

Desktop (Version 2) Modified Flow Data for Ecological Category B

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	3.171	4.616	10.580	8.670	4.500	6.310	2.534	1.177	0.513	0.668	0.350	0.581	43.670
1921	0.715	4.699	10.750	7.660	3.930	4.920	1.015	0.619	0.397	0.623	0.478	0.356	36.160
1922	2.035	4.251	5.080	5.140	4.890	1.825	0.353	0.300	0.239	0.290	0.258	0.273	24.934
1923	0.445	0.829	5.150	3.180	2.960	4.680	2.087	1.246	0.502	0.607	0.366	0.659	22.711
1924	1.943	4.709	13.542	16.031	13.540	7.352	2.789	1.808	0.764	1.128	0.794	0.953	65.353
1925	3.432	4.552	5.500	3.040	2.065	3.880	1.763	0.717	0.715	1.058	0.636	0.859	28.217
1926	3.373	4.576	7.980	3.570	4.180	6.998	2.380	1.009	0.508	0.994	0.778	0.879	37.226
1927	2.979	2.688	4.290	6.800	8.210	6.270	2.028	0.993	0.389	0.546	0.466	0.622	36.281
1928	1.720	0.996	1.820	1.704	1.720	5.760	2.657	1.707	0.754	1.126	0.783	0.949	21.694
1929	3.456	4.708	10.080	12.160	13.651	7.213	2.736	1.780	0.707	0.975	0.765	0.922	59.154
1930	2.541	2.486	4.310	4.320	3.100	2.034	0.441	0.323	0.258	0.335	0.269	0.273	20.689
1931	0.869	1.238	2.593	1.640	15.029	7.352	2.789	1.808	0.770	1.129	0.794	0.862	36.872
1932	1.456	1.252	4.690	3.710	3.060	2.573	0.493	0.334	0.249	0.323	0.278	0.273	18.689
1933	0.445	3.310	8.680	15.470	13.726	7.277	2.781	1.804	0.766	1.118	0.797	0.957	57.131
1934	2.378	3.838	13.542	16.031	9.770	6.814	2.393	1.359	0.741	1.064	0.678	0.691	59.300
1935	0.659	0.674	1.670	5.070	9.150	7.294	2.750	1.808	0.770	1.124	0.737	0.854	32.560
1936	2.792	4.682	9.400	5.700	11.160	7.134	1.457	0.766	0.440	0.714	0.370	0.467	45.081
1937	0.835	0.742	6.480	6.930	9.510	7.218	2.740	1.791	0.758	1.129	0.797	0.926	39.856
1938	3.174	4.186	6.360	6.650	15.029	7.352	2.789	1.805	0.770	1.121	0.792	0.959	50.987
1939	3.442	4.709	13.485	11.460	6.650	3.020	1.724	1.808	0.770	1.129	0.797	0.961	49.956
1940	3.351	3.977	10.530	9.120	4.480	3.620	2.051	1.354	0.440	0.526	0.332	0.360	40.142
1941	0.659	1.262	2.792	4.530	6.320	7.006	2.691	1.742	0.759	1.092	0.781	0.956	30.590
1942	3.419	4.652	13.542	16.031	12.730	7.312	2.789	1.808	0.770	1.129	0.797	0.963	65.941
1943	3.462	4.707	9.610	3.200	5.680	7.003	1.254	0.537	0.730	1.102	0.713	0.960	38.958
1944	3.434	4.383	3.083	2.910	3.580	7.352	2.788	1.760	0.742	0.931	0.549	0.422	31.934
1945	0.501	0.612	1.360	6.320	6.430	3.700	1.247	1.058	0.384	0.424	0.301	0.304	22.640
1946	1.972	3.748	5.160	3.790	9.360	7.319	2.725	1.750	0.764	1.121	0.769	0.852	39.331
1947	2.114	4.446	13.059	12.170	7.650	7.119	2.711	1.693	0.626	0.782	0.454	0.482	53.306
1948	1.496	3.182	4.210	4.540	7.510	7.251	2.781	1.808	0.770	1.121	0.713	0.830	36.212
1949	2.979	4.512	13.542	15.722	9.440	7.095	2.589	1.363	0.689	0.878	0.610	0.445	59.864
1950	0.497	0.612	3.670	3.330	1.470	1.633	0.397	0.320	0.250	0.302	0.791	0.961	14.233
1951	3.402	3.306	4.270	5.040	3.630	3.430	1.015	1.126	0.566	1.073	0.780	0.666	28.303
1952	1.186	2.269	7.340	11.420	14.003	7.178	2.528	1.648	0.633	0.837	0.626	0.703	50.370
1953	1.232	3.912	5.830	3.980	7.150	7.044	2.174	1.762	0.769	1.105	0.770	0.951	36.678
1954	3.462	4.709	11.230	9.090	13.260	7.266	2.688	1.732	0.732	0.893	0.462	0.360	55.884
1955	1.988	4.289	10.620	8.220	15.029	7.349	2.616	0.864	0.570	0.732	0.402	0.789	53.468
1956	3.174	4.563	13.542	15.260	10.840	7.120	2.694	1.781	0.711	1.102	0.796	0.963	62.547
1957	3.462	4.709	12.470	9.820	14.459	6.963	2.662	1.782	0.689	0.878	0.447	0.445	58.785
1958	1.294	2.106	4.090	6.670	8.810	6.420	0.809	1.627	0.752	0.946	0.709	0.830	35.063
1959	2.691	2.703	6.590	5.360	5.000	7.003	2.772	1.804	0.760	1.095	0.763	0.910	37.450
1960	3.036	4.697	13.542	16.031	14.172	7.184	2.756	1.797	0.765	1.110	0.756	0.941	66.788
1961	3.298	4.286	6.590	4.560	3.370	4.280	2.229	1.380	0.527	0.668	0.665	0.723	32.577
1962	2.248	4.243	8.810	12.230	8.740	7.231	2.785	1.794	0.768	1.129	0.797	0.963	51.737
1963	3.186	4.488	3.430	6.800	7.080	3.050	1.352	1.517	0.661	0.912	0.576	0.608	33.660
1964	3.330	4.524	8.360	5.180	4.330	2.980	0.540	0.496	0.612	1.069	0.789	0.949	33.158
1965	3.368	4.629	8.330	10.500	13.908	6.971	1.647	1.522	0.686	0.813	0.594	0.757	53.723
1966	1.147	1.327	4.890	6.800	14.572	7.351	2.789	1.808	0.769	1.084	0.711	0.747	43.993
1967	2.327	4.518	7.580	5.270	3.930	6.697	2.419	0.847	0.375	0.506	0.613	0.933	36.115
1968	2.490	2.848	7.260	7.880	3.420	7.248	2.789	1.799	0.767	1.114	0.711	0.908	39.233
1969	3.446	4.584	5.930	3.850	2.930	2.526	0.592	1.083	0.600	0.638	0.646	0.943	27.768
1970	3.454	4.709	9.740	10.410	10.590	5.390	2.219	1.808	0.770	1.129	0.797	0.961	51.977
1971	3.405	3.956	5.680	10.180	15.029	7.352	2.765	1.778	0.769	1.103	0.780	0.800	53.596
1972	1.602	1.943	3.510	2.930	5.460	5.460	2.402	1.645	0.612	0.862	0.787	0.963	28.174
1973	3.462	4.653	10.320	13.750	10.140	5.500	2.225	1.600	0.737	1.050	0.680	0.574	54.694
1974	0.506	1.763	7.160	16.031	15.029	7.333	2.783	1.808	0.748	1.008	0.648	0.963	55.780
1975	3.454	4.555	11.950	16.031	15.001	7.352	2.789	1.808	0.765	1.042	0.739	0.778	66.264
1976	3.269	4.164	7.490	15.656	15.029	7.352	2.789	1.236	0.452	0.587	0.599	0.951	59.576
1977	3.426	4.173	8.020	12.690	14.413	7.309	2.768	1.768	0.626	1.002	0.782	0.945	57.921
1978	3.453	4.670	10.570	6.730	5.110	3.090	1.569	1.566	0.615	0.912	0.778	0.956	40.020
1979	3.114	1.780	4.800	4.910	3.400	2.193	0.370	0.341	0.254	0.297	0.261	0.908	22.628
1980	2.827	3.529	4.530	7.310	9.710	5.220	0.722	1.635	0.770	1.128	0.797	0.963	39.142
1981	3.462	4.689	10.220	6.860	6.350	6.600	2.579	1.701	0.685	0.893	0.511	0.467	45.017
1982	2.698	3.138	2.182	1.909	1.727	1.633	0.320	0.294	0.241	0.307	0.567	0.716	15.732
1983	1.415	4.264	12.280	16.031	15.029	7.352	2.789	1.440	0.675	1.118	0.797	0.961	64.152
1984	3.390	4.385	4.400	4.030	15.029	7.339	2.074	0.496	0.322	0.424	0.313	0.334	42.536
1985	3.462	4.630	8.460	5.080	6.480	4.940	1.415	0.864	0.380	0.506	0.335	0.333	36.886
1986	1.170	1.402	5.960	7.810	7.480	5.790	2.539	1.692	0.755	1.112	0.797	0.963	37.470
1987	3.462	4.709	13.040	7.510	8.590	7.338	2.774	1.735	0.749	1.121	0.794	0.951	52.774
1988	3.440	4.647	12.240	7.940	10.260	7.220	1.860	1.240	0.699	1.013	0.585	0.534	51.678
1989	0.938	4.709	13.542	9.630	3.870	6.714	2.486	1.453	0.600	0.759	0.749	0.809	46.259
1990	2.561	2.298	4.680	6.560	10.470	7.309	2.731	1.762	0.768	1.127	0.790	0.898	41.955
1991	3.076	2.630	3.299	3.090	2.780	2.135	0.366	0.289	0.239	0.290	0.258	0.274	18.726
1992	0.534	1.682	4.260	2.700	2.623	3.170	0.798	0.460	0.287	0.342	0.306	0.385	17.547
1993	3.462	4.709	12.779	10.630	7.770	5.010	1.883	0.684	0.322	0.447	0.531	0.519	48.745
1994	3.146	4.260	4.440	2.920	1.928	1.860	1.897	1.727	0.764	1.129	0.796	0.931	25.796
1995	3.302	4.678	13.542	16.031	15.029	7.352	2.756	1.654	0.682	1.098	0.793	0.829	67.745
1996	2.964	3.693	4.830	6.590	8.560	6.646	2.626	1.794	0.770	1.129	0.797	0.963	41.361
1997	3.462	4.709	13.351	6.890	4.290	4.100	1.821	1.513	0.582	0.719	0.410	0.489	42.336
1998	2.792	3.769	6.290	7.430	6.920	5.070	1.233	1.058	0.508	0.526	0.447	0.628	36.670
1999	1.928	3.589	13.542	16.031	14.906	7.318	2.753	1.801	0.770	1.114	0.711	0.924	65.387
2000	3.259	4.709	13.421	8.650	4.690	1.275	0.676	0.304	0.365	0.294	0.869	0.869	43.161
2001	3.330	4.440	11.110	10.760	6.180	3.430	0.665	0.425	0.280	1.129	0.797	0.963	43.508
2002	3.384	4.221	2.845	2.076	2.713	1.874	0.320	0.289	0.269	0.354	0.268	0.326	18.939

A.83. Niii13 – Category C**Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii13

Annual Flows (Mill. cu. m or index values):

MAR = 84.969

S.Dev. = 48.154

CV = 0.567

Q75 = 2.890

Q75/MMF = 0.408

BFI Index = 0.524

CV(JJA+JFM) Index = 2.250

Ecological Category = C

Total IFR = 42.714 (50.27 %MAR)

Maint. Lowflow = 21.698 (25.54 %MAR)

Drought Lowflow = 7.273 (8.56 %MAR)

Maint. Highflow = 21.017 (24.73 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	6.562	6.971	1.062	0.894	0.269	1.569	2.463
Nov	9.183	7.192	0.783	1.296	0.382	2.038	3.333
Dec	8.983	7.111	0.792	3.696	1.412	4.156	7.853
Jan	9.622	14.763	1.534	3.937	1.125	5.193	9.130
Feb	11.213	12.929	1.153	3.733	1.176	4.911	8.643
Mar	9.698	11.361	1.172	3.487	1.406	1.906	5.393
Apr	6.916	5.262	0.761	1.535	0.271	0.325	1.861
May	5.402	4.590	0.850	1.198	0.274	0.057	1.255
Jun	4.158	3.074	0.739	0.551	0.236	0.000	0.551
Jul	4.352	5.521	1.269	0.486	0.242	0.430	0.916
Aug	3.703	3.269	0.883	0.452	0.244	0.103	0.555
Sep	5.177	11.424	2.207	0.432	0.235	0.329	0.761

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii13

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	3.051	3.026	2.969	2.852	2.633	2.272	1.763	1.177	0.676	0.443
Nov	4.236	4.209	4.152	4.041	3.831	3.466	2.884	2.076	1.175	0.609
Dec	13.224	12.120	10.530	8.680	7.260	5.930	4.800	4.270	3.032	1.670
Jan	15.571	12.160	9.820	7.810	6.800	5.700	4.910	3.850	2.930	1.701
Feb	14.738	13.437	10.260	8.810	7.510	6.320	4.500	3.630	2.930	1.720
Mar	7.134	7.093	7.007	6.838	6.520	5.500	4.680	3.430	2.491	1.632
Apr	2.459	2.438	2.391	2.295	2.115	1.819	1.401	0.920	0.509	0.317
May	1.688	1.674	1.644	1.581	1.463	1.270	0.997	0.682	0.413	0.288
Jun	0.747	0.742	0.731	0.708	0.665	0.595	0.496	0.382	0.284	0.239
Jul	1.163	1.154	1.135	1.096	1.023	0.902	0.732	0.536	0.368	0.290
Aug	0.733	0.729	0.718	0.697	0.657	0.591	0.498	0.391	0.300	0.257
Sep	0.971	0.964	0.949	0.917	0.859	0.762	0.626	0.469	0.335	0.273

Reserve Flows without High Flows

Oct	1.210	1.201	1.180	1.138	1.060	0.931	0.748	0.538	0.359	0.275
Nov	1.805	1.794	1.772	1.729	1.647	1.505	1.278	0.963	0.612	0.391
Dec	5.151	5.124	5.066	4.951	4.737	4.362	3.766	2.938	2.016	1.435
Jan	5.485	5.452	5.385	5.251	5.001	4.564	3.870	2.905	1.829	1.152
Feb	5.200	5.170	5.108	4.985	4.754	4.351	3.710	2.819	1.826	1.201
Mar	4.860	4.835	4.781	4.675	4.477	4.131	3.581	2.816	1.964	1.428
Apr	2.077	2.060	2.021	1.940	1.789	1.541	1.191	0.788	0.443	0.283
May	1.620	1.608	1.578	1.518	1.406	1.221	0.960	0.659	0.402	0.282
Jun	0.747	0.742	0.731	0.708	0.665	0.595	0.496	0.382	0.284	0.239
Jul	0.659	0.655	0.646	0.627	0.592	0.535	0.454	0.361	0.281	0.244
Aug	0.613	0.609	0.601	0.585	0.554	0.503	0.432	0.349	0.279	0.246
Sep	0.585	0.581	0.574	0.558	0.529	0.481	0.413	0.335	0.269	0.238

Natural Duration curves

Oct	12.860	7.980	6.430	5.580	4.700	4.120	3.440	2.890	2.300	1.240
Nov	18.820	13.650	9.920	8.080	7.000	6.050	4.740	4.110	3.350	1.700
Dec	16.820	12.240	10.530	8.680	7.260	5.930	4.800	4.270	3.220	1.670
Jan	16.630	12.160	9.820	7.810	6.800	5.700	4.910	3.850	2.930	1.800
Feb	21.380	14.120	10.260	8.810	7.510	6.320	4.500	3.630	2.930	1.720
Mar	18.820	12.440	10.150	8.170	6.860	5.500	4.680	3.430	2.740	1.760
Apr	13.100	9.690	8.320	6.810	5.460	4.400	3.840	3.050	2.430	1.760
May	10.170	7.140	5.860	4.760	3.980	3.490	2.910	2.700	2.100	1.530
Jun	7.260	5.690	4.110	3.490	3.100	2.890	2.620	2.450	1.870	1.300
Jul	6.620	5.100	4.280	3.360	2.920	2.680	2.380	2.200	1.880	1.170
Aug	6.380	4.100	3.440	3.110	2.920	2.530	2.380	2.140	1.750	1.150
Sep	7.240	4.740	4.070	3.420	3.080	2.550	2.260	2.040	1.790	1.200

Hydrological time series

Total Runoff : Niii13

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	2.799	4.154	10.580	8.670	4.500	6.296	2.238	1.106	0.501	0.684	0.338	0.585	42.451
1921	0.676	4.227	10.750	7.660	3.930	4.920	0.920	0.592	0.390	0.636	0.452	0.357	35.510
1922	1.817	3.831	5.080	5.140	4.890	1.816	0.346	0.299	0.239	0.290	0.257	0.273	24.279
1923	0.443	0.801	5.150	3.180	2.960	4.680	1.850	1.170	0.490	0.620	0.353	0.664	22.360
1924	1.737	4.236	13.224	15.571	13.306	7.134	2.459	1.688	0.741	1.163	0.731	0.960	62.948
1925	3.025	4.098	5.500	3.040	2.051	3.880	1.569	0.682	0.694	1.089	0.591	0.866	27.085
1926	2.974	4.118	7.980	3.570	4.180	6.794	2.104	0.952	0.496	1.023	0.716	0.886	35.793
1927	2.633	2.447	4.290	6.800	8.210	6.270	1.799	0.937	0.382	0.557	0.441	0.626	35.392
1928	1.545	0.949	1.820	1.701	1.720	5.760	2.345	1.594	0.731	1.160	0.721	0.956	21.001
1929	3.046	4.236	10.080	12.160	13.362	7.000	2.413	1.661	0.686	1.003	0.705	0.930	57.282
1930	2.254	2.268	4.310	4.320	3.100	2.017	0.423	0.320	0.257	0.337	0.267	0.273	20.146
1931	0.809	1.163	2.562	1.640	14.738	7.134	2.459	1.688	0.747	1.163	0.730	0.869	35.700
1932	1.316	1.175	4.690	3.710	3.060	2.536	0.468	0.330	0.248	0.325	0.275	0.273	18.405
1933	0.443	2.998	8.680	15.060	13.437	7.062	2.452	1.683	0.743	1.151	0.733	0.965	55.407
1934	2.113	3.466	13.224	15.571	9.770	6.617	2.115	1.274	0.719	1.096	0.628	0.695	57.288
1935	0.628	0.664	1.670	5.070	9.150	7.078	2.425	1.687	0.747	1.158	0.680	0.860	31.817
1936	2.471	4.213	9.400	5.700	11.160	6.924	1.304	0.727	0.431	0.732	0.356	0.469	43.887
1937	0.779	0.724	6.480	6.930	9.510	7.006	2.416	1.672	0.735	1.163	0.733	0.934	39.081
1938	2.802	3.773	6.360	6.650	14.738	7.134	2.459	1.685	0.747	1.155	0.728	0.967	49.197
1939	3.033	4.236	13.166	11.460	6.650	3.020	1.535	1.688	0.747	1.163	0.733	0.969	48.401
1940	2.955	3.589	10.530	9.120	4.480	3.620	1.819	1.270	0.431	0.536	0.323	0.361	39.033
1941	0.628	1.185	2.752	4.530	6.320	6.801	2.374	1.627	0.736	1.124	0.719	0.964	29.759
1942	3.013	4.186	13.224	15.571	12.730	7.095	2.459	1.688	0.747	1.163	0.733	0.971	63.578
1943	3.051	4.235	9.610	3.200	5.680	6.799	1.128	0.517	0.708	1.135	0.659	0.968	37.688
1944	3.026	3.948	3.032	2.910	3.580	7.134	2.458	1.644	0.720	0.957	0.514	0.424	30.346
1945	0.491	0.609	1.360	6.320	6.430	3.700	1.122	0.997	0.378	0.430	0.296	0.304	22.434
1946	1.763	3.386	5.160	3.790	9.360	7.102	2.404	1.634	0.741	1.155	0.708	0.859	38.061
1947	1.885	4.004	12.741	12.170	7.650	6.910	2.391	1.581	0.608	0.802	0.431	0.484	51.658
1948	1.351	2.884	4.210	4.540	7.510	7.037	2.452	1.688	0.747	1.154	0.659	0.837	35.068
1949	2.633	4.062	13.224	15.263	9.440	6.887	2.286	1.278	0.668	0.902	0.568	0.447	57.656
1950	0.487	0.609	3.670	3.330	1.470	1.632	0.385	0.317	0.249	0.303	0.728	0.969	14.148
1951	2.999	2.994	4.270	5.040	3.630	3.430	0.920	1.059	0.551	1.105	0.718	0.670	27.386
1952	1.083	2.076	7.340	11.420	13.714	6.966	2.232	1.540	0.615	0.860	0.582	0.708	49.136
1953	1.123	3.531	5.830	3.980	7.150	6.838	1.925	1.645	0.746	1.138	0.709	0.959	35.573
1954	3.051	4.236	11.230	9.090	13.243	7.051	2.371	1.618	0.710	0.917	0.437	0.361	54.316
1955	1.776	3.864	10.620	8.220	14.738	7.132	2.309	0.818	0.556	0.750	0.384	0.795	51.962
1956	2.802	4.107	13.224	14.968	10.840	6.911	2.377	1.663	0.690	1.135	0.732	0.971	60.419
1957	3.051	4.236	12.182	9.820	14.168	6.760	2.349	1.664	0.668	0.902	0.424	0.447	56.671
1958	1.177	1.932	4.090	6.670	8.810	6.340	0.742	1.520	0.729	0.973	0.655	0.837	34.475
1959	2.384	2.460	6.590	5.360	5.000	6.799	2.444	1.684	0.736	1.128	0.703	0.917	36.205
1960	2.682	4.226	13.224	15.571	13.882	6.973	2.431	1.677	0.742	1.143	0.697	0.949	64.196
1961	2.909	3.862	6.590	4.560	3.370	4.280	1.973	1.293	0.514	0.684	0.616	0.728	31.381
1962	2.001	3.824	8.810	12.230	8.740	7.017	2.456	1.674	0.745	1.163	0.733	0.971	50.363
1963	2.812	4.041	3.395	6.800	7.080	3.050	1.213	1.420	0.642	0.937	0.538	0.612	32.539
1964	2.937	4.073	8.360	5.180	4.330	2.980	0.509	0.479	0.595	1.101	0.726	0.957	32.225
1965	2.969	4.165	8.330	10.500	13.618	6.767	1.468	1.424	0.666	0.834	0.554	0.762	52.059
1966	1.049	1.242	4.890	6.800	14.281	7.133	2.459	1.688	0.745	1.116	0.657	0.752	42.812
1967	2.069	4.067	7.580	5.270	3.930	6.504	2.138	0.803	0.369	0.515	0.659	0.940	34.844
1968	2.210	2.589	7.260	7.880	3.420	7.034	2.459	1.679	0.743	1.148	0.657	0.916	37.994
1969	3.037	4.125	5.930	3.850	2.930	2.491	0.554	1.020	0.584	0.652	0.600	0.951	26.724
1970	3.044	4.236	9.740	10.410	10.590	5.390	1.964	1.688	0.747	1.163	0.733	0.969	50.674
1971	3.001	3.569	5.680	10.180	14.738	7.134	2.438	1.660	0.745	1.136	0.718	0.806	51.806
1972	1.442	1.787	3.510	2.930	5.460	5.460	2.123	1.537	0.595	0.885	0.724	0.971	27.424
1973	3.051	4.187	10.320	13.750	10.140	5.500	1.970	1.496	0.715	1.081	0.630	0.578	53.419
1974	0.496	1.628	7.160	15.571	14.738	7.116	2.454	1.688	0.725	1.038	0.601	0.971	54.184
1975	3.044	4.100	11.950	15.571	14.709	7.134	2.459	1.688	0.741	1.073	0.682	0.784	63.934
1976	2.884	3.754	7.490	15.197	14.738	7.134	2.459	1.161	0.443	0.599	0.559	0.959	57.376
1977	3.019	3.762	8.020	12.690	14.123	7.093	2.441	1.651	0.608	1.031	0.720	0.952	56.110
1978	3.043	4.202	10.570	6.730	5.110	3.090	1.401	1.465	0.598	0.937	0.716	0.964	38.827
1979	2.750	1.643	4.800	4.910	3.400	2.170	0.361	0.336	0.254	0.298	0.261	0.916	22.097
1980	2.502	3.191	4.530	7.310	9.710	5.220	0.667	1.528	0.747	1.162	0.733	0.971	38.271
1981	3.051	4.219	10.220	6.860	6.350	6.414	2.276	1.589	0.665	0.917	0.480	0.469	43.511
1982	2.390	2.846	2.168	1.896	1.725	1.632	0.317	0.292	0.241	0.308	0.530	0.722	15.066
1983	1.281	3.843	12.131	15.571	14.738	7.134	2.459	1.349	0.655	1.152	0.733	0.969	62.014
1984	2.989	3.949	4.400	4.030	14.738	7.122	1.839	0.479	0.318	0.430	0.306	0.335	40.934
1985	3.051	4.167	8.460	5.080	6.480	4.940	1.267	0.818	0.373	0.515	0.326	0.334	35.811
1986	1.069	1.309	5.960	7.810	7.480	5.790	2.242	1.581	0.732	1.145	0.733	0.971	36.822
1987	3.051	4.236	12.722	7.510	8.590	7.121	2.446	1.620	0.726	1.155	0.731	0.959	50.867
1988	3.032	4.182	12.120	7.940	10.260	7.007	1.653	1.164	0.678	1.043	0.546	0.537	50.162
1989	0.868	4.236	13.224	9.630	3.870	6.520	2.197	1.360	0.584	0.778	0.691	0.815	44.773
1990	2.272	2.102	4.680	6.560	10.470	7.093	2.409	1.645	0.745	1.161	0.727	0.905	40.768
1991	2.717	2.396	3.239	3.090	2.765	2.115	0.357	0.288	0.239	0.290	0.257	0.274	18.028
1992	0.520	1.556	4.260	2.700	2.591	3.170	0.733	0.446	0.284	0.344	0.300	0.387	17.290
1993	3.051	4.236	12.461	10.630	7.770	5.010	1.673	0.652	0.318	0.453	0.498	0.522	47.275
1994	2.777	3.839	4.440	2.920	1.919	1.850	1.685	1.613	0.740	1.163	0.732	0.938	24.616
1995	2.912	4.209	13.224	15.571	14.738	7.134	2.430	1.546	0.662	1.131	0.729	0.835	65.120
1996	2.620	3.337	4.830	6.590	8.560	6.455	2.317	1.675	0.747	1.163	0.733	0.971	39.997
1997	3.051	4.236	13.032	6.890	4.290	4.100	1.619	1.416	0.567	0.736	0.391	0.492	40.821
1998	2.471	3.404	6.290	7.430	6.920	5.070	1.109	0.997	0.496	0.536	0.424	0.632	35.779
1999	1.724	3.245	13.224	15.571	14.615	7.101	2.428	1.681	0.747	1.147	0.657	0.931	63.071
2000	2.875	4.236	13.103	8.650	4.650	4.690	1.146	0.644	0.301	0.368	0.289	0.876	41.829
2001	2.937	3.998	11.110	10.760	6.180	3.430	0.617	0.413	0.278	1.163	0.733	0.971	42.590
2002	2.983	3.804	2.803	2.055	2.678	1.864	0.317	0.288	0.267	0.357	0.267	0.327	18.011
2003	0.5												

A.84. *Niii13 – Category D***Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii13

Annual Flows (Mill. cu. m or index values):

MAR = 84,969

S.Dev. = 48,154

CV = 0,567

Q75 = 2,890

Q75/MMF = 0,408

BFI Index = 0,513

CV(JJA+JFM) Index = 2,250

Ecological Category = D

Total IFR = 20,790 (24,47 %MAR)

Maint. Lowflow = 7,273 (8,56 %MAR)

Drought Lowflow = 7,273 (8,56 %MAR)

Maint. Highflow = 13,517 (15,91 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	6,562	6,971	1,062	0,269	0,269	1,032	1,301
Nov	9,183	7,192	0,783	0,382	0,382	1,052	1,434
Dec	8,983	7,111	0,792	1,412	1,412	2,461	3,873
Jan	9,622	14,763	1,534	1,125	1,125	3,326	4,451
Feb	11,213	12,929	1,153	1,176	1,176	3,602	4,779
Mar	9,698	11,361	1,172	1,406	1,406	1,140	2,546
Apr	6,916	5,262	0,761	0,271	0,271	0,063	0,334
May	5,402	4,590	0,850	0,274	0,274	0,000	0,274
Jun	4,158	3,074	0,739	0,236	0,236	0,000	0,236
Jul	4,352	5,521	1,269	0,242	0,242	0,434	0,676
Aug	3,703	3,269	0,883	0,244	0,244	0,104	0,348
Sep	5,177	11,424	2,207	0,235	0,235	0,303	0,539

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii13

Regional Type : Zululand

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points										
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%	
Oct	1.943	1.937	1.911	1.854	1.738	1.534	1.229	0.859	0.533	0.382	
Nov	2.186	2.182	2.158	2.101	1.984	1.770	1.439	1.032	0.667	0.498	
Dec	7.763	6.967	6.300	5.721	4.667	4.245	3.587	2.764	2.022	1.670	
Jan	9.057	7.988	7.103	6.353	4.990	4.518	3.758	2.785	1.895	1.482	
Feb	9.720	8.556	7.590	6.766	5.274	4.751	3.933	2.910	1.989	1.563	
Mar	4.969	4.598	4.279	3.987	3.453	3.176	2.750	2.223	1.752	1.534	
Apr	0.584	0.582	0.577	0.566	0.544	0.504	0.445	0.373	0.309	0.280	
May	0.499	0.498	0.494	0.485	0.467	0.437	0.393	0.341	0.296	0.275	
Jun	0.428	0.427	0.423	0.415	0.400	0.374	0.336	0.292	0.255	0.237	
Jul	1.043	1.036	1.019	0.986	0.922	0.818	0.671	0.502	0.357	0.290	
Aug	0.588	0.586	0.579	0.565	0.539	0.494	0.429	0.353	0.287	0.256	
Sep	0.857	0.853	0.842	0.819	0.773	0.694	0.579	0.443	0.325	0.270	

Reserve Flows without High Flows

Oct	0.491	0.490	0.487	0.479	0.462	0.433	0.390	0.338	0.292	0.271
Nov	0.701	0.700	0.696	0.685	0.663	0.623	0.561	0.484	0.416	0.384
Dec	2.604	2.603	2.587	2.549	2.469	2.321	2.090	1.800	1.540	1.419
Jan	2.087	2.087	2.076	2.048	1.988	1.873	1.687	1.449	1.232	1.131
Feb	2.170	2.168	2.155	2.124	2.057	1.934	1.741	1.500	1.283	1.182
Mar	2.580	2.578	2.561	2.522	2.441	2.293	2.064	1.783	1.530	1.414
Apr	0.495	0.494	0.491	0.483	0.466	0.437	0.393	0.341	0.294	0.273
May	0.499	0.498	0.494	0.485	0.467	0.437	0.393	0.341	0.296	0.275
Jun	0.428	0.427	0.423	0.415	0.400	0.374	0.336	0.292	0.255	0.237
Jul	0.436	0.434	0.430	0.421	0.405	0.379	0.341	0.297	0.260	0.243
Aug	0.443	0.441	0.437	0.429	0.413	0.387	0.348	0.303	0.263	0.245
Sep	0.430	0.429	0.425	0.417	0.402	0.376	0.339	0.294	0.255	0.237

Natural Duration curves

Oct	12.860	7.980	6.430	5.580	4.700	4.120	3.440	2.890	2.300	1.240
Nov	18.820	13.650	9.920	8.080	7.000	6.050	4.740	4.110	3.350	1.700
Dec	16.820	12.240	10.530	8.680	7.260	5.930	4.800	4.270	3.220	1.670
Jan	16.630	12.160	9.820	7.810	6.800	5.700	4.910	3.850	2.930	1.800
Feb	21.380	14.120	10.260	8.810	7.510	6.320	4.500	3.630	2.930	1.720
Mar	18.820	12.440	10.150	8.170	6.860	5.500	4.680	3.430	2.740	1.760
Apr	13.100	9.690	8.320	6.810	5.460	4.400	3.840	3.050	2.430	1.760
May	10.170	7.140	5.860	4.760	3.980	3.490	2.910	2.700	2.100	1.530
Jun	7.260	5.690	4.110	3.490	3.100	2.890	2.620	2.450	1.870	1.300
Jul	6.620	5.100	4.280	3.360	2.920	2.680	2.380	2.200	1.880	1.170
Aug	6.380	4.100	3.440	3.110	2.920	2.530	2.380	2.140	1.750	1.150
Sep	7.240	4.740	4.070	3.420	3.080	2.550	2.260	2.040	1.790	1.200

Hydrological time series

Total Runoff : Niii13

Desktop (Version 2) Modified Flow Data for Ecological Category D													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	1.826	2.158	6.362	6.671	3.933	3.341	0.559	0.411	0.338	0.630	0.315	0.544	27.088
1921	0.533	2.186	6.572	6.151	3.210	2.910	0.373	0.326	0.296	0.589	0.396	0.344	23.885
1922	1.262	1.984	3.901	4.157	4.136	1.575	0.284	0.277	0.237	0.290	0.256	0.270	18.629
1923	0.382	0.551	3.980	2.216	2.031	2.750	0.508	0.421	0.334	0.575	0.325	0.611	14.683
1924	1.213	2.186	7.763	9.057	8.444	4.969	0.584	0.499	0.426	1.043	0.587	0.850	37.621
1925	1.936	2.131	4.103	2.036	1.657	2.454	0.469	0.341	0.410	0.980	0.494	0.778	17.789
1926	1.913	2.141	5.201	2.551	3.496	3.914	0.542	0.386	0.336	0.922	0.578	0.794	22.776
1927	1.738	1.210	2.820	4.990	6.077	3.333	0.501	0.384	0.292	0.520	0.388	0.579	22.833
1928	1.092	0.596	1.692	1.482	1.563	3.229	0.572	0.487	0.423	1.041	0.580	0.848	13.606
1929	1.943	2.186	6.135	7.988	8.492	4.265	0.580	0.496	0.407	0.905	0.570	0.828	34.795
1930	1.524	1.124	2.875	3.216	2.223	1.627	0.296	0.280	0.244	0.331	0.263	0.270	14.272
1931	0.620	0.663	1.877	1.482	9.720	4.969	0.584	0.499	0.428	1.043	0.587	0.781	23.253
1932	0.948	0.667	3.460	2.668	2.168	1.766	0.303	0.282	0.240	0.320	0.269	0.270	13.361
1933	0.382	1.503	5.721	8.652	8.556	4.458	0.584	0.499	0.427	1.033	0.588	0.853	33.257
1934	1.441	1.770	7.763	9.057	7.302	3.616	0.544	0.438	0.419	0.986	0.519	0.638	34.492
1935	0.502	0.512	1.670	4.036	6.951	4.531	0.581	0.499	0.428	1.039	0.554	0.774	22.078
1936	1.647	2.183	5.909	4.518	7.983	4.112	0.430	0.349	0.311	0.671	0.328	0.443	28.884
1937	0.601	0.528	4.420	5.165	7.150	4.276	0.580	0.498	0.424	1.043	0.588	0.831	26.104
1938	1.827	1.950	4.382	4.926	9.720	4.969	0.584	0.499	0.428	1.036	0.585	0.855	31.762
1939	1.939	2.186	7.721	7.747	4.896	1.948	0.464	0.499	0.428	1.043	0.588	0.856	30.315
1940	1.904	1.842	6.300	6.840	3.905	2.321	0.504	0.437	0.311	0.502	0.304	0.347	25.518
1941	0.502	0.670	1.936	3.409	4.751	3.926	0.576	0.492	0.424	1.010	0.579	0.853	19.127
1942	1.931	2.173	7.763	9.057	8.287	4.616	0.584	0.499	0.428	1.043	0.588	0.857	37.825
1943	1.943	2.186	5.963	2.241	4.515	3.922	0.404	0.314	0.415	1.019	0.540	0.856	24.318
1944	1.937	2.049	2.022	1.884	2.846	4.969	0.584	0.494	0.419	0.866	0.440	0.403	18.914
1945	0.413	0.498	1.360	4.784	4.799	2.362	0.403	0.393	0.291	0.410	0.284	0.297	16.294
1946	1.229	1.723	3.991	2.735	7.065	4.668	0.579	0.493	0.426	1.037	0.572	0.773	25.290
1947	1.303	2.081	7.409	7.989	5.435	4.091	0.577	0.485	0.379	0.731	0.381	0.456	31.317
1948	0.970	1.439	2.719	3.418	5.274	4.367	0.584	0.499	0.428	1.036	0.540	0.755	22.029
1949	1.738	2.112	7.763	8.812	7.109	4.058	0.565	0.439	0.401	0.818	0.478	0.423	34.716
1950	0.411	0.498	2.310	2.350	1.470	1.534	0.290	0.280	0.241	0.301	0.585	0.856	11.125
1951	1.925	1.501	2.764	3.984	2.910	2.223	0.373	0.404	0.357	0.993	0.579	0.617	18.629
1952	0.798	1.032	4.726	7.733	8.801	4.197	0.558	0.479	0.381	0.782	0.487	0.649	30.623
1953	0.824	1.808	4.212	2.904	5.116	3.987	0.518	0.494	0.428	1.022	0.573	0.849	22.736
1954	1.943	2.186	6.699	6.829	8.390	4.410	0.575	0.490	0.416	0.831	0.386	0.347	33.502
1955	1.237	2.002	6.411	6.505	9.720	4.940	0.568	0.364	0.359	0.687	0.348	0.721	33.862
1956	1.827	2.136	7.763	8.578	7.843	4.092	0.576	0.497	0.409	1.019	0.588	0.857	36.184
1957	1.943	2.186	7.011	7.103	9.202	3.857	0.573	0.497	0.401	0.818	0.376	0.423	34.388
1958	0.859	0.969	2.628	4.934	6.766	3.363	0.345	0.476	0.422	0.879	0.538	0.755	22.935
1959	1.598	1.217	4.454	4.328	4.194	3.922	0.583	0.499	0.425	1.013	0.569	0.819	23.621
1960	1.764	2.186	7.763	9.057	8.949	4.209	0.582	0.498	0.427	1.026	0.565	0.842	37.868
1961	1.882	2.001	4.454	3.436	2.577	2.602	0.525	0.441	0.343	0.630	0.511	0.666	20.069
1962	1.373	1.979	5.755	8.001	6.686	4.309	0.584	0.498	0.427	1.043	0.588	0.857	32.100
1963	1.833	2.101	2.157	4.990	5.085	1.968	0.417	0.461	0.391	0.849	0.457	0.567	21.275
1964	1.895	2.118	5.483	4.227	3.701	1.921	0.309	0.307	0.374	0.990	0.584	0.848	22.756
1965	1.911	2.164	5.461	7.404	8.717	3.869	0.454	0.461	0.400	0.760	0.468	0.694	32.763
1966	0.777	0.692	3.688	4.990	9.305	4.959	0.584	0.499	0.428	1.003	0.539	0.686	28.148
1967	1.415	2.115	4.904	4.277	3.210	3.445	0.547	0.361	0.287	0.484	0.540	0.836	22.422
1968	1.498	1.285	4.667	6.379	2.641	4.358	0.584	0.499	0.427	1.030	0.539	0.817	24.723
1969	1.941	2.145	4.245	2.785	1.989	1.752	0.316	0.397	0.369	0.602	0.500	0.844	17.885
1970	1.943	2.186	6.011	7.364	7.734	3.134	0.524	0.499	0.428	1.043	0.588	0.856	32.310
1971	1.926	1.830	4.163	7.262	9.720	4.969	0.582	0.496	0.428	1.020	0.579	0.730	33.706
1972	1.028	0.907	2.208	1.895	4.434	3.161	0.545	0.478	0.374	0.804	0.583	0.857	17.273
1973	1.943	2.173	6.223	8.290	7.520	3.176	0.524	0.472	0.417	0.973	0.520	0.538	32.770
1974	0.416	0.839	4.635	9.057	9.720	4.769	0.584	0.499	0.421	0.935	0.501	0.857	33.233
1975	1.943	2.132	6.890	9.057	6.995	4.969	0.584	0.499	0.426	0.965	0.556	0.712	38.428
1976	1.870	1.939	4.837	8.760	9.720	4.969	0.584	0.420	0.316	0.557	0.471	0.849	35.292
1977	1.934	1.943	5.231	8.089	9.162	4.596	0.583	0.495	0.379	0.930	0.580	0.845	34.765
1978	1.943	2.179	6.349	4.960	4.251	1.995	0.445	0.468	0.375	0.849	0.578	0.853	25.244
1979	1.800	0.845	3.587	3.758	2.616	1.667	0.286	0.283	0.243	0.296	0.259	0.817	16.458
1980	1.664	1.612	3.276	5.678	7.267	3.068	0.334	0.477	0.428	1.043	0.588	0.857	26.291
1981	1.943	2.184	6.187	5.071	4.764	3.400	0.564	0.486	0.400	0.831	0.416	0.443	26.688
1982	1.601	1.419	1.755	1.532	1.564	1.534	0.280	0.276	0.238	0.305	0.451	0.660	11.615
1983	0.926	1.990	6.974	9.057	9.720	4.969	0.584	0.450	0.396	1.034	0.588	0.856	37.544
1984	1.920	2.050	3.126	2.950	9.720	4.822	0.507	0.307	0.268	0.410	0.291	0.325	26.697
1985	1.943	2.164	5.557	4.053	4.821	2.924	0.425	0.364	0.289	0.484	0.306	0.324	23.653
1986	0.790	0.716	4.255	6.353	5.261	3.235	0.560	0.485	0.423	1.028	0.588	0.857	24.550
1987	1.943	2.186	7.395	5.948	6.514	4.805	0.583	0.491	0.421	1.037	0.587	0.850	32.759
1988	1.939	2.171	6.967	6.401	7.590	4.279	0.481	0.421	0.404	0.940	0.463	0.502	32.556
1989	0.659	2.186	7.763	7.031	3.150	3.453	0.554	0.451	0.369	0.711	0.561	0.737	27.627
1990	1.534	1.044	3.449	4.887	7.682	4.598	0.579	0.494	0.427	1.042	0.584	0.809	27.130
1991	1.783	1.186	2.099	2.100	1.900	1.652	0.286	0.275	0.237	0.290	0.256	0.271	12.335
1992	0.432	0.808	2.756	1.779	1.841	2.049	0.344	0.302	0.255	0.337	0.287	0.370	11.558
1993	1.943	2.186	7.210	7.462	5.572	2.971	0.484	0.336	0.268	0.431	0.429	0.489	29.780
1994	1.814	1.988	3.172	1.890	1.619	1.582	0.485	0.490	0.426	1.043	0.588	0.834	15.932
1995	1.884	2.182	7.763	9.057	9.720	4.969	0.582	0.480	0.398	1.015	0.586	0.753	39.390
1996	1.731	1.695	3.621	4.900	6.479	3.420	0.569	0.498	0.428	1.043	0.588	0.857	25.828
1997	1.943	2.186	7.622	5.111	3.646	2.535	0.476	0.460	0.363	0.675	0.353	0.463	25.834
1998	1.647	1.734	4.359	5.840	5.014	3.011	0.401	0.393	0.336	0.502	0.376	0.585	24.199
1999	1.205	1.641	7.763	9.057	9.608	4.662	0.581	0.499	0.428	1.030	0.539	0.829	37.842
2000	0.865	2.186	7.674	6.664	4.011	2.757	0.407	0.335	0.261	0.357	0.279	0.786	27.582
2001	1.895	2.077	6.668	7.507	4.699	2.223	0.326	0.296	0.252	1.043	0.588	0.857	28.431
2002	1.917	1.968	1.952	1.572	1.871	1.586	0.280	0.275	0.248	0.348	0.263	0.317	12.596
2003	0.424	0.535	1.731	1.577	4.567	3.78							

A.85. Niii14 – Category B**Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii14

Annual Flows (Mill. cu. m or index values):

MAR = 53.385
 S.Dev. = 57.108
 CV = 1.070
 Q75 = 1.390
 Q75/MMF = 0.312
 BFI Index = 0.450
 CV(JJA+JFM) Index = 3.879

Ecological Category = B

Total IFR = 30.723 (57.55 %MAR)
 Maint. Lowflow = 17.518 (32.82 %MAR)
 Drought Lowflow = 4.569 (8.56 %MAR)
 Maint. Highflow = 13.204 (24.73 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	4.381	7.842	1.790	0.919	0.169	0.986	1.905
Nov	4.043	3.275	0.810	1.305	0.240	1.280	2.586
Dec	3.945	6.507	1.649	2.877	0.887	2.611	5.489
Jan	4.080	8.489	2.081	3.128	0.707	3.263	6.391
Feb	6.749	16.759	2.483	2.889	0.739	3.085	5.975
Mar	7.512	26.495	3.527	2.771	0.884	1.197	3.968
Apr	4.830	9.398	1.946	1.281	0.171	0.204	1.485
May	3.736	3.715	0.995	0.919	0.172	0.036	0.955
Jun	3.278	3.227	0.985	0.405	0.148	0.000	0.405
Jul	3.675	5.937	1.616	0.346	0.152	0.270	0.616
Aug	2.865	2.710	0.946	0.360	0.153	0.065	0.425
Sep	4.290	14.910	3.475	0.317	0.148	0.207	0.524

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii14

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	2.175	2.157	2.116	2.031	1.871	1.609	1.239	0.813	0.449	0.280
Nov	2.958	2.939	2.899	2.820	2.671	2.412	1.999	1.426	0.786	0.384
Dec	7.420	5.060	3.780	3.120	2.680	2.150	1.830	1.390	0.870	0.590
Jan	6.980	4.930	3.740	3.070	2.570	2.000	1.610	1.140	0.850	0.680
Feb	8.570	5.190	4.410	3.620	2.950	2.440	1.860	1.200	0.680	0.450
Mar	4.619	4.592	4.536	4.160	2.990	2.250	1.810	1.300	0.920	0.470
Apr	1.752	1.737	1.703	1.634	1.503	1.289	0.986	0.637	0.339	0.201
May	1.136	1.127	1.106	1.063	0.983	0.851	0.665	0.450	0.267	0.182
Jun	0.484	0.481	0.474	0.458	0.430	0.384	0.319	0.244	0.180	0.150
Jul	0.709	0.704	0.693	0.669	0.625	0.552	0.449	0.330	0.229	0.182
Aug	0.501	0.498	0.490	0.475	0.447	0.400	0.334	0.257	0.192	0.162
Sep	0.605	0.601	0.591	0.572	0.535	0.475	0.391	0.293	0.210	0.171

Reserve Flows without High Flows

Oct	1.097	1.088	1.068	1.026	0.949	0.822	0.642	0.434	0.257	0.175
Nov	1.558	1.548	1.528	1.488	1.412	1.280	1.070	0.778	0.453	0.248
Dec	3.437	3.418	3.378	3.120	2.680	2.150	1.830	1.390	0.870	0.590
Jan	3.735	3.713	3.666	3.070	2.570	2.000	1.610	1.140	0.850	0.680
Feb	3.450	3.430	3.388	3.305	2.950	2.440	1.860	1.200	0.680	0.450
Mar	3.310	3.292	3.254	3.180	2.990	2.250	1.810	1.300	0.920	0.470
Apr	1.528	1.516	1.486	1.425	1.312	1.125	0.862	0.559	0.300	0.179
May	1.097	1.088	1.068	1.027	0.949	0.822	0.643	0.436	0.260	0.178
Jun	0.484	0.481	0.474	0.458	0.430	0.384	0.319	0.244	0.180	0.150
Jul	0.414	0.411	0.406	0.394	0.372	0.336	0.285	0.227	0.177	0.154
Aug	0.430	0.428	0.422	0.409	0.386	0.348	0.294	0.233	0.180	0.155
Sep	0.379	0.377	0.372	0.361	0.342	0.310	0.266	0.214	0.170	0.149

Natural Duration curves

Oct	6.230	4.980	3.590	3.020	2.700	2.440	2.090	1.240	0.970	0.590
Nov	6.710	5.280	4.520	4.020	3.680	2.910	2.340	1.760	1.190	0.600
Dec	7.420	5.060	3.780	3.120	2.680	2.150	1.830	1.390	0.870	0.590
Jan	6.980	4.930	3.740	3.070	2.570	2.000	1.610	1.140	0.850	0.680
Feb	8.570	5.190	4.410	3.620	2.950	2.440	1.860	1.200	0.680	0.450
Mar	11.200	6.590	4.860	4.160	2.990	2.250	1.810	1.300	0.920	0.470
Apr	8.850	5.790	5.020	3.740	3.000	2.320	1.660	1.180	0.650	0.390
May	7.250	5.500	4.560	3.200	2.610	2.170	1.630	1.200	0.780	0.400
Jun	6.560	5.240	4.220	3.600	2.380	1.550	1.280	1.030	0.670	0.460
Jul	6.830	5.170	4.090	3.260	2.300	1.740	1.300	1.010	0.750	0.470
Aug	5.760	4.200	3.540	2.860	1.980	1.730	1.360	0.990	0.650	0.480
Sep	5.300	4.170	3.130	2.520	2.030	1.730	1.370	1.140	0.790	0.420

Hydrological time series

Total Runoff : Niii14

Desktop (Version 2) Modified Flow Data for Ecological Category B													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.801	2.503	3.420	4.570	1.400	3.450	1.657	1.045	0.435	0.544	0.422	0.487	20.735
1921	2.031	2.920	7.680	3.760	1.300	3.740	1.051	0.851	0.347	0.474	0.383	0.525	25.062
1922	1.074	2.849	2.830	2.000	3.150	0.740	0.944	0.191	0.205	0.182	0.162	0.171	14.497
1923	0.280	0.384	0.830	0.790	0.680	1.080	0.538	0.523	0.314	0.446	0.273	0.538	6.676
1924	1.398	2.750	8.509	8.190	8.570	4.619	1.752	1.136	0.484	0.709	0.501	0.590	39.208
1925	2.175	2.906	2.300	1.370	0.620	2.090	1.292	0.429	0.411	0.567	0.342	0.475	14.978
1926	2.006	2.715	3.430	2.840	2.230	4.528	1.677	0.777	0.450	0.587	0.489	0.523	22.251
1927	2.052	2.395	1.450	2.870	3.030	2.860	1.061	0.983	0.403	0.532	0.358	0.322	18.317
1928	0.776	0.718	0.520	0.970	1.200	2.350	1.739	1.095	0.477	0.707	0.499	0.605	11.656
1929	2.171	2.952	3.300	3.350	6.770	1.810	1.669	0.872	0.434	0.565	0.422	0.573	24.888
1930	1.609	1.700	2.110	1.550	0.910	1.080	0.304	0.267	0.152	0.198	0.166	0.179	10.225
1931	0.318	0.650	0.870	0.780	9.442	4.619	1.752	1.136	0.484	0.709	0.501	0.597	21.859
1932	2.074	2.455	3.070	2.730	2.550	2.300	0.442	0.543	0.156	0.250	0.195	0.202	16.967
1933	0.305	1.103	2.510	3.490	4.560	4.450	1.686	1.123	0.481	0.704	0.500	0.602	21.514
1934	1.629	2.671	5.600	6.970	4.010	4.563	1.516	1.094	0.479	0.705	0.498	0.602	30.337
1935	1.504	2.248	0.680	2.270	3.920	4.536	1.533	1.095	0.483	0.690	0.488	0.555	20.002
1936	2.116	2.936	4.870	1.720	5.590	4.557	1.572	1.070	0.384	0.656	0.430	0.493	26.394
1937	0.918	1.764	4.420	5.260	5.590	4.600	1.358	1.129	0.432	0.708	0.497	0.583	27.258
1938	1.896	2.255	1.210	2.500	4.480	4.613	1.724	1.127	0.484	0.707	0.501	0.603	22.099
1939	2.175	2.952	6.980	2.570	3.300	0.960	1.523	1.136	0.484	0.709	0.501	0.605	23.895
1940	2.160	2.936	7.910	5.050	1.470	2.280	0.592	0.698	0.180	0.259	0.186	0.210	23.931
1941	0.449	1.025	1.830	1.590	2.670	2.000	1.669	0.863	0.467	0.674	0.472	0.597	14.305
1942	2.134	2.906	6.790	5.750	2.420	4.594	1.752	1.136	0.482	0.709	0.501	0.605	29.779
1943	2.168	2.958	7.120	1.820	1.940	3.410	0.668	0.633	0.351	0.681	0.460	0.598	22.808
1944	2.175	2.950	3.780	1.010	3.310	4.380	1.742	0.983	0.469	0.575	0.463	0.251	22.089
1945	0.589	0.406	0.590	1.140	1.140	0.970	0.757	0.267	0.268	0.193	0.195	0.177	6.693
1946	0.412	0.773	0.780	0.810	1.470	4.380	1.654	1.071	0.445	0.687	0.483	0.585	13.549
1947	1.861	2.181	3.330	1.940	3.000	2.280	1.289	0.902	0.282	0.463	0.205	0.242	17.974
1948	0.346	0.718	0.950	0.680	1.510	2.370	1.737	1.136	0.455	0.705	0.477	0.596	11.681
1949	2.117	2.899	5.150	6.830	3.660	4.592	1.731	1.052	0.458	0.628	0.447	0.391	29.955
1950	0.374	0.384	0.640	0.830	0.450	0.470	0.241	0.201	0.168	0.212	0.327	0.575	4.873
1951	1.740	1.689	0.850	1.610	0.530	0.900	0.223	0.309	0.289	0.390	0.400	0.230	9.161
1952	0.449	1.112	2.190	1.410	0.990	1.380	0.383	0.232	0.157	0.217	0.236	0.439	9.195
1953	1.906	2.870	4.670	1.270	5.060	4.545	1.267	1.132	0.484	0.699	0.498	0.603	25.003
1954	2.175	2.958	1.740	4.820	3.190	4.619	1.752	1.126	0.474	0.676	0.476	0.535	24.542
1955	1.462	2.680	2.690	0.850	2.440	4.613	1.743	1.085	0.482	0.693	0.483	0.571	19.792
1956	1.750	2.263	8.509	9.450	4.750	4.610	1.716	1.136	0.424	0.701	0.491	0.605	36.404
1957	2.175	2.958	2.810	7.220	9.110	4.605	1.258	1.116	0.438	0.660	0.400	0.513	33.264
1958	1.438	1.426	1.660	2.450	2.100	0.670	0.339	0.215	0.260	0.188	0.189	0.352	11.288
1959	1.525	1.742	1.420	1.720	0.920	3.570	1.729	1.130	0.476	0.686	0.492	0.591	16.002
1960	1.976	2.883	8.509	10.072	7.620	4.593	1.743	1.136	0.479	0.709	0.486	0.603	40.809
1961	2.157	2.939	3.460	1.840	1.850	0.920	1.301	0.450	0.309	0.232	0.290	0.316	16.065
1962	0.776	2.412	3.290	3.070	3.890	4.494	1.748	1.117	0.477	0.709	0.501	0.605	23.088
1963	2.155	2.945	2.290	3.230	5.310	1.780	1.579	1.063	0.408	0.625	0.373	0.346	22.106
1964	1.247	2.509	1.470	1.010	0.490	0.620	0.201	0.182	0.179	0.369	0.330	0.533	9.140
1965	1.901	2.798	2.150	3.460	4.750	1.590	0.986	0.562	0.390	0.458	0.253	0.335	19.633
1966	0.813	0.802	1.170	2.010	3.700	4.571	1.752	1.134	0.464	0.702	0.494	0.544	18.157
1967	1.462	2.684	2.680	0.900	1.960	2.250	1.352	0.337	0.366	0.330	0.405	0.573	15.301
1968	1.650	2.181	2.990	3.110	0.800	4.130	1.749	1.136	0.484	0.693	0.498	0.588	20.008
1969	2.165	2.860	1.390	1.680	0.580	1.550	0.313	0.493	0.374	0.382	0.280	0.433	12.499
1970	2.080	2.889	2.630	2.160	2.850	1.760	1.462	1.124	0.484	0.709	0.501	0.605	19.253
1971	2.175	2.958	3.060	7.000	9.442	4.619	1.314	1.135	0.484	0.706	0.491	0.546	33.929
1972	1.239	1.860	1.800	1.920	2.680	3.280	1.191	1.058	0.319	0.591	0.439	0.604	16.981
1973	2.175	2.900	4.550	5.720	7.190	2.120	1.704	0.665	0.468	0.540	0.447	0.216	28.694
1974	0.315	0.486	2.150	2.710	5.750	4.592	1.721	1.133	0.466	0.693	0.454	0.597	21.068
1975	2.166	2.776	5.510	8.290	9.442	4.619	1.752	1.136	0.484	0.580	0.495	0.405	37.656
1976	2.082	2.594	3.310	6.470	9.442	4.619	1.752	0.863	0.471	0.282	0.475	0.594	32.954
1977	2.154	2.859	4.000	6.980	7.570	4.584	1.747	1.120	0.459	0.684	0.480	0.592	33.230
1978	2.149	2.948	2.900	2.190	1.480	0.640	0.469	0.429	0.236	0.268	0.276	0.473	14.460
1979	1.609	1.435	1.750	1.520	0.710	1.050	0.208	0.194	0.150	0.183	0.169	0.442	9.420
1980	1.886	2.066	2.490	1.440	4.570	2.990	0.717	1.095	0.483	0.708	0.500	0.605	19.550
1981	2.175	2.958	8.350	2.670	5.190	1.570	1.697	0.626	0.430	0.275	0.334	0.191	26.467
1982	0.997	1.644	0.960	1.040	0.650	0.730	0.339	0.230	0.171	0.229	0.387	0.485	7.862
1983	1.115	2.862	5.080	10.072	9.442	4.619	1.752	1.136	0.481	0.709	0.501	0.605	38.375
1984	2.119	2.929	1.910	3.310	9.442	4.614	1.009	0.983	0.244	0.625	0.227	0.322	27.735
1985	2.175	2.958	2.300	3.740	2.490	2.160	0.816	0.375	0.217	0.330	0.178	0.206	17.946
1986	0.356	0.802	2.000	4.930	3.410	2.090	1.703	0.878	0.480	0.697	0.500	0.605	18.451
1987	2.175	2.958	7.420	4.710	3.820	4.619	1.748	1.005	0.462	0.669	0.494	0.582	30.661
1988	2.066	2.793	3.990	3.630	2.040	4.503	0.816	1.058	0.243	0.612	0.257	0.285	22.293
1989	0.614	2.958	7.620	3.200	2.100	4.491	1.706	1.028	0.415	0.511	0.455	0.565	25.663
1990	1.133	2.346	1.120	2.990	4.070	4.592	1.727	1.082	0.484	0.702	0.500	0.572	21.318
1991	2.138	1.999	1.130	1.080	0.360	0.370	0.201	0.182	0.150	0.182	0.162	0.171	8.124
1992	0.280	0.786	1.620	0.850	0.900	0.890	0.622	0.241	0.205	0.195	0.217	0.270	7.076
1993	2.143	2.958	4.350	6.980	3.620	4.160	1.503	0.690	0.356	0.390	0.334	0.341	27.824
1994	0.926	2.550	1.870	0.740	0.520	1.320	1.561	1.115	0.484	0.709	0.497	0.601	12.893
1995	2.085	2.935	5.060	8.060	9.442	4.619	1.752	1.109	0.480	0.681	0.498	0.358	37.078
1996	1.801	2.503	2.120	3.020	5.040	3.810	1.547	1.106	0.477	0.699	0.490	0.604	23.217
1997	2.173	2.958	8.500	1.570	4.410	2.250	0.788	0.744	0.205	0.369	0.192	0.192	24.351
1998	0.449	1.103	1.320	2.030	2.760	2.600	0.637	0.818	0.358	0.495	0.367	0.449	13.386
1999	1.966	2.536	2.080	4.730	4.890	4.565	1.699	1.127	0.483	0.666	0.475	0.519	25.737
2000	0.961	2.835	6.790	3.820	3.410	2.430	1.112	0.780	0.187	0.303	0.165	0.270	24.062
2001	1.871	2.570	3.660	4.460	2.950	2.210	0.972	0.516	0.226	0.709	0.501	0.605	21.250
2002	2.170	2.953	4.450	2.340	1.860	1.300	0.232	0.290	0.177	0.382	0.186	0.233	16.573
2003	0.573	0.439	0.690	0.710	2.120	3.380	1.						

A.86. *Niii14 – Category C***Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii14

Annual Flows (Mill. cu. m or index values):

MAR = 53.385
 S.Dev. = 57.108
 CV = 1.070
 Q75 = 1.390
 Q75/MMF = 0.312
 BFI Index = 0.450
 CV(JJA+JFM) Index = 3.879

Ecological Category = C

Total IFR = 26.837 (50.27 %MAR)
 Maint. Lowflow = 13.632 (25.54 %MAR)
 Drought Lowflow = 4.569 (8.56 %MAR)
 Maint. Highflow = 13.204 (24.73 %MAR)

Monthly Distributions (Mill. cu. m.)
 Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	4.381	7.842	1.790	0.562	0.169	0.986	1.548
Nov	4.043	3.275	0.810	0.814	0.240	1.280	2.094
Dec	3.945	6.507	1.649	2.322	0.887	2.611	4.934
Jan	4.080	8.489	2.081	2.474	0.707	3.263	5.736
Feb	6.749	16.759	2.483	2.345	0.739	3.085	5.430
Mar	7.512	26.495	3.527	2.191	0.884	1.197	3.388
Apr	4.830	9.398	1.946	0.965	0.171	0.204	1.169
May	3.736	3.715	0.995	0.753	0.172	0.036	0.788
Jun	3.278	3.227	0.985	0.346	0.148	0.000	0.346
Jul	3.675	5.937	1.616	0.306	0.152	0.270	0.575
Aug	2.865	2.710	0.946	0.284	0.153	0.065	0.349
Sep	4.290	14.910	3.475	0.271	0.148	0.207	0.478

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii14

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.917	1.901	1.865	1.792	1.654	1.427	1.108	0.739	0.424	0.278
Nov	2.661	2.644	2.609	2.539	2.407	2.177	1.812	1.304	0.738	0.382
Dec	7.420	5.060	3.780	3.120	2.680	2.150	1.830	1.390	0.870	0.590
Jan	6.980	4.930	3.740	3.070	2.570	2.000	1.610	1.140	0.850	0.680
Feb	8.570	5.190	4.410	3.620	2.950	2.440	1.860	1.200	0.680	0.450
Mar	4.482	4.456	4.402	4.160	2.990	2.250	1.810	1.300	0.920	0.470
Apr	1.545	1.532	1.503	1.442	1.329	1.143	0.880	0.578	0.320	0.199
May	1.060	1.052	1.033	0.993	0.919	0.798	0.626	0.429	0.260	0.181
Jun	0.469	0.466	0.459	0.445	0.418	0.374	0.312	0.240	0.179	0.150
Jul	0.731	0.725	0.713	0.689	0.643	0.567	0.460	0.337	0.231	0.182
Aug	0.461	0.458	0.451	0.438	0.413	0.371	0.313	0.246	0.188	0.162
Sep	0.610	0.606	0.596	0.576	0.540	0.479	0.393	0.295	0.211	0.171

Reserve Flows without High Flows

Oct	0.760	0.754	0.742	0.715	0.666	0.585	0.470	0.338	0.225	0.173
Nov	1.134	1.127	1.114	1.086	1.035	0.945	0.803	0.605	0.384	0.246
Dec	3.237	3.219	3.183	3.111	2.680	2.150	1.830	1.390	0.870	0.590
Jan	3.446	3.426	3.383	3.070	2.570	2.000	1.610	1.140	0.850	0.680
Feb	3.267	3.248	3.209	3.132	2.950	2.440	1.860	1.200	0.680	0.450
Mar	3.054	3.038	3.004	2.938	2.813	2.250	1.810	1.300	0.920	0.470
Apr	1.305	1.294	1.269	1.219	1.124	0.968	0.748	0.495	0.278	0.178
May	1.018	1.010	0.992	0.954	0.883	0.767	0.603	0.414	0.252	0.177
Jun	0.469	0.466	0.459	0.445	0.418	0.374	0.312	0.240	0.179	0.150
Jul	0.414	0.411	0.406	0.394	0.372	0.336	0.285	0.227	0.177	0.154
Aug	0.385	0.383	0.378	0.367	0.348	0.316	0.271	0.220	0.175	0.155
Sep	0.367	0.365	0.361	0.351	0.332	0.302	0.260	0.211	0.169	0.149

Natural Duration curves

Oct	6.230	4.980	3.590	3.020	2.700	2.440	2.090	1.240	0.970	0.590
Nov	6.710	5.280	4.520	4.020	3.680	2.910	2.340	1.760	1.190	0.600
Dec	7.420	5.060	3.780	3.120	2.680	2.150	1.830	1.390	0.870	0.590
Jan	6.980	4.930	3.740	3.070	2.570	2.000	1.610	1.140	0.850	0.680
Feb	8.570	5.190	4.410	3.620	2.950	2.440	1.860	1.200	0.680	0.450
Mar	11.200	6.590	4.860	4.160	2.990	2.250	1.810	1.300	0.920	0.470
Apr	8.850	5.790	5.020	3.740	3.000	2.320	1.660	1.180	0.650	0.390
May	7.250	5.500	4.560	3.200	2.610	2.170	1.630	1.200	0.780	0.400
Jun	6.560	5.240	4.220	3.600	2.380	1.550	1.280	1.030	0.670	0.460
Jul	6.830	5.170	4.090	3.260	2.300	1.740	1.300	1.010	0.750	0.470
Aug	5.760	4.200	3.540	2.860	1.980	1.730	1.360	0.990	0.650	0.480
Sep	5.300	4.170	3.130	2.520	2.030	1.730	1.370	1.140	0.790	0.420

Hydrological time series

Total Runoff : Niii14

Desktop (Version 2) Modified Flow Data for Ecological Category C													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.729	2.258	3.420	4.570	1.400	3.450	1.463	0.977	0.423	0.559	0.391	0.491	20.130
1921	1.792	2.627	7.680	3.760	1.300	3.740	0.937	0.798	0.338	0.486	0.357	0.529	24.344
1922	0.965	2.565	2.830	2.000	3.150	0.740	0.844	0.189	0.202	0.182	0.162	0.171	14.000
1923	0.278	0.382	0.830	0.790	0.680	1.080	0.492	0.496	0.307	0.457	0.260	0.542	6.594
1924	1.245	2.477	8.308	8.190	8.570	4.482	1.545	1.060	0.469	0.731	0.461	0.595	38.132
1925	1.917	2.615	2.300	1.370	0.620	2.090	1.146	0.409	0.399	0.583	0.321	0.479	14.249
1926	1.770	2.446	3.430	2.840	2.230	4.395	1.480	0.729	0.436	0.603	0.450	0.527	21.337
1927	1.811	2.163	1.450	2.870	3.030	2.860	0.945	0.919	0.392	0.547	0.335	0.324	17.645
1928	0.707	0.678	0.520	0.970	1.200	2.350	1.533	1.022	0.463	0.729	0.459	0.610	11.240
1929	1.913	2.656	3.300	3.350	6.770	1.810	1.473	0.817	0.421	0.580	0.391	0.578	24.059
1930	1.427	1.547	2.110	1.550	0.910	1.080	0.289	0.260	0.152	0.198	0.166	0.179	9.868
1931	0.311	0.618	0.870	0.780	9.259	4.482	1.545	1.060	0.469	0.731	0.461	0.602	21.188
1932	1.830	2.216	3.070	2.730	2.550	2.300	0.409	0.514	0.156	0.253	0.191	0.202	16.419
1933	0.300	1.018	2.510	3.490	4.560	4.350	1.488	1.048	0.466	0.725	0.460	0.607	21.023
1934	1.445	2.407	5.600	6.970	4.010	4.428	1.340	1.022	0.464	0.726	0.459	0.607	29.477
1935	1.336	2.033	0.680	2.270	3.920	4.402	1.355	1.022	0.468	0.711	0.450	0.559	19.206
1936	1.865	2.641	4.870	1.720	5.590	4.422	1.389	1.000	0.374	0.676	0.398	0.497	25.442
1937	0.830	1.604	4.420	5.260	5.590	4.464	1.203	1.054	0.419	0.729	0.457	0.587	26.617
1938	1.676	2.038	1.210	2.500	4.480	4.476	1.520	1.052	0.469	0.728	0.461	0.608	21.218
1939	1.917	2.656	6.980	2.570	3.300	0.960	1.346	1.060	0.469	0.731	0.461	0.610	23.059
1940	1.903	2.642	7.910	5.050	1.470	2.280	0.538	0.657	0.179	0.262	0.183	0.211	23.285
1941	0.424	0.949	1.830	1.590	2.670	2.000	1.473	0.809	0.452	0.694	0.435	0.602	13.929
1942	1.881	2.615	6.790	5.750	2.420	4.458	1.545	1.060	0.468	0.731	0.461	0.610	28.788
1943	1.910	2.661	7.120	1.820	1.940	3.410	0.605	0.597	0.342	0.701	0.424	0.603	22.135
1944	1.917	2.654	3.780	1.010	3.310	4.337	1.536	0.919	0.455	0.591	0.428	0.252	21.189
1945	0.545	0.402	0.590	1.140	1.140	0.970	0.682	0.260	0.263	0.193	0.191	0.177	6.553
1946	0.392	0.726	0.780	0.810	1.470	4.337	1.460	1.000	0.432	0.707	0.445	0.590	13.149
1947	1.645	1.973	3.330	1.940	3.000	2.280	1.143	0.845	0.276	0.474	0.200	0.243	17.349
1948	0.336	0.678	0.950	0.680	1.510	2.370	1.532	1.060	0.442	0.727	0.439	0.601	11.325
1949	1.867	2.609	5.150	6.830	3.660	4.456	1.526	0.983	0.445	0.646	0.413	0.393	28.977
1950	0.360	0.382	0.640	0.830	0.450	0.470	0.235	0.199	0.167	0.214	0.308	0.580	4.834
1951	1.541	1.538	0.850	1.610	0.530	0.900	0.219	0.299	0.283	0.398	0.371	0.231	8.769
1952	0.424	1.027	2.190	1.410	0.990	1.380	0.357	0.228	0.157	0.219	0.227	0.442	9.051
1953	1.684	2.583	4.670	1.270	5.060	4.411	1.124	1.057	0.469	0.720	0.458	0.609	24.113
1954	1.917	2.661	1.740	4.820	3.190	4.482	1.545	1.051	0.459	0.696	0.439	0.540	23.540
1955	1.300	2.415	2.690	0.850	2.440	4.477	1.537	1.013	0.467	0.714	0.445	0.576	18.923
1956	1.549	2.046	8.308	9.450	4.750	4.474	1.513	1.060	0.412	0.722	0.452	0.610	35.346
1957	1.917	2.661	2.810	7.220	9.110	4.469	1.116	1.042	0.425	0.680	0.371	0.517	32.338
1958	1.279	1.304	1.660	2.450	2.100	0.670	0.320	0.212	0.255	0.188	0.186	0.354	10.979
1959	1.355	1.585	1.420	1.720	0.920	3.570	1.524	1.055	0.462	0.706	0.453	0.596	15.366
1960	1.744	2.595	8.308	9.783	7.620	4.457	1.537	1.060	0.464	0.731	0.448	0.608	39.356
1961	1.901	2.644	3.460	1.840	1.850	0.920	1.154	0.429	0.302	0.234	0.275	0.318	15.326
1962	0.707	2.177	3.290	3.070	3.890	4.362	1.541	1.043	0.462	0.731	0.461	0.610	22.343
1963	1.899	2.650	2.290	3.230	5.310	1.780	1.395	0.993	0.397	0.644	0.348	0.348	21.284
1964	1.114	2.264	1.470	1.010	0.490	0.620	0.199	0.181	0.177	0.376	0.310	0.538	8.750
1965	1.680	2.519	2.150	3.460	4.750	1.590	0.880	0.531	0.379	0.469	0.242	0.337	18.988
1966	0.739	0.753	1.170	2.010	3.700	4.436	1.545	1.058	0.450	0.723	0.455	0.549	17.588
1967	1.300	2.419	2.680	0.900	1.960	2.250	1.198	0.325	0.356	0.337	0.376	0.578	14.678
1968	1.462	1.973	2.990	3.110	0.800	4.130	1.542	1.060	0.469	0.714	0.458	0.593	19.301
1969	1.908	2.575	1.390	1.680	0.580	1.550	0.296	0.468	0.364	0.390	0.266	0.436	11.902
1970	1.834	2.600	2.630	2.160	2.850	1.760	1.293	1.049	0.469	0.730	0.461	0.610	18.446
1971	1.917	2.661	3.060	7.000	9.259	4.482	1.165	1.059	0.469	0.727	0.452	0.550	32.801
1972	1.108	1.689	1.800	1.920	2.680	3.280	1.058	0.988	0.312	0.607	0.406	0.609	16.457
1973	1.917	2.609	4.550	5.720	7.190	2.120	1.503	0.626	0.454	0.554	0.413	0.216	27.873
1974	0.309	0.473	2.150	2.710	5.750	4.456	1.518	1.058	0.452	0.713	0.419	0.602	20.610
1975	1.908	2.500	5.510	8.290	9.259	4.482	1.545	1.060	0.469	0.597	0.456	0.408	36.484
1976	1.836	2.338	3.310	6.470	9.259	4.482	1.545	0.809	0.457	0.286	0.438	0.598	31.829
1977	1.898	2.573	4.000	6.980	7.570	4.448	1.541	1.046	0.445	0.704	0.443	0.597	32.245
1978	1.894	2.653	2.900	2.190	1.480	0.640	0.432	0.409	0.232	0.272	0.262	0.477	13.841
1979	1.427	1.312	1.750	1.520	0.710	1.050	0.205	0.193	0.150	0.183	0.168	0.445	9.114
1980	1.667	1.872	2.490	1.440	4.570	2.990	0.647	1.022	0.468	0.729	0.460	0.610	18.965
1981	1.917	2.661	8.308	2.670	5.190	1.570	1.497	0.591	0.418	0.279	0.313	0.191	25.605
1982	0.898	1.497	0.960	1.040	0.650	0.730	0.320	0.225	0.170	0.231	0.360	0.489	7.571
1983	1.000	2.576	5.080	9.783	9.259	4.482	1.545	1.060	0.466	0.731	0.461	0.610	37.054
1984	1.868	2.635	1.910	3.310	9.259	4.478	0.901	0.919	0.240	0.643	0.219	0.324	26.707
1985	1.917	2.661	2.300	3.740	2.490	2.160	0.733	0.359	0.214	0.337	0.175	0.207	17.293
1986	0.344	0.753	2.000	4.930	3.410	2.090	1.503	0.823	0.465	0.718	0.460	0.610	18.104
1987	1.917	2.661	7.420	4.710	3.820	4.482	1.541	0.939	0.448	0.689	0.455	0.586	29.668
1988	1.822	2.515	3.990	3.630	2.040	4.371	0.733	0.988	0.239	0.629	0.246	0.286	21.489
1989	0.567	2.661	7.620	3.200	2.100	4.359	1.505	0.961	0.403	0.524	0.420	0.570	24.890
1990	1.016	2.119	1.120	2.990	4.070	4.456	1.523	1.011	0.469	0.724	0.460	0.576	20.533
1991	1.884	1.812	1.130	1.080	0.360	0.370	0.199	0.181	0.150	0.182	0.162	0.171	7.682
1992	0.278	0.738	1.620	0.850	0.900	0.890	0.565	0.236	0.202	0.196	0.210	0.271	6.957
1993	1.889	2.661	4.350	6.980	3.620	4.160	1.329	0.649	0.347	0.398	0.313	0.343	27.039
1994	0.837	2.300	1.870	0.740	0.520	1.320	1.379	1.041	0.469	0.731	0.457	0.606	12.269
1995	1.839	2.641	5.060	8.060	9.259	4.482	1.545	1.035	0.465	0.701	0.458	0.360	35.905
1996	1.593	2.258	2.120	3.020	5.040	3.810	1.367	1.033	0.462	0.720	0.451	0.609	22.483
1997	1.915	2.661	8.308	1.570	4.410	2.250	0.708	0.699	0.202	0.376	0.188	0.192	23.482
1998	0.424	1.018	1.320	2.030	2.760	2.600	0.578	0.767	0.349	0.508	0.342	0.452	13.150
1999	1.736	2.288	2.080	4.730	4.890	4.430	1.499	1.052	0.468	0.686	0.438	0.523	24.820
2000	1.731	2.552	6.790	3.820	3.410	2.430	0.990	0.732	0.185	0.308	0.164	0.271	23.384
2001	1.654	2.318	3.660	4.460	2.950	2.210	0.868	0.489	0.223	0.731	0.461	0.610	20.633
2002	1.912	2.656	4.450	2.340	1.860	1.300	0.227	0.281	0.176	0.390	0.183	0.234	16.009
2003	0.532	0.431	0.690	0.710	2.120	3.380	1.184						

A.87. *Niii14 – Category D***Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niii14

Annual Flows (Mill. cu. m or index values):

MAR = 53,385
 S.Dev. = 57,108
 CV = 1,070
 Q75 = 1,390
 Q75/MMF = 0,312
 BFI Index = 0,438
 CV(JJA+JFM) Index = 3,879

Ecological Category = D

Total IFR = 13,062 (24,47 %MAR)
 Maint. Lowflow = 4,569 (8,56 %MAR)
 Drought Lowflow = 4,569 (8,56 %MAR)
 Maint. Highflow = 8,493 (15,91 %MAR)

Monthly Distributions (Mill. cu. m.)
 Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	4,381	7,842	1,790	0,169	0,169	0,648	0,817
Nov	4,043	3,275	0,810	0,240	0,240	0,661	0,901
Dec	3,945	6,507	1,649	0,887	0,887	1,546	2,433
Jan	4,080	8,489	2,081	0,707	0,707	2,089	2,796
Feb	6,749	16,759	2,483	0,739	0,739	2,263	3,002
Mar	7,512	26,495	3,527	0,884	0,884	0,716	1,600
Apr	4,830	9,398	1,946	0,171	0,171	0,039	0,210
May	3,736	3,715	0,995	0,172	0,172	0,000	0,172
Jun	3,278	3,227	0,985	0,148	0,148	0,000	0,148
Jul	3,675	5,937	1,616	0,152	0,152	0,273	0,425
Aug	2,865	2,710	0,946	0,153	0,153	0,065	0,218
Sep	4,290	14,910	3,475	0,148	0,148	0,191	0,339

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niii14

Regional Type : Zululand

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.221	1.217	1.201	1.165	1.092	0.964	0.772	0.540	0.335	0.240
Nov	1.373	1.371	1.356	1.320	1.246	1.112	0.904	0.648	0.419	0.313
Dec	4.877	4.377	3.780	3.120	2.680	2.150	1.830	1.390	0.870	0.590
Jan	5.690	4.930	3.740	3.070	2.570	2.000	1.610	1.140	0.850	0.680
Feb	6.107	5.190	4.410	3.620	2.950	2.440	1.860	1.200	0.680	0.450
Mar	3.122	2.889	2.688	2.505	2.169	1.996	1.728	1.300	0.920	0.470
Apr	0.367	0.366	0.363	0.356	0.342	0.317	0.279	0.234	0.194	0.176
May	0.314	0.313	0.310	0.305	0.294	0.275	0.247	0.214	0.186	0.173
Jun	0.269	0.268	0.266	0.261	0.251	0.235	0.211	0.184	0.160	0.149
Jul	0.655	0.651	0.641	0.619	0.579	0.514	0.422	0.315	0.224	0.182
Aug	0.369	0.368	0.364	0.355	0.338	0.310	0.269	0.222	0.180	0.161
Sep	0.538	0.536	0.529	0.514	0.486	0.436	0.364	0.278	0.204	0.169

Reserve Flows without High Flows

Oct	0.309	0.308	0.306	0.301	0.290	0.272	0.245	0.212	0.183	0.170
Nov	0.440	0.440	0.437	0.430	0.417	0.391	0.352	0.304	0.261	0.241
Dec	1.636	1.635	1.625	1.601	1.551	1.458	1.313	1.131	0.870	0.590
Jan	1.311	1.311	1.304	1.287	1.249	1.177	1.060	0.911	0.774	0.680
Feb	1.363	1.362	1.354	1.334	1.292	1.215	1.094	0.942	0.680	0.450
Mar	1.621	1.620	1.609	1.585	1.533	1.440	1.297	1.120	0.920	0.470
Apr	0.311	0.311	0.308	0.303	0.293	0.275	0.247	0.214	0.185	0.171
May	0.314	0.313	0.310	0.305	0.294	0.275	0.247	0.214	0.186	0.173
Jun	0.269	0.268	0.266	0.261	0.251	0.235	0.211	0.184	0.160	0.149
Jul	0.274	0.273	0.270	0.265	0.255	0.238	0.214	0.187	0.163	0.153
Aug	0.278	0.277	0.275	0.270	0.260	0.243	0.219	0.190	0.166	0.154
Sep	0.270	0.269	0.267	0.262	0.253	0.236	0.213	0.185	0.160	0.149

Natural Duration curves

Oct	6.230	4.980	3.590	3.020	2.700	2.440	2.090	1.240	0.970	0.590
Nov	6.710	5.280	4.520	4.020	3.680	2.910	2.340	1.760	1.190	0.600
Dec	7.420	5.060	3.780	3.120	2.680	2.150	1.830	1.390	0.870	0.590
Jan	6.980	4.930	3.740	3.070	2.570	2.000	1.610	1.140	0.850	0.680
Feb	8.570	5.190	4.410	3.620	2.950	2.440	1.860	1.200	0.680	0.450
Mar	11.200	6.590	4.860	4.160	2.990	2.250	1.810	1.300	0.920	0.470
Apr	8.850	5.790	5.020	3.740	3.000	2.320	1.660	1.180	0.650	0.390
May	7.250	5.500	4.560	3.200	2.610	2.170	1.630	1.200	0.780	0.400
Jun	6.560	5.240	4.220	3.600	2.380	1.550	1.280	1.030	0.670	0.460
Jul	6.830	5.170	4.090	3.260	2.300	1.740	1.300	1.010	0.750	0.470
Aug	5.760	4.200	3.540	2.860	1.980	1.730	1.360	0.990	0.650	0.480
Sep	5.300	4.170	3.130	2.520	2.030	1.730	1.370	1.140	0.790	0.420

Hydrological time series

Total Runoff : Niii14

Desktop (Version 2) Modified Flow Data for Ecological Category D													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.533	1.159	3.420	4.570	1.400	2.301	0.358	0.302	0.253	0.508	0.324	0.446	15.574
1921	1.165	1.364	4.877	3.760	1.300	2.385	0.287	0.275	0.221	0.444	0.300	0.477	16.856
1922	0.683	1.334	2.830	2.000	3.150	0.740	0.274	0.174	0.169	0.182	0.161	0.169	11.866
1923	0.240	0.313	0.830	0.790	0.680	1.080	0.221	0.226	0.209	0.419	0.232	0.487	5.727
1924	0.855	1.285	4.877	5.690	6.107	3.122	0.367	0.314	0.269	0.655	0.369	0.528	24.440
1925	1.221	1.358	2.300	1.370	0.620	1.876	0.317	0.211	0.244	0.528	0.275	0.436	10.756
1926	1.153	1.268	3.430	2.840	2.230	2.673	0.360	0.264	0.258	0.546	0.363	0.476	15.860
1927	1.174	1.103	1.450	2.870	3.030	2.139	0.289	0.294	0.241	0.497	0.285	0.304	13.675
1928	0.519	0.400	0.520	0.970	1.200	2.019	0.366	0.309	0.267	0.654	0.368	0.538	8.130
1929	1.221	1.373	3.300	3.350	5.781	1.728	0.359	0.278	0.252	0.526	0.324	0.515	19.007
1930	0.964	0.765	2.110	1.550	0.910	1.080	0.189	0.186	0.150	0.196	0.164	0.176	8.441
1931	0.261	0.381	0.870	0.780	6.107	3.122	0.367	0.314	0.269	0.655	0.369	0.533	14.029
1932	1.184	1.134	3.070	2.730	2.550	2.007	0.208	0.229	0.151	0.243	0.182	0.196	13.884
1933	0.254	0.525	2.510	3.490	4.560	2.583	0.361	0.312	0.268	0.651	0.369	0.537	16.421
1934	0.974	1.246	4.464	5.684	4.010	2.764	0.343	0.309	0.267	0.652	0.368	0.537	21.618
1935	0.910	1.028	0.680	2.270	3.920	2.688	0.345	0.309	0.269	0.638	0.363	0.501	13.921
1936	1.201	1.370	4.304	1.720	5.478	2.747	0.349	0.306	0.235	0.608	0.328	0.451	19.096
1937	0.597	0.795	4.129	5.098	5.478	2.944	0.325	0.313	0.252	0.654	0.368	0.523	21.476
1938	1.103	1.031	1.210	2.500	4.480	3.050	0.365	0.313	0.269	0.653	0.369	0.537	15.881
1939	1.221	1.373	4.722	2.570	3.300	0.960	0.344	0.314	0.269	0.655	0.369	0.538	16.635
1940	1.217	1.370	4.877	5.047	1.470	2.003	0.228	0.252	0.160	0.251	0.177	0.204	17.256
1941	0.335	0.497	1.830	1.590	2.670	1.828	0.359	0.277	0.263	0.624	0.353	0.533	11.160
1942	1.208	1.359	4.655	5.216	2.420	2.900	0.367	0.314	0.268	0.655	0.369	0.538	20.269
1943	1.220	1.373	4.771	1.820	1.940	2.290	0.238	0.242	0.223	0.630	0.346	0.534	15.629
1944	1.221	1.373	3.780	1.010	3.310	2.565	0.366	0.294	0.264	0.535	0.348	0.240	15.306
1945	0.414	0.318	0.590	1.140	1.140	0.970	0.250	0.186	0.193	0.192	0.182	0.175	5.749
1946	0.314	0.415	0.780	0.810	1.470	2.565	0.358	0.306	0.256	0.635	0.360	0.524	8.793
1947	1.087	0.995	3.330	1.940	3.000	2.003	0.317	0.282	0.198	0.434	0.189	0.233	14.006
1948	0.277	0.400	0.950	0.680	1.510	2.024	0.366	0.314	0.260	0.652	0.356	0.533	8.321
1949	1.201	1.356	4.392	5.602	3.660	2.887	0.365	0.303	0.261	0.582	0.338	0.364	21.311
1950	0.293	0.313	0.640	0.830	0.450	0.470	0.181	0.176	0.155	0.209	0.266	0.517	4.500
1951	1.028	0.761	0.850	1.610	0.530	0.900	0.179	0.193	0.200	0.368	0.310	0.222	7.151
1952	0.335	0.529	2.190	1.410	0.990	1.380	0.200	0.181	0.151	0.214	0.208	0.405	8.193
1953	1.108	1.343	4.226	1.270	5.060	2.713	0.314	0.314	0.269	0.646	0.368	0.538	18.168
1954	1.221	1.373	1.740	4.820	3.190	3.122	0.367	0.313	0.266	0.626	0.356	0.486	17.878
1955	0.889	1.251	2.690	0.850	2.440	3.054	0.366	0.308	0.268	0.641	0.360	0.514	13.630
1956	1.033	1.035	4.877	5.690	4.750	3.019	0.364	0.314	0.249	0.648	0.364	0.538	22.882
1957	1.221	1.373	2.810	5.690	6.107	2.981	0.313	0.312	0.254	0.612	0.310	0.467	22.450
1958	0.876	0.648	1.660	2.450	2.100	0.670	0.194	0.178	0.190	0.187	0.178	0.330	9.662
1959	0.921	0.785	1.420	1.720	0.920	2.336	0.365	0.313	0.267	0.635	0.365	0.529	10.576
1960	1.140	1.349	4.877	5.690	5.935	2.893	0.366	0.314	0.267	0.655	0.362	0.538	24.387
1961	1.217	1.371	3.460	1.840	1.850	0.920	0.318	0.214	0.208	0.226	0.242	0.298	12.165
1962	0.519	1.112	3.290	3.070	3.890	2.606	0.367	0.312	0.267	0.655	0.369	0.538	16.995
1963	1.216	1.372	2.290	3.230	5.310	1.704	0.350	0.305	0.243	0.580	0.294	0.325	17.220
1964	0.776	1.162	1.470	1.010	0.490	0.620	0.176	0.173	0.159	0.350	0.268	0.484	7.138
1965	1.106	1.309	2.150	3.460	4.750	1.557	0.279	0.232	0.237	0.430	0.219	0.315	16.044
1966	0.540	0.424	1.170	2.010	3.700	2.798	0.367	0.314	0.262	0.649	0.366	0.493	13.093
1967	0.889	1.253	2.680	0.900	1.960	1.996	0.324	0.197	0.228	0.315	0.314	0.515	11.571
1968	0.984	0.995	2.990	3.110	0.800	2.497	0.367	0.314	0.269	0.641	0.368	0.526	13.860
1969	1.219	1.339	1.390	1.680	0.580	1.531	0.191	0.221	0.231	0.361	0.236	0.400	9.380
1970	1.186	1.352	2.630	2.160	2.850	1.689	0.337	0.313	0.269	0.655	0.369	0.538	14.347
1971	1.221	1.373	3.060	5.690	6.107	3.122	0.320	0.314	0.269	0.653	0.364	0.494	22.986
1972	0.772	0.840	1.800	1.920	2.680	2.253	0.305	0.304	0.211	0.549	0.334	0.538	12.506
1973	1.221	1.356	4.180	5.209	5.857	1.892	0.363	0.247	0.264	0.503	0.338	0.209	21.639
1974	0.260	0.336	2.150	2.710	5.519	2.889	0.365	0.314	0.263	0.641	0.343	0.534	16.322
1975	1.219	1.299	4.449	5.690	6.107	3.122	0.367	0.314	0.269	0.540	0.367	0.376	24.119
1976	1.187	1.206	3.310	5.390	6.107	3.122	0.367	0.277	0.265	0.272	0.355	0.531	22.388
1977	1.215	1.338	4.000	5.690	5.926	2.851	0.367	0.312	0.261	0.633	0.358	0.530	23.482
1978	1.214	1.373	2.900	2.190	1.480	0.640	0.212	0.211	0.181	0.259	0.233	0.435	11.327
1979	0.964	0.652	1.750	1.520	0.710	1.050	0.177	0.175	0.149	0.183	0.165	0.408	7.902
1980	1.099	0.938	2.490	1.440	4.570	2.169	0.245	0.309	0.269	0.654	0.369	0.538	15.090
1981	1.221	1.373	4.877	2.670	5.190	1.542	0.362	0.241	0.251	0.266	0.269	0.187	18.450
1982	0.641	0.741	0.960	1.040	0.650	0.730	0.194	0.180	0.157	0.224	0.303	0.444	6.265
1983	0.705	1.340	4.380	5.690	6.107	3.122	0.367	0.314	0.268	0.655	0.369	0.538	23.856
1984	1.202	1.367	1.910	3.310	6.107	3.067	0.282	0.294	0.184	0.580	0.202	0.304	18.809
1985	1.221	1.373	2.300	3.740	2.490	1.924	0.257	0.203	0.174	0.315	0.171	0.201	14.368
1986	0.282	0.424	2.000	4.930	3.410	1.876	0.363	0.279	0.268	0.645	0.369	0.538	15.383
1987	1.221	1.373	4.877	4.710	3.820	3.122	0.367	0.297	0.262	0.619	0.366	0.522	21.556
1988	1.180	1.307	3.990	3.630	2.040	2.624	0.257	0.304	0.183	0.568	0.222	0.271	16.576
1989	0.428	1.373	4.877	3.200	2.100	2.601	0.363	0.300	0.246	0.477	0.343	0.509	16.818
1990	0.714	1.078	1.120	2.990	4.070	2.887	0.365	0.307	0.269	0.649	0.369	0.514	15.333
1991	1.209	0.904	1.130	1.080	0.360	0.370	0.176	0.173	0.149	0.182	0.161	0.169	6.064
1992	0.240	0.419	1.620	0.850	0.900	0.890	0.232	0.182	0.169	0.194	0.196	0.257	6.150
1993	1.211	1.373	4.111	5.690	3.620	2.505	0.342	0.251	0.225	0.368	0.269	0.320	20.286
1994	0.602	1.183	1.870	0.740	0.520	1.320	0.348	0.311	0.269	0.655	0.367	0.536	8.722
1995	1.188	1.369	4.377	5.690	6.107	3.122	0.367	0.311	0.268	0.630	0.368	0.335	24.132
1996	1.058	1.159	2.120	3.020	5.040	2.405	0.346	0.310	0.267	0.646	0.364	0.538	17.273
1997	1.221	1.373	4.877	1.570	4.410	1.996	0.254	0.259	0.169	0.350	0.180	0.188	16.846
1998	0.335	0.525	1.320	2.030	2.760	2.078	0.234	0.270	0.225	0.463	0.290	0.414	10.944
1999	1.135	1.176	2.080	4.730	4.890	2.771	0.362	0.313	0.269	0.617	0.355	0.472	19.171
2000	1.133	1.327	4.655	3.820	3.410	2.038	0.295	0.264	0.163	0.290	0.163	0.257	17.815
2001	1.092	1.194	3.660	4.460	2.950	1.964	0.277	0.225	0.177	0.655	0.369	0.538	17.562
2002	1.221	1.373	4.141	2.340	1.860	1.300	0.180	0.190	0.159	0.361	0.177	0.225	13.526
2003	0.405	0.326	0.690	0.710	2.120	2.281	0.322	0					

A.88. Niv1 – Category B**Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv1

Annual Flows (Mill. cu. m or index values):

MAR = 11,971

S.Dev. = 5,894

CV = 0,492

Q75 = 0,300

Q75/MMF = 0,301

BFI Index = 0,443

CV(JJA+JFM) Index = 1,354

Ecological Category = B

Total IFR = 4,399 (36,75 %MAR)

Maint. Lowflow = 3,276 (27,36 %MAR)

Drought Lowflow = 1,011 (8,44 %MAR)

Maint. Highflow = 1,124 (9,39 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : E.Escarp

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	0,569	0,644	1,130	0,188	0,062	0,047	0,235
Nov	1,230	0,926	0,752	0,246	0,077	0,141	0,387
Dec	1,882	1,462	0,777	0,316	0,096	0,230	0,546
Jan	2,220	1,902	0,857	0,374	0,112	0,430	0,804
Feb	1,961	1,653	0,843	0,390	0,116	0,073	0,462
Mar	1,324	0,895	0,676	0,367	0,110	0,145	0,512
Apr	0,894	0,691	0,773	0,333	0,101	0,058	0,392
May	0,536	0,384	0,716	0,278	0,086	0,000	0,278
Jun	0,394	0,203	0,515	0,235	0,074	0,000	0,235
Jul	0,363	0,248	0,684	0,209	0,067	0,000	0,209
Aug	0,289	0,140	0,486	0,177	0,059	0,000	0,177
Sep	0,307	0,252	0,820	0,163	0,050	0,000	0,163

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv1

Regional Type : E.Escarp

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.276	0.275	0.273	0.268	0.258	0.240	0.210	0.165	0.112	0.073
Nov	0.448	0.446	0.442	0.432	0.415	0.383	0.331	0.256	0.167	0.102
Dec	0.629	0.626	0.619	0.606	0.580	0.534	0.459	0.352	0.226	0.135
Jan	1.282	1.168	1.069	0.978	0.886	0.732	0.626	0.476	0.301	0.177
Feb	0.607	0.586	0.565	0.543	0.512	0.460	0.400	0.313	0.210	0.136
Mar	0.720	0.682	0.646	0.610	0.570	0.500	0.433	0.336	0.222	0.139
Apr	0.462	0.461	0.457	0.448	0.432	0.401	0.350	0.275	0.184	0.118
May	0.332	0.332	0.329	0.324	0.313	0.293	0.258	0.205	0.141	0.094
Jun	0.280	0.280	0.278	0.274	0.265	0.248	0.219	0.175	0.121	0.081
Jul	0.249	0.249	0.248	0.244	0.237	0.223	0.198	0.159	0.110	0.073
Aug	0.211	0.211	0.209	0.206	0.200	0.187	0.166	0.133	0.093	0.064
Sep	0.195	0.195	0.193	0.190	0.183	0.172	0.151	0.120	0.082	0.055

Reserve Flows without High Flows

Oct	0.225	0.224	0.222	0.218	0.211	0.197	0.173	0.139	0.097	0.067
Nov	0.294	0.293	0.290	0.284	0.274	0.254	0.223	0.177	0.123	0.084
Dec	0.377	0.376	0.372	0.365	0.350	0.325	0.284	0.225	0.155	0.105
Jan	0.446	0.444	0.439	0.429	0.411	0.380	0.331	0.261	0.180	0.122
Feb	0.466	0.464	0.459	0.450	0.432	0.400	0.349	0.276	0.189	0.127
Mar	0.438	0.437	0.433	0.424	0.408	0.379	0.331	0.262	0.180	0.120
Apr	0.398	0.397	0.394	0.387	0.373	0.347	0.305	0.242	0.166	0.110
May	0.332	0.332	0.329	0.324	0.313	0.293	0.258	0.205	0.141	0.094
Jun	0.280	0.280	0.278	0.274	0.265	0.248	0.219	0.175	0.121	0.081
Jul	0.249	0.249	0.248	0.244	0.237	0.223	0.198	0.159	0.110	0.073
Aug	0.211	0.211	0.209	0.206	0.200	0.187	0.166	0.133	0.093	0.064
Sep	0.195	0.195	0.193	0.190	0.183	0.172	0.151	0.120	0.082	0.055

Natural Duration curves

Oct	1.290	0.750	0.580	0.440	0.380	0.300	0.260	0.220	0.160	0.080
Nov	2.630	1.860	1.750	1.230	1.080	0.740	0.570	0.420	0.300	0.150
Dec	3.840	2.880	2.390	1.980	1.410	1.170	0.910	0.680	0.520	0.210
Jan	4.330	3.170	2.500	2.120	1.760	1.420	1.140	0.830	0.650	0.460
Feb	4.280	3.260	2.480	1.750	1.390	1.080	0.850	0.690	0.540	0.290
Mar	2.630	2.140	1.660	1.290	1.060	0.890	0.750	0.640	0.440	0.230
Apr	1.660	1.300	1.030	0.800	0.720	0.560	0.530	0.410	0.320	0.170
May	1.060	0.740	0.600	0.500	0.440	0.400	0.350	0.290	0.220	0.140
Jun	0.660	0.510	0.430	0.410	0.350	0.320	0.290	0.260	0.170	0.110
Jul	0.620	0.430	0.390	0.340	0.320	0.270	0.260	0.230	0.170	0.100
Aug	0.440	0.350	0.320	0.290	0.270	0.240	0.220	0.200	0.170	0.090
Sep	0.540	0.360	0.310	0.280	0.250	0.230	0.200	0.170	0.120	0.070

Hydrological time series

Total Runoff : Niv1

Desktop (Version 2) Modified Flow Data for Ecological Category B													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.276	0.447	0.626	1.017	0.525	0.637	0.457	0.329	0.279	0.249	0.210	0.188	5.241
1921	0.275	0.448	0.626	0.952	0.492	0.682	0.462	0.329	0.275	0.247	0.209	0.194	5.191
1922	0.276	0.448	0.625	1.282	0.607	0.662	0.432	0.317	0.269	0.234	0.187	0.151	5.490
1923	0.165	0.134	0.387	0.626	0.400	0.661	0.461	0.324	0.265	0.229	0.187	0.195	4.033
1924	0.271	0.448	0.619	0.631	0.297	0.692	0.462	0.331	0.279	0.249	0.211	0.195	4.684
1925	0.268	0.256	0.173	0.436	0.382	0.306	0.275	0.220	0.196	0.159	0.133	0.192	2.996
1926	0.229	0.205	0.167	0.160	0.221	0.271	0.224	0.196	0.163	0.177	0.166	0.135	2.315
1927	0.276	0.383	0.536	1.105	0.541	0.433	0.318	0.286	0.254	0.223	0.180	0.151	4.686
1928	0.112	0.309	0.304	0.177	0.157	0.584	0.449	0.230	0.196	0.168	0.149	0.186	3.021
1929	0.276	0.446	0.551	1.115	0.556	0.533	0.382	0.298	0.265	0.229	0.187	0.164	5.001
1930	0.135	0.167	0.402	0.886	0.511	0.381	0.350	0.298	0.260	0.244	0.206	0.172	4.012
1931	0.165	0.372	0.528	0.367	0.348	0.508	0.407	0.303	0.269	0.241	0.203	0.172	3.882
1932	0.256	0.364	0.605	0.746	0.307	0.447	0.405	0.286	0.248	0.223	0.180	0.140	4.207
1933	0.135	0.442	0.588	1.282	0.605	0.646	0.457	0.329	0.278	0.248	0.211	0.195	5.415
1934	0.263	0.448	0.629	1.168	0.532	0.500	0.350	0.293	0.254	0.223	0.166	0.140	4.966
1935	0.147	0.102	0.280	1.143	0.553	0.561	0.417	0.332	0.280	0.249	0.211	0.192	4.467
1936	0.258	0.439	0.536	1.282	0.607	0.720	0.460	0.329	0.278	0.246	0.206	0.183	5.544
1937	0.198	0.121	0.629	1.140	0.512	0.561	0.460	0.332	0.280	0.249	0.211	0.193	4.886
1938	0.275	0.383	0.563	0.676	0.586	0.720	0.459	0.328	0.275	0.249	0.211	0.195	4.920
1939	0.264	0.448	0.628	0.919	0.460	0.433	0.382	0.315	0.280	0.249	0.211	0.195	4.785
1940	0.270	0.434	0.629	1.069	0.415	0.433	0.424	0.325	0.274	0.244	0.203	0.172	4.892
1941	0.237	0.193	0.465	0.886	0.446	0.433	0.401	0.313	0.274	0.245	0.208	0.192	4.293
1942	0.258	0.432	0.576	0.661	0.415	0.582	0.462	0.332	0.280	0.249	0.211	0.195	4.654
1943	0.275	0.437	0.580	0.912	0.593	0.711	0.457	0.328	0.278	0.247	0.208	0.186	5.210
1944	0.261	0.341	0.231	0.281	0.232	0.484	0.413	0.265	0.219	0.168	0.133	0.113	3.142
1945	0.229	0.147	0.123	1.282	0.607	0.610	0.436	0.293	0.229	0.177	0.149	0.135	4.416
1946	0.135	0.421	0.506	0.832	0.517	0.461	0.392	0.303	0.265	0.232	0.187	0.164	4.414
1947	0.229	0.418	0.623	0.984	0.507	0.582	0.438	0.318	0.269	0.237	0.196	0.172	4.974
1948	0.176	0.389	0.399	0.975	0.543	0.664	0.462	0.332	0.279	0.247	0.209	0.193	4.869
1949	0.253	0.404	0.596	1.048	0.517	0.508	0.440	0.327	0.278	0.247	0.209	0.188	5.016
1950	0.186	0.304	0.534	0.484	0.205	0.359	0.442	0.329	0.278	0.177	0.211	0.194	3.704
1951	0.274	0.250	0.616	0.219	0.186	0.236	0.180	0.107	0.085	0.244	0.203	0.099	2.700
1952	0.229	0.429	0.430	0.247	0.584	0.500	0.432	0.308	0.238	0.168	0.111	0.091	3.765
1953	0.112	0.448	0.459	1.069	0.607	0.720	0.457	0.332	0.280	0.249	0.211	0.195	5.139
1954	0.274	0.377	0.167	1.232	0.595	0.704	0.462	0.332	0.280	0.249	0.211	0.192	5.075
1955	0.264	0.390	0.629	1.115	0.581	0.702	0.450	0.326	0.279	0.248	0.211	0.195	5.389
1956	0.276	0.440	0.623	0.993	0.494	0.720	0.462	0.331	0.280	0.249	0.211	0.195	5.275
1957	0.276	0.413	0.518	1.251	0.547	0.594	0.460	0.332	0.280	0.249	0.203	0.195	5.318
1958	0.258	0.422	0.628	1.194	0.553	0.475	0.258	0.332	0.272	0.234	0.200	0.195	5.021
1959	0.249	0.268	0.616	0.446	0.443	0.634	0.456	0.331	0.278	0.237	0.211	0.178	4.346
1960	0.275	0.442	0.629	1.040	0.565	0.626	0.462	0.332	0.280	0.249	0.209	0.195	5.304
1961	0.271	0.439	0.629	0.952	0.365	0.381	0.382	0.230	0.219	0.223	0.203	0.193	4.488
1962	0.268	0.445	0.600	0.877	0.348	0.342	0.453	0.280	0.280	0.249	0.211	0.195	4.549
1963	0.275	0.419	0.280	0.476	0.254	0.151	0.249	0.160	0.145	0.126	0.180	0.106	2.821
1964	0.276	0.448	0.607	1.282	0.523	0.336	0.305	0.205	0.219	0.198	0.200	0.194	4.794
1965	0.229	0.401	0.459	0.877	0.502	0.376	0.168	0.141	0.151	0.131	0.133	0.099	3.668
1966	0.266	0.217	0.629	0.850	0.607	0.703	0.462	0.332	0.280	0.249	0.210	0.195	4.999
1967	0.273	0.447	0.629	0.912	0.435	0.690	0.462	0.332	0.280	0.249	0.211	0.194	5.114
1968	0.229	0.445	0.568	0.301	0.489	0.720	0.462	0.332	0.280	0.249	0.211	0.195	4.482
1969	0.276	0.444	0.618	0.818	0.578	0.537	0.409	0.315	0.219	0.223	0.200	0.168	4.804
1970	0.273	0.417	0.280	0.889	0.437	0.271	0.448	0.265	0.238	0.198	0.166	0.195	4.077
1971	0.268	0.446	0.623	1.110	0.565	0.681	0.452	0.332	0.280	0.249	0.211	0.192	5.410
1972	0.240	0.448	0.542	0.721	0.601	0.720	0.462	0.332	0.280	0.249	0.211	0.195	5.001
1973	0.276	0.446	0.626	1.108	0.607	0.623	0.462	0.332	0.280	0.249	0.211	0.190	5.410
1974	0.234	0.415	0.628	1.220	0.604	0.661	0.457	0.324	0.267	0.234	0.166	0.186	5.395
1975	0.263	0.448	0.629	1.282	0.570	0.658	0.462	0.332	0.280	0.249	0.211	0.190	5.574
1976	0.273	0.357	0.316	0.622	0.569	0.636	0.459	0.320	0.260	0.241	0.208	0.164	4.425
1977	0.141	0.444	0.591	1.216	0.544	0.613	0.342	0.298	0.229	0.246	0.187	0.183	5.035
1978	0.275	0.357	0.253	0.692	0.371	0.222	0.419	0.258	0.196	0.226	0.187	0.192	3.646
1979	0.272	0.435	0.378	1.168	0.585	0.578	0.310	0.230	0.196	0.159	0.149	0.168	4.629
1980	0.101	0.291	0.161	0.348	0.594	0.704	0.350	0.298	0.260	0.244	0.180	0.186	3.716
1981	0.258	0.304	0.226	0.456	0.136	0.139	0.118	0.128	0.102	0.110	0.122	0.069	2.168
1982	0.080	0.141	0.151	0.201	0.127	0.194	0.137	0.114	0.121	0.110	0.206	0.135	1.716
1983	0.153	0.448	0.619	1.282	0.598	0.633	0.442	0.196	0.196	0.249	0.211	0.194	5.223
1984	0.276	0.407	0.509	0.436	0.590	0.671	0.290	0.322	0.238	0.198	0.093	0.151	4.180
1985	0.268	0.285	0.352	0.376	0.254	0.206	0.275	0.258	0.248	0.198	0.166	0.106	2.993
1986	0.106	0.107	0.411	0.716	0.437	0.433	0.184	0.141	0.092	0.081	0.077	0.195	2.982
1987	0.276	0.447	0.606	0.732	0.394	0.229	0.258	0.187	0.151	0.159	0.111	0.135	3.684
1988	0.275	0.331	0.622	1.234	0.548	0.587	0.310	0.265	0.278	0.241	0.192	0.164	5.048
1989	0.251	0.448	0.623	0.545	0.474	0.557	0.434	0.322	0.248	0.198	0.149	0.178	4.426
1990	0.231	0.372	0.582	1.240	0.574	0.719	0.461	0.331	0.280	0.246	0.200	0.172	5.409
1991	0.229	0.392	0.484	0.570	0.181	0.128	0.131	0.094	0.081	0.073	0.064	0.055	2.481
1992	0.073	0.094	0.584	0.601	0.173	0.516	0.305	0.205	0.169	0.145	0.111	0.106	3.083
1993	0.186	0.256	0.606	1.031	0.563	0.586	0.428	0.230	0.175	0.131	0.093	0.082	4.368
1994	0.165	0.256	0.179	0.213	0.153	0.194	0.210	0.169	0.145	0.110	0.077	0.059	1.930
1995	0.084	0.167	0.607	0.777	0.607	0.720	0.462	0.332	0.280	0.249	0.210	0.168	4.664
1996	0.275	0.322	0.495	0.528	0.149	0.619	0.457	0.230	0.248	0.232	0.196	0.183	3.933
1997	0.276	0.438	0.566	0.552	0.313	0.276	0.184	0.128	0.081	0.073	0.070	0.082	3.039
1998	0.272	0.435	0.613	0.545	0.265	0.159	0.124	0.107	0.092	0.084	0.072	0.063	2.831
1999	0.240	0.211	0.629	1.282	0.607	0.720	0.462	0.332	0.280	0.249	0.209	0.192	5.413
2000	0.268	0.448	0.629	0.978	0.482	0.336	0.334	0.293	0.196	0.177	0.166	0.135	4.443
2001	0.147	0.416	0.421	0.240	0.318	0.186	0.141	0.094	0.092	0.084	0.088	0.082	2.309
2002	0.095	0.102	0.159	1.014	0.522	0.163	0.118	0.088	0.076	0.073	0.060	0.050	2.519
2003	0.068	0.160	0.135	0.177	0.210	0.478	0.176	0.114	0.092	0.084	0.070	0.055	1.819
20													

A.89. Niv1 – Category C**Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv1

Annual Flows (Mill. cu. m or index values):

MAR = 11,971

S.Dev. = 5,894

CV = 0,492

Q75 = 0,300

Q75/MMF = 0,301

BFI Index = 0,443

CV(JJA+JFM) Index = 1,354

Ecological Category = C

Total IFR = 2,840 (23,72 %MAR)

Maint. Lowflow = 1,903 (15,90 %MAR)

Drought Lowflow = 1,011 (8,44 %MAR)

Maint. Highflow = 0,937 (7,83 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : E.Escarp

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	0,569	0,644	1,130	0,112	0,062	0,039	0,151
Nov	1,230	0,926	0,752	0,144	0,077	0,117	0,261
Dec	1,882	1,462	0,777	0,182	0,096	0,192	0,374
Jan	2,220	1,902	0,857	0,213	0,112	0,359	0,572
Feb	1,961	1,653	0,843	0,222	0,116	0,061	0,283
Mar	1,324	0,895	0,676	0,210	0,110	0,121	0,331
Apr	0,894	0,691	0,773	0,191	0,101	0,049	0,240
May	0,536	0,384	0,716	0,161	0,086	0,000	0,161
Jun	0,394	0,203	0,515	0,138	0,074	0,000	0,138
Jul	0,363	0,248	0,684	0,124	0,067	0,000	0,124
Aug	0,289	0,140	0,486	0,106	0,059	0,000	0,106
Sep	0,307	0,252	0,820	0,099	0,050	0,000	0,099

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv1

Regional Type : E.Escarp

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.203	0.203	0.201	0.198	0.191	0.180	0.160	0.131	0.095	0.070
Nov	0.341	0.340	0.336	0.330	0.317	0.295	0.258	0.205	0.142	0.097
Dec	0.483	0.481	0.476	0.466	0.447	0.414	0.360	0.283	0.192	0.127
Jan	0.994	0.900	0.819	0.746	0.674	0.554	0.479	0.374	0.251	0.163
Feb	0.427	0.411	0.395	0.378	0.358	0.324	0.287	0.235	0.174	0.130
Mar	0.528	0.496	0.467	0.440	0.410	0.360	0.318	0.256	0.184	0.131
Apr	0.325	0.324	0.322	0.317	0.306	0.288	0.256	0.210	0.154	0.113
May	0.225	0.225	0.223	0.220	0.214	0.203	0.183	0.153	0.117	0.091
Jun	0.192	0.192	0.191	0.188	0.183	0.174	0.157	0.132	0.101	0.078
Jul	0.173	0.173	0.172	0.170	0.165	0.157	0.143	0.120	0.092	0.071
Aug	0.148	0.148	0.147	0.145	0.142	0.134	0.122	0.103	0.079	0.061
Sep	0.138	0.138	0.137	0.135	0.131	0.124	0.111	0.093	0.070	0.053

Reserve Flows without High Flows

Oct	0.157	0.157	0.155	0.153	0.149	0.141	0.127	0.107	0.082	0.065
Nov	0.201	0.200	0.198	0.195	0.189	0.178	0.160	0.134	0.103	0.081
Dec	0.254	0.253	0.251	0.247	0.239	0.224	0.201	0.168	0.129	0.101
Jan	0.297	0.296	0.293	0.288	0.278	0.261	0.233	0.195	0.150	0.118
Feb	0.310	0.309	0.306	0.301	0.291	0.274	0.245	0.205	0.157	0.122
Mar	0.293	0.292	0.289	0.285	0.276	0.259	0.233	0.194	0.149	0.116
Apr	0.267	0.267	0.265	0.261	0.253	0.239	0.215	0.180	0.137	0.106
May	0.225	0.225	0.223	0.220	0.214	0.203	0.183	0.153	0.117	0.091
Jun	0.192	0.192	0.191	0.188	0.183	0.174	0.157	0.132	0.101	0.078
Jul	0.173	0.173	0.172	0.170	0.165	0.157	0.143	0.120	0.092	0.071
Aug	0.148	0.148	0.147	0.145	0.142	0.134	0.122	0.103	0.079	0.061
Sep	0.138	0.138	0.137	0.135	0.131	0.124	0.111	0.093	0.070	0.053

Natural Duration curves

Oct	1.290	0.750	0.580	0.440	0.380	0.300	0.260	0.220	0.160	0.080
Nov	2.630	1.860	1.750	1.230	1.080	0.740	0.570	0.420	0.300	0.150
Dec	3.840	2.880	2.390	1.980	1.410	1.170	0.910	0.680	0.520	0.210
Jan	4.330	3.170	2.500	2.120	1.760	1.420	1.140	0.830	0.650	0.460
Feb	4.280	3.260	2.480	1.750	1.390	1.080	0.850	0.690	0.540	0.290
Mar	2.630	2.140	1.660	1.290	1.060	0.890	0.750	0.640	0.440	0.230
Apr	1.660	1.300	1.030	0.800	0.720	0.560	0.530	0.410	0.320	0.170
May	1.060	0.740	0.600	0.500	0.440	0.400	0.350	0.290	0.220	0.140
Jun	0.660	0.510	0.430	0.410	0.350	0.320	0.290	0.260	0.170	0.110
Jul	0.620	0.430	0.390	0.340	0.320	0.270	0.260	0.230	0.170	0.100
Aug	0.440	0.350	0.320	0.290	0.270	0.240	0.220	0.200	0.170	0.090
Sep	0.540	0.360	0.310	0.280	0.250	0.230	0.200	0.170	0.120	0.070

Hydrological time series

Total Runoff : Niv1

Desktop (Version 2) Modified Flow Data for Ecological Category C													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.203	0.340	0.481	0.776	0.367	0.460	0.322	0.223	0.192	0.172	0.148	0.134	3.818
1921	0.203	0.341	0.481	0.726	0.345	0.496	0.325	0.223	0.189	0.171	0.147	0.137	3.783
1922	0.203	0.341	0.480	0.994	0.427	0.480	0.306	0.216	0.186	0.164	0.134	0.111	4.043
1923	0.131	0.119	0.308	0.479	0.287	0.479	0.324	0.220	0.183	0.161	0.134	0.138	2.965
1924	0.200	0.341	0.475	0.483	0.226	0.504	0.325	0.224	0.192	0.172	0.148	0.138	3.428
1925	0.198	0.205	0.154	0.346	0.277	0.237	0.210	0.162	0.144	0.120	0.103	0.136	2.291
1926	0.172	0.170	0.150	0.151	0.181	0.215	0.178	0.148	0.125	0.131	0.122	0.101	1.845
1927	0.203	0.295	0.415	0.849	0.377	0.318	0.236	0.199	0.177	0.157	0.130	0.111	3.468
1928	0.095	0.243	0.249	0.163	0.143	0.421	0.317	0.167	0.144	0.126	0.112	0.132	2.311
1929	0.203	0.340	0.426	0.856	0.388	0.384	0.276	0.206	0.183	0.161	0.134	0.119	3.676
1930	0.111	0.142	0.319	0.674	0.357	0.285	0.256	0.206	0.180	0.170	0.145	0.124	2.969
1931	0.131	0.287	0.410	0.297	0.256	0.366	0.291	0.209	0.186	0.168	0.143	0.124	2.867
1932	0.190	0.281	0.466	0.565	0.232	0.327	0.290	0.199	0.174	0.157	0.130	0.105	3.115
1933	0.111	0.336	0.453	0.994	0.426	0.467	0.322	0.224	0.191	0.172	0.148	0.138	3.981
1934	0.195	0.341	0.483	0.900	0.372	0.360	0.256	0.203	0.177	0.157	0.122	0.105	3.669
1935	0.119	0.097	0.231	0.880	0.386	0.404	0.297	0.225	0.192	0.172	0.148	0.136	3.287
1936	0.191	0.335	0.415	0.994	0.427	0.528	0.323	0.224	0.191	0.171	0.145	0.131	4.075
1937	0.152	0.110	0.482	0.877	0.358	0.404	0.324	0.225	0.192	0.172	0.148	0.137	3.582
1938	0.203	0.295	0.435	0.515	0.411	0.528	0.323	0.223	0.189	0.172	0.148	0.138	3.579
1939	0.196	0.341	0.482	0.700	0.324	0.318	0.276	0.215	0.192	0.173	0.148	0.138	3.501
1940	0.200	0.331	0.483	0.819	0.296	0.318	0.302	0.221	0.188	0.170	0.143	0.124	3.595
1941	0.178	0.161	0.364	0.674	0.315	0.318	0.288	0.214	0.188	0.170	0.146	0.136	3.152
1942	0.191	0.330	0.444	0.504	0.296	0.419	0.325	0.225	0.192	0.173	0.148	0.138	3.387
1943	0.203	0.333	0.447	0.694	0.416	0.520	0.322	0.222	0.191	0.171	0.146	0.132	3.798
1944	0.194	0.265	0.196	0.236	0.187	0.350	0.295	0.187	0.157	0.126	0.103	0.088	2.384
1945	0.172	0.128	0.118	0.994	0.427	0.440	0.309	0.203	0.163	0.131	0.112	0.101	3.298
1946	0.111	0.322	0.394	0.632	0.362	0.335	0.282	0.209	0.183	0.162	0.134	0.119	3.244
1947	0.172	0.320	0.478	0.750	0.355	0.419	0.310	0.217	0.186	0.165	0.139	0.124	3.637
1948	0.137	0.299	0.317	0.744	0.378	0.482	0.325	0.225	0.192	0.171	0.147	0.137	3.554
1949	0.188	0.310	0.459	0.802	0.362	0.366	0.312	0.222	0.191	0.171	0.147	0.134	3.663
1950	0.144	0.239	0.414	0.380	0.171	0.271	0.313	0.223	0.191	0.131	0.148	0.137	2.763
1951	0.202	0.201	0.473	0.193	0.160	0.193	0.151	0.098	0.080	0.170	0.143	0.080	2.145
1952	0.172	0.327	0.340	0.212	0.409	0.360	0.306	0.211	0.168	0.126	0.089	0.075	2.796
1953	0.095	0.341	0.360	0.819	0.427	0.528	0.322	0.225	0.192	0.173	0.148	0.138	3.768
1954	0.202	0.291	0.150	0.953	0.418	0.514	0.325	0.225	0.192	0.172	0.148	0.136	3.726
1955	0.196	0.300	0.483	0.856	0.407	0.512	0.318	0.222	0.191	0.172	0.148	0.138	3.941
1956	0.203	0.336	0.479	0.757	0.346	0.528	0.325	0.224	0.192	0.173	0.148	0.138	3.848
1957	0.203	0.316	0.403	0.968	0.381	0.428	0.324	0.225	0.192	0.173	0.143	0.138	3.895
1958	0.191	0.322	0.482	0.922	0.386	0.344	0.199	0.225	0.188	0.164	0.142	0.138	3.703
1959	0.186	0.214	0.473	0.353	0.313	0.458	0.321	0.224	0.191	0.165	0.148	0.127	3.174
1960	0.203	0.336	0.483	0.795	0.394	0.452	0.325	0.225	0.192	0.173	0.147	0.138	3.862
1961	0.200	0.334	0.483	0.726	0.266	0.285	0.276	0.167	0.157	0.157	0.143	0.137	3.333
1962	0.198	0.339	0.462	0.667	0.256	0.260	0.319	0.195	0.192	0.173	0.148	0.138	3.348
1963	0.203	0.321	0.231	0.374	0.201	0.139	0.194	0.128	0.115	0.101	0.130	0.084	2.219
1964	0.203	0.341	0.467	0.994	0.365	0.256	0.228	0.153	0.157	0.143	0.142	0.137	3.588
1965	0.172	0.308	0.360	0.667	0.352	0.281	0.144	0.117	0.118	0.104	0.103	0.080	2.806
1966	0.197	0.178	0.483	0.646	0.427	0.513	0.325	0.225	0.192	0.173	0.148	0.138	3.643
1967	0.201	0.340	0.483	0.694	0.308	0.503	0.325	0.225	0.192	0.173	0.148	0.137	3.730
1968	0.172	0.339	0.439	0.251	0.343	0.528	0.325	0.225	0.192	0.173	0.148	0.138	3.272
1969	0.203	0.338	0.475	0.621	0.404	0.387	0.292	0.215	0.157	0.157	0.142	0.121	3.513
1970	0.201	0.319	0.231	0.676	0.310	0.215	0.317	0.187	0.168	0.143	0.122	0.138	3.027
1971	0.198	0.340	0.478	0.852	0.395	0.495	0.319	0.225	0.192	0.173	0.148	0.136	3.951
1972	0.180	0.341	0.420	0.547	0.422	0.528	0.325	0.225	0.192	0.173	0.148	0.138	3.638
1973	0.203	0.340	0.480	0.850	0.427	0.449	0.325	0.225	0.192	0.173	0.148	0.135	3.948
1974	0.176	0.317	0.482	0.943	0.425	0.479	0.322	0.220	0.184	0.164	0.122	0.132	3.967
1975	0.195	0.341	0.483	0.994	0.398	0.477	0.325	0.225	0.192	0.173	0.148	0.135	4.085
1976	0.201	0.277	0.257	0.477	0.397	0.460	0.323	0.218	0.180	0.168	0.146	0.119	3.224
1977	0.115	0.338	0.455	0.939	0.379	0.442	0.251	0.206	0.163	0.171	0.134	0.131	3.724
1978	0.203	0.277	0.212	0.526	0.270	0.184	0.298	0.183	0.144	0.159	0.134	0.136	2.725
1979	0.201	0.332	0.302	0.900	0.410	0.417	0.231	0.167	0.144	0.120	0.112	0.121	3.458
1980	0.088	0.230	0.146	0.284	0.417	0.514	0.256	0.206	0.180	0.170	0.130	0.132	2.752
1981	0.191	0.239	0.192	0.360	0.130	0.131	0.113	0.110	0.090	0.092	0.096	0.062	1.806
1982	0.075	0.124	0.138	0.180	0.124	0.166	0.125	0.102	0.101	0.092	0.145	0.101	1.473
1983	0.123	0.341	0.476	0.994	0.420	0.457	0.313	0.148	0.144	0.173	0.148	0.138	3.874
1984	0.203	0.312	0.396	0.346	0.414	0.487	0.219	0.219	0.168	0.143	0.079	0.111	3.097
1985	0.198	0.226	0.283	0.304	0.201	0.174	0.210	0.183	0.174	0.143	0.122	0.084	2.301
1986	0.092	0.100	0.326	0.543	0.310	0.318	0.154	0.117	0.085	0.075	0.070	0.138	2.326
1987	0.203	0.340	0.466	0.554	0.284	0.188	0.199	0.143	0.118	0.120	0.089	0.101	2.807
1988	0.203	0.258	0.478	0.955	0.382	0.423	0.231	0.187	0.191	0.168	0.137	0.119	3.732
1989	0.187	0.341	0.478	0.422	0.333	0.401	0.308	0.219	0.174	0.143	0.112	0.127	3.245
1990	0.174	0.287	0.448	0.960	0.402	0.526	0.325	0.224	0.192	0.171	0.142	0.124	3.975
1991	0.172	0.302	0.378	0.440	0.157	0.124	0.121	0.091	0.078	0.071	0.061	0.053	2.047
1992	0.070	0.091	0.450	0.462	0.152	0.372	0.228	0.153	0.129	0.112	0.089	0.084	2.393
1993	0.144	0.205	0.466	0.788	0.393	0.422	0.304	0.167	0.132	0.104	0.079	0.070	3.275
1994	0.131	0.205	0.158	0.188	0.140	0.166	0.170	0.133	0.115	0.092	0.070	0.055	1.623
1995	0.077	0.142	0.467	0.589	0.427	0.528	0.325	0.225	0.192	0.173	0.148	0.121	3.415
1996	0.202	0.252	0.386	0.410	0.138	0.446	0.322	0.167	0.174	0.162	0.139	0.131	2.930
1997	0.203	0.334	0.438	0.427	0.235	0.218	0.154	0.110	0.078	0.071	0.065	0.070	2.403
1998	0.201	0.332	0.471	0.422	0.207	0.144	0.117	0.098	0.085	0.077	0.066	0.058	2.277
1999	0.180	0.174	0.483	0.994	0.427	0.528	0.325	0.225	0.192	0.173	0.147	0.136	3.982
2000	0.198	0.341	0.483	0.746	0.338	0.256	0.246	0.203	0.144	0.131	0.122	0.101	3.309
2001	0.119	0.318	0.333	0.208	0.238	0.161	0.127	0.091	0.085	0.077	0.076	0.070	1.901
2002	0.085	0.097	0.144	0.774	0.364	0.146	0.113	0.087	0.075	0.071	0.059	0.050	2.065
2003	0.067	0.138	0.127	0.163	0.174	0.346	0.149	0.102	0.085	0.077	0.065	0.053	1.545
20													

A.90. Niv1 – Category D**Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv1

Annual Flows (Mill. cu. m or index values):

MAR = 11,971

S.Dev. = 5,894

CV = 0,492

Q75 = 0,300

Q75/MMF = 0,301

BFI Index = 0,443

CV(JJA+JFM) Index = 1,354

Ecological Category = D

Total IFR = 1,830 (15,28 %MAR)

Maint. Lowflow = 1,015 (8,48 %MAR)

Drought Lowflow = 1,011 (8,44 %MAR)

Maint. Highflow = 0,814 (6,80 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : E.Escarp

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	0,569	0,644	1,130	0,062	0,062	0,034	0,095
Nov	1,230	0,926	0,752	0,077	0,077	0,102	0,179
Dec	1,882	1,462	0,777	0,096	0,096	0,167	0,263
Jan	2,220	1,902	0,857	0,112	0,112	0,312	0,424
Feb	1,961	1,653	0,843	0,116	0,116	0,053	0,169
Mar	1,324	0,895	0,676	0,110	0,110	0,105	0,215
Apr	0,894	0,691	0,773	0,101	0,101	0,042	0,143
May	0,536	0,384	0,716	0,086	0,086	0,000	0,086
Jun	0,394	0,203	0,515	0,074	0,074	0,000	0,074
Jul	0,363	0,248	0,684	0,067	0,067	0,000	0,067
Aug	0,289	0,140	0,486	0,059	0,059	0,000	0,059
Sep	0,307	0,252	0,820	0,055	0,050	0,000	0,055

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv1

Regional Type : E.Escarp

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.173	0.173	0.172	0.169	0.164	0.155	0.139	0.116	0.089	0.068
Nov	0.306	0.305	0.302	0.297	0.286	0.267	0.235	0.189	0.134	0.094
Dec	0.441	0.439	0.434	0.426	0.409	0.379	0.331	0.262	0.181	0.123
Jan	0.828	0.747	0.677	0.615	0.555	0.456	0.398	0.317	0.222	0.155
Feb	0.334	0.320	0.307	0.294	0.279	0.254	0.230	0.196	0.155	0.127
Mar	0.424	0.396	0.372	0.350	0.326	0.287	0.258	0.215	0.164	0.127
Apr	0.264	0.264	0.262	0.258	0.251	0.237	0.214	0.181	0.140	0.110
May	0.172	0.171	0.170	0.169	0.165	0.158	0.146	0.127	0.105	0.089
Jun	0.148	0.148	0.147	0.146	0.143	0.137	0.126	0.111	0.091	0.077
Jul	0.134	0.134	0.134	0.132	0.130	0.124	0.115	0.101	0.083	0.069
Aug	0.117	0.117	0.116	0.115	0.112	0.108	0.100	0.087	0.072	0.060
Sep	0.109	0.109	0.109	0.107	0.105	0.100	0.091	0.079	0.063	0.052

Reserve Flows without High Flows

Oct	0.123	0.123	0.122	0.121	0.118	0.112	0.104	0.091	0.075	0.064
Nov	0.154	0.154	0.153	0.151	0.147	0.140	0.129	0.113	0.094	0.080
Dec	0.192	0.191	0.190	0.188	0.183	0.174	0.160	0.140	0.116	0.099
Jan	0.223	0.222	0.221	0.217	0.211	0.201	0.185	0.161	0.135	0.115
Feb	0.232	0.231	0.230	0.226	0.221	0.210	0.193	0.169	0.140	0.120
Mar	0.220	0.219	0.218	0.215	0.209	0.200	0.184	0.161	0.133	0.114
Apr	0.201	0.201	0.200	0.198	0.193	0.184	0.170	0.148	0.123	0.104
May	0.172	0.171	0.170	0.169	0.165	0.158	0.146	0.127	0.105	0.089
Jun	0.148	0.148	0.147	0.146	0.143	0.137	0.126	0.111	0.091	0.077
Jul	0.134	0.134	0.134	0.132	0.130	0.124	0.115	0.101	0.083	0.069
Aug	0.117	0.117	0.116	0.115	0.112	0.108	0.100	0.087	0.072	0.060
Sep	0.109	0.109	0.109	0.107	0.105	0.100	0.091	0.079	0.063	0.052

Natural Duration curves

Oct	1.290	0.750	0.580	0.440	0.380	0.300	0.260	0.220	0.160	0.080
Nov	2.630	1.860	1.750	1.230	1.080	0.740	0.570	0.420	0.300	0.150
Dec	3.840	2.880	2.390	1.980	1.410	1.170	0.910	0.680	0.520	0.210
Jan	4.330	3.170	2.500	2.120	1.760	1.420	1.140	0.830	0.650	0.460
Feb	4.280	3.260	2.480	1.750	1.390	1.080	0.850	0.690	0.540	0.290
Mar	2.630	2.140	1.660	1.290	1.060	0.890	0.750	0.640	0.440	0.230
Apr	1.660	1.300	1.030	0.800	0.720	0.560	0.530	0.410	0.320	0.170
May	1.060	0.740	0.600	0.500	0.440	0.400	0.350	0.290	0.220	0.140
Jun	0.660	0.510	0.430	0.410	0.350	0.320	0.290	0.260	0.170	0.110
Jul	0.620	0.430	0.390	0.340	0.320	0.270	0.260	0.230	0.170	0.100
Aug	0.440	0.350	0.320	0.290	0.270	0.240	0.220	0.200	0.170	0.090
Sep	0.540	0.360	0.310	0.280	0.250	0.230	0.200	0.170	0.120	0.070

Hydrological time series

Total Runoff : Niv1

Desktop (Version 2) Modified Flow Data for Ecological Category D													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.173	0.306	0.439	0.641	0.285	0.367	0.262	0.170	0.148	0.134	0.116	0.106	3.148
1921	0.173	0.306	0.439	0.598	0.269	0.396	0.264	0.170	0.146	0.133	0.116	0.109	3.121
1922	0.173	0.306	0.438	0.828	0.334	0.383	0.251	0.166	0.144	0.129	0.108	0.091	3.351
1923	0.116	0.114	0.285	0.398	0.230	0.382	0.264	0.169	0.143	0.126	0.108	0.109	2.444
1924	0.171	0.306	0.434	0.401	0.189	0.404	0.264	0.171	0.148	0.134	0.117	0.109	2.848
1925	0.169	0.189	0.147	0.295	0.223	0.201	0.181	0.133	0.118	0.101	0.087	0.108	1.952
1926	0.149	0.158	0.144	0.146	0.160	0.186	0.158	0.124	0.106	0.108	0.100	0.085	1.621
1927	0.173	0.267	0.381	0.703	0.293	0.258	0.200	0.156	0.139	0.124	0.105	0.091	2.888
1928	0.089	0.221	0.232	0.155	0.135	0.335	0.258	0.136	0.118	0.104	0.093	0.106	1.981
1929	0.173	0.305	0.390	0.709	0.301	0.306	0.229	0.160	0.143	0.126	0.108	0.097	3.047
1930	0.101	0.134	0.294	0.555	0.278	0.235	0.214	0.160	0.141	0.132	0.115	0.100	2.459
1931	0.116	0.260	0.375	0.258	0.210	0.292	0.240	0.161	0.144	0.131	0.114	0.100	2.400
1932	0.163	0.255	0.425	0.465	0.194	0.264	0.239	0.156	0.137	0.124	0.105	0.087	2.612
1933	0.101	0.302	0.414	0.828	0.333	0.372	0.262	0.171	0.147	0.134	0.117	0.109	3.290
1934	0.167	0.306	0.441	0.747	0.289	0.287	0.214	0.158	0.139	0.124	0.100	0.087	3.058
1935	0.107	0.094	0.216	0.729	0.299	0.322	0.244	0.171	0.148	0.134	0.117	0.108	2.690
1936	0.164	0.301	0.381	0.828	0.334	0.424	0.263	0.171	0.147	0.133	0.115	0.105	3.365
1937	0.133	0.106	0.440	0.727	0.279	0.322	0.263	0.172	0.148	0.134	0.117	0.109	2.949
1938	0.173	0.267	0.398	0.426	0.320	0.424	0.263	0.170	0.146	0.134	0.117	0.109	2.946
1939	0.167	0.306	0.440	0.577	0.254	0.258	0.229	0.165	0.148	0.134	0.117	0.109	2.904
1940	0.170	0.298	0.441	0.677	0.236	0.258	0.247	0.169	0.146	0.132	0.114	0.100	2.987
1941	0.153	0.150	0.335	0.555	0.248	0.258	0.237	0.165	0.146	0.133	0.116	0.108	2.603
1942	0.164	0.297	0.406	0.418	0.236	0.334	0.264	0.172	0.148	0.134	0.117	0.109	2.798
1943	0.173	0.300	0.409	0.572	0.324	0.417	0.262	0.170	0.147	0.133	0.116	0.106	3.128
1944	0.166	0.241	0.185	0.211	0.164	0.280	0.242	0.148	0.126	0.104	0.087	0.076	2.031
1945	0.149	0.122	0.115	0.828	0.334	0.350	0.253	0.158	0.130	0.108	0.093	0.085	2.723
1946	0.101	0.290	0.361	0.520	0.281	0.270	0.233	0.161	0.143	0.128	0.108	0.097	2.692
1947	0.149	0.288	0.437	0.619	0.277	0.334	0.254	0.167	0.144	0.130	0.111	0.100	3.008
1948	0.122	0.270	0.293	0.613	0.294	0.384	0.264	0.171	0.148	0.133	0.116	0.109	2.917
1949	0.162	0.279	0.419	0.663	0.281	0.292	0.255	0.170	0.147	0.133	0.116	0.106	3.023
1950	0.127	0.218	0.379	0.322	0.153	0.225	0.256	0.170	0.147	0.108	0.117	0.109	2.331
1951	0.172	0.185	0.432	0.178	0.146	0.170	0.138	0.093	0.078	0.132	0.114	0.070	1.909
1952	0.149	0.295	0.313	0.193	0.319	0.287	0.251	0.163	0.133	0.104	0.078	0.067	2.351
1953	0.089	0.306	0.331	0.677	0.334	0.424	0.262	0.171	0.148	0.134	0.117	0.109	3.103
1954	0.172	0.263	0.144	0.793	0.326	0.412	0.264	0.171	0.148	0.134	0.117	0.108	3.052
1955	0.167	0.271	0.441	0.709	0.317	0.411	0.259	0.169	0.147	0.134	0.117	0.109	3.250
1956	0.173	0.302	0.437	0.625	0.270	0.424	0.264	0.171	0.148	0.134	0.117	0.109	3.174
1957	0.173	0.285	0.369	0.806	0.296	0.341	0.264	0.172	0.148	0.134	0.114	0.109	3.210
1958	0.164	0.290	0.440	0.766	0.300	0.276	0.173	0.171	0.145	0.129	0.112	0.109	3.076
1959	0.159	0.196	0.432	0.301	0.247	0.365	0.262	0.171	0.147	0.130	0.117	0.102	2.628
1960	0.173	0.302	0.441	0.657	0.306	0.359	0.264	0.172	0.148	0.134	0.116	0.109	3.182
1961	0.171	0.301	0.440	0.598	0.216	0.235	0.229	0.136	0.126	0.124	0.114	0.109	2.799
1962	0.170	0.305	0.422	0.550	0.210	0.217	0.260	0.153	0.148	0.134	0.117	0.109	2.794
1963	0.173	0.289	0.216	0.317	0.173	0.132	0.169	0.112	0.100	0.089	0.105	0.073	1.947
1964	0.173	0.306	0.426	0.828	0.284	0.215	0.194	0.127	0.126	0.115	0.112	0.109	3.018
1965	0.149	0.277	0.331	0.550	0.274	0.232	0.133	0.105	0.102	0.091	0.087	0.070	2.401
1966	0.168	0.164	0.440	0.532	0.334	0.411	0.264	0.172	0.148	0.134	0.116	0.109	2.994
1967	0.172	0.306	0.441	0.572	0.244	0.402	0.264	0.171	0.148	0.134	0.117	0.109	3.080
1968	0.149	0.304	0.401	0.222	0.268	0.424	0.264	0.172	0.148	0.134	0.117	0.109	2.713
1969	0.173	0.304	0.434	0.512	0.314	0.308	0.241	0.165	0.126	0.124	0.112	0.098	2.912
1970	0.172	0.287	0.216	0.557	0.245	0.186	0.258	0.148	0.133	0.115	0.100	0.109	2.526
1971	0.169	0.305	0.437	0.706	0.307	0.396	0.260	0.172	0.148	0.134	0.117	0.108	3.258
1972	0.155	0.306	0.384	0.450	0.330	0.424	0.264	0.172	0.148	0.134	0.117	0.109	2.993
1973	0.173	0.305	0.438	0.704	0.334	0.357	0.264	0.172	0.148	0.134	0.117	0.107	3.255
1974	0.152	0.286	0.440	0.784	0.332	0.382	0.262	0.169	0.143	0.129	0.100	0.106	3.284
1975	0.167	0.306	0.441	0.828	0.309	0.380	0.264	0.172	0.148	0.134	0.117	0.107	3.374
1976	0.172	0.251	0.239	0.396	0.309	0.366	0.263	0.167	0.141	0.131	0.116	0.097	2.647
1977	0.104	0.304	0.416	0.781	0.295	0.351	0.211	0.160	0.130	0.133	0.108	0.105	3.096
1978	0.173	0.251	0.199	0.434	0.218	0.164	0.245	0.146	0.118	0.125	0.108	0.108	2.288
1979	0.172	0.299	0.279	0.747	0.319	0.332	0.196	0.136	0.118	0.101	0.093	0.098	2.890
1980	0.083	0.210	0.140	0.248	0.325	0.412	0.214	0.160	0.141	0.132	0.105	0.106	2.275
1981	0.164	0.218	0.181	0.306	0.127	0.127	0.110	0.100	0.084	0.083	0.083	0.058	1.642
1982	0.072	0.118	0.133	0.168	0.123	0.151	0.119	0.096	0.091	0.083	0.115	0.085	1.353
1983	0.110	0.306	0.434	0.828	0.328	0.364	0.256	0.124	0.118	0.134	0.117	0.109	3.228
1984	0.173	0.281	0.363	0.295	0.322	0.389	0.187	0.168	0.133	0.115	0.072	0.091	2.591
1985	0.170	0.206	0.262	0.263	0.173	0.157	0.181	0.146	0.137	0.115	0.100	0.073	1.982
1986	0.086	0.097	0.301	0.447	0.245	0.258	0.140	0.105	0.081	0.072	0.066	0.109	2.006
1987	0.173	0.306	0.426	0.456	0.228	0.167	0.173	0.121	0.102	0.101	0.078	0.085	2.415
1988	0.173	0.235	0.436	0.794	0.297	0.337	0.196	0.148	0.147	0.131	0.109	0.097	3.100
1989	0.161	0.306	0.436	0.355	0.260	0.320	0.252	0.168	0.137	0.115	0.093	0.102	2.704
1990	0.150	0.260	0.410	0.799	0.312	0.423	0.264	0.171	0.148	0.133	0.112	0.100	3.282
1991	0.149	0.272	0.347	0.368	0.144	0.122	0.116	0.089	0.077	0.069	0.060	0.052	1.866
1992	0.068	0.089	0.411	0.385	0.141	0.296	0.194	0.127	0.108	0.096	0.078	0.073	2.069
1993	0.127	0.189	0.426	0.651	0.305	0.336	0.249	0.136	0.111	0.091	0.072	0.063	2.755
1994	0.116	0.189	0.151	0.174	0.133	0.151	0.152	0.115	0.100	0.083	0.066	0.054	1.483
1995	0.074	0.134	0.426	0.485	0.334	0.424	0.264	0.172	0.148	0.134	0.116	0.098	2.810
1996	0.173	0.229	0.354	0.345	0.132	0.355	0.262	0.136	0.137	0.128	0.111	0.105	2.466
1997	0.173	0.300	0.400	0.358	0.196	0.188	0.140	0.100	0.077	0.069	0.063	0.063	2.129
1998	0.171	0.299	0.430	0.355	0.177	0.136	0.113	0.093	0.081	0.073	0.064	0.055	2.047
1999	0.155	0.161	0.441	0.828	0.334	0.424	0.264	0.172	0.148	0.134	0.116	0.108	3.284
2000	0.170	0.306	0.441	0.615	0.264	0.215	0.207	0.158	0.118	0.108	0.100	0.085	2.785
2001	0.107	0.287	0.307	0.189	0.198	0.148	0.121	0.089	0.081	0.073	0.070	0.063	1.732
2002	0.080	0.094	0.138	0.639	0.284	0.138	0.110	0.087	0.075	0.069	0.059	0.050	1.823
2003	0.066	0.130	0.123	0.155	0.155	0.277	0.136	0.096	0.081	0.073	0.063	0.052	1.408
20													

A.91. Niv2 – Category B**Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv2

Annual Flows (Mill. cu. m or index values):

MAR = 44.804

S.Dev. = 23.968

CV = 0.535

Q75 = 0.920

Q75/MMF = 0.246

BFI Index = 0.380

CV(JJA+JFM) Index = 2.321

Ecological Category = B

Total IFR = 33.087 (73.85 %MAR)

Maint. Lowflow = 23.515 (52.48 %MAR)

Drought Lowflow = 7.845 (17.51 %MAR)

Maint. Highflow = 9.572 (21.36 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			Maint.	Drought	Maint.	Maint.	
Oct	2.658	2.929	1.102	1.550	0.280	0.827	2.377
Nov	5.352	4.752	0.888	2.572	1.116	1.566	4.138
Dec	6.565	4.811	0.733	3.071	1.106	1.820	4.891
Jan	8.014	13.924	1.737	3.683	1.359	1.699	5.381
Feb	7.439	7.672	1.031	3.530	1.089	1.663	5.194
Mar	5.575	5.893	1.057	2.885	0.994	1.123	4.008
Apr	3.163	2.201	0.696	2.017	0.717	0.409	2.426
May	1.829	1.069	0.585	1.363	0.700	0.109	1.472
Jun	1.213	0.790	0.651	0.902	0.122	0.047	0.949
Jul	1.056	1.537	1.455	0.716	0.126	0.119	0.835
Aug	0.780	0.805	1.032	0.569	0.119	0.035	0.605
Sep	1.159	1.947	1.679	0.657	0.117	0.155	0.811

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv2

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	2.755	2.732	2.680	2.270	1.670	1.480	1.210	0.850	0.590	0.290
Nov	4.787	4.761	4.707	4.599	4.090	3.240	2.570	2.030	1.500	0.590
Dec	7.203	6.713	6.274	5.848	5.382	4.594	3.670	2.930	1.964	1.200
Jan	7.699	7.237	6.817	6.330	5.170	4.500	3.870	3.391	2.266	1.070
Feb	7.447	6.993	6.580	5.710	4.440	3.840	3.450	2.890	2.001	1.285
Mar	4.675	4.648	4.593	4.484	4.279	3.750	3.060	2.563	1.683	1.129
Apr	2.857	2.837	2.792	2.698	2.523	2.234	1.827	1.358	0.957	0.771
May	1.749	1.739	1.716	1.670	1.540	1.390	1.240	0.940	0.780	0.550
Jun	1.128	1.118	1.097	1.052	0.968	0.831	0.636	0.413	0.222	0.133
Jul	0.985	0.977	0.958	0.920	0.710	0.590	0.470	0.380	0.218	0.143
Aug	0.718	0.713	0.700	0.673	0.610	0.500	0.420	0.270	0.179	0.120
Sep	0.953	0.945	0.928	0.891	0.740	0.610	0.500	0.367	0.210	0.080

Reserve Flows without High Flows

Oct	1.850	1.835	1.801	1.731	1.600	1.384	1.080	0.729	0.429	0.290
Nov	3.074	3.060	3.029	2.969	2.857	2.661	2.349	1.916	1.432	0.590
Dec	3.669	3.650	3.610	3.532	3.384	3.128	2.719	2.152	1.520	1.122
Jan	4.400	4.377	4.330	4.237	4.063	3.758	3.274	2.601	1.850	1.070
Feb	4.216	4.193	4.145	4.049	3.870	3.556	3.058	2.366	1.594	1.109
Mar	3.446	3.428	3.390	3.315	3.174	2.929	2.538	1.995	1.390	1.010
Apr	2.410	2.394	2.357	2.281	2.140	1.907	1.579	1.201	0.878	0.728
May	1.630	1.621	1.601	1.559	1.482	1.354	1.174	0.940	0.780	0.550
Jun	1.077	1.068	1.047	1.004	0.925	0.793	0.608	0.395	0.212	0.128
Jul	0.854	0.847	0.831	0.799	0.710	0.590	0.470	0.334	0.195	0.131
Aug	0.680	0.674	0.662	0.637	0.590	0.500	0.404	0.270	0.172	0.120
Sep	0.784	0.778	0.763	0.733	0.678	0.586	0.457	0.308	0.180	0.080

Natural Duration curves

Oct	6.000	3.800	2.930	2.270	1.670	1.480	1.210	0.850	0.600	0.290
Nov	11.810	8.100	6.400	4.640	4.090	3.240	2.570	2.030	1.500	0.590
Dec	12.950	8.980	7.340	6.140	5.490	4.630	3.670	2.930	2.540	1.200
Jan	13.370	10.230	7.780	6.330	5.170	4.500	3.870	3.490	2.760	1.070
Feb	17.090	10.410	7.250	5.710	4.440	3.840	3.450	2.890	2.440	1.380
Mar	9.870	7.480	6.030	5.370	5.080	3.750	3.060	2.660	1.880	1.310
Apr	5.150	4.450	3.520	3.140	2.830	2.590	2.230	1.690	1.190	0.810
May	3.660	2.700	2.070	1.720	1.540	1.390	1.240	0.940	0.780	0.550
Jun	2.360	1.710	1.410	1.180	1.020	0.860	0.730	0.630	0.450	0.310
Jul	1.830	1.220	1.060	0.950	0.710	0.590	0.470	0.410	0.310	0.170
Aug	1.790	0.950	0.840	0.690	0.610	0.500	0.420	0.270	0.210	0.120
Sep	2.090	1.420	1.030	0.900	0.740	0.610	0.500	0.380	0.220	0.080

Hydrological time series

Total Runoff : Niv2

YEAR	Modified Flow Data for Ecological Category B											TOTAL	
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug		Sep
1920	2.747	4.739	6.033	2.064	2.890	4.672	2.734	1.610	0.865	0.450	0.223	0.911	29.937
1921	2.696	4.787	7.203	5.410	3.290	2.000	0.912	0.690	0.354	0.330	0.716	0.850	29.238
1922	2.680	4.787	6.274	6.495	4.390	2.604	1.402	0.930	0.208	0.180	0.135	0.080	30.164
1923	1.320	1.990	6.989	3.512	5.160	4.592	2.734	1.699	0.979	0.470	0.310	0.950	30.705
1924	1.670	4.700	7.203	4.330	2.482	4.675	2.857	1.739	1.091	0.940	0.654	0.951	33.294
1925	2.200	2.050	2.870	3.790	2.525	4.628	1.888	1.200	0.792	0.460	0.179	0.929	23.511
1926	1.120	1.310	2.785	1.893	5.250	4.399	2.072	1.020	0.208	0.770	0.630	0.430	21.887
1927	2.707	3.220	5.208	7.692	3.690	1.776	0.889	0.550	0.133	0.120	0.169	0.830	26.983
1928	1.480	2.270	2.828	1.679	1.376	4.675	2.823	1.713	1.107	0.973	0.600	0.953	22.476
1929	2.755	4.711	5.061	6.971	5.710	3.200	1.402	0.860	0.167	0.170	0.400	0.470	31.876
1930	0.340	1.930	2.930	1.675	1.823	1.624	1.358	0.980	0.180	0.218	0.179	0.090	13.327
1931	0.290	0.500	1.561	1.070	6.993	4.614	2.752	1.746	1.126	0.961	0.490	0.367	22.470
1932	1.130	4.599	6.362	6.742	6.541	3.710	1.707	1.020	0.222	0.470	0.380	0.210	33.093
1933	0.660	4.787	7.203	7.699	4.240	4.631	2.851	1.749	1.128	0.985	0.718	0.946	37.597
1934	0.850	4.646	6.714	4.600	3.480	2.355	1.260	1.510	1.010	0.590	0.340	0.258	27.613
1935	0.460	0.590	1.910	7.313	5.640	4.632	2.523	1.749	1.128	0.967	0.500	0.740	28.150
1936	2.530	4.782	3.453	7.699	7.447	4.560	2.379	1.330	0.413	0.305	0.158	0.937	35.993
1937	1.800	1.480	5.712	3.600	3.120	2.210	2.857	1.740	1.118	0.982	0.709	0.640	25.970
1938	2.751	3.240	6.800	7.498	7.447	4.675	2.835	1.733	1.100	0.982	0.717	0.953	40.732
1939	2.636	4.787	5.942	6.994	2.960	3.760	2.746	1.739	1.128	0.985	0.716	0.937	35.330
1940	1.430	4.090	7.203	4.930	4.200	2.926	2.750	1.678	0.573	0.590	0.480	0.570	31.421
1941	0.850	2.410	3.100	4.310	3.500	4.569	1.970	1.736	1.127	0.982	0.697	0.891	26.142
1942	2.460	4.735	6.597	3.277	3.060	3.750	2.857	1.749	1.128	0.985	0.718	0.953	32.269
1943	2.732	4.763	6.374	6.760	7.447	4.314	1.741	0.840	1.110	0.974	0.520	0.952	38.526
1944	2.748	2.310	1.479	4.590	1.858	4.665	2.528	1.520	1.059	0.928	0.700	0.700	25.086
1945	0.730	0.720	1.120	4.060	6.586	4.496	2.857	1.340	0.856	0.710	0.654	0.941	25.072
1946	1.810	4.761	6.073	4.760	6.348	3.020	2.246	1.550	0.670	0.440	0.240	0.410	32.328
1947	1.610	4.654	5.554	7.249	7.447	4.675	2.857	1.694	1.075	0.250	0.700	0.936	38.701
1948	1.540	4.741	4.120	7.699	6.580	4.477	2.837	1.741	1.108	0.810	0.380	0.480	36.513
1949	1.630	4.170	6.458	6.010	3.570	4.622	2.852	1.736	1.109	0.973	0.717	0.937	34.784
1950	0.820	1.520	5.382	6.819	3.480	4.593	2.856	1.631	1.078	0.968	0.718	0.952	30.819
1951	2.747	2.270	5.253	1.862	2.242	1.164	0.957	0.810	0.805	0.670	0.661	0.580	20.020
1952	1.050	2.580	5.892	2.611	3.340	2.990	2.681	1.250	0.805	0.760	0.610	0.650	25.219
1953	0.910	2.850	3.920	3.720	5.760	4.463	2.851	1.749	1.120	0.981	0.687	0.760	29.770
1954	2.270	3.570	4.470	7.564	7.417	4.675	2.099	1.310	1.077	0.982	0.713	0.924	37.071
1955	1.390	2.030	6.070	5.290	7.447	4.666	2.391	1.540	1.075	0.850	0.673	0.903	34.325
1956	2.732	4.634	6.233	4.550	6.462	4.279	2.734	1.690	1.052	0.985	0.718	0.953	37.023
1957	2.755	4.646	1.889	7.237	6.380	2.563	2.523	1.631	0.753	0.470	0.330	0.810	31.987
1958	1.210	4.767	5.848	6.567	4.660	2.180	0.782	1.460	0.874	0.630	0.661	0.910	30.549
1959	1.240	3.710	5.489	2.266	6.439	4.024	2.801	1.718	0.865	0.450	0.590	0.910	30.501
1960	2.390	4.787	7.203	6.582	4.440	3.230	2.838	1.721	1.117	0.980	0.717	0.710	36.715
1961	1.530	4.090	3.740	3.391	2.504	2.456	1.245	1.170	0.615	0.620	0.520	0.570	22.450
1962	0.910	4.768	6.657	6.300	3.400	3.580	1.420	0.640	1.128	0.985	0.718	0.950	31.457
1963	1.540	4.370	2.657	7.159	3.570	1.129	1.112	0.720	0.369	0.610	0.630	0.550	24.415
1964	2.755	4.661	6.085	3.870	3.450	1.269	0.813	0.690	0.509	0.670	0.520	0.830	26.122
1965	0.800	1.220	1.385	5.600	6.773	1.649	0.791	0.840	0.413	0.530	0.450	0.520	20.970
1966	0.890	0.970	2.401	3.790	7.247	4.622	2.687	1.695	1.079	0.920	0.694	0.740	27.736
1967	0.590	4.655	4.850	1.737	1.285	2.960	1.621	1.240	0.968	0.928	0.704	0.911	22.449
1968	0.450	1.980	1.964	3.830	1.556	4.675	2.857	1.747	1.120	0.900	0.450	0.928	22.457
1969	2.755	4.210	4.960	2.395	2.173	1.269	0.771	0.620	0.258	0.199	0.300	0.490	20.401
1970	2.270	3.590	3.280	6.720	2.760	4.164	2.853	1.749	1.128	0.968	0.640	0.530	30.652
1971	2.634	4.751	7.126	7.699	7.370	4.666	2.816	1.746	1.125	0.958	0.530	0.270	41.691
1972	0.400	3.460	1.807	2.871	7.447	4.484	2.843	1.736	1.052	0.570	0.703	0.953	28.327
1973	2.655	4.698	5.647	7.699	3.840	3.530	2.664	1.680	0.899	0.943	0.682	0.288	35.226
1974	0.740	4.778	6.528	7.246	6.805	4.078	2.819	1.728	0.951	0.520	0.240	0.953	37.386
1975	1.550	4.130	7.203	6.817	7.130	4.648	2.830	1.749	1.125	0.928	0.500	0.270	38.880
1976	2.688	3.040	4.585	6.604	7.019	4.258	2.511	1.480	0.509	0.281	0.223	0.937	34.134
1977	1.480	1.920	3.425	7.699	6.599	4.336	2.792	1.716	0.968	0.670	0.673	0.910	33.188
1978	2.755	4.711	4.777	3.940	2.890	2.940	2.072	1.520	0.636	0.380	0.712	0.945	28.278
1979	2.712	4.150	4.594	7.123	6.955	3.380	1.147	0.850	0.295	0.156	0.138	0.924	32.424
1980	0.780	4.740	6.003	6.330	5.880	2.832	1.040	0.780	0.973	0.860	0.698	0.948	31.864
1981	1.760	3.630	1.999	4.550	1.466	4.220	2.534	1.500	0.461	0.305	0.158	0.140	22.725
1982	2.749	2.230	1.300	0.860	0.430	1.129	1.040	1.500	0.989	0.610	0.708	0.610	14.155
1983	1.270	4.787	5.308	7.699	6.345	4.658	2.803	1.670	1.097	0.985	0.718	0.953	38.293
1984	2.726	2.880	3.295	2.904	7.447	4.552	1.827	0.780	0.151	0.156	0.120	0.110	26.948
1985	2.050	1.820	3.670	7.098	5.640	4.110	2.619	1.580	0.839	0.550	0.270	0.170	30.415
1986	0.568	1.080	5.052	2.904	2.001	4.293	2.761	1.713	1.036	0.620	0.718	0.953	23.700
1987	2.755	4.707	3.570	4.500	6.755	4.371	2.270	1.180	1.015	0.949	0.707	0.680	33.458
1988	2.755	3.650	7.087	3.512	7.250	4.496	2.698	1.665	1.112	0.977	0.610	0.323	36.135
1989	1.640	4.787	6.491	5.170	3.290	3.060	2.140	1.390	0.369	0.180	0.420	0.332	29.268
1990	1.410	2.750	5.425	7.699	7.043	4.654	2.746	1.740	1.128	0.985	0.717	0.720	37.016
1991	1.140	1.500	4.050	3.870	4.520	1.931	0.897	0.640	0.133	0.143	0.080	0.070	18.974
1992	0.360	2.840	5.813	2.741	4.040	4.502	2.551	1.600	0.831	0.421	0.440	0.500	26.639
1993	2.755	4.190	6.797	5.140	3.520	4.650	2.499	1.050	0.295	0.160	0.138	0.120	31.313
1994	2.666	3.310	6.713	4.920	1.450	2.577	1.560	1.240	0.653	0.368	0.223	0.150	25.829
1995	2.738	4.774	7.203	7.624	7.447	4.675	2.842	1.746	1.123	0.979	0.710	0.420	42.283
1996	2.725	2.570	5.640	7.058	4.210	4.675	2.857	1.749	1.128	0.985	0.718	0.951	35.266
1997	2.736	4.786	3.550	6.498	4.320	4.010	1.810	1.260	0.509	0.281	0.135	0.205	30.100
1998	2.240	3.940	7.065	5.320	2.730	1.683	1.316	1.220	0.670	0.401	0.510	0.420	27.514
1999	1.590	1.730	7.203	7.494	7.447	4.668	2.857	1.749	1.127	0.955	0.460	0.600	37.881
2000	2.711	4.787	6.766	3.960	3.940	3.240	1.888	1.340	0.530	0.450	0.290	0.760	30.663
2001	2.600	4.787	3.770	3.720	1.734	1.371	0.866	0.590	0.135	0.958	0.715	0.891	22.137
2002	0.760	1.030	2.244	2.219	4.180	1.632	0.690	0.300	0.332	0.450	0.240	0.222	14.299
2003	0.220	2.040	1.200	4.260	6.941	4.60							

A.92. Niv2 – Category C**Summary table**

Desktop Version 2, Generated on 2015-03-11

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv2

Annual Flows (Mill. cu. m or index values):

MAR = 44,804

S.Dev. = 23,968

CV = 0,535

Q75 = 0,920

Q75/MMF = 0,246

BFI Index = 0,380

CV(JJA+JFM) Index = 2,321

Ecological Category = C

Total IFR = 22,998 (51,33 %MAR)

Maint. Lowflow = 15,973 (35,65 %MAR)

Drought Lowflow = 7,845 (17,51 %MAR)

Maint. Highflow = 7,026 (15,68 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	2,658	2,929	1,102	1,010	0,280	0,674	1,684
Nov	5,352	4,752	0,888	1,871	1,116	1,157	3,028
Dec	6,565	4,811	0,733	2,063	1,106	1,314	3,377
Jan	8,014	13,924	1,737	2,436	1,359	1,357	3,793
Feb	7,439	7,672	1,031	2,328	1,089	1,342	3,670
Mar	5,575	5,893	1,057	1,997	0,994	0,805	2,801
Apr	3,163	2,201	0,696	1,365	0,717	0,265	1,630
May	1,829	1,069	0,585	1,145	0,700	0,020	1,165
Jun	1,213	0,790	0,651	0,512	0,122	0,000	0,512
Jul	1,056	1,537	1,455	0,449	0,126	0,081	0,529
Aug	0,780	0,805	1,032	0,393	0,119	0,000	0,393
Sep	1,159	1,947	1,679	0,403	0,117	0,012	0,415

Rule curve

Desktop Version 2, Generated on 2015-03-11

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv2

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	2.158	2.141	2.101	2.020	1.670	1.480	1.210	0.850	0.519	0.290
Nov	3.990	3.970	3.927	3.842	3.684	3.240	2.570	2.030	1.500	0.590
Dec	5.429	5.076	4.760	4.455	4.123	3.562	3.092	2.440	1.713	1.200
Jan	6.034	5.667	5.338	5.017	4.661	4.061	3.543	2.823	2.020	1.070
Feb	5.853	5.489	5.161	4.839	4.440	3.840	3.337	2.594	1.766	1.245
Mar	3.744	3.724	3.683	3.601	3.448	3.180	2.755	2.164	1.506	1.091
Apr	2.161	2.147	2.116	2.053	1.935	1.740	1.465	1.149	0.878	0.752
May	1.576	1.567	1.549	1.509	1.437	1.317	1.147	0.940	0.780	0.550
Jun	0.692	0.687	0.675	0.649	0.602	0.523	0.412	0.285	0.176	0.125
Jul	0.701	0.696	0.684	0.658	0.611	0.533	0.423	0.296	0.188	0.138
Aug	0.532	0.528	0.519	0.500	0.466	0.409	0.329	0.237	0.158	0.120
Sep	0.560	0.556	0.546	0.526	0.489	0.429	0.343	0.244	0.160	0.080

Reserve Flows without High Flows

Oct	1.367	1.357	1.333	1.285	1.194	1.045	0.834	0.591	0.383	0.287
Nov	2.610	2.599	2.576	2.530	2.444	2.295	2.057	1.726	1.358	0.590
Dec	2.877	2.864	2.837	2.783	2.681	2.503	2.221	1.829	1.392	1.117
Jan	3.398	3.383	3.351	3.289	3.172	2.967	2.643	2.192	1.689	1.070
Feb	3.246	3.230	3.196	3.130	3.006	2.790	2.447	1.970	1.438	1.103
Mar	2.784	2.771	2.743	2.688	2.585	2.406	2.121	1.725	1.283	1.006
Apr	1.850	1.839	1.814	1.764	1.669	1.513	1.294	1.041	0.825	0.724
May	1.552	1.544	1.526	1.488	1.417	1.300	1.134	0.940	0.780	0.550
Jun	0.692	0.687	0.675	0.649	0.602	0.523	0.412	0.285	0.176	0.125
Jul	0.607	0.602	0.592	0.570	0.530	0.464	0.371	0.264	0.172	0.129
Aug	0.532	0.528	0.519	0.500	0.466	0.409	0.329	0.237	0.158	0.120
Sep	0.546	0.542	0.532	0.513	0.477	0.418	0.335	0.239	0.157	0.080

Natural Duration curves

Oct	6.000	3.800	2.930	2.270	1.670	1.480	1.210	0.850	0.600	0.290
Nov	11.810	8.100	6.400	4.640	4.090	3.240	2.570	2.030	1.500	0.590
Dec	12.950	8.980	7.340	6.140	5.490	4.630	3.670	2.930	2.540	1.200
Jan	13.370	10.230	7.780	6.330	5.170	4.500	3.870	3.490	2.760	1.070
Feb	17.090	10.410	7.250	5.710	4.440	3.840	3.450	2.890	2.440	1.380
Mar	9.870	7.480	6.030	5.370	5.080	3.750	3.060	2.660	1.880	1.310
Apr	5.150	4.450	3.520	3.140	2.830	2.590	2.230	1.690	1.190	0.810
May	3.660	2.700	2.070	1.720	1.540	1.390	1.240	0.940	0.780	0.550
Jun	2.360	1.710	1.410	1.180	1.020	0.860	0.730	0.630	0.450	0.310
Jul	1.830	1.220	1.060	0.950	0.710	0.590	0.470	0.410	0.310	0.170
Aug	1.790	0.950	0.840	0.690	0.610	0.500	0.420	0.270	0.210	0.120
Sep	2.090	1.420	1.030	0.900	0.740	0.610	0.500	0.380	0.220	0.080

Hydrological time series

Total Runoff : Niv2

YEAR	Modified Flow Data for Ecological Category C												TOTAL
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
1920	2.152	3.952	4.587	1.876	2.594	3.742	2.077	1.465	0.543	0.351	0.188	0.537	24.065
1921	2.113	3.990	5.429	4.735	3.142	1.784	0.847	0.690	0.251	0.263	0.530	0.515	24.290
1922	2.101	3.990	4.760	5.089	4.390	2.195	1.178	0.930	0.168	0.162	0.128	0.080	25.171
1923	1.320	1.990	5.275	2.909	4.683	3.682	2.077	1.534	0.607	0.423	0.263	0.558	25.323
1924	1.670	3.922	5.429	3.985	2.116	3.744	2.161	1.568	0.672	0.671	0.487	0.559	26.983
1925	2.003	2.050	2.350	3.335	2.147	3.709	1.506	1.124	0.501	0.387	0.158	0.547	19.816
1926	1.120	1.310	2.290	1.754	4.709	3.538	1.631	1.013	0.168	0.623	0.474	0.287	18.917
1927	2.122	3.220	3.999	6.028	3.690	1.575	0.832	0.550	0.125	0.120	0.151	0.510	22.923
1928	1.480	2.270	2.320	1.602	1.311	3.744	2.137	1.546	0.680	0.693	0.461	0.560	18.804
1929	2.158	3.930	3.894	5.458	4.839	2.871	1.178	0.860	0.145	0.156	0.317	0.319	26.125
1930	0.340	1.930	2.440	1.599	1.636	1.462	1.149	0.980	0.152	0.188	0.158	0.090	12.124
1931	0.290	0.500	1.429	1.070	5.489	3.698	2.089	1.573	0.691	0.686	0.401	0.244	18.161
1932	1.130	3.842	4.823	5.280	5.131	3.163	1.384	1.013	0.176	0.423	0.306	0.160	26.831
1933	0.576	3.990	5.429	6.034	4.240	3.711	2.156	1.576	0.692	0.701	0.532	0.556	30.194
1934	0.850	3.879	5.076	4.151	3.479	2.009	1.082	1.413	0.625	0.533	0.282	0.186	23.565
1935	0.444	0.590	1.674	5.728	4.819	3.712	1.935	1.576	0.692	0.689	0.409	0.489	22.757
1936	2.053	3.986	2.759	6.034	5.853	3.658	1.837	1.266	0.285	0.246	0.144	0.551	28.673
1937	1.800	1.480	4.358	2.981	2.935	1.905	2.161	1.569	0.687	0.700	0.525	0.443	21.544
1938	2.155	3.240	5.138	5.874	5.853	3.744	2.146	1.563	0.677	0.700	0.530	0.560	32.179
1939	2.068	3.990	4.522	4.477	2.698	3.182	2.085	1.567	0.692	0.701	0.530	0.551	28.065
1940	1.430	3.684	5.429	4.446	4.200	2.436	2.088	1.517	0.376	0.533	0.393	0.395	26.927
1941	0.850	2.410	2.531	3.976	3.500	3.665	1.562	1.565	0.692	0.700	0.517	0.526	22.493
1942	2.044	3.949	4.992	2.742	2.846	3.180	2.161	1.576	0.692	0.701	0.532	0.560	25.976
1943	2.141	3.972	4.831	5.294	5.852	3.474	1.407	0.840	0.682	0.694	0.419	0.559	30.165
1944	2.153	2.310	1.371	1.412	1.662	3.736	1.939	1.421	0.653	0.664	0.519	0.471	21.040
1945	0.643	0.720	1.120	3.864	5.166	3.610	2.161	1.274	0.538	0.611	0.487	0.553	20.747
1946	1.810	3.970	4.616	4.294	4.979	2.657	1.748	1.441	0.431	0.337	0.200	0.270	26.753
1947	1.610	3.886	4.245	5.677	5.853	3.744	2.161	1.530	0.662	0.209	0.519	0.551	30.645
1948	1.540	3.954	3.405	6.034	5.161	3.596	2.147	1.569	0.681	0.631	0.306	0.327	29.350
1949	1.630	3.707	4.892	4.919	3.570	3.704	2.157	1.565	0.682	0.693	0.530	0.551	28.601
1950	0.807	1.520	4.123	5.340	3.479	3.683	2.160	1.477	0.664	0.690	0.532	0.559	25.034
1951	2.152	2.270	4.031	1.732	1.941	1.118	0.878	0.810	0.508	0.585	0.492	0.403	16.920
1952	1.050	2.580	4.486	2.267	3.203	2.583	2.041	1.162	0.508	0.621	0.466	0.447	21.415
1953	0.910	2.850	3.284	3.154	4.848	3.585	2.156	1.576	0.688	0.699	0.510	0.494	24.753
1954	2.020	3.515	3.512	5.927	5.828	3.744	1.649	1.249	0.663	0.700	0.528	0.544	29.880
1955	1.390	2.030	4.613	4.698	5.853	3.738	1.845	1.437	0.662	0.639	0.500	0.533	27.938
1956	2.141	3.870	4.730	4.106	5.069	3.448	2.077	1.527	0.649	0.701	0.532	0.560	29.410
1957	2.158	3.879	1.660	5.667	5.004	2.164	1.935	1.477	0.479	0.423	0.276	0.506	25.629
1958	1.210	3.975	4.455	5.145	4.542	1.888	0.760	1.373	0.548	0.559	0.492	0.536	25.482
1959	1.240	3.561	4.199	2.020	5.050	3.257	2.122	1.550	0.543	0.351	0.455	0.536	24.885
1960	2.036	3.990	5.429	5.156	4.440	2.895	2.148	1.553	0.686	0.698	0.530	0.475	30.036
1961	1.530	3.684	3.146	2.823	2.131	2.084	1.073	1.106	0.400	0.553	0.419	0.395	19.343
1962	0.910	3.975	5.036	5.008	3.276	3.106	1.190	0.640	0.692	0.701	0.532	0.558	25.625
1963	1.540	3.765	2.200	5.606	3.570	1.091	0.982	0.720	0.260	0.546	0.474	0.380	21.135
1964	2.158	3.891	4.624	3.543	3.337	1.197	0.781	0.690	0.340	0.585	0.419	0.510	22.075
1965	0.768	1.220	1.305	4.793	5.314	1.481	0.766	0.840	0.285	0.489	0.365	0.358	17.984
1966	0.890	0.970	2.020	3.335	5.692	3.704	2.045	1.530	0.665	0.658	0.515	0.489	22.515
1967	0.519	3.886	3.744	1.643	1.245	2.510	1.326	1.147	0.602	0.664	0.522	0.537	18.345
1968	0.438	1.980	1.713	3.439	1.442	3.744	2.161	1.574	0.688	0.648	0.365	0.546	18.738
1969	2.158	3.719	3.823	2.113	1.891	1.197	0.752	0.620	0.197	0.175	0.257	0.335	17.235
1970	2.020	3.522	2.638	5.263	2.393	3.361	2.158	1.576	0.692	0.690	0.479	0.365	25.158
1971	2.067	3.962	5.373	6.034	5.790	3.737	2.132	1.573	0.691	0.684	0.424	0.192	32.661
1972	0.400	3.460	1.602	2.452	5.853	3.601	2.151	1.565	0.649	0.518	0.521	0.560	23.333
1973	2.082	3.920	4.312	6.034	3.840	3.084	2.030	1.518	0.562	0.673	0.507	0.202	28.765
1974	0.652	3.983	4.942	5.675	5.339	3.297	1.134	1.558	0.592	0.478	0.200	0.560	29.412
1975	1.550	3.696	5.429	5.338	5.598	3.724	2.142	1.576	0.691	0.664	0.409	0.192	31.008
1976	2.108	3.040	3.555	5.173	5.510	3.432	1.927	1.389	0.340	0.230	0.188	0.551	27.442
1977	1.480	1.920	2.740	6.034	5.176	3.490	2.116	1.549	0.602	0.585	0.500	0.536	26.728
1978	2.158	3.931	3.692	3.661	2.594	2.461	1.631	1.421	0.412	0.296	0.527	0.556	23.339
1979	2.126	3.701	3.562	5.578	5.459	3.019	1.006	0.850	0.218	0.146	0.129	0.544	26.338
1980	0.730	3.954	4.565	5.017	4.871	2.366	0.934	0.780	0.604	0.641	0.518	0.557	25.535
1981	1.760	3.535	1.737	4.106	1.377	3.404	1.942	1.405	0.312	0.246	0.144	0.136	20.103
1982	2.154	2.230	1.274	0.860	0.430	1.091	0.934	1.405	0.613	0.546	0.524	0.429	12.490
1983	1.270	3.990	4.071	6.034	4.977	3.731	2.124	1.509	0.675	0.701	0.532	0.560	30.174
1984	2.137	2.880	2.649	2.475	5.853	3.652	1.465	0.780	0.135	0.146	0.120	0.110	22.402
1985	1.965	1.820	3.092	5.558	4.819	3.321	2.000	1.453	0.528	0.504	0.237	0.145	25.441
1986	0.503	1.080	3.888	2.475	1.766	3.458	2.095	1.546	0.640	0.553	0.532	0.560	19.096
1987	2.158	3.927	2.896	4.061	5.299	3.517	1.764	1.112	0.628	0.678	0.523	0.461	27.025
1988	2.158	3.541	5.345	2.909	5.694	3.610	2.053	1.505	0.684	0.696	0.466	0.221	28.883
1989	1.640	3.990	4.916	4.661	3.142	2.755	1.676	1.317	0.260	0.162	0.329	0.225	25.074
1990	1.410	2.750	4.153	6.034	5.529	3.728	2.085	1.569	0.692	0.701	0.530	0.480	29.663
1991	1.140	1.500	3.383	3.543	4.502	1.691	0.837	0.640	0.125	0.138	0.080	0.070	17.650
1992	0.360	2.840	4.430	2.359	4.040	3.615	1.954	1.461	0.523	0.324	0.353	0.343	22.601
1993	2.158	3.713	5.136	4.635	3.520	3.725	1.918	1.036	0.218	0.149	0.129	0.120	26.458
1994	2.091	3.310	5.076	4.437	1.365	2.174	1.285	1.147	0.422	0.288	0.188	0.139	21.922
1995	2.146	3.980	5.429	5.975	5.853	3.744	2.150	1.574	0.690	0.698	0.526	0.278	33.041
1996	2.136	2.570	4.307	5.527	4.210	3.744	2.161	1.576	0.692	0.701	0.532	0.559	28.713
1997	2.144	3.989	2.857	5.092	4.320	3.247	1.454	1.176	0.340	0.230	0.128	0.157	25.133
1998	2.013	3.635	5.329	4.707	2.347	1.506	1.120	1.135	0.431	0.310	0.414	0.278	23.227
1999	1.590	1.730	5.429	5.871	5.853	3.739	2.161	1.576	0.692	0.682	0.377	0.420	30.119
2000	2.125	3.990	5.114	3.695	3.940	2.904	1.506	1.274	0.352	0.351	0.250	0.494	25.995
2001	2.062	3.990	3.169	3.154	1.571	1.272	0.817	0.590	0.127	0.684	0.529	0.526	18.491
2002	0.691	1.030	1.910	1.987	4.180	1.468	0.690	0.300	0.239	0.351	0.200	0.166	13.212
2003	0.220	2.040	1.200	3.953	5.447	3.69							

A.93. Niv2 – Category D**Summary table**

Desktop Version 2, Generated on 2015-03-11

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv2

Annual Flows (Mill. cu. m or index values):

MAR = 44,804

S.Dev. = 23,968

CV = 0,535

Q75 = 0,920

Q75/MMF = 0,246

BFI Index = 0,380

CV(JJA+JFM) Index = 2,321

Ecological Category = D

Total IFR = 13,233 (29,54 %MAR)

Maint. Lowflow = 7,845 (17,51 %MAR)

Drought Lowflow = 7,845 (17,51 %MAR)

Maint. Highflow = 5,388 (12,03 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	2,658	2,929	1,102	0,280	0,280	0,544	0,824
Nov	5,352	4,752	0,888	1,116	1,116	0,912	2,028
Dec	6,565	4,811	0,733	1,106	1,106	1,003	2,109
Jan	8,014	13,924	1,737	1,359	1,359	1,001	2,360
Feb	7,439	7,672	1,031	1,089	1,089	1,142	2,232
Mar	5,575	5,893	1,057	0,994	0,994	0,557	1,551
Apr	3,163	2,201	0,696	0,717	0,717	0,118	0,835
May	1,829	1,069	0,585	0,700	0,700	0,013	0,713
Jun	1,213	0,790	0,651	0,122	0,122	0,000	0,122
Jul	1,056	1,537	1,455	0,126	0,126	0,082	0,208
Aug	0,780	0,805	1,032	0,119	0,119	0,000	0,119
Sep	1,159	1,947	1,679	0,117	0,117	0,016	0,132

Rule curve

Desktop Version 2, Generated on 2015-03-11

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv2

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.293	1.284	1.263	1.220	1.140	1.008	0.822	0.608	0.425	0.290
Nov	3.586	3.568	3.531	3.459	3.322	3.084	2.570	2.030	1.500	0.590
Dec	4.153	3.885	3.647	3.423	3.183	2.780	2.462	2.021	1.528	1.200
Jan	4.654	4.385	4.144	3.912	3.659	3.231	2.873	2.376	1.822	1.070
Feb	4.390	4.087	3.819	3.568	3.306	2.864	2.528	2.063	1.543	1.217
Mar	2.812	2.799	2.772	2.718	2.617	2.440	2.160	1.769	1.335	1.061
Apr	1.498	1.491	1.474	1.440	1.375	1.270	1.121	0.949	0.802	0.734
May	1.317	1.311	1.298	1.270	1.219	1.134	1.015	0.878	0.760	0.550
Jun	0.226	0.225	0.222	0.218	0.209	0.195	0.175	0.151	0.132	0.122
Jul	0.351	0.349	0.344	0.334	0.316	0.287	0.245	0.196	0.155	0.136
Aug	0.220	0.219	0.217	0.212	0.204	0.190	0.170	0.148	0.128	0.119
Sep	0.239	0.237	0.235	0.229	0.219	0.203	0.179	0.153	0.130	0.080

Reserve Flows without High Flows

Oct	0.519	0.517	0.511	0.501	0.481	0.448	0.402	0.348	0.303	0.281
Nov	2.226	2.217	2.200	2.166	2.103	1.991	1.815	1.569	1.295	0.590
Dec	2.204	2.196	2.179	2.145	2.082	1.972	1.797	1.554	1.283	1.112
Jan	2.710	2.700	2.679	2.638	2.560	2.425	2.210	1.911	1.577	1.070
Feb	2.172	2.164	2.147	2.114	2.052	1.944	1.771	1.531	1.264	1.096
Mar	1.982	1.975	1.960	1.929	1.873	1.774	1.616	1.398	1.154	1.000
Apr	1.330	1.324	1.311	1.283	1.232	1.148	1.029	0.892	0.775	0.721
May	1.299	1.293	1.280	1.253	1.204	1.121	1.005	0.872	0.757	0.550
Jun	0.226	0.225	0.222	0.218	0.209	0.195	0.175	0.151	0.132	0.122
Jul	0.234	0.233	0.230	0.226	0.217	0.202	0.181	0.157	0.136	0.127
Aug	0.220	0.219	0.217	0.212	0.204	0.190	0.170	0.148	0.128	0.119
Sep	0.216	0.215	0.213	0.209	0.201	0.187	0.167	0.145	0.126	0.080

Natural Duration curves

Oct	6.000	3.800	2.930	2.270	1.670	1.480	1.210	0.850	0.600	0.290
Nov	11.810	8.100	6.400	4.640	4.090	3.240	2.570	2.030	1.500	0.590
Dec	12.950	8.980	7.340	6.140	5.490	4.630	3.670	2.930	2.540	1.200
Jan	13.370	10.230	7.780	6.330	5.170	4.500	3.870	3.490	2.760	1.070
Feb	17.090	10.410	7.250	5.710	4.440	3.840	3.450	2.890	2.440	1.380
Mar	9.870	7.480	6.030	5.370	5.080	3.750	3.060	2.660	1.880	1.310
Apr	5.150	4.450	3.520	3.140	2.830	2.590	2.230	1.690	1.190	0.810
May	3.660	2.700	2.070	1.720	1.540	1.390	1.240	0.940	0.780	0.550
Jun	2.360	1.710	1.410	1.180	1.020	0.860	0.730	0.630	0.450	0.310
Jul	1.830	1.220	1.060	0.950	0.710	0.590	0.470	0.410	0.310	0.170
Aug	1.790	0.950	0.840	0.690	0.610	0.500	0.420	0.270	0.210	0.120
Sep	2.090	1.420	1.030	0.900	0.740	0.610	0.500	0.380	0.220	0.080

Hydrological time series

Total Runoff : Niv2

Desktop (Version 2) Modified Flow Data for Ecological Category D													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	1.290	3.553	3.519	1.723	2.063	2.811	1.453	1.239	0.198	0.217	0.136	0.232	18.434
1921	1.269	3.586	4.153	3.711	2.406	1.518	0.785	0.690	0.145	0.183	0.219	0.226	18.893
1922	1.263	3.586	3.647	3.964	3.269	1.789	0.965	0.870	0.130	0.145	0.121	0.080	19.830
1923	0.891	1.990	4.036	2.436	3.455	2.771	1.453	1.287	0.210	0.245	0.154	0.238	19.165
1924	1.140	3.527	4.153	3.179	1.763	2.812	1.498	1.311	0.222	0.339	0.209	0.238	20.391
1925	1.211	2.050	1.960	2.730	1.782	2.789	1.143	0.998	0.191	0.231	0.128	0.235	15.448
1926	0.786	1.310	1.919	1.638	3.473	2.676	1.210	0.921	0.130	0.321	0.206	0.164	14.755
1927	1.274	3.076	3.094	4.650	2.804	1.381	0.777	0.550	0.122	0.120	0.126	0.225	18.200
1928	1.008	2.270	1.939	1.533	1.258	2.812	1.485	1.296	0.223	0.348	0.202	0.239	14.615
1929	1.293	3.534	3.019	4.232	3.568	2.236	0.965	0.820	0.126	0.142	0.167	0.173	20.276
1930	0.340	1.930	2.021	1.531	1.462	1.305	0.949	0.899	0.127	0.155	0.128	0.090	10.938
1931	0.290	0.500	1.336	1.070	4.087	2.782	1.459	1.315	0.225	0.345	0.188	0.153	13.750
1932	0.790	3.459	3.695	4.103	3.796	2.429	1.076	0.921	0.132	0.245	0.164	0.130	20.937
1933	0.456	3.586	4.153	4.654	3.158	2.791	1.496	1.317	0.226	0.351	0.220	0.237	22.643
1934	0.608	3.490	3.885	3.295	2.618	1.667	0.913	1.202	0.213	0.287	0.159	0.137	18.473
1935	0.385	0.590	1.502	4.429	3.554	2.791	1.375	1.317	0.226	0.346	0.190	0.219	16.925
1936	1.237	3.582	2.237	4.654	4.390	2.756	1.323	1.099	0.151	0.177	0.125	0.236	21.967
1937	1.157	1.480	3.353	2.486	2.277	1.598	1.498	1.312	0.225	0.350	0.218	0.207	16.160
1938	1.291	3.084	3.932	4.537	4.390	2.812	1.490	1.307	0.223	0.350	0.220	0.239	23.875
1939	1.245	3.586	3.472	4.245	2.128	2.442	1.457	1.311	0.226	0.351	0.219	0.236	20.918
1940	0.967	3.322	4.153	3.506	3.129	1.949	1.459	1.275	0.168	0.287	0.186	0.194	20.593
1941	0.608	2.410	2.082	3.172	2.677	2.760	1.173	1.309	0.226	0.350	0.216	0.229	17.214
1942	1.233	3.550	3.822	2.320	2.221	2.440	1.498	1.317	0.226	0.351	0.220	0.239	19.436
1943	1.284	3.570	3.701	4.112	4.390	2.634	1.089	0.805	0.224	0.348	0.192	0.238	22.588
1944	1.290	2.310	1.297	3.289	1.478	2.807	1.378	1.207	0.191	0.336	0.217	0.214	16.042
1945	0.491	0.720	1.120	3.095	3.823	2.724	1.498	1.105	0.197	0.316	0.209	0.237	15.535
1946	1.159	3.568	3.541	3.397	3.676	2.095	1.274	1.222	0.178	0.212	0.139	0.160	20.619
1947	1.099	3.496	3.272	4.392	4.390	2.812	1.498	1.284	0.220	0.163	0.217	0.236	23.079
1948	1.050	3.555	2.674	4.654	3.819	2.714	1.491	1.312	0.224	0.324	0.164	0.175	22.156
1949	1.112	3.342	3.747	3.842	2.756	2.786	1.496	1.309	0.224	0.348	0.220	0.236	21.418
1950	0.578	1.520	3.183	4.146	2.618	2.772	1.498	1.247	0.220	0.347	0.220	0.238	18.586
1951	1.290	2.270	3.118	1.623	1.653	1.078	0.802	0.783	0.192	0.306	0.210	0.196	13.521
1952	0.758	2.580	3.445	1.992	2.445	2.046	1.433	1.025	0.192	0.320	0.204	0.208	16.648
1953	0.701	2.850	2.592	2.605	3.576	2.707	1.496	1.317	0.225	0.350	0.215	0.221	18.853
1954	1.220	3.176	2.747	4.575	4.370	2.812	1.220	1.087	0.220	0.350	0.219	0.234	22.232
1955	0.934	2.030	3.539	3.685	4.390	2.808	1.327	1.219	0.220	0.327	0.212	0.231	20.923
1956	1.284	3.482	3.626	3.263	3.747	2.617	1.453	1.282	0.218	0.351	0.220	0.239	21.780
1957	1.293	3.490	1.492	4.385	3.696	1.769	1.375	1.247	0.187	0.245	0.157	0.224	19.561
1958	0.822	3.572	3.423	4.004	3.351	1.587	0.738	1.174	0.199	0.296	0.210	0.232	19.609
1959	0.841	3.216	3.239	1.822	3.732	2.491	1.477	1.298	0.198	0.217	0.201	0.232	18.965
1960	1.228	3.586	4.153	4.012	3.306	2.252	1.491	1.300	0.224	0.350	0.220	0.216	22.337
1961	1.043	3.322	2.499	2.376	1.773	1.716	0.907	0.986	0.172	0.294	0.192	0.194	15.475
1962	0.701	3.573	3.855	3.906	2.490	2.391	0.971	0.640	0.226	0.351	0.220	0.238	19.561
1963	1.050	3.392	1.858	4.340	2.756	1.061	0.858	0.720	0.147	0.292	0.206	0.190	16.869
1964	1.293	3.501	3.547	2.873	2.528	1.130	0.749	0.690	0.161	0.306	0.192	0.225	17.197
1965	0.557	1.220	1.252	3.753	3.943	1.318	0.741	0.805	0.151	0.270	0.179	0.184	14.373
1966	0.670	0.970	1.736	2.730	4.256	2.786	1.435	1.285	0.221	0.334	0.216	0.219	16.859
1967	0.425	3.496	2.912	1.562	1.217	1.997	1.045	1.015	0.209	0.336	0.218	0.232	14.664
1968	0.382	1.980	1.528	2.802	1.340	2.812	1.498	1.316	0.225	0.331	0.179	0.235	14.628
1969	1.293	3.352	2.968	1.886	1.622	1.130	0.734	0.620	0.135	0.150	0.152	0.177	14.219
1970	1.220	3.182	2.155	4.090	1.937	2.560	1.497	1.317	0.226	0.347	0.207	0.186	18.922
1971	1.245	3.562	4.110	4.654	4.338	2.808	1.483	1.315	0.225	0.344	0.194	0.139	24.416
1972	0.368	3.145	1.453	1.120	4.390	2.718	1.493	1.309	0.218	0.281	0.217	0.239	17.952
1973	1.253	3.526	3.320	4.654	2.864	2.377	1.427	1.276	0.202	0.340	0.214	0.141	21.593
1974	0.496	3.580	3.784	4.390	3.964	2.517	1.484	1.305	0.207	0.266	0.139	0.239	22.370
1975	1.057	3.332	4.153	4.144	4.178	2.799	1.488	1.317	0.225	0.336	0.190	0.139	23.357
1976	1.266	3.010	2.776	4.025	4.104	2.606	1.371	1.185	0.161	0.171	0.136	0.236	21.047
1977	1.008	1.920	2.224	4.654	3.832	2.645	1.474	1.298	0.209	0.306	0.212	0.232	20.014
1978	1.293	3.535	2.874	2.955	2.063	1.965	1.210	1.207	0.175	0.196	0.219	0.237	17.929
1979	1.276	3.337	2.780	4.320	4.062	2.334	0.871	0.812	0.139	0.139	0.121	0.234	20.426
1980	0.537	3.554	3.503	3.912	3.593	1.902	0.832	0.760	0.210	0.328	0.216	0.238	19.585
1981	1.152	3.193	1.545	3.263	1.300	2.588	1.380	1.196	0.156	0.177	0.125	0.123	16.198
1982	1.291	2.230	1.231	0.860	0.430	1.061	0.832	1.196	0.211	0.292	0.218	0.203	10.055
1983	0.860	3.586	3.146	4.654	3.674	2.804	1.478	1.270	0.222	0.351	0.220	0.239	22.503
1984	1.282	2.880	2.162	2.136	4.390	2.752	1.121	0.760	0.124	0.139	0.119	0.110	17.975
1985	1.191	1.820	2.462	4.305	3.554	2.533	1.411	1.230	0.196	0.275	0.148	0.126	19.250
1986	0.417	1.080	3.015	2.136	1.543	2.624	1.463	1.296	0.216	0.294	0.220	0.239	14.542
1987	1.293	3.531	2.330	3.231	3.931	2.662	1.283	0.990	0.214	0.342	0.218	0.212	20.237
1988	1.293	3.199	4.089	2.436	4.258	2.724	1.440	1.267	0.224	0.349	0.204	0.146	21.628
1989	1.119	3.586	3.764	3.659	2.406	2.160	1.235	1.134	0.147	0.145	0.170	0.148	19.673
1990	0.951	2.750	3.205	4.654	4.120	2.802	1.457	1.312	0.226	0.351	0.220	0.217	22.264
1991	0.794	1.500	2.660	2.873	3.322	1.457	0.780	0.640	0.122	0.136	0.080	0.070	14.434
1992	0.357	2.840	3.404	2.056	3.011	2.727	1.386	1.236	0.195	0.207	0.176	0.179	17.774
1993	1.293	3.347	3.930	3.640	2.736	2.800	1.367	0.937	0.139	0.140	0.121	0.120	20.570
1994	1.257	3.103	3.885	3.499	1.292	1.776	1.023	1.015	0.176	0.193	0.136	0.124	17.479
1995	1.286	3.577	4.153	4.610	4.390	2.812	1.492	1.315	0.225	0.350	0.219	0.162	24.592
1996	1.281	2.570	3.316	4.282	3.136	2.812	1.498	1.317	0.226	0.351	0.220	0.238	21.247
1997	1.286	3.585	2.303	3.966	3.217	2.484	1.114	1.035	0.161	0.171	0.121	0.129	19.573
1998	1.216	3.280	4.077	3.692	1.908	1.335	0.933	1.007	0.178	0.201	0.191	0.162	18.180
1999	1.085	1.730	4.153	4.534	4.390	2.809	1.498	1.317	0.226	0.343	0.182	0.200	22.467
2000	1.275	3.586	3.914	2.978	2.937	2.257	1.143	1.105	0.164	0.217	0.151	0.221	19.948
2001	1.242	3.586	2.514	2.605	1.422	1.180	0.769	0.590	0.123	0.344	0.219	0.229	14.823
2002	0.516	1.030	1.661	1.799	3.114	1.310	0.690	0.300	0.143	0.217	0.139	0.131	11.051
2003	0.220	2.040	1.200	3.157	4.052	2.77							

A.94. Niv3 – Category B**Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv3

Annual Flows (Mill. cu. m or index values):

MAR = 229.202

S.Dev. = 115.162

CV = 0.502

Q75 = 5.150

Q75/MMF = 0.270

BFI Index = 0.424

CV(JJA+JFM) Index = 1.542

Ecological Category = B

Total IFR = 169.262 (73.85 %MAR)

Maint. Lowflow = 120.294 (52.48 %MAR)

Drought Lowflow = 40.133 (17.51 %MAR)

Maint. Highflow = 48.969 (21.36 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	13.065	17.033	1.304	7.929	1.431	4.231	12.160
Nov	24.762	20.173	0.815	13.158	5.711	8.011	21.169
Dec	34.102	24.437	0.717	15.709	5.656	9.309	25.018
Jan	38.847	44.765	1.152	18.839	6.954	8.689	27.529
Feb	36.711	28.460	0.775	18.059	5.573	8.510	26.569
Mar	29.046	20.205	0.696	14.758	5.087	5.746	20.504
Apr	18.154	11.204	0.617	10.318	3.668	2.094	12.412
May	10.576	5.940	0.562	6.972	3.583	0.557	7.529
Jun	7.032	3.726	0.530	4.617	0.622	0.238	4.855
Jul	5.870	4.325	0.737	3.661	0.645	0.611	4.272
Aug	4.928	3.633	0.737	2.913	0.607	0.181	3.094
Sep	6.109	8.977	1.469	3.361	0.597	0.791	4.151

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv3

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	14.092	13.975	13.570	10.890	8.730	6.980	5.150	3.980	2.930	1.170
Nov	24.489	24.355	24.077	22.360	17.220	15.480	13.110	9.940	6.140	2.550
Dec	36.848	34.341	32.094	29.919	27.531	23.210	19.310	15.339	10.049	3.500
Jan	39.385	37.020	34.871	32.740	30.321	26.080	22.509	16.990	11.590	5.460
Feb	38.098	35.776	33.659	31.548	28.920	23.910	19.660	15.470	10.237	6.572
Mar	23.915	23.780	23.497	22.938	21.891	20.062	17.154	13.113	8.609	5.650
Apr	14.617	14.515	14.282	13.801	12.905	11.430	9.347	6.948	4.898	3.620
May	8.946	8.895	8.780	8.543	8.100	7.371	6.341	5.156	4.143	2.580
Jun	5.770	5.721	5.610	5.380	4.953	4.249	3.255	2.111	1.133	0.678
Jul	5.038	4.997	4.903	4.709	4.348	3.752	2.912	1.945	1.118	0.733
Aug	3.675	3.646	3.580	3.444	3.189	2.770	2.178	1.497	0.915	0.644
Sep	4.876	4.836	4.745	4.550	4.040	3.440	2.815	1.877	1.075	0.702

Reserve Flows without High Flows

Oct	9.465	9.388	9.214	8.855	8.184	6.980	5.150	3.729	2.195	1.170
Nov	15.727	15.652	15.497	15.190	14.616	13.612	12.017	9.799	6.140	2.550
Dec	18.768	18.671	18.468	18.066	17.314	16.000	13.911	11.009	7.773	3.500
Jan	22.509	22.393	22.153	21.676	20.784	19.225	16.747	13.304	9.466	5.460
Feb	21.570	21.451	21.203	20.713	19.796	18.193	15.645	12.104	8.157	5.673
Mar	17.630	17.537	17.343	16.959	16.239	14.982	12.984	10.207	7.112	5.165
Apr	12.327	12.245	12.057	11.670	10.947	9.757	8.078	6.144	4.491	3.620
May	8.336	8.291	8.188	7.975	7.579	6.926	6.004	4.942	4.035	2.580
Jun	5.509	5.462	5.357	5.138	4.730	4.059	3.111	2.020	1.087	0.653
Jul	4.369	4.334	4.253	4.086	3.776	3.264	2.541	1.710	0.999	0.668
Aug	3.477	3.450	3.388	3.259	3.020	2.625	2.068	1.427	0.879	0.625
Sep	4.011	3.979	3.905	3.752	3.467	2.998	2.336	1.573	0.921	0.618

Natural Duration curves

Oct	27.010	18.470	13.570	10.890	8.730	6.980	5.150	3.980	2.930	1.170
Nov	51.620	37.330	31.160	22.360	17.220	15.480	13.110	9.940	6.140	2.550
Dec	73.050	43.610	38.340	34.880	30.340	23.210	19.310	17.070	11.130	3.500
Jan	68.900	52.160	39.130	34.410	30.390	26.080	24.430	16.990	14.720	5.460
Feb	78.790	53.590	40.960	34.350	28.920	23.910	19.660	15.470	12.720	7.010
Mar	55.300	42.520	33.240	28.430	23.920	20.700	18.910	15.920	9.990	5.650
Apr	35.080	22.230	20.440	18.620	17.370	14.860	12.190	9.040	6.700	3.620
May	18.610	14.450	12.380	10.840	10.120	8.740	7.110	5.790	4.510	2.580
Jun	12.030	9.420	8.850	7.630	6.350	5.130	4.860	3.960	3.010	1.800
Jul	11.680	7.510	6.750	5.610	4.570	4.230	3.600	3.260	2.240	1.510
Aug	11.460	6.290	5.050	4.270	3.900	3.220	3.060	2.640	2.090	1.140
Sep	12.790	7.710	5.280	4.550	4.040	3.440	2.910	2.300	1.670	1.050

Hydrological time series

Total Runoff : Niv3

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	14.089	24.377	31.529	19.652	12.542	23.224	13.651	8.254	5.053	4.172	2.534	4.752	163.831
1921	13.863	24.489	36.848	33.893	27.580	17.154	10.150	7.915	5.380	4.737	3.675	4.876	190.561
1922	14.092	24.489	36.848	39.385	34.533	23.068	14.288	8.731	5.030	3.910	2.869	2.107	209.350
1923	7.200	14.230	33.038	32.475	26.750	22.938	14.134	8.841	5.642	4.702	3.035	4.815	177.800
1924	9.520	24.302	35.305	26.630	18.240	23.915	14.617	8.944	5.746	5.025	3.655	4.860	180.757
1925	10.440	9.790	13.625	14.584	19.620	19.654	7.753	5.423	4.249	3.752	2.063	4.642	115.596
1926	7.040	7.360	7.565	7.800	13.411	14.970	9.110	6.341	2.605	3.278	2.825	2.376	84.682
1927	12.200	13.210	15.919	33.671	22.150	12.205	8.280	6.073	2.476	1.614	1.138	4.310	133.247
1928	6.730	9.370	10.049	7.710	6.572	23.570	14.416	8.426	5.522	4.987	3.570	4.876	105.799
1929	14.055	24.077	24.936	35.281	30.695	22.309	12.723	7.424	3.255	1.945	1.920	3.400	182.019
1930	3.210	10.200	12.285	9.284	7.964	6.222	4.457	4.533	1.089	1.435	1.019	1.021	62.719
1931	1.810	2.550	7.160	5.460	20.060	20.556	11.412	8.553	5.414	4.566	2.838	2.015	92.394
1932	3.640	9.270	27.989	25.241	17.160	8.773	6.169	5.528	2.562	3.945	3.382	2.938	116.596
1933	3.580	22.680	36.848	39.385	27.030	19.591	13.207	8.910	5.725	5.026	3.675	4.863	190.521
1934	8.870	21.830	29.787	26.620	21.150	16.274	10.630	8.620	5.668	4.819	3.306	2.721	160.296
1935	3.310	3.520	10.724	35.779	32.052	22.620	11.430	8.914	5.770	5.001	3.501	3.670	146.289
1936	7.040	24.326	23.991	38.357	35.991	23.345	13.944	8.352	4.630	3.208	1.556	4.450	189.191
1937	6.090	5.250	27.963	21.025	15.160	11.067	13.801	8.743	5.585	5.023	3.653	4.676	128.036
1938	13.863	17.900	27.531	31.596	38.098	23.896	14.553	8.861	5.556	4.985	3.646	4.819	195.305
1939	13.781	24.382	31.271	34.884	21.310	14.858	10.601	8.866	5.770	5.038	3.668	4.805	179.232
1940	6.960	14.190	32.094	20.464	12.699	9.512	10.209	8.106	4.682	3.565	2.321	2.752	127.554
1941	3.470	7.160	9.215	14.023	16.510	23.281	14.279	8.796	5.723	4.952	3.553	4.694	115.654
1942	10.270	24.045	32.670	31.969	23.910	20.545	14.617	8.946	5.770	5.038	3.675	4.876	186.332
1943	13.992	24.050	27.547	23.731	34.982	22.130	9.552	6.675	5.498	5.015	3.608	4.793	181.573
1944	12.230	10.800	9.129	9.887	6.599	15.819	8.977	6.704	3.674	2.864	1.805	1.877	90.366
1945	2.370	2.150	3.060	29.076	25.350	13.113	11.759	5.706	2.154	1.731	1.210	3.230	100.910
1946	5.600	23.753	29.919	24.638	20.560	10.521	8.177	6.961	4.520	4.050	2.428	2.162	143.288
1947	4.180	17.220	15.339	19.719	29.989	23.216	13.888	8.042	4.815	2.673	2.534	3.480	145.094
1948	7.590	20.530	19.150	31.175	19.310	21.624	14.048	8.849	5.670	4.709	2.949	2.689	158.294
1949	8.730	12.110	17.326	11.590	7.502	16.497	11.859	7.783	5.040	4.487	3.416	3.310	109.649
1950	2.930	8.720	24.987	29.789	15.870	20.618	14.352	8.860	3.148	4.137	3.675	4.864	141.951
1951	14.067	13.950	22.350	16.526	8.590	5.650	5.686	3.520	0.726	1.786	0.762	0.702	94.316
1952	1.630	15.570	17.107	9.514	31.126	22.578	13.744	5.667	1.710	1.038	0.874	1.545	122.103
1953	1.990	14.850	18.359	12.923	29.389	20.227	10.750	8.543	3.853	2.410	0.850	1.867	126.010
1954	10.890	24.241	20.510	33.186	34.763	23.915	13.515	8.058	5.440	4.809	3.402	3.360	186.088
1955	8.320	15.560	29.425	25.013	38.098	23.915	14.515	8.800	5.610	4.829	3.514	4.755	182.352
1956	14.081	24.355	33.985	26.740	29.896	23.385	14.573	8.946	5.770	5.038	3.675	4.876	195.320
1957	14.092	24.221	19.310	37.020	32.905	18.957	11.671	8.548	5.070	4.137	2.770	4.220	182.921
1958	8.040	24.489	34.027	28.950	31.715	13.784	7.006	6.513	3.285	4.664	1.440	4.654	168.566
1959	11.670	23.808	30.521	16.990	28.690	20.062	12.841	8.724	5.655	3.805	3.512	4.380	170.657
1960	13.850	24.455	36.848	38.646	32.472	21.976	14.612	8.902	5.756	5.006	3.648	4.836	211.006
1961	9.860	16.190	19.250	33.786	31.548	15.334	7.983	6.318	2.877	3.927	3.072	3.710	153.855
1962	4.960	24.420	36.848	36.657	23.510	21.891	14.407	8.895	5.770	5.038	3.675	4.865	190.936
1963	11.930	24.445	22.020	34.697	27.150	8.389	4.776	4.143	1.648	1.910	2.078	2.282	145.468
1964	14.092	24.471	34.830	32.511	27.560	8.486	4.708	3.779	3.090	3.348	2.178	3.950	163.003
1965	4.510	11.600	9.671	33.026	35.776	12.805	4.814	5.156	4.370	2.324	2.574	4.290	130.917
1966	6.840	4.870	23.200	31.723	38.098	23.871	14.411	8.211	4.980	4.448	3.189	3.440	167.280
1967	4.820	24.300	32.280	28.360	19.660	23.400	11.600	7.078	4.193	4.348	3.368	3.090	166.497
1968	2.370	15.860	23.210	30.321	19.700	23.755	14.617	8.946	5.711	4.903	3.538	4.708	157.640
1969	14.092	20.640	26.219	25.920	33.097	20.760	5.701	4.928	2.111	2.020	3.103	3.600	162.193
1970	13.889	19.780	30.416	38.514	27.120	17.502	14.576	8.946	5.759	4.997	3.591	4.593	189.683
1971	13.150	24.212	35.956	39.385	38.045	23.915	14.617	8.940	5.754	4.995	3.615	3.770	216.355
1972	4.120	9.940	13.650	15.663	37.233	23.908	14.617	8.946	5.734	4.965	3.675	4.876	147.327
1973	14.028	23.765	30.338	37.464	34.555	21.951	14.520	8.780	5.480	5.038	3.668	3.960	203.547
1974	4.450	24.369	34.341	36.490	35.941	23.844	14.594	8.930	5.698	4.863	3.334	4.876	201.730
1975	10.610	24.072	36.848	38.275	38.098	23.915	14.617	8.946	5.770	5.030	3.648	4.490	214.319
1976	13.570	17.720	35.203	38.827	36.555	23.515	14.282	8.665	4.266	3.605	2.499	4.550	203.257
1977	13.856	13.110	20.790	39.385	37.172	23.868	14.483	8.760	5.280	4.751	3.580	4.738	189.772
1978	14.092	23.932	33.141	18.447	10.237	6.494	4.161	3.817	0.773	1.401	3.492	4.803	124.791
1979	10.580	15.910	22.130	32.740	34.103	17.818	5.218	3.942	0.870	1.118	0.826	2.815	148.069
1980	2.780	13.980	26.655	30.357	34.782	18.609	4.898	4.221	2.080	2.134	2.574	4.852	147.921
1981	6.290	11.130	9.215	22.338	7.748	19.401	6.399	4.143	1.200	0.820	0.691	0.787	90.161
1982	6.980	6.140	3.500	5.330	2.000	3.110	3.620	3.650	1.509	0.802	1.339	0.958	38.938
1983	5.150	24.489	30.861	39.385	38.098	23.748	14.585	8.895	5.701	5.038	3.675	4.876	204.501
1984	13.990	17.500	20.290	22.509	38.098	23.643	12.905	7.371	4.080	2.505	1.268	1.229	165.388
1985	7.190	15.480	14.085	35.912	32.910	22.952	14.404	8.315	4.953	3.733	1.673	1.383	162.992
1986	4.340	5.480	12.769	19.504	9.819	21.976	9.347	4.979	5.093	1.311	3.615	4.876	103.110
1987	14.092	24.489	31.557	33.120	33.659	23.698	13.078	7.145	4.763	4.916	3.444	3.470	197.429
1988	14.092	15.560	36.326	37.382	36.548	23.818	11.577	7.566	5.721	4.755	3.244	1.686	198.275
1989	3.980	24.489	34.832	24.813	12.213	20.459	6.948	5.226	1.155	1.038	0.915	1.163	137.231
1990	3.250	5.670	18.965	39.385	37.089	23.785	13.078	8.100	5.547	4.854	3.084	2.830	165.637
1991	11.740	11.970	26.677	26.080	28.920	8.609	4.059	2.580	0.678	0.733	0.644	0.702	123.393
1992	1.170	13.860	11.308	8.887	13.668	20.334	6.948	4.644	0.826	0.787	0.692	1.039	84.164
1993	14.092	22.360	28.962	33.845	33.475	23.780	13.947	7.199	3.061	2.362	1.791	1.012	185.885
1994	11.500	11.340	30.944	11.623	7.351	7.263	5.731	4.857	1.133	1.026	0.705	0.708	94.183
1995	7.540	24.145	36.848	39.385	38.098	23.915	14.613	8.946	5.766	5.038	3.666	4.040	212.001
1996	13.975	16.380	26.836	34.871	15.350	23.915	14.617	8.946	5.770	5.038	3.674	4.869	174.241
1997	13.989	24.489	33.418	37.092	31.750	23.497	13.078	7.524	4.595	3.418	1.752	1.645	196.247
1998	6.340	16.070	35.755	29.627	15.470	7.332	4.122	3.947	0.782	0.980	1.086	1.075	122.588
1999	3.540	4.940	36.848	39.385	38.098	23.706	14.617	8.946	5.770	5.027	3.627	4.745	189.249
2000	13.779												

A.95. Niv3 – Category C**Summary table**

Desktop Version 2, Generated on 2015-03-11

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv3

Annual Flows (Mill. cu. m or index values):

MAR = 229,202

S.Dev. = 115,162

CV = 0,502

Q75 = 5,150

Q75/MMF = 0,270

BFI Index = 0,424

CV(JJA+JFM) Index = 1,542

Ecological Category = C

Total IFR = 117,652 (51,33 %MAR)

Maint. Lowflow = 81,711 (35,65 %MAR)

Drought Lowflow = 40,133 (17,51 %MAR)

Maint. Highflow = 35,941 (15,68 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	13,065	17,033	1,304	5,169	1,431	3,447	8,616
Nov	24,762	20,173	0,815	9,572	5,711	5,917	15,489
Dec	34,102	24,437	0,717	10,555	5,656	6,720	17,275
Jan	38,847	44,765	1,152	12,463	6,954	6,943	19,406
Feb	36,711	28,460	0,775	11,909	5,573	6,866	18,776
Mar	29,046	20,205	0,696	10,214	5,087	4,116	14,330
Apr	18,154	11,204	0,617	6,984	3,668	1,356	8,340
May	10,576	5,940	0,562	5,860	3,583	0,102	5,961
Jun	7,032	3,726	0,530	2,618	0,622	0,000	2,618
Jul	5,870	4,325	0,737	2,294	0,645	0,412	2,706
Aug	4,928	3,633	0,737	2,009	0,607	0,000	2,009
Sep	6,109	8,977	1,469	2,063	0,597	0,061	2,124

Rule curve

Desktop Version 2, Generated on 2015-03-11

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv3

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	11.039	10.951	10.750	10.336	8.730	6.980	5.150	3.980	2.656	1.170
Nov	20.412	20.307	20.089	19.657	17.220	15.480	13.110	9.940	6.140	2.550
Dec	27.772	25.965	24.349	22.791	21.091	18.220	15.819	12.482	8.762	3.500
Jan	30.868	28.993	27.306	25.664	23.846	20.774	18.124	14.440	10.335	5.460
Feb	29.939	28.080	26.401	24.755	22.917	19.806	17.071	13.270	9.033	6.367
Mar	19.153	19.051	18.840	18.421	17.638	16.270	14.095	11.072	7.703	5.584
Apr	11.052	10.983	10.826	10.502	9.897	8.901	7.495	5.876	4.492	3.620
May	8.061	8.018	7.922	7.722	7.349	6.735	5.868	4.871	4.018	2.580
Jun	3.542	3.515	3.451	3.321	3.077	2.676	2.109	1.457	0.900	0.641
Jul	3.588	3.561	3.498	3.368	3.126	2.727	2.164	1.516	0.962	0.704
Aug	2.719	2.699	2.654	2.559	2.383	2.092	1.683	1.211	0.807	0.620
Sep	2.864	2.842	2.794	2.692	2.504	2.193	1.755	1.250	0.818	0.617

Reserve Flows without High Flows

Oct	6.995	6.942	6.821	6.572	6.108	5.344	4.265	3.022	1.960	1.170
Nov	13.353	13.296	13.178	12.944	12.505	11.739	10.522	8.830	6.140	2.550
Dec	14.720	14.652	14.512	14.234	13.714	12.806	11.362	9.356	7.120	3.500
Jan	17.382	17.304	17.143	16.824	16.225	15.181	13.519	11.211	8.638	5.460
Feb	16.604	16.522	16.351	16.013	15.380	14.275	12.518	10.076	7.355	5.642
Mar	14.241	14.173	14.032	13.751	13.226	12.309	10.850	8.824	6.565	5.144
Apr	9.462	9.406	9.281	9.022	8.538	7.742	6.618	5.325	4.218	3.620
May	7.942	7.900	7.806	7.611	7.247	6.648	5.803	4.829	3.997	2.580
Jun	3.542	3.515	3.451	3.321	3.077	2.676	2.109	1.457	0.900	0.641
Jul	3.105	3.081	3.028	2.918	2.713	2.375	1.898	1.348	0.878	0.660
Aug	2.719	2.699	2.654	2.559	2.383	2.092	1.683	1.211	0.807	0.620
Sep	2.792	2.771	2.724	2.626	2.442	2.141	1.715	1.225	0.806	0.611

Natural Duration curves

Oct	27.010	18.470	13.570	10.890	8.730	6.980	5.150	3.980	2.930	1.170
Nov	51.620	37.330	31.160	22.360	17.220	15.480	13.110	9.940	6.140	2.550
Dec	73.050	43.610	38.340	34.880	30.340	23.210	19.310	17.070	11.130	3.500
Jan	68.900	52.160	39.130	34.410	30.390	26.080	24.430	16.990	14.720	5.460
Feb	78.790	53.590	40.960	34.350	28.920	23.910	19.660	15.470	12.720	7.010
Mar	55.300	42.520	33.240	28.430	23.920	20.700	18.910	15.920	9.990	5.650
Apr	35.080	22.230	20.440	18.620	17.370	14.860	12.190	9.040	6.700	3.620
May	18.610	14.450	12.380	10.840	10.120	8.740	7.110	5.790	4.510	2.580
Jun	12.030	9.420	8.850	7.630	6.350	5.130	4.860	3.960	3.010	1.800
Jul	11.680	7.510	6.750	5.610	4.570	4.230	3.600	3.260	2.240	1.510
Aug	11.460	6.290	5.050	4.270	3.900	3.220	3.060	2.640	2.090	1.140
Sep	12.790	7.710	5.280	4.550	4.040	3.440	2.910	2.300	1.670	1.050

Hydrological time series

Total Runoff : Niv3

Desktop (Version 2) Modified Flow Data for Ecological Category C													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	11.037	20.325	23.944	16.086	10.710	18.635	10.400	7.478	3.134	3.008	1.929	2.798	129.485
1921	10.866	20.412	27.772	26.549	22.085	14.095	8.037	7.193	3.321	3.387	2.719	2.864	149.300
1922	11.039	20.412	27.772	30.868	27.092	18.519	10.831	7.880	3.121	2.832	2.161	1.373	163.900
1923	7.200	14.230	25.027	25.465	21.569	18.421	10.727	7.973	3.470	3.363	2.276	2.831	142.553
1924	9.520	20.265	26.659	21.166	15.281	19.153	11.052	8.059	3.529	3.580	2.705	2.855	143.825
1925	10.175	9.790	11.277	12.470	17.021	15.965	6.419	5.096	2.676	2.727	1.603	2.738	97.957
1926	7.040	7.360	7.016	7.800	11.342	12.462	7.336	5.868	1.739	2.409	2.131	1.518	74.020
1927	10.599	13.210	12.890	26.377	19.144	10.393	6.775	5.643	1.665	1.295	0.962	2.604	111.557
1928	6.730	9.370	8.762	7.710	6.367	18.894	10.917	7.623	3.402	3.554	2.647	2.864	88.841
1929	11.011	20.089	19.243	27.626	24.105	17.951	9.774	6.780	2.109	1.516	1.504	2.160	143.868
1930	3.157	10.200	10.334	8.690	7.380	5.918	4.195	4.346	0.875	1.175	0.880	0.789	57.938
1931	1.810	2.550	6.881	5.460	17.526	16.640	8.889	7.730	3.340	3.272	2.139	1.324	77.561
1932	3.640	9.270	21.416	20.072	14.423	7.826	5.350	5.184	1.714	2.856	2.516	1.821	96.088
1933	3.580	19.672	27.772	30.868	21.743	15.918	10.100	8.031	3.517	3.580	2.719	2.857	150.358
1934	8.870	19.573	22.697	21.159	18.767	13.437	8.362	7.787	3.485	3.441	2.464	1.704	131.745
1935	3.310	3.520	9.237	28.016	25.146	18.183	8.901	8.034	3.542	3.564	2.598	2.312	116.364
1936	7.040	20.285	18.570	30.051	28.252	18.726	10.598	7.561	2.893	2.363	1.251	2.655	150.246
1937	6.090	5.250	21.398	17.065	12.627	9.542	10.502	7.890	3.438	3.578	2.704	2.756	102.839
1938	10.866	17.900	21.091	24.805	29.939	19.138	11.010	7.989	3.421	3.553	2.699	2.834	155.244
1939	10.804	20.328	23.759	27.316	18.827	12.378	8.341	7.994	3.542	3.588	2.714	2.826	142.417
1940	6.960	14.190	24.349	16.665	10.824	8.379	8.077	7.354	2.923	2.602	1.781	1.721	105.824
1941	3.470	7.160	8.176	12.070	13.980	18.678	10.824	7.935	3.516	3.531	2.635	2.766	94.740
1942	10.114	20.064	24.763	25.085	19.806	16.631	11.052	8.061	3.542	3.588	2.719	2.864	148.292
1943	10.963	20.068	21.102	18.995	27.449	17.817	7.634	6.149	3.388	3.573	2.673	2.819	142.630
1944	10.603	10.800	8.116	9.120	6.387	13.097	7.245	6.173	2.348	2.132	1.424	1.250	78.695
1945	2.278	2.150	3.060	22.913	20.700	11.072	9.123	5.333	1.482	1.373	1.012	2.018	82.515
1946	5.600	19.835	22.791	19.642	18.095	9.133	6.705	6.390	2.830	2.926	1.855	1.403	117.207
1947	4.180	17.220	12.482	16.133	23.567	18.630	10.560	7.300	2.998	2.004	1.929	2.214	119.217
1948	7.590	19.369	15.294	24.489	16.630	17.438	10.669	7.980	3.486	3.368	2.216	1.687	130.215
1949	8.730	12.110	13.879	10.335	7.044	13.603	9.191	7.082	3.127	3.219	2.540	2.085	92.945
1950	2.656	8.720	19.279	23.447	13.543	16.686	10.874	7.988	2.049	2.985	2.719	2.858	113.805
1951	11.021	13.950	17.561	13.856	7.835	5.584	5.024	3.520	0.668	1.410	0.701	0.617	81.746
1952	1.630	15.570	13.725	8.855	24.434	18.152	10.463	5.301	1.229	0.908	0.779	1.071	102.117
1953	1.990	14.850	14.606	11.286	23.110	16.393	8.442	7.722	2.450	1.827	0.763	1.244	104.683
1954	10.336	20.218	16.478	26.006	27.274	19.153	10.308	7.313	3.355	3.435	2.530	2.127	148.532
1955	8.320	15.560	22.439	19.909	29.939	19.153	10.983	7.938	3.451	3.448	2.608	2.799	146.548
1956	11.031	20.307	25.709	21.245	23.496	18.756	11.023	8.061	3.542	3.588	2.719	2.864	152.341
1957	11.039	20.202	15.819	28.993	25.810	15.443	9.064	7.726	3.144	2.985	2.092	2.570	144.887
1958	8.040	20.412	25.739	22.820	24.884	11.575	5.915	6.013	2.127	3.338	1.171	2.744	134.778
1959	10.531	19.878	23.222	14.440	22.774	16.270	9.854	7.874	3.477	2.762	2.606	2.629	136.318
1960	10.856	20.385	27.772	30.280	25.472	17.702	11.049	8.024	3.535	3.567	2.700	2.842	164.184
1961	9.860	16.190	15.622	26.466	24.755	12.734	6.574	5.849	1.894	2.844	2.302	2.333	127.423
1962	4.960	20.358	27.772	28.707	19.656	17.638	10.910	8.018	3.542	3.588	2.719	2.858	150.728
1963	10.570	20.378	17.307	27.171	21.818	7.539	4.410	4.018	1.193	1.493	1.613	1.467	118.978
1964	11.039	20.399	26.317	25.492	22.072	7.611	4.364	3.711	2.015	2.456	1.683	2.457	129.617
1965	4.510	11.600	8.496	25.884	28.080	10.842	4.436	4.871	2.745	1.770	1.956	2.596	107.786
1966	6.840	4.870	18.212	24.900	29.939	19.119	10.913	7.442	3.092	3.193	2.383	2.193	133.098
1967	4.820	20.264	24.482	22.399	17.071	18.767	9.016	6.489	2.644	3.126	2.507	1.903	133.488
1968	2.278	15.860	18.220	23.846	17.117	19.033	11.052	8.061	3.509	3.498	2.625	2.774	127.872
1969	11.039	19.386	20.157	20.611	25.961	16.793	5.034	4.679	1.457	1.567	2.323	2.276	131.283
1970	10.886	19.250	23.147	30.176	21.799	14.355	11.025	8.061	3.536	3.561	2.661	2.712	151.168
1971	10.704	20.195	27.129	30.868	29.897	19.153	11.052	8.056	3.534	3.560	2.678	2.364	169.188
1972	4.120	9.940	11.295	13.240	29.246	19.147	11.052	8.061	3.522	3.540	2.719	2.864	118.746
1973	10.991	19.845	23.090	29.344	27.109	17.683	10.987	7.922	3.378	3.588	2.714	2.462	159.113
1974	4.450	20.319	25.965	28.575	28.212	19.099	11.037	8.048	3.501	3.471	2.483	2.864	158.024
1975	10.235	20.085	27.772	29.986	29.939	19.153	11.052	8.061	3.542	3.583	2.701	2.670	168.780
1976	10.750	17.720	26.586	30.424	28.703	18.853	10.826	7.824	2.686	2.628	1.905	2.692	161.598
1977	10.860	13.110	16.632	30.868	29.197	19.117	10.962	7.904	3.264	3.396	2.654	2.790	150.752
1978	11.039	19.975	25.102	15.226	9.033	6.121	3.995	3.743	0.695	1.152	2.592	2.825	101.499
1979	10.225	15.910	17.392	25.664	26.752	14.592	4.709	3.848	0.750	0.962	0.746	1.755	123.304
1980	2.555	13.980	20.467	23.873	27.290	15.183	4.492	4.083	1.440	1.643	1.956	2.851	119.814
1981	6.290	11.130	8.176	18.001	7.222	15.776	5.506	4.018	0.938	0.763	0.652	0.663	79.134
1982	6.980	6.140	3.500	5.330	2.000	3.110	3.620	3.650	1.114	0.750	1.101	0.755	38.051
1983	5.150	20.412	23.465	30.868	29.939	19.027	11.031	8.018	3.503	3.588	2.719	2.864	160.586
1984	10.962	17.500	16.357	18.124	29.939	18.949	9.897	6.735	2.579	1.891	1.052	0.901	134.887
1985	7.190	15.480	11.600	28.121	25.815	18.432	10.909	7.530	3.077	2.714	1.333	0.984	133.184
1986	4.340	5.480	10.675	15.980	8.729	17.702	7.495	4.721	3.157	1.091	2.678	2.864	84.913
1987	11.039	20.412	23.964	25.955	26.401	18.990	10.013	6.545	2.969	3.507	2.559	2.209	154.562
1988	11.039	15.560	27.396	29.279	28.697	19.080	9.000	6.900	3.515	3.399	2.421	1.147	157.431
1989	3.980	20.412	26.318	19.767	10.470	16.568	5.876	4.929	0.913	0.908	0.807	0.865	111.814
1990	3.229	5.670	15.032	30.868	29.130	19.055	10.013	7.349	3.415	3.465	2.310	1.763	131.299
1991	10.549	11.970	20.483	20.774	22.917	7.703	3.926	2.580	0.641	0.704	0.620	0.617	103.484
1992	1.170	13.860	9.648	8.408	11.529	16.474	5.876	4.440	0.725	0.740	0.653	0.799	74.321
1993	11.039	19.657	22.109	26.512	26.257	19.051	10.600	6.591	1.999	1.795	1.414	0.784	147.808
1994	10.489	11.340	23.525	10.359	6.934	6.697	5.054	4.619	0.900	0.900	0.662	0.620	82.099
1995	7.540	20.143	27.772	30.868	29.939	19.153	11.050	8.061	3.541	3.588	2.713	2.504	166.870
1996	10.951	16.380	20.595	27.306	13.021	19.153	11.052	8.061	3.542	3.588	2.719	2.860	139.229
1997	10.961	20.412	25.301	29.050	24.912	18.840	10.013	6.864	2.873	2.503	1.387	1.125	154.241
1998	6.340	16.070	26.984	23.326	13.270	6.748	3.969	3.853	0.700	0.870	0.926	0.818	103.873
1999	3.540	4.940	27.772	30.868	29.939	18.996	11.052	8.061	3.542	3.581	2.686	2.794	147.772
2000	10.802												

A.96. Niv3 – Category D**Summary table**

Desktop Version 2, Generated on 2015-03-11

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv3

Annual Flows (Mill. cu. m or index values):

MAR = 229,202

S.Dev. = 115,162

CV = 0,502

Q75 = 5,150

Q75/MMF = 0,270

BFI Index = 0,424

CV(JJA+JFM) Index = 1,542

Ecological Category = D

Total IFR = 67,697 (29,54 %MAR)

Maint. Lowflow = 40,133 (17,51 %MAR)

Drought Lowflow = 40,133 (17,51 %MAR)

Maint. Highflow = 27,564 (12,03 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	13,065	17,033	1,304	1,431	1,431	2,785	4,216
Nov	24,762	20,173	0,815	5,711	5,711	4,667	10,377
Dec	34,102	24,437	0,717	5,656	5,656	5,132	10,788
Jan	38,847	44,765	1,152	6,954	6,954	5,120	12,074
Feb	36,711	28,460	0,775	5,573	5,573	5,843	11,416
Mar	29,046	20,205	0,696	5,087	5,087	2,847	7,933
Apr	18,154	11,204	0,617	3,668	3,668	0,606	4,274
May	10,576	5,940	0,562	3,583	3,583	0,064	3,647
Jun	7,032	3,726	0,530	0,622	0,622	0,000	0,622
Jul	5,870	4,325	0,737	0,645	0,645	0,422	1,066
Aug	4,928	3,633	0,737	0,607	0,607	0,000	0,607
Sep	6,109	8,977	1,469	0,597	0,597	0,079	0,676

Rule curve

Desktop Version 2, Generated on 2015-03-11

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv3

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	6.614	6.567	6.461	6.242	5.832	5.159	4.207	3.112	2.176	1.170
Nov	18.344	18.254	18.065	17.693	16.995	15.480	13.110	9.940	6.140	2.550
Dec	21.243	19.873	18.659	17.509	16.285	14.224	12.597	10.337	7.818	3.500
Jan	23.808	22.431	21.200	20.013	18.717	16.530	14.699	12.156	9.321	5.460
Feb	22.460	20.906	19.537	18.255	16.910	14.649	12.935	10.552	7.896	6.225
Mar	14.387	14.320	14.180	13.904	13.387	12.484	11.047	9.052	6.827	5.428
Apr	7.664	7.626	7.541	7.365	7.036	6.496	5.732	4.854	4.102	3.620
May	6.736	6.706	6.638	6.497	6.235	5.802	5.192	4.489	3.888	2.580
Jun	1.154	1.149	1.138	1.114	1.070	0.996	0.893	0.775	0.673	0.626
Jul	1.795	1.784	1.760	1.711	1.618	1.466	1.251	1.004	0.792	0.694
Aug	1.125	1.120	1.109	1.086	1.042	0.971	0.871	0.755	0.656	0.610
Sep	1.220	1.214	1.201	1.173	1.122	1.038	0.918	0.781	0.663	0.609

Reserve Flows without High Flows

Oct	2.655	2.643	2.617	2.562	2.460	2.292	2.054	1.781	1.548	1.170
Nov	11.385	11.343	11.255	11.081	10.756	10.187	9.283	8.027	6.140	2.550
Dec	11.276	11.234	11.147	10.975	10.653	10.090	9.194	7.950	6.563	3.500
Jan	13.864	13.813	13.706	13.494	13.098	12.405	11.304	9.775	8.070	5.460
Feb	11.111	11.070	10.985	10.815	10.497	9.942	9.060	7.834	6.468	5.608
Mar	10.141	10.104	10.025	9.871	9.581	9.074	8.269	7.150	5.903	5.118
Apr	6.802	6.772	6.705	6.564	6.303	5.872	5.264	4.564	3.966	3.620
May	6.645	6.616	6.549	6.412	6.157	5.736	5.142	4.458	3.874	2.580
Jun	1.154	1.149	1.138	1.114	1.070	0.996	0.893	0.775	0.673	0.626
Jul	1.196	1.190	1.178	1.154	1.108	1.032	0.925	0.802	0.697	0.648
Aug	1.125	1.120	1.109	1.086	1.042	0.971	0.871	0.755	0.656	0.610
Sep	1.107	1.102	1.091	1.068	1.026	0.956	0.857	0.743	0.646	0.600

Natural Duration curves

Oct	27.010	18.470	13.570	10.890	8.730	6.980	5.150	3.980	2.930	1.170
Nov	51.620	37.330	31.160	22.360	17.220	15.480	13.110	9.940	6.140	2.550
Dec	73.050	43.610	38.340	34.880	30.340	23.210	19.310	17.070	11.130	3.500
Jan	68.900	52.160	39.130	34.410	30.390	26.080	24.430	16.990	14.720	5.460
Feb	78.790	53.590	40.960	34.350	28.920	23.910	19.660	15.470	12.720	7.010
Mar	55.300	42.520	33.240	28.430	23.920	20.700	18.910	15.920	9.990	5.650
Apr	35.080	22.230	20.440	18.620	17.370	14.860	12.190	9.040	6.700	3.620
May	18.610	14.450	12.380	10.840	10.120	8.740	7.110	5.790	4.510	2.580
Jun	12.030	9.420	8.850	7.630	6.350	5.130	4.860	3.960	3.010	1.800
Jul	11.680	7.510	6.750	5.610	4.570	4.230	3.600	3.260	2.240	1.510
Aug	11.460	6.290	5.050	4.270	3.900	3.220	3.060	2.640	2.090	1.140
Sep	12.790	7.710	5.280	4.550	4.040	3.440	2.910	2.300	1.670	1.050

Hydrological time series

Total Runoff : Niv3

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	6.613	18.269	18.358	13.292	8.947	14.045	7.310	6.326	1.080	1.574	0.931	1.202	97.946
1921	6.522	18.344	21.243	20.651	16.306	11.047	6.027	6.125	1.114	1.718	1.125	1.220	111.442
1922	6.614	18.344	21.243	23.808	20.095	13.968	7.543	6.609	1.078	1.506	0.988	0.815	122.610
1923	5.243	14.230	19.167	19.871	15.931	13.904	7.487	6.674	1.141	1.709	1.016	1.211	107.584
1924	5.982	18.218	20.398	16.809	11.813	14.387	7.664	6.735	1.152	1.792	1.121	1.218	107.287
1925	6.156	9.790	9.521	10.796	12.903	12.282	5.148	4.648	0.996	1.466	0.851	1.186	75.744
1926	5.182	7.360	6.635	7.763	9.343	9.969	5.646	5.192	0.826	1.345	0.980	0.854	61.095
1927	6.381	13.210	10.614	20.526	14.234	8.603	5.341	5.033	0.812	0.919	0.694	1.149	87.517
1928	5.011	9.370	7.818	7.710	6.225	14.216	7.590	6.428	1.129	1.782	1.107	1.220	69.605
1929	6.599	18.065	14.958	21.433	17.779	13.593	6.970	5.834	0.893	1.004	0.827	1.028	108.983
1930	2.441	10.200	8.883	8.185	6.859	5.648	3.941	4.119	0.668	0.873	0.674	0.656	53.148
1931	1.810	2.550	6.543	5.460	13.220	12.728	6.489	6.503	1.117	1.674	0.983	0.801	59.878
1932	2.820	9.270	16.520	16.045	11.275	6.908	4.568	4.710	0.821	1.515	1.075	0.936	76.463
1933	2.768	17.705	21.243	23.808	16.057	12.251	7.147	6.715	1.150	1.792	1.125	1.218	112.979
1934	5.859	17.621	17.442	16.804	13.998	10.613	6.203	6.543	1.144	1.739	1.062	0.904	99.931
1935	2.536	3.520	8.139	21.717	18.554	13.747	6.496	6.717	1.154	1.786	1.095	1.070	86.530
1936	5.182	18.234	14.475	23.207	21.049	14.105	7.417	6.384	1.036	1.327	0.765	1.163	114.345
1937	4.660	5.250	16.506	13.968	10.149	8.041	7.365	6.616	1.135	1.791	1.121	1.191	77.793
1938	6.522	17.087	16.285	19.400	22.460	14.377	7.640	6.686	1.132	1.781	1.120	1.212	115.703
1939	6.489	18.272	18.221	21.207	14.035	9.914	6.192	6.689	1.154	1.795	1.124	1.210	106.301
1940	5.147	14.190	18.659	13.692	9.018	7.273	6.048	6.238	1.041	1.418	0.895	0.909	84.530
1941	2.674	7.160	7.421	10.519	10.997	14.073	7.540	6.647	1.149	1.773	1.104	1.193	72.250
1942	6.124	18.044	18.969	19.600	14.649	12.722	7.664	6.736	1.154	1.795	1.125	1.220	109.802
1943	6.574	18.047	16.293	15.301	20.388	13.505	5.808	5.390	1.126	1.789	1.113	1.208	106.542
1944	6.383	10.800	7.380	8.482	6.237	10.388	5.597	5.407	0.937	1.239	0.807	0.781	64.438
1945	1.976	2.150	3.060	18.052	15.299	9.052	6.616	4.815	0.779	0.949	0.706	0.990	64.444
1946	4.424	17.846	17.509	15.748	13.577	7.771	5.304	5.559	1.025	1.542	0.913	0.823	92.041
1947	3.313	16.995	10.337	13.325	17.386	14.042	7.396	6.200	1.055	1.190	0.931	1.043	93.213
1948	5.393	17.444	12.242	19.175	12.658	13.255	7.455	6.679	1.144	1.711	1.001	0.900	99.057
1949	5.832	12.110	11.284	9.321	6.649	10.723	6.653	6.047	1.079	1.654	1.001	1.008	73.440
1950	2.176	8.720	14.984	18.433	10.723	12.758	7.566	6.685	0.882	1.565	1.125	1.218	86.836
1951	6.604	13.950	13.777	11.752	7.145	5.428	4.391	3.520	0.631	0.963	0.630	0.609	69.400
1952	1.630	15.570	11.179	8.299	18.019	13.726	7.344	4.792	0.733	0.772	0.649	0.732	83.445
1953	1.840	14.850	11.775	9.978	17.052	12.565	6.247	6.497	0.955	1.123	0.645	0.779	84.305
1954	6.242	18.177	13.044	20.259	20.244	14.387	7.260	6.210	1.120	1.736	1.079	1.019	110.775
1955	5.675	15.560	17.256	15.932	22.460	14.387	7.626	6.650	1.138	1.741	1.097	1.202	110.724
1956	6.610	18.254	19.680	16.865	17.334	14.125	7.648	6.736	1.154	1.795	1.125	1.220	112.544
1957	6.614	18.163	12.597	22.431	19.071	11.938	6.584	6.500	1.082	1.565	0.971	1.140	108.656
1958	5.567	18.344	19.703	17.986	18.353	9.383	4.875	5.294	0.896	1.699	0.745	1.188	104.033
1959	6.345	17.883	17.825	12.156	16.807	12.484	7.013	6.605	1.142	1.479	1.097	1.156	101.992
1960	6.517	18.321	21.243	23.376	18.804	13.429	7.661	6.710	1.153	1.787	1.120	1.214	121.335
1961	6.046	16.190	12.464	20.591	18.255	10.149	5.233	5.178	0.854	1.511	1.022	1.076	98.568
1962	4.038	18.298	21.243	22.222	14.555	13.387	7.586	6.706	1.154	1.795	1.125	1.218	113.328
1963	6.365	18.315	13.606	21.102	16.112	6.719	4.058	3.888	0.726	0.995	0.853	0.840	93.579
1964	6.614	18.332	20.140	19.890	16.297	6.766	4.033	3.673	0.876	1.363	0.871	1.109	99.963
1965	3.638	11.600	7.638	20.171	20.906	8.900	4.072	4.489	1.009	1.101	0.938	1.147	85.608
1966	5.076	4.870	14.218	19.468	22.460	14.365	7.588	6.300	1.072	1.644	1.042	1.038	99.141
1967	3.914	18.217	18.759	17.687	12.935	14.132	6.558	5.629	0.991	1.618	1.073	0.959	102.470
1968	1.976	15.860	14.224	18.717	12.963	14.308	7.664	6.736	1.148	1.760	1.102	1.196	97.653
1969	6.614	17.459	15.614	16.417	19.190	12.829	4.397	4.354	0.775	1.023	1.028	1.060	100.759
1970	6.533	17.342	17.770	23.299	16.098	11.219	7.649	6.736	1.153	1.784	1.111	1.179	111.873
1971	6.437	18.157	20.754	23.808	22.424	14.387	7.664	6.733	1.153	1.784	1.115	1.084	125.498
1972	3.253	9.940	9.533	11.327	21.877	14.383	7.664	6.736	1.151	1.776	1.125	1.220	89.985
1973	6.589	17.855	17.729	22.689	20.109	13.416	7.628	6.638	1.124	1.795	1.124	1.111	117.805
1974	3.585	18.263	19.873	22.126	21.016	14.351	7.655	6.727	1.147	1.750	1.067	1.220	118.780
1975	6.189	18.062	21.243	23.160	22.460	14.387	7.664	6.736	1.154	1.793	1.120	1.167	125.134
1976	6.461	17.063	20.343	23.482	21.425	14.189	7.541	6.570	0.998	1.428	0.925	1.173	121.598
1977	6.519	13.110	13.148	23.808	21.836	14.363	7.615	6.626	1.104	1.721	1.109	1.200	112.158
1978	6.614	17.967	19.222	12.699	7.896	5.783	3.832	3.695	0.636	0.865	1.094	1.209	81.512
1979	6.183	15.910	13.663	20.013	19.821	11.375	4.220	3.769	0.646	0.792	0.641	0.918	97.950
1980	2.122	13.980	15.837	18.736	20.257	11.766	4.102	3.935	0.771	1.052	0.938	1.217	94.713
1981	4.756	11.130	7.421	14.615	6.761	12.157	4.652	3.888	0.680	0.716	0.618	0.621	68.015
1982	5.159	6.140	3.500	5.330	2.000	3.110	3.620	3.650	0.712	0.711	0.728	0.646	35.306
1983	4.207	18.344	18.003	23.808	22.460	14.304	7.652	6.706	1.147	1.795	1.125	1.220	120.771
1984	6.573	17.033	12.962	14.699	22.460	14.252	7.036	5.802	0.979	1.147	0.716	0.686	104.346
1985	5.239	15.480	9.740	21.793	19.074	13.911	7.586	6.362	1.070	1.461	0.785	0.709	103.210
1986	3.474	5.480	9.113	13.219	7.706	13.429	5.732	4.384	1.084	0.841	1.115	1.220	66.798
1987	6.614	18.344	18.373	20.222	19.537	14.279	7.099	5.668	1.050	1.764	1.086	1.042	115.079
1988	6.614	15.560	20.957	22.641	21.420	14.339	6.550	5.918	1.149	1.722	1.052	0.753	118.675
1989	3.112	18.344	20.140	15.834	8.797	12.680	4.854	4.531	0.675	0.772	0.656	0.676	91.071
1990	2.479	5.670	12.064	23.808	21.780	14.322	7.099	6.235	1.131	1.748	1.024	0.920	98.282
1991	6.354	11.970	15.849	16.530	16.910	6.827	3.795	2.580	0.626	0.694	0.610	0.609	83.354
1992	1.170	13.860	8.418	7.990	12.618	4.854	4.186	0.641	0.708	0.618	0.658	0.658	65.180
1993	6.614	17.693	17.018	20.624	19.423	14.320	7.418	5.701	0.873	1.110	0.805	0.654	112.253
1994	6.323	11.340	18.048	9.338	6.580	6.163	4.408	4.312	0.673	0.769	0.620	0.610	69.182
1995	5.374	18.112	21.243	23.808	22.460	14.387	7.662	6.736	1.154	1.795	1.123	1.122	124.976
1996	6.567	16.380	15.930	21.200	10.396	14.387	7.664	6.736	1.154	1.795	1.125	1.219	104.552
1997	6.573	18.344	19.372	22.473	18.374	14.180	7.099	5.893	1.032	1.380	0.798	0.747	116.267
1998	4.780	16.070	20.644	18.347	10.552	6.196	3.818	3.772	0.636	0.757	0.685	0.663	86.922
1999	2.734	4.940	21.243	23.808	22.460	14.283	7.664	6.736	1.154	1.792	1.117	1.201	109.132
2000	6.489	18.344	20.817	15.336	12.326	7.767	7.497	6.260	0.996	1.251	0.755	1.215	99.054
2001	6.277												

A.97. Niv4 – Category B**Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv4

Annual Flows (Mill. cu. m or index values):

MAR = 392.393
 S.Dev. = 209.901
 CV = 0.535
 Q75 = 8.040
 Q75/MMF = 0.246
 BFI Index = 0.380
 CV(JJA+JFM) Index = 2.321

Ecological Category = B

Total IFR = 289.776 (73.85 %MAR)
 Maint. Lowflow = 205.942 (52.48 %MAR)
 Drought Lowflow = 68.707 (17.51 %MAR)
 Maint. Highflow = 83.834 (21.36 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
			CV	Maint.	Drought	Maint.	
Oct	23.279	25.648	1.102	13.575	2.451	7.243	20.818
Nov	46.874	41.614	0.888	22.527	9.776	13.715	36.242
Dec	57.505	42.135	0.733	26.894	9.683	15.937	42.831
Jan	70.186	121.945	1.737	32.253	11.905	14.876	47.129
Feb	65.152	67.192	1.031	30.917	9.541	14.569	45.485
Mar	48.826	51.612	1.057	25.265	8.708	9.838	35.103
Apr	27.701	19.278	0.696	17.665	6.279	3.584	21.249
May	16.012	9.369	0.585	11.936	6.134	0.954	12.890
Jun	10.624	6.914	0.651	7.903	1.066	0.408	8.311
Jul	9.249	13.463	1.456	6.267	1.104	1.047	7.314
Aug	6.836	7.054	1.032	4.987	1.038	0.310	5.297
Sep	10.149	17.046	1.680	5.753	1.022	1.354	7.107

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv4

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	24.125	23.926	23.472	19.910	14.590	12.970	10.560	7.460	5.166	2.530
Nov	41.925	41.696	41.220	40.277	35.830	28.410	22.520	17.770	13.160	5.210
Dec	63.084	58.792	54.944	51.221	47.134	40.231	32.130	25.690	17.204	10.480
Jan	67.427	63.379	59.699	55.480	45.250	39.420	33.900	29.696	19.842	9.410
Feb	65.223	61.248	57.624	50.030	38.860	33.630	30.210	25.300	17.525	11.251
Mar	40.943	40.710	40.227	39.269	37.477	32.840	26.770	22.450	14.739	9.887
Apr	25.024	24.849	24.451	23.628	22.094	19.568	16.001	11.896	8.385	6.753
May	15.316	15.229	15.032	14.625	13.450	12.130	10.857	8.260	6.810	4.790
Jun	9.877	9.794	9.604	9.211	8.480	7.274	5.573	3.615	1.940	1.161
Jul	8.625	8.554	8.394	8.062	6.240	5.190	4.070	3.329	1.913	1.255
Aug	6.292	6.242	6.129	5.895	5.370	4.410	3.720	2.320	1.566	1.050
Sep	8.348	8.279	8.123	7.802	6.510	5.360	4.340	3.214	1.841	0.700

Reserve Flows without High Flows

Oct	16.204	16.072	15.775	15.159	14.012	12.122	9.454	6.383	3.758	2.530
Nov	26.924	26.796	26.531	26.006	25.022	23.304	20.573	16.777	12.546	5.210
Dec	32.131	31.964	31.616	30.929	29.641	27.392	23.816	18.847	13.308	8.823
Jan	38.535	38.337	37.925	37.110	35.582	32.914	28.672	22.776	16.206	9.410
Feb	36.927	36.724	36.300	35.461	33.890	31.146	26.784	20.721	13.964	9.713
Mar	30.183	30.023	29.691	29.033	27.801	25.650	22.229	17.475	12.176	8.842
Apr	21.104	20.963	20.642	19.979	18.742	16.705	13.829	10.519	7.688	6.372
May	14.272	14.194	14.018	13.654	12.975	11.857	10.278	8.260	6.810	4.790
Jun	9.431	9.352	9.170	8.796	8.098	6.949	5.326	3.458	1.861	1.118
Jul	7.480	7.419	7.281	6.996	6.240	5.190	4.070	2.927	1.710	1.144
Aug	5.953	5.906	5.800	5.580	5.170	4.410	3.541	2.320	1.505	1.050
Sep	6.867	6.811	6.685	6.423	5.936	5.132	3.999	2.694	1.578	0.700

Natural Duration curves

Oct	52.510	33.280	25.660	19.910	14.590	12.970	10.560	7.460	5.250	2.530
Nov	103.420	70.930	56.030	40.620	35.830	28.410	22.520	17.770	13.160	5.210
Dec	113.410	78.660	64.270	53.750	48.080	40.540	32.130	25.690	22.260	10.480
Jan	117.080	89.640	68.110	55.480	45.250	39.420	33.900	30.600	24.190	9.410
Feb	149.710	91.180	63.500	50.030	38.860	33.630	30.210	25.300	21.360	12.120
Mar	86.480	65.540	52.850	47.000	44.470	32.840	26.770	23.270	16.440	11.510
Apr	45.100	39.010	30.820	27.480	24.750	22.680	19.520	14.770	10.440	7.140
May	32.060	23.650	18.140	15.050	13.450	12.130	10.880	8.260	6.810	4.790
Jun	20.640	15.010	12.350	10.310	8.970	7.570	6.360	5.530	3.960	2.690
Jul	16.050	10.680	9.310	8.290	6.240	5.190	4.070	3.630	2.730	1.480
Aug	15.650	8.310	7.380	6.030	5.370	4.410	3.720	2.320	1.810	1.050
Sep	18.290	12.450	9.050	7.890	6.510	5.360	4.340	3.320	1.960	0.700

Hydrological time series

Total Runoff : Niv4

Desktop (Version 2) Modified Flow Data for Ecological Category B													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	24.062	41.503	52.834	18.059	25.350	40.914	23.957	14.120	7.515	3.930	1.949	7.974	262.167
1921	23.610	41.925	63.084	47.360	28.850	17.500	7.992	6.030	3.058	2.859	6.268	7.460	255.995
1922	23.472	41.925	54.944	56.878	38.490	22.778	12.269	8.180	1.850	1.561	1.182	0.700	264.230
1923	11.550	17.380	61.213	30.731	45.190	40.213	23.980	14.883	8.534	4.150	2.730	8.318	268.873
1924	14.590	41.167	63.084	37.950	21.740	40.943	25.024	15.231	9.556	8.232	5.744	8.329	291.590
1925	19.240	17.950	25.017	33.190	22.117	40.533	16.571	10.490	6.936	4.010	1.583	8.129	205.766
1926	9.820	11.440	24.460	16.537	45.940	38.575	18.148	8.920	1.774	6.780	5.480	3.750	191.623
1927	23.710	28.160	45.632	67.368	32.270	15.631	7.792	4.790	1.161	1.010	1.545	7.260	236.329
1928	12.960	19.910	24.803	14.697	12.041	40.943	24.722	15.008	9.692	8.524	5.290	8.348	196.936
1929	24.125	41.255	44.305	61.054	50.030	28.040	12.277	7.500	1.518	1.453	3.530	4.110	279.197
1930	2.980	16.880	25.690	14.671	16.007	14.209	11.896	8.580	1.620	1.913	1.566	0.780	116.792
1931	2.530	4.400	13.630	9.410	61.248	40.415	24.096	15.292	9.860	8.419	4.270	3.214	196.784
1932	9.890	40.277	55.717	59.064	57.302	32.530	14.941	8.900	1.940	4.070	3.310	1.841	289.782
1933	5.810	41.921	63.084	67.427	37.130	40.562	24.969	15.316	9.877	8.625	6.292	8.287	329.301
1934	7.460	40.692	58.804	40.290	30.450	20.637	11.069	13.220	8.834	5.190	3.020	2.280	241.946
1935	4.000	5.210	16.744	64.043	49.370	40.566	22.094	15.316	9.877	8.463	4.390	6.480	246.553
1936	22.200	41.878	30.214	67.427	65.223	39.944	20.910	11.610	3.615	2.675	1.418	8.209	315.325
1937	15.760	13.000	50.024	31.510	27.330	19.400	25.024	15.243	9.794	8.605	6.217	5.630	227.573
1938	24.094	28.410	59.555	65.667	65.223	40.943	24.830	15.178	9.637	8.604	6.277	8.348	356.765
1939	23.076	41.925	52.046	61.254	25.920	32.940	24.051	15.229	9.877	8.625	6.270	8.207	309.421
1940	12.500	35.830	63.084	43.210	36.780	25.629	24.086	14.701	5.105	5.180	4.200	4.990	275.295
1941	7.480	21.120	27.140	37.730	30.640	40.013	17.283	15.204	9.874	8.603	6.107	7.802	228.995
1942	21.570	41.466	57.771	28.670	26.810	32.840	25.024	15.316	9.877	8.625	6.292	8.348	282.608
1943	23.926	41.717	55.823	59.206	65.216	37.824	15.243	7.380	9.716	8.530	4.550	8.334	337.465
1944	24.065	20.230	12.951	40.180	16.242	40.853	22.145	13.310	9.265	8.133	6.125	6.140	219.639
1945	6.420	6.300	9.840	35.540	57.689	39.382	25.024	11.770	7.498	6.240	5.704	8.241	219.649
1946	15.810	41.696	53.207	41.660	55.592	26.480	19.665	13.580	5.904	3.880	2.110	3.570	283.155
1947	14.090	40.759	48.669	63.479	65.223	40.943	25.024	14.834	9.413	2.069	6.129	8.194	338.826
1948	13.480	41.521	36.100	67.427	57.624	39.248	24.849	15.246	9.704	7.070	3.320	4.240	319.830
1949	14.260	36.500	56.561	52.610	31.240	40.477	24.978	15.206	9.712	8.524	6.278	8.205	304.551
1950	7.190	13.320	47.134	59.733	30.450	40.227	25.014	14.294	9.436	8.479	6.292	8.340	269.907
1951	24.053	19.870	45.980	16.245	19.721	10.155	8.385	7.130	7.069	5.880	5.803	5.100	175.392
1952	9.160	22.570	51.600	22.914	29.250	26.200	23.471	10.950	7.020	6.610	5.360	5.670	220.775
1953	8.010	24.920	34.310	32.600	50.480	39.128	24.965	15.316	9.810	8.590	6.015	6.650	260.793
1954	19.850	31.260	39.160	66.246	64.955	40.943	18.432	11.460	9.429	8.603	6.242	8.081	324.660
1955	12.160	17.770	53.174	46.300	65.223	40.868	20.959	13.450	9.379	7.410	5.895	7.890	300.479
1956	23.926	40.585	54.586	39.830	56.589	37.477	23.945	14.813	9.211	8.625	6.292	8.348	324.227
1957	24.125	40.689	16.552	63.379	55.865	22.450	22.094	14.289	6.597	4.110	2.860	7.130	280.141
1958	10.560	41.750	51.221	57.501	40.780	19.070	6.836	12.770	7.610	5.490	5.810	7.937	267.336
1959	10.820	32.520	48.085	19.842	56.396	35.256	24.530	15.041	7.550	3.940	5.190	7.949	267.119
1960	20.900	41.925	63.084	57.644	38.860	28.250	24.857	15.077	9.775	8.581	6.277	6.230	321.460
1961	13.410	35.840	32.720	29.696	22.096	21.501	10.949	10.280	5.395	5.400	4.590	5.000	196.876
1962	7.980	41.760	58.320	55.190	29.780	31.320	12.460	5.570	9.877	8.625	6.292	8.321	275.495
1963	13.510	38.310	23.303	62.702	31.300	9.887	9.735	6.320	3.223	5.330	5.510	4.800	213.929
1964	24.125	40.825	53.288	33.900	30.210	11.118	7.124	6.010	4.459	5.860	4.520	7.260	228.700
1965	6.960	10.700	12.120	49.010	59.317	14.449	6.927	7.320	3.615	4.680	3.970	4.590	183.657
1966	7.810	8.510	21.031	33.240	63.470	40.479	23.521	14.847	9.447	8.062	6.083	6.510	243.009
1967	5.166	40.769	42.501	15.215	11.251	25.960	14.209	10.857	8.480	8.161	6.176	7.972	196.716
1968	3.980	17.370	17.204	33.520	13.602	40.943	25.024	15.299	9.809	7.880	3.930	8.123	196.684
1969	24.125	36.840	43.481	20.949	19.225	11.047	6.753	5.430	2.037	1.698	2.600	4.290	178.474
1970	19.910	31.450	28.738	58.865	24.190	36.459	24.990	15.316	9.877	8.478	5.590	4.630	268.493
1971	23.064	41.611	62.416	67.427	64.546	40.867	24.660	15.288	9.848	8.383	4.620	2.320	365.050
1972	3.490	30.300	15.839	25.144	65.223	39.269	24.898	15.206	9.218	5.010	6.156	8.348	248.102
1973	23.257	41.146	49.455	67.427	33.630	30.880	23.353	14.715	7.817	8.265	5.976	2.570	308.492
1974	6.460	41.850	57.184	63.442	59.600	35.703	24.689	15.136	8.316	4.540	2.097	8.348	327.365
1975	13.550	36.210	63.084	59.699	62.441	40.710	24.787	15.316	9.851	8.145	4.410	2.340	340.543
1976	23.549	26.650	40.169	57.833	61.470	37.307	22.021	12.940	4.526	2.419	1.949	8.205	299.037
1977	12.970	16.780	29.993	67.427	57.804	37.958	24.451	15.032	8.419	5.900	5.898	7.967	290.600
1978	24.125	41.264	41.842	34.490	25.300	25.698	18.189	13.350	5.573	3.329	6.230	8.279	247.669
1979	23.754	36.320	40.231	62.381	60.912	29.610	10.052	7.470	2.584	1.355	1.208	8.090	283.966
1980	6.810	41.515	52.592	55.480	51.530	24.736	9.097	6.810	8.507	7.510	6.114	8.297	278.998
1981	15.460	31.800	17.567	39.840	12.843	36.954	22.201	13.150	3.998	2.641	1.387	1.270	199.111
1982	24.078	19.560	11.430	7.570	3.790	9.887	9.097	13.150	8.654	5.380	6.202	5.360	124.159
1983	11.170	41.925	46.465	67.427	55.571	40.792	24.546	14.625	9.604	8.625	6.292	8.348	335.390
1984	23.879	25.250	28.892	25.497	65.223	39.871	16.001	6.850	1.325	1.370	1.050	0.970	236.178
1985	17.930	15.910	32.130	62.149	49.410	36.007	22.959	13.830	7.352	4.830	2.320	1.520	266.347
1986	5.002	9.450	44.250	25.417	17.525	37.597	24.185	14.999	9.058	5.410	6.292	8.348	207.533
1987	24.125	41.220	31.230	39.420	59.158	38.284	19.873	10.310	8.884	8.320	6.189	5.930	292.942
1988	24.125	31.930	62.076	30.711	63.495	39.389	23.628	14.573	9.737	8.554	5.370	2.859	316.447
1989	14.400	41.925	56.878	45.250	28.850	26.770	18.784	12.130	3.223	1.590	3.720	2.943	256.463
1990	12.330	24.040	47.516	67.427	61.682	40.759	24.054	15.242	9.877	8.625	6.276	6.280	324.108
1991	9.950	13.160	35.490	33.920	39.590	17.045	7.829	5.580	1.161	1.255	0.720	0.650	166.349
1992	3.130	24.910	50.925	24.007	35.390	39.451	22.347	14.020	7.274	3.620	3.850	4.340	233.265
1993	24.125	36.660	59.528	45.050	30.840	40.724	21.911	9.230	2.326	1.404	1.208	1.010	274.016
1994	23.345	29.020	58.792	43.050	12.690	22.568	13.666	10.875	5.699	3.214	1.932	1.350	226.200
1995	23.980	41.813	63.084	66.779	65.223	40.943	24.891	15.294	9.832	8.578	6.222	3.700	370.343
1996	23.870	22.520	49.426	61.805	36.820	40.943	25.024	15.316	9.877	8.625	6.292	8.326	308.844
1997	23.969	41.912	31.120	56.889	37.840	35.113	15.889	11.000	4.382	2.457	1.200	1.773	263.546
1998	19.590	34.490	61.881	46.550	23.880	14.739	11.514	10.640	5.935	3.514	4.500	3.670	240.904

A.98. Niv4 – Category C**Summary table**

Desktop Version 2, Generated on 2015-03-25

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv4

Annual Flows (Mill. cu. m or index values):

MAR = 392,393
 S.Dev. = 209,901
 CV = 0,535
 Q75 = 8,040
 Q75/MMF = 0,246
 BFI Index = 0,380
 CV(JJA+JFM) Index = 2,321

Ecological Category = C

Total IFR = 201,420 (51,33 %MAR)
 Maint. Lowflow = 139,888 (35,65 %MAR)
 Drought Lowflow = 68,707 (17,51 %MAR)
 Maint. Highflow = 61,532 (15,68 %MAR)

Monthly Distributions (Mill. cu. m.)
 Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows	High Flows	Total Flows		
			CV	Maint.	Drought	Maint.	
Oct	23,279	25,648	1,102	8,849	2,451	5,901	14,751
Nov	46,874	41,614	0,888	16,387	9,776	10,130	26,517
Dec	57,505	42,135	0,733	18,070	9,683	11,505	29,575
Jan	70,186	121,945	1,737	21,336	11,905	11,887	33,223
Feb	65,152	67,192	1,031	20,389	9,541	11,755	32,144
Mar	48,826	51,612	1,057	17,486	8,708	7,047	24,533
Apr	27,701	19,278	0,696	11,956	6,279	2,321	14,278
May	16,012	9,369	0,585	10,032	6,134	0,174	10,206
Jun	10,624	6,914	0,651	4,482	1,066	0,000	4,482
Jul	9,249	13,463	1,456	3,928	1,104	0,705	4,633
Aug	6,836	7,054	1,032	3,440	1,038	0,000	3,440
Sep	10,149	17,046	1,680	3,532	1,022	0,105	3,637

Rule curve

Desktop Version 2, Generated on 2015-03-25

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv4

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	18.899	18.748	18.404	17.695	14.590	12.970	10.560	7.460	4.548	2.530
Nov	34.946	34.766	34.392	33.652	32.266	28.410	22.520	17.770	13.160	5.210
Dec	47.545	44.452	41.685	39.018	36.107	31.193	27.082	21.369	15.001	10.480
Jan	52.845	49.635	46.748	43.937	40.825	35.565	31.027	24.722	17.694	9.410
Feb	51.256	48.073	45.199	42.381	38.860	33.630	29.225	22.718	15.465	10.901
Mar	32.789	32.615	32.253	31.537	30.196	27.854	24.131	18.956	13.188	9.559
Apr	18.922	18.803	18.535	17.979	16.944	15.239	12.832	10.060	7.691	6.589
May	13.800	13.727	13.562	13.220	12.581	11.530	10.047	8.260	6.810	4.790
Jun	6.065	6.017	5.909	5.685	5.268	4.581	3.611	2.495	1.541	1.097
Jul	6.143	6.096	5.988	5.766	5.351	4.668	3.705	2.595	1.646	1.205
Aug	4.656	4.621	4.543	4.381	4.079	3.582	2.881	2.073	1.382	1.050
Sep	4.903	4.866	4.782	4.609	4.286	3.754	3.004	2.139	1.400	0.700

Reserve Flows without High Flows

Oct	11.975	11.884	11.678	11.252	10.457	9.149	7.301	5.174	3.356	2.510
Nov	22.860	22.763	22.560	22.159	21.409	20.098	18.014	15.118	11.889	5.210
Dec	25.200	25.085	24.845	24.369	23.479	21.924	19.452	16.017	12.189	9.780
Jan	29.758	29.625	29.349	28.802	27.778	25.989	23.145	19.193	14.788	9.410
Feb	28.425	28.285	27.992	27.414	26.331	24.439	21.431	17.250	12.591	9.659
Mar	24.381	24.264	24.022	23.542	22.643	21.072	18.576	15.106	11.239	8.806
Apr	16.198	16.104	15.889	15.445	14.617	13.255	11.331	9.116	7.222	6.341
May	13.596	13.525	13.364	13.030	12.407	11.382	9.934	8.260	6.810	4.790
Jun	6.065	6.017	5.909	5.685	5.268	4.581	3.611	2.495	1.541	1.097
Jul	5.315	5.275	5.184	4.996	4.644	4.065	3.249	2.308	1.504	1.130
Aug	4.656	4.621	4.543	4.381	4.079	3.582	2.881	2.073	1.382	1.050
Sep	4.780	4.745	4.663	4.495	4.181	3.665	2.936	2.097	1.379	0.700

Natural Duration curves

Oct	52.510	33.280	25.660	19.910	14.590	12.970	10.560	7.460	5.250	2.530
Nov	103.420	70.930	56.030	40.620	35.830	28.410	22.520	17.770	13.160	5.210
Dec	113.410	78.660	64.270	53.750	48.080	40.540	32.130	25.690	22.260	10.480
Jan	117.080	89.640	68.110	55.480	45.250	39.420	33.900	30.600	24.190	9.410
Feb	149.710	91.180	63.500	50.030	38.860	33.630	30.210	25.300	21.360	12.120
Mar	86.480	65.540	52.850	47.000	44.470	32.840	26.770	23.270	16.440	11.510
Apr	45.100	39.010	30.820	27.480	24.750	22.680	19.520	14.770	10.440	7.140
May	32.060	23.650	18.140	15.050	13.450	12.130	10.880	8.260	6.810	4.790
Jun	20.640	15.010	12.350	10.310	8.970	7.570	6.360	5.530	3.960	2.690
Jul	16.050	10.680	9.310	8.290	6.240	5.190	4.070	3.630	2.730	1.480
Aug	15.650	8.310	7.380	6.030	5.370	4.410	3.720	2.320	1.810	1.050
Sep	18.290	12.450	9.050	7.890	6.510	5.360	4.340	3.320	1.960	0.700

Hydrological time series

Total Runoff : Niv4

Desktop (Version 2) Modified Flow Data for Ecological Category C													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	18.851	34.614	40.172	16.422	22.792	32.768	18.201	12.849	4.718	3.185	1.648	4.702	210.922
1921	18.509	34.946	47.545	41.467	27.565	15.626	7.426	6.030	2.178	2.280	4.639	4.509	212.718
1922	18.404	34.946	41.685	44.571	38.490	19.202	10.312	8.180	1.490	1.410	1.117	0.700	220.507
1923	11.550	17.380	46.196	25.461	41.017	32.243	18.217	13.437	5.299	3.781	2.337	4.887	221.805
1924	14.590	34.351	47.545	34.912	18.530	32.789	18.922	13.729	5.881	5.880	4.276	4.893	236.298
1925	17.528	17.950	20.495	29.166	18.804	32.483	13.216	9.817	4.388	3.482	1.394	4.785	173.509
1926	9.820	11.440	20.103	15.337	41.228	31.018	14.281	8.840	1.446	5.460	4.129	2.512	165.614
1927	18.585	28.160	35.038	52.798	32.270	13.855	7.290	4.790	1.097	1.010	1.368	4.462	200.722
1928	12.960	19.910	20.344	14.024	11.475	32.789	18.717	13.542	5.959	6.075	4.038	4.903	164.737
1929	18.899	34.420	34.093	47.807	42.381	25.163	10.318	7.500	1.300	1.338	2.779	2.812	228.810
1930	2.980	16.880	21.369	14.006	14.360	12.792	10.060	8.580	1.358	1.646	1.382	0.780	106.194
1931	2.530	4.400	12.488	9.410	48.073	32.394	18.296	13.780	6.055	6.005	3.474	2.139	159.044
1932	9.890	33.652	42.240	46.256	44.946	27.719	12.116	8.825	1.541	3.705	2.661	1.400	234.952
1933	5.087	34.943	47.545	52.845	37.130	32.504	18.884	13.800	6.065	6.143	4.656	4.871	264.473
1934	7.460	33.978	44.460	36.350	30.331	17.600	9.503	12.398	5.470	4.668	2.507	1.653	206.378
1935	3.871	5.210	14.678	50.161	42.195	32.507	16.944	13.800	6.065	6.035	3.567	4.272	199.306
1936	17.985	34.909	24.149	52.845	51.256	32.042	16.145	11.072	2.495	2.157	1.280	4.829	251.165
1937	15.760	13.000	38.166	26.041	25.709	16.722	18.922	13.739	6.017	6.129	4.604	3.879	188.688
1938	18.875	28.410	45.002	51.447	51.256	32.789	18.791	13.685	5.928	6.129	4.645	4.903	281.859
1939	18.105	34.946	39.608	47.963	23.631	27.875	18.265	13.727	6.065	6.143	4.640	4.828	245.796
1940	12.500	32.266	47.545	38.984	36.780	21.334	18.288	13.283	3.345	4.661	3.419	3.456	235.862
1941	7.480	21.120	22.154	34.814	30.640	32.093	13.697	13.706	6.063	6.128	4.528	4.609	197.032
1942	17.905	34.586	43.717	23.991	24.943	27.854	18.922	13.800	6.065	6.143	4.656	4.903	227.484
1943	18.748	34.783	42.316	46.366	51.251	30.456	12.320	7.380	5.972	6.080	3.655	4.896	264.222
1944	18.853	20.230	12.011	36.251	14.531	32.722	16.978	12.470	5.716	5.814	4.540	4.115	184.230
1945	5.673	6.300	9.840	33.841	45.250	31.622	18.922	11.213	4.709	5.351	4.248	4.846	181.814
1946	15.810	34.766	40.439	37.586	43.607	23.380	15.305	12.633	3.800	3.038	1.765	2.356	234.485
1947	14.090	34.031	37.201	49.715	51.256	32.789	18.922	13.395	5.800	1.751	4.543	4.821	268.312
1948	13.480	34.629	29.819	52.845	45.199	31.522	18.803	13.742	5.966	5.519	2.667	2.920	257.110
1949	14.260	32.460	42.847	43.064	31.240	32.441	18.891	13.708	5.970	6.075	4.646	4.827	250.428
1950	7.072	13.320	36.107	46.774	30.331	32.253	18.915	12.940	5.813	6.045	4.656	4.899	219.126
1951	18.844	19.870	35.286	15.128	17.062	9.759	7.691	7.130	4.464	5.117	4.317	3.544	148.213
1952	9.160	22.570	39.289	19.885	28.053	22.655	17.873	10.154	4.436	5.426	4.074	3.898	187.474
1953	8.010	24.920	28.735	27.620	42.466	31.431	18.882	13.800	6.026	6.119	4.464	4.319	216.793
1954	17.680	30.776	30.766	51.906	51.041	32.789	14.472	10.940	5.809	6.128	4.621	4.760	261.688
1955	12.160	17.770	40.415	41.144	51.256	32.733	16.178	12.581	5.781	5.588	4.381	4.657	244.645
1956	18.748	33.894	41.428	35.935	44.388	30.196	18.193	13.378	5.685	6.143	4.656	4.903	257.547
1957	18.899	33.976	14.543	49.635	43.821	18.956	16.944	12.936	4.195	3.743	2.421	4.431	224.501
1958	10.560	34.809	39.018	45.048	39.774	16.532	6.645	12.040	4.772	4.863	4.321	4.682	223.066
1959	10.820	31.187	36.785	17.694	44.237	28.535	18.588	13.569	4.738	3.222	3.986	4.689	218.049
1960	17.820	34.946	47.545	45.157	38.860	25.334	18.809	13.600	6.006	6.113	4.645	4.157	262.992
1961	13.410	32.269	27.529	24.722	18.789	18.246	9.422	9.693	3.510	4.805	3.675	3.464	169.534
1962	7.980	34.816	44.113	43.849	28.700	27.188	10.441	5.570	6.065	6.143	4.656	4.889	224.410
1963	13.510	32.984	19.289	49.102	31.300	9.559	8.602	6.320	2.272	4.759	4.143	3.324	185.165
1964	18.899	34.083	40.498	31.027	29.225	10.480	6.840	6.010	2.976	5.104	3.639	4.462	193.243
1965	6.644	10.700	11.426	41.969	46.537	12.971	6.707	7.320	2.495	4.285	3.200	3.178	157.431
1966	7.810	8.510	17.692	29.297	49.850	32.442	17.907	13.406	5.819	5.766	4.511	4.286	197.297
1967	4.548	34.039	32.809	14.394	10.901	22.033	11.622	10.047	5.268	5.832	4.575	4.701	160.768
1968	3.861	17.370	15.001	30.031	12.611	32.789	18.922	13.786	6.025	5.683	3.149	4.782	164.011
1969	18.899	32.559	33.506	18.483	16.701	10.426	6.589	5.430	1.596	1.502	2.253	2.962	150.907
1970	17.695	30.838	23.112	46.103	21.028	29.435	18.898	13.800	6.065	6.045	4.180	3.205	220.403
1971	18.095	34.700	47.064	52.845	50.713	32.732	18.676	13.777	6.048	5.981	3.691	1.684	286.006
1972	3.490	30.300	14.041	21.476	51.256	31.537	18.836	13.709	5.689	4.533	4.562	4.903	204.332
1973	18.242	34.335	37.760	52.845	33.630	26.996	17.793	13.295	4.890	5.902	4.437	1.798	251.923
1974	5.712	34.887	43.295	49.686	46.762	28.869	18.696	13.649	5.175	4.152	1.750	4.903	257.535
1975	13.550	32.376	47.545	46.748	49.027	32.615	18.761	13.800	6.050	5.821	3.582	1.694	271.571
1976	18.463	26.650	31.149	45.303	48.250	30.069	16.895	12.175	3.015	1.985	1.648	4.827	240.429
1977	12.970	16.780	23.994	52.845	45.341	30.557	18.535	13.562	5.234	5.130	4.382	4.698	234.028
1978	18.899	34.427	32.340	32.040	22.718	21.386	14.308	12.502	3.611	2.595	4.612	4.866	204.304
1979	18.618	32.408	31.193	48.850	47.806	26.439	8.816	7.470	1.908	1.273	1.134	4.764	230.678
1980	6.364	34.624	39.999	43.937	42.662	20.666	8.171	6.810	5.284	5.608	4.532	4.876	223.534
1981	15.460	30.952	15.257	35.944	12.059	29.806	17.016	12.343	2.714	2.134	1.258	1.208	176.149
1982	18.863	19.560	11.168	7.570	3.790	9.559	8.171	12.343	5.368	4.792	4.593	3.754	109.531
1983	11.170	34.946	35.631	52.845	43.590	32.676	18.599	13.220	5.909	6.143	4.656	4.903	264.288
1984	18.712	25.250	23.220	21.727	51.256	31.988	12.832	6.850	1.190	1.282	1.050	0.970	196.328
1985	17.202	15.910	27.082	48.668	42.206	29.097	17.528	12.733	4.625	4.398	2.073	1.277	222.799
1986	4.423	9.450	34.054	21.670	15.465	30.286	18.355	13.534	5.598	4.811	4.656	4.903	167.206
1987	18.899	34.392	25.334	35.565	46.410	30.801	15.445	9.711	5.498	5.939	4.584	4.018	236.596
1988	18.899	30.994	46.818	25.446	49.870	31.627	17.979	13.176	5.985	6.096	4.079	1.948	252.917
1989	14.400	34.946	43.074	40.825	27.565	24.131	14.709	11.530	2.272	1.430	2.881	1.994	219.757
1990	12.330	24.040	36.379	52.845	48.420	32.651	18.267	13.739	6.065	6.143	4.645	4.180	259.703
1991	9.950	13.160	29.630	31.062	39.439	14.913	7.315	5.580	1.097	1.205	0.720	0.650	154.721
1992	3.130	24.910	38.808	20.664	35.390	31.674	17.115	12.809	4.581	2.790	3.047	3.004	197.920
1993	18.899	32.507	44.982	40.644	30.840	32.625	16.820	9.075	1.761	1.306	1.134	1.010	231.603
1994	18.308	29.020	44.452	38.840	11.947	19.044	11.255	10.062	3.683	2.518	1.636	1.230	191.996
1995	18.789	34.858	47.545	52.330	51.256	32.789	18.832	13.782	6.039	6.111	4.610	2.469	289.411
1996	18.706	22.520	37.740	48.396	36.820	32.789	18.922	13.800	6.065	6.143	4.656	4.892	251.448
1997	18.781	34.936	25.120	44.580	37.840	28.428	12.756	10.231	2.933	2.011	1.129	1.364	220.109
1998	17.615	31.829	46.678	41.220	20.556	13.188	9.803	9.905	3.818	2.719	3.629	2.443	203.403

A.99. Niv4 – Category D**Summary table**

Desktop Version 2, Generated on 2015-03-25

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv4

Annual Flows (Mill. cu. m or index values):

MAR = 392,393
 S.Dev. = 209,901
 CV = 0,535
 Q75 = 8,040
 Q75/MMF = 0,246
 BFI Index = 0,380
 CV(JJA+JFM) Index = 2,321

Ecological Category = D

Total IFR = 115,896 (29,54 %MAR)
 Maint. Lowflow = 68,707 (17,51 %MAR)
 Drought Lowflow = 68,707 (17,51 %MAR)
 Maint. Highflow = 47,190 (12,03 %MAR)

Monthly Distributions (Mill. cu. m.)
 Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)			
	Mean	SD	Low flows	High Flows	Total Flows	
			CV	Maint.	Drought	Maint.
Oct	23,279	25,648	1,102	2,451	2,451	4,768
Nov	46,874	41,614	0,888	9,776	9,776	7,989
Dec	57,505	42,135	0,733	9,683	9,683	8,786
Jan	70,186	121,945	1,737	11,905	11,905	8,765
Feb	65,152	67,192	1,031	9,541	9,541	10,003
Mar	48,826	51,612	1,057	8,708	8,708	4,874
Apr	27,701	19,278	0,696	6,279	6,279	1,037
May	16,012	9,369	0,585	6,134	6,134	0,110
Jun	10,624	6,914	0,651	1,066	1,066	0,000
Jul	9,249	13,463	1,456	1,104	1,104	0,722
Aug	6,836	7,054	1,032	1,038	1,038	0,000
Sep	10,149	17,046	1,680	1,022	1,022	0,136

Rule curve

Desktop Version 2, Generated on 2015-03-25

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv4

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	11.323	11.243	11.061	10.686	9.985	8.832	7.203	5.328	3.725	2.530
Nov	31.405	31.250	30.928	30.290	29.095	27.008	22.520	17.770	13.160	5.210
Dec	36.368	34.022	31.944	29.975	27.880	24.351	21.566	17.697	13.384	10.480
Jan	40.759	38.402	36.294	34.262	32.043	28.299	25.165	20.811	15.958	9.410
Feb	38.451	35.791	33.448	31.252	28.951	25.080	22.144	18.065	13.518	10.657
Mar	24.630	24.515	24.276	23.803	22.918	21.372	18.913	15.496	11.688	9.292
Apr	13.120	13.056	12.910	12.608	12.046	11.121	9.814	8.309	7.023	6.425
May	11.532	11.481	11.364	11.123	10.674	9.934	8.889	7.686	6.657	4.790
Jun	1.976	1.968	1.948	1.907	1.831	1.706	1.529	1.326	1.152	1.071
Jul	3.073	3.055	3.014	2.929	2.771	2.510	2.142	1.718	1.356	1.188
Aug	1.926	1.917	1.898	1.858	1.784	1.662	1.490	1.292	1.123	1.044
Sep	2.089	2.079	2.056	2.009	1.921	1.776	1.572	1.337	1.136	0.700

Reserve Flows without High Flows

Oct	4.545	4.525	4.480	4.386	4.211	3.923	3.517	3.049	2.650	2.464
Nov	19.492	19.419	19.269	18.971	18.414	17.441	15.893	13.743	11.345	5.210
Dec	19.305	19.233	19.084	18.789	18.237	17.273	15.741	13.611	11.237	9.743
Jan	23.735	23.647	23.464	23.102	22.423	21.238	19.353	16.734	13.815	9.410
Feb	19.023	18.952	18.806	18.515	17.971	17.021	15.511	13.412	11.073	9.601
Mar	17.362	17.297	17.163	16.898	16.402	15.535	14.156	12.241	10.106	8.762
Apr	11.646	11.594	11.478	11.238	10.790	10.053	9.012	7.814	6.789	6.313
May	11.376	11.326	11.212	10.978	10.540	9.820	8.803	7.633	6.632	4.790
Jun	1.976	1.968	1.948	1.907	1.831	1.706	1.529	1.326	1.152	1.071
Jul	2.047	2.038	2.017	1.975	1.896	1.767	1.584	1.373	1.193	1.110
Aug	1.926	1.917	1.898	1.858	1.784	1.662	1.490	1.292	1.123	1.044
Sep	1.896	1.887	1.868	1.829	1.756	1.636	1.467	1.272	1.105	0.700

Natural Duration curves

Oct	52.510	33.280	25.660	19.910	14.590	12.970	10.560	7.460	5.250	2.530
Nov	103.420	70.930	56.030	40.620	35.830	28.410	22.520	17.770	13.160	5.210
Dec	113.410	78.660	64.270	53.750	48.080	40.540	32.130	25.690	22.260	10.480
Jan	117.080	89.640	68.110	55.480	45.250	39.420	33.900	30.600	24.190	9.410
Feb	149.710	91.180	63.500	50.030	38.860	33.630	30.210	25.300	21.360	12.120
Mar	86.480	65.540	52.850	47.000	44.470	32.840	26.770	23.270	16.440	11.510
Apr	45.100	39.010	30.820	27.480	24.750	22.680	19.520	14.770	10.440	7.140
May	32.060	23.650	18.140	15.050	13.450	12.130	10.880	8.260	6.810	4.790
Jun	20.640	15.010	12.350	10.310	8.970	7.570	6.360	5.530	3.960	2.690
Jul	16.050	10.680	9.310	8.290	6.240	5.190	4.070	3.630	2.730	1.480
Aug	15.650	8.310	7.380	6.030	5.370	4.410	3.720	2.320	1.810	1.050
Sep	18.290	12.450	9.050	7.890	6.510	5.360	4.340	3.320	1.960	0.700

Hydrological time series

Total Runoff : Niv4

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	11.298	31.120	30.821	15.080	18.111	24.616	12.729	10.862	1.731	1.943	1.188	2.034	161.533
1921	11.117	31.405	36.368	32.501	21.103	13.298	6.879	6.030	1.268	1.598	1.922	1.981	165.470
1922	11.061	31.405	31.944	34.718	28.677	15.659	8.446	7.632	1.143	1.266	1.058	0.700	173.708
1923	7.810	17.380	35.343	21.321	30.255	24.269	12.737	11.276	1.837	2.171	1.357	2.084	167.841
1924	9.985	30.892	36.368	27.848	15.440	24.630	13.120	11.482	1.943	2.972	1.833	2.086	178.598
1925	10.597	17.950	17.105	23.880	15.611	24.428	10.023	8.727	1.671	2.057	1.126	2.057	135.231
1926	6.894	11.440	16.840	14.330	30.409	23.460	10.600	8.038	1.135	2.812	1.797	1.438	129.194
1927	11.157	26.918	27.113	40.724	24.536	12.129	6.806	4.790	1.071	1.010	1.119	1.969	159.341
1928	8.824	19.910	17.003	13.424	11.017	24.630	13.009	11.350	1.957	3.047	1.774	2.089	128.033
1929	11.323	30.952	26.434	37.065	31.252	19.595	8.449	7.174	1.108	1.238	1.465	1.520	177.575
1930	2.980	16.880	17.697	13.411	12.825	11.427	8.309	7.857	1.119	1.356	1.123	0.780	95.764
1931	2.530	4.400	11.682	9.410	35.791	24.369	12.780	11.518	1.974	3.020	1.636	1.337	120.448
1932	6.923	30.290	32.359	35.937	33.248	21.282	9.426	8.028	1.152	2.142	1.437	1.136	183.359
1933	4.010	31.403	36.368	40.759	27.670	24.442	13.100	11.532	1.976	3.073	1.926	2.080	198.339
1934	5.328	30.571	34.028	28.858	22.837	14.601	8.007	10.545	1.868	2.510	1.399	1.204	161.756
1935	3.367	5.210	13.165	38.788	31.116	24.444	12.046	11.532	1.976	3.031	1.659	1.917	148.252
1936	10.839	31.374	19.580	40.759	38.451	24.137	11.612	9.611	1.326	1.551	1.098	2.068	192.406
1937	10.139	13.000	29.362	21.722	19.939	14.022	13.120	11.489	1.968	3.068	1.913	1.810	141.552
1938	11.311	27.008	34.438	39.731	38.451	24.630	13.049	11.451	1.951	3.068	1.923	2.089	209.099
1939	10.903	31.405	30.408	37.179	18.637	21.385	12.763	11.481	1.976	3.073	1.922	2.068	183.201
1940	8.455	29.095	36.368	30.733	27.411	17.067	12.776	11.168	1.481	2.507	1.622	1.695	180.378
1941	5.358	21.120	18.229	27.780	23.386	24.170	10.284	11.466	1.976	3.067	1.894	2.009	150.739
1942	10.797	31.095	33.469	20.306	19.459	21.372	13.120	11.532	1.976	3.073	1.926	2.089	170.213
1943	11.243	31.265	32.416	36.017	38.447	23.089	9.536	7.093	1.959	3.049	1.680	2.087	197.881
1944	11.299	20.230	11.359	28.787	12.932	24.585	12.065	10.595	1.913	2.947	1.897	1.874	140.484
1945	4.321	6.300	9.840	27.108	33.489	23.859	13.120	9.710	1.729	2.771	1.826	2.073	136.145
1946	10.146	31.250	31.020	29.738	32.192	18.417	11.156	10.710	1.564	1.887	1.217	1.396	180.693
1947	9.629	30.616	28.667	38.460	38.451	24.630	13.120	11.247	1.928	1.396	1.898	2.066	202.109
1948	9.195	31.132	23.420	40.759	33.448	23.793	13.056	11.491	1.958	2.835	1.438	1.549	194.073
1949	9.750	29.262	32.813	33.639	24.124	24.400	13.103	11.467	1.959	3.047	1.923	2.068	187.556
1950	5.062	13.320	27.880	36.313	22.837	24.276	13.116	10.927	1.930	3.035	1.926	2.088	162.710
1951	11.294	19.870	27.290	14.186	14.519	9.424	7.023	6.905	1.685	2.681	1.843	1.719	118.440
1952	6.618	22.570	30.174	17.471	21.409	17.938	12.551	8.964	1.680	2.799	1.783	1.815	145.773
1953	6.137	24.920	22.686	22.812	31.316	23.733	13.098	11.532	1.969	3.064	1.879	1.930	165.077
1954	10.678	27.810	24.062	40.069	38.271	24.630	10.704	9.518	1.930	3.067	1.917	2.050	194.704
1955	8.183	17.770	31.002	32.271	38.451	24.593	11.630	10.674	1.925	2.861	1.858	2.022	183.241
1956	11.243	30.499	31.753	28.562	32.808	22.918	12.724	11.235	1.907	3.073	1.926	2.089	190.736
1957	11.323	30.569	13.074	38.402	32.360	15.496	12.046	10.924	1.636	2.156	1.378	1.960	171.325
1958	7.203	31.287	29.975	35.062	29.346	13.896	6.456	10.292	1.741	2.584	1.844	2.029	171.715
1959	7.362	28.164	28.368	15.958	32.688	21.821	12.939	11.369	1.735	1.958	1.762	2.030	166.154
1960	10.752	31.405	36.368	35.141	28.951	19.707	13.058	11.391	1.966	3.062	1.923	1.886	195.609
1961	9.145	29.097	21.869	20.811	15.602	15.028	7.963	8.640	1.511	2.562	1.685	1.697	135.610
1962	6.093	31.294	33.766	34.199	21.815	20.932	8.516	5.570	1.976	3.073	1.926	2.085	171.244
1963	9.216	29.714	16.289	38.012	24.148	9.292	7.518	6.320	1.285	2.545	1.800	1.659	147.797
1964	11.323	30.661	31.063	25.165	22.144	9.900	6.561	6.010	1.414	2.676	1.676	1.969	150.563
1965	4.835	10.700	10.963	32.859	34.530	11.545	6.489	7.052	1.326	2.363	1.569	1.619	125.850
1966	5.843	8.510	15.207	23.971	37.271	24.401	12.569	11.255	1.932	2.929	1.890	1.921	147.697
1967	3.725	30.623	25.512	13.679	10.657	17.528	9.157	8.889	1.831	2.954	1.906	2.034	128.495
1968	3.361	17.370	13.384	24.478	11.729	24.630	13.120	11.523	1.969	2.897	1.556	2.056	128.073
1969	11.323	29.347	26.013	16.503	14.293	9.865	6.425	5.430	1.162	1.301	1.336	1.561	124.559
1970	10.686	27.863	18.878	35.826	17.005	22.415	13.107	11.532	1.976	3.035	1.809	1.627	165.759
1971	10.898	31.193	36.002	40.759	37.995	24.592	12.986	11.516	1.973	3.011	1.689	1.213	213.828
1972	3.221	27.540	12.734	18.570	38.451	23.803	13.074	11.468	1.908	2.458	1.903	2.089	157.218
1973	10.975	30.878	29.070	40.759	25.080	20.805	12.507	11.176	1.762	2.981	1.872	1.244	189.110
1974	4.341	31.354	33.151	38.439	34.715	22.042	12.997	11.426	1.814	2.313	1.213	2.089	195.893
1975	9.245	29.190	36.368	36.294	36.586	24.515	13.033	11.532	1.973	2.950	1.662	1.216	204.563
1976	11.092	26.372	24.321	35.247	35.939	22.834	12.019	10.388	1.421	1.485	1.188	2.068	184.374
1977	8.832	16.780	19.475	40.759	33.562	23.156	12.910	11.364	1.825	2.686	1.859	2.033	175.241
1978	11.323	30.958	25.175	25.864	18.065	17.101	10.615	10.618	1.529	1.718	1.915	2.079	156.960
1979	11.174	29.217	24.351	37.828	35.572	20.437	7.634	7.153	1.219	1.213	1.062	2.051	178.912
1980	4.687	31.128	30.695	34.262	31.467	16.625	7.284	6.657	1.834	2.869	1.896	2.081	171.484
1981	10.100	27.961	13.557	28.568	11.383	22.660	12.085	10.506	1.366	1.542	1.092	1.083	141.904
1982	11.304	19.560	10.788	7.570	3.790	9.292	7.284	10.506	1.849	2.557	1.911	1.776	88.187
1983	7.577	31.405	27.539	40.759	32.179	24.555	12.945	11.123	1.948	3.073	1.926	2.089	197.117
1984	11.224	25.250	18.951	18.743	38.451	24.101	9.814	6.688	1.088	1.217	1.044	0.970	157.542
1985	10.425	15.910	21.566	37.694	31.124	22.192	12.363	10.781	1.714	2.406	1.292	1.102	168.570
1986	3.659	9.450	26.406	18.704	13.518	22.977	12.812	11.345	1.891	2.564	1.926	2.089	127.341
1987	11.323	30.928	20.383	28.299	34.426	23.317	11.232	8.652	1.873	2.995	1.908	1.848	177.184
1988	11.323	27.998	35.815	21.311	37.288	23.862	12.608	11.092	1.962	3.055	1.784	1.285	189.384
1989	9.850	31.405	32.984	32.043	21.103	18.913	10.833	9.934	1.285	1.274	1.490	1.297	172.412
1990	8.319	24.040	28.076	40.759	36.080	24.539	12.764	11.489	1.976	3.073	1.923	1.892	194.931
1991	6.948	13.160	23.293	25.189	29.101	12.827	6.819	5.580	1.071	1.188	0.720	0.650	126.546
1992	3.123	24.910	29.824	18.009	26.382	23.893	12.139	10.834	1.706	1.793	1.531	1.572	155.717
1993	11.323	29.302	34.424	31.915	23.964	24.522	11.979	8.204	1.192	1.226	1.062	1.010	180.123
1994	11.010	27.180	34.022	30.630	11.313	15.555	8.958	8.899	1.542	1.689	1.185	1.089	153.073
1995	11.265	31.330	36.368	40.380	38.451	24.630	13.071	11.520	1.972	3.061	1.915	1.426	215.388
1996	11.221	22.520	29.055	37.496	27.441	24.630	13.120	11.532	1.976	3.073	1.926	2.086	186.076
1997	11.261	31.397	20.238	34.724	28.196	21.751	9.773	9.019	1.406	1.495	1.061	1.126	171.445
1998	10.643	28.718	35.709	32.325	16.709	11.688	8.170	8.789	1.567	1.766	1.674	1.419	159.178
1999	9.487	15.130	36.368	39.711	38.451	24.601	1						

A.100. *Niv5 – Category B***Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv5

Annual Flows (Mill. cu. m or index values):

MAR = 780.980

S.Dev. = 397.451

CV = 0.509

Q75 = 17.090

Q75/MMF = 0.263

BFI Index = 0.396

CV(JJA+JFM) Index = 2.024

Ecological Category = B

Total IFR = 576.741 (73.85 %MAR)

Maint. Lowflow = 409.886 (52.48 %MAR)

Drought Lowflow = 136.747 (17.51 %MAR)

Maint. Highflow = 166.855 (21.36 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	45.799	52.254	1.141	27.019	4.877	14.416	41.434
Nov	90.677	75.906	0.837	44.835	19.458	27.297	72.132
Dec	114.965	81.271	0.707	53.526	19.271	31.720	85.247
Jan	137.541	214.337	1.558	64.193	23.694	29.608	93.800
Feb	128.326	117.067	0.912	61.533	18.990	28.996	90.530
Mar	97.706	89.211	0.913	50.286	17.332	19.580	69.865
Apr	57.107	35.086	0.614	35.158	12.498	7.133	42.292
May	33.092	18.169	0.549	23.756	12.208	1.899	25.655
Jun	21.971	12.997	0.592	15.730	2.121	0.812	16.542
Jul	18.875	22.710	1.203	12.473	2.197	2.083	14.556
Aug	14.541	12.976	0.892	9.925	2.067	0.617	10.542
Sep	20.380	32.543	1.597	11.451	2.034	2.694	14.145

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv5

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	48.017	47.619	46.716	38.800	29.670	25.420	20.850	14.200	10.282	5.360
Nov	83.443	82.987	82.039	80.163	66.390	53.010	41.890	36.700	26.650	10.840
Dec	125.557	117.014	109.356	101.945	93.810	80.071	68.435	52.264	34.241	19.580
Jan	134.201	126.143	118.820	111.556	90.540	80.200	75.260	59.103	39.492	18.690
Feb	129.813	121.902	114.690	102.780	88.420	69.560	65.390	54.550	34.881	22.393
Mar	81.488	81.026	80.063	78.158	74.590	67.970	58.450	44.682	29.335	19.679
Apr	49.806	49.457	48.665	47.027	43.974	38.946	31.848	23.676	16.689	13.440
May	30.482	30.310	29.918	29.109	27.600	24.490	21.608	17.570	14.117	10.420
Jun	19.659	19.492	19.114	18.333	16.877	14.478	11.092	7.194	3.861	2.311
Jul	17.166	17.025	16.706	16.045	13.480	11.320	9.922	6.626	3.808	2.497
Aug	12.523	12.424	12.199	11.734	10.866	9.438	7.422	5.101	3.116	2.193
Sep	16.614	16.478	16.168	15.528	13.000	10.930	9.250	6.396	3.664	2.393

Reserve Flows without High Flows

Oct	32.250	31.989	31.396	30.171	27.887	24.126	18.817	12.705	7.479	5.049
Nov	53.587	53.333	52.805	51.759	49.801	46.382	40.945	33.391	24.970	10.840
Dec	63.950	63.618	62.926	61.558	58.994	54.518	47.401	37.511	26.487	19.551
Jan	76.697	76.303	75.483	73.859	70.818	65.508	57.065	45.332	32.254	18.690
Feb	73.497	73.091	72.248	70.578	67.451	61.990	53.308	41.242	27.793	19.331
Mar	60.073	59.756	59.094	57.785	55.333	51.051	44.242	34.781	24.235	17.599
Apr	42.004	41.723	41.084	39.763	37.302	33.247	27.524	20.935	15.302	12.682
May	28.405	28.251	27.900	27.175	25.824	23.599	20.457	16.840	13.748	10.420
Jun	18.771	18.613	18.252	17.507	16.118	13.830	10.600	6.882	3.703	2.225
Jul	14.888	14.767	14.492	13.924	12.865	11.121	8.660	5.826	3.403	2.276
Aug	11.848	11.755	11.543	11.106	10.290	8.945	7.048	4.864	2.996	2.128
Sep	13.668	13.557	13.305	12.784	11.814	10.215	7.959	5.361	3.140	2.107

Natural Duration curves

Oct	95.600	63.100	52.930	38.800	29.670	25.420	20.850	14.200	11.400	5.360
Nov	194.000	130.410	111.290	85.280	66.390	53.010	41.890	36.700	26.650	10.840
Dec	214.230	151.680	128.010	107.180	95.620	82.830	73.000	57.170	44.210	19.580
Jan	229.630	160.480	150.130	112.530	90.540	80.200	75.260	63.770	51.010	18.690
Feb	271.270	196.880	118.960	102.780	88.420	69.560	65.390	54.550	46.680	28.700
Mar	164.900	130.010	108.160	95.990	86.790	67.970	60.760	47.330	38.160	22.040
Apr	102.820	79.560	65.280	55.730	52.620	46.500	41.850	31.040	22.330	17.390
May	62.870	46.970	37.690	31.900	29.530	24.490	22.280	19.110	14.640	10.420
Jun	41.460	29.910	26.600	21.560	19.600	15.370	13.560	12.030	9.740	6.880
Jul	31.220	21.940	20.530	16.680	13.480	11.320	9.990	7.930	6.810	4.200
Aug	29.770	18.190	15.050	13.070	11.420	9.990	8.310	6.240	4.900	3.780
Sep	33.350	25.120	17.760	16.240	13.000	10.930	9.250	7.570	4.640	2.700

Hydrological time series

Total Runoff : Niv5													
Desktop (Version 2) Modified Flow Data for Ecological Category B													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	47.909	82.952	105.483	41.212	43.269	81.260	47.614	28.046	15.794	9.922	4.711	15.915	524.088
1921	47.056	83.443	125.557	103.260	68.160	39.710	21.149	16.125	13.130	10.280	12.523	16.478	556.871
1922	47.619	83.443	120.547	120.654	96.280	60.542	31.848	23.430	7.213	6.040	3.597	2.958	604.170
1923	23.430	38.670	121.832	77.710	90.300	79.329	47.969	29.792	18.357	11.430	6.328	16.509	561.656
1924	30.040	82.194	124.993	79.990	43.561	81.488	49.806	30.411	19.291	16.721	12.210	16.576	587.281
1925	37.500	35.030	44.655	56.308	47.542	78.973	27.199	19.311	14.478	9.540	3.879	16.168	390.584
1926	20.850	23.450	33.962	30.283	79.150	72.828	32.881	18.136	3.724	13.340	10.477	7.774	346.854
1927	46.835	52.810	80.071	131.833	67.530	29.635	19.282	13.270	2.342	2.497	3.116	14.520	463.742
1928	24.960	37.370	38.087	29.232	22.393	81.488	49.040	29.704	19.343	17.025	11.397	16.614	376.655
1929	48.017	82.039	86.720	118.704	102.780	65.160	27.752	17.853	4.715	3.151	6.795	9.180	572.866
1930	7.400	33.930	43.784	29.673	27.695	22.179	21.119	14.945	2.648	2.991	2.994	2.393	211.751
1931	5.360	8.730	25.777	18.690	117.672	78.392	45.780	30.424	19.573	16.410	8.898	5.888	381.594
1932	17.550	66.390	109.347	112.674	104.900	54.269	25.026	16.789	3.861	10.060	8.341	4.473	533.681
1933	11.409	83.320	125.557	134.201	79.240	79.274	49.337	30.482	19.639	17.166	12.523	16.527	658.676
1934	19.360	80.346	112.574	83.270	63.960	44.851	24.488	27.734	18.546	13.480	7.422	4.714	500.745
1935	8.516	10.840	33.158	128.437	104.920	80.269	41.542	30.482	19.659	16.874	10.147	12.780	497.624
1936	38.250	83.309	62.910	134.201	129.230	79.132	44.072	26.279	11.092	6.757	3.245	16.331	634.808
1937	28.250	23.530	99.989	63.905	52.398	35.821	49.806	30.313	19.492	17.129	12.424	13.000	446.057
1938	47.915	57.860	116.667	128.972	129.813	81.488	49.457	30.204	19.163	17.122	12.490	16.610	707.761
1939	46.076	83.404	104.246	118.820	57.760	62.709	43.974	30.310	19.659	17.166	12.496	16.382	613.002
1940	24.530	64.570	125.557	82.080	66.010	44.682	43.949	29.109	13.357	11.320	8.636	9.910	523.710
1941	13.990	36.870	40.416	67.409	59.590	79.142	41.534	30.221	19.616	17.100	12.193	15.528	433.608
1942	40.600	82.530	113.939	75.260	61.610	67.730	49.806	30.482	19.659	17.166	12.523	16.614	587.919
1943	47.705	83.012	109.356	112.716	127.669	75.125	27.956	15.444	19.374	17.047	11.003	16.550	662.956
1944	47.578	39.250	26.749	67.189	25.561	80.808	38.946	25.959	16.877	15.490	11.763	10.930	407.100
1945	10.282	11.010	16.890	79.060	113.058	73.093	49.806	22.830	13.971	11.720	9.958	16.339	428.017
1946	27.840	82.812	105.208	83.630	100.110	47.878	32.992	26.279	13.758	9.436	4.835	6.568	541.347
1947	23.990	80.163	85.270	118.276	129.813	81.488	49.537	29.276	17.932	5.455	11.968	15.949	649.117
1948	26.540	82.048	65.531	132.395	108.600	75.637	49.158	30.348	19.386	15.550	7.249	8.830	621.272
1949	28.790	63.440	106.859	88.700	50.892	77.514	49.239	30.124	19.087	16.558	12.450	15.939	559.593
1950	13.040	27.450	91.490	114.536	58.680	78.158	49.569	29.432	17.152	16.385	12.523	16.614	525.029
1951	47.892	41.890	85.818	36.728	30.234	19.679	16.472	13.300	8.371	11.300	9.438	8.031	329.153
1952	14.510	47.310	93.810	37.368	74.530	63.730	47.388	20.619	11.678	11.470	9.053	9.940	441.406
1953	13.250	49.890	62.958	53.452	100.480	74.590	49.081	30.470	19.313	16.682	10.597	11.640	492.402
1954	38.800	78.640	71.677	130.697	126.375	81.488	40.950	25.934	18.735	17.077	12.317	15.351	658.040
1955	25.420	40.560	104.889	90.340	129.813	81.488	47.027	28.874	18.785	16.045	11.734	15.857	610.831
1956	47.891	81.122	110.070	82.750	113.128	77.440	48.692	30.120	19.106	17.166	12.523	16.614	656.625
1957	48.017	81.078	41.858	129.328	114.690	51.009	41.887	28.555	15.153	10.230	6.037	14.250	582.092
1958	22.890	83.294	105.155	111.556	92.070	39.084	14.808	25.240	14.875	13.200	10.347	15.641	548.160
1959	26.890	72.890	100.108	39.492	112.012	69.570	48.400	29.903	17.189	9.263	11.103	15.373	552.192
1960	44.240	83.443	125.557	118.578	91.100	64.020	49.702	30.109	19.526	17.090	12.492	15.652	671.508
1961	28.710	66.590	61.138	79.420	66.290	45.682	22.308	20.482	10.177	11.920	9.618	10.750	433.085
1962	16.180	83.190	121.577	114.730	65.390	67.970	34.836	21.608	19.659	17.166	12.523	16.571	591.399
1963	30.920	81.048	52.264	125.810	71.160	20.972	17.729	13.196	5.488	10.700	10.177	9.500	448.964
1964	48.017	82.541	109.911	81.710	70.040	21.310	14.179	12.300	8.875	12.090	8.963	14.160	484.095
1965	14.310	26.650	25.183	103.840	117.742	29.335	13.604	14.720	9.508	9.749	8.185	10.740	383.566
1966	17.820	16.830	52.763	79.460	128.046	80.865	48.033	29.355	18.385	15.980	12.010	12.600	512.147
1967	12.200	81.393	96.421	47.780	26.081	68.330	29.229	23.330	15.816	16.003	12.199	14.610	443.393
1968	7.822	40.290	48.769	77.520	34.881	81.476	49.780	30.473	19.521	16.277	9.728	16.202	432.741
1969	48.017	72.450	87.795	53.552	69.550	31.706	13.440	12.876	3.724	3.808	6.235	9.640	412.792
1970	44.010	64.000	71.866	122.836	61.130	71.093	49.696	30.482	19.646	16.874	11.697	11.240	574.570
1971	45.610	82.951	125.098	134.201	129.813	81.480	49.634	30.459	19.606	16.706	11.082	5.786	732.425
1972	8.580	52.550	34.241	44.421	129.813	80.785	49.806	30.428	18.894	14.130	12.501	16.614	492.763
1973	47.191	81.315	101.945	134.201	89.480	67.610	48.139	29.525	17.174	17.144	12.391	6.396	652.510
1974	13.540	83.237	115.317	128.641	118.370	78.753	49.472	30.189	18.333	12.870	5.870	16.614	671.209
1975	29.670	79.551	125.557	124.709	125.451	81.457	49.806	30.482	19.659	16.960	11.513	6.999	701.814
1976	46.547	55.200	101.319	119.536	121.902	78.011	46.467	27.600	10.705	6.785	4.694	16.309	635.074
1977	33.270	36.700	59.696	134.201	118.964	80.503	48.665	29.918	17.070	14.120	11.973	15.803	600.882
1978	48.017	81.870	97.265	64.752	39.168	41.119	26.286	22.680	6.786	5.910	12.323	16.461	462.637
1979	46.716	66.990	76.081	121.914	119.055	58.450	19.375	14.117	3.003	2.616	2.287	15.207	545.811
1980	12.350	81.412	102.777	108.460	113.839	53.052	16.689	13.716	15.176	13.870	11.898	16.522	559.760
1981	28.020	55.840	32.647	80.200	25.420	72.269	36.120	23.010	6.147	2.795	2.193	2.695	367.356
1982	47.563	33.650	19.580	15.970	7.320	17.790	14.535	21.410	14.971	8.047	12.000	9.080	221.918
1983	20.850	83.443	98.180	134.201	122.967	81.194	49.109	29.680	19.114	17.166	12.523	16.614	685.043
1984	47.665	53.010	56.852	59.103	129.813	80.063	37.424	16.341	4.599	2.884	2.298	2.682	492.735
1985	32.410	37.860	56.875	126.143	107.590	73.441	47.868	27.849	15.470	11.010	4.676	3.221	544.413
1986	10.282	18.770	74.945	49.872	30.931	74.698	44.102	28.218	17.820	10.020	12.518	16.614	388.790
1987	48.017	82.987	77.995	90.540	116.181	79.611	41.690	22.690	16.929	16.555	12.233	11.800	617.227
1988	48.017	60.470	125.557	98.810	124.837	80.561	45.083	27.970	19.466	16.767	10.924	4.838	663.299
1989	24.230	83.443	117.014	88.720	54.550	56.955	29.782	22.910	5.142	2.693	6.102	4.597	496.138
1990	20.590	39.480	85.002	134.201	122.900	81.169	47.391	30.249	19.659	17.166	12.403	11.740	621.949
1991	25.730	30.470	75.649	73.780	84.590	25.984	13.976	10.420	2.311	2.497	1.920	1.640	348.967
1992	5.570	48.880	85.721	37.368	64.390	74.935	37.116	24.490	10.670	4.654	5.712	6.855	406.362
1993	48.017	73.910	117.292	99.880	83.620	81.119	45.211	20.132	5.477	3.222	3.069	2.619	583.568
1994	46.041	52.150	113.041	75.260	24.744	37.544	23.676	19.038	7.269	4.891	2.657	2.576	408.886
1995	47.209	83.136	125.557	134.201	129.813	81.488	49.716	30.482	19.593	17.142	12.454	9.250	740.040
1996	47.641	48.050	97.730	122.289	67.130	81.488	4						

A.101. Niv5 – Category C**Summary table**

Desktop Version 2, Generated on 2015-03-25

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv5

Annual Flows (Mill. cu. m or index values):

MAR = 780,980

S.Dev. = 397,451

CV = 0,509

Q75 = 17,090

Q75/MMF = 0,263

BFI Index = 0,396

CV(JJA+JFM) Index = 2,024

Ecological Category = C

Total IFR = 400,886 (51,33 %MAR)

Maint. Lowflow = 278,419 (35,65 %MAR)

Drought Lowflow = 136,747 (17,51 %MAR)

Maint. Highflow = 122,466 (15,68 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	45,799	52,254	1,141	17,613	4,877	11,746	29,359
Nov	90,677	75,906	0,837	32,616	19,458	20,161	52,777
Dec	114,965	81,271	0,707	35,965	19,271	22,899	58,863
Jan	137,541	214,337	1,558	42,465	23,694	23,659	66,124
Feb	128,326	117,067	0,912	40,580	18,990	23,397	63,976
Mar	97,706	89,211	0,913	34,801	17,332	14,026	48,827
Apr	57,107	35,086	0,614	23,797	12,498	4,620	28,417
May	33,092	18,169	0,549	19,967	12,208	0,346	20,313
Jun	21,971	12,997	0,592	8,921	2,121	0,000	8,921
Jul	18,875	22,710	1,203	7,818	2,197	1,404	9,222
Aug	14,541	12,976	0,892	6,847	2,067	0,000	6,847
Sep	20,380	32,543	1,597	7,031	2,034	0,208	7,239

Rule curve

Desktop Version 2, Generated on 2015-03-25

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv5

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	37.614	37.314	36.630	35.218	29.670	25.420	20.850	14.200	9.052	5.360
Nov	69.553	69.195	68.451	66.978	64.220	53.010	41.890	36.700	26.650	10.840
Dec	94.630	88.473	82.966	77.658	71.864	62.083	53.900	42.530	29.857	19.580
Jan	105.177	98.789	93.043	87.448	81.254	70.785	61.754	49.204	35.216	18.690
Feb	102.015	95.680	89.959	84.351	78.086	67.488	58.167	45.216	30.779	21.696
Mar	65.260	64.914	64.194	62.769	60.100	55.439	48.027	37.728	26.248	19.025
Apr	37.660	37.425	36.890	35.784	33.724	30.330	25.539	20.023	15.307	13.114
May	27.467	27.322	26.992	26.311	25.041	22.949	19.996	16.596	13.690	10.420
Jun	12.070	11.976	11.760	11.315	10.485	9.118	7.188	4.966	3.066	2.183
Jul	12.226	12.132	11.918	11.475	10.650	9.292	7.373	5.165	3.277	2.399
Aug	9.266	9.197	9.042	8.719	8.119	7.129	5.733	4.125	2.751	2.112
Sep	9.759	9.685	9.519	9.174	8.531	7.473	5.978	4.258	2.787	2.103

Reserve Flows without High Flows

Oct	23.834	23.653	23.243	22.395	20.813	18.208	14.531	10.298	6.679	4.996
Nov	45.498	45.304	44.901	44.104	42.610	40.001	35.853	30.088	23.663	10.840
Dec	50.156	49.926	49.448	48.502	46.730	43.636	38.716	31.880	24.259	19.465
Jan	59.227	58.963	58.413	57.325	55.286	51.726	46.066	38.200	29.433	18.690
Feb	56.575	56.295	55.713	54.562	52.406	48.641	42.653	34.333	25.060	19.225
Mar	48.525	48.294	47.811	46.855	45.066	41.941	36.971	30.066	22.370	17.527
Apr	32.239	32.051	31.624	30.740	29.093	26.381	22.551	18.143	14.374	12.621
May	27.061	26.919	26.598	25.933	24.694	22.653	19.772	16.455	13.620	10.420
Jun	12.070	11.976	11.760	11.315	10.485	9.118	7.188	4.966	3.066	2.183
Jul	10.579	10.499	10.318	9.943	9.243	8.092	6.466	4.594	2.993	2.249
Aug	9.266	9.197	9.042	8.719	8.119	7.129	5.733	4.125	2.751	2.112
Sep	9.514	9.443	9.281	8.946	8.322	7.295	5.844	4.173	2.745	2.081

Natural Duration curves

Oct	95.600	63.100	52.930	38.800	29.670	25.420	20.850	14.200	11.400	5.360
Nov	194.000	130.410	111.290	85.280	66.390	53.010	41.890	36.700	26.650	10.840
Dec	214.230	151.680	128.010	107.180	95.620	82.830	73.000	57.170	44.210	19.580
Jan	229.630	160.480	150.130	112.530	90.540	80.200	75.260	63.770	51.010	18.690
Feb	271.270	196.880	118.960	102.780	88.420	69.560	65.390	54.550	46.680	28.700
Mar	164.900	130.010	108.160	95.990	86.790	67.970	60.760	47.330	38.160	22.040
Apr	102.820	79.560	65.280	55.730	52.620	46.500	41.850	31.040	22.330	17.390
May	62.870	46.970	37.690	31.900	29.530	24.490	22.280	19.110	14.640	10.420
Jun	41.460	29.910	26.600	21.560	19.600	15.370	13.560	12.030	9.740	6.880
Jul	31.220	21.940	20.530	16.680	13.480	11.320	9.990	7.930	6.810	4.200
Aug	29.770	18.190	15.050	13.070	11.420	9.990	8.310	6.240	4.900	3.780
Sep	33.350	25.120	17.760	16.240	13.000	10.930	9.250	7.570	4.640	2.700

Hydrological time series

Total Runoff : Niv5

Desktop (Version 2)	Modified Flow Data for Ecological Category C												
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	37.533	69.167	80.189	36.443	36.881	65.089	36.181	25.416	9.867	7.373	3.856	9.382	417.377
1921	36.888	69.553	94.630	84.837	65.104	34.009	18.318	15.380	8.349	8.528	9.266	9.685	454.546
1922	37.314	69.553	91.018	94.476	81.515	49.592	25.539	22.160	4.977	4.773	3.084	2.407	486.407
1923	23.430	38.670	91.944	65.364	78.906	63.645	36.420	26.886	11.328	9.361	4.976	9.702	460.631
1924	30.040	68.572	94.223	70.153	37.093	65.260	37.660	27.407	11.861	11.928	9.049	9.738	472.984
1925	34.843	35.030	37.179	47.210	39.989	63.379	22.401	18.062	9.118	7.117	3.279	9.519	327.126
1926	20.850	23.450	29.661	28.648	72.877	58.782	26.236	17.073	2.988	10.562	7.849	5.000	303.975
1927	36.720	52.810	62.083	103.297	64.031	26.473	17.057	12.977	2.201	2.399	2.751	8.833	391.630
1928	24.960	37.370	32.561	27.899	21.696	65.260	37.143	26.812	11.890	12.132	8.486	9.759	315.968
1929	37.614	68.451	66.816	92.953	84.351	53.435	22.774	16.835	3.553	2.837	5.299	5.921	460.840
1930	6.887	33.930	36.567	28.213	25.552	20.896	18.297	14.387	2.375	2.729	2.666	2.103	194.602
1931	5.360	8.730	23.906	18.690	92.316	62.944	34.943	27.418	12.022	11.720	6.755	3.985	308.787
1932	17.550	64.220	82.959	88.303	85.240	44.899	20.935	15.939	3.066	7.652	6.369	3.223	440.357
1933	9.905	69.456	94.630	105.177	72.927	63.604	37.343	27.467	12.059	12.226	9.266	9.712	523.774
1934	19.360	67.122	85.278	73.893	55.818	37.854	20.571	25.153	11.436	10.650	5.733	3.353	416.222
1935	7.715	10.840	29.096	100.605	85.249	64.348	32.082	27.467	12.070	12.031	7.621	8.419	397.541
1936	35.059	69.447	50.016	105.177	101.547	63.497	33.790	23.928	7.188	5.253	2.840	9.606	507.350
1937	28.250	23.530	76.264	52.629	43.520	31.100	37.660	27.324	11.976	12.202	9.197	8.531	362.184
1938	37.537	57.860	88.224	101.029	102.015	65.260	37.425	27.232	11.788	12.197	9.243	9.757	559.566
1939	36.146	69.522	79.304	93.043	48.119	51.212	33.724	27.322	12.070	12.226	9.247	9.634	481.570
1940	24.530	63.565	94.630	72.688	59.882	37.728	33.707	26.311	8.479	9.292	6.574	6.839	444.223
1941	13.990	36.870	34.199	55.129	49.775	63.505	32.077	27.247	12.046	12.182	9.037	9.174	355.230
1942	35.458	68.836	86.260	61.754	51.957	55.267	37.660	27.467	12.070	12.226	9.266	9.759	467.980
1943	37.378	69.214	82.966	88.336	100.295	60.500	22.912	14.807	11.908	12.146	8.213	9.724	518.400
1944	37.282	39.250	24.589	54.972	24.000	64.751	30.330	23.659	10.485	11.169	8.740	7.473	336.699
1945	9.052	11.010	16.890	67.353	88.681	58.980	37.660	21.548	8.829	9.543	7.489	9.611	346.645
1946	27.840	69.057	79.992	74.258	83.186	40.119	26.311	23.928	8.707	7.048	3.941	4.351	448.739
1947	23.990	66.978	65.784	92.622	102.015	65.260	37.479	26.451	11.086	4.380	8.881	9.401	514.328
1948	26.540	68.458	51.859	103.743	86.792	60.883	37.223	27.353	11.915	11.184	5.613	5.636	497.199
1949	28.790	63.158	81.176	79.391	42.425	62.287	37.277	27.165	11.745	11.819	9.216	9.395	463.844
1950	12.752	27.450	70.212	89.729	48.952	62.769	37.500	26.583	10.641	11.703	9.266	9.759	417.315
1951	37.520	41.890	66.174	33.245	27.399	19.025	15.161	13.002	5.637	9.277	7.129	5.138	280.598
1952	14.510	47.310	71.864	33.701	70.281	52.213	36.028	19.164	7.522	9.386	6.863	6.878	375.718
1953	13.173	49.890	50.049	45.173	83.348	60.100	37.171	27.457	11.873	11.902	7.932	7.836	405.903
1954	35.218	66.009	56.180	102.394	99.257	65.260	31.683	23.638	11.544	12.167	9.123	9.079	521.550
1955	25.420	40.560	79.763	81.051	102.015	65.260	35.784	26.113	11.572	11.475	8.719	9.351	497.084
1956	37.520	67.731	83.479	73.367	88.736	62.232	36.908	27.162	11.756	12.226	9.266	9.759	520.142
1957	37.614	67.696	35.213	101.310	89.959	42.461	32.315	25.845	9.502	8.329	4.774	8.779	463.798
1958	22.890	69.435	79.954	87.448	79.678	33.540	14.038	23.260	9.344	10.474	7.759	9.235	447.055
1959	26.890	65.169	76.349	35.216	87.862	56.345	36.711	26.980	10.663	6.931	8.282	9.090	446.489
1960	35.943	69.553	94.630	92.856	79.255	52.622	37.590	27.153	11.995	12.175	9.244	9.241	532.256
1961	28.710	64.249	48.770	68.437	60.656	38.476	19.100	19.048	6.666	9.669	7.254	7.364	378.399
1962	16.180	69.354	91.760	89.877	58.167	55.439	27.556	19.996	12.070	12.226	9.266	9.736	471.628
1963	30.920	67.673	42.530	98.527	68.387	19.993	16.009	12.914	3.994	8.836	7.641	6.304	383.729
1964	37.614	68.845	83.365	72.314	67.758	20.245	13.613	12.300	5.924	9.776	6.801	8.761	407.315
1965	14.310	26.650	23.488	85.000	92.370	26.248	13.225	14.198	6.285	7.257	6.261	7.358	322.651
1966	17.820	16.830	42.881	68.557	100.597	64.794	36.463	26.518	11.344	11.432	8.911	8.327	414.474
1967	11.002	67.944	73.723	41.128	24.378	55.528	23.771	22.086	9.880	11.447	9.042	8.850	358.780
1968	7.190	40.290	40.073	65.084	30.779	65.251	37.643	27.459	11.992	11.631	7.330	9.537	354.258
1969	37.614	65.105	67.581	45.245	67.471	28.022	13.114	12.645	2.988	3.277	4.911	6.487	354.461
1970	35.913	63.359	56.313	96.187	51.168	57.484	37.586	27.467	12.063	12.031	8.694	7.631	465.896
1971	36.052	69.166	94.299	105.177	102.015	65.254	37.544	27.447	12.041	11.918	8.268	9.390	573.111
1972	7.763	52.550	29.857	38.732	102.015	64.734	37.660	27.421	11.634	10.818	9.251	9.759	402.195
1973	6.989	67.882	77.658	105.177	78.548	55.182	36.535	26.661	10.654	12.211	9.175	4.258	520.931
1974	13.540	69.391	87.252	100.767	92.870	63.214	37.435	27.220	11.315	10.267	4.658	9.759	527.688
1975	29.670	66.498	94.630	97.661	98.518	65.237	37.660	27.467	12.070	12.088	8.566	4.583	554.648
1976	36.502	55.200	77.212	93.603	95.680	62.659	35.407	25.041	6.967	5.271	3.843	9.594	506.978
1977	33.270	36.700	47.756	105.177	93.343	64.523	36.890	26.992	10.595	10.815	8.885	9.322	484.267
1978	37.614	68.318	74.325	53.234	33.898	35.063	21.785	21.125	4.733	4.686	9.128	9.676	373.583
1979	36.630	64.307	59.277	95.461	93.415	48.027	17.120	13.690	2.578	2.478	2.176	9.001	444.161
1980	11.368	67.959	78.253	86.301	89.293	43.989	15.307	13.352	9.515	10.751	8.833	9.709	444.630
1981	28.020	55.840	28.736	70.785	23.897	58.364	28.423	21.848	4.369	2.598	2.112	2.266	327.258
1982	37.271	33.650	19.580	15.970	7.320	17.790	13.854	19.829	9.399	6.117	8.904	5.840	195.524
1983	20.850	69.553	74.976	105.177	96.532	65.040	37.190	26.792	11.760	12.226	9.266	9.759	539.121
1984	37.349	53.010	45.756	49.204	102.015	64.194	29.303	15.562	3.487	2.658	2.184	2.259	406.981
1985	32.410	37.860	45.772	98.789	86.368	59.240	36.352	25.250	9.683	9.064	3.831	2.549	447.169
1986	9.052	18.770	58.478	42.620	27.906	60.181	33.810	25.561	11.023	7.493	9.263	9.759	313.914
1987	37.614	69.195	60.623	81.254	91.137	63.856	32.182	21.153	10.514	11.817	9.065	7.917	496.328
1988	37.614	60.470	94.630	83.583	98.027	64.567	34.472	25.352	11.961	11.959	8.159	3.419	534.212
1989	24.230	69.553	88.473	79.411	45.216	46.909	24.144	21.773	3.797	2.530	4.819	3.290	414.143
1990	20.590	39.480	65.593	105.177	96.478	65.021	36.030	27.270	12.070	12.226	9.183	7.887	497.006
1991	25.730	30.470	58.973	60.301	75.933	23.742	13.476	10.420	2.183	2.399	1.920	1.640	307.188
1992	5.570	48.880	66.105	33.701	56.524	60.358	29.095	22.949	6.947	3.844	4.549	4.505	343.028
1993	37.614	65.318	88.673	83.885	75.388	64.984	34.558	18.754	3.988	2.884	2.718	2.225	480.989
1994	36.119	52.150	85.614	61.754	23.406	32.389	20.023	17.833	5.009	4.003	2.433	2.202	342.933
1995	37.003	69.311	94.630	105.177	102.015	65.260	37.599	27.467	12.033	12.210	9.218	5.978	577.903
1996	37.330	48.050	74.655	95.756	62.978	65.260	37.660	27.467	12.070	12.226	9.266	9.743	492.463
1997	37.391	69.553	64.048	90.850	77.855	59.265	29.339	22.953	7.725	5.165	2.673	2.787	469

A.102. *Niv5 – Category D***Summary table**

Desktop Version 2, Generated on 2015-03-25

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv5

Annual Flows (Mill. cu. m or index values):

MAR = 780,980

S.Dev. = 397,451

CV = 0,509

Q75 = 17,090

Q75/MMF = 0,263

BFI Index = 0,396

CV(JJA+JFM) Index = 2,024

Ecological Category = D

Total IFR = 230,669 (29,54 %MAR)

Maint. Lowflow = 136,747 (17,51 %MAR)

Drought Lowflow = 136,747 (17,51 %MAR)

Maint. Highflow = 93,922 (12,03 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	45,799	52,254	1,141	4,877	4,877	9,490	14,367
Nov	90,677	75,906	0,837	19,458	19,458	15,901	35,359
Dec	114,965	81,271	0,707	19,271	19,271	17,486	36,757
Jan	137,541	214,337	1,558	23,694	23,694	17,445	41,140
Feb	128,326	117,067	0,912	18,990	18,990	19,910	38,900
Mar	97,706	89,211	0,913	17,332	17,332	9,701	27,032
Apr	57,107	35,086	0,614	12,498	12,498	2,064	14,562
May	33,092	18,169	0,549	12,208	12,208	0,219	12,427
Jun	21,971	12,997	0,592	2,121	2,121	0,000	2,121
Jul	18,875	22,710	1,203	2,197	2,197	1,436	3,633
Aug	14,541	12,976	0,892	2,067	2,067	0,000	2,067
Sep	20,380	32,543	1,597	2,034	2,034	0,271	2,305

Rule curve

Desktop Version 2, Generated on 2015-03-25

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv5

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	22.537	22.377	22.015	21.267	19.873	17.577	14.336	10.605	7.414	5.360
Nov	62.506	62.198	61.556	60.286	57.907	53.010	41.890	36.700	26.650	10.840
Dec	72.383	67.714	63.578	59.660	55.490	48.465	42.923	35.222	26.638	19.580
Jan	81.122	76.431	72.235	68.191	63.776	56.323	50.087	41.421	31.761	18.690
Feb	76.529	71.235	66.571	62.200	57.620	49.916	44.073	35.954	26.904	21.210
Mar	49.021	48.792	48.317	47.376	45.614	42.536	37.643	30.842	23.263	18.494
Apr	26.113	25.985	25.694	25.094	23.976	22.133	19.533	16.538	13.978	12.788
May	22.953	22.851	22.619	22.139	21.244	19.771	17.691	15.296	13.249	10.420
Jun	3.933	3.916	3.877	3.796	3.644	3.395	3.044	2.639	2.293	2.132
Jul	6.116	6.080	5.998	5.829	5.514	4.995	4.263	3.420	2.699	2.364
Aug	3.833	3.816	3.778	3.699	3.551	3.309	2.966	2.572	2.235	2.078
Sep	4.157	4.137	4.092	3.998	3.823	3.535	3.129	2.661	2.261	2.074

Reserve Flows without High Flows

Oct	9.046	9.006	8.916	8.729	8.381	7.809	7.000	6.069	5.273	4.903
Nov	38.794	38.650	38.351	37.759	36.649	34.712	31.632	27.352	22.581	10.840
Dec	38.422	38.280	37.983	37.397	36.298	34.379	31.329	27.089	22.364	19.391
Jan	47.240	47.065	46.700	45.979	44.628	42.270	38.519	33.306	27.497	18.690
Feb	37.861	37.721	37.429	36.851	35.768	33.877	30.871	26.694	22.038	19.108
Mar	34.555	34.427	34.160	33.633	32.645	30.919	28.175	24.363	20.113	17.439
Apr	23.178	23.076	22.845	22.367	21.476	20.009	17.937	15.552	13.513	12.564
May	22.641	22.542	22.316	21.849	20.979	19.545	17.521	15.192	13.200	10.420
Jun	3.933	3.916	3.877	3.796	3.644	3.395	3.044	2.639	2.293	2.132
Jul	4.074	4.056	4.015	3.931	3.775	3.517	3.153	2.733	2.375	2.208
Aug	3.833	3.816	3.778	3.699	3.551	3.309	2.966	2.572	2.235	2.078
Sep	3.773	3.756	3.719	3.641	3.496	3.257	2.920	2.531	2.199	2.045

Natural Duration curves

Oct	95.600	63.100	52.930	38.800	29.670	25.420	20.850	14.200	11.400	5.360
Nov	194.000	130.410	111.290	85.280	66.390	53.010	41.890	36.700	26.650	10.840
Dec	214.230	151.680	128.010	107.180	95.620	82.830	73.000	57.170	44.210	19.580
Jan	229.630	160.480	150.130	112.530	90.540	80.200	75.260	63.770	51.010	18.690
Feb	271.270	196.880	118.960	102.780	88.420	69.560	65.390	54.550	46.680	28.700
Mar	164.900	130.010	108.160	95.990	86.790	67.970	60.760	47.330	38.160	22.040
Apr	102.820	79.560	65.280	55.730	52.620	46.500	41.850	31.040	22.330	17.390
May	62.870	46.970	37.690	31.900	29.530	24.490	22.280	19.110	14.640	10.420
Jun	41.460	29.910	26.600	21.560	19.600	15.370	13.560	12.030	9.740	6.880
Jul	31.220	21.940	20.530	16.680	13.480	11.320	9.990	7.930	6.810	4.200
Aug	29.770	18.190	15.050	13.070	11.420	9.990	8.310	6.240	4.900	3.780
Sep	33.350	25.120	17.760	16.240	13.000	10.930	9.250	7.570	4.640	2.700

Hydrological time series

Total Runoff : Niv5

Desktop (Version 2) Modified Flow Data for Ecological Category D													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	22.493	62.174	61.518	32.609	30.729	48.908	25.310	21.508	3.532	4.263	2.506	4.055	319.604
1921	22.152	62.506	72.383	66.330	48.421	28.387	15.613	14.440	3.255	4.704	3.833	4.137	346.161
1922	22.377	62.506	69.642	73.280	60.127	38.675	19.533	19.215	2.641	3.270	2.316	2.157	375.739
1923	15.939	38.670	70.343	52.579	58.220	47.954	25.440	22.543	3.798	5.022	2.780	4.142	347.431
1924	19.930	61.661	72.074	55.886	30.862	49.021	26.113	22.910	3.895	6.002	3.780	4.152	356.285
1925	21.069	34.739	31.598	40.044	32.678	47.779	17.829	16.329	3.395	4.165	2.364	4.092	256.081
1926	14.336	23.450	26.506	27.225	53.834	44.744	19.911	15.632	2.279	5.481	3.485	2.863	239.745
1927	22.063	52.810	48.465	79.740	47.749	23.411	14.928	12.747	2.135	2.364	2.235	3.905	312.553
1928	17.162	37.370	28.470	26.708	21.210	49.021	25.832	22.492	3.900	6.080	3.642	4.157	246.045
1929	22.537	61.556	51.865	72.171	62.200	41.213	18.032	15.464	2.382	2.531	2.860	3.113	355.923
1930	6.268	32.609	31.183	26.925	23.628	19.729	15.601	13.740	2.167	2.490	2.214	2.074	178.630
1931	5.360	8.730	22.608	18.690	68.473	47.491	24.638	22.918	3.924	5.922	3.217	2.586	234.558
1932	12.214	57.907	63.573	68.807	62.882	35.577	17.033	14.834	2.293	4.369	3.122	2.379	344.992
1933	7.866	62.423	72.383	81.122	53.870	47.927	25.941	22.953	3.931	6.116	3.833	4.145	392.510
1934	13.378	60.410	65.308	58.536	42.600	30.926	16.836	21.323	3.818	5.514	2.966	2.414	324.030
1935	6.707	10.840	26.123	77.764	62.888	48.419	23.085	22.953	3.933	6.041	3.429	3.793	295.974
1936	21.183	62.415	40.292	81.122	76.137	47.857	24.012	20.461	3.044	3.453	2.257	4.116	386.349
1937	19.106	23.530	58.657	43.786	34.891	26.466	26.113	22.852	3.916	6.106	3.816	3.823	273.064
1938	22.496	55.260	67.526	78.075	76.529	49.021	25.985	22.788	3.882	6.105	3.827	4.157	415.649
1939	21.759	62.480	60.867	72.235	37.774	39.746	23.976	22.851	3.933	6.116	3.828	4.123	359.689
1940	16.774	57.342	72.383	57.678	45.148	30.842	23.967	22.139	3.279	4.995	3.172	3.363	341.083
1941	10.382	36.870	29.579	45.512	38.812	47.862	23.082	22.798	3.929	6.099	3.777	3.998	272.700
1942	21.395	61.888	66.047	50.087	40.180	42.423	26.113	22.953	3.933	6.116	3.833	4.157	349.124
1943	22.411	62.214	63.578	68.831	75.086	45.878	18.107	14.036	3.904	6.085	3.575	4.148	387.852
1944	22.361	39.250	23.071	45.403	22.655	48.685	22.133	20.271	3.644	5.712	3.704	3.535	260.424
1945	7.414	11.010	16.890	53.953	65.562	44.874	26.113	18.784	3.343	5.091	3.397	4.117	260.549
1946	18.885	62.079	61.372	58.795	61.349	32.421	19.952	20.461	3.321	4.139	2.527	2.686	347.985
1947	16.287	60.286	51.124	71.930	76.529	49.021	26.014	22.237	3.754	3.120	3.739	4.060	388.102
1948	18.182	61.562	41.541	80.068	64.071	46.131	25.875	22.873	3.905	5.718	2.937	3.036	375.899
1949	19.398	56.992	62.250	62.450	34.205	47.058	25.905	22.741	3.874	5.960	3.821	4.058	348.711
1950	9.373	27.450	54.304	69.834	38.296	47.376	26.026	22.330	3.673	5.916	3.833	4.157	312.568
1951	22.486	41.890	51.404	30.400	24.786	18.494	13.899	12.765	2.761	4.990	3.309	2.900	230.084
1952	10.754	47.310	55.490	30.715	51.946	40.406	25.226	17.105	3.105	5.031	3.243	3.373	293.706
1953	9.596	49.890	40.315	38.637	61.467	45.614	25.847	22.946	3.897	5.992	3.506	3.634	311.340
1954	21.267	59.450	44.468	79.076	74.214	49.021	22.868	20.256	3.837	6.093	3.798	3.972	388.320
1955	17.577	40.560	61.204	63.632	76.529	49.021	25.094	21.999	3.843	5.829	3.699	4.046	373.034
1956	22.486	60.935	63.962	58.161	65.606	47.022	25.704	22.738	3.876	6.116	3.833	4.157	384.596
1957	22.537	60.905	30.266	78.281	66.571	33.968	23.211	21.810	3.465	4.628	2.731	3.891	352.264
1958	15.604	62.405	61.344	68.191	58.785	28.078	13.289	19.990	3.437	5.447	3.463	4.015	344.046
1959	18.372	58.726	58.719	31.761	64.916	43.135	25.597	22.610	3.677	4.094	3.592	3.975	339.173
1960	21.652	62.506	72.383	72.100	58.475	40.676	26.075	22.732	3.919	6.096	3.828	4.016	394.457
1961	19.355	57.933	39.448	54.701	45.633	31.337	16.037	17.023	2.949	5.139	3.339	3.506	296.401
1962	11.556	62.335	70.204	69.941	44.073	42.536	20.627	17.691	3.933	6.116	3.833	4.151	356.996
1963	20.064	60.885	35.222	76.240	50.570	19.133	14.360	12.703	2.462	4.822	3.434	3.217	303.111
1964	22.537	61.895	63.876	57.411	50.112	19.299	13.059	12.300	2.814	5.180	3.228	3.886	315.597
1965	10.658	26.650	22.325	66.446	68.518	23.263	12.848	13.607	2.879	4.219	3.096	3.504	258.012
1966	12.387	16.830	35.460	54.784	75.339	48.713	25.463	22.284	3.801	5.812	3.746	3.768	308.388
1967	8.447	61.119	56.828	35.844	22.892	42.595	18.573	19.163	3.534	5.818	3.778	3.910	282.502
1968	6.429	40.290	33.558	52.386	26.904	49.015	26.103	22.948	3.919	5.889	3.358	4.097	274.895
1969	22.537	58.670	52.414	38.687	49.905	24.434	12.788	12.514	2.279	2.699	2.765	3.267	282.958
1970	21.635	57.166	44.557	74.528	39.685	43.887	26.072	22.953	3.932	6.041	3.693	3.578	347.728
1971	21.709	62.173	72.132	81.122	76.529	49.016	26.049	22.939	3.928	5.998	3.588	2.571	427.756
1972	6.732	52.550	26.638	34.189	76.529	48.674	26.113	22.921	3.854	5.578	3.829	4.157	311.765
1973	22.205	61.066	59.660	81.122	57.959	42.367	25.502	22.385	3.675	6.110	3.811	2.661	388.522
1974	9.904	62.367	66.795	77.883	68.928	47.670	25.990	22.779	3.796	5.368	2.702	4.157	398.339
1975	19.873	59.872	72.383	75.606	73.599	49.005	26.113	22.953	3.933	6.063	3.661	2.749	415.811
1976	21.948	54.434	59.339	72.643	71.235	47.303	24.889	21.244	3.004	3.461	2.503	4.113	386.115
1977	20.423	36.700	38.761	81.122	69.316	48.534	25.694	22.619	3.664	5.577	3.739	4.038	360.189
1978	22.537	61.441	57.261	44.203	28.859	29.083	17.495	18.486	2.597	3.237	3.799	4.135	293.132
1979	22.015	57.983	46.565	73.997	69.375	37.643	14.962	13.249	2.204	2.394	2.094	3.951	346.433
1980	8.641	61.131	60.097	67.374	66.045	34.976	13.978	13.011	3.468	5.553	3.727	4.144	342.145
1981	18.982	54.633	25.879	56.323	22.591	44.467	21.098	18.995	2.530	2.440	2.078	2.119	272.135
1982	22.355	32.067	19.580	15.970	7.320	17.790	13.189	17.574	3.447	3.783	3.744	3.091	159.910
1983	14.336	62.506	57.730	81.122	71.945	48.875	25.857	22.477	3.877	6.116	3.833	4.157	402.832
1984	22.396	53.010	37.407	41.421	76.529	48.317	21.576	14.568	2.370	2.463	2.096	2.117	324.268
1985	20.292	37.860	37.418	76.431	63.747	45.046	25.403	21.391	3.498	4.908	2.500	2.196	340.690
1986	7.414	18.770	46.024	36.874	25.103	45.667	24.022	21.610	3.742	4.309	3.832	4.157	241.526
1987	22.537	62.198	47.477	63.776	67.522	48.094	23.139	18.506	3.650	5.959	3.784	3.656	370.296
1988	22.537	56.070	72.383	65.436	73.190	48.563	24.382	21.463	3.913	6.014	3.561	2.433	399.944
1989	16.504	62.506	67.714	62.464	35.954	36.904	18.776	18.943	2.426	2.414	2.742	2.397	329.744
1990	14.169	39.480	50.986	81.122	71.900	48.863	25.228	22.814	3.933	6.116	3.813	3.648	372.072
1991	17.745	30.103	46.359	49.083	56.056	21.608	12.984	10.420	2.132	2.364	1.920	1.640	252.414
1992	5.570	48.880	51.354	30.715	43.043	45.784	21.463	19.771	3.000	2.916	2.676	2.728	277.900
1993	22.537	58.854	67.866	65.651	55.660	48.838	24.429	16.816	2.461	2.549	2.227	2.107	369.995
1994	21.745	52.150	65.561	50.087	22.283	27.317	16.538	16.167	2.647	2.976	2.156	2.101	281.728
1995	22.213	62.298	72.383	81.122	76.529	49.021	26.080	22.953	3.926	6.110	3.821	3.129	429.584
1996	22.386	48.050	57.499	74.213	47.089	49.021	26.113	22.953	3.933	6.116	3.833	4.153	365.359
1997	22.418	62.506	49.877	70.646	57.453	45.062	21.596	19.774	3.142	3.420	2.215	2.261	360.369
1998	20.516	57.346	71.573	64.694	29.782	20.782	15.256	15.296					

A.103. *Niv6 – Category B***Summary table**

Desktop Version 2, Generated on 2015-03-11

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv6

Annual Flows (Mill. cu. m or index values):

MAR = 24,285

S.Dev. = 24,118

CV = 0,993

Q75 = 0,034

Q75/MMF = 0,017

BFI Index = 0,304

CV(JJA+JFM) Index = 4,126

Ecological Category = B

Total IFR = 9,525 (39,22 %MAR)

Maint. Lowflow = 4,030 (16,60 %MAR)

Drought Lowflow = 0,875 (3,60 %MAR)

Maint. Highflow = 5,494 (22,62 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	1,819	5,195	2,856	0,185	0,047	0,534	0,719
Nov	2,170	3,340	1,539	0,243	0,055	0,520	0,763
Dec	3,863	4,617	1,195	0,661	0,141	1,138	1,799
Jan	3,641	5,360	1,472	0,749	0,150	0,981	1,730
Feb	4,943	7,755	1,569	0,670	0,134	1,286	1,956
Mar	2,143	3,304	1,541	0,630	0,133	0,433	1,063
Apr	1,338	2,202	1,645	0,329	0,053	0,260	0,589
May	0,852	1,610	1,890	0,140	0,036	0,092	0,232
Jun	0,400	0,711	1,775	0,118	0,034	0,000	0,118
Jul	1,250	4,547	3,637	0,113	0,033	0,108	0,222
Aug	0,584	1,391	2,383	0,101	0,031	0,054	0,155
Sep	1,280	3,905	3,050	0,092	0,029	0,087	0,180

Rule curve

Desktop Version 2, Generated on 2015-03-11

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv6

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.805	0.798	0.783	0.424	0.219	0.106	0.022	0.002	0.000	0.000
Nov	0.859	0.854	0.842	0.819	0.721	0.381	0.133	0.017	0.002	0.000
Dec	2.999	2.699	2.439	2.203	1.926	1.350	0.824	0.371	0.193	0.007
Jan	2.799	2.540	2.313	2.103	1.888	1.504	0.817	0.511	0.055	0.002
Feb	3.297	2.960	2.667	2.401	2.058	1.350	1.000	0.513	0.099	0.000
Mar	1.225	1.218	1.201	1.022	0.675	0.484	0.195	0.101	0.012	0.000
Apr	0.677	0.671	0.659	0.632	0.393	0.231	0.104	0.036	0.002	0.000
May	0.268	0.266	0.261	0.251	0.231	0.087	0.036	0.005	0.000	0.000
Jun	0.141	0.140	0.137	0.132	0.089	0.043	0.022	0.002	0.000	0.000
Jul	0.254	0.252	0.247	0.171	0.096	0.027	0.014	0.002	0.000	0.000
Aug	0.180	0.178	0.175	0.125	0.055	0.019	0.012	0.002	0.000	0.000
Sep	0.206	0.204	0.200	0.193	0.116	0.039	0.012	0.005	0.000	0.000

Reserve Flows without High Flows

Oct	0.221	0.219	0.215	0.208	0.193	0.106	0.022	0.002	0.000	0.000
Nov	0.290	0.288	0.285	0.277	0.264	0.240	0.133	0.017	0.002	0.000
Dec	0.789	0.784	0.774	0.754	0.717	0.652	0.549	0.371	0.193	0.007
Jan	0.894	0.888	0.877	0.854	0.811	0.737	0.618	0.454	0.055	0.002
Feb	0.800	0.795	0.785	0.764	0.726	0.659	0.553	0.406	0.099	0.000
Mar	0.752	0.747	0.737	0.718	0.675	0.484	0.195	0.101	0.012	0.000
Apr	0.393	0.390	0.382	0.367	0.339	0.231	0.104	0.036	0.002	0.000
May	0.167	0.166	0.163	0.157	0.146	0.087	0.036	0.005	0.000	0.000
Jun	0.141	0.140	0.137	0.132	0.089	0.043	0.022	0.002	0.000	0.000
Jul	0.135	0.134	0.132	0.127	0.096	0.027	0.014	0.002	0.000	0.000
Aug	0.120	0.120	0.118	0.114	0.055	0.019	0.012	0.002	0.000	0.000
Sep	0.110	0.110	0.108	0.104	0.097	0.039	0.012	0.005	0.000	0.000

Natural Duration curves

Oct	3.290	1.489	0.897	0.424	0.219	0.106	0.022	0.002	0.000	0.000
Nov	7.054	3.470	1.909	1.386	0.721	0.381	0.133	0.017	0.002	0.000
Dec	9.630	6.796	4.803	3.140	1.926	1.350	0.824	0.371	0.193	0.007
Jan	8.481	5.683	4.338	3.210	2.126	1.504	0.817	0.511	0.055	0.002
Feb	13.402	8.500	4.085	2.774	2.058	1.350	1.000	0.513	0.099	0.000
Mar	6.869	3.955	2.198	1.022	0.675	0.484	0.195	0.101	0.012	0.000
Apr	3.875	2.294	1.400	0.774	0.393	0.231	0.104	0.036	0.002	0.000
May	2.911	1.176	0.718	0.422	0.231	0.087	0.036	0.005	0.000	0.000
Jun	1.157	0.595	0.325	0.171	0.089	0.043	0.022	0.002	0.000	0.000
Jul	2.518	0.911	0.376	0.171	0.096	0.027	0.014	0.002	0.000	0.000
Aug	2.224	0.482	0.229	0.125	0.055	0.019	0.012	0.002	0.000	0.000
Sep	2.624	1.458	0.448	0.212	0.116	0.039	0.012	0.005	0.000	0.000

Hydrological time series

Total Runoff : Niv6

Desktop (Version 2) Modified Flow Data for Ecological Category B														
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL	
1920	0.804	0.825	1.350	0.010	0.014	0.012	0.002	0.002	0.000	0.000	0.000	0.000	0.206	3.225
1921	0.789	0.859	2.729	2.192	2.032	1.174	0.460	0.238	0.132	0.106	0.180	0.194	11.085	
1922	0.287	0.858	2.896	2.799	2.624	1.194	0.640	0.257	0.137	0.207	0.125	0.075	12.099	
1923	0.782	0.839	1.926	1.888	0.468	0.323	0.002	0.000	0.000	0.000	0.000	0.197	6.427	
1924	0.219	0.829	2.132	0.316	2.428	1.225	0.672	0.266	0.140	0.251	0.176	0.191	8.845	
1925	0.099	0.133	0.668	0.952	0.190	0.101	0.005	0.002	0.002	0.000	0.000	0.196	2.348	
1926	0.000	0.000	0.974	0.571	0.716	0.142	0.000	0.000	0.000	0.171	0.034	0.000	2.608	
1927	0.000	0.200	0.359	2.198	0.848	0.610	0.345	0.000	0.000	0.000	0.000	0.204	4.765	
1928	0.005	0.111	0.010	0.000	1.147	1.186	0.137	0.087	0.051	0.034	0.019	0.196	2.983	
1929	0.178	0.171	0.554	2.399	1.991	1.211	0.104	0.065	0.039	0.024	0.014	0.010	6.760	
1930	0.005	0.053	1.892	0.027	0.234	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.211	
1931	0.000	0.000	0.041	0.039	2.679	1.203	0.002	0.000	0.000	0.000	0.000	0.000	3.964	
1932	0.000	0.000	2.173	0.227	0.065	0.055	0.335	0.000	0.000	0.254	0.000	0.000	3.108	
1933	0.000	0.000	2.999	2.198	0.239	0.159	0.431	0.060	0.036	0.252	0.180	0.205	6.759	
1934	0.792	0.721	1.246	0.354	1.029	0.118	0.060	0.039	0.024	0.014	0.010	0.005	4.412	
1935	0.002	0.002	1.588	2.190	2.598	0.190	0.108	0.261	0.053	0.022	0.012	0.007	7.033	
1936	0.005	0.795	0.386	2.176	2.758	1.187	0.583	0.246	0.134	0.137	0.084	0.048	8.538	
1937	0.031	0.019	2.203	0.178	0.513	0.492	0.349	0.010	0.007	0.005	0.002	0.002	3.811	
1938	0.186	0.243	1.986	1.643	3.149	1.215	0.660	0.264	0.139	0.249	0.173	0.116	10.023	
1939	0.745	0.831	0.945	1.885	0.643	0.448	0.087	0.268	0.084	0.022	0.014	0.051	6.023	
1940	0.101	0.178	1.793	0.043	0.075	0.002	0.313	0.005	0.000	0.000	0.000	0.000	2.510	
1941	0.000	0.000	1.224	0.272	1.041	0.641	0.096	0.060	0.036	0.022	0.014	0.007	3.413	
1942	0.306	0.802	2.655	1.287	1.533	0.484	0.595	0.267	0.140	0.254	0.180	0.203	8.706	
1943	0.791	0.431	0.639	1.010	2.092	0.328	0.036	0.024	0.132	0.010	0.005	0.193	5.691	
1944	0.005	0.002	0.053	0.027	0.000	0.063	0.547	0.034	0.000	0.000	0.000	0.000	0.731	
1945	0.000	0.000	0.007	2.271	0.094	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.372	
1946	0.000	0.786	2.673	0.901	0.407	0.292	0.632	0.239	0.060	0.039	0.024	0.014	6.067	
1947	0.010	0.005	0.005	0.055	0.870	0.063	0.002	0.000	0.000	0.000	0.000	0.000	1.010	
1948	0.002	0.000	0.455	0.039	0.014	0.860	0.121	0.135	0.000	0.000	0.000	0.000	1.626	
1949	0.128	0.017	0.063	0.002	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.215	
1950	0.014	0.002	1.234	0.002	1.714	0.827	0.000	0.000	0.000	0.000	0.178	0.007	3.978	
1951	0.000	0.000	2.271	0.817	0.024	0.012	0.000	0.000	0.000	0.000	0.000	0.000	3.124	
1952	0.000	0.089	2.074	0.610	3.297	0.595	0.084	0.024	0.014	0.010	0.005	0.010	6.812	
1953	0.002	0.000	0.270	0.212	2.297	0.007	0.634	0.254	0.043	0.027	0.017	0.202	3.965	
1954	0.292	0.010	0.439	0.699	0.966	1.135	0.137	0.087	0.051	0.031	0.019	0.012	3.878	
1955	0.431	0.369	1.191	1.838	3.297	1.225	0.677	0.268	0.141	0.251	0.178	0.204	10.070	
1956	0.706	0.859	2.303	1.735	3.016	1.203	0.665	0.261	0.136	0.254	0.180	0.206	11.524	
1957	0.805	0.859	2.758	2.455	3.210	1.186	0.649	0.251	0.135	0.157	0.096	0.055	12.616	
1958	0.036	0.859	2.504	1.573	2.392	0.648	0.231	0.262	0.089	0.055	0.034	0.206	8.888	
1959	0.780	0.051	2.384	0.499	2.244	0.434	0.675	0.235	0.041	0.027	0.017	0.041	7.428	
1960	0.176	0.819	2.999	2.799	3.043	1.225	0.656	0.263	0.138	0.244	0.172	0.206	12.740	
1961	0.799	0.489	1.740	2.327	0.142	1.022	0.077	0.036	0.022	0.014	0.007	0.005	6.680	
1962	0.002	0.806	2.999	2.686	2.514	1.219	0.677	0.268	0.141	0.252	0.179	0.199	11.941	
1963	0.260	0.190	0.210	2.066	1.350	0.140	0.104	0.051	0.031	0.019	0.012	0.007	4.440	
1964	0.798	0.859	2.877	1.985	1.065	0.631	0.374	0.233	0.130	0.250	0.055	0.031	9.288	
1965	0.104	0.831	0.287	0.545	2.801	0.007	0.002	0.002	0.002	0.002	0.060	0.070	4.712	
1966	0.000	0.496	1.164	1.504	2.867	1.223	0.661	0.264	0.139	0.245	0.173	0.116	8.852	
1967	0.106	0.846	2.286	1.561	0.130	0.378	0.043	0.029	0.017	0.010	0.007	0.005	5.418	
1968	0.002	0.381	2.999	2.407	1.391	0.877	0.627	0.240	0.132	0.108	0.065	0.200	9.429	
1969	0.791	0.106	0.214	0.619	2.262	0.017	0.007	0.005	0.002	0.002	0.002	0.204	4.231	
1970	0.805	0.499	0.251	2.799	1.000	0.754	0.675	0.268	0.141	0.253	0.179	0.201	7.825	
1971	0.347	0.586	2.494	2.602	3.297	1.223	0.669	0.266	0.140	0.248	0.176	0.145	12.192	
1972	0.092	0.060	0.193	2.313	3.297	1.225	0.677	0.268	0.141	0.253	0.180	0.206	8.904	
1973	0.805	0.845	2.105	2.591	2.828	0.362	0.212	0.135	0.080	0.253	0.031	0.019	10.265	
1974	0.058	0.853	0.366	1.376	2.500	1.211	0.646	0.261	0.138	0.243	0.157	0.206	8.014	
1975	0.805	0.859	2.867	2.752	2.788	1.204	0.674	0.268	0.141	0.253	0.179	0.201	12.991	
1976	0.439	0.848	2.833	2.540	3.297	1.225	0.677	0.268	0.140	0.250	0.178	0.206	12.901	
1977	0.805	0.799	2.096	2.799	2.867	1.201	0.647	0.260	0.138	0.243	0.157	0.190	12.202	
1978	0.805	0.857	2.558	1.978	2.960	0.675	0.313	0.198	0.116	0.254	0.179	0.205	11.099	
1979	0.790	0.595	1.697	2.241	0.964	0.099	0.058	0.036	0.022	0.014	0.007	0.005	6.528	
1980	0.002	0.002	0.634	1.721	2.401	0.031	0.000	0.000	0.048	0.111	0.036	0.204	5.191	
1981	0.190	0.811	2.111	2.455	2.468	0.831	0.393	0.186	0.108	0.070	0.041	0.024	9.688	
1982	0.641	0.824	0.007	0.819	0.002	0.002	0.000	0.195	0.031	0.000	0.000	0.000	2.521	
1983	0.000	0.854	2.311	2.799	3.297	1.225	0.677	0.268	0.141	0.254	0.180	0.206	12.212	
1984	0.803	0.807	1.366	2.429	3.297	1.219	0.659	0.264	0.139	0.245	0.173	0.116	11.516	
1985	0.792	0.791	0.371	2.103	2.058	0.186	0.075	0.048	0.029	0.017	0.010	0.007	6.487	
1986	0.005	0.002	2.999	0.511	0.123	0.024	0.010	0.007	0.005	0.002	0.179	0.206	4.072	
1987	0.805	0.859	2.439	2.099	2.667	1.210	0.677	0.267	0.140	0.254	0.177	0.204	11.799	
1988	0.803	0.848	2.334	0.964	2.257	0.665	0.362	0.202	0.137	0.075	0.046	0.027	8.719	
1989	0.125	0.832	2.520	2.428	1.757	0.824	0.468	0.239	0.133	0.111	0.067	0.039	9.542	
1990	0.024	0.014	2.593	2.593	3.234	1.216	0.666	0.265	0.139	0.247	0.175	0.135	11.302	
1991	0.422	0.480	2.334	0.200	1.256	0.034	0.005	0.002	0.002	0.000	0.000	0.000	4.735	
1992	0.000	0.029	0.824	1.985	2.205	0.000	0.665	0.002	0.000	0.000	0.000	0.204	5.914	
1993	0.805	0.856	2.870	2.783	2.651	1.218	0.637	0.257	0.137	0.210	0.128	0.075	12.626	
1994	0.799	0.849	2.999	1.957	0.099	0.106	0.145	0.031	0.017	0.010	0.005	0.002	7.019	
1995	0.798	0.492	2.999	2.799	3.297	1.225	0.677	0.268	0.141	0.253	0.179	0.197	13.326	
1996	0.799	0.214	1.432	0.709	0.617	1.225	0.677	0.268	0.141	0.254	0.180	0.204	6.720	
1997	0.783	0.842	2.229	2.799	1.029	1.225	0.487	0.251	0.134	0.096	0.058	0.034	9.968	
1998	0.424	0.354	2.747	2.044	1.815	0.769	0.669	0.242	0.131	0.099	0.060	0.036	9.391	
1999	0.022	0.012	2.699	2.799	3.297	1.223	0.677	0.268	0.141	0.252	0.179	0.199	11.770	
2000	0.272	0.859	2.999	2.769	2.646	1.223	0.670	0.265	0.140	0.247	0.175	0.206	12.470	
2001	0.783	0.854	2.156	2.103	3.181	1.190	0.671	0.256	0.137	0.254	0.180	0.206	11.971	
2002	0.804	0.837	1.892	0.711	2.986	0.195	0.116	0.072	0.043	0.027	0.017	0.010	7.710	
2003	0.007	0.854	0.786	1.609	2.769	1.225	0.676	0.268	0.140	0.254	0.18			

A.104. *Niv6 – Category C***Summary table**

Desktop Version 2, Generated on 2015-03-11

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv6

Annual Flows (Mill. cu. m or index values):

MAR = 24,285

S.Dev. = 24,118

CV = 0,993

Q75 = 0,034

Q75/MMF = 0,017

BFI Index = 0,304

CV(JJA+JFM) Index = 4,126

Ecological Category = C

Total IFR = 7,310 (30,10 %MAR)

Maint. Lowflow = 2,223 (9,16 %MAR)

Drought Lowflow = 0,869 (3,58 %MAR)

Maint. Highflow = 5,087 (20,95 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	1,819	5,195	2,856	0,116	0,047	0,477	0,593
Nov	2,170	3,340	1,539	0,147	0,055	0,472	0,619
Dec	3,863	4,617	1,195	0,359	0,141	1,053	1,412
Jan	3,641	5,360	1,472	0,391	0,150	0,930	1,321
Feb	4,943	7,755	1,569	0,358	0,134	1,220	1,579
Mar	2,143	3,304	1,541	0,345	0,133	0,393	0,739
Apr	1,338	2,202	1,645	0,161	0,053	0,214	0,375
May	0,852	1,610	1,890	0,082	0,031	0,088	0,170
Jun	0,400	0,711	1,775	0,071	0,034	0,000	0,071
Jul	1,250	4,547	3,637	0,069	0,033	0,108	0,177
Aug	0,584	1,391	2,383	0,065	0,031	0,054	0,119
Sep	1,280	3,905	3,050	0,059	0,029	0,077	0,136

Rule curve

Desktop Version 2, Generated on 2015-03-11

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv6

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.717	0.711	0.697	0.424	0.219	0.106	0.022	0.002	0.000	0.000
Nov	0.768	0.763	0.753	0.732	0.694	0.381	0.133	0.017	0.002	0.000
Dec	2.545	2.270	2.033	1.822	1.616	1.273	0.824	0.371	0.193	0.007
Jan	2.351	2.107	1.897	1.708	1.522	1.211	0.817	0.511	0.055	0.002
Feb	2.869	2.551	2.277	2.033	1.798	1.350	1.000	0.513	0.099	0.000
Mar	0.951	0.945	0.933	0.909	0.675	0.484	0.195	0.101	0.012	0.000
Apr	0.469	0.465	0.457	0.439	0.393	0.231	0.104	0.036	0.002	0.000
May	0.214	0.212	0.208	0.201	0.186	0.087	0.036	0.005	0.000	0.000
Jun	0.096	0.096	0.094	0.091	0.086	0.043	0.022	0.002	0.000	0.000
Jul	0.220	0.219	0.215	0.171	0.096	0.027	0.014	0.002	0.000	0.000
Aug	0.152	0.151	0.148	0.125	0.055	0.019	0.012	0.002	0.000	0.000
Sep	0.170	0.169	0.166	0.160	0.116	0.039	0.012	0.005	0.000	0.000

Reserve Flows without High Flows

Oct	0.157	0.156	0.154	0.149	0.140	0.106	0.022	0.002	0.000	0.000
Nov	0.204	0.203	0.201	0.196	0.188	0.173	0.133	0.017	0.002	0.000
Dec	0.500	0.498	0.492	0.481	0.461	0.425	0.367	0.288	0.193	0.007
Jan	0.545	0.542	0.536	0.524	0.501	0.462	0.399	0.311	0.055	0.002
Feb	0.499	0.497	0.491	0.480	0.459	0.422	0.364	0.283	0.099	0.000
Mar	0.481	0.479	0.473	0.463	0.443	0.408	0.195	0.101	0.012	0.000
Apr	0.218	0.217	0.213	0.206	0.192	0.169	0.104	0.036	0.002	0.000
May	0.111	0.110	0.108	0.105	0.098	0.087	0.036	0.005	0.000	0.000
Jun	0.096	0.096	0.094	0.091	0.086	0.043	0.022	0.002	0.000	0.000
Jul	0.093	0.093	0.091	0.089	0.084	0.027	0.014	0.002	0.000	0.000
Aug	0.088	0.087	0.086	0.084	0.055	0.019	0.012	0.002	0.000	0.000
Sep	0.080	0.079	0.078	0.076	0.072	0.039	0.012	0.005	0.000	0.000

Natural Duration curves

Oct	3.290	1.489	0.897	0.424	0.219	0.106	0.022	0.002	0.000	0.000
Nov	7.054	3.470	1.909	1.386	0.721	0.381	0.133	0.017	0.002	0.000
Dec	9.630	6.796	4.803	3.140	1.926	1.350	0.824	0.371	0.193	0.007
Jan	8.481	5.683	4.338	3.210	2.126	1.504	0.817	0.511	0.055	0.002
Feb	13.402	8.500	4.085	2.774	2.058	1.350	1.000	0.513	0.099	0.000
Mar	6.869	3.955	2.198	1.022	0.675	0.484	0.195	0.101	0.012	0.000
Apr	3.875	2.294	1.400	0.774	0.393	0.231	0.104	0.036	0.002	0.000
May	2.911	1.176	0.718	0.422	0.231	0.087	0.036	0.005	0.000	0.000
Jun	1.157	0.595	0.325	0.171	0.089	0.043	0.022	0.002	0.000	0.000
Jul	2.518	0.911	0.376	0.171	0.096	0.027	0.014	0.002	0.000	0.000
Aug	2.224	0.482	0.229	0.125	0.055	0.019	0.012	0.002	0.000	0.000
Sep	2.624	1.458	0.448	0.212	0.116	0.039	0.012	0.005	0.000	0.000

Hydrological time series

Total Runoff : Niv6

Desktop (Version 2) Modified Flow Data for Ecological Category C													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.716	0.738	1.273	0.010	0.014	0.012	0.002	0.002	0.000	0.000	0.000	0.170	2.937
1921	0.702	0.768	2.297	1.788	1.784	0.915	0.412	0.190	0.091	0.106	0.152	0.161	9.366
1922	0.287	0.767	2.451	2.351	2.238	0.927	0.445	0.205	0.094	0.207	0.125	0.075	10.172
1923	0.696	0.750	1.616	1.522	0.468	0.323	0.002	0.002	0.000	0.000	0.000	0.163	5.543
1924	0.219	0.741	1.760	0.316	2.058	0.951	0.466	0.212	0.096	0.218	0.149	0.158	7.343
1925	0.099	0.133	0.668	0.952	0.190	0.101	0.005	0.002	0.002	0.000	0.000	0.163	2.315
1926	0.000	0.000	0.974	0.571	0.716	0.142	0.000	0.000	0.000	0.171	0.034	0.000	2.608
1927	0.000	0.200	0.359	1.793	0.848	0.610	0.345	0.000	0.000	0.000	0.000	0.169	4.324
1928	0.005	0.111	0.010	0.000	1.147	0.921	0.137	0.087	0.051	0.034	0.019	0.163	2.685
1929	0.178	0.171	0.554	1.977	1.761	0.940	0.104	0.065	0.039	0.024	0.014	0.010	5.837
1930	0.005	0.053	1.596	0.027	0.234	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.915
1931	0.000	0.000	0.041	0.039	2.288	0.934	0.002	0.000	0.000	0.000	0.000	0.000	3.305
1932	0.000	0.000	1.796	0.027	0.065	0.055	0.335	0.000	0.000	0.220	0.000	0.000	2.698
1933	0.000	0.000	2.545	1.793	0.239	0.159	0.410	0.060	0.036	0.219	0.152	0.170	5.782
1934	0.706	0.694	1.221	0.354	1.029	0.118	0.060	0.039	0.024	0.014	0.010	0.005	4.274
1935	0.002	0.002	1.415	1.786	2.213	0.190	0.108	0.208	0.053	0.022	0.012	0.007	6.018
1936	0.005	0.711	0.386	1.773	2.362	0.922	0.423	0.196	0.093	0.137	0.084	0.048	7.139
1937	0.031	0.019	1.822	0.178	0.513	0.492	0.349	0.010	0.007	0.005	0.002	0.002	3.430
1938	0.186	0.243	1.634	1.311	2.729	0.943	0.458	0.210	0.095	0.217	0.146	0.116	8.288
1939	0.689	0.743	0.945	1.519	0.643	0.448	0.087	0.214	0.084	0.022	0.014	0.051	5.459
1940	0.101	0.178	1.537	0.043	0.075	0.002	0.313	0.005	0.000	0.000	0.000	0.000	2.254
1941	0.000	0.000	1.210	0.272	1.041	0.641	0.096	0.060	0.036	0.022	0.014	0.007	3.399
1942	0.306	0.717	2.230	1.181	1.507	0.484	0.424	0.213	0.096	0.220	0.152	0.168	7.697
1943	0.704	0.431	0.639	1.010	1.809	0.328	0.036	0.024	0.091	0.010	0.005	0.160	5.248
1944	0.005	0.002	0.053	0.027	0.000	0.063	0.420	0.034	0.000	0.000	0.000	0.000	0.604
1945	0.000	0.000	0.007	1.859	0.094	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.960
1946	0.000	0.703	2.247	0.901	0.407	0.292	0.439	0.191	0.060	0.039	0.024	0.014	5.317
1947	0.010	0.005	0.005	0.055	0.870	0.063	0.002	0.000	0.000	0.000	0.000	0.000	1.010
1948	0.002	0.000	0.455	0.039	0.014	0.860	0.121	0.135	0.000	0.000	0.000	0.000	1.626
1949	0.128	0.017	0.063	0.002	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.215
1950	0.014	0.002	1.215	0.002	1.607	0.827	0.000	0.000	0.000	0.000	0.151	0.007	3.825
1951	0.000	0.000	1.882	0.817	0.024	0.012	0.000	0.000	0.000	0.000	0.000	0.000	2.735
1952	0.000	0.089	1.710	0.610	2.869	0.595	0.084	0.024	0.014	0.010	0.005	0.010	6.020
1953	0.002	0.000	0.270	0.212	1.940	0.007	0.441	0.203	0.043	0.027	0.017	0.167	3.329
1954	0.292	0.010	0.439	0.699	0.966	0.913	0.137	0.087	0.051	0.031	0.019	0.012	3.656
1955	0.431	0.369	1.191	1.478	2.869	0.951	0.469	0.214	0.096	0.218	0.150	0.169	8.605
1956	0.687	0.768	1.911	1.390	2.604	0.934	0.461	0.208	0.093	0.220	0.152	0.170	9.600
1957	0.717	0.768	2.324	2.029	2.786	0.921	0.451	0.201	0.093	0.157	0.096	0.055	10.597
1958	0.036	0.768	2.092	1.250	2.024	0.648	0.231	0.209	0.086	0.055	0.034	0.170	7.604
1959	0.694	0.051	1.984	0.499	1.893	0.434	0.468	0.188	0.041	0.027	0.017	0.041	6.337
1960	0.176	0.732	2.545	2.351	2.629	0.950	0.455	0.210	0.095	0.213	0.146	0.170	10.673
1961	0.711	0.489	1.505	1.911	0.142	0.909	0.077	0.036	0.022	0.014	0.007	0.005	5.828
1962	0.002	0.721	2.545	2.244	2.136	0.946	0.469	0.214	0.096	0.219	0.151	0.165	9.908
1963	0.260	0.190	0.210	1.676	1.350	0.140	0.104	0.051	0.031	0.019	0.012	0.007	4.050
1964	0.710	0.768	2.433	1.606	1.065	0.631	0.374	0.186	0.090	0.217	0.055	0.031	8.167
1965	0.104	0.743	0.287	0.545	2.402	0.007	0.002	0.002	0.002	0.002	0.060	0.070	4.225
1966	0.000	0.496	1.164	1.211	2.464	0.949	0.458	0.210	0.095	0.213	0.146	0.116	7.524
1967	0.106	0.757	1.895	1.240	0.130	0.378	0.043	0.029	0.017	0.010	0.007	0.005	4.617
1968	0.002	0.381	2.545	1.984	1.391	0.877	0.436	0.192	0.091	0.108	0.065	0.166	8.239
1969	0.705	0.106	0.214	0.619	1.909	0.017	0.007	0.005	0.002	0.002	0.002	0.169	3.756
1970	0.717	0.499	0.251	2.351	1.000	0.754	0.468	0.214	0.096	0.220	0.151	0.166	6.887
1971	0.347	0.586	2.083	2.166	2.869	0.949	0.464	0.212	0.096	0.215	0.148	0.145	10.280
1972	0.092	0.060	0.193	1.897	2.869	0.951	0.469	0.214	0.096	0.220	0.152	0.170	7.383
1973	0.717	0.755	1.737	2.156	2.427	0.362	0.212	0.135	0.080	0.220	0.031	0.019	8.850
1974	0.058	0.763	0.366	1.193	2.124	0.940	0.448	0.208	0.095	0.211	0.144	0.170	6.720
1975	0.717	0.768	2.424	2.307	2.390	0.935	0.467	0.214	0.096	0.220	0.151	0.166	10.855
1976	0.439	0.758	2.392	2.107	2.869	0.951	0.469	0.213	0.096	0.218	0.150	0.170	10.833
1977	0.717	0.714	1.729	2.351	2.464	0.933	0.450	0.208	0.095	0.211	0.144	0.158	10.173
1978	0.717	0.766	2.141	1.600	2.551	0.675	0.313	0.180	0.088	0.220	0.151	0.170	9.573
1979	0.703	0.595	1.480	1.832	0.964	0.099	0.058	0.036	0.022	0.014	0.007	0.005	5.815
1980	0.002	0.002	0.634	1.378	2.033	0.031	0.000	0.000	0.048	0.111	0.036	0.169	4.445
1981	0.190	0.725	1.742	2.029	2.094	0.831	0.393	0.178	0.087	0.070	0.041	0.024	8.405
1982	0.641	0.737	0.007	0.819	0.002	0.002	0.000	0.180	0.031	0.000	0.000	0.000	2.419
1983	0.000	0.764	1.918	2.351	2.869	0.951	0.469	0.214	0.096	0.220	0.152	0.170	10.174
1984	0.715	0.721	1.282	2.005	2.869	0.946	0.457	0.210	0.095	0.213	0.146	0.116	9.776
1985	0.705	0.707	0.371	1.708	1.798	0.186	0.075	0.048	0.029	0.017	0.010	0.007	5.661
1986	0.005	0.002	2.545	0.511	0.123	0.024	0.010	0.007	0.005	0.002	0.151	0.170	3.556
1987	0.717	0.768	2.033	1.705	2.277	0.939	0.469	0.213	0.096	0.220	0.149	0.169	9.756
1988	0.715	0.758	1.938	0.964	1.905	0.665	0.362	0.181	0.094	0.075	0.046	0.027	7.730
1989	0.125	0.744	2.106	2.003	1.631	0.824	0.413	0.191	0.092	0.111	0.067	0.039	8.345
1990	0.024	0.014	2.173	2.157	2.810	0.944	0.462	0.211	0.096	0.215	0.148	0.135	9.389
1991	0.422	0.480	1.939	0.200	1.256	0.034	0.005	0.002	0.002	0.000	0.000	0.000	4.340
1992	0.000	0.029	0.824	1.606	1.858	0.000	0.461	0.002	0.000	0.000	0.000	0.169	4.950
1993	0.717	0.765	2.427	2.335	2.262	0.945	0.443	0.205	0.094	0.209	0.128	0.075	10.605
1994	0.711	0.759	2.545	1.582	0.099	0.106	0.145	0.031	0.017	0.010	0.005	0.002	6.012
1995	0.711	0.492	2.545	2.351	2.869	0.951	0.469	0.214	0.096	0.220	0.151	0.163	11.233
1996	0.712	0.214	1.322	0.709	0.617	0.951	0.469	0.214	0.096	0.220	0.152	0.169	5.844
1997	0.697	0.753	1.845	2.351	1.029	0.951	0.414	0.201	0.092	0.096	0.058	0.034	8.521
1998	0.424	0.354	2.314	1.657	1.663	0.769	0.464	0.194	0.091	0.099	0.060	0.036	8.124
1999	0.022	0.012	2.270	2.351	2.869	0.949	0.469	0.214	0.096	0.219	0.151	0.165	9.789
2000	0.272	0.768	2.545	2.323	2.258	0.949	0.464	0.211	0.096	0.215	0.148	0.170	10.419
2001	0.698	0.763	1.781	1.708	2.759	0.925	0.465	0.205	0.094	0.220	0.152	0.170	9.940
2002	0.716	0.748	1.596	0.711	2.575	0.195	0.116	0.072	0.043	0.027	0.017	0.010	6.826
2003	0.007	0.763	0.786	1.282	2.372	0.951	0.469	0.213	0.096	0.220	0.152	0.168	7.478</

A.105. Niv6 – Category D**Summary table**

Desktop Version 2, Generated on 2015-03-11

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv6

Annual Flows (Mill. cu. m or index values):

MAR = 24,285

S.Dev. = 24,118

CV = 0,993

Q75 = 0,034

Q75/MMF = 0,017

BFI Index = 0,304

CV(JJA+JFM) Index = 4,126

Ecological Category = D

Total IFR = 4,569 (18,81 %MAR)

Maint. Lowflow = 0,875 (3,60 %MAR)

Drought Lowflow = 0,875 (3,60 %MAR)

Maint. Highflow = 3,694 (15,21 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	1,819	5,195	2,856	0,047	0,047	0,343	0,390
Nov	2,170	3,340	1,539	0,055	0,055	0,322	0,377
Dec	3,863	4,617	1,195	0,141	0,141	0,766	0,907
Jan	3,641	5,360	1,472	0,150	0,150	0,659	0,808
Feb	4,943	7,755	1,569	0,134	0,134	0,920	1,054
Mar	2,143	3,304	1,541	0,133	0,133	0,296	0,429
Apr	1,338	2,202	1,645	0,053	0,053	0,121	0,175
May	0,852	1,610	1,890	0,036	0,036	0,037	0,073
Jun	0,400	0,711	1,775	0,034	0,034	0,000	0,034
Jul	1,250	4,547	3,637	0,033	0,033	0,109	0,142
Aug	0,584	1,391	2,383	0,031	0,031	0,054	0,086
Sep	1,280	3,905	3,050	0,029	0,029	0,066	0,096

Rule curve

Desktop Version 2, Generated on 2015-03-11

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv6

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.574	0.569	0.559	0.424	0.219	0.106	0.022	0.002	0.000	0.000
Nov	0.590	0.587	0.579	0.564	0.535	0.381	0.133	0.017	0.002	0.000
Dec	1.769	1.569	1.399	1.249	1.106	0.868	0.737	0.371	0.193	0.007
Jan	1.578	1.406	1.259	1.129	1.005	0.798	0.680	0.511	0.055	0.002
Feb	2.053	1.814	1.610	1.431	1.262	0.980	0.827	0.513	0.099	0.000
Mar	0.706	0.702	0.694	0.677	0.646	0.484	0.195	0.101	0.012	0.000
Apr	0.272	0.270	0.265	0.256	0.239	0.211	0.104	0.036	0.002	0.000
May	0.119	0.118	0.116	0.113	0.106	0.087	0.036	0.005	0.000	0.000
Jun	0.062	0.062	0.061	0.060	0.058	0.043	0.022	0.002	0.000	0.000
Jul	0.216	0.215	0.211	0.171	0.096	0.027	0.014	0.002	0.000	0.000
Aug	0.135	0.134	0.132	0.125	0.055	0.019	0.012	0.002	0.000	0.000
Sep	0.148	0.147	0.145	0.140	0.116	0.039	0.012	0.005	0.000	0.000

Reserve Flows without High Flows

Oct	0.086	0.086	0.085	0.083	0.080	0.075	0.022	0.002	0.000	0.000
Nov	0.110	0.109	0.108	0.107	0.104	0.098	0.089	0.017	0.002	0.000
Dec	0.280	0.279	0.277	0.273	0.265	0.251	0.229	0.198	0.163	0.007
Jan	0.299	0.297	0.295	0.291	0.282	0.267	0.243	0.211	0.055	0.002
Feb	0.267	0.266	0.264	0.259	0.252	0.239	0.217	0.188	0.099	0.000
Mar	0.265	0.264	0.262	0.258	0.250	0.237	0.195	0.101	0.012	0.000
Apr	0.099	0.099	0.098	0.096	0.092	0.086	0.077	0.036	0.002	0.000
May	0.067	0.066	0.066	0.064	0.062	0.057	0.036	0.005	0.000	0.000
Jun	0.062	0.062	0.061	0.060	0.058	0.043	0.022	0.002	0.000	0.000
Jul	0.061	0.061	0.060	0.059	0.056	0.027	0.014	0.002	0.000	0.000
Aug	0.058	0.058	0.057	0.056	0.054	0.019	0.012	0.002	0.000	0.000
Sep	0.054	0.054	0.053	0.052	0.050	0.039	0.012	0.005	0.000	0.000

Natural Duration curves

Oct	3.290	1.489	0.897	0.424	0.219	0.106	0.022	0.002	0.000	0.000
Nov	7.054	3.470	1.909	1.386	0.721	0.381	0.133	0.017	0.002	0.000
Dec	9.630	6.796	4.803	3.140	1.926	1.350	0.824	0.371	0.193	0.007
Jan	8.481	5.683	4.338	3.210	2.126	1.504	0.817	0.511	0.055	0.002
Feb	13.402	8.500	4.085	2.774	2.058	1.350	1.000	0.513	0.099	0.000
Mar	6.869	3.955	2.198	1.022	0.675	0.484	0.195	0.101	0.012	0.000
Apr	3.875	2.294	1.400	0.774	0.393	0.231	0.104	0.036	0.002	0.000
May	2.911	1.176	0.718	0.422	0.231	0.087	0.036	0.005	0.000	0.000
Jun	1.157	0.595	0.325	0.171	0.089	0.043	0.022	0.002	0.000	0.000
Jul	2.518	0.911	0.376	0.171	0.096	0.027	0.014	0.002	0.000	0.000
Aug	2.224	0.482	0.229	0.125	0.055	0.019	0.012	0.002	0.000	0.000
Sep	2.624	1.458	0.448	0.212	0.116	0.039	0.012	0.005	0.000	0.000

Hydrological time series

Total Runoff : Niv6

Desktop (Version 2) Modified Flow Data for Ecological Category D

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.574	0.568	0.868	0.010	0.014	0.012	0.002	0.002	0.000	0.000	0.000	0.148	2.198
1921	0.563	0.590	1.589	1.184	1.251	0.681	0.242	0.108	0.060	0.106	0.135	0.140	6.650
1922	0.287	0.590	1.700	1.578	1.581	0.690	0.259	0.115	0.061	0.205	0.125	0.075	7.265
1923	0.558	0.577	1.106	1.005	0.468	0.323	0.002	0.002	0.000	0.000	0.000	0.143	4.184
1924	0.219	0.570	1.206	0.316	1.449	0.706	0.270	0.118	0.062	0.214	0.133	0.138	5.401
1925	0.099	0.133	0.668	0.747	0.190	0.101	0.005	0.002	0.002	0.000	0.000	0.142	2.089
1926	0.000	0.000	0.770	0.559	0.711	0.142	0.000	0.000	0.000	0.171	0.034	0.000	2.386
1927	0.000	0.200	0.359	1.187	0.765	0.610	0.231	0.000	0.000	0.000	0.000	0.147	3.499
1928	0.005	0.111	0.010	0.000	0.929	0.685	0.137	0.087	0.051	0.034	0.019	0.142	2.210
1929	0.178	0.171	0.554	1.314	1.235	0.699	0.104	0.065	0.039	0.024	0.014	0.010	4.407
1930	0.005	0.053	1.092	0.027	0.234	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.411
1931	0.000	0.000	0.041	0.039	1.619	0.695	0.002	0.000	0.000	0.000	0.000	0.000	2.395
1932	0.000	0.000	1.230	0.227	0.065	0.055	0.229	0.000	0.000	0.216	0.000	0.000	2.023
1933	0.000	0.000	1.769	1.187	0.239	0.159	0.241	0.060	0.036	0.215	0.135	0.148	4.189
1934	0.565	0.535	0.835	0.354	0.851	0.118	0.060	0.039	0.024	0.014	0.010	0.005	3.410
1935	0.002	0.002	0.966	1.182	1.563	0.190	0.108	0.116	0.053	0.022	0.012	0.007	4.224
1936	0.005	0.547	0.386	1.174	1.673	0.686	0.248	0.111	0.061	0.137	0.084	0.048	5.159
1937	0.031	0.019	1.249	0.178	0.513	0.492	0.231	0.010	0.007	0.005	0.002	0.002	2.739
1938	0.186	0.243	1.118	0.864	1.948	0.701	0.266	0.117	0.062	0.212	0.130	0.116	5.964
1939	0.552	0.572	0.764	1.003	0.643	0.448	0.087	0.119	0.057	0.022	0.014	0.051	4.332
1940	0.101	0.178	1.051	0.043	0.075	0.002	0.225	0.005	0.000	0.000	0.000	0.000	1.680
1941	0.000	0.000	0.829	0.272	0.860	0.636	0.096	0.060	0.036	0.022	0.014	0.007	2.832
1942	0.306	0.552	1.540	0.780	1.052	0.484	0.248	0.118	0.062	0.216	0.135	0.146	5.641
1943	0.564	0.431	0.639	0.757	1.270	0.328	0.036	0.024	0.060	0.010	0.005	0.140	4.264
1944	0.005	0.002	0.053	0.027	0.000	0.063	0.246	0.034	0.000	0.000	0.000	0.000	0.430
1945	0.000	0.000	0.007	1.233	0.094	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.334
1946	0.000	0.541	1.552	0.722	0.407	0.292	0.256	0.108	0.055	0.039	0.024	0.014	4.011
1947	0.010	0.005	0.005	0.055	0.774	0.063	0.002	0.000	0.000	0.000	0.000	0.000	0.914
1948	0.002	0.000	0.455	0.039	0.014	0.662	0.121	0.099	0.000	0.000	0.000	0.000	1.392
1949	0.128	0.017	0.063	0.002	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.215
1950	0.014	0.002	0.832	0.002	1.125	0.659	0.000	0.000	0.000	0.000	0.134	0.007	2.775
1951	0.000	0.000	1.291	0.680	0.024	0.012	0.000	0.000	0.000	0.000	0.000	0.000	2.008
1952	0.000	0.089	1.171	0.586	2.053	0.595	0.084	0.024	0.014	0.010	0.005	0.010	4.641
1953	0.002	0.000	0.270	0.212	1.364	0.007	0.257	0.114	0.043	0.027	0.017	0.146	2.458
1954	0.292	0.010	0.439	0.628	0.813	0.680	0.137	0.087	0.051	0.031	0.019	0.012	3.199
1955	0.431	0.369	0.818	0.976	2.053	0.706	0.272	0.119	0.062	0.214	0.134	0.147	6.301
1956	0.551	0.590	1.311	0.917	1.854	0.695	0.268	0.116	0.061	0.216	0.135	0.148	6.863
1957	0.574	0.590	1.608	1.351	1.991	0.686	0.262	0.113	0.061	0.157	0.096	0.055	7.544
1958	0.036	0.590	1.441	0.824	1.424	0.638	0.211	0.117	0.058	0.055	0.034	0.148	5.576
1959	0.557	0.051	1.363	0.499	1.330	0.434	0.271	0.107	0.041	0.027	0.017	0.041	4.738
1960	0.176	0.564	1.769	1.578	1.873	0.706	0.265	0.117	0.062	0.209	0.130	0.148	7.595
1961	0.570	0.489	1.029	1.269	0.142	0.677	0.077	0.036	0.022	0.014	0.007	0.005	4.337
1962	0.002	0.555	1.769	1.502	1.506	0.702	0.272	0.119	0.062	0.215	0.135	0.144	6.983
1963	0.260	0.190	0.210	1.108	0.980	0.140	0.104	0.051	0.031	0.019	0.012	0.007	3.112
1964	0.569	0.590	1.687	1.061	0.879	0.631	0.236	0.106	0.060	0.213	0.055	0.031	6.119
1965	0.104	0.571	0.287	0.540	1.703	0.007	0.002	0.002	0.002	0.002	0.060	0.070	3.351
1966	0.000	0.496	0.812	0.798	1.750	0.705	0.266	0.117	0.062	0.209	0.131	0.116	5.462
1967	0.106	0.582	1.301	0.817	0.130	0.378	0.043	0.029	0.017	0.010	0.007	0.005	3.425
1968	0.002	0.381	1.769	1.320	0.996	0.664	0.255	0.109	0.060	0.108	0.065	0.145	5.873
1969	0.565	0.106	0.214	0.592	1.341	0.017	0.007	0.005	0.002	0.002	0.002	0.147	3.000
1970	0.574	0.499	0.251	1.578	0.827	0.653	0.271	0.119	0.062	0.216	0.135	0.145	5.330
1971	0.347	0.515	1.435	1.447	2.053	0.705	0.269	0.118	0.062	0.211	0.132	0.133	7.427
1972	0.092	0.060	0.193	1.259	2.053	0.706	0.272	0.119	0.062	0.215	0.135	0.148	5.315
1973	0.574	0.581	1.189	1.440	1.722	0.362	0.207	0.099	0.057	0.216	0.031	0.019	6.498
1974	0.058	0.587	0.366	0.787	1.497	0.698	0.261	0.116	0.062	0.207	0.129	0.148	4.916
1975	0.574	0.590	1.681	1.546	1.694	0.695	0.271	0.119	0.062	0.215	0.135	0.145	7.728
1976	0.439	0.583	1.658	1.406	2.053	0.706	0.272	0.119	0.062	0.214	0.134	0.148	7.794
1977	0.574	0.550	1.184	1.578	1.749	0.694	0.262	0.116	0.062	0.207	0.129	0.138	7.242
1978	0.574	0.589	1.476	1.057	1.814	0.646	0.225	0.104	0.059	0.216	0.135	0.148	7.043
1979	0.563	0.516	1.011	1.214	0.813	0.099	0.058	0.036	0.022	0.014	0.007	0.005	4.359
1980	0.002	0.002	0.634	0.909	1.431	0.031	0.000	0.000	0.048	0.111	0.036	0.147	3.351
1981	0.190	0.558	1.193	1.351	1.475	0.660	0.239	0.103	0.058	0.070	0.041	0.024	5.962
1982	0.548	0.567	0.007	0.681	0.002	0.002	0.000	0.103	0.031	0.000	0.000	0.000	1.942
1983	0.000	0.587	1.317	1.578	2.053	0.706	0.272	0.119	0.062	0.216	0.135	0.148	7.194
1984	0.573	0.555	0.875	1.334	2.053	0.702	0.265	0.117	0.062	0.209	0.130	0.116	6.993
1985	0.565	0.545	0.371	1.129	1.262	0.186	0.075	0.048	0.029	0.017	0.010	0.007	4.243
1986	0.005	0.002	1.769	0.511	0.123	0.024	0.010	0.007	0.005	0.002	0.135	0.148	2.741
1987	0.574	0.590	1.399	1.127	1.610	0.698	0.272	0.118	0.062	0.216	0.133	0.147	6.948
1988	0.573	0.583	1.331	0.753	1.338	0.643	0.234	0.104	0.061	0.075	0.046	0.027	5.768
1989	0.125	0.572	1.451	1.333	1.142	0.659	0.242	0.108	0.060	0.111	0.067	0.039	5.910
1990	0.024	0.014	1.499	1.441	2.009	0.701	0.268	0.118	0.062	0.211	0.132	0.132	6.611
1991	0.422	0.480	1.331	0.200	0.956	0.034	0.005	0.002	0.002	0.000	0.000	0.000	3.433
1992	0.000	0.029	0.737	1.061	1.305	0.000	0.268	0.002	0.000	0.000	0.000	0.147	3.549
1993	0.574	0.588	1.683	1.567	1.599	0.702	0.258	0.115	0.061	0.205	0.128	0.075	7.555
1994	0.570	0.584	1.769	1.045	0.099	0.106	0.145	0.031	0.017	0.010	0.005	0.002	4.382
1995	0.570	0.492	1.769	1.578	2.053	0.706	0.272	0.119	0.062	0.216	0.135	0.142	8.113
1996	0.570	0.214	0.902	0.632	0.617	0.706	0.272	0.119	0.062	0.216	0.135	0.147	4.593
1997	0.559	0.579	1.265	1.578	0.851	0.706	0.243	0.113	0.061	0.096	0.058	0.034	6.142
1998	0.424	0.354	1.601	1.095	1.165	0.654	0.269	0.110	0.060	0.099	0.060	0.036	5.927
1999	0.022	0.012	1.569	1.578	2.053	0.705	0.272	0.119	0.062	0.215	0.135	0.144	6.886
2000	0.272	0.590	1.769	1.558	1.596	0.705	0.269	0.118	0.062	0.211	0.132	0.148	7.430
2001	0.559	0.587	1.220	1.129	1.971	0.688	0.270	0.115	0.061	0.216	0.135	0.148	7.099
2002	0.574	0.576	1.092	0.633	1.833	0.195	0.116	0.072	0.043	0.027	0.017	0.010	5.187
2003	0.007	0.587	0.723	0.845	1.681	0.706	0.272	0.119	0.062	0.216	0.135	0.146	5.499
2004	0.54												

A.106. Niv7 – Category B**Summary table**

Desktop Version 2, Generated on 2015-03-31

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv7

Annual Flows (Mill. cu. m or index values):

MAR = 288,623

S.Dev. = 300,622

CV = 1,042

Q75 = 1,533

Q75/MMF = 0,064

BFI Index = 0,314

CV(JJA+JFM) Index = 4,189

Ecological Category = B

Total IFR = 155,328 (53,82 %MAR)

Maint. Lowflow = 97,580 (33,81 %MAR)

Drought Lowflow = 17,856 (6,19 %MAR)

Maint. Highflow = 57,748 (20,01 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	20,472	50,399	2,462	6,022	0,859	3,822	9,844
Nov	21,132	28,420	1,345	9,284	0,982	6,059	15,342
Dec	39,013	50,928	1,305	12,172	2,754	7,647	19,819
Jan	42,820	59,694	1,394	13,459	2,781	9,296	22,755
Feb	48,531	77,547	1,598	13,077	2,592	14,090	27,167
Mar	37,867	84,417	2,229	13,812	2,733	9,364	23,176
Apr	15,950	27,590	1,730	9,771	0,953	2,507	12,278
May	10,582	16,998	1,606	7,600	0,972	1,782	9,382
Jun	5,270	7,881	1,495	3,799	0,904	0,000	3,799
Jul	23,942	92,756	3,874	3,440	0,849	1,484	4,923
Aug	6,346	12,534	1,975	2,859	0,769	0,000	2,859
Sep	16,699	53,856	3,225	2,287	0,707	1,697	3,984

Rule curve

Desktop Version 2, Generated on 2015-03-31

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv7

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	11.367	11.270	11.051	7.523	4.173	2.527	1.732	0.767	0.170	0.000
Nov	17.703	17.583	17.334	16.637	10.164	8.290	3.889	2.470	0.795	0.028
Dec	29.384	27.317	25.455	23.638	21.619	16.892	11.924	7.921	4.202	0.199
Jan	34.121	31.616	29.369	27.191	18.595	13.656	9.937	6.075	2.328	0.312
Feb	42.977	39.232	35.936	32.854	22.769	19.617	12.917	6.558	3.747	0.341
Mar	26.729	26.558	26.201	18.368	15.047	9.567	5.905	3.180	1.561	0.199
Apr	14.399	14.274	12.179	10.192	7.978	5.110	4.003	1.789	0.596	0.057
May	11.018	10.924	9.681	5.990	4.400	2.328	1.618	0.653	0.227	0.028
Jun	4.536	4.501	4.422	3.378	2.328	1.647	0.994	0.369	0.114	0.000
Jul	5.729	5.684	4.883	2.867	1.959	1.249	0.852	0.511	0.114	0.000
Aug	3.414	3.389	3.095	1.987	1.278	0.823	0.511	0.369	0.114	0.000
Sep	4.588	4.553	4.472	3.180	2.072	1.249	0.653	0.341	0.170	0.028

Reserve Flows without High Flows

Oct	7.187	7.126	6.989	6.706	4.173	2.527	1.732	0.767	0.170	0.000
Nov	11.077	11.002	10.845	10.536	9.957	8.290	3.889	2.470	0.795	0.028
Dec	14.532	14.445	14.262	13.902	13.226	12.046	10.170	7.563	4.202	0.199
Jan	16.067	15.968	15.762	15.355	14.593	13.262	9.937	6.075	2.328	0.312
Feb	15.611	15.514	15.312	14.913	14.167	12.862	10.789	6.558	3.747	0.341
Mar	16.487	16.385	16.172	15.751	14.962	9.567	5.905	3.180	1.561	0.199
Apr	11.657	11.555	11.323	10.192	7.978	5.110	4.003	1.789	0.596	0.057
May	9.069	8.992	8.816	5.990	4.400	2.328	1.618	0.653	0.227	0.028
Jun	4.536	4.501	4.422	3.378	2.328	1.647	0.994	0.369	0.114	0.000
Jul	4.107	4.076	4.005	2.867	1.959	1.249	0.852	0.511	0.114	0.000
Aug	3.414	3.389	3.095	1.987	1.278	0.823	0.511	0.369	0.114	0.000
Sep	2.732	2.712	2.669	2.578	2.072	1.249	0.653	0.341	0.170	0.028

Natural Duration curves

Oct	45.850	24.501	11.867	7.523	4.173	2.527	1.732	0.767	0.170	0.000
Nov	49.086	34.636	23.819	16.637	10.164	8.290	3.889	2.470	0.795	0.028
Dec	103.907	55.361	44.203	28.617	24.273	16.892	11.924	7.921	4.202	0.199
Jan	118.046	69.726	50.733	28.958	18.595	13.656	9.937	6.075	2.328	0.312
Feb	107.201	66.717	48.831	35.743	22.769	19.617	12.917	6.558	3.747	0.341
Mar	80.173	51.301	35.260	18.368	15.047	9.567	5.905	3.180	1.561	0.199
Apr	34.465	25.750	12.179	10.192	7.978	5.110	4.003	1.789	0.596	0.057
May	34.607	13.684	9.681	5.990	4.400	2.328	1.618	0.653	0.227	0.028
Jun	15.615	7.836	5.422	3.378	2.328	1.647	0.994	0.369	0.114	0.000
Jul	32.052	10.476	4.883	2.867	1.959	1.249	0.852	0.511	0.114	0.000
Aug	21.548	6.785	3.095	1.987	1.278	0.823	0.511	0.369	0.114	0.000
Sep	41.591	15.189	8.460	3.180	2.072	1.249	0.653	0.341	0.170	0.028

Hydrological time series

Total Runoff : Niv7

Desktop (Version 2) Modified Flow Data for Ecological Category B

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	11.235	8.773	7.921	1.618	6.558	3.776	0.568	0.284	0.170	0.114	0.057	4.554	45.629
1921	6.956	17.703	27.344	27.808	36.355	11.782	4.628	2.867	1.703	1.079	3.413	3.549	145.187
1922	11.051	17.632	26.239	34.121	36.176	21.009	10.192	5.309	2.924	1.845	1.107	0.653	168.258
1923	2.527	8.659	25.737	13.656	21.775	26.441	14.047	8.687	4.394	2.896	1.732	1.703	132.255
1924	1.647	17.703	27.134	34.121	42.977	26.729	14.399	11.018	4.536	5.729	3.414	4.515	193.923
1925	7.523	4.031	4.202	3.009	1.136	1.561	0.426	0.227	0.142	0.085	0.057	4.472	26.871
1926	0.028	0.057	1.022	1.079	4.486	3.180	0.596	0.000	0.000	0.852	0.114	0.199	11.613
1927	1.561	7.978	5.792	5.508	6.785	1.987	0.823	0.028	0.028	0.000	0.000	1.902	32.392
1928	0.000	0.596	0.767	0.852	3.095	15.728	2.867	1.647	0.994	0.596	0.369	2.811	30.322
1929	2.101	1.618	2.214	34.121	20.923	26.612	10.731	5.593	3.322	2.101	1.278	0.767	111.381
1930	0.483	0.369	9.681	0.397	0.341	0.085	0.369	0.483	0.256	0.199	0.284	0.170	13.117
1931	0.114	1.249	0.199	0.114	42.943	26.025	10.022	9.113	4.442	3.492	2.101	1.249	101.063
1932	0.795	0.568	11.924	7.552	26.431	2.555	1.334	0.653	0.369	5.597	0.142	0.085	58.005
1933	0.114	8.290	23.910	19.447	4.968	8.347	1.164	0.312	0.170	0.994	3.368	2.583	73.667
1934	2.640	3.889	24.690	5.508	22.598	0.937	0.227	0.142	1.136	0.057	0.028	0.028	61.880
1935	0.000	0.000	1.902	32.297	20.867	26.729	14.399	11.018	4.536	5.661	3.372	3.464	124.245
1936	2.158	17.612	22.543	29.994	41.611	20.384	10.362	5.621	3.322	4.798	1.278	3.123	162.805
1937	0.511	0.483	24.112	2.328	32.452	3.378	10.873	0.625	4.490	5.715	3.347	3.180	91.495
1938	10.419	16.981	25.971	10.249	21.349	26.322	6.927	9.284	2.981	5.721	3.414	4.547	144.166
1939	11.219	17.703	25.455	28.135	19.419	7.779	14.363	11.018	4.527	5.636	3.356	4.543	153.152
1940	8.716	15.359	26.938	25.381	11.612	10.845	4.968	1.618	0.965	0.596	0.369	0.539	107.906
1941	0.653	1.902	6.643	9.937	33.169	6.558	1.789	1.278	4.422	0.795	0.483	4.394	72.024
1942	11.092	16.239	28.401	29.699	19.617	26.201	14.360	10.990	4.525	5.729	3.414	4.588	174.854
1943	11.336	14.706	20.057	6.246	22.769	3.833	1.789	1.136	1.647	1.221	0.738	4.588	90.066
1944	11.341	16.637	13.798	14.138	19.078	26.729	14.184	10.533	4.464	3.889	2.356	1.420	138.567
1945	0.880	0.539	25.120	31.616	35.936	10.504	4.883	2.243	1.334	0.852	0.511	0.312	114.730
1946	0.767	1.931	7.609	14.706	34.173	26.729	14.278	10.924	4.505	4.486	2.725	2.072	124.905
1947	1.079	17.638	29.384	18.595	12.719	18.368	9.993	1.647	0.994	0.625	0.369	1.334	112.745
1948	1.278	6.586	16.495	12.548	9.823	1.987	14.063	11.018	1.931	1.221	0.738	0.653	78.340
1949	2.158	2.953	20.267	24.983	4.514	15.047	2.214	3.747	0.369	0.199	0.114	0.085	76.650
1950	0.256	0.028	16.892	8.261	1.931	13.514	1.334	0.085	0.000	0.000	3.413	4.473	50.188
1951	7.836	3.009	22.701	5.763	22.939	6.870	0.284	0.170	0.114	5.712	0.880	0.284	76.562
1952	0.170	1.902	19.440	27.191	32.854	8.034	4.798	1.107	0.454	0.284	0.170	0.114	96.518
1953	0.256	11.697	0.767	1.363	21.889	8.091	1.363	10.984	4.394	2.867	1.760	4.552	69.984
1954	11.286	17.466	18.028	27.773	41.157	26.703	14.366	10.930	4.501	4.940	2.981	1.760	181.890
1955	4.202	1.561	6.473	3.861	41.265	26.505	14.179	10.824	4.472	4.145	2.498	4.392	124.376
1956	1.732	17.342	23.752	13.457	22.911	5.678	14.281	10.938	4.464	5.729	3.414	4.588	128.286
1957	11.367	17.703	28.610	30.524	39.232	16.182	9.425	5.252	3.095	1.959	1.192	0.937	165.479
1958	2.754	17.299	22.609	21.548	9.255	3.889	2.101	2.356	0.795	0.511	0.312	4.546	87.975
1959	4.741	2.271	24.887	2.129	34.058	9.567	14.137	4.400	1.732	1.079	0.653	1.476	101.130
1960	0.483	17.473	27.317	34.111	35.850	21.179	11.867	7.552	4.387	2.413	1.476	4.577	168.685
1961	11.161	7.239	6.274	9.255	2.328	11.441	11.214	2.016	0.596	0.397	0.397	0.170	62.488
1962	0.114	3.577	29.384	20.810	27.056	17.573	14.399	10.799	4.505	5.729	3.414	4.584	141.945
1963	11.195	9.993	6.558	33.694	6.615	3.123	12.179	1.618	0.965	0.625	0.369	0.227	87.161
1964	11.289	17.690	24.934	11.924	41.339	4.173	2.583	1.476	1.334	1.363	0.483	0.341	118.928
1965	6.132	2.782	1.874	1.448	24.983	0.199	0.057	0.057	0.028	0.028	0.170	0.142	37.900
1966	0.000	10.959	28.683	12.690	38.214	26.201	14.171	10.822	4.462	3.691	2.243	1.732	153.868
1967	3.180	17.463	23.638	14.309	4.599	26.729	11.810	7.069	4.173	2.640	3.357	0.937	119.905
1968	2.072	3.804	22.477	19.135	3.747	26.609	8.829	7.665	4.230	2.527	1.533	2.328	104.956
1969	11.346	17.354	11.242	9.312	13.911	2.555	5.025	1.249	0.539	0.341	1.987	4.554	79.415
1970	11.367	16.990	10.078	17.290	4.173	2.953	7.126	11.005	4.506	5.640	3.389	2.867	97.384
1971	4.145	2.129	13.826	29.694	42.977	26.701	14.352	11.009	4.533	5.717	3.392	4.390	162.863
1972	2.981	3.180	2.470	6.672	36.451	14.479	14.138	7.012	3.691	1.987	3.362	4.588	101.011
1973	11.367	17.223	23.625	29.369	18.056	10.589	3.435	2.016	1.164	5.715	0.454	0.284	123.296
1974	0.681	9.709	28.484	33.358	42.205	26.729	14.274	10.926	4.501	4.883	2.953	4.588	183.290
1975	11.367	17.502	24.428	32.047	34.522	26.558	14.399	11.018	4.536	5.708	3.392	4.396	189.871
1976	5.025	8.034	26.951	29.265	42.977	26.729	14.399	11.018	4.536	5.684	3.382	4.452	182.451
1977	10.646	2.470	7.239	34.121	34.799	13.769	8.375	3.918	2.328	2.300	0.880	0.823	121.668
1978	10.999	8.801	20.910	14.678	19.021	9.198	10.306	4.400	2.612	5.422	1.732	4.473	112.552
1979	7.523	3.719	17.346	17.630	19.816	0.795	0.341	0.227	0.114	0.085	0.057	4.472	72.125
1980	1.420	17.583	14.791	16.665	15.189	0.284	3.350	11.018	4.536	5.686	3.395	4.588	98.505
1981	11.294	16.835	17.829	12.236	19.390	17.204	5.877	3.322	1.959	1.249	0.767	0.454	108.416
1982	2.271	4.826	0.142	4.259	2.072	0.256	0.028	0.284	0.028	0.000	0.483	0.000	14.649
1983	1.902	17.687	21.831	34.121	42.977	26.729	14.399	10.988	4.526	5.729	3.414	4.585	188.889
1984	11.183	9.624	7.836	30.458	42.977	21.576	9.454	5.735	3.378	2.129	1.306	1.249	146.905
1985	11.270	17.600	14.081	26.876	31.882	4.826	1.136	0.596	0.341	0.227	0.142	0.114	109.091
1986	4.400	8.176	26.700	27.459	12.917	5.905	6.416	9.965	1.789	1.902	3.406	4.588	113.624
1987	11.367	17.703	29.384	30.641	38.315	26.446	14.288	10.921	4.494	5.704	3.095	3.066	195.424
1988	11.348	17.703	29.384	28.414	35.831	15.217	7.978	4.429	2.839	1.647	0.994	4.574	160.360
1989	4.173	17.664	29.384	30.314	38.777	26.569	14.380	9.681	4.383	3.038	1.845	1.107	181.315
1990	7.750	17.334	23.374	23.762	37.311	26.311	6.757	9.482	2.158	1.363	0.823	0.483	156.909
1991	1.278	3.208	11.981	0.312	42.977	17.346	4.088	2.470	1.476	0.937	0.568	0.341	86.982
1992	2.385	0.454	13.570	3.634	3.038	1.107	4.003	0.057	0.000	0.000	0.000	1.505	29.753
1993	11.367	17.666	25.643	28.414	17.659	15.700	7.495	3.208	1.902	1.192	0.880	0.426	131.552
1994	3.464	8.858	20.595	9.425	0.227	21.293	4.088	1.334	0.199	0.142	0.085	0.057	69.767
1995	9.738	17.458	29.384	34.121	42.977	26.729	14.399	11.018	4.536	5.729	3.407	4.455	203.952
1996	11.367	13.315	27.574	32.732	40.758	26.673	14.399	10.851	4.536	5.729	3.414	4.588	195.937
1997	11.367	17.703	29.384	33.029	31.598	26.385	8.801	5.990	3.407	2.044	1.249	0.738	171.696
1998	11.367	14.280	28.227	31.122	10.873	26.190	5.706	2.328	1.306	0.823	0.511	0.341	133.074
1999	2.072	0.795	29.384	34.121	42.977	26.704	14.399	11.018	4.536	5.676	3.376	4.553	179.610
2000	11.166	17.703	29.384	29.185	21.548	19.447	7.495	4.457	2.612	1.647</			

A.107. Niv7 – Category C**Summary table**

Desktop Version 2, Generated on 2015-03-31

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv7

Annual Flows (Mill. cu. m or index values):

MAR = 288,623

S.Dev. = 300,622

CV = 1,042

Q75 = 1,533

Q75/MMF = 0,064

BFI Index = 0,314

CV(JJA+JFM) Index = 4,189

Ecological Category = C

Total IFR = 128,534 (44,53 %MAR)

Maint. Lowflow = 64,901 (22,49 %MAR)

Drought Lowflow = 17,856 (6,19 %MAR)

Maint. Highflow = 63,633 (22,05 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	20,472	50,399	2,462	4,137	0,859	4,143	8,280
Nov	21,132	28,420	1,345	5,876	0,982	6,671	12,547
Dec	39,013	50,928	1,305	8,996	2,754	8,390	17,386
Jan	42,820	59,694	1,394	9,478	2,781	10,380	19,859
Feb	48,531	77,547	1,598	8,938	2,592	15,441	24,379
Mar	37,867	84,417	2,229	9,022	2,733	10,722	19,744
Apr	15,950	27,590	1,730	6,040	0,953	2,726	8,766
May	10,582	16,998	1,606	4,888	0,972	1,921	6,810
Jun	5,270	7,881	1,495	2,404	0,904	0,000	2,404
Jul	23,942	92,756	3,874	2,270	0,849	1,503	3,774
Aug	6,346	12,534	1,975	2,089	0,769	0,000	2,089
Sep	16,699	53,856	3,225	0,761	0,707	1,736	2,497

Rule curve

Desktop Version 2, Generated on 2015-03-31

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv7

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	10.457	10.369	10.171	7.523	4.173	2.527	1.732	0.767	0.170	0.000
Nov	16.140	16.033	15.808	15.364	10.164	8.290	3.889	2.470	0.795	0.028
Dec	28.828	26.584	24.590	22.692	20.657	16.892	11.924	7.921	4.202	0.199
Jan	33.365	30.600	28.159	25.863	18.595	13.656	9.937	6.075	2.328	0.312
Feb	42.440	38.369	34.826	31.582	22.769	19.617	12.917	6.558	3.747	0.341
Mar	25.361	25.201	24.867	18.368	15.047	9.567	5.905	3.180	1.561	0.199
Apr	11.367	11.270	11.051	10.192	7.978	5.110	4.003	1.789	0.596	0.057
May	8.867	8.794	8.627	5.990	4.400	2.328	1.618	0.653	0.227	0.028
Jun	3.255	3.233	3.182	3.077	2.328	1.647	0.994	0.369	0.114	0.000
Jul	4.837	4.801	4.718	2.867	1.959	1.249	0.852	0.511	0.114	0.000
Aug	2.828	2.809	2.764	1.987	1.278	0.823	0.511	0.369	0.114	0.000
Sep	3.069	3.048	3.001	2.903	2.072	1.249	0.653	0.341	0.170	0.028

Reserve Flows without High Flows

Oct	5.597	5.552	5.449	5.237	4.173	2.527	1.732	0.767	0.170	0.000
Nov	8.182	8.128	8.017	7.796	7.383	6.662	3.889	2.470	0.795	0.028
Dec	12.533	12.461	12.309	12.010	11.449	10.469	8.911	6.747	4.202	0.199
Jan	13.204	13.127	12.965	12.646	12.048	11.004	9.343	6.075	2.328	0.312
Feb	12.451	12.377	12.225	11.923	11.357	10.370	8.799	6.558	3.747	0.341
Mar	12.568	12.495	12.343	12.042	11.477	9.567	5.905	3.180	1.561	0.199
Apr	8.169	8.100	7.944	7.621	7.019	5.110	4.003	1.789	0.596	0.057
May	6.613	6.559	6.437	5.990	4.400	2.328	1.618	0.653	0.227	0.028
Jun	3.255	3.233	3.182	3.077	2.328	1.647	0.994	0.369	0.114	0.000
Jul	3.074	3.052	3.004	2.867	1.959	1.249	0.852	0.511	0.114	0.000
Aug	2.828	2.809	2.764	1.987	1.278	0.823	0.511	0.369	0.114	0.000
Sep	1.032	1.029	1.022	1.008	0.981	0.936	0.653	0.341	0.170	0.028

Natural Duration curves

Oct	45.850	24.501	11.867	7.523	4.173	2.527	1.732	0.767	0.170	0.000
Nov	49.086	34.636	23.819	16.637	10.164	8.290	3.889	2.470	0.795	0.028
Dec	103.907	55.361	44.203	28.617	24.273	16.892	11.924	7.921	4.202	0.199
Jan	118.046	69.726	50.733	28.958	18.595	13.656	9.937	6.075	2.328	0.312
Feb	107.201	66.717	48.831	35.743	22.769	19.617	12.917	6.558	3.747	0.341
Mar	80.173	51.301	35.260	18.368	15.047	9.567	5.905	3.180	1.561	0.199
Apr	34.465	25.750	12.179	10.192	7.978	5.110	4.003	1.789	0.596	0.057
May	34.607	13.684	9.681	5.990	4.400	2.328	1.618	0.653	0.227	0.028
Jun	15.615	7.836	5.422	3.378	2.328	1.647	0.994	0.369	0.114	0.000
Jul	32.052	10.476	4.883	2.867	1.959	1.249	0.852	0.511	0.114	0.000
Aug	21.548	6.785	3.095	1.987	1.278	0.823	0.511	0.369	0.114	0.000
Sep	41.591	15.189	8.460	3.180	2.072	1.249	0.653	0.341	0.170	0.028

Hydrological time series

Total Runoff : Niv7

Desktop (Version 2) Modified Flow Data for Ecological Category C

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	10.338	8.773	7.921	1.618	6.558	3.776	0.568	0.284	0.170	0.114	0.057	3.049	43.226
1921	6.956	16.140	26.613	26.506	35.273	11.782	4.628	2.867	1.703	1.079	2.828	2.916	139.291
1922	10.171	16.076	25.425	33.365	35.082	21.009	10.192	5.309	2.924	1.845	1.107	0.653	163.157
1923	2.527	8.659	24.889	13.656	21.775	25.092	11.096	8.544	3.164	2.896	1.732	1.703	125.733
1924	1.647	16.140	26.387	33.365	42.440	25.361	11.367	8.867	3.255	4.837	2.828	3.026	179.520
1925	7.523	4.031	4.202	3.009	1.136	1.561	0.426	0.227	0.142	0.085	0.057	3.001	25.400
1926	0.028	0.057	1.022	1.079	4.486	3.180	0.596	0.000	0.000	0.852	0.114	0.199	11.613
1927	1.561	7.978	5.792	5.508	6.785	1.987	0.823	0.028	0.028	0.000	0.000	1.902	32.392
1928	0.000	0.596	0.767	0.852	3.095	15.728	2.867	1.647	0.994	0.596	0.369	2.811	30.322
1929	2.101	1.618	2.214	33.365	20.923	25.251	10.731	5.593	3.066	2.101	1.278	0.767	109.008
1930	0.483	0.369	9.681	0.397	0.341	0.085	0.369	0.483	0.256	0.199	0.284	0.170	13.117
1931	0.114	1.249	0.199	0.114	42.403	24.703	10.022	8.590	3.194	3.492	2.101	1.249	97.420
1932	0.795	0.568	11.924	7.552	26.431	2.555	1.334	0.653	0.369	4.730	0.142	0.085	57.138
1933	0.114	8.290	22.973	19.447	4.968	8.347	1.164	0.312	0.170	0.994	2.792	2.583	72.154
1934	2.640	3.889	23.785	5.508	22.598	0.937	0.227	0.142	1.136	0.057	0.028	0.028	60.975
1935	0.000	0.000	1.902	31.350	20.867	25.361	11.367	8.867	3.255	4.782	2.795	2.913	113.459
1936	2.158	16.058	21.588	28.834	40.952	20.384	10.362	5.621	3.066	4.712	1.278	2.894	157.906
1937	0.511	0.483	23.182	2.328	31.174	3.378	10.830	0.625	3.226	4.826	2.776	2.903	86.242
1938	10.079	15.491	25.139	10.249	21.349	24.980	6.927	8.594	2.981	4.831	2.828	3.045	136.492
1939	10.323	16.140	24.590	26.847	19.419	7.779	11.339	8.867	3.249	4.761	2.783	3.042	139.140
1940	8.716	15.200	26.175	25.027	11.612	10.845	4.968	1.618	0.965	0.596	0.369	0.539	106.631
1941	0.653	1.902	6.643	9.937	31.912	6.558	1.789	1.278	3.182	0.795	0.483	2.955	68.086
1942	10.207	15.313	27.758	28.515	19.617	24.867	11.337	8.845	3.248	4.837	2.828	3.069	160.442
1943	10.429	14.706	19.088	6.246	22.769	3.833	1.789	1.136	1.647	1.221	0.738	3.069	86.671
1944	10.434	15.364	13.798	14.138	19.078	25.361	11.202	8.669	3.209	3.889	2.356	1.420	128.917
1945	0.880	0.539	24.237	30.600	34.826	10.504	4.883	2.243	1.334	0.852	0.511	0.312	111.721
1946	0.767	1.931	7.609	14.706	32.959	25.361	11.274	8.794	3.235	4.486	2.725	2.072	115.918
1947	1.079	16.082	28.828	18.595	12.719	18.368	9.993	1.647	0.994	0.625	0.369	1.334	110.633
1948	1.278	6.586	16.495	12.548	9.823	1.987	11.108	8.867	1.931	1.221	0.738	0.653	73.235
1949	2.158	2.953	19.299	24.934	4.514	15.047	2.214	3.747	0.369	0.199	0.114	0.085	75.632
1950	0.256	0.028	16.892	8.261	1.931	13.514	1.334	0.085	0.000	0.000	2.828	3.002	48.130
1951	7.836	3.009	21.748	5.763	22.939	6.870	0.284	0.170	0.114	4.823	0.880	0.284	74.720
1952	0.170	1.902	18.468	25.863	31.582	8.034	4.798	1.107	0.454	0.284	0.170	0.114	92.946
1953	0.256	11.697	0.767	1.363	21.889	8.091	1.363	8.840	3.164	2.867	1.760	3.048	65.105
1954	10.384	15.927	17.755	26.470	40.458	25.336	11.341	8.798	3.233	4.718	2.755	1.760	168.936
1955	4.202	1.561	6.473	3.861	40.575	25.151	11.197	8.715	6.474	4.145	2.498	2.953	114.547
1956	1.732	15.815	22.810	13.457	22.911	5.678	11.276	8.805	3.209	4.837	2.828	3.069	116.427
1957	10.457	16.140	27.985	29.408	38.369	16.182	9.425	5.252	3.024	1.959	1.192	0.937	160.331
1958	2.754	15.777	21.655	21.548	9.255	3.889	2.101	2.356	0.795	0.511	0.312	3.044	83.997
1959	4.741	2.271	23.992	2.129	32.839	9.567	11.166	4.400	1.732	1.079	0.653	1.476	96.045
1960	0.483	15.934	26.584	33.353	34.735	21.179	10.998	7.552	3.159	2.413	1.476	3.063	160.927
1961	10.271	7.239	6.274	9.255	2.328	11.441	10.888	2.016	0.596	0.397	0.397	0.170	61.271
1962	0.114	3.577	28.828	20.810	27.056	17.573	11.367	8.696	3.235	4.837	2.828	3.067	131.989
1963	10.301	9.993	6.558	32.891	6.615	3.123	11.051	1.618	0.965	0.625	0.369	0.227	84.336
1964	10.386	16.129	24.041	11.924	40.656	4.173	2.583	1.476	1.334	1.363	0.483	0.341	114.889
1965	6.132	2.782	1.874	1.448	24.983	0.199	0.057	0.057	0.028	0.028	0.170	0.142	37.900
1966	0.000	10.959	28.065	12.690	37.271	24.867	11.191	8.714	3.208	3.691	2.243	1.732	144.631
1967	3.180	15.924	22.692	14.309	4.599	25.361	10.988	7.069	3.127	2.640	2.784	0.937	113.611
1968	2.072	3.804	21.522	19.135	3.747	25.248	8.829	7.665	3.131	2.527	1.533	2.328	101.541
1969	10.439	15.826	11.242	9.312	13.911	2.555	5.025	1.249	0.539	0.341	1.987	3.049	75.475
1970	10.457	15.499	10.078	17.290	4.173	2.953	7.126	8.857	3.236	4.765	2.809	2.851	90.094
1971	4.145	2.129	13.826	28.510	42.440	25.335	11.330	8.860	3.253	4.827	2.811	2.952	150.418
1972	2.981	3.180	2.470	6.672	35.376	14.479	11.166	7.012	3.097	1.987	2.787	3.069	94.276
1973	10.457	15.708	22.679	28.159	18.056	10.589	3.435	2.016	1.164	4.826	0.454	0.284	117.827
1974	0.681	9.709	27.848	32.520	41.599	25.361	11.270	8.796	3.233	4.718	2.753	3.069	171.556
1975	10.457	15.960	23.509	31.074	33.328	25.201	11.367	8.867	3.255	4.820	2.811	2.956	173.604
1976	5.025	8.034	26.190	28.049	42.440	25.361	11.367	8.867	3.255	4.801	2.803	2.989	169.179
1977	10.093	2.470	7.239	33.365	33.622	13.769	8.375	3.918	2.328	2.300	0.880	0.823	119.182
1978	10.124	8.801	19.945	14.678	19.021	9.198	10.306	4.400	2.612	4.724	1.732	3.001	108.542
1979	7.523	3.719	17.346	17.630	19.816	0.795	0.341	0.227	0.114	0.085	0.057	3.001	70.654
1980	1.420	16.033	14.791	16.665	15.189	0.284	3.350	8.867	3.255	4.803	2.813	3.069	90.539
1981	10.391	15.379	17.663	12.236	19.390	17.204	5.877	3.322	1.959	1.249	0.767	0.454	105.891
1982	2.271	4.826	0.142	4.259	2.072	0.256	0.028	0.284	0.028	0.000	0.483	0.000	14.649
1983	1.902	16.126	20.870	33.365	42.440	25.361	11.367	8.844	3.249	4.837	2.828	3.067	174.256
1984	10.290	9.624	7.836	29.337	42.440	21.576	9.454	5.735	3.077	2.129	1.306	1.249	144.052
1985	10.369	16.047	14.081	25.544	30.607	4.826	1.136	0.596	0.341	0.227	0.142	0.114	104.031
1986	4.400	8.176	25.920	26.142	12.917	5.905	6.416	8.641	1.789	1.902	2.822	3.069	108.100
1987	10.457	16.140	28.828	29.537	37.380	25.096	11.281	8.792	3.228	4.816	2.764	2.884	181.204
1988	10.440	16.140	28.828	27.145	34.714	15.217	7.978	4.429	2.839	1.647	0.994	3.061	153.433
1989	4.173	16.105	28.828	29.179	37.879	25.211	11.352	8.627	3.156	3.038	1.845	1.107	170.500
1990	7.750	15.808	22.426	23.762	36.297	24.970	6.757	8.610	2.158	1.363	0.823	0.483	151.208
1991	1.278	3.208	11.981	0.312	42.440	17.346	4.088	2.470	1.476	0.937	0.568	0.341	86.445
1992	2.385	0.454	13.570	3.634	3.038	1.107	4.003	0.057	0.000	0.000	0.000	1.505	29.753
1993	10.457	16.106	24.790	27.145	17.659	15.700	7.495	3.208	1.902	1.192	0.880	0.426	126.960
1994	3.464	8.858	19.629	9.425	0.227	21.293	4.088	1.334	0.199	0.142	0.085	0.057	68.801
1995	9.738	15.920	28.828	33.365	42.440	25.361	11.367	8.867	3.255	4.837	2.822	2.991	189.791
1996	10.457	13.315	26.862	31.829	40.025	25.308	11.367	8.737	3.255	4.837	2.828	3.069	181.890
1997	10.457	16.140	28.828	32.156	30.535	25.039	8.801	5.990	3.078	2.044	1.249	0.738	165.057
1998	10.457	14.280	27.570	30.061	10.873	24.857	5.706	2.328	1.306	0.823	0.511	0.341	129.113
1999	2.072	0.795	28.828	33.365	42.440	25.337	11.367	8.867	3.255	4.794	2.798	3.048	166.966
2000	10.275	16.140	28.828	27.963	21.548	19.447	7.495	4.457	2.612	1.647	0.994	3.069	144

A.108. Niv7 – Category D**Summary table**

Desktop Version 2, Generated on 2015-03-31

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv7

Annual Flows (Mill. cu. m or index values):

MAR = 288,623

S.Dev. = 300,622

CV = 1,042

Q75 = 1,533

Q75/MMF = 0,064

BFI Index = 0,314

CV(JJA+JFM) Index = 4,189

Ecological Category = D

Total IFR = 62,906 (21,80 %MAR)

Maint. Lowflow = 17,856 (6,19 %MAR)

Drought Lowflow = 17,856 (6,19 %MAR)

Maint. Highflow = 45,050 (15,61 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	20,472	50,399	2,462	0,859	0,859	3,047	3,906
Nov	21,132	28,420	1,345	0,982	0,982	4,348	5,330
Dec	39,013	50,928	1,305	2,754	2,754	5,170	7,925
Jan	42,820	59,694	1,394	2,781	2,781	6,873	9,653
Feb	48,531	77,547	1,598	2,592	2,592	12,151	14,743
Mar	37,867	84,417	2,229	2,733	2,733	6,691	9,424
Apr	15,950	27,590	1,730	0,953	0,953	2,033	2,986
May	10,582	16,998	1,606	0,972	0,972	1,570	2,543
Jun	5,270	7,881	1,495	0,904	0,904	0,000	0,904
Jul	23,942	92,756	3,874	0,849	0,849	1,520	2,369
Aug	6,346	12,534	1,975	0,769	0,769	0,000	0,769
Sep	16,699	53,856	3,225	0,707	0,707	1,648	2,355

Rule curve

Desktop Version 2, Generated on 2015-03-31

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv7

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	5.925	5.879	5.776	5.563	4.173	2.527	1.732	0.767	0.170	0.000
Nov	8.441	8.389	8.280	8.065	7.662	6.958	3.889	2.470	0.795	0.028
Dec	15.533	14.174	12.997	11.928	10.863	9.079	7.906	6.277	4.202	0.199
Jan	18.892	17.092	15.540	14.146	12.781	10.497	9.078	6.075	2.328	0.312
Feb	28.767	25.603	22.894	20.501	18.219	14.412	12.271	6.558	3.747	0.341
Mar	15.427	15.337	15.151	14.783	14.093	9.567	5.905	3.180	1.561	0.199
Apr	4.658	4.624	4.549	4.392	4.100	3.619	2.940	1.789	0.596	0.057
May	4.036	4.008	3.945	3.815	3.573	2.328	1.618	0.653	0.227	0.028
Jun	1.677	1.669	1.653	1.618	1.554	1.448	0.994	0.369	0.114	0.000
Jul	3.735	3.709	3.650	2.867	1.959	1.249	0.852	0.511	0.114	0.000
Aug	1.426	1.420	1.406	1.376	1.278	0.823	0.511	0.369	0.114	0.000
Sep	3.654	3.628	3.568	3.180	2.072	1.249	0.653	0.341	0.170	0.028

Reserve Flows without High Flows

Oct	1.593	1.586	1.570	1.538	1.476	1.375	1.233	0.767	0.170	0.000
Nov	1.957	1.950	1.935	1.905	1.849	1.751	1.596	1.380	0.795	0.028
Dec	5.491	5.471	5.429	5.345	5.188	4.914	4.478	3.872	3.196	0.199
Jan	5.544	5.523	5.480	5.396	5.237	4.960	4.520	3.909	2.328	0.312
Feb	5.168	5.149	5.109	5.030	4.882	4.624	4.214	3.643	3.008	0.341
Mar	5.450	5.429	5.387	5.304	5.148	4.876	4.444	3.180	1.561	0.199
Apr	1.768	1.760	1.743	1.706	1.638	1.526	1.368	1.186	0.596	0.057
May	1.803	1.795	1.777	1.740	1.671	1.557	1.395	0.653	0.227	0.028
Jun	1.677	1.669	1.653	1.618	1.554	1.448	0.994	0.369	0.114	0.000
Jul	1.574	1.567	1.551	1.519	1.458	1.249	0.852	0.511	0.114	0.000
Aug	1.426	1.420	1.406	1.376	1.278	0.823	0.511	0.369	0.114	0.000
Sep	1.312	1.306	1.293	1.266	1.215	1.132	0.653	0.341	0.170	0.028

Natural Duration curves

Oct	45.850	24.501	11.867	7.523	4.173	2.527	1.732	0.767	0.170	0.000
Nov	49.086	34.636	23.819	16.637	10.164	8.290	3.889	2.470	0.795	0.028
Dec	103.907	55.361	44.203	28.617	24.273	16.892	11.924	7.921	4.202	0.199
Jan	118.046	69.726	50.733	28.958	18.595	13.656	9.937	6.075	2.328	0.312
Feb	107.201	66.717	48.831	35.743	22.769	19.617	12.917	6.558	3.747	0.341
Mar	80.173	51.301	35.260	18.368	15.047	9.567	5.905	3.180	1.561	0.199
Apr	34.465	25.750	12.179	10.192	7.978	5.110	4.003	1.789	0.596	0.057
May	34.607	13.684	9.681	5.990	4.400	2.328	1.618	0.653	0.227	0.028
Jun	15.615	7.836	5.422	3.378	2.328	1.647	0.994	0.369	0.114	0.000
Jul	32.052	10.476	4.883	2.867	1.959	1.249	0.852	0.511	0.114	0.000
Aug	21.548	6.785	3.095	1.987	1.278	0.823	0.511	0.369	0.114	0.000
Sep	41.591	15.189	8.460	3.180	2.072	1.249	0.653	0.341	0.170	0.028

Hydrological time series

Total Runoff : Niv7

Desktop (Version 2) Modified Flow Data for Ecological Category D													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	5.863	7.139	6.277	1.618	6.558	3.776	0.568	0.284	0.170	0.114	0.057	3.629	36.053
1921	5.496	8.441	14.192	14.530	23.234	11.782	3.261	2.867	1.456	1.079	1.426	3.460	91.224
1922	5.776	8.410	13.485	18.892	23.089	14.960	4.392	3.711	1.590	1.845	1.107	0.653	97.909
1923	2.527	7.097	13.172	10.497	17.018	15.277	4.564	3.914	1.647	2.896	1.357	1.703	81.668
1924	1.647	8.441	14.057	18.892	28.767	15.427	4.658	4.036	1.677	3.735	1.426	3.599	106.362
1925	5.563	4.031	4.202	3.009	1.136	1.561	0.426	0.227	0.142	0.085	0.057	3.568	24.007
1926	0.028	0.057	1.022	1.079	4.486	3.180	0.596	0.000	0.000	0.852	0.114	0.199	11.613
1927	1.561	6.832	4.978	5.508	6.785	1.987	0.823	0.028	0.000	0.000	1.902	0.000	30.432
1928	0.000	0.596	0.767	0.852	3.095	14.235	2.584	1.647	0.994	0.596	0.369	2.811	28.545
1929	2.101	1.618	2.214	18.892	15.990	15.366	4.456	3.755	1.615	2.101	1.278	0.767	70.151
1930	0.483	0.369	6.888	0.397	0.341	0.085	0.369	0.483	0.256	0.199	0.284	0.170	10.324
1931	0.114	1.249	0.199	0.114	28.739	15.060	4.369	3.927	1.657	3.492	1.380	1.249	61.549
1932	0.795	0.568	7.906	7.552	18.863	2.555	1.334	0.653	0.369	3.659	0.142	0.085	44.481
1933	0.114	6.958	12.084	12.893	4.968	8.347	1.164	0.312	0.170	0.994	1.415	2.583	52.001
1934	2.640	3.889	12.537	5.508	18.012	0.937	0.227	0.142	1.136	0.057	0.028	0.028	45.141
1935	0.000	0.000	1.902	17.579	15.922	15.427	4.658	4.036	1.677	3.696	1.416	3.456	69.767
1936	2.158	8.401	11.350	15.965	27.607	14.918	4.412	3.759	1.615	3.646	1.278	3.123	98.231
1937	0.511	0.483	12.199	2.328	20.216	3.378	4.472	0.625	1.667	3.727	1.410	3.180	54.196
1938	5.729	8.126	13.318	9.185	16.504	15.214	3.923	3.933	1.594	3.730	1.426	3.624	86.306
1939	5.855	8.441	12.997	14.734	14.142	7.779	4.648	4.036	1.675	3.681	1.412	3.620	83.019
1940	5.673	7.985	13.932	13.675	11.593	10.845	3.496	1.618	0.965	0.596	0.369	0.539	71.285
1941	0.653	1.902	5.293	9.078	20.741	6.558	1.789	1.278	1.653	0.795	0.483	3.509	53.731
1942	5.795	8.040	14.883	15.764	14.412	15.152	4.647	4.028	1.675	3.735	1.426	3.654	93.211
1943	5.910	7.945	10.046	6.246	18.219	3.833	1.789	1.136	1.448	1.221	0.738	3.654	62.185
1944	5.912	8.065	8.538	10.720	13.676	15.427	4.601	3.961	1.662	3.600	1.387	1.420	78.968
1945	0.880	0.539	12.795	17.092	22.894	10.504	3.422	2.243	1.334	0.852	0.511	0.312	73.379
1946	0.767	1.931	6.037	10.982	21.503	15.427	4.625	4.008	1.670	3.630	1.397	2.072	74.049
1947	1.079	8.413	15.533	12.781	12.168	14.783	4.366	1.647	0.994	0.625	0.369	1.334	74.091
1948	1.278	6.998	9.016	9.983	9.823	1.987	4.568	4.036	1.492	1.221	0.738	0.653	51.193
1949	2.158	2.953	10.156	13.623	4.514	14.093	2.214	3.447	0.369	0.199	0.114	0.085	53.924
1950	0.256	0.028	9.079	8.012	1.931	13.514	1.334	0.085	0.000	0.000	1.426	3.569	39.233
1951	5.592	3.009	11.434	5.763	18.249	6.870	0.284	0.170	0.114	3.725	0.880	0.284	56.373
1952	0.170	1.902	9.724	14.146	20.501	8.034	3.348	1.107	0.454	0.284	0.170	0.114	59.954
1953	0.256	7.757	0.767	1.363	17.156	8.091	1.363	4.026	1.647	2.867	1.359	3.628	50.279
1954	5.887	8.338	9.353	14.508	27.223	15.413	4.649	4.010	1.669	3.650	1.403	1.760	97.863
1955	4.202	1.561	5.200	3.861	27.314	15.310	4.599	3.979	1.663	3.613	1.391	3.507	76.200
1956	1.732	8.283	11.993	10.405	18.244	5.678	4.626	4.012	1.662	3.735	1.426	3.654	75.451
1957	5.925	8.441	15.021	16.329	25.603	14.329	4.291	3.703	1.601	1.959	1.192	0.937	99.329
1958	2.754	8.265	11.385	13.170	9.255	3.889	2.101	2.356	0.795	0.511	0.312	3.623	58.415
1959	4.741	2.271	12.655	2.129	21.416	9.567	4.588	3.573	1.461	1.079	0.653	1.476	65.609
1960	0.483	8.341	14.174	18.884	22.826	14.971	4.530	3.877	1.645	2.413	1.337	3.646	97.129
1961	5.828	6.533	5.135	8.644	2.328	11.441	4.492	2.016	0.596	0.397	0.397	0.170	47.977
1962	0.114	3.577	15.533	13.073	18.973	14.618	4.658	3.971	1.670	3.735	1.426	3.652	85.000
1963	5.844	7.598	5.228	18.582	6.615	3.123	4.549	1.618	0.965	0.625	0.369	0.227	55.342
1964	5.888	8.435	12.684	9.767	27.376	4.173	2.495	1.476	1.334	1.363	0.483	0.341	75.809
1965	5.398	2.782	1.874	1.448	18.608	0.199	0.057	0.028	0.028	0.170	0.142	30.791	
1966	0.000	7.711	15.069	10.049	24.759	15.151	4.597	3.978	1.661	3.590	1.384	1.732	89.682
1967	3.180	8.336	11.928	10.799	4.599	15.427	4.527	3.858	1.635	2.640	1.412	0.937	69.278
1968	2.072	3.804	11.315	12.852	3.747	15.364	4.212	3.882	1.636	2.527	1.341	2.328	65.080
1969	5.915	8.289	7.581	8.680	12.487	2.555	3.545	1.249	0.539	0.341	1.376	3.629	56.186
1970	5.925	8.130	7.025	12.177	4.173	2.953	3.957	4.032	1.670	3.683	1.420	2.867	58.013
1971	4.145	2.129	8.547	15.761	28.767	15.412	4.645	4.033	1.676	3.728	1.421	3.506	93.770
1972	2.981	3.180	2.470	6.672	23.312	13.968	4.588	3.856	1.625	1.987	1.413	3.654	69.707
1973	5.925	8.231	11.921	15.540	13.389	10.589	2.762	2.016	1.164	3.727	0.454	0.284	76.001
1974	0.681	7.491	14.937	18.339	28.112	15.427	4.624	4.009	1.669	3.650	1.402	3.654	103.996
1975	5.925	8.353	12.380	17.400	21.778	15.337	4.658	4.036	1.677	3.722	1.421	3.510	100.197
1976	5.025	6.854	13.940	15.472	28.767	15.427	4.658	4.036	1.677	3.709	1.418	3.552	104.536
1977	5.736	2.470	5.752	18.892	21.997	13.769	4.152	3.480	1.554	2.300	0.880	0.823	81.804
1978	5.752	7.150	10.492	10.969	13.599	9.198	4.405	3.573	1.571	3.654	1.357	3.568	75.288
1979	5.563	3.719	9.188	12.334	14.653	0.795	0.341	0.227	0.114	0.085	0.057	3.568	50.644
1980	1.420	8.389	8.746	11.888	12.765	0.284	2.735	4.036	1.677	3.710	1.421	3.654	60.725
1981	5.890	8.072	9.305	9.869	14.102	14.541	3.747	3.322	1.496	1.249	0.767	0.454	72.816
1982	2.271	4.826	0.142	4.259	2.072	0.256	0.028	0.284	0.028	0.000	0.483	0.000	14.649
1983	1.902	8.434	10.974	18.892	28.767	15.427	4.658	4.027	1.675	3.735	1.426	3.652	103.569
1984	5.838	7.459	6.211	16.283	28.767	14.976	4.294	3.776	1.618	2.129	1.306	1.249	93.908
1985	5.879	8.396	8.633	13.967	19.822	4.826	1.136	0.596	0.341	0.227	0.142	0.114	64.078
1986	4.400	6.912	13.780	14.313	12.271	5.905	3.838	3.950	1.470	1.902	1.424	3.654	73.819
1987	5.925	8.441	15.533	16.411	24.842	15.279	4.628	4.007	1.668	3.720	1.406	3.066	104.927
1988	5.916	8.441	15.533	14.916	22.811	14.128	4.100	3.577	1.585	1.647	0.994	3.644	97.293
1989	4.173	8.424	15.533	16.182	25.226	15.343	4.653	3.945	1.644	3.038	1.365	1.107	100.633
1990	5.584	8.280	11.789	13.462	24.011	15.209	3.895	3.939	1.527	1.363	0.823	0.483	90.364
1991	1.278	3.208	7.925	0.312	28.767	14.571	2.983	2.470	1.418	0.937	0.568	0.341	64.778
1992	2.385	0.454	8.461	3.634	3.038	1.107	2.940	0.057	0.000	0.000	0.000	1.505	23.580
1993	5.925	8.424	13.113	14.916	13.302	14.229	4.019	3.208	1.487	1.192	0.880	0.426	81.122
1994	3.464	7.171	10.328	8.752	0.227	14.973	2.983	1.334	0.199	0.142	0.085	0.057	49.715
1995	5.706	8.334	15.533	18.892	28.767	15.427	4.658	4.036	1.677	3.735	1.424	3.555	111.744
1996	5.925	7.858	14.342	17.890	26.887	15.398	4.658	3.987	1.677	3.735	1.426	3.654	107.436
1997	5.925	8.441	15.533	18.102	19.772	15.248	4.208	3.815	1.619	2.044	1.249	0.738	96.693
1998	5.925	7.918	14.769	16.747	10.873	15.146	3.719	2.328	1.306	0.823	0.511	0.341	80.405
1999	2.072	0.795	15.533	18.892	28.767	15.413	4.658	4.036	1.677	3.704	1.417	3.628	100.592
2000	5.830	8.441	15.533	15.420	16.744	14.855	4.019	3.581	1.571	1.647	0.994	3.654	92.290
2001	5.405	7.043	7.148	6.075	12.094	2.044	2.682	0.681	0.625	3.735	1.426	3.647	52.605

A.109. *Niv8 – Category B***Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv8

Annual Flows (Mill. cu. m or index values):

MAR = 24.716

S.Dev. = 43.307

CV = 1.752

Q75 = 0.005

Q75/MMF = 0.002

BFI Index = 0.280

CV(JJA+JFM) Index = 6.252

Ecological Category = B

Total IFR = 13.805 (55.86 %MAR)

Maint. Lowflow = 8.356 (33.81 %MAR)

Drought Lowflow = 1.529 (6.19 %MAR)

Maint. Highflow = 5.449 (22.05 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	1.618	4.662	2.881	0.516	0.074	0.355	0.870
Nov	1.078	2.402	2.228	0.795	0.084	0.571	1.366
Dec	1.933	3.769	1.950	1.042	0.236	0.718	1.761
Jan	3.347	9.566	2.858	1.153	0.238	0.889	2.041
Feb	3.687	13.084	3.548	1.120	0.222	1.322	2.442
Mar	2.697	8.645	3.206	1.183	0.234	0.918	2.101
Apr	0.993	3.449	3.474	0.837	0.082	0.233	1.070
May	0.745	1.950	2.616	0.651	0.083	0.165	0.815
Jun	0.517	1.354	2.619	0.325	0.077	0.000	0.325
Jul	5.310	21.351	4.021	0.295	0.073	0.129	0.423
Aug	1.155	2.892	2.504	0.245	0.066	0.000	0.245
Sep	1.636	4.760	2.910	0.196	0.061	0.149	0.345

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv8

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.003	0.995	0.726	0.183	0.082	0.024	0.005	0.000	0.000	0.000
Nov	1.573	1.433	0.899	0.346	0.164	0.072	0.024	0.014	0.000	0.000
Dec	2.640	2.367	1.178	0.914	0.654	0.241	0.091	0.010	0.000	0.000
Jan	3.102	2.864	2.155	1.025	0.649	0.327	0.082	0.010	0.000	0.000
Feb	3.905	2.780	1.616	0.871	0.438	0.250	0.115	0.005	0.000	0.000
Mar	2.416	2.304	0.981	0.770	0.313	0.164	0.019	0.000	0.000	0.000
Apr	1.254	0.904	0.515	0.265	0.125	0.043	0.005	0.000	0.000	0.000
May	0.957	0.948	0.361	0.274	0.077	0.029	0.000	0.000	0.000	0.000
Jun	0.388	0.385	0.221	0.173	0.096	0.029	0.000	0.000	0.000	0.000
Jul	0.493	0.489	0.361	0.139	0.091	0.024	0.000	0.000	0.000	0.000
Aug	0.292	0.290	0.226	0.101	0.067	0.019	0.000	0.000	0.000	0.000
Sep	0.397	0.393	0.387	0.130	0.048	0.029	0.010	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.615	0.610	0.599	0.183	0.082	0.024	0.005	0.000	0.000	0.000
Nov	0.949	0.942	0.899	0.346	0.164	0.072	0.024	0.014	0.000	0.000
Dec	1.244	1.237	1.178	0.914	0.654	0.241	0.091	0.010	0.000	0.000
Jan	1.376	1.367	1.350	1.025	0.649	0.327	0.082	0.010	0.000	0.000
Feb	1.337	1.329	1.311	0.871	0.438	0.250	0.115	0.005	0.000	0.000
Mar	1.412	1.403	0.981	0.770	0.313	0.164	0.019	0.000	0.000	0.000
Apr	0.998	0.904	0.515	0.265	0.125	0.043	0.005	0.000	0.000	0.000
May	0.777	0.770	0.361	0.274	0.077	0.029	0.000	0.000	0.000	0.000
Jun	0.388	0.385	0.221	0.173	0.096	0.029	0.000	0.000	0.000	0.000
Jul	0.352	0.349	0.343	0.139	0.091	0.024	0.000	0.000	0.000	0.000
Aug	0.292	0.290	0.226	0.101	0.067	0.019	0.000	0.000	0.000	0.000
Sep	0.234	0.232	0.229	0.130	0.048	0.029	0.010	0.000	0.000	0.000

Natural Duration curves

Oct	3.405	1.910	0.726	0.183	0.082	0.024	0.005	0.000	0.000	0.000
Nov	2.843	1.433	0.899	0.346	0.164	0.072	0.024	0.014	0.000	0.000
Dec	5.844	2.367	1.178	0.914	0.654	0.241	0.091	0.010	0.000	0.000
Jan	8.312	4.238	2.155	1.025	0.649	0.327	0.082	0.010	0.000	0.000
Feb	8.350	2.780	1.616	0.871	0.438	0.250	0.115	0.005	0.000	0.000
Mar	5.998	2.304	0.981	0.770	0.313	0.164	0.019	0.000	0.000	0.000
Apr	1.977	0.904	0.515	0.265	0.125	0.043	0.005	0.000	0.000	0.000
May	2.165	0.981	0.361	0.274	0.077	0.029	0.000	0.000	0.000	0.000
Jun	1.659	0.582	0.221	0.173	0.096	0.029	0.000	0.000	0.000	0.000
Jul	7.643	1.073	0.361	0.139	0.091	0.024	0.000	0.000	0.000	0.000
Aug	5.416	0.649	0.226	0.101	0.067	0.019	0.000	0.000	0.000	0.000
Sep	4.762	1.910	0.457	0.130	0.048	0.029	0.010	0.000	0.000	0.000

Hydrological time series

Total Runoff : Niv8

Desktop (Version 2) Modified Flow Data for Ecological Category B														
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL	
1920	0.992	0.245	0.048	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.388	1.673
1921	0.423	1.573	1.929	1.472	0.673	0.491	0.255	0.164	0.096	0.063	0.292	0.391	7.823	
1922	0.984	1.121	0.837	3.102	3.218	0.962	0.515	0.322	0.192	0.120	0.072	0.043	11.488	
1923	0.038	0.087	2.555	0.861	1.616	2.416	1.254	0.950	0.387	0.467	0.284	0.168	11.083	
1924	0.106	1.573	2.507	3.102	3.905	2.416	1.254	0.957	0.388	0.493	0.292	0.394	17.387	
1925	0.986	0.808	0.510	0.308	0.173	0.120	0.072	0.043	0.029	0.014	0.010	0.005	3.078	
1926	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	
1927	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
1928	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
1929	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
1930	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
1931	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
1932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.274	0.000	0.000	0.274	
1933	0.000	0.072	0.005	0.284	0.034	0.236	0.000	0.000	0.000	0.000	0.010	0.014	0.655	
1934	0.010	0.010	2.367	0.000	1.510	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.897	
1935	0.000	0.000	0.000	3.037	3.030	0.067	0.034	0.957	0.388	0.489	0.291	0.387	5.952	
1936	0.356	0.899	1.101	2.854	3.867	1.049	0.616	0.950	0.231	0.488	0.087	0.077	12.014	
1937	0.034	0.019	1.049	0.014	3.280	0.019	0.404	0.000	0.388	0.492	0.292	0.389	6.380	
1938	0.726	1.573	2.640	0.173	0.087	2.412	0.043	0.274	0.024	0.492	0.292	0.394	9.130	
1939	0.992	1.571	2.222	1.313	0.447	0.149	1.254	0.952	0.387	0.484	0.288	0.393	10.451	
1940	0.346	0.625	0.746	1.005	0.317	0.197	0.014	0.005	0.005	0.000	0.000	0.000	3.260	
1941	0.000	0.072	0.168	0.029	0.005	0.000	0.000	0.000	0.173	0.000	0.000	0.096	0.543	
1942	0.279	0.164	0.996	2.806	0.087	2.275	0.673	0.428	0.255	0.493	0.292	0.397	9.144	
1943	1.003	1.570	1.337	0.722	0.433	0.274	0.164	0.101	0.106	0.139	0.087	0.396	6.332	
1944	1.003	1.571	1.400	0.933	0.861	2.416	1.254	0.956	0.388	0.487	0.289	0.279	11.837	
1945	0.178	0.106	2.524	3.094	3.866	0.770	0.380	0.241	0.144	0.091	0.053	0.034	11.482	
1946	0.019	0.014	0.010	1.193	0.515	2.416	1.254	0.957	0.388	0.487	0.289	0.293	7.835	
1947	0.183	1.573	2.640	2.684	1.717	1.987	0.596	0.375	0.221	0.139	0.087	0.053	12.255	
1948	0.034	0.096	1.092	0.327	0.120	0.005	1.193	0.957	0.188	0.120	0.072	0.043	4.247	
1949	0.029	0.014	0.241	0.726	0.029	1.419	0.087	0.361	0.005	0.000	0.000	0.000	2.911	
1950	0.000	0.000	0.385	0.005	0.000	0.808	0.010	0.000	0.000	0.000	0.292	0.394	1.894	
1951	0.981	0.630	0.669	0.265	0.159	0.313	0.053	0.034	0.019	0.491	0.226	0.058	3.898	
1952	0.038	0.024	0.192	2.318	0.418	0.356	0.000	0.000	0.000	0.000	0.000	0.000	3.346	
1953	0.000	0.625	0.000	0.000	0.851	0.380	0.014	0.957	0.385	0.327	0.197	0.392	4.128	
1954	0.654	0.106	0.067	1.005	3.751	0.770	0.438	0.274	0.164	0.101	0.063	0.038	7.431	
1955	0.024	0.014	0.010	0.005	1.861	1.087	0.587	0.370	0.221	0.139	0.087	0.048	4.453	
1956	0.034	0.019	0.010	0.010	0.005	0.005	0.000	0.000	0.000	0.493	0.292	0.397	1.264	
1957	1.003	1.573	2.640	2.864	3.054	1.284	0.755	0.476	0.284	0.178	0.106	0.063	14.280	
1958	0.038	0.289	0.322	0.010	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.274	0.943	
1959	0.000	0.000	0.904	0.005	0.438	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1.357	
1960	0.000	0.053	0.005	0.568	0.871	0.000	0.000	0.000	0.111	0.000	0.000	0.393	2.001	
1961	0.736	0.346	0.216	0.139	0.072	0.308	0.274	0.038	0.010	0.005	0.005	0.005	2.154	
1962	0.000	0.014	2.583	0.034	0.091	0.101	0.803	0.000	0.386	0.493	0.292	0.397	5.194	
1963	1.003	1.570	1.178	2.810	0.414	0.274	0.904	0.101	0.063	0.038	0.024	0.014	8.393	
1964	0.999	1.573	2.453	0.981	3.905	0.409	0.226	0.139	0.149	0.053	0.034	0.019	10.940	
1965	0.183	0.010	0.005	0.005	1.429	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.632	
1966	0.000	0.139	0.871	0.168	2.198	0.443	0.265	0.164	0.096	0.063	0.038	0.024	4.469	
1967	0.014	0.034	0.303	0.010	0.000	2.416	1.250	0.948	0.385	0.366	0.221	0.130	6.078	
1968	0.082	0.053	0.043	1.424	0.135	2.401	0.101	0.058	0.034	0.024	0.014	0.010	4.379	
1969	0.995	0.938	0.534	0.332	0.558	0.125	0.149	0.048	0.029	0.019	0.164	0.394	4.285	
1970	1.003	1.539	0.972	0.592	0.332	0.226	0.135	0.957	0.387	0.489	0.290	0.183	7.106	
1971	0.125	0.067	0.043	2.948	3.905	2.416	1.254	0.957	0.388	0.490	0.290	0.385	13.269	
1972	0.265	0.159	0.101	0.058	1.881	0.024	0.014	0.010	0.005	0.005	0.288	0.397	3.206	
1973	1.003	1.573	1.669	2.930	1.010	0.842	0.279	0.173	0.106	0.491	0.038	0.024	10.139	
1974	0.014	0.183	2.557	3.102	3.905	2.401	1.248	0.885	0.385	0.332	0.202	0.396	15.610	
1975	1.003	0.938	0.654	3.066	0.351	2.411	1.252	0.955	0.385	0.361	0.221	0.130	11.728	
1976	0.082	0.111	2.562	2.655	3.905	2.416	1.254	0.957	0.388	0.489	0.290	0.384	15.492	
1977	0.241	0.144	0.091	3.102	2.766	0.818	0.481	0.303	0.178	0.284	0.067	0.038	8.513	
1978	0.024	0.014	1.020	1.025	0.601	0.005	0.168	0.005	0.000	0.000	0.000	0.029	2.891	
1979	0.111	0.063	0.038	0.106	0.144	0.010	0.005	0.005	0.000	0.000	0.000	0.387	0.869	
1980	0.043	0.274	0.091	1.015	0.091	0.000	0.000	0.000	0.388	0.489	0.290	0.396	3.078	
1981	1.001	1.433	1.087	0.548	1.169	0.423	0.125	0.077	0.048	0.029	0.019	0.010	5.969	
1982	0.014	0.024	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.043	
1983	0.000	0.476	0.471	3.102	3.905	2.416	1.254	0.954	0.388	0.493	0.292	0.397	14.147	
1984	1.001	1.534	0.972	2.976	3.905	2.404	1.251	0.949	0.386	0.404	0.245	0.144	16.171	
1985	0.226	0.221	0.048	1.121	0.755	0.111	0.005	0.005	0.000	0.000	0.000	0.000	2.492	
1986	0.149	0.250	1.193	1.443	0.005	0.000	0.000	0.000	0.000	0.000	0.288	0.397	3.724	
1987	1.003	1.573	2.640	2.294	1.693	0.779	0.443	0.279	0.164	0.168	0.063	0.038	11.138	
1988	0.024	0.327	0.115	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.476	
1989	0.000	1.101	2.640	2.092	1.174	0.808	1.178	0.303	0.178	0.111	0.067	0.038	9.690	
1990	0.024	0.462	0.370	0.082	1.270	2.416	0.005	0.949	0.000	0.000	0.000	0.000	5.578	
1991	0.000	0.000	0.111	0.000	2.737	0.948	0.019	0.000	0.000	0.000	0.000	0.000	3.815	
1992	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
1993	0.999	1.159	0.847	0.476	0.250	0.173	0.101	0.063	0.038	0.024	0.014	0.010	4.154	
1994	0.005	0.005	0.087	0.173	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.270	
1995	0.000	0.351	2.640	3.102	3.905	2.416	1.254	0.957	0.388	0.493	0.292	0.393	16.190	
1996	1.003	0.933	2.527	2.919	1.135	2.412	1.252	0.284	0.388	0.493	0.292	0.397	14.036	
1997	1.003	1.573	2.640	2.998	2.780	2.304	1.049	0.664	0.383	0.250	0.149	0.087	15.881	
1998	1.001	0.529	1.958	2.174	0.115	2.352	0.087	0.029	0.019	0.010	0.005	0.005	8.284	
1999	0.005	0.000	2.640	1.467	0.226	0.164	0.197	0.956	0.265	0.168	0.101	0.390	6.579	
2000	0.987	1.573	2.640	2.155	1.174	1.015	0.481	0.303	0.178	0.115	0.067	0.397	11.085	
2001	0.994	1.092	0.693	0.418	0.236	0.164	0.096	0.0						

A.110. *Niv8 – Category C***Summary table**

Desktop Version 2, Generated on 10/04/15

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv8

Annual Flows (Mill. cu. m or index values):

MAR = 24.716

S.Dev. = 43.307

CV = 1.752

Q75 = 0.005

Q75/MMF = 0.002

BFI Index = 0.280

CV(JJA+JFM) Index = 6.252

Ecological Category = C

Total IFR = 11.007 (44.53 %MAR)

Maint. Lowflow = 5.558 (22.49 %MAR)

Drought Lowflow = 1.529 (6.19 %MAR)

Maint. Highflow = 5.449 (22.05 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	1.618	4.662	2.881	0.354	0.074	0.355	0.709
Nov	1.078	2.402	2.228	0.503	0.084	0.571	1.074
Dec	1.933	3.769	1.950	0.770	0.236	0.718	1.489
Jan	3.347	9.566	2.858	0.812	0.238	0.889	1.701
Feb	3.687	13.084	3.548	0.765	0.222	1.322	2.088
Mar	2.697	8.645	3.206	0.773	0.234	0.918	1.691
Apr	0.993	3.449	3.474	0.517	0.082	0.233	0.751
May	0.745	1.950	2.616	0.419	0.083	0.165	0.583
Jun	0.517	1.354	2.619	0.206	0.077	0.000	0.206
Jul	5.310	21.351	4.021	0.194	0.073	0.129	0.323
Aug	1.155	2.892	2.504	0.179	0.066	0.000	0.179
Sep	1.636	4.760	2.910	0.065	0.061	0.149	0.214

Rule curve

Desktop Version 2, Generated on 10/04/15

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv8

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.895	0.888	0.726	0.183	0.082	0.024	0.005	0.000	0.000	0.000
Nov	1.382	1.373	0.899	0.346	0.164	0.072	0.024	0.014	0.000	0.000
Dec	2.469	2.276	1.178	0.914	0.654	0.241	0.091	0.010	0.000	0.000
Jan	2.857	2.620	2.155	1.025	0.649	0.327	0.082	0.010	0.000	0.000
Feb	3.634	2.780	1.616	0.871	0.438	0.250	0.115	0.005	0.000	0.000
Mar	2.172	2.158	0.981	0.770	0.313	0.164	0.019	0.000	0.000	0.000
Apr	0.973	0.904	0.515	0.265	0.125	0.043	0.005	0.000	0.000	0.000
May	0.759	0.753	0.361	0.274	0.077	0.029	0.000	0.000	0.000	0.000
Jun	0.279	0.277	0.221	0.173	0.096	0.029	0.000	0.000	0.000	0.000
Jul	0.414	0.411	0.361	0.139	0.091	0.024	0.000	0.000	0.000	0.000
Aug	0.242	0.241	0.226	0.101	0.067	0.019	0.000	0.000	0.000	0.000
Sep	0.263	0.261	0.257	0.130	0.048	0.029	0.010	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.479	0.475	0.467	0.183	0.082	0.024	0.005	0.000	0.000	0.000
Nov	0.701	0.696	0.687	0.346	0.164	0.072	0.024	0.014	0.000	0.000
Dec	1.073	1.067	1.054	0.914	0.654	0.241	0.091	0.010	0.000	0.000
Jan	1.131	1.124	1.110	1.025	0.649	0.327	0.082	0.010	0.000	0.000
Feb	1.066	1.060	1.047	0.871	0.438	0.250	0.115	0.005	0.000	0.000
Mar	1.076	1.070	0.981	0.770	0.313	0.164	0.019	0.000	0.000	0.000
Apr	0.700	0.694	0.515	0.265	0.125	0.043	0.005	0.000	0.000	0.000
May	0.566	0.562	0.361	0.274	0.077	0.029	0.000	0.000	0.000	0.000
Jun	0.279	0.277	0.221	0.173	0.096	0.029	0.000	0.000	0.000	0.000
Jul	0.263	0.261	0.257	0.139	0.091	0.024	0.000	0.000	0.000	0.000
Aug	0.242	0.241	0.226	0.101	0.067	0.019	0.000	0.000	0.000	0.000
Sep	0.088	0.088	0.088	0.086	0.048	0.029	0.010	0.000	0.000	0.000

Natural Duration curves

Oct	3.405	1.910	0.726	0.183	0.082	0.024	0.005	0.000	0.000	0.000
Nov	2.843	1.433	0.899	0.346	0.164	0.072	0.024	0.014	0.000	0.000
Dec	5.844	2.367	1.178	0.914	0.654	0.241	0.091	0.010	0.000	0.000
Jan	8.312	4.238	2.155	1.025	0.649	0.327	0.082	0.010	0.000	0.000
Feb	8.350	2.780	1.616	0.871	0.438	0.250	0.115	0.005	0.000	0.000
Mar	5.998	2.304	0.981	0.770	0.313	0.164	0.019	0.000	0.000	0.000
Apr	1.977	0.904	0.515	0.265	0.125	0.043	0.005	0.000	0.000	0.000
May	2.165	0.981	0.361	0.274	0.077	0.029	0.000	0.000	0.000	0.000
Jun	1.659	0.582	0.221	0.173	0.096	0.029	0.000	0.000	0.000	0.000
Jul	7.643	1.073	0.361	0.139	0.091	0.024	0.000	0.000	0.000	0.000
Aug	5.416	0.649	0.226	0.101	0.067	0.019	0.000	0.000	0.000	0.000
Sep	4.762	1.910	0.457	0.130	0.048	0.029	0.010	0.000	0.000	0.000

Hydrological time series

Total Runoff : Niv8

Desktop (Version 2) Modified Flow Data for Ecological Category C

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.886	0.245	0.048	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.436
1921	0.423	1.382	1.929	1.472	0.673	0.491	0.255	0.164	0.096	0.063	0.242	0.260	7.450
1922	0.878	1.121	0.837	2.857	3.218	0.962	0.515	0.322	0.192	0.120	0.072	0.043	11.137
1923	0.038	0.087	2.385	0.861	1.616	2.172	0.973	0.755	0.278	0.407	0.238	0.168	9.978
1924	0.106	1.382	2.337	2.857	3.634	2.172	0.973	0.759	0.279	0.414	0.242	0.261	15.417
1925	0.880	0.808	0.510	0.308	0.173	0.120	0.072	0.043	0.029	0.014	0.010	0.005	2.972
1926	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005
1927	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1928	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1929	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1930	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1931	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.274	0.000	0.000	0.274
1933	0.000	0.072	0.005	0.284	0.034	0.236	0.000	0.000	0.000	0.000	0.010	0.014	0.655
1934	0.010	0.010	2.276	0.000	1.510	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.806
1935	0.000	0.000	0.000	2.792	0.303	0.067	0.034	0.759	0.279	0.411	0.241	0.257	5.144
1936	0.356	0.899	1.101	2.610	3.596	1.049	0.616	0.390	0.231	0.410	0.087	0.077	11.423
1937	0.034	0.019	1.049	0.014	3.280	0.019	0.404	0.000	0.279	0.414	0.242	0.258	6.011
1938	0.726	1.382	2.469	0.173	0.087	2.168	0.043	0.274	0.024	0.414	0.242	0.262	8.263
1939	0.885	1.380	2.222	1.313	0.447	0.149	0.973	0.755	0.278	0.408	0.239	0.261	9.310
1940	0.346	0.625	0.746	1.005	0.317	0.197	0.014	0.005	0.005	0.000	0.000	0.000	3.260
1941	0.000	0.072	0.168	0.029	0.005	0.000	0.000	0.000	0.173	0.000	0.000	0.096	0.543
1942	0.279	0.164	0.996	2.563	0.087	2.158	0.673	0.428	0.255	0.414	0.242	0.263	8.522
1943	0.895	1.379	1.337	0.722	0.433	0.274	0.164	0.101	0.106	0.139	0.087	0.263	5.900
1944	0.895	1.380	1.400	0.933	0.861	2.172	0.973	0.759	0.278	0.409	0.240	0.253	10.554
1945	0.178	0.106	2.354	2.849	3.596	0.770	0.380	0.241	0.144	0.091	0.053	0.034	10.796
1946	0.019	0.014	0.010	1.193	0.515	2.172	0.973	0.759	0.279	0.410	0.240	0.253	6.837
1947	0.183	1.382	2.469	2.501	1.717	1.987	0.596	0.375	0.221	0.139	0.087	0.053	11.710
1948	0.034	0.096	1.092	0.327	0.120	0.005	0.968	0.759	0.188	0.120	0.072	0.043	3.824
1949	0.029	0.014	0.241	0.726	0.029	1.419	0.087	0.361	0.005	0.000	0.000	0.000	2.911
1950	0.000	0.000	0.385	0.005	0.000	0.808	0.010	0.000	0.000	0.000	0.242	0.261	1.711
1951	0.876	0.630	0.669	0.265	0.159	0.313	0.053	0.034	0.019	0.413	0.226	0.058	3.715
1952	0.038	0.024	0.192	2.318	0.418	0.356	0.000	0.000	0.000	0.000	0.000	0.000	3.346
1953	0.000	0.625	0.000	0.000	0.851	0.380	0.014	0.759	0.277	0.327	0.197	0.260	3.690
1954	0.654	0.106	0.067	1.005	3.482	0.770	0.438	0.274	0.164	0.101	0.063	0.038	7.162
1955	0.024	0.014	0.010	0.005	1.861	1.087	0.587	0.370	0.221	0.139	0.087	0.048	4.453
1956	0.034	0.019	0.010	0.010	0.005	0.005	0.000	0.000	0.000	0.414	0.242	0.263	1.002
1957	0.895	1.382	2.469	2.620	3.054	1.284	0.755	0.476	0.275	0.178	0.106	0.063	13.558
1958	0.038	0.289	0.322	0.010	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.253	0.922
1959	0.000	0.000	0.904	0.005	0.438	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1.357
1960	0.000	0.053	0.005	0.568	0.871	0.000	0.000	0.000	0.111	0.000	0.000	0.261	1.869
1961	0.736	0.346	0.216	0.139	0.072	0.308	0.274	0.038	0.010	0.005	0.005	0.005	2.154
1962	0.000	0.014	2.412	0.034	0.091	0.101	0.803	0.000	0.277	0.414	0.242	0.263	4.652
1963	0.895	1.379	1.178	2.568	0.414	0.274	0.904	0.101	0.063	0.038	0.024	0.014	7.852
1964	0.891	1.382	2.283	0.981	3.634	0.409	0.226	0.139	0.149	0.053	0.034	0.019	10.201
1965	0.183	0.010	0.005	0.005	1.429	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.632
1966	0.000	0.139	0.871	0.168	2.198	0.443	0.265	0.164	0.096	0.063	0.038	0.024	4.469
1967	0.014	0.034	0.303	0.010	0.000	2.172	0.971	0.753	0.277	0.366	0.221	0.130	5.250
1968	0.082	0.053	0.043	1.424	0.135	2.159	0.101	0.058	0.034	0.024	0.014	0.010	4.137
1969	0.888	0.938	0.534	0.332	0.558	0.125	0.149	0.048	0.029	0.019	0.164	0.261	4.045
1970	0.895	1.374	0.972	0.592	0.332	0.226	0.135	0.759	0.278	0.411	0.241	0.183	6.399
1971	0.125	0.067	0.043	2.704	3.634	2.172	0.973	0.759	0.279	0.412	0.241	0.256	11.666
1972	0.265	0.159	0.101	0.058	1.881	0.024	0.014	0.010	0.005	0.005	0.239	0.263	3.024
1973	0.895	1.382	1.669	2.686	1.010	0.842	0.279	0.173	0.106	0.413	0.038	0.024	9.518
1974	0.014	0.183	2.386	2.857	3.634	2.159	0.969	0.752	0.276	0.332	0.202	0.262	14.027
1975	0.895	0.938	0.654	2.821	0.351	2.167	0.973	0.758	0.277	0.361	0.221	0.130	10.546
1976	0.082	0.111	2.391	2.499	3.634	2.172	0.973	0.759	0.279	0.411	0.241	0.255	13.807
1977	0.241	0.144	0.091	2.857	2.766	0.818	0.481	0.303	0.178	0.284	0.067	0.038	8.268
1978	0.024	0.014	1.020	1.025	0.601	0.005	0.168	0.005	0.000	0.000	0.000	0.029	2.891
1979	0.111	0.063	0.038	0.106	0.144	0.010	0.005	0.005	0.000	0.000	0.000	0.257	0.739
1980	0.043	0.274	0.091	1.015	0.091	0.000	0.000	0.000	0.279	0.411	0.241	0.263	2.707
1981	0.893	1.373	1.087	0.548	1.169	0.423	0.125	0.077	0.048	0.029	0.019	0.010	5.801
1982	0.014	0.024	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.043
1983	0.000	0.476	0.471	2.857	3.634	2.172	0.973	0.757	0.278	0.414	0.242	0.263	12.539
1984	0.893	1.374	0.972	2.732	3.634	2.161	0.972	0.754	0.277	0.404	0.237	0.144	14.554
1985	0.226	0.221	0.048	1.121	0.755	0.111	0.005	0.005	0.000	0.000	0.000	0.000	2.492
1986	0.149	0.250	1.193	1.443	0.005	0.000	0.000	0.000	0.000	0.000	0.239	0.263	3.542
1987	0.895	1.382	2.469	2.294	1.693	0.779	0.443	0.279	0.164	0.168	0.063	0.038	10.667
1988	0.024	0.327	0.115	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.476
1989	0.000	1.101	2.469	2.092	1.174	0.808	0.968	0.303	0.178	0.111	0.067	0.038	9.308
1990	0.024	0.462	0.370	0.082	1.270	2.172	0.005	0.753	0.000	0.000	0.000	0.000	5.138
1991	0.000	0.000	0.111	0.000	2.737	0.948	0.019	0.000	0.000	0.000	0.000	0.000	3.815
1992	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1993	0.891	1.159	0.847	0.476	0.250	0.173	0.101	0.063	0.038	0.024	0.014	0.010	4.046
1994	0.005	0.005	0.087	1.173	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.270
1995	0.000	0.351	2.469	2.857	3.634	2.172	0.973	0.759	0.279	0.414	0.242	0.261	14.411
1996	0.895	0.933	2.356	2.675	1.135	2.169	0.972	0.284	0.279	0.414	0.242	0.263	12.618
1997	0.895	1.382	2.469	2.754	2.780	2.158	0.966	0.664	0.276	0.250	0.149	0.087	14.830
1998	0.893	0.529	1.958	2.174	0.115	2.158	0.087	0.029	0.019	0.010	0.005	0.005	7.982
1999	0.005	0.000	2.469	1.467	0.226	0.164	0.197	0.759	0.265	0.168	0.101	0.259	6.080
2000	0.881	1.382	2.469	2.155	1.174	1.015	0.481	0.303	0.178	0.115	0.067	0.263	10.483
2001	0.887	1.092	0.693	0.418	0.236	0.164	0.096	0.063	0.058	0.414	0.242	0.263	4.627
2002	0.892	1.374	0.914	0.553	3.155	0.221	0.125	0.082	0.048	0.029	0.019	0.010	7.422
2003	0.005	0.284	0.289	2.857	3.634	1.457	0.539	0.342	0.202	0.414	0.242	0.262	

A.111. *Niv8 – Category D***Summary table**

Desktop Version 2, Generated on 2015-03-09

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv8

Annual Flows (Mill. cu. m or index values):

MAR = 24,716

S.Dev. = 43,307

CV = 1,752

Q75 = 0,005

Q75/MMF = 0,002

BFI Index = 0,280

CV(JJA+JFM) Index = 6,252

Ecological Category = D

Total IFR = 5,387 (21,80 %MAR)

Maint. Lowflow = 1,529 (6,19 %MAR)

Drought Lowflow = 1,529 (6,19 %MAR)

Maint. Highflow = 3,858 (15,61 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	1,618	4,662	2,881	0,074	0,074	0,261	0,334
Nov	1,078	2,402	2,228	0,084	0,084	0,372	0,456
Dec	1,933	3,769	1,950	0,236	0,236	0,443	0,679
Jan	3,347	9,566	2,858	0,238	0,238	0,589	0,827
Feb	3,687	13,084	3,548	0,222	0,222	1,041	1,263
Mar	2,697	8,645	3,206	0,234	0,234	0,573	0,807
Apr	0,993	3,449	3,474	0,082	0,082	0,174	0,256
May	0,745	1,950	2,616	0,083	0,083	0,134	0,218
Jun	0,517	1,354	2,619	0,077	0,077	0,000	0,077
Jul	5,310	21,351	4,021	0,073	0,073	0,130	0,203
Aug	1,155	2,892	2,504	0,066	0,066	0,000	0,066
Sep	1,636	4,760	2,910	0,061	0,061	0,141	0,202

Rule curve

Desktop Version 2, Generated on 2015-03-09

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv8

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.507	0.503	0.495	0.183	0.082	0.024	0.005	0.000	0.000	0.000
Nov	0.723	0.718	0.709	0.346	0.164	0.072	0.024	0.014	0.000	0.000
Dec	1.330	1.214	1.113	0.914	0.654	0.241	0.091	0.010	0.000	0.000
Jan	1.618	1.464	1.331	1.025	0.649	0.327	0.082	0.010	0.000	0.000
Feb	2.463	2.192	1.616	0.871	0.438	0.250	0.115	0.005	0.000	0.000
Mar	1.321	1.313	0.981	0.770	0.313	0.164	0.019	0.000	0.000	0.000
Apr	0.399	0.396	0.390	0.265	0.125	0.043	0.005	0.000	0.000	0.000
May	0.346	0.343	0.338	0.274	0.077	0.029	0.000	0.000	0.000	0.000
Jun	0.144	0.143	0.142	0.139	0.096	0.029	0.000	0.000	0.000	0.000
Jul	0.320	0.318	0.313	0.139	0.091	0.024	0.000	0.000	0.000	0.000
Aug	0.122	0.122	0.120	0.101	0.067	0.019	0.000	0.000	0.000	0.000
Sep	0.313	0.311	0.306	0.130	0.048	0.029	0.010	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.136	0.136	0.134	0.132	0.082	0.024	0.005	0.000	0.000	0.000
Nov	0.168	0.167	0.166	0.163	0.158	0.072	0.024	0.014	0.000	0.000
Dec	0.470	0.469	0.465	0.458	0.444	0.241	0.091	0.010	0.000	0.000
Jan	0.475	0.473	0.469	0.462	0.448	0.327	0.082	0.010	0.000	0.000
Feb	0.443	0.441	0.437	0.431	0.418	0.250	0.115	0.005	0.000	0.000
Mar	0.467	0.465	0.461	0.454	0.313	0.164	0.019	0.000	0.000	0.000
Apr	0.151	0.151	0.149	0.146	0.125	0.043	0.005	0.000	0.000	0.000
May	0.154	0.154	0.152	0.149	0.077	0.029	0.000	0.000	0.000	0.000
Jun	0.144	0.143	0.142	0.139	0.096	0.029	0.000	0.000	0.000	0.000
Jul	0.135	0.134	0.133	0.130	0.091	0.024	0.000	0.000	0.000	0.000
Aug	0.122	0.122	0.120	0.101	0.067	0.019	0.000	0.000	0.000	0.000
Sep	0.112	0.112	0.111	0.108	0.048	0.029	0.010	0.000	0.000	0.000

Natural Duration curves

Oct	3.405	1.910	0.726	0.183	0.082	0.024	0.005	0.000	0.000	0.000
Nov	2.843	1.433	0.899	0.346	0.164	0.072	0.024	0.014	0.000	0.000
Dec	5.844	2.367	1.178	0.914	0.654	0.241	0.091	0.010	0.000	0.000
Jan	8.312	4.238	2.155	1.025	0.649	0.327	0.082	0.010	0.000	0.000
Feb	8.350	2.780	1.616	0.871	0.438	0.250	0.115	0.005	0.000	0.000
Mar	5.998	2.304	0.981	0.770	0.313	0.164	0.019	0.000	0.000	0.000
Apr	1.977	0.904	0.515	0.265	0.125	0.043	0.005	0.000	0.000	0.000
May	2.165	0.981	0.361	0.274	0.077	0.029	0.000	0.000	0.000	0.000
Jun	1.659	0.582	0.221	0.173	0.096	0.029	0.000	0.000	0.000	0.000
Jul	7.643	1.073	0.361	0.139	0.091	0.024	0.000	0.000	0.000	0.000
Aug	5.416	0.649	0.226	0.101	0.067	0.019	0.000	0.000	0.000	0.000
Sep	4.762	1.910	0.457	0.130	0.048	0.029	0.010	0.000	0.000	0.000

Hydrological time series

Total Runoff : Niv8

Desktop (Version 2) Modified Flow Data for Ecological Category D														
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL	
1920	0.502	0.245	0.048	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.306	1.102
1921	0.423	0.723	1.177	1.266	0.673	0.491	0.255	0.164	0.096	0.063	0.122	0.309	5.762	
1922	0.498	0.714	0.837	1.618	2.235	0.962	0.390	0.322	0.140	0.120	0.072	0.043	7.951	
1923	0.038	0.087	1.279	0.861	1.616	1.321	0.399	0.344	0.143	0.315	0.121	0.168	6.692	
1924	0.106	0.723	1.250	1.618	2.463	1.321	0.399	0.346	0.144	0.320	0.122	0.311	9.122	
1925	0.499	0.707	0.510	0.308	0.173	0.120	0.072	0.043	0.029	0.014	0.010	0.005	2.490	
1926	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	
1927	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
1928	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
1929	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
1930	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
1931	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
1932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.274	0.000	0.000	0.274	
1933	0.000	0.072	0.005	0.284	0.034	0.236	0.000	0.000	0.000	0.000	0.010	0.014	0.655	
1934	0.010	0.010	1.214	0.000	1.510	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.744	
1935	0.000	0.000	0.000	1.575	0.303	0.067	0.034	0.346	0.144	0.318	0.122	0.306	3.214	
1936	0.356	0.709	1.087	1.457	2.434	1.049	0.393	0.341	0.142	0.317	0.087	0.077	8.449	
1937	0.034	0.019	1.049	0.014	2.241	0.019	0.383	0.000	0.144	0.319	0.122	0.307	4.651	
1938	0.495	0.723	1.330	0.173	0.087	1.319	0.043	0.274	0.024	0.319	0.122	0.311	5.220	
1939	0.502	0.722	1.202	1.248	0.447	0.149	0.399	0.344	0.143	0.315	0.121	0.311	5.902	
1940	0.346	0.625	0.746	1.005	0.317	0.197	0.014	0.005	0.005	0.000	0.000	0.000	3.260	
1941	0.000	0.072	0.168	0.029	0.005	0.000	0.000	0.000	0.139	0.000	0.000	0.096	0.509	
1942	0.279	0.164	0.996	1.427	0.087	1.313	0.394	0.341	0.142	0.320	0.122	0.313	5.898	
1943	0.507	0.721	1.126	0.722	0.433	0.274	0.164	0.101	0.106	0.139	0.087	0.313	4.694	
1944	0.507	0.722	1.132	0.933	0.861	1.321	0.399	0.345	0.143	0.316	0.121	0.279	7.081	
1945	0.178	0.106	1.261	1.613	2.433	0.770	0.380	0.241	0.136	0.091	0.053	0.034	7.296	
1946	0.019	0.014	0.010	1.193	0.515	1.321	0.399	0.346	0.144	0.317	0.121	0.293	4.691	
1947	0.183	0.723	1.330	1.387	1.717	1.311	0.393	0.339	0.142	0.139	0.087	0.053	7.804	
1948	0.034	0.096	1.084	0.327	0.120	0.005	0.397	0.346	0.140	0.120	0.072	0.043	2.784	
1949	0.029	0.014	0.241	0.726	0.029	1.307	0.087	0.338	0.005	0.000	0.000	0.000	2.776	
1950	0.000	0.000	0.385	0.005	0.000	0.808	0.010	0.000	0.000	0.000	0.122	0.311	1.641	
1951	0.497	0.630	0.669	0.265	0.159	0.313	0.053	0.034	0.019	0.319	0.120	0.058	3.137	
1952	0.038	0.024	0.192	1.349	0.418	0.356	0.000	0.000	0.000	0.000	0.000	0.000	2.377	
1953	0.000	0.625	0.000	0.000	0.851	0.380	0.014	0.346	0.143	0.311	0.120	0.309	3.099	
1954	0.493	0.106	0.067	1.005	2.344	0.770	0.385	0.274	0.138	0.101	0.063	0.038	5.784	
1955	0.024	0.014	0.010	0.005	1.861	1.087	0.393	0.339	0.142	0.139	0.087	0.048	4.148	
1956	0.034	0.019	0.010	0.010	0.005	0.005	0.000	0.000	0.000	0.320	0.122	0.313	0.838	
1957	0.507	0.723	1.330	1.464	2.219	1.284	0.395	0.341	0.142	0.178	0.106	0.063	8.752	
1958	0.038	0.289	0.322	0.010	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.274	0.943	
1959	0.000	0.000	0.904	0.005	0.438	0.010	0.000	0.000	0.000	0.000	0.000	0.000	1.357	
1960	0.000	0.053	0.005	0.568	0.871	0.000	0.000	0.000	0.111	0.000	0.000	0.310	1.918	
1961	0.495	0.346	0.216	0.139	0.072	0.308	0.274	0.038	0.010	0.005	0.005	0.005	1.913	
1962	0.000	0.014	1.296	0.034	0.091	0.101	0.395	0.000	0.143	0.320	0.122	0.313	2.829	
1963	0.507	0.721	1.113	1.430	0.414	0.274	0.396	0.101	0.063	0.038	0.024	0.014	5.096	
1964	0.505	0.723	1.218	0.981	2.463	0.409	0.226	0.139	0.137	0.053	0.034	0.019	6.907	
1965	0.183	0.010	0.005	0.005	1.429	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.632	
1966	0.000	0.139	0.871	0.168	2.104	0.443	0.265	0.164	0.096	0.063	0.038	0.024	4.375	
1967	0.014	0.034	0.303	0.010	0.000	1.321	0.398	0.343	0.143	0.313	0.120	0.130	3.129	
1968	0.082	0.053	0.043	1.262	0.135	1.314	0.101	0.058	0.034	0.024	0.014	0.010	3.129	
1969	0.503	0.710	0.534	0.332	0.558	0.125	0.149	0.048	0.029	0.019	0.119	0.311	3.438	
1970	0.507	0.719	0.972	0.592	0.332	0.226	0.135	0.346	0.143	0.318	0.122	0.183	4.595	
1971	0.125	0.067	0.043	1.518	2.463	1.321	0.399	0.346	0.144	0.319	0.122	0.304	7.170	
1972	0.265	0.159	0.101	0.058	1.881	0.024	0.014	0.010	0.005	0.005	0.121	0.313	2.956	
1973	0.507	0.723	1.155	1.506	1.010	0.842	0.279	0.173	0.106	0.319	0.038	0.024	6.682	
1974	0.014	0.183	1.280	1.618	2.463	1.314	0.398	0.343	0.143	0.311	0.120	0.312	8.498	
1975	0.507	0.710	0.654	1.594	0.351	1.319	0.399	0.345	0.143	0.313	0.120	0.130	6.584	
1976	0.082	0.111	1.283	1.386	2.463	1.321	0.399	0.346	0.144	0.318	0.122	0.303	8.277	
1977	0.241	0.144	0.091	1.618	2.190	0.818	0.388	0.303	0.139	0.284	0.067	0.038	6.321	
1978	0.024	0.014	1.020	1.025	0.601	0.005	0.168	0.005	0.000	0.000	0.000	0.029	2.891	
1979	0.111	0.063	0.038	0.106	0.144	0.010	0.005	0.005	0.000	0.000	0.000	0.306	0.788	
1980	0.043	0.274	0.091	1.015	0.091	0.000	0.000	0.000	0.144	0.318	0.122	0.313	2.410	
1981	0.506	0.718	1.083	0.548	1.169	0.423	0.125	0.077	0.048	0.029	0.019	0.010	4.755	
1982	0.014	0.024	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.043	
1983	0.000	0.476	0.471	1.618	2.463	1.321	0.399	0.345	0.143	0.320	0.122	0.313	7.991	
1984	0.506	0.719	0.972	1.536	2.463	1.315	0.398	0.343	0.143	0.313	0.121	0.144	8.974	
1985	0.226	0.221	0.048	1.121	0.755	0.111	0.005	0.005	0.000	0.000	0.000	0.000	2.492	
1986	0.149	0.250	1.114	1.263	0.005	0.000	0.000	0.000	0.000	0.000	0.121	0.313	3.216	
1987	0.507	0.723	1.330	1.346	1.693	0.779	0.385	0.279	0.138	0.168	0.063	0.038	7.450	
1988	0.024	0.327	0.115	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.476	
1989	0.000	0.714	1.330	1.325	1.174	0.808	0.397	0.303	0.139	0.111	0.067	0.038	6.406	
1990	0.024	0.462	0.370	0.082	1.270	1.321	0.005	0.343	0.000	0.000	0.000	0.000	3.877	
1991	0.000	0.000	0.111	0.000	2.186	0.948	0.019	0.000	0.000	0.000	0.000	0.000	3.264	
1992	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
1993	0.505	0.715	0.847	0.476	0.250	0.173	0.101	0.063	0.038	0.024	0.014	0.010	3.216	
1994	0.005	0.005	0.087	0.173	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.270	
1995	0.000	0.351	1.330	1.618	2.463	1.321	0.399	0.346	0.144	0.320	0.122	0.310	8.724	
1996	0.507	0.710	1.262	1.499	1.135	1.319	0.398	0.284	0.144	0.320	0.122	0.313	8.014	
1997	0.507	0.723	1.330	1.550	2.192	1.313	0.396	0.342	0.143	0.250	0.119	0.087	8.953	
1998	0.506	0.529	1.179	1.333	0.115	1.314	0.087	0.029	0.019	0.010	0.005	0.005	5.131	
1999	0.005	0.000	1.330	1.266	0.226	0.164	0.197	0.345	0.142	0.168	0.101	0.308	4.253	
2000	0.500	0.723	1.330	1.331	1.174	1.015	0.388	0.303	0.139	0.115	0.067	0.313	7.397	
2001	0.503	0.714	0.693	0.418	0.236	0.164	0.096	0.063	0.058	0.320				

A.112. Niv9 – Category B**Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv9

Annual Flows (Mill. cu. m or index values):

MAR = 71,637

S.Dev. = 70,514

CV = 0,984

Q75 = 0,281

Q75/MMF = 0,047

BFI Index = 0,310

CV(JJA+JFM) Index = 3,721

Ecological Category = B

Total IFR = 21,121 (29,48 %MAR)

Maint. Lowflow = 11,064 (15,44 %MAR)

Drought Lowflow = 0,000 (0,00 %MAR)

Maint. Highflow = 10,058 (14,04 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			Maint.	Drought	Maint.	Maint.	
Oct	4,268	11,963	2,803	0,757	0,000	0,664	1,422
Nov	3,278	4,599	1,403	0,640	0,000	0,475	1,116
Dec	3,998	7,150	1,788	0,643	0,000	1,323	1,966
Jan	4,202	6,019	1,432	0,621	0,000	0,661	1,283
Feb	9,050	23,305	2,575	0,970	0,000	0,661	1,631
Mar	10,205	17,230	1,688	1,177	0,000	4,301	5,478
Apr	7,405	10,743	1,451	1,100	0,000	1,063	2,163
May	9,617	23,637	2,458	1,306	0,000	0,000	1,306
Jun	5,289	8,111	1,533	1,050	0,000	0,000	1,050
Jul	6,048	15,167	2,508	1,096	0,000	0,000	1,096
Aug	3,622	5,165	1,426	0,876	0,000	0,302	1,178
Sep	4,656	16,357	3,513	0,826	0,000	0,607	1,433

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv9

Regional Type : Zululand

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.597	1.591	1.566	1.510	1.119	0.424	0.215	0.097	0.031	0.000
Nov	1.266	1.263	1.246	1.205	1.121	0.690	0.347	0.179	0.041	0.005
Dec	3.533	3.105	2.745	2.345	1.743	0.848	0.562	0.281	0.041	0.005
Jan	2.127	1.914	1.732	1.568	1.262	1.078	0.562	0.271	0.056	0.010
Feb	2.533	2.318	2.127	1.946	1.607	1.226	0.644	0.235	0.066	0.000
Mar	10.394	9.000	7.839	6.265	3.163	1.482	0.853	0.399	0.164	0.010
Apr	2.426	2.417	2.379	2.295	2.124	1.477	0.685	0.256	0.051	0.005
May	1.518	1.509	1.481	1.421	1.303	1.101	0.669	0.281	0.051	0.000
Jun	1.211	1.202	1.179	1.128	1.032	0.869	0.511	0.210	0.020	0.000
Jul	1.253	1.241	1.214	1.158	1.053	0.685	0.322	0.123	0.026	0.000
Aug	1.334	1.325	1.299	1.245	1.142	0.649	0.414	0.107	0.015	0.000
Sep	1.615	1.606	1.577	1.515	1.053	0.669	0.347	0.112	0.031	0.000

Reserve Flows without High Flows

Oct	0.880	0.877	0.863	0.830	0.766	0.424	0.215	0.097	0.031	0.000
Nov	0.751	0.749	0.738	0.713	0.661	0.567	0.347	0.179	0.041	0.005
Dec	0.761	0.760	0.750	0.725	0.674	0.580	0.432	0.248	0.041	0.005
Jan	0.741	0.741	0.733	0.712	0.665	0.576	0.433	0.250	0.056	0.005
Feb	1.147	1.145	1.130	1.094	1.017	0.874	0.644	0.235	0.066	0.000
Mar	1.380	1.377	1.358	1.312	1.216	1.042	0.774	0.399	0.146	0.009
Apr	1.279	1.274	1.253	1.207	1.113	0.947	0.685	0.256	0.051	0.005
May	1.518	1.509	1.481	1.421	1.303	1.101	0.669	0.281	0.051	0.000
Jun	1.211	1.202	1.179	1.128	1.032	0.869	0.511	0.210	0.020	0.000
Jul	1.253	1.241	1.214	1.158	1.053	0.685	0.322	0.123	0.026	0.000
Aug	1.010	1.003	0.983	0.941	0.861	0.649	0.414	0.107	0.015	0.000
Sep	0.960	0.955	0.937	0.899	0.824	0.669	0.347	0.112	0.031	0.000

Natural Duration curves

Oct	10.992	4.410	3.265	1.635	1.119	0.424	0.215	0.097	0.031	0.000
Nov	11.186	5.575	3.700	2.310	1.293	0.690	0.347	0.179	0.041	0.005
Dec	13.281	5.115	3.112	2.345	1.743	0.848	0.562	0.281	0.041	0.005
Jan	12.918	6.382	4.471	3.270	1.972	1.078	0.562	0.271	0.056	0.010
Feb	19.341	12.136	7.512	3.035	1.656	1.226	0.644	0.235	0.066	0.000
Mar	32.045	14.185	9.290	6.265	3.163	1.482	0.853	0.399	0.164	0.010
Apr	22.167	12.801	7.215	5.166	2.959	1.477	0.685	0.256	0.051	0.005
May	24.334	10.133	5.779	3.878	2.070	1.165	0.669	0.281	0.051	0.000
Jun	18.411	8.876	4.982	3.362	1.870	1.099	0.511	0.210	0.020	0.000
Jul	14.328	8.575	4.660	2.483	1.349	0.685	0.322	0.123	0.026	0.000
Aug	10.767	6.500	4.052	1.896	1.170	0.649	0.414	0.107	0.015	0.000
Sep	10.225	5.371	3.030	1.804	1.053	0.669	0.347	0.112	0.031	0.000

Hydrological time series

Total Runoff : Niv9

Desktop (Version 2) Modified Flow Data for Ecological Category B													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.020	0.526	0.455	0.266	0.000	2.601	2.143	0.669	0.399	0.250	0.153	1.592	9.074
1921	0.215	1.264	3.181	1.197	0.792	0.828	0.322	0.210	0.123	0.077	0.077	0.026	8.312
1922	1.237	0.230	0.020	1.262	0.164	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.913
1923	0.000	0.010	0.041	0.010	1.605	0.082	0.010	0.005	0.005	0.005	0.000	0.051	1.824
1924	0.020	0.552	1.702	0.557	2.127	10.394	2.426	1.518	1.211	1.245	1.312	1.565	24.630
1925	1.510	0.935	0.598	0.368	0.204	2.754	2.233	0.869	0.511	0.322	0.194	0.118	10.617
1926	0.210	0.041	3.533	0.445	0.026	1.032	0.036	0.005	0.000	0.000	0.000	0.000	5.328
1927	0.000	0.000	0.005	0.588	0.133	0.015	0.005	1.485	0.194	0.123	0.072	0.046	2.666
1928	0.031	0.020	0.041	1.002	0.005	7.613	2.119	1.273	0.787	0.496	0.301	0.179	13.867
1929	0.112	0.066	0.041	2.127	1.835	1.191	0.685	0.434	0.531	0.189	0.102	0.061	7.375
1930	0.041	0.026	0.031	0.010	1.007	2.918	2.090	0.005	0.000	0.000	0.000	0.000	6.128
1931	0.000	1.266	2.437	0.056	2.533	9.000	2.426	1.518	1.211	1.253	1.328	1.589	24.616
1932	1.534	1.123	1.017	1.123	1.415	1.538	0.107	0.066	0.041	0.026	0.015	0.010	8.014
1933	0.036	0.005	0.046	0.848	1.986	6.265	1.763	1.134	1.211	1.228	1.328	1.606	17.455
1934	1.555	1.257	2.863	0.537	0.312	0.399	0.148	1.511	1.179	1.182	1.288	1.528	13.759
1935	1.160	0.690	0.434	1.498	1.558	10.071	2.334	1.518	1.209	1.251	1.329	1.595	24.648
1936	1.531	1.266	3.271	1.609	2.014	8.063	2.366	1.421	1.032	0.995	0.685	0.404	24.656
1937	0.256	1.219	3.533	2.127	2.190	2.345	1.257	0.797	0.872	0.322	0.184	0.112	15.214
1938	0.072	0.041	1.814	0.046	2.355	7.016	2.124	1.469	1.202	1.233	1.313	1.589	20.274
1939	1.522	1.261	0.838	1.152	1.180	10.394	2.426	1.518	1.211	1.253	1.334	1.609	25.699
1940	1.571	1.266	3.338	1.643	1.643	1.283	0.736	0.465	0.276	0.174	0.107	0.061	12.563
1941	0.051	0.496	1.998	2.032	2.107	8.425	2.288	1.487	1.192	1.194	1.228	1.027	23.525
1942	0.644	0.782	3.140	0.194	0.266	10.394	2.426	1.518	1.206	1.253	1.333	1.603	24.760
1943	1.580	1.254	2.361	0.767	2.249	7.257	1.477	0.920	1.211	1.249	1.325	1.615	23.265
1944	1.597	1.266	2.902	1.159	2.318	10.394	2.420	1.497	1.151	1.114	1.148	0.721	27.688
1945	0.455	0.271	2.832	1.378	0.066	5.202	2.422	1.373	0.961	0.954	0.588	0.347	16.848
1946	0.220	0.128	0.281	0.164	2.130	9.364	2.414	1.481	1.096	1.081	0.971	0.807	20.138
1947	0.409	0.409	0.164	1.402	1.891	0.128	0.664	0.026	0.010	0.005	0.005	0.608	5.720
1948	0.015	0.031	0.000	1.395	2.047	0.853	2.426	1.518	1.154	1.116	1.148	0.751	12.455
1949	0.455	0.286	3.453	1.638	0.199	3.163	2.379	0.475	0.041	0.026	0.015	0.010	12.140
1950	0.225	0.015	0.133	0.133	0.000	7.346	1.196	0.429	0.235	0.148	1.320	0.506	11.686
1951	0.281	0.169	3.533	0.072	0.399	0.812	0.235	1.106	1.193	1.253	1.334	1.612	11.998
1952	1.576	1.172	2.745	0.950	0.874	0.986	0.215	0.138	0.082	0.102	0.031	1.053	9.924
1953	0.087	0.475	3.533	0.158	2.259	4.298	1.789	1.517	0.968	0.777	0.475	1.211	17.548
1954	1.571	1.263	2.335	1.741	1.986	8.312	2.221	1.313	0.911	0.823	0.588	0.404	23.469
1955	0.296	0.240	0.583	0.041	2.053	10.177	2.186	1.258	1.128	0.659	0.639	0.235	19.497
1956	1.180	1.266	3.533	2.127	2.256	6.020	2.316	1.496	1.107	1.214	1.220	1.614	25.349
1957	1.597	1.266	3.367	2.101	2.519	7.383	2.339	1.346	0.952	1.004	0.577	0.342	24.793
1958	0.220	0.128	0.664	0.312	0.046	0.020	0.010	1.286	0.020	0.092	0.000	1.466	4.264
1959	0.654	0.450	1.635	0.363	1.665	0.761	2.426	1.518	1.198	1.210	1.255	1.216	14.352
1960	1.170	1.266	3.533	2.127	2.507	2.611	2.379	1.373	1.211	1.253	1.334	1.615	22.378
1961	1.597	1.255	1.436	1.078	0.475	8.571	2.402	1.452	1.066	1.053	1.273	1.175	22.835
1962	0.552	1.265	3.008	1.277	1.456	3.056	1.022	0.281	1.211	1.253	1.334	1.615	17.329
1963	1.597	1.227	2.417	1.830	1.226	0.996	2.381	1.423	1.018	1.025	0.649	0.373	16.162
1964	1.597	1.251	2.562	0.961	0.537	0.388	0.256	0.378	1.155	1.185	1.330	1.615	13.215
1965	1.597	1.264	2.892	2.127	1.607	1.022	0.608	0.383	0.225	0.143	0.087	0.051	12.007
1966	0.031	0.020	0.036	0.010	0.010	0.164	2.426	1.358	0.936	1.233	1.270	1.298	8.792
1967	1.540	1.062	0.301	0.281	1.773	0.179	0.164	0.102	0.373	0.041	0.731	0.015	6.562
1968	0.010	0.179	0.005	0.000	0.000	10.394	2.426	1.515	1.199	1.211	1.257	1.569	19.765
1969	1.591	0.531	0.312	0.266	0.138	2.151	0.041	1.463	0.623	0.393	0.240	0.307	8.056
1970	1.583	1.205	1.048	1.535	1.124	3.265	2.238	1.518	1.211	1.253	1.332	1.601	18.913
1971	1.560	1.141	1.763	1.807	2.533	10.145	2.417	1.517	1.209	1.231	1.295	1.521	28.138
1972	1.180	1.191	0.848	1.860	0.235	0.322	0.296	0.041	0.020	0.031	1.334	1.615	8.973
1973	1.597	1.246	3.105	2.035	1.349	0.915	0.542	1.470	1.186	1.197	1.245	1.032	16.919
1974	0.654	1.256	0.603	2.127	2.533	9.578	2.397	1.509	1.128	1.094	1.083	1.615	25.578
1975	1.597	1.238	2.913	2.127	2.533	10.394	2.426	1.518	1.209	1.253	1.318	1.577	30.105
1976	1.580	1.121	3.342	1.162	2.533	10.394	2.426	1.507	1.175	1.158	1.190	0.925	28.513
1977	0.567	0.823	1.160	2.127	2.219	7.839	2.369	1.438	1.053	1.246	1.299	1.548	23.687
1978	1.562	1.152	1.027	0.623	0.353	0.695	0.731	1.221	0.832	0.583	0.358	0.399	9.535
1979	0.133	0.981	0.368	0.041	0.041	0.010	0.005	0.393	0.010	0.000	0.000	1.612	3.594
1980	0.077	0.347	0.332	1.604	1.944	1.150	0.654	1.518	1.211	1.245	1.312	1.615	13.009
1981	1.597	1.262	2.747	1.215	1.441	5.856	2.419	1.499	1.166	1.108	1.129	0.669	22.108
1982	0.424	0.250	0.158	0.143	0.056	0.036	0.020	0.015	0.281	1.221	1.334	1.613	5.551
1983	1.580	1.238	2.345	2.127	2.533	9.723	2.415	1.482	1.180	1.250	1.334	1.614	28.822
1984	1.593	1.212	2.105	1.914	2.533	8.667	2.358	1.393	1.202	1.253	1.334	1.615	27.179
1985	1.597	1.266	2.642	1.283	0.945	0.608	2.426	1.303	1.162	0.685	0.414	0.245	14.576
1986	0.153	0.092	1.794	1.876	0.869	5.125	1.068	0.965	1.184	1.172	1.334	1.615	17.248
1987	1.597	1.266	3.391	1.743	2.533	10.394	2.419	1.497	1.144	1.112	1.146	0.710	28.951
1988	0.618	1.216	3.533	1.729	2.437	4.068	1.928	1.120	0.828	0.710	0.429	1.145	19.761
1989	0.215	1.266	3.533	1.936	1.946	7.562	1.913	0.988	0.598	0.378	1.211	1.426	22.972
1990	1.595	0.118	1.743	1.727	2.207	8.285	2.399	1.518	1.209	1.233	1.299	1.523	24.857
1991	1.201	0.710	0.455	0.271	0.158	0.261	0.118	0.092	0.020	0.015	0.010	0.005	3.316
1992	0.005	0.572	0.782	0.031	1.764	0.250	0.051	0.000	0.000	0.000	0.000	0.000	3.455
1993	1.597	1.233	1.819	1.407	0.593	0.818	0.644	0.148	0.087	0.056	0.777	0.031	9.210
1994	1.590	0.087	0.026	0.015	0.072	7.016	2.426	1.511	1.208	1.226	1.287	1.515	17.980
1995	1.145	1.139	1.722	1.732	2.369	9.775	2.388	1.446	1.057	1.244	1.325	1.582	26.923
1996	1.597	1.132	0.736	1.705	1.680	0.261	2.330	1.101	1.137	1.223	1.334	1.614	15.849
1997	1.566	1.266	3.533	1.969	2.346	3.327	1.656	1.015	0.618	0.393	0.235	0.138	18.062
1998	0.097	1.266	3.017	1.971	2.533	8.013	2.295	1.343	0.948	1.134	1.032	0.429	24.076
1999	1.597	1.243	2.633	1.587	2.518	10.394	2.426	1.518	1.210	1.241	1.304	1.549	29.221
2000	1.380	1.266	2.629	2.032	0.874	7.173	2.400	1.477	1.074	1.081	1.142	1.615	24.143
2001	1.592	1.264	2.732	1.796	1.451	0.751	0.966	0.281	0.210	1.250	1.334	1.600	15.227
2002	1.544	1.125	0.838	0.562	0.327	0.199	0.118	0.133	0.271	0.987	0.603	0.358	7.065
2003	0.225	0.204	0.087	1.917	2.414	8.811	2.205						

A.113. Niv9 – Category C**Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv9

Annual Flows (Mill. cu. m or index values):

MAR = 71,637

S.Dev. = 70,514

CV = 0,984

Q75 = 0,281

Q75/MMF = 0,047

BFI Index = 0,310

CV(JJA+JFM) Index = 3,721

Ecological Category = C

Total IFR = 14,205 (19,83 %MAR)

Maint. Lowflow = 6,309 (8,81 %MAR)

Drought Lowflow = 0,000 (0,00 %MAR)

Maint. Highflow = 7,896 (11,02 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			Maint.	Drought	Maint.	Maint.	
Oct	4,268	11,963	2,803	0,435	0,000	0,522	0,957
Nov	3,278	4,599	1,403	0,371	0,000	0,373	0,744
Dec	3,998	7,150	1,788	0,373	0,000	1,038	1,411
Jan	4,202	6,019	1,432	0,361	0,000	0,519	0,880
Feb	9,050	23,305	2,575	0,552	0,000	0,519	1,071
Mar	10,205	17,230	1,688	0,666	0,000	3,376	4,042
Apr	7,405	10,743	1,451	0,624	0,000	0,835	1,458
May	9,617	23,637	2,458	0,737	0,000	0,000	0,737
Jun	5,289	8,111	1,533	0,596	0,000	0,000	0,596
Jul	6,048	15,167	2,508	0,622	0,000	0,000	0,622
Aug	3,622	5,165	1,426	0,500	0,000	0,237	0,738
Sep	4,656	16,357	3,513	0,473	0,000	0,476	0,949

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv9

Regional Type : Zululand

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.180	1.175	1.157	1.116	1.033	0.424	0.215	0.097	0.031	0.000
Nov	0.928	0.926	0.913	0.884	0.822	0.690	0.347	0.179	0.041	0.005
Dec	2.676	2.340	2.059	1.815	1.370	0.848	0.562	0.281	0.041	0.005
Jan	1.575	1.409	1.267	1.140	0.906	0.792	0.562	0.271	0.056	0.010
Feb	1.829	1.660	1.513	1.375	1.120	0.971	0.644	0.235	0.066	0.000
Mar	7.963	6.869	5.961	5.184	3.163	1.482	0.853	0.399	0.164	0.010
Apr	1.791	1.784	1.757	1.694	1.569	1.347	0.685	0.256	0.051	0.005
May	0.974	0.968	0.950	0.911	0.836	0.706	0.517	0.281	0.051	0.000
Jun	0.782	0.777	0.761	0.729	0.667	0.561	0.409	0.210	0.020	0.000
Jul	0.809	0.801	0.784	0.748	0.680	0.569	0.322	0.123	0.026	0.000
Aug	0.930	0.923	0.906	0.868	0.796	0.649	0.414	0.107	0.015	0.000
Sep	1.177	1.170	1.149	1.104	1.017	0.669	0.347	0.112	0.031	0.000

Reserve Flows without High Flows

Oct	0.575	0.573	0.564	0.543	0.500	0.424	0.215	0.097	0.031	0.000
Nov	0.494	0.493	0.486	0.469	0.435	0.373	0.277	0.158	0.041	0.003
Dec	0.500	0.499	0.493	0.477	0.443	0.381	0.284	0.163	0.041	0.003
Jan	0.487	0.487	0.482	0.468	0.437	0.379	0.285	0.164	0.054	0.003
Feb	0.741	0.739	0.730	0.706	0.657	0.565	0.421	0.235	0.066	0.000
Mar	0.887	0.885	0.872	0.843	0.781	0.670	0.497	0.284	0.094	0.006
Apr	0.824	0.821	0.808	0.778	0.717	0.610	0.449	0.256	0.051	0.005
May	0.974	0.968	0.950	0.911	0.836	0.706	0.517	0.281	0.051	0.000
Jun	0.782	0.777	0.761	0.729	0.667	0.561	0.409	0.210	0.020	0.000
Jul	0.809	0.801	0.784	0.748	0.680	0.569	0.322	0.123	0.026	0.000
Aug	0.656	0.652	0.639	0.612	0.560	0.471	0.344	0.107	0.015	0.000
Sep	0.625	0.621	0.610	0.585	0.537	0.453	0.332	0.112	0.031	0.000

Natural Duration curves

Oct	10.992	4.410	3.265	1.635	1.119	0.424	0.215	0.097	0.031	0.000
Nov	11.186	5.575	3.700	2.310	1.293	0.690	0.347	0.179	0.041	0.005
Dec	13.281	5.115	3.112	2.345	1.743	0.848	0.562	0.281	0.041	0.005
Jan	12.918	6.382	4.471	3.270	1.972	1.078	0.562	0.271	0.056	0.010
Feb	19.341	12.136	7.512	3.035	1.656	1.226	0.644	0.235	0.066	0.000
Mar	32.045	14.185	9.290	6.265	3.163	1.482	0.853	0.399	0.164	0.010
Apr	22.167	12.801	7.215	5.166	2.959	1.477	0.685	0.256	0.051	0.005
May	24.334	10.133	5.779	3.878	2.070	1.165	0.669	0.281	0.051	0.000
Jun	18.411	8.876	4.982	3.362	1.870	1.099	0.511	0.210	0.020	0.000
Jul	14.328	8.575	4.660	2.483	1.349	0.685	0.322	0.123	0.026	0.000
Aug	10.767	6.500	4.052	1.896	1.170	0.649	0.414	0.107	0.015	0.000
Sep	10.225	5.371	3.030	1.804	1.053	0.669	0.347	0.112	0.031	0.000

Hydrological time series

Total Runoff : Niv9

Desktop (Version 2) Modified Flow Data for Ecological Category C													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.020	0.526	0.455	0.266	0.000	2.601	1.583	0.517	0.362	0.250	0.153	1.160	7.893
1921	0.215	0.927	2.400	0.860	0.792	0.828	0.322	0.210	0.123	0.077	0.077	0.026	6.856
1922	1.052	0.230	0.020	0.906	0.164	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.372
1923	0.000	0.010	0.041	0.010	1.118	0.082	0.010	0.005	0.005	0.005	0.000	0.051	1.337
1924	0.020	0.552	1.362	0.557	1.513	7.963	1.791	0.974	0.782	0.804	0.915	1.141	18.374
1925	1.116	0.755	0.598	0.368	0.204	2.754	1.649	0.584	0.409	0.322	0.194	0.118	9.072
1926	0.210	0.041	2.676	0.445	0.026	1.032	0.036	0.005	0.000	0.000	0.000	0.000	4.471
1927	0.000	0.000	0.005	0.588	0.133	0.015	0.005	0.953	0.194	0.123	0.072	0.046	2.134
1928	0.031	0.020	0.041	0.769	0.005	5.785	1.565	0.817	0.519	0.496	0.301	0.179	10.527
1929	0.112	0.066	0.041	1.575	1.292	1.191	0.685	0.408	0.422	0.189	0.102	0.061	6.145
1930	0.041	0.026	0.031	0.010	0.900	2.918	1.543	0.005	0.000	0.000	0.000	0.000	5.475
1931	0.000	0.928	1.852	0.056	1.829	6.869	1.791	0.974	0.782	0.809	0.926	1.158	17.974
1932	1.133	0.823	1.017	0.807	1.036	1.538	1.107	0.066	0.041	0.026	0.015	0.010	6.619
1933	0.036	0.005	0.046	0.722	1.405	5.184	1.390	0.727	0.782	0.793	0.926	1.170	13.185
1934	1.148	0.922	2.151	0.537	0.312	0.399	0.148	0.969	0.761	0.763	0.898	1.114	10.123
1935	1.039	0.690	0.434	1.087	1.086	7.710	1.723	0.973	0.781	0.808	0.926	1.162	18.421
1936	1.131	0.928	2.470	1.171	1.427	6.135	1.747	0.911	0.667	0.642	0.683	0.404	18.317
1937	0.256	0.894	2.676	1.575	1.561	2.345	1.257	0.560	0.564	0.322	0.184	0.112	12.306
1938	0.072	0.041	1.423	0.046	1.689	5.319	1.569	0.942	0.777	0.796	0.915	1.158	14.747
1939	1.124	0.924	0.838	0.828	0.956	7.963	1.791	0.974	0.782	0.809	0.930	1.173	19.092
1940	1.160	0.928	2.524	1.197	1.147	1.283	0.736	0.423	0.276	0.174	0.107	0.061	10.016
1941	0.051	0.496	1.559	1.501	1.497	6.419	1.690	0.954	0.770	0.771	0.856	1.007	17.570
1942	0.644	0.727	2.368	0.194	0.266	7.963	1.791	0.974	0.779	0.809	0.929	1.168	18.613
1943	1.167	0.919	1.821	0.689	1.607	5.507	1.347	0.602	0.782	0.807	0.923	1.177	17.348
1944	1.180	0.928	2.181	0.832	1.660	7.963	1.787	0.960	0.744	0.719	0.801	0.721	20.477
1945	0.455	0.271	1.127	0.995	0.066	4.702	1.788	0.880	0.621	0.616	0.588	0.347	13.456
1946	0.220	0.128	0.281	0.164	1.515	7.155	1.782	0.950	0.708	0.698	0.750	0.807	15.158
1947	0.409	0.409	0.164	1.013	1.334	0.128	0.664	0.026	0.010	0.005	0.005	0.608	4.775
1948	0.015	0.031	0.000	1.008	1.452	0.853	1.791	0.974	0.746	0.721	0.801	0.751	9.141
1949	0.455	0.286	2.614	1.194	0.199	3.163	1.757	0.427	0.041	0.026	0.015	0.010	10.186
1950	0.225	0.015	0.133	0.133	0.000	5.576	1.196	0.406	0.235	0.148	0.920	0.506	9.493
1951	0.281	0.169	2.676	0.072	0.399	0.812	0.235	0.709	0.771	0.809	0.930	1.175	9.038
1952	1.164	0.859	2.059	0.753	0.846	0.986	0.215	0.138	0.082	0.102	0.031	1.017	8.252
1953	0.087	0.475	2.676	0.158	1.615	4.293	1.394	0.973	0.626	0.584	0.475	1.035	14.391
1954	1.160	0.926	1.807	1.274	1.406	6.331	1.640	0.842	0.589	0.592	0.588	0.404	17.558
1955	0.296	0.240	0.583	0.041	1.456	7.793	1.615	0.807	0.729	0.560	0.639	0.235	14.994
1956	1.042	0.928	2.676	1.575	1.612	5.073	1.710	0.959	0.715	0.784	0.850	1.177	19.102
1957	1.180	0.928	2.546	1.555	1.818	5.605	1.727	0.863	0.615	0.649	0.577	0.342	18.404
1958	0.220	0.128	0.664	0.312	0.046	0.020	0.010	0.825	0.020	0.092	0.000	1.069	3.405
1959	0.654	0.450	1.349	0.363	1.164	0.761	1.791	0.974	0.774	0.781	0.875	1.036	10.972
1960	1.041	0.928	2.676	1.575	1.809	2.611	1.756	0.880	0.782	0.809	0.930	1.177	16.975
1961	1.180	0.920	1.309	0.792	0.475	6.533	1.774	0.931	0.689	0.680	0.888	1.031	17.202
1962	0.552	0.927	2.264	0.917	1.051	3.056	1.022	0.281	0.782	0.809	0.930	1.177	13.769
1963	1.179	0.899	1.844	1.343	0.971	0.996	1.758	0.912	0.658	0.662	0.649	0.373	12.244
1964	1.180	0.917	1.917	0.756	0.537	0.388	0.256	0.376	0.746	0.765	0.927	1.177	9.943
1965	1.180	0.927	2.174	1.575	1.120	1.022	0.608	0.381	0.225	0.143	0.087	0.051	9.493
1966	0.031	0.020	0.036	0.010	0.010	0.164	1.791	0.871	0.605	0.797	0.885	1.045	6.265
1967	1.137	0.779	0.301	0.281	1.245	0.179	0.164	0.102	0.351	0.041	0.693	0.015	5.289
1968	0.010	0.179	0.005	0.000	0.000	7.963	1.791	0.972	0.774	0.782	0.877	1.143	14.497
1969	1.175	0.531	0.312	0.266	0.138	2.151	0.041	0.938	0.481	0.393	0.240	0.307	6.973
1970	1.169	0.884	1.048	1.115	0.938	3.265	1.653	0.974	0.782	0.809	0.929	1.167	14.732
1971	1.152	0.837	1.385	1.325	1.829	7.767	1.784	0.973	0.781	0.795	0.903	1.109	20.639
1972	1.042	0.873	0.848	1.366	0.235	0.322	0.296	0.041	0.020	0.031	0.930	1.177	7.182
1973	1.180	0.913	2.340	1.503	1.013	0.915	0.542	0.943	0.766	0.773	0.868	1.009	12.765
1974	0.654	0.921	0.603	1.575	1.829	7.322	1.770	0.968	0.729	0.707	0.776	1.177	19.031
1975	1.180	0.908	2.190	1.575	1.829	7.963	1.791	0.974	0.781	0.809	0.919	1.149	22.069
1976	1.167	0.822	2.527	0.834	1.829	7.963	1.791	0.967	0.759	0.748	0.830	0.925	21.161
1977	0.567	0.735	1.160	1.575	1.583	5.961	1.749	0.922	0.680	0.805	0.905	1.128	17.770
1978	1.153	0.845	1.027	0.623	0.353	0.695	0.731	0.783	0.537	0.532	0.358	0.399	8.037
1979	0.133	0.764	0.368	0.041	0.041	0.010	0.005	0.390	0.010	0.000	0.000	1.175	2.936
1980	0.077	0.347	0.332	1.168	1.374	1.150	0.654	0.974	0.782	0.804	0.915	1.177	9.754
1981	1.180	0.925	2.060	0.872	1.045	4.998	1.786	0.961	0.754	0.715	0.788	0.669	16.754
1982	0.424	0.250	0.158	0.143	0.056	0.036	0.020	0.015	0.281	0.788	0.930	1.176	4.277
1983	1.166	0.908	1.815	1.575	1.829	7.436	1.783	0.950	0.762	0.808	0.930	1.177	21.139
1984	1.177	0.889	1.638	1.409	1.829	6.609	1.741	0.893	0.777	0.809	0.930	1.177	19.875
1985	1.180	0.928	1.979	0.922	0.880	0.608	1.791	0.836	0.751	0.569	0.414	0.245	11.102
1986	0.153	0.092	1.408	1.379	0.844	4.667	1.068	0.619	0.765	0.757	0.930	1.177	13.859
1987	1.180	0.928	2.565	1.275	1.829	7.963	1.786	0.960	0.739	0.718	0.799	0.710	21.451
1988	0.618	0.891	2.676	1.264	1.754	4.068	1.424	0.718	0.535	0.573	0.429	1.028	15.979
1989	0.215	0.928	2.676	1.426	1.375	5.744	1.413	0.634	0.465	0.378	0.844	1.060	17.160
1990	1.178	0.118	1.370	1.263	1.574	6.309	1.771	0.974	0.781	0.796	0.906	1.110	18.150
1991	1.046	0.710	0.455	0.271	0.158	0.261	0.118	0.092	0.020	0.015	0.010	0.005	3.161
1992	0.005	0.572	0.782	0.031	1.238	0.250	0.051	0.000	0.000	0.000	0.000	0.000	2.929
1993	1.180	0.904	1.426	1.017	0.593	0.818	0.644	0.148	0.087	0.056	0.704	0.031	7.608
1994	1.174	0.087	0.026	0.015	0.072	5.319	1.791	0.969	0.780	0.792	0.898	1.104	13.028
1995	1.037	0.835	1.366	1.267	1.700	7.477	1.763	0.927	0.683	0.803	0.923	1.153	19.935
1996	1.180	0.830	0.736	1.246	1.175	0.261	1.721	0.706	0.735	0.790	0.930	1.176	11.484
1997	1.157	0.928	2.676	1.452	1.682	3.327	1.374	0.651	0.478	0.393	0.235	0.138	14.490
1998	0.097	0.928	2.271	1.453	1.829	6.097	1.694	0.861	0.612	0.732	0.764	0.429	17.767
1999	1.180	0.911	1.972	1.155	1.817	7.963	1.791	0.974	0.782	0.801	0.909	1.129	21.384
2000	1.075	0.928	1.969	1.501	0.846	5.441	1.772	0.947	0.694	0.698	0.796	1.177	17.845
2001	1.176	0.927	2.049	1.316	1.049	0.751	0.966	0.281	0.210	0.808	0.930	1.166	11.628
2002	1.140	0.825	0.838	0.562	0.327	0.199	0.118	0.133	0.271	0.637	0.603	0.358	6.012
2003	0.225	0.204	0.087	1.410	1.736	6.721	1.629	0.858	0.56				

A.114. *Niv9 – Category D***Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv9

Annual Flows (Mill. cu. m or index values):

MAR = 71,637

S.Dev. = 70,514

CV = 0,984

Q75 = 0,281

Q75/MMF = 0,047

BFI Index = 0,310

CV(JJA+JFM) Index = 3,721

Ecological Category = D

Total IFR = 9,218 (12,87 %MAR)

Maint. Lowflow = 2,623 (3,66 %MAR)

Drought Lowflow = 0,000 (0,00 %MAR)

Maint. Highflow = 6,595 (9,21 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			Maint.	Drought	Maint.	Maint.	
Oct	4,268	11,963	2,803	0,183	0,000	0,436	0,618
Nov	3,278	4,599	1,403	0,157	0,000	0,312	0,469
Dec	3,998	7,150	1,788	0,158	0,000	0,867	1,025
Jan	4,202	6,019	1,432	0,153	0,000	0,434	0,587
Feb	9,050	23,305	2,575	0,229	0,000	0,434	0,663
Mar	10,205	17,230	1,688	0,274	0,000	2,820	3,094
Apr	7,405	10,743	1,451	0,257	0,000	0,697	0,955
May	9,617	23,637	2,458	0,302	0,000	0,000	0,302
Jun	5,289	8,111	1,533	0,247	0,000	0,000	0,247
Jul	6,048	15,167	2,508	0,257	0,000	0,000	0,257
Aug	3,622	5,165	1,426	0,209	0,000	0,198	0,407
Sep	4,656	16,357	3,513	0,198	0,000	0,398	0,596

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv9

Regional Type : Zululand

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.945	0.942	0.927	0.894	0.828	0.424	0.215	0.097	0.031	0.000
Nov	0.727	0.726	0.716	0.693	0.645	0.557	0.347	0.179	0.041	0.005
Dec	2.108	1.827	1.594	1.394	1.032	0.848	0.562	0.281	0.041	0.005
Jan	1.192	1.052	0.935	0.833	0.645	0.565	0.435	0.270	0.056	0.010
Feb	1.330	1.189	1.069	0.960	0.760	0.660	0.503	0.235	0.066	0.000
Mar	6.412	5.499	4.743	4.102	2.946	1.482	0.853	0.399	0.164	0.010
Apr	1.449	1.443	1.421	1.371	1.269	1.090	0.685	0.256	0.051	0.005
May	0.550	0.546	0.536	0.514	0.472	0.399	0.292	0.165	0.051	0.000
Jun	0.446	0.443	0.434	0.416	0.380	0.320	0.233	0.132	0.020	0.000
Jul	0.462	0.457	0.447	0.426	0.388	0.325	0.235	0.123	0.026	0.000
Aug	0.655	0.650	0.638	0.612	0.561	0.476	0.352	0.107	0.015	0.000
Sep	0.919	0.914	0.898	0.863	0.795	0.669	0.347	0.112	0.031	0.000

Reserve Flows without High Flows

Oct	0.332	0.331	0.326	0.313	0.289	0.246	0.181	0.097	0.031	0.000
Nov	0.287	0.287	0.283	0.273	0.253	0.217	0.161	0.092	0.030	0.002
Dec	0.290	0.290	0.286	0.277	0.257	0.221	0.165	0.095	0.031	0.002
Jan	0.283	0.283	0.280	0.272	0.254	0.220	0.165	0.095	0.031	0.002
Feb	0.421	0.420	0.415	0.401	0.373	0.321	0.239	0.137	0.045	0.000
Mar	0.501	0.500	0.493	0.477	0.442	0.379	0.281	0.161	0.053	0.003
Apr	0.468	0.466	0.459	0.442	0.407	0.346	0.255	0.145	0.048	0.003
May	0.550	0.546	0.536	0.514	0.472	0.399	0.292	0.165	0.051	0.000
Jun	0.446	0.443	0.434	0.416	0.380	0.320	0.233	0.132	0.020	0.000
Jul	0.462	0.457	0.447	0.426	0.388	0.325	0.235	0.123	0.026	0.000
Aug	0.377	0.375	0.367	0.352	0.322	0.271	0.197	0.107	0.015	0.000
Sep	0.359	0.357	0.351	0.336	0.308	0.261	0.191	0.108	0.031	0.000

Natural Duration curves

Oct	10.992	4.410	3.265	1.635	1.119	0.424	0.215	0.097	0.031	0.000
Nov	11.186	5.575	3.700	2.310	1.293	0.690	0.347	0.179	0.041	0.005
Dec	13.281	5.115	3.112	2.345	1.743	0.848	0.562	0.281	0.041	0.005
Jan	12.918	6.382	4.471	3.270	1.972	1.078	0.562	0.271	0.056	0.010
Feb	19.341	12.136	7.512	3.035	1.656	1.226	0.644	0.235	0.066	0.000
Mar	32.045	14.185	9.290	6.265	3.163	1.482	0.853	0.399	0.164	0.010
Apr	22.167	12.801	7.215	5.166	2.959	1.477	0.685	0.256	0.051	0.005
May	24.334	10.133	5.779	3.878	2.070	1.165	0.669	0.281	0.051	0.000
Jun	18.411	8.876	4.982	3.362	1.870	1.099	0.511	0.210	0.020	0.000
Jul	14.328	8.575	4.660	2.483	1.349	0.685	0.322	0.123	0.026	0.000
Aug	10.767	6.500	4.052	1.896	1.170	0.649	0.414	0.107	0.015	0.000
Sep	10.225	5.371	3.030	1.804	1.053	0.669	0.347	0.112	0.031	0.000

Hydrological time series

Total Runoff : Niv9

Desktop (Version 2) Modified Flow Data for Ecological Category D													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.020	0.504	0.455	0.265	0.000	2.601	1.280	0.292	0.206	0.207	0.153	0.906	6.890
1921	0.215	0.726	1.877	0.613	0.550	0.828	0.322	0.132	0.095	0.077	0.077	0.026	5.539
1922	0.843	0.230	0.020	0.645	0.164	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.902
1923	0.000	0.010	0.041	0.010	0.759	0.082	0.010	0.005	0.005	0.005	0.000	0.051	0.978
1924	0.020	0.513	1.026	0.433	1.069	6.412	1.449	0.550	0.446	0.459	0.644	0.891	13.910
1925	0.894	0.592	0.598	0.343	0.204	2.754	1.334	0.330	0.233	0.235	0.194	0.118	7.830
1926	0.210	0.041	2.108	0.380	0.026	1.032	0.036	0.005	0.000	0.000	0.000	0.000	3.837
1927	0.000	0.000	0.005	0.443	0.133	0.015	0.005	0.538	0.125	0.123	0.072	0.046	1.504
1928	0.031	0.020	0.041	0.549	0.005	4.598	1.266	0.461	0.296	0.285	0.300	0.179	8.030
1929	0.112	0.066	0.041	1.192	0.895	1.191	0.685	0.231	0.241	0.182	0.102	0.061	4.999
1930	0.041	0.026	0.031	0.010	0.613	2.890	1.249	0.005	0.000	0.000	0.000	0.000	4.865
1931	0.000	0.727	1.425	0.056	1.330	5.499	1.449	0.550	0.446	0.462	0.652	0.904	13.499
1932	0.908	0.645	0.924	0.576	0.704	1.538	0.107	0.062	0.041	0.026	0.015	0.010	5.556
1933	0.036	0.005	0.046	0.515	0.984	4.102	1.125	0.411	0.446	0.452	0.652	0.914	9.687
1934	0.920	0.722	1.670	0.424	0.312	0.399	0.148	0.547	0.434	0.435	0.633	0.870	7.515
1935	0.833	0.557	0.434	0.790	0.738	6.200	1.394	0.549	0.445	0.461	0.652	0.908	13.962
1936	0.906	0.727	1.936	0.858	1.000	4.888	1.413	0.514	0.380	0.366	0.481	0.404	13.876
1937	0.256	0.701	2.108	1.192	1.108	2.345	1.034	0.316	0.321	0.235	0.184	0.112	9.911
1938	0.072	0.041	1.074	0.046	1.214	4.214	1.269	0.532	0.443	0.454	0.644	0.905	10.908
1939	0.901	0.724	0.838	0.590	0.650	6.412	1.449	0.550	0.446	0.462	0.655	0.916	14.592
1940	0.929	0.727	1.980	0.879	0.782	1.283	0.736	0.239	0.177	0.174	0.107	0.061	8.075
1941	0.051	0.490	1.185	1.130	1.056	5.124	1.367	0.539	0.439	0.440	0.603	0.787	13.210
1942	0.644	0.570	1.851	0.194	0.266	6.412	1.449	0.550	0.444	0.462	0.654	0.913	14.408
1943	0.935	0.721	1.400	0.493	1.145	4.368	1.090	0.340	0.446	0.460	0.650	0.919	12.967
1944	0.945	0.727	1.695	0.593	1.189	6.412	1.445	0.542	0.424	0.410	0.564	0.693	15.642
1945	0.455	0.271	1.650	0.716	0.066	3.706	1.447	0.497	0.354	0.351	0.427	0.347	10.287
1946	0.220	0.128	0.281	0.164	1.071	5.737	1.442	0.536	0.404	0.398	0.528	0.720	11.628
1947	0.409	0.409	0.164	0.731	0.928	0.128	0.664	0.026	0.010	0.005	0.005	0.608	4.087
1948	0.015	0.031	0.000	0.727	1.020	0.853	1.449	0.550	0.425	0.411	0.564	0.702	6.748
1949	0.455	0.286	2.056	0.876	0.199	2.946	1.421	0.241	0.041	0.026	0.015	0.010	8.571
1950	0.225	0.015	0.133	0.133	0.000	4.425	1.018	0.229	0.150	0.148	0.648	0.506	7.630
1951	0.281	0.169	2.108	0.072	0.399	0.812	0.235	0.400	0.439	0.462	0.655	0.918	6.949
1952	0.933	0.674	1.594	0.537	0.577	0.986	0.215	0.099	0.078	0.102	0.031	0.795	6.620
1953	0.087	0.475	2.108	0.158	1.152	3.369	1.128	0.549	0.357	0.333	0.378	0.809	10.903
1954	0.930	0.726	1.388	0.941	0.984	5.050	1.327	0.475	0.336	0.338	0.427	0.404	13.325
1955	0.296	0.240	0.583	0.041	1.024	6.270	1.306	0.456	0.416	0.319	0.468	0.235	11.653
1956	0.836	0.727	2.108	1.192	1.150	4.011	1.383	0.542	0.408	0.447	0.599	0.919	14.321
1957	0.945	0.727	1.999	1.174	1.321	4.449	1.397	0.487	0.351	0.370	0.422	0.342	13.985
1958	0.220	0.128	0.664	0.301	0.046	0.020	0.010	0.466	0.020	0.092	0.000	0.835	2.801
1959	0.654	0.450	1.016	0.339	0.794	0.761	1.449	0.550	0.441	0.446	0.616	0.809	8.326
1960	0.834	0.727	2.108	1.192	1.313	2.611	1.421	0.497	0.446	0.462	0.655	0.919	13.184
1961	0.945	0.721	0.986	0.565	0.439	5.219	1.435	0.526	0.393	0.388	0.625	0.806	13.048
1962	0.552	0.727	1.764	0.654	0.714	2.922	0.966	0.165	0.446	0.462	0.655	0.919	10.945
1963	0.945	0.705	1.418	0.998	0.660	0.996	1.422	0.515	0.375	0.378	0.476	0.373	9.260
1964	0.945	0.719	1.478	0.540	0.463	0.388	0.256	0.213	0.425	0.436	0.653	0.919	7.434
1965	0.945	0.726	1.689	1.192	0.760	1.022	0.608	0.215	0.142	0.143	0.087	0.051	7.582
1966	0.031	0.020	0.036	0.010	0.010	0.164	1.449	0.492	0.345	0.454	0.623	0.817	4.451
1967	0.911	0.611	0.301	0.277	0.858	0.179	0.164	0.081	0.200	0.041	0.489	0.015	4.128
1968	0.010	0.179	0.005	0.000	0.000	6.412	1.449	0.549	0.441	0.446	0.617	0.893	11.002
1969	0.942	0.506	0.312	0.265	0.138	2.151	0.041	0.530	0.274	0.255	0.240	0.307	5.961
1970	0.937	0.693	0.929	0.813	0.638	2.984	1.337	0.550	0.446	0.462	0.654	0.911	11.353
1971	0.923	0.656	1.044	0.983	1.330	6.248	1.443	0.549	0.445	0.453	0.636	0.866	15.577
1972	0.836	0.684	0.848	1.017	0.235	0.322	0.296	0.041	0.020	0.031	0.655	0.919	5.904
1973	0.945	0.716	1.827	1.131	0.689	0.915	0.542	0.532	0.437	0.441	0.612	0.788	9.575
1974	0.654	0.722	0.603	1.192	1.330	5.877	1.432	0.546	0.416	0.403	0.547	0.919	14.640
1975	0.945	0.712	1.703	1.192	1.330	6.412	1.449	0.550	0.445	0.462	0.647	0.898	16.744
1976	0.935	0.645	1.983	0.595	1.330	6.412	1.449	0.546	0.433	0.426	0.584	0.756	16.093
1977	0.567	0.576	0.945	1.192	1.126	4.743	1.415	0.521	0.388	0.459	0.638	0.881	13.451
1978	0.924	0.662	0.926	0.452	0.353	0.695	0.731	0.442	0.306	0.304	0.326	0.399	6.521
1979	0.133	0.599	0.368	0.041	0.041	0.010	0.005	0.220	0.010	0.000	0.000	0.917	2.344
1980	0.077	0.347	0.332	0.855	0.960	1.150	0.654	0.550	0.446	0.458	0.644	0.919	7.392
1981	0.945	0.725	1.595	0.622	0.710	3.950	1.444	0.543	0.430	0.408	0.555	0.669	12.596
1982	0.424	0.250	0.158	0.143	0.056	0.036	0.020	0.015	0.178	0.450	0.655	0.918	3.303
1983	0.935	0.711	1.394	1.192	1.330	5.972	1.442	0.537	0.435	0.461	0.655	0.919	15.982
1984	0.943	0.697	1.250	1.052	1.330	5.282	1.408	0.504	0.443	0.462	0.655	0.919	14.944
1985	0.945	0.727	1.528	0.658	0.599	0.608	1.449	0.472	0.428	0.325	0.352	0.245	8.337
1986	0.153	0.092	1.062	1.028	0.575	3.677	0.985	0.350	0.436	0.432	0.655	0.919	10.364
1987	0.945	0.727	2.015	0.942	1.330	6.412	1.445	0.542	0.421	0.409	0.563	0.690	16.441
1988	0.618	0.699	2.108	0.933	1.267	3.283	1.153	0.406	0.305	0.327	0.358	0.803	12.260
1989	0.215	0.727	2.108	1.067	0.960	4.564	1.144	0.358	0.265	0.251	0.595	0.828	13.083
1990	0.944	0.118	1.032	0.932	1.118	5.032	1.433	0.550	0.445	0.454	0.638	0.867	13.564
1991	0.838	0.560	0.455	0.270	0.158	0.261	0.118	0.076	0.020	0.015	0.010	0.005	2.785
1992	0.005	0.519	0.782	0.031	0.853	0.250	0.051	0.000	0.000	0.000	0.000	0.000	2.491
1993	0.945	0.708	1.077	0.734	0.484	0.818	0.644	0.104	0.080	0.056	0.497	0.031	6.178
1994	0.941	0.087	0.026	0.015	0.072	4.214	1.449	0.547	0.445	0.452	0.632	0.863	9.742
1995	0.831	0.655	1.029	0.935	1.223	6.006	1.426	0.523	0.389	0.458	0.650	0.901	15.026
1996	0.945	0.651	0.736	0.918	0.803	0.261	1.392	0.399	0.419	0.450	0.655	0.919	8.547
1997	0.927	0.727	2.108	1.088	1.208	3.007	1.112	0.367	0.273	0.255	0.235	0.138	11.445
1998	0.097	0.727	1.770	1.089	1.330	4.856	1.371	0.486	0.349	0.418	0.538	0.429	13.461
1999	0.945	0.714	1.523	0.845	1.320	6.412	1.449	0.550	0.446	0.457	0.640	0.882	16.183
2000	0.861	0.727	1.520	1.129	0.577	4.314	1.433	0.535	0.396	0.398	0.561	0.919	13.372
2001	0.942	0.726	1.586	0.976	0.713	0.751	0.942	0.165	0.132	0.461	0.655	0.911	8.958
2002	0.914	0.647	0.838	0.435	0.327	0.199	0.118	0.097	0.176	0.364	0.439	0.358	4.911
2003	0.225	0.204	0.087	1.054	1.252	5.376	1.318	0.485	0.320	0.437			

A.115. *Niv10 – Category B***Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv10

Annual Flows (Mill. cu. m or index values):

MAR = 133,782

S.Dev. = 134,842

CV = 1,008

Q75 = 2,700

Q75/MMF = 0,242

BFI Index = 0,444

CV(JJA+JFM) Index = 4,427

Ecological Category = B

Total IFR = 40,309 (30,13 %MAR)

Maint. Lowflow = 22,217 (16,61 %MAR)

Drought Lowflow = 5,385 (4,03 %MAR)

Maint. Highflow = 18,093 (13,52 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	10,621	19,439	1,830	1,713	0,220	1,754	3,467
Nov	11,148	15,323	1,374	1,813	0,458	1,837	3,649
Dec	13,388	22,829	1,705	1,970	0,494	2,472	4,441
Jan	13,270	28,623	2,157	1,975	0,495	1,236	3,210
Feb	18,968	50,144	2,644	2,333	0,577	6,799	9,132
Mar	15,227	34,063	2,237	2,252	0,558	1,236	3,488
Apr	9,898	14,873	1,503	1,968	0,493	1,135	3,102
May	9,051	15,479	1,710	1,837	0,463	0,000	1,837
Jun	6,968	8,361	1,200	1,618	0,413	0,000	1,618
Jul	10,003	38,652	3,864	1,707	0,434	0,000	1,707
Aug	5,313	6,264	1,179	1,414	0,366	0,277	1,691
Sep	9,926	35,952	3,622	1,618	0,413	1,348	2,966

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv10

Regional Type : Zululand

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	3.885	3.871	3.814	3.687	3.430	2.977	2.298	1.477	0.753	0.417
Nov	4.119	4.111	4.062	3.946	3.705	3.267	2.591	1.756	1.009	0.663
Dec	7.513	6.712	6.034	5.432	4.331	3.828	3.042	2.061	1.176	0.766
Jan	4.948	4.551	4.205	3.883	3.282	2.926	2.353	1.620	0.948	0.637
Feb	17.013	14.815	9.020	7.020	5.290	4.060	3.500	2.740	1.780	1.280
Mar	5.234	4.830	4.472	4.129	3.493	3.091	2.471	1.705	1.019	0.702
Apr	3.515	3.503	3.456	3.350	3.136	2.759	2.193	1.508	0.905	0.625
May	2.138	2.128	2.098	2.031	1.901	1.678	1.352	0.966	0.630	0.474
Jun	1.867	1.857	1.829	1.768	1.653	1.457	1.174	0.842	0.555	0.422
Jul	1.954	1.939	1.906	1.838	1.711	1.502	1.208	0.868	0.578	0.443
Aug	1.930	1.919	1.889	1.826	1.703	1.497	1.198	0.848	0.544	0.404
Sep	3.339	3.322	3.270	3.159	2.943	2.571	2.028	1.385	0.825	0.565

Reserve Flows without High Flows

Oct	1.993	1.986	1.957	1.892	1.762	1.532	1.187	0.769	0.402	0.231
Nov	2.128	2.125	2.101	2.045	1.929	1.719	1.394	0.993	0.634	0.468
Dec	2.332	2.330	2.305	2.247	2.124	1.895	1.539	1.093	0.691	0.505
Jan	2.358	2.358	2.336	2.283	2.167	1.943	1.584	1.123	0.702	0.507
Feb	2.763	2.760	2.731	2.661	2.515	2.244	1.819	1.289	0.812	0.591
Mar	2.644	2.639	2.610	2.540	2.396	2.133	1.728	1.227	0.779	0.572
Apr	2.291	2.284	2.254	2.189	2.057	1.823	1.473	1.050	0.677	0.505
May	2.138	2.128	2.098	2.031	1.901	1.678	1.352	0.966	0.630	0.474
Jun	1.867	1.857	1.829	1.768	1.653	1.457	1.174	0.842	0.555	0.422
Jul	1.954	1.939	1.906	1.838	1.711	1.502	1.208	0.868	0.578	0.443
Aug	1.633	1.624	1.599	1.547	1.446	1.275	1.029	0.740	0.490	0.374
Sep	1.884	1.875	1.848	1.790	1.675	1.480	1.193	0.854	0.559	0.422

Natural Duration curves

Oct	19.200	11.410	8.750	5.030	4.510	3.950	3.360	2.620	1.830	0.900
Nov	23.950	16.910	9.530	7.760	6.100	4.560	3.940	3.190	1.920	1.340
Dec	30.270	15.960	11.550	8.400	6.750	4.830	4.130	2.780	1.840	1.290
Jan	30.100	12.340	8.610	6.080	4.590	3.810	3.250	2.540	1.780	1.240
Feb	37.950	15.700	9.020	7.020	5.290	4.060	3.500	2.740	1.780	1.280
Mar	32.210	19.300	10.960	6.100	5.530	4.170	3.380	2.840	1.830	1.370
Apr	20.290	12.640	10.170	5.520	4.550	3.670	3.120	2.760	2.010	1.190
May	18.920	10.010	7.810	5.220	4.180	3.450	2.780	2.250	1.690	1.050
Jun	15.410	9.440	6.560	5.160	3.800	3.180	2.750	2.170	1.520	0.950
Jul	12.140	7.610	5.760	5.140	3.920	2.940	2.560	2.270	1.480	0.900
Aug	8.830	7.040	5.370	4.490	3.450	2.910	2.520	2.160	1.470	0.950
Sep	13.770	7.040	5.510	4.370	3.820	2.920	2.700	2.230	1.700	1.010

Hydrological time series

Total Runoff : Niv10

Desktop (Version 2) Modified Flow Data for Ecological Category B													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	3.697	3.534	4.011	3.653	3.930	3.103	3.209	1.898	1.485	1.389	0.999	2.083	32.993
1921	3.010	4.119	7.008	3.897	3.610	2.597	2.174	1.401	1.174	0.890	1.209	1.872	32.961
1922	1.835	3.257	2.772	4.171	5.760	1.839	1.202	0.725	0.558	0.540	0.436	0.565	23.660
1923	0.417	0.663	0.766	0.637	1.280	1.019	1.097	0.934	0.842	0.827	0.808	2.303	11.595
1924	2.257	3.946	5.841	4.022	16.034	5.234	3.515	2.138	1.865	1.940	1.919	3.309	52.022
1925	3.763	3.781	3.844	2.683	2.740	2.507	2.759	1.257	1.074	1.208	0.818	1.441	27.874
1926	1.971	2.161	2.492	2.245	2.910	3.147	3.067	1.690	1.457	1.547	1.596	2.451	26.736
1927	1.971	1.534	1.530	1.890	3.340	2.041	1.807	1.592	1.453	1.385	1.181	1.356	21.081
1928	1.033	0.851	0.766	0.875	1.790	5.061	3.503	2.036	1.768	1.873	1.881	3.270	24.708
1929	3.713	3.523	2.589	4.026	5.790	2.688	2.279	1.401	1.124	1.424	1.497	2.811	32.864
1930	2.457	1.756	2.182	1.209	1.770	0.890	0.778	0.580	0.502	0.569	0.501	0.624	13.819
1931	0.559	0.805	1.094	0.766	17.013	5.065	3.515	2.138	1.866	1.929	1.896	3.217	39.863
1932	3.465	3.301	3.729	3.141	3.910	2.176	1.302	0.733	0.555	0.546	0.536	0.686	24.081
1933	0.491	1.036	1.933	2.791	4.670	3.292	3.189	2.031	1.799	1.918	1.913	3.256	28.320
1934	3.220	2.591	5.687	3.973	4.600	3.045	2.537	1.803	1.867	1.954	1.928	3.298	36.503
1935	3.539	2.113	1.901	2.014	5.980	4.129	3.136	2.131	1.850	1.885	1.820	3.037	33.535
1936	3.430	4.111	5.586	2.842	4.890	3.716	3.264	1.825	1.473	1.556	1.566	2.357	36.616
1937	1.306	1.544	3.555	3.419	9.600	4.163	2.823	1.678	1.561	1.798	1.890	3.108	36.446
1938	2.977	1.741	2.061	1.620	13.230	4.435	3.361	2.089	1.829	1.919	1.905	3.339	40.506
1939	3.819	4.095	4.785	3.282	3.310	2.471	2.930	2.138	1.867	1.954	1.926	3.319	35.895
1940	3.712	4.088	5.432	3.698	3.740	2.176	1.990	1.061	0.800	0.780	0.631	0.876	28.985
1941	0.678	1.181	1.519	2.045	2.890	2.850	3.106	1.889	1.690	1.719	1.741	3.026	24.333
1942	3.010	3.176	6.711	4.205	4.240	4.756	3.515	2.138	1.837	1.939	1.930	3.331	40.787
1943	3.814	3.991	4.922	3.041	3.720	3.091	2.603	1.247	1.608	1.873	1.859	3.339	34.477
1944	3.865	3.808	3.821	2.436	3.660	4.983	3.496	1.995	1.671	1.569	1.416	1.385	34.105
1945	0.898	0.721	0.856	0.948	1.690	1.019	1.138	0.878	0.635	0.588	0.488	0.617	10.478
1946	0.522	0.713	0.856	0.690	2.390	3.206	3.211	1.948	1.695	1.784	1.821	3.136	21.974
1947	3.066	2.763	2.801	2.554	3.400	2.199	2.291	1.352	0.793	0.690	0.544	0.705	23.159
1948	0.544	0.851	0.931	0.652	1.780	1.183	3.479	2.084	1.717	1.722	1.650	2.633	19.226
1949	2.985	3.206	6.189	4.145	5.290	3.493	3.198	1.849	1.599	1.541	1.379	1.375	36.250
1950	0.753	0.663	0.796	0.705	1.050	0.702	0.637	0.506	0.494	0.578	1.427	3.163	11.473
1951	3.573	2.252	1.933	1.415	1.860	0.794	0.715	0.759	0.876	0.963	1.024	0.901	17.066
1952	0.492	0.740	1.168	0.851	1.456	0.858	0.703	0.535	0.452	0.468	0.426	0.772	8.922
1953	1.374	3.830	3.983	2.613	7.080	3.995	3.279	2.113	1.843	1.906	1.860	3.270	37.146
1954	3.885	4.119	3.828	3.339	4.700	4.723	3.476	2.066	1.758	1.711	1.703	2.774	38.082
1955	3.139	3.412	3.460	1.638	16.058	4.830	3.425	2.040	1.789	1.816	1.833	3.221	46.660
1956	3.687	3.500	7.513	4.948	7.990	4.292	3.515	2.130	1.796	1.882	1.889	3.339	46.480
1957	3.885	4.119	4.678	4.636	15.662	4.279	3.379	2.068	1.764	1.788	1.758	3.085	51.100
1958	3.539	2.356	2.193	2.083	2.330	0.745	0.625	0.528	0.516	0.474	0.556	1.725	17.670
1959	3.519	3.267	5.652	1.908	14.815	3.795	3.515	2.128	1.810	1.808	1.794	2.986	46.997
1960	2.784	4.119	7.513	4.948	16.372	4.598	3.515	2.138	1.867	1.954	1.930	3.336	55.074
1961	3.857	4.119	5.072	3.819	4.060	4.735	3.405	1.935	1.374	1.079	1.198	1.794	36.447
1962	1.566	4.004	7.123	4.270	7.090	4.413	3.350	1.908	1.867	1.954	1.930	3.339	42.814
1963	3.885	4.097	5.834	4.948	8.220	3.716	3.456	2.003	1.653	1.628	1.619	2.248	43.308
1964	3.885	4.099	6.038	3.237	3.160	1.379	3.323	0.983	1.867	1.838	1.891	3.331	35.032
1965	3.885	4.115	6.066	4.948	11.100	3.277	2.772	1.564	1.382	1.304	1.315	2.491	44.219
1966	1.557	3.004	4.758	1.306	6.880	4.472	3.515	2.138	1.772	1.817	1.845	2.864	35.929
1967	3.770	4.119	7.269	3.589	3.500	5.118	3.106	1.549	1.217	1.186	1.459	2.737	38.619
1968	2.489	2.706	7.157	3.609	3.560	5.234	3.512	2.114	1.844	1.907	1.826	3.257	39.213
1969	3.885	3.705	3.042	4.493	7.020	3.795	0.945	2.066	1.345	1.100	0.843	3.159	35.400
1970	3.870	4.119	4.331	4.948	6.700	4.222	3.505	2.138	1.867	1.949	1.930	3.324	42.903
1971	3.797	3.824	5.379	4.551	17.013	5.234	3.501	2.137	1.864	1.948	1.928	3.286	54.462
1972	3.672	3.752	3.938	2.926	5.600	2.724	2.537	1.640	0.986	0.883	1.930	3.339	33.926
1973	3.885	4.062	4.872	4.275	7.080	4.290	3.055	1.928	1.741	1.705	1.619	1.994	40.506
1974	1.058	3.318	3.915	4.770	17.013	5.234	3.506	2.127	1.844	1.894	1.859	3.339	49.876
1975	3.885	4.087	7.513	4.948	17.013	5.234	3.515	2.138	1.865	1.948	1.930	3.322	57.398
1976	3.873	4.007	7.513	4.940	17.013	5.234	3.515	2.138	1.865	1.949	1.930	3.338	57.316
1977	3.854	3.954	5.252	4.948	14.563	4.612	3.501	2.116	1.828	1.926	1.909	3.283	51.746
1978	3.882	4.112	7.513	3.132	9.520	3.126	1.508	1.133	1.111	1.015	1.198	2.675	39.925
1979	2.712	2.135	6.712	1.583	7.840	0.742	0.625	0.474	0.422	0.444	0.404	2.138	26.231
1980	2.298	4.047	3.524	3.273	5.060	1.954	1.807	2.138	1.867	1.954	1.930	3.339	33.191
1981	3.885	4.119	6.564	4.359	7.460	4.575	3.406	2.051	1.667	1.558	1.283	1.664	42.590
1982	1.629	1.803	1.431	0.875	1.438	0.702	0.671	0.474	0.428	0.559	1.703	2.704	14.417
1983	2.953	4.108	7.238	4.948	17.013	5.234	3.515	2.131	1.857	1.954	1.930	3.339	56.219
1984	3.871	4.066	6.650	4.792	17.013	5.056	3.469	2.098	1.867	1.928	1.888	3.200	55.897
1985	3.885	4.119	4.299	4.230	15.275	3.616	2.513	1.314	1.302	0.812	0.646	0.825	42.836
1986	0.887	1.298	5.975	4.379	4.640	3.428	3.123	1.931	1.867	1.954	1.930	3.339	34.751
1987	3.885	4.119	6.950	4.545	16.126	5.234	3.515	2.118	1.847	1.953	1.919	3.309	55.521
1988	3.828	4.035	7.513	4.668	17.013	4.621	3.445	2.100	1.821	1.878	1.809	2.943	55.674
1989	2.953	4.119	7.513	4.750	6.610	5.234	3.507	2.123	1.838	1.850	1.876	3.232	45.606
1990	3.844	3.512	7.017	4.348	15.203	5.045	3.491	2.138	1.858	1.954	1.929	3.316	53.654
1991	3.753	3.853	5.476	3.246	2.090	1.147	0.687	0.509	0.422	0.443	0.404	0.565	22.596
1992	0.446	4.083	6.034	1.122	1.493	3.215	0.905	0.498	0.428	0.443	0.413	0.653	19.733
1993	3.885	4.026	3.951	3.633	3.730	1.993	1.444	0.831	0.611	0.608	0.661	0.990	26.363
1994	3.874	3.939	2.647	1.944	1.680	1.285	3.515	2.128	1.864	1.932	1.906	3.136	29.850
1995	3.558	4.112	7.513	4.918	17.013	5.014	3.481	2.103	1.818	1.923	1.913	3.189	56.556
1996	3.341	3.004	3.171	2.995	11.060	3.012	3.446	1.870	1.863	1.943	1.921	3.326	40.953
1997	3.780	4.119	7.513	4.158	8.680	3.917	3.515	1.927	1.466	1.429	1.074	1.280	42.858
1998	3.884	1.962	6.312	2.707	11.590	4.210	2.685	1.515	1.036	1.165	1.325	2.571	40.964
1999	3.885	4.021	6.537	3.946	5.630	4.875	3.392	2.138	1.852	1.856	1.770	2.955	42.858
2000	3.066	4.119	7.298	4.751	10.020	3.984	3.198	1.901	1.495	1.385	0.848	3.338	45.403
2001	3.603	4.111	5.412	3.883	4.720	4.647	1.807	0.966	0.729	1.954	1.930	3.338	37.100
2002	3.817	3.900	5.811	3.082	15.066	1.610	1.118	0.751	1.206	1.337	0.999	1.664	40.360
2003	0.220	0.758	1.328	4									

A.116. *Niv10 – Category C***Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv10

Annual Flows (Mill. cu. m or index values):

MAR = 133,782

S.Dev. = 134,842

CV = 1,008

Q75 = 2,700

Q75/MMF = 0,242

BFI Index = 0,444

CV(JJA+JFM) Index = 4,427

Ecological Category = C

Total IFR = 27,116 (20,27 %MAR)

Maint. Lowflow = 12,764 (9,54 %MAR)

Drought Lowflow = 5,385 (4,03 %MAR)

Maint. Highflow = 14,351 (10,73 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		
			Maint.	Drought	Maint.	Maint.	
Oct	10,621	19,439	1,830	0,987	0,220	1,391	2,378
Nov	11,148	15,323	1,374	1,042	0,458	1,457	2,499
Dec	13,388	22,829	1,705	1,129	0,494	1,961	3,089
Jan	13,270	28,623	2,157	1,132	0,495	0,980	2,112
Feb	18,968	50,144	2,644	1,329	0,577	5,393	6,722
Mar	15,227	34,063	2,237	1,284	0,558	0,980	2,265
Apr	9,898	14,873	1,503	1,128	0,493	0,900	2,028
May	9,051	15,479	1,710	1,056	0,463	0,000	1,056
Jun	6,968	8,361	1,200	0,935	0,413	0,000	0,935
Jul	10,003	38,652	3,864	0,984	0,434	0,000	0,984
Aug	5,313	6,264	1,179	0,823	0,366	0,220	1,043
Sep	9,926	35,952	3,622	0,935	0,413	1,069	2,005

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv10

Regional Type : Zululand

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	2.918	2.907	2.866	2.772	2.584	2.252	1.754	1.152	0.621	0.375
Nov	3.086	3.080	3.045	2.962	2.790	2.477	1.995	1.399	0.866	0.619
Dec	5.627	4.992	4.460	3.997	3.152	2.807	2.268	1.595	0.988	0.707
Jan	3.587	3.272	3.002	2.760	2.311	2.081	1.712	1.239	0.805	0.605
Feb	13.090	11.348	9.020	7.020	5.290	4.060	3.500	2.740	1.764	1.154
Mar	3.768	3.449	3.172	2.917	2.447	2.191	1.796	1.308	0.871	0.669
Apr	2.536	2.528	2.497	2.425	2.282	2.028	1.648	1.189	0.783	0.596
May	1.398	1.392	1.375	1.338	1.266	1.141	0.959	0.744	0.556	0.469
Jun	1.229	1.223	1.207	1.173	1.108	0.999	0.840	0.654	0.493	0.418
Jul	1.284	1.276	1.257	1.219	1.148	1.032	0.867	0.677	0.514	0.439
Aug	1.335	1.328	1.310	1.271	1.195	1.068	0.884	0.668	0.481	0.394
Sep	2.477	2.466	2.430	2.352	2.200	1.939	1.558	1.107	0.715	0.532

Reserve Flows without High Flows

Oct	1.306	1.302	1.284	1.245	1.165	1.024	0.812	0.557	0.331	0.227
Nov	1.391	1.389	1.375	1.344	1.280	1.162	0.981	0.757	0.556	0.464
Dec	1.517	1.516	1.502	1.470	1.401	1.274	1.076	0.827	0.604	0.500
Jan	1.532	1.532	1.521	1.491	1.426	1.302	1.101	0.845	0.610	0.501
Feb	1.787	1.785	1.769	1.731	1.650	1.499	1.265	0.971	0.707	0.585
Mar	1.714	1.711	1.695	1.656	1.576	1.431	1.206	0.929	0.681	0.566
Apr	1.494	1.490	1.473	1.437	1.363	1.234	1.039	0.803	0.596	0.500
May	1.398	1.392	1.375	1.338	1.266	1.141	0.959	0.744	0.556	0.469
Jun	1.229	1.223	1.207	1.173	1.108	0.999	0.840	0.654	0.493	0.418
Jul	1.284	1.276	1.257	1.219	1.148	1.032	0.867	0.677	0.514	0.439
Aug	1.082	1.077	1.063	1.033	0.976	0.880	0.741	0.578	0.436	0.371
Sep	1.239	1.234	1.218	1.186	1.122	1.012	0.851	0.661	0.495	0.418

Natural Duration curves

Oct	19.200	11.410	8.750	5.030	4.510	3.950	3.360	2.620	1.830	0.900
Nov	23.950	16.910	9.530	7.760	6.100	4.560	3.940	3.190	1.920	1.340
Dec	30.270	15.960	11.550	8.400	6.750	4.830	4.130	2.780	1.840	1.290
Jan	30.100	12.340	8.610	6.080	4.590	3.810	3.250	2.540	1.780	1.240
Feb	37.950	15.700	9.020	7.020	5.290	4.060	3.500	2.740	1.780	1.280
Mar	32.210	19.300	10.960	6.100	5.530	4.170	3.380	2.840	1.830	1.370
Apr	20.290	12.640	10.170	5.520	4.550	3.670	3.120	2.760	2.010	1.190
May	18.920	10.010	7.810	5.220	4.180	3.450	2.780	2.250	1.690	1.050
Jun	15.410	9.440	6.560	5.160	3.800	3.180	2.750	2.170	1.520	0.950
Jul	12.140	7.610	5.760	5.140	3.920	2.940	2.560	2.270	1.480	0.900
Aug	8.830	7.040	5.370	4.490	3.450	2.910	2.520	2.160	1.470	0.950
Sep	13.770	7.040	5.510	4.370	3.820	2.920	2.700	2.230	1.700	1.010

Hydrological time series

Total Runoff : Niv10

Desktop (Version 2) Modified Flow Data for Ecological Category C													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	2.780	2.668	2.933	2.588	3.930	2.198	2.331	1.264	1.015	0.968	0.761	1.597	25.033
1921	2.276	3.086	5.226	2.770	3.610	1.876	1.636	0.987	0.840	0.689	0.890	1.449	25.335
1922	1.415	2.470	2.083	2.977	5.760	1.393	0.983	0.609	0.494	0.493	0.414	0.532	19.624
1923	0.375	0.619	0.707	0.605	1.154	0.871	0.913	0.726	0.654	0.654	0.644	1.751	9.673
1924	1.724	2.962	4.311	2.863	12.314	3.768	2.536	1.398	1.228	1.276	1.328	2.457	38.166
1925	2.828	2.844	2.818	1.925	2.740	1.819	2.028	0.906	0.784	0.867	0.650	1.146	21.355
1926	1.515	1.688	1.891	1.642	2.910	2.226	2.236	1.148	0.999	1.057	1.129	1.855	20.296
1927	1.515	1.241	1.231	1.413	3.340	1.522	1.389	1.093	0.996	0.966	0.874	1.087	16.666
1928	0.826	0.753	0.707	0.758	1.778	3.631	2.528	1.341	1.173	1.239	1.305	2.430	18.469
1929	2.792	2.660	1.957	2.866	5.790	1.934	1.706	0.987	0.812	0.988	1.068	2.107	25.667
1930	1.871	1.399	1.678	0.974	1.741	0.789	0.698	0.528	0.463	0.509	0.454	0.573	11.679
1931	0.479	0.720	0.932	0.688	13.090	3.634	2.536	1.398	1.228	1.270	1.314	2.392	29.682
1932	2.610	2.502	2.740	2.220	3.910	1.608	1.050	0.614	0.493	0.497	0.476	0.617	19.335
1933	0.429	0.885	1.508	1.994	4.670	2.319	2.317	1.338	1.191	1.264	1.325	2.419	21.659
1934	2.430	1.995	4.191	2.827	4.600	2.161	1.880	1.211	1.229	1.284	1.334	2.449	27.591
1935	2.664	1.654	1.486	1.493	5.980	2.917	2.282	1.394	1.219	1.246	1.267	2.266	25.866
1936	2.584	3.080	4.114	2.027	4.890	2.612	2.368	1.223	1.008	1.061	1.111	1.789	27.867
1937	1.027	1.248	2.620	2.413	9.600	2.942	2.072	1.141	1.057	1.197	1.311	2.316	28.942
1938	2.252	1.389	1.595	1.239	10.892	3.144	2.433	1.371	1.207	1.264	1.320	2.477	30.583
1939	2.869	3.069	3.500	2.311	3.310	1.796	2.144	1.398	1.229	1.284	1.332	2.463	26.705
1940	2.791	3.064	3.997	2.621	3.740	1.608	1.512	0.797	0.630	0.628	0.534	0.750	22.672
1941	0.567	0.988	1.224	1.513	2.890	2.037	2.262	1.259	1.129	1.153	1.219	2.258	18.497
1942	2.276	2.413	4.991	3.002	4.240	3.391	2.536	1.398	1.212	1.276	1.335	2.472	30.542
1943	2.866	2.994	3.125	2.155	3.720	2.191	1.924	0.901	1.084	1.239	1.291	2.477	25.966
1944	2.903	2.864	2.802	1.765	3.660	3.569	2.524	1.318	1.119	1.069	1.018	1.107	25.718
1945	0.728	0.660	0.769	0.805	1.550	0.871	0.940	0.695	0.538	0.520	0.446	0.569	9.092
1946	0.452	0.655	0.769	0.639	2.390	2.264	2.332	1.292	1.132	1.189	1.268	2.335	16.718
1947	2.317	2.118	2.103	1.841	3.400	1.623	1.714	0.959	0.626	0.577	0.481	0.630	18.390
1948	0.468	0.753	0.820	0.614	1.764	0.975	2.512	1.368	1.145	1.154	1.162	1.983	14.720
1949	2.258	2.434	4.582	2.957	5.290	2.447	2.323	1.237	1.078	1.053	0.995	1.101	27.755
1950	0.621	0.619	0.728	0.649	1.050	0.669	0.603	0.487	0.458	0.514	1.025	2.354	9.778
1951	2.689	1.753	1.508	1.106	1.860	0.728	0.656	0.628	0.673	0.730	0.777	0.768	13.876
1952	0.430	0.674	0.983	0.743	1.262	0.769	0.648	0.503	0.435	0.453	0.408	0.678	7.984
1953	1.077	2.879	2.913	1.879	7.080	2.818	2.378	1.384	1.215	1.257	1.292	2.430	28.602
1954	2.918	3.086	2.807	2.353	4.700	3.365	2.510	1.357	1.168	1.148	1.195	2.081	28.689
1955	2.371	2.581	2.555	1.250	12.332	3.449	2.475	1.343	1.185	1.207	1.275	2.395	34.419
1956	2.772	2.644	5.627	3.587	7.990	3.036	2.536	1.393	1.189	1.244	1.310	2.477	35.806
1957	2.918	3.086	3.418	3.340	12.019	3.026	2.445	1.359	1.171	1.191	1.229	2.299	37.501
1958	2.664	1.828	1.686	1.538	2.330	0.696	0.596	0.499	0.471	0.456	0.488	1.346	14.597
1959	2.649	2.477	4.165	1.425	11.348	2.669	2.536	1.392	1.197	1.203	1.251	2.230	34.543
1960	2.111	3.086	5.627	3.587	12.582	3.269	2.536	1.398	1.229	1.284	1.335	2.476	40.519
1961	2.897	3.086	3.720	2.712	4.060	3.375	2.463	1.284	0.952	0.795	0.884	1.394	27.622
1962	1.218	3.004	5.317	3.053	7.090	3.127	2.425	1.270	1.229	1.284	1.335	2.477	32.830
1963	2.918	3.070	4.305	3.587	8.220	2.612	2.497	1.323	1.108	1.102	1.144	1.712	33.597
1964	2.918	3.071	4.464	2.282	3.160	1.100	2.408	0.753	1.229	1.219	1.311	2.472	26.387
1965	2.918	3.083	4.485	3.587	10.499	2.309	2.037	1.077	0.957	0.921	0.956	1.883	34.712
1966	1.211	2.290	3.480	1.036	6.880	3.172	2.536	1.398	1.175	1.208	1.283	2.145	27.814
1967	2.834	3.086	5.434	2.540	3.500	3.676	2.262	1.069	0.864	0.855	1.045	2.055	29.218
1968	1.894	2.077	5.345	2.555	3.560	3.768	2.534	1.384	1.216	1.258	1.271	2.420	29.282
1969	2.918	2.790	2.268	3.227	7.020	2.669	0.811	1.358	0.936	0.807	0.665	2.352	27.820
1970	2.906	3.086	3.152	3.587	6.700	2.984	2.530	1.398	1.229	1.281	1.335	2.467	32.656
1971	2.854	2.875	3.956	3.272	13.090	3.768	2.527	1.397	1.227	1.281	1.334	2.440	40.021
1972	2.762	2.824	2.883	2.081	5.600	1.957	1.880	1.120	0.734	0.685	1.335	2.477	26.337
1973	2.918	3.045	3.567	3.057	7.080	3.035	2.227	1.281	1.158	1.145	1.144	1.534	31.190
1974	0.845	2.514	2.867	3.446	13.090	3.768	2.530	1.392	1.216	1.251	1.291	2.477	36.886
1975	2.918	3.063	5.627	3.587	13.090	3.768	2.536	1.398	1.228	1.281	1.335	2.466	42.296
1976	2.909	3.006	5.627	3.581	13.090	3.768	2.536	1.398	1.228	1.281	1.335	2.477	42.236
1977	2.895	2.968	3.858	3.587	11.148	3.279	2.527	1.386	1.207	1.268	1.322	2.439	37.885
1978	2.916	3.080	5.627	2.214	9.520	2.213	1.189	0.837	0.805	0.759	0.884	2.012	32.055
1979	2.057	1.670	4.992	1.215	7.840	0.694	0.596	0.469	0.418	0.440	0.394	1.635	22.421
1980	1.754	3.034	2.599	2.305	5.060	1.467	1.389	1.398	1.229	1.284	1.335	2.477	25.332
1981	2.918	3.086	4.875	3.122	7.460	3.251	2.463	1.349	1.117	1.063	0.936	1.303	32.942
1982	1.264	1.432	1.163	0.758	1.248	0.669	0.627	0.469	0.422	0.504	1.195	2.032	11.784
1983	2.235	3.078	5.408	3.587	13.090	3.768	2.536	1.394	1.223	1.284	1.335	2.477	41.416
1984	2.907	3.048	4.943	3.463	13.090	3.627	2.506	1.375	1.229	1.270	1.309	2.380	41.147
1985	2.918	3.086	3.130	3.022	11.712	2.537	1.863	0.938	0.912	0.645	0.544	0.715	32.022
1986	0.720	1.072	4.414	3.137	4.640	2.405	2.273	1.282	1.229	1.284	1.335	2.477	26.270
1987	2.918	3.086	5.180	3.268	12.386	3.768	2.536	1.387	1.218	1.284	1.329	2.457	40.816
1988	2.876	3.026	5.627	3.365	13.090	3.286	2.489	1.376	1.203	1.242	1.261	2.200	41.041
1989	2.235	3.086	5.627	3.430	6.610	3.768	2.531	1.390	1.213	1.226	1.302	2.403	34.819
1990	2.888	2.652	5.233	3.113	11.655	3.618	2.520	1.398	1.224	1.284	1.335	2.461	39.381
1991	2.821	2.896	4.030	2.287	2.090	0.953	0.637	0.489	0.418	0.439	0.394	0.532	17.987
1992	0.396	3.060	4.460	0.918	1.289	2.270	0.783	0.483	0.422	0.439	0.400	0.593	15.513
1993	2.918	3.020	2.892	2.573	3.730	1.491	1.146	0.668	0.524	0.531	0.553	0.830	20.876
1994	2.910	2.957	1.997	1.448	1.527	1.040	2.536	1.392	1.227	1.272	1.320	2.335	21.962
1995	2.678	3.081	5.627	3.563	13.090	3.594	2.514	1.378	1.201	1.267	1.325	2.373	41.691
1996	2.519	2.290	2.357	2.126	10.492	2.140	2.490	1.249	1.227	1.278	1.329	2.468	31.965
1997	2.841	3.086	5.627	2.967	8.680	2.760	2.536	1.280	1.004	0.990	0.807	1.034	33.611
1998	2.917	1.546	4.678	1.940	10.589	2.976	1.979	1.050	0.763	0.843	0.962	1.939	32.183
1999	2.918	3.016	4.855	2.807	5.630	3.484	2.453	1.398	1.220	1.230	1.237	2.208	32.456
2000	2.317	3.086	5.457	3.431	10.020	2.809	2.323	1.266	1.020	0.966	0.668	2.477	35.840
2001	2.711	3.080	3.981	2.760	4.720	3.306	1.389	0.744	0.591	1.284	1.335	2.477	28.378
2002	2.868	2.929	4.288	2.181	11.546	1.248	0.926	0.624	0.858	0.939	0.761	1.303	30.471
2003	0.220	0.687	1.092	3.58									

A.117. *Niv10 – Category D***Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv10

Annual Flows (Mill. cu. m or index values):

MAR = 133,782

S.Dev. = 134,842

CV = 1,008

Q75 = 2,700

Q75/MMF = 0,242

BFI Index = 0,444

CV(JJA+JFM) Index = 4,427

Ecological Category = D

Total IFR = 17,647 (13,19 %MAR)

Maint. Lowflow = 5,600 (4,19 %MAR)

Drought Lowflow = 5,385 (4,03 %MAR)

Maint. Highflow = 12,048 (9,01 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	10,621	19,439	1,830	0,435	0,220	1,168	1,603
Nov	11,148	15,323	1,374	0,458	0,458	1,223	1,681
Dec	13,388	22,829	1,705	0,494	0,494	1,646	2,140
Jan	13,270	28,623	2,157	0,495	0,495	0,823	1,318
Feb	18,968	50,144	2,644	0,577	0,577	4,527	5,104
Mar	15,227	34,063	2,237	0,558	0,558	0,823	1,381
Apr	9,898	14,873	1,503	0,493	0,493	0,756	1,249
May	9,051	15,479	1,710	0,463	0,463	0,000	0,463
Jun	6,968	8,361	1,200	0,413	0,413	0,000	0,413
Jul	10,003	38,652	3,864	0,434	0,434	0,000	0,434
Aug	5,313	6,264	1,179	0,366	0,366	0,185	0,551
Sep	9,926	35,952	3,622	0,413	0,413	0,898	1,311

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv10

Regional Type : Zululand

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	2.435	2.427	2.392	2.316	2.162	1.889	1.481	0.987	0.552	0.350
Nov	2.567	2.562	2.534	2.468	2.330	2.080	1.694	1.217	0.790	0.592
Dec	4.360	3.829	3.388	3.012	2.333	2.099	1.732	1.274	0.861	0.670
Jan	2.643	2.378	2.157	1.966	1.617	1.478	1.255	0.968	0.706	0.584
Feb	10.553	9.091	7.888	6.876	5.052	4.060	3.500	2.508	1.517	1.058
Mar	2.749	2.482	2.257	2.059	1.700	1.548	1.315	1.026	0.768	0.648
Apr	1.963	1.957	1.935	1.884	1.781	1.600	1.329	1.001	0.712	0.578
May	0.845	0.843	0.836	0.821	0.791	0.740	0.666	0.578	0.501	0.466
Jun	0.750	0.747	0.741	0.727	0.700	0.655	0.589	0.512	0.446	0.415
Jul	0.783	0.779	0.772	0.756	0.727	0.679	0.611	0.533	0.467	0.436
Aug	0.924	0.920	0.909	0.887	0.844	0.772	0.667	0.544	0.438	0.388
Sep	2.017	2.008	1.980	1.920	1.802	1.601	1.306	0.957	0.653	0.512

Reserve Flows without High Flows

Oct	0.792	0.790	0.781	0.760	0.718	0.643	0.532	0.397	0.279	0.224
Nov	0.840	0.839	0.834	0.821	0.794	0.746	0.672	0.580	0.498	0.460
Dec	0.911	0.910	0.905	0.891	0.864	0.812	0.731	0.630	0.539	0.496
Jan	0.918	0.918	0.913	0.901	0.874	0.824	0.742	0.638	0.542	0.498
Feb	1.065	1.064	1.057	1.042	1.009	0.949	0.854	0.736	0.630	0.580
Mar	1.025	1.024	1.017	1.001	0.969	0.910	0.820	0.708	0.608	0.561
Apr	0.900	0.899	0.892	0.877	0.847	0.794	0.715	0.619	0.535	0.496
May	0.845	0.843	0.836	0.821	0.791	0.740	0.666	0.578	0.501	0.466
Jun	0.750	0.747	0.741	0.727	0.700	0.655	0.589	0.512	0.446	0.415
Jul	0.783	0.779	0.772	0.756	0.727	0.679	0.611	0.533	0.467	0.436
Aug	0.665	0.663	0.657	0.645	0.621	0.581	0.523	0.455	0.396	0.368
Sep	0.754	0.752	0.746	0.732	0.706	0.660	0.594	0.515	0.447	0.415

Natural Duration curves

Oct	19.200	11.410	8.750	5.030	4.510	3.950	3.360	2.620	1.830	0.900
Nov	23.950	16.910	9.530	7.760	6.100	4.560	3.940	3.190	1.920	1.340
Dec	30.270	15.960	11.550	8.400	6.750	4.830	4.130	2.780	1.840	1.290
Jan	30.100	12.340	8.610	6.080	4.590	3.810	3.250	2.540	1.780	1.240
Feb	37.950	15.700	9.020	7.020	5.290	4.060	3.500	2.740	1.780	1.280
Mar	32.210	19.300	10.960	6.100	5.530	4.170	3.380	2.840	1.830	1.370
Apr	20.290	12.640	10.170	5.520	4.550	3.670	3.120	2.760	2.010	1.190
May	18.920	10.010	7.810	5.220	4.180	3.450	2.780	2.250	1.690	1.050
Jun	15.410	9.440	6.560	5.160	3.800	3.180	2.750	2.170	1.520	0.950
Jul	12.140	7.610	5.760	5.140	3.920	2.940	2.560	2.270	1.480	0.900
Aug	8.830	7.040	5.370	4.490	3.450	2.910	2.520	2.160	1.470	0.950
Sep	13.770	7.040	5.510	4.370	3.820	2.920	2.700	2.230	1.700	1.010

Hydrological time series

Total Runoff : Niv10

Desktop (Version 2) Modified Flow Data for Ecological Category D													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	2.322	2.233	2.184	1.833	3.930	1.553	1.816	0.791	0.661	0.653	0.597	1.336	19.908
1921	1.909	2.567	4.025	1.974	3.610	1.362	1.320	0.677	0.589	0.538	0.671	1.221	20.463
1922	1.202	2.074	1.606	2.136	5.547	1.077	0.854	0.523	0.447	0.458	0.399	0.512	16.837
1923	0.350	0.592	0.670	0.584	1.058	0.768	0.804	0.571	0.512	0.524	0.530	1.455	8.419
1924	1.456	2.468	3.266	2.046	9.902	2.749	1.963	0.845	0.749	0.779	0.920	2.001	29.145
1925	2.362	2.373	2.106	1.383	2.508	1.328	1.600	0.644	0.566	0.611	0.534	0.987	17.004
1926	1.284	1.448	1.476	1.212	2.802	1.569	1.749	0.743	0.655	0.689	0.807	1.535	15.970
1927	1.284	1.090	1.026	1.074	3.340	1.153	1.144	0.721	0.654	0.652	0.661	0.942	13.740
1928	0.720	0.700	0.670	0.677	1.527	2.634	1.957	0.822	0.727	0.764	0.906	1.980	14.085
1929	2.332	2.226	1.521	2.048	5.579	1.396	1.370	0.677	0.578	0.661	0.772	1.731	20.890
1930	1.576	1.217	1.331	0.808	1.499	0.719	0.651	0.490	0.434	0.465	0.422	0.544	10.156
1931	0.435	0.673	0.823	0.635	10.553	2.636	1.963	0.845	0.749	0.777	0.912	1.951	22.954
1932	2.182	2.099	2.053	1.562	3.910	1.204	0.902	0.525	0.446	0.459	0.435	0.578	16.355
1933	0.394	0.806	1.215	1.426	4.670	1.624	1.807	0.821	0.734	0.774	0.918	1.972	17.160
1934	2.035	1.694	3.168	2.018	4.600	1.531	1.494	0.769	0.750	0.783	0.923	1.995	21.759
1935	2.227	1.420	1.200	1.122	5.779	2.059	1.781	0.844	0.746	0.767	0.885	1.854	20.684
1936	2.162	2.562	3.107	1.445	4.869	1.826	1.843	0.774	0.658	0.691	0.796	1.485	22.217
1937	0.884	1.096	1.971	1.697	8.026	2.079	1.631	0.740	0.679	0.747	0.910	1.892	22.352
1938	1.889	1.208	1.274	0.968	8.711	2.235	1.889	0.834	0.741	0.775	0.915	2.017	23.456
1939	2.395	2.553	2.613	1.617	3.310	1.315	1.683	0.845	0.750	0.783	0.922	2.006	20.792
1940	2.331	2.549	3.012	1.859	3.740	1.204	1.232	0.600	0.503	0.513	0.468	0.681	18.691
1941	0.507	0.888	1.021	1.134	2.768	1.458	1.767	0.788	0.709	0.729	0.857	1.847	14.473
1942	1.909	2.028	3.828	2.157	4.240	2.435	1.963	0.845	0.743	0.779	0.924	2.013	23.863
1943	2.392	2.493	2.315	1.523	3.720	1.548	1.526	0.642	0.690	0.764	0.899	2.017	20.529
1944	2.423	2.389	2.095	1.287	3.660	2.583	1.954	0.813	0.704	0.694	0.743	0.957	20.302
1945	0.639	0.626	0.712	0.706	1.356	0.768	0.823	0.558	0.465	0.469	0.418	0.541	8.080
1946	0.413	0.621	0.712	0.605	2.136	1.592	1.817	0.802	0.710	0.744	0.885	1.907	12.944
1947	1.943	1.792	1.620	1.333	3.400	1.212	1.376	0.666	0.501	0.492	0.438	0.588	15.361
1948	0.426	0.700	0.747	0.590	1.517	0.829	1.946	0.833	0.715	0.729	0.825	1.634	11.493
1949	1.894	2.045	3.488	2.121	5.052	1.700	1.811	0.779	0.688	0.688	0.730	0.952	21.947
1950	0.552	0.592	0.684	0.611	1.050	0.648	0.583	0.473	0.432	0.467	0.747	1.921	8.761
1951	2.248	1.500	1.215	0.888	1.596	0.683	0.621	0.531	0.520	0.555	0.606	0.695	11.657
1952	0.395	0.636	0.858	0.668	1.139	0.707	0.615	0.480	0.422	0.441	0.396	0.625	7.382
1953	0.925	2.401	2.171	1.356	6.933	1.984	1.850	0.840	0.744	0.772	0.899	1.980	22.855
1954	2.435	2.567	2.099	1.650	4.700	2.414	1.944	0.829	0.724	0.727	0.844	1.710	22.643
1955	1.987	2.163	1.927	0.975	9.917	2.482	1.920	0.823	0.732	0.751	0.890	1.953	26.519
1956	2.316	2.213	4.360	2.643	7.496	2.150	1.963	0.843	0.733	0.766	0.909	2.017	28.410
1957	2.435	2.567	2.547	2.435	9.654	2.143	1.898	0.829	0.726	0.745	0.863	1.879	28.721
1958	2.227	1.560	1.336	1.149	2.072	0.664	0.578	0.478	0.437	0.443	0.442	1.142	12.527
1959	2.215	2.080	3.147	1.081	9.091	1.870	1.963	0.843	0.736	0.749	0.876	1.826	26.478
1960	1.773	2.567	4.360	2.643	10.127	2.335	1.963	0.845	0.750	0.783	0.924	2.016	31.085
1961	2.418	2.567	2.790	1.929	4.060	2.422	1.911	0.799	0.635	0.582	0.667	1.179	21.958
1962	1.041	2.501	4.101	2.198	6.943	2.222	1.884	0.793	0.750	0.783	0.924	2.017	26.155
1963	2.435	2.554	3.261	2.643	7.583	1.826	1.935	0.815	0.700	0.708	0.815	1.425	26.699
1964	2.435	2.555	3.390	1.600	3.160	0.903	1.871	0.582	0.750	0.756	0.910	2.013	20.925
1965	2.435	2.564	3.408	2.643	8.382	1.619	1.607	0.714	0.637	0.634	0.708	1.557	26.908
1966	1.036	1.930	2.597	0.846	6.728	2.257	1.963	0.845	0.727	0.751	0.894	1.760	22.334
1967	2.366	2.567	4.198	1.795	3.500	2.672	1.767	0.711	0.599	0.606	0.758	1.690	23.230
1968	1.596	1.759	4.124	1.807	3.560	2.749	1.962	0.840	0.744	0.772	0.887	1.972	22.772
1969	2.435	2.330	1.732	2.341	6.876	1.870	0.731	0.829	0.629	0.587	0.542	1.920	22.822
1970	2.426	2.567	2.333	2.643	6.539	2.111	1.958	0.845	0.750	0.782	0.924	2.009	25.886
1971	2.382	2.398	2.980	2.378	10.553	2.749	1.956	0.845	0.749	0.781	0.923	1.988	30.684
1972	2.307	2.357	2.150	1.478	5.379	1.410	1.494	0.732	0.546	0.537	0.924	2.017	21.330
1973	2.435	2.534	2.667	2.201	6.933	2.150	1.742	0.797	0.720	0.725	0.815	1.287	25.007
1974	0.735	2.109	2.139	2.524	10.553	2.749	1.959	0.843	0.744	0.769	0.899	2.017	28.040
1975	2.435	2.548	4.360	2.643	10.553	2.749	1.963	0.845	0.749	0.781	0.923	2.008	32.559
1976	2.428	2.503	4.360	2.638	10.553	2.749	1.963	0.845	0.749	0.782	0.924	2.017	32.511
1977	2.416	2.472	2.901	2.643	8.925	2.344	1.956	0.840	0.741	0.776	0.916	1.987	28.918
1978	2.433	2.562	4.360	1.559	8.007	1.562	1.001	0.616	0.575	0.567	0.667	1.657	25.566
1979	1.729	1.433	3.829	0.954	7.439	0.663	0.578	0.466	0.415	0.436	0.388	1.366	19.695
1980	1.481	2.525	1.957	1.614	4.946	1.120	1.144	0.845	0.750	0.783	0.924	2.017	20.106
1981	2.435	2.567	3.731	2.254	7.294	2.321	1.911	0.825	0.703	0.692	0.697	1.109	26.538
1982	1.079	1.243	0.980	0.677	1.129	0.648	0.600	0.466	0.417	0.462	0.844	1.672	10.218
1983	1.875	2.560	4.177	2.643	10.553	2.749	1.963	0.844	0.747	0.783	0.924	2.017	31.835
1984	2.427	2.536	3.788	2.539	10.553	2.631	1.941	0.836	0.750	0.777	0.909	1.942	31.627
1985	2.435	2.567	2.318	2.173	9.397	1.769	1.483	0.657	0.619	0.520	0.473	0.653	25.065
1986	0.633	0.955	3.350	2.267	4.640	1.675	1.775	0.798	0.750	0.783	0.924	2.017	20.567
1987	2.435	2.567	3.986	2.375	9.963	2.749	1.963	0.841	0.745	0.782	0.920	2.001	31.326
1988	2.401	2.519	4.360	2.456	10.553	2.349	1.929	0.837	0.739	0.765	0.881	1.802	31.593
1989	1.875	2.567	4.360	2.511	6.444	2.749	1.959	0.842	0.743	0.759	0.905	1.959	27.673
1990	2.411	2.220	4.030	2.247	9.349	2.623	1.952	0.845	0.747	0.783	0.923	2.005	30.135
1991	2.356	2.415	3.039	1.603	1.823	0.816	0.607	0.474	0.415	0.436	0.388	0.512	14.885
1992	0.367	2.546	3.388	0.774	1.159	1.595	0.712	0.471	0.417	0.436	0.392	0.560	12.816
1993	2.435	2.514	2.156	1.821	3.730	1.135	0.970	0.547	0.459	0.474	0.479	0.743	17.461
1994	2.429	2.464	1.548	1.095	1.338	0.868	1.963	0.843	0.749	0.778	0.915	1.907	16.895
1995	2.239	2.563	4.360	2.623	10.553	2.603	1.947	0.837	0.738	0.776	0.918	1.936	32.093
1996	2.108	1.930	1.792	1.505	8.376	1.519	1.930	0.784	0.749	0.780	0.920	2.010	24.403
1997	2.372	2.567	4.360	2.129	7.758	1.940	1.963	0.797	0.657	0.662	0.623	0.900	26.728
1998	2.435	1.335	3.567	1.393	8.458	2.105	1.565	0.703	0.557	0.601	0.712	1.601	25.031
1999	2.435	2.511	3.714	2.003	5.410	2.512	1.904	0.845	0.746	0.760	0.868	1.809	25.516
2000	1.943	2.567	4.218	2.511	8.127	1.977	1.811	0.791	0.663	0.652	0.544	2.017	27.821
2001	2.265	2.562	3.000	1.966	4.720	2.365	1.144	0.578	0.486	0.783	0.924	2.017	22.811
2002	2.394	2.441	3.247	1.539	9.258	0.990	0.814	0.529	0.597	0.641	0.597	1.109	24.156
2003	0.220	0.647	0.932	2.643	7.888								

A.118. *Niv11 – Category B***Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv11

Annual Flows (Mill. cu. m or index values):

MAR = 31.260

S.Dev. = 28.260

CV = 0.904

Q75 = 0.096

Q75/MMF = 0.037

BFI Index = 0.313

CV(JJA+JFM) Index = 3.655

Ecological Category = B

Total IFR = 17.990 (57.55 %MAR)

Maint. Lowflow = 10.258 (32.82 %MAR)

Drought Lowflow = 2.676 (8.56 %MAR)

Maint. Highflow = 7.732 (24.73 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	2.430	4.903	2.018	0.538	0.099	0.577	1.116
Nov	4.491	9.794	2.181	0.764	0.141	0.750	1.514
Dec	4.548	5.180	1.139	1.685	0.519	1.529	3.214
Jan	4.783	5.806	1.214	1.832	0.414	1.911	3.742
Feb	4.788	5.552	1.160	1.692	0.433	1.807	3.499
Mar	3.155	5.567	1.765	1.622	0.517	0.701	2.323
Apr	1.616	2.474	1.531	0.750	0.100	0.120	0.870
May	1.144	2.513	2.196	0.538	0.101	0.021	0.559
Jun	0.589	0.892	1.515	0.237	0.087	0.000	0.237
Jul	0.540	1.108	2.053	0.203	0.089	0.158	0.361
Aug	1.389	4.527	3.258	0.211	0.090	0.038	0.249
Sep	1.787	5.223	2.923	0.186	0.087	0.121	0.307

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv11

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.274	1.263	1.239	0.796	0.302	0.088	0.034	0.021	0.000	0.000
Nov	1.732	1.721	1.698	1.651	1.215	0.763	0.331	0.101	0.013	0.000
Dec	4.982	4.575	4.216	3.879	2.518	1.508	0.792	0.520	0.067	0.000
Jan	5.898	5.390	4.943	4.060	2.728	1.890	0.905	0.629	0.184	0.000
Feb	5.529	5.050	4.628	3.989	2.757	2.028	1.106	0.557	0.235	0.000
Mar	2.705	2.689	2.573	2.082	1.663	1.060	0.515	0.260	0.038	0.000
Apr	1.026	1.017	0.997	0.922	0.670	0.448	0.235	0.101	0.004	0.000
May	0.665	0.660	0.648	0.587	0.419	0.285	0.155	0.063	0.000	0.000
Jun	0.283	0.282	0.277	0.268	0.252	0.184	0.088	0.038	0.000	0.000
Jul	0.415	0.412	0.406	0.289	0.193	0.130	0.067	0.034	0.000	0.000
Aug	0.293	0.291	0.287	0.226	0.130	0.092	0.038	0.021	0.000	0.000
Sep	0.354	0.352	0.346	0.235	0.134	0.059	0.042	0.013	0.000	0.000

Reserve Flows without High Flows

Oct	0.642	0.637	0.625	0.601	0.302	0.088	0.034	0.021	0.000	0.000
Nov	0.912	0.907	0.895	0.871	0.827	0.749	0.331	0.101	0.013	0.000
Dec	2.012	2.001	1.978	1.932	1.847	1.508	0.792	0.520	0.067	0.000
Jan	2.187	2.174	2.146	2.092	1.990	1.813	0.905	0.629	0.184	0.000
Feb	2.020	2.009	1.984	1.935	1.844	1.685	1.106	0.557	0.235	0.000
Mar	1.938	1.927	1.905	1.862	1.663	1.060	0.515	0.260	0.038	0.000
Apr	0.895	0.887	0.870	0.835	0.670	0.448	0.235	0.101	0.004	0.000
May	0.642	0.637	0.625	0.587	0.419	0.285	0.155	0.063	0.000	0.000
Jun	0.283	0.282	0.277	0.268	0.252	0.184	0.088	0.038	0.000	0.000
Jul	0.242	0.241	0.238	0.231	0.193	0.130	0.067	0.034	0.000	0.000
Aug	0.252	0.250	0.247	0.226	0.130	0.092	0.038	0.021	0.000	0.000
Sep	0.222	0.221	0.218	0.212	0.134	0.059	0.042	0.013	0.000	0.000

Natural Duration curves

Oct	9.055	2.946	1.680	0.796	0.302	0.088	0.034	0.021	0.000	0.000
Nov	13.546	5.225	2.640	1.856	1.215	0.763	0.331	0.101	0.013	0.000
Dec	12.733	8.665	5.849	4.923	2.518	1.508	0.792	0.520	0.067	0.000
Jan	11.317	7.517	6.184	4.060	2.728	1.890	0.905	0.629	0.184	0.000
Feb	14.824	7.425	5.585	3.989	2.757	2.028	1.106	0.557	0.235	0.000
Mar	7.576	4.693	2.573	2.082	1.663	1.060	0.515	0.260	0.038	0.000
Apr	4.877	2.501	1.420	0.922	0.670	0.448	0.235	0.101	0.004	0.000
May	2.677	1.433	0.930	0.587	0.419	0.285	0.155	0.063	0.000	0.000
Jun	1.818	0.888	0.603	0.406	0.268	0.184	0.088	0.038	0.000	0.000
Jul	1.332	0.716	0.406	0.289	0.193	0.130	0.067	0.034	0.000	0.000
Aug	3.260	0.737	0.339	0.226	0.130	0.092	0.038	0.021	0.000	0.000
Sep	4.911	1.659	0.478	0.235	0.134	0.059	0.042	0.013	0.000	0.000

Hydrological time series

Total Runoff : Niv11

Desktop (Version 2) Modified Flow Data for Ecological Category B													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.004	0.017	0.004	0.000	0.239	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.268
1921	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004
1922	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1923	0.000	0.126	0.067	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.197
1924	0.000	0.000	0.122	0.758	2.510	0.008	0.000	0.000	0.000	0.000	0.000	0.000	3.398
1925	0.042	0.339	0.230	0.306	0.134	0.054	0.034	0.021	0.013	0.008	0.004	0.184	1.369
1926	0.000	0.272	0.067	0.310	0.289	0.017	0.004	0.000	0.000	0.000	0.000	0.000	0.959
1927	0.000	0.000	0.201	0.210	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.415
1928	0.000	0.000	0.000	0.025	0.000	0.000	0.000	0.000	0.000	0.348	0.092	0.054	0.519
1929	0.034	0.331	0.306	0.184	0.071	0.046	0.029	0.017	0.008	0.008	0.004	0.004	1.042
1930	0.000	0.000	0.000	1.890	0.716	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.606
1931	0.000	0.000	0.000	0.000	5.529	2.689	1.004	0.653	0.278	0.394	0.239	0.142	10.928
1932	0.088	0.054	1.508	0.541	1.781	1.165	0.159	0.101	0.059	0.063	0.021	0.013	5.553
1933	0.008	1.695	4.917	2.682	5.305	2.690	0.817	0.511	0.256	0.193	0.293	0.351	19.718
1934	0.859	1.651	2.694	1.425	0.557	0.373	0.235	0.138	0.084	0.050	0.034	0.017	8.117
1935	0.013	0.008	0.792	4.085	1.911	0.071	0.025	0.155	0.059	0.034	0.021	0.013	7.187
1936	0.008	1.729	3.980	5.390	2.954	2.451	0.620	0.390	0.230	0.147	0.088	0.050	18.037
1937	0.034	0.021	4.982	5.898	5.366	2.660	0.985	0.640	0.273	0.318	0.222	0.134	21.533
1938	1.274	1.725	4.982	5.898	3.013	2.660	0.670	0.419	0.245	0.155	0.096	0.054	21.190
1939	0.034	1.732	3.957	2.422	4.403	2.705	1.008	0.665	0.283	0.415	0.292	0.348	18.265
1940	0.712	1.450	4.366	5.095	5.529	2.359	1.026	0.665	0.283	0.415	0.292	0.346	22.539
1941	0.302	0.180	2.598	5.809	3.909	1.663	0.909	0.574	0.260	0.214	0.130	0.075	16.624
1942	0.050	1.715	4.697	4.186	1.592	1.177	0.670	0.665	0.283	0.415	0.293	0.354	16.098
1943	1.274	1.731	4.216	2.845	4.718	1.328	0.750	0.473	0.254	0.176	0.109	0.352	18.225
1944	1.263	1.374	4.043	0.624	0.578	2.705	1.017	0.660	0.281	0.410	0.286	0.193	13.435
1945	0.122	0.071	0.603	1.056	0.071	0.101	0.004	0.004	0.004	0.000	0.000	0.000	2.036
1946	0.775	1.496	1.492	0.721	0.465	0.486	0.172	0.096	0.059	0.038	0.021	0.013	5.834
1947	1.269	0.737	1.286	0.809	1.282	0.151	0.054	0.034	0.021	0.013	0.008	0.004	5.668
1948	0.800	1.022	0.872	5.325	2.757	2.694	1.013	0.657	0.280	0.408	0.277	0.163	16.268
1949	0.218	0.101	0.520	0.243	0.268	0.331	0.008	0.004	0.000	0.000	0.000	0.000	1.693
1950	0.712	0.980	4.235	2.480	5.123	2.250	0.494	0.310	0.184	0.117	0.293	0.354	17.533
1951	1.260	1.701	4.982	5.118	4.281	2.430	0.986	0.641	0.274	0.318	0.184	0.109	22.284
1952	0.071	1.621	2.816	1.320	4.716	2.573	1.026	0.665	0.283	0.415	0.293	0.350	16.150
1953	0.507	1.688	0.536	0.905	2.032	0.499	0.277	0.256	0.105	0.067	0.038	0.344	7.254
1954	1.237	1.727	4.575	4.779	5.480	2.705	1.024	0.663	0.283	0.413	0.289	0.272	23.448
1955	0.193	0.641	0.750	0.134	4.964	2.284	0.654	0.415	0.243	0.155	0.092	0.054	10.579
1956	0.034	0.737	4.379	3.737	2.644	0.763	0.448	0.285	0.168	0.218	0.287	0.354	14.054
1957	1.274	1.730	4.156	4.253	1.710	0.989	0.982	0.660	0.280	0.409	0.285	0.172	16.899
1958	0.122	1.215	1.244	0.344	2.120	0.503	0.277	0.176	0.105	0.117	0.042	0.025	6.290
1959	0.034	1.729	4.380	2.103	2.548	0.666	0.398	0.235	0.138	0.088	0.050	0.353	12.722
1960	0.289	0.872	1.102	2.728	5.142	1.634	0.897	0.587	0.262	0.218	0.134	0.080	13.944
1961	0.050	1.649	0.645	2.330	3.989	0.541	0.742	0.339	0.245	0.155	0.096	0.054	10.835
1962	0.034	1.712	4.302	4.031	0.515	1.228	0.360	0.277	0.163	0.415	0.293	0.350	13.680
1963	0.796	1.732	4.767	5.046	2.535	1.525	0.901	0.570	0.260	0.214	0.130	0.354	18.831
1964	1.274	1.732	4.982	5.358	3.608	1.894	0.971	0.634	0.269	0.264	0.159	0.096	21.242
1965	1.247	0.494	0.147	5.898	4.709	1.986	0.969	0.633	0.268	0.260	0.180	0.117	16.909
1966	0.059	0.465	2.305	0.327	4.973	0.566	0.457	0.352	0.210	0.130	0.080	0.046	9.970
1967	0.029	1.627	1.580	0.679	0.272	0.193	0.105	0.067	0.038	0.025	0.017	0.008	4.640
1968	0.004	0.193	4.583	5.432	4.628	2.705	1.026	0.665	0.283	0.415	0.291	0.345	20.571
1969	1.265	1.119	1.622	5.447	5.529	2.705	1.016	0.660	0.281	0.410	0.293	0.354	20.701
1970	1.274	1.717	2.351	1.680	0.771	0.813	0.310	0.197	0.117	0.075	0.292	0.302	9.899
1971	1.254	1.688	4.982	4.928	0.968	2.045	0.541	0.318	0.189	0.122	0.071	0.042	17.148
1972	1.258	0.993	2.217	3.168	5.089	2.683	1.022	0.664	0.283	0.413	0.293	0.353	18.436
1973	1.248	1.349	0.758	5.703	3.595	2.082	0.978	0.635	0.270	0.268	0.163	0.096	17.145
1974	0.059	1.723	4.939	4.893	4.556	2.011	0.997	0.520	0.257	0.193	0.117	0.346	20.611
1975	1.252	1.675	4.454	5.212	5.319	2.683	1.026	0.665	0.283	0.413	0.290	0.289	23.561
1976	1.274	1.709	4.034	5.676	5.394	2.699	1.018	0.660	0.282	0.410	0.287	0.353	23.795
1977	1.246	0.763	3.247	5.898	5.050	2.673	1.005	0.654	0.279	0.406	0.247	0.151	21.617
1978	1.274	1.721	3.658	1.772	3.616	1.391	0.771	0.486	0.255	0.352	0.293	0.354	15.943
1979	1.264	1.596	3.879	0.892	0.968	0.306	0.147	0.092	0.054	0.034	0.021	0.256	9.510
1980	0.804	1.148	4.831	5.898	4.831	2.229	0.978	0.639	0.273	0.289	0.214	0.352	22.486
1981	1.223	1.014	0.930	0.629	2.028	1.693	0.532	0.335	0.197	0.126	0.075	0.046	8.828
1982	0.985	1.702	1.886	3.989	0.541	0.716	0.101	0.063	0.038	0.025	0.017	0.008	10.071
1983	0.176	1.732	4.755	5.898	5.529	2.705	1.026	0.665	0.283	0.415	0.293	0.354	23.832
1984	1.268	1.674	1.081	1.915	5.529	2.705	1.023	0.662	0.283	0.412	0.289	0.260	17.100
1985	0.775	1.710	2.724	1.140	1.475	2.697	0.402	0.247	0.147	0.092	0.054	0.034	11.497
1986	0.021	0.013	4.982	5.888	4.536	2.704	1.026	0.665	0.283	0.414	0.291	0.354	21.177
1987	1.274	1.732	4.804	5.898	4.569	2.681	1.008	0.653	0.278	0.398	0.243	0.142	23.680
1988	1.253	1.661	1.303	0.825	4.804	2.680	1.004	0.650	0.277	0.373	0.226	0.134	15.189
1989	0.084	1.732	4.982	5.471	4.414	2.145	1.024	0.648	0.276	0.348	0.210	0.126	21.460
1990	0.084	0.046	0.578	2.749	5.529	2.700	1.020	0.664	0.282	0.411	0.288	0.235	14.586
1991	0.620	0.109	3.448	4.943	0.566	0.260	0.151	0.096	0.059	0.038	0.021	0.013	10.324
1992	0.025	0.004	0.520	0.775	1.978	0.117	0.063	0.034	0.017	0.013	0.008	0.004	3.558
1993	1.274	1.732	4.396	4.060	3.960	2.129	0.557	0.352	0.210	0.130	0.080	0.050	18.930
1994	0.029	0.017	4.024	0.029	0.235	0.515	0.008	0.000	0.000	0.000	0.000	0.000	4.857
1995	0.000	1.652	4.331	5.898	5.529	2.705	1.026	0.665	0.283	0.415	0.291	0.344	23.139
1996	0.260	0.151	0.675	0.130	0.218	0.038	0.142	0.034	0.277	0.414	0.293	0.353	2.986
1997	1.239	1.215	2.518	3.997	1.098	2.704	0.834	0.453	0.252	0.168	0.101	0.059	14.638
1998	1.231	0.034	3.239	4.349	4.827	0.578	0.235	0.147	0.088	0.054	0.034	0.021	14.837
1999	0.013	0.138	4.163	4.815	4.035	2.705	1.026	0.665	0.283	0.415	0.293	0.349	18.900
2000	0.536	1.732	4.982	5.129	3.038	2.028	0.922	0.582	0.261	0.218	0.130	0.354	19.913
2001	1.271	1.732	4.982	5.178	2.757	1.617	0.955	0.603	0.283	0.415	0.293	0.354	20.441
2002	1.270	1.692	2.070	3.210	0.825	2.666	0.373	0.130	0.075	0.054	0.029	0.017	12.412
2003	0.013	1.698	0.021	5.898	4.161	1.856	1.009	0.644	0.				

A.119. Niv11 – Category C**Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv11

Annual Flows (Mill. cu. m or index values):

MAR = 31.260

S.Dev. = 28.260

CV = 0.904

Q75 = 0.096

Q75/MMF = 0.037

BFI Index = 0.313

CV(JJA+JFM) Index = 3.655

Ecological Category = C

Total IFR = 15.715 (50.27 %MAR)

Maint. Lowflow = 7.983 (25.54 %MAR)

Drought Lowflow = 2.676 (8.56 %MAR)

Maint. Highflow = 7.732 (24.73 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	2.430	4.903	2.018	0.329	0.099	0.577	0.906
Nov	4.491	9.794	2.181	0.477	0.141	0.750	1.226
Dec	4.548	5.180	1.139	1.360	0.519	1.529	2.889
Jan	4.783	5.806	1.214	1.449	0.414	1.911	3.359
Feb	4.788	5.552	1.160	1.373	0.433	1.807	3.180
Mar	3.155	5.567	1.765	1.283	0.517	0.701	1.984
Apr	1.616	2.474	1.531	0.565	0.100	0.120	0.685
May	1.144	2.513	2.196	0.441	0.101	0.021	0.462
Jun	0.589	0.892	1.515	0.203	0.087	0.000	0.203
Jul	0.540	1.108	2.053	0.179	0.089	0.158	0.337
Aug	1.389	4.527	3.258	0.166	0.090	0.038	0.204
Sep	1.787	5.223	2.923	0.159	0.087	0.121	0.280

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv11

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.122	1.113	1.092	0.796	0.302	0.088	0.034	0.021	0.000	0.000
Nov	1.558	1.548	1.528	1.487	1.215	0.763	0.331	0.101	0.013	0.000
Dec	4.865	4.459	4.102	3.768	2.518	1.508	0.792	0.520	0.067	0.000
Jan	5.728	5.222	4.778	4.060	2.728	1.890	0.905	0.629	0.184	0.000
Feb	5.422	4.943	4.524	3.989	2.757	2.028	1.106	0.557	0.235	0.000
Mar	2.625	2.609	2.573	2.082	1.663	1.060	0.515	0.260	0.038	0.000
Apr	0.905	0.897	0.880	0.844	0.670	0.448	0.235	0.101	0.004	0.000
May	0.621	0.616	0.605	0.582	0.419	0.285	0.155	0.063	0.000	0.000
Jun	0.275	0.273	0.269	0.260	0.245	0.184	0.088	0.038	0.000	0.000
Jul	0.428	0.425	0.406	0.289	0.193	0.130	0.067	0.034	0.000	0.000
Aug	0.270	0.268	0.264	0.226	0.130	0.092	0.038	0.021	0.000	0.000
Sep	0.357	0.355	0.349	0.235	0.134	0.059	0.042	0.013	0.000	0.000

Reserve Flows without High Flows

Oct	0.445	0.442	0.434	0.419	0.302	0.088	0.034	0.021	0.000	0.000
Nov	0.664	0.660	0.652	0.636	0.606	0.554	0.331	0.101	0.013	0.000
Dec	1.895	1.885	1.864	1.822	1.743	1.508	0.792	0.520	0.067	0.000
Jan	2.018	2.006	1.981	1.932	1.840	1.679	0.905	0.629	0.184	0.000
Feb	1.913	1.902	1.879	1.834	1.749	1.601	1.106	0.557	0.235	0.000
Mar	1.788	1.779	1.759	1.720	1.647	1.060	0.515	0.260	0.038	0.000
Apr	0.764	0.758	0.743	0.714	0.658	0.448	0.235	0.101	0.004	0.000
May	0.596	0.591	0.581	0.559	0.419	0.285	0.155	0.063	0.000	0.000
Jun	0.275	0.273	0.269	0.260	0.245	0.184	0.088	0.038	0.000	0.000
Jul	0.242	0.241	0.238	0.231	0.193	0.130	0.067	0.034	0.000	0.000
Aug	0.225	0.224	0.221	0.215	0.130	0.092	0.038	0.021	0.000	0.000
Sep	0.215	0.214	0.211	0.205	0.134	0.059	0.042	0.013	0.000	0.000

Natural Duration curves

Oct	9.055	2.946	1.680	0.796	0.302	0.088	0.034	0.021	0.000	0.000
Nov	13.546	5.225	2.640	1.856	1.215	0.763	0.331	0.101	0.013	0.000
Dec	12.733	8.665	5.849	4.923	2.518	1.508	0.792	0.520	0.067	0.000
Jan	11.317	7.517	6.184	4.060	2.728	1.890	0.905	0.629	0.184	0.000
Feb	14.824	7.425	5.585	3.989	2.757	2.028	1.106	0.557	0.235	0.000
Mar	7.576	4.693	2.573	2.082	1.663	1.060	0.515	0.260	0.038	0.000
Apr	4.877	2.501	1.420	0.922	0.670	0.448	0.235	0.101	0.004	0.000
May	2.677	1.433	0.930	0.587	0.419	0.285	0.155	0.063	0.000	0.000
Jun	1.818	0.888	0.603	0.406	0.268	0.184	0.088	0.038	0.000	0.000
Jul	1.332	0.716	0.406	0.289	0.193	0.130	0.067	0.034	0.000	0.000
Aug	3.260	0.737	0.339	0.226	0.130	0.092	0.038	0.021	0.000	0.000
Sep	4.911	1.659	0.478	0.235	0.134	0.059	0.042	0.013	0.000	0.000

Hydrological time series

Total Runoff : Niv11

Desktop (Version 2) Modified Flow Data for Ecological Category C													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.004	0.017	0.004	0.000	0.239	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.268
1921	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004
1922	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1923	0.000	0.126	0.067	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.197
1924	0.000	0.000	0.122	0.758	2.510	0.008	0.000	0.000	0.000	0.000	0.000	0.000	3.398
1925	0.042	0.339	0.230	0.306	0.134	0.054	0.034	0.021	0.013	0.008	0.004	0.184	1.369
1926	0.000	0.272	0.067	0.310	0.289	0.017	0.004	0.000	0.000	0.000	0.000	0.000	0.959
1927	0.000	0.000	0.201	0.210	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.415
1928	0.000	0.000	0.000	0.025	0.000	0.000	0.000	0.000	0.000	0.348	0.092	0.054	0.519
1929	0.034	0.331	0.306	0.184	0.071	0.046	0.029	0.017	0.008	0.008	0.004	0.004	1.042
1930	0.000	0.000	0.000	1.890	0.716	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.606
1931	0.000	0.000	0.000	0.000	5.422	2.609	0.886	0.610	0.270	0.394	0.239	0.142	10.571
1932	0.088	0.054	1.508	0.541	1.781	1.165	0.159	0.101	0.059	0.063	0.021	0.013	5.553
1933	0.008	1.525	4.800	2.682	5.198	2.610	0.817	0.511	0.249	0.193	0.269	0.354	19.216
1934	0.859	1.487	2.694	1.425	0.557	0.373	0.235	0.138	0.084	0.050	0.034	0.017	7.953
1935	0.013	0.008	0.792	4.085	1.911	0.071	0.025	0.155	0.059	0.034	0.021	0.013	7.187
1936	0.008	1.555	3.868	5.222	2.954	2.451	0.620	0.390	0.230	0.147	0.088	0.050	17.583
1937	0.034	0.021	4.865	5.728	5.259	2.581	0.869	0.598	0.265	0.318	0.222	0.134	20.894
1938	1.122	1.552	4.865	5.728	3.013	2.581	0.670	0.419	0.238	0.155	0.096	0.054	20.494
1939	0.034	1.558	3.845	2.422	4.300	2.625	0.889	0.621	0.275	0.428	0.269	0.350	17.615
1940	0.712	1.438	4.251	4.928	5.422	2.359	0.905	0.621	0.275	0.428	0.268	0.349	21.955
1941	0.302	0.180	2.598	5.640	3.909	1.663	0.841	0.574	0.253	0.214	0.130	0.075	16.379
1942	0.050	1.543	4.581	4.186	1.592	1.177	0.670	0.621	0.275	0.428	0.270	0.357	15.749
1943	1.122	1.557	4.102	2.845	4.613	1.328	0.750	0.473	0.246	0.176	0.109	0.355	17.676
1944	1.113	1.374	3.930	0.624	0.578	2.625	0.897	0.616	0.273	0.422	0.264	0.193	12.908
1945	0.122	0.071	0.603	1.056	0.071	0.101	0.004	0.004	0.004	0.000	0.000	0.000	2.036
1946	0.775	1.443	1.492	0.721	0.465	0.486	0.172	0.096	0.059	0.038	0.021	0.013	5.781
1947	1.118	0.737	1.286	0.809	1.282	0.151	0.054	0.034	0.021	0.013	0.008	0.004	5.517
1948	0.800	1.022	0.872	5.157	2.757	2.614	0.893	0.613	0.271	0.420	0.261	0.163	15.845
1949	0.218	0.101	0.520	0.243	0.268	0.331	0.008	0.004	0.000	0.000	0.000	0.000	1.693
1950	0.712	0.980	4.121	2.480	5.017	2.250	0.494	0.310	0.184	0.117	0.270	0.357	17.291
1951	1.111	1.531	4.865	4.951	4.179	2.430	0.870	0.599	0.266	0.318	0.184	0.109	21.412
1952	0.071	1.460	2.816	1.320	4.610	2.573	0.905	0.621	0.275	0.428	0.270	0.353	15.701
1953	0.507	1.519	0.536	0.905	2.032	0.499	0.277	0.256	0.105	0.067	0.038	0.347	7.088
1954	1.091	1.554	4.459	4.615	5.373	2.625	0.903	0.619	0.274	0.425	0.266	0.272	22.476
1955	0.193	0.641	0.750	0.134	4.857	2.284	0.654	0.415	0.237	0.155	0.092	0.054	10.466
1956	0.034	0.737	4.264	3.737	2.644	0.763	0.448	0.285	0.168	0.218	0.264	0.357	13.919
1957	1.122	1.556	4.042	4.253	1.710	0.989	0.866	0.616	0.272	0.421	0.262	0.172	16.282
1958	0.122	1.215	1.244	0.344	2.120	0.503	0.277	0.176	0.105	0.117	0.042	0.025	6.290
1959	0.034	1.555	4.265	2.103	2.548	0.666	0.398	0.235	0.138	0.088	0.050	0.356	12.436
1960	0.289	0.872	1.102	2.728	5.035	1.634	0.838	0.582	0.254	0.218	0.134	0.080	13.765
1961	0.050	1.484	0.645	2.330	3.989	0.541	0.742	0.339	0.238	0.155	0.096	0.054	10.664
1962	0.034	1.541	4.187	4.031	0.515	1.228	0.360	0.277	0.163	0.428	0.269	0.352	13.386
1963	0.796	1.558	4.650	4.880	2.535	1.525	0.839	0.570	0.253	0.214	0.130	0.357	18.307
1964	1.122	1.558	4.865	5.191	3.608	1.894	0.857	0.592	0.261	0.264	0.159	0.096	20.467
1965	1.099	0.494	0.147	5.728	4.604	1.986	0.855	0.591	0.260	0.260	0.180	0.117	16.323
1966	0.059	0.465	2.305	0.327	4.867	0.566	0.457	0.352	0.210	0.130	0.080	0.046	9.864
1967	0.029	1.465	1.580	0.679	0.272	0.193	0.105	0.067	0.038	0.025	0.017	0.008	4.478
1968	0.004	0.193	4.466	5.264	4.524	2.625	0.905	0.621	0.275	0.428	0.268	0.348	19.919
1969	1.115	1.119	1.622	5.279	5.422	2.625	0.896	0.616	0.272	0.422	0.270	0.357	20.014
1970	1.122	1.545	2.351	1.680	0.771	0.813	0.310	0.197	0.117	0.075	0.269	0.302	9.552
1971	1.105	1.519	4.865	4.762	0.968	2.045	0.541	0.318	0.189	0.122	0.071	0.042	16.548
1972	1.109	0.993	2.217	3.168	4.982	2.603	0.901	0.620	0.274	0.425	0.270	0.356	17.919
1973	1.100	1.349	0.758	5.534	3.595	2.082	0.863	0.593	0.262	0.268	0.163	0.096	16.663
1974	0.059	1.550	4.821	4.728	4.452	2.011	0.880	0.520	0.249	0.193	0.117	0.349	19.930
1975	1.103	1.508	4.339	5.044	5.212	2.604	0.905	0.621	0.274	0.426	0.266	0.289	22.591
1976	1.122	1.538	3.921	5.507	5.287	2.619	0.897	0.616	0.273	0.422	0.264	0.356	22.823
1977	1.098	0.763	3.247	5.728	4.943	2.594	0.886	0.611	0.270	0.406	0.247	0.151	20.945
1978	1.122	1.548	3.586	1.772	3.616	1.391	0.771	0.486	0.247	0.352	0.270	0.357	15.519
1979	1.114	1.455	3.768	0.892	0.968	0.306	0.147	0.092	0.054	0.034	0.021	0.256	9.108
1980	0.804	1.148	4.714	5.728	4.726	2.229	0.863	0.596	0.265	0.289	0.214	0.355	21.931
1981	1.078	1.014	0.930	0.629	2.028	1.693	0.532	0.335	0.197	0.126	0.075	0.046	8.683
1982	0.985	1.532	1.886	3.989	0.541	0.716	0.101	0.063	0.038	0.025	0.017	0.008	9.901
1983	0.176	1.558	4.638	5.728	5.422	2.625	0.905	0.621	0.275	0.428	0.270	0.357	23.002
1984	1.117	1.506	1.081	1.915	5.422	2.625	0.902	0.618	0.274	0.425	0.266	0.260	16.411
1985	0.775	1.538	2.724	1.140	1.475	2.617	0.402	0.247	0.147	0.092	0.054	0.034	11.245
1986	0.021	0.013	4.865	5.719	4.432	2.624	0.905	0.621	0.274	0.427	0.268	0.357	20.524
1987	1.122	1.558	4.687	5.728	4.464	2.601	0.889	0.610	0.270	0.398	0.243	0.142	22.714
1988	1.104	1.495	1.303	0.825	4.698	2.600	0.885	0.607	0.268	0.373	0.226	0.134	14.520
1989	0.084	1.558	4.865	5.303	4.310	2.145	0.903	0.605	0.267	0.348	0.210	0.126	20.725
1990	0.084	0.046	0.578	2.749	5.422	2.620	0.900	0.619	0.273	0.424	0.265	0.235	14.215
1991	0.620	0.109	3.448	4.778	0.566	0.260	0.151	0.096	0.059	0.038	0.021	0.013	10.159
1992	0.025	0.004	0.520	0.775	1.978	0.117	0.063	0.034	0.017	0.013	0.008	0.004	3.558
1993	1.122	1.558	4.281	4.060	3.960	2.129	0.557	0.352	0.210	0.130	0.080	0.050	18.489
1994	0.029	0.017	3.911	0.029	0.235	0.515	0.008	0.000	0.000	0.000	0.000	0.000	4.744
1995	0.000	1.487	4.215	5.728	5.422	2.625	0.905	0.621	0.275	0.427	0.268	0.347	22.320
1996	0.260	0.151	0.675	0.130	0.218	0.038	0.142	0.034	0.269	0.427	0.270	0.356	2.970
1997	1.092	1.215	2.518	3.997	1.098	2.624	0.821	0.453	0.245	0.168	0.101	0.059	14.391
1998	1.085	0.034	3.239	4.349	4.722	0.578	0.235	0.147	0.088	0.054	0.034	0.021	14.586
1999	0.013	0.138	4.049	4.651	4.035	2.625	0.905	0.621	0.275	0.428	0.269	0.352	18.359
2000	0.536	1.558	4.865	4.963	3.038	2.028	0.844	0.580	0.253	0.218	0.130	0.357	19.371
2001	1.120	1.558	4.865	5.011	2.757	1.617	0.846	0.583	0.274	0.428	0.270	0.357	19.686
2002	1.120	1.523	2.070	3.210	0.825	2.587	0.373	0.130	0.075	0.054	0.029	0.017	12.013
2003	0.013	1.528	0.021	5.728	4.158	1.856	0.890	0.602	0.2				

A.120. *Niv11 – Category D***Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv11

Annual Flows (Mill. cu. m or index values):

MAR = 31,260

S.Dev. = 28,260

CV = 0,904

Q75 = 0,096

Q75/MMF = 0,037

BFI Index = 0,313

CV(JJA+JFM) Index = 3,655

Ecological Category = D

Total IFR = 7,649 (24,47 %MAR)

Maint. Lowflow = 2,676 (8,56 %MAR)

Drought Lowflow = 2,676 (8,56 %MAR)

Maint. Highflow = 4,973 (15,91 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	2,430	4,903	2,018	0,099	0,099	0,380	0,479
Nov	4,491	9,794	2,181	0,141	0,141	0,387	0,528
Dec	4,548	5,180	1,139	0,519	0,519	0,905	1,425
Jan	4,783	5,806	1,214	0,414	0,414	1,223	1,637
Feb	4,788	5,552	1,160	0,433	0,433	1,325	1,758
Mar	3,155	5,567	1,765	0,517	0,517	0,419	0,937
Apr	1,616	2,474	1,531	0,100	0,100	0,023	0,123
May	1,144	2,513	2,196	0,101	0,101	0,000	0,101
Jun	0,589	0,892	1,515	0,087	0,087	0,000	0,087
Jul	0,540	1,108	2,053	0,089	0,089	0,160	0,249
Aug	1,389	4,527	3,258	0,090	0,090	0,038	0,128
Sep	1,787	5,223	2,923	0,087	0,087	0,112	0,198

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv11

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.723	0.718	0.705	0.679	0.302	0.088	0.034	0.021	0.000	0.000
Nov	0.857	0.852	0.842	0.821	0.782	0.714	0.331	0.101	0.013	0.000
Dec	2.794	2.556	2.349	2.161	1.972	1.508	0.792	0.520	0.067	0.000
Jan	3.201	2.882	2.607	2.361	2.122	1.724	0.905	0.629	0.184	0.000
Feb	3.437	3.091	2.793	2.527	2.270	1.840	1.106	0.557	0.235	0.000
Mar	1.657	1.649	1.632	1.598	1.535	1.060	0.515	0.260	0.038	0.000
Apr	0.218	0.217	0.214	0.209	0.200	0.184	0.161	0.101	0.004	0.000
May	0.187	0.186	0.184	0.180	0.173	0.161	0.145	0.063	0.000	0.000
Jun	0.161	0.160	0.159	0.155	0.149	0.139	0.088	0.038	0.000	0.000
Jul	0.392	0.389	0.383	0.289	0.193	0.130	0.067	0.034	0.000	0.000
Aug	0.221	0.219	0.217	0.211	0.130	0.092	0.038	0.021	0.000	0.000
Sep	0.319	0.317	0.312	0.235	0.134	0.059	0.042	0.013	0.000	0.000

Reserve Flows without High Flows

Oct	0.184	0.183	0.181	0.177	0.170	0.088	0.034	0.021	0.000	0.000
Nov	0.280	0.279	0.277	0.273	0.265	0.251	0.229	0.101	0.013	0.000
Dec	1.036	1.032	1.024	1.008	0.978	0.927	0.792	0.520	0.067	0.000
Jan	0.825	0.822	0.816	0.803	0.780	0.738	0.673	0.582	0.184	0.000
Feb	0.863	0.860	0.853	0.840	0.815	0.772	0.704	0.557	0.235	0.000
Mar	1.032	1.028	1.020	1.004	0.975	0.923	0.515	0.260	0.038	0.000
Apr	0.185	0.184	0.183	0.179	0.172	0.160	0.143	0.101	0.004	0.000
May	0.187	0.186	0.184	0.180	0.173	0.161	0.145	0.063	0.000	0.000
Jun	0.161	0.160	0.159	0.155	0.149	0.139	0.088	0.038	0.000	0.000
Jul	0.165	0.164	0.163	0.159	0.153	0.130	0.067	0.034	0.000	0.000
Aug	0.166	0.166	0.164	0.161	0.130	0.092	0.038	0.021	0.000	0.000
Sep	0.161	0.160	0.158	0.155	0.134	0.059	0.042	0.013	0.000	0.000

Natural Duration curves

Oct	9.055	2.946	1.680	0.796	0.302	0.088	0.034	0.021	0.000	0.000
Nov	13.546	5.225	2.640	1.856	1.215	0.763	0.331	0.101	0.013	0.000
Dec	12.733	8.665	5.849	4.923	2.518	1.508	0.792	0.520	0.067	0.000
Jan	11.317	7.517	6.184	4.060	2.728	1.890	0.905	0.629	0.184	0.000
Feb	14.824	7.425	5.585	3.989	2.757	2.028	1.106	0.557	0.235	0.000
Mar	7.576	4.693	2.573	2.082	1.663	1.060	0.515	0.260	0.038	0.000
Apr	4.877	2.501	1.420	0.922	0.670	0.448	0.235	0.101	0.004	0.000
May	2.677	1.433	0.930	0.587	0.419	0.285	0.155	0.063	0.000	0.000
Jun	1.818	0.888	0.603	0.406	0.268	0.184	0.088	0.038	0.000	0.000
Jul	1.332	0.716	0.406	0.289	0.193	0.130	0.067	0.034	0.000	0.000
Aug	3.260	0.737	0.339	0.226	0.130	0.092	0.038	0.021	0.000	0.000
Sep	4.911	1.659	0.478	0.235	0.134	0.059	0.042	0.013	0.000	0.000

Hydrological time series

Total Runoff : Niv11

Desktop (Version 2) Modified Flow Data for Ecological Category D													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.004	0.017	0.004	0.000	0.239	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.268
1921	0.000	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004
1922	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1923	0.000	0.126	0.067	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.197
1924	0.000	0.000	0.122	0.758	2.124	0.008	0.000	0.000	0.000	0.000	0.000	0.000	3.012
1925	0.042	0.339	0.230	0.306	0.134	0.054	0.034	0.021	0.013	0.008	0.004	0.184	1.369
1926	0.000	0.272	0.067	0.310	0.289	0.017	0.004	0.000	0.000	0.000	0.000	0.000	0.959
1927	0.000	0.000	0.201	0.210	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.415
1928	0.000	0.000	0.000	0.025	0.000	0.000	0.000	0.000	0.000	0.348	0.092	0.054	0.519
1929	0.034	0.331	0.306	0.184	0.071	0.046	0.029	0.017	0.008	0.008	0.004	0.004	1.042
1930	0.000	0.000	0.000	1.724	0.716	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.440
1931	0.000	0.000	0.000	0.000	3.437	1.649	0.215	0.185	0.159	0.382	0.212	0.142	6.381
1932	0.088	0.054	1.508	0.541	1.764	1.165	0.148	0.101	0.059	0.063	0.021	0.013	5.525
1933	0.008	0.841	2.756	2.101	3.275	1.649	0.205	0.177	0.151	0.193	0.220	0.317	11.892
1934	0.683	0.821	1.986	1.425	0.557	0.373	0.161	0.138	0.084	0.050	0.034	0.017	6.329
1935	0.013	0.008	0.792	2.370	1.804	0.071	0.025	0.145	0.059	0.034	0.021	0.013	5.354
1936	0.008	0.856	2.217	2.882	2.311	1.626	0.196	0.170	0.144	0.147	0.088	0.050	10.694
1937	0.034	0.021	2.794	3.201	3.318	1.634	0.213	0.183	0.157	0.318	0.211	0.134	12.218
1938	0.723	0.854	2.794	3.201	2.323	1.634	0.200	0.173	0.147	0.155	0.096	0.054	12.354
1939	0.034	0.857	2.203	1.977	2.639	1.657	0.216	0.187	0.161	0.392	0.220	0.314	10.856
1940	0.671	0.796	2.435	2.699	3.437	1.621	0.218	0.187	0.161	0.392	0.220	0.312	13.148
1941	0.302	0.180	1.978	3.145	2.510	1.535	0.209	0.180	0.152	0.214	0.130	0.075	10.611
1942	0.050	0.849	2.627	2.406	1.592	1.177	0.200	0.187	0.161	0.392	0.221	0.319	10.181
1943	0.723	0.856	2.349	2.143	2.856	1.328	0.203	0.175	0.150	0.176	0.109	0.317	11.386
1944	0.718	0.792	2.252	0.624	0.578	1.657	0.217	0.186	0.160	0.387	0.216	0.193	7.979
1945	0.122	0.071	0.603	1.056	0.071	0.101	0.004	0.004	0.004	0.000	0.000	0.000	2.036
1946	0.677	0.799	1.492	0.721	0.465	0.486	0.151	0.096	0.059	0.038	0.021	0.013	5.018
1947	0.721	0.707	1.286	0.809	1.282	0.151	0.054	0.034	0.021	0.013	0.008	0.004	5.090
1948	0.679	0.753	0.872	2.841	2.270	1.651	0.216	0.186	0.160	0.385	0.215	0.163	10.391
1949	0.218	0.101	0.520	0.243	0.268	0.331	0.008	0.004	0.000	0.000	0.000	0.000	1.693
1950	0.671	0.747	2.360	2.005	3.143	1.615	0.187	0.163	0.139	0.117	0.221	0.319	11.687
1951	0.716	0.843	2.794	2.713	2.557	1.624	0.213	0.183	0.157	0.318	0.184	0.109	12.413
1952	0.071	0.807	1.995	1.320	2.854	1.632	0.218	0.187	0.161	0.392	0.221	0.316	10.174
1953	0.507	0.837	0.536	0.905	1.842	0.499	0.165	0.156	0.105	0.067	0.038	0.311	5.968
1954	0.704	0.855	2.556	2.509	3.401	1.657	0.218	0.186	0.161	0.390	0.218	0.272	13.127
1955	0.193	0.641	0.750	0.134	3.029	1.617	0.198	0.173	0.146	0.155	0.092	0.054	7.182
1956	0.034	0.707	2.442	2.303	2.203	0.763	0.184	0.161	0.136	0.218	0.216	0.319	9.688
1957	0.723	0.856	2.315	2.430	1.710	0.989	0.212	0.186	0.160	0.386	0.215	0.172	10.355
1958	0.122	0.782	1.244	0.344	1.894	0.503	0.165	0.147	0.105	0.117	0.042	0.025	5.490
1959	0.034	0.856	2.443	1.825	2.146	0.666	0.178	0.153	0.132	0.088	0.050	0.318	8.890
1960	0.289	0.731	1.102	2.122	3.157	1.530	0.208	0.180	0.153	0.218	0.134	0.080	9.904
1961	0.050	0.820	0.645	1.933	2.527	0.541	0.202	0.166	0.147	0.155	0.096	0.054	7.336
1962	0.034	0.848	2.398	2.356	0.515	1.228	0.173	0.160	0.136	0.392	0.220	0.315	8.776
1963	0.679	0.857	2.668	2.669	2.139	1.510	0.208	0.179	0.152	0.214	0.130	0.319	11.726
1964	0.723	0.857	2.794	2.862	2.448	1.570	0.211	0.182	0.156	0.264	0.159	0.096	12.322
1965	0.709	0.494	0.147	3.201	2.850	1.584	0.211	0.182	0.155	0.260	0.180	0.117	10.090
1966	0.059	0.465	1.905	0.327	3.036	0.566	0.184	0.167	0.142	0.130	0.080	0.046	7.108
1967	0.029	0.810	1.580	0.679	0.272	0.193	0.105	0.067	0.038	0.025	0.017	0.008	3.823
1968	0.004	0.193	2.560	2.908	2.793	1.657	0.218	0.187	0.161	0.392	0.219	0.311	11.604
1969	0.719	0.768	1.622	2.917	3.437	1.657	0.217	0.186	0.160	0.387	0.221	0.319	12.610
1970	0.723	0.851	1.920	1.680	0.771	0.813	0.169	0.149	0.117	0.075	0.220	0.302	7.789
1971	0.713	0.837	2.794	2.598	0.968	1.593	0.190	0.164	0.139	0.122	0.071	0.042	10.232
1972	0.715	0.749	1.878	2.201	3.119	1.645	0.218	0.187	0.161	0.390	0.221	0.319	11.801
1973	0.710	0.790	0.758	3.078	2.445	1.598	0.212	0.182	0.156	0.268	0.163	0.096	10.456
1974	0.059	0.853	2.768	2.577	2.743	1.587	0.214	0.177	0.151	0.193	0.117	0.312	11.754
1975	0.712	0.832	2.486	2.771	3.285	1.646	0.218	0.187	0.161	0.390	0.218	0.289	13.194
1976	0.723	0.847	2.246	3.061	3.339	1.654	0.217	0.186	0.160	0.387	0.217	0.319	13.356
1977	0.709	0.714	2.029	3.201	3.091	1.641	0.215	0.185	0.159	0.383	0.213	0.151	12.691
1978	0.723	0.852	2.062	1.701	2.449	1.391	0.203	0.176	0.150	0.352	0.221	0.319	10.600
1979	0.718	0.805	2.161	0.892	0.968	0.306	0.146	0.092	0.054	0.034	0.021	0.256	6.454
1980	0.679	0.772	2.705	3.201	2.935	1.613	0.212	0.183	0.157	0.289	0.210	0.318	13.274
1981	0.697	0.752	0.930	0.629	1.840	1.540	0.190	0.166	0.140	0.126	0.075	0.046	7.130
1982	0.692	0.844	1.774	2.348	0.541	0.716	0.101	0.063	0.038	0.025	0.017	0.008	7.168
1983	0.176	0.857	2.661	3.201	3.437	1.657	0.218	0.187	0.161	0.392	0.221	0.319	13.487
1984	0.720	0.831	1.081	1.736	3.437	1.657	0.218	0.186	0.161	0.390	0.218	0.260	10.894
1985	0.677	0.847	1.988	1.140	1.475	1.653	0.178	0.155	0.133	0.092	0.054	0.034	8.426
1986	0.021	0.013	2.794	3.195	2.730	1.656	0.218	0.187	0.161	0.391	0.219	0.319	11.905
1987	0.723	0.857	2.690	3.201	2.752	1.644	0.216	0.185	0.159	0.382	0.213	0.142	13.165
1988	0.712	0.825	1.303	0.825	2.916	1.644	0.215	0.184	0.158	0.373	0.211	0.134	9.501
1989	0.084	0.857	2.794	2.933	2.646	1.605	0.218	0.184	0.158	0.348	0.209	0.126	12.162
1990	0.084	0.046	0.578	2.126	3.437	1.654	0.217	0.186	0.160	0.389	0.217	0.235	9.331
1991	0.620	0.109	2.045	2.607	0.566	0.260	0.147	0.096	0.059	0.038	0.021	0.013	6.581
1992	0.025	0.004	0.520	0.775	1.824	0.117	0.063	0.034	0.017	0.013	0.008	0.004	3.404
1993	0.723	0.857	2.452	2.361	2.521	1.603	0.191	0.167	0.142	0.130	0.080	0.050	11.279
1994	0.029	0.017	2.241	0.029	0.235	0.515	0.008	0.000	0.000	0.000	0.000	0.000	3.074
1995	0.000	0.821	2.415	3.201	3.437	1.657	0.218	0.187	0.161	0.392	0.219	0.311	13.018
1996	0.260	0.151	0.675	0.130	0.218	0.038	0.142	0.034	0.159	0.391	0.221	0.319	2.737
1997	0.705	0.782	1.972	2.350	1.098	1.657	0.206	0.174	0.149	0.168	0.101	0.059	9.421
1998	0.701	0.034	2.029	2.464	2.932	0.578	0.161	0.143	0.088	0.054	0.034	0.021	9.239
1999	0.013	0.138	2.319	2.530	2.531	1.657	0.218	0.187	0.161	0.392	0.220	0.315	10.681
2000	0.536	0.857	2.794	2.720	2.328	1.590	0.209	0.180	0.152	0.218	0.130	0.319	12.035
2001	0.722	0.857	2.794	2.750	2.270	1.527	0.210	0.180	0.161	0.392	0.221	0.319	12.403
2002	0.722	0.839	1.832	2.209	0.825	1.637	0.175	0.130	0.075	0.054	0.029	0.017	8.543
2003	0.013	0.842	0.021	3.201	2.543	1.564	0.216	0.184	0.157	0.386			

A.121. *Niv12 – Category B***Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv12

Annual Flows (Mill. cu. m or index values):

MAR = 30.155

S.Dev. = 28.891

CV = 0.958

Q75 = 0.033

Q75/MMF = 0.013

BFI Index = 0.302

CV(JJA+JFM) Index = 3.883

Ecological Category = B

Total IFR = 17.354 (57.55 %MAR)

Maint. Lowflow = 9.895 (32.82 %MAR)

Drought Lowflow = 2.581 (8.56 %MAR)

Maint. Highflow = 7.459 (24.73 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			Maint.	Drought	Maint.	Maint.	
Oct	2.289	4.913	2.147	0.519	0.096	0.557	1.076
Nov	3.802	9.527	2.506	0.737	0.136	0.723	1.460
Dec	4.203	5.185	1.234	1.625	0.501	1.475	3.100
Jan	5.281	6.893	1.305	1.767	0.399	1.843	3.610
Feb	5.139	6.251	1.216	1.632	0.417	1.743	3.375
Mar	3.057	5.754	1.882	1.565	0.499	0.676	2.241
Apr	1.482	2.407	1.624	0.724	0.096	0.116	0.839
May	1.023	2.360	2.307	0.519	0.097	0.020	0.539
Jun	0.541	0.896	1.657	0.229	0.084	0.000	0.229
Jul	0.468	0.994	2.124	0.196	0.086	0.152	0.348
Aug	0.945	3.275	3.466	0.203	0.087	0.036	0.240
Sep	1.925	6.512	3.383	0.179	0.084	0.117	0.296

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv12

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.229	1.219	1.195	0.510	0.269	0.076	0.028	0.005	0.000	0.000
Nov	1.671	1.660	1.638	1.204	0.571	0.326	0.109	0.038	0.005	0.000
Dec	4.806	4.414	4.067	3.742	2.011	1.147	0.647	0.212	0.009	0.000
Jan	5.689	5.199	4.768	4.121	2.615	1.822	0.949	0.533	0.123	0.000
Feb	5.334	4.871	4.465	4.086	2.945	2.086	1.175	0.330	0.156	0.000
Mar	2.609	2.594	2.562	2.025	1.317	0.906	0.274	0.137	0.005	0.000
Apr	0.990	0.981	0.962	0.923	0.548	0.208	0.076	0.009	0.000	0.000
May	0.642	0.637	0.625	0.600	0.345	0.099	0.038	0.009	0.000	0.000
Jun	0.273	0.272	0.267	0.259	0.203	0.071	0.024	0.005	0.000	0.000
Jul	0.401	0.398	0.340	0.250	0.132	0.071	0.019	0.000	0.000	0.000
Aug	0.283	0.281	0.269	0.189	0.104	0.042	0.009	0.000	0.000	0.000
Sep	0.342	0.339	0.334	0.208	0.109	0.047	0.009	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.620	0.615	0.603	0.510	0.269	0.076	0.028	0.005	0.000	0.000
Nov	0.880	0.875	0.863	0.840	0.571	0.326	0.109	0.038	0.005	0.000
Dec	1.941	1.931	1.908	1.864	1.782	1.147	0.647	0.212	0.009	0.000
Jan	2.110	2.097	2.071	2.018	1.920	1.749	0.949	0.533	0.123	0.000
Feb	1.949	1.938	1.914	1.867	1.779	1.626	1.175	0.330	0.156	0.000
Mar	1.869	1.859	1.838	1.796	1.317	0.906	0.274	0.137	0.005	0.000
Apr	0.863	0.856	0.839	0.805	0.548	0.208	0.076	0.009	0.000	0.000
May	0.620	0.615	0.603	0.580	0.345	0.099	0.038	0.009	0.000	0.000
Jun	0.273	0.272	0.267	0.259	0.203	0.071	0.024	0.005	0.000	0.000
Jul	0.234	0.232	0.229	0.223	0.132	0.071	0.019	0.000	0.000	0.000
Aug	0.243	0.242	0.238	0.189	0.104	0.042	0.009	0.000	0.000	0.000
Sep	0.214	0.213	0.210	0.204	0.109	0.047	0.009	0.000	0.000	0.000

Natural Duration curves

Oct	9.331	2.917	1.222	0.510	0.269	0.076	0.028	0.005	0.000	0.000
Nov	12.050	3.932	2.096	1.204	0.571	0.326	0.109	0.038	0.005	0.000
Dec	11.606	7.689	5.381	4.248	2.011	1.147	0.647	0.212	0.009	0.000
Jan	13.074	8.175	6.127	4.121	2.615	1.822	0.949	0.533	0.123	0.000
Feb	16.883	7.694	5.763	4.220	2.945	2.086	1.175	0.330	0.156	0.000
Mar	8.024	4.479	2.681	2.025	1.317	0.906	0.274	0.137	0.005	0.000
Apr	3.960	2.218	1.388	0.968	0.548	0.208	0.076	0.009	0.000	0.000
May	2.185	1.307	0.868	0.609	0.345	0.099	0.038	0.009	0.000	0.000
Jun	1.534	0.949	0.519	0.359	0.203	0.071	0.024	0.005	0.000	0.000
Jul	1.435	0.628	0.340	0.250	0.132	0.071	0.019	0.000	0.000	0.000
Aug	1.638	0.500	0.269	0.189	0.104	0.042	0.009	0.000	0.000	0.000
Sep	4.498	1.421	0.604	0.208	0.109	0.047	0.009	0.000	0.000	0.000

Hydrological time series

Total Runoff : Niv12

Desktop (Version 2) Modified Flow Data for Ecological Category B													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.005	0.005	0.000	0.000	0.278	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.293
1921	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1922	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1923	0.000	0.019	0.061	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080
1924	0.000	0.000	0.113	1.090	2.903	0.009	0.000	0.000	0.000	0.000	0.000	0.000	4.115
1925	0.000	0.000	0.000	0.278	0.104	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.332
1926	0.000	0.047	0.009	0.467	0.330	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.867
1927	0.000	0.000	0.189	0.316	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.505
1928	0.000	0.000	0.000	0.057	0.000	0.000	0.000	0.000	0.000	0.085	0.000	0.000	0.142
1929	0.000	0.104	0.094	0.123	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.321
1930	0.000	0.000	0.000	2.587	0.840	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.427
1931	0.000	0.000	0.000	0.000	5.334	2.596	0.971	0.634	0.270	0.394	0.264	0.156	10.617
1932	0.099	0.057	1.595	0.746	2.044	0.906	0.042	0.028	0.014	0.009	0.005	0.005	5.550
1933	0.000	1.208	4.700	1.921	5.131	2.594	0.699	0.444	0.249	0.165	0.194	0.208	17.514
1934	0.132	1.038	1.893	0.920	0.274	0.175	0.104	0.066	0.038	0.024	0.014	0.009	4.687
1935	0.005	0.005	0.845	4.648	2.152	0.028	0.000	0.028	0.000	0.000	0.000	0.000	7.711
1936	0.000	1.668	3.882	5.244	2.856	2.214	0.552	0.345	0.203	0.127	0.080	0.047	17.217
1937	0.028	0.019	4.806	5.689	5.184	2.566	0.957	0.622	0.266	0.316	0.189	0.113	20.755
1938	1.229	1.666	4.806	5.689	3.007	2.562	0.647	0.406	0.241	0.151	0.090	0.052	20.547
1939	0.033	1.671	3.798	2.280	4.465	2.609	0.973	0.642	0.273	0.401	0.282	0.336	17.763
1940	0.467	0.968	4.403	5.068	5.334	2.565	0.990	0.642	0.273	0.401	0.282	0.332	21.725
1941	0.326	0.194	2.780	5.689	4.193	2.044	0.943	0.613	0.263	0.274	0.165	0.099	17.584
1942	0.061	1.651	4.507	4.121	1.350	1.024	0.491	0.638	0.273	0.401	0.283	0.342	15.142
1943	1.229	1.669	3.880	2.223	4.564	1.166	0.689	0.434	0.249	0.165	0.099	0.341	16.708
1944	1.225	1.636	4.250	0.982	0.779	2.609	0.983	0.638	0.271	0.397	0.278	0.208	14.256
1945	0.132	0.080	0.642	1.515	0.094	0.066	0.005	0.005	0.005	0.000	0.000	0.000	2.544
1946	0.231	0.396	0.212	0.118	0.156	0.283	0.028	0.014	0.009	0.005	0.005	0.000	1.457
1947	1.226	0.255	1.147	1.015	1.355	0.066	0.009	0.005	0.005	0.000	0.000	0.000	5.083
1948	0.510	0.434	0.722	5.290	2.945	2.595	0.972	0.634	0.270	0.394	0.264	0.156	15.185
1949	0.142	0.066	0.524	0.316	0.302	0.274	0.005	0.005	0.000	0.000	0.000	0.000	1.634
1950	0.500	0.453	3.742	0.812	4.928	1.576	0.123	0.076	0.047	0.028	0.282	0.341	12.908
1951	1.211	1.640	4.806	4.833	3.894	2.200	0.954	0.620	0.265	0.307	0.184	0.109	21.024
1952	0.071	0.359	2.082	0.916	4.516	2.299	0.990	0.642	0.273	0.401	0.283	0.336	13.168
1953	0.354	1.619	0.496	0.920	1.949	0.137	0.076	0.057	0.028	0.019	0.009	0.337	6.001
1954	0.727	1.656	3.846	3.502	5.236	2.609	0.987	0.640	0.273	0.399	0.280	0.269	20.424
1955	0.170	0.406	0.647	0.194	4.871	1.902	0.444	0.278	0.165	0.104	0.061	0.038	9.280
1956	0.024	0.170	3.997	1.789	1.836	0.142	0.080	0.052	0.028	0.019	0.014	0.341	8.492
1957	1.229	1.670	4.094	4.537	1.742	0.996	0.835	0.477	0.251	0.175	0.104	0.061	16.170
1958	0.038	0.160	0.746	0.028	2.096	0.142	0.061	0.038	0.024	0.014	0.009	0.005	3.361
1959	0.005	1.667	4.317	2.039	2.700	0.576	0.316	0.198	0.118	0.076	0.042	0.341	12.396
1960	0.354	0.326	0.666	1.421	4.917	0.963	0.557	0.349	0.208	0.132	0.080	0.047	10.020
1961	0.028	0.571	0.066	2.615	4.086	0.269	0.538	0.009	0.000	0.000	0.000	0.000	8.182
1962	0.000	1.635	4.212	3.847	0.245	0.887	0.061	0.028	0.019	0.401	0.282	0.337	11.953
1963	0.505	1.671	4.548	4.768	2.086	1.355	0.798	0.505	0.253	0.189	0.113	0.342	17.132
1964	1.229	1.671	4.806	5.006	3.616	1.973	0.943	0.613	0.263	0.274	0.165	0.099	20.657
1965	1.208	0.245	0.142	5.689	4.515	1.779	0.932	0.606	0.261	0.250	0.151	0.090	15.868
1966	0.057	0.241	2.384	0.472	4.866	0.194	0.085	0.052	0.033	0.019	0.014	0.009	8.426
1967	0.005	0.448	0.670	0.283	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.406
1968	0.000	0.038	4.414	5.199	4.420	2.609	0.990	0.642	0.273	0.400	0.281	0.330	19.597
1969	1.219	0.434	1.256	5.331	5.334	2.609	0.983	0.638	0.272	0.397	0.283	0.342	19.097
1970	1.229	1.661	2.195	1.831	0.755	0.750	0.302	0.194	0.113	0.071	0.245	0.028	9.373
1971	1.062	0.123	4.771	4.631	0.250	1.317	0.085	0.038	0.024	0.014	0.009	0.005	12.329
1972	1.207	0.340	1.657	3.762	4.856	2.586	0.980	0.636	0.270	0.395	0.283	0.340	17.312
1973	1.207	0.798	0.425	5.590	4.139	2.431	0.964	0.626	0.268	0.335	0.203	0.118	17.103
1974	0.076	1.662	4.737	4.446	4.233	1.171	0.929	0.312	0.184	0.118	0.071	0.337	18.276
1975	1.219	1.648	4.426	4.794	5.113	2.584	0.990	0.641	0.273	0.399	0.280	0.269	22.636
1976	1.229	1.653	4.075	5.504	5.238	2.605	0.983	0.638	0.272	0.398	0.278	0.341	23.214
1977	1.218	1.090	3.659	5.689	4.980	2.591	0.977	0.637	0.270	0.395	0.277	0.179	21.961
1978	1.229	1.661	3.356	1.822	3.847	1.246	0.722	0.458	0.250	0.217	0.283	0.342	15.432
1979	1.215	1.204	3.968	0.944	0.986	0.203	0.104	0.066	0.038	0.024	0.014	0.334	9.099
1980	1.206	1.355	4.806	5.689	4.791	2.369	0.962	0.625	0.267	0.326	0.198	0.340	22.936
1981	1.138	0.750	0.505	0.571	2.185	1.208	0.146	0.090	0.052	0.033	0.019	0.014	6.711
1982	0.680	1.581	1.336	4.541	0.481	0.524	0.014	0.009	0.005	0.005	0.000	0.000	9.176
1983	0.038	1.671	4.582	5.689	5.334	2.609	0.990	0.642	0.273	0.401	0.283	0.342	22.853
1984	1.220	1.627	0.892	2.402	5.334	2.609	0.989	0.641	0.273	0.400	0.280	0.283	16.949
1985	0.647	1.649	2.256	0.949	1.529	2.599	0.208	0.132	0.076	0.047	0.028	0.019	10.140
1986	0.009	0.005	4.806	5.429	4.254	2.603	0.990	0.642	0.273	0.400	0.281	0.342	20.033
1987	1.229	1.671	4.634	5.689	4.323	2.563	0.951	0.618	0.265	0.297	0.179	0.109	22.529
1988	1.201	1.331	0.930	0.533	4.634	2.589	0.972	0.634	0.270	0.395	0.269	0.160	13.918
1989	0.099	1.671	4.806	4.948	4.248	2.025	0.990	0.615	0.263	0.283	0.170	0.099	20.217
1990	0.066	0.038	0.623	3.639	5.334	2.605	0.986	0.641	0.272	0.399	0.279	0.255	15.136
1991	0.491	0.109	3.162	4.924	0.278	0.057	0.033	0.019	0.009	0.009	0.005	0.005	9.101
1992	0.005	0.000	0.562	1.090	2.233	0.014	0.005	0.000	0.000	0.000	0.000	0.000	3.909
1993	1.229	1.671	4.324	3.833	4.062	1.978	0.496	0.312	0.184	0.118	0.071	0.057	18.335
1994	0.038	0.014	4.184	0.033	0.278	0.434	0.005	0.000	0.000	0.000	0.000	0.000	4.986
1995	0.000	0.703	3.981	5.512	5.334	2.609	0.990	0.642	0.273	0.400	0.282	0.331	21.056
1996	0.269	0.160	0.689	0.203	0.241	0.024	0.047	0.009	0.076	0.113	0.283	0.339	2.453
1997	1.020	0.656	1.449	4.394	0.920	2.605	0.387	0.189	0.113	0.071	0.042	0.024	11.870
1998	1.195	0.009	1.779	4.286	4.667	0.175	0.019	0.009	0.005	0.005	0.005	0.000	12.154
1999	0.000	0.033	4.067	4.581	3.894	2.609	0.990	0.642	0.273	0.401	0.283	0.337	18.109
2000	0.486	1.671	4.806	5.015	3.205	2.053	0.923	0.600	0.259	0.227	0.137	0.342	19.724
2001	1.227	1.671	4.806	5.105	2.827	1.728	0.928	0.604	0.273	0.401	0.283	0.342	20.195
2002	1.225	1.641	2.011	3.894	0.873	2.579	0.359	0.123	0.071	0.047	0.028	0.014	12.865
2003	0.009	1.638	0.009	5.689	4.272	2.181	0.976	0.626	0.264				

A.122. Niv12 – Category C**Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv12

Annual Flows (Mill. cu. m or index values):

MAR = 30.155

S.Dev. = 28.891

CV = 0.958

Q75 = 0.033

Q75/MMF = 0.013

BFI Index = 0.302

CV(JJA+JFM) Index = 3.883

Ecological Category = C

Total IFR = 15.159 (50.27 %MAR)

Maint. Lowflow = 7.700 (25.54 %MAR)

Drought Lowflow = 2.581 (8.56 %MAR)

Maint. Highflow = 7.459 (24.73 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	2.289	4.913	2.147	0.317	0.096	0.557	0.874
Nov	3.802	9.527	2.506	0.460	0.136	0.723	1.183
Dec	4.203	5.185	1.234	1.312	0.501	1.475	2.787
Jan	5.281	6.893	1.305	1.397	0.399	1.843	3.240
Feb	5.139	6.251	1.216	1.325	0.417	1.743	3.067
Mar	3.057	5.754	1.882	1.238	0.499	0.676	1.914
Apr	1.482	2.407	1.624	0.545	0.096	0.116	0.660
May	1.023	2.360	2.307	0.425	0.097	0.020	0.445
Jun	0.541	0.896	1.657	0.196	0.084	0.000	0.196
Jul	0.468	0.994	2.124	0.173	0.086	0.152	0.325
Aug	0.945	3.275	3.466	0.161	0.087	0.036	0.197
Sep	1.925	6.512	3.383	0.153	0.084	0.117	0.270

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv12

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.083	1.074	1.054	0.510	0.269	0.076	0.028	0.005	0.000	0.000
Nov	1.503	1.494	1.474	1.204	0.571	0.326	0.109	0.038	0.005	0.000
Dec	4.693	4.301	3.957	3.635	2.011	1.147	0.647	0.212	0.009	0.000
Jan	5.526	5.037	4.609	4.121	2.615	1.822	0.949	0.533	0.123	0.000
Feb	5.230	4.769	4.364	3.988	2.945	2.086	1.175	0.330	0.156	0.000
Mar	2.532	2.517	2.487	2.025	1.317	0.906	0.274	0.137	0.005	0.000
Apr	0.873	0.865	0.849	0.814	0.548	0.208	0.076	0.009	0.000	0.000
May	0.599	0.594	0.583	0.561	0.345	0.099	0.038	0.009	0.000	0.000
Jun	0.265	0.263	0.259	0.251	0.203	0.071	0.024	0.005	0.000	0.000
Jul	0.413	0.410	0.340	0.250	0.132	0.071	0.019	0.000	0.000	0.000
Aug	0.260	0.259	0.255	0.189	0.104	0.042	0.009	0.000	0.000	0.000
Sep	0.344	0.342	0.337	0.208	0.109	0.047	0.009	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.429	0.426	0.419	0.404	0.269	0.076	0.028	0.005	0.000	0.000
Nov	0.641	0.637	0.629	0.614	0.571	0.326	0.109	0.038	0.005	0.000
Dec	1.828	1.818	1.798	1.757	1.681	1.147	0.647	0.212	0.009	0.000
Jan	1.946	1.935	1.911	1.864	1.775	1.620	0.949	0.533	0.123	0.000
Feb	1.846	1.835	1.813	1.769	1.687	1.544	1.175	0.330	0.156	0.000
Mar	1.725	1.716	1.697	1.659	1.317	0.906	0.274	0.137	0.005	0.000
Apr	0.737	0.731	0.717	0.688	0.548	0.208	0.076	0.009	0.000	0.000
May	0.575	0.571	0.560	0.539	0.345	0.099	0.038	0.009	0.000	0.000
Jun	0.265	0.263	0.259	0.251	0.203	0.071	0.024	0.005	0.000	0.000
Jul	0.234	0.232	0.229	0.223	0.132	0.071	0.019	0.000	0.000	0.000
Aug	0.217	0.216	0.213	0.189	0.104	0.042	0.009	0.000	0.000	0.000
Sep	0.208	0.206	0.204	0.198	0.109	0.047	0.009	0.000	0.000	0.000

Natural Duration curves

Oct	9.331	2.917	1.222	0.510	0.269	0.076	0.028	0.005	0.000	0.000
Nov	12.050	3.932	2.096	1.204	0.571	0.326	0.109	0.038	0.005	0.000
Dec	11.606	7.689	5.381	4.248	2.011	1.147	0.647	0.212	0.009	0.000
Jan	13.074	8.175	6.127	4.121	2.615	1.822	0.949	0.533	0.123	0.000
Feb	16.883	7.694	5.763	4.220	2.945	2.086	1.175	0.330	0.156	0.000
Mar	8.024	4.479	2.681	2.025	1.317	0.906	0.274	0.137	0.005	0.000
Apr	3.960	2.218	1.388	0.968	0.548	0.208	0.076	0.009	0.000	0.000
May	2.185	1.307	0.868	0.609	0.345	0.099	0.038	0.009	0.000	0.000
Jun	1.534	0.949	0.519	0.359	0.203	0.071	0.024	0.005	0.000	0.000
Jul	1.435	0.628	0.340	0.250	0.132	0.071	0.019	0.000	0.000	0.000
Aug	1.638	0.500	0.269	0.189	0.104	0.042	0.009	0.000	0.000	0.000
Sep	4.498	1.421	0.604	0.208	0.109	0.047	0.009	0.000	0.000	0.000

Hydrological time series

Total Runoff : Niv12

Desktop (Version 2) Modified Flow Data for Ecological Category C													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.005	0.005	0.000	0.000	0.278	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.293
1921	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1922	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1923	0.000	0.019	0.061	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080
1924	0.000	0.000	0.113	1.090	2.903	0.009	0.000	0.000	0.000	0.000	0.000	0.000	4.115
1925	0.000	0.000	0.000	0.278	0.104	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.334
1926	0.000	0.047	0.009	0.467	0.330	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.867
1927	0.000	0.000	0.189	0.316	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.505
1928	0.000	0.000	0.000	0.057	0.000	0.000	0.000	0.000	0.000	0.085	0.000	0.000	0.142
1929	0.000	0.104	0.094	0.123	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.321
1930	0.000	0.000	0.000	2.587	0.840	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.427
1931	0.000	0.000	0.000	0.000	5.230	2.519	0.856	0.591	0.261	0.406	0.255	0.156	10.275
1932	0.099	0.057	1.595	0.746	2.044	0.906	0.042	0.028	0.014	0.009	0.005	0.005	5.550
1933	0.000	1.208	4.588	1.921	5.028	2.517	0.699	0.444	0.242	0.165	0.194	0.208	17.213
1934	0.132	1.038	1.893	0.920	0.274	0.175	0.104	0.066	0.038	0.024	0.014	0.009	4.687
1935	0.005	0.005	0.845	4.490	2.152	0.028	0.000	0.028	0.000	0.000	0.000	0.000	7.553
1936	0.000	1.500	3.773	5.082	2.856	2.214	0.552	0.345	0.203	0.127	0.080	0.047	16.779
1937	0.028	0.019	4.693	5.526	5.080	2.490	0.844	0.581	0.258	0.316	0.189	0.113	20.138
1938	1.083	1.499	4.693	5.526	3.007	2.487	0.647	0.406	0.240	0.151	0.090	0.052	19.880
1939	0.033	1.503	3.690	2.280	4.364	2.532	0.858	0.599	0.265	0.413	0.260	0.338	17.135
1940	0.467	0.968	4.291	4.906	5.230	2.490	0.873	0.599	0.265	0.413	0.259	0.335	21.096
1941	0.326	0.194	2.780	5.526	4.094	2.044	0.832	0.572	0.255	0.274	0.165	0.099	17.162
1942	0.061	1.486	4.395	4.121	1.350	1.024	0.491	0.595	0.265	0.413	0.260	0.344	14.805
1943	1.083	1.501	3.771	2.223	4.463	1.166	0.689	0.434	0.242	0.165	0.099	0.344	16.179
1944	1.079	1.473	4.139	0.982	0.779	2.532	0.867	0.595	0.263	0.409	0.256	0.208	13.581
1945	0.132	0.080	0.642	1.515	0.094	0.066	0.005	0.005	0.005	0.000	0.000	0.000	2.544
1946	0.231	0.396	0.212	0.118	0.156	0.283	0.028	0.014	0.009	0.005	0.005	0.000	1.457
1947	1.080	0.255	1.147	1.015	1.355	0.066	0.009	0.005	0.005	0.000	0.000	0.000	4.937
1948	0.510	0.434	0.722	5.127	2.945	2.518	0.857	0.591	0.261	0.406	0.255	0.156	14.783
1949	0.142	0.066	0.524	0.316	0.302	0.274	0.005	0.005	0.000	0.000	0.000	0.000	1.634
1950	0.500	0.453	3.635	0.812	4.826	1.576	0.123	0.076	0.047	0.028	0.259	0.344	12.679
1951	1.067	1.476	4.693	4.673	3.889	2.200	0.842	0.579	0.257	0.307	0.184	0.109	20.276
1952	0.071	0.359	2.082	0.916	4.415	2.299	0.873	0.599	0.265	0.413	0.260	0.339	12.890
1953	0.354	1.457	0.496	0.920	1.949	0.137	0.076	0.057	0.028	0.019	0.009	0.340	5.842
1954	0.727	1.490	3.738	3.502	5.133	2.532	0.870	0.597	0.264	0.411	0.257	0.269	19.791
1955	0.170	0.406	0.647	0.194	4.769	1.902	0.444	0.278	0.165	0.104	0.061	0.038	9.178
1956	0.024	0.170	3.887	1.789	1.836	0.142	0.080	0.052	0.028	0.019	0.014	0.344	8.385
1957	1.083	1.502	3.983	4.380	1.742	0.996	0.794	0.477	0.243	0.175	0.104	0.061	15.541
1958	0.038	0.160	0.746	0.028	2.096	0.142	0.061	0.038	0.024	0.014	0.009	0.005	3.361
1959	0.005	1.500	4.205	2.039	2.700	0.576	0.316	0.198	0.118	0.076	0.042	0.344	12.119
1960	0.354	0.326	0.666	1.421	4.814	0.963	0.557	0.349	0.208	0.132	0.080	0.047	9.917
1961	0.028	0.571	0.066	2.615	3.988	0.269	0.538	0.009	0.000	0.000	0.000	0.000	8.084
1962	0.000	1.471	4.100	3.847	0.245	0.887	0.061	0.028	0.019	0.413	0.260	0.340	11.671
1963	0.505	1.503	4.435	4.609	2.086	1.355	0.789	0.505	0.245	0.189	0.113	0.344	16.678
1964	1.083	1.503	4.693	4.845	3.616	1.973	0.832	0.572	0.255	0.274	0.165	0.099	19.910
1965	1.065	0.245	0.142	5.526	4.414	1.779	0.822	0.566	0.253	0.250	0.151	0.090	15.303
1966	0.057	0.241	2.384	0.472	4.764	0.194	0.085	0.052	0.033	0.019	0.014	0.009	8.324
1967	0.005	0.448	0.670	0.283	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.406
1968	0.000	0.038	4.301	5.037	4.320	2.532	0.873	0.599	0.265	0.412	0.259	0.333	18.968
1969	1.074	0.434	1.256	5.169	5.230	2.532	0.867	0.596	0.263	0.409	0.260	0.344	18.434
1970	1.083	1.494	2.195	1.831	0.755	0.750	0.302	0.194	0.113	0.071	0.245	0.028	9.061
1971	1.043	0.123	4.658	4.473	0.250	1.317	0.085	0.038	0.024	0.014	0.009	0.005	12.039
1972	1.064	0.340	1.657	3.762	4.753	2.510	0.864	0.594	0.262	0.407	0.260	0.342	16.815
1973	1.064	0.798	0.425	5.427	4.041	2.431	0.850	0.584	0.259	0.335	0.203	0.118	16.535
1974	0.076	1.495	4.624	4.315	4.133	1.171	0.820	0.312	0.184	0.118	0.071	0.340	17.659
1975	1.074	1.483	4.314	4.634	5.010	2.508	0.873	0.599	0.264	0.411	0.257	0.269	21.696
1976	1.083	1.487	3.965	5.341	5.135	2.527	0.867	0.596	0.263	0.410	0.256	0.344	22.274
1977	1.073	1.090	3.553	5.526	4.877	2.514	0.861	0.594	0.262	0.407	0.255	0.179	21.192
1978	1.083	1.495	3.356	1.822	3.847	1.246	0.722	0.458	0.242	0.217	0.260	0.344	15.093
1979	1.071	1.204	3.858	0.944	0.986	0.203	0.104	0.066	0.038	0.024	0.014	0.337	8.848
1980	1.063	1.355	4.693	5.526	4.689	2.369	0.849	0.584	0.259	0.326	0.198	0.343	22.253
1981	1.048	0.750	0.505	0.571	2.185	1.208	0.146	0.090	0.052	0.033	0.019	0.014	6.621
1982	0.680	1.454	1.336	4.384	0.481	0.524	0.014	0.009	0.005	0.005	0.000	0.000	8.892
1983	0.038	1.503	4.470	5.526	5.230	2.532	0.873	0.599	0.265	0.413	0.260	0.344	22.053
1984	1.075	1.465	0.892	2.402	5.230	2.532	0.872	0.598	0.265	0.412	0.258	0.283	16.283
1985	0.647	1.484	2.256	0.949	1.529	2.522	0.208	0.132	0.076	0.047	0.028	0.019	9.898
1986	0.009	0.005	4.693	5.266	4.155	2.526	0.873	0.599	0.265	0.412	0.259	0.344	19.404
1987	1.083	1.503	4.522	5.526	4.223	2.487	0.839	0.577	0.257	0.297	0.179	0.109	21.602
1988	1.059	1.331	0.930	0.533	4.532	2.513	0.857	0.592	0.261	0.406	0.255	0.160	13.430
1989	0.099	1.503	4.693	4.787	4.148	2.025	0.872	0.574	0.255	0.283	0.170	0.099	19.510
1990	0.066	0.038	0.623	3.639	5.230	2.528	0.869	0.598	0.264	0.411	0.257	0.255	14.778
1991	0.491	0.109	3.162	4.764	0.278	0.057	0.033	0.019	0.009	0.009	0.005	0.005	8.941
1992	0.005	0.000	0.562	1.090	2.233	0.014	0.005	0.000	0.000	0.000	0.000	0.000	3.909
1993	1.083	1.503	4.212	3.833	3.965	1.978	0.496	0.312	0.184	0.118	0.071	0.057	17.812
1994	0.038	0.014	4.073	0.033	0.278	0.434	0.005	0.000	0.000	0.000	0.000	0.000	4.875
1995	0.000	0.703	3.871	5.349	5.230	2.532	0.873	0.599	0.265	0.412	0.259	0.334	20.426
1996	0.269	0.160	0.689	0.203	0.241	0.024	0.047	0.009	0.076	0.113	0.260	0.342	2.433
1997	1.020	0.656	1.449	4.298	0.920	2.528	0.387	0.189	0.113	0.071	0.042	0.024	11.697
1998	1.054	0.009	1.779	4.263	4.565	0.175	0.019	0.009	0.005	0.005	0.005	0.000	11.888
1999	0.000	0.033	3.957	4.423	3.889	2.532	0.873	0.599	0.265	0.413	0.260	0.340	17.582
2000	0.486	1.503	4.693	4.853	3.205	2.053	0.814	0.561	0.251	0.227	0.137	0.344	19.129
2001	1.081	1.503	4.693	4.943	2.827	1.728	0.819	0.565	0.265	0.413	0.260	0.344	19.442
2002	1.079	1.477	2.011	3.894	0.873	2.502	0.359	0.123	0.071	0.047	0.028	0.014	12.479
2003	0.009	1.474	0.009	5.526	4.173	2.181	0.860	0.584	0.256				

A.123. *Niv12 – Category D***Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Niv12

Annual Flows (Mill. cu. m or index values):

MAR = 30,155

S.Dev. = 28,891

CV = 0,958

Q75 = 0,033

Q75/MMF = 0,013

BFI Index = 0,302

CV(JJA+JFM) Index = 3,883

Ecological Category = D

Total IFR = 7,378 (24,47 %MAR)

Maint. Lowflow = 2,581 (8,56 %MAR)

Drought Lowflow = 2,581 (8,56 %MAR)

Maint. Highflow = 4,797 (15,91 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			Maint.	Drought	Maint.	Maint.	
Oct	2,289	4,913	2,147	0,096	0,096	0,366	0,462
Nov	3,802	9,527	2,506	0,136	0,136	0,373	0,509
Dec	4,203	5,185	1,234	0,501	0,501	0,873	1,374
Jan	5,281	6,893	1,305	0,399	0,399	1,180	1,579
Feb	5,139	6,251	1,216	0,417	0,417	1,278	1,696
Mar	3,057	5,754	1,882	0,499	0,499	0,404	0,904
Apr	1,482	2,407	1,624	0,096	0,096	0,022	0,119
May	1,023	2,360	2,307	0,097	0,097	0,000	0,097
Jun	0,541	0,896	1,657	0,084	0,084	0,000	0,084
Jul	0,468	0,994	2,124	0,086	0,086	0,154	0,240
Aug	0,945	3,275	3,466	0,087	0,087	0,037	0,123
Sep	1,925	6,512	3,383	0,084	0,084	0,108	0,191

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Niv12

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.698	0.692	0.680	0.510	0.269	0.076	0.028	0.005	0.000	0.000
Nov	0.827	0.822	0.812	0.792	0.571	0.326	0.109	0.038	0.005	0.000
Dec	2.695	2.466	2.266	2.084	1.902	1.147	0.647	0.212	0.009	0.000
Jan	3.088	2.780	2.514	2.277	2.047	1.663	0.949	0.533	0.123	0.000
Feb	3.315	2.981	2.694	2.438	2.189	1.775	1.175	0.330	0.156	0.000
Mar	1.598	1.590	1.574	1.542	1.317	0.906	0.274	0.137	0.005	0.000
Apr	0.210	0.209	0.207	0.202	0.193	0.177	0.076	0.009	0.000	0.000
May	0.180	0.179	0.178	0.174	0.167	0.099	0.038	0.009	0.000	0.000
Jun	0.155	0.154	0.153	0.150	0.144	0.071	0.024	0.005	0.000	0.000
Jul	0.378	0.376	0.340	0.250	0.132	0.071	0.019	0.000	0.000	0.000
Aug	0.213	0.212	0.209	0.189	0.104	0.042	0.009	0.000	0.000	0.000
Sep	0.308	0.306	0.301	0.208	0.109	0.047	0.009	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.177	0.176	0.175	0.171	0.164	0.076	0.028	0.005	0.000	0.000
Nov	0.270	0.269	0.267	0.263	0.255	0.242	0.109	0.038	0.005	0.000
Dec	0.999	0.995	0.987	0.972	0.944	0.894	0.647	0.212	0.009	0.000
Jan	0.796	0.793	0.787	0.775	0.752	0.712	0.649	0.533	0.123	0.000
Feb	0.832	0.829	0.823	0.810	0.786	0.745	0.679	0.330	0.156	0.000
Mar	0.995	0.991	0.984	0.969	0.940	0.890	0.274	0.137	0.005	0.000
Apr	0.179	0.178	0.176	0.172	0.166	0.154	0.076	0.009	0.000	0.000
May	0.180	0.179	0.178	0.174	0.167	0.099	0.038	0.009	0.000	0.000
Jun	0.155	0.154	0.153	0.150	0.144	0.071	0.024	0.005	0.000	0.000
Jul	0.159	0.158	0.157	0.154	0.132	0.071	0.019	0.000	0.000	0.000
Aug	0.161	0.160	0.158	0.155	0.104	0.042	0.009	0.000	0.000	0.000
Sep	0.155	0.154	0.153	0.150	0.109	0.047	0.009	0.000	0.000	0.000

Natural Duration curves

Oct	9.331	2.917	1.222	0.510	0.269	0.076	0.028	0.005	0.000	0.000
Nov	12.050	3.932	2.096	1.204	0.571	0.326	0.109	0.038	0.005	0.000
Dec	11.606	7.689	5.381	4.248	2.011	1.147	0.647	0.212	0.009	0.000
Jan	13.074	8.175	6.127	4.121	2.615	1.822	0.949	0.533	0.123	0.000
Feb	16.883	7.694	5.763	4.220	2.945	2.086	1.175	0.330	0.156	0.000
Mar	8.024	4.479	2.681	2.025	1.317	0.906	0.274	0.137	0.005	0.000
Apr	3.960	2.218	1.388	0.968	0.548	0.208	0.076	0.009	0.000	0.000
May	2.185	1.307	0.868	0.609	0.345	0.099	0.038	0.009	0.000	0.000
Jun	1.534	0.949	0.519	0.359	0.203	0.071	0.024	0.005	0.000	0.000
Jul	1.435	0.628	0.340	0.250	0.132	0.071	0.019	0.000	0.000	0.000
Aug	1.638	0.500	0.269	0.189	0.104	0.042	0.009	0.000	0.000	0.000
Sep	4.498	1.421	0.604	0.208	0.109	0.047	0.009	0.000	0.000	0.000

Hydrological time series

Total Runoff : Niv12

Desktop (Version 2) Modified Flow Data for Ecological Category D													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.005	0.005	0.000	0.000	0.278	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.293
1921	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1922	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1923	0.000	0.019	0.061	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.080
1924	0.000	0.000	0.113	1.090	2.169	0.009	0.000	0.000	0.000	0.000	0.000	0.000	3.381
1925	0.000	0.000	0.000	0.278	0.104	0.000	0.000	0.000	0.000	0.000	0.000	0.299	0.681
1926	0.000	0.047	0.009	0.467	0.330	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.867
1927	0.000	0.000	0.189	0.316	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.505
1928	0.000	0.000	0.000	0.057	0.000	0.000	0.000	0.000	0.000	0.085	0.000	0.000	0.142
1929	0.000	0.104	0.094	0.123	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.321
1930	0.000	0.000	0.000	2.034	0.840	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.874
1931	0.000	0.000	0.000	0.000	3.315	1.591	0.208	0.179	0.154	0.372	0.209	0.156	6.184
1932	0.099	0.057	1.595	0.746	1.763	0.906	0.042	0.028	0.014	0.009	0.005	0.005	5.269
1933	0.000	0.792	2.633	1.711	3.169	1.590	0.196	0.170	0.146	0.165	0.194	0.208	10.974
1934	0.132	0.782	1.861	0.920	0.274	0.175	0.104	0.066	0.038	0.024	0.014	0.009	4.399
1935	0.005	0.005	0.845	2.443	1.806	0.028	0.000	0.028	0.000	0.000	0.000	0.000	5.160
1936	0.000	0.825	2.161	2.808	2.147	1.559	0.193	0.167	0.144	0.127	0.080	0.047	10.257
1937	0.028	0.019	2.695	3.088	3.207	1.576	0.206	0.177	0.152	0.316	0.189	0.113	11.767
1938	0.698	0.825	2.695	3.088	2.202	1.574	0.195	0.169	0.145	0.151	0.090	0.052	11.883
1939	0.033	0.827	2.115	1.885	2.694	1.598	0.208	0.180	0.155	0.378	0.212	0.303	10.590
1940	0.467	0.778	2.460	2.698	3.315	1.576	0.210	0.180	0.155	0.378	0.212	0.300	12.730
1941	0.326	0.194	1.965	3.088	2.509	1.543	0.204	0.176	0.151	0.274	0.165	0.099	10.695
1942	0.061	0.818	2.520	2.277	1.350	1.024	0.190	0.180	0.155	0.378	0.213	0.308	9.475
1943	0.698	0.826	2.160	1.857	2.764	1.166	0.196	0.169	0.146	0.165	0.099	0.307	10.554
1944	0.696	0.812	2.371	0.982	0.779	1.598	0.209	0.180	0.154	0.375	0.210	0.208	8.574
1945	0.132	0.080	0.642	1.515	0.094	0.066	0.005	0.005	0.005	0.000	0.000	0.000	2.544
1946	0.231	0.396	0.212	0.118	0.156	0.283	0.028	0.014	0.009	0.005	0.005	0.000	1.457
1947	0.696	0.255	1.147	1.015	1.355	0.066	0.009	0.005	0.005	0.000	0.000	0.000	4.553
1948	0.510	0.434	0.722	2.836	2.189	1.591	0.208	0.179	0.154	0.373	0.209	0.156	9.561
1949	0.142	0.066	0.524	0.316	0.302	0.274	0.005	0.005	0.000	0.000	0.000	0.000	1.634
1950	0.500	0.453	2.084	0.812	3.023	1.503	0.123	0.076	0.047	0.028	0.212	0.307	9.169
1951	0.688	0.813	2.695	2.554	2.374	1.558	0.206	0.177	0.152	0.307	0.184	0.109	11.818
1952	0.071	0.359	1.908	0.916	2.730	1.561	0.210	0.180	0.155	0.378	0.213	0.303	8.986
1953	0.354	0.804	0.496	0.920	1.737	0.137	0.076	0.057	0.028	0.019	0.009	0.304	4.941
1954	0.662	0.820	2.142	2.183	3.245	1.598	0.210	0.180	0.155	0.377	0.211	0.269	12.051
1955	0.170	0.406	0.647	0.194	2.981	1.531	0.188	0.164	0.141	0.104	0.061	0.038	6.625
1956	0.024	0.170	2.226	1.656	1.706	0.142	0.080	0.052	0.028	0.019	0.014	0.308	6.425
1957	0.698	0.826	2.281	2.377	1.680	0.996	0.199	0.170	0.147	0.175	0.104	0.061	9.715
1958	0.038	0.160	0.746	0.028	1.779	0.142	0.061	0.038	0.024	0.014	0.009	0.005	3.044
1959	0.005	0.825	2.410	1.768	2.071	0.576	0.182	0.160	0.118	0.076	0.042	0.308	8.541
1960	0.354	0.326	0.666	1.421	3.014	0.963	0.193	0.167	0.144	0.132	0.080	0.047	7.507
1961	0.028	0.571	0.066	2.047	2.438	0.269	0.192	0.009	0.000	0.000	0.000	0.000	5.620
1962	0.000	0.811	2.349	2.236	0.245	0.887	0.061	0.028	0.019	0.378	0.213	0.304	7.530
1963	0.505	0.827	2.544	2.514	1.775	1.355	0.198	0.171	0.147	0.189	0.113	0.308	10.647
1964	0.698	0.827	2.695	2.660	2.320	1.537	0.204	0.176	0.151	0.274	0.165	0.099	11.807
1965	0.687	0.245	0.142	3.088	2.729	1.520	0.203	0.175	0.150	0.250	0.151	0.090	9.431
1966	0.057	0.241	1.933	0.472	2.978	0.194	0.085	0.052	0.033	0.019	0.014	0.009	6.087
1967	0.005	0.448	0.670	0.283	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.406
1968	0.000	0.038	2.466	2.780	2.664	1.598	0.210	0.180	0.155	0.378	0.212	0.298	10.979
1969	0.693	0.434	1.256	2.863	3.315	1.598	0.209	0.180	0.154	0.375	0.213	0.308	11.598
1970	0.698	0.822	1.917	1.667	0.755	0.750	0.181	0.160	0.113	0.071	0.208	0.028	7.371
1971	0.673	0.123	2.675	2.433	0.250	1.317	0.085	0.038	0.024	0.014	0.009	0.005	7.646
1972	0.686	0.340	1.657	2.223	2.970	1.586	0.209	0.179	0.154	0.373	0.213	0.306	10.898
1973	0.687	0.768	0.425	3.025	2.473	1.566	0.207	0.178	0.153	0.335	0.203	0.118	10.138
1974	0.076	0.823	2.655	2.339	2.535	1.171	0.203	0.165	0.142	0.118	0.071	0.304	10.602
1975	0.692	0.816	2.473	2.530	3.156	1.585	0.210	0.180	0.155	0.377	0.211	0.269	12.655
1976	0.698	0.819	2.271	2.971	3.246	1.596	0.210	0.180	0.155	0.376	0.210	0.308	13.037
1977	0.692	0.785	2.040	3.088	3.060	1.589	0.209	0.179	0.154	0.374	0.209	0.179	12.558
1978	0.698	0.823	2.012	1.663	2.365	1.246	0.196	0.170	0.146	0.217	0.213	0.308	10.057
1979	0.690	0.792	2.210	0.944	0.986	0.203	0.104	0.066	0.038	0.024	0.014	0.301	6.373
1980	0.686	0.796	2.695	3.088	2.924	1.564	0.207	0.178	0.153	0.326	0.198	0.307	13.122
1981	0.677	0.750	0.505	0.571	1.822	1.208	0.146	0.090	0.052	0.033	0.019	0.014	5.887
1982	0.660	0.802	1.336	2.379	0.481	0.524	0.014	0.009	0.005	0.005	0.000	0.000	6.216
1983	0.038	0.827	2.564	3.088	3.315	1.598	0.210	0.180	0.155	0.378	0.213	0.308	12.876
1984	0.693	0.807	0.892	1.944	3.315	1.598	0.210	0.180	0.155	0.377	0.211	0.283	10.667
1985	0.647	0.817	1.922	0.949	1.529	1.593	0.177	0.132	0.076	0.047	0.028	0.019	7.937
1986	0.009	0.005	2.695	2.924	2.550	1.595	0.210	0.180	0.155	0.377	0.212	0.308	11.221
1987	0.698	0.827	2.595	3.088	2.597	1.574	0.205	0.177	0.152	0.297	0.179	0.109	12.498
1988	0.683	0.795	0.930	0.533	2.813	1.588	0.208	0.179	0.154	0.373	0.209	0.160	8.625
1989	0.099	0.827	2.695	2.624	2.546	1.542	0.210	0.176	0.151	0.283	0.170	0.099	11.422
1990	0.066	0.038	0.623	2.204	3.315	1.596	0.210	0.180	0.155	0.376	0.210	0.255	9.229
1991	0.491	0.109	1.996	2.610	0.278	0.057	0.033	0.019	0.009	0.009	0.005	0.005	5.621
1992	0.005	0.000	0.562	1.090	1.846	0.014	0.005	0.000	0.000	0.000	0.000	0.000	3.522
1993	0.698	0.827	2.414	2.233	2.423	1.538	0.190	0.165	0.142	0.118	0.071	0.057	10.876
1994	0.038	0.014	2.333	0.033	0.278	0.434	0.005	0.000	0.000	0.000	0.000	0.000	3.135
1995	0.000	0.703	2.217	2.976	3.315	1.598	0.210	0.180	0.155	0.378	0.212	0.299	12.244
1996	0.269	0.160	0.689	0.203	0.241	0.024	0.047	0.009	0.076	0.113	0.213	0.306	2.350
1997	0.672	0.656	1.449	2.329	0.920	1.596	0.185	0.160	0.113	0.071	0.042	0.024	8.217
1998	0.680	0.009	1.779	2.309	2.836	0.175	0.019	0.009	0.005	0.005	0.005	0.000	7.831
1999	0.000	0.033	2.266	2.403	2.374	1.598	0.210	0.180	0.155	0.378	0.213	0.304	10.115
2000	0.486	0.827	2.695	2.665	2.240	1.544	0.202	0.174	0.150	0.227	0.137	0.308	11.656
2001	0.697	0.827	2.695	2.721	2.133	1.516	0.203	0.174	0.155	0.378	0.213	0.308	12.020
2002	0.696	0.814	1.902	2.243	0.873	1.583	0.184	0.123	0.071	0.047	0.028	0.014	8.577
2003	0.009	0.812	0.009	3.088	2.562	1.556	0.209	0.178	0.152	0.340	0.189		

A.124. *Nv1 – Category B***Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nv1

Annual Flows (Mill. cu. m or index values):

MAR = 78.371
 S.Dev. = 83.970
 CV = 1.071
 Q75 = 0.343
 Q75/MMF = 0.053
 BFI Index = 0.315
 CV(JJA+JFM) Index = 4.080

Ecological Category = B

Total IFR = 31.676 (40.42 %MAR)
 Maint. Lowflow = 18.322 (23.38 %MAR)
 Drought Lowflow = 1.819 (2.32 %MAR)
 Maint. Highflow = 13.354 (17.04 %MAR)

Monthly Distributions (Mill. cu. m.)
 Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows Total Flows		
			CV	Maint.	Drought	Maint.	
Oct	4.833	11.217	2.321	1.072	0.108	1.207	2.279
Nov	5.695	7.645	1.342	1.647	0.123	0.897	2.543
Dec	12.258	14.045	1.146	2.989	0.251	2.865	5.855
Jan	12.721	20.146	1.584	3.260	0.244	2.756	6.016
Feb	14.680	26.938	1.835	3.074	0.228	3.099	6.173
Mar	8.284	14.970	1.807	2.752	0.233	1.391	4.143
Apr	3.930	5.863	1.492	1.526	0.157	0.269	1.795
May	2.406	3.538	1.471	0.554	0.107	0.108	0.662
Jun	1.210	1.659	1.371	0.411	0.093	0.000	0.411
Jul	7.037	24.986	3.550	0.370	0.093	0.487	0.857
Aug	1.854	3.879	2.092	0.333	0.094	0.089	0.422
Sep	3.465	9.285	2.680	0.334	0.089	0.186	0.520

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nv1

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	2.599	2.577	2.525	1.961	1.412	0.626	0.305	0.160	0.023	0.000
Nov	2.945	2.925	2.883	2.799	2.642	2.258	1.366	0.580	0.114	0.000
Dec	9.131	8.365	7.684	7.037	6.343	5.043	3.357	2.411	0.870	0.023
Jan	9.242	8.501	7.839	7.203	6.486	5.288	3.464	2.068	0.671	0.053
Feb	9.687	8.859	8.125	7.429	6.687	5.438	3.273	2.167	1.053	0.084
Mar	4.804	4.771	4.703	4.166	3.250	2.205	1.587	0.938	0.237	0.015
Apr	2.115	2.097	2.055	1.968	1.807	1.442	0.992	0.343	0.099	0.000
May	0.779	0.773	0.759	0.729	0.674	0.583	0.404	0.168	0.053	0.000
Jun	0.491	0.487	0.478	0.460	0.427	0.373	0.221	0.092	0.031	0.000
Jul	0.974	0.966	0.948	0.911	0.572	0.351	0.168	0.092	0.023	0.000
Aug	0.495	0.492	0.483	0.466	0.366	0.221	0.137	0.069	0.023	0.000
Sep	0.602	0.598	0.587	0.565	0.443	0.282	0.175	0.084	0.031	0.000

Reserve Flows without High Flows

Oct	1.279	1.268	1.242	1.190	1.092	0.626	0.305	0.160	0.023	0.000
Nov	1.964	1.951	1.922	1.866	1.760	1.576	1.282	0.580	0.114	0.000
Dec	3.566	3.542	3.490	3.389	3.198	2.866	2.338	1.604	0.786	0.023
Jan	3.889	3.862	3.805	3.694	3.485	3.119	2.539	1.732	0.671	0.053
Feb	3.667	3.642	3.588	3.483	3.286	2.941	2.393	1.632	0.784	0.084
Mar	3.283	3.261	3.213	3.120	2.945	2.205	1.587	0.938	0.237	0.015
Apr	1.821	1.805	1.769	1.694	1.555	1.327	0.992	0.343	0.099	0.000
May	0.661	0.655	0.643	0.619	0.572	0.496	0.389	0.168	0.053	0.000
Jun	0.491	0.487	0.478	0.460	0.427	0.373	0.221	0.092	0.031	0.000
Jul	0.442	0.439	0.431	0.415	0.386	0.338	0.168	0.092	0.023	0.000
Aug	0.398	0.395	0.389	0.375	0.350	0.221	0.137	0.069	0.023	0.000
Sep	0.399	0.396	0.389	0.376	0.350	0.282	0.175	0.084	0.031	0.000

Natural Duration curves

Oct	13.169	6.005	3.044	1.961	1.412	0.626	0.305	0.160	0.023	0.000
Nov	12.994	8.851	6.051	4.387	3.640	2.258	1.366	0.580	0.114	0.000
Dec	27.964	20.250	13.757	11.842	7.462	5.043	3.357	2.411	0.870	0.023
Jan	28.796	19.678	13.406	9.744	6.486	5.288	3.464	2.068	0.671	0.053
Feb	29.566	20.662	12.368	8.965	6.981	5.578	3.273	2.167	1.053	0.084
Mar	18.831	12.239	8.530	4.166	3.250	2.205	1.587	0.938	0.237	0.015
Apr	9.698	5.112	3.739	3.266	2.281	1.442	0.992	0.343	0.099	0.000
May	7.867	3.556	2.503	1.610	0.969	0.626	0.404	0.168	0.053	0.000
Jun	3.868	2.045	1.259	0.900	0.572	0.404	0.221	0.092	0.031	0.000
Jul	7.470	3.243	1.335	0.946	0.572	0.351	0.168	0.092	0.023	0.000
Aug	7.523	1.656	0.801	0.526	0.366	0.221	0.137	0.069	0.023	0.000
Sep	8.828	3.762	1.938	0.862	0.443	0.282	0.175	0.084	0.031	0.000

Hydrological time series

Total Runoff : Nv1

Desktop (Version 2) Modified Flow Data for Ecological Category B													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	2.592	2.661	3.411	0.496	0.305	0.565	0.244	0.130	0.076	0.046	0.031	0.599	11.157
1921	2.513	2.945	8.339	7.622	6.144	3.899	1.579	0.674	0.427	0.359	0.495	0.552	35.549
1922	2.545	2.945	8.817	9.242	8.535	4.687	2.057	0.750	0.478	0.794	0.456	0.282	41.589
1923	1.404	2.666	7.969	6.604	7.084	4.793	2.071	0.763	0.482	0.911	0.469	0.548	35.765
1924	0.610	2.945	8.521	9.242	9.687	4.804	2.115	0.779	0.491	0.974	0.495	0.593	41.256
1925	1.679	1.068	1.259	1.320	0.404	0.237	0.084	0.053	0.031	0.023	0.015	0.328	6.501
1926	0.008	0.000	0.977	0.572	0.725	0.145	0.000	0.000	0.000	0.168	0.038	0.000	2.633
1927	0.000	0.198	0.359	3.434	0.847	0.610	0.343	0.000	0.000	0.000	0.000	0.577	6.368
1928	0.008	0.114	0.008	0.000	1.152	1.824	0.511	0.275	0.145	0.092	0.053	0.343	4.525
1929	0.206	0.198	0.679	4.792	2.136	3.250	0.160	0.099	0.061	0.038	0.023	0.015	11.657
1930	0.008	0.053	1.923	0.076	0.282	0.031	0.175	0.183	0.092	0.069	0.084	0.053	3.029
1931	0.023	0.015	0.053	0.053	5.043	3.586	0.794	0.443	0.221	0.114	0.069	0.038	10.460
1932	0.031	0.031	3.060	0.267	0.084	0.069	0.343	0.008	0.000	0.966	0.008	0.000	4.859
1933	0.008	1.495	8.365	6.594	1.717	2.320	0.610	0.160	0.092	0.911	0.494	0.590	23.356
1934	1.587	1.579	7.473	0.748	6.970	0.328	0.107	0.069	0.038	0.023	0.015	0.008	18.945
1935	0.008	0.000	1.724	8.568	7.355	1.701	1.007	0.779	0.489	0.947	0.483	0.481	23.543
1936	0.298	2.925	6.414	8.128	9.687	4.657	2.013	0.746	0.477	0.958	0.453	0.553	37.308
1937	0.183	0.107	7.342	1.190	8.125	1.366	2.034	0.404	0.410	0.969	0.481	0.537	23.148
1938	2.474	2.895	7.949	4.135	8.134	4.792	1.857	0.741	0.469	0.974	0.495	0.598	35.515
1939	2.488	2.929	7.416	7.845	5.839	2.365	2.115	0.779	0.487	0.948	0.484	0.596	34.291
1940	2.297	2.698	7.278	6.638	3.273	2.403	1.442	0.420	0.244	0.153	0.092	0.076	27.014
1941	0.046	0.565	3.060	1.938	2.663	0.649	0.099	0.076	0.130	0.023	0.015	0.565	9.829
1942	1.991	2.612	7.860	7.675	4.990	4.703	1.987	0.769	0.484	0.974	0.495	0.602	35.142
1943	2.582	2.526	5.173	2.068	5.438	1.061	0.359	0.229	0.298	0.084	0.053	0.601	20.471
1944	2.558	2.152	2.411	2.373	4.517	4.804	2.097	0.759	0.481	0.904	0.468	0.328	23.852
1945	0.206	0.122	7.725	8.919	8.313	3.441	1.328	0.633	0.398	0.305	0.183	0.107	31.680
1946	0.214	1.068	6.119	5.570	7.004	4.804	2.113	0.776	0.488	0.951	0.488	0.536	30.131
1947	0.336	2.938	9.131	6.470	4.830	4.603	1.648	0.605	0.378	0.267	0.160	0.305	31.672
1948	0.359	1.709	5.953	3.464	2.197	1.221	1.963	0.779	0.464	0.588	0.359	0.244	19.300
1949	0.710	0.397	4.654	6.545	1.053	3.815	0.443	0.473	0.061	0.038	0.023	0.015	18.227
1950	0.046	0.008	6.241	0.656	1.785	4.166	0.053	0.008	0.008	0.000	0.491	0.282	13.744
1951	0.969	0.107	6.661	1.908	1.083	1.541	0.015	0.008	0.008	0.972	0.382	0.137	13.791
1952	0.092	0.183	6.666	7.258	8.432	3.426	1.335	0.404	0.221	0.137	0.084	0.053	28.291
1953	0.084	2.642	0.542	0.542	7.429	2.365	1.045	0.756	0.380	0.237	0.145	0.596	16.763
1954	2.574	2.905	4.761	5.654	8.828	4.743	2.097	0.766	0.483	0.930	0.475	0.359	34.574
1955	1.412	0.580	2.976	2.701	9.687	4.803	2.109	0.775	0.487	0.950	0.486	0.587	27.553
1956	0.900	2.945	5.757	3.365	7.728	2.838	1.650	0.629	0.305	0.974	0.495	0.602	28.190
1957	2.599	2.945	8.470	8.260	8.872	3.983	1.871	0.705	0.449	0.496	0.305	0.214	39.170
1958	0.641	2.945	6.974	3.731	3.960	1.289	0.580	0.677	0.221	0.137	0.084	0.596	21.835
1959	1.633	0.633	7.188	1.038	6.696	1.755	2.055	0.611	0.275	0.168	0.099	0.290	22.441
1960	0.237	2.809	8.428	9.242	8.804	4.738	2.059	0.759	0.481	0.877	0.466	0.600	39.500
1961	2.537	1.312	2.358	5.478	0.313	2.938	1.802	0.504	0.198	0.122	0.076	0.046	17.684
1962	0.031	1.755	9.131	7.478	6.273	4.636	2.115	0.777	0.490	0.974	0.495	0.602	34.759
1963	2.552	2.129	1.427	7.839	2.167	0.664	2.011	0.589	0.366	0.244	0.145	0.084	20.219
1964	2.593	2.945	8.068	5.509	9.658	1.732	1.030	0.583	0.375	0.717	0.153	0.084	33.448
1965	1.557	1.648	0.870	0.671	7.954	0.137	0.061	0.038	0.023	0.015	0.076	0.084	13.134
1966	0.008	2.426	6.617	3.266	8.978	4.771	2.093	0.768	0.484	0.933	0.476	0.443	31.263
1967	0.382	2.925	7.504	5.288	1.892	4.804	2.021	0.744	0.476	0.748	0.455	0.267	27.506
1968	0.610	1.305	8.172	7.203	2.228	4.687	1.807	0.717	0.458	0.519	0.313	0.550	28.568
1969	2.593	2.900	3.357	3.075	5.845	0.702	1.335	0.282	0.153	0.099	0.137	0.599	21.076
1970	2.599	2.874	3.067	7.642	1.885	1.366	2.032	0.779	0.491	0.967	0.494	0.574	24.770
1971	1.602	0.977	6.343	8.501	9.687	4.804	2.113	0.779	0.491	0.972	0.494	0.578	37.341
1972	1.038	0.977	1.030	5.051	9.300	4.765	2.115	0.778	0.490	0.958	0.493	0.602	27.598
1973	2.599	2.883	4.815	8.469	7.645	3.594	1.228	0.621	0.390	0.973	0.183	0.107	33.507
1974	0.237	2.852	8.242	8.871	9.448	4.789	2.103	0.773	0.487	0.944	0.481	0.602	39.830
1975	2.599	2.939	7.278	9.242	8.184	4.795	2.115	0.779	0.491	0.964	0.492	0.569	40.447
1976	1.137	2.682	8.960	8.045	9.687	4.804	2.115	0.779	0.491	0.964	0.492	0.596	40.750
1977	2.589	1.366	3.800	9.242	8.521	4.595	1.974	0.733	0.471	0.914	0.389	0.351	34.944
1978	2.588	2.904	7.037	6.486	7.981	0.938	1.831	0.684	0.433	0.969	0.488	0.590	32.931
1979	2.022	1.038	2.464	6.402	3.197	0.191	0.114	0.069	0.046	0.023	0.015	0.578	16.159
1980	0.305	1.686	3.888	6.203	3.685	0.053	0.107	0.490	0.919	0.462	0.602	0.602	16.954
1981	2.556	2.680	5.971	6.470	6.936	2.930	0.748	0.397	0.237	0.145	0.092	0.053	29.216
1982	0.984	2.258	0.023	1.122	0.008	0.015	0.000	0.198	0.031	0.000	0.000	0.000	4.639
1983	0.175	2.931	6.765	9.242	9.687	4.804	2.115	0.779	0.491	0.974	0.495	0.602	39.061
1984	2.577	2.562	2.938	8.393	9.687	4.749	2.077	0.766	0.483	0.933	0.476	0.458	36.098
1985	2.476	2.799	2.732	7.021	5.635	0.923	0.259	0.145	0.084	0.053	0.031	0.023	22.180
1986	1.412	2.258	8.605	7.290	3.075	1.587	1.626	0.613	0.373	0.252	0.488	0.602	28.181
1987	2.599	2.945	9.078	7.435	7.991	4.747	2.111	0.774	0.488	0.967	0.486	0.583	40.205
1988	2.526	2.895	6.690	3.495	5.601	2.152	1.206	0.583	0.422	0.237	0.145	0.084	26.036
1989	0.160	2.911	9.131	7.908	6.687	3.662	2.081	0.705	0.446	0.481	0.290	0.175	34.638
1990	0.320	2.819	7.031	7.096	8.873	4.794	1.905	0.759	0.469	0.603	0.366	0.214	35.248
1991	0.473	0.511	5.757	0.237	7.546	2.892	0.061	0.008	0.000	0.000	0.000	0.000	17.485
1992	0.000	0.031	0.824	2.617	2.327	0.008	1.597	0.000	0.000	0.000	0.000	0.576	7.981
1993	2.599	2.925	7.684	7.676	5.954	4.594	1.503	0.664	0.420	0.351	0.221	0.122	34.713
1994	1.961	2.483	7.316	5.066	0.122	0.122	0.832	0.320	0.160	0.099	0.061	0.038	18.580
1995	1.717	2.647	9.131	9.242	9.687	4.804	2.115	0.779	0.491	0.974	0.495	0.592	42.673
1996	2.599	2.458	8.797	8.696	7.195	4.804	2.115	0.777	0.491	0.972	0.495	0.602	40.001
1997	2.599	2.945	9.131	9.060	7.184	4.791	1.823	0.730	0.463	0.542	0.328	0.191	39.787
1998	2.596	2.703	9.131	8.117	5.013	4.705	1.968	0.681	0.428	0.366	0.221	0.137	36.067
1999	0.626	0.191	9.131	9.047	9.687	4.738	2.109	0.779	0.491	0.960	0.490	0.598	38.847
2000	2.563	2.945	9.131	8.501	7.507	4.719	2.042	0.746	0.476	0.748	0.450	0.602	40.431
2001	2.514	2.842	4.593	4.097	8.014	1.785	1.828	0.573	0.364	0.974	0.495	0.602	28.682
2002	2.577	2.842	3.006	1.755	8.859	0.511	0.267	0.168	0.099	0.061	0.038	0.023	20.206
2003	0.015	2.861	3.701	9.242	9.632	4.792	2.1						

A.125. *Nv1 – Category C***Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nv1

Annual Flows (Mill. cu. m or index values):

MAR = 78.371

S.Dev. = 83.970

CV = 1.071

Q75 = 0.343

Q75/MMF = 0.053

BFI Index = 0.315

CV(JJA+JFM) Index = 4.080

Ecological Category = C

Total IFR = 23.601 (30.11 %MAR)

Maint. Lowflow = 10.247 (13.07 %MAR)

Drought Lowflow = 1.819 (2.32 %MAR)

Maint. Highflow = 13.354 (17.04 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	4.833	11.217	2.321	0.541	0.108	1.207	1.749
Nov	5.695	7.645	1.342	0.707	0.123	0.897	1.603
Dec	12.258	14.045	1.146	1.822	0.251	2.865	4.687
Jan	12.721	20.146	1.584	1.903	0.244	2.756	4.660
Feb	14.680	26.938	1.835	1.784	0.228	3.099	4.883
Mar	8.284	14.970	1.807	1.659	0.233	1.391	3.050
Apr	3.930	5.863	1.492	0.957	0.157	0.269	1.226
May	2.406	3.538	1.471	0.207	0.107	0.108	0.315
Jun	1.210	1.659	1.371	0.179	0.093	0.000	0.179
Jul	7.037	24.986	3.550	0.173	0.093	0.487	0.659
Aug	1.854	3.879	2.092	0.162	0.094	0.089	0.251
Sep	3.465	9.285	2.680	0.153	0.089	0.186	0.339

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nv1

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	2.149	2.130	2.089	1.961	1.412	0.626	0.305	0.160	0.023	0.000
Nov	2.054	2.040	2.012	1.955	1.850	1.665	1.366	0.580	0.114	0.000
Dec	8.101	7.343	6.678	6.062	5.428	4.362	3.357	2.411	0.870	0.023
Jan	8.002	7.271	6.629	6.030	5.408	4.362	3.464	2.068	0.671	0.053
Feb	8.502	7.683	6.968	6.308	5.634	4.504	3.273	2.167	1.053	0.084
Mar	3.969	3.942	3.886	3.776	3.250	2.205	1.587	0.938	0.237	0.015
Apr	1.610	1.596	1.565	1.502	1.383	1.187	0.910	0.343	0.099	0.000
May	0.408	0.405	0.399	0.386	0.361	0.322	0.265	0.168	0.053	0.000
Jun	0.242	0.240	0.237	0.231	0.218	0.198	0.169	0.092	0.031	0.000
Jul	0.805	0.799	0.784	0.755	0.572	0.351	0.168	0.092	0.023	0.000
Aug	0.324	0.322	0.317	0.307	0.289	0.221	0.137	0.069	0.023	0.000
Sep	0.426	0.423	0.416	0.402	0.375	0.282	0.175	0.084	0.031	0.000

Reserve Flows without High Flows

Oct	0.732	0.726	0.713	0.685	0.633	0.547	0.305	0.160	0.023	0.000
Nov	0.984	0.978	0.964	0.938	0.889	0.802	0.665	0.475	0.114	0.000
Dec	2.536	2.519	2.484	2.414	2.283	2.054	1.690	1.184	0.620	0.023
Jan	2.650	2.632	2.595	2.521	2.383	2.142	1.758	1.226	0.632	0.053
Feb	2.483	2.466	2.431	2.362	2.233	2.007	1.648	1.149	0.592	0.084
Mar	2.309	2.294	2.262	2.198	2.079	1.871	1.540	0.938	0.237	0.015
Apr	1.294	1.284	1.259	1.208	1.113	0.957	0.736	0.343	0.099	0.000
May	0.280	0.279	0.275	0.267	0.253	0.229	0.195	0.156	0.053	0.000
Jun	0.242	0.240	0.237	0.231	0.218	0.198	0.169	0.092	0.031	0.000
Jul	0.234	0.233	0.230	0.223	0.212	0.192	0.165	0.092	0.023	0.000
Aug	0.220	0.219	0.216	0.210	0.200	0.182	0.137	0.069	0.023	0.000
Sep	0.208	0.207	0.204	0.199	0.189	0.172	0.149	0.084	0.031	0.000

Natural Duration curves

Oct	13.169	6.005	3.044	1.961	1.412	0.626	0.305	0.160	0.023	0.000
Nov	12.994	8.851	6.051	4.387	3.640	2.258	1.366	0.580	0.114	0.000
Dec	27.964	20.250	13.757	11.842	7.462	5.043	3.357	2.411	0.870	0.023
Jan	28.796	19.678	13.406	9.744	6.486	5.288	3.464	2.068	0.671	0.053
Feb	29.566	20.662	12.368	8.965	6.981	5.578	3.273	2.167	1.053	0.084
Mar	18.831	12.239	8.530	4.166	3.250	2.205	1.587	0.938	0.237	0.015
Apr	9.698	5.112	3.739	3.266	2.281	1.442	0.992	0.343	0.099	0.000
May	7.867	3.556	2.503	1.610	0.969	0.626	0.404	0.168	0.053	0.000
Jun	3.868	2.045	1.259	0.900	0.572	0.404	0.221	0.092	0.031	0.000
Jul	7.470	3.243	1.335	0.946	0.572	0.351	0.168	0.092	0.023	0.000
Aug	7.523	1.656	0.801	0.526	0.366	0.221	0.137	0.069	0.023	0.000
Sep	8.828	3.762	1.938	0.862	0.443	0.282	0.175	0.084	0.031	0.000

Hydrological time series

Total Runoff : Nv1

Desktop (Version 2) Modified Flow Data for Ecological Category C													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	2.143	1.863	3.411	0.496	0.305	0.565	0.244	0.130	0.076	0.046	0.031	0.424	9.733
1921	2.079	2.054	7.317	6.422	5.143	3.716	1.219	0.361	0.218	0.359	0.324	0.393	29.605
1922	2.104	2.054	7.790	8.002	7.366	3.873	1.567	0.395	0.237	0.732	0.302	0.282	34.706
1923	1.404	1.866	6.955	5.492	5.995	3.960	1.577	0.401	0.239	0.755	0.309	0.390	29.343
1924	0.610	2.054	7.497	8.002	8.502	3.969	1.610	0.408	0.242	0.805	0.324	0.419	34.443
1925	1.679	1.068	1.259	1.320	0.404	0.237	0.084	0.053	0.031	0.023	0.015	0.328	6.501
1926	0.008	0.000	0.977	0.572	0.725	0.145	0.000	0.000	0.000	0.168	0.038	0.000	2.633
1927	0.000	0.198	0.359	3.434	0.847	0.610	0.343	0.000	0.000	0.000	0.000	0.409	6.200
1928	0.008	0.114	0.008	0.000	1.152	1.824	0.511	0.234	0.145	0.092	0.053	0.343	4.484
1929	0.206	0.198	0.679	4.235	2.136	3.250	0.160	0.099	0.061	0.038	0.023	0.015	11.100
1930	0.008	0.053	1.923	0.076	0.282	0.031	0.175	0.183	0.092	0.069	0.084	0.053	3.029
1931	0.023	0.015	0.053	0.053	4.286	3.586	0.794	0.279	0.169	0.114	0.069	0.038	9.486
1932	0.031	0.031	3.060	0.267	0.084	0.069	0.343	0.008	0.000	0.799	0.008	0.000	4.692
1933	0.008	1.440	7.343	5.483	1.717	2.320	0.610	0.160	0.092	0.755	0.323	0.418	20.669
1934	1.587	1.485	6.475	0.748	5.891	0.328	0.107	0.069	0.038	0.023	0.015	0.008	16.774
1935	0.008	0.000	1.724	7.337	6.241	1.701	0.920	0.408	0.241	0.784	0.317	0.377	20.059
1936	0.298	2.040	5.492	6.907	8.502	3.849	1.534	0.393	0.237	0.792	0.300	0.394	30.740
1937	0.183	0.107	6.350	1.190	6.968	1.366	1.550	0.265	0.212	0.801	0.316	0.384	19.691
1938	2.047	2.020	6.935	4.067	6.977	3.959	1.420	0.391	0.234	0.805	0.324	0.423	29.601
1939	2.059	2.043	6.421	6.634	4.866	2.365	1.610	0.408	0.241	0.784	0.318	0.422	28.169
1940	2.024	1.887	6.289	5.523	3.273	2.403	1.187	0.271	0.174	0.153	0.092	0.076	23.352
1941	0.046	0.565	3.060	1.938	2.663	0.649	0.099	0.076	0.130	0.023	0.015	0.402	9.666
1942	1.991	1.829	6.848	6.472	4.264	3.886	1.515	0.403	0.239	0.805	0.324	0.425	29.004
1943	2.134	1.771	4.419	2.068	4.504	1.061	0.359	0.221	0.186	0.084	0.053	0.425	17.285
1944	2.115	1.644	2.411	2.373	4.099	3.969	1.597	0.399	0.238	0.749	0.309	0.328	20.231
1945	0.206	0.122	6.718	7.682	7.150	3.441	1.128	0.344	0.207	0.305	0.183	0.107	27.593
1946	0.214	1.068	5.223	4.608	5.922	3.969	1.609	0.406	0.241	0.786	0.320	0.383	24.749
1947	0.336	2.049	8.101	5.394	4.199	3.805	1.265	0.331	0.200	0.267	0.160	0.305	26.413
1948	0.359	1.554	5.071	3.464	2.197	1.221	1.498	0.408	0.232	0.588	0.287	0.244	17.123
1949	0.710	0.397	4.108	5.440	1.053	3.697	0.443	0.289	0.061	0.038	0.023	0.015	16.274
1950	0.046	0.008	5.334	0.656	1.785	3.776	0.053	0.008	0.008	0.000	0.322	0.282	12.278
1951	0.969	0.107	5.718	1.908	1.083	1.541	0.015	0.008	0.008	0.803	0.291	0.137	12.588
1952	0.092	0.183	5.723	6.081	7.265	3.426	1.132	0.265	0.169	0.137	0.084	0.053	24.610
1953	0.084	1.850	0.542	0.542	6.308	2.365	0.947	0.397	0.200	0.237	0.145	0.422	14.040
1954	2.128	2.027	4.178	4.681	7.653	3.919	1.596	0.402	0.239	0.770	0.312	0.352	28.258
1955	1.412	0.580	2.976	2.701	8.502	3.968	1.605	0.406	0.241	0.786	0.319	0.416	23.911
1956	0.900	2.054	4.843	3.365	6.589	2.838	1.267	0.342	0.187	0.805	0.324	0.426	23.990
1957	2.149	2.054	7.447	7.036	7.696	3.735	1.430	0.375	0.226	0.496	0.276	0.214	33.133
1958	0.641	2.054	6.005	3.731	3.922	1.289	0.580	0.363	0.169	0.137	0.084	0.422	19.395
1959	1.633	0.633	6.205	1.038	5.642	1.755	1.565	0.334	0.181	0.168	0.099	0.290	19.543
1960	0.237	1.962	7.405	8.002	7.630	3.915	1.569	0.399	0.238	0.744	0.308	0.424	32.833
1961	2.098	1.312	2.358	4.528	0.313	2.938	1.379	0.299	0.163	0.122	0.076	0.046	15.632
1962	0.031	1.563	8.101	6.286	5.260	3.832	1.610	0.407	0.242	0.805	0.324	0.425	28.886
1963	2.111	1.639	1.427	6.629	2.167	0.664	1.534	0.324	0.195	0.244	0.145	0.084	17.162
1964	2.143	2.054	7.052	4.555	8.474	1.732	0.937	0.322	0.199	0.717	0.153	0.084	28.421
1965	1.557	1.521	0.870	0.671	6.804	0.137	0.061	0.038	0.023	0.015	0.076	0.084	11.858
1966	0.008	1.704	5.678	3.266	7.801	3.942	1.594	0.403	0.239	0.773	0.313	0.375	26.095
1967	0.382	2.040	6.505	4.362	1.892	3.969	1.541	0.392	0.236	0.725	0.301	0.267	22.613
1968	0.610	1.305	7.154	6.030	2.228	3.873	1.383	0.380	0.230	0.519	0.278	0.392	24.381
1969	2.143	2.023	3.357	3.075	4.872	0.702	1.132	0.236	0.152	0.099	0.137	0.423	18.351
1970	2.149	2.006	3.067	6.441	1.885	1.366	1.549	0.408	0.242	0.800	0.323	0.407	20.642
1971	1.602	0.977	5.428	7.271	8.502	3.969	1.608	0.407	0.242	0.803	0.323	0.410	31.543
1972	1.038	0.977	1.030	4.301	8.119	3.937	1.610	0.407	0.242	0.792	0.323	0.426	23.202
1973	2.149	2.012	4.213	7.240	6.510	3.594	1.076	0.338	0.204	0.804	0.183	0.107	28.431
1974	0.237	1.991	7.222	7.635	8.265	3.956	1.601	0.405	0.240	0.781	0.316	0.426	33.077
1975	2.149	2.050	6.289	8.002	7.025	3.961	1.610	0.408	0.242	0.797	0.322	0.404	33.259
1976	1.137	1.877	7.931	6.827	8.502	3.969	1.610	0.408	0.242	0.797	0.322	0.422	34.024
1977	2.140	1.366	3.761	8.002	7.352	3.799	1.506	0.387	0.235	0.757	0.291	0.350	29.948
1978	2.140	2.026	6.062	5.408	6.831	0.938	1.400	0.366	0.220	0.801	0.320	0.418	26.930
1979	2.007	1.038	2.464	5.334	3.197	0.191	0.114	0.069	0.046	0.023	0.015	0.410	14.908
1980	0.305	1.542	2.388	5.161	3.685	0.053	0.053	0.107	0.242	0.761	0.306	0.426	15.028
1981	2.114	1.876	5.089	5.394	5.860	2.930	0.748	0.264	0.172	0.145	0.092	0.053	24.736
1982	0.984	1.665	0.023	1.122	0.008	0.015	0.000	0.198	0.031	0.000	0.000	0.000	4.046
1983	0.175	2.045	5.813	8.002	8.502	3.969	1.610	0.408	0.242	0.805	0.324	0.426	32.321
1984	2.130	1.796	2.938	7.166	8.502	3.924	1.582	0.402	0.239	0.772	0.313	0.376	30.140
1985	2.049	1.955	2.732	5.867	4.682	0.923	0.259	0.145	0.084	0.053	0.031	0.023	18.802
1986	1.412	1.665	7.580	6.111	3.075	1.587	1.249	0.335	0.198	0.252	0.320	0.426	24.209
1987	2.149	2.054	8.048	6.246	6.840	3.922	1.607	0.405	0.241	0.800	0.319	0.413	33.044
1988	2.089	2.020	5.745	3.495	4.651	2.152	1.061	0.322	0.216	0.237	0.145	0.084	22.217
1989	0.160	2.031	8.101	6.695	5.634	3.662	1.585	0.375	0.225	0.481	0.273	0.175	29.398
1990	0.320	1.969	6.057	5.934	7.697	3.961	1.455	0.399	0.234	0.603	0.289	0.214	29.130
1991	0.473	0.511	4.893	0.237	6.418	2.892	0.061	0.008	0.000	0.000	0.000	0.000	15.493
1992	0.000	0.031	0.824	2.617	2.327	0.008	1.228	0.000	0.000	0.000	0.000	0.409	7.444
1993	2.149	2.041	6.678	6.474	4.970	3.798	1.201	0.357	0.215	0.351	0.221	0.122	28.576
1994	1.961	1.743	6.325	4.305	0.122	0.122	0.832	0.245	0.154	0.099	0.061	0.038	16.006
1995	1.717	1.853	8.101	8.002	8.502	3.969	1.610	0.408	0.242	0.805	0.324	0.419	35.952
1996	2.149	1.725	7.769	7.464	6.096	3.969	1.610	0.407	0.242	0.803	0.324	0.426	32.982
1997	2.149	2.054	8.101	7.822	6.085	3.957	1.395	0.386	0.232	0.542	0.281	0.191	33.195
1998	2.146	1.891	8.101	6.896	4.274	3.888	1.502	0.365	0.218	0.366	0.221	0.137	30.005
1999	0.626	0.191	8.101	7.810	8.502	3.915	1.606	0.408	0.242	0.794	0.321	0.423	32.939
2000	2.119	2.054	8.101	7.271	6.381	3.900	1.556	0.393	0.236	0.725	0.298	0.426	33.462
2001	2.079	1.984	4.069	4.040	6.861	1.785	1.398	0.317	0.194	0.805	0.324	0.426	24.284
2002	2.131	1.984	3.006	1.755	7.683	0.511	0.267	0.168	0.099	0.061	0.038	0.023	17.726
2003	0.015	1.997	3.701	8.002	8.448	3.959	1.600						

A.126. *Nv1 – Category D***Summary table**

Desktop Version 2, Generated on 2015-03-26

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvi

Annual Flows (Mill. cu. m or index values):

MAR = 78,371

S.Dev. = 83,970

CV = 1,071

Q75 = 0,343

Q75/MMF = 0,053

BFI Index = 0,315

CV(JJA+JFM) Index = 4,080

Ecological Category = D

Total IFR = 14,458 (18,45 %MAR)

Maint. Lowflow = 1,819 (2,32 %MAR)

Drought Lowflow = 1,819 (2,32 %MAR)

Maint. Highflow = 12,639 (16,13 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	4,833	11,217	2,321	0,108	0,108	1,040	1,148
Nov	5,695	7,645	1,342	0,123	0,123	0,798	0,921
Dec	12,258	14,045	1,146	0,251	0,251	2,755	3,006
Jan	12,721	20,146	1,584	0,244	0,244	2,638	2,882
Feb	14,680	26,938	1,835	0,228	0,228	3,072	3,300
Mar	8,284	14,970	1,807	0,233	0,233	1,323	1,556
Apr	3,930	5,863	1,492	0,157	0,157	0,177	0,333
May	2,406	3,538	1,471	0,107	0,107	0,084	0,191
Jun	1,210	1,659	1,371	0,093	0,093	0,000	0,093
Jul	7,037	24,986	3,550	0,093	0,093	0,489	0,582
Aug	1,854	3,879	2,092	0,094	0,094	0,090	0,183
Sep	3,465	9,285	2,680	0,089	0,089	0,174	0,262

Rule curve

Desktop Version 2, Generated on 2015-03-26

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvi

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	1.678	1.664	1.633	1.567	1.412	0.626	0.305	0.160	0.023	0.000
Nov	1.435	1.426	1.407	1.369	1.299	1.175	0.979	0.580	0.114	0.000
Dec	5.852	5.137	4.528	3.995	3.497	2.667	2.235	1.634	0.870	0.023
Jan	5.609	4.925	4.342	3.832	3.354	2.560	2.145	1.570	0.671	0.053
Feb	6.421	5.624	4.946	4.354	3.801	2.882	2.408	1.749	1.016	0.084
Mar	2.438	2.422	2.390	2.327	2.208	2.000	1.587	0.938	0.237	0.015
Apr	0.542	0.538	0.530	0.514	0.483	0.433	0.361	0.279	0.099	0.000
May	0.317	0.315	0.311	0.302	0.285	0.257	0.218	0.168	0.053	0.000
Jun	0.172	0.172	0.170	0.166	0.160	0.149	0.133	0.092	0.031	0.000
Jul	0.868	0.861	0.845	0.813	0.572	0.351	0.168	0.092	0.023	0.000
Aug	0.301	0.299	0.295	0.286	0.270	0.221	0.137	0.069	0.023	0.000
Sep	0.412	0.409	0.402	0.388	0.363	0.282	0.175	0.084	0.031	0.000

Reserve Flows without High Flows

Oct	0.200	0.199	0.197	0.193	0.185	0.172	0.154	0.134	0.023	0.000
Nov	0.245	0.245	0.243	0.239	0.232	0.220	0.200	0.173	0.114	0.000
Dec	0.501	0.499	0.495	0.487	0.473	0.448	0.408	0.353	0.291	0.023
Jan	0.486	0.484	0.480	0.473	0.459	0.435	0.396	0.343	0.283	0.053
Feb	0.455	0.453	0.450	0.443	0.430	0.407	0.371	0.321	0.265	0.084
Mar	0.465	0.463	0.460	0.452	0.439	0.416	0.379	0.328	0.237	0.015
Apr	0.290	0.289	0.286	0.280	0.269	0.251	0.225	0.195	0.099	0.000
May	0.198	0.197	0.195	0.191	0.184	0.171	0.153	0.133	0.053	0.000
Jun	0.172	0.172	0.170	0.166	0.160	0.149	0.133	0.092	0.031	0.000
Jul	0.172	0.172	0.170	0.166	0.160	0.149	0.133	0.092	0.023	0.000
Aug	0.174	0.173	0.171	0.168	0.161	0.150	0.135	0.069	0.023	0.000
Sep	0.165	0.164	0.162	0.159	0.153	0.142	0.128	0.084	0.031	0.000

Natural Duration curves

Oct	13.169	6.005	3.044	1.961	1.412	0.626	0.305	0.160	0.023	0.000
Nov	12.994	8.851	6.051	4.387	3.640	2.258	1.366	0.580	0.114	0.000
Dec	27.964	20.250	13.757	11.842	7.462	5.043	3.357	2.411	0.870	0.023
Jan	28.796	19.678	13.406	9.744	6.486	5.288	3.464	2.068	0.671	0.053
Feb	29.566	20.662	12.368	8.965	6.981	5.578	3.273	2.167	1.053	0.084
Mar	18.831	12.239	8.530	4.166	3.250	2.205	1.587	0.938	0.237	0.015
Apr	9.698	5.112	3.739	3.266	2.281	1.442	0.992	0.343	0.099	0.000
May	7.867	3.556	2.503	1.610	0.969	0.626	0.404	0.168	0.053	0.000
Jun	3.868	2.045	1.259	0.900	0.572	0.404	0.221	0.092	0.031	0.000
Jul	7.470	3.243	1.335	0.946	0.572	0.351	0.168	0.092	0.023	0.000
Aug	7.523	1.656	0.801	0.526	0.366	0.221	0.137	0.069	0.023	0.000
Sep	8.828	3.762	1.938	0.862	0.443	0.282	0.175	0.084	0.031	0.000

Hydrological time series

Total Runoff : Nvi

Desktop (Version 2) Modified Flow Data for Ecological Category D													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	1.674	1.307	2.247	0.496	0.305	0.565	0.244	0.130	0.076	0.046	0.031	0.410	7.531
1921	1.625	1.435	5.113	4.163	3.401	2.292	0.441	0.285	0.160	0.359	0.301	0.381	19.957
1922	1.645	1.435	5.557	5.609	5.321	2.383	0.531	0.308	0.170	0.788	0.282	0.282	24.311
1923	1.404	1.310	4.778	3.419	4.097	2.433	0.533	0.313	0.171	0.813	0.288	0.378	19.936
1924	0.610	1.435	5.282	5.609	6.421	2.438	0.542	0.317	0.172	0.868	0.301	0.406	24.401
1925	1.504	0.845	1.163	1.254	0.404	0.237	0.084	0.053	0.031	0.023	0.015	0.328	5.940
1926	0.008	0.000	0.977	0.572	0.725	0.145	0.000	0.000	0.000	0.168	0.038	0.000	2.633
1927	0.000	0.198	0.359	2.133	0.847	0.610	0.279	0.000	0.000	0.000	0.000	0.396	4.822
1928	0.008	0.114	0.008	0.000	1.062	1.824	0.304	0.196	0.123	0.092	0.053	0.337	4.122
1929	0.206	0.198	0.679	2.492	1.720	2.208	0.160	0.099	0.061	0.038	0.023	0.015	7.899
1930	0.008	0.053	1.443	0.076	0.282	0.031	0.175	0.176	0.092	0.069	0.084	0.053	2.542
1931	0.031	0.015	0.053	0.053	2.753	2.252	0.339	0.227	0.133	0.114	0.069	0.038	6.077
1932	0.023	0.031	1.982	0.267	0.084	0.069	0.279	0.008	0.000	0.861	0.008	0.000	3.612
1933	0.008	1.025	5.137	3.412	1.326	2.023	0.318	0.160	0.092	0.813	0.301	0.404	15.018
1934	1.484	1.055	4.350	0.748	4.012	0.328	0.107	0.069	0.038	0.023	0.015	0.008	12.235
1935	0.008	0.000	1.365	4.986	4.299	1.701	0.364	0.317	0.172	0.844	0.295	0.365	14.716
1936	0.298	1.426	3.547	4.591	6.421	2.369	0.522	0.307	0.170	0.854	0.280	0.381	21.167
1937	0.183	0.107	4.239	1.190	4.946	1.366	0.526	0.218	0.156	0.863	0.294	0.371	14.461
1938	1.601	1.413	4.760	2.402	4.954	2.432	0.493	0.306	0.168	0.868	0.301	0.409	20.107
1939	1.610	1.428	4.302	4.346	3.177	2.032	0.542	0.317	0.172	0.845	0.295	0.408	19.473
1940	1.583	1.324	4.187	3.443	2.408	2.040	0.433	0.222	0.136	0.153	0.092	0.076	16.096
1941	0.046	0.565	1.982	1.515	2.160	0.649	0.099	0.076	0.121	0.023	0.015	0.388	7.640
1942	1.568	1.285	4.682	4.206	2.740	2.390	0.517	0.314	0.171	0.868	0.301	0.411	19.455
1943	1.668	1.246	2.712	1.570	2.882	1.061	0.282	0.187	0.143	0.084	0.053	0.411	12.297
1944	1.653	1.161	1.634	1.697	2.642	2.438	0.538	0.311	0.170	0.806	0.288	0.328	13.667
1945	0.206	0.122	4.564	5.308	5.117	2.233	0.418	0.273	0.154	0.305	0.183	0.107	18.988
1946	0.214	0.845	3.338	2.747	4.037	2.438	0.541	0.316	0.172	0.847	0.297	0.371	16.163
1947	0.336	1.432	5.852	3.344	2.701	2.344	0.453	0.264	0.150	0.267	0.160	0.305	17.608
1948	0.359	1.101	3.220	2.145	1.789	1.221	0.513	0.317	0.167	0.588	0.268	0.244	11.933
1949	0.710	0.397	2.525	3.379	1.016	2.281	0.294	0.234	0.061	0.038	0.023	0.015	10.974
1950	0.046	0.008	3.424	0.656	1.390	2.327	0.053	0.008	0.008	0.000	0.299	0.282	8.501
1951	0.969	0.107	3.725	1.502	1.030	1.541	0.015	0.008	0.008	0.866	0.271	0.137	10.179
1952	0.092	0.183	3.729	3.874	5.225	2.231	0.418	0.218	0.133	0.137	0.084	0.053	16.377
1953	0.084	1.299	0.542	0.542	4.354	2.032	0.371	0.310	0.150	0.237	0.145	0.408	10.474
1954	1.662	1.417	2.565	2.803	5.595	2.409	0.538	0.313	0.171	0.829	0.291	0.341	18.935
1955	1.412	0.580	1.911	1.834	6.421	2.437	0.541	0.316	0.172	0.846	0.297	0.402	17.168
1956	0.900	1.435	3.081	2.105	4.600	2.126	0.453	0.272	0.143	0.868	0.301	0.412	16.697
1957	1.678	1.435	5.235	4.709	5.636	2.303	0.495	0.295	0.164	0.496	0.258	0.214	22.919
1958	0.641	1.435	3.950	2.248	2.537	1.289	0.315	0.286	0.133	0.137	0.084	0.408	13.463
1959	1.494	0.633	4.116	1.038	3.808	1.755	0.530	0.266	0.140	0.168	0.099	0.290	14.336
1960	0.237	1.374	5.195	5.609	5.573	2.407	0.531	0.311	0.170	0.801	0.287	0.410	22.906
1961	1.640	0.955	1.614	2.686	0.313	2.146	0.482	0.242	0.130	0.122	0.076	0.046	10.451
1962	0.031	1.107	5.852	4.044	3.496	2.359	0.542	0.317	0.172	0.868	0.301	0.411	19.501
1963	1.649	1.158	1.248	4.342	1.749	0.664	0.522	0.259	0.148	0.244	0.145	0.084	12.212
1964	1.674	1.435	4.868	2.706	6.393	1.732	0.368	0.257	0.149	0.717	0.153	0.084	20.539
1965	1.477	1.079	0.870	0.671	4.797	0.137	0.061	0.038	0.023	0.015	0.076	0.084	9.328
1966	0.008	1.201	3.693	2.065	5.738	2.422	0.538	0.314	0.171	0.832	0.292	0.363	17.637
1967	0.382	1.426	4.376	2.560	1.491	2.438	0.524	0.307	0.169	0.748	0.281	0.267	14.968
1968	0.610	0.952	4.962	3.832	1.830	2.383	0.483	0.298	0.166	0.519	0.260	0.379	16.674
1969	1.674	1.415	2.235	1.987	3.181	0.702	0.418	0.198	0.124	0.099	0.137	0.409	12.580
1970	1.678	1.403	1.988	4.179	1.484	1.366	0.526	0.317	0.172	0.862	0.301	0.394	14.671
1971	1.487	0.815	3.497	4.925	6.421	2.438	0.541	0.317	0.172	0.866	0.301	0.397	22.176
1972	1.038	0.815	1.030	2.527	6.047	2.420	0.542	0.317	0.172	0.853	0.300	0.412	16.473
1973	1.678	1.407	2.584	4.896	4.531	2.253	0.404	0.269	0.152	0.867	0.183	0.107	19.332
1974	0.237	1.394	5.026	5.264	6.189	2.431	0.539	0.315	0.172	0.841	0.294	0.412	23.114
1975	1.678	1.433	4.187	5.609	5.000	2.434	0.542	0.317	0.172	0.859	0.299	0.391	22.922
1976	1.137	1.317	5.690	4.519	6.421	2.438	0.542	0.317	0.172	0.858	0.299	0.408	24.119
1977	1.672	0.979	2.331	5.609	5.308	2.340	0.515	0.303	0.168	0.815	0.272	0.339	20.652
1978	1.671	1.417	3.995	3.354	4.821	0.938	0.488	0.288	0.161	0.863	0.298	0.404	18.699
1979	1.570	0.831	1.660	3.299	2.377	0.191	0.114	0.069	0.046	0.023	0.015	0.396	10.592
1980	0.305	1.093	1.625	3.167	2.486	0.053	0.107	0.172	0.820	0.285	0.412	0.576	10.576
1981	1.652	1.316	3.233	3.344	3.986	2.144	0.334	0.217	0.135	0.145	0.092	0.053	16.651
1982	0.984	1.175	0.023	1.122	0.008	0.015	0.000	0.180	0.031	0.000	0.000	0.000	3.538
1983	0.175	1.429	3.800	5.609	6.421	2.438	0.542	0.317	0.172	0.868	0.301	0.412	22.484
1984	1.664	1.263	1.892	4.828	6.421	2.412	0.534	0.313	0.171	0.831	0.291	0.364	20.985
1985	1.602	1.369	1.791	3.706	3.026	0.923	0.258	0.145	0.084	0.053	0.031	0.023	13.012
1986	1.412	1.175	5.360	3.899	2.327	1.587	0.449	0.267	0.149	0.252	0.298	0.412	17.586
1987	1.678	1.435	5.802	4.011	4.829	2.411	0.541	0.316	0.172	0.862	0.297	0.400	22.754
1988	1.633	1.413	3.746	2.157	3.001	1.984	0.400	0.257	0.159	0.237	0.145	0.084	15.218
1989	0.160	1.420	5.852	4.401	3.801	2.261	0.535	0.295	0.164	0.481	0.255	0.175	19.800
1990	0.320	1.378	3.991	3.758	5.637	2.433	0.502	0.311	0.168	0.603	0.270	0.214	19.586
1991	0.473	0.511	3.081	0.237	4.450	2.137	0.061	0.008	0.000	0.000	0.000	0.000	10.958
1992	0.000	0.031	0.824	1.799	1.961	0.008	0.443	0.000	0.000	0.000	0.000	0.395	5.462
1993	1.678	1.427	4.528	4.207	3.261	2.339	0.436	0.282	0.158	0.351	0.221	0.122	19.011
1994	1.567	1.227	4.217	2.529	0.122	0.122	0.343	0.204	0.125	0.099	0.061	0.038	10.655
1995	1.513	1.301	5.852	5.609	6.421	2.438	0.542	0.317	0.172	0.868	0.301	0.405	25.738
1996	1.678	1.216	5.537	5.104	4.180	2.438	0.542	0.317	0.172	0.866	0.301	0.412	22.761
1997	1.678	1.435	5.852	5.440	4.171	2.431	0.486	0.302	0.167	0.542	0.263	0.191	22.959
1998	1.676	1.326	5.852	4.581	2.746	2.391	0.514	0.287	0.160	0.366	0.221	0.137	20.258
1999	0.626	0.191	5.852	5.428	6.421	2.407	0.541	0.317	0.172	0.856	0.299	0.409	23.518
2000	1.656	1.435	5.852	4.925	4.418	2.398	0.528	0.307	0.169	0.748	0.278	0.412	23.126
2001	1.626	1.389	2.503	2.388	4.849	1.785	0.487	0.254	0.147	0.868	0.301	0.412	17.009
2002	1.665	1.389	1.936	1.437	5.624	0.511	0.260	0.168	0.099	0.061	0.038	0.023	13.211
2003	0.015	1.398	2.310	5.609	6.368	2.432	0.539						

A.127. *Nvij1 – Category B***Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvij1

Annual Flows (Mill. cu. m or index values):

MAR = 35,574

S.Dev. = 22,826

CV = 0,642

Q75 = 0,290

Q75/MMF = 0,098

BFI Index = 0,293

CV(JJA+JFM) Index = 2,050

Ecological Category = B

Total IFR = 11,221 (31,54 %MAR)

Maint. Lowflow = 6,821 (19,17 %MAR)

Drought Lowflow = 0,828 (2,33 %MAR)

Maint. Highflow = 4,400 (12,37 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : E.Escarp

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	Maint.
Oct	1,227	2,450	1,997	0,236	0,000	0,154	0,390
Nov	3,220	3,264	1,014	0,433	0,000	0,449	0,881
Dec	5,953	5,357	0,900	0,737	0,201	0,843	1,581
Jan	7,180	6,711	0,935	0,966	0,110	1,681	2,648
Feb	7,369	7,504	1,018	1,098	0,296	0,339	1,437
Mar	4,859	4,449	0,916	1,020	0,170	0,677	1,697
Apr	2,784	2,642	0,949	0,853	0,050	0,257	1,110
May	1,413	1,426	1,009	0,621	0,000	0,000	0,621
Jun	0,686	0,571	0,832	0,381	0,000	0,000	0,381
Jul	0,375	0,368	0,980	0,224	0,000	0,000	0,224
Aug	0,229	0,336	1,469	0,138	0,000	0,000	0,138
Sep	0,280	0,736	2,626	0,113	0,000	0,000	0,113

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvij1

Regional Type : E.Escarp

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.450	0.448	0.443	0.433	0.413	0.300	0.140	0.020	0.000	0.000
Nov	1.007	1.002	0.990	0.965	0.918	0.832	0.692	0.489	0.249	0.000
Dec	1.803	1.795	1.774	1.734	1.656	1.520	1.297	0.978	0.603	0.333
Jan	4.419	3.976	3.593	3.245	2.900	2.322	1.945	1.414	0.797	0.356
Feb	1.969	1.877	1.789	1.699	1.590	1.402	1.209	0.932	0.606	0.371
Mar	2.533	2.354	2.194	2.041	1.875	1.591	1.350	1.001	0.588	0.210
Apr	1.299	1.295	1.281	1.252	1.195	1.090	0.914	0.654	0.342	0.110
May	0.741	0.740	0.732	0.716	0.683	0.622	0.517	0.359	0.166	0.024
Jun	0.454	0.453	0.449	0.440	0.420	0.383	0.300	0.190	0.103	0.015
Jul	0.267	0.267	0.265	0.260	0.249	0.200	0.120	0.080	0.010	0.000
Aug	0.165	0.164	0.163	0.159	0.150	0.110	0.030	0.010	0.000	0.000
Sep	0.135	0.134	0.133	0.130	0.100	0.020	0.000	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.281	0.280	0.277	0.270	0.257	0.233	0.140	0.020	0.000	0.000
Nov	0.516	0.514	0.507	0.494	0.468	0.422	0.347	0.238	0.109	0.000
Dec	0.881	0.877	0.868	0.850	0.815	0.754	0.654	0.512	0.343	0.222
Jan	1.153	1.145	1.130	1.100	1.044	0.947	0.793	0.575	0.322	0.142
Feb	1.312	1.306	1.292	1.265	1.213	1.122	0.973	0.760	0.509	0.328
Mar	1.217	1.212	1.199	1.172	1.120	1.027	0.875	0.654	0.392	0.203
Apr	1.018	1.015	1.004	0.981	0.936	0.852	0.713	0.508	0.261	0.081
May	0.741	0.740	0.732	0.716	0.683	0.622	0.517	0.359	0.166	0.024
Jun	0.454	0.453	0.449	0.440	0.420	0.383	0.300	0.190	0.103	0.015
Jul	0.267	0.267	0.265	0.260	0.249	0.200	0.120	0.080	0.010	0.000
Aug	0.165	0.164	0.163	0.159	0.150	0.110	0.030	0.010	0.000	0.000
Sep	0.135	0.134	0.133	0.130	0.100	0.020	0.000	0.000	0.000	0.000

Natural Duration curves

Oct	3.050	2.170	1.010	0.580	0.430	0.300	0.140	0.020	0.000	0.000
Nov	7.640	5.620	3.820	2.930	2.330	1.630	1.220	0.800	0.460	0.000
Dec	14.680	9.460	7.150	5.220	4.820	3.660	2.390	1.760	1.030	0.350
Jan	16.200	9.770	7.920	6.230	5.540	4.860	3.510	2.640	1.850	0.810
Feb	18.380	11.410	7.420	5.920	4.720	3.810	3.070	2.260	1.670	0.810
Mar	11.370	6.720	5.510	4.380	3.480	2.810	2.510	1.920	1.100	0.210
Apr	5.880	4.050	3.210	2.820	1.980	1.620	1.280	0.960	0.560	0.110
May	3.140	2.490	1.810	1.400	1.110	0.860	0.520	0.360	0.230	0.070
Jun	1.490	1.030	0.930	0.780	0.620	0.430	0.300	0.190	0.110	0.030
Jul	0.910	0.570	0.520	0.400	0.300	0.200	0.120	0.080	0.010	0.000
Aug	0.620	0.350	0.290	0.200	0.150	0.110	0.030	0.010	0.000	0.000
Sep	0.620	0.370	0.200	0.140	0.100	0.020	0.000	0.000	0.000	0.000

Hydrological time series

Total Runoff : Nvij1

Desktop (Version 2) Modified Flow Data for Ecological Category B													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.450	1.007	1.803	4.144	1.507	2.008	1.236	0.659	0.366	0.130	0.000	0.000	13.308
1921	0.450	1.007	1.798	2.696	1.314	1.612	1.189	0.583	0.260	0.090	0.010	0.000	11.008
1922	0.450	1.007	1.773	4.419	1.969	2.261	1.162	0.433	0.140	0.000	0.000	0.000	13.614
1923	0.000	0.125	1.398	2.526	1.447	2.204	1.299	0.738	0.444	0.247	0.040	0.134	10.603
1924	0.446	1.007	1.788	2.099	0.955	2.107	1.299	0.741	0.454	0.267	0.165	0.135	11.462
1925	0.421	0.445	0.474	0.797	1.329	1.500	1.013	0.559	0.351	0.180	0.020	0.135	7.224
1926	0.444	0.489	0.765	0.642	0.932	1.112	0.958	0.609	0.366	0.260	0.164	0.132	6.874
1927	0.450	0.990	1.436	3.301	1.684	1.876	1.261	0.702	0.391	0.120	0.000	0.020	12.232
1928	0.000	0.816	1.520	1.875	0.764	2.041	1.298	0.716	0.397	0.220	0.050	0.133	9.829
1929	0.450	1.006	1.740	3.468	1.789	1.837	0.914	0.475	0.190	0.080	0.020	0.000	11.968
1930	0.000	0.148	1.297	2.270	1.466	1.370	1.195	0.717	0.420	0.259	0.163	0.110	9.415
1931	0.020	0.604	0.978	0.482	0.600	1.257	1.145	0.678	0.441	0.262	0.110	0.010	6.587
1932	0.400	0.879	1.697	2.501	1.073	0.884	0.969	0.552	0.220	0.070	0.000	0.000	9.244
1933	0.000	0.975	1.744	4.419	1.969	2.133	1.281	0.726	0.441	0.266	0.165	0.135	14.252
1934	0.425	1.002	1.802	4.242	1.590	1.350	0.876	0.404	0.120	0.000	0.000	0.000	11.811
1935	0.000	0.000	0.383	2.586	1.704	1.595	1.174	0.736	0.454	0.267	0.163	0.080	9.142
1936	0.300	0.989	1.588	4.419	1.969	2.463	1.272	0.690	0.366	0.080	0.000	0.000	14.136
1937	0.250	0.353	1.794	4.201	1.567	1.919	1.295	0.741	0.454	0.267	0.164	0.133	13.138
1938	0.450	0.992	1.620	2.900	1.925	2.533	1.298	0.733	0.438	0.265	0.165	0.134	13.452
1939	0.442	1.006	1.796	3.245	1.379	1.164	1.024	0.651	0.454	0.267	0.165	0.135	11.728
1940	0.443	0.939	1.754	2.781	1.079	1.500	1.252	0.733	0.438	0.220	0.020	0.000	11.160
1941	0.110	0.213	0.965	2.915	1.630	1.513	1.203	0.683	0.453	0.267	0.164	0.134	10.252
1942	0.439	0.985	1.718	2.206	1.249	1.396	1.299	0.741	0.454	0.267	0.165	0.135	11.054
1943	0.448	0.979	1.520	3.593	1.950	2.533	1.242	0.601	0.330	0.190	0.050	0.040	13.475
1944	0.421	0.965	1.485	1.263	0.940	1.494	1.229	0.632	0.290	0.060	0.000	0.000	8.779
1945	0.200	0.243	0.220	4.419	1.969	2.318	1.299	0.727	0.395	0.120	0.000	0.000	11.910
1946	0.000	0.902	1.593	3.458	1.769	1.875	1.197	0.687	0.395	0.140	0.010	0.000	12.024
1947	0.220	0.967	1.778	3.757	1.701	1.948	1.229	0.692	0.391	0.120	0.000	0.000	12.803
1948	0.090	0.844	1.306	2.955	1.736	2.183	1.299	0.741	0.454	0.267	0.157	0.133	12.164
1949	0.410	0.875	1.656	3.100	1.441	1.680	1.258	0.727	0.446	0.254	0.154	0.050	12.051
1950	0.020	0.318	1.127	1.414	0.814	1.226	1.264	0.740	0.454	0.267	0.165	0.135	7.942
1951	0.443	0.741	1.630	2.645	0.741	0.588	0.609	0.609	0.424	0.265	0.164	0.100	8.959
1952	0.000	1.002	1.796	3.190	1.557	2.092	1.281	0.724	0.427	0.200	0.010	0.000	12.279
1953	0.000	1.003	1.766	2.348	1.956	2.533	1.299	0.741	0.454	0.267	0.157	0.133	12.656
1954	0.413	0.577	0.622	3.878	1.918	2.509	1.299	0.741	0.454	0.267	0.161	0.010	12.850
1955	0.438	0.891	1.789	3.715	1.699	2.358	1.277	0.732	0.454	0.267	0.161	0.134	13.915
1956	0.449	0.996	1.734	2.594	1.339	1.917	1.292	0.740	0.454	0.267	0.165	0.135	12.082
1957	0.446	0.883	1.127	3.647	1.827	1.065	1.093	0.719	0.433	0.237	0.030	0.134	11.642
1958	0.430	0.832	1.797	4.225	1.520	1.257	0.882	0.673	0.452	0.263	0.130	0.129	12.590
1959	0.230	0.552	1.496	1.927	0.769	1.144	1.269	0.741	0.454	0.256	0.140	0.070	9.047
1960	0.425	0.947	1.803	4.419	1.625	2.242	1.295	0.741	0.454	0.267	0.155	0.134	14.506
1961	0.433	0.918	1.763	3.395	1.209	1.001	1.098	0.681	0.389	0.100	0.000	0.020	11.007
1962	0.330	0.995	1.714	1.945	1.098	0.637	0.739	0.583	0.449	0.267	0.165	0.135	9.057
1963	0.446	0.957	1.317	1.527	1.061	0.541	0.394	0.359	0.140	0.000	0.000	0.000	6.742
1964	0.450	1.006	1.654	3.252	1.667	0.855	0.446	0.266	0.120	0.010	0.010	0.020	9.756
1965	0.030	0.656	1.556	3.165	1.644	1.539	0.563	0.098	0.051	0.000	0.000	0.000	9.302
1966	0.418	0.648	1.718	3.010	1.898	2.533	1.291	0.737	0.447	0.254	0.140	0.020	13.114
1967	0.435	0.978	1.774	3.518	1.402	1.998	1.298	0.738	0.450	0.252	0.150	0.050	13.043
1968	0.000	0.963	1.575	1.480	1.651	2.386	1.299	0.741	0.454	0.267	0.162	0.135	11.112
1969	0.450	1.000	1.666	2.060	1.837	1.309	0.342	0.489	0.250	0.080	0.140	0.000	9.623
1970	0.440	0.979	1.029	1.660	0.655	0.375	0.517	0.517	0.220	0.252	0.164	0.133	6.941
1971	0.310	1.007	1.803	4.137	1.782	2.423	1.090	0.741	0.453	0.249	0.161	0.100	14.256
1972	0.000	0.713	0.707	1.795	1.966	2.533	1.299	0.741	0.450	0.262	0.165	0.135	10.765
1973	0.449	1.007	1.803	3.392	1.810	0.767	1.233	0.737	0.448	0.267	0.165	0.131	12.207
1974	0.000	0.950	1.803	4.362	1.969	2.354	1.293	0.656	0.200	0.130	0.163	0.100	13.981
1975	0.070	1.006	1.803	4.419	1.860	2.344	1.299	0.741	0.453	0.264	0.164	0.110	14.532
1976	0.439	0.780	1.732	3.752	1.851	2.282	1.288	0.489	0.130	0.245	0.159	0.134	13.281
1977	0.000	0.664	0.765	4.185	1.923	2.533	0.795	0.374	0.383	0.170	0.164	0.000	11.956
1978	0.450	0.905	0.867	0.356	0.519	0.320	1.024	0.690	0.452	0.267	0.161	0.134	6.145
1979	0.450	1.006	1.284	2.179	1.877	1.971	1.295	0.166	0.300	0.254	0.110	0.110	10.001
1980	0.000	0.559	0.474	1.330	1.930	2.456	0.497	0.194	0.051	0.110	0.155	0.000	7.756
1981	0.400	0.353	0.489	0.714	0.442	0.170	0.050	0.000	0.000	0.000	0.000	0.000	2.618
1982	0.100	0.097	0.333	0.458	0.371	0.240	0.110	0.030	0.015	0.000	0.040	0.000	1.793
1983	0.000	1.007	1.780	4.419	1.969	2.194	1.171	0.036	0.360	0.266	0.164	0.133	13.498
1984	0.450	0.844	0.558	0.110	0.606	2.273	0.172	0.297	0.440	0.267	0.165	0.132	6.313
1985	0.436	0.780	1.041	0.854	1.294	0.394	0.324	0.098	0.072	0.120	0.050	0.000	5.464
1986	0.000	0.097	0.362	1.584	1.076	1.591	0.654	0.098	0.040	0.000	0.110	0.135	5.747
1987	0.450	1.007	1.788	1.263	0.340	0.387	0.180	0.396	0.230	0.220	0.000	0.135	6.395
1988	0.448	0.416	1.802	3.781	1.803	1.777	1.185	0.065	0.440	0.100	0.120	0.020	10.957
1989	0.140	1.000	1.801	1.063	1.392	2.164	1.087	0.696	0.220	0.130	0.050	0.040	9.782
1990	0.080	0.178	1.103	3.976	1.870	2.499	1.269	0.622	0.411	0.262	0.165	0.000	12.435
1991	0.200	0.822	0.603	0.532	0.390	0.210	0.138	0.024	0.040	0.000	0.000	0.000	2.959
1992	0.000	0.000	1.243	1.063	0.390	1.858	0.715	0.098	0.150	0.030	0.020	0.000	5.566
1993	0.090	0.692	1.755	2.290	1.743	2.105	0.703	0.250	0.015	0.070	0.150	0.060	9.923
1994	0.210	0.584	0.410	0.466	0.438	0.379	0.295	0.236	0.103	0.237	0.110	0.000	3.469
1995	0.300	0.283	1.803	4.295	1.969	2.533	1.299	0.741	0.454	0.267	0.162	0.080	14.186
1996	0.449	0.977	0.890	0.758	0.569	1.692	1.284	0.724	0.451	0.265	0.162	0.134	8.355
1997	0.447	1.000	1.707	1.364	0.853	0.710	0.478	0.266	0.103	0.000	0.000	0.000	6.927
1998	0.436	0.773	1.749	2.060	0.987	0.870	1.038	0.624	0.446	0.080	0.000	0.120	9.182
1999	0.427	0.465	1.803	4.419	1.969	2.533	1.299	0.741	0.423	0.267	0.164	0.132	14.641
2000	0.446	1.006	1.795	3.000	0.747	1.001	1.192	0.741	0.338	0.245	0.050	0.000	10.560
2001	0.410	1.007	1.801	2.322	1.787	2.406	0.864	0.475	0.454	0.267	0.154	0.135	12.082
2002	0.360	0.249	1.208	3.369	1.739	1.697	0.776	0.266	0.160	0.070	0.010	0.000	9.903
2003	0.100	0.919	1.547	1.833	1.513	2.095	1.267	0.689	0.383				

A.128. *Nvij1 – Category C***Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvij1

Annual Flows (Mill. cu. m or index values):

MAR = 35,574

S.Dev. = 22,826

CV = 0,642

Q75 = 0,290

Q75/MMF = 0,098

BFI Index = 0,293

CV(JJA+JFM) Index = 2,050

Ecological Category = C

Total IFR = 7,523 (21,15 %MAR)

Maint. Lowflow = 3,957 (11,12 %MAR)

Drought Lowflow = 0,828 (2,33 %MAR)

Maint. Highflow = 3,566 (10,02 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : E.Escarp

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	1,227	2,450	1,997	0,141	0,000	0,125	0,266
Nov	3,220	3,264	1,014	0,253	0,000	0,364	0,616
Dec	5,953	5,357	0,900	0,426	0,201	0,683	1,109
Jan	7,180	6,711	0,935	0,555	0,110	1,363	1,918
Feb	7,369	7,504	1,018	0,630	0,296	0,274	0,905
Mar	4,859	4,449	0,916	0,586	0,170	0,549	1,135
Apr	2,784	2,642	0,949	0,491	0,050	0,208	0,699
May	1,413	1,426	1,009	0,360	0,000	0,000	0,360
Jun	0,686	0,571	0,832	0,223	0,000	0,000	0,223
Jul	0,375	0,368	0,980	0,134	0,000	0,000	0,134
Aug	0,229	0,336	1,469	0,086	0,000	0,000	0,086
Sep	0,280	0,736	2,626	0,071	0,000	0,000	0,071

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvij1

Regional Type : E.Escarp

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.345	0.344	0.340	0.332	0.317	0.288	0.140	0.020	0.000	0.000
Nov	0.786	0.782	0.773	0.753	0.716	0.650	0.540	0.383	0.195	0.000
Dec	1.409	1.403	1.387	1.357	1.299	1.196	1.029	0.790	0.508	0.305
Jan	3.420	3.063	2.755	2.478	2.208	1.757	1.478	1.086	0.630	0.304
Feb	1.412	1.338	1.270	1.203	1.127	0.997	0.876	0.702	0.497	0.349
Mar	1.882	1.739	1.611	1.492	1.368	1.156	0.990	0.750	0.466	0.210
Apr	0.932	0.929	0.920	0.899	0.859	0.785	0.661	0.478	0.258	0.098
May	0.501	0.500	0.494	0.484	0.462	0.420	0.349	0.243	0.112	0.016
Jun	0.311	0.310	0.307	0.301	0.288	0.262	0.219	0.152	0.070	0.010
Jul	0.187	0.187	0.185	0.182	0.174	0.160	0.120	0.080	0.010	0.000
Aug	0.119	0.119	0.118	0.115	0.110	0.101	0.030	0.010	0.000	0.000
Sep	0.099	0.099	0.098	0.096	0.092	0.020	0.000	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.196	0.196	0.193	0.189	0.180	0.163	0.135	0.020	0.000	0.000
Nov	0.352	0.350	0.346	0.337	0.319	0.288	0.237	0.163	0.075	0.000
Dec	0.593	0.591	0.586	0.575	0.556	0.520	0.463	0.380	0.283	0.214
Jan	0.773	0.769	0.759	0.740	0.704	0.642	0.544	0.406	0.245	0.130
Feb	0.879	0.875	0.868	0.852	0.822	0.770	0.685	0.562	0.418	0.314
Mar	0.816	0.813	0.805	0.788	0.756	0.699	0.605	0.468	0.307	0.190
Apr	0.684	0.682	0.675	0.660	0.630	0.576	0.484	0.350	0.188	0.070
May	0.501	0.500	0.494	0.484	0.462	0.420	0.349	0.243	0.112	0.016
Jun	0.311	0.310	0.307	0.301	0.288	0.262	0.219	0.152	0.070	0.010
Jul	0.187	0.187	0.185	0.182	0.174	0.160	0.120	0.080	0.010	0.000
Aug	0.119	0.119	0.118	0.115	0.110	0.101	0.030	0.010	0.000	0.000
Sep	0.099	0.099	0.098	0.096	0.092	0.020	0.000	0.000	0.000	0.000

Natural Duration curves

Oct	3.050	2.170	1.010	0.580	0.430	0.300	0.140	0.020	0.000	0.000
Nov	7.640	5.620	3.820	2.930	2.330	1.630	1.220	0.800	0.460	0.000
Dec	14.680	9.460	7.150	5.220	4.820	3.660	2.390	1.760	1.030	0.350
Jan	16.200	9.770	7.920	6.230	5.540	4.860	3.510	2.640	1.850	0.810
Feb	18.380	11.410	7.420	5.920	4.720	3.810	3.070	2.260	1.670	0.810
Mar	11.370	6.720	5.510	4.380	3.480	2.810	2.510	1.920	1.100	0.210
Apr	5.880	4.050	3.210	2.820	1.980	1.620	1.280	0.960	0.560	0.110
May	3.140	2.490	1.810	1.400	1.110	0.860	0.520	0.360	0.230	0.070
Jun	1.490	1.030	0.930	0.780	0.620	0.430	0.300	0.190	0.110	0.030
Jul	0.910	0.570	0.520	0.400	0.300	0.200	0.120	0.080	0.010	0.000
Aug	0.620	0.350	0.290	0.200	0.150	0.110	0.030	0.010	0.000	0.000
Sep	0.620	0.370	0.200	0.140	0.100	0.020	0.000	0.000	0.000	0.000

Hydrological time series

Total Runoff : Nvij1

Desktop (Version 2) Modified Flow Data for Ecological Category C													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.345	0.786	1.409	3.198	1.070	1.467	0.888	0.445	0.250	0.130	0.000	0.000	9.988
1921	0.345	0.786	1.405	2.049	0.942	1.171	0.855	0.394	0.201	0.090	0.010	0.000	8.247
1922	0.345	0.786	1.386	3.420	1.412	1.664	0.836	0.293	0.114	0.000	0.000	0.000	10.256
1923	0.000	0.099	1.105	1.916	1.028	1.619	0.932	0.498	0.304	0.173	0.040	0.099	7.814
1924	0.342	0.785	1.398	1.592	0.716	1.543	0.932	0.500	0.311	0.187	0.119	0.099	8.526
1925	0.323	0.348	0.411	0.630	0.951	1.093	0.731	0.377	0.240	0.157	0.020	0.099	5.382
1926	0.341	0.383	0.630	0.515	0.702	0.826	0.692	0.411	0.250	0.182	0.119	0.097	5.149
1927	0.345	0.773	1.133	2.523	1.193	1.369	0.905	0.474	0.268	0.120	0.000	0.020	9.124
1928	0.000	0.637	1.196	1.427	0.596	1.492	0.932	0.484	0.272	0.163	0.050	0.098	7.345
1929	0.345	0.785	1.361	2.655	1.270	1.339	0.661	0.321	0.152	0.080	0.020	0.000	8.991
1930	0.000	0.117	1.029	1.719	1.041	1.003	0.859	0.484	0.288	0.181	0.118	0.093	6.932
1931	0.020	0.472	0.790	0.397	0.493	0.926	0.824	0.458	0.302	0.183	0.101	0.010	4.975
1932	0.310	0.686	1.329	1.896	0.790	0.670	0.700	0.373	0.184	0.066	0.000	0.000	7.004
1933	0.000	0.761	1.364	3.420	1.412	1.563	0.920	0.490	0.302	0.186	0.119	0.099	10.637
1934	0.326	0.782	1.408	3.278	1.127	0.990	0.635	0.273	0.088	0.000	0.000	0.000	8.907
1935	0.000	0.000	0.343	1.963	1.208	1.159	0.844	0.497	0.311	0.187	0.118	0.080	6.709
1936	0.288	0.772	1.247	3.420	1.412	1.826	0.913	0.466	0.250	0.080	0.000	0.000	10.675
1937	0.250	0.276	1.402	3.245	1.111	1.401	0.929	0.501	0.311	0.187	0.119	0.099	9.830
1938	0.345	0.774	1.271	2.208	1.377	1.882	0.932	0.495	0.300	0.185	0.119	0.099	9.988
1939	0.340	0.785	1.403	2.478	0.982	0.862	0.739	0.440	0.311	0.187	0.119	0.099	8.746
1940	0.340	0.733	1.372	2.115	0.794	1.093	0.899	0.495	0.300	0.163	0.020	0.000	8.325
1941	0.110	0.167	0.780	2.220	1.156	1.102	0.865	0.462	0.310	0.187	0.119	0.099	7.577
1942	0.337	0.769	1.345	1.671	0.901	1.021	0.932	0.501	0.311	0.187	0.119	0.099	8.194
1943	0.344	0.764	1.196	2.755	1.396	1.882	0.892	0.406	0.228	0.158	0.050	0.040	10.112
1944	0.323	0.753	1.170	0.974	0.707	1.089	0.883	0.427	0.214	0.060	0.000	0.000	6.601
1945	0.200	0.190	0.220	3.420	1.412	1.710	0.932	0.491	0.270	0.120	0.000	0.000	8.966
1946	0.000	0.704	1.251	2.648	1.255	1.368	0.860	0.464	0.270	0.140	0.010	0.000	8.969
1947	0.220	0.755	1.390	2.887	1.205	1.423	0.883	0.468	0.268	0.120	0.000	0.000	9.617
1948	0.090	0.659	1.036	2.251	1.231	1.603	0.932	0.501	0.311	0.187	0.113	0.098	9.011
1949	0.315	0.683	1.299	2.365	1.024	1.222	0.903	0.491	0.305	0.178	0.111	0.050	8.946
1950	0.020	0.249	0.901	1.086	0.628	0.905	0.908	0.500	0.311	0.187	0.119	0.099	5.911
1951	0.340	0.579	1.279	2.009	0.582	0.466	0.446	0.411	0.290	0.185	0.119	0.092	6.798
1952	0.000	0.782	1.403	2.435	1.104	1.532	0.920	0.489	0.292	0.160	0.010	0.000	9.128
1953	0.000	0.783	1.381	1.777	1.401	1.882	0.932	0.501	0.311	0.187	0.113	0.098	9.366
1954	0.317	0.451	0.522	2.984	1.371	1.863	0.932	0.501	0.311	0.187	0.117	0.010	9.566
1955	0.336	0.695	1.398	2.853	1.203	1.742	0.917	0.494	0.311	0.187	0.117	0.099	10.353
1956	0.345	0.778	1.357	1.969	0.958	1.399	0.927	0.500	0.311	0.187	0.119	0.099	8.949
1957	0.343	0.690	0.901	2.799	1.299	0.794	0.787	0.486	0.297	0.166	0.030	0.099	8.689
1958	0.330	0.650	1.404	3.263	1.079	0.926	0.639	0.455	0.309	0.184	0.105	0.095	9.440
1959	0.230	0.432	1.178	1.465	0.600	0.848	0.911	0.500	0.310	0.179	0.108	0.070	6.831
1960	0.326	0.739	1.409	3.420	1.152	1.649	0.930	0.500	0.311	0.187	0.112	0.099	10.834
1961	0.332	0.716	1.379	2.597	0.876	0.750	0.791	0.460	0.266	0.100	0.000	0.020	8.288
1962	0.295	0.777	1.342	1.478	0.806	0.499	0.538	0.394	0.307	0.187	0.119	0.099	6.842
1963	0.342	0.746	1.044	1.169	0.783	0.434	0.295	0.243	0.114	0.000	0.000	0.000	5.170
1964	0.345	0.785	1.297	2.484	1.181	0.649	0.332	0.180	0.088	0.010	0.010	0.020	7.382
1965	0.030	0.512	1.223	2.415	1.165	1.120	0.414	0.066	0.035	0.000	0.000	0.000	6.982
1966	0.321	0.506	1.345	2.294	1.355	1.882	0.927	0.498	0.306	0.178	0.108	0.020	9.740
1967	0.334	0.763	1.387	2.696	0.997	1.460	0.931	0.498	0.308	0.177	0.110	0.050	9.712
1968	0.000	0.751	1.238	1.135	1.170	1.764	0.932	0.501	0.311	0.187	0.117	0.099	8.205
1969	0.345	0.781	1.306	1.564	1.307	0.962	0.258	0.331	0.197	0.080	0.108	0.000	7.238
1970	0.338	0.764	0.828	1.267	0.528	0.319	0.382	0.349	0.184	0.177	0.119	0.098	5.352
1971	0.290	0.786	1.409	3.193	1.265	1.794	0.785	0.501	0.310	0.174	0.117	0.092	10.714
1972	0.000	0.557	0.586	1.368	1.409	1.882	0.932	0.501	0.308	0.183	0.119	0.099	7.944
1973	0.345	0.786	1.409	2.595	1.286	0.589	0.886	0.498	0.306	0.187	0.119	0.096	9.101
1974	0.000	0.741	1.409	3.375	1.412	1.739	0.928	0.443	0.163	0.130	0.118	0.092	10.549
1975	0.070	0.785	1.409	3.420	1.325	1.730	0.932	0.501	0.310	0.185	0.118	0.093	10.878
1976	0.337	0.609	1.355	2.882	1.318	1.681	0.925	0.331	0.106	0.172	0.115	0.099	9.929
1977	0.000	0.519	0.630	3.231	1.374	1.882	0.577	0.253	0.262	0.155	0.119	0.000	9.003
1978	0.345	0.707	0.706	0.304	0.442	0.281	0.739	0.466	0.309	0.187	0.117	0.099	4.702
1979	0.345	0.785	1.019	1.651	1.338	1.440	0.226	0.112	0.219	0.178	0.101	0.093	7.506
1980	0.000	0.436	0.411	1.024	1.380	1.820	0.368	0.131	0.035	0.110	0.112	0.000	5.828
1981	0.310	0.276	0.423	0.568	0.394	0.170	0.050	0.000	0.000	0.000	0.000	0.000	2.191
1982	0.100	0.077	0.305	0.379	0.349	0.240	0.098	0.020	0.010	0.000	0.040	0.000	1.619
1983	0.000	0.786	1.392	3.420	1.412	1.611	0.842	0.024	0.246	0.186	0.119	0.098	10.136
1984	0.345	0.659	0.474	0.110	0.497	1.674	0.139	0.201	0.301	0.187	0.119	0.097	4.803
1985	0.335	0.609	0.837	0.672	0.929	0.333	0.246	0.066	0.049	0.120	0.050	0.000	4.245
1986	0.000	0.077	0.327	1.211	0.792	1.156	0.478	0.066	0.027	0.000	0.101	0.099	4.335
1987	0.345	0.786	1.398	0.974	0.330	0.327	0.144	0.268	0.188	0.163	0.000	0.099	5.022
1988	0.344	0.326	1.408	2.906	1.281	1.295	0.148	0.044	0.301	0.100	0.103	0.020	8.275
1989	0.140	0.781	1.407	0.826	0.991	1.588	0.783	0.470	0.184	0.130	0.050	0.040	7.389
1990	0.080	0.140	0.883	3.063	1.333	1.855	0.911	0.420	0.281	0.184	0.119	0.000	9.269
1991	0.200	0.642	0.508	0.434	0.361	0.210	0.114	0.016	0.027	0.000	0.000	0.000	2.513
1992	0.000	0.000	0.988	0.826	0.361	1.355	0.521	0.066	0.122	0.030	0.020	0.000	4.290
1993	0.090	0.540	1.373	1.733	1.236	1.542	0.513	0.169	0.010	0.066	0.110	0.060	7.442
1994	0.210	0.456	0.363	0.385	0.392	0.322	0.226	0.160	0.070	0.166	0.101	0.000	2.850
1995	0.288	0.222	1.409	3.320	1.412	1.882	0.932	0.501	0.311	0.187	0.118	0.080	10.661
1996	0.345	0.762	0.723	0.601	0.473	1.232	0.922	0.489	0.309	0.186	0.117	0.099	6.258
1997	0.343	0.780	1.336	1.049	0.652	0.550	0.354	0.180	0.070	0.000	0.000	0.000	5.314
1998	0.335	0.603	1.368	1.564	0.736	0.660	0.748	0.422	0.305	0.080	0.000	0.094	6.914
1999	0.328	0.364	1.409	3.420	1.412	1.882	0.932	0.501	0.289	0.187	0.119	0.097	10.940
2000	0.342	0.785	1.403	2.286	0.585	0.750	0.857	0.501	0.231	0.172	0.050	0.000	7.962
2001	0.315	0.786	1.408	1.757	1.269	1.780	0.626	0.321	0.311	0.187	0.111	0.099	8.969
2002	0.301	0.195	0.962	2.577	1.233	1.235	0.564	0.180	0.129	0.066	0.010	0.000	7.452
2003	0.100	0.717	1.216	1.395	1.074	1.534	0.910	0.465	0.262	0.184	0.119	0.097	8.074

A.129. *Nvij1 – Category D***Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvij1

Annual Flows (Mill. cu. m or index values):

MAR = 35,574

S.Dev. = 22,826

CV = 0,642

Q75 = 0,290

Q75/MMF = 0,098

BFI Index = 0,293

CV(JJA+JFM) Index = 2,050

Ecological Category = D

Total IFR = 4,911 (13,80 %MAR)

Maint. Lowflow = 1,883 (5,29 %MAR)

Drought Lowflow = 0,828 (2,33 %MAR)

Maint. Highflow = 3,028 (8,51 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : E.Escarp

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	1,227	2,450	1,997	0,069	0,000	0,106	0,175
Nov	3,220	3,264	1,014	0,121	0,000	0,309	0,430
Dec	5,953	5,357	0,900	0,201	0,201	0,580	0,782
Jan	7,180	6,711	0,935	0,262	0,110	1,157	1,419
Feb	7,369	7,504	1,018	0,296	0,296	0,233	0,529
Mar	4,859	4,449	0,916	0,276	0,170	0,466	0,742
Apr	2,784	2,642	0,949	0,232	0,050	0,177	0,409
May	1,413	1,426	1,009	0,171	0,000	0,000	0,171
Jun	0,686	0,571	0,832	0,107	0,000	0,000	0,107
Jul	0,375	0,368	0,980	0,066	0,000	0,000	0,066
Aug	0,229	0,336	1,469	0,044	0,000	0,000	0,044
Sep	0,280	0,736	2,626	0,037	0,000	0,000	0,037

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvij1

Regional Type : E.Escarp

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.296	0.295	0.292	0.285	0.271	0.247	0.140	0.020	0.000	0.000
Nov	0.701	0.698	0.690	0.672	0.639	0.580	0.482	0.341	0.173	0.000
Dec	1.267	1.261	1.248	1.221	1.170	1.079	0.931	0.719	0.470	0.291
Jan	2.768	2.466	2.207	1.976	1.755	1.386	1.172	0.870	0.520	0.270
Feb	1.044	0.982	0.927	0.876	0.821	0.729	0.655	0.549	0.425	0.335
Mar	1.455	1.333	1.227	1.131	1.033	0.868	0.752	0.584	0.385	0.210
Apr	0.725	0.723	0.715	0.699	0.669	0.612	0.518	0.379	0.211	0.089
May	0.340	0.339	0.335	0.328	0.313	0.285	0.237	0.165	0.076	0.011
Jun	0.214	0.213	0.211	0.207	0.198	0.180	0.150	0.105	0.048	0.007
Jul	0.132	0.132	0.130	0.128	0.123	0.113	0.094	0.066	0.010	0.000
Aug	0.087	0.086	0.086	0.084	0.080	0.073	0.030	0.010	0.000	0.000
Sep	0.073	0.073	0.073	0.071	0.068	0.020	0.000	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.138	0.137	0.136	0.132	0.126	0.114	0.094	0.020	0.000	0.000
Nov	0.241	0.240	0.237	0.230	0.219	0.197	0.162	0.111	0.051	0.000
Dec	0.402	0.400	0.398	0.392	0.382	0.364	0.335	0.293	0.243	0.208
Jan	0.521	0.518	0.512	0.500	0.478	0.440	0.379	0.293	0.194	0.123
Feb	0.591	0.589	0.585	0.577	0.562	0.536	0.493	0.431	0.358	0.306
Mar	0.549	0.547	0.543	0.533	0.514	0.480	0.425	0.345	0.250	0.182
Apr	0.461	0.460	0.455	0.445	0.426	0.391	0.332	0.245	0.139	0.063
May	0.340	0.339	0.335	0.328	0.313	0.285	0.237	0.165	0.076	0.011
Jun	0.214	0.213	0.211	0.207	0.198	0.180	0.150	0.105	0.048	0.007
Jul	0.132	0.132	0.130	0.128	0.123	0.113	0.094	0.066	0.010	0.000
Aug	0.087	0.086	0.086	0.084	0.080	0.073	0.030	0.010	0.000	0.000
Sep	0.073	0.073	0.073	0.071	0.068	0.020	0.000	0.000	0.000	0.000

Natural Duration curves

Oct	3.050	2.170	1.010	0.580	0.430	0.300	0.140	0.020	0.000	0.000
Nov	7.640	5.620	3.820	2.930	2.330	1.630	1.220	0.800	0.460	0.000
Dec	14.680	9.460	7.150	5.220	4.820	3.660	2.390	1.760	1.030	0.350
Jan	16.200	9.770	7.920	6.230	5.540	4.860	3.510	2.640	1.850	0.810
Feb	18.380	11.410	7.420	5.920	4.720	3.810	3.070	2.260	1.670	0.810
Mar	11.370	6.720	5.510	4.380	3.480	2.810	2.510	1.920	1.100	0.210
Apr	5.880	4.050	3.210	2.820	1.980	1.620	1.280	0.960	0.560	0.110
May	3.140	2.490	1.810	1.400	1.110	0.860	0.520	0.360	0.230	0.070
Jun	1.490	1.030	0.930	0.780	0.620	0.430	0.300	0.190	0.110	0.030
Jul	0.910	0.570	0.520	0.400	0.300	0.200	0.120	0.080	0.010	0.000
Aug	0.620	0.350	0.290	0.200	0.150	0.110	0.030	0.010	0.000	0.000
Sep	0.620	0.370	0.200	0.140	0.100	0.020	0.000	0.000	0.000	0.000

Hydrological time series

Total Runoff : Nvij1

Desktop (Version 2) Modified Flow Data for Ecological Category D													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.296	0.701	1.267	2.580	0.781	1.111	0.691	0.302	0.172	0.100	0.000	0.000	8.001
1921	0.296	0.701	1.263	1.625	0.695	0.881	0.666	0.267	0.138	0.073	0.010	0.000	6.615
1922	0.296	0.701	1.247	2.768	1.044	1.271	0.651	0.199	0.078	0.000	0.000	0.000	8.256
1923	0.000	0.087	0.998	1.516	0.751	1.234	0.725	0.338	0.209	0.122	0.040	0.073	6.093
1924	0.293	0.701	1.257	1.259	0.558	1.172	0.725	0.339	0.214	0.132	0.087	0.073	6.810
1925	0.277	0.310	0.385	0.520	0.701	0.825	0.571	0.256	0.165	0.110	0.020	0.073	4.213
1926	0.292	0.341	0.578	0.432	0.549	0.638	0.542	0.279	0.172	0.128	0.086	0.072	4.109
1927	0.296	0.690	1.023	2.013	0.869	1.034	0.704	0.322	0.184	0.094	0.000	0.020	7.249
1928	0.000	0.568	1.079	1.132	0.485	1.131	0.724	0.328	0.187	0.115	0.050	0.073	5.871
1929	0.296	0.701	1.225	2.123	0.927	1.011	0.518	0.218	0.105	0.066	0.020	0.000	7.210
1930	0.000	0.103	0.931	1.357	0.760	0.762	0.669	0.328	0.198	0.127	0.086	0.069	5.389
1931	0.020	0.420	0.719	0.342	0.422	0.707	0.642	0.311	0.207	0.129	0.073	0.010	4.004
1932	0.266	0.612	1.197	1.500	0.603	0.528	0.548	0.253	0.126	0.046	0.000	0.000	5.678
1933	0.000	0.679	1.228	2.768	1.044	1.188	0.715	0.332	0.207	0.131	0.087	0.073	8.453
1934	0.279	0.698	1.267	2.648	0.821	0.752	0.498	0.185	0.061	0.000	0.000	0.000	7.209
1935	0.000	0.000	0.324	1.554	0.879	0.871	0.658	0.337	0.214	0.132	0.086	0.066	5.120
1936	0.247	0.689	1.124	2.768	1.044	1.407	0.710	0.316	0.172	0.066	0.000	0.000	8.544
1937	0.238	0.246	1.261	2.620	0.810	1.059	0.723	0.340	0.214	0.132	0.086	0.073	7.800
1938	0.296	0.691	1.145	1.755	1.014	1.455	0.724	0.336	0.206	0.130	0.087	0.073	7.912
1939	0.291	0.701	1.262	1.976	0.720	0.663	0.577	0.298	0.214	0.132	0.087	0.073	6.993
1940	0.292	0.654	1.235	1.679	0.606	0.825	0.699	0.336	0.206	0.115	0.020	0.000	6.665
1941	0.110	0.148	0.711	1.764	0.842	0.831	0.673	0.313	0.213	0.132	0.086	0.073	5.897
1942	0.289	0.686	1.211	1.320	0.670	0.774	0.725	0.340	0.214	0.132	0.087	0.073	6.520
1943	0.295	0.682	1.079	2.207	1.031	1.455	0.694	0.276	0.157	0.111	0.050	0.040	8.075
1944	0.277	0.672	1.056	0.785	0.552	0.821	0.687	0.289	0.147	0.044	0.000	0.000	5.332
1945	0.200	0.169	0.220	2.768	1.044	1.309	0.725	0.333	0.186	0.094	0.000	0.000	7.048
1946	0.000	0.628	1.127	2.117	0.915	1.033	0.670	0.315	0.186	0.106	0.010	0.000	7.107
1947	0.220	0.674	1.250	2.317	0.877	1.077	0.687	0.317	0.184	0.094	0.000	0.000	7.697
1948	0.090	0.588	0.937	1.790	0.897	1.220	0.725	0.340	0.214	0.131	0.082	0.072	7.086
1949	0.270	0.609	1.170	1.883	0.748	0.920	0.703	0.333	0.210	0.125	0.081	0.050	7.102
1950	0.020	0.221	0.818	0.870	0.504	0.692	0.706	0.339	0.214	0.132	0.087	0.073	4.676
1951	0.292	0.516	1.152	1.592	0.477	0.385	0.354	0.279	0.199	0.130	0.086	0.068	5.531
1952	0.000	0.698	1.262	1.941	0.805	1.162	0.715	0.332	0.201	0.113	0.010	0.000	7.239
1953	0.000	0.699	1.242	1.402	1.034	1.455	0.725	0.340	0.214	0.132	0.082	0.073	7.397
1954	0.271	0.402	0.483	2.400	1.010	1.438	0.725	0.340	0.214	0.132	0.085	0.010	7.508
1955	0.288	0.620	1.257	2.289	0.876	1.336	0.713	0.335	0.214	0.132	0.085	0.073	8.219
1956	0.296	0.694	1.221	1.560	0.705	1.058	0.721	0.339	0.214	0.132	0.087	0.073	7.098
1957	0.294	0.615	0.818	2.243	0.950	0.615	0.614	0.330	0.204	0.117	0.030	0.073	6.903
1958	0.283	0.580	1.263	2.636	0.787	0.707	0.501	0.309	0.213	0.130	0.077	0.070	7.554
1959	0.230	0.384	1.063	1.162	0.487	0.653	0.709	0.339	0.213	0.126	0.078	0.065	5.510
1960	0.279	0.660	1.267	2.768	0.839	1.259	0.723	0.339	0.214	0.131	0.082	0.073	8.634
1961	0.285	0.639	1.240	2.075	0.655	0.584	0.617	0.312	0.183	0.080	0.000	0.020	6.690
1962	0.253	0.693	1.208	1.172	0.613	0.409	0.424	0.267	0.211	0.132	0.087	0.073	5.542
1963	0.293	0.666	0.944	0.935	0.598	0.363	0.239	0.165	0.078	0.000	0.000	0.000	4.282
1964	0.296	0.701	1.168	1.981	0.860	0.514	0.267	0.122	0.061	0.010	0.010	0.020	6.009
1965	0.030	0.457	1.103	1.925	0.849	0.843	0.329	0.045	0.024	0.000	0.000	0.000	5.605
1966	0.275	0.451	1.211	1.825	0.996	1.455	0.721	0.338	0.210	0.125	0.078	0.020	7.705
1967	0.286	0.681	1.248	2.157	0.729	1.106	0.724	0.338	0.212	0.124	0.080	0.050	7.735
1968	0.000	0.671	1.116	0.908	0.852	1.355	0.725	0.340	0.214	0.132	0.085	0.073	6.469
1969	0.296	0.697	1.176	1.237	0.957	0.732	0.211	0.224	0.135	0.066	0.078	0.000	5.810
1970	0.290	0.682	0.753	1.010	0.443	0.283	0.305	0.237	0.126	0.124	0.086	0.073	4.412
1971	0.249	0.701	1.267	2.576	0.923	1.380	0.612	0.340	0.213	0.123	0.085	0.068	8.536
1972	0.000	0.497	0.539	1.087	1.042	1.455	0.725	0.340	0.212	0.129	0.087	0.073	6.184
1973	0.296	0.701	1.267	2.073	0.940	0.471	0.689	0.338	0.211	0.131	0.087	0.071	7.275
1974	0.000	0.662	1.267	2.730	1.044	1.333	0.721	0.301	0.112	0.100	0.086	0.068	8.423
1975	0.070	0.701	1.267	2.768	0.971	1.326	0.725	0.340	0.213	0.130	0.086	0.069	8.666
1976	0.289	0.543	1.220	2.314	0.966	1.285	0.719	0.224	0.073	0.121	0.084	0.073	7.910
1977	0.000	0.462	0.578	2.608	1.012	1.455	0.454	0.171	0.180	0.109	0.086	0.000	7.117
1978	0.296	0.631	0.646	0.270	0.392	0.256	0.577	0.316	0.212	0.132	0.085	0.073	3.885
1979	0.296	0.701	0.922	1.305	0.982	1.090	0.186	0.076	0.150	0.125	0.073	0.069	5.974
1980	0.000	0.389	0.385	0.823	1.017	1.402	0.294	0.089	0.024	0.087	0.082	0.000	4.591
1981	0.266	0.246	0.395	0.473	0.362	0.170	0.050	0.000	0.000	0.000	0.000	0.000	1.961
1982	0.100	0.067	0.291	0.328	0.335	0.240	0.089	0.014	0.007	0.000	0.040	0.000	1.510
1983	0.000	0.701	1.252	2.768	1.044	1.227	0.656	0.016	0.169	0.131	0.086	0.073	8.124
1984	0.296	0.588	0.440	0.110	0.425	1.279	0.119	0.136	0.207	0.132	0.087	0.072	3.891
1985	0.287	0.543	0.761	0.553	0.688	0.292	0.201	0.045	0.034	0.094	0.050	0.000	3.547
1986	0.000	0.067	0.310	0.967	0.604	0.868	0.379	0.045	0.019	0.000	0.073	0.073	3.406
1987	0.296	0.701	1.257	0.785	0.323	0.288	0.124	0.182	0.129	0.115	0.000	0.073	4.273
1988	0.295	0.290	1.267	2.333	0.936	0.977	0.127	0.030	0.207	0.080	0.075	0.020	6.634
1989	0.140	0.697	1.266	0.671	0.725	1.208	0.611	0.319	0.126	0.100	0.050	0.040	5.953
1990	0.080	0.124	0.802	2.466	0.978	1.431	0.709	0.285	0.193	0.129	0.087	0.000	7.284
1991	0.200	0.573	0.470	0.370	0.343	0.210	0.101	0.011	0.019	0.000	0.000	0.000	2.296
1992	0.000	0.000	0.895	0.671	0.343	1.023	0.411	0.045	0.084	0.030	0.020	0.000	3.522
1993	0.090	0.482	1.235	1.368	0.900	1.171	0.405	0.115	0.007	0.046	0.080	0.060	5.959
1994	0.210	0.406	0.342	0.333	0.361	0.285	0.186	0.108	0.048	0.117	0.073	0.000	2.469
1995	0.247	0.197	1.267	2.684	1.044	1.455	0.725	0.340	0.214	0.131	0.085	0.066	8.453
1996	0.296	0.680	0.660	0.498	0.411	0.927	0.717	0.332	0.212	0.131	0.085	0.073	5.022
1997	0.294	0.696	1.203	0.842	0.519	0.444	0.284	0.122	0.048	0.000	0.000	0.000	4.453
1998	0.287	0.538	1.231	1.237	0.570	0.521	0.584	0.286	0.210	0.066	0.000	0.069	5.600
1999	0.281	0.324	1.267	2.768	1.044	1.455	0.725	0.340	0.199	0.132	0.086	0.072	8.691
2000	0.293	0.701	1.261	1.819	0.479	0.584	0.667	0.340	0.159	0.121	0.050	0.000	6.474
2001	0.270	0.701	1.266	1.386	0.926	1.368	0.491	0.218	0.213	0.132	0.081	0.073	7.126
2002	0.258	0.173	0.872	2.058	0.898	0.930	0.444	0.122	0.089	0.046	0.010	0.000	5.900
2003	0.100	0.640	1.097	1.108	0.784	1.164	0.708	0.316	0.108	0.129	0.087	0.071	6.384
20													

A.130. *Nvii2 – Category B***Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvii2

Annual Flows (Mill. cu. m or index values):

MAR = 41,938
 S.Dev. = 23,414
 CV = 0,558
 Q75 = 0,750
 Q75/MMF = 0,215
 BFI Index = 0,389
 CV(JJA+JFM) Index = 1,689

Ecological Category = B

Total IFR = 14,289 (34,07 %MAR)
 Maint. Lowflow = 9,834 (23,45 %MAR)
 Drought Lowflow = 2,564 (6,11 %MAR)
 Maint. Highflow = 4,456 (10,62 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	1,894	2,955	1,560	0,501	0,130	0,193	0,694
Nov	4,159	4,253	1,023	0,702	0,214	0,524	1,226
Dec	6,779	5,614	0,828	0,979	0,287	0,597	1,576
Jan	7,357	6,086	0,827	1,151	0,333	1,709	2,860
Feb	7,177	6,036	0,841	1,242	0,357	0,597	1,839
Mar	5,456	5,023	0,921	1,223	0,352	0,585	1,808
Apr	3,484	3,258	0,935	1,087	0,240	0,228	1,315
May	1,891	1,488	0,787	0,874	0,170	0,000	0,874
Jun	1,190	0,781	0,657	0,670	0,160	0,000	0,670
Jul	1,030	1,011	0,982	0,559	0,140	0,000	0,559
Aug	0,783	0,656	0,838	0,455	0,110	0,000	0,455
Sep	0,737	0,718	0,974	0,392	0,070	0,021	0,413

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvii2

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.810	0.803	0.789	0.760	0.704	0.614	0.486	0.338	0.212	0.150
Nov	1.412	1.403	1.385	1.350	1.285	1.170	0.987	0.734	0.451	0.260
Dec	2.329	2.168	2.023	1.882	1.727	1.464	1.239	0.925	0.576	0.356
Jan	4.694	4.244	3.852	3.495	3.135	2.531	2.122	1.553	0.919	0.520
Feb	2.644	2.481	2.332	2.184	2.014	1.727	1.462	1.095	0.685	0.427
Mar	2.100	2.087	2.061	2.010	1.913	1.743	1.474	1.100	0.684	0.421
Apr	1.547	1.535	1.507	1.449	1.342	1.166	0.917	0.630	0.385	0.250
May	1.043	1.035	1.016	0.977	0.904	0.784	0.615	0.420	0.253	0.175
Jun	0.800	0.794	0.780	0.751	0.698	0.610	0.486	0.343	0.221	0.164
Jul	0.668	0.663	0.651	0.628	0.584	0.511	0.409	0.291	0.190	0.143
Aug	0.543	0.539	0.529	0.510	0.474	0.414	0.330	0.234	0.151	0.113
Sep	0.491	0.487	0.478	0.459	0.424	0.367	0.285	0.192	0.112	0.075

Reserve Flows without High Flows

Oct	0.598	0.594	0.583	0.563	0.523	0.459	0.368	0.264	0.174	0.133
Nov	0.839	0.834	0.825	0.805	0.770	0.707	0.607	0.469	0.315	0.218
Dec	1.169	1.163	1.149	1.122	1.071	0.983	0.843	0.647	0.430	0.293
Jan	1.374	1.367	1.350	1.319	1.259	1.155	0.989	0.758	0.501	0.340
Feb	1.483	1.475	1.458	1.423	1.359	1.246	1.066	0.817	0.539	0.364
Mar	1.460	1.452	1.435	1.401	1.337	1.226	1.050	0.804	0.531	0.359
Apr	1.297	1.287	1.265	1.217	1.129	0.984	0.779	0.542	0.341	0.247
May	1.043	1.035	1.016	0.977	0.904	0.784	0.615	0.420	0.253	0.175
Jun	0.800	0.794	0.780	0.751	0.698	0.610	0.486	0.343	0.221	0.164
Jul	0.668	0.663	0.651	0.628	0.584	0.511	0.409	0.291	0.190	0.143
Aug	0.543	0.539	0.529	0.510	0.474	0.414	0.330	0.234	0.151	0.113
Sep	0.467	0.464	0.455	0.437	0.404	0.350	0.272	0.184	0.108	0.072

Natural Duration curves

Oct	4.180	2.590	1.860	1.260	1.020	0.660	0.540	0.380	0.260	0.150
Nov	9.290	6.370	4.820	4.110	3.080	2.180	1.790	1.140	0.680	0.260
Dec	15.130	10.880	8.230	6.510	5.630	3.890	3.080	2.180	1.760	0.720
Jan	15.870	11.520	8.930	7.000	5.920	4.670	3.950	2.440	1.590	0.990
Feb	15.400	10.650	9.490	7.170	5.600	4.090	3.200	2.460	1.780	0.700
Mar	11.990	7.820	6.660	4.630	3.620	3.200	2.940	1.850	1.450	0.700
Apr	7.600	5.050	3.780	3.260	2.700	2.090	1.770	1.220	0.950	0.250
May	4.110	2.640	2.260	1.830	1.540	1.240	1.110	0.780	0.600	0.200
Jun	2.390	1.630	1.470	1.240	1.070	0.890	0.660	0.570	0.410	0.170
Jul	1.730	1.270	1.110	0.940	0.830	0.710	0.650	0.540	0.430	0.150
Aug	1.450	1.090	0.860	0.760	0.630	0.520	0.480	0.360	0.290	0.130
Sep	1.450	0.890	0.720	0.650	0.570	0.460	0.390	0.330	0.220	0.140

Hydrological time series

Total Runoff : Nvii2

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.810	1.412	2.216	4.005	1.812	2.053	1.542	1.035	0.794	0.658	0.517	0.393	17.246
1921	0.776	1.412	2.329	4.694	2.137	1.641	1.067	0.832	0.659	0.511	0.474	0.455	16.986
1922	0.810	1.412	2.161	4.244	2.332	1.641	0.732	0.578	0.523	0.190	0.136	0.076	14.835
1923	0.130	0.343	0.766	2.398	1.862	2.013	1.500	0.967	0.745	0.584	0.425	0.350	12.082
1924	0.629	1.178	1.225	1.370	0.905	2.079	1.547	1.041	0.799	0.668	0.543	0.490	12.472
1925	0.739	0.987	0.723	0.608	0.993	1.342	0.917	0.784	0.701	0.596	0.477	0.491	9.357
1926	0.789	0.734	0.412	3.325	2.420	2.088	1.536	1.026	0.780	0.659	0.535	0.455	14.758
1927	0.809	1.350	1.568	2.671	0.618	1.800	1.479	0.896	0.723	0.553	0.381	0.285	13.135
1928	0.325	0.717	1.378	2.451	1.951	2.085	1.544	1.037	0.795	0.663	0.531	0.489	13.968
1929	0.806	1.410	2.168	4.015	2.173	1.272	0.704	0.551	0.432	0.188	0.151	0.112	13.982
1930	0.150	0.280	0.423	2.531	2.012	1.919	1.415	1.010	0.785	0.663	0.539	0.476	12.204
1931	0.577	0.907	1.299	2.013	1.462	1.856	1.354	0.962	0.780	0.647	0.510	0.398	12.765
1932	0.409	0.792	1.101	1.427	1.706	2.041	1.481	0.997	0.771	0.640	0.496	0.377	12.239
1933	0.312	1.385	1.938	4.676	2.642	2.010	1.538	1.043	0.800	0.668	0.543	0.491	18.045
1934	0.767	1.394	2.259	4.594	2.307	2.091	1.546	1.036	0.787	0.645	0.493	0.350	18.269
1935	0.299	0.260	1.239	3.495	2.038	1.530	1.090	1.041	0.800	0.668	0.541	0.484	13.483
1936	0.799	1.412	2.329	4.633	2.644	2.096	1.449	0.917	0.707	0.470	0.275	0.143	17.874
1937	0.261	0.319	1.776	3.669	1.439	0.860	1.438	1.041	0.794	0.660	0.534	0.459	13.249
1938	0.797	1.171	0.380	0.750	2.644	2.100	1.531	1.027	0.794	0.665	0.542	0.488	12.890
1939	0.783	1.412	2.252	3.592	2.133	2.029	1.334	1.024	0.800	0.668	0.543	0.491	17.058
1940	0.732	1.363	2.084	3.475	2.415	2.100	1.547	1.043	0.800	0.666	0.537	0.471	17.232
1941	0.659	0.604	0.925	3.562	2.121	1.913	1.467	0.892	0.693	0.470	0.303	0.268	13.877
1942	0.669	1.218	1.404	3.478	2.395	2.065	1.547	1.043	0.800	0.668	0.543	0.491	16.320
1943	0.803	1.395	2.023	3.758	2.644	2.100	1.508	0.962	0.766	0.642	0.485	0.483	17.568
1944	0.775	1.353	1.570	3.646	2.249	1.844	1.342	0.900	0.698	0.470	0.275	0.143	15.266
1945	0.220	0.458	0.356	2.691	2.202	2.049	1.527	0.996	0.753	0.592	0.431	0.205	12.480
1946	0.197	0.728	1.020	2.122	1.488	1.060	0.786	0.725	0.595	0.316	0.234	0.112	9.384
1947	0.338	0.984	1.615	4.062	2.285	1.756	1.256	0.944	0.751	0.588	0.425	0.232	15.236
1948	0.547	1.410	2.129	3.852	2.309	1.391	1.285	1.016	0.790	0.657	0.521	0.419	16.326
1949	0.677	1.149	2.015	4.158	2.229	2.023	1.276	1.026	0.799	0.666	0.540	0.484	17.040
1950	0.338	0.418	1.306	2.376	2.267	1.768	1.440	0.979	0.717	0.588	0.543	0.491	13.228
1951	0.806	1.082	1.998	1.788	0.448	0.471	0.404	0.208	0.190	0.316	0.183	0.093	7.987
1952	0.150	1.342	1.928	1.496	2.423	2.087	1.492	0.615	0.560	0.221	0.151	0.093	12.559
1953	0.197	1.103	1.789	3.241	2.644	2.093	1.390	0.979	0.659	0.250	0.488	0.484	15.315
1954	0.804	1.188	0.536	4.694	2.644	2.100	1.543	1.041	0.798	0.663	0.534	0.377	16.920
1955	0.750	1.082	1.945	3.541	1.016	2.077	1.545	1.014	0.789	0.656	0.524	0.478	15.417
1956	0.808	1.370	1.875	3.181	0.681	0.860	1.082	0.876	0.683	0.628	0.529	0.491	13.065
1957	0.810	1.324	1.417	2.913	1.784	1.100	1.448	0.872	0.615	0.529	0.425	0.489	13.725
1958	0.734	1.101	1.642	3.115	0.858	0.649	0.306	1.035	0.459	0.351	0.260	0.479	10.990
1959	0.669	1.175	1.611	0.621	0.493	0.671	1.166	0.767	0.486	0.399	0.381	0.295	8.734
1960	0.563	1.390	2.329	3.029	2.500	2.100	1.547	1.043	0.800	0.666	0.536	0.459	16.963
1961	0.614	1.136	2.283	4.362	2.592	1.697	0.577	0.469	0.432	0.351	0.289	0.367	15.168
1962	0.606	1.398	1.944	2.638	0.951	0.784	0.735	0.317	0.754	0.668	0.543	0.484	11.822
1963	0.776	1.402	0.545	2.666	1.661	0.421	0.288	0.193	0.177	0.154	0.121	0.078	8.483
1964	0.810	1.412	2.045	4.051	1.462	0.790	0.297	0.242	0.221	0.229	0.203	0.491	12.252
1965	0.430	0.319	1.069	1.210	1.212	0.421	0.250	0.175	0.160	0.143	0.113	0.075	5.577
1966	0.801	0.717	1.502	1.106	2.481	1.976	1.522	0.964	0.654	0.632	0.513	0.334	13.201
1967	0.547	1.412	2.301	0.919	0.427	1.979	1.012	0.381	0.343	0.270	0.270	0.150	10.012
1968	0.161	1.406	1.905	1.614	1.095	2.076	1.523	1.043	0.794	0.648	0.502	0.491	13.258
1969	0.810	1.285	1.944	1.931	2.120	0.920	0.350	0.541	0.332	0.553	0.193	0.143	11.121
1970	0.704	1.170	0.403	2.245	1.153	0.559	0.394	0.259	0.289	0.186	0.151	0.219	7.734
1971	0.402	1.358	2.169	4.694	2.359	2.063	1.402	1.037	0.774	0.638	0.517	0.409	17.819
1972	0.423	1.368	0.732	0.740	1.740	1.650	1.547	0.977	0.723	0.553	0.542	0.471	11.467
1973	0.760	1.397	2.329	4.381	2.573	1.940	1.506	1.023	0.792	0.666	0.535	0.459	18.362
1974	0.624	1.403	2.329	4.496	2.644	2.096	1.535	0.999	0.757	0.630	0.510	0.481	18.503
1975	0.644	1.384	2.329	4.694	2.463	2.061	1.547	1.043	0.799	0.668	0.541	0.487	18.661
1976	0.773	1.248	1.031	2.456	2.548	1.971	1.470	0.717	0.592	0.409	0.452	0.414	14.080
1977	0.486	0.861	0.565	4.694	2.367	2.100	1.460	0.977	0.748	0.651	0.520	0.490	15.918
1978	0.810	1.292	0.576	1.806	1.524	0.544	0.479	0.266	0.327	0.229	0.425	0.446	8.724
1979	0.769	1.292	1.577	2.119	2.494	1.474	0.630	0.343	0.363	0.270	0.347	0.424	12.103
1980	0.516	1.006	0.699	0.711	1.843	2.036	0.586	0.407	0.405	0.291	0.289	0.446	9.234
1981	0.721	0.886	1.097	2.376	0.539	0.488	0.283	0.180	0.165	0.140	0.110	0.070	7.053
1982	0.205	0.300	0.356	0.520	0.427	0.449	0.240	0.170	0.164	0.145	0.117	0.083	3.177
1983	0.252	1.407	2.097	4.296	2.611	1.697	1.206	0.420	0.486	0.547	0.436	0.462	15.919
1984	0.797	1.290	0.952	0.721	1.623	1.173	0.364	0.615	0.203	0.162	0.131	0.164	8.196
1985	0.718	0.850	1.438	1.056	1.626	1.236	1.074	0.253	0.244	0.458	0.136	0.083	9.173
1986	0.212	0.377	0.791	1.987	0.706	1.743	0.364	0.193	0.177	0.154	0.146	0.491	7.341
1987	0.810	1.412	2.088	1.815	0.664	1.974	0.568	0.234	0.244	0.291	0.213	0.232	10.545
1988	0.809	1.197	1.860	2.232	2.216	1.864	0.385	0.448	0.785	0.470	0.381	0.192	12.838
1989	0.338	1.287	1.727	1.553	0.472	1.848	0.895	0.734	0.363	0.250	0.203	0.143	9.812
1990	0.286	0.451	1.220	4.694	2.184	2.097	1.536	0.615	0.523	0.446	0.364	0.325	14.741
1991	0.486	0.571	0.592	0.567	1.311	1.391	1.043	0.812	0.620	0.342	0.116	0.232	8.083
1992	0.167	0.230	2.073	2.898	1.892	2.096	1.521	1.030	0.363	0.470	0.524	0.469	13.734
1993	0.808	1.289	1.769	4.020	2.159	1.453	0.577	0.246	0.194	0.578	0.414	0.232	13.739
1994	0.599	0.738	0.799	1.187	1.679	1.977	1.533	0.578	0.607	0.608	0.543	0.367	11.214
1995	0.725	1.407	2.329	4.694	2.644	2.100	1.547	1.043	0.800	0.667	0.541	0.459	18.956
1996	0.810	1.396	1.881	3.241	0.716	1.240	1.189	1.035	0.432	0.616	0.543	0.459	13.557
1997	0.807	1.409	1.882	4.304	2.560	2.075	0.988	0.330	0.338	0.596	0.347	0.424	16.060
1998	0.793	1.382	2.274	3.712	1.272	0.900	0.754	0.676	0.221	0.169	0.249	0.171	12.571
1999	0.788	0.756	2.190	4.694	2.644	2.099	1.547	1.043	0.800	0.668	0.542	0.490	18.260
2000	0.797	1.409	2.329	3.950	0.685	0.684	1.204	0.904	0.268	0.547	0.414	0.403	13.594
2001	0.794	1.405	1.464	0.520	1.264	1.747	0.754	0.441	0.629	0.523	0.431	0.315	10.287
2002	0.641	0.543	1.275	3.358	1.205	1.519	0.884	0.784	0.610	0.390	0.330	0.232	11.772
2003	0.174	1.381	1.626	3.135	2.014	2.100	1.209	0.504	0.774	0.664	0		

A.131. *Nvii2 – Category C***Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvii2

Annual Flows (Mill. cu. m or index values):

MAR = 41,938
 S.Dev. = 23,414
 CV = 0,558
 Q75 = 0,750
 Q75/MMF = 0,215
 BFI Index = 0,389
 CV(JJA+JFM) Index = 1,689

Ecological Category = C

Total IFR = 9,429 (22,48 %MAR)
 Maint. Lowflow = 5,728 (13,66 %MAR)
 Drought Lowflow = 2,564 (6,11 %MAR)
 Maint. Highflow = 3,700 (8,82 %MAR)

Monthly Distributions (Mill. cu. m.)
 Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	1,894	2,955	1,560	0,302	0,130	0,161	0,463
Nov	4,159	4,253	1,023	0,413	0,214	0,435	0,848
Dec	6,779	5,614	0,828	0,565	0,287	0,496	1,061
Jan	7,357	6,086	0,827	0,660	0,333	1,419	2,079
Feb	7,177	6,036	0,841	0,710	0,357	0,496	1,206
Mar	5,456	5,023	0,921	0,699	0,352	0,486	1,185
Apr	3,484	3,258	0,935	0,624	0,240	0,189	0,814
May	1,891	1,488	0,787	0,507	0,170	0,000	0,507
Jun	1,190	0,781	0,657	0,395	0,160	0,000	0,395
Jul	1,030	1,011	0,982	0,334	0,140	0,000	0,334
Aug	0,783	0,656	0,838	0,277	0,110	0,000	0,277
Sep	0,737	0,718	0,974	0,242	0,070	0,018	0,260

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvii2

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.598	0.593	0.584	0.563	0.526	0.464	0.376	0.275	0.189	0.149
Nov	1.095	1.088	1.076	1.050	1.002	0.918	0.785	0.599	0.393	0.260
Dec	1.751	1.619	1.503	1.393	1.277	1.082	0.931	0.722	0.490	0.343
Jan	3.676	3.305	2.984	2.696	2.413	1.939	1.644	1.233	0.775	0.487
Feb	1.953	1.820	1.701	1.588	1.464	1.256	1.084	0.846	0.581	0.414
Mar	1.555	1.546	1.528	1.493	1.427	1.311	1.127	0.872	0.587	0.408
Apr	1.068	1.060	1.042	1.006	0.939	0.828	0.671	0.490	0.336	0.250
May	0.687	0.682	0.671	0.647	0.604	0.533	0.433	0.318	0.219	0.173
Jun	0.535	0.531	0.523	0.506	0.475	0.424	0.351	0.267	0.196	0.162
Jul	0.453	0.450	0.443	0.429	0.403	0.360	0.299	0.229	0.170	0.142
Aug	0.375	0.372	0.366	0.355	0.332	0.296	0.245	0.186	0.135	0.112
Sep	0.348	0.346	0.340	0.327	0.304	0.266	0.213	0.151	0.098	0.074

Reserve Flows without High Flows

Oct	0.409	0.406	0.400	0.388	0.365	0.326	0.272	0.210	0.157	0.132
Nov	0.576	0.573	0.568	0.556	0.536	0.499	0.442	0.362	0.272	0.216
Dec	0.788	0.784	0.777	0.761	0.732	0.682	0.603	0.492	0.368	0.291
Jan	0.920	0.915	0.906	0.888	0.855	0.796	0.702	0.573	0.428	0.337
Feb	0.990	0.985	0.975	0.956	0.920	0.856	0.756	0.616	0.459	0.361
Mar	0.975	0.970	0.961	0.942	0.906	0.843	0.744	0.606	0.453	0.356
Apr	0.845	0.840	0.827	0.799	0.749	0.666	0.548	0.413	0.298	0.244
May	0.687	0.682	0.671	0.647	0.604	0.533	0.433	0.318	0.219	0.173
Jun	0.535	0.531	0.523	0.506	0.475	0.424	0.351	0.267	0.196	0.162
Jul	0.453	0.450	0.443	0.429	0.403	0.360	0.299	0.229	0.170	0.142
Aug	0.375	0.372	0.366	0.355	0.332	0.296	0.245	0.186	0.135	0.112
Sep	0.328	0.325	0.319	0.308	0.286	0.251	0.201	0.144	0.094	0.072

Natural Duration curves

Oct	4.180	2.590	1.860	1.260	1.020	0.660	0.540	0.380	0.260	0.150
Nov	9.290	6.370	4.820	4.110	3.080	2.180	1.790	1.140	0.680	0.260
Dec	15.130	10.880	8.230	6.510	5.630	3.890	3.080	2.180	1.760	0.720
Jan	15.870	11.520	8.930	7.000	5.920	4.670	3.950	2.440	1.590	0.990
Feb	15.400	10.650	9.490	7.170	5.600	4.090	3.200	2.460	1.780	0.700
Mar	11.990	7.820	6.660	4.630	3.620	3.200	2.940	1.850	1.450	0.700
Apr	7.600	5.050	3.780	3.260	2.700	2.090	1.770	1.220	0.950	0.250
May	4.110	2.640	2.260	1.830	1.540	1.240	1.110	0.780	0.600	0.200
Jun	2.390	1.630	1.470	1.240	1.070	0.890	0.660	0.570	0.410	0.170
Jul	1.730	1.270	1.110	0.940	0.830	0.710	0.650	0.540	0.430	0.150
Aug	1.450	1.090	0.860	0.760	0.630	0.520	0.480	0.360	0.290	0.130
Sep	1.450	0.890	0.720	0.650	0.570	0.460	0.390	0.330	0.220	0.140

Hydrological time series

Total Runoff : Nvii2

Desktop (Version 2) Modified Flow Data for Ecological Category C													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.598	1.095	1.658	3.109	1.318	1.523	1.065	0.682	0.532	0.447	0.359	0.284	12.667
1921	0.574	1.095	1.751	3.676	1.554	1.241	0.765	0.562	0.452	0.360	0.332	0.325	12.688
1922	0.598	1.095	1.614	3.305	1.701	1.241	0.554	0.411	0.373	0.170	0.126	0.075	11.262
1923	0.130	0.314	0.616	1.843	1.354	1.495	1.038	0.642	0.503	0.403	0.303	0.256	8.895
1924	0.474	0.924	0.922	1.101	0.723	1.540	1.068	0.685	0.535	0.453	0.375	0.348	9.146
1925	0.549	0.785	0.588	0.550	0.780	1.037	0.671	0.533	0.477	0.410	0.334	0.348	7.062
1926	0.584	0.599	0.380	2.562	1.771	1.546	1.061	0.677	0.523	0.447	0.370	0.325	10.845
1927	0.597	1.050	1.159	2.049	0.537	1.350	1.025	0.600	0.490	0.385	0.276	0.213	9.730
1928	0.266	0.587	1.025	1.882	1.419	1.544	1.066	0.683	0.532	0.450	0.367	0.347	10.168
1929	0.595	1.093	1.619	3.117	1.580	0.989	0.537	0.396	0.319	0.168	0.135	0.098	10.647
1930	0.149	0.269	0.388	1.939	1.463	1.431	0.985	0.667	0.526	0.450	0.372	0.338	8.977
1931	0.439	0.725	0.972	1.565	1.084	1.388	0.946	0.639	0.523	0.440	0.355	0.287	9.363
1932	0.323	0.642	0.840	1.142	1.243	1.514	1.026	0.659	0.518	0.436	0.346	0.273	8.963
1933	0.258	1.076	1.436	3.662	1.952	1.493	1.062	0.687	0.535	0.453	0.375	0.348	13.334
1934	0.569	1.082	1.694	3.594	1.682	1.548	1.067	0.682	0.527	0.439	0.344	0.256	13.483
1935	0.249	0.260	0.931	2.696	1.481	1.165	0.780	0.685	0.535	0.453	0.373	0.344	9.951
1936	0.590	1.095	1.751	3.626	1.953	1.552	1.006	0.612	0.481	0.336	0.211	0.118	13.331
1937	0.222	0.296	1.314	2.836	1.069	0.707	0.999	0.685	0.531	0.448	0.369	0.327	9.804
1938	0.589	0.919	0.359	0.653	1.953	1.555	1.058	0.677	0.532	0.451	0.374	0.347	9.466
1939	0.579	1.095	1.688	2.773	1.551	1.506	0.933	0.675	0.535	0.453	0.375	0.348	12.510
1940	0.544	1.059	1.551	2.680	1.767	1.555	1.068	0.687	0.535	0.451	0.371	0.335	12.603
1941	0.495	0.505	0.722	2.749	1.542	1.427	1.017	0.597	0.472	0.336	0.228	0.201	10.291
1942	0.502	0.953	1.042	2.682	1.751	1.531	1.068	0.687	0.535	0.453	0.375	0.348	11.925
1943	0.593	1.082	1.503	2.907	1.953	1.555	1.043	0.639	0.515	0.437	0.339	0.343	12.910
1944	0.574	1.052	1.160	2.817	1.637	1.380	0.939	0.602	0.475	0.336	0.211	0.118	11.301
1945	0.195	0.398	0.343	2.064	1.602	1.520	1.055	0.659	0.507	0.407	0.306	0.160	9.216
1946	0.179	0.595	0.786	1.644	1.101	0.844	0.589	0.498	0.415	0.244	0.186	0.098	7.179
1947	0.275	0.782	1.194	3.156	1.665	1.319	0.884	0.628	0.506	0.405	0.303	0.178	11.295
1948	0.418	1.094	1.587	2.984	1.683	1.070	0.902	0.671	0.529	0.446	0.361	0.301	12.047
1949	0.507	0.903	1.496	3.234	1.622	1.502	0.897	0.676	0.535	0.452	0.373	0.344	12.539
1950	0.275	0.368	0.976	1.827	1.651	1.328	1.000	0.649	0.486	0.405	0.375	0.348	9.688
1951	0.595	0.853	1.483	1.403	0.427	0.442	0.348	0.193	0.178	0.244	0.155	0.085	6.406
1952	0.149	1.044	1.428	1.191	1.774	1.546	1.033	0.433	0.395	0.188	0.135	0.085	9.402
1953	0.179	0.869	1.323	2.496	1.953	1.550	0.969	0.649	0.452	0.205	0.341	0.344	11.329
1954	0.594	0.931	0.463	3.676	1.953	1.555	1.065	0.685	0.534	0.450	0.369	0.273	12.548
1955	0.557	0.853	1.441	2.732	0.795	1.539	1.066	0.669	0.529	0.446	0.363	0.340	11.331
1956	0.596	1.065	1.387	2.449	0.578	0.707	0.775	0.588	0.467	0.429	0.366	0.348	9.756
1957	0.598	1.030	1.050	2.238	1.297	0.872	1.005	0.585	0.426	0.371	0.303	0.347	10.123
1958	0.546	0.867	1.214	2.397	0.693	0.564	0.286	0.682	0.335	0.265	0.202	0.341	8.392
1959	0.502	0.922	1.191	0.560	0.456	0.579	0.828	0.523	0.351	0.294	0.276	0.219	6.698
1960	0.429	1.079	1.751	2.329	1.836	1.555	1.068	0.687	0.535	0.452	0.371	0.327	12.418
1961	0.464	0.893	1.713	3.402	1.911	1.279	0.457	0.347	0.319	0.265	0.220	0.266	11.536
1962	0.459	1.085	1.440	2.023	0.753	0.656	0.556	0.257	0.508	0.453	0.375	0.344	8.908
1963	0.575	1.088	0.469	2.045	1.213	0.408	0.275	0.184	0.170	0.148	0.117	0.076	6.767
1964	0.598	1.095	1.520	3.146	1.084	0.660	0.280	0.212	0.196	0.193	0.167	0.348	9.500
1965	0.338	0.296	0.819	0.985	0.922	0.408	0.250	0.173	0.160	0.142	0.112	0.074	4.677
1966	0.592	0.587	1.110	0.910	1.820	1.470	1.052	0.640	0.449	0.431	0.357	0.245	9.662
1967	0.418	1.095	1.728	0.775	0.414	1.472	0.730	0.295	0.267	0.217	0.208	0.123	7.742
1968	0.154	1.091	1.410	1.277	0.846	1.538	1.052	0.687	0.531	0.441	0.349	0.348	9.726
1969	0.598	1.002	1.440	1.506	1.541	0.749	0.314	0.389	0.261	0.385	0.161	0.118	8.463
1970	0.526	0.918	0.374	1.733	0.884	0.502	0.342	0.223	0.236	0.167	0.135	0.169	6.209
1971	0.319	1.055	1.620	3.676	1.723	1.529	0.976	0.683	0.520	0.435	0.359	0.294	13.188
1972	0.333	1.063	0.594	0.646	1.266	1.247	1.068	0.647	0.490	0.385	0.374	0.335	8.448
1973	0.563	1.084	1.751	3.418	1.895	1.445	1.042	0.675	0.531	0.452	0.370	0.327	13.553
1974	0.470	1.088	1.751	3.513	1.953	1.552	1.060	0.660	0.510	0.430	0.355	0.342	13.685
1975	0.484	1.075	1.751	3.676	1.806	1.528	1.068	0.687	0.535	0.453	0.373	0.346	13.782
1976	0.573	0.975	0.793	1.885	1.875	1.467	1.019	0.493	0.413	0.299	0.319	0.297	10.408
1977	0.376	0.692	0.482	3.676	1.729	1.555	1.013	0.647	0.505	0.443	0.361	0.348	11.826
1978	0.598	1.007	0.490	1.415	1.125	0.492	0.395	0.227	0.258	0.193	0.303	0.319	6.820
1979	0.570	1.007	1.166	1.642	1.831	1.127	0.490	0.272	0.279	0.217	0.255	0.304	9.160
1980	0.397	0.798	0.572	0.624	1.340	1.511	0.462	0.310	0.303	0.229	0.220	0.319	7.086
1981	0.537	0.710	0.837	1.827	0.486	0.453	0.272	0.176	0.163	0.140	0.110	0.070	5.780
1982	0.184	0.282	0.343	0.487	0.414	0.427	0.240	0.170	0.162	0.143	0.114	0.079	3.045
1983	0.217	1.091	1.561	3.348	1.927	1.279	0.853	0.318	0.351	0.381	0.309	0.330	11.966
1984	0.589	1.006	0.741	0.631	1.188	0.922	0.323	0.433	0.185	0.153	0.123	0.132	6.427
1985	0.535	0.684	1.064	0.873	1.191	0.964	0.770	0.219	0.209	0.328	0.126	0.079	7.044
1986	0.189	0.338	0.633	1.546	0.594	1.311	0.323	0.184	0.170	0.148	0.132	0.348	5.916
1987	0.598	1.095	1.554	1.422	0.567	1.469	0.451	0.208	0.209	0.229	0.173	0.178	8.152
1988	0.597	0.938	1.376	1.723	1.612	1.394	0.336	0.334	0.526	0.336	0.276	0.151	9.597
1989	0.275	1.003	1.277	1.233	0.442	1.383	0.657	0.503	0.279	0.205	0.167	0.118	7.543
1990	0.240	0.393	0.919	3.676	1.588	1.553	1.061	0.433	0.373	0.321	0.265	0.239	11.060
1991	0.376	0.480	0.500	0.521	0.987	1.070	0.750	0.550	0.429	0.259	0.114	0.178	6.214
1992	0.158	0.230	1.543	2.227	1.376	1.552	1.051	0.679	0.279	0.336	0.363	0.334	10.127
1993	0.596	1.005	1.309	3.121	1.569	1.113	0.457	0.215	0.180	0.399	0.296	0.178	10.437
1994	0.454	0.602	0.638	0.968	1.225	1.470	1.059	0.411	0.422	0.417	0.375	0.266	8.308
1995	0.540	1.092	1.751	3.676	1.953	1.555	1.068	0.687	0.535	0.452	0.373	0.327	14.009
1996	0.598	1.083	1.391	2.496	0.601	0.967	0.842	0.682	0.319	0.422	0.375	0.327	10.103
1997	0.596	1.093	1.393	3.355	1.885	1.537	0.716	0.265	0.264	0.410	0.255	0.304	12.071
1998	0.586	1.073	1.706	2.870	0.961	0.735	0.568	0.469	0.196	0.157	0.195	0.137	9.653
1999	0.583	0.616	1.637	3.676	1.953	1.554	1.068	0.687	0.535	0.453	0.374	0.348	13.483
2000	0.589	1.093	1.751	3.063	0.581	0.587	0.851	0.604	0.223	0.381	0.296	0.291	10.311
2001	0.587	1.090	1.082	0.487	0.956	1.314	0.568	0.330	0.435	0.367	0.306	0.232	7.753
2002	0.483	0.459	0.956	2.588	0.918	1.158	0.650	0.533	0.424	0.288	0.245	0.178	8.879
2003	0.163	1.072	1.202	2.413	1.464	1.555	0.855	0.368	0.520	0.450			

A.132. *Nvii2 – Category D***Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvii2

Annual Flows (Mill. cu. m or index values):

MAR = 41,938
 S.Dev. = 23,414
 CV = 0,558
 Q75 = 0,750
 Q75/MMF = 0,215
 BFI Index = 0,389
 CV(JJA+JFM) Index = 1,689

Ecological Category = D

Total IFR = 6,133 (14,63 %MAR)
 Maint. Lowflow = 2,940 (7,01 %MAR)
 Drought Lowflow = 2,564 (6,11 %MAR)
 Maint. Highflow = 3,193 (7,61 %MAR)

Monthly Distributions (Mill. cu. m.)
 Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	1,894	2,955	1,560	0,160	0,130	0,139	0,299
Nov	4,159	4,253	1,023	0,214	0,214	0,375	0,589
Dec	6,779	5,614	0,828	0,287	0,287	0,428	0,715
Jan	7,357	6,086	0,827	0,333	0,333	1,225	1,558
Feb	7,177	6,036	0,841	0,357	0,357	0,428	0,785
Mar	5,456	5,023	0,921	0,352	0,352	0,419	0,771
Apr	3,484	3,258	0,935	0,316	0,240	0,164	0,480
May	1,891	1,488	0,787	0,259	0,170	0,000	0,259
Jun	1,190	0,781	0,657	0,205	0,160	0,000	0,205
Jul	1,030	1,011	0,982	0,176	0,140	0,000	0,176
Aug	0,783	0,656	0,838	0,148	0,110	0,000	0,148
Sep	0,737	0,718	0,974	0,131	0,070	0,015	0,147

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvii2

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.494	0.491	0.483	0.468	0.438	0.390	0.322	0.244	0.177	0.146
Nov	0.986	0.981	0.969	0.947	0.905	0.831	0.714	0.551	0.370	0.256
Dec	1.404	1.291	1.193	1.103	1.011	0.858	0.751	0.603	0.438	0.334
Jan	3.043	2.723	2.449	2.206	1.972	1.581	1.354	1.038	0.686	0.464
Feb	1.544	1.430	1.331	1.238	1.143	0.982	0.865	0.701	0.519	0.405
Mar	1.327	1.320	1.306	1.277	1.224	1.130	0.982	0.775	0.545	0.400
Apr	0.818	0.813	0.801	0.775	0.729	0.651	0.542	0.417	0.310	0.250
May	0.481	0.478	0.471	0.457	0.431	0.388	0.328	0.259	0.200	0.172
Jun	0.380	0.378	0.373	0.364	0.345	0.315	0.272	0.223	0.181	0.161
Jul	0.326	0.324	0.320	0.312	0.296	0.271	0.235	0.193	0.158	0.141
Aug	0.274	0.273	0.269	0.262	0.248	0.226	0.194	0.157	0.126	0.111
Sep	0.265	0.263	0.259	0.250	0.234	0.208	0.170	0.127	0.090	0.073

Reserve Flows without High Flows

Oct	0.297	0.296	0.292	0.284	0.271	0.248	0.215	0.178	0.146	0.131
Nov	0.426	0.425	0.422	0.415	0.403	0.382	0.348	0.301	0.248	0.215
Dec	0.573	0.571	0.566	0.558	0.541	0.513	0.467	0.404	0.334	0.289
Jan	0.664	0.662	0.656	0.646	0.627	0.594	0.541	0.468	0.387	0.335
Feb	0.712	0.710	0.704	0.693	0.673	0.637	0.581	0.502	0.415	0.360
Mar	0.702	0.700	0.694	0.683	0.663	0.628	0.573	0.495	0.409	0.354
Apr	0.586	0.582	0.575	0.559	0.531	0.483	0.416	0.339	0.273	0.242
May	0.481	0.478	0.471	0.457	0.431	0.388	0.328	0.259	0.200	0.172
Jun	0.380	0.378	0.373	0.364	0.345	0.315	0.272	0.223	0.181	0.161
Jul	0.326	0.324	0.320	0.312	0.296	0.271	0.235	0.193	0.158	0.141
Aug	0.274	0.273	0.269	0.262	0.248	0.226	0.194	0.157	0.126	0.111
Sep	0.243	0.242	0.238	0.230	0.216	0.192	0.158	0.120	0.086	0.071

Natural Duration curves

Oct	4.180	2.590	1.860	1.260	1.020	0.660	0.540	0.380	0.260	0.150
Nov	9.290	6.370	4.820	4.110	3.080	2.180	1.790	1.140	0.680	0.260
Dec	15.130	10.880	8.230	6.510	5.630	3.890	3.080	2.180	1.760	0.720
Jan	15.870	11.520	8.930	7.000	5.920	4.670	3.950	2.440	1.590	0.990
Feb	15.400	10.650	9.490	7.170	5.600	4.090	3.200	2.460	1.780	0.700
Mar	11.990	7.820	6.660	4.630	3.620	3.200	2.940	1.850	1.450	0.700
Apr	7.600	5.050	3.780	3.260	2.700	2.090	1.770	1.220	0.950	0.250
May	4.110	2.640	2.260	1.830	1.540	1.240	1.110	0.780	0.600	0.200
Jun	2.390	1.630	1.470	1.240	1.070	0.890	0.660	0.570	0.410	0.170
Jul	1.730	1.270	1.110	0.940	0.830	0.710	0.650	0.540	0.430	0.150
Aug	1.450	1.090	0.860	0.760	0.630	0.520	0.480	0.360	0.290	0.130
Sep	1.450	0.890	0.720	0.650	0.570	0.460	0.390	0.330	0.220	0.140

Hydrological time series

Total Runoff : Nvii2

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	0.494	0.986	1.325	2.556	1.030	1.302	0.816	0.478	0.378	0.322	0.264	0.220	10.171
1921	0.476	0.986	1.404	3.043	1.212	1.074	0.608	0.406	0.332	0.271	0.248	0.248	10.309
1922	0.494	0.986	1.287	2.723	1.331	1.074	0.462	0.315	0.285	0.158	0.120	0.074	9.308
1923	0.130	0.301	0.528	1.507	1.058	1.279	0.797	0.454	0.361	0.296	0.230	0.200	7.141
1924	0.398	0.836	0.745	0.936	0.617	1.316	0.818	0.480	0.380	0.326	0.274	0.264	7.390
1925	0.457	0.714	0.508	0.513	0.656	0.909	0.542	0.388	0.346	0.301	0.249	0.265	5.848
1926	0.483	0.551	0.361	2.095	1.389	1.321	0.813	0.475	0.373	0.323	0.271	0.248	8.705
1927	0.494	0.947	0.918	1.672	0.490	1.162	0.788	0.428	0.354	0.286	0.213	0.170	7.921
1928	0.237	0.541	0.817	1.536	1.108	1.319	0.817	0.479	0.379	0.324	0.270	0.264	8.091
1929	0.493	0.985	1.291	2.562	1.232	0.870	0.449	0.306	0.254	0.157	0.126	0.090	8.815
1930	0.146	0.262	0.366	1.581	1.142	1.228	0.760	0.469	0.375	0.324	0.273	0.258	7.184
1931	0.371	0.662	0.780	1.293	0.865	1.193	0.734	0.452	0.373	0.319	0.262	0.222	7.525
1932	0.282	0.589	0.686	0.968	0.973	1.295	0.789	0.464	0.371	0.316	0.257	0.212	7.202
1933	0.230	0.969	1.138	3.030	1.542	1.277	0.814	0.481	0.380	0.326	0.274	0.265	10.728
1934	0.472	0.975	1.355	2.972	1.315	1.322	0.818	0.478	0.376	0.318	0.256	0.200	10.856
1935	0.223	0.256	0.751	2.206	1.156	1.012	0.618	0.480	0.380	0.326	0.274	0.262	7.945
1936	0.488	0.986	1.404	3.000	1.544	1.325	0.775	0.436	0.348	0.256	0.173	0.104	10.841
1937	0.203	0.285	1.040	2.324	0.854	0.642	0.770	0.480	0.378	0.323	0.271	0.250	7.822
1938	0.487	0.832	0.346	0.592	1.544	1.327	0.811	0.475	0.378	0.325	0.274	0.264	7.656
1939	0.480	0.986	1.350	2.271	1.210	1.288	0.725	0.474	0.380	0.326	0.274	0.265	10.029
1940	0.453	0.955	1.234	2.193	1.386	1.327	0.818	0.481	0.380	0.325	0.272	0.256	10.080
1941	0.414	0.468	0.603	2.251	1.203	1.224	0.783	0.427	0.344	0.256	0.183	0.162	8.319
1942	0.420	0.862	0.829	2.195	1.372	1.308	0.818	0.481	0.380	0.326	0.274	0.265	9.531
1943	0.491	0.975	1.193	2.385	1.544	1.327	0.801	0.452	0.369	0.317	0.252	0.261	10.367
1944	0.476	0.949	0.919	2.308	1.278	1.186	0.729	0.430	0.345	0.256	0.173	0.104	9.153
1945	0.181	0.375	0.334	1.684	1.250	1.299	0.810	0.464	0.364	0.299	0.232	0.133	7.425
1946	0.169	0.548	0.648	1.354	0.876	0.753	0.485	0.368	0.310	0.202	0.157	0.090	5.959
1947	0.244	0.712	0.946	2.596	1.301	1.137	0.691	0.445	0.364	0.298	0.230	0.145	9.108
1948	0.355	0.985	1.264	2.449	1.316	0.935	0.703	0.471	0.377	0.322	0.266	0.232	9.677
1949	0.424	0.818	1.188	2.663	1.266	1.285	0.700	0.475	0.380	0.325	0.273	0.262	10.057
1950	0.244	0.349	0.783	1.495	1.289	1.144	0.771	0.458	0.352	0.298	0.274	0.265	7.721
1951	0.493	0.774	1.177	1.168	0.414	0.428	0.318	0.184	0.170	0.202	0.138	0.081	5.546
1952	0.146	0.941	1.131	1.006	1.392	1.320	0.794	0.328	0.298	0.169	0.126	0.081	7.733
1953	0.169	0.788	1.048	2.041	1.544	1.323	0.750	0.458	0.332	0.179	0.253	0.262	9.146
1954	0.491	0.842	0.419	3.043	1.544	1.327	0.816	0.480	0.380	0.324	0.271	0.212	10.151
1955	0.463	0.774	1.142	2.237	0.666	1.315	0.817	0.470	0.377	0.322	0.267	0.259	9.109
1956	0.493	0.960	1.099	2.002	0.517	0.642	0.615	0.421	0.340	0.312	0.269	0.265	7.935
1957	0.494	0.930	0.835	1.828	1.014	0.775	0.775	0.420	0.317	0.277	0.230	0.264	8.158
1958	0.454	0.787	0.962	1.959	0.596	0.526	0.275	0.478	0.263	0.214	0.167	0.260	6.941
1959	0.420	0.834	0.943	0.521	0.434	0.538	0.651	0.383	0.272	0.231	0.213	0.175	5.615
1960	0.363	0.972	1.404	1.903	1.444	1.327	0.818	0.481	0.380	0.325	0.272	0.250	9.941
1961	0.390	0.809	1.372	2.807	1.507	1.105	0.394	0.276	0.254	0.214	0.178	0.208	9.515
1962	0.386	0.978	1.141	1.650	0.638	0.600	0.463	0.222	0.365	0.326	0.274	0.262	7.305
1963	0.477	0.980	0.423	1.668	0.953	0.400	0.267	0.178	0.166	0.145	0.114	0.074	5.846
1964	0.494	0.986	1.207	2.588	0.865	0.604	0.271	0.196	0.181	0.171	0.145	0.265	7.974
1965	0.293	0.285	0.671	0.847	0.754	0.400	0.250	0.172	0.160	0.141	0.111	0.073	4.156
1966	0.490	0.541	0.880	0.790	1.430	1.259	0.807	0.453	0.330	0.313	0.263	0.193	7.748
1967	0.355	0.986	1.385	0.686	0.405	1.260	0.584	0.245	0.223	0.186	0.171	0.107	6.593
1968	0.150	0.983	1.117	1.072	0.701	1.314	0.808	0.481	0.378	0.319	0.259	0.265	7.846
1969	0.494	0.905	1.141	1.248	1.203	0.675	0.294	0.302	0.219	0.286	0.142	0.104	7.013
1970	0.438	0.831	0.357	1.422	0.727	0.476	0.314	0.202	0.205	0.156	0.126	0.139	5.393
1971	0.278	0.952	1.292	3.043	1.349	1.307	0.755	0.478	0.372	0.315	0.264	0.227	10.631
1972	0.289	0.958	0.512	0.587	0.990	1.079	0.818	0.457	0.354	0.286	0.274	0.256	6.859
1973	0.468	0.977	1.404	2.820	1.494	1.239	0.800	0.474	0.378	0.325	0.272	0.250	10.901
1974	0.396	0.981	1.404	2.903	1.544	1.325	0.813	0.465	0.366	0.313	0.262	0.260	11.030
1975	0.406	0.969	1.404	3.043	1.419	1.306	0.818	0.481	0.380	0.326	0.274	0.263	11.089
1976	0.475	0.881	0.653	1.539	1.477	1.256	0.784	0.365	0.309	0.235	0.240	0.229	8.443
1977	0.322	0.633	0.433	3.043	1.354	1.327	0.780	0.457	0.363	0.320	0.266	0.265	9.562
1978	0.494	0.910	0.438	1.178	0.892	0.468	0.351	0.204	0.217	0.171	0.230	0.244	5.798
1979	0.473	0.909	0.924	1.352	1.439	0.982	0.417	0.231	0.230	0.186	0.200	0.234	7.578
1980	0.339	0.726	0.496	0.570	1.047	1.292	0.398	0.254	0.244	0.193	0.178	0.244	5.982
1981	0.447	0.649	0.684	1.495	0.454	0.437	0.265	0.174	0.162	0.140	0.110	0.070	5.086
1982	0.173	0.273	0.334	0.464	0.405	0.415	0.240	0.170	0.161	0.142	0.113	0.077	2.968
1983	0.199	0.983	1.243	2.761	1.521	1.105	0.669	0.259	0.272	0.284	0.234	0.252	9.781
1984	0.487	0.908	0.616	0.576	0.936	0.815	0.301	0.328	0.175	0.148	0.118	0.114	5.523
1985	0.446	0.626	0.845	0.762	0.938	0.850	0.611	0.200	0.189	0.252	0.120	0.077	5.915
1986	0.177	0.322	0.540	1.279	0.528	1.130	0.301	0.178	0.166	0.145	0.124	0.265	5.155
1987	0.494	0.986	1.236	1.183	0.510	1.258	0.390	0.193	0.189	0.193	0.149	0.145	6.927
1988	0.494	0.848	1.089	1.415	1.258	1.197	0.310	0.269	0.375	0.256	0.213	0.127	7.851
1989	0.244	0.906	1.011	1.038	0.424	1.188	0.533	0.371	0.230	0.179	0.145	0.104	6.373
1990	0.217	0.370	0.742	3.043	1.238	1.326	0.813	0.328	0.285	0.248	0.207	0.188	9.006
1991	0.322	0.447	0.446	0.491	0.798	0.935	0.598	0.398	0.318	0.211	0.112	0.145	5.222
1992	0.153	0.230	1.227	1.819	1.075	1.325	0.807	0.476	0.230	0.256	0.267	0.255	8.120
1993	0.493	0.907	1.036	2.566	1.224	0.970	0.394	0.197	0.172	0.294	0.226	0.145	8.625
1994	0.383	0.554	0.544	0.835	0.961	1.259	0.812	0.315	0.314	0.305	0.274	0.208	6.763
1995	0.449	0.983	1.404	3.043	1.544	1.327	0.818	0.481	0.380	0.326	0.274	0.250	11.280
1996	0.494	0.976	1.102	2.041	0.533	0.852	0.662	0.478	0.254	0.308	0.274	0.250	8.224
1997	0.493	0.984	1.103	2.766	1.486	1.313	0.574	0.227	0.221	0.301	0.200	0.234	9.902
1998	0.485	0.967	1.366	2.353	0.780	0.664	0.471	0.350	0.181	0.150	0.163	0.117	8.047
1999	0.483	0.566	1.307	3.043	1.544	1.327	0.818	0.481	0.380	0.326	0.274	0.264	10.813
2000	0.487	0.984	1.404	2.517	0.519	0.545	0.668	0.431	0.197	0.284	0.226	0.225	8.487
2001	0.486	0.982	0.858	0.464	0.776	1.133	0.471	0.266	0.322	0.275	0.232	0.184	6.448
2002	0.405	0.429	0.768	2.117	0.750	1.006	0.528	0.388	0.315	0.228	0.194	0.145	7.274
2003	0.157	0.966	0.952	1.972	1.143	1.327	0.670	0.289	0.372	0.324	0.266	0.264	8.703
2004	0.253												

A.133. *Nvii3 – Category B***Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvii3

Annual Flows (Mill. cu. m or index values):

MAR = 236,811

S.Dev. = 249,442

CV = 1,053

Q75 = 2,057

Q75/MMF = 0,104

BFI Index = 0,365

CV(JJA+JFM) Index = 3,262

Ecological Category = B

Total IFR = 72,307 (30,53 %MAR)

Maint. Lowflow = 41,066 (17,34 %MAR)

Drought Lowflow = 0,970 (0,41 %MAR)

Maint. Highflow = 31,241 (13,19 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			Maint.	Drought	Maint.	Maint.	
Oct	9,941	25,747	2,590	2,154	0,000	1,194	3,349
Nov	10,956	18,315	1,672	2,188	0,000	1,388	3,577
Dec	16,957	26,955	1,590	2,616	0,182	3,720	6,336
Jan	28,357	57,429	2,025	3,434	0,605	1,860	5,295
Feb	46,537	100,525	2,160	4,849	0,061	14,576	19,425
Mar	35,192	39,130	1,112	4,830	0,061	5,121	9,950
Apr	26,833	30,496	1,137	4,718	0,000	2,751	7,470
May	22,709	34,139	1,503	4,585	0,061	0,000	4,585
Jun	13,818	18,823	1,362	3,807	0,000	0,000	3,807
Jul	10,638	17,237	1,620	3,185	0,000	0,000	3,185
Aug	6,817	10,269	1,506	2,515	0,000	0,000	2,515
Sep	8,055	19,335	2,400	2,185	0,000	0,630	2,815

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvii3

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	3.875	3.839	3.758	3.026	2.360	1.755	1.271	0.666	0.303	0.061
Nov	4.128	4.098	4.036	3.914	3.086	2.420	1.997	1.573	0.783	0.121
Dec	10.346	9.361	8.499	7.700	6.535	4.720	2.965	2.299	1.566	0.593
Jan	7.712	7.205	6.742	6.281	5.753	4.860	4.038	2.897	1.624	0.666
Feb	34.093	30.277	26.987	24.035	13.978	9.561	6.838	4.357	2.420	0.605
Mar	11.360	11.280	11.113	10.782	10.164	9.083	7.365	4.977	2.315	0.303
Apr	8.636	8.556	8.375	8.001	7.303	6.154	4.533	2.666	1.070	0.061
May	5.468	5.417	5.300	5.058	4.607	3.864	2.815	1.607	0.575	0.095
Jun	4.539	4.496	4.398	4.195	3.816	3.192	2.312	1.298	0.431	0.028
Jul	3.798	3.762	3.680	3.510	3.193	2.671	1.755	1.029	0.361	0.024
Aug	2.999	2.970	2.905	2.771	2.521	1.815	1.271	0.787	0.285	0.019
Sep	3.295	3.264	3.194	3.049	2.178	1.573	1.089	0.605	0.303	0.061

Reserve Flows without High Flows

Oct	2.569	2.545	2.489	2.374	2.160	1.755	1.271	0.666	0.244	0.016
Nov	2.609	2.590	2.550	2.470	2.320	2.059	1.643	1.065	0.421	0.016
Dec	3.120	3.098	3.053	2.963	2.794	2.500	2.032	1.381	0.657	0.200
Jan	4.099	4.073	4.019	3.912	3.712	3.362	2.805	2.031	1.169	0.627
Feb	5.782	5.740	5.651	5.476	5.148	4.575	3.663	2.397	0.985	0.097
Mar	5.760	5.717	5.629	5.454	5.127	4.557	3.649	2.387	0.981	0.097
Apr	5.627	5.573	5.451	5.199	4.730	3.957	2.865	1.609	0.535	0.035
May	5.468	5.417	5.300	5.058	4.607	3.864	2.815	1.607	0.575	0.095
Jun	4.539	4.496	4.398	4.195	3.816	3.192	2.312	1.298	0.431	0.028
Jul	3.798	3.762	3.680	3.510	3.193	2.671	1.755	1.029	0.361	0.024
Aug	2.999	2.970	2.905	2.771	2.521	1.815	1.271	0.787	0.285	0.019
Sep	2.606	2.581	2.525	2.408	2.178	1.573	1.089	0.605	0.248	0.016

Natural Duration curves

Oct	19.121	8.471	4.780	3.026	2.360	1.755	1.271	0.666	0.303	0.061
Nov	35.217	12.889	8.290	5.022	3.086	2.420	1.997	1.573	0.908	0.121
Dec	47.258	26.080	15.793	9.863	6.535	4.720	2.965	2.299	1.515	0.666
Jan	61.660	37.637	29.710	18.032	11.315	7.382	4.478	2.965	2.360	0.666
Feb	115.877	56.456	39.392	29.408	13.978	9.561	6.838	4.357	2.420	0.605
Mar	114.001	68.618	50.223	27.230	19.545	10.589	8.169	5.869	2.662	0.303
Apr	75.577	51.252	36.911	22.812	10.892	7.201	5.869	3.691	1.936	0.061
May	57.908	45.261	25.656	13.191	8.229	6.233	4.357	2.844	1.150	0.363
Jun	42.599	27.169	13.070	8.955	5.809	3.631	2.723	1.513	0.666	0.121
Jul	31.768	15.975	10.226	6.717	3.873	2.783	1.755	1.029	0.424	0.061
Aug	17.185	10.045	6.959	4.296	2.602	1.815	1.271	0.787	0.363	0.061
Sep	20.815	8.532	5.325	3.631	2.178	1.573	1.089	0.605	0.303	0.061

Hydrological time series

Total Runoff : Nvii3

Desktop (Version 2) Modified Flow Data for Ecological Category B													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	2.360	1.199	2.299	1.116	1.271	0.363	0.061	0.204	0.028	0.024	0.019	1.694	10.638
1921	1.331	3.946	10.346	6.938	14.159	8.454	4.642	2.815	2.312	1.755	2.299	1.029	60.025
1922	1.331	2.541	7.610	6.706	32.417	11.113	8.090	4.948	4.013	3.361	2.592	1.815	86.537
1923	1.452	3.949	7.700	6.048	8.169	7.529	5.509	3.288	2.488	1.815	1.089	1.573	50.609
1924	3.801	4.057	7.536	7.220	28.424	11.337	8.636	5.468	4.539	3.798	2.999	3.289	91.103
1925	3.875	4.128	9.361	5.768	6.838	4.684	2.572	1.998	1.616	1.271	0.787	0.484	43.382
1926	0.303	0.243	1.486	0.666	0.605	1.001	1.683	0.827	0.639	0.640	0.359	0.242	8.694
1927	0.666	4.099	7.904	7.492	28.347	10.354	7.096	4.134	3.487	2.671	1.694	2.057	80.000
1928	1.634	1.199	2.057	1.086	34.093	11.284	8.490	5.300	4.341	3.569	2.828	3.186	79.067
1929	3.863	4.022	5.688	7.712	31.406	11.283	8.527	5.312	4.365	3.597	2.840	2.926	91.541
1930	1.876	1.815	2.178	2.162	1.997	1.065	1.223	0.647	0.473	0.407	0.285	0.148	14.277
1931	0.121	0.990	1.731	0.605	8.471	10.198	8.470	5.468	4.539	3.795	2.992	3.253	50.633
1932	3.779	3.752	6.898	6.742	27.230	11.241	8.193	5.059	4.056	3.368	2.574	1.755	84.648
1933	1.815	2.178	8.499	5.977	7.685	4.977	2.666	1.271	0.765	1.089	2.457	2.420	41.797
1934	1.634	1.694	2.057	1.026	1.755	0.303	0.121	0.061	0.000	0.000	0.000	0.000	8.651
1935	0.000	0.000	0.593	4.661	12.707	6.873	6.154	3.367	3.296	2.845	1.936	1.150	43.583
1936	0.726	4.128	10.346	6.829	34.093	11.360	8.635	5.411	4.466	3.696	2.903	3.148	95.740
1937	2.783	1.634	10.346	7.711	24.657	9.937	6.738	3.886	3.383	2.816	1.815	1.089	76.795
1938	1.271	0.387	10.346	7.712	34.093	11.360	8.614	5.369	4.449	3.725	2.926	3.194	93.446
1939	3.694	4.107	8.529	5.231	6.112	10.974	8.610	5.468	4.539	3.798	2.999	3.280	67.342
1940	3.807	4.036	7.610	6.711	13.978	8.430	4.533	2.492	1.735	1.755	1.150	0.484	56.721
1941	0.303	0.216	9.995	6.995	27.570	10.818	7.424	4.314	4.520	3.723	2.909	3.124	81.910
1942	2.420	3.086	2.965	2.283	2.299	10.656	8.581	5.468	4.539	3.798	2.999	3.295	52.389
1943	3.866	4.007	5.567	3.504	26.987	10.782	7.342	4.404	3.643	2.700	1.694	1.936	76.431
1944	2.965	2.420	2.299	1.474	6.475	10.456	7.438	4.607	3.729	3.048	2.118	1.271	48.299
1945	1.029	0.321	2.118	2.897	25.828	10.583	7.303	4.269	3.573	2.729	1.755	1.755	64.160
1946	0.666	0.783	0.840	4.254	6.051	11.261	8.359	5.219	4.286	3.510	2.775	2.541	50.545
1947	1.876	1.997	4.841	3.750	3.449	3.389	1.147	0.533	0.431	0.361	0.079	0.908	22.762
1948	0.182	1.513	1.997	6.281	26.202	10.164	8.387	5.468	4.534	3.787	2.969	3.224	74.707
1949	3.722	2.481	9.762	7.208	15.370	7.446	4.046	2.169	1.337	1.029	0.592	0.363	55.526
1950	0.242	0.121	2.178	1.757	1.210	1.723	0.466	0.095	0.047	0.049	1.755	3.211	12.854
1951	3.776	3.778	7.904	4.860	4.115	2.315	0.697	0.286	0.120	1.029	0.079	0.116	29.076
1952	0.121	1.694	7.700	6.400	9.561	6.688	3.958	2.063	1.537	1.150	0.726	1.029	42.627
1953	0.363	4.068	8.340	5.107	5.990	7.365	4.642	4.667	4.398	3.614	2.821	2.982	54.357
1954	3.510	3.086	2.965	4.548	24.035	10.984	8.001	5.058	4.195	3.462	2.771	2.420	75.034
1955	3.026	2.118	2.904	2.528	25.278	11.286	8.556	5.339	4.423	3.639	2.870	3.103	75.072
1956	2.723	3.147	9.241	4.998	13.554	10.524	7.209	4.021	3.153	3.680	2.974	3.295	68.518
1957	3.875	4.128	10.346	7.712	32.505	11.199	8.067	4.909	3.976	3.253	2.299	1.331	93.601
1958	1.694	3.850	8.234	6.162	8.653	5.623	2.432	1.607	0.942	0.640	0.431	1.331	41.600
1959	1.392	1.694	2.239	0.976	2.420	2.315	1.070	0.719	0.353	0.274	0.079	0.148	13.679
1960	0.242	2.118	5.930	7.180	25.612	11.154	8.596	5.386	4.492	3.781	2.970	3.231	80.693
1961	3.838	4.066	7.326	4.411	3.268	3.328	1.454	0.972	0.639	0.500	0.505	0.484	30.791
1962	0.605	1.634	3.691	4.489	9.803	11.038	8.387	5.195	4.299	3.798	2.999	3.295	59.233
1963	3.872	4.055	7.431	7.577	24.991	9.740	6.644	3.864	3.192	2.118	1.271	0.787	75.542
1964	1.755	4.073	8.058	4.943	6.717	6.074	3.136	1.271	1.120	0.968	0.847	1.089	40.051
1965	1.271	1.199	0.692	7.404	24.001	9.857	6.908	3.976	3.153	2.118	1.331	0.787	62.696
1966	0.484	1.312	1.566	1.757	32.435	11.360	8.630	5.417	4.469	3.701	2.905	3.110	77.147
1967	2.360	2.481	3.086	2.773	2.178	7.446	5.857	3.051	1.928	1.513	0.908	0.545	34.125
1968	0.666	0.717	2.723	4.718	6.293	9.083	7.643	5.186	4.365	3.605	2.847	3.049	50.896
1969	3.758	4.010	5.688	3.792	3.147	2.315	1.012	0.575	0.276	0.274	0.183	0.303	25.332
1970	2.662	2.662	2.420	1.893	2.420	2.184	1.964	1.607	2.842	2.816	2.574	2.178	28.222
1971	2.057	2.299	2.481	5.801	34.093	11.360	8.636	5.459	4.531	3.779	2.974	3.232	86.700
1972	3.754	3.026	2.965	1.624	4.357	6.259	4.400	3.446	3.192	2.647	2.057	3.295	41.021
1973	3.875	4.128	10.346	7.027	26.398	10.762	7.693	4.728	3.729	3.193	1.694	1.029	84.621
1974	0.666	2.360	4.236	5.753	30.365	11.360	8.636	5.441	4.500	3.747	2.940	3.292	83.296
1975	3.875	4.128	10.346	7.712	34.093	11.270	8.481	5.370	4.459	3.699	2.906	3.153	99.491
1976	3.676	2.904	3.268	4.038	34.093	11.360	8.636	5.468	4.527	3.756	2.946	3.295	87.967
1977	3.875	4.128	9.121	7.712	31.200	11.334	8.600	5.361	4.423	3.726	2.939	3.190	95.609
1978	3.839	4.105	8.680	5.479	6.112	4.282	2.620	2.128	1.800	2.057	1.392	1.694	44.187
1979	1.271	0.651	1.404	1.594	17.003	10.446	7.190	4.044	3.192	1.997	1.210	3.264	53.267
1980	0.968	1.815	4.720	3.586	7.382	7.938	3.604	5.468	4.539	3.798	2.999	3.295	50.112
1981	3.875	4.121	8.858	5.588	6.354	6.074	3.270	1.308	1.031	0.750	0.505	0.303	42.038
1982	0.484	0.852	0.182	0.908	0.061	0.061	0.000	0.177	0.765	0.361	0.359	0.148	4.358
1983	0.121	4.098	9.500	7.712	34.093	11.360	8.636	5.465	4.539	3.798	2.999	3.295	95.614
1984	3.875	4.069	7.102	6.537	34.093	11.360	8.636	5.440	4.496	3.762	2.961	3.217	95.548
1985	3.690	3.821	3.570	3.421	3.328	2.623	1.041	0.493	0.353	0.361	0.079	0.148	22.929
1986	0.545	0.783	2.541	6.129	12.586	9.112	7.190	4.667	3.816	3.193	2.521	3.295	56.377
1987	3.875	4.128	10.085	6.483	20.694	11.233	8.636	5.453	4.526	3.789	2.976	3.234	85.111
1988	3.808	4.025	6.535	4.548	11.194	11.354	8.539	5.276	4.324	3.546	2.762	2.178	68.088
1989	1.936	4.128	10.346	7.712	31.112	11.138	8.375	5.182	4.214	3.469	2.726	2.239	92.578
1990	1.815	2.057	3.510	6.906	30.277	11.285	8.403	5.468	4.539	3.798	2.999	3.288	84.346
1991	3.853	3.964	4.841	3.212	2.783	1.525	0.927	0.286	0.120	0.100	0.059	0.116	21.786
1992	0.061	0.651	5.688	3.264	3.933	10.909	8.265	5.111	4.129	3.341	2.539	1.573	49.465
1993	3.875	4.118	8.311	5.825	12.647	8.793	5.401	2.613	1.735	1.331	0.847	0.484	55.979
1994	1.876	3.864	7.102	6.490	8.532	4.867	5.509	5.452	4.539	3.796	2.994	3.274	58.297
1995	3.801	3.843	9.297	7.712	34.093	11.360	8.636	5.445	4.511	3.781	2.980	3.240	98.698
1996	3.867	4.118	8.824	6.276	10.650	9.214	8.561	5.428	4.519	3.768	2.990	3.279	71.494
1997	3.844	4.094	10.112	7.310	30.277	11.003	7.640	4.750	3.881	3.193	2.239	1.331	89.673
1998	2.662	2.057	4.175	5.479	24.928	10.548	7.990	4.854	3.918	3.193	2.457	1.331	73.592
1999	1.150	1.936	8.040	6.829	29.969	11.353	8.636	5.468	4.539	3.798	2.996	3.285	88.000
2000	3.864	4.128	10.346	7.712	29.679	10.951	8.210	5.339	4.406	3.633	2.867	3.110	94.245
2001	3.676	4.096	9.511	6.970	17.064	8.938	5.608	3.367	2.842	3.798	2.999	3.295	72.163
2002	3.864	3.977	5.264	3.159	3.086	1.262	0.496	0.122	0.065	0.075	0		

A.134. *Nvii3 – Category C***Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvii3

Annual Flows (Mill. cu. m or index values):

MAR = 236,811

S.Dev. = 249,442

CV = 1,053

Q75 = 2,057

Q75/MMF = 0,104

BFI Index = 0,365

CV(JJA+JFM) Index = 3,262

Ecological Category = C

Total IFR = 48,620 (20,53 %MAR)

Maint. Lowflow = 23,679 (10,00 %MAR)

Drought Lowflow = 0,970 (0,41 %MAR)

Maint. Highflow = 24,941 (10,53 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	9,941	25,747	2,590	1,295	0,000	0,953	2,248
Nov	10,956	18,315	1,672	1,313	0,000	1,108	2,421
Dec	16,957	26,955	1,590	1,542	0,182	2,970	4,512
Jan	28,357	57,429	2,025	1,980	0,605	1,485	3,465
Feb	46,537	100,525	2,160	2,737	0,061	11,637	14,374
Mar	35,192	39,130	1,112	2,726	0,061	4,088	6,814
Apr	26,833	30,496	1,137	2,667	0,000	2,196	4,863
May	22,709	34,139	1,503	2,596	0,061	0,000	2,596
Jun	13,818	18,823	1,362	2,179	0,000	0,000	2,179
Jul	10,638	17,237	1,620	1,846	0,000	0,000	1,846
Aug	6,817	10,269	1,506	1,488	0,000	0,000	1,488
Sep	8,055	19,335	2,400	1,311	0,000	0,503	1,814

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvii3

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	2.869	2.842	2.782	2.658	2.360	1.755	1.271	0.666	0.303	0.061
Nov	3.149	3.127	3.079	2.986	2.812	2.420	1.997	1.351	0.602	0.121
Dec	7.915	7.131	6.448	5.823	5.188	4.124	2.965	2.299	1.225	0.508
Jan	5.642	5.242	4.883	4.534	4.149	3.500	2.945	2.175	1.316	0.666
Feb	26.409	23.369	20.755	18.424	13.978	9.561	6.838	4.357	2.420	0.605
Mar	8.671	8.610	8.483	8.232	7.761	6.939	5.633	3.818	1.794	0.303
Apr	6.181	6.124	5.995	5.728	5.231	4.412	3.256	1.924	0.786	0.061
May	3.508	3.475	3.401	3.247	2.959	2.485	1.817	1.047	0.389	0.083
Jun	2.945	2.917	2.853	2.721	2.475	2.071	1.500	0.842	0.280	0.018
Jul	2.495	2.472	2.418	2.306	2.098	1.755	1.271	0.714	0.237	0.016
Aug	2.010	1.991	1.948	1.858	1.690	1.414	1.024	0.575	0.191	0.013
Sep	2.362	2.340	2.290	2.187	1.994	1.573	1.089	0.605	0.270	0.061

Reserve Flows without High Flows

Oct	1.750	1.733	1.695	1.617	1.471	1.231	0.891	0.500	0.166	0.011
Nov	1.827	1.813	1.785	1.729	1.624	1.441	1.150	0.746	0.295	0.011
Dec	2.146	2.131	2.101	2.041	1.928	1.731	1.419	0.984	0.499	0.194
Jan	2.758	2.742	2.709	2.643	2.519	2.304	1.961	1.484	0.953	0.618
Feb	3.808	3.780	3.722	3.607	3.392	3.017	2.420	1.591	0.666	0.084
Mar	3.793	3.766	3.708	3.593	3.379	3.005	2.411	1.585	0.664	0.084
Apr	3.604	3.570	3.492	3.330	3.030	2.535	1.835	1.031	0.343	0.023
May	3.508	3.475	3.401	3.247	2.959	2.485	1.817	1.047	0.389	0.083
Jun	2.945	2.917	2.853	2.721	2.475	2.071	1.500	0.842	0.280	0.018
Jul	2.495	2.472	2.418	2.306	2.098	1.755	1.271	0.714	0.237	0.016
Aug	2.010	1.991	1.948	1.858	1.690	1.414	1.024	0.575	0.191	0.013
Sep	1.772	1.755	1.717	1.638	1.490	1.246	0.903	0.507	0.168	0.011

Natural Duration curves

Oct	19.121	8.471	4.780	3.026	2.360	1.755	1.271	0.666	0.303	0.061
Nov	35.217	12.889	8.290	5.022	3.086	2.420	1.997	1.573	0.908	0.121
Dec	47.258	26.080	15.793	9.863	6.535	4.720	2.965	2.299	1.815	0.666
Jan	61.660	37.637	29.710	18.032	11.315	7.382	4.478	2.965	2.360	0.666
Feb	115.877	56.456	39.392	29.408	13.978	9.561	6.838	4.357	2.420	0.605
Mar	114.001	68.618	50.223	27.230	19.545	10.589	8.169	5.869	2.662	0.303
Apr	75.577	51.252	36.911	22.812	10.892	7.201	5.869	3.691	1.936	0.061
May	57.908	45.261	25.656	13.191	8.229	6.233	4.357	2.844	1.150	0.363
Jun	42.599	27.169	13.070	8.955	5.809	3.631	2.723	1.513	0.666	0.121
Jul	31.768	15.975	10.226	6.717	3.873	2.783	1.755	1.029	0.424	0.061
Aug	17.185	10.045	6.959	4.296	2.602	1.815	1.271	0.787	0.363	0.061
Sep	20.815	8.532	5.325	3.631	2.178	1.573	1.089	0.605	0.303	0.061

Hydrological time series

Total Runoff : Nvii3

Desktop (Version 2) Modified Flow Data for Ecological Category C													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	2.360	0.918	2.299	0.973	1.271	0.363	0.061	0.152	0.018	0.016	0.013	1.694	10.138
1921	1.331	3.010	7.915	5.034	14.159	6.462	3.333	1.817	1.500	1.271	1.584	1.029	48.443
1922	1.331	2.541	5.753	4.855	25.073	8.483	5.792	3.176	2.603	2.208	1.738	1.803	65.358
1923	1.452	3.013	5.823	4.364	8.169	5.758	3.952	2.118	1.614	1.329	0.832	1.573	39.996
1924	2.814	3.095	5.696	5.254	21.896	8.653	6.181	3.508	2.945	2.495	2.010	2.358	66.905
1925	2.869	3.149	7.131	4.160	6.838	3.595	1.858	1.296	1.048	0.906	0.575	0.440	33.864
1926	0.303	0.190	1.166	0.666	0.605	0.796	1.224	0.550	0.415	0.420	0.241	0.190	6.764
1927	0.666	3.127	5.982	5.642	21.835	7.906	5.083	2.658	2.262	1.755	1.259	1.930	59.930
1928	1.634	0.918	1.707	0.953	26.409	8.613	6.077	3.401	2.816	2.345	1.896	2.284	59.054
1929	2.860	3.068	4.692	5.642	24.268	8.612	6.104	3.409	2.832	2.363	1.904	2.098	67.852
1930	1.876	1.805	2.036	1.679	1.997	0.844	0.896	0.435	0.307	0.267	0.191	0.111	12.444
1931	0.121	0.760	1.347	0.605	8.471	7.787	6.063	3.508	2.945	2.493	2.006	2.333	38.438
1932	2.797	2.872	5.257	4.883	20.948	8.581	5.865	3.248	2.631	2.213	1.726	1.755	62.776
1933	1.815	2.178	6.448	4.312	7.685	3.818	1.924	0.832	0.496	0.761	1.648	2.026	33.944
1934	1.634	1.660	1.707	0.912	1.755	0.303	0.121	0.061	0.000	0.000	0.000	0.000	8.154
1935	0.000	0.000	0.508	3.366	12.707	5.259	4.412	2.168	2.138	1.869	1.456	1.150	35.034
1936	0.726	3.149	7.915	4.950	26.409	8.671	6.180	3.472	2.897	2.428	1.946	2.258	71.000
1937	2.574	1.507	7.915	5.641	18.913	7.589	4.828	2.500	2.194	1.850	1.414	1.089	58.014
1938	1.271	0.300	7.915	5.642	26.409	8.671	6.166	3.445	2.886	2.447	1.962	2.290	69.404
1939	2.735	3.133	6.472	3.770	6.112	8.377	6.163	3.508	2.945	2.495	2.010	2.352	50.073
1940	2.818	3.079	5.753	4.859	13.978	6.443	3.256	1.611	1.126	1.271	0.896	0.440	45.529
1941	0.303	0.170	7.635	5.078	21.217	8.259	5.317	2.772	2.932	2.446	1.951	2.240	60.320
1942	2.420	2.812	2.965	1.761	2.299	8.135	6.142	3.508	2.945	2.495	2.010	2.362	39.856
1943	2.862	3.057	4.621	2.584	20.755	8.232	5.259	2.830	2.363	1.774	1.259	1.867	57.461
1944	2.637	2.420	2.299	1.215	6.475	7.983	5.327	2.959	2.419	2.002	1.520	1.271	38.527
1945	1.029	0.250	1.873	2.175	19.838	8.080	5.231	2.744	2.318	1.793	1.337	1.755	48.422
1946	0.666	0.602	0.690	3.091	6.051	8.596	5.984	3.350	2.780	2.306	1.860	2.042	38.017
1947	1.876	1.997	4.195	2.751	3.449	2.678	0.841	0.362	0.280	0.237	0.053	0.908	19.627
1948	0.182	1.265	1.588	4.534	20.134	7.761	6.004	3.508	2.942	2.488	1.991	2.312	54.707
1949	2.755	2.481	7.450	5.245	15.370	5.695	2.909	1.405	0.868	0.714	0.397	0.326	45.614
1950	0.242	0.121	2.036	1.406	1.210	1.344	0.355	0.083	0.030	0.032	1.337	2.302	10.499
1951	2.795	2.883	5.982	3.500	4.115	1.794	0.521	0.205	0.078	0.714	0.053	0.088	22.727
1952	0.121	1.660	5.823	4.623	9.561	5.119	2.846	1.338	0.997	0.810	0.515	1.029	34.442
1953	0.363	3.104	6.324	3.680	5.990	5.633	3.333	2.998	2.853	2.374	1.891	2.138	40.682
1954	2.704	2.812	2.965	3.289	18.424	8.385	5.728	3.247	2.721	2.275	1.858	2.026	56.433
1955	2.658	2.118	2.904	1.926	19.403	8.614	6.124	3.426	2.869	2.391	1.924	2.225	56.584
1956	2.553	2.818	7.036	3.600	13.554	8.035	5.164	2.586	2.045	2.418	1.994	2.362	54.164
1957	2.869	3.149	7.915	5.642	25.143	8.548	5.775	3.152	2.579	2.137	1.584	1.331	69.825
1958	1.694	2.937	6.241	4.447	8.653	4.309	1.758	1.047	0.611	0.420	0.289	1.331	33.738
1959	1.392	1.660	2.202	0.878	2.420	1.794	0.786	0.481	0.229	0.180	0.053	0.111	12.187
1960	0.242	2.118	4.833	5.223	19.667	8.514	6.153	3.456	2.914	2.484	1.991	2.316	59.913
1961	2.841	3.102	5.534	3.197	3.268	2.649	1.060	0.642	0.415	0.328	0.339	0.440	23.815
1962	0.605	1.507	3.691	3.249	9.803	8.426	6.004	3.334	2.789	2.495	2.010	2.362	46.276
1963	2.866	3.094	5.615	5.535	19.177	7.439	4.761	2.485	2.071	1.578	1.024	0.787	56.433
1964	1.755	3.107	6.102	3.560	6.717	4.652	2.260	0.832	0.727	0.640	0.623	1.089	32.064
1965	1.271	0.918	0.581	5.399	18.397	7.528	4.949	2.557	2.045	1.578	1.057	0.787	47.067
1966	0.484	1.004	1.225	1.406	25.088	8.671	6.177	3.475	2.899	2.432	1.948	2.230	57.039
1967	2.360	2.481	3.086	2.091	2.178	5.695	4.200	1.967	1.251	1.090	0.672	0.545	27.615
1968	0.666	0.551	2.723	3.404	6.293	6.939	5.473	3.328	2.832	2.369	1.909	2.187	38.675
1969	2.782	3.059	4.692	2.779	3.147	1.794	0.745	0.389	0.179	0.180	0.123	0.270	20.138
1970	2.531	2.618	2.420	1.497	2.420	1.694	1.424	1.047	1.844	1.850	1.726	1.994	23.065
1971	2.057	2.299	2.481	4.184	26.409	8.671	6.181	3.502	2.939	2.483	1.994	2.317	65.517
1972	2.779	2.785	2.965	1.316	4.357	4.792	3.161	2.219	2.071	1.739	1.499	2.362	32.045
1973	2.869	3.149	7.915	5.103	20.289	8.232	5.509	3.036	2.419	2.098	1.259	1.029	62.905
1974	0.666	2.360	3.992	4.149	23.439	8.671	6.181	3.491	2.919	2.462	1.971	2.360	62.662
1975	2.869	3.149	7.915	5.642	26.409	8.603	6.070	3.445	2.893	2.430	1.949	2.261	73.634
1976	2.722	2.729	3.268	2.945	26.409	8.671	6.181	3.508	2.937	2.468	1.975	2.362	66.175
1977	2.869	3.149	6.941	5.642	24.104	8.651	6.155	3.440	2.869	2.448	1.971	2.287	70.527
1978	2.842	3.132	6.592	3.950	6.112	3.289	1.891	1.379	1.168	1.562	1.091	1.694	34.701
1979	1.271	0.501	1.106	1.295	16.607	7.976	5.150	2.600	2.071	1.504	0.960	2.340	43.382
1980	0.968	1.805	4.124	2.640	7.382	6.069	2.593	3.508	2.945	2.495	2.010	2.362	38.903
1981	2.869	3.144	6.732	4.029	6.354	4.652	2.355	0.856	0.669	0.493	0.339	0.270	32.761
1982	0.484	0.654	0.182	0.844	0.061	0.061	0.000	0.135	0.496	0.237	0.241	0.111	3.506
1983	0.121	3.127	7.241	5.642	26.409	8.671	6.181	3.506	2.945	2.495	2.010	2.362	70.711
1984	2.869	3.104	5.361	4.727	26.409	8.671	6.181	3.490	2.917	2.472	1.985	2.307	70.492
1985	2.732	2.916	3.570	2.529	3.328	2.028	0.766	0.336	0.229	0.237	0.053	0.111	18.835
1986	0.545	0.602	2.541	4.423	12.586	6.962	5.150	2.998	2.475	2.098	1.690	2.362	44.432
1987	2.869	3.149	7.707	4.685	17.148	8.574	6.181	3.499	2.936	2.489	1.995	2.319	63.551
1988	2.819	3.070	5.188	3.289	11.194	8.666	6.112	3.386	2.805	2.330	1.852	1.994	52.705
1989	1.936	3.149	7.915	5.642	24.034	8.502	5.995	3.326	2.734	2.279	1.828	2.002	69.342
1990	1.815	2.057	3.510	5.009	23.369	8.614	6.016	3.508	2.945	2.495	2.010	2.357	63.706
1991	2.852	3.024	4.195	2.387	2.783	1.194	0.684	0.205	0.078	0.066	0.040	0.088	17.596
1992	0.061	0.501	4.692	2.423	3.933	8.328	5.917	3.281	2.679	2.195	1.702	1.573	37.284
1993	2.869	3.142	6.301	4.201	12.647	6.719	3.875	1.688	1.126	0.954	0.623	0.440	44.583
1994	1.876	2.948	5.361	4.691	8.532	3.734	3.952	3.498	2.945	2.494	2.008	2.348	44.387
1995	2.814	2.932	7.081	5.642	26.409	8.671	6.181	3.493	2.926	2.484	1.998	2.323	72.954
1996	2.863	3.142	6.706	4.530	10.650	7.039	6.128	3.482	2.932	2.476	2.004	2.351	54.303
1997	2.846	3.123	7.728	5.325	23.369	8.399	5.471	3.050	2.518	2.098	1.563	1.331	66.820
1998	2.531	2.057	3.976	3.950	19.127	8.054	5.721	3.117	2.542	2.098	1.648	1.331	56.150
1999	1.150	1.936	6.088	4.950	23.124	8.665	6.181	3.508	2.945	2.495	2.009	2.355	65.407
2000	2.860	3.149	7.915	5.642	22.893	8.360	5.878	3.426	2.858	2.387	1.923	2.230	69.521
2001	2.722	3.125	7.251	5.059	16.616	6.829	4.022	2.168	1.844	2.495	2.010	2.362	56.504
2002	2.860	3.034	4.443	2.352	3.086	0.994	0.377	0.100	0.042	0.049	0.026	0.061	17.425
2003	0.061												

A.135. *Nvii3 – Category D***Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvii3

Annual Flows (Mill. cu. m or index values):

MAR = 236,811

S.Dev. = 249,442

CV = 1,053

Q75 = 2,057

Q75/MMF = 0,104

BFI Index = 0,365

CV(JJA+JFM) Index = 3,262

Ecological Category = D

Total IFR = 31,685 (13,38 %MAR)

Maint. Lowflow = 10,678 (4,51 %MAR)

Drought Lowflow = 0,970 (0,41 %MAR)

Maint. Highflow = 21,007 (8,87 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			Maint.	Drought	Maint.	Maint.	
Oct	9,941	25,747	2,590	0,607	0,000	0,803	1,410
Nov	10,956	18,315	1,672	0,614	0,000	0,934	1,548
Dec	16,957	26,955	1,590	0,710	0,182	2,502	3,211
Jan	28,357	57,429	2,025	0,893	0,605	1,251	2,143
Feb	46,537	100,525	2,160	1,208	0,061	9,801	11,010
Mar	35,192	39,130	1,112	1,204	0,061	3,443	4,647
Apr	26,833	30,496	1,137	1,179	0,000	1,850	3,029
May	22,709	34,139	1,503	1,150	0,061	0,000	1,150
Jun	13,818	18,823	1,362	0,976	0,000	0,000	0,976
Jul	10,638	17,237	1,620	0,837	0,000	0,000	0,837
Aug	6,817	10,269	1,506	0,687	0,000	0,000	0,687
Sep	8,055	19,335	2,400	0,614	0,000	0,423	1,037

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvii3

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	2.263	2.242	2.195	2.097	1.915	1.615	1.192	0.666	0.288	0.061
Nov	2.613	2.594	2.555	2.478	2.334	2.081	1.680	1.122	0.500	0.109
Dec	6.270	5.614	5.045	4.531	4.021	3.167	2.615	1.848	0.992	0.454
Jan	4.207	3.875	3.582	3.308	3.021	2.538	2.173	1.666	1.100	0.666
Feb	21.438	18.883	16.694	14.756	12.900	9.561	6.838	4.357	2.420	0.605
Mar	7.528	7.475	7.365	7.146	6.738	6.024	4.890	3.313	1.556	0.303
Apr	4.810	4.765	4.665	4.458	4.073	3.437	2.540	1.507	0.625	0.061
May	2.125	2.105	2.061	1.968	1.796	1.513	1.112	0.651	0.257	0.074
Jun	1.803	1.786	1.747	1.666	1.516	1.268	0.918	0.516	0.171	0.011
Jul	1.547	1.532	1.499	1.429	1.300	1.088	0.788	0.442	0.147	0.010
Aug	1.270	1.258	1.231	1.174	1.068	0.893	0.647	0.363	0.121	0.008
Sep	1.736	1.720	1.683	1.608	1.466	1.234	0.905	0.527	0.203	0.053

Reserve Flows without High Flows

Oct	1.122	1.111	1.087	1.036	0.943	0.789	0.571	0.321	0.107	0.007
Nov	1.221	1.212	1.193	1.156	1.086	0.963	0.769	0.498	0.197	0.008
Dec	1.412	1.403	1.384	1.346	1.275	1.152	0.956	0.684	0.381	0.190
Jan	1.778	1.769	1.751	1.715	1.648	1.530	1.343	1.084	0.794	0.612
Feb	2.402	2.385	2.348	2.277	2.142	1.908	1.535	1.017	0.439	0.076
Mar	2.393	2.376	2.340	2.268	2.135	1.901	1.529	1.013	0.438	0.076
Apr	2.180	2.159	2.112	2.014	1.832	1.533	1.110	0.623	0.207	0.014
May	2.125	2.105	2.061	1.968	1.796	1.513	1.112	0.651	0.257	0.074
Jun	1.803	1.786	1.747	1.666	1.516	1.268	0.918	0.516	0.171	0.011
Jul	1.547	1.532	1.499	1.429	1.300	1.088	0.788	0.442	0.147	0.010
Aug	1.270	1.258	1.231	1.174	1.068	0.893	0.647	0.363	0.121	0.008
Sep	1.134	1.123	1.099	1.048	0.954	0.798	0.578	0.324	0.108	0.007

Natural Duration curves

Oct	19.121	8.471	4.780	3.026	2.360	1.755	1.271	0.666	0.303	0.061
Nov	35.217	12.889	8.290	5.022	3.086	2.420	1.997	1.573	0.908	0.121
Dec	47.258	26.080	15.793	9.863	6.535	4.720	2.965	2.299	1.815	0.666
Jan	61.660	37.637	29.710	18.032	11.315	7.382	4.478	2.965	2.360	0.666
Feb	115.877	56.456	39.392	29.408	13.978	9.561	6.838	4.357	2.420	0.605
Mar	114.001	68.618	50.223	27.230	19.545	10.589	8.169	5.869	2.662	0.303
Apr	75.577	51.252	36.911	22.812	10.892	7.201	5.869	3.691	1.936	0.061
May	57.908	45.261	25.656	13.191	8.229	6.233	4.357	2.844	1.150	0.363
Jun	42.599	27.169	13.070	8.955	5.809	3.631	2.723	1.513	0.666	0.121
Jul	31.768	15.975	10.226	6.717	3.873	2.783	1.755	1.029	0.424	0.061
Aug	17.185	10.045	6.959	4.296	2.602	1.815	1.271	0.787	0.363	0.061
Sep	20.815	8.532	5.325	3.631	2.178	1.573	1.089	0.605	0.303	0.061

Hydrological time series

Total Runoff : Nvii3

Desktop (Version 2) Modified Flow Data for Ecological Category D													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	1.915	0.763	1.848	0.874	1.271	0.363	0.061	0.116	0.011	0.010	0.008	1.280	8.520
1921	1.276	2.498	6.270	3.704	12.922	5.609	2.601	1.112	0.918	0.788	1.001	0.862	39.561
1922	1.276	1.217	4.475	3.560	20.315	7.365	4.508	1.926	1.594	1.369	1.098	1.327	50.940
1923	1.447	2.500	4.531	3.181	8.169	4.998	3.080	1.293	0.989	0.824	0.526	1.234	32.770
1924	2.220	2.568	4.429	3.884	17.648	7.513	4.810	1.215	1.803	1.547	1.270	1.733	51.551
1925	2.263	2.613	5.614	3.028	6.838	3.120	1.456	0.800	0.642	0.562	0.363	0.328	27.627
1926	0.288	0.159	0.948	0.666	0.605	0.688	0.964	0.354	0.254	0.261	0.152	0.145	5.482
1927	0.666	2.595	4.661	4.062	17.597	6.863	3.958	1.616	1.385	1.088	0.795	1.420	46.706
1928	1.548	0.763	1.354	0.861	21.438	7.477	4.729	2.061	1.724	1.454	1.198	1.679	46.286
1929	2.256	2.546	3.623	4.207	19.638	7.477	4.750	2.065	1.734	1.465	1.203	1.543	52.507
1930	1.675	1.499	1.601	1.339	1.997	0.730	0.709	0.285	0.188	0.166	0.121	0.087	10.397
1931	0.121	0.631	1.083	0.605	8.471	6.760	4.718	1.225	1.803	1.546	1.267	1.715	30.846
1932	2.207	2.383	4.077	3.582	16.856	7.450	4.565	1.969	1.611	1.372	1.090	1.304	48.465
1933	1.645	1.929	5.045	3.142	7.685	3.313	1.507	0.523	0.304	0.472	1.041	1.490	28.096
1934	1.548	1.378	1.354	0.835	1.548	0.303	0.121	0.061	0.000	0.000	0.000	0.000	7.148
1935	0.000	0.000	0.454	2.449	12.009	4.565	3.437	1.323	1.309	1.159	0.920	0.955	28.580
1936	0.726	2.613	6.270	3.636	21.438	7.528	4.809	2.103	1.774	1.505	1.230	1.660	55.292
1937	2.031	1.251	6.270	4.206	15.162	6.588	3.760	1.521	1.344	1.147	0.893	0.905	45.079
1938	1.192	0.250	6.270	4.207	21.438	7.528	4.798	2.087	1.768	1.517	1.240	1.683	53.978
1939	2.158	2.600	5.065	2.738	6.112	7.273	4.796	1.215	1.803	1.547	1.270	1.729	39.216
1940	2.223	2.555	4.475	3.563	12.900	5.593	2.540	0.989	0.689	0.788	0.566	0.328	37.210
1941	0.288	0.142	6.036	3.740	17.081	7.170	4.139	1.684	1.796	1.516	1.232	1.647	46.472
1942	1.932	2.334	2.615	1.393	2.299	7.063	4.779	2.125	1.803	1.547	1.270	1.736	30.896
1943	2.258	2.537	3.566	1.935	16.694	7.146	4.094	1.719	1.447	1.100	0.795	1.373	44.664
1944	2.081	2.081	1.848	1.034	6.475	6.931	4.147	1.796	1.481	1.241	0.960	1.054	31.129
1945	1.029	0.208	1.478	1.666	15.931	7.014	4.073	1.667	1.420	1.111	0.845	1.304	37.745
1946	0.666	0.500	0.590	2.268	6.051	7.463	4.657	2.030	1.703	1.429	1.175	1.502	30.035
1947	1.675	1.680	3.224	2.045	3.449	2.323	0.667	0.241	0.171	0.147	0.034	0.776	16.433
1948	0.182	1.051	1.264	3.308	16.177	6.738	4.672	1.225	1.801	1.542	1.258	1.699	41.816
1949	2.174	2.104	5.880	3.877	13.067	4.943	2.271	0.866	0.531	0.442	0.251	0.245	36.652
1950	0.238	0.109	1.601	1.159	1.210	1.165	0.290	0.074	0.019	0.020	0.845	1.692	8.421
1951	2.205	2.392	4.661	2.538	4.115	1.556	0.418	0.147	0.048	0.442	0.034	0.070	18.627
1952	0.121	1.378	4.531	3.377	9.561	4.443	2.222	0.825	0.610	0.502	0.326	0.862	28.760
1953	0.363	2.576	4.942	2.671	5.990	4.890	2.601	1.819	1.747	1.472	1.195	1.572	31.838
1954	2.134	2.334	2.615	2.399	14.756	7.279	4.458	1.968	1.666	1.410	1.174	1.490	43.684
1955	2.097	1.846	2.555	1.502	15.568	7.479	4.765	2.076	1.757	1.482	1.216	1.636	43.980
1956	2.014	2.338	5.534	2.612	12.603	6.976	4.020	1.573	1.253	1.499	1.260	1.736	43.418
1957	2.263	2.613	6.270	4.207	20.374	7.422	4.495	1.912	1.580	1.325	1.001	1.103	54.564
1958	1.581	2.438	4.874	3.243	8.653	3.740	1.378	0.651	0.374	0.261	0.183	1.103	28.478
1959	1.362	1.378	1.725	0.812	2.420	1.556	0.625	0.312	0.140	0.111	0.034	0.087	10.563
1960	0.238	1.846	3.737	3.859	15.788	7.392	4.788	2.094	1.785	1.540	1.258	1.703	46.026
1961	2.242	2.574	4.299	2.338	3.268	2.298	0.837	0.409	0.254	0.204	0.214	0.328	19.264
1962	0.605	1.251	2.957	2.373	9.803	7.315	4.672	2.021	1.708	1.547	1.270	1.736	37.259
1963	2.261	2.567	4.364	4.118	15.381	6.458	3.708	1.513	1.268	0.978	0.647	0.690	43.953
1964	1.615	2.578	4.760	2.582	6.717	4.038	1.768	0.523	0.445	0.397	0.394	0.905	26.721
1965	1.192	0.763	0.508	4.004	14.734	6.535	3.854	1.555	1.253	0.978	0.668	0.690	36.735
1966	0.484	0.834	0.992	1.159	20.327	7.528	4.807	2.105	1.775	1.507	1.231	1.640	44.390
1967	1.915	2.104	2.672	1.611	2.178	4.943	3.272	1.202	0.766	0.676	0.424	0.428	22.192
1968	0.666	0.458	2.378	2.475	6.293	6.024	4.261	2.017	1.734	1.468	1.206	1.608	30.589
1969	2.195	2.538	3.623	2.063	3.147	1.556	0.593	0.257	0.110	0.111	0.078	0.203	16.474
1970	1.998	2.173	2.024	1.220	2.420	1.469	1.119	0.651	1.129	1.147	1.090	1.466	17.906
1971	1.765	2.005	2.113	3.046	21.438	7.528	4.810	2.121	1.800	1.539	1.260	1.703	51.128
1972	2.192	2.311	2.615	1.100	4.357	4.160	2.467	1.353	1.268	1.078	0.947	1.736	25.584
1973	2.263	2.613	6.270	3.761	16.306	7.146	4.288	1.842	1.481	1.300	0.795	0.862	48.930
1974	0.666	2.043	3.069	3.021	18.942	7.528	4.810	2.115	1.788	1.526	1.246	1.735	48.487
1975	2.263	2.613	6.270	4.207	21.438	7.469	4.724	2.087	1.772	1.506	1.231	1.662	57.242
1976	2.148	2.265	2.758	2.173	21.438	7.528	4.810	2.125	1.799	1.530	1.248	1.736	51.556
1977	2.263	2.613	5.455	4.207	19.501	7.510	4.790	2.084	1.757	1.518	1.245	1.681	54.625
1978	2.242	2.599	5.164	2.872	6.112	2.854	1.482	0.850	0.715	0.968	0.689	1.280	27.828
1979	1.192	0.417	0.903	1.087	13.264	6.924	4.010	1.581	1.268	0.932	0.606	1.720	33.905
1980	0.968	1.499	3.167	1.972	7.382	5.268	2.026	1.125	1.803	1.547	1.270	1.736	30.764
1981	2.263	2.609	5.281	2.931	6.354	4.038	1.842	0.537	0.409	0.306	0.214	0.203	26.986
1982	0.484	0.544	0.182	0.790	0.061	0.061	0.000	0.105	0.304	0.147	0.152	0.087	2.916
1983	0.121	2.594	5.706	4.207	21.438	7.528	4.810	2.124	1.803	1.547	1.270	1.736	54.884
1984	2.263	2.576	4.160	3.458	21.438	7.528	4.810	2.114	1.786	1.532	1.254	1.696	54.615
1985	2.155	2.420	2.900	1.899	3.328	1.759	0.609	0.226	0.140	0.147	0.034	0.087	15.703
1986	0.545	0.500	2.200	3.225	11.924	6.044	4.010	1.819	1.516	1.300	1.068	1.736	35.888
1987	2.263	2.613	6.096	3.425	13.708	7.444	4.810	2.119	1.798	1.543	1.261	1.704	48.784
1988	2.224	2.548	4.021	2.399	10.948	7.524	4.756	2.052	1.718	1.444	1.170	1.466	42.270
1989	1.705	2.613	6.270	4.207	19.442	7.381	4.665	2.016	1.674	1.413	1.155	1.472	54.014
1990	1.645	1.762	2.872	3.684	18.883	7.479	4.681	2.125	1.803	1.547	1.270	1.733	49.485
1991	2.250	2.510	3.224	1.805	2.783	1.034	0.545	0.147	0.048	0.041	0.025	0.070	14.483
1992	0.061	0.417	3.623	1.829	3.933	7.230	4.605	1.989	1.640	1.361	1.075	1.234	28.996
1993	2.263	2.607	4.923	3.059	11.967	5.833	3.021	1.035	0.689	0.591	0.394	0.328	36.710
1994	1.675	2.447	4.160	3.430	8.532	3.241	3.080	2.119	1.803	1.546	1.268	1.726	35.027
1995	2.220	2.433	5.571	4.207	21.438	7.528	4.810	2.116	1.792	1.540	1.263	1.708	56.625
1996	2.258	2.607	5.259	3.305	10.567	6.111	4.768	2.110	1.795	1.535	1.266	1.728	43.309
1997	2.245	2.592	6.114	3.943	18.883	7.292	4.259	1.851	1.542	1.300	0.987	1.103	52.111
1998	1.998	1.762	3.056	2.872	15.339	6.992	4.453	1.891	1.556	1.300	1.041	1.103	43.363
1999	1.130	1.619	4.748	3.636	18.678	7.523	4.810	2.125	1.803	1.547	1.269	1.731	50.621
2000	2.257	2.613	6.270	4.207	18.485	7.258	4.574	2.076	1.750	1.480	1.215	1.640	53.824
2001	2.148	2.593	5.714	3.724	13.271	5.928	3.135	1.323	1.129	1.547	1.270	1.736	43.518
2002	2.257	2.518	3.423	1.782	3.086	0.860	0.307	0.084	0.026	0.031	0.016	0.053	14.444
2003	0.061	1.											

A.136. *Nvij4 – Category B***Summary table**

Desktop Version 2, Generated on 09/04/2015

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvij4

Annual Flows (Mill. cu. m or index values):

MAR = 6.498

S.Dev. = 11.067

CV = 1.703

Q75 = 0.000

Q75/MMF = 0.000

BFI Index = 0.250

CV(JJA+JFM) Index = 7.767

Ecological Category = B

Total IFR = 3.630 (55.86 %MAR)

Maint. Lowflow = 2.197 (33.81 %MAR)

Drought Lowflow = 0.402 (6.19 %MAR)

Maint. Highflow = 1.433 (22.05 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	0.544	2.246	4.132	0.136	0.019	0.093	0.229
Nov	0.447	1.479	3.311	0.209	0.022	0.150	0.359
Dec	0.440	1.489	3.386	0.274	0.062	0.189	0.463
Jan	1.350	3.872	2.867	0.303	0.063	0.234	0.537
Feb	1.530	4.799	3.137	0.294	0.058	0.348	0.642
Mar	0.485	1.125	2.319	0.311	0.062	0.241	0.552
Apr	0.353	1.415	4.007	0.220	0.021	0.061	0.281
May	0.427	1.700	3.982	0.171	0.022	0.043	0.214
Jun	0.162	0.513	3.160	0.086	0.020	0.000	0.086
Jul	0.367	2.699	7.345	0.077	0.019	0.034	0.111
Aug	0.098	0.436	4.473	0.064	0.017	0.000	0.064
Sep	0.295	1.552	5.252	0.051	0.016	0.039	0.091

Rule curve

Desktop Version 2, Generated on 09/04/2015

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvij4

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.264	0.093	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.414	0.170	0.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dec	0.694	0.376	0.108	0.041	0.005	0.000	0.000	0.000	0.000	0.000
Jan	0.816	0.753	0.376	0.144	0.036	0.005	0.000	0.000	0.000	0.000
Feb	1.027	0.934	0.397	0.191	0.052	0.010	0.000	0.000	0.000	0.000
Mar	0.635	0.469	0.155	0.031	0.005	0.000	0.000	0.000	0.000	0.000
Apr	0.330	0.088	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000
May	0.251	0.129	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jun	0.102	0.036	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.129	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.077	0.036	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.104	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.162	0.093	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.249	0.170	0.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dec	0.327	0.325	0.108	0.041	0.005	0.000	0.000	0.000	0.000	0.000
Jan	0.362	0.360	0.355	0.144	0.036	0.005	0.000	0.000	0.000	0.000
Feb	0.351	0.349	0.345	0.191	0.052	0.010	0.000	0.000	0.000	0.000
Mar	0.371	0.369	0.155	0.031	0.005	0.000	0.000	0.000	0.000	0.000
Apr	0.262	0.088	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000
May	0.204	0.129	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jun	0.102	0.036	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.092	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.077	0.036	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.062	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Natural Duration curves

Oct	0.736	0.093	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.984	0.170	0.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dec	1.694	0.376	0.108	0.041	0.005	0.000	0.000	0.000	0.000	0.000
Jan	2.405	1.329	0.376	0.144	0.036	0.005	0.000	0.000	0.000	0.000
Feb	3.440	1.365	0.397	0.191	0.052	0.010	0.000	0.000	0.000	0.000
Mar	1.818	0.469	0.155	0.031	0.005	0.000	0.000	0.000	0.000	0.000
Apr	0.762	0.088	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000
May	0.783	0.129	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jun	0.597	0.036	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.376	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.232	0.036	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.180	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Hydrological time series

Total Runoff : Nvij4

Desktop (Version 2) Modified Flow Data for Ecological Category B

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL	
1920	0.264	0.041	0.026	0.015	0.010	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.005	0.371
1921	0.000	0.000	0.000	0.000	0.000	0.124	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.124
1922	0.000	0.000	0.000	0.252	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.252
1923	0.000	0.000	0.000	0.000	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.051
1924	0.005	0.000	0.000	0.781	0.944	0.010	0.021	0.015	0.010	0.005	0.005	0.000	0.000	1.796
1925	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1926	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1927	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1928	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1929	0.000	0.000	0.000	0.816	1.027	0.635	0.330	0.251	0.102	0.129	0.077	0.104	0.104	3.471
1930	0.067	0.041	0.026	0.015	0.010	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.169
1931	0.000	0.414	0.134	0.000	1.027	0.386	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.960
1932	0.000	0.000	0.694	0.664	0.108	0.628	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.094
1933	0.000	0.000	0.041	0.088	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.129
1934	0.000	0.000	0.108	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.108
1935	0.000	0.000	0.000	0.777	0.361	0.469	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.607
1936	0.000	0.414	0.134	0.797	0.721	0.088	0.026	0.010	0.005	0.005	0.005	0.000	0.000	2.205
1937	0.000	0.000	0.694	0.211	0.093	0.232	0.041	0.026	0.015	0.010	0.005	0.005	0.005	1.332
1938	0.000	0.000	0.000	0.149	1.027	0.634	0.330	0.251	0.102	0.129	0.077	0.067	0.067	2.766
1939	0.041	0.263	0.015	0.816	0.397	0.633	0.005	0.134	0.102	0.129	0.077	0.104	0.104	2.716
1940	0.103	0.413	0.694	0.036	0.052	0.525	0.015	0.005	0.000	0.000	0.000	0.000	0.000	1.843
1941	0.000	0.000	0.093	0.175	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.268
1942	0.000	0.062	0.015	0.005	0.005	0.635	0.330	0.251	0.102	0.129	0.077	0.104	0.104	1.716
1943	0.263	0.278	0.180	0.108	0.577	0.041	0.026	0.015	0.102	0.010	0.005	0.000	0.000	1.606
1944	0.000	0.000	0.000	0.623	0.998	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.621
1945	0.000	0.000	0.000	0.771	0.299	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.070
1946	0.000	0.000	0.000	0.036	0.955	0.635	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.626
1947	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1948	0.000	0.000	0.000	0.811	1.014	0.000	0.330	0.251	0.102	0.129	0.077	0.104	0.104	2.819
1949	0.093	0.057	0.453	0.046	0.010	0.010	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.679
1950	0.000	0.000	0.041	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.077	0.000	0.123
1951	0.000	0.000	0.000	0.000	0.386	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.386
1952	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.124	0.000	0.000	0.000	0.000	0.000	0.134
1953	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.251	0.015	0.000	0.000	0.000	0.000	0.266
1954	0.000	0.000	0.000	0.763	0.934	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.702
1955	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1956	0.000	0.000	0.694	0.804	0.026	0.000	0.000	0.000	0.000	0.000	0.000	0.104	0.104	1.629
1957	0.264	0.067	0.041	0.816	1.027	0.635	0.330	0.251	0.102	0.129	0.077	0.093	0.093	3.831
1958	0.264	0.046	0.694	0.735	0.005	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	1.754
1959	0.000	0.000	0.000	0.000	0.695	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.710
1960	0.000	0.413	0.417	0.108	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.943
1961	0.000	0.000	0.000	0.000	0.000	0.036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.036
1962	0.000	0.414	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.129	0.077	0.104	0.104	0.724
1963	0.264	0.413	0.489	0.816	0.170	0.113	0.067	0.041	0.026	0.015	0.010	0.005	0.005	2.429
1964	0.264	0.371	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.635
1965	0.000	0.000	0.000	0.751	0.903	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.654
1966	0.000	0.000	0.000	0.000	0.974	0.247	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.221
1967	0.000	0.000	0.000	0.000	0.000	0.149	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.149
1968	0.000	0.000	0.000	0.000	0.000	0.170	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.170
1969	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1970	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1971	0.000	0.000	0.000	0.093	1.027	0.635	0.330	0.251	0.102	0.129	0.077	0.104	0.104	2.749
1972	0.113	0.088	0.046	0.026	0.015	0.010	0.005	0.005	0.000	0.000	0.077	0.104	0.104	0.489
1973	0.264	0.414	0.623	0.376	0.211	0.144	0.088	0.057	0.031	0.021	0.010	0.005	0.005	2.243
1974	0.005	0.005	0.000	0.175	1.027	0.635	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.847
1975	0.000	0.000	0.000	0.816	0.000	0.000	0.329	0.000	0.000	0.000	0.000	0.000	0.000	1.144
1976	0.000	0.000	0.026	0.057	1.027	0.407	0.309	0.216	0.088	0.057	0.036	0.021	0.021	2.244
1977	0.010	0.005	0.103	0.005	0.000	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.138
1978	0.000	0.000	0.000	0.000	0.000	0.000	0.330	0.196	0.000	0.000	0.000	0.000	0.000	0.526
1979	0.000	0.000	0.678	0.283	0.103	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.064
1980	0.000	0.000	0.108	0.036	0.000	0.000	0.000	0.251	0.102	0.129	0.077	0.104	0.104	0.808
1981	0.144	0.413	0.062	0.031	0.021	0.010	0.005	0.005	0.005	0.000	0.000	0.000	0.000	0.696
1982	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1983	0.000	0.000	0.000	0.816	1.027	0.635	0.330	0.251	0.102	0.129	0.077	0.104	0.104	3.471
1984	0.124	0.072	0.046	0.816	1.027	0.635	0.330	0.251	0.102	0.129	0.077	0.104	0.104	3.713
1985	0.264	0.414	0.211	0.062	0.108	0.036	0.015	0.010	0.005	0.005	0.000	0.000	0.000	1.129
1986	0.000	0.000	0.376	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.046	0.104	0.104	0.531
1987	0.264	0.414	0.694	0.746	0.716	0.634	0.263	0.165	0.098	0.062	0.036	0.021	0.021	4.113
1988	0.015	0.010	0.268	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.298
1989	0.000	0.414	0.694	0.816	0.971	0.634	0.329	0.251	0.102	0.129	0.077	0.046	0.046	4.462
1990	0.031	0.015	0.010	0.144	0.015	0.216	0.000	0.251	0.102	0.129	0.077	0.104	0.104	1.095
1991	0.263	0.170	0.108	0.067	0.036	0.026	0.015	0.010	0.005	0.005	0.000	0.000	0.000	0.705
1992	0.000	0.010	0.505	0.000	0.191	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.706
1993	0.264	0.414	0.694	0.748	0.510	0.350	0.206	0.129	0.077	0.046	0.031	0.015	0.015	3.484
1994	0.113	0.057	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.175
1995	0.000	0.000	0.000	0.000	0.294	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.299
1996	0.264	0.052	0.000	0.000	0.196	0.057	0.237	0.000	0.000	0.000	0.000	0.000	0.000	0.806
1997	0.000	0.227	0.677	0.407	0.227	0.155	0.093	0.057	0.036	0.021	0.015	0.010	0.010	1.925
1998	0.005	0.005	0.139	0.753	0.350	0.000	0.000	0.000	0.000					

A.137. *Nvij4 – Category C***Summary table**

Desktop Version 2, Generated on 10/04/15

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvij4

Annual Flows (Mill. cu. m or index values):

MAR = 6.498

S.Dev. = 11.067

CV = 1.703

Q75 = 0.000

Q75/MMF = 0.000

BFI Index = 0.250

CV(JJA+JFM) Index = 7.767

Ecological Category = C

Total IFR = 2.894 (44.53 %MAR)

Maint. Lowflow = 1.461 (22.49 %MAR)

Drought Lowflow = 0.402 (6.19 %MAR)

Maint. Highflow = 1.433 (22.05 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	0.544	2.246	4.132	0.093	0.019	0.093	0.186
Nov	0.447	1.479	3.311	0.132	0.022	0.150	0.282
Dec	0.440	1.489	3.386	0.203	0.062	0.189	0.391
Jan	1.350	3.872	2.867	0.213	0.063	0.234	0.447
Feb	1.530	4.799	3.137	0.201	0.058	0.348	0.549
Mar	0.485	1.125	2.319	0.203	0.062	0.241	0.445
Apr	0.353	1.415	4.007	0.136	0.021	0.061	0.197
May	0.427	1.700	3.982	0.110	0.022	0.043	0.153
Jun	0.162	0.513	3.160	0.054	0.020	0.000	0.054
Jul	0.367	2.699	7.345	0.051	0.019	0.034	0.085
Aug	0.098	0.436	4.473	0.047	0.017	0.000	0.047
Sep	0.295	1.552	5.252	0.017	0.016	0.039	0.056

Rule curve

Desktop Version 2, Generated on 10/04/15

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvij4

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.235	0.093	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.363	0.170	0.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dec	0.649	0.376	0.108	0.041	0.005	0.000	0.000	0.000	0.000	0.000
Jan	0.751	0.689	0.376	0.144	0.036	0.005	0.000	0.000	0.000	0.000
Feb	0.956	0.864	0.397	0.191	0.052	0.010	0.000	0.000	0.000	0.000
Mar	0.571	0.469	0.155	0.031	0.005	0.000	0.000	0.000	0.000	0.000
Apr	0.256	0.088	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000
May	0.200	0.129	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jun	0.073	0.036	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.109	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.064	0.036	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.069	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.126	0.093	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.184	0.170	0.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dec	0.282	0.281	0.108	0.041	0.005	0.000	0.000	0.000	0.000	0.000
Jan	0.297	0.296	0.292	0.144	0.036	0.005	0.000	0.000	0.000	0.000
Feb	0.280	0.279	0.275	0.191	0.052	0.010	0.000	0.000	0.000	0.000
Mar	0.283	0.281	0.155	0.031	0.005	0.000	0.000	0.000	0.000	0.000
Apr	0.184	0.088	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000
May	0.149	0.129	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jun	0.073	0.036	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.069	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.064	0.036	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.023	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Natural Duration curves

Oct	0.736	0.093	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.984	0.170	0.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dec	1.694	0.376	0.108	0.041	0.005	0.000	0.000	0.000	0.000	0.000
Jan	2.405	1.329	0.376	0.144	0.036	0.005	0.000	0.000	0.000	0.000
Feb	3.440	1.365	0.397	0.191	0.052	0.010	0.000	0.000	0.000	0.000
Mar	1.818	0.469	0.155	0.031	0.005	0.000	0.000	0.000	0.000	0.000
Apr	0.762	0.088	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000
May	0.783	0.129	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jun	0.597	0.036	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.376	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.232	0.036	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.180	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Hydrological time series

Total Runoff : Nvij4

A.138. *Nvij4 – Category D***Summary table**

Desktop Version 2, Generated on 2015-03-09

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvij4

Annual Flows (Mill. cu. m or index values):

MAR = 6,498

S.Dev. = 11,067

CV = 1,703

Q75 = 0,000

Q75/MMF = 0,000

BFI Index = 0,241

CV(JJA+JFM) Index = 7,767

Ecological Category = D

Total IFR = 1,416 (21,80 %MAR)

Maint. Lowflow = 0,402 (6,19 %MAR)

Drought Lowflow = 0,402 (6,19 %MAR)

Maint. Highflow = 1,014 (15,61 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	0,544	2,246	4,132	0,019	0,019	0,069	0,088
Nov	0,447	1,479	3,311	0,022	0,022	0,098	0,120
Dec	0,440	1,489	3,386	0,062	0,062	0,116	0,178
Jan	1,350	3,872	2,867	0,063	0,063	0,155	0,217
Feb	1,530	4,799	3,137	0,058	0,058	0,274	0,332
Mar	0,485	1,125	2,319	0,062	0,062	0,151	0,212
Apr	0,353	1,415	4,007	0,021	0,021	0,046	0,067
May	0,427	1,700	3,982	0,022	0,022	0,035	0,057
Jun	0,162	0,513	3,160	0,020	0,020	0,000	0,020
Jul	0,367	2,699	7,345	0,019	0,019	0,034	0,053
Aug	0,098	0,436	4,473	0,017	0,017	0,000	0,017
Sep	0,295	1,552	5,252	0,016	0,016	0,037	0,053

Rule curve

Desktop Version 2, Generated on 2015-03-09

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvij4

Regional Type : Zululand

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	0.132	0.093	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.179	0.170	0.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dec	0.358	0.321	0.108	0.041	0.005	0.000	0.000	0.000	0.000	0.000
Jan	0.440	0.391	0.349	0.144	0.036	0.005	0.000	0.000	0.000	0.000
Feb	0.681	0.593	0.397	0.191	0.052	0.010	0.000	0.000	0.000	0.000
Mar	0.429	0.380	0.155	0.031	0.005	0.000	0.000	0.000	0.000	0.000
Apr	0.104	0.088	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000
May	0.090	0.089	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jun	0.037	0.036	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.082	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.031	0.031	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.081	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Reserve Flows without High Flows

Oct	0.035	0.035	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.041	0.041	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dec	0.114	0.114	0.108	0.041	0.005	0.000	0.000	0.000	0.000	0.000
Jan	0.116	0.116	0.115	0.114	0.036	0.005	0.000	0.000	0.000	0.000
Feb	0.108	0.108	0.107	0.105	0.052	0.010	0.000	0.000	0.000	0.000
Mar	0.113	0.113	0.112	0.031	0.005	0.000	0.000	0.000	0.000	0.000
Apr	0.039	0.039	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000
May	0.040	0.040	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jun	0.037	0.036	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.034	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.031	0.031	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.029	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Natural Duration curves

Oct	0.736	0.093	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nov	0.984	0.170	0.041	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dec	1.694	0.376	0.108	0.041	0.005	0.000	0.000	0.000	0.000	0.000
Jan	2.405	1.329	0.376	0.144	0.036	0.005	0.000	0.000	0.000	0.000
Feb	3.440	1.365	0.397	0.191	0.052	0.010	0.000	0.000	0.000	0.000
Mar	1.818	0.469	0.155	0.031	0.005	0.000	0.000	0.000	0.000	0.000
Apr	0.762	0.088	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000
May	0.783	0.129	0.010	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jun	0.597	0.036	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jul	0.376	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aug	0.232	0.036	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Sep	0.180	0.021	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Hydrological time series

Total Runoff : Nvij4

Desktop (Version 2) Modified Flow Data for Ecological Category D														
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL	
1920	0.132	0.041	0.026	0.015	0.010	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.005	0.239
1921	0.000	0.000	0.000	0.000	0.124	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.124
1922	0.000	0.000	0.000	0.252	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.252
1923	0.000	0.000	0.000	0.000	0.046	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.051
1924	0.005	0.000	0.000	0.413	0.602	0.010	0.021	0.015	0.010	0.005	0.005	0.000	0.000	1.085
1925	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1926	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1927	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1928	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1929	0.000	0.000	0.000	0.440	0.681	0.429	0.104	0.090	0.037	0.082	0.031	0.081	0.081	1.975
1930	0.067	0.041	0.026	0.015	0.010	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.169
1931	0.000	0.179	0.134	0.000	0.681	0.371	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.365
1932	0.000	0.000	0.358	0.366	0.108	0.389	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.221
1933	0.000	0.000	0.041	0.088	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.129
1934	0.000	0.000	0.108	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.108
1935	0.000	0.000	0.000	0.409	0.361	0.380	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.150
1936	0.000	0.179	0.134	0.426	0.550	0.088	0.026	0.010	0.005	0.005	0.005	0.000	0.000	1.427
1937	0.000	0.000	0.358	0.211	0.093	0.232	0.041	0.026	0.015	0.010	0.005	0.005	0.005	0.996
1938	0.000	0.000	0.000	0.149	0.681	0.417	0.104	0.090	0.037	0.082	0.031	0.067	0.067	1.657
1939	0.041	0.179	0.015	0.440	0.397	0.400	0.005	0.089	0.037	0.082	0.031	0.081	0.081	1.798
1940	0.103	0.179	0.358	0.036	0.052	0.383	0.015	0.005	0.000	0.000	0.000	0.000	0.000	1.131
1941	0.000	0.000	0.093	0.175	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.268
1942	0.000	0.062	0.015	0.005	0.005	0.429	0.104	0.090	0.037	0.082	0.031	0.081	0.081	0.941
1943	0.132	0.179	0.180	0.108	0.536	0.041	0.026	0.015	0.037	0.010	0.005	0.000	0.000	1.269
1944	0.000	0.000	0.000	0.364	0.654	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.017
1945	0.000	0.000	0.000	0.405	0.299	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.704
1946	0.000	0.000	0.000	0.036	0.612	0.429	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.077
1947	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1948	0.000	0.000	0.000	0.437	0.669	0.000	0.104	0.090	0.037	0.082	0.031	0.081	0.081	1.531
1949	0.093	0.057	0.327	0.046	0.010	0.010	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.553
1950	0.000	0.000	0.041	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.031	0.000	0.077
1951	0.000	0.000	0.000	0.000	0.386	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.386
1952	0.000	0.000	0.010	0.000	0.000	0.000	0.000	0.089	0.000	0.000	0.000	0.000	0.000	0.099
1953	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.090	0.015	0.000	0.000	0.000	0.000	0.105
1954	0.000	0.000	0.000	0.398	0.593	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.996
1955	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1956	0.000	0.000	0.358	0.431	0.026	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.081	0.897
1957	0.132	0.067	0.041	0.440	0.681	0.429	0.104	0.090	0.037	0.082	0.031	0.081	0.081	2.215
1958	0.132	0.046	0.358	0.377	0.005	0.005	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.929
1959	0.000	0.000	0.000	0.000	0.547	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.562
1960	0.000	0.179	0.324	0.108	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.616
1961	0.000	0.000	0.000	0.000	0.000	0.036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.036
1962	0.000	0.179	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.082	0.031	0.081	0.081	0.374
1963	0.132	0.179	0.330	0.440	0.170	0.113	0.067	0.041	0.026	0.015	0.010	0.005	0.005	1.528
1964	0.132	0.179	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.310
1965	0.000	0.000	0.000	0.389	0.564	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.953
1966	0.000	0.000	0.000	0.000	0.630	0.247	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.877
1967	0.000	0.000	0.000	0.000	0.000	0.149	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.149
1968	0.000	0.000	0.000	0.000	0.000	0.170	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.170
1969	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1970	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1971	0.000	0.000	0.000	0.093	0.681	0.429	0.104	0.090	0.037	0.082	0.031	0.081	0.081	1.628
1972	0.113	0.088	0.046	0.026	0.015	0.010	0.005	0.005	0.000	0.000	0.031	0.081	0.081	0.421
1973	0.132	0.179	0.342	0.349	0.211	0.144	0.088	0.057	0.031	0.021	0.010	0.005	0.005	1.569
1974	0.005	0.005	0.000	0.175	0.681	0.429	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.295
1975	0.000	0.000	0.000	0.440	0.000	0.000	0.104	0.000	0.000	0.000	0.000	0.000	0.000	0.544
1976	0.000	0.000	0.026	0.057	0.681	0.373	0.104	0.090	0.037	0.057	0.031	0.021	0.021	1.476
1977	0.010	0.005	0.103	0.005	0.000	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.138
1978	0.000	0.000	0.000	0.000	0.000	0.000	0.104	0.090	0.000	0.000	0.000	0.000	0.000	0.193
1979	0.000	0.000	0.347	0.283	0.103	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.733
1980	0.000	0.000	0.108	0.036	0.000	0.000	0.000	0.090	0.037	0.082	0.031	0.081	0.081	0.466
1981	0.132	0.179	0.062	0.031	0.021	0.010	0.005	0.005	0.005	0.000	0.000	0.000	0.000	0.450
1982	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1983	0.000	0.000	0.000	0.440	0.681	0.429	0.104	0.090	0.037	0.082	0.031	0.081	0.081	1.975
1984	0.124	0.072	0.046	0.440	0.681	0.429	0.104	0.090	0.037	0.082	0.031	0.081	0.081	2.217
1985	0.132	0.179	0.211	0.062	0.108	0.036	0.015	0.010	0.005	0.005	0.000	0.000	0.000	0.763
1986	0.000	0.000	0.321	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.031	0.081	0.081	0.438
1987	0.132	0.179	0.358	0.386	0.549	0.409	0.103	0.089	0.037	0.062	0.031	0.021	0.021	2.356
1988	0.015	0.010	0.268	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.298
1989	0.000	0.179	0.358	0.440	0.627	0.407	0.104	0.090	0.037	0.082	0.031	0.046	0.046	2.401
1990	0.031	0.015	0.010	0.144	0.015	0.216	0.000	0.090	0.037	0.082	0.031	0.081	0.081	0.753
1991	0.132	0.170	0.108	0.067	0.036	0.026	0.015	0.010	0.005	0.005	0.000	0.000	0.000	0.574
1992	0.000	0.010	0.332	0.000	0.191	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.533
1993	0.132	0.179	0.358	0.387	0.510	0.350	0.103	0.089	0.037	0.046	0.031	0.015	0.015	2.238
1994	0.113	0.057	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.175
1995	0.000	0.000	0.000	0.000	0.294	0.005	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.299
1996	0.132	0.052	0.000	0.000	0.196	0.057	0.103	0.000	0.000	0.000	0.000	0.000	0.000	0.540
1997	0.000	0.178	0.345	0.351	0.227	0.155	0.093	0.057	0.036	0.021	0.015	0.010	0.010	1.489
1998	0.005	0.005	0.139	0.391	0.350	0.000	0.000	0.000						

A.139. *Nvij5 – Category B***Summary table**

Desktop Version 2, Generated on 2015-03-31

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvij5

Annual Flows (Mill. cu. m or index values):

MAR = 166,128

S.Dev. = 91,567

CV = 0,551

Q75 = 5,770

Q75/MMF = 0,417

BFI Index = 0,518

CV(JJA+JFM) Index = 2,217

Ecological Category = B

Total IFR = 56,972 (34,29 %MAR)

Maint. Lowflow = 39,528 (23,79 %MAR)

Drought Lowflow = 11,869 (7,14 %MAR)

Maint. Highflow = 17,444 (10,50 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	12,822	13,468	1,050	2,966	0,908	1,416	4,382
Nov	17,999	14,756	0,820	3,349	1,003	2,346	5,695
Dec	17,808	14,111	0,792	3,491	1,038	2,495	5,986
Jan	19,046	27,885	1,464	3,631	1,073	1,247	4,878
Feb	21,963	25,115	1,144	3,926	1,146	6,104	10,030
Mar	18,840	21,765	1,155	3,916	1,143	2,206	6,122
Apr	13,439	10,053	0,748	3,709	1,092	0,899	4,608
May	10,512	8,718	0,829	3,344	1,001	0,000	3,344
Jun	8,049	5,668	0,704	2,964	0,907	0,000	2,964
Jul	8,456	11,103	1,313	2,833	0,875	0,000	2,833
Aug	7,185	6,248	0,870	2,647	0,828	0,000	2,647
Sep	10,009	21,579	2,156	2,752	0,855	0,731	3,483

Rule curve

Desktop Version 2, Generated on 2015-03-31

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvij5

Regional Type : Zululand

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	4.982	4.966	4.902	4.759	4.470	3.959	3.194	2.268	1.452	1.074
Nov	6.476	6.464	6.390	6.215	5.853	5.192	4.174	2.916	1.791	1.270
Dec	9.364	8.554	7.853	7.206	6.011	5.350	4.316	3.024	1.860	1.321
Jan	6.950	6.549	6.184	5.821	5.128	4.603	3.757	2.675	1.684	1.225
Feb	17.443	15.468	13.807	12.353	9.703	8.590	6.851	4.677	2.719	1.812
Mar	9.223	8.501	7.867	7.263	6.147	5.462	4.407	3.103	1.937	1.398
Apr	5.289	5.273	5.206	5.056	4.754	4.221	3.421	2.455	1.603	1.208
May	3.894	3.877	3.824	3.709	3.484	3.099	2.536	1.869	1.288	1.019
Jun	3.422	3.404	3.356	3.251	3.051	2.712	2.223	1.649	1.153	0.923
Jul	3.243	3.220	3.169	3.063	2.866	2.540	2.081	1.552	1.100	0.890
Aug	3.056	3.041	2.997	2.905	2.728	2.428	1.994	1.486	1.046	0.842
Sep	3.994	3.975	3.919	3.797	3.559	3.151	2.554	1.848	1.233	0.947

Reserve Flows without High Flows

Oct	3.454	3.444	3.403	3.310	3.122	2.792	2.296	1.697	1.169	0.924
Nov	3.933	3.927	3.885	3.788	3.585	3.215	2.646	1.942	1.313	1.021
Dec	4.135	4.130	4.089	3.991	3.784	3.399	2.798	2.047	1.371	1.057
Jan	4.337	4.337	4.299	4.206	4.002	3.611	2.981	2.174	1.435	1.093
Feb	4.650	4.645	4.598	4.487	4.252	3.817	3.138	2.288	1.522	1.168
Mar	4.599	4.591	4.542	4.427	4.188	3.752	3.080	2.250	1.508	1.165
Apr	4.319	4.306	4.254	4.136	3.899	3.480	2.852	2.092	1.423	1.112
May	3.894	3.877	3.824	3.709	3.484	3.099	2.536	1.869	1.288	1.019
Jun	3.422	3.404	3.356	3.251	3.051	2.712	2.223	1.649	1.153	0.923
Jul	3.243	3.220	3.169	3.063	2.866	2.540	2.081	1.552	1.100	0.890
Aug	3.056	3.041	2.997	2.905	2.728	2.428	1.994	1.486	1.046	0.842
Sep	3.205	3.191	3.148	3.054	2.872	2.559	2.102	1.560	1.088	0.870

Natural Duration curves

Oct	25.870	15.300	12.690	10.790	9.280	8.120	6.640	5.720	4.510	2.420
Nov	35.810	24.970	17.370	16.060	13.590	11.930	9.070	7.830	6.480	3.400
Dec	32.940	23.750	20.930	17.220	14.420	11.900	9.450	8.290	6.710	3.380
Jan	34.460	23.860	20.240	15.540	13.540	11.570	9.630	7.910	6.070	3.690
Feb	41.270	28.090	20.060	17.090	14.190	11.810	9.040	7.440	5.930	3.490
Mar	37.230	24.390	20.260	15.950	13.420	10.990	9.010	6.750	5.540	3.550
Apr	24.910	19.240	16.610	12.310	10.460	8.730	7.680	6.250	4.970	3.550
May	19.130	13.510	11.320	8.890	7.960	7.110	5.890	5.490	4.410	3.090
Jun	13.490	11.090	7.960	6.800	6.240	5.820	5.280	4.970	3.690	2.670
Jul	12.140	9.170	8.180	6.650	5.830	5.400	4.730	4.400	3.540	2.320
Aug	11.840	8.020	6.830	6.190	5.720	4.950	4.630	4.260	3.440	2.240
Sep	14.200	9.220	8.040	6.690	5.960	5.000	4.470	4.060	3.570	2.320

Hydrological time series

Total Runoff : Nvij5

Desktop (Version 2) Modified Flow Data for Ecological Category B													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	4.936	6.397	7.885	5.981	6.996	5.921	5.022	2.877	2.353	2.054	1.306	2.462	54.190
1921	1.584	6.476	8.179	5.595	6.025	4.407	2.455	1.736	1.691	1.808	1.785	1.400	43.139
1922	3.208	5.872	4.794	3.929	7.147	1.505	1.276	1.056	0.930	0.890	0.842	0.947	32.396
1923	1.074	1.457	4.941	1.877	2.830	4.652	4.095	2.825	2.041	1.509	1.230	2.554	31.086
1924	3.194	6.476	9.364	6.891	15.468	9.223	5.289	3.894	3.407	3.243	3.046	3.961	73.456
1925	4.962	6.215	5.234	1.842	2.012	3.927	3.908	1.869	3.241	3.046	2.428	3.598	42.282
1926	4.887	6.390	6.250	2.690	5.571	6.932	4.762	2.641	2.365	2.866	2.982	3.702	52.039
1927	4.470	3.544	3.523	5.000	11.238	6.017	4.255	2.401	1.596	1.552	1.677	2.554	47.826
1928	2.813	1.568	1.344	1.225	1.812	5.561	5.106	3.629	3.356	3.234	3.003	3.947	36.597
1929	4.982	6.476	7.853	6.549	14.854	7.670	5.241	3.855	3.123	2.805	2.914	3.860	70.183
1930	3.931	3.360	3.660	3.154	3.461	1.613	1.400	1.099	1.021	1.042	0.900	0.955	25.595
1931	1.452	1.788	1.576	1.225	17.443	9.223	5.289	3.894	3.422	3.243	3.042	3.631	55.229
1932	2.452	1.882	4.316	2.448	3.479	2.094	1.508	1.119	0.975	1.003	0.936	0.955	23.165
1933	1.074	4.452	7.206	6.950	16.379	8.239	5.286	3.886	3.410	3.219	3.055	3.975	67.132
1934	3.660	5.204	9.364	6.853	13.324	6.438	4.483	3.099	3.312	3.063	2.615	2.916	64.330
1935	1.395	1.319	1.321	4.059	12.965	8.327	5.273	3.894	3.422	3.223	2.875	3.614	51.887
1936	4.219	6.473	7.431	4.810	14.183	7.525	3.421	1.991	1.898	2.081	1.336	1.848	57.217
1937	1.702	1.367	5.814	5.152	12.573	7.998	5.217	3.877	3.366	3.243	3.056	3.869	57.233
1938	4.724	5.411	5.584	5.239	17.443	9.223	5.289	3.892	3.422	3.220	3.041	3.989	70.476
1939	4.966	6.476	9.361	6.450	8.330	2.782	3.882	3.894	3.422	3.243	3.056	3.991	59.855
1940	4.811	5.363	7.803	6.038	6.778	3.514	4.267	3.064	1.815	1.541	1.168	1.372	47.536
1941	1.391	1.791	1.651	3.306	8.973	6.968	5.201	3.806	3.371	3.144	2.997	3.976	46.576
1942	4.953	6.430	9.364	6.950	14.596	8.433	5.289	3.894	3.422	3.243	3.056	3.994	73.625
1943	4.982	6.476	7.484	2.069	8.098	6.778	3.004	1.709	3.299	3.186	2.769	3.991	53.847
1944	4.968	5.697	2.272	1.676	4.558	9.223	5.289	3.850	3.268	2.593	2.049	1.635	47.079
1945	1.156	1.270	1.321	5.896	9.516	3.675	2.877	2.158	1.452	1.248	1.017	1.068	32.655
1946	3.123	5.068	4.950	2.604	11.723	8.651	5.244	3.839	3.390	3.221	2.953	3.614	58.381
1947	3.392	6.215	9.061	6.589	10.699	7.488	5.145	3.727	2.850	2.350	1.706	1.970	61.192
1948	2.577	4.207	3.024	3.551	10.306	8.131	5.289	3.894	3.422	3.220	2.769	3.495	53.886
1949	4.439	6.218	9.364	6.853	12.832	7.263	4.966	3.103	3.062	2.475	2.335	1.741	64.652
1950	1.151	1.270	2.312	2.074	1.812	1.398	1.327	1.080	0.975	0.923	3.028	3.992	21.341
1951	4.913	3.640	2.883	3.757	4.828	3.382	2.487	2.711	2.519	3.110	2.988	2.726	39.943
1952	2.088	2.838	5.741	6.378	16.565	7.792	5.040	3.520	2.761	2.397	2.401	2.931	60.451
1953	2.170	5.299	5.250	2.675	9.563	7.210	4.461	3.852	3.421	3.169	2.962	3.959	53.991
1954	4.982	6.476	8.491	6.037	14.522	7.995	5.206	3.785	3.251	2.555	1.719	1.470	66.489
1955	3.123	5.932	8.480	5.893	17.443	9.151	5.018	2.212	2.507	2.116	1.441	3.312	66.631
1956	4.699	6.377	9.364	6.771	13.970	7.374	5.134	3.866	3.205	3.187	3.053	3.994	70.994
1957	4.982	6.476	8.143	6.184	16.530	6.919	5.130	3.865	3.108	2.540	1.706	1.824	67.407
1958	2.283	2.799	2.862	5.061	12.253	6.057	2.189	3.646	3.352	2.654	2.728	3.487	49.369
1959	4.074	3.468	5.636	3.864	7.460	7.370	5.281	3.893	3.381	3.134	2.914	3.797	54.271
1960	4.535	6.476	9.364	6.950	15.787	7.603	5.212	3.882	3.400	3.197	2.923	3.919	73.248
1961	4.834	5.873	5.492	3.775	4.067	4.298	4.625	3.113	2.294	1.931	2.544	2.997	45.842
1962	3.403	5.872	7.212	6.585	12.717	7.867	5.289	3.875	3.420	3.243	3.056	3.994	66.533
1963	4.517	5.891	2.185	5.391	9.291	2.420	3.117	3.407	2.866	2.578	2.229	2.447	46.339
1964	4.849	6.295	6.408	4.603	5.634	2.372	1.603	1.496	2.712	3.094	3.029	3.949	46.043
1965	4.896	6.404	7.142	6.315	15.413	6.747	3.473	3.185	2.979	2.357	2.256	3.151	64.318
1966	2.046	1.914	4.491	5.128	17.102	9.223	5.289	3.894	3.395	3.102	2.716	3.077	61.376
1967	3.539	6.307	6.028	4.279	5.244	5.989	4.770	2.266	1.774	1.656	2.769	3.894	48.514
1968	3.717	4.174	6.011	5.363	4.677	8.519	5.289	3.884	3.417	3.166	2.750	3.790	54.759
1969	4.982	6.389	5.468	2.594	2.719	1.937	1.669	2.545	2.626	1.780	2.466	3.920	39.096
1970	4.982	6.476	7.766	6.248	13.462	5.052	4.655	3.894	3.422	3.243	3.056	3.987	66.243
1971	4.908	5.192	5.270	6.337	17.443	9.210	5.250	3.835	3.419	3.178	2.999	3.402	70.443
1972	2.771	2.916	2.216	1.684	7.918	5.462	4.754	3.672	2.745	2.481	3.020	3.994	43.633
1973	4.982	6.464	7.764	6.626	13.462	5.273	4.470	3.523	3.305	3.020	2.622	2.354	63.865
1974	1.211	2.279	5.956	6.950	17.443	8.902	5.289	3.893	3.340	2.919	2.509	3.994	64.885
1975	4.976	6.057	8.536	6.950	17.253	9.223	5.289	3.894	3.392	3.025	2.848	3.270	74.713
1976	4.780	5.674	6.024	6.950	17.443	9.223	5.289	2.944	2.184	1.835	2.388	3.957	68.691
1977	4.962	5.690	6.690	6.568	16.106	8.501	5.273	3.768	2.890	2.895	3.001	3.932	70.276
1978	4.982	6.450	7.948	5.093	6.921	2.720	3.601	3.503	2.706	2.586	2.979	3.977	53.464
1979	4.628	2.565	4.380	3.367	4.198	1.765	1.296	1.136	1.019	0.916	0.863	3.758	29.892
1980	4.210	4.797	4.046	5.155	13.420	5.249	2.029	3.704	3.422	3.242	3.056	3.994	56.324
1981	4.982	6.470	7.738	4.994	8.707	5.933	5.094	3.748	3.076	2.555	1.994	1.848	57.140
1982	3.994	4.174	1.440	1.292	1.818	1.398	1.208	1.026	0.923	0.938	1.876	2.709	22.794
1983	2.268	5.853	8.022	6.950	17.443	9.223	5.289	3.294	3.051	3.236	3.056	3.992	71.677
1984	4.917	6.042	3.010	2.968	17.443	8.966	4.221	1.512	1.324	1.274	1.094	1.233	54.005
1985	4.982	6.422	6.327	4.486	8.590	4.873	3.294	2.136	1.632	1.552	1.201	1.233	46.727
1986	2.052	1.919	5.350	5.821	9.739	5.851	5.056	3.709	3.366	3.205	3.056	3.994	53.116
1987	4.982	6.476	9.005	4.661	13.942	8.905	5.283	3.791	3.345	3.232	3.048	3.959	70.630
1988	4.968	6.430	8.670	5.892	14.486	7.806	3.344	2.880	3.090	2.887	2.173	2.073	64.701
1989	1.768	6.476	9.364	6.166	5.865	5.851	4.922	3.334	2.712	2.279	2.875	3.423	55.036
1990	3.717	3.094	4.133	5.064	13.807	8.634	5.242	3.824	3.416	3.239	3.032	3.790	60.990
1991	4.596	3.392	1.860	1.849	2.508	1.684	1.283	1.019	0.923	0.890	0.842	0.947	21.792
1992	1.159	2.227	3.149	1.544	2.428	2.782	1.959	1.288	1.153	1.051	1.027	1.230	20.997
1993	4.982	6.476	8.910	6.423	9.637	5.020	3.549	1.832	1.342	1.434	2.146	2.154	53.905
1994	4.663	5.894	3.592	1.586	1.928	1.516	3.983	3.780	3.404	3.243	3.054	3.856	40.499
1995	4.818	6.459	9.364	6.950	17.443	9.223	5.266	3.653	3.058	3.164	3.043	3.457	75.898
1996	4.408	5.068	4.142	4.952	12.353	6.147	5.134	3.878	3.422	3.243	3.056	3.994	59.798
1997	4.982	6.476	9.214	4.502	6.851	4.051	3.927	3.430	2.586	2.116	1.486	1.909	51.528
1998	4.131	5.112	5.479	5.370	9.703	5.083	2.832	2.536	2.223	1.573	1.633	2.606	48.279
1999	3.959	4.623	8.755	6.950	16.948	8.401	5.266	3.893	3.422	3.196	2.754	3.846	72.014
2000	4.621	6.476	9.364	6.140	6.054	3.352	1.860	1.387	1.131	1.005	0.878	3.538	45.805
2001	4.902	6.354	8.730	6.549	8.959	3.103	1.950	1.381	1.200	3.243	3.056	3.994	53.422
2002	4.974	5.709	1.721	1.372	2.581	1.593	1.208	1.019	1.087	1.100	0.888	1.169	24.421
2003	1.163	1.3											

A.140. *Nvij5 – Category C***Summary table**

Desktop Version 2, Generated on 2015-03-31

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvij5

Annual Flows (Mill. cu. m or index values):

MAR = 166,128

S.Dev. = 91,567

CV = 0,551

Q75 = 5,770

Q75/MMF = 0,417

BFI Index = 0,518

CV(JJA+JFM) Index = 2,217

Ecological Category = C

Total IFR = 49,928 (30,05 %MAR)

Maint. Lowflow = 34,213 (20,59 %MAR)

Drought Lowflow = 10,417 (6,27 %MAR)

Maint. Highflow = 15,715 (9,46 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	12,822	13,468	1,050	1,886	0,718	0,449	2,335
Nov	17,999	14,756	0,820	2,604	1,167	0,180	2,784
Dec	17,808	14,111	0,792	3,592	1,437	1,796	5,388
Jan	19,046	27,885	1,464	4,849	1,437	1,796	6,645
Feb	21,963	25,115	1,144	4,310	1,167	6,286	10,596
Mar	18,840	21,765	1,155	4,849	1,167	1,527	6,376
Apr	13,439	10,053	0,748	3,682	0,898	0,269	3,951
May	10,512	8,718	0,829	2,694	0,718	0,000	2,694
Jun	8,049	5,668	0,704	1,886	0,449	0,000	1,886
Jul	8,456	11,103	1,313	1,437	0,359	0,000	1,437
Aug	7,185	6,248	0,870	0,988	0,269	0,449	1,437
Sep	10,009	21,579	2,156	1,437	0,629	2,963	4,400

Rule curve

Desktop Version 2, Generated on 2015-03-31

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvij5

Regional Type : Zululand

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	3.017	3.008	2.971	2.889	2.723	2.431	1.992	1.462	0.994	0.777
Nov	3.684	3.678	3.643	3.560	3.387	3.072	2.586	1.986	1.449	1.201
Dec	8.592	8.008	7.487	6.985	6.047	5.426	4.457	3.245	2.153	1.648
Jan	10.327	9.749	9.219	8.683	7.658	6.851	5.551	3.887	2.364	1.658
Feb	18.965	16.929	15.205	13.676	10.878	9.607	7.619	5.135	2.896	1.860
Mar	9.664	9.158	8.678	8.164	7.190	6.350	5.055	3.455	2.024	1.362
Apr	5.184	5.167	5.097	4.942	4.629	4.076	3.247	2.245	1.361	0.952
May	3.565	3.548	3.496	3.382	3.161	2.783	2.228	1.572	1.001	0.736
Jun	2.476	2.462	2.423	2.339	2.177	1.904	1.510	1.047	0.647	0.462
Jul	1.873	1.858	1.825	1.758	1.631	1.423	1.130	0.792	0.503	0.369
Aug	1.815	1.805	1.775	1.713	1.594	1.392	1.100	0.757	0.461	0.324
Sep	5.335	5.309	5.228	5.052	4.710	4.123	3.265	2.248	1.363	0.953

Reserve Flows without High Flows

Oct	2.497	2.490	2.461	2.396	2.265	2.034	1.688	1.270	0.901	0.730
Nov	3.475	3.470	3.437	3.360	3.200	2.909	2.461	1.907	1.411	1.182
Dec	4.828	4.823	4.778	4.671	4.443	4.022	3.364	2.542	1.801	1.458
Jan	6.562	6.562	6.504	6.358	6.037	5.422	4.433	3.166	2.006	1.469
Feb	5.790	5.783	5.722	5.576	5.266	4.692	3.795	2.674	1.664	1.196
Mar	6.464	6.453	6.377	6.201	5.834	5.166	4.137	2.865	1.727	1.201
Apr	4.872	4.856	4.791	4.646	4.354	3.838	3.065	2.130	1.305	0.923
May	3.565	3.548	3.496	3.382	3.161	2.783	2.228	1.572	1.001	0.736
Jun	2.476	2.462	2.423	2.339	2.177	1.904	1.510	1.047	0.647	0.462
Jul	1.873	1.858	1.825	1.758	1.631	1.423	1.130	0.792	0.503	0.369
Aug	1.297	1.290	1.270	1.227	1.146	1.007	0.807	0.573	0.370	0.276
Sep	1.903	1.895	1.872	1.821	1.722	1.553	1.305	1.011	0.755	0.637

Natural Duration curves

Oct	25.870	15.300	12.690	10.790	9.280	8.120	6.640	5.720	4.510	2.420
Nov	35.810	24.970	17.370	16.060	13.590	11.930	9.070	7.830	6.480	3.400
Dec	32.940	23.750	20.930	17.220	14.420	11.900	9.450	8.290	6.710	3.380
Jan	34.460	23.860	20.240	15.540	13.540	11.570	9.630	7.910	6.070	3.690
Feb	41.270	28.090	20.060	17.090	14.190	11.810	9.040	7.440	5.930	3.490
Mar	37.230	24.390	20.260	15.950	13.420	10.990	9.010	6.750	5.540	3.550
Apr	24.910	19.240	16.610	12.310	10.460	8.730	7.680	6.250	4.970	3.550
May	19.130	13.510	11.320	8.890	7.960	7.110	5.890	5.490	4.410	3.090
Jun	13.490	11.090	7.960	6.800	6.240	5.820	5.280	4.970	3.690	2.670
Jul	12.140	9.170	8.180	6.650	5.830	5.400	4.730	4.400	3.540	2.320
Aug	11.840	8.020	6.830	6.190	5.720	4.950	4.630	4.260	3.440	2.240
Sep	14.200	9.220	8.040	6.690	5.960	5.000	4.470	4.060	3.570	2.320

Hydrological time series

Total Runoff : Nvij5

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	2.991	3.646	7.511	8.921	7.784	6.913	4.906	2.564	1.615	1.112	0.636	3.132	51.732
1921	1.069	3.684	7.731	8.350	6.675	5.055	2.245	1.441	1.081	0.955	0.959	1.604	40.848
1922	2.001	3.396	4.905	5.815	7.957	1.494	1.023	0.773	0.467	0.369	0.324	0.953	29.475
1923	0.777	1.290	5.043	2.660	3.023	5.355	3.945	2.513	1.363	0.765	0.585	3.265	30.585
1924	1.992	3.684	8.592	10.242	16.929	9.664	5.184	3.565	2.464	1.873	1.808	5.288	71.285
1925	3.005	3.560	5.318	2.607	2.088	4.466	3.752	1.572	2.330	1.747	1.392	4.766	36.603
1926	2.963	3.643	6.234	3.911	6.155	7.875	4.637	2.332	1.624	1.631	1.765	4.916	47.688
1927	2.723	2.286	3.713	7.461	12.499	7.031	4.111	2.096	1.004	0.792	0.886	3.265	47.867
1928	1.774	1.343	1.669	1.658	1.860	6.471	4.994	3.304	2.423	1.867	1.780	5.268	34.410
1929	3.017	3.684	7.487	9.749	16.293	8.516	5.134	3.527	2.235	1.593	1.719	5.144	68.097
1930	2.414	2.198	3.841	4.623	3.744	1.626	1.151	0.815	0.541	0.466	0.363	0.963	22.746
1931	0.994	1.448	1.887	1.658	18.965	9.664	5.184	3.565	2.476	1.873	1.806	4.813	54.333
1932	1.567	1.493	4.457	3.538	3.765	2.216	1.263	0.834	0.504	0.441	0.387	0.963	21.428
1933	0.777	2.719	6.985	10.327	17.868	8.963	5.180	3.557	2.466	1.858	1.815	5.309	67.823
1934	2.259	3.077	8.592	10.187	14.699	7.444	4.348	2.783	2.388	1.758	1.518	3.785	62.836
1935	0.961	1.224	1.648	6.016	14.322	9.029	5.167	3.565	2.476	1.860	1.693	4.790	52.750
1936	2.580	3.683	7.162	7.171	15.596	8.396	3.247	1.693	1.248	1.130	0.656	2.248	54.809
1937	1.137	1.247	5.862	7.694	13.909	8.779	5.109	3.548	2.431	1.873	1.815	5.155	58.559
1938	2.869	3.176	5.646	7.822	18.965	9.664	5.184	3.563	2.476	1.858	1.805	5.329	68.356
1939	3.008	3.684	8.590	9.605	9.309	3.061	3.725	3.565	2.476	1.873	1.815	5.332	56.044
1940	2.919	3.153	7.449	9.005	7.536	3.959	4.124	2.748	1.181	0.785	0.543	1.564	44.966
1941	0.959	1.449	1.957	4.858	10.045	7.906	5.093	3.478	2.435	1.809	1.775	5.310	47.075
1942	3.000	3.662	8.592	10.327	16.026	9.107	5.184	3.565	2.476	1.873	1.815	5.335	70.963
1943	3.017	3.684	7.204	2.957	9.045	7.740	2.814	1.415	2.377	1.836	1.622	5.332	49.044
1944	3.009	3.313	2.540	2.352	4.998	9.664	5.184	3.522	2.352	1.457	1.137	1.942	41.469
1945	0.824	1.201	1.648	8.795	10.665	4.157	2.682	1.857	0.888	0.597	0.442	1.126	34.882
1946	1.952	3.012	5.052	3.778	13.010	9.264	5.137	3.511	2.451	1.859	1.745	4.790	55.560
1947	2.106	3.560	8.373	9.806	11.930	8.363	5.034	3.401	2.015	1.302	0.906	2.424	59.219
1948	1.638	2.602	3.245	5.234	11.515	8.883	5.184	3.565	2.476	1.858	1.622	4.618	52.441
1949	2.706	3.561	8.592	10.186	14.182	8.164	4.849	2.787	2.186	1.382	1.329	2.095	62.019
1950	0.821	1.201	2.577	2.964	1.860	1.362	1.075	0.796	0.504	0.390	1.796	5.332	20.678
1951	2.977	2.331	3.113	5.551	5.307	3.797	2.278	2.401	1.748	1.787	1.769	3.512	36.572
1952	1.358	1.949	5.793	9.501	18.060	8.616	4.925	3.197	1.943	1.332	1.374	3.806	61.855
1953	1.406	3.123	5.333	3.887	10.718	8.117	4.325	3.523	2.475	1.825	1.752	5.285	51.769
1954	3.017	3.684	7.961	9.003	15.949	8.778	5.097	3.457	2.339	1.433	0.914	1.704	63.336
1955	1.952	3.425	7.953	8.791	18.965	9.615	4.903	1.910	1.739	1.153	0.727	4.355	65.486
1956	2.855	3.637	8.592	10.068	15.375	8.262	5.023	3.537	2.301	1.837	1.813	5.335	68.635
1957	3.017	3.684	7.704	9.219	18.024	7.863	5.019	3.536	2.223	1.423	0.906	2.214	64.832
1958	1.470	1.930	3.093	7.556	13.570	7.079	1.969	3.321	2.420	1.496	1.594	4.606	50.103
1959	2.496	2.249	5.695	5.715	8.315	8.258	5.175	3.564	2.443	1.803	1.719	5.052	52.485
1960	2.761	3.684	8.592	10.327	17.258	8.460	5.104	3.553	2.458	1.843	1.725	5.228	70.993
1961	2.932	3.396	5.559	5.578	4.437	4.921	4.495	2.796	1.567	1.034	1.470	3.901	42.088
1962	2.112	3.396	6.989	9.801	14.060	8.678	5.184	3.546	2.475	1.873	1.815	5.335	65.264
1963	2.751	3.405	2.458	8.048	10.408	2.617	2.932	3.086	2.028	1.448	1.258	3.110	43.546
1964	2.941	3.598	6.358	6.851	6.227	2.557	1.361	1.205	1.904	1.777	1.797	5.271	41.848
1965	2.968	3.650	6.935	9.409	16.872	7.713	3.300	2.867	2.119	1.307	1.276	4.123	62.538
1966	1.335	1.508	4.621	7.658	18.613	9.664	5.184	3.565	2.454	1.782	1.586	4.017	61.986
1967	2.190	3.604	6.060	6.353	5.782	6.996	4.646	1.963	1.148	0.858	1.622	5.192	46.413
1968	2.292	2.586	6.047	8.007	5.135	9.171	5.184	3.555	2.472	1.823	1.609	5.043	52.923
1969	3.017	3.642	5.537	3.763	2.896	2.024	1.430	2.237	1.834	0.938	1.418	5.229	33.967
1970	3.017	3.684	7.420	9.311	14.843	5.847	4.527	3.565	2.476	1.873	1.815	5.325	63.704
1971	2.975	3.072	5.352	9.442	18.965	9.655	5.143	3.506	2.474	1.831	1.776	4.484	68.674
1972	1.750	1.986	2.488	2.364	8.838	6.350	4.629	3.347	1.930	1.386	1.791	5.335	42.193
1973	3.017	3.678	7.419	9.860	14.843	6.117	4.335	3.199	2.382	1.730	1.523	2.977	61.080
1974	0.856	1.682	5.995	10.327	18.965	9.442	5.184	3.564	2.410	1.665	1.447	5.335	66.871
1975	3.014	3.484	7.994	10.327	18.768	9.664	5.184	3.565	2.452	1.733	1.675	4.294	72.154
1976	2.901	3.301	6.057	10.327	18.965	9.664	5.184	2.630	1.478	0.973	1.365	5.282	68.127
1977	3.006	3.309	6.580	9.776	17.587	9.158	5.167	3.441	2.047	1.650	1.778	5.246	68.745
1978	3.017	3.672	7.558	7.605	7.698	2.985	3.433	3.180	1.899	1.453	1.763	5.311	49.574
1979	2.814	1.819	4.517	4.952	4.587	1.813	1.043	0.851	0.539	0.385	0.338	4.996	28.655
1980	2.575	2.883	4.203	7.699	14.800	6.088	1.804	3.378	2.476	1.872	1.815	5.335	54.928
1981	3.017	3.681	7.399	7.453	9.740	6.927	4.982	3.421	2.197	1.433	1.100	2.248	53.599
1982	2.451	2.586	1.759	1.761	1.866	1.362	0.952	0.743	0.462	0.399	1.020	3.488	18.847
1983	1.462	3.387	7.614	10.327	18.965	9.664	5.184	2.974	2.177	1.868	1.815	5.333	70.769
1984	2.980	3.477	3.232	4.338	18.965	9.487	4.076	1.221	0.785	0.614	0.493	1.363	51.032
1985	3.017	3.658	6.295	6.672	9.607	5.626	3.115	1.835	1.033	0.792	0.565	1.363	43.579
1986	1.338	1.510	5.426	8.683	10.917	6.827	4.942	3.382	2.431	1.849	1.815	5.335	54.454
1987	3.017	3.684	8.333	6.941	15.346	9.444	5.178	3.463	2.414	1.866	1.810	5.285	66.781
1988	3.009	3.662	8.091	8.789	15.912	8.628	3.166	2.567	2.209	1.645	1.220	2.572	61.471
1989	1.175	3.684	8.592	9.192	6.492	6.827	4.803	3.014	1.904	1.257	1.693	4.514	53.147
1990	2.292	2.071	4.285	7.560	15.205	9.252	5.134	3.496	2.471	1.870	1.799	5.043	60.477
1991	2.796	2.213	2.153	2.618	2.655	1.713	1.029	0.736	0.462	0.369	0.324	0.953	18.020
1992	0.826	1.657	3.362	2.149	2.563	3.061	1.730	1.001	0.647	0.472	0.448	1.360	19.276
1993	3.017	3.684	8.265	9.566	10.804	5.807	3.380	1.536	0.800	0.717	1.202	2.689	51.465
1994	2.834	3.406	3.778	2.213	1.992	1.507	3.829	3.453	2.462	1.872	1.813	5.138	34.298
1995	2.923	3.676	8.592	10.327	18.965	9.664	5.160	3.328	2.183	1.822	1.806	4.563	73.008
1996	2.688	3.012	4.294	7.388	13.676	7.190	5.023	3.549	2.476	1.873	1.815	5.335	58.320
1997	3.017	3.684	8.484	6.696	7.619	4.618	3.771	3.108	1.802	1.153	0.757	2.336	47.044
1998	2.529	3.033	5.547	8.017	10.878	5.885	2.636	2.228	1.510	0.805	0.856	3.339	47.264
1999	2.431	2.800	8.153	10.327	18.454	9.084	5.160	3.564	2.476	1.843	1.611	5.123	71.026
2000	2.810	3.684	8.592	9.153	6.708	3.761	1.628	1.098	0.630	0.442	0.348	4.679	43.533
2001	2.971	3.626	8.135	9.749	10.029	3.455	1.721	1.092	0.685	1.873	1.815	5.335	50.487
2002	3.012	3.318	2.023	1.884	2.738	1.602	0.952	0.736	0.594	0.503	0.355	1.271	18.989
2003	0.828	1.256	1.7										

A.141. *Nvij5 – Category D***Summary table**

Desktop Version 2, Generated on 2015-03-31

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvij5

Annual Flows (Mill. cu. m or index values):

MAR = 166,128

S.Dev. = 91,567

CV = 0,551

Q75 = 5,770

Q75/MMF = 0,417

BFI Index = 0,518

CV(JJA+JFM) Index = 2,217

Ecological Category = D

Total IFR = 24,397 (14,69 %MAR)

Maint. Lowflow = 11,869 (7,14 %MAR)

Drought Lowflow = 11,869 (7,14 %MAR)

Maint. Highflow = 12,528 (7,54 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	12,822	13,468	1,050	0,908	0,908	1,017	1,925
Nov	17,999	14,756	0,820	1,003	1,003	1,685	2,688
Dec	17,808	14,111	0,792	1,038	1,038	1,792	2,830
Jan	19,046	27,885	1,464	1,073	1,073	0,896	1,969
Feb	21,963	25,115	1,144	1,146	1,146	4,383	5,529
Mar	18,840	21,765	1,155	1,143	1,143	1,584	2,727
Apr	13,439	10,053	0,748	1,092	1,092	0,646	1,738
May	10,512	8,718	0,829	1,001	1,001	0,000	1,001
Jun	8,049	5,668	0,704	0,907	0,907	0,000	0,907
Jul	8,456	11,103	1,313	0,875	0,875	0,000	0,875
Aug	7,185	6,248	0,870	0,828	0,828	0,000	0,828
Sep	10,009	21,579	2,156	0,855	0,855	0,525	1,380

Rule curve

Desktop Version 2, Generated on 2015-03-31

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvij5

Regional Type : Zululand

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	3.088	3.079	3.045	2.970	2.817	2.547	2.143	1.654	1.223	1.023
Nov	4.219	4.212	4.169	4.067	3.856	3.472	2.880	2.148	1.494	1.191
Dec	5.671	5.091	4.605	4.183	3.415	3.108	2.627	2.025	1.484	1.233
Jan	3.868	3.580	3.334	3.113	2.705	2.499	2.167	1.742	1.353	1.173
Feb	11.300	9.884	8.712	7.717	5.918	5.311	4.363	3.177	2.109	1.615
Mar	5.417	4.903	4.469	4.086	3.390	3.091	2.630	2.061	1.552	1.316
Apr	2.901	2.894	2.866	2.802	2.674	2.448	2.108	1.697	1.335	1.168
May	1.827	1.822	1.806	1.774	1.710	1.600	1.439	1.249	1.083	1.006
Jun	1.646	1.641	1.626	1.596	1.537	1.437	1.294	1.125	0.979	0.912
Jul	1.579	1.573	1.557	1.526	1.467	1.370	1.234	1.076	0.942	0.879
Aug	1.503	1.498	1.485	1.457	1.403	1.312	1.181	1.027	0.894	0.832
Sep	2.299	2.290	2.265	2.209	2.101	1.916	1.646	1.325	1.046	0.916

Reserve Flows without High Flows

Oct	1.657	1.654	1.642	1.614	1.559	1.462	1.316	1.140	0.985	0.913
Nov	1.840	1.838	1.826	1.799	1.741	1.635	1.472	1.271	1.091	1.008
Dec	1.915	1.914	1.902	1.874	1.815	1.706	1.536	1.324	1.132	1.043
Jan	1.990	1.990	1.979	1.953	1.896	1.786	1.609	1.382	1.175	1.079
Feb	2.114	2.113	2.100	2.069	2.004	1.884	1.696	1.461	1.250	1.152
Mar	2.097	2.095	2.081	2.050	1.984	1.863	1.678	1.449	1.244	1.149
Apr	1.993	1.989	1.974	1.942	1.875	1.758	1.583	1.371	1.184	1.098
May	1.827	1.822	1.806	1.774	1.710	1.600	1.439	1.249	1.083	1.006
Jun	1.646	1.641	1.626	1.596	1.537	1.437	1.294	1.125	0.979	0.912
Jul	1.579	1.573	1.557	1.526	1.467	1.370	1.234	1.076	0.942	0.879
Aug	1.503	1.498	1.485	1.457	1.403	1.312	1.181	1.027	0.894	0.832
Sep	1.560	1.556	1.543	1.515	1.460	1.366	1.229	1.067	0.925	0.859

Natural Duration curves

Oct	25.870	15.300	12.690	10.790	9.280	8.120	6.640	5.720	4.510	2.420
Nov	35.810	24.970	17.370	16.060	13.590	11.930	9.070	7.830	6.480	3.400
Dec	32.940	23.750	20.930	17.220	14.420	11.900	9.450	8.290	6.710	3.380
Jan	34.460	23.860	20.240	15.540	13.540	11.570	9.630	7.910	6.070	3.690
Feb	41.270	28.090	20.060	17.090	14.190	11.810	9.040	7.440	5.930	3.490
Mar	37.230	24.390	20.260	15.950	13.420	10.990	9.010	6.750	5.540	3.550
Apr	24.910	19.240	16.610	12.310	10.460	8.730	7.680	6.250	4.970	3.550
May	19.130	13.510	11.320	8.890	7.960	7.110	5.890	5.490	4.410	3.090
Jun	13.490	11.090	7.960	6.800	6.240	5.820	5.280	4.970	3.690	2.670
Jul	12.140	9.170	8.180	6.650	5.830	5.400	4.730	4.400	3.540	2.320
Aug	11.840	8.020	6.830	6.190	5.720	4.950	4.630	4.260	3.440	2.240
Sep	14.200	9.220	8.040	6.690	5.960	5.000	4.470	4.060	3.570	2.320

Hydrological time series

Total Runoff : Nvij5

Desktop (Version 2) Modified Flow Data for Ecological Category D													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	3.064	4.173	4.627	3.207	4.442	3.292	2.788	1.536	1.332	1.226	0.973	1.604	32.262
1921	1.292	4.219	4.829	2.980	3.912	2.630	1.697	1.211	1.137	1.152	1.118	1.122	27.300
1922	2.150	3.868	2.849	2.234	4.524	1.363	1.197	1.017	0.914	0.879	0.832	0.916	22.743
1923	1.023	1.299	2.917	1.429	2.170	2.737	2.394	1.521	1.240	1.064	0.950	1.646	20.390
1924	2.143	4.219	5.671	3.825	9.884	5.417	2.901	1.827	1.642	1.579	1.500	2.284	42.892
1925	3.077	4.067	3.054	1.416	1.724	2.421	2.315	1.249	1.593	1.521	1.312	2.119	25.867
1926	3.038	4.169	3.569	1.748	3.664	3.880	2.678	1.469	1.335	1.467	1.480	2.167	30.664
1927	2.817	2.513	2.257	2.655	6.960	3.333	2.462	1.401	1.109	1.076	1.085	1.646	29.315
1928	1.942	1.363	1.243	1.173	1.615	3.134	2.824	1.751	1.626	1.577	1.487	2.277	22.012
1929	3.088	4.219	4.605	3.580	9.449	4.341	2.881	1.816	1.558	1.449	1.460	2.238	40.684
1930	2.532	2.406	2.321	1.930	2.514	1.410	1.249	1.029	0.941	0.925	0.850	0.920	19.027
1931	1.223	1.492	1.352	1.173	11.300	5.417	2.901	1.827	1.646	1.579	1.498	2.134	33.543
1932	1.751	1.546	2.627	1.653	2.524	1.620	1.295	1.035	0.927	0.913	0.861	0.920	17.671
1933	1.023	3.042	4.183	3.868	10.537	4.721	2.900	1.824	1.642	1.572	1.502	2.290	39.105
1934	2.389	3.479	5.671	3.798	8.378	3.572	2.559	1.600	1.614	1.526	1.369	1.810	37.763
1935	1.192	1.219	1.233	2.286	8.130	4.782	2.894	1.827	1.646	1.573	1.448	2.127	30.356
1936	2.684	4.218	4.326	2.580	8.976	4.247	2.108	1.284	1.198	1.234	0.982	1.325	35.162
1937	1.354	1.247	3.324	2.719	7.866	4.557	2.871	1.822	1.629	1.579	1.503	2.242	32.712
1938	2.951	3.599	3.216	2.770	11.300	5.417	2.901	1.826	1.646	1.573	1.498	2.297	40.995
1939	3.079	4.219	5.669	3.512	5.169	1.921	2.304	1.827	1.646	1.579	1.503	2.298	34.725
1940	2.998	3.572	4.572	3.243	4.323	2.240	2.467	1.590	1.174	1.073	0.931	1.109	29.292
1941	1.190	1.494	1.386	1.990	5.520	3.902	2.864	1.801	1.631	1.550	1.485	2.291	27.104
1942	3.072	4.193	5.671	3.868	9.267	4.855	2.901	1.827	1.646	1.579	1.503	2.299	42.680
1943	3.088	4.219	4.360	1.505	5.043	3.783	1.931	1.203	1.610	1.562	1.416	2.298	32.018
1944	3.080	3.766	1.675	1.350	3.112	5.417	2.901	1.814	1.601	1.386	1.198	1.228	28.529
1945	1.066	1.191	1.233	3.157	5.816	2.311	1.877	1.331	1.067	0.986	0.885	0.971	21.891
1946	2.105	3.400	2.922	1.714	7.289	5.009	2.882	1.811	1.637	1.573	1.471	2.127	33.940
1947	2.247	4.067	5.453	3.608	6.594	4.225	2.840	1.779	1.478	1.314	1.094	1.381	36.079
1948	1.817	2.899	2.025	2.086	6.327	4.646	2.901	1.827	1.646	1.573	1.416	2.073	31.236
1949	2.801	4.069	5.671	3.798	8.041	4.086	2.764	1.601	1.540	1.351	1.284	1.277	38.282
1950	1.063	1.191	1.694	1.507	1.615	1.316	1.218	1.023	0.927	0.889	1.494	2.298	16.235
1951	3.051	2.569	1.960	2.167	3.260	2.183	1.711	1.489	1.381	1.540	1.482	1.724	24.515
1952	1.558	2.103	3.290	3.463	10.670	4.420	2.795	1.720	1.452	1.328	1.304	1.816	35.919
1953	1.602	3.535	3.061	1.742	5.841	4.053	2.550	1.815	1.646	1.557	1.474	2.283	31.158
1954	3.088	4.219	5.047	3.242	9.214	4.555	2.866	1.795	1.596	1.375	1.098	1.153	39.248
1955	2.105	3.903	5.039	3.156	11.300	5.366	2.786	1.347	1.377	1.244	1.014	1.990	40.627
1956	2.938	4.162	5.671	3.739	8.826	4.154	2.836	1.819	1.582	1.563	1.502	2.299	41.090
1957	3.088	4.219	4.804	3.334	10.645	3.872	2.834	1.818	1.554	1.370	1.094	1.314	39.944
1958	1.661	2.080	1.950	2.679	7.649	3.351	1.584	1.756	1.625	1.404	1.403	2.069	29.211
1959	2.608	2.469	3.241	2.209	4.695	4.152	2.898	1.826	1.634	1.547	1.460	2.209	30.947
1960	2.851	4.219	5.671	3.868	10.113	4.298	2.869	1.823	1.639	1.565	1.462	2.265	42.644
1961	3.009	3.868	3.174	2.174	2.845	2.583	2.619	1.604	1.315	1.189	1.348	1.846	27.573
1962	2.253	3.868	4.187	3.606	7.963	4.469	2.901	1.821	1.645	1.579	1.503	2.299	38.093
1963	2.842	3.879	1.635	2.860	5.694	1.763	1.979	1.688	1.482	1.382	1.252	1.597	28.051
1964	3.018	4.114	3.671	2.499	3.699	1.742	1.335	1.142	1.437	1.535	1.494	2.278	27.964
1965	3.042	4.177	4.142	3.420	9.845	3.764	2.130	1.624	1.516	1.316	1.260	1.916	38.154
1966	1.536	1.565	2.708	2.705	11.055	5.417	2.901	1.827	1.638	1.537	1.400	1.883	36.172
1967	2.325	4.121	3.426	2.372	3.486	3.321	2.681	1.362	1.162	1.107	1.416	2.254	29.032
1968	2.419	2.880	3.415	2.844	3.177	4.915	2.901	1.824	1.645	1.556	1.410	2.206	31.193
1969	3.088	4.168	3.163	1.711	2.109	1.552	1.364	1.441	1.412	1.144	1.324	2.265	24.741
1970	3.088	4.219	4.547	3.376	8.474	2.912	2.632	1.827	1.646	1.579	1.503	2.296	38.098
1971	3.049	3.472	3.071	3.435	11.300	5.408	2.885	1.810	1.645	1.560	1.485	2.030	41.150
1972	1.919	2.148	1.649	1.353	4.944	3.091	2.674	1.763	1.447	1.353	1.492	2.299	26.133
1973	3.088	4.212	4.546	3.635	8.474	3.008	2.554	1.721	1.612	1.513	1.371	1.555	37.288
1974	1.095	1.777	3.390	3.868	11.300	5.187	2.901	1.826	1.622	1.483	1.337	2.299	38.085
1975	3.084	3.975	5.078	3.868	11.164	5.417	2.901	1.827	1.637	1.514	1.440	1.970	43.876
1976	2.981	3.752	3.424	3.868	11.300	5.417	2.901	1.555	1.282	1.160	1.300	2.282	41.224
1977	3.077	3.761	3.852	3.593	10.341	4.903	2.895	1.791	1.490	1.476	1.486	2.271	40.934
1978	3.088	4.204	4.670	2.691	4.401	1.894	2.184	1.715	1.436	1.384	1.479	2.291	31.436
1979	2.901	1.944	2.656	2.014	2.916	1.477	1.205	1.040	0.940	0.887	0.839	2.192	21.010
1980	2.680	3.242	2.501	2.721	8.445	2.998	1.517	1.772	1.646	1.579	1.503	2.299	32.902
1981	3.088	4.216	4.529	2.652	5.375	3.297	2.819	1.785	1.544	1.375	1.181	1.325	33.185
1982	2.566	2.880	1.288	1.199	1.618	1.316	1.168	1.008	0.912	0.894	1.145	1.716	17.709
1983	1.654	3.856	4.721	3.868	11.300	5.417	2.901	1.655	1.537	1.577	1.503	2.298	42.288
1984	3.054	3.967	2.019	1.857	11.300	5.233	2.448	1.147	1.030	0.994	0.909	1.046	35.002
1985	3.088	4.188	3.618	2.453	5.311	2.834	2.054	1.325	1.120	1.076	0.941	1.046	29.053
1986	1.539	1.568	3.108	3.113	5.943	3.261	2.802	1.774	1.630	1.568	1.502	2.299	30.106
1987	3.088	4.219	5.413	2.522	8.807	5.189	2.899	1.797	1.623	1.576	1.500	2.283	40.916
1988	3.080	4.192	5.174	3.155	9.189	4.429	2.075	1.537	1.549	1.474	1.235	1.427	38.516
1989	1.389	4.219	5.671	3.322	3.825	3.261	2.746	1.667	1.437	1.293	1.448	2.040	32.317
1990	2.419	2.251	2.541	2.630	8.712	4.997	2.881	1.806	1.644	1.578	1.495	2.206	35.212
1991	2.884	2.425	1.484	1.418	1.994	1.441	1.199	1.006	0.912	0.879	0.832	0.916	17.391
1992	1.067	1.747	2.083	1.298	1.950	1.921	1.487	1.083	0.979	0.927	0.888	1.045	16.477
1993	3.088	4.219	5.345	3.493	5.882	2.898	2.162	1.238	1.035	1.041	1.227	1.464	33.093
1994	2.919	3.880	2.290	1.315	1.678	1.368	2.347	1.794	1.641	1.579	1.502	2.236	24.549
1995	3.001	4.209	5.671	3.868	11.300	5.417	2.892	1.758	1.539	1.556	1.499	2.055	44.764
1996	2.784	3.400	2.546	2.636	7.717	3.390	2.836	1.822	1.646	1.579	1.503	2.299	34.158
1997	3.088	4.219	5.563	2.459	4.363	2.475	2.323	1.694	1.400	1.244	1.027	1.353	31.207
1998	2.638	3.425	3.167	2.848	5.918	2.926	1.858	1.439	1.294	1.083	1.072	1.669	29.335
1999	2.547	3.141	5.234	3.868	10.944	4.833	2.892	1.826	1.646	1.565	1.411	2.232	42.140
2000	2.897	4.219	5.671	3.306	3.928	2.170	1.445	1.111	0.973	0.914	0.843	2.092	29.568
2001	3.045	4.148	5.217	3.580	5.512	2.061	1.483	1.109	0.993	1.579	1.503	2.299	32.530
2002	3.083	3.773	1.419	1.231	2.034	1.402	1.168	1.006	0.960	0.942	0.846	1.017	18.880
2003	1.070	1.258	1.268	1.213									

A.142. *Nvii6 – Category B***Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvii6

Annual Flows (Mill. cu. m or index values):

MAR = 505,609

S.Dev. = 381,528

CV = 0,755

Q75 = 17,050

Q75/MMF = 0,405

BFI Index = 0,540

CV(JJA+JFM) Index = 3,089

Ecological Category = B

Total IFR = 164,273 (32,49 %MAR)

Maint. Lowflow = 105,387 (20,84 %MAR)

Drought Lowflow = 30,234 (5,98 %MAR)

Maint. Highflow = 58,886 (11,65 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	39,717	53,551	1,348	8,104	2,344	5,637	13,741
Nov	45,563	38,994	0,856	8,735	2,507	6,964	15,699
Dec	48,196	54,472	1,130	9,142	2,613	8,060	17,202
Jan	48,935	78,929	1,613	9,222	2,633	4,030	13,252
Feb	64,998	120,235	1,850	10,353	2,927	20,703	31,056
Mar	60,349	127,678	2,116	10,450	2,952	4,030	14,480
Apr	41,890	50,974	1,217	9,628	2,739	4,344	13,972
May	34,733	34,438	0,992	8,888	2,547	0,000	8,888
Jun	28,417	23,249	0,818	8,014	2,320	0,000	8,014
Jul	32,206	66,027	2,050	7,903	2,292	0,000	7,903
Aug	24,159	19,831	0,821	7,233	2,118	1,019	8,252
Sep	36,444	104,689	2,873	7,715	2,243	4,099	11,814

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvii6

Regional Type : Zululand

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	15.518	15.467	15.262	14.802	13.875	12.238	9.783	6.816	4.199	2.986
Nov	17.806	17.774	17.565	17.080	16.069	14.227	11.389	7.883	4.747	3.295
Dec	27.721	25.108	22.866	20.833	17.093	15.178	12.185	8.445	5.075	3.515
Jan	19.460	18.164	17.009	15.895	13.792	12.355	10.041	7.078	4.367	3.111
Feb	55.653	48.957	43.357	38.507	29.688	26.231	20.827	14.073	7.988	5.171
Mar	20.719	19.395	18.193	16.990	14.742	13.112	10.600	7.496	4.721	3.436
Apr	15.898	15.847	15.640	15.176	14.240	12.589	10.112	7.117	4.476	3.253
May	10.350	10.303	10.160	9.849	9.243	8.205	6.686	4.888	3.322	2.596
Jun	9.252	9.203	9.068	8.780	8.229	7.296	5.948	4.366	2.999	2.364
Jul	9.046	8.982	8.835	8.533	7.970	7.042	5.731	4.223	2.934	2.334
Aug	9.445	9.393	9.253	8.953	8.378	7.406	6.001	4.353	2.927	2.265
Sep	13.406	13.341	13.144	12.716	11.881	10.450	8.357	5.878	3.721	2.720

Reserve Flows without High Flows

Oct	9.436	9.408	9.293	9.034	8.512	7.592	6.211	4.542	3.070	2.388
Nov	10.258	10.241	10.130	9.873	9.336	8.359	6.852	4.991	3.327	2.556
Dec	10.828	10.816	10.707	10.447	9.896	8.876	7.282	5.290	3.495	2.664
Jan	11.013	11.013	10.917	10.679	10.154	9.149	7.531	5.460	3.564	2.686
Feb	12.261	12.248	12.124	11.829	11.203	10.044	8.233	5.969	3.929	2.985
Mar	12.273	12.252	12.119	11.809	11.164	9.988	8.177	5.938	3.937	3.010
Apr	11.212	11.178	11.040	10.731	10.108	9.008	7.359	5.365	3.607	2.792
May	10.350	10.303	10.160	9.849	9.243	8.205	6.686	4.888	3.322	2.596
Jun	9.252	9.203	9.068	8.780	8.229	7.296	5.948	4.366	2.999	2.364
Jul	9.046	8.982	8.835	8.533	7.970	7.042	5.731	4.223	2.934	2.334
Aug	8.351	8.306	8.185	7.927	7.431	6.592	5.379	3.958	2.728	2.157
Sep	8.984	8.943	8.820	8.551	8.028	7.131	5.819	4.265	2.913	2.285

Natural Duration curves

Oct	55.670	45.180	38.080	28.900	25.910	22.610	19.830	16.130	13.050	8.670
Nov	97.940	61.140	46.540	39.890	34.570	29.890	22.810	19.840	16.030	10.820
Dec	91.820	60.580	48.330	39.950	33.870	30.080	25.610	21.450	16.380	10.490
Jan	89.820	59.360	46.370	38.730	32.260	27.170	23.250	19.720	16.900	10.220
Feb	116.640	58.930	44.760	39.160	32.040	28.590	24.810	20.990	15.580	10.090
Mar	106.160	68.650	47.600	37.340	32.190	27.460	24.470	19.030	15.030	9.800
Apr	72.150	52.390	40.730	35.090	29.000	23.880	20.420	17.000	13.390	10.150
May	67.820	44.860	35.600	26.670	23.660	20.400	18.190	16.110	12.210	8.850
Jun	49.790	39.440	29.840	25.850	21.540	17.520	16.080	14.460	12.200	7.580
Jul	46.990	34.420	28.600	24.530	19.660	17.760	14.970	13.140	11.230	7.310
Aug	38.510	30.700	26.300	21.140	18.420	16.650	14.950	13.330	11.100	7.160
Sep	52.850	31.160	25.640	22.190	20.320	16.180	14.810	13.720	11.260	6.670

Hydrological time series

Total Runoff : Nvii6

Desktop (Version 2) Modified Flow Data for Ecological Category B

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	14.362	16.069	19.874	14.744	14.257	13.075	14.076	8.055	7.220	5.731	4.620	7.983	140.066
1921	8.110	17.806	26.668	15.011	17.044	10.600	8.424	5.991	5.614	5.053	5.598	6.416	132.335
1922	8.153	14.869	10.388	13.987	24.142	4.910	5.024	3.220	2.740	2.529	2.327	2.720	95.008
1923	2.986	3.295	6.326	3.560	6.260	6.693	7.117	3.926	3.657	3.429	3.476	7.017	57.743
1924	8.565	17.806	26.873	18.623	52.673	20.719	15.898	10.350	9.252	9.044	9.445	13.337	212.584
1925	15.435	17.191	14.148	6.311	8.104	9.051	11.797	5.294	7.519	7.042	5.260	10.450	117.600
1926	13.943	15.589	15.208	8.889	13.359	16.532	14.002	7.596	7.725	7.442	8.937	11.311	140.532
1927	12.724	10.598	7.518	11.523	28.606	13.066	10.855	7.493	6.867	6.112	6.060	6.955	128.377
1928	6.816	4.058	3.515	3.266	5.664	18.891	15.711	9.606	8.780	8.882	9.258	13.341	107.789
1929	15.390	17.775	20.993	17.350	46.289	15.716	15.284	9.855	7.732	7.016	8.351	12.158	193.908
1930	11.333	10.035	8.575	7.683	7.912	4.004	3.585	3.070	2.636	2.684	2.414	2.835	66.767
1931	3.257	3.616	3.815	3.111	55.653	20.719	15.898	10.350	9.252	9.046	9.435	13.193	157.346
1932	12.848	11.759	12.684	9.970	14.110	7.496	5.497	3.597	2.801	2.842	2.705	2.945	89.253
1933	3.013	6.083	13.959	17.455	45.643	17.521	15.643	10.190	9.154	8.956	9.436	13.309	170.361
1934	13.116	14.227	27.721	18.411	40.188	15.951	13.266	9.374	9.252	9.046	9.423	13.249	193.224
1935	10.933	6.204	4.170	10.041	40.538	18.021	15.470	10.344	9.242	8.850	9.172	12.493	155.478
1936	14.114	17.806	22.361	12.355	43.357	17.376	13.295	8.759	7.389	7.574	7.352	10.287	182.024
1937	6.225	5.106	17.093	14.140	44.649	18.193	15.042	10.072	8.565	8.966	9.408	12.908	170.366
1938	14.052	13.252	11.995	12.524	55.653	20.719	15.888	10.303	9.203	8.982	9.422	13.405	195.397
1939	15.468	17.806	25.493	16.467	24.962	7.345	12.589	10.350	9.252	9.046	9.445	13.398	171.622
1940	15.190	17.565	24.389	16.368	18.703	8.622	10.822	6.769	4.118	4.223	3.161	3.721	133.651
1941	3.754	4.379	4.677	5.745	20.726	13.843	14.945	9.467	8.661	8.292	8.969	13.144	116.603
1942	15.091	17.420	27.721	18.880	42.330	19.509	15.898	10.350	9.242	9.046	9.445	13.406	208.338
1943	15.518	17.795	22.521	9.393	22.177	15.065	9.715	5.688	7.962	8.688	8.882	13.406	156.810
1944	15.469	16.772	12.890	5.094	18.175	20.674	15.898	9.945	8.528	7.442	7.560	5.684	144.131
1945	4.115	3.295	3.515	12.092	18.892	5.680	6.178	3.633	2.999	2.790	2.518	2.878	68.584
1946	4.319	7.006	6.038	3.847	22.600	17.896	15.176	9.849	8.656	8.551	8.981	12.158	125.077
1947	11.377	15.246	23.364	16.382	29.318	14.649	14.376	8.998	6.420	5.565	3.991	4.407	154.093
1948	4.795	5.728	5.075	4.367	20.827	15.476	15.854	10.314	9.110	8.733	8.611	11.729	120.618
1949	13.553	16.225	26.747	18.617	38.655	17.452	15.004	9.416	8.431	7.970	7.812	8.232	188.114
1950	4.190	3.338	4.683	3.886	5.171	3.436	3.271	2.695	2.507	2.470	7.444	12.991	56.083
1951	14.548	8.680	6.383	6.069	7.988	4.721	4.476	3.751	4.140	6.393	6.959	4.399	78.507
1952	4.018	4.747	9.940	13.792	41.172	13.963	10.122	4.027	2.979	2.934	2.967	4.553	115.214
1953	6.694	15.014	14.021	10.078	38.507	16.990	13.531	10.281	9.195	8.877	9.255	13.342	162.787
1954	15.518	17.806	21.775	16.094	43.719	19.395	15.847	10.160	8.929	8.408	8.757	10.882	197.290
1955	11.278	16.084	21.330	12.846	55.653	20.139	15.613	9.692	8.912	8.533	8.953	12.716	201.749
1956	14.866	17.002	27.721	19.460	46.261	18.193	15.898	10.330	8.808	8.918	9.383	13.406	210.245
1957	15.518	17.806	22.866	18.761	52.551	17.799	15.216	10.217	8.519	8.276	8.291	11.076	206.896
1958	10.847	10.150	8.064	12.392	27.824	9.667	4.434	5.200	5.656	3.198	3.878	6.669	107.978
1959	10.644	9.421	14.744	7.078	30.333	15.380	15.898	10.303	9.016	8.466	9.109	12.738	153.128
1960	13.409	17.806	27.721	19.460	52.849	18.698	15.898	10.348	9.252	9.046	9.435	13.361	217.282
1961	15.352	17.722	18.040	12.175	14.073	16.069	14.079	8.205	6.151	4.677	6.034	6.669	139.246
1962	7.644	15.321	24.039	17.078	37.207	17.958	15.794	10.010	9.252	9.046	9.445	13.406	186.201
1963	15.391	17.562	15.178	18.105	37.306	9.335	14.306	9.533	7.741	7.496	7.428	8.877	168.258
1964	15.518	17.336	18.975	10.667	10.350	4.494	5.937	3.295	9.139	7.120	8.666	13.123	124.621
1965	15.518	17.684	20.649	18.912	47.389	14.001	10.112	7.606	7.296	5.945	5.066	8.981	179.159
1966	5.210	5.680	10.495	10.572	48.957	19.364	15.898	10.350	9.068	8.764	9.166	11.428	164.953
1967	13.835	17.745	24.054	10.585	13.747	18.525	13.098	5.668	5.416	4.722	7.406	11.881	146.684
1968	10.542	11.409	23.561	13.343	10.588	20.719	15.898	10.290	9.185	8.835	9.200	12.987	156.557
1969	15.511	17.042	13.029	12.838	13.446	7.733	4.790	7.960	5.985	4.397	4.490	11.625	118.845
1970	15.374	17.800	20.347	19.460	37.442	13.198	15.419	10.350	9.252	9.046	9.445	13.379	190.513
1971	15.479	16.924	17.653	17.668	55.653	20.719	15.788	10.345	9.244	9.014	9.372	12.938	210.795
1972	11.896	12.296	9.124	6.432	24.622	11.826	12.575	9.027	6.485	6.520	9.327	13.406	133.536
1973	15.518	17.678	21.701	17.879	44.231	14.211	14.240	9.199	8.683	8.052	8.378	8.357	188.128
1974	4.284	7.883	14.256	19.351	55.653	20.026	15.834	10.311	8.962	8.549	8.748	13.406	187.263
1975	15.518	17.080	26.356	19.460	55.084	20.719	15.898	10.350	9.243	8.928	9.316	12.898	220.850
1976	15.228	16.396	25.509	19.460	55.653	20.719	15.898	10.239	9.125	8.472	9.185	13.361	219.245
1977	15.316	16.213	20.064	19.460	50.255	18.904	15.890	10.236	8.870	8.723	9.253	13.256	206.441
1978	15.518	17.774	26.213	12.939	25.148	6.985	7.988	6.686	5.124	4.874	6.534	11.912	147.696
1979	12.238	6.612	17.017	5.422	14.880	3.691	3.253	2.744	2.451	2.334	2.265	8.731	81.640
1980	9.783	13.416	8.445	11.137	35.919	9.742	6.004	10.350	9.252	9.026	9.445	13.406	145.925
1981	15.518	17.806	25.108	15.895	34.655	17.163	15.438	9.716	7.911	6.578	5.743	4.933	176.465
1982	9.217	9.350	4.123	3.371	5.171	3.436	3.253	2.596	2.364	2.450	4.455	5.878	55.664
1983	6.867	17.387	25.100	19.460	55.653	20.719	15.898	10.287	9.177	9.046	9.445	13.402	212.442
1984	15.332	17.336	18.010	16.784	55.653	20.219	14.566	9.243	8.945	8.081	7.284	10.168	201.621
1985	15.518	17.806	16.724	14.000	40.067	11.181	9.466	4.888	4.520	4.081	3.016	3.555	144.821
1986	4.199	4.342	15.764	16.166	27.474	13.112	14.351	8.985	9.252	9.003	9.445	13.406	145.499
1987	15.518	17.806	26.561	16.534	49.508	20.611	15.898	10.073	9.018	8.985	9.349	13.250	213.110
1988	15.262	17.617	27.721	17.490	54.619	18.511	13.660	9.591	8.229	8.127	7.549	9.625	208.002
1989	6.816	17.806	27.721	17.735	21.291	19.931	15.640	9.919	8.408	7.735	8.943	12.069	174.013
1990	14.755	12.113	20.833	14.858	48.550	20.059	15.799	10.350	9.217	9.030	9.431	13.165	198.161
1991	15.069	13.125	10.543	5.234	7.165	3.688	3.315	2.596	2.364	2.334	2.265	2.720	70.418
1992	2.986	11.389	12.185	3.386	5.792	5.622	3.669	2.759	2.491	2.404	2.375	3.018	58.076
1993	15.518	17.778	22.772	16.918	27.694	10.799	10.056	3.964	3.445	3.227	4.217	4.571	140.960
1994	15.043	15.120	7.900	3.815	5.575	3.720	15.671	10.104	9.224	9.016	9.366	13.008	117.562
1995	14.814	17.752	27.721	19.460	55.653	20.719	15.877	10.165	9.083	8.912	9.393	11.993	221.542
1996	13.498	13.781	10.090	12.846	42.923	14.408	15.472	10.036	9.219	9.031	9.437	13.398	174.141
1997	15.518	17.806	27.721	13.850	30.865	12.137	15.377	8.597	5.948	5.053	4.008	4.294	161.173
1998	15.005	11.379	16.946	11.468	41.296	13.066	7.791	5.984	5.051	4.874	5.131	8.731	146.722
1999	15.372	14.475	23.789	19.205	49.041	19.229	15.751						

A.143. *Nvii6* – Category C**Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvii6

Annual Flows (Mill. cu. m or index values):

MAR = 505,609

S.Dev. = 381,528

CV = 0,755

Q75 = 17,050

Q75/MMF = 0,405

BFI Index = 0,540

CV(JJA+JFM) Index = 3,089

Ecological Category = C

Total IFR = 109,604 (21,68 %MAR)

Maint. Lowflow = 61,314 (12,13 %MAR)

Drought Lowflow = 30,234 (5,98 %MAR)

Maint. Highflow = 48,289 (9,55 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	39,717	53,551	1,348	4,732	2,344	4,623	9,355
Nov	45,563	38,994	0,856	5,083	2,507	5,711	10,794
Dec	48,196	54,472	1,130	5,310	2,613	6,610	11,919
Jan	48,935	78,929	1,613	5,354	2,633	3,305	8,659
Feb	64,998	120,235	1,850	5,983	2,927	16,977	22,960
Mar	60,349	127,678	2,116	6,037	2,952	3,305	9,342
Apr	41,890	50,974	1,217	5,580	2,739	3,562	9,142
May	34,733	34,438	0,992	5,168	2,547	0,000	5,168
Jun	28,417	23,249	0,818	4,682	2,320	0,000	4,682
Jul	32,206	66,027	2,050	4,621	2,292	0,000	4,621
Aug	24,159	19,831	0,821	4,248	2,118	0,836	5,084
Sep	36,444	104,689	2,873	4,516	2,243	3,361	7,877

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvii6

Regional Type : Zululand

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	11.623	11.588	11.445	11.123	10.475	9.330	7.614	5.539	3.709	2.861
Nov	13.428	13.405	13.257	12.913	12.197	10.891	8.880	6.395	4.172	3.143
Dec	20.993	18.853	17.045	15.447	12.528	11.232	9.207	6.676	4.395	3.339
Jan	14.179	13.116	12.195	11.346	9.762	8.854	7.391	5.519	3.805	3.011
Feb	43.628	38.141	33.582	29.686	22.624	20.103	16.164	11.241	6.805	4.751
Mar	14.984	13.904	12.954	12.053	10.385	9.368	7.801	5.865	4.134	3.333
Apr	11.518	11.485	11.348	11.040	10.421	9.328	7.688	5.706	3.958	3.148
May	6.847	6.821	6.742	6.571	6.237	5.665	4.828	3.837	2.974	2.574
Jun	6.156	6.129	6.054	5.895	5.590	5.074	4.328	3.453	2.696	2.344
Jul	6.030	5.994	5.913	5.746	5.434	4.920	4.195	3.361	2.647	2.315
Aug	6.549	6.518	6.434	6.253	5.907	5.322	4.477	3.485	2.627	2.229
Sep	9.876	9.832	9.698	9.408	8.841	7.870	6.450	4.768	3.304	2.625

Reserve Flows without High Flows

Oct	6.269	6.253	6.189	6.046	5.758	5.248	4.484	3.560	2.746	2.368
Nov	6.785	6.775	6.714	6.572	6.276	5.736	4.905	3.878	2.959	2.534
Dec	7.140	7.133	7.073	6.930	6.626	6.064	5.186	4.088	3.099	2.641
Jan	7.252	7.252	7.199	7.068	6.779	6.225	5.333	4.191	3.146	2.662
Feb	8.045	8.038	7.970	7.808	7.464	6.829	5.836	4.595	3.476	2.959
Mar	8.058	8.046	7.973	7.804	7.450	6.806	5.814	4.588	3.491	2.984
Apr	7.392	7.373	7.298	7.128	6.786	6.182	5.276	4.181	3.215	2.768
May	6.847	6.821	6.742	6.571	6.237	5.665	4.828	3.837	2.974	2.574
Jun	6.156	6.129	6.054	5.895	5.590	5.074	4.328	3.453	2.696	2.344
Jul	6.030	5.994	5.913	5.746	5.434	4.920	4.195	3.361	2.647	2.315
Aug	5.585	5.560	5.493	5.349	5.073	4.607	3.932	3.141	2.457	2.140
Sep	5.983	5.960	5.892	5.743	5.452	4.955	4.227	3.365	2.614	2.266

Natural Duration curves

Oct	55.670	45.180	38.080	28.900	25.910	22.610	19.830	16.130	13.050	8.670
Nov	97.940	61.140	46.540	39.890	34.570	29.890	22.810	19.840	16.030	10.820
Dec	91.820	60.580	48.330	39.950	33.870	30.080	25.610	21.450	16.380	10.490
Jan	89.820	59.360	46.370	38.730	32.260	27.170	23.250	19.720	16.900	10.220
Feb	116.640	58.930	44.760	39.160	32.040	28.590	24.810	20.990	15.580	10.090
Mar	106.160	68.650	47.600	37.340	32.190	27.460	24.470	19.030	15.030	9.800
Apr	72.150	52.390	40.730	35.090	29.000	23.880	20.420	17.000	13.390	10.150
May	67.820	44.860	35.600	26.670	23.660	20.400	18.190	16.110	12.210	8.850
Jun	49.790	39.440	29.840	25.850	21.540	17.520	16.080	14.460	12.200	7.580
Jul	46.990	34.420	28.600	24.530	19.660	17.760	14.970	13.140	11.230	7.310
Aug	38.510	30.700	26.300	21.140	18.420	16.650	14.950	13.330	11.100	7.160
Sep	52.850	31.160	25.640	22.190	20.320	16.180	14.810	13.720	11.260	6.670

Hydrological time series

Total Runoff : Nvii6

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	10.815	12.197	14.698	10.479	11.374	9.345	10.312	5.582	5.031	4.195	3.646	6.196	103.872
1921	6.444	13.428	20.129	10.680	13.406	7.801	6.571	4.445	4.143	3.820	4.234	5.133	100.234
1922	6.474	11.346	7.990	9.909	18.580	4.252	4.320	2.918	2.552	2.423	2.266	2.625	75.656
1923	2.861	3.143	5.241	3.295	5.545	5.365	5.706	3.307	3.060	2.921	2.957	5.541	48.942
1924	6.762	13.428	20.297	13.493	41.184	14.984	11.518	6.847	6.156	6.028	6.549	9.829	157.077
1925	11.565	12.992	10.535	5.034	6.890	6.835	8.803	4.061	5.197	4.920	4.031	7.870	88.733
1926	10.522	11.856	11.253	6.663	10.720	11.713	10.263	5.329	5.311	5.142	6.243	8.454	103.470
1927	9.670	8.319	6.048	8.328	21.835	9.339	8.180	5.272	4.836	4.406	4.512	5.498	96.245
1928	5.539	3.684	3.339	3.109	5.111	13.503	11.395	6.437	5.895	5.939	6.437	9.832	80.219
1929	11.534	13.406	15.571	12.465	35.966	11.107	11.112	6.574	5.315	4.906	5.891	9.029	142.875
1930	8.697	7.920	6.764	5.901	6.749	3.687	3.367	2.835	2.495	2.509	2.319	2.703	55.946
1931	3.050	3.371	3.542	3.011	43.628	14.984	11.518	6.847	6.156	6.030	6.543	9.732	118.413
1932	9.757	9.142	9.544	7.346	11.267	5.865	4.633	3.125	2.586	2.596	2.493	2.777	71.134
1933	2.880	5.119	10.407	12.547	35.439	12.444	11.349	6.758	6.102	5.979	6.544	9.810	125.379
1934	9.944	10.891	20.993	13.319	31.029	11.282	9.776	6.309	6.156	6.030	6.536	9.769	142.033
1935	8.418	5.205	3.782	7.391	31.308	12.823	11.235	6.844	6.151	5.921	6.385	9.256	114.719
1936	10.642	13.428	16.644	8.854	33.582	12.336	9.795	5.970	5.125	5.215	5.289	7.760	134.641
1937	5.126	4.427	12.528	10.024	34.632	12.954	10.952	6.694	5.776	5.985	6.527	9.538	125.161
1938	10.598	10.200	9.078	8.961	43.628	14.984	11.512	6.821	6.129	5.994	6.535	9.875	144.315
1939	11.589	13.428	19.169	11.776	19.178	5.771	9.328	6.847	6.156	6.030	6.549	9.871	125.691
1940	11.394	13.257	18.271	11.700	14.616	6.567	8.158	4.874	3.315	3.361	2.768	3.304	101.585
1941	3.398	3.912	4.125	4.676	16.091	9.824	10.888	6.360	5.829	5.612	6.263	9.698	86.676
1942	11.325	13.154	20.993	13.703	32.754	13.997	11.518	6.847	6.151	6.030	6.549	9.876	152.896
1943	11.623	13.420	16.771	6.982	17.148	10.624	7.425	4.278	5.442	5.832	6.210	9.876	115.632
1944	11.589	12.695	9.684	4.264	14.231	14.947	11.518	6.624	5.756	5.142	5.415	4.636	106.501
1945	3.650	3.143	3.339	8.687	14.753	4.733	5.084	3.145	2.696	2.567	2.381	2.732	56.911
1946	3.793	5.773	5.047	3.476	17.457	12.728	11.040	6.571	5.826	5.756	6.270	9.029	92.766
1947	8.728	11.614	17.444	11.711	22.353	10.327	10.511	6.102	4.589	4.103	3.267	3.770	114.518
1948	4.126	4.867	4.395	3.805	16.164	10.929	11.489	6.827	6.078	5.856	6.047	8.738	89.321
1949	10.249	12.307	20.194	13.488	29.804	12.392	10.926	6.332	5.702	5.434	5.567	6.365	138.761
1950	3.703	3.173	4.130	3.501	4.751	3.333	3.160	2.628	2.424	2.391	5.345	9.595	48.133
1951	10.945	6.960	5.280	4.880	6.805	4.134	3.958	3.210	3.327	4.561	5.053	3.764	62.879
1952	3.583	4.172	7.687	9.762	31.820	9.899	7.695	3.362	2.685	2.647	2.651	3.868	89.831
1953	5.454	11.449	10.449	5.519	29.686	12.053	9.951	6.809	6.125	5.936	6.435	9.833	119.698
1954	11.623	13.428	16.180	11.494	33.877	13.904	11.485	6.742	5.977	5.677	6.135	8.163	144.686
1955	8.659	12.208	15.833	9.164	43.628	14.509	11.329	6.484	5.968	5.746	6.253	9.408	149.189
1956	11.168	12.858	20.993	14.179	35.942	12.954	11.518	6.836	5.911	5.959	6.512	9.876	154.705
1957	11.623	13.428	17.045	13.606	41.085	12.655	11.067	6.773	5.751	5.604	5.854	8.295	152.785
1958	8.358	8.002	6.417	8.877	21.265	7.219	3.930	4.009	4.166	2.793	3.199	5.304	83.539
1959	8.215	7.485	10.939	5.519	23.139	10.858	11.518	6.821	6.025	5.709	6.347	9.423	111.997
1960	10.149	13.428	20.993	14.179	41.329	13.349	11.518	6.846	6.156	6.030	6.543	9.846	160.364
1961	11.507	13.368	13.268	8.740	11.241	11.369	10.314	5.665	4.440	3.612	4.496	5.304	103.325
1962	6.118	11.667	17.988	12.250	28.644	12.776	11.449	6.660	6.156	6.030	6.549	9.876	136.162
1963	11.535	13.255	11.232	13.069	28.724	7.012	10.465	6.397	5.320	5.172	5.335	6.803	124.318
1964	11.623	13.095	13.997	7.787	8.526	3.993	4.925	2.959	6.094	4.963	6.080	9.684	93.728
1965	11.623	13.341	15.303	13.730	36.862	9.923	7.688	5.335	5.074	4.314	3.914	6.873	133.980
1966	4.416	4.833	8.063	7.727	38.141	13.879	11.518	6.847	6.054	5.874	6.381	8.534	122.268
1967	10.447	13.385	18.000	7.735	11.003	13.214	9.665	4.267	4.033	3.637	5.322	8.841	109.549
1968	8.144	8.894	17.602	9.478	8.700	14.984	11.518	6.814	6.119	5.913	6.402	9.592	114.160
1969	11.618	12.886	9.778	9.159	10.784	6.013	4.165	5.530	4.348	3.457	3.567	8.668	89.973
1970	11.523	13.424	15.068	14.179	28.833	9.422	11.201	6.847	6.156	6.030	6.549	9.858	139.089
1971	11.596	12.803	12.965	12.718	43.628	14.984	11.445	6.844	6.152	6.012	6.505	9.559	155.210
1972	9.091	9.523	7.135	5.110	18.930	8.566	9.319	6.118	4.625	4.632	6.478	9.876	99.402
1973	11.623	13.337	16.121	12.888	34.292	10.054	10.421	6.213	5.841	5.479	5.907	6.450	138.627
1974	3.768	6.395	10.608	14.089	43.628	14.417	11.476	6.825	5.996	5.754	6.130	9.876	138.963
1975	11.623	12.913	19.875	14.179	43.162	14.984	11.518	6.847	6.151	5.964	6.472	9.531	163.219
1976	11.421	12.428	19.182	14.179	43.628	14.984	11.518	6.786	6.086	5.712	6.393	9.845	162.162
1977	11.483	12.299	14.847	14.179	39.204	13.513	11.513	6.784	5.945	5.851	6.434	9.775	151.825
1978	11.623	13.405	19.758	9.223	19.314	5.547	6.282	4.828	3.872	3.721	4.798	8.863	111.232
1979	9.330	5.494	12.477	4.472	11.829	3.492	3.148	2.656	2.393	2.315	2.229	6.704	66.538
1980	7.614	10.316	6.676	8.084	27.613	7.266	4.969	6.847	6.156	6.018	6.549	9.876	107.984
1981	11.623	13.428	18.853	11.346	26.601	12.180	11.214	6.498	5.414	4.664	4.321	4.126	130.268
1982	7.218	7.434	3.750	3.176	4.751	3.333	3.148	2.574	2.344	2.379	3.547	4.768	48.422
1983	5.575	13.131	18.847	14.179	43.628	14.984	11.518	6.812	6.115	6.030	6.549	9.874	157.242
1984	11.494	13.095	13.244	12.021	43.628	14.574	10.637	6.237	5.986	5.495	5.249	7.679	149.338
1985	11.623	13.428	12.278	9.918	30.932	8.164	7.261	3.837	3.537	3.282	2.680	3.911	110.132
1986	3.709	3.885	11.629	11.548	21.009	9.368	10.494	6.095	6.156	6.006	6.549	9.876	106.325
1987	11.623	13.428	20.042	11.828	38.592	14.896	11.518	6.694	6.026	5.996	6.491	9.770	156.905
1988	11.445	13.294	20.993	12.575	42.780	13.203	10.037	6.429	5.590	5.521	5.408	7.311	154.586
1989	5.539	13.428	20.993	12.772	16.502	14.339	11.348	6.609	5.689	5.304	6.247	8.969	127.739
1990	11.090	9.393	15.447	10.565	37.809	14.443	11.453	6.847	6.137	6.021	6.541	9.713	145.458
1991	11.310	10.111	10.095	4.353	6.205	3.490	3.189	2.574	2.344	2.315	2.229	2.625	58.839
1992	2.861	8.880	9.207	3.185	5.204	4.696	3.423	2.664	2.415	2.354	2.295	2.827	50.010
1993	11.623	13.408	16.970	12.124	21.170	7.925	7.651	3.328	2.943	2.810	3.403	3.881	107.237
1994	11.291	11.525	6.307	3.456	5.046	3.510	11.368	6.711	6.141	6.013	6.502	9.606	87.474
1995	11.131	13.390	20.993	14.179	43.628	14.984	11.505	6.745	6.063	5.955	6.518	8.917	164.008
1996	10.211	10.576	7.789	9.164	33.232	10.176	11.237	6.674	6.138	6.021	6.544	9.871	127.633
1997	11.623	13.428	20.993	9.806	23.566	8.760	11.173	5.881	4.328	3.820	3.277	3.693	120.348
1998	11.265	8.873	12.429	8.293	31.920	9.339	6.152	4.441	3.832	3.721	3.953	6.704	110.920
1999	11.521	11.067	17.786	13.970	38.209	13.772	11.421	6.846	6.145	5.912	6.330	9.174	152.154
2000	10.475	13.428	20.993	13.116	23.437	7.896	7.554	4.828	3.468	3.212	2.593		

A.144. *Nvii6 – Category D***Summary table**

Desktop Version 2, Generated on 2015-03-30

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvii6

Annual Flows (Mill. cu. m or index values):

MAR = 505,609

S.Dev. = 381,528

CV = 0,755

Q75 = 17,050

Q75/MMF = 0,405

BFI Index = 0,540

CV(JJA+JFM) Index = 3,089

Ecological Category = D

Total IFR = 71,530 (14,15 %MAR)

Maint. Lowflow = 30,234 (5,98 %MAR)

Drought Lowflow = 30,234 (5,98 %MAR)

Maint. Highflow = 41,295 (8,17 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : Zululand

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			Maint.	Drought	Maint.	Maint.	
Oct	39,717	53,551	1,348	2,344	2,344	3,953	6,297
Nov	45,563	38,994	0,856	2,507	2,507	4,884	7,391
Dec	48,196	54,472	1,130	2,613	2,613	5,652	8,265
Jan	48,935	78,929	1,613	2,633	2,633	2,826	5,460
Feb	64,998	120,235	1,850	2,927	2,927	14,518	17,445
Mar	60,349	127,678	2,116	2,952	2,952	2,826	5,778
Apr	41,890	50,974	1,217	2,739	2,739	3,046	5,785
May	34,733	34,438	0,992	2,547	2,547	0,000	2,547
Jun	28,417	23,249	0,818	2,320	2,320	0,000	2,320
Jul	32,206	66,027	2,050	2,292	2,292	0,000	2,292
Aug	24,159	19,831	0,821	2,118	2,118	0,715	2,833
Sep	36,444	104,689	2,873	2,243	2,243	2,874	5,117

Rule curve

Desktop Version 2, Generated on 2015-03-30

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvii6

Regional Type : Zululand

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	9.838	9.809	9.694	9.435	8.913	7.992	6.610	4.939	3.466	2.783
Nov	11.495	11.476	11.355	11.072	10.484	9.412	7.760	5.719	3.894	3.049
Dec	16.667	14.839	13.315	12.001	9.617	8.715	7.306	5.545	3.958	3.224
Jan	10.807	9.899	9.130	8.452	7.204	6.631	5.709	4.528	3.446	2.946
Feb	35.828	31.138	27.265	23.993	18.082	16.163	13.164	9.416	6.039	4.475
Mar	11.339	10.419	9.634	8.927	7.632	7.003	6.032	4.834	3.762	3.266
Apr	9.283	9.258	9.157	8.929	8.470	7.660	6.446	4.977	3.682	3.082
May	4.648	4.635	4.596	4.513	4.350	4.070	3.661	3.177	2.756	2.560
Jun	4.211	4.198	4.161	4.082	3.932	3.677	3.310	2.878	2.505	2.332
Jul	4.136	4.119	4.079	3.996	3.842	3.589	3.231	2.819	2.467	2.303
Aug	4.846	4.827	4.775	4.665	4.454	4.096	3.579	2.973	2.449	2.206
Sep	8.136	8.103	8.000	7.777	7.342	6.595	5.504	4.212	3.087	2.565

Reserve Flows without High Flows

Oct	4.277	4.269	4.238	4.167	4.025	3.774	3.398	2.943	2.542	2.356
Nov	4.600	4.595	4.566	4.496	4.351	4.087	3.680	3.178	2.728	2.520
Dec	4.820	4.817	4.787	4.718	4.570	4.296	3.867	3.332	2.850	2.627
Jan	4.884	4.884	4.858	4.794	4.653	4.383	3.949	3.392	2.883	2.647
Feb	5.399	5.395	5.362	5.284	5.118	4.811	4.332	3.732	3.192	2.942
Mar	5.416	5.410	5.375	5.293	5.123	4.812	4.333	3.741	3.212	2.967
Apr	4.998	4.989	4.952	4.869	4.703	4.410	3.970	3.439	2.970	2.753
May	4.648	4.635	4.596	4.513	4.350	4.070	3.661	3.177	2.756	2.560
Jun	4.211	4.198	4.161	4.082	3.932	3.677	3.310	2.878	2.505	2.332
Jul	4.136	4.119	4.079	3.996	3.842	3.589	3.231	2.819	2.467	2.303
Aug	3.844	3.831	3.798	3.726	3.589	3.357	3.021	2.627	2.287	2.129
Sep	4.093	4.082	4.048	3.974	3.831	3.584	3.224	2.798	2.427	2.255

Natural Duration curves

Oct	55.670	45.180	38.080	28.900	25.910	22.610	19.830	16.130	13.050	8.670
Nov	97.940	61.140	46.540	39.890	34.570	29.890	22.810	19.840	16.030	10.820
Dec	91.820	60.580	48.330	39.950	33.870	30.080	25.610	21.450	16.380	10.490
Jan	89.820	59.360	46.370	38.730	32.260	27.170	23.250	19.720	16.900	10.220
Feb	116.640	58.930	44.760	39.160	32.040	28.590	24.810	20.990	15.580	10.090
Mar	106.160	68.650	47.600	37.340	32.190	27.460	24.470	19.030	15.030	9.800
Apr	72.150	52.390	40.730	35.090	29.000	23.880	20.420	17.000	13.390	10.150
May	67.820	44.860	35.600	26.670	23.660	20.400	18.190	16.110	12.210	8.850
Jun	49.790	39.440	29.840	25.850	21.540	17.520	16.080	14.460	12.200	7.580
Jul	46.990	34.420	28.600	24.530	19.660	17.760	14.970	13.140	11.230	7.310
Aug	38.510	30.700	26.300	21.140	18.420	16.650	14.950	13.330	11.100	7.160
Sep	52.850	31.160	25.640	22.190	20.320	16.180	14.810	13.720	11.260	6.670

Hydrological time series

Total Runoff : Nvii6

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	9.187	10.484	11.390	7.769	9.517	6.988	8.390	4.030	3.657	3.231	3.072	5.309	83.024
1921	5.668	11.495	15.928	7.928	11.065	6.032	5.618	3.474	3.219	3.046	3.431	4.493	81.396
1922	5.692	9.785	6.460	7.320	15.004	3.835	3.951	2.728	2.435	2.356	2.229	2.565	64.360
1923	2.783	3.049	4.547	3.125	5.080	4.524	4.977	2.918	2.685	2.602	2.651	4.806	43.747
1924	5.924	11.495	16.072	10.221	33.738	11.339	9.283	4.648	4.211	4.136	4.846	8.100	124.012
1925	9.791	11.137	8.230	4.222	6.103	5.434	7.272	3.286	3.738	3.589	3.307	6.595	72.705
1926	8.951	10.204	8.729	5.249	9.019	8.663	8.353	3.906	3.795	3.698	4.659	7.044	82.271
1927	8.265	7.299	5.108	6.300	17.481	6.985	6.810	3.878	3.561	3.335	3.601	4.773	77.397
1928	4.939	3.493	3.224	3.008	4.749	10.085	9.192	4.447	4.082	4.092	4.777	8.103	64.190
1929	9.766	11.476	12.102	9.353	29.287	8.193	8.982	4.514	3.796	3.582	4.443	7.486	112.932
1930	7.482	6.972	5.606	4.769	5.996	3.485	3.245	2.688	2.406	2.399	2.261	2.625	49.935
1931	2.936	3.236	3.365	2.946	35.828	11.339	9.283	4.648	4.211	4.136	4.842	8.026	94.795
1932	8.335	7.975	7.541	5.680	9.436	4.834	4.183	2.830	2.451	2.442	2.368	2.683	60.757
1933	2.798	4.672	8.141	9.422	28.839	9.228	9.158	4.604	4.184	4.112	4.842	8.086	98.086
1934	8.486	9.412	16.667	10.072	25.115	8.328	7.993	4.385	4.211	4.136	4.837	8.054	111.697
1935	7.257	4.742	3.532	5.709	25.349	9.530	9.073	4.646	4.208	4.083	4.745	7.660	90.535
1936	9.047	11.495	12.983	6.631	27.265	9.145	8.007	4.219	3.703	3.734	4.076	6.511	106.817
1937	4.607	4.103	9.617	7.411	28.155	9.634	8.863	4.573	4.024	4.114	4.832	7.877	97.809
1938	9.012	8.844	7.216	6.699	35.828	11.339	9.278	4.635	4.198	4.119	4.837	8.136	114.142
1939	9.810	11.495	15.108	8.792	15.459	4.775	7.660	4.648	4.211	4.136	4.846	8.132	99.072
1940	9.653	11.355	14.347	8.730	11.985	5.268	6.794	3.684	2.811	2.819	2.535	3.087	83.069
1941	3.216	3.680	3.770	3.996	13.108	7.285	8.816	4.410	4.050	3.931	4.671	8.000	68.932
1942	9.597	11.270	16.667	10.401	26.567	10.498	9.283	4.648	4.208	4.136	4.846	8.136	120.258
1943	9.838	11.488	13.088	5.451	13.913	7.818	6.251	3.393	3.859	4.039	4.639	8.136	91.913
1944	9.810	10.893	7.638	3.736	11.692	11.307	9.283	4.539	4.014	3.698	4.153	4.111	84.874
1945	3.419	3.049	3.224	6.526	12.090	4.132	4.517	2.839	2.505	2.428	2.299	2.648	49.676
1946	3.534	5.209	4.411	3.239	14.148	9.455	8.929	4.513	4.049	4.001	4.675	7.486	73.648
1947	7.507	10.005	13.650	8.738	17.876	7.596	8.537	4.284	3.439	3.186	2.840	3.445	91.103
1948	3.801	4.465	3.958	3.446	13.164	8.054	9.261	4.638	4.172	4.051	4.539	7.262	70.813
1949	8.731	10.574	15.984	10.216	24.092	9.188	8.845	4.396	3.987	3.842	4.245	5.439	109.541
1950	3.461	3.074	3.774	3.255	4.475	3.266	3.091	2.587	2.371	2.341	4.110	7.920	43.724
1951	9.292	6.183	4.574	4.125	6.039	3.762	3.682	2.871	2.817	3.412	3.932	3.441	54.129
1952	3.364	3.894	6.248	7.204	25.780	7.331	6.451	2.945	2.500	2.467	2.464	3.521	74.171
1953	4.871	9.870	8.170	4.528	23.993	8.927	8.122	4.629	4.196	4.090	4.776	8.103	94.275
1954	9.838	11.495	12.599	8.569	27.515	10.419	9.258	4.596	4.123	3.962	4.593	6.821	113.788
1955	7.451	10.493	12.315	6.827	35.828	10.932	9.143	4.471	4.118	3.996	4.665	7.777	118.016
1956	9.471	11.027	16.667	10.807	29.267	9.634	9.283	4.642	4.090	4.101	4.823	8.136	121.950
1957	9.838	11.495	13.315	10.317	33.653	9.396	8.949	4.612	4.011	3.926	4.421	6.922	120.854
1958	7.209	7.039	5.365	6.646	17.047	5.672	3.662	3.261	3.230	2.539	2.799	4.624	69.093
1959	7.094	6.614	8.511	4.528	18.514	7.999	9.283	4.635	4.147	3.978	4.722	7.788	87.812
1960	8.650	11.495	16.667	10.807	33.862	9.957	9.283	4.647	4.211	4.136	4.842	8.113	126.671
1961	9.744	11.446	10.221	6.560	9.416	8.396	8.391	4.070	3.365	2.943	3.591	4.624	82.768
1962	5.406	10.048	14.108	9.175	23.122	9.492	9.232	4.556	4.211	4.136	4.846	8.136	106.469
1963	9.767	11.353	8.715	9.859	23.188	5.544	8.503	4.428	3.799	3.713	4.104	5.775	98.747
1964	9.838	11.221	10.817	5.959	7.349	3.674	4.399	2.748	4.180	3.610	4.559	7.989	76.344
1965	9.838	11.424	11.884	10.423	30.050	7.346	6.446	3.909	3.677	3.290	3.236	5.829	107.352
1966	4.035	4.437	6.510	5.920	31.138	10.399	9.283	4.648	4.161	4.059	4.743	7.105	96.440
1967	8.891	11.460	14.117	5.926	9.235	9.847	7.910	3.387	3.165	2.956	4.096	7.342	88.330
1968	7.037	7.771	13.782	7.025	7.481	11.339	9.283	4.632	4.193	4.079	4.756	7.918	89.297
1969	9.834	11.050	7.703	6.824	9.068	4.925	3.836	4.004	3.320	2.867	3.024	7.208	73.663
1970	9.757	11.492	11.692	10.807	23.279	7.036	9.048	4.648	4.211	4.136	4.846	8.122	109.074
1971	9.816	10.981	9.974	9.564	35.828	11.339	9.229	4.646	4.209	4.128	4.819	7.893	122.425
1972	7.799	8.288	5.864	4.270	15.270	6.506	7.654	4.291	3.456	3.447	4.802	8.136	79.784
1973	9.838	11.420	12.550	9.707	27.867	7.427	8.470	4.338	4.056	3.865	4.454	5.504	109.496
1974	3.514	5.719	8.281	10.731	35.828	10.854	9.252	4.637	4.132	4.001	4.590	8.136	109.675
1975	9.838	11.072	15.711	10.807	35.429	11.339	9.283	4.648	4.209	4.104	4.798	7.871	129.110
1976	9.675	10.674	15.120	10.807	35.828	11.339	9.283	4.618	4.176	3.980	4.750	8.113	128.363
1977	9.724	10.568	11.511	10.807	32.047	10.094	9.279	4.617	4.107	4.048	4.775	8.059	119.636
1978	9.838	11.476	15.611	6.864	15.562	4.637	5.404	3.661	3.085	2.997	3.775	7.358	90.268
1979	7.992	4.980	9.581	3.867	9.864	3.364	3.082	2.600	2.356	2.303	2.206	5.699	57.894
1980	6.610	8.939	5.545	6.146	22.258	5.701	4.431	4.648	4.211	4.131	4.846	8.136	85.602
1981	9.838	11.495	14.839	8.452	21.411	9.025	9.058	4.477	3.845	3.462	3.485	3.719	103.106
1982	6.291	6.573	3.509	3.050	4.475	3.266	3.082	2.560	2.332	2.335	3.011	4.212	44.696
1983	4.968	11.251	14.834	10.807	35.828	11.339	9.283	4.631	4.191	4.136	4.846	8.135	124.249
1984	9.733	11.221	10.201	8.990	35.828	10.989	8.630	4.350	4.127	3.873	4.051	6.448	118.441
1985	9.838	11.495	9.443	7.328	25.034	6.257	6.129	3.177	2.920	2.781	2.482	3.001	89.884
1986	3.466	3.658	8.991	8.611	16.853	7.003	8.525	4.280	4.211	4.125	4.846	8.136	82.705
1987	9.838	11.495	15.853	8.833	31.524	11.264	9.283	4.573	4.147	4.120	4.810	8.055	123.795
1988	9.694	11.385	16.667	9.445	35.103	9.838	8.186	4.443	3.932	3.885	4.149	6.165	122.892
1989	4.939	11.495	16.667	9.610	13.421	10.789	9.157	4.532	3.981	3.778	4.661	7.439	100.468
1990	9.408	8.181	12.001	7.837	30.856	10.877	9.235	4.648	4.201	4.132	4.841	8.011	114.228
1991	9.585	8.771	6.532	3.792	5.582	3.363	3.113	2.560	2.332	2.303	2.206	2.565	52.705
1992	2.783	7.760	7.306	3.055	4.820	4.110	3.286	2.604	2.367	2.322	2.246	2.721	45.381
1993	9.838	11.478	13.253	9.073	16.975	6.109	6.419	2.929	2.627	2.547	2.924	3.531	87.702
1994	9.570	9.932	5.288	3.226	4.699	3.375	9.172	4.581	4.203	4.128	4.817	7.929	70.922
1995	9.441	11.463	16.667	10.807	35.828	11.339	9.273	4.598	4.165	4.100	4.827	7.400	129.908
1996	8.701	9.152	6.319	6.827	26.970	7.503	9.074	4.563	4.202	4.132	4.843	8.132	100.420
1997	9.838	11.495	16.667	7.239	18.871	6.626	9.028	4.176	3.310	3.046	2.847	3.386	96.526
1998	9.549	7.754	9.548	6.278	25.864	6.985	5.308	3.472	3.065	2.997	3.260	5.699	89.778
1999	9.756	9.556	13.936	10.629	31.197	10.309	9.211	4.647	4.206	4.078	4.712	7.597	119.835
2000	8.913	11.495	16.667	9.899	18.763	6.091	6.346	3.661	2.886	2.746	2.428	8.015	97.909
2001	9.286	11.371	13.795	9.130	16.491	7.632	5.288	2.991	2.649	4.136	4.846	8.136	95.752
2002	9.809	1											

A.145. *Nvii7 – Category B***Summary table**

Desktop Version 2, Generated on 2015-04-20

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvii7

Annual Flows (Mill. cu. m or index values):

MAR = 209,887

S.Dev. = 165,234

CV = 0,787

Q75 = 1,536

Q75/MMF = 0,088

BFI Index = 0,326

CV(JJA+JFM) Index = 3,145

Ecological Category = B

Total IFR = 117,235 (55,86 %MAR)

Maint. Lowflow = 70,960 (33,81 %MAR)

Drought Lowflow = 12,985 (6,19 %MAR)

Maint. Highflow = 46,274 (22,05 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	10,686	22,996	2,152	4,379	0,625	3,012	7,392
Nov	16,869	21,065	1,249	6,751	0,714	4,851	11,602
Dec	27,685	35,062	1,266	8,851	2,003	6,101	14,953
Jan	33,715	48,314	1,433	9,787	2,022	7,549	17,336
Feb	43,416	69,006	1,589	9,510	1,885	11,229	20,738
Mar	26,155	29,625	1,133	10,044	1,988	7,797	17,841
Apr	15,064	21,519	1,429	7,105	0,693	1,982	9,088
May	12,184	19,923	1,635	5,527	0,707	1,397	6,924
Jun	5,473	7,020	1,283	2,763	0,658	0,000	2,763
Jul	7,672	19,985	2,605	2,501	0,617	1,093	3,595
Aug	3,505	4,876	1,391	2,079	0,559	0,000	2,079
Sep	7,462	18,153	2,433	1,663	0,514	1,262	2,926

Rule curve

Desktop Version 2, Generated on 2015-04-20

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvii7

Regional Type : N.Natal

Ecological Category = B

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	8.521	8.448	6.432	4.140	2.396	1.302	0.937	0.286	0.130	0.000
Nov	13.361	13.270	13.082	11.249	9.739	6.875	3.620	2.213	0.807	0.052
Dec	22.417	20.774	19.302	17.877	16.314	13.675	10.182	6.224	3.672	0.833
Jan	26.345	24.319	22.511	20.777	18.897	14.400	9.869	5.234	3.333	0.911
Feb	33.160	30.183	27.570	24.608	18.671	15.207	10.650	6.770	3.541	0.625
Mar	20.518	20.386	20.111	19.567	13.046	8.984	6.015	3.229	1.562	0.208
Apr	10.645	10.552	10.341	9.905	6.432	5.026	3.307	2.318	1.016	0.026
May	8.123	8.054	7.896	7.369	3.984	2.969	1.875	1.250	0.599	0.026
Jun	3.298	3.273	3.216	3.098	2.370	1.641	1.094	0.625	0.339	0.026
Jul	4.182	4.149	4.075	3.489	2.213	1.276	0.781	0.469	0.234	0.000
Aug	2.483	2.465	2.423	2.337	1.771	0.937	0.599	0.339	0.130	0.000
Sep	3.367	3.341	3.282	2.682	1.667	1.146	0.651	0.286	0.156	0.000

Reserve Flows without High Flows

Oct	5.226	5.182	5.083	4.140	2.396	1.302	0.937	0.286	0.130	0.000
Nov	8.055	8.000	7.887	7.662	7.241	6.505	3.620	2.213	0.807	0.052
Dec	10.568	10.504	10.372	10.109	9.618	8.760	7.395	5.499	3.386	0.833
Jan	11.684	11.612	11.462	11.166	10.612	9.644	8.105	5.234	3.333	0.911
Feb	11.352	11.282	11.135	10.845	10.302	9.354	7.845	5.750	3.414	0.625
Mar	11.990	11.915	11.760	11.454	10.880	8.984	6.015	3.229	1.562	0.208
Apr	8.477	8.403	8.234	7.886	6.432	5.026	3.307	2.318	1.016	0.026
May	6.595	6.539	6.411	6.148	3.984	2.969	1.875	1.250	0.599	0.026
Jun	3.298	3.273	3.216	3.098	2.370	1.641	1.094	0.625	0.339	0.026
Jul	2.987	2.964	2.913	2.807	2.213	1.276	0.781	0.469	0.234	0.000
Aug	2.483	2.465	2.423	2.337	1.771	0.937	0.599	0.339	0.130	0.000
Sep	1.987	1.972	1.941	1.875	1.667	1.146	0.651	0.286	0.156	0.000

Natural Duration curves

Oct	27.108	12.864	6.432	4.140	2.396	1.302	0.937	0.286	0.130	0.000
Nov	44.997	28.956	19.244	11.249	9.739	6.875	3.620	2.213	0.807	0.052
Dec	57.965	38.044	26.196	21.327	17.343	13.957	10.182	6.224	3.672	0.833
Jan	77.703	42.758	32.862	28.644	20.207	14.400	9.869	5.234	3.333	0.911
Feb	124.055	59.866	34.217	24.608	18.671	15.207	10.650	6.770	3.541	0.625
Mar	76.870	52.262	31.300	23.176	13.046	8.984	6.015	3.229	1.562	0.208
Apr	35.310	22.993	16.561	10.208	6.432	5.026	3.307	2.318	1.016	0.026
May	34.008	18.697	12.057	7.369	3.984	2.969	1.875	1.250	0.599	0.026
Jun	13.853	9.322	6.510	4.271	2.370	1.641	1.094	0.625	0.339	0.026
Jul	18.358	7.005	4.505	3.489	2.213	1.276	0.781	0.469	0.234	0.000
Aug	10.989	5.937	3.541	2.370	1.771	0.937	0.599	0.339	0.130	0.000
Sep	16.171	6.849	3.620	2.682	1.667	1.146	0.651	0.286	0.156	0.000

Hydrological time series

Total Runoff : Nvii7

Desktop (Version 2) Modified Flow Data for Ecological Category B													
YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	6.666	3.047	4.661	1.562	1.614	0.286	0.052	0.807	0.104	0.052	0.026	3.335	22.212
1921	3.047	13.361	22.417	20.574	15.207	8.749	4.843	3.541	1.693	1.068	2.466	0.833	97.799
1922	1.719	13.179	20.300	26.345	29.586	19.722	10.063	7.239	3.098	2.708	1.641	0.963	136.564
1923	1.094	13.296	19.652	11.718	13.879	19.626	5.364	3.125	1.823	1.146	0.703	3.311	94.736
1924	8.451	13.212	20.632	25.976	30.183	20.518	10.645	8.123	3.298	4.182	2.483	3.342	151.046
1925	8.521	13.331	16.774	9.921	5.234	7.109	2.265	7.738	1.406	0.885	0.547	0.365	74.096
1926	0.234	0.260	5.520	0.755	0.625	19.174	2.292	1.354	0.807	0.521	0.312	0.182	32.036
1927	8.509	13.231	17.274	26.345	23.124	12.525	6.953	3.984	2.344	1.484	0.911	3.319	120.003
1928	1.328	2.760	12.734	4.557	33.160	20.465	10.575	7.957	3.236	4.059	2.372	3.367	106.570
1929	8.483	8.124	9.765	26.345	26.938	20.518	10.502	7.738	3.185	3.724	2.265	1.328	128.914
1930	0.833	2.604	14.202	2.422	4.869	1.510	3.958	1.198	0.703	0.443	0.339	0.156	33.237
1931	0.104	3.620	13.675	5.052	27.570	3.099	10.645	8.123	3.298	4.178	2.477	3.313	85.155
1932	2.734	11.536	15.096	26.249	31.857	20.111	9.928	6.093	3.022	4.031	1.380	0.859	132.895
1933	2.890	13.103	21.745	14.452	6.171	4.218	2.448	1.745	0.599	0.755	2.426	2.344	72.896
1934	1.536	2.213	11.900	2.474	6.328	0.286	0.104	0.078	0.026	0.000	0.000	24.971	
1935	0.000	0.000	1.484	21.947	9.036	10.494	5.286	7.896	3.102	2.239	1.354	0.807	63.645
1936	0.521	13.361	21.076	24.163	33.160	20.518	10.643	8.054	3.273	4.120	2.424	2.682	143.995
1937	1.406	0.833	22.417	24.319	26.179	13.046	8.489	3.958	2.578	2.838	1.042	0.651	107.756
1938	1.016	4.557	22.417	26.345	33.160	20.462	10.518	7.883	3.222	4.152	2.471	3.282	139.485
1939	2.396	13.361	17.520	18.996	7.656	20.518	10.645	8.123	3.298	4.182	2.480	3.341	112.516
1940	3.750	13.270	17.285	25.132	5.208	8.984	6.901	2.083	1.224	1.719	0.599	0.286	86.441
1941	0.182	0.469	22.417	22.511	19.322	19.282	2.552	1.510	3.298	2.890	1.771	1.328	97.533
1942	1.302	8.723	13.858	9.947	6.432	20.453	10.645	8.123	3.298	4.182	2.483	3.361	92.807
1943	7.421	9.973	4.427	17.265	31.949	11.145	5.859	3.698	2.992	1.380	0.833	3.343	100.285
1944	4.140	2.265	16.580	4.687	18.176	20.346	9.905	5.130	2.956	1.927	1.172	0.677	87.960
1945	0.625	0.260	12.864	24.183	29.814	13.176	7.369	4.192	2.474	1.562	0.937	3.250	100.706
1946	0.365	0.755	12.994	21.116	26.721	20.518	10.452	7.700	3.169	3.489	2.109	1.458	110.846
1947	1.224	11.223	19.777	5.234	19.999	5.286	1.354	0.599	0.339	0.208	0.130	2.005	67.372
1948	0.130	2.708	5.885	24.835	17.421	6.015	10.645	8.123	3.298	4.151	2.449	2.864	88.521
1949	1.719	1.172	22.417	14.400	11.301	6.250	1.797	1.667	0.625	0.391	0.234	0.130	62.103
1950	0.104	0.052	5.390	3.333	1.719	3.229	0.026	0.000	0.000	0.000	2.483	3.353	19.689
1951	4.791	2.682	14.305	2.474	1.406	1.562	0.234	0.156	0.078	2.213	0.104	0.026	30.031
1952	0.026	0.234	17.121	8.046	18.358	3.620	4.349	1.250	0.729	0.469	0.286	1.120	55.608
1953	0.104	13.331	7.135	4.427	21.691	16.327	5.494	8.102	3.144	2.838	1.771	3.267	87.631
1954	5.520	3.828	4.401	16.301	26.230	20.211	10.406	7.809	3.147	3.255	1.979	1.172	104.259
1955	1.276	2.344	8.619	4.635	32.507	20.474	10.555	7.927	3.246	4.075	2.381	2.239	100.279
1956	1.458	12.971	11.874	5.026	27.587	10.468	3.047	1.771	0.963	4.182	2.483	3.367	85.198
1957	8.521	13.361	20.457	24.079	30.744	8.046	5.026	2.812	1.641	1.042	0.625	0.365	116.718
1958	7.395	13.301	19.210	12.161	15.103	2.083	1.120	2.786	0.417	0.260	0.156	2.786	76.778
1959	0.859	1.406	13.757	0.911	5.625	2.448	2.318	0.260	0.078	0.052	0.026	0.104	27.844
1960	0.182	6.901	21.982	23.266	30.696	20.310	10.548	8.056	3.270	4.114	2.411	3.335	135.071
1961	8.431	12.317	4.297	6.432	14.062	6.250	2.969	0.990	0.469	0.312	0.286	0.156	56.971
1962	0.234	0.937	20.303	17.788	24.608	20.381	10.425	7.675	3.175	4.182	2.483	3.361	115.552
1963	8.370	9.973	3.672	25.839	6.796	3.021	8.463	1.536	0.911	0.573	0.339	0.208	69.701
1964	8.452	13.238	18.020	8.749	25.945	2.995	1.745	1.068	0.651	0.495	0.573	0.625	82.555
1965	1.120	1.614	0.833	21.692	18.514	4.062	2.318	1.458	0.859	0.547	0.339	0.208	53.564
1966	0.130	1.849	13.959	8.645	33.160	20.518	10.549	7.864	3.216	4.027	2.353	1.536	107.807
1967	0.963	9.661	8.281	5.677	1.198	20.111	3.698	1.953	1.172	0.729	0.443	0.260	54.146
1968	0.286	0.807	16.314	20.133	9.999	19.567	5.494	8.077	3.263	4.091	2.395	2.161	92.587
1969	8.498	12.265	8.151	5.078	6.770	2.786	1.667	0.859	0.365	0.234	0.208	3.073	49.954
1970	8.384	9.739	2.422	18.058	3.281	2.838	10.108	8.057	3.276	4.107	2.423	1.979	74.672
1971	5.781	9.791	14.142	23.270	33.160	20.436	10.552	8.044	3.294	4.158	2.453	2.812	137.893
1972	1.771	9.296	2.838	11.119	26.345	12.760	10.251	7.369	3.025	2.005	2.057	3.367	92.203
1973	8.521	13.351	19.921	23.061	17.577	19.402	3.489	2.187	1.302	3.854	0.495	0.286	113.445
1974	0.208	13.082	17.877	20.798	31.418	20.486	10.589	7.897	3.231	4.043	2.362	3.367	135.358
1975	8.521	13.270	21.701	25.216	28.659	19.611	10.221	8.106	3.282	4.115	2.426	2.135	147.263
1976	2.552	4.166	18.261	21.526	33.160	20.518	10.645	8.068	3.290	4.135	2.445	3.367	132.135
1977	8.521	10.702	21.395	26.345	27.905	20.358	10.365	7.667	3.159	3.385	2.057	1.667	143.525
1978	8.521	13.143	16.396	10.859	14.270	3.620	6.432	2.370	1.458	3.776	1.068	1.484	83.397
1979	1.094	0.599	1.745	9.869	9.453	0.208	0.052	0.026	0.026	0.000	0.000	1.302	24.374
1980	0.104	11.848	10.182	6.380	13.176	9.244	1.823	8.123	3.298	4.177	2.474	3.367	74.196
1981	8.508	13.174	11.692	8.723	10.807	13.515	1.016	0.625	0.365	0.234	0.130	0.078	68.866
1982	1.250	1.745	0.104	0.911	0.000	0.000	0.000	5.599	1.432	0.443	0.365	0.156	12.005
1983	0.130	13.346	19.302	26.345	33.160	20.483	10.619	8.024	3.288	4.182	2.483	3.367	144.730
1984	8.440	6.979	9.479	20.720	33.160	20.386	10.572	7.979	3.250	4.080	2.386	1.745	129.175
1985	2.656	4.297	4.531	19.280	11.796	4.323	0.833	0.469	0.286	0.182	0.104	0.052	48.809
1986	0.521	2.265	19.598	20.777	3.541	0.833	10.341	4.010	2.370	1.484	1.953	3.367	71.061
1987	8.521	13.303	18.733	18.897	27.732	20.476	10.616	8.031	3.265	4.149	2.417	3.302	139.444
1988	8.448	12.984	18.171	6.041	17.212	20.136	4.922	2.969	1.797	1.120	0.677	0.391	94.868
1989	0.937	13.361	22.417	23.982	19.608	19.859	10.268	7.005	3.083	2.630	1.588	0.937	125.675
1990	0.625	4.192	14.832	26.345	29.953	19.983	9.400	8.123	3.298	4.174	2.472	3.301	126.698
1991	2.864	1.927	6.224	2.370	10.650	2.552	0.182	0.078	0.052	0.026	0.000	0.000	26.951
1992	0.000	0.755	10.859	4.739	3.307	20.253	6.145	3.281	1.927	1.224	0.729	1.614	54.833
1993	8.521	13.024	17.653	17.212	21.249	6.562	4.661	1.588	0.885	0.547	0.339	0.208	92.449
1994	4.271	8.645	21.097	15.233	1.901	1.068	10.148	8.123	3.297	4.139	2.445	2.318	82.686
1995	2.187	11.197	22.417	26.345	33.160	20.518	10.645	8.101	3.289	4.182	2.462	3.203	147.707
1996	8.521	12.978	18.494	19.779	10.442	19.845	10.645	8.110	3.298	4.172	2.480	3.359	122.125
1997	8.468	13.298	20.774	22.235	16.093	19.567	5.312	3.437	2.005	1.250	0.755	0.443	113.637
1998	4.583	6.875	18.935	20.197	10.416	6.979	2.370	0.859	0.495	0.312	0.963	0.156	73.140
1999	0.208	5.338	21.469	24.604	32.287	20.518	10.645	8.123	3.298	4.171	2.465	3.355	136.481
2000	8.398	13.361	22.417	22.379	18.671	12.760	10.629	8.001	3.198	3.880	2.337	3.367	129.398
2001	4.323	13.361	22.267										

A.146. *Nvii7 – Category C***Summary table**

Desktop Version 2, Generated on 10/04/15

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvii7

Annual Flows (Mill. cu. m or index values):

MAR = 209.887

S.Dev. = 165.234

CV = 0.787

Q75 = 1.536

Q75/MMF = 0.088

BFI Index = 0.326

CV(JJA+JFM) Index = 3.145

Ecological Category = C

Total IFR = 93.470 (44.53 %MAR)

Maint. Lowflow = 47.196 (22.49 %MAR)

Drought Lowflow = 12.985 (6.19 %MAR)

Maint. Highflow = 46.274 (22.05 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	10.686	22.996	2.152	3.009	0.625	3.012	6.021
Nov	16.869	21.065	1.249	4.273	0.714	4.851	9.124
Dec	27.685	35.062	1.266	6.542	2.003	6.101	12.643
Jan	33.715	48.314	1.433	6.893	2.022	7.549	14.441
Feb	43.416	69.006	1.589	6.500	1.885	11.229	17.728
Mar	26.155	29.625	1.133	6.561	1.988	7.797	14.358
Apr	15.064	21.519	1.429	4.392	0.693	1.982	6.375
May	12.184	19.923	1.635	3.555	0.707	1.397	4.952
Jun	5.473	7.020	1.283	1.749	0.658	0.000	1.749
Jul	7.672	19.985	2.605	1.651	0.617	1.093	2.744
Aug	3.505	4.876	1.391	1.519	0.559	0.000	1.519
Sep	7.462	18.153	2.433	0.553	0.514	1.262	1.816

Rule curve

Desktop Version 2, Generated on 10/04/15

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvii7

Regional Type : N.Natal

Ecological Category = C

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	7.604	7.541	6.432	4.140	2.396	1.302	0.937	0.286	0.130	0.000
Nov	11.737	11.659	11.496	11.173	9.739	6.875	3.620	2.213	0.807	0.052
Dec	20.964	19.332	17.882	16.502	15.022	12.528	10.182	6.224	3.672	0.833
Jan	24.263	22.253	20.477	18.807	17.047	14.083	9.869	5.234	3.333	0.911
Feb	30.862	27.902	25.325	22.967	18.671	15.207	10.650	6.770	3.541	0.625
Mar	18.442	18.326	18.083	17.603	13.046	8.984	6.015	3.229	1.562	0.208
Apr	8.266	8.196	8.036	7.706	6.432	5.026	3.307	2.318	1.016	0.026
May	6.448	6.395	6.273	6.023	3.984	2.969	1.875	1.250	0.599	0.026
Jun	2.367	2.351	2.314	2.237	2.095	1.641	1.094	0.625	0.339	0.026
Jul	3.518	3.491	3.431	3.306	2.213	1.276	0.781	0.469	0.234	0.000
Aug	2.057	2.042	2.010	1.943	1.771	0.937	0.599	0.339	0.130	0.000
Sep	2.232	2.217	2.182	2.111	1.667	1.146	0.651	0.286	0.156	0.000

Reserve Flows without High Flows

Oct	4.070	4.037	3.963	3.808	2.396	1.302	0.937	0.286	0.130	0.000
Nov	5.950	5.911	5.830	5.669	5.369	4.844	3.620	2.213	0.807	0.052
Dec	9.114	9.061	8.951	8.734	8.326	7.613	6.480	4.906	3.151	0.833
Jan	9.602	9.546	9.428	9.196	8.761	8.002	6.794	5.116	3.246	0.911
Feb	9.054	9.001	8.890	8.670	8.259	7.541	6.399	4.812	3.043	0.625
Mar	9.140	9.086	8.976	8.757	8.346	7.630	6.015	3.229	1.562	0.208
Apr	5.940	5.890	5.777	5.542	5.104	4.383	3.307	2.194	1.016	0.026
May	4.809	4.770	4.681	4.497	3.984	2.969	1.875	1.250	0.599	0.026
Jun	2.367	2.351	2.314	2.237	2.095	1.641	1.094	0.625	0.339	0.026
Jul	2.235	2.220	2.185	2.112	1.977	1.276	0.781	0.469	0.234	0.000
Aug	2.057	2.042	2.010	1.943	1.771	0.937	0.599	0.339	0.130	0.000
Sep	0.751	0.748	0.743	0.733	0.713	0.681	0.635	0.286	0.156	0.000

Natural Duration curves

Oct	27.108	12.864	6.432	4.140	2.396	1.302	0.937	0.286	0.130	0.000
Nov	44.997	28.956	19.244	11.249	9.739	6.875	3.620	2.213	0.807	0.052
Dec	57.965	38.044	26.196	21.327	17.343	13.957	10.182	6.224	3.672	0.833
Jan	77.703	42.758	32.862	28.644	20.207	14.400	9.869	5.234	3.333	0.911
Feb	124.055	59.866	34.217	24.608	18.671	15.207	10.650	6.770	3.541	0.625
Mar	76.870	52.262	31.300	23.176	13.046	8.984	6.015	3.229	1.562	0.208
Apr	35.310	22.993	16.561	10.208	6.432	5.026	3.307	2.318	1.016	0.026
May	34.008	18.697	12.057	7.369	3.984	2.969	1.875	1.250	0.599	0.026
Jun	13.853	9.322	6.510	4.271	2.370	1.641	1.094	0.625	0.339	0.026
Jul	18.358	7.005	4.505	3.489	2.213	1.276	0.781	0.469	0.234	0.000
Aug	10.989	5.937	3.541	2.370	1.771	0.937	0.599	0.339	0.130	0.000
Sep	16.171	6.849	3.620	2.682	1.667	1.146	0.651	0.286	0.156	0.000

Hydrological time series

Total Runoff : Nvii7

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	6.666	3.047	4.661	1.562	1.614	0.286	0.052	0.807	0.104	0.052	0.026	2.213	21.090
1921	3.047	11.737	20.964	18.617	15.207	8.749	4.843	3.541	1.693	1.068	2.043	0.833	92.343
1922	1.719	11.580	18.864	24.263	27.312	17.740	7.826	6.005	2.237	2.708	1.641	0.963	122.859
1923	1.094	11.681	18.225	11.718	13.879	17.655	5.364	3.125	1.823	1.146	0.703	2.199	88.612
1924	7.543	11.609	19.191	23.897	27.902	18.442	8.266	6.448	2.367	3.518	2.057	2.217	133.457
1925	7.604	11.712	15.457	9.921	5.234	7.109	2.265	6.152	1.406	0.885	0.547	0.365	68.657
1926	0.234	0.260	5.520	0.755	0.625	17.256	2.292	1.354	0.807	0.521	0.312	0.182	30.118
1927	7.594	11.625	15.931	24.263	22.371	12.525	6.953	3.984	2.086	1.484	0.911	2.204	111.931
1928	1.328	2.760	11.767	4.557	30.862	18.396	8.213	6.320	2.327	3.418	1.970	2.232	94.150
1929	7.571	8.124	9.765	24.263	24.709	18.442	8.157	6.152	2.294	3.344	1.921	1.328	116.071
1930	0.833	2.604	13.027	2.422	4.869	1.510	3.958	1.198	0.703	0.443	0.339	0.156	32.062
1931	0.104	3.620	12.528	5.052	25.325	3.099	8.266	6.448	2.367	3.514	2.052	2.200	74.576
1932	2.734	11.217	13.871	24.167	29.565	18.083	7.724	5.847	2.189	3.395	1.380	0.859	121.031
1933	2.890	11.515	20.294	14.109	6.171	4.218	2.448	1.745	0.599	0.755	2.012	2.067	68.823
1934	1.536	2.213	11.361	2.474	6.328	0.286	0.104	0.078	0.026	0.026	0.000	0.000	24.432
1935	0.000	0.000	1.484	19.931	9.036	10.494	5.286	6.273	2.240	2.239	1.354	0.807	59.144
1936	0.521	11.737	19.631	22.100	30.862	18.442	8.264	6.395	2.351	3.468	2.011	2.111	127.893
1937	1.406	0.833	20.964	22.253	23.968	13.046	7.426	3.958	2.110	2.838	1.042	0.651	100.495
1938	1.016	4.557	20.964	24.263	30.862	18.393	8.170	6.263	2.318	3.493	2.047	2.182	124.529
1939	2.396	11.737	16.163	17.139	7.656	18.442	8.266	6.448	2.367	3.518	2.054	2.217	98.404
1940	3.750	11.659	15.940	23.059	5.208	8.984	6.901	2.083	1.224	1.719	0.599	0.286	81.412
1941	0.182	0.469	20.964	20.477	19.322	17.351	2.552	1.510	2.367	2.890	1.771	1.328	91.184
1942	1.302	8.723	12.701	9.947	6.432	18.385	8.266	6.448	2.367	3.518	2.057	2.228	82.374
1943	7.421	9.973	4.427	15.545	29.656	11.145	5.859	3.698	2.169	1.380	0.833	2.217	94.324
1944	4.140	2.265	15.273	4.687	18.176	18.291	7.706	5.130	2.146	1.927	1.172	0.677	81.590
1945	0.625	0.260	11.848	22.119	27.538	13.176	7.244	4.192	2.103	1.562	0.937	2.163	93.766
1946	0.365	0.755	11.929	19.131	24.497	18.442	8.120	6.123	2.283	3.306	1.888	1.458	98.297
1947	1.224	11.163	18.348	5.234	19.999	5.286	1.354	0.599	0.339	0.208	0.130	2.005	65.889
1948	0.130	2.708	5.885	22.764	17.421	6.015	8.266	6.448	2.365	3.492	2.030	2.132	79.657
1949	1.719	1.172	20.964	14.083	11.301	6.250	1.797	1.667	0.625	0.391	0.234	0.130	60.333
1950	0.104	0.052	5.390	3.333	1.719	3.229	0.026	0.000	0.000	2.057	2.223	18.133	
1951	4.791	2.682	13.123	2.474	1.406	1.562	0.234	0.156	0.078	2.213	0.104	0.026	28.849
1952	0.026	0.234	15.786	8.046	18.358	3.620	4.349	1.250	0.729	0.469	0.286	1.120	54.273
1953	0.104	11.712	7.135	4.427	21.691	16.327	5.494	6.432	2.267	2.838	1.771	2.174	82.371
1954	5.520	3.828	4.401	15.053	24.018	18.172	8.085	6.206	2.269	3.255	1.861	1.172	93.841
1955	1.276	2.344	8.619	4.635	30.212	18.404	8.198	6.297	2.333	3.431	1.977	2.053	89.780
1956	1.458	11.400	11.349	5.026	25.342	10.468	3.047	1.771	0.963	3.518	2.057	2.232	78.630
1957	7.604	11.737	19.018	22.016	28.460	8.046	5.026	2.812	1.641	1.042	0.625	0.365	108.393
1958	7.395	11.686	17.793	12.161	15.103	2.083	1.120	2.786	0.417	0.260	0.156	2.123	73.082
1959	0.859	1.406	12.605	0.911	5.625	2.448	2.318	0.260	0.078	0.052	0.026	0.104	26.692
1960	0.182	6.901	20.531	21.216	28.412	18.259	8.193	6.396	2.349	3.463	2.000	2.213	120.114
1961	7.525	11.338	4.297	6.432	14.062	6.250	2.969	0.990	0.469	0.312	0.286	0.156	55.086
1962	0.234	0.937	18.866	16.010	22.967	18.322	8.099	6.103	2.287	3.518	2.057	2.228	101.629
1963	7.472	9.973	3.672	23.760	6.796	3.021	7.422	1.536	0.911	0.573	0.339	0.208	65.683
1964	7.543	11.631	16.639	8.749	23.742	2.995	1.745	1.068	0.651	0.495	0.573	0.625	76.457
1965	1.120	1.614	0.833	19.684	18.514	4.062	2.318	1.458	0.859	0.547	0.339	0.208	51.556
1966	0.130	1.849	12.797	8.645	30.862	18.442	8.193	6.249	2.314	3.393	1.955	1.536	96.366
1967	0.963	9.661	8.281	5.677	1.198	18.083	3.698	1.953	1.172	0.729	0.443	0.260	52.118
1968	0.286	0.807	15.022	18.204	9.999	17.603	5.494	6.413	2.344	3.444	1.988	2.043	83.647
1969	7.584	11.330	8.151	5.078	6.770	2.786	1.667	0.859	0.365	0.234	0.208	2.152	47.184
1970	7.484	9.739	2.422	16.263	3.281	2.838	7.860	6.397	2.353	3.457	2.010	1.979	66.082
1971	5.781	9.791	12.969	21.219	30.862	18.370	8.196	6.387	2.365	3.498	2.034	2.126	123.598
1972	1.771	9.296	2.838	11.119	24.130	12.760	7.968	6.023	2.190	2.005	1.878	2.232	84.209
1973	7.604	11.729	18.489	21.015	17.577	17.457	3.489	2.187	1.302	3.366	0.495	0.286	104.996
1974	0.208	11.496	16.502	18.827	29.128	18.415	8.223	6.274	2.324	3.405	1.963	2.232	118.997
1975	7.604	11.659	20.251	23.142	26.395	17.642	7.945	6.435	2.357	3.464	2.012	2.039	130.946
1976	2.552	4.166	16.871	19.523	30.862	18.442	8.266	6.406	2.362	3.480	2.027	2.232	117.191
1977	7.604	10.702	19.947	24.263	25.655	18.301	8.054	6.097	2.277	3.287	1.878	1.667	129.732
1978	7.604	11.549	15.099	10.859	14.270	3.620	6.432	2.370	1.458	3.353	1.068	1.484	79.167
1979	1.094	0.599	1.745	9.869	9.453	0.208	0.052	0.026	0.026	0.000	0.000	1.302	24.374
1980	0.104	11.266	10.182	6.380	13.176	9.244	1.823	6.448	2.367	3.513	2.050	2.232	68.785
1981	7.593	11.575	11.260	8.723	10.807	13.515	1.016	0.625	0.365	0.234	0.130	0.078	65.921
1982	1.250	1.745	0.104	0.911	0.000	0.000	0.000	5.599	1.432	0.443	0.365	0.156	12.005
1983	0.130	11.725	17.882	24.263	30.862	18.412	8.246	6.372	2.361	3.518	2.057	2.232	128.059
1984	7.533	6.979	9.479	18.753	30.862	18.326	8.210	6.337	2.336	3.435	1.982	1.745	115.977
1985	2.656	4.297	4.531	17.405	11.796	4.323	0.833	0.469	0.286	0.182	0.104	0.052	46.934
1986	0.521	2.265	18.172	18.807	3.541	0.833	8.036	4.010	2.095	1.484	1.856	2.232	63.852
1987	7.604	11.687	17.328	17.047	25.484	18.406	8.244	6.377	2.346	3.491	2.006	2.194	122.214
1988	7.541	11.411	16.784	6.041	17.212	18.105	4.922	2.969	1.797	1.120	0.677	0.391	88.970
1989	0.937	11.737	20.964	21.921	19.608	17.861	7.981	5.973	2.228	2.630	1.588	0.937	114.364
1990	0.625	4.192	13.622	24.263	27.674	17.970	7.574	6.448	2.367	3.511	2.048	2.193	112.489
1991	2.864	1.927	6.224	2.370	10.650	2.552	0.182	0.078	0.052	0.026	0.026	0.000	26.951
1992	0.000	0.755	10.855	4.739	3.307	18.209	6.145	3.281	1.927	1.224	0.729	1.614	52.785
1993	7.604	11.446	16.289	15.518	21.249	6.562	4.661	1.588	0.885	0.547	0.339	0.208	86.896
1994	4.271	8.645	19.652	14.508	1.901	1.068	7.890	6.448	2.366	3.483	2.027	2.063	74.323
1995	2.187	11.152	20.964	24.263	30.862	18.442	8.266	6.431	2.361	3.518	2.041	2.159	132.647
1996	7.604	11.406	17.096	17.873	10.442	17.849	8.266	6.438	2.367	3.509	2.054	2.227	107.132
1997	7.558	11.684	19.332	20.209	16.093	17.603	5.312	3.437	1.977	1.250	0.755	0.443	105.653
1998	4.583	6.875	17.524	18.264	10.416	6.979	2.370	0.859	0.495	0.312	0.963	0.156	69.796
1999	0.208	5.338	20.021	22.535	29.993	18.442	8.266	6.448	2.367	3.509	2.042	2.225	121.395
2000	7.496	11.737	20.964	20.349	18.671	12.760	8.254	6.354	2.302	3.370	1.943	2.232	116.433
2001	4.323	11.737	20.814	18.827	21.691	7.942	5.390	3.151	1.875	3.518	2.		

A.147. *Nvii7 – Category D***Summary table**

Desktop Version 2, Generated on 2015-03-09

Summary of Desktop (Version 2) estimate for Quaternary Catchment Area :

Total Runoff : Nvii7

Annual Flows (Mill. cu. m or index values):

MAR = 209,887

S.Dev. = 165,234

CV = 0,787

Q75 = 1,536

Q75/MMF = 0,088

BFI Index = 0,326

CV(JJA+JFM) Index = 3,145

Ecological Category = D

Total IFR = 45,745 (21,80 %MAR)

Maint. Lowflow = 12,985 (6,19 %MAR)

Drought Lowflow = 12,985 (6,19 %MAR)

Maint. Highflow = 32,761 (15,61 %MAR)

Monthly Distributions (Mill. cu. m.)

Distribution Type : N.Natal

Month	Natural Flows		Modified Flows (IFR)				
	Mean	SD	Low flows		High Flows		Total Flows
			CV	Maint.	Drought	Maint.	
Oct	10,686	22,996	2,152	0,625	0,625	2,216	2,840
Nov	16,869	21,065	1,249	0,714	0,714	3,162	3,876
Dec	27,685	35,062	1,266	2,003	2,003	3,760	5,763
Jan	33,715	48,314	1,433	2,022	2,022	4,998	7,020
Feb	43,416	69,006	1,589	1,885	1,885	8,836	10,721
Mar	26,155	29,625	1,133	1,988	1,988	4,865	6,853
Apr	15,064	21,519	1,429	0,693	0,693	1,478	2,171
May	12,184	19,923	1,635	0,707	0,707	1,142	1,849
Jun	5,473	7,020	1,283	0,658	0,658	0,000	0,658
Jul	7,672	19,985	2,605	0,617	0,617	1,105	1,723
Aug	3,505	4,876	1,391	0,559	0,559	0,000	0,559
Sep	7,462	18,153	2,433	0,514	0,514	1,198	1,713

Rule curve

Desktop Version 2, Generated on 2015-03-09

Summary of IFR rule curves (Desktop Version 2) for :

Total Runoff : Nvii7

Regional Type : N.Natal

Ecological Category = D

Data are given in m³ * 10⁶ monthly flow volume

Month	% Points									
	10%	20%	30%	40%	50%	60%	70%	80%	90%	99%
Oct	4.308	4.275	4.200	4.045	2.396	1.302	0.937	0.286	0.130	0.000
Nov	6.138	6.100	6.021	5.865	5.572	5.060	3.620	2.213	0.807	0.052
Dec	11.296	10.308	9.451	8.674	7.899	6.602	5.749	4.564	3.243	0.833
Jan	13.738	12.430	11.301	10.287	9.294	7.633	6.601	5.167	3.333	0.911
Feb	20.920	18.618	16.649	14.908	13.249	10.481	8.923	6.759	3.541	0.625
Mar	11.218	11.153	11.018	10.750	10.249	8.984	6.015	3.229	1.562	0.208
Apr	3.387	3.363	3.308	3.194	2.981	2.632	2.138	1.569	1.016	0.026
May	2.935	2.915	2.869	2.774	2.598	2.308	1.875	1.250	0.599	0.026
Jun	1.219	1.214	1.202	1.177	1.130	1.053	0.944	0.625	0.339	0.026
Jul	2.716	2.697	2.654	2.565	2.213	1.276	0.781	0.469	0.234	0.000
Aug	1.037	1.033	1.022	1.001	0.961	0.895	0.599	0.339	0.130	0.000
Sep	2.658	2.638	2.594	2.504	1.667	1.146	0.651	0.286	0.156	0.000

Reserve Flows without High Flows

Oct	1.159	1.154	1.142	1.118	1.074	1.000	0.897	0.286	0.130	0.000
Nov	1.423	1.418	1.407	1.385	1.345	1.274	1.161	1.003	0.807	0.052
Dec	3.993	3.979	3.948	3.887	3.773	3.573	3.256	2.816	2.324	0.833
Jan	4.031	4.016	3.985	3.924	3.809	3.607	3.287	2.842	2.347	0.911
Feb	3.758	3.744	3.715	3.658	3.550	3.363	3.064	2.650	2.187	0.625
Mar	3.963	3.948	3.918	3.857	3.744	3.546	3.231	2.794	1.562	0.208
Apr	1.286	1.280	1.267	1.241	1.191	1.110	0.995	0.863	0.750	0.026
May	1.311	1.305	1.292	1.265	1.215	1.132	1.015	0.880	0.599	0.026
Jun	1.219	1.214	1.202	1.177	1.130	1.053	0.944	0.625	0.339	0.026
Jul	1.145	1.139	1.128	1.104	1.060	0.988	0.781	0.469	0.234	0.000
Aug	1.037	1.033	1.022	1.001	0.961	0.895	0.599	0.339	0.130	0.000
Sep	0.954	0.950	0.940	0.920	0.884	0.823	0.651	0.286	0.156	0.000

Natural Duration curves

Oct	27.108	12.864	6.432	4.140	2.396	1.302	0.937	0.286	0.130	0.000
Nov	44.997	28.956	19.244	11.249	9.739	6.875	3.620	2.213	0.807	0.052
Dec	57.965	38.044	26.196	21.327	17.343	13.957	10.182	6.224	3.672	0.833
Jan	77.703	42.758	32.862	28.644	20.207	14.400	9.869	5.234	3.333	0.911
Feb	124.055	59.866	34.217	24.608	18.671	15.207	10.650	6.770	3.541	0.625
Mar	76.870	52.262	31.300	23.176	13.046	8.984	6.015	3.229	1.562	0.208
Apr	35.310	22.993	16.561	10.208	6.432	5.026	3.307	2.318	1.016	0.026
May	34.008	18.697	12.057	7.369	3.984	2.969	1.875	1.250	0.599	0.026
Jun	13.853	9.322	6.510	4.271	2.370	1.641	1.094	0.625	0.339	0.026
Jul	18.358	7.005	4.505	3.489	2.213	1.276	0.781	0.469	0.234	0.000
Aug	10.989	5.937	3.541	2.370	1.771	0.937	0.599	0.339	0.130	0.000
Sep	16.171	6.849	3.620	2.682	1.667	1.146	0.651	0.286	0.156	0.000

Hydrological time series

Total Runoff : Nvii7

Desktop (Version 2) Modified Flow Data for Ecological Category D

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	TOTAL
1920	4.204	3.047	3.860	1.562	1.614	0.286	0.052	0.807	0.104	0.052	0.026	2.633	18.248
1921	3.047	6.138	11.296	10.180	10.481	8.749	2.578	2.471	1.058	1.068	1.033	0.833	58.932
1922	1.719	6.062	10.029	13.738	18.165	10.827	3.235	2.768	1.177	2.464	0.951	0.963	72.097
1923	1.094	6.111	9.652	7.310	9.889	10.779	2.716	2.352	1.072	1.146	0.703	2.616	55.440
1924	4.277	6.076	10.224	13.499	18.618	11.218	3.387	2.935	1.219	2.716	1.037	2.639	77.846
1925	4.308	6.126	8.127	6.627	5.234	7.109	1.541	2.823	1.023	0.885	0.547	0.365	44.716
1926	0.234	0.260	4.247	0.755	0.625	10.557	1.556	1.354	0.807	0.521	0.312	0.182	21.410
1927	4.303	6.084	8.375	13.738	14.493	10.136	3.011	2.598	1.127	1.484	0.890	2.622	68.861
1928	1.328	2.760	6.278	4.179	20.920	11.193	3.369	2.887	1.206	2.645	1.009	2.658	60.431
1929	4.291	5.283	5.609	13.738	16.189	11.218	3.350	2.823	1.195	2.593	0.994	1.328	68.611
1930	0.833	2.604	6.861	2.422	4.869	1.510	2.323	1.198	0.703	0.443	0.339	0.156	24.262
1931	0.104	3.620	6.602	4.860	16.649	3.099	3.387	2.935	1.219	2.713	1.036	2.617	48.842
1932	2.734	5.886	7.301	13.676	19.908	11.018	3.200	2.708	1.161	2.629	0.930	0.859	72.009
1933	2.890	6.030	10.889	7.648	6.171	4.218	1.705	1.745	0.599	0.755	1.023	2.344	46.018
1934	1.536	2.213	6.105	2.474	6.328	0.286	0.104	0.078	0.026	0.026	0.000	0.000	19.176
1935	0.000	0.000	1.484	10.965	7.625	9.698	2.696	2.869	1.178	2.239	0.928	0.807	40.489
1936	0.521	6.138	10.488	12.332	20.920	11.218	3.386	2.915	1.214	2.681	1.023	2.504	75.339
1937	1.406	0.833	11.296	12.430	15.637	10.249	3.097	2.591	1.135	2.480	0.904	0.651	62.708
1938	1.016	4.557	11.296	13.738	20.920	11.191	3.354	2.865	1.203	2.699	1.034	2.594	76.467
1939	2.396	6.138	8.497	9.346	7.098	11.218	3.387	2.935	1.219	2.716	1.036	2.638	58.626
1940	3.750	6.100	8.380	12.953	5.208	8.984	3.008	2.021	0.985	1.719	0.599	0.286	53.992
1941	0.182	0.469	11.296	11.301	13.431	10.610	1.814	1.510	1.219	2.487	0.961	1.328	56.608
1942	1.302	5.390	6.692	6.640	6.432	11.187	3.387	2.935	1.219	2.716	1.037	2.653	51.590
1943	4.216	5.617	7.374	8.453	19.979	9.839	2.839	2.516	1.154	1.380	0.833	2.639	63.199
1944	4.045	2.265	8.031	4.244	12.853	11.134	3.194	2.658	1.147	1.927	0.914	0.677	53.088
1945	0.625	0.260	6.312	12.344	18.338	10.255	3.034	2.609	1.132	1.562	0.895	2.571	59.938
1946	0.365	0.755	6.347	10.480	16.031	11.218	3.337	2.812	1.192	2.565	0.983	1.458	57.544
1947	1.224	5.860	9.724	5.167	13.620	5.286	1.170	0.599	0.339	0.208	0.130	2.005	45.331
1948	0.130	2.708	4.412	12.761	12.250	6.015	3.387	2.935	1.219	2.698	1.029	2.531	52.074
1949	1.719	1.172	11.296	7.633	9.118	6.250	1.297	1.667	0.625	0.391	0.234	0.130	41.532
1950	0.104	0.052	4.189	3.333	1.719	3.229	0.026	0.000	0.000	0.000	1.037	2.647	16.336
1951	4.125	2.682	6.912	2.474	1.406	1.562	0.234	0.156	0.078	2.213	0.104	0.026	21.972
1952	0.026	0.234	8.299	6.190	12.999	3.620	2.435	1.250	0.729	0.469	0.286	1.120	37.657
1953	0.104	6.126	4.805	4.114	14.093	10.411	2.748	2.929	1.187	2.480	0.961	2.583	52.541
1954	4.159	3.828	3.717	8.177	15.674	11.068	3.325	2.844	1.187	2.535	0.975	1.172	58.659
1955	1.276	2.344	5.223	4.218	20.413	11.197	3.364	2.878	1.208	2.654	1.012	2.239	58.025
1956	1.458	5.975	6.100	4.816	16.661	9.693	2.026	1.771	0.911	2.716	1.037	2.658	55.821
1957	4.308	6.138	10.121	12.278	19.051	8.046	2.632	2.270	1.053	1.042	0.625	0.365	67.929
1958	4.216	6.113	9.400	7.364	10.434	2.083	1.110	2.263	0.417	0.260	0.156	2.519	46.336
1959	0.859	1.406	6.642	0.911	5.625	2.448	1.569	0.260	0.078	0.052	0.026	0.104	19.980
1960	0.182	5.065	11.032	11.766	19.014	11.116	3.362	2.915	1.213	2.677	1.019	2.634	71.994
1961	4.267	5.945	3.650	5.826	9.970	6.250	1.993	0.990	0.469	0.312	0.286	0.156	40.114
1962	0.234	0.937	10.031	8.713	14.908	11.151	3.329	2.805	1.193	2.716	1.037	2.653	59.708
1963	4.240	5.617	3.243	13.409	6.769	3.021	3.096	1.536	0.898	0.573	0.339	0.208	42.950
1964	4.277	6.087	8.750	6.349	15.473	2.995	1.270	1.068	0.651	0.495	0.573	0.625	48.612
1965	1.120	1.614	0.833	10.813	13.123	4.062	1.569	1.458	0.859	0.547	0.339	0.208	36.546
1966	0.130	1.849	6.742	6.325	20.920	11.218	3.362	2.860	1.202	2.627	1.005	1.536	59.776
1967	0.963	5.558	5.109	5.411	1.198	11.018	2.249	1.944	0.968	0.729	0.443	0.260	35.850
1968	0.286	0.807	7.899	9.947	8.327	10.750	2.748	2.921	1.212	2.664	1.015	2.161	50.737
1969	4.298	5.941	5.074	4.904	6.759	2.786	1.250	0.859	0.365	0.234	0.208	2.556	35.234
1970	4.246	5.572	2.422	8.855	3.281	2.838	3.247	2.916	1.215	2.673	1.022	1.979	40.265
1971	4.171	5.582	6.832	11.768	20.920	11.178	3.363	2.912	1.219	2.702	1.030	2.523	74.198
1972	1.771	5.493	2.838	7.228	15.758	10.187	3.284	2.774	1.161	2.005	0.980	2.658	56.136
1973	4.308	6.134	8.806	11.639	12.375	10.669	2.190	2.082	1.009	2.608	0.495	0.286	63.601
1974	0.208	6.021	8.674	10.299	19.569	11.203	3.372	2.869	1.205	2.636	1.007	2.658	69.722
1975	4.308	6.100	10.862	13.007	17.461	10.772	3.276	2.930	1.216	2.678	1.023	2.135	75.768
1976	2.552	4.166	8.879	10.714	20.920	11.218	3.387	2.919	1.218	2.689	1.028	2.658	72.347
1977	4.308	5.759	10.679	13.738	16.899	11.140	3.314	2.802	1.190	2.552	0.980	1.667	75.027
1978	4.308	6.047	7.940	7.098	10.063	3.620	2.981	2.163	1.029	2.599	0.906	1.484	50.238
1979	1.094	0.599	1.745	6.601	7.826	0.208	0.052	0.026	0.000	0.000	1.302	19.480	
1980	0.104	5.910	5.749	5.797	9.679	9.244	1.311	2.935	1.219	2.713	1.035	2.658	48.353
1981	4.302	6.060	6.062	6.343	8.970	10.272	1.016	0.625	0.365	0.234	0.130	0.078	44.457
1982	1.250	1.745	0.104	0.911	0.000	0.000	0.000	2.682	1.026	0.443	0.365	0.156	8.682
1983	0.130	6.132	4.951	13.738	20.920	11.201	3.380	2.906	1.217	2.716	1.037	2.658	75.487
1984	4.272	5.079	5.512	10.257	20.920	11.153	3.368	2.893	1.209	2.657	1.013	1.745	70.077
1985	2.656	4.297	3.802	9.496	9.266	4.323	0.833	0.469	0.286	0.182	0.104	0.052	35.766
1986	0.521	2.265	9.621	10.287	3.541	0.833	3.308	2.599	1.130	1.484	0.973	2.658	39.220
1987	4.308	6.114	9.135	9.294	16.770	11.198	3.379	2.908	1.212	2.697	1.021	2.609	70.646
1988	4.275	5.980	8.830	5.611	12.083	11.030	2.601	2.308	1.069	1.120	0.677	0.391	55.976
1989	0.937	6.138	11.296	12.217	13.511	10.894	3.289	2.755	1.174	2.453	0.947	0.937	66.548
1990	0.625	4.192	7.171	13.738	18.443	10.955	3.148	2.935	1.219	2.712	1.034	2.608	68.781
1991	2.864	1.927	4.564	2.370	8.923	2.552	0.182	0.078	0.052	0.026	0.026	0.000	23.565
1992	0.000	0.755	5.890	4.332	3.307	11.088	2.910	2.397	1.083	1.224	0.729	1.614	35.328
1993	4.308	5.997	8.563	8.438	13.969	6.562	2.526	1.588	0.885	0.547	0.339	0.208	53.929
1994	4.061	5.376	10.501	7.872	1.901	1.068	3.257	2.935	1.219	2.691	1.028	2.318	44.228
1995	2.187	5.855	11.296	13.738	20.920	11.218	3.387	2.929	1.217	2.716	1.032	2.565	79.060
1996	4.308	5.978	9.003	9.760	8.733	10.887	3.387	2.931	1.219	2.710	1.036	2.651	62.604
1997	4.284	6.112	10.308	11.136	11.189	10.750	2.703	2.441	1.091	1.250	0.755	0.443	62.462
1998	4.100	5.060	9.247	9.981	8.709	6.979	1.624	0.859	0.495	0.312	0.897	0.156	48.419
1999	0.208	4.855	10.724	12.613	20.242	11.218	3.387	2.935	1.219	2.710	1.033	2.649	73.792
2000	4.252	6.138	11.296	11.222	13.249	10.187	3.383	2.899	1.198	2.611	1.001	2.658	70.094
2001	4.068	6.138	11.205	10.299	14.093	7.942	2.722	2.360	1.077	2.716	1.037	2.655	66.312
2002	4.186	5.597	6.285	2.734	14.355	0.599	0.286						

Appendix B. INCREMENTAL FLOWS (TIME SERIES)

B.1. Ni3_i

FILE : Ni3_i
UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	6.900	12.680	11.610	4.570	5.030	16.240	5.510	2.800	1.560	0.770	0.400	1.630
1921	5.510	23.720	23.610	9.380	5.710	3.470	1.970	1.190	0.950	0.630	1.890	1.480
1922	5.090	20.620	12.740	11.440	7.630	4.660	3.010	1.620	0.770	0.470	0.280	0.140
1923	2.280	3.450	20.170	6.170	8.950	10.450	5.500	3.310	1.800	0.830	0.540	2.740
1924	2.900	10.930	22.480	7.520	4.470	90.680	9.970	4.720	2.360	1.730	1.150	2.910
1925	3.820	3.560	5.030	6.580	4.500	11.270	3.980	2.080	1.440	0.790	0.360	1.810
1926	1.940	2.260	5.010	4.370	9.110	9.120	4.290	1.770	0.760	1.350	1.080	0.750
1927	5.810	5.580	9.210	23.100	6.390	3.310	1.910	0.950	0.400	0.200	0.360	1.440
1928	2.570	3.940	5.030	3.420	3.050	22.690	7.220	3.550	2.730	2.050	1.050	4.120
1929	10.410	11.290	8.920	15.360	9.920	5.560	3.020	1.490	0.720	0.450	0.700	0.820
1930	0.590	3.340	5.090	3.390	4.070	3.140	2.930	1.710	0.730	0.540	0.360	0.150
1931	0.500	0.880	3.380	1.870	18.080	10.660	5.590	5.840	3.860	1.880	0.850	0.660
1932	1.960	1.960	13.640	12.990	12.360	6.450	3.630	1.770	0.790	0.800	0.660	0.390
1933	1.150	20.290	29.400	23.210	7.360	11.550	8.430	7.260	4.270	3.190	4.230	2.520
1934	1.480	9.380	15.620	7.980	6.030	4.140	2.690	2.630	1.910	1.030	0.600	0.450
1935	0.790	1.030	4.280	18.490	9.790	11.590	4.910	6.730	4.160	1.940	0.870	1.280
1936	4.400	17.970	6.070	24.670	29.670	9.860	4.720	2.300	1.090	0.600	0.330	1.970
1937	3.130	2.580	10.320	6.240	5.420	3.840	11.870	4.940	2.980	2.550	1.600	1.110
1938	8.650	5.640	17.030	20.260	62.860	20.330	7.660	4.250	2.560	2.550	2.030	3.630
1939	4.590	20.500	11.140	15.640	5.130	6.530	5.520	4.690	6.280	4.180	1.910	1.950
1940	2.470	7.110	26.710	8.560	7.290	5.090	5.570	3.070	1.220	1.030	0.830	0.990
1941	1.480	4.190	5.380	7.480	6.070	10.020	4.120	4.470	4.040	2.500	1.430	1.570
1942	4.280	12.420	15.150	5.940	5.310	6.510	31.280	9.510	5.570	7.690	9.900	6.060
1943	6.600	14.380	13.760	13.110	29.650	8.910	3.700	1.470	2.800	2.060	0.900	3.090
1944	7.060	4.010	3.180	7.960	4.100	14.580	4.930	2.630	2.050	1.680	1.450	1.220
1945	1.280	1.250	1.950	7.050	12.600	9.350	12.540	2.330	1.550	1.240	1.140	2.200
1946	3.130	14.050	11.800	8.260	11.220	5.250	4.520	2.690	1.300	0.770	0.420	0.710
1947	2.800	9.590	9.950	17.870	35.130	21.250	8.940	3.220	2.100	0.550	1.460	1.930
1948	2.670	12.810	7.150	24.700	12.580	9.310	7.730	5.000	2.760	1.400	0.650	0.840
1949	2.820	7.230	14.620	10.430	6.190	10.720	8.510	4.490	2.780	2.050	2.110	1.940
1950	1.430	2.640	9.530	13.540	6.030	10.480	8.840	2.850	2.140	1.960	4.270	3.310
1951	6.880	3.930	9.280	4.330	4.360	2.310	2.070	1.420	1.460	1.170	1.170	1.020
1952	1.810	4.470	10.870	5.210	5.790	5.190	5.390	2.170	1.460	1.310	1.060	1.120
1953	1.580	4.940	6.800	6.460	10.010	9.280	8.400	7.000	3.190	2.390	1.300	1.320
1954	3.930	6.190	7.770	21.220	28.690	18.050	4.330	2.270	2.130	2.490	1.650	1.740
1955	2.410	3.530	11.790	9.180	66.900	14.790	4.720	2.660	2.090	1.470	1.200	1.590
1956	6.600	9.040	12.550	7.890	11.890	8.810	5.500	3.190	2.050	7.370	3.200	21.090
1957	33.750	9.370	4.230	17.770	11.400	4.610	4.900	2.840	1.390	0.810	0.570	1.420
1958	2.100	14.890	10.650	11.780	8.080	3.780	1.490	2.530	1.580	1.090	1.170	1.610
1959	2.140	6.450	9.790	4.800	11.750	7.180	6.440	3.620	1.570	0.780	1.030	1.610
1960	4.140	20.660	39.860	11.860	7.700	5.600	7.780	3.720	2.940	2.320	2.030	1.230
1961	2.650	7.110	6.490	6.060	4.500	4.370	2.660	2.030	1.240	1.070	0.910	0.990
1962	1.590	15.040	15.390	10.940	5.910	6.210	3.050	1.100	5.490	22.920	5.010	2.760
1963	2.680	7.590	4.960	17.090	6.210	2.280	2.310	1.260	0.990	1.050	1.090	0.950
1964	16.300	9.810	11.850	6.720	5.990	2.420	1.730	1.200	1.160	1.160	0.900	1.440
1965	1.380	2.120	2.540	9.710	13.450	3.190	1.570	1.450	1.090	0.930	0.780	0.910
1966	1.550	1.690	4.850	6.590	23.240	10.740	5.410	3.240	2.170	1.640	1.400	1.290
1967	1.040	9.620	8.530	4.200	2.410	5.150	3.460	2.160	1.780	1.700	1.530	1.620
1968	0.790	3.440	4.410	6.640	3.800	17.150	9.060	5.990	3.180	1.560	0.770	1.790
1969	12.530	7.300	8.740	4.950	4.330	2.410	1.410	1.080	0.790	0.500	0.510	0.850
1970	3.940	6.230	5.730	12.840	4.800	8.070	8.620	7.220	4.090	1.960	1.110	0.910
1971	4.580	13.460	21.660	35.210	27.170	14.730	6.970	5.770	3.700	1.840	0.910	0.460
1972	0.700	6.010	4.010	5.500	30.540	9.310	8.010	4.500	2.050	1.000	1.510	5.990
1973	4.820	10.860	10.160	29.010	6.670	6.130	5.350	3.080	1.630	1.750	1.270	0.510
1974	1.280	16.410	14.890	17.840	14.120	7.500	7.090	3.890	1.740	0.910	0.410	5.380
1975	2.690	7.170	23.810	13.500	20.850	12.990	7.480	6.360	3.740	1.680	0.870	0.460
1976	5.320	5.280	8.010	12.010	18.590	8.690	4.900	2.570	1.160	0.570	0.400	1.940
1977	2.570	3.330	6.050	24.500	12.640	8.950	6.110	3.590	1.770	1.170	1.190	1.620
1978	15.750	11.340	8.390	6.830	5.010	5.090	4.290	2.650	1.260	0.720	1.630	2.470
1979	5.970	7.200	8.030	16.760	17.260	5.870	2.410	1.480	0.830	0.390	0.290	1.750
1980	1.350	12.770	11.470	11.000	10.210	4.960	2.200	1.350	1.780	1.480	1.440	2.600
1981	3.070	6.300	4.450	7.900	3.720	8.430	4.940	2.610	1.120	0.600	0.330	0.250
1982	7.760	3.870	2.270	1.500	0.750	2.070	2.200	2.610	1.840	1.070	1.580	1.060
1983	2.220	42.240	9.390	222.690	11.190	13.890	6.500	2.980	2.450	5.140	5.800	3.710
1984	6.420	5.010	5.770	5.550	49.650	9.720	3.870	1.350	0.680	0.410	0.210	0.190
1985	3.560	3.160	6.370	16.540	9.790	7.730	5.210	2.740	1.520	0.960	0.460	0.310
1986	0.990	1.870	8.910	5.530	4.230	8.850	5.720	3.530	1.990	1.070	3.240	23.320
1987	13.430	11.100	6.190	7.810	13.060	9.040	4.550	2.040	1.920	1.790	1.550	1.180
1988	15.240	6.330	21.230	6.160	23.300	9.350	5.450	2.960	2.850	2.110	1.060	0.580
1989	2.860	47.170	14.760	8.970	5.720	5.300	4.380	2.400	0.990	0.470	0.740	0.590
1990	2.440	4.760	9.630	46.420	19.080	13.530	5.520	4.930	5.830	4.010	1.980	1.240
1991	1.980	2.600	7.040	6.730	7.850	3.410	1.920	1.110	0.530	0.300	0.140	0.130
1992	0.620	4.940	10.570	5.360	7.020	9.370	4.990	2.780	1.500	0.740	0.760	0.860
1993	22.190	7.260	16.980	8.930	6.110	13.140	4.880	1.830	0.800	0.440	0.290	0.200
1994	4.920	5.760	15.590	8.530	3.600	4.630	3.330	2.160	1.280	0.700	0.400	0.270
1995	6.720	15.850	50.420	22.120	46.370	17.140	7.970	5.890	3.490	2.300	1.620	0.730
1996	6.390	4.460	10.160	16.200	7.290	27.060	11.560	7.500	6.530	4.650	3.100	2.790
1997	6.690	19.830	6.170	11.450	7.500	7.080	3.840	2.190	1.150	0.570	0.290	0.370
1998	3.880	6.830	20.990	9.220	4.740	3.260	2.820	2.110	1.310	0.730	0.890	0.730
1999	2.750	3.000	33.340	20.220	57.900	15.280	10.820	7.330	3.990	1.820	0.800	1.040
2000	5.940	29.900	16.480	6.880	6.850	5.630	3.990	2.340	1.180	0.780	0.500	1.310
2001	4.520	23.860	6.550	6.470	3.960	2.620	1.850	1.020	0.560	1.840	1.850	1.550
2002	1.320	1.790	4.680	4.740	7.260	3.170	1.190	0.520	0.910	0.780	0.420	0.390
2003	0.370	3.550	2.080	7.400	16.950	10.610	4.500	1.630	0.700	2.330	1.670	0.860
2004	0.650	3.620	6.270	9.150	7.750	9.470	4.620	2.520	1.940	1.510	1.290	1.090

B.2. Ni6_i

FILE : Ni6_i
UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	5.610	7.950	7.460	4.330	2.780	4.800	3.760	2.170	1.430	1.000	0.730	1.120
1921	2.970	20.730	15.340	7.730	6.030	4.200	2.960	2.270	1.770	1.340	3.800	3.440
1922	5.980	20.020	19.320	15.990	9.390	6.500	4.670	2.740	1.530	1.010	0.810	0.620
1923	1.450	3.040	7.100	7.560	5.320	5.510	4.160	2.770	1.950	1.270	0.830	1.360
1924	1.940	7.350	9.090	5.510	3.880	19.920	11.820	3.830	2.340	1.830	1.570	1.880
1925	2.030	1.900	3.150	2.920	4.220	3.330	1.820	1.190	1.060	0.940	0.690	0.970
1926	1.460	1.490	1.290	1.280	2.230	2.780	2.290	1.510	0.930	0.750	0.660	0.580
1927	2.160	2.450	2.960	5.460	4.560	3.180	2.320	1.550	0.970	0.670	0.540	0.860
1928	1.290	1.740	2.010	1.400	1.280	5.560	4.230	2.120	1.750	1.530	1.090	2.840
1929	3.840	6.060	5.070	7.760	6.590	5.590	3.810	1.990	1.110	0.750	0.610	0.730
1930	0.710	2.040	2.870	2.190	1.790	1.370	1.080	0.880	0.630	0.550	0.500	0.380
1931	0.380	0.500	1.270	1.080	2.220	3.750	2.850	1.820	1.380	1.010	0.700	0.510
1932	0.610	1.070	5.710	4.350	2.380	1.560	1.440	1.260	0.920	0.960	0.950	0.690
1933	0.720	2.540	17.970	13.670	5.630	3.270	3.150	2.640	1.760	1.670	2.220	2.000
1934	1.990	4.020	6.260	5.440	4.370	3.880	2.970	2.390	1.950	1.390	0.930	0.650
1935	0.710	0.720	2.390	7.680	7.380	4.990	2.960	2.750	2.430	1.620	1.000	0.720
1936	1.080	6.400	5.100	11.950	9.620	6.240	4.100	2.280	1.280	0.850	0.620	0.810
1937	1.040	0.920	6.210	4.590	2.960	2.730	2.830	2.250	1.750	1.680	1.460	1.100
1938	2.480	3.610	4.960	5.010	11.220	9.810	5.140	2.750	1.800	1.450	1.260	1.260
1939	2.850	6.850	7.370	7.390	4.550	3.180	2.520	2.710	3.250	2.810	1.810	1.420
1940	1.360	2.450	5.470	4.020	2.450	2.020	2.410	2.060	1.280	0.850	0.650	0.570
1941	0.640	1.150	1.710	2.710	3.200	5.980	4.480	2.450	1.760	1.340	1.000	1.050
1942	1.910	5.770	7.640	7.390	5.170	4.390	5.930	4.790	2.810	2.290	2.700	2.270
1943	3.780	5.480	5.480	4.180	6.970	4.870	2.540	1.640	1.730	1.700	1.180	1.160
1944	1.970	2.090	2.030	1.730	1.140	2.150	2.140	1.470	0.930	0.640	0.480	0.390
1945	0.400	0.350	0.460	6.200	4.400	2.540	1.920	1.210	0.760	0.550	0.430	0.470
1946	0.920	4.390	6.910	5.000	3.410	2.330	1.870	1.530	1.200	0.980	0.720	0.540
1947	0.610	2.830	2.730	2.290	2.280	4.020	3.380	2.010	1.210	0.790	0.560	0.570
1948	1.490	3.160	3.690	4.140	2.890	4.430	3.750	2.560	1.820	1.190	0.780	0.590
1949	1.750	1.910	2.390	2.070	1.310	2.910	2.590	1.690	1.220	0.930	0.730	0.530
1950	0.510	1.780	5.000	5.380	3.040	3.810	3.860	2.960	0.860	0.810	2.500	1.950
1951	4.830	2.890	4.160	3.490	1.960	1.060	1.520	0.660	0.340	0.580	0.250	0.100
1952	0.120	3.210	2.930	2.000	7.480	5.930	3.810	1.230	0.640	0.340	0.330	0.320
1953	0.250	2.960	3.690	2.790	5.840	3.820	2.130	1.630	0.780	0.480	0.280	0.370
1954	2.120	7.740	3.940	5.530	6.610	11.060	3.900	2.160	1.710	1.140	0.800	0.570
1955	1.710	3.360	6.680	4.900	19.130	12.750	4.840	2.750	1.890	1.340	0.970	1.140
1956	5.350	7.960	8.800	5.480	5.840	6.560	5.870	4.170	2.700	3.250	3.160	14.510
1957	28.290	7.120	4.190	10.320	7.790	4.170	3.070	2.280	1.460	0.990	0.720	0.840
1958	1.690	11.510	9.110	5.430	7.450	3.480	2.050	1.430	0.980	1.210	0.470	1.010
1959	2.590	5.810	7.280	3.520	5.370	4.070	3.330	2.420	1.990	0.950	0.990	0.850
1960	3.080	8.700	28.180	14.360	7.950	5.220	7.270	3.100	2.380	1.600	1.290	1.740
1961	2.060	2.960	3.820	8.180	7.910	3.610	2.080	1.460	0.930	0.920	0.790	0.780
1962	1.000	8.650	15.930	10.640	4.980	5.030	4.850	3.450	3.380	4.050	3.350	2.060
1963	2.580	10.440	4.750	7.050	5.850	2.110	1.280	0.940	0.690	0.640	0.580	0.540
1964	8.630	10.890	9.930	7.490	5.980	2.110	1.350	0.780	1.000	0.780	0.630	0.770
1965	0.920	2.580	2.280	7.250	11.350	3.400	1.410	1.230	1.170	0.700	0.670	0.940
1966	1.470	0.960	5.060	7.180	20.030	10.160	4.490	2.080	1.280	0.960	0.760	0.660
1967	1.050	7.550	8.410	6.460	4.560	7.180	3.260	1.680	1.010	0.880	0.810	0.520
1968	0.470	3.440	5.140	6.590	4.350	7.850	7.390	3.730	1.850	1.450	1.070	1.020
1969	6.050	4.040	5.670	5.730	9.070	5.130	1.620	1.170	0.870	0.740	0.860	0.770
1970	3.400	3.990	7.910	14.020	6.060	3.520	5.440	4.250	2.250	1.580	1.120	1.040
1971	2.590	6.440	10.900	15.370	15.460	12.620	8.050	3.500	2.250	1.590	1.200	0.870
1972	0.920	1.560	3.320	3.210	13.740	12.090	13.710	4.470	2.230	1.620	3.010	2.300
1973	4.430	4.940	7.210	9.470	9.540	5.110	4.840	2.630	1.870	3.710	1.940	0.910
1974	0.920	7.170	8.620	9.230	11.850	10.320	6.380	3.350	2.040	1.490	0.970	2.500
1975	2.240	6.680	17.070	13.530	19.150	15.410	11.900	7.220	3.170	2.180	1.480	1.050
1976	2.580	3.620	11.170	14.600	13.420	7.170	4.370	2.440	1.110	0.940	0.730	0.840
1977	3.370	2.770	4.270	25.200	16.430	10.400	4.550	2.500	1.570	1.280	1.080	1.070
1978	6.950	5.510	8.990	3.570	2.410	1.330	0.770	0.570	0.480	0.510	0.870	1.330
1979	1.730	2.870	4.300	6.020	7.740	3.880	1.370	0.810	0.580	0.500	0.420	0.460
1980	0.490	1.520	5.440	5.930	9.530	4.090	1.340	0.920	0.700	0.600	0.570	1.800
1981	1.100	1.810	1.860	4.830	1.770	3.700	1.310	0.730	0.590	0.400	0.320	0.300
1982	0.540	0.940	0.530	1.100	0.380	0.460	0.570	0.510	0.510	0.310	0.390	0.220
1983	0.950	11.510	7.380	65.350	30.750	8.310	5.930	3.160	1.940	2.130	2.930	2.670
1984	3.780	3.610	4.190	5.260	12.050	8.340	3.750	1.980	1.170	0.800	0.590	0.410
1985	1.250	3.390	3.040	8.250	8.040	5.940	4.510	2.200	1.360	0.910	0.610	0.410
1986	0.930	1.080	2.380	4.130	2.390	4.720	2.170	0.810	1.390	0.440	0.840	7.700
1987	11.910	11.220	8.320	7.590	8.240	8.770	3.710	1.740	1.210	1.430	0.830	0.690
1988	4.560	2.920	12.650	12.860	12.660	9.700	2.940	1.830	1.920	1.140	0.830	0.440
1989	0.550	10.140	9.480	4.900	2.620	4.540	1.590	1.090	0.600	0.470	0.410	0.340
1990	0.440	0.680	3.290	17.980	15.300	8.630	3.560	1.770	1.280	0.990	0.630	0.540
1991	2.640	2.600	6.140	5.500	6.030	1.980	0.890	0.470	0.350	0.280	0.200	0.160
1992	0.200	2.710	1.640	1.710	2.580	3.850	1.490	0.770	0.470	0.340	0.250	0.280
1993	9.870	4.480	5.650	7.780	9.150	8.620	4.080	1.810	1.040	0.780	0.650	0.370
1994	2.120	1.950	6.470	2.370	1.630	1.540	1.340	0.970	0.560	0.430	0.330	0.230
1995	0.850	5.720	20.220	14.790	31.440	20.120	7.330	4.780	2.430	2.600	1.720	0.900
1996	3.640	3.410	5.720	7.300	2.720	11.210	7.660	3.660	3.790	3.640	2.310	2.310
1997	3.740	11.360	9.480	11.450	7.560	7.240	3.820	1.930	1.260	0.890	0.650	0.460
1998	0.990	2.970	10.090	6.000	3.150	1.770	0.900	0.710	0.490	0.420	0.440	0.310
1999	0.460	0.770	21.110	16.830	12.640	7.850	8.490	6.800	3.140	1.920	1.310	1.160
2000	2.640	16.660	12.230	5.150	3.670	2.270	4.420	2.190	1.100	0.780	0.580	1.840
2001	2.100	7.950	7.090	4.990	7.710	3.770	1.520	0.830	0.660	1.000	1.150	2.050
2002	1.010	0.860	3.980	3.370	3.390	1.300	0.620	0.350	0.310	0.260	0.220	0.220
2003	0.230	1.980	1.740	2.200	9.520	12.080	3.550	1.400	0.740	0.980	0.970	0.950
2004	0.550	1.850	6.180	9.720	7.180	12.410	4.310	1.820	0.930	1.470	1.270	1.000

B.3. Ni10_i

FILE : Ni10_i
UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	0.663	0.059	0.469	0.322	0.410	0.000	0.000	0.000	0.001	0.018	0.009	0.661
1921	0.164	8.533	4.925	2.002	1.510	0.708	0.496	0.437	0.157	0.119	0.319	0.039

1922	0.026	2.747	2.172	13.098	7.381	4.047	1.598	0.997	0.615	0.363	0.244	0.153
1923	0.093	5.843	3.113	0.532	1.337	2.261	0.115	0.086	0.027	0.041	0.000	7.770
1924	2.755	1.589	4.169	7.961	4.908	36.529	27.577	15.229	7.317	4.029	2.415	1.546
1925	14.084	5.496	2.705	1.631	0.978	1.546	0.422	1.721	0.129	0.092	0.046	0.019
1926	0.045	0.019	0.936	0.013	0.003	4.079	0.396	0.251	0.135	0.247	0.071	0.027
1927	5.377	4.875	3.628	18.314	3.121	1.749	1.005	0.623	0.379	0.226	0.136	0.741
1928	0.068	0.520	2.483	1.202	37.511	8.365	2.769	1.482	0.856	0.546	0.310	3.299
1929	2.161	1.229	1.647	51.230	4.692	13.514	2.804	1.546	0.886	0.569	0.352	0.208
1930	0.144	0.677	2.327	0.370	1.238	0.270	0.544	0.024	0.030	0.011	0.045	0.018
1931	0.001	0.883	2.969	1.335	7.698	0.287	23.807	6.933	3.165	1.742	1.042	0.598
1932	0.372	2.808	1.879	15.039	14.873	4.856	1.398	0.887	0.499	0.327	0.190	0.118
1933	0.914	4.170	4.805	1.218	0.704	0.214	0.379	0.314	0.029	0.013	0.211	0.000
1934	0.000	0.230	0.699	0.667	0.024	0.000	0.001	0.000	0.009	0.009	0.000	0.000
1935	0.000	0.000	0.000	8.461	1.713	2.314	0.961	0.298	0.153	0.099	0.077	0.030
1936	0.003	16.856	5.059	5.261	38.373	11.776	4.771	2.488	1.392	0.887	0.516	0.459
1937	0.304	0.179	34.129	6.800	2.661	2.170	0.969	0.614	0.389	0.233	0.145	0.082
1938	0.066	0.050	29.445	37.080	85.985	14.829	6.106	3.499	2.050	1.321	0.785	0.464
1939	0.292	8.792	1.781	2.733	0.895	19.723	8.672	3.657	9.751	4.048	2.011	1.144
1940	0.752	4.966	1.856	9.705	0.585	1.661	1.266	0.150	0.102	1.457	0.239	0.028
1941	0.000	0.020	22.266	10.832	6.051	5.070	0.624	0.374	14.993	1.542	0.882	0.522
1942	0.338	1.433	0.501	0.383	0.862	9.705	19.302	6.785	2.649	12.576	2.984	1.653
1943	1.094	2.137	0.424	3.536	15.249	1.489	0.807	0.490	1.841	0.190	0.109	0.656
1944	0.048	0.038	3.444	1.351	4.020	6.760	1.205	0.594	0.339	0.202	0.120	0.091
1945	0.143	0.019	0.747	5.637	11.520	1.517	1.076	0.554	0.318	0.218	0.144	0.698
1946	0.054	0.048	1.210	5.397	6.136	7.947	1.816	0.888	0.526	0.315	0.194	0.147
1947	0.312	0.643	0.220	0.036	3.803	0.158	0.007	0.000	0.010	0.001	0.009	0.403
1948	0.009	0.258	0.362	20.884	4.322	1.314	9.543	11.842	1.636	1.041	0.598	0.381
1949	0.236	0.154	22.227	2.561	2.728	0.870	0.193	0.044	0.038	0.028	0.010	0.009
1950	0.001	0.018	2.113	6.264	0.515	1.378	0.567	0.314	0.209	0.140	7.915	3.509
1951	1.840	1.052	12.039	0.807	0.409	0.287	0.150	0.088	0.061	0.125	0.070	0.044
1952	0.079	1.790	27.262	5.111	2.372	2.872	1.061	0.670	0.388	0.229	0.132	0.206
1953	0.175	13.025	1.799	0.983	3.472	1.402	0.613	7.040	0.820	0.442	0.253	0.969
1954	3.414	1.372	0.660	16.679	14.702	7.644	4.333	2.833	1.501	0.898	0.534	0.329
1955	3.296	1.391	1.362	0.565	31.808	22.083	9.893	5.118	2.812	1.777	1.070	0.657
1956	0.601	4.973	3.237	2.548	7.577	3.422	0.827	0.568	0.293	2.418	0.982	17.492
1957	21.252	9.675	5.198	11.568	20.279	2.493	1.396	0.782	0.488	0.285	0.178	0.124
1958	3.075	0.890	1.121	0.683	1.788	0.116	0.067	2.065	0.177	0.124	0.053	1.297
1959	1.514	1.037	1.504	0.240	13.361	1.915	1.347	1.066	0.480	0.297	0.183	0.105
1960	0.062	1.964	8.667	4.623	15.714	49.548	7.447	6.206	10.526	2.491	1.335	0.992
1961	4.215	7.332	1.602	0.827	4.680	2.755	1.150	0.511	0.299	0.176	0.202	0.263
1962	0.429	0.528	0.226	8.348	0.834	42.864	3.585	2.020	1.129	22.905	4.416	2.309
1963	4.112	3.707	1.319	37.546	4.616	2.284	2.810	1.674	0.834	0.544	0.325	0.176
1964	4.344	3.211	2.174	0.918	0.510	0.356	0.210	0.154	0.082	0.029	0.230	0.282
1965	0.939	0.410	0.249	25.393	5.008	2.639	1.382	0.880	0.537	0.326	0.220	0.106
1966	0.079	0.036	0.022	2.627	46.327	31.579	3.312	4.903	1.866	1.016	0.606	0.453
1967	0.258	2.100	0.619	1.966	2.292	7.264	1.223	0.246	0.120	0.108	0.046	0.019
1968	0.202	0.065	0.421	14.032	3.856	13.330	4.103	8.960	2.234	1.274	0.810	0.666
1969	6.121	2.149	1.517	0.785	0.663	0.983	0.183	0.118	0.089	0.045	0.036	0.068
1970	1.097	3.488	0.405	2.514	0.279	0.198	0.300	0.064	0.067	0.038	0.018	0.010
1971	2.281	3.436	2.894	7.983	88.757	40.831	14.908	8.731	4.312	2.581	1.560	0.922
1972	0.602	5.676	1.315	1.445	3.624	0.502	0.295	0.169	0.124	0.054	0.142	37.339
1973	66.621	6.150	4.552	12.023	6.713	16.925	1.327	0.709	0.408	0.264	0.168	0.097
1974	0.071	2.709	0.416	9.903	50.549	39.185	21.284	9.311	4.311	2.666	1.610	17.320
1975	16.332	3.989	14.923	21.201	25.672	7.609	4.228	3.489	1.544	0.973	0.594	0.378
1976	7.813	0.580	1.798	4.669	91.609	33.242	12.616	6.956	3.423	2.163	1.286	51.123
1977	21.975	7.376	14.170	21.713	4.678	50.356	11.553	6.190	3.143	1.989	1.189	0.707
1978	7.653	5.444	1.923	1.496	0.877	1.197	6.202	1.120	0.357	0.203	0.119	0.086
1979	0.267	0.169	0.663	0.601	42.688	6.213	2.740	1.719	0.986	0.663	0.384	2.642
1980	0.489	4.625	2.696	3.288	6.472	2.936	1.004	76.982	14.562	7.095	3.919	24.721
1981	8.392	12.091	3.524	2.794	1.269	5.541	0.415	0.248	0.159	0.115	0.079	0.027
1982	0.181	0.314	0.070	0.205	0.035	0.035	0.000	0.020	0.000	0.011	0.019	0.018
1983	0.009	10.644	2.108	70.011	105.607	21.039	9.106	4.510	13.142	4.052	3.856	5.550
1984	3.223	1.956	2.248	18.871	217.886	19.562	9.694	4.914	2.839	1.804	1.105	0.733
1985	1.078	1.776	0.320	0.585	1.047	2.378	1.016	0.299	0.167	0.097	0.070	0.088
1986	0.073	0.492	1.052	20.425	2.043	11.940	10.556	1.958	1.051	0.680	1.677	37.611
1987	27.260	4.617	3.264	2.827	13.901	57.738	22.855	12.479	7.496	5.943	2.740	1.731
1988	4.133	3.152	1.821	1.009	26.168	89.182	8.550	4.221	2.531	1.533	0.928	0.552
1989	0.563	21.123	33.889	5.956	3.565	10.391	3.578	1.930	1.130	0.720	0.436	0.249
1990	0.597	0.798	2.113	28.475	12.871	12.793	3.792	92.730	10.586	5.298	3.063	1.827
1991	6.943	1.389	2.432	1.295	0.762	0.275	3.657	0.376	0.227	0.148	0.079	0.070
1992	0.035	0.048	10.395	0.531	7.931	34.408	11.235	1.675	0.935	0.591	0.353	0.200
1993	11.735	2.209	2.175	4.949	6.985	1.221	2.912	0.401	0.197	0.151	0.080	0.036
1994	3.861	7.060	8.079	4.101	1.100	1.061	20.353	44.377	13.035	6.779	3.606	2.150
1995	1.547	5.729	14.818	12.969	39.284	14.819	6.430	4.204	2.175	1.327	0.832	0.496
1996	12.563	11.038	1.788	1.731	2.331	6.882	21.248	3.524	1.817	1.143	2.229	0.661
1997	0.757	6.639	4.743	19.231	10.222	4.535	2.226	1.309	0.787	0.495	0.292	0.186
1998	0.094	0.629	0.604	7.220	27.625	25.443	5.273	2.456	1.390	0.874	1.061	0.367
1999	0.525	4.853	7.954	9.363	26.136	38.811	17.704	22.869	9.733	5.077	2.893	3.642
2000	3.823	40.036	9.190	5.561	14.798	3.364	16.277	4.965	2.405	1.530	0.841	1.384
2001	0.633	10.703	13.318	4.389	1.622	1.027	0.613	0.409	0.219	0.700	0.118	0.059
2002	0.023	2.346	1.480	0.058	1.627	0.832	0.167	0.062	0.044	0.027	0.018	0.018
2003	0.009	2.390	0.426	29.405	33.413	6.849	4.428	1.869	1.095	1.088	0.621	0.364
2004	0.210	1.245	1.620	1.250	1.826	5.877	0.462	0.289	0.163	0.100	0.054	0.045
2005	0.018	8.057	1.381	3.329	3.427	3.450	1.603	0.634	0.369	1.287	5.492	0.809
2006	2.258	6.351	18.289	5.689	1.157	0.435	2.162	0.186	0.413	0.167	0.044	0.022
2007	0.129	4.620	2.622	0.930	0.252	0.698	5.215	0.560	0.333	0.190	0.126	0.055
2008	0.063	16.025	1.193	11.676	12.590	4.256	0.664	1.582	0.513	0.333	1.663	1.089
2009	3.131	1.311	1.216	4.985	2.178	1.333	3.030	0.412	0.251	0.161	0.090	0.063

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UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	0.000	0.000	0.000	0.003	0.000	0.						

1926	0.003	0.000	0.023	0.002	0.198	0.027	0.016	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1927	0.000	0.021	0.009	0.834	0.133	0.102	0.077	0.044	0.008	0.036	0.000	0.000	0.000	0.007
1928	0.000	0.000	0.000	0.806	0.040	0.053	0.000	0.011	0.015	0.016	0.000	0.000	0.000	0.000
1929	0.000	0.003	0.000	24.833	4.117	2.238	1.195	0.748	0.425	0.277	0.164	0.098	0.000	0.000
1930	0.058	0.027	0.011	0.000	0.020	0.000	0.027	0.000	0.000	0.017	0.004	0.010	0.000	0.000
1931	0.000	0.012	0.000	0.000	16.453	3.780	1.436	2.957	2.416	1.300	0.782	0.444	0.000	0.000
1932	0.286	0.189	0.146	0.087	0.303	0.039	0.035	0.000	0.027	0.018	0.002	0.023	0.000	0.000
1933	0.000	0.000	0.007	0.000	0.006	0.000	0.025	0.012	0.010	0.015	0.003	0.000	0.000	0.000
1934	0.000	0.028	0.251	0.005	0.031	0.000	0.000	0.002	0.017	0.000	0.008	0.000	0.000	0.000
1935	0.000	0.000	0.007	0.112	0.016	0.093	0.034	0.009	0.000	0.019	0.000	0.009	0.000	0.000
1936	0.009	0.156	0.021	0.000	0.011	0.005	0.000	0.000	0.014	0.000	0.005	0.000	0.000	0.000
1937	0.000	0.003	0.003	0.000	0.000	0.000	0.000	0.024	0.000	0.004	0.000	0.004	0.000	0.000
1938	0.024	0.000	0.022	0.000	0.002	0.000	0.000	0.000	0.000	0.020	0.000	0.000	0.000	0.000
1939	0.000	0.001	0.000	0.017	0.000	0.000	0.000	0.003	10.274	1.596	1.022	0.625	0.380	0.000
1940	0.234	0.157	0.069	0.024	0.033	0.019	0.000	0.000	0.003	0.016	0.000	0.001	0.000	0.000
1941	0.000	0.007	0.000	0.000	0.054	0.000	0.013	0.000	0.000	0.000	0.000	0.011	0.000	0.000
1942	0.000	0.000	0.000	0.008	0.004	0.015	0.020	0.011	0.009	0.033	0.010	0.010	0.000	0.000
1943	0.015	0.000	0.000	0.023	0.002	0.001	0.000	0.000	0.000	0.009	0.004	0.024	0.000	0.000
1944	0.020	0.000	0.007	0.000	0.022	0.000	0.000	0.000	0.000	0.015	0.019	0.000	0.000	0.000
1945	0.023	0.003	0.001	0.023	0.000	0.003	0.000	0.003	0.000	0.000	0.013	0.000	0.000	0.000
1946	0.007	0.001	0.000	0.026	0.007	0.035	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000
1947	0.000	0.022	0.000	0.000	0.000	0.002	0.003	0.000	0.000	0.000	0.013	0.018	0.000	0.000
1948	0.000	0.019	0.000	0.000	0.001	0.000	0.015	0.011	0.000	0.000	0.018	0.000	0.000	0.000
1949	0.011	0.023	0.000	0.016	0.000	0.000	0.005	0.000	0.000	0.017	0.031	0.000	0.000	0.000
1950	0.000	0.008	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.015	0.000	0.000	0.000
1951	0.001	0.000	0.005	0.000	0.000	0.023	0.000	0.012	0.011	0.014	0.011	0.019	0.000	0.000
1952	0.007	0.000	0.000	0.250	0.013	0.005	0.000	0.010	0.014	0.004	0.010	0.000	0.000	0.000
1953	0.000	0.000	0.000	0.006	0.031	0.000	0.000	0.000	0.000	0.012	0.000	0.256	0.000	0.000
1954	0.148	0.125	0.064	0.050	0.023	0.015	0.000	0.014	0.000	0.003	0.019	0.003	0.000	0.000
1955	0.026	0.000	0.003	0.000	0.003	0.013	0.002	0.022	0.023	0.003	0.009	0.000	0.000	0.000
1956	0.000	0.016	0.008	4.332	0.036	0.010	0.075	0.027	0.000	0.014	0.000	10.956	0.000	0.000
1957	12.683	6.035	3.360	3.940	2.866	0.620	0.376	0.217	0.153	0.097	0.035	0.045	0.000	0.000
1958	0.018	0.016	0.009	0.241	0.036	0.000	0.025	0.094	0.000	0.000	0.012	0.000	0.000	0.000
1959	0.015	0.000	0.223	0.028	0.707	0.043	1.877	1.364	0.718	0.470	0.284	0.181	0.000	0.000
1960	0.094	0.849	10.173	6.939	3.125	1.340	0.816	0.519	0.411	0.217	0.109	0.153	0.000	0.000
1961	0.145	0.737	0.031	0.009	0.014	2.014	0.618	0.324	0.187	0.102	0.066	0.041	0.000	0.000
1962	0.031	0.120	1.519	0.955	0.092	0.377	0.005	0.000	0.054	73.239	7.968	4.174	0.000	0.000
1963	2.092	1.111	0.694	3.931	0.322	0.206	0.356	0.082	0.053	0.022	0.003	0.011	0.000	0.000
1964	6.063	5.302	2.217	1.183	0.659	0.462	0.397	0.186	0.931	0.062	0.060	0.577	0.000	0.000
1965	0.747	0.667	0.535	5.141	1.115	0.234	0.159	0.087	0.044	0.008	0.010	0.002	0.000	0.000
1966	0.000	0.035	0.193	0.004	0.051	0.507	0.374	0.005	0.005	0.000	0.000	0.000	0.000	0.000
1967	0.337	2.478	2.318	0.058	0.013	5.642	1.192	0.741	0.433	0.273	0.156	0.122	0.000	0.000
1968	0.080	0.034	0.680	0.051	0.009	5.796	1.230	0.780	0.456	0.296	0.182	0.725	0.000	0.000
1969	2.357	0.131	0.078	1.814	0.952	0.094	0.014	0.108	0.008	0.000	0.000	1.188	0.000	0.000
1970	2.004	1.517	0.480	17.176	2.160	1.289	1.206	6.766	1.270	0.807	0.499	0.301	0.000	0.000
1971	0.198	0.109	0.074	0.716	5.555	4.217	1.812	1.115	0.625	0.403	0.243	0.155	0.000	0.000
1972	0.105	0.084	0.059	0.008	0.023	0.017	0.000	0.004	0.016	0.000	1.100	22.070	0.000	0.000
1973	25.996	2.767	1.413	0.882	0.498	0.351	0.213	0.117	0.099	0.038	0.048	0.052	0.000	0.000
1974	0.000	0.016	0.023	3.901	6.089	5.562	1.237	0.807	0.467	0.298	0.196	11.966	0.000	0.000
1975	12.071	3.972	2.979	1.451	2.602	7.086	7.697	3.339	1.443	0.921	0.534	0.325	0.000	0.000
1976	0.370	0.142	2.480	3.848	33.910	9.073	4.699	2.441	1.252	0.774	0.486	3.246	0.000	0.000
1977	3.273	1.457	0.884	14.107	3.729	2.347	1.088	0.679	0.376	0.263	0.170	0.075	0.000	0.000
1978	0.124	0.444	3.551	0.007	0.482	0.093	0.011	0.000	0.000	0.018	0.000	0.022	0.000	0.000
1979	0.004	0.002	0.954	0.027	0.216	0.000	0.015	0.000	0.031	0.000	0.000	0.162	0.000	0.000
1980	0.014	0.327	0.106	0.155	0.000	0.004	0.001	12.540	4.480	2.430	1.331	11.105	0.000	0.000
1981	6.039	5.331	2.270	1.195	0.662	1.036	0.303	0.204	0.119	0.055	0.043	0.041	0.000	0.000
1982	0.020	0.014	0.000	0.029	0.017	0.000	0.000	0.004	0.008	0.000	0.022	0.000	0.000	0.000
1983	0.007	0.238	1.247	27.916	53.407	4.259	1.894	1.120	0.664	0.453	0.787	0.783	0.000	0.000
1984	0.273	0.155	0.164	3.156	10.441	3.345	1.548	0.961	0.774	0.385	0.214	0.156	0.000	0.000
1985	4.133	5.682	1.147	1.153	1.483	0.396	0.157	0.084	0.056	0.025	0.002	0.000	0.000	0.000
1986	0.026	0.005	0.399	0.196	0.013	0.004	0.000	0.000	0.193	0.043	0.296	53.775	0.000	0.000
1987	37.544	6.624	3.713	1.672	1.303	1.246	0.568	0.362	0.240	0.211	0.086	0.066	0.000	0.000
1988	0.120	0.160	1.882	0.314	5.870	1.969	1.066	0.687	0.404	0.263	0.159	0.099	0.000	0.000
1989	0.078	3.475	7.374	3.551	0.572	12.858	5.536	2.843	1.373	0.887	0.537	0.296	0.000	0.000
1990	0.584	0.111	0.620	0.728	0.211	0.240	0.120	10.009	1.914	1.123	0.654	0.382	0.000	0.000
1991	0.344	0.323	0.159	0.156	0.062	0.045	0.000	0.016	0.001	0.000	0.009	0.000	0.000	0.000
1992	0.000	0.338	0.265	0.005	0.025	0.082	0.032	0.000	0.000	0.000	0.000	0.009	0.000	0.000
1993	13.000	1.434	0.884	0.564	0.322	0.197	0.114	0.080	0.041	0.045	0.042	0.000	0.000	0.000
1994	1.252	0.397	0.229	0.165	0.097	0.073	0.019	0.035	0.017	0.002	0.000	0.000	0.000	0.000
1995	0.026	0.841	2.498	3.477	7.289	0.949	0.407	0.259	0.127	0.088	0.056	0.038	0.000	0.000
1996	0.007	0.020	0.018	0.014	0.448	0.027	0.373	0.000	0.001	0.000	0.000	0.509	0.000	0.000
1997	0.002	0.865	2.128	1.027	0.607	0.415	1.788	0.660	0.383	0.228	0.151	0.076	0.000	0.000
1998	2.300	0.035	0.398	0.002	0.000	0.000	0.008	0.000	0.008	0.000	0.000	0.015	0.000	0.000
1999	0.805	0.142	0.644	0.102	0.034	2.254	0.013	0.462	0.011	0.000	0.005	0.036	0.000	0.000
2000	0.000	7.193	2.859	3.494	0.842	0.543	0.311	0.212	0.129	0.075	0.056	6.360	0.000	0.000
2001	1.096	1.272	0.431	0.244	0.158	2.188	0.075	0.049	0.002	9.085	3.897	2.819	0.000	0.000
2002	1.044	0.599	0.493	0.231	1.617	0.081	0.066	0.040	0.008	0.017	0.011	0.006	0.000	0.000
2003	0.003	0.001	0.010	26.996	5.413	2.165	1.164	0.720	0.453	1.232	0.349	0.490	0.000	0.000
2004	0.079	0.065	0.032	0.037	0.058	0.017	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2005	0.013	0.000	0.036	0.446	0									

1930	0.036	0.099	0.053	0.000	0.000	0.063	0.000	0.026	0.015	0.011	0.032	0.007
1931	0.000	0.000	0.008	0.000	32.302	4.849	6.824	16.410	8.343	4.445	2.179	1.319
1932	0.847	0.462	0.279	0.155	1.112	0.143	0.084	0.052	0.000	0.000	0.000	0.000
1933	0.013	0.000	0.058	0.000	0.008	0.000	0.000	0.000	0.091	0.048	0.042	0.070
1934	0.000	0.058	0.053	0.008	0.012	0.001	0.039	0.044	0.026	0.000	0.000	0.040
1935	0.000	0.000	0.000	0.000	0.086	0.261	0.001	0.000	0.065	0.000	0.000	0.022
1936	0.000	0.410	0.056	0.032	0.050	0.000	0.034	0.000	0.000	0.000	0.000	0.000
1937	0.000	0.004	0.053	0.000	0.000	0.000	0.000	0.027	0.026	0.013	0.000	0.000
1938	0.050	0.000	0.018	0.051	0.000	0.030	0.020	0.000	0.052	0.007	0.000	0.010
1939	0.000	0.005	0.041	0.017	0.000	0.000	0.034	39.111	4.093	2.071	1.204	0.657
1940	0.496	0.327	0.161	0.097	0.038	0.021	0.020	0.000	0.000	0.014	0.021	0.038
1941	0.035	0.000	0.000	0.018	0.024	0.017	0.000	0.000	0.019	0.000	0.010	0.000
1942	0.000	0.069	0.000	0.026	0.006	0.028	0.038	0.000	0.000	0.039	0.050	0.000
1943	0.013	0.033	0.049	0.000	0.007	0.074	0.000	0.000	1.556	0.142	0.076	0.040
1944	0.025	0.040	0.054	0.021	0.000	0.053	0.014	0.026	0.038	0.006	0.061	0.000
1945	0.000	0.008	0.000	0.000	0.000	0.000	0.000	0.023	0.012	0.003	0.014	0.000
1946	0.000	0.000	0.029	0.016	0.000	0.000	0.008	0.004	0.000	0.000	0.000	0.000
1947	0.000	0.039	0.032	0.000	0.000	0.021	0.000	0.017	0.042	0.006	0.000	0.010
1948	0.061	0.000	0.000	0.045	0.041	0.004	1.723	1.691	0.008	0.020	0.000	0.016
1949	0.000	0.009	0.014	0.000	0.000	0.000	0.061	0.033	0.015	0.038	0.030	0.062
1950	0.000	0.063	0.000	0.037	0.051	0.049	0.000	0.000	0.003	0.000	0.039	0.000
1951	0.000	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.034	0.038	0.034	0.002
1952	0.025	0.000	0.029	0.000	0.000	0.000	0.048	0.000	0.000	0.000	0.000	0.033
1953	0.032	0.000	0.000	0.010	0.000	0.021	0.011	0.177	0.000	0.000	0.000	0.633
1954	0.943	0.414	0.177	0.107	0.110	0.058	0.080	0.040	0.000	0.030	0.000	0.000
1955	0.000	0.000	0.031	0.006	0.030	0.037	0.058	0.000	0.000	0.000	0.010	0.023
1956	0.021	0.000	0.000	8.232	20.466	6.235	0.270	0.185	0.122	0.169	0.167	3.834
1957	18.644	4.872	5.600	11.774	3.724	1.189	0.800	0.459	0.268	0.169	0.143	0.081
1958	0.134	0.062	0.000	0.890	0.065	0.000	0.029	0.010	0.000	0.021	0.000	0.630
1959	0.117	0.036	0.145	0.026	0.202	0.742	7.053	1.551	0.674	0.409	0.217	0.103
1960	0.378	2.726	5.388	5.052	2.462	0.670	0.302	0.184	16.013	7.079	2.844	1.535
1961	1.027	0.576	0.418	0.263	0.108	10.092	7.908	2.900	1.613	1.006	0.668	0.359
1962	0.290	5.425	1.521	0.804	0.470	6.115	0.586	0.395	1.096	62.555	7.380	3.528
1963	1.958	1.104	8.906	1.446	0.573	0.475	0.254	0.104	0.047	0.013	0.033	0.000
1964	12.800	7.420	2.419	1.505	0.828	0.592	0.357	0.190	0.115	0.112	0.216	0.201
1965	7.390	1.761	1.086	3.019	0.408	0.247	0.091	0.145	0.054	0.074	0.036	0.000
1966	0.014	0.000	0.130	1.192	0.026	0.076	1.877	0.000	0.011	0.913	0.049	0.078
1967	1.298	0.237	0.000	0.054	5.675	0.063	0.000	0.000	0.000	0.058	0.019	0.000
1968	0.000	0.044	0.437	0.015	0.000	26.296	11.479	3.251	1.762	1.073	0.633	0.355
1969	4.260	0.890	0.242	0.201	0.158	0.598	0.057	1.135	0.073	0.033	0.042	0.355
1970	3.033	1.456	0.811	3.156	0.779	2.172	0.228	62.122	2.633	1.851	1.006	0.617
1971	0.600	0.168	0.930	3.381	15.178	10.484	5.171	2.534	1.482	0.908	0.629	0.304
1972	0.170	0.726	0.135	3.997	0.115	0.032	3.547	0.450	0.174	0.085	8.663	26.238
1973	28.065	2.467	2.289	1.201	0.585	0.483	0.218	0.291	0.512	0.403	0.172	0.137
1974	0.119	3.981	0.086	12.720	14.645	6.701	1.461	0.832	0.492	0.286	0.198	4.253
1975	2.648	0.958	2.480	11.580	6.016	36.908	11.522	4.156	2.032	1.544	0.750	0.460
1976	0.872	0.226	6.050	1.389	63.793	21.066	8.631	4.659	2.101	1.350	0.848	0.478
1977	0.330	0.206	0.805	12.406	2.773	1.717	1.403	0.673	0.448	2.011	0.186	0.136
1978	1.442	0.028	0.412	0.025	0.017	0.307	0.138	0.021	0.042	0.007	0.001	0.000
1979	0.067	0.064	0.051	0.001	3.037	0.058	0.000	0.039	0.000	0.000	0.000	10.347
1980	0.226	0.755	2.802	1.407	0.157	0.167	0.091	25.988	10.924	6.288	3.027	10.275
1981	4.903	2.006	1.200	2.885	0.474	7.371	0.648	0.331	0.150	0.134	0.020	0.034
1982	0.058	0.240	0.000	0.000	0.000	0.080	0.027	0.000	0.044	2.563	1.129	0.790
1983	0.486	3.850	4.703	20.712	75.689	3.746	1.855	1.134	4.506	5.658	4.914	2.309
1984	1.595	0.830	0.553	2.739	14.243	6.473	2.974	1.791	17.674	19.729	5.284	3.812
1985	11.641	19.346	2.966	1.784	0.938	0.693	1.334	0.233	1.411	0.085	0.058	0.080
1986	0.060	0.000	0.034	12.461	0.184	20.679	1.469	0.881	5.093	2.039	3.485	122.791
1987	64.504	6.862	3.509	1.869	17.006	12.570	5.301	2.603	1.473	0.971	0.551	0.345
1988	1.277	1.143	2.973	2.062	11.043	3.665	0.936	0.526	0.223	0.173	0.137	0.149
1989	0.023	14.884	19.283	3.613	1.720	19.310	3.273	0.968	0.607	0.321	0.311	0.181
1990	6.462	0.135	1.829	3.569	3.136	14.256	3.916	24.326	5.504	2.733	1.569	0.880
1991	0.593	0.326	0.227	0.160	0.046	3.080	0.047	0.000	0.000	0.001	0.000	0.000
1992	0.068	0.029	2.248	0.013	0.314	0.015	0.000	0.000	0.000	0.000	0.040	0.007
1993	35.278	3.091	1.768	1.507	0.593	0.461	0.311	0.162	0.104	0.071	0.000	0.079
1994	10.427	2.282	0.980	0.520	0.621	1.101	2.385	1.157	2.028	0.872	0.596	0.365
1995	1.241	0.839	0.242	1.201	10.741	10.806	2.710	1.647	0.983	0.842	0.460	0.264
1996	8.187	0.419	0.291	0.976	0.766	0.000	1.789	0.027	0.035	0.885	0.401	0.216
1997	0.196	5.730	8.313	2.315	4.277	0.960	0.563	0.285	0.203	0.145	0.019	0.024
1998	0.010	2.220	0.772	1.845	0.000	0.029	0.013	0.048	0.010	0.017	0.033	0.229
1999	31.490	6.208	9.995	1.632	0.642	39.299	4.975	3.723	2.340	1.386	0.808	0.432
2000	0.342	10.127	0.453	0.126	0.058	0.287	0.018	0.067	0.000	0.057	0.012	0.058
2001	0.042	0.000	0.032	0.027	0.000	0.180	0.004	0.049	0.000	0.059	0.028	0.000
2002	0.000	0.046	0.000	0.029	0.000	0.137	0.029	0.000	0.000	0.000	0.004	0.000
2003	0.044	3.670	0.000	7.939	2.289	1.012	0.468	0.352	0.204	0.806	0.264	0.342
2004	0.046	0.076	0.009	0.347	5.153	2.456	0.044	0.224	1.913	0.125	0.016	0.009
2005	0.000	0.000	0.234	0.022	0.048	0.030	0.000	0.000	0.046	0.039	2.585	0.739
2006	0.104	0.224	0.523	0.007	0.130	0.006	0.129	0.021	0.060	0.011	0.000	0.018
2007	2.090	1.852	0.000	0.053	0.729	34.572	23.104	12.099	6.076	2.973	1.703	1.089
2008	0.686	0.363	0.243	0.123	0.106	0.098	0.008	0.036	0.000	0.000	0.000	0.000
2009	1.157	0.043	0.055	0.393	0.111	28.202	1.495	0.627	0.392	0.266	0.130	0.087

B.6. Ni19_i

FILE : Ni19i

UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	6.370	6.420	7.230	6.660	5.160	5.820	5.920	5.130	4.830	4.570	4.300	4.450
1921	4.770	14.250	13.820	8.410	7.100	6.640	5.780	5.210	5.050	4.750	4.700	4.450
1922	4.970	6.540	5.750	5.950	6.010	4.820	4.430	4.100	3.680	3.350	3.020	2.650
1923	2.420	2.960	3.900	3.280	3.290	4.030	3.980	3.740	3.610	3.480	3.380	3.720
1924	4.310	15.820	11.670	11.880	16.360	368.480	126.850	37.870	16.920	14.810	12.860	9.290
1925	10.880	10.450	7.950	5.740	5.090	5.780	5.760	4.960	5.080	4.920	4.410	4.550
1926	5.770	6.710	6.310	5.360	5.240	6.820	6.230	5.440	5.260	5.360	5.510	5.320
1927	5.880	5.650	5.430	6.100	6.720	6.360	5.540	5.090	4.860	4.610	4.460	4.280
1928	4.440	4.060	3.420	3.400	3.290	5.180	6.420	5.520	6.010			

1932	7.460	6.930	7.060	6.390	6.020	5.650	5.030	4.530	4.080	3.830	3.570	3.220
1933	3.030	4.210	5.590	9.380	8.690	7.500	7.520	6.970	7.040	7.630	8.010	7.550
1934	6.680	7.340	17.330	12.570	9.760	8.960	7.630	7.050	21.150	11.610	9.500	9.190
1935	7.180	5.870	4.820	5.960	7.990	8.720	8.150	8.320	9.310	7.640	7.490	6.520
1936	7.030	13.720	9.820	7.150	9.640	9.210	7.220	6.730	5.780	5.650	5.290	5.110
1937	5.010	5.050	7.130	7.180	8.190	10.610	8.990	8.630	7.230	8.160	7.870	6.600
1938	6.940	7.010	6.620	6.700	17.160	17.460	11.940	9.740	10.260	10.590	10.070	12.480
1939	11.250	17.210	14.020	10.430	7.400	5.940	6.470	17.330	37.060	21.330	13.300	12.230
1940	10.440	9.420	12.790	10.570	6.520	5.840	6.010	5.390	4.770	4.430	4.040	3.820
1941	3.730	4.040	3.890	4.530	5.140	5.740	6.530	5.580	5.460	5.370	5.340	5.930
1942	6.890	8.300	13.520	12.610	9.690	12.450	34.840	20.060	13.630	14.660	19.740	15.190
1943	14.650	16.370	11.630	6.950	6.720	8.050	5.900	5.210	5.720	6.260	5.620	7.000
1944	8.240	9.330	8.570	5.760	5.920	15.900	10.660	8.080	6.830	6.050	5.280	4.840
1945	4.600	4.030	3.760	6.540	5.420	4.110	3.950	3.590	3.270	2.990	2.710	2.480
1946	3.040	3.780	3.520	3.150	4.540	7.170	6.370	5.560	5.440	5.440	5.270	5.330
1947	5.510	7.160	9.550	8.780	7.040	6.980	6.630	5.770	5.000	4.580	4.210	3.950
1948	4.130	4.590	4.320	4.390	5.410	6.670	8.160	8.240	7.700	6.670	5.800	5.530
1949	6.200	7.740	12.620	13.160	9.260	9.540	8.940	7.410	6.800	6.210	5.420	4.990
1950	4.680	4.230	4.660	4.320	3.370	3.210	3.130	2.790	2.560	2.400	3.490	4.480
1951	5.100	4.360	4.350	4.530	4.100	3.860	3.580	3.640	3.690	4.060	4.060	3.550
1952	3.520	3.910	4.820	6.190	7.790	5.990	4.570	3.670	3.280	3.080	3.000	3.140
1953	3.630	5.420	5.760	5.010	6.490	7.270	6.420	8.420	9.090	7.360	7.970	8.540
1954	32.050	21.910	11.790	10.050	11.140	10.750	11.750	10.490	9.720	8.440	7.190	5.910
1955	6.140	7.890	9.430	7.010	16.600	15.920	9.780	8.420	8.650	7.960	6.610	6.600
1956	7.410	8.800	58.030	27.570	13.620	12.210	19.930	13.140	8.770	8.460	8.480	28.060
1957	80.380	30.530	14.200	11.300	16.630	10.930	9.290	9.990	7.190	6.790	5.910	5.590
1958	5.980	6.010	5.820	6.660	6.890	5.880	4.310	4.580	4.230	3.540	3.410	3.450
1959	4.060	4.130	4.910	4.140	4.460	5.990	7.390	7.550	6.320	5.760	5.860	6.090
1960	6.210	10.910	80.350	32.300	17.680	14.080	23.500	15.670	15.550	12.010	9.990	8.940
1961	9.840	10.230	8.670	6.940	5.730	5.950	6.120	5.410	4.780	4.380	4.370	4.140
1962	4.480	5.830	6.480	8.050	7.040	7.630	8.740	7.290	8.190	76.630	31.860	15.350
1963	10.770	11.320	7.970	8.400	8.820	6.290	6.390	6.830	5.600	5.390	5.110	4.780
1964	6.200	7.090	6.410	5.760	4.590	4.000	3.560	3.290	3.380	3.500	3.760	4.220
1965	5.440	6.610	6.540	7.470	8.770	6.310	5.080	4.900	4.710	4.370	4.190	4.170
1966	4.130	4.190	4.550	5.240	9.950	10.270	19.990	13.720	8.030	8.360	7.540	6.000
1967	5.990	7.750	7.070	5.940	5.490	6.380	5.850	4.870	4.540	4.300	4.530	4.910
1968	4.970	5.200	6.460	6.030	4.840	8.830	10.240	9.670	9.010	8.020	7.870	6.720
1969	9.720	9.060	7.000	5.590	5.090	4.830	4.510	4.570	4.420	3.980	3.870	4.320
1970	6.630	8.750	7.340	7.300	7.020	5.580	6.070	45.360	22.930	12.990	11.870	10.460
1971	11.460	10.360	8.860	11.120	48.080	24.550	12.060	11.400	12.390	10.570	8.870	7.090
1972	6.350	6.240	5.890	5.560	6.370	6.310	6.080	5.790	5.100	4.800	5.320	11.210
1973	9.340	9.530	9.290	11.050	10.630	7.720	7.530	6.880	6.600	5.840	5.430	4.910
1974	4.510	5.000	6.170	12.240	11.290	9.880	8.640	9.280	7.700	6.800	5.940	7.640
1975	8.660	7.930	10.270	14.050	15.620	61.600	37.010	18.370	12.690	9.310	7.570	6.730
1976	7.870	8.480	8.600	14.090	150.370	59.160	22.500	7.410	6.630	5.900	5.970	6.930
1977	8.370	8.110	8.690	11.210	12.400	11.580	11.720	10.110	8.470	7.680	7.380	7.330
1978	9.730	11.010	9.380	7.180	5.710	5.050	5.060	4.980	4.410	4.130	4.170	4.690
1979	4.900	4.460	4.780	4.470	4.070	3.520	3.090	2.830	2.490	2.190	2.020	2.900
1980	3.680	4.220	4.070	4.830	6.510	5.010	4.260	5.350	6.840	6.800	8.670	11.790
1981	12.760	14.960	13.770	10.010	8.800	8.110	8.270	6.610	5.570	5.150	4.740	4.400
1982	5.060	5.110	4.090	3.680	3.280	3.030	2.780	2.480	2.200	2.140	2.610	2.840
1983	3.340	5.330	6.690	123.480	184.140	54.160	23.720	14.060	12.060	14.490	12.640	10.600
1984	9.620	9.760	6.800	6.930	34.070	17.590	7.910	6.410	5.620	5.380	4.980	4.800
1985	15.980	10.030	7.290	7.410	7.390	6.130	5.560	4.940	4.560	4.220	3.810	3.540
1986	3.680	3.750	4.840	6.010	5.670	5.920	6.060	5.480	6.130	6.590	13.270	245.230
1987	86.550	30.830	16.070	11.440	12.530	17.790	12.820	8.660	7.490	7.550	7.530	6.860
1988	7.970	9.490	16.400	10.040	10.600	10.210	6.150	5.760	5.610	5.410	4.940	4.630
1989	4.630	23.830	12.510	8.750	6.180	7.120	8.170	6.490	5.650	5.270	5.570	5.470
1990	5.920	5.870	5.830	6.690	8.060	14.910	9.980	9.330	10.160	9.620	8.820	7.130
1991	7.550	6.620	5.540	5.050	4.490	4.060	3.610	3.100	2.670	2.340	2.080	1.900
1992	2.010	2.650	2.870	2.360	2.370	2.560	2.420	2.150	2.040	1.960	2.020	2.150
1993	14.000	9.510	9.030	9.630	7.290	6.360	5.650	4.520	4.180	3.950	4.000	3.760
1994	4.910	5.830	4.730	3.790	3.360	3.510	4.850	6.180	6.990	8.740	7.620	6.670
1995	7.240	9.480	15.790	15.760	49.110	26.620	15.250	11.460	9.870	9.040	8.660	6.440
1996	6.640	7.470	6.210	6.970	8.590	7.750	7.680	7.940	8.150	8.390	7.640	8.420
1997	10.600	30.060	16.300	8.850	8.430	7.630	5.950	5.700	4.980	4.590	4.220	3.920
1998	4.510	4.980	5.000	5.310	5.860	5.220	4.600	4.420	4.220	4.020	3.980	4.020
1999	5.350	5.490	5.420	10.990	9.600	8.540	8.910	11.610	11.420	8.690	6.840	6.040
2000	6.380	31.360	19.270	11.640	8.350	6.650	5.550	5.080	4.650	4.260	3.870	4.440
2001	6.020	7.080	9.160	8.870	6.620	5.410	5.160	4.720	4.420	19.560	12.410	13.180
2002	11.950	11.810	9.240	6.730	5.920	4.990	4.470	4.120	4.030	3.870	3.440	3.380
2003	3.340	3.380	3.050	3.010	4.430	5.380	4.670	4.280	3.730	4.090	4.290	4.190
2004	4.420	4.770	4.250	4.440	5.350	6.790	6.680	5.400	5.080	4.940	4.750	4.490

B.7. Niii6_i

FILE : Niii6_i

UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	7.590	13.960	12.770	5.020	5.530	17.870	6.050	3.080	1.710	0.860	0.450	1.790
1921	6.060	26.110	25.990	10.330	6.300	3.820	2.160	1.320	1.050	0.710	2.090	1.630
1922	5.600	22.690	14.020	12.600	8.390	5.140	3.320	1.780	0.850	0.510	0.300	0.150
1923	2.520	3.790	22.200	6.780	9.860	11.490	6.060	3.650	1.980	0.900	0.590	3.020
1924	3.180	12.040	24.740	8.280	4.920	99.820	10.980	5.200	2.600	1.900	1.270	3.200
1925	4.190	3.910	5.540	7.240	4.960	12.410	4.380	2.290	1.590	0.880	0.400	1.980
1926	2.150	2.500	5.520	4.810	10.020	10.040	4.720	1.940	0.830	1.470	1.200	0.820
1927	6.400	6.150	10.130	25.440	7.040	3.650	2.100	1.040	0.450	0.220	0.390	1.580
1928	2.830	4.350	5.530	3.780	3.370	24.990	7.950	3.900	3.000	2.260	1.150	4.520
1929	11.450	12.440	9.810	16.920	10.910	6.120	3.320	1.630	0.800	0.490	0.770	0.890
1930	0.650	3.690	5.600	3.730	4.470	3.450	3.220	1.870	0.810	0.590	0.400	0.170
1931	0.550	0.950	3.720	2.050	19.890	11.730	6.140	6.430	4.250	2.060	0.930	0.720
1932	2.150	8.860	15.020	14.300	13.610	7.100	3.980	1.940	0.860	0.890	0.720	0.420
1933	1.270	22.340	32.350	25.540	8.100	12.710	9.270	7.980	4.700	3.500	4.660	2.780
1934	1.630	10.320	17.180	8.790	6.640	4.570	2.970	2.880				

1939	5.060	22.560	12.260	17.220	5.660	7.180	6.070	5.160	6.910	4.600	2.120	2.160
1940	2.730	7.810	29.410	9.430	8.020	5.600	6.130	3.370	1.340	1.130	0.920	1.090
1941	1.640	4.610	5.920	8.230	6.680	11.020	4.530	4.920	4.450	2.750	1.570	1.720
1942	4.700	13.670	16.680	6.540	5.850	7.170	34.420	10.480	6.150	8.470	10.910	6.670
1943	7.260	15.840	15.150	14.420	32.630	9.810	4.060	1.600	3.070	2.280	1.000	3.410
1944	7.770	4.410	3.510	8.770	4.500	16.040	5.420	2.910	2.270	1.850	1.610	1.340
1945	1.400	1.380	2.150	7.750	13.880	10.290	13.820	2.570	1.710	1.360	1.250	2.420
1946	3.450	15.480	13.000	9.090	12.340	5.770	4.960	2.960	1.440	0.840	0.460	0.780
1947	3.070	10.560	10.950	19.680	38.670	23.390	9.840	3.550	2.320	0.600	1.610	2.110
1948	2.940	14.110	7.880	27.190	13.860	10.250	8.510	5.500	3.050	1.540	0.730	0.920
1949	3.110	7.970	16.100	11.480	6.810	11.800	9.360	4.940	3.070	2.260	2.320	2.140
1950	1.570	2.910	10.490	14.910	6.640	11.530	9.730	3.130	2.360	2.150	4.700	3.650
1951	7.570	4.340	10.210	4.770	4.790	2.540	2.280	1.550	1.620	1.280	1.280	1.110
1952	2.000	4.930	11.980	5.740	6.380	5.720	5.940	2.390	1.610	1.450	1.170	1.240
1953	1.750	5.440	7.490	7.120	11.010	10.210	9.250	7.710	3.500	2.640	1.430	1.450
1954	4.330	6.820	8.540	23.370	31.570	19.860	4.770	2.500	2.350	2.750	1.810	1.930
1955	2.650	3.870	12.970	10.100	73.650	16.280	5.200	2.940	2.310	1.620	1.310	1.760
1956	7.260	9.950	13.810	8.690	13.080	9.710	6.050	3.520	2.250	8.110	3.530	23.210
1957	37.140	10.310	4.650	19.560	12.540	5.080	5.400	3.130	1.520	0.900	0.630	1.550
1958	2.300	16.390	11.730	12.960	8.900	4.160	1.640	2.780	1.730	1.200	1.280	1.780
1959	2.360	7.090	10.770	5.280	12.940	7.900	7.080	3.990	1.720	0.860	1.140	1.780
1960	4.560	22.730	43.880	13.050	8.480	6.170	8.550	4.100	3.220	2.560	2.230	1.360
1961	2.930	7.820	7.140	6.680	4.960	4.800	2.930	2.250	1.370	1.170	1.000	1.090
1962	1.740	16.550	16.930	12.040	6.500	6.830	3.370	1.210	6.030	25.220	5.510	3.040
1963	2.950	8.360	5.450	18.810	6.820	2.510	2.560	1.370	1.090	1.160	1.210	1.050
1964	17.940	10.800	13.050	7.400	6.590	2.670	1.910	1.310	1.280	1.280	0.980	1.580
1965	1.520	2.330	2.810	10.690	14.790	3.510	1.720	1.600	1.210	1.020	0.870	1.000
1966	1.700	1.860	5.340	7.250	25.570	11.830	5.950	3.570	2.380	1.810	1.530	1.420
1967	1.140	10.600	9.380	4.620	2.640	5.660	3.800	2.370	1.950	1.860	1.690	1.790
1968	0.870	3.790	4.860	7.320	4.190	18.880	9.980	6.610	3.490	1.720	0.860	1.980
1969	13.800	8.040	9.620	5.440	4.770	2.650	1.560	1.180	0.870	0.550	0.570	0.940
1970	4.350	6.860	6.300	14.130	5.270	8.870	9.480	7.950	4.500	2.160	1.220	1.020
1971	5.040	14.810	23.830	38.750	29.920	16.220	7.670	6.340	4.070	2.020	1.010	0.510
1972	0.760	6.610	4.430	6.060	33.610	10.260	8.820	4.940	2.250	1.090	1.650	6.580
1973	5.300	11.960	11.200	31.920	7.340	6.730	5.880	3.400	1.790	1.930	1.390	0.560
1974	1.410	18.060	16.390	19.630	15.540	8.270	7.800	4.270	1.920	0.990	0.460	5.910
1975	2.960	7.900	26.200	14.860	22.940	14.300	8.230	6.990	4.110	1.860	0.970	0.510
1976	5.860	5.820	8.810	13.220	20.460	9.560	5.380	2.820	1.290	0.620	0.450	2.140
1977	2.830	3.660	6.670	26.960	13.910	9.850	6.720	3.960	1.940	1.290	1.320	1.780
1978	17.330	12.490	9.230	7.520	5.520	5.610	4.730	2.910	1.390	0.790	1.790	2.720
1979	6.570	7.930	8.850	18.460	19.010	6.460	2.650	1.630	0.900	0.430	0.320	1.940
1980	1.480	14.050	12.610	12.100	11.250	5.460	2.420	1.490	1.970	1.640	1.590	2.850
1981	3.370	6.930	4.900	8.690	4.100	9.280	5.440	2.870	1.240	0.660	0.350	0.280
1982	8.540	4.270	2.490	1.650	0.830	2.280	2.420	2.870	2.020	1.170	1.730	1.170
1983	2.430	46.490	10.330	245.140	12.320	15.300	7.150	3.290	2.690	5.670	6.390	4.090
1984	7.080	5.510	6.350	6.100	54.660	10.680	4.260	1.500	0.750	0.440	0.230	0.220
1985	3.910	3.470	7.010	18.200	10.780	8.510	5.730	3.020	1.670	1.050	0.510	0.330
1986	1.100	2.060	9.800	6.090	4.660	9.740	6.290	3.890	2.190	1.180	3.580	25.670
1987	14.780	12.230	6.820	8.600	14.380	9.950	5.000	2.250	2.120	1.970	1.710	1.290
1988	16.780	6.970	23.370	6.790	25.640	10.300	5.990	3.260	3.120	2.330	1.180	0.630
1989	3.140	51.930	16.250	9.870	6.300	5.850	4.820	2.650	1.090	0.520	0.810	0.660
1990	2.690	5.250	10.610	51.090	21.010	14.890	6.080	5.430	6.430	4.410	2.170	1.370
1991	2.170	2.870	7.740	7.400	8.640	3.750	2.120	1.220	0.590	0.320	0.160	0.140
1992	0.690	5.430	11.640	5.900	7.720	10.320	5.500	3.060	1.650	0.820	0.840	0.950
1993	24.430	8.000	18.690	9.830	6.730	14.470	5.360	2.010	0.890	0.480	0.320	0.220
1994	5.430	6.330	17.160	9.400	3.950	5.100	3.670	2.370	1.400	0.770	0.440	0.290
1995	7.390	17.450	55.500	24.350	51.050	18.870	8.780	6.490	3.840	2.530	1.780	0.810
1996	7.040	4.910	11.180	17.820	8.040	29.790	12.720	8.260	7.180	5.120	3.420	3.080
1997	7.370	21.820	6.790	12.600	8.260	7.780	4.230	2.400	1.270	0.620	0.310	0.390
1998	4.270	7.530	23.110	10.160	5.210	3.590	3.110	2.320	1.430	0.810	0.990	0.800
1999	3.030	3.300	36.710	22.260	63.740	16.810	11.910	8.070	4.390	2.010	0.890	1.130
2000	6.540	32.910	18.140	7.580	7.530	6.200	4.380	2.570	1.310	0.870	0.560	1.450
2001	4.970	26.260	7.210	7.110	4.370	2.880	2.030	1.130	0.600	2.030	2.040	1.710
2002	1.450	1.960	5.150	5.220	8.000	3.480	1.320	0.570	1.000	0.850	0.470	0.440
2003	0.410	3.900	2.280	8.150	18.660	11.680	4.940	1.800	0.760	2.570	1.840	0.940
2004	0.700	3.990	6.900	10.060	8.530	10.430	5.090	2.780	2.130	1.670	1.420	1.190

B.8. Niii7_i

FILE : Niii7_i
UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	2.230	4.090	3.730	1.470	1.620	5.230	1.770	0.910	0.500	0.250	0.130	0.520
1921	1.770	7.650	7.600	3.020	1.850	1.110	0.630	0.380	0.300	0.200	0.610	0.470
1922	1.640	6.640	4.110	3.690	2.460	1.500	0.960	0.530	0.250	0.150	0.080	0.040
1923	0.730	1.110	6.490	1.990	2.890	3.360	1.780	1.070	0.580	0.270	0.180	0.880
1924	0.930	3.520	7.240	2.430	1.430	29.210	3.210	1.520	0.760	0.550	0.380	0.940
1925	1.230	1.150	1.620	2.110	1.450	3.640	1.280	0.670	0.460	0.260	0.120	0.580
1926	0.630	0.720	1.620	1.400	2.930	2.950	1.380	0.560	0.240	0.440	0.350	0.240
1927	1.870	1.790	2.970	7.440	2.060	1.070	0.620	0.300	0.130	0.060	0.120	0.460
1928	0.830	1.270	1.630	1.100	0.990	7.310	2.330	1.150	0.880	0.660	0.340	1.320
1929	3.350	3.630	2.870	4.950	3.200	1.800	0.960	0.480	0.230	0.140	0.230	0.260
1930	0.190	1.080	1.650	1.100	1.310	1.010	0.940	0.550	0.250	0.170	0.110	0.040
1931	0.160	0.280	1.090	0.600	5.820	3.430	1.800	1.880	1.250	0.610	0.270	0.210
1932	0.640	2.590	4.390	4.190	3.990	2.080	1.160	0.570	0.250	0.250	0.210	0.130
1933	0.380	6.540	9.470	7.470	2.370	3.730	2.720	2.340	1.370	1.030	1.360	0.820
1934	0.470	3.020	5.040	2.570	1.940	1.340	0.870	0.850	0.610	0.330	0.200	0.150
1935	0.250	0.340	1.380	5.950	3.150	3.740	1.580	2.160	1.340	0.620	0.280	0.410
1936	1.420	5.790	1.950	7.940	9.570	3.190	1.520	0.730	0.350	0.190	0.100	0.630
1937	1.000	0.830	3.320	2.010	1.740	1.250	3.820	1.590	0.970	0.830	0.520	0.360
1938	2.790	1.820	5.490	6.530	20.260	6.550	2.470	1.370	0.830	0.820	0.660	1.160
1939	1.470	6.600	3.590	5.040	1.660	2.110	1.780	1.510	2.020	1.350	0.610	0.630
1940	0.790	2.290	8.600	2.760	2.350	1.650	1.790	0.990	0.390	0.330	0.260	0.320
1941	0.480	1.350	1.730	2.410	1.960	3.220	1.330	1.440	1.300	0.800	0.460	0.500
1942	1.380	4.010	4.87									

1944	2.270	1.300	1.030	2.570	1.310	4.690	1.580	0.850	0.650	0.540	0.470	0.400
1945	0.410	0.400	0.630	2.270	4.060	3.010	4.050	0.750	0.510	0.400	0.360	0.710
1946	1.010	4.530	3.800	2.650	3.610	1.700	1.450	0.860	0.410	0.250	0.130	0.220
1947	0.900	3.090	3.200	5.760	11.310	6.840	2.880	1.040	0.680	0.170	0.470	0.620
1948	0.850	4.130	2.310	7.960	4.050	3.000	2.490	1.600	0.900	0.450	0.210	0.280
1949	0.910	2.330	4.710	3.360	1.990	3.450	2.740	1.450	0.900	0.670	0.670	0.630
1950	0.460	0.850	3.080	4.370	1.940	3.380	2.850	0.920	0.690	0.630	1.370	1.070
1951	2.220	1.270	2.980	1.390	1.400	0.750	0.670	0.450	0.480	0.380	0.380	0.320
1952	0.580	1.440	3.500	1.680	1.870	1.670	1.730	0.700	0.470	0.420	0.340	0.360
1953	0.520	1.590	2.190	2.090	3.230	2.990	2.700	2.260	1.020	0.770	0.420	0.420
1954	1.260	1.990	2.500	6.840	9.240	5.810	1.400	0.730	0.690	0.800	0.530	0.560
1955	0.780	1.140	3.800	2.960	21.560	4.760	1.520	0.860	0.670	0.470	0.380	0.510
1956	2.120	2.910	4.040	2.540	3.830	2.840	1.770	1.030	0.650	2.370	1.040	6.790
1957	10.870	3.010	1.360	5.730	3.670	1.480	1.580	0.910	0.450	0.260	0.180	0.460
1958	0.670	4.800	3.430	3.790	2.600	1.220	0.480	0.810	0.510	0.350	0.380	0.510
1959	0.690	2.080	3.150	1.550	3.790	2.320	2.070	1.160	0.500	0.250	0.330	0.520
1960	1.330	6.650	12.840	3.820	2.480	1.800	2.500	1.200	0.940	0.740	0.650	0.390
1961	0.850	2.290	2.080	1.960	1.450	1.400	0.860	0.660	0.400	0.340	0.300	0.330
1962	0.510	4.840	4.960	3.520	1.900	1.990	0.990	0.350	1.760	7.380	1.620	0.890
1963	0.860	2.460	1.600	5.500	2.000	0.740	0.740	0.400	0.320	0.330	0.350	0.310
1964	5.250	3.160	3.820	2.170	1.930	0.780	0.560	0.380	0.370	0.370	0.280	0.460
1965	0.440	0.690	0.820	3.120	4.330	1.030	0.510	0.460	0.350	0.310	0.250	0.300
1966	0.500	0.540	1.560	2.130	7.480	3.460	1.740	1.040	0.690	0.520	0.450	0.420
1967	0.330	3.110	2.750	1.350	0.780	1.660	1.110	0.690	0.580	0.550	0.500	0.510
1968	0.260	1.110	1.430	2.130	1.220	5.520	2.920	1.920	1.020	0.500	0.250	0.580
1969	4.040	2.350	2.820	1.600	1.400	0.780	0.460	0.340	0.250	0.160	0.160	0.270
1970	1.280	2.010	1.850	4.140	1.550	2.590	2.780	2.330	1.320	0.630	0.350	0.290
1971	1.470	4.330	6.970	11.350	8.760	4.740	2.240	1.860	1.200	0.590	0.290	0.140
1972	0.220	1.940	1.300	1.770	9.840	3.000	2.570	1.450	0.650	0.320	0.480	1.920
1973	1.560	3.500	3.270	9.340	2.150	1.970	1.730	0.990	0.520	0.560	0.410	0.160
1974	0.410	5.280	4.800	5.740	4.550	2.420	2.290	1.250	0.560	0.290	0.130	1.730
1975	0.870	2.310	7.660	4.350	6.720	4.180	2.410	2.040	1.210	0.550	0.290	0.140
1976	1.710	1.710	2.580	3.870	5.980	2.810	1.580	0.820	0.380	0.180	0.130	0.630
1977	0.830	1.070	1.950	7.890	4.080	2.880	1.970	1.160	0.570	0.380	0.390	0.530
1978	5.070	3.660	2.700	2.190	1.610	1.630	1.380	0.860	0.400	0.230	0.520	0.790
1979	1.920	2.320	2.590	5.400	5.560	1.890	0.780	0.480	0.270	0.120	0.090	0.570
1980	0.430	4.110	3.700	3.550	3.290	1.590	0.710	0.430	0.570	0.480	0.470	0.830
1981	0.990	2.040	1.440	2.550	1.200	2.720	1.590	0.850	0.360	0.190	0.100	0.080
1982	2.500	1.250	0.740	0.490	0.240	0.670	0.710	0.850	0.590	0.350	0.510	0.340
1983	0.720	13.600	3.020	71.740	3.600	4.470	2.090	0.960	0.780	1.650	1.870	1.190
1984	2.070	1.620	1.860	1.790	16.000	3.130	1.240	0.440	0.220	0.130	0.070	0.060
1985	1.140	1.020	2.050	5.320	3.150	2.490	1.680	0.880	0.490	0.310	0.150	0.100
1986	0.320	0.600	2.870	1.780	1.370	2.850	1.850	1.130	0.640	0.350	1.050	7.510
1987	4.320	3.570	1.990	2.520	4.210	2.910	1.460	0.650	0.620	0.580	0.500	0.370
1988	4.910	2.040	6.840	1.980	7.510	3.010	1.750	0.950	0.910	0.680	0.340	0.180
1989	0.920	15.190	4.760	2.880	1.850	1.700	1.420	0.770	0.330	0.160	0.240	0.190
1990	0.790	1.530	3.100	14.950	6.150	4.370	1.780	1.590	1.890	1.290	0.630	0.400
1991	0.630	0.840	2.270	2.170	2.530	1.100	0.610	0.350	0.170	0.090	0.050	0.040
1992	0.190	1.590	3.410	1.730	2.260	3.020	1.610	0.900	0.490	0.240	0.250	0.270
1993	7.140	2.340	5.470	2.880	1.970	4.240	1.570	0.600	0.260	0.150	0.090	0.060
1994	1.590	1.860	5.020	2.740	1.150	1.490	1.080	0.700	0.410	0.230	0.130	0.090
1995	2.160	5.110	16.240	7.130	14.940	5.530	2.580	1.890	1.120	0.730	0.530	0.240
1996	2.060	1.440	3.280	5.210	2.350	8.720	3.720	2.420	2.110	1.500	1.000	0.900
1997	2.150	6.390	1.990	3.690	2.410	2.270	1.240	0.700	0.360	0.180	0.090	0.120
1998	1.240	2.210	6.760	2.960	1.520	1.050	0.900	0.670	0.420	0.230	0.290	0.230
1999	0.890	0.960	10.750	6.510	18.650	4.920	3.490	2.370	1.290	0.590	0.260	0.330
2000	1.920	9.620	5.310	2.220	2.210	1.820	1.280	0.750	0.380	0.250	0.170	0.420
2001	1.460	7.690	2.120	2.080	1.270	0.840	0.590	0.330	0.180	0.600	0.590	0.500
2002	0.420	0.570	1.510	1.530	2.340	1.020	0.390	0.160	0.300	0.240	0.140	0.120
2003	0.120	1.140	0.660	2.380	5.460	3.420	1.450	0.530	0.220	0.750	0.540	0.280
2004	0.200	1.160	2.030	2.950	2.500	3.040	1.500	0.820	0.620	0.480	0.420	0.350

B.9. Nii8_i

FILE : Nii8_i

UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	12.300	22.630	20.710	8.150	8.970	28.980	9.820	5.000	2.770	1.390	0.720	2.900
1921	9.830	42.340	42.140	16.750	10.210	6.190	3.500	2.130	1.700	1.140	3.380	2.630
1922	9.080	36.790	22.740	20.430	13.610	8.320	5.380	2.890	1.380	0.840	0.490	0.240
1923	4.080	6.150	36.000	11.010	15.980	18.640	9.820	5.910	3.220	1.460	0.970	4.880
1924	5.150	19.510	40.120	13.420	7.980	161.830	17.800	8.420	4.220	3.080	2.050	5.200
1925	6.800	6.350	8.980	11.740	8.040	20.110	7.100	3.710	2.580	1.420	0.640	3.220
1926	3.480	4.040	8.930	7.800	16.250	16.290	7.650	3.150	1.360	2.400	1.930	1.330
1927	10.370	9.960	16.430	41.230	11.420	5.910	3.410	1.700	0.730	0.360	0.630	2.570
1928	4.590	7.040	8.980	6.120	5.450	40.500	12.880	6.340	4.860	3.670	1.860	7.330
1929	18.570	20.160	15.910	27.420	17.700	9.920	5.380	2.660	1.280	0.800	1.250	1.450
1930	1.060	5.970	9.080	6.050	7.260	5.590	5.220	3.040	1.310	0.970	0.650	0.270
1931	0.900	1.550	6.030	3.320	32.250	19.020	9.970	10.410	6.890	3.350	1.520	1.170
1932	3.510	14.380	24.350	23.190	22.070	11.500	6.460	3.140	1.400	1.440	1.170	0.690
1933	2.060	36.220	52.450	41.410	13.140	20.620	15.040	12.950	7.620	5.670	7.550	4.500
1934	2.630	16.740	27.860	14.250	10.770	7.410	4.810	4.680	3.400	1.840	1.070	0.800
1935	1.410	1.840	7.630	33.000	17.460	20.680	8.760	12.010	7.430	3.460	1.560	2.290
1936	7.850	32.070	10.830	44.040	52.950	17.610	8.400	4.110	1.950	1.070	0.590	3.510
1937	5.580	4.600	18.420	11.150	9.670	6.870	21.180	8.820	5.310	4.560	2.860	1.990
1938	15.440	10.050	30.400	36.160	112.180	36.270	13.660	7.580	4.550	4.550	3.630	6.470
1939	8.200	36.590	19.880	27.910	9.170	11.650	9.850	8.370	11.210	7.460	3.430	3.490
1940	4.430	12.680	47.670	15.280	13.010	9.080	9.940	5.470	2.170	1.840	1.490	1.770
1941	2.640	7.460	9.600	13.340	10.840	17.870	7.350	7.980	7.210	4.450	2.550	2.800
1942	7.630	22.170	27.040	10.600	9.480	11.620	55.810	16.990	9.950	13.730	17.680	10.820
1943	11.780	25.680	24.570	23.390	52.920	15.900	6.590	2.610	4.980	3.690	1.620	5.520
1944	12.600	7.160	5.690	14.210	7.310	26.010	8.790	4.720	3.670	3.000	2.610	2.180
1945	2.270	2.230	3.490	12.550	22.510	16.690	22.390	4.170	2.770	2.200	2.030	3.920
1946	5.590	25.090	21.060	14.740	20.020	9.360	8.060	4.800	2.320	1.370	0.750	1.260
1947	4.980	17.110	17.76									

1949	5.040	12.910	26.100	18.620	11.050	19.150	15.190	8.010	4.980	3.670	3.770	3.470
1950	2.540	4.710	17.000	24.180	10.770	18.690	15.780	5.070	3.830	3.510	7.620	5.910
1951	12.260	7.020	16.560	7.720	7.770	4.120	3.690	2.520	2.620	2.090	2.080	1.810
1952	3.250	7.980	19.400	9.290	10.340	9.260	9.630	3.870	2.610	2.340	1.890	2.000
1953	2.830	8.810	12.140	11.530	17.850	16.560	15.000	12.490	5.680	4.270	2.320	2.340
1954	7.020	11.050	13.850	37.880	51.210	32.200	7.720	4.050	3.800	4.450	2.940	3.110
1955	4.300	6.280	21.040	16.380	119.400	26.380	8.420	4.770	3.730	2.610	2.130	2.850
1956	11.780	16.140	22.390	14.090	21.220	15.730	9.810	5.690	3.650	13.140	5.710	37.640
1957	60.220	16.730	7.540	31.710	20.330	8.230	8.760	5.070	2.470	1.450	1.010	2.520
1958	3.740	26.560	19.000	21.030	14.420	6.750	2.660	4.520	2.820	1.940	2.080	2.880
1959	3.830	11.500	17.470	8.560	20.980	12.800	11.480	6.460	2.800	1.400	1.840	2.880
1960	7.390	36.860	71.140	21.160	13.750	9.990	13.880	6.650	5.230	4.140	3.610	2.200
1961	4.740	12.690	11.570	10.820	8.040	7.800	4.750	3.640	2.220	1.910	1.620	1.770
1962	2.830	26.840	27.460	19.530	10.530	11.080	5.450	1.960	9.780	40.890	8.930	4.920
1963	4.770	13.550	8.840	30.500	11.070	4.070	4.140	2.230	1.770	1.890	1.960	1.700
1964	29.090	17.510	21.140	12.000	10.680	4.310	3.090	2.120	2.080	2.080	1.600	2.570
1965	2.470	3.780	4.550	17.320	23.990	5.700	2.790	2.580	1.950	1.650	1.400	1.620
1966	2.760	3.010	8.650	11.750	41.470	19.170	9.650	5.780	3.870	2.930	2.490	2.300
1967	1.860	17.180	15.220	7.490	4.290	9.190	6.170	3.850	3.170	3.030	2.730	2.900
1968	1.410	6.150	7.870	11.860	6.780	30.620	16.170	10.710	5.670	2.780	1.390	3.200
1969	22.360	13.030	15.600	8.830	7.720	4.300	2.530	1.920	1.400	0.890	0.920	1.520
1970	7.040	11.130	10.220	22.910	8.560	14.400	15.380	12.880	7.300	3.490	1.980	1.640
1971	8.180	24.020	38.640	62.830	48.490	26.290	12.440	10.290	6.610	3.280	1.630	0.820
1972	1.240	10.720	7.160	9.810	54.500	16.620	14.310	8.020	3.650	1.770	2.690	10.680
1973	8.600	19.390	18.140	51.760	11.900	10.920	9.540	5.500	2.900	3.130	2.250	0.910
1974	2.280	29.290	26.580	31.830	25.200	13.390	12.660	6.940	3.100	1.600	0.740	9.590
1975	4.790	12.810	42.470	24.100	37.200	23.190	13.340	11.340	6.670	3.000	1.570	0.820
1976	9.490	9.420	14.290	21.430	33.180	15.510	8.730	4.580	2.080	1.020	0.720	3.470
1977	4.590	5.940	10.800	43.720	22.560	15.970	10.890	6.420	3.140	2.080	2.130	2.890
1978	28.110	20.240	14.960	12.200	8.950	9.090	7.660	4.730	2.250	1.280	2.900	4.410
1979	10.650	12.850	14.330	29.920	30.820	10.480	4.300	2.640	1.480	0.700	0.520	3.120
1980	2.410	22.780	20.460	19.630	18.220	8.840	3.930	2.410	3.180	2.650	2.570	4.630
1981	5.470	11.260	7.940	14.100	6.640	15.050	8.820	4.650	2.010	1.080	0.580	0.450
1982	13.850	6.920	4.040	2.680	1.340	3.690	3.930	4.650	3.290	1.910	2.820	1.890
1983	3.950	75.380	16.750	397.400	19.980	24.800	11.600	5.320	4.360	9.200	10.360	6.620
1984	11.470	8.930	10.300	9.890	88.610	17.330	6.910	2.420	1.210	0.730	0.370	0.340
1985	6.340	5.630	11.370	29.510	17.480	13.800	9.300	4.890	2.710	1.710	0.820	0.530
1986	1.780	3.340	15.900	9.870	7.550	15.780	10.200	6.300	3.550	1.910	5.800	41.610
1987	23.960	19.820	11.040	13.940	23.310	16.140	8.110	3.650	3.440	3.190	2.780	2.110
1988	27.200	11.280	37.900	10.990	41.580	16.700	9.720	5.290	5.070	3.780	1.890	1.020
1989	5.090	84.200	26.340	16.010	10.200	9.470	7.810	4.290	1.770	0.850	1.320	1.060
1990	4.360	8.500	17.190	82.830	34.060	24.150	9.860	8.810	10.410	7.160	3.540	2.230
1991	3.510	4.650	12.550	12.000	14.010	6.080	3.430	1.980	0.940	0.530	0.260	0.240
1992	1.110	8.810	18.870	9.570	12.520	16.730	8.910	4.960	2.680	1.330	1.360	1.540
1993	39.610	12.980	30.310	15.940	10.920	23.460	8.700	3.260	1.440	0.780	0.510	0.360
1994	8.800	10.260	27.830	15.230	6.420	8.260	5.940	3.850	2.280	1.240	0.720	0.480
1995	11.980	28.290	89.970	39.480	82.760	30.590	14.230	10.520	6.220	4.110	2.890	1.310
1996	11.400	7.960	18.140	28.900	13.030	48.300	20.620	13.390	11.640	8.300	5.540	4.980
1997	11.940	35.380	11.010	20.430	13.380	12.630	6.870	3.900	2.060	1.010	0.510	0.650
1998	6.920	12.200	37.470	16.460	8.450	5.810	5.030	3.760	2.330	1.310	1.590	1.300
1999	4.920	5.350	59.520	36.090	103.330	27.260	19.310	13.090	7.120	3.270	1.430	1.840
2000	10.600	53.370	29.410	12.280	12.220	10.050	7.110	4.170	2.110	1.400	0.900	2.340
2001	8.060	42.580	11.690	11.540	7.090	4.670	3.300	1.830	0.990	3.300	3.310	2.770
2002	2.360	3.200	8.350	8.450	12.960	5.640	2.140	0.920	1.620	1.370	0.760	0.710
2003	0.670	6.340	3.700	13.200	30.250	18.930	8.020	2.930	1.240	4.170	2.990	1.540
2004	1.140	6.470	11.190	16.320	13.830	16.900	8.250	4.500	3.460	2.690	2.300	1.940

B.10. Niii9_i

FILE : Niii9_i

UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	1.332	0.672	0.344	0.005	0.023	0.081	0.003	0.000	0.000	0.000	0.000	0.318
1921	0.417	6.588	5.304	3.261	1.790	1.100	0.483	0.298	0.175	0.111	0.119	0.038
1922	0.526	2.537	4.580	16.178	5.351	1.962	0.966	0.585	0.347	0.219	0.132	0.077
1923	0.096	0.493	5.649	1.953	3.808	6.875	2.172	1.258	0.741	0.469	0.286	0.167
1924	0.121	9.877	6.180	11.862	19.210	48.745	19.388	9.346	4.883	10.265	3.103	1.243
1925	0.782	0.467	0.290	0.181	0.101	0.067	0.040	0.023	0.017	0.014	0.007	0.000
1926	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.003	0.000	0.000
1927	0.000	0.002	0.002	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000
1928	0.000	0.000	0.003	0.000	0.000	0.001	0.002	0.002	0.000	0.000	0.000	0.001
1929	0.000	0.002	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.000	0.000	0.000
1930	0.003	0.000	0.000	0.001	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1931	0.000	0.000	0.001	0.001	0.000	0.000	0.002	0.002	0.000	0.003	0.000	0.000
1932	0.000	0.000	0.000	0.003	0.000	0.000	0.000	0.000	0.000	0.026	0.000	0.000
1933	0.000	0.524	0.636	0.945	0.416	0.673	0.004	0.000	0.001	0.000	0.000	0.001
1934	0.035	0.183	4.202	0.035	3.286	0.039	0.004	0.003	0.001	0.000	0.000	0.000
1935	0.003	0.000	0.019	6.888	1.679	0.337	0.161	4.216	1.915	1.006	0.613	0.359
1936	0.227	3.603	4.080	5.662	12.201	3.187	1.498	0.939	0.552	0.493	0.212	0.170
1937	0.076	0.046	2.979	0.360	5.931	0.287	1.394	0.209	0.129	0.741	0.051	0.037
1938	0.253	2.484	6.606	0.756	0.569	4.571	0.102	0.190	0.097	1.847	2.431	1.212
1939	0.745	3.029	4.055	3.871	2.034	0.685	4.600	2.763	1.241	0.789	0.477	1.011
1940	0.365	1.340	2.953	1.555	0.706	0.533	0.173	0.037	0.023	0.014	0.007	0.007
1941	0.007	0.211	0.626	0.467	0.700	0.001	0.000	0.000	0.000	0.000	0.000	0.078
1942	0.293	0.517	2.716	4.062	1.036	2.821	1.010	0.634	0.376	14.755	3.407	1.790
1943	1.406	0.671	1.247	0.252	1.358	0.217	0.094	0.065	0.038	0.023	0.013	1.639
1944	1.403	0.798	0.714	0.797	2.172	10.908	2.663	1.396	0.830	0.524	0.320	0.190
1945	0.116	0.068	5.460	8.815	6.824	1.476	0.619	0.388	0.231	0.143	0.088	0.054
1946	0.041	0.056	0.043	1.725	3.425	30.596	4.608	2.334	1.235	0.788	0.474	0.279
1947	0.175	5.136	16.285	3.169	2.031	2.607	0.714	0.333	0.197	0.122	0.075	0.061
1948	0.054	0.632	2.136	1.097	0.710	0.060	1.447	4.282	0.782	0.496	0.299	0.177
1949	0.151	0.105	1.214	1.945	0.177	1.544	0.102	0.156	0.007	0.000	0.000	0.000
1950	0.003	0.000	1.841	0.136	0.009	1.327	0.014	0.000	0.000	0.000	0.036	0.000
1951	0.068	0.000	1.720	0.30								

1954	0.642	0.561	0.316	1.191	8.171	3.783	1.880	1.116	0.665	0.417	0.251	0.153
1955	0.169	0.070	0.325	0.023	5.252	3.674	1.533	0.956	0.570	0.357	0.215	0.142
1956	0.077	0.099	0.359	0.211	0.416	0.100	0.002	0.001	0.004	7.738	2.874	9.607
1957	15.199	8.379	4.837	3.787	3.554	0.808	0.466	0.296	0.175	0.113	0.072	0.042
1958	0.081	0.926	1.043	0.166	0.109	0.002	0.003	0.003	0.004	0.005	0.000	0.126
1959	0.085	0.159	2.518	0.062	2.057	0.372	0.104	0.067	0.039	0.026	0.013	0.026
1960	0.002	0.775	0.884	1.934	2.408	0.330	0.070	0.052	0.031	0.024	0.011	0.767
1961	0.192	0.069	0.058	0.223	0.019	0.689	0.778	0.064	0.001	0.005	0.002	0.000
1962	0.003	0.147	7.228	1.012	1.038	0.750	1.928	0.465	0.277	71.424	6.253	3.156
1963	1.586	0.936	0.595	3.736	0.233	0.152	1.391	0.145	0.084	0.054	0.037	0.017
1964	2.034	4.170	3.273	0.993	14.864	0.454	0.250	0.162	0.097	0.061	0.039	0.024
1965	0.235	0.011	0.136	0.010	2.905	0.010	0.000	0.000	0.000	0.000	0.000	0.002
1966	0.000	0.801	2.507	0.439	7.014	2.902	1.444	0.895	0.530	0.337	0.203	0.121
1967	0.076	1.193	2.048	0.754	0.348	8.261	1.514	0.927	0.543	0.343	0.207	0.122
1968	0.129	0.297	0.743	1.685	0.160	2.955	0.584	0.317	0.188	0.120	0.071	0.048
1969	1.998	1.672	0.957	0.781	1.578	0.223	0.496	0.085	0.051	0.034	0.020	0.981
1970	2.602	1.280	0.799	0.467	0.265	0.180	0.118	2.108	1.000	0.831	0.617	0.313
1971	0.274	0.114	0.379	5.190	19.674	7.822	3.584	3.273	2.212	1.815	1.123	0.650
1972	0.409	0.356	0.243	0.225	5.643	1.199	0.718	0.447	0.264	0.169	0.101	2.859
1973	9.352	1.498	0.923	5.172	1.350	1.259	0.369	0.229	0.136	1.216	0.049	0.034
1974	0.025	0.659	6.830	9.173	10.287	4.214	1.786	1.090	0.644	0.408	0.243	1.712
1975	1.635	0.762	1.293	6.795	1.498	4.581	3.101	1.720	0.804	0.508	0.307	0.185
1976	0.137	0.488	6.540	3.496	29.248	12.962	6.317	3.425	1.591	1.004	0.609	0.362
1977	0.223	0.132	0.313	9.491	5.271	1.133	0.828	0.413	0.245	0.171	0.094	0.055
1978	0.085	0.055	2.013	1.357	1.285	0.064	0.703	0.097	0.059	0.034	0.020	0.067
1979	0.022	0.008	0.065	0.672	0.885	0.005	0.004	0.001	0.000	0.000	0.003	0.227
1980	0.030	0.700	0.549	1.502	0.328	0.001	0.007	0.000	0.122	0.000	0.002	1.295
1981	0.901	0.643	1.172	0.323	2.088	0.742	0.051	0.026	0.016	0.014	0.009	0.002
1982	0.043	0.094	0.003	0.075	0.000	0.000	0.000	0.000	0.002	0.000	0.000	0.000
1983	0.007	2.087	2.150	58.689	79.723	6.310	2.889	1.430	0.848	11.304	5.226	2.455
1984	1.314	0.812	0.557	5.713	15.983	3.938	1.865	1.110	0.652	0.411	0.250	0.153
1985	0.315	0.715	0.598	1.999	1.807	0.301	0.039	0.029	0.010	0.012	0.005	0.006
1986	0.234	0.724	3.356	3.288	0.922	0.440	0.420	0.142	0.085	0.051	0.034	17.431
1987	14.263	5.196	6.730	2.018	3.020	2.754	1.310	0.821	0.487	0.308	0.186	0.108
1988	0.071	1.284	1.865	0.894	1.293	0.411	0.232	0.125	0.075	0.048	0.029	0.016
1989	0.012	2.265	13.702	3.657	2.028	1.190	1.830	0.394	0.228	0.150	0.086	0.054
1990	0.042	1.882	1.678	0.827	3.876	5.179	0.277	0.618	0.104	0.065	0.041	0.023
1991	0.015	0.008	0.688	0.001	4.293	1.221	0.020	0.003	0.000	0.000	0.000	0.000
1992	0.000	0.000	0.000	0.000	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1993	2.103	0.904	1.532	0.814	0.366	0.190	0.085	0.052	0.030	0.017	0.009	0.006
1994	0.032	0.006	0.750	0.745	0.002	0.003	0.190	0.018	0.003	0.002	0.000	0.002
1995	0.000	1.032	21.917	21.031	37.517	18.893	8.812	4.924	2.315	8.788	2.065	1.093
1996	3.975	0.991	7.142	7.666	2.544	5.514	2.598	0.541	0.323	0.200	0.124	1.966
1997	6.217	14.383	16.353	6.170	3.080	2.791	0.867	0.549	0.327	0.208	0.121	0.077
1998	2.199	0.572	6.688	4.475	1.048	3.245	0.445	0.255	0.150	0.099	0.057	0.035
1999	0.080	0.023	14.254	5.471	2.816	1.478	1.203	1.965	0.847	0.535	0.325	0.847
2000	1.299	7.824	21.716	3.561	1.691	1.456	0.584	0.368	0.220	0.137	0.081	4.369
2001	1.080	0.644	0.647	0.355	0.166	0.095	0.050	0.032	0.018	42.175	5.344	2.559
2002	1.319	1.249	0.492	0.387	5.949	0.147	0.071	0.046	0.026	0.017	0.012	0.005
2003	0.006	0.743	0.990	15.593	11.925	2.424	0.915	0.581	0.346	11.704	6.604	2.180
2004	1.149	1.058	1.325	11.178	8.764	0.648	0.213	0.132	0.084	0.054	0.029	0.017
2005	0.016	0.625	0.036	0.947	0.195	0.000	0.083	0.002	0.001	0.001	0.000	0.002
2006	0.002	0.375	5.351	0.975	0.490	0.340	0.203	0.128	0.071	0.047	0.031	0.016
2007	0.198	0.408	0.005	0.003	0.000	0.000	0.147	0.005	0.001	0.002	0.003	0.000
2008	0.003	0.000	1.299	1.019	0.712	1.011	0.000	0.001	0.004	0.000	0.000	0.000
2009	0.000	0.000	0.014	9.414	2.499	0.961	0.609	0.352	0.210	0.129	0.081	0.046

B.11. Niii11_i

FILE : Niii11 I

UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	48.456	24.823	26.702	4.948	5.601	5.949	3.458	2.075	1.224	0.798	0.479	34.208
1921	18.992	149.066	122.515	72.990	56.179	23.514	9.044	5.639	3.352	2.128	33.995	10.002
1922	10.534	91.504	125.180	198.489	84.056	38.889	19.684	10.746	6.384	4.043	2.447	1.436
1923	9.789	22.572	50.837	43.624	25.425	39.102	15.322	8.246	4.735	2.979	1.809	4.735
1924	14.311	58.360	70.255	83.324	100.296	556.880	214.715	96.026	49.582	60.595	23.834	11.012
1925	7.406	4.661	6.686	6.385	1.677	1.116	0.392	0.245	0.147	0.098	0.049	5.045
1926	0.160	0.106	4.499	3.000	4.807	2.044	1.166	0.585	0.319	1.330	0.319	0.106
1927	0.798	5.214	6.952	20.169	7.661	3.937	1.809	0.479	0.266	0.160	0.102	3.032
1928	0.053	0.479	0.266	2.046	4.682	15.268	5.001	2.873	1.649	1.057	0.653	4.095
1929	5.020	3.130	4.388	161.049	32.487	56.133	15.665	8.282	4.407	2.758	1.698	1.007
1930	0.638	0.532	12.396	1.323	1.635	0.426	0.266	0.160	0.106	0.053	0.053	0.000
1931	0.000	0.532	0.372	0.372	111.393	35.467	11.239	17.405	14.115	7.312	4.338	2.575
1932	1.622	1.006	17.431	6.428	17.562	6.122	3.203	1.786	1.044	11.898	0.400	0.249
1933	0.151	3.274	72.976	24.391	5.831	4.629	2.102	1.067	0.662	4.377	13.530	8.567
1934	4.701	3.489	21.588	4.092	13.693	0.570	0.247	0.168	1.315	0.086	0.059	0.027
1935	0.036	0.000	6.928	59.239	22.590	104.492	59.718	36.099	22.871	11.670	6.523	3.871
1936	2.439	24.557	25.175	47.331	69.894	23.691	11.383	6.554	3.876	2.812	1.481	0.967
1937	0.577	0.386	25.757	5.372	20.208	3.747	3.771	0.864	4.302	9.580	5.707	3.370
1938	5.900	14.908	35.928	14.755	41.861	31.004	8.525	6.570	3.289	11.504	13.114	8.991
1939	17.011	35.672	30.493	32.538	13.235	6.737	12.992	81.806	21.542	16.906	8.626	8.363
1940	5.470	13.064	44.173	32.542	14.217	8.194	9.905	2.504	1.458	0.904	0.557	0.391
1941	0.277	2.606	9.039	19.868	73.932	33.533	16.922	9.068	10.345	4.992	3.057	1.953
1942	7.283	10.796	76.246	42.872	21.157	20.728	20.598	26.490	14.075	160.922	49.487	48.686
1943	40.617	24.115	45.410	12.647	46.930	10.327	9.041	3.401	3.928	4.500	2.718	32.808
1944	36.129	19.802	24.483	10.311	26.733	78.491	24.454	12.105	7.060	4.464	2.675	1.621
1945	1.023	0.593	21.365	69.036	48.300	12.389	6.907	3.928	2.332	1.490	0.904	0.532
1946	0.377	2.523	28.780	12.834	21.883	134.146	23.474	12.338	6.369	4.054	2.475	1.477
1947	0.948	19.702	74.281	17.222	14.653	11.168	5.362	1.664	0.985	0.626	0.364	0.262
1948	1.722	4.608	13.994	7.209	6.640	4.639	13.693	29.533	7.045	4.478	2.704	1.596
1949	1.556	2.813	26.780	13.326	10.868	10.514	1.264	0.895	0.372	0.213	0.106	0.053
1950	0.224	0.056	27.135	4.581	6.434	25.167	1.511	0.891	0.513	0.333	26.743	21.625
1951	12.652	6.410	28.690	7.915	14.294	3.723	0.764	0.494	0.256	4.588	0.536	0.

1958	2.128	39.588	41.155	19.259	40.047	11.379	5.355	4.893	2.106	1.305	0.800	9.972
1959	4.431	3.253	68.144	18.893	29.173	12.218	20.406	8.132	4.000	2.550	1.556	1.318
1960	1.485	19.923	105.271	181.786	70.807	38.207	13.868	8.747	6.520	5.449	3.297	15.461
1961	15.615	8.495	10.939	23.411	3.283	12.703	5.051	1.566	0.710	0.483	0.542	0.212
1962	2.148	4.127	174.921	60.325	38.980	27.996	26.498	11.931	9.713	682.588	80.170	41.353
1963	21.468	11.894	8.865	88.267	13.520	6.962	6.281	2.064	1.225	0.768	0.448	0.313
1964	28.837	87.804	81.422	28.870	58.160	8.901	5.656	3.299	4.843	3.665	1.218	4.646
1965	7.808	7.400	4.713	24.907	39.448	3.683	1.844	1.250	0.851	0.501	0.573	0.431
1966	0.151	7.327	57.875	30.642	93.229	49.462	21.111	12.471	7.152	4.533	2.726	1.594
1967	3.264	65.701	70.421	35.054	22.231	68.701	18.888	10.786	6.399	4.018	6.101	1.481
1968	1.166	3.121	96.540	35.847	13.071	65.624	22.209	11.644	6.758	4.267	2.611	3.336
1969	36.020	34.144	17.818	23.199	22.842	5.920	2.968	2.189	0.922	0.624	1.880	19.223
1970	55.136	33.474	17.586	91.025	13.263	15.993	16.944	55.310	22.273	13.207	8.150	4.671
1971	3.483	2.778	51.787	114.183	228.127	105.592	45.286	31.564	18.833	12.952	7.687	4.529
1972	3.059	2.178	8.682	21.479	161.933	67.309	72.356	35.824	17.860	9.764	19.092	80.760
1973	155.545	38.392	35.950	68.608	45.401	14.798	7.381	4.664	2.772	12.431	1.070	0.690
1974	0.557	19.341	88.356	101.471	100.124	89.333	28.141	15.289	8.501	5.382	3.270	84.266
1975	92.339	59.496	61.294	127.098	54.101	63.108	100.448	97.541	35.734	20.417	11.239	6.837
1976	12.946	12.669	69.703	65.171	347.134	165.549	75.819	41.459	20.518	12.324	7.476	14.545
1977	29.368	7.883	23.642	198.274	57.421	25.619	12.698	7.818	4.592	2.933	1.796	1.213
1978	17.672	17.336	40.653	31.305	38.183	7.098	6.008	2.674	1.570	15.657	4.404	8.820
1979	11.155	5.872	28.866	37.106	22.943	2.470	0.707	0.427	0.280	0.156	0.124	1.481
1980	0.176	24.470	24.530	33.064	34.856	7.371	4.788	72.299	28.922	15.026	11.664	75.133
1981	40.891	28.028	27.186	36.306	29.303	27.210	18.899	10.215	5.603	3.512	2.140	1.270
1982	2.698	4.893	0.396	6.607	1.212	5.995	0.045	0.460	0.064	0.023	1.526	0.790
1983	1.595	65.296	58.978	592.142	705.539	150.762	79.301	44.897	22.622	72.155	52.984	53.018
1984	24.798	15.068	12.231	89.421	274.501	67.339	30.908	16.659	10.645	6.206	3.712	2.223
1985	24.965	51.996	21.993	47.441	58.814	9.794	3.859	2.440	1.427	0.925	0.556	0.320
1986	1.406	3.281	71.218	28.159	16.805	18.238	9.171	11.411	5.563	8.146	19.180	465.107
1987	400.079	129.637	142.375	79.661	57.411	47.658	27.204	14.156	7.997	17.871	4.472	9.219
1988	29.812	64.750	138.481	72.536	71.880	32.448	14.909	8.608	5.143	3.173	1.952	14.761
1989	4.977	41.687	162.603	71.491	52.837	66.905	34.348	16.190	7.994	5.008	3.025	1.797
1990	5.862	14.812	49.392	77.668	108.816	56.054	21.187	37.949	11.258	6.783	4.067	2.436
1991	2.560	3.773	32.012	6.095	75.764	18.995	4.817	2.917	1.741	1.070	0.666	0.408
1992	0.981	2.071	14.879	16.063	11.377	0.720	4.082	0.073	0.036	0.000	0.045	3.613
1993	247.150	60.694	88.238	90.687	48.182	37.283	14.748	8.061	4.714	2.997	1.818	1.063
1994	7.487	11.035	47.050	21.696	2.838	16.287	1.902	1.117	0.745	0.479	0.266	0.160
1995	10.108	21.683	282.291	212.707	441.565	315.087	118.807	66.469	31.961	49.284	16.679	9.011
1996	43.946	13.308	43.484	47.122	49.869	72.450	40.402	15.598	18.207	21.142	16.503	52.429
1997	59.385	93.995	122.915	112.106	28.785	63.187	15.165	8.669	5.045	3.166	1.932	1.141
1998	41.488	14.002	72.228	64.568	18.393	31.540	9.908	3.994	2.301	1.430	0.919	0.511
1999	1.956	1.371	111.534	154.633	157.044	81.368	47.638	46.403	21.528	11.880	7.054	6.103
2000	9.405	137.782	234.812	87.030	40.201	36.564	14.656	8.810	5.097	3.173	1.968	86.592
2001	19.028	19.832	20.300	19.452	63.097	11.604	7.282	2.953	1.699	380.840	71.014	47.500
2002	26.197	26.859	17.997	7.792	68.472	6.106	1.982	1.290	0.811	0.484	0.262	0.182
2003	0.084	14.310	19.122	187.699	130.739	87.148	36.736	19.937	11.157	95.785	46.901	18.165
2004	9.027	28.216	27.165	63.393	75.331	33.414	14.365	7.635	4.420	2.758	2.141	0.989
2005	0.723	28.714	21.259	55.253	17.875	16.174	8.213	3.287	1.827	1.159	1.371	1.707
2006	4.307	24.589	159.622	47.235	21.400	10.303	6.066	3.808	12.915	13.179	5.061	5.454
2007	57.860	44.719	27.269	17.718	7.706	7.254	14.592	7.306	3.747	2.326	1.397	0.835
2008	0.499	24.334	22.760	34.796	14.606	40.420	3.121	1.959	1.161	6.224	28.090	3.298
2009	4.740	45.039	16.221	172.838	58.269	19.413	19.327	7.813	4.466	2.807	1.690	0.984

B.12. Niv3_i

FILE : Niv3_i

UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	4.270	7.860	7.190	2.830	3.110	10.060	3.410	1.730	0.960	0.480	0.250	1.010
1921	3.410	14.690	14.630	5.820	3.540	2.150	1.220	0.740	0.590	0.400	1.170	0.920
1922	3.150	12.770	7.890	7.090	4.730	2.890	1.870	1.000	0.480	0.290	0.170	0.090
1923	1.420	2.130	12.500	3.820	5.550	6.470	3.410	2.050	1.110	0.510	0.330	1.700
1924	1.790	6.770	13.930	4.660	2.770	56.180	6.180	2.930	1.460	1.070	0.710	1.800
1925	2.360	2.200	3.120	4.080	2.790	6.980	2.470	1.290	0.900	0.490	0.220	1.120
1926	1.210	1.410	3.100	2.710	5.640	5.650	2.660	1.100	0.470	0.830	0.670	0.460
1927	3.600	3.460	5.700	14.320	3.960	2.050	1.180	0.590	0.250	0.120	0.220	0.890
1928	1.590	2.450	3.110	2.120	1.890	14.060	4.470	2.200	1.690	1.270	0.650	2.550
1929	6.450	7.000	5.520	9.520	6.140	3.440	1.870	0.920	0.450	0.280	0.430	0.500
1930	0.370	2.070	3.150	2.100	2.520	1.940	1.810	1.050	0.450	0.340	0.220	0.100
1931	0.310	0.540	2.090	1.160	11.200	6.610	3.460	3.620	2.390	1.160	0.530	0.410
1932	1.210	4.990	8.450	8.050	7.660	4.000	2.250	1.090	0.490	0.500	0.410	0.240
1933	0.710	12.570	18.210	14.380	4.560	7.150	5.220	4.490	2.650	1.970	2.620	1.560
1934	0.920	5.810	9.670	4.950	3.740	2.570	1.670	1.620	1.180	0.640	0.370	0.280
1935	0.490	0.640	2.650	11.460	6.060	7.180	3.040	4.170	2.580	1.200	0.540	0.800
1936	2.730	11.130	3.760	15.290	18.380	6.110	2.920	1.430	0.680	0.380	0.210	1.220
1937	1.940	1.600	6.400	3.870	3.360	2.380	7.350	3.060	1.840	1.580	0.990	0.690
1938	5.360	3.490	10.550	12.550	38.940	12.600	4.740	2.630	1.580	1.580	1.260	2.250
1939	2.850	12.700	6.900	9.690	3.180	4.040	3.420	2.900	3.890	2.590	1.190	1.210
1940	1.540	4.400	16.550	5.310	4.520	3.150	3.450	1.900	0.760	0.640	0.520	0.610
1941	0.920	2.590	3.330	4.630	3.760	6.210	2.550	2.770	2.500	1.550	0.890	0.970
1942	2.650	7.690	9.390	3.680	3.290	4.030	19.380	5.900	3.460	4.770	6.140	3.750
1943	4.090	8.910	8.530	8.120	18.370	5.520	2.290	0.910	1.730	1.280	0.560	1.920
1944	4.370	2.480	1.970	4.930	2.540	9.030	3.050	1.630	1.280	1.040	0.900	0.750
1945	0.790	0.770	1.210	4.360	7.810	5.790	7.770	1.450	0.960	0.770	0.710	1.360
1946	1.940	8.710	7.320	5.120	6.950	3.250	2.800	1.670	0.810	0.480	0.260	0.440
1947	1.730	5.940	6.170	11.070	21.770	13.170	5.540	1.990	1.300	0.340	0.910	1.190
1948	1.660	7.940	4.430	15.300	7.800	5.770	4.790	3.100	1.710	0.870	0.410	0.520
1949	1.750	4.480	9.060	6.460	3.840	6.640	5.270	2.780	1.730	1.270	1.310	1.200
1950	0.880	1.640	5.900	8.390	3.740	6.490	5.480	1.760	1.330	1.210	2.650	2.050
1951	4.260	2.440	5.750	2.680	2.700	1.430	1.280	0.880	0.910	0.720	0.720	0.630
1952	1.130	2.770	6.740	3.230	3.590	3.220	3.340	1.340	0.900	0.810	0.660	0.700
1953	0.980	3.060	4.210	4.000	6.200	5.750	5.210	4.340	1.970	1.480	0.800	0.820
1954	2.440											

1960	2.570	12.800	24.700	7.350	4.770	3.470	4.820	2.310	1.820	1.440	1.260	0.770
1961	1.650	4.400	4.020	3.760	2.790	2.710	1.650	1.260	0.770	0.660	0.560	0.610
1962	0.980	9.320	9.530	6.780	3.660	3.850	1.890	0.680	3.400	14.200	3.100	1.710
1963	1.660	4.700	3.070	10.590	3.840	1.410	1.440	0.780	0.620	0.660	0.680	0.590
1964	10.090	6.080	7.340	4.160	3.710	1.500	1.070	0.740	0.720	0.720	0.560	0.890
1965	0.850	1.310	1.580	6.020	8.330	1.980	0.970	0.900	0.680	0.570	0.490	0.560
1966	0.960	1.050	3.010	4.080	14.400	6.650	3.350	2.010	1.340	1.020	0.870	0.800
1967	0.650	5.960	5.280	2.600	1.490	3.190	2.140	1.340	1.100	1.050	0.950	1.010
1968	0.490	2.130	2.730	4.120	2.360	10.630	5.620	3.720	1.970	0.970	0.480	1.110
1969	7.760	4.520	5.410	3.060	2.680	1.490	0.880	0.670	0.490	0.310	0.320	0.530
1970	2.440	3.860	3.550	7.950	2.970	5.000	5.340	4.470	2.530	1.210	0.690	0.570
1971	2.840	8.340	13.420	21.810	16.830	9.130	4.320	3.570	2.290	1.140	0.570	0.290
1972	0.430	3.720	2.490	3.410	18.920	5.770	4.970	2.780	1.270	0.620	0.930	3.710
1973	2.980	6.730	6.300	17.970	4.130	3.790	3.310	1.910	1.010	1.090	0.780	0.320
1974	0.790	10.170	9.230	11.050	8.750	4.650	4.390	2.410	1.080	0.560	0.260	3.330
1975	1.660	4.450	14.750	8.360	12.910	8.050	4.630	3.940	2.310	1.040	0.540	0.290
1976	3.300	3.270	4.960	7.440	11.520	5.380	3.030	1.590	0.720	0.350	0.250	1.200
1977	1.590	2.060	3.750	15.180	7.830	5.540	3.780	2.230	1.090	0.730	0.740	1.000
1978	9.760	7.030	5.200	4.240	3.110	3.160	2.660	1.640	0.780	0.450	1.010	1.530
1979	3.700	4.460	4.980	10.390	10.700	3.640	1.490	0.920	0.510	0.240	0.180	1.090
1980	0.840	7.910	7.100	6.810	6.330	3.070	1.360	0.840	1.110	0.920	0.890	1.610
1981	1.900	3.900	2.760	4.890	2.310	5.220	3.060	1.610	0.700	0.370	0.200	0.160
1982	4.810	2.400	1.400	0.930	0.470	1.280	1.360	1.610	1.140	0.660	0.980	0.660
1983	1.370	26.170	5.810	137.970	6.940	8.610	4.030	1.850	1.520	3.190	3.600	2.300
1984	3.980	3.100	3.580	3.440	30.760	6.020	2.400	0.840	0.420	0.250	0.130	0.120
1985	2.200	1.950	3.950	10.250	6.070	4.790	3.230	1.700	0.940	0.590	0.280	0.190
1986	0.620	1.160	5.520	3.430	2.620	5.480	3.540	2.190	1.230	0.660	2.010	14.450
1987	8.320	6.880	3.830	4.840	8.090	5.600	2.820	1.270	1.190	1.110	0.960	0.730
1988	9.440	3.920	13.160	3.820	14.430	5.800	3.380	1.830	1.760	1.310	0.660	0.360
1989	1.770	29.230	9.140	5.560	3.540	3.290	2.710	1.490	0.610	0.290	0.460	0.370
1990	1.510	2.950	5.970	28.760	11.820	8.380	3.420	3.060	3.610	2.490	1.230	0.770
1991	1.220	1.620	4.360	4.170	4.860	2.110	1.190	0.690	0.330	0.180	0.090	0.080
1992	0.390	3.060	6.550	3.320	4.350	5.810	3.090	1.720	0.930	0.460	0.470	0.530
1993	13.750	4.500	10.520	5.530	3.790	8.140	3.020	1.130	0.500	0.270	0.180	0.120
1994	3.050	3.560	9.660	5.290	2.230	2.870	2.060	1.340	0.790	0.430	0.250	0.170
1995	4.160	9.820	31.240	13.700	28.730	10.620	4.940	3.650	2.160	1.430	1.000	0.450
1996	3.960	2.770	6.290	10.030	4.520	16.770	7.160	4.650	4.040	2.880	1.920	1.730
1997	4.150	12.280	3.820	7.090	4.650	4.380	2.380	1.350	0.720	0.350	0.180	0.220
1998	2.410	4.230	13.010	5.720	2.930	2.020	1.750	1.310	0.810	0.460	0.550	0.450
1999	1.700	1.860	20.660	12.530	35.870	9.460	6.700	4.540	2.470	1.130	0.500	0.640
2000	3.680	18.530	10.210	4.260	4.240	3.490	2.470	1.450	0.740	0.490	0.310	0.810
2001	2.800	14.780	4.060	4.010	2.460	1.620	1.150	0.630	0.340	1.140	1.150	0.960
2002	0.820	1.110	2.900	2.940	4.500	1.960	0.740	0.320	0.560	0.480	0.260	0.250
2003	0.230	2.200	1.290	4.590	10.500	6.570	2.780	1.010	0.430	1.450	1.040	0.530
2004	0.400	2.250	3.880	5.660	4.800	5.870	2.860	1.560	1.200	0.940	0.800	0.670

B.13. Niv4_i

FILE : Niv4_i

UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	3.500	6.440	5.900	2.320	2.550	8.250	2.800	1.420	0.790	0.400	0.200	0.830
1921	2.790	12.040	11.990	4.770	2.900	1.760	1.000	0.610	0.480	0.320	0.960	0.750
1922	2.580	10.470	6.470	5.810	3.880	2.360	1.530	0.830	0.390	0.240	0.130	0.070
1923	1.170	1.750	10.240	3.140	4.550	5.310	2.800	1.680	0.910	0.420	0.280	1.390
1924	1.470	5.550	11.420	3.820	2.270	46.050	5.060	2.390	1.200	0.880	0.580	1.480
1925	1.940	1.810	2.560	3.340	2.290	5.720	2.020	1.050	0.740	0.400	0.180	0.920
1926	0.980	1.150	2.540	2.220	4.620	4.630	2.170	0.900	0.390	0.690	0.550	0.370
1927	2.950	2.830	4.670	11.730	3.250	1.690	0.970	0.480	0.200	0.100	0.180	0.730
1928	1.300	2.000	2.550	1.740	1.550	11.530	3.660	1.810	1.390	1.050	0.530	2.090
1929	5.290	5.730	4.530	7.800	5.040	2.820	1.530	0.760	0.360	0.230	0.360	0.420
1930	0.300	1.700	2.590	1.730	2.070	1.590	1.490	0.860	0.380	0.280	0.180	0.080
1931	0.260	0.450	1.710	0.950	9.180	5.420	2.840	2.960	1.960	0.960	0.430	0.340
1932	1.000	4.090	6.920	6.600	6.290	3.270	1.850	0.890	0.400	0.410	0.330	0.200
1933	0.580	10.310	14.930	11.790	3.740	5.870	4.280	3.680	2.170	1.610	2.140	1.280
1934	0.750	4.770	7.930	4.060	3.070	2.100	1.370	1.330	0.970	0.520	0.310	0.230
1935	0.400	0.530	2.180	9.390	4.970	5.890	2.490	3.420	2.120	0.980	0.440	0.650
1936	2.240	9.130	3.080	12.530	15.070	5.010	2.390	1.170	0.560	0.310	0.170	1.000
1937	1.580	1.310	5.250	3.170	2.750	1.950	6.030	2.510	1.510	1.290	0.820	0.570
1938	4.390	2.860	8.650	10.290	31.920	10.320	3.890	2.160	1.290	1.300	1.040	1.840
1939	2.330	10.410	5.660	7.940	2.610	3.320	2.800	2.380	3.190	2.130	0.970	0.990
1940	1.260	3.610	13.560	4.350	3.700	2.590	2.830	1.560	0.620	0.520	0.420	0.500
1941	0.750	2.120	2.730	3.800	3.090	5.090	2.100	2.270	2.050	1.270	0.730	0.790
1942	2.170	6.310	7.690	3.010	2.700	3.300	15.890	4.840	2.830	3.910	5.030	3.070
1943	3.350	7.300	6.990	6.660	15.060	4.530	1.880	0.750	1.420	1.050	0.450	1.570
1944	3.580	2.040	1.610	4.040	2.080	7.410	2.500	1.340	1.050	0.850	0.740	0.620
1945	0.640	0.630	0.990	3.580	6.400	4.750	6.370	1.180	0.790	0.630	0.580	1.120
1946	1.590	7.140	6.000	4.190	5.690	2.670	2.290	1.370	0.660	0.400	0.210	0.360
1947	1.420	4.880	5.060	9.080	17.850	10.790	4.540	1.630	1.070	0.280	0.740	0.980
1948	1.360	6.510	3.630	12.550	6.390	4.730	3.930	2.530	1.400	0.710	0.330	0.430
1949	1.440	3.670	7.430	5.290	3.150	5.450	4.330	2.280	1.410	1.050	1.080	0.990
1950	0.720	1.340	4.840	6.880	3.070	5.320	4.490	1.440	1.090	1.000	2.170	1.680
1951	3.490	2.000	4.720	2.200	2.220	1.180	1.050	0.720	0.740	0.590	0.600	0.510
1952	0.920	2.270	5.520	2.650	2.950	2.630	2.740	1.100	0.740	0.660	0.540	0.570
1953	0.810	2.510	3.450	3.280	5.080	4.710	4.270	3.550	1.620	1.210	0.660	0.670
1954	2.000	3.150	3.940	10.780	14.570	9.160	2.190	1.160	1.080	1.260	0.840	0.880
1955	1.230	1.790	5.990	4.660	33.980	7.510	2.390	1.350	1.060	0.740	0.610	0.810
1956	3.350	4.590	6.370	4.010	6.040	4.470	2.800	1.620	1.030	3.740	1.620	10.710
1957	17.140	4.760	2.140	9.020	5.790	2.340	2.490	1.440	0.710	0.410	0.280	0.720
1958	1.060	7.560	5.410	5.990	4.110	1.920	0.750	1.290	0.800	0.550	0.600	0.810
1959	1.090	3.270	4.980	2.430	5.970	3.650	3.270	1.830	0.790	0.400	0.520	0.820
1960	2.100	10.490	20.250	6.020	3.910	2.840	3.950	1.890	1.490	1.180	1.030	0.630
1961	1.350	3.600	3.290	3.080	2.290	2.220	1.350	1.030	0.640	0.550	0.460	0.500
1962	0.800	7.640	7.820	5.560	2.990	3.150	1.550	0.570	2.790	11.640	2.540	1.400
1963	1.360	3.860	2.520	8.680	3.160	1.160	1.180	0.640	0.510			

1967	0.530	4.890	4.330	2.130	1.220	2.610	1.760	1.100	0.910	0.860	0.780	0.830
1968	0.400	1.750	2.240	3.370	1.930	8.720	4.600	3.040	1.610	0.790	0.400	0.910
1969	6.360	3.710	4.440	2.510	2.190	1.230	0.720	0.550	0.400	0.250	0.260	0.430
1970	2.000	3.170	2.910	6.510	2.440	4.100	4.380	3.660	2.080	0.990	0.560	0.460
1971	2.320	6.830	11.000	17.880	13.800	7.480	3.540	2.930	1.880	0.930	0.470	0.230
1972	0.350	3.050	2.040	2.790	15.510	4.730	4.070	2.290	1.040	0.500	0.770	3.040
1973	2.450	5.520	5.160	14.730	3.380	3.110	2.720	1.560	0.820	0.890	0.640	0.260
1974	0.650	8.340	7.570	9.060	7.170	3.810	3.600	1.980	0.880	0.450	0.210	2.730
1975	1.360	3.650	12.080	6.850	10.590	6.600	3.800	3.230	1.900	0.850	0.440	0.240
1976	2.700	2.680	4.070	6.100	9.440	4.420	2.490	1.300	0.590	0.290	0.200	0.980
1977	1.310	1.690	3.070	12.450	6.420	4.550	3.110	1.830	0.890	0.590	0.610	0.820
1978	8.000	5.760	4.250	3.480	2.550	2.590	2.180	1.340	0.640	0.360	0.820	1.250
1979	3.030	3.650	4.080	8.520	8.770	2.980	1.230	0.750	0.420	0.200	0.150	0.890
1980	0.690	6.480	5.830	5.590	5.180	2.510	1.120	0.680	0.910	0.760	0.730	1.320
1981	1.560	3.210	2.270	4.010	1.880	4.280	2.510	1.320	0.570	0.310	0.170	0.130
1982	3.940	1.970	1.150	0.770	0.380	1.050	1.120	1.320	0.940	0.540	0.800	0.540
1983	1.130	21.450	4.760	113.110	5.690	7.060	3.310	1.510	1.250	2.610	2.950	1.880
1984	3.260	2.540	2.930	2.820	25.220	4.940	1.960	0.690	0.340	0.210	0.100	0.090
1985	1.800	1.600	3.230	8.400	4.980	3.930	2.650	1.390	0.770	0.490	0.230	0.150
1986	0.500	0.950	4.520	2.820	2.150	4.490	2.900	1.790	1.010	0.550	1.650	11.840
1987	6.820	5.640	3.140	3.970	6.630	4.590	2.310	1.040	0.980	0.910	0.790	0.600
1988	7.740	3.210	10.790	3.130	11.830	4.750	2.770	1.510	1.450	1.080	0.540	0.290
1989	1.450	23.960	7.500	4.550	2.900	2.690	2.220	1.220	0.510	0.250	0.370	0.300
1990	1.240	2.420	4.890	23.580	9.690	6.870	2.800	2.510	2.960	2.040	1.010	0.640
1991	1.000	1.330	3.570	3.410	3.980	1.730	0.970	0.560	0.270	0.150	0.070	0.070
1992	0.310	2.510	5.370	2.720	3.560	4.760	2.540	1.410	0.770	0.370	0.390	0.440
1993	11.270	3.690	8.630	4.540	3.100	6.670	2.480	0.930	0.420	0.220	0.150	0.100
1994	2.500	2.920	7.920	4.330	1.830	2.350	1.690	1.100	0.650	0.360	0.200	0.140
1995	3.410	8.050	25.610	11.230	23.550	8.700	4.050	2.990	1.770	1.170	0.820	0.370
1996	3.250	2.270	5.160	8.220	3.700	13.740	5.870	3.810	3.320	2.370	1.570	1.420
1997	3.400	10.070	3.130	5.820	3.810	3.600	1.950	1.100	0.590	0.290	0.150	0.190
1998	1.980	3.470	10.660	4.690	2.400	1.650	1.430	1.070	0.670	0.370	0.450	0.370
1999	1.400	1.520	16.940	10.270	29.410	7.760	5.500	3.720	2.030	0.930	0.400	0.530
2000	3.020	15.190	8.370	3.490	3.480	2.860	2.020	1.180	0.600	0.400	0.260	0.660
2001	2.290	12.120	3.330	3.290	2.020	1.320	0.940	0.520	0.280	0.940	0.940	0.790
2002	0.670	0.910	2.380	2.410	3.690	1.600	0.610	0.260	0.460	0.390	0.210	0.200
2003	0.190	1.810	1.060	3.760	8.610	5.390	2.290	0.840	0.350	1.180	0.850	0.440
2004	0.330	1.850	3.180	4.640	3.940	4.810	2.340	1.280	0.990	0.760	0.650	0.550

B.14. Niv5_i

FILE : Niv5_i

UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	7.930	14.590	13.360	5.250	5.780	18.690	6.330	3.220	1.790	0.890	0.470	1.870
1921	6.340	27.300	27.170	10.810	6.590	4.000	2.260	1.370	1.090	0.740	2.190	1.710
1922	5.860	23.730	14.660	13.180	8.780	5.370	3.470	1.860	0.880	0.550	0.320	0.170
1923	2.630	3.960	23.220	7.090	10.310	12.030	6.340	3.810	2.070	0.950	0.620	3.150
1924	3.330	12.590	25.870	8.650	5.150	104.400	11.480	5.440	2.720	1.990	1.320	3.340
1925	4.390	4.090	5.790	7.580	5.190	12.970	4.590	2.390	1.660	0.920	0.420	2.070
1926	2.240	2.620	5.770	5.020	10.490	10.500	4.940	2.040	0.870	1.540	1.260	0.860
1927	6.680	6.430	10.600	26.610	7.360	3.820	2.210	1.100	0.470	0.230	0.400	1.660
1928	2.960	4.550	5.770	3.950	3.520	26.130	8.310	4.080	3.140	2.360	1.220	4.740
1929	11.980	13.010	10.270	17.690	11.410	6.400	3.470	1.700	0.830	0.520	0.800	0.940
1930	0.680	3.840	5.860	3.890	4.690	3.610	3.370	1.960	0.840	0.620	0.410	0.180
1931	0.570	1.000	3.900	2.150	20.800	12.270	6.430	6.730	4.440	2.160	0.970	0.760
1932	2.250	9.270	15.710	14.950	14.230	7.420	4.170	2.040	0.910	0.930	0.760	0.450
1933	1.320	23.360	33.840	26.710	8.470	13.290	9.700	8.350	4.920	3.670	4.870	2.900
1934	1.710	10.800	17.970	9.190	6.940	4.770	3.100	3.010	2.190	1.190	0.680	0.510
1935	0.910	1.180	4.930	21.280	11.260	13.330	5.640	7.750	4.780	2.240	1.000	1.480
1936	5.060	20.680	6.990	28.410	34.150	11.360	5.430	2.650	1.260	0.700	0.380	2.270
1937	3.600	2.970	11.880	7.190	6.240	4.420	13.660	5.690	3.420	2.940	1.850	1.280
1938	9.960	6.490	19.610	23.310	72.360	23.410	8.810	4.900	2.940	2.930	2.340	4.170
1939	5.290	23.600	12.820	18.000	5.910	7.510	6.350	5.390	7.240	4.810	2.210	2.250
1940	2.850	8.170	30.760	9.850	8.390	5.860	6.420	3.530	1.410	1.180	0.970	1.140
1941	1.710	4.830	6.190	8.610	6.980	11.530	4.740	5.150	4.660	2.880	1.650	1.810
1942	4.920	14.290	17.440	6.840	6.120	7.490	36.000	10.950	6.420	8.850	11.410	6.980
1943	7.590	16.560	15.840	15.080	34.130	10.260	4.250	1.680	3.210	2.370	1.040	3.560
1944	8.130	4.610	3.670	9.170	4.720	16.780	5.660	3.030	2.370	1.930	1.670	1.390
1945	1.470	1.440	2.240	8.110	14.510	10.770	14.440	2.690	1.780	1.420	1.310	2.520
1946	3.610	16.180	13.590	9.520	12.910	6.040	5.190	3.100	1.500	0.880	0.480	0.820
1947	3.210	11.040	11.460	20.580	40.440	24.460	10.280	3.700	2.410	0.630	1.690	2.210
1948	3.080	14.740	8.240	28.430	14.490	10.710	8.900	5.750	3.180	1.610	0.760	0.960
1949	3.260	8.330	16.830	12.000	7.120	12.340	9.790	5.160	3.200	2.350	2.430	2.230
1950	1.640	3.040	10.970	15.600	6.940	12.050	10.170	3.270	2.470	2.260	4.920	3.820
1951	7.910	4.530	10.680	4.990	5.010	2.650	2.380	1.630	1.690	1.340	1.340	1.170
1952	2.090	5.150	12.530	6.000	6.670	5.990	6.200	2.500	1.680	1.510	1.220	1.290
1953	1.820	5.680	7.830	7.430	11.520	10.670	9.670	8.060	3.670	2.760	1.500	1.520
1954	4.530	7.130	8.940	24.440	33.020	20.770	4.990	2.610	2.450	2.870	1.890	2.020
1955	2.770	4.060	13.570	10.560	77.010	17.030	5.440	3.070	2.410	1.700	1.380	1.830
1956	7.590	10.400	14.450	9.090	13.680	10.150	6.320	3.680	2.360	8.490	3.680	24.280
1957	38.840	10.790	4.870	20.450	13.120	5.310	5.650	3.280	1.600	0.940	0.660	1.630
1958	2.410	17.130	12.260	13.560	9.300	4.350	1.710	2.910	1.820	1.250	1.350	1.860
1959	2.470	7.430	11.270	5.520	13.540	8.260	7.410	4.180	1.810	0.900	1.180	1.850
1960	4.770	23.770	45.880	13.650	8.860	6.450	8.960	4.280	3.380	2.680	2.340	1.430
1961	3.060	8.180	7.470	6.980	5.180	5.030	3.060	2.350	1.430	1.230	1.050	1.140
1962	1.820	17.310	17.710	12.590	6.800	7.160	3.520	1.270	6.320	26.370	5.770	3.180
1963	3.080	8.740	5.700	19.670	7.140	2.630	2.670	1.450	1.140	1.220	1.250	1.100
1964	18.760	11.290	13.630	7.740	6.890	2.790	1.990	1.380	1.340	1.340	1.030	1.660
1965	1.600	2.440	2.930	11.180	15.470	3.670	1.800	1.680	1.260	1.060	0.910	1.040
1966	1.780	1.940	5.590	7.580	26.750	12.360	6.230	3.730	2.490	1.890	1.610	1.490
1967	1.200	11.080	9.820	4.830	2.760	5.930	3.980	2.480	2.040	1.940	1.770	1.870
1968	0.900	3.970	5.080	7.650	4.380	19.750	10.440	6.910	3.650	1.800	0.890	2.060
1969	14.430	8.410	10.060	5.690	4.990	2.770	1.620	1.240	0.910	0.570	0.600	0.990
1970	4.											

1972	0.790	6.910	4.620	6.340	35.160	10.720	9.230	5.170	2.360	1.150	1.730	6.890
1973	5.540	12.510	11.710	33.390	7.670	7.050	6.160	3.560	1.870	2.010	1.460	0.590
1974	1.480	18.890	17.140	20.530	16.260	8.640	8.150	4.470	2.010	1.040	0.490	6.180
1975	3.090	8.260	27.410	15.540	23.990	14.950	8.620	7.310	4.300	1.940	1.000	0.540
1976	6.130	6.080	9.220	13.830	21.390	9.990	5.630	2.960	1.350	0.650	0.470	2.240
1977	2.960	3.820	6.960	28.200	14.560	10.300	7.030	4.130	2.040	1.350	1.380	1.860
1978	18.130	13.050	9.650	7.870	5.770	5.870	4.940	3.040	1.460	0.840	1.870	2.840
1979	6.880	8.290	9.250	19.300	19.880	6.760	2.770	1.700	0.950	0.450	0.340	2.020
1980	1.550	14.700	13.190	12.650	11.770	5.720	2.540	1.560	2.060	1.710	1.660	2.990
1981	3.520	7.240	5.120	9.090	4.290	9.700	5.700	3.000	1.300	0.690	0.380	0.290
1982	8.930	4.470	2.610	1.720	0.860	2.380	2.540	3.000	2.120	1.230	1.820	1.230
1983	2.540	48.620	10.810	256.360	12.880	16.000	7.470	3.440	2.820	5.930	6.680	4.280
1984	7.400	5.760	6.640	6.380	57.160	11.180	4.460	1.560	0.790	0.460	0.240	0.230
1985	4.100	3.630	7.330	19.040	11.270	8.900	6.000	3.160	1.750	1.110	0.530	0.350
1986	1.150	2.160	10.250	6.370	4.870	10.190	6.580	4.070	2.280	1.230	3.740	26.850
1987	15.470	12.790	7.130	9.000	15.030	10.410	5.220	2.350	2.210	2.070	1.780	1.350
1988	17.540	7.290	24.440	7.100	26.810	10.760	6.270	3.400	3.270	2.430	1.230	0.670
1989	3.290	54.300	16.990	10.330	6.580	6.110	5.050	2.770	1.140	0.540	0.850	0.680
1990	2.810	5.490	11.090	53.430	21.960	15.570	6.360	5.670	6.720	4.620	2.270	1.420
1991	2.270	3.000	8.100	7.740	9.030	3.930	2.220	1.270	0.610	0.340	0.170	0.150
1992	0.720	5.680	12.160	6.170	8.070	10.790	5.750	3.190	1.720	0.850	0.880	0.990
1993	25.550	8.360	19.550	10.270	7.030	15.120	5.610	2.100	0.920	0.500	0.330	0.230
1994	5.670	6.620	17.950	9.820	4.130	5.330	3.830	2.480	1.470	0.810	0.460	0.300
1995	7.740	18.260	58.040	25.470	53.380	19.730	9.190	6.790	4.010	2.650	1.860	0.850
1996	7.360	5.140	11.690	18.640	8.400	31.160	13.290	8.620	7.510	5.360	3.580	3.220
1997	7.700	22.830	7.100	13.180	8.630	8.140	4.430	2.510	1.340	0.660	0.320	0.410
1998	4.470	7.870	24.180	10.620	5.450	3.750	3.250	2.430	1.500	0.850	1.030	0.840
1999	3.160	3.460	38.390	23.280	66.660	17.590	12.460	8.440	4.590	2.100	0.930	1.190
2000	6.830	34.420	18.980	7.920	7.890	6.480	4.590	2.680	1.380	0.900	0.580	1.520
2001	5.200	27.470	7.540	7.440	4.560	3.010	2.130	1.180	0.630	2.120	2.140	1.790
2002	1.530	2.060	5.390	5.450	8.360	3.640	1.380	0.590	1.050	0.900	0.490	0.460
2003	0.430	4.080	2.390	8.520	19.510	12.220	5.170	1.880	0.790	2.690	1.920	0.990
2004	0.740	4.170	7.210	10.520	8.920	10.900	5.320	2.900	2.230	1.750	1.480	1.250

B.15. Niv6_i

FILE : Niv6 I
UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	3.039	1.480	1.350	0.010	0.014	0.012	0.002	0.002	0.000	0.000	0.000	3.147
1921	1.053	10.363	7.023	3.388	2.032	1.174	0.460	0.287	0.169	0.106	6.025	0.246
1922	0.287	6.630	8.413	8.481	3.977	1.788	0.945	0.552	0.325	0.207	0.125	0.075
1923	0.880	1.824	1.926	2.126	0.468	0.323	0.002	0.002	0.000	0.000	0.000	0.357
1924	0.219	1.533	2.776	0.316	2.993	8.146	2.523	1.176	0.670	0.699	0.282	0.198
1925	0.099	0.133	0.668	0.952	0.190	0.101	0.005	0.002	0.002	0.000	0.000	0.323
1926	0.000	0.000	0.974	0.571	0.716	0.142	0.000	0.000	0.000	0.171	0.034	0.000
1927	0.000	0.200	0.359	3.434	0.848	0.610	0.345	0.000	0.000	0.000	0.000	1.530
1928	0.005	0.111	0.010	0.000	1.147	1.359	0.137	0.087	0.051	0.034	0.019	0.321
1929	0.178	0.171	0.554	4.608	1.991	3.160	0.104	0.065	0.039	0.024	0.014	0.010
1930	0.005	0.053	1.892	0.027	0.234	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1931	0.000	0.000	0.041	0.039	4.215	2.381	0.002	0.000	0.000	0.000	0.000	0.000
1932	0.000	0.000	2.986	0.227	0.065	0.055	0.335	0.000	0.000	2.718	0.000	0.000
1933	0.000	0.000	17.294	3.434	0.239	0.159	0.431	0.060	0.036	0.911	3.073	2.282
1934	1.186	0.721	1.246	0.354	1.029	0.118	0.060	0.039	0.024	0.014	0.010	0.005
1935	0.002	0.002	1.588	3.384	3.909	0.190	0.108	0.718	0.053	0.022	0.012	0.007
1936	0.005	1.015	0.386	3.355	5.049	1.407	0.583	0.369	0.217	0.137	0.084	0.048
1937	0.031	0.019	3.140	0.178	0.513	0.492	0.349	0.010	0.007	0.005	0.002	0.002
1938	0.186	0.243	2.032	1.704	10.903	3.646	1.446	0.853	0.504	0.468	0.195	0.116
1939	0.745	1.574	0.945	2.121	0.643	0.448	0.087	4.104	0.084	0.022	0.014	0.051
1940	0.101	0.178	1.793	0.043	0.075	0.002	0.313	0.005	0.000	0.000	0.000	0.000
1941	0.000	0.000	1.224	0.272	1.041	0.641	0.096	0.060	0.036	0.022	0.014	0.007
1942	0.306	1.125	6.606	1.287	1.533	0.484	0.595	1.480	0.824	7.719	2.200	1.138
1943	1.109	0.431	0.639	1.010	2.092	0.328	0.036	0.024	0.169	0.010	0.005	0.212
1944	0.005	0.002	0.053	0.027	0.000	0.063	0.547	0.034	0.000	0.000	0.000	0.000
1945	0.000	0.000	0.007	4.010	0.094	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1946	0.000	0.877	6.685	0.901	0.407	0.292	0.774	0.296	0.060	0.039	0.024	0.014
1947	0.010	0.005	0.005	0.055	0.870	0.063	0.002	0.000	0.000	0.000	0.000	0.000
1948	0.002	0.000	0.455	0.039	0.014	0.860	0.121	0.135	0.000	0.000	0.000	0.000
1949	0.128	0.017	0.063	0.002	0.000	0.005	0.000	0.000	0.000	0.000	0.000	0.000
1950	0.014	0.002	1.234	0.002	1.714	0.827	0.000	0.000	0.000	0.000	0.482	0.007
1951	0.000	0.000	3.473	0.817	0.024	0.012	0.000	0.000	0.000	0.000	0.000	0.000
1952	0.000	0.089	2.480	0.610	13.402	0.595	0.084	0.024	0.014	0.010	0.005	0.010
1953	0.002	0.000	0.270	0.212	2.490	0.007	0.815	0.494	0.043	0.027	0.017	0.950
1954	0.292	0.010	0.439	0.699	0.966	1.135	0.137	0.087	0.051	0.031	0.019	0.012
1955	0.431	0.369	1.191	2.039	23.601	11.529	4.512	2.396	1.157	0.730	0.443	1.448
1956	0.706	12.508	3.629	1.863	9.216	2.376	1.632	0.725	0.260	20.827	4.745	29.995
1957	35.957	14.178	7.244	5.013	11.925	1.374	1.154	0.422	0.248	0.157	0.096	0.055
1958	0.036	9.568	5.601	1.583	2.747	0.648	0.231	0.757	0.089	0.055	0.034	2.528
1959	0.844	0.051	4.328	0.499	2.347	0.434	3.196	0.258	0.041	0.027	0.017	0.041
1960	0.176	1.386	12.775	15.518	9.560	6.574	1.333	0.817	0.484	0.306	0.186	2.449
1961	1.617	0.489	1.740	4.384	0.142	1.022	0.077	0.036	0.022	0.014	0.007	0.005
1962	0.002	1.191	19.996	7.642	3.695	4.280	5.006	2.911	2.721	1.152	0.692	0.410
1963	0.260	0.190	0.210	3.025	1.350	0.140	0.104	0.051	0.031	0.019	0.012	0.007
1964	1.458	7.054	8.187	2.617	1.065	0.631	0.374	0.236	0.149	0.576	0.055	0.031
1965	0.104	1.562	0.287	0.545	5.598	0.007	0.002	0.002	0.002	0.002	0.060	0.070
1966	0.000	0.496	1.164	1.504	6.818	5.847	1.482	0.870	0.516	0.325	0.198	0.116
1967	0.106	2.374	3.545	1.562	0.130	0.378	0.043	0.029	0.017	0.010	0.007	0.005
1968	0.002	0.381	14.458	4.634	1.391	0.877	0.737	0.306	0.171	0.108	0.065	0.448
1969	1.123	0.106	0.214	0.619	2.396	0.017	0.007	0.005	0.002	0.002	0.002	1.335
1970	3.290	0.499	0.251	10.722	1.000	0.754	3.174	6.777	3.316	1.622	0.930	0.549
1971	0.347	0.586	5.485	6.521	16.089	5.572	1.976	1.268	0.639	0.405	0.246	0.145
1972	0.092	0.060	0.193	4.338	15.299	9.893	14.079	5.312	2.702	1.350	2.224	3.229
1973	5.553	2.205	2.637	6.374	6.090	0.362	0.212	0.135	0.080	1.988	0.031	0.019
1974	0.058	3.454	0.366	1.376	3.586	3.090	1.068	0.716	0.410	0.258	0.157	11.554
1975	8.061	8.878	8.076	8.131	5.369	2.420	2.969	9.527	2			

1977	7.751	1.077	2.593	18.311	6.803	2.198	1.118	0.689	0.407	0.258	0.157	0.193
1978	6.996	6.203	6.189	2.581	8.500	0.675	0.313	0.198	0.116	3.895	0.716	1.742
1979	1.075	0.595	1.697	3.772	0.964	0.099	0.058	0.036	0.022	0.014	0.007	0.005
1980	0.002	0.002	0.634	1.839	2.774	0.031	0.000	0.000	0.048	0.111	0.036	1.516
1981	0.190	1.265	2.668	5.015	3.319	0.831	0.393	0.186	0.108	0.070	0.041	0.024
1982	0.641	1.468	0.007	0.819	0.002	0.002	0.000	0.195	0.031	0.000	0.000	0.000
1983	0.000	4.015	3.699	41.592	47.342	8.719	8.189	4.514	2.222	2.518	3.796	5.302
1984	2.634	1.198	1.366	4.808	32.559	4.263	1.400	0.853	0.506	0.321	0.193	0.116
1985	1.162	0.952	0.371	3.210	2.058	0.186	0.075	0.048	0.029	0.017	0.010	0.007
1986	0.005	0.002	11.785	0.511	0.123	0.024	0.010	0.007	0.005	0.002	0.653	17.485
1987	20.015	7.016	4.803	3.191	4.085	2.986	4.090	1.542	0.863	2.651	0.335	1.489
1988	2.338	2.581	3.892	0.964	2.383	0.665	0.362	0.202	0.301	0.075	0.046	0.027
1989	0.125	1.595	5.801	4.798	1.757	0.824	0.468	0.294	0.174	0.111	0.067	0.039
1990	0.024	0.014	6.338	6.399	12.342	3.748	1.759	1.003	0.593	0.374	0.227	0.135
1991	0.422	0.480	3.899	0.200	1.256	0.034	0.005	0.002	0.002	0.000	0.000	0.000
1992	0.000	0.029	0.824	2.617	2.241	0.000	1.617	0.002	0.000	0.000	0.000	1.504
1993	23.616	4.919	8.105	8.358	4.044	3.955	0.894	0.557	0.330	0.210	0.128	0.075
1994	1.581	2.704	9.630	2.475	0.099	0.106	0.145	0.031	0.017	0.010	0.005	0.002
1995	1.538	0.492	17.232	8.715	29.163	19.885	6.377	3.548	1.656	1.738	0.586	0.347
1996	1.709	0.214	1.432	0.709	0.617	6.869	7.869	2.974	2.116	2.608	2.805	1.458
1997	0.897	1.909	3.270	12.269	1.029	8.057	0.487	0.422	0.202	0.096	0.058	0.034
1998	0.424	0.354	7.163	2.911	1.815	0.769	2.029	0.333	0.157	0.099	0.060	0.036
1999	0.022	0.012	6.796	8.818	20.702	5.876	3.875	5.403	2.205	1.171	0.706	0.417
2000	0.272	14.472	18.020	8.259	4.032	5.673	2.099	1.058	0.595	0.376	0.229	6.550
2001	0.911	3.470	2.899	3.210	11.440	1.603	2.294	0.535	0.316	35.762	5.124	5.010
2002	2.897	1.752	1.892	0.711	8.833	0.195	0.116	0.072	0.043	0.027	0.017	0.010
2003	0.007	3.593	0.786	1.646	5.167	8.365	3.538	1.827	0.957	11.983	3.552	1.044
2004	0.639	7.681	1.191	0.815	9.548	5.514	2.465	1.178	0.672	0.424	0.436	0.152
2005	0.118	2.046	0.039	6.312	2.644	1.053	1.379	0.231	0.111	0.070	0.431	0.027
2006	1.489	3.463	15.590	4.401	1.829	0.542	0.321	0.202	0.121	0.075	0.046	1.116
2007	13.200	10.421	6.141	2.637	1.217	0.993	4.304	1.593	0.771	0.489	0.296	0.176
2008	0.111	6.895	0.282	0.909	0.721	0.121	0.007	0.005	0.002	1.501	7.630	0.434
2009	0.376	3.514	0.183	9.016	1.118	0.313	3.699	0.434	0.231	0.147	0.089	0.053

B.16. Niv7_i

FILE : Niv7 I

UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	4.371	1.206	1.169	0.208	5.701	1.636	0.102	0.026	0.020	0.021	0.001	6.007
1921	1.101	35.386	19.971	10.104	36.848	3.884	1.745	1.093	0.653	0.421	2.514	0.914
1922	1.741	4.234	5.770	40.046	10.344	2.531	1.177	0.746	0.436	0.274	0.156	0.091
1923	0.181	0.743	13.376	2.098	4.195	9.444	2.869	1.552	0.931	0.584	0.354	0.519
1924	0.293	12.462	8.435	41.538	30.798	488.403	136.143	60.046	31.351	40.967	12.730	5.864
1925	4.569	2.209	2.464	1.382	0.513	1.212	0.276	0.131	0.088	0.047	0.034	8.128
1926	0.017	0.053	0.045	0.507	3.741	3.019	0.596	0.000	0.000	0.684	0.075	0.199
1927	1.561	7.779	5.433	2.074	5.938	1.377	0.480	0.028	0.028	0.000	0.000	0.369
1928	0.008	0.482	0.759	0.832	1.923	12.617	1.318	0.816	0.518	0.298	0.191	2.393
1929	1.844	1.389	1.508	142.335	18.779	54.065	10.567	5.490	3.261	2.063	1.255	0.751
1930	0.475	0.316	7.723	0.294	0.058	0.055	0.019	0.031	0.004	0.029	0.134	0.074
1931	0.056	1.218	0.134	0.025	98.502	18.102	5.218	6.453	4.441	2.716	1.632	0.974
1932	0.620	0.448	8.806	7.250	26.328	2.471	0.983	0.641	0.365	2.094	0.134	0.085
1933	0.063	3.441	4.937	6.753	0.704	1.028	0.309	0.000	0.011	0.007	1.805	0.183
1934	0.209	0.338	8.587	4.126	6.000	0.068	0.019	0.015	1.062	0.011	0.001	0.013
1935	0.012	0.004	0.042	33.679	2.523	155.771	78.094	28.560	12.341	6.510	3.967	2.337
1936	1.475	13.943	10.794	20.787	25.000	6.019	3.018	1.896	1.128	1.433	0.435	0.387
1937	0.165	0.294	5.721	0.387	6.465	0.223	1.096	0.026	3.765	5.472	2.232	1.312
1938	3.244	4.732	15.877	3.546	6.755	8.155	0.264	1.608	0.319	5.987	6.424	5.510
1939	15.246	25.690	15.099	10.469	5.261	2.710	5.782	29.367	9.014	6.147	3.385	3.935
1940	2.109	4.520	27.303	7.074	3.098	3.937	1.075	0.596	0.363	0.218	0.141	0.265
1941	0.522	0.264	0.841	5.042	30.826	5.898	1.685	1.065	4.071	0.768	0.467	0.648
1942	8.004	6.388	38.137	22.912	5.750	6.982	19.591	16.676	8.204	128.505	27.857	22.967
1943	16.867	8.449	9.821	2.972	11.313	1.741	1.002	0.638	0.983	1.032	0.622	26.029
1944	25.052	12.003	8.632	8.529	7.859	57.588	10.845	5.937	3.493	2.207	1.336	0.807
1945	0.499	0.312	10.691	15.782	14.085	2.111	2.069	0.563	0.344	0.224	0.133	0.089
1946	0.071	0.349	0.320	2.597	18.289	73.951	9.142	4.996	2.915	1.821	1.112	0.695
1947	0.420	11.570	30.211	7.181	4.306	5.493	5.442	0.501	0.317	0.194	0.112	0.096
1948	0.141	1.135	2.785	3.564	3.825	0.152	6.890	17.070	0.867	0.540	0.321	0.199
1949	0.328	1.385	11.035	7.193	0.314	4.346	0.383	0.275	0.012	0.011	0.014	0.008
1950	0.109	0.006	2.540	6.753	0.083	3.081	1.211	0.078	0.008	0.000	11.312	7.056
1951	4.428	2.533	10.154	2.183	20.214	2.318	0.230	0.124	0.075	4.238	0.359	0.143
1952	0.075	1.517	2.196	7.388	12.231	1.240	0.790	0.112	0.058	0.038	0.020	0.021
1953	0.000	1.646	0.015	0.401	3.634	1.552	0.119	11.500	3.445	2.055	1.261	6.767
1954	12.214	9.380	5.105	21.607	33.884	47.695	19.141	8.241	4.506	2.843	1.713	1.009
1955	0.806	0.468	1.120	0.223	29.266	23.941	9.920	5.791	3.422	2.184	1.305	1.209
1956	0.563	9.722	17.777	5.284	9.440	1.323	23.571	14.735	5.641	41.926	18.440	149.326
1957	140.305	60.953	40.769	25.190	34.812	9.033	5.051	2.921	1.725	1.093	0.665	0.381
1958	0.977	2.608	2.918	12.795	2.747	1.406	0.817	0.587	0.305	0.203	0.123	0.810
1959	1.513	0.308	15.667	0.419	24.118	4.957	12.633	2.244	0.749	0.464	0.281	0.187
1960	0.114	15.176	21.092	61.860	12.282	3.078	1.854	1.217	0.937	0.458	0.289	13.019
1961	8.346	4.274	2.866	1.781	1.688	4.446	4.502	0.738	0.118	0.096	0.212	0.058
1962	0.032	0.157	44.725	4.595	17.292	6.069	10.955	1.845	1.569	436.444	43.784	22.723
1963	11.253	6.262	4.143	77.623	4.012	2.195	2.738	0.861	0.514	0.338	0.197	0.128
1964	7.793	14.046	9.248	3.960	21.174	1.582	0.880	0.555	0.347	0.533	0.124	0.171
1965	2.137	0.831	0.362	0.469	5.683	0.015	0.008	0.015	0.006	0.013	0.008	0.004
1966	0.008	4.322	58.185	7.421	16.454	14.973	8.285	4.849	2.595	1.568	0.956	0.573
1967	2.226	6.434	4.167	4.275	0.820	37.065	5.688	3.545	2.084	1.325	3.834	0.468
1968	0.416	0.383	2.079	2.895	0.423	36.800	4.303	2.505	1.431	0.915	0.555	0.591
1969	17.496	11.455	5.314	3.720	3.461	1.297	1.224	0.508	0.262	0.164	0.858	6.144
1970	28.180	7.251	4.471	3.547	1.495	1.038	2.666	4.754	1.341	1.871	1.663	0.704
1971	0.640	0.853	3.983	16.260	98.547	38.574	14.524	11.856	5.801	5.712	3.167	1.757
1972	1.107	0.768	0.530	0.621	8.924	1.037	0.670	0.391	0.213	0.145	0.908	24.675
1973	77.614	12.914	22.144	15.198	4.892	3.518	1.732	0.946	0.527	3.926	0.201	0.138
1974	0.099	1.412	29.178	39.320	39.365	56.635	12.800	7.004	4.048	2.558	1.544	30.811
1975	35.322	1										

1981	15.814	7.940	5.964	3.195	6.179	10.050	4.693	2.637	1.551	0.995	0.609	0.362
1982	0.614	0.938	0.104	2.627	2.061	0.194	0.028	0.086	0.002	0.000	0.463	0.000
1983	1.260	25.878	8.110	99.640	131.440	98.807	21.349	10.391	5.789	46.975	18.529	16.703
1984	6.858	3.903	3.085	21.721	20.140	5.500	2.561	1.581	0.921	0.578	0.365	0.208
1985	19.380	27.392	9.763	11.607	21.800	3.176	0.674	0.436	0.249	0.170	0.108	0.087
1986	0.554	1.814	19.498	9.760	6.034	2.221	1.218	7.996	0.762	1.261	10.710	316.154
1987	230.321	65.764	79.379	37.065	36.798	23.958	11.916	6.546	3.735	8.082	1.648	0.923
1988	34.151	67.505	95.080	36.122	37.622	10.580	5.204	3.173	1.870	1.177	0.705	23.763
1989	3.959	20.268	100.828	32.718	50.141	45.685	20.602	7.470	3.577	2.250	1.369	0.823
1990	6.808	11.663	9.808	9.995	18.612	8.923	0.815	1.293	0.298	0.192	0.126	0.074
1991	0.680	2.623	3.118	0.021	87.639	9.565	3.938	2.458	1.472	0.937	0.568	0.341
1992	2.385	0.424	12.746	1.017	0.547	1.084	2.378	0.053	0.000	0.000	0.000	0.002
1993	143.200	25.809	25.695	24.773	8.630	8.975	5.323	1.877	1.115	0.694	0.418	0.249
1994	0.620	5.704	6.030	1.247	0.101	21.167	1.261	0.034	0.003	0.019	0.009	0.011
1995	7.710	15.614	201.674	124.867	187.246	90.720	40.166	22.489	10.400	26.447	6.505	3.515
1996	20.003	7.331	11.446	31.238	59.587	24.123	15.387	4.906	11.330	14.378	9.660	65.153
1997	51.115	67.773	85.699	42.344	15.237	21.135	4.569	2.903	1.717	1.078	0.664	0.396
1998	32.164	6.453	14.497	31.609	2.309	14.583	1.208	0.598	0.325	0.204	0.130	0.067
1999	0.171	0.091	64.580	102.790	82.575	56.144	30.646	22.653	10.064	5.793	3.488	3.737
2000	4.882	64.070	51.536	15.345	5.561	4.290	2.145	1.351	0.807	0.506	0.306	21.309
2001	2.225	2.862	4.511	1.188	0.428	0.204	0.695	0.059	0.037	167.495	21.612	10.167
2002	5.878	12.916	5.481	1.625	19.937	0.565	0.303	0.197	0.187	0.074	0.056	0.022
2003	0.005	1.435	17.364	108.560	105.979	35.893	15.350	7.793	4.512	33.376	15.913	5.268
2004	2.806	2.709	1.973	18.555	21.984	6.898	1.502	0.174	0.094	0.070	0.195	0.035
2005	0.019	18.387	25.716	2.987	2.280	0.177	1.341	0.125	0.001	0.017	0.033	2.647
2006	0.698	16.340	23.216	1.340	0.616	0.418	0.240	0.160	12.266	7.558	2.272	1.617
2007	7.140	4.611	2.592	6.974	0.897	3.086	4.883	0.221	0.134	0.079	0.043	0.023
2008	0.028	0.020	6.710	3.519	1.409	42.303	0.191	0.163	0.085	0.030	0.235	0.019
2009	2.637	50.335	10.796	79.751	26.527	6.284	3.686	2.244	1.332	0.858	0.519	0.290

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UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.000
1921	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007	0.002	0.001	0.001	0.000
1922	0.000	0.002	0.000	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1923	0.000	0.000	0.002	0.002	0.000	0.025	0.000	0.000	0.001	0.003	0.000	0.051
1924	0.020	0.000	0.000	0.000	0.000	23.588	29.983	23.141	13.661	7.640	4.042	1.816
1925	1.132	0.672	0.424	0.257	0.144	0.094	0.055	0.034	0.020	0.012	0.007	0.006
1926	0.003	0.000	0.000	0.002	0.000	0.000	0.003	0.001	0.000	0.000	0.000	0.000
1927	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.322	0.003	0.002	0.000	0.003
1928	0.003	0.001	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
1929	0.000	0.000	0.000	11.063	0.573	0.360	0.211	0.134	0.354	0.076	0.034	0.020
1930	0.016	0.010	0.005	0.004	0.127	2.904	2.778	0.005	0.000	0.000	0.000	0.000
1931	0.000	11.652	2.172	0.035	28.544	9.453	25.362	67.341	25.222	11.089	6.047	2.920
1932	1.530	0.906	0.635	0.346	1.098	1.482	0.080	0.049	0.031	0.020	0.011	0.008
1933	0.012	0.000	0.001	0.191	3.229	3.036	1.508	1.198	18.343	6.960	7.629	5.355
1934	2.872	1.383	0.897	0.535	0.298	0.204	0.121	10.046	3.438	2.378	2.925	1.643
1935	0.969	0.573	0.362	1.434	0.143	24.719	5.563	13.663	12.267	12.529	7.701	3.998
1936	2.001	4.533	5.297	2.763	1.266	8.237	5.172	3.383	1.640	0.982	0.597	0.353
1937	0.222	0.145	5.386	11.859	5.924	2.000	1.082	0.686	0.437	0.260	0.159	0.097
1938	0.062	0.035	1.075	0.042	4.831	2.668	1.921	3.507	7.995	7.031	5.026	2.855
1939	1.702	2.547	0.598	0.882	0.709	28.564	16.987	72.189	35.744	22.831	10.328	5.396
1940	3.012	14.426	6.017	2.997	1.392	0.965	0.566	0.360	0.214	0.135	0.084	0.048
1941	0.032	0.016	0.093	5.460	5.241	9.211	5.030	6.278	6.461	3.698	1.765	1.023
1942	0.642	0.727	4.026	0.177	0.236	67.717	28.276	21.469	9.474	21.248	9.398	4.764
1943	3.701	1.305	0.838	0.700	9.573	7.242	1.465	0.912	21.709	11.796	6.430	14.400
1944	7.155	5.531	2.778	1.073	7.784	24.981	11.304	6.317	3.152	1.614	0.976	0.578
1945	0.365	0.218	2.731	1.437	0.047	0.058	13.548	2.976	1.437	0.905	0.551	0.326
1946	0.206	0.120	0.137	0.160	0.055	2.807	11.375	5.179	2.502	1.381	0.834	0.495
1947	0.311	0.187	0.119	1.452	2.009	0.058	0.132	0.022	0.008	0.005	0.005	0.579
1948	0.015	0.000	0.000	2.345	3.800	0.688	21.839	26.822	3.260	1.664	0.996	0.621
1949	0.373	0.230	3.921	0.842	0.047	0.049	0.055	0.413	0.014	0.008	0.006	0.004
1950	0.075	0.004	0.002	0.000	0.000	8.197	1.196	0.429	0.235	0.148	3.940	0.332
1951	0.186	0.112	12.047	0.050	0.026	0.103	0.009	0.618	6.225	35.997	13.057	6.802
1952	3.738	1.857	1.532	0.925	0.808	0.978	0.211	0.136	0.080	0.050	0.031	0.477
1953	0.013	0.005	25.075	0.158	0.715	0.698	0.051	10.786	0.379	0.108	0.070	0.039
1954	0.825	3.734	1.491	3.065	2.657	5.548	3.214	1.603	0.935	0.593	0.449	0.322
1955	0.242	0.078	0.052	0.029	0.011	12.693	0.186	0.049	2.460	0.092	0.296	0.032
1956	0.020	0.578	13.318	14.381	8.280	4.877	4.047	6.358	2.809	4.446	1.633	6.026
1957	28.583	10.042	7.156	7.773	14.872	8.090	4.547	2.272	1.223	0.988	0.474	0.282
1958	0.181	0.104	0.068	0.047	0.021	0.017	0.008	1.991	0.020	0.092	0.000	1.185
1959	0.531	0.448	0.399	0.359	1.302	0.598	35.532	22.583	7.620	4.210	1.988	1.123
1960	1.112	2.272	11.389	6.277	10.194	1.646	1.027	0.700	30.884	21.143	16.766	8.513
1961	7.940	3.915	1.276	0.772	0.434	10.415	10.371	4.976	2.378	1.333	2.586	1.169
1962	0.548	7.161	4.376	2.034	1.059	2.660	0.515	0.277	19.731	71.192	15.101	7.745
1963	4.313	1.948	1.914	4.717	0.998	0.895	7.378	3.913	1.782	1.205	0.639	0.367
1964	3.348	3.149	1.408	0.832	0.464	0.338	0.226	0.357	3.839	3.298	8.284	13.426
1965	10.703	6.059	3.245	6.581	1.131	0.778	0.464	0.292	0.170	0.108	0.065	0.039
1966	0.023	0.017	0.007	0.008	0.002	0.041	11.623	2.644	1.287	7.549	2.453	1.269
1967	1.719	0.655	0.288	0.174	0.296	0.173	0.164	0.102	0.246	0.041	0.662	0.015
1968	0.010	0.175	0.005	0.000	0.000	32.487	23.030	12.982	6.950	3.835	1.778	2.515
1969	2.910	0.399	0.251	0.153	0.091	0.055	0.033	2.702	0.475	0.302	0.184	0.108
1970	0.792	0.880	0.242	0.966	0.373	2.717	3.244	148.880	16.178	19.734	8.551	4.436
1971	2.623	1.388	1.597	1.437	15.731	20.638	9.840	14.655	11.267	6.294	3.231	1.543
1972	0.974	1.999	0.503	4.308	0.130	0.295	0.053	0.033	0.017	0.029	14.704	7.304
1973	9.036	1.968	4.602	6.157	1.168	0.802	0.475	4.117	5.749	3.753	1.841	0.999
1974	0.635	3.816	0.287	21.579	14.657	12.648	8.882	9.476	2.976	1.550	0.935	12.847
1975	7.576	2.952	2.967	9.266	17.729	37.924	41.374	22.103	11.934	13.805	5.506	2.802
1976	3.825	1.039	3.204	0.529	44.152	48.073	12.652	7.029	3.611	1.754	1.065	0.664
1977	0.401	0.238	1.086	14.207	7.413	4.971	2.710	2.644	1.319	9.854	3.681	1.971
1978	2.852	1.597	0.980	0.594	0.331	0.683	0.189	0.424	0.555	0.		

1985	7.708	6.155	2.322	1.724	0.706	0.487	14.465	2.027	2.845	0.669	0.404	0.239
1986	0.149	0.090	0.054	2.801	0.017	4.088	0.717	0.444	1.229	0.842	11.393	118.987
1987	82.765	12.689	7.088	3.726	12.052	24.255	10.685	5.968	2.942	1.542	0.934	0.552
1988	0.462	2.466	17.164	4.090	8.287	3.247	1.509	0.946	0.723	0.595	0.359	1.069
1989	0.187	8.836	15.827	5.588	2.579	1.503	1.137	0.563	0.333	0.210	0.515	0.365
1990	3.800	0.073	0.067	4.304	3.394	9.772	10.194	43.065	12.618	7.067	3.703	1.689
1991	1.068	0.632	0.400	0.242	0.141	0.093	0.055	0.035	0.018	0.013	0.010	0.005
1992	0.005	0.003	0.495	0.001	2.216	0.188	0.051	0.000	0.000	0.000	0.000	0.000
1993	18.573	2.625	1.416	0.858	0.482	0.753	0.605	0.127	0.073	0.048	0.771	0.027
1994	1.586	0.052	0.008	0.006	0.000	0.231	9.810	7.147	7.706	5.013	2.497	1.277
1995	0.803	1.113	0.316	3.574	9.887	17.191	7.700	4.281	1.948	8.996	5.829	2.950
1996	11.588	1.177	0.556	0.465	0.226	0.130	5.380	1.103	3.478	6.055	10.581	7.031
1997	3.154	6.518	12.974	5.998	12.197	2.824	1.359	0.860	0.507	0.319	0.192	0.113
1998	0.081	0.034	0.681	4.944	18.455	8.746	4.515	2.271	1.228	0.771	0.865	0.304
1999	7.999	1.933	2.239	3.072	6.020	36.922	26.858	17.343	12.795	7.155	3.763	1.720
2000	1.083	0.614	0.400	6.155	0.139	7.321	10.113	5.521	2.439	1.601	1.137	10.080
2001	2.670	5.666	2.671	1.561	0.761	0.519	0.827	0.193	0.159	6.197	9.928	4.499
2002	2.308	1.213	0.768	0.478	0.261	0.182	0.108	0.127	0.267	1.092	0.601	0.358
2003	0.225	0.142	0.087	1.657	5.726	1.723	0.562	0.815	0.209	0.543	0.196	0.927
2004	0.051	0.137	2.151	0.102	6.595	0.020	0.002	1.003	5.241	0.535	0.238	0.143
2005	0.087	0.337	0.036	2.381	2.509	0.241	0.214	0.567	0.012	0.004	5.661	2.120
2006	1.090	1.032	0.465	0.729	0.599	0.100	1.157	0.049	0.017	0.014	0.008	0.005
2007	0.089	0.845	0.343	5.860	2.337	1.474	2.844	0.981	0.560	0.453	0.491	0.674
2008	0.196	0.110	0.068	0.054	0.047	0.015	0.204	0.005	0.005	0.000	0.000	0.021
2009	0.044	0.001	0.004	0.332	0.009	2.169	0.106	0.068	0.040	0.027	0.013	0.011

B.18. Nv1_i

FILE : Nv1 I

UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	2.381	1.230	1.063	0.416	0.220	0.412	0.228	0.117	0.070	0.042	0.027	0.851
1921	0.771	6.950	5.418	3.808	2.021	1.285	0.516	0.307	0.182	0.112	1.353	0.433
1922	1.571	4.517	6.010	16.379	5.671	2.733	1.290	0.687	0.367	0.228	0.138	0.080
1923	0.226	0.908	5.113	1.687	2.948	6.593	2.376	1.428	0.814	0.474	0.269	0.159
1924	0.197	9.323	7.216	12.692	14.779	41.002	14.958	6.684	3.508	10.054	2.878	1.001
1925	0.625	0.370	0.233	0.150	0.087	0.052	0.029	0.021	0.008	0.013	0.009	0.002
1926	0.004	0.000	0.003	0.001	0.009	0.003	0.000	0.000	0.000	0.000	0.004	0.000
1927	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.003
1928	0.003	0.004	0.000	0.000	0.005	0.464	0.374	0.188	0.094	0.058	0.034	0.023
1929	0.028	0.027	0.125	0.184	0.146	0.091	0.057	0.034	0.022	0.014	0.008	0.006
1930	0.003	0.000	0.007	0.050	0.049	0.031	0.175	0.183	0.092	0.069	0.081	0.050
1931	0.027	0.012	0.009	0.012	0.815	1.202	0.788	0.443	0.221	0.114	0.069	0.038
1932	0.023	0.031	0.074	0.041	0.019	0.013	0.008	0.008	0.000	0.146	0.008	0.000
1933	0.008	0.772	1.200	1.455	0.755	1.189	0.176	0.100	0.055	0.035	0.086	0.053
1934	0.200	0.531	4.134	0.293	2.644	0.153	0.047	0.030	0.014	0.008	0.006	0.003
1935	0.005	0.000	0.039	6.495	2.503	1.116	0.714	4.073	1.465	0.722	0.437	0.266
1936	0.162	3.675	3.204	5.234	9.891	2.656	1.384	0.714	0.413	0.606	0.157	0.354
1937	0.065	0.037	3.260	0.479	4.662	0.472	1.703	0.264	0.418	1.832	0.472	0.363
1938	1.147	2.696	5.864	0.968	0.769	5.145	0.986	0.920	0.393	2.922	3.020	1.630
1939	0.809	3.893	4.778	4.559	2.383	0.912	4.271	1.944	0.898	0.560	0.339	1.507
1940	1.247	2.013	3.945	3.089	1.383	1.128	0.559	0.174	0.100	0.062	0.038	0.043
1941	0.026	0.283	0.716	0.617	0.667	0.004	0.003	0.016	0.094	0.001	0.001	0.490
1942	0.845	1.403	3.620	4.545	1.839	4.441	1.603	0.898	0.493	15.426	3.333	2.903
1943	2.635	1.197	1.831	0.522	1.626	0.451	0.202	0.128	0.082	0.044	0.032	2.804
1944	2.147	1.047	0.941	0.909	1.824	9.664	2.146	1.076	0.615	0.385	0.231	0.140
1945	0.089	0.052	4.773	8.010	6.262	1.565	0.584	0.351	0.206	0.131	0.076	0.043
1946	0.110	0.114	0.094	1.687	3.036	23.918	3.386	1.778	0.987	0.549	0.331	0.243
1947	0.138	4.553	13.659	2.569	1.538	2.238	0.898	0.331	0.195	0.126	0.073	0.171
1948	0.179	0.848	2.071	1.238	0.940	0.273	1.399	3.292	0.397	0.253	0.158	0.120
1949	0.280	0.269	1.701	2.772	0.755	1.800	0.305	0.379	0.058	0.035	0.023	0.015
1950	0.028	0.005	1.944	0.248	0.048	1.480	0.033	0.008	0.008	0.000	0.914	0.272
1951	0.530	0.103	1.922	0.397	0.423	0.688	0.012	0.008	0.008	1.896	0.057	0.000
1952	0.004	0.040	2.383	3.667	1.795	1.119	0.614	0.169	0.083	0.047	0.032	0.017
1953	0.051	1.777	0.252	0.209	2.593	1.115	0.187	1.314	0.364	0.207	0.125	1.111
1954	2.309	2.921	2.215	2.104	7.887	4.582	2.325	1.262	0.673	0.419	0.248	0.149
1955	0.451	0.121	0.743	0.538	4.596	3.210	1.414	0.790	0.460	0.289	0.178	0.269
1956	0.100	0.335	1.269	1.006	0.699	0.325	0.147	0.072	0.042	9.145	2.791	11.169
1957	16.403	9.060	4.975	4.784	3.660	1.162	0.672	0.381	0.223	0.138	0.088	0.085
1958	0.263	2.033	3.184	1.247	0.720	0.423	0.221	0.162	0.085	0.052	0.030	0.466
1959	0.357	0.318	2.765	0.378	2.017	0.986	0.513	0.458	0.224	0.135	0.079	0.162
1960	0.057	1.764	3.492	6.271	4.276	1.880	1.466	0.972	0.581	0.303	0.188	1.401
1961	1.006	0.481	0.316	0.475	0.097	0.897	1.177	0.370	0.163	0.101	0.066	0.038
1962	0.025	0.333	7.150	1.635	1.180	1.298	3.376	1.292	0.707	65.255	5.333	2.786
1963	1.387	0.759	0.470	3.973	0.368	0.236	1.696	0.410	0.240	0.155	0.089	0.050
1964	3.000	4.997	3.893	1.240	10.898	0.427	0.278	0.152	0.122	0.054	0.044	0.022
1965	0.602	0.066	0.171	0.070	2.377	0.113	0.059	0.036	0.020	0.013	0.016	0.014
1966	0.008	0.973	2.706	0.733	6.512	3.005	1.893	1.103	0.618	0.350	0.212	0.173
1967	0.152	3.160	3.806	1.625	0.750	7.987	1.617	0.866	0.517	0.323	0.215	0.115
1968	0.266	0.482	1.696	2.077	0.409	3.382	0.961	0.867	0.532	0.300	0.181	0.188
1969	3.226	2.689	1.317	0.945	1.409	0.273	0.618	0.123	0.060	0.040	0.101	1.281
1970	4.467	2.291	1.209	0.661	0.365	0.253	0.238	2.584	0.924	0.984	0.772	0.319
1971	0.542	0.197	0.707	5.016	14.762	6.109	2.979	3.067	1.771	1.978	0.939	0.485
1972	0.330	0.387	0.274	0.254	4.619	1.026	0.713	0.371	0.219	0.140	0.223	3.117
1973	9.657	1.577	0.861	4.809	1.572	1.336	0.417	0.257	0.154	1.717	0.065	0.034
1974	0.092	0.783	6.514	9.134	9.664	4.888	2.416	1.312	0.731	0.428	0.261	2.610
1975	2.229	1.000	1.548	7.720	3.222	5.600	4.038	2.548	1.072	0.620	0.366	0.214
1976	0.340	0.640	5.931	3.908	23.864	11.958	5.768	3.174	1.517	0.840	0.508	0.374
1977	0.235	0.118	0.376	8.521	4.820	1.520	1.067	0.467	0.272	0.267	0.105	0.081
1978	0.645	0.542	2.011	1.526	1.259	0.163	1.185	0.870	0.511	0.306	0.181	0.430
1979	0.659	0.305	0.342	1.009	0.937	0.072	0.043	0.026	0.021	0.005	0.005	0.749
1980	0.186	0.779	0.612	1.634	0.375	0.019	0.047	0.103	2.784	0.815	0.448	3.684
1981	2.024	1.284	1.471	0.634	1.667	0.983	0.258	0.151	0.091	0.052	0.037	0.023
1982	0.152	0.355	0.002	0.115	0.005	0.010	0.000	0.003	0.000	0.000	0.000	0.000
1983	0.095	2.707	2.439	46.689	62.090	5.722	3.363	1.811	0.940	12.171	4.728	2.926
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1989	0.018	2.797	13.319	3.893	2.246	1.203	1.973	0.498	0.275	0.172	0.102	0.067
1990	0.156	2.085	2.095	1.290	3.647	5.197	0.896	1.082	0.277	0.179	0.110	0.059
1991	0.038	0.025	0.742	0.016	3.176	1.223	0.026	0.005	0.000	0.000	0.000	0.000
1992	0.000	0.002	0.000	0.000	0.042	0.008	0.000	0.000	0.000	0.000	0.000	0.000
1993	4.232	1.863	2.098	1.635	1.005	0.600	0.277	0.166	0.095	0.064	0.047	0.021
1994	0.186	0.067	0.920	0.869	0.020	0.013	0.376	0.266	0.140	0.090	0.056	0.036
1995	0.152	1.777	21.349	19.165	29.745	17.022	6.718	3.758	1.869	9.176	1.853	0.899
1996	4.385	1.020	7.674	8.556	3.220	5.770	3.254	0.910	1.196	2.261	2.506	5.322
1997	8.838	14.006	14.168	5.826	2.898	2.719	0.751	0.491	0.288	0.177	0.106	0.060
1998	4.488	1.682	8.008	5.402	1.419	3.347	0.513	0.298	0.175	0.110	0.064	0.044
1999	0.259	0.108	13.429	6.916	3.747	1.993	1.655	2.698	1.058	0.587	0.335	1.559
2000	1.794	7.565	19.335	4.508	2.148	1.648	0.625	0.385	0.229	0.144	0.084	5.286
2001	0.897	0.666	0.639	0.375	0.190	0.086	0.060	0.031	0.038	39.327	3.961	2.446
2002	1.327	1.326	0.451	0.414	4.567	0.125	0.061	0.039	0.022	0.014	0.008	0.007
2003	0.005	0.846	0.935	13.967	9.527	3.217	1.273	0.716	0.389	12.256	5.788	2.105
2004	0.985	1.179	1.565	10.406	6.818	0.814	0.268	0.171	0.101	0.068	0.040	0.024
2005	0.018	1.001	0.090	0.961	0.195	0.007	0.226	0.010	0.004	0.000	0.004	0.004
2006	0.056	0.556	5.738	1.568	0.712	0.473	0.279	0.175	0.340	0.141	0.042	0.026
2007	0.652	0.732	0.035	0.016	0.008	0.011	0.362	0.010	0.000	0.000	0.001	0.000
2008	0.004	0.033	1.304	1.077	0.627	0.815	0.000	0.003	0.000	0.002	0.226	0.001
2009	0.006	0.004	0.038	8.327	2.021	0.759	0.512	0.266	0.159	0.096	0.063	0.037

B.19. Nvii3_i

FILE : Nvii3I

UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	5.970	1.895	2.867	0.577	0.765	0.072	0.026	0.198	0.016	0.009	0.026	5.216
1921	1.880	69.824	15.643	3.364	2.879	0.442	0.590	0.378	0.873	0.568	4.087	0.156
1922	0.414	23.564	26.133	91.515	3.920	20.985	12.201	3.745	2.557	2.314	1.201	0.699
1923	0.266	31.230	21.477	2.817	7.310	17.850	0.935	1.509	0.994	0.629	0.391	12.325
1924	9.857	17.292	31.790	40.175	24.510	117.201	1.089	44.102	37.603	14.797	17.839	6.074
1925	54.194	3.038	4.646	0.186	0.554	3.317	0.847	9.032	0.449	0.282	0.193	0.100
1926	0.023	0.023	4.702	0.102	0.023	22.017	0.267	0.032	0.026	0.019	0.040	0.033
1927	26.975	17.710	12.900	59.585	16.524	7.631	2.269	2.352	1.937	1.073	0.647	3.527
1928	0.238	2.010	13.159	4.488	98.353	4.256	17.335	10.894	3.472	2.582	2.237	18.563
1929	7.768	1.366	5.724	110.826	18.662	25.674	23.087	14.038	4.449	3.050	2.446	1.239
1930	0.780	1.537	14.831	0.214	4.123	0.279	2.457	0.049	0.007	0.030	0.021	0.007
1931	0.016	18.551	15.384	5.841	48.510	15.737	69.812	4.986	15.189	12.264	5.028	2.958
1932	2.498	10.604	14.537	61.649	48.633	25.189	17.300	6.272	3.688	0.979	1.394	0.778
1933	1.989	22.147	38.978	1.689	0.809	1.437	0.864	0.240	0.521	0.321	1.323	0.082
1934	0.098	0.749	10.696	1.991	4.597	0.023	0.016	0.009	0.035	0.035	0.000	0.000
1935	0.000	0.000	0.800	36.485	1.172	6.041	0.954	7.574	0.508	0.808	0.505	0.312
1936	0.203	73.420	1.880	19.625	118.581	27.037	35.129	22.701	10.212	3.526	2.767	1.483
1937	1.050	0.610	104.706	10.767	0.088	1.750	0.655	1.554	1.234	0.045	0.593	0.332
1938	0.177	4.074	96.760	51.987	2.987	37.687	35.782	19.129	8.003	2.091	0.030	1.003
1939	1.103	39.715	5.918	18.178	3.106	83.306	1.671	13.464	4.333	15.381	9.232	1.957
1940	2.276	26.812	16.484	32.331	8.018	2.392	2.309	1.639	0.852	1.421	0.312	0.170
1941	0.128	0.247	74.033	10.700	14.888	2.624	9.678	5.499	6.985	6.381	4.261	2.316
1942	0.697	7.308	11.799	7.692	5.102	45.015	60.442	20.554	24.771	2.741	20.661	9.891
1943	2.608	4.938	0.382	17.300	54.075	14.524	4.844	3.473	0.092	1.262	0.740	5.777
1944	1.223	0.117	19.188	5.040	20.760	32.179	1.743	2.482	2.109	1.429	0.827	0.503
1945	0.261	0.205	11.493	47.122	32.648	10.056	2.446	2.575	2.170	1.125	0.673	2.224
1946	0.247	0.105	12.934	29.840	33.983	43.702	15.654	9.652	3.730	2.913	2.053	0.936
1947	0.340	9.869	24.336	1.216	20.353	2.056	0.636	0.496	0.317	0.214	0.102	1.500
1948	0.042	1.454	4.250	56.767	8.964	11.275	28.280	28.452	21.465	10.264	4.230	2.668
1949	2.032	0.964	84.824	20.726	1.280	1.074	3.191	1.667	0.898	0.610	0.361	0.223
1950	0.137	0.051	5.492	7.844	1.035	2.560	0.000	0.037	0.028	0.019	19.758	7.310
1951	1.696	0.195	18.346	3.911	1.371	0.753	0.730	0.458	0.272	1.322	0.068	0.051
1952	0.016	0.378	41.205	5.414	11.396	0.690	0.422	1.122	0.723	0.428	0.295	0.309
1953	0.084	37.307	5.213	3.050	19.494	9.608	0.178	24.665	7.077	5.022	3.035	1.212
1954	5.711	2.257	2.191	31.765	18.140	10.291	0.092	1.172	2.134	2.021	1.712	0.872
1955	1.725	1.724	7.136	2.452	103.068	14.501	16.014	12.512	4.708	2.342	2.033	1.051
1956	0.557	17.625	6.654	3.040	28.598	10.025	6.668	4.294	2.302	24.337	1.393	85.324
1957	43.886	22.666	24.076	0.918	31.387	40.938	16.521	6.665	4.249	2.603	1.199	0.664
1958	9.633	28.599	17.785	2.104	8.262	4.264	2.190	2.019	0.677	0.403	0.275	2.800
1959	1.065	0.844	13.398	0.159	21.055	1.938	1.823	0.006	0.011	0.010	0.021	0.040
1960	0.002	8.343	56.006	6.185	44.888	54.084	29.999	14.077	3.136	9.719	4.927	0.912
1961	7.961	9.355	2.381	1.668	15.498	5.807	1.903	0.315	0.200	0.117	0.056	0.053
1962	0.058	2.178	30.034	22.143	15.663	61.709	15.662	7.105	2.963	67.918	24.696	13.759
1963	2.779	4.438	3.426	55.829	21.162	10.421	2.785	2.760	1.731	0.906	0.548	0.367
1964	17.242	19.387	13.236	1.958	21.472	3.536	2.148	1.078	0.659	0.445	0.044	0.182
1965	0.788	0.753	0.174	14.442	3.203	9.850	5.660	4.030	2.079	1.186	0.737	0.449
1966	0.263	0.565	12.529	8.888	116.326	8.571	46.806	27.911	13.085	5.413	3.757	2.126
1967	1.103	9.304	5.825	4.834	1.657	30.550	1.917	2.340	1.069	0.675	0.419	0.265
1968	0.177	0.025	15.041	35.796	7.777	28.536	6.270	12.930	1.066	1.614	1.679	0.756
1969	19.081	6.716	4.003	1.760	4.299	1.119	0.034	0.172	0.091	0.084	0.058	2.838
1970	8.017	10.624	0.407	18.703	1.139	0.495	9.990	16.281	6.511	2.603	0.595	0.189
1971	6.005	11.511	14.981	35.697	99.851	15.369	42.507	25.257	16.774	6.958	3.534	2.601
1972	2.108	12.506	1.319	10.264	28.806	6.230	9.552	2.710	0.151	0.652	0.141	3.492
1973	25.110	10.699	16.688	17.353	11.583	15.446	12.220	6.354	3.618	0.365	0.960	0.609
1974	0.363	19.616	17.519	28.856	79.783	6.181	31.504	27.763	15.553	6.653	3.962	50.895
1975	20.109	5.899	5.208	9.206	46.759	35.204	25.789	5.966	8.090	3.668	2.784	2.183
1976	8.211	1.997	22.306	31.010	132.333	18.738	42.908	30.969	16.628	5.880	3.111	75.113
1977	6.936	15.078	36.948	64.643	17.832	34.306	30.688	18.021	5.947	5.684	4.832	2.689
1978	26.468	9.534	0.485	2.285	9.059	0.108	12.981	0.626	0.353	1.969	0.181	0.112
1979	0.102	0.019	2.119	8.635	47.571	14.739	6.808	4.376	2.273	1.107	0.695	4.243
1980	0.268	14.729	8.349	6.332	12.505	3.790	1.736	83.606	21.269	22.002	13.395	37.779
1981	18.996	7.430	6.575	1.345	5.877	12.288	2.745	1.452	0.784	0.486	0.323	0.198
1982	0.947	1.091	0.007	0.209	0.014	0.026	0.000	5.074	0.281	0.030	0.040	0.007
1983	0.019	38.497	0.584	43.523	43.448	34.035	47.567	32.015	38.025	14.119	13.846	3.698
1984	2.879	1.673	4.498	41.728	8.307	51.008	41.365	28.704	15.205	8.411	4.962	3.313
1985	2.946	5.219	1.841	19.191	9.920	4.059	0.033	0.225	0.128	0.132	0.056	0.042
1986	0.049	1.849	26.950	35.9								

1993	56.247	5.931	11.181	12.047	16.290	1.568	1.541	1.886	0.989	0.574	0.393	0.216
1994	6.446	11.761	43.532	0.467	5.447	3.499	30.153	36.326	14.346	14.500	6.444	4.425
1995	2.420	12.736	96.216	30.363	75.427	31.632	40.714	22.110	15.881	1.106	4.791	3.489
1996	44.707	0.504	5.271	7.984	2.505	22.901	62.226	15.652	13.714	5.823	0.935	0.396
1997	6.613	27.220	4.272	13.939	28.105	8.963	8.518	4.687	3.347	1.985	1.109	0.655
1998	2.050	5.494	22.307	25.882	14.546	15.958	13.130	6.779	4.259	2.364	0.266	0.689
1999	0.345	8.457	44.060	24.374	64.058	26.757	31.318	12.583	27.106	17.907	6.703	2.401
2000	3.628	91.261	17.066	19.881	14.094	13.763	20.710	10.590	4.591	3.104	2.638	13.499
2001	1.336	42.980	40.344	0.475	6.261	1.245	0.532	1.220	0.992	75.305	21.972	7.763
2002	4.507	5.135	10.273	0.476	21.169	0.192	0.272	0.179	0.068	0.077	0.051	0.009
2003	0.026	9.200	2.149	80.956	39.964	29.231	16.970	8.246	3.496	25.622	0.675	3.340
2004	3.272	7.508	7.310	15.375	18.859	11.188	5.489	3.706	1.830	0.952	0.425	0.342
2005	0.249	17.925	1.855	17.089	11.242	9.636	0.530	1.048	0.570	1.065	10.853	0.116
2006	6.503	11.521	68.089	18.226	4.768	9.118	12.773	4.096	6.419	1.059	0.612	0.258
2007	22.119	50.696	8.577	6.272	3.743	2.497	10.559	0.579	0.554	0.410	0.242	0.142
2008	0.075	51.381	14.073	30.588	26.638	10.527	21.673	7.853	4.769	1.522	15.239	0.996
2009	6.559	4.050	1.723	52.317	4.976	5.267	4.654	2.475	1.101	0.691	0.470	0.256

B.20. Nvii5_i

FILE : Nvii5_i

UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	8.040	8.280	10.410	8.480	4.790	6.310	5.720	3.230	2.760	2.390	2.030	2.210
1921	2.310	16.760	10.930	7.230	4.540	4.090	3.200	2.660	2.520	2.270	2.220	1.840
1922	3.160	6.720	4.890	4.780	4.660	2.350	2.050	1.750	1.420	1.150	0.950	0.750
1923	0.810	2.620	4.980	3.170	3.030	4.630	3.950	3.070	2.530	2.120	1.890	2.150
1924	3.220	35.930	20.360	16.360	14.550	86.860	33.630	15.510	5.660	5.570	4.270	4.320
1925	7.090	7.550	5.890	3.260	2.590	4.160	4.120	2.790	3.410	3.260	2.420	2.960
1926	6.010	8.330	7.000	4.370	3.970	7.210	5.090	3.130	2.780	2.910	3.280	3.160
1927	4.580	4.340	4.360	6.260	7.660	6.690	4.490	2.970	2.460	2.190	2.170	2.210
1928	3.100	2.750	1.890	1.890	1.770	5.580	6.380	3.580	3.850	4.180	3.430	4.200
1929	7.500	15.720	10.850	11.700	11.730	8.090	8.650	5.600	3.150	2.870	3.060	3.530
1930	4.000	4.270	4.460	4.520	3.230	2.460	2.210	1.830	1.600	1.630	1.390	1.160
1931	2.120	3.140	2.760	1.760	55.310	24.560	16.270	16.670	13.900	6.740	3.640	3.040
1932	2.920	3.300	4.760	3.720	3.280	2.960	2.390	1.880	1.530	1.550	1.460	1.160
1933	1.180	4.780	8.540	18.990	15.540	10.770	9.720	6.910	5.420	4.210	5.300	4.320
1934	3.970	5.910	32.920	16.010	9.590	6.820	4.120	3.610	3.630	3.290	2.680	2.310
1935	2.160	2.050	1.710	5.070	9.690	10.990	10.030	9.320	8.060	3.970	3.080	3.040
1936	4.270	16.130	9.080	6.650	11.070	7.520	4.000	2.870	2.520	2.350	2.020	2.020
1937	2.330	2.370	7.190	6.680	8.210	10.680	8.000	6.460	4.000	5.720	5.460	3.570
1938	5.230	5.630	6.430	7.210	36.940	34.450	15.350	7.990	5.160	4.040	3.940	5.220
1939	7.070	20.920	16.360	11.140	4.800	3.420	4.120	30.670	18.730	13.670	5.540	4.630
1940	5.160	5.990	10.110	8.900	4.510	3.690	4.480	3.490	2.500	2.190	1.870	1.810
1941	2.150	3.120	2.900	4.510	6.310	7.260	8.510	5.420	4.280	3.650	3.380	4.590
1942	7.070	10.450	23.030	17.860	11.710	11.150	22.760	15.180	7.810	9.900	15.800	10.680
1943	13.960	16.430	9.170	3.430	5.450	6.840	3.700	2.710	3.630	4.220	2.900	5.240
1944	7.550	5.600	4.010	3.130	3.750	23.970	12.770	6.120	3.260	2.680	2.270	1.900
1945	1.870	1.340	1.390	9.980	7.360	3.830	3.530	2.840	2.310	1.960	1.610	1.410
1946	3.150	5.640	4.980	3.970	7.040	12.750	9.000	6.020	4.970	4.060	3.170	3.050
1947	3.560	8.170	15.060	12.970	7.630	7.580	6.590	4.540	3.060	2.580	2.210	2.060
1948	3.050	4.420	4.080	4.820	7.340	10.550	12.550	10.520	6.280	4.070	2.900	2.850
1949	4.510	7.830	20.440	16.700	9.020	7.270	5.020	3.610	3.140	2.620	2.400	1.960
1950	1.830	1.700	3.610	3.310	1.580	1.800	2.110	1.760	1.500	1.310	3.700	5.310
1951	6.160	3.760	3.820	4.590	3.930	3.700	3.250	3.100	2.790	3.430	3.300	2.240
1952	2.620	3.660	6.050	10.280	15.250	9.840	5.870	3.620	2.930	2.550	2.420	2.310
1953	2.720	5.980	5.630	3.930	6.740	7.660	4.730	6.110	5.920	3.820	3.240	4.360
1954	21.740	22.140	12.170	8.910	10.870	9.650	8.680	5.180	3.280	2.710	2.210	1.880
1955	5.130	6.960	12.720	8.050	35.210	17.230	5.100	2.980	2.770	2.360	2.080	2.650
1956	5.100	8.470	20.360	15.830	10.160	7.290	6.590	6.180	3.340	4.210	4.990	34.150
1957	36.020	18.680	9.010	10.420	14.190	7.320	7.000	6.070	3.270	2.720	2.220	2.030
1958	2.850	3.730	3.970	6.620	8.170	6.680	3.090	4.270	3.860	2.730	2.810	2.830
1959	4.080	4.290	6.400	4.450	5.090	8.200	10.170	8.960	5.050	3.320	3.070	3.270
1960	4.720	16.820	47.520	20.450	13.540	7.730	7.360	7.000	5.240	4.120	3.140	3.970
1961	5.800	6.570	5.850	5.100	3.510	4.510	5.090	3.590	2.680	2.300	2.570	2.340
1962	3.420	6.740	8.440	12.800	9.390	9.880	11.520	6.280	6.230	42.440	19.760	8.380
1963	4.110	5.770	3.690	7.500	6.230	3.040	3.720	3.920	2.980	2.700	2.370	2.160
1964	5.800	8.000	6.990	6.390	3.870	3.060	2.540	2.450	2.930	3.390	3.830	4.230
1965	6.180	8.480	8.740	10.540	13.340	6.900	3.840	3.420	3.040	2.520	2.370	2.450
1966	2.590	3.290	4.750	6.740	20.030	18.630	15.150	10.250	4.260	3.180	2.770	2.380
1967	3.690	8.080	6.880	5.240	3.960	6.040	4.930	3.010	2.580	2.270	2.900	3.800
1968	3.900	4.560	7.160	6.340	4.020	13.850	11.810	7.250	5.830	3.380	2.860	3.260
1969	9.960	8.140	6.420	3.890	3.000	2.800	2.580	2.960	2.840	2.230	2.470	3.910
1970	9.680	14.620	10.680	10.220	8.970	4.410	5.220	15.870	12.160	7.720	6.820	4.190
1971	5.960	5.610	5.870	11.000	37.310	18.090	8.240	5.030	5.360	4.040	3.440	2.800
1972	3.150	3.920	3.650	3.140	5.420	5.530	4.940	4.270	2.970	2.650	3.730	16.640
1973	12.170	12.680	10.090	12.610	9.420	4.940	4.600	3.920	3.570	3.200	2.690	2.150
1974	1.960	3.540	7.050	24.890	19.890	14.300	10.060	7.130	3.830	3.040	2.570	6.960
1975	7.700	6.410	11.700	17.320	17.720	22.740	14.090	8.960	5.020	3.270	3.000	2.610
1976	5.270	6.340	6.960	19.350	57.940	25.000	10.620	3.410	2.720	2.320	2.460	4.310
1977	7.370	6.360	7.990	11.770	13.560	11.960	9.280	4.060	3.110	2.980	3.430	4.070
1978	8.900	10.790	10.540	6.680	4.050	3.290	3.980	4.050	2.910	2.710	3.250	4.570
1979	4.940	3.750	4.720	4.210	3.600	2.670	2.090	1.930	1.620	1.310	1.240	3.160
1980	4.200	5.200	4.640	6.310	9.790	5.150	2.990	4.460	6.390	5.330	6.800	11.090
1981	12.670	14.090	10.040	6.180	5.710	6.060	6.770	4.880	3.210	2.710	2.300	2.020
1982	3.890	4.360	2.540	2.230	1.800	1.790	1.790	1.570	1.330	1.390	2.120	2.130
1983	2.710	6.530	8.970	123.050	66.260	24.680	9.840	3.850	3.170	4.690	6.850	5.160
1984	6.370	7.270	3.870	4.450	32.620	15.050	4.260	2.480	2.260	2.050	1.780	1.780
1985	16.380	10.640	6.700	6.110	5.330	4.640	3.880	2.940	2.520	2.220	1.940	1.790
1986	2.570	3.230	5.940	7.730	6.750	6.580	5.900	4.130	4.450	4.240	5.420	92.030
1987	37.990	23.300	14.520	4.280	12.250	13.860	10.280	5.260	3.870	4.380	4.560	4.330
1988	7.430	10.670	12.860	8.320	13.720	9.460	3.580	3.160	3.130	2.880	2.320	2.040
1989	2.320	32.000	16.120	10.330	4.490	5.510	5.420	3.910	2.970	2.530	3.030	2.800
1990	3.830	3.980	4.580	6.740	9.590	13.490	8.760	5.3				

1997	12.440	33.980	15.370	4.350	4.750	4.190	4.130	3.980	2.840	2.390	2.120	2.020
1998	4.070	5.740	6.100	6.810	7.270	4.820	3.480	2.980	2.660	2.210	2.170	2.230
1999	4.710	4.590	4.610	20.320	14.740	10.270	9.570	9.580	7.700	3.940	2.870	3.390
2000	4.330	43.400	20.240	10.910	3.840	2.400	2.090	1.940	1.540	1.250	1.010	2.730
2001	6.510	9.070	14.690	13.100	6.420	3.320	3.010	2.480	2.110	35.660	18.080	14.090
2002	9.790	6.300	3.130	2.510	3.010	2.530	1.840	1.590	1.740	1.740	1.350	1.600
2003	1.830	2.460	2.200	2.310	5.800	7.540	4.970	4.030	2.610	3.400	3.840	3.470
2004	4.060	4.820	3.670	4.160	5.930	8.900	8.240	4.530	3.340	3.090	3.030	2.930

B.21. Nvii6_i

FILE : Nvii6_i

UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	1.120	1.170	1.220	1.300	1.260	1.320	1.440	1.420	1.360	1.300	1.270	1.330
1921	1.490	17.560	13.000	2.760	1.320	1.630	1.650	1.610	1.580	1.450	1.390	1.400
1922	1.450	2.470	1.700	6.640	2.770	2.070	1.920	1.860	1.680	1.440	1.290	1.140
1923	1.120	1.120	1.150	1.160	1.170	1.240	1.310	1.310	1.310	1.310	1.300	1.380
1924	1.840	5.190	7.710	3.950	12.360	85.670	32.810	13.620	4.400	3.340	3.310	3.180
1925	3.950	3.210	2.980	2.590	2.290	2.270	2.360	2.090	1.930	1.840	1.630	1.580
1926	1.780	1.880	1.860	1.900	1.890	5.110	2.620	2.230	2.310	2.230	2.260	2.150
1927	2.160	2.040	1.770	1.850	2.000	2.040	1.990	2.160	2.240	2.200	2.220	2.180
1928	2.010	1.870	1.550	1.470	1.480	12.500	4.660	2.000	2.130	2.420	2.730	3.350
1929	3.480	3.320	3.010	6.770	3.200	2.590	2.350	2.210	1.980	1.930	1.920	1.990
1930	1.990	1.980	2.050	1.930	1.720	1.740	1.680	1.540	1.350	1.320	1.260	1.210
1931	1.230	1.240	1.250	1.230	18.920	12.260	20.420	16.700	3.990	2.630	2.580	2.630
1932	2.550	2.460	2.370	2.290	2.180	2.110	1.940	1.800	1.640	1.510	1.420	1.310
1933	1.220	1.260	1.330	1.440	3.300	1.790	2.250	3.100	4.030	4.440	3.310	3.300
1934	3.080	2.970	6.590	3.170	2.680	2.530	2.300	2.340	22.840	8.030	5.510	2.800
1935	2.620	2.460	2.190	2.070	3.940	3.220	2.220	8.270	3.190	2.530	2.620	2.690
1936	2.840	12.570	4.500	2.240	2.410	3.130	2.650	2.580	2.330	2.290	2.280	2.280
1937	2.120	2.020	4.180	2.350	7.120	2.770	2.000	2.050	2.090	2.360	2.530	2.420
1938	2.230	2.200	2.050	2.170	6.570	6.820	2.450	5.070	2.660	2.820	2.940	10.060
1939	3.750	8.400	3.340	2.610	2.310	2.020	2.190	13.600	18.880	5.260	2.440	2.600
1940	2.690	8.800	5.260	2.880	2.400	2.160	2.050	1.770	1.560	1.450	1.250	1.240
1941	1.240	1.270	1.310	1.380	1.400	2.970	1.730	1.870	2.000	2.170	2.560	2.710
1942	2.790	3.840	12.530	4.270	2.480	11.420	20.850	6.150	2.760	3.910	7.380	2.940
1943	5.470	3.560	2.990	2.610	2.290	2.450	2.270	1.990	2.470	2.600	2.260	11.930
1944	4.460	3.320	2.680	2.430	2.480	14.220	5.120	2.350	2.140	1.890	1.720	1.620
1945	1.430	1.230	1.180	1.220	1.230	1.250	1.320	1.320	1.280	1.230	1.200	1.190
1946	1.210	1.210	1.200	1.200	1.310	2.370	2.150	1.540	1.540	1.690	2.160	2.320
1947	2.390	2.560	3.050	2.960	2.950	2.900	2.820	2.690	2.370	2.090	1.860	1.690
1948	1.560	1.440	1.310	1.200	1.260	1.310	4.400	2.210	1.640	1.690	1.670	1.910
1949	2.280	2.560	10.220	3.730	2.600	2.790	2.860	2.860	2.820	2.660	2.420	2.220
1950	1.920	1.620	1.310	1.300	1.180	1.180	1.200	1.180	1.200	1.220	1.340	1.500
1951	2.700	1.520	1.340	1.330	1.530	1.520	1.490	1.510	1.500	1.480	1.490	1.360
1952	1.300	1.300	1.400	1.340	1.310	1.420	1.390	1.270	1.230	1.170	1.180	1.320
1953	1.620	2.940	2.130	2.060	6.640	3.250	3.400	6.720	3.130	3.140	3.010	3.770
1954	20.340	6.880	2.750	2.560	2.570	7.400	3.300	2.710	2.540	2.320	2.250	2.340
1955	2.490	3.860	2.560	2.230	11.110	12.040	3.210	2.670	2.780	2.720	2.670	2.910
1956	3.770	5.350	40.820	15.130	5.020	3.890	12.120	4.260	2.940	2.840	2.790	12.880
1957	19.310	5.460	2.570	11.180	9.870	2.760	2.580	2.690	2.400	2.380	2.300	2.260
1958	2.400	2.350	2.120	2.000	1.880	1.570	1.310	1.240	1.220	1.170	1.220	1.300
1959	1.400	1.430	1.420	1.350	1.390	2.080	8.050	3.250	2.130	2.270	2.440	2.480
1960	2.520	11.780	32.960	10.410	6.780	2.920	13.790	5.000	8.150	4.100	3.130	3.060
1961	4.630	4.180	2.980	2.680	2.470	2.220	2.280	2.200	1.960	1.690	1.640	1.620
1962	1.630	1.850	1.890	1.860	1.960	2.900	2.740	2.400	10.640	32.350	10.080	2.640
1963	2.570	2.690	2.500	2.760	2.530	2.220	2.190	2.280	2.050	2.000	2.010	1.850
1964	2.050	2.180	2.120	1.860	1.580	1.470	1.320	1.320	1.360	1.400	1.470	1.930
1965	10.140	3.680	2.110	2.240	2.640	2.560	2.260	2.200	2.010	1.840	1.760	1.810
1966	1.700	1.580	1.440	1.400	1.520	3.950	22.430	7.560	2.060	2.140	2.340	2.330
1967	2.350	2.470	2.210	1.800	1.890	2.070	2.050	1.840	1.760	1.720	1.690	1.860
1968	1.920	1.940	1.980	1.910	1.570	11.740	6.140	2.770	2.590	2.540	2.380	2.340
1969	3.000	2.850	2.500	2.160	1.870	1.690	1.610	1.620	1.590	1.400	1.310	1.310
1970	2.230	3.960	2.020	1.900	2.170	3.580	4.090	37.660	12.660	5.020	3.160	3.200
1971	6.040	3.260	2.990	2.960	24.120	8.800	3.020	8.050	3.380	3.130	3.090	2.810
1972	2.520	2.440	2.340	2.200	2.020	1.910	1.810	1.920	1.820	1.710	1.900	14.540
1973	5.220	2.380	2.440	4.150	2.640	2.620	2.540	2.490	2.560	2.480	2.330	2.090
1974	1.810	1.790	1.880	1.880	11.840	4.320	2.100	2.180	2.180	2.140	2.150	2.820
1975	2.460	2.400	2.390	14.490	8.540	30.180	17.500	4.220	3.110	2.920	2.940	2.800
1976	2.760	2.830	5.910	4.370	41.200	22.110	3.300	2.620	2.410	2.160	1.980	1.960
1977	1.950	1.890	1.870	10.810	4.010	2.410	8.160	3.060	2.660	2.740	2.820	2.840
1978	9.320	3.580	2.590	2.200	2.020	1.690	1.460	1.470	1.400	1.320	1.320	1.410
1979	1.540	1.620	1.710	1.690	1.590	1.500	1.360	1.280	1.160	1.130	1.130	1.250
1980	1.370	1.330	1.290	1.310	1.430	1.400	1.360	5.970	3.990	2.080	2.170	7.000
1981	3.710	5.340	3.140	2.780	2.540	2.390	2.360	2.140	1.940	1.630	1.460	1.330
1982	1.440	1.450	1.270	1.170	1.140	1.120	1.110	1.100	1.110	1.140	1.240	1.300
1983	1.340	4.040	2.080	43.320	49.300	14.610	5.330	2.760	3.120	8.620	5.700	3.260
1984	2.990	2.960	2.800	2.980	24.480	8.380	2.320	2.010	1.900	1.910	1.820	1.690
1985	14.770	5.340	1.760	1.680	1.720	1.690	1.740	1.680	1.420	1.320	1.200	1.210
1986	1.240	1.250	1.350	3.750	1.880	1.770	1.810	1.800	8.030	3.370	11.520	74.260
1987	28.300	3.330	3.280	3.020	4.810	12.650	4.120	2.570	2.430	2.340	2.210	2.240
1988	2.360	3.510	15.670	5.340	8.010	3.110	2.330	2.280	2.220	2.080	1.870	1.700
1989	1.750	18.310	6.520	2.000	1.900	2.400	2.430	2.500	2.390	2.120	2.100	2.240
1990	3.880	2.440	2.280	2.450	9.030	14.370	4.220	3.390	2.990	2.950	2.960	2.820
1991	2.740	2.610	2.310	1.930	1.490	1.200	1.160	1.120	1.090	1.080	1.080	1.100
1992	1.110	1.160	1.190	1.170	1.170	1.170	1.150	1.120	1.110	1.100	1.110	1.150
1993	1.320	1.470	1.430	1.440	1.360	1.300	1.260	1.210	1.180	1.170	1.210	1.230
1994	1.320	1.430	1.330	1.190	1.140	1.260	6.890	2.830	5.890	2.500	2.180	1.930
1995	2.040	2.370	8.040	7.150	17.650	9.600	3.030	2.930	2.800	2.780	2.860	2.540
1996	2.340	2.320	2.040	2.080	2.350	2.260	2.120	2.320	2.480	2.590	2.720	3.020
1997	4.400	19.920	6.620	2.530	2.430	2.320	1.990	1.880	1.520	1.260	1.220	1.200
1998	1.260	1.310	1.330	1.400	7.370	2.820	1.620	1.630	1.630	1.830	1.920	1.960
1999	6.830	2.790	1.860	2.030	4.480	7.060	5.100	7.980	3.010	2.770	2.640	2.500
2000	2.520	17.970	12.310	2.980	2.590	2.520	2.380	2.430	2.2			

2002	2.410	2.450	2.420	2.220	2.160	1.930	1.520	1.400	1.310	1.340	1.280	1.290
2003	1.300	1.270	1.220	1.230	1.400	1.670	1.710	1.640	1.530	1.580	1.700	1.720
2004	1.730	1.700	1.700	1.540	1.790	1.970	2.020	1.860	2.000	1.980	1.860	1.760

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FILE : Nvii7 I
UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	3.559	0.979	3.206	1.535	1.580	0.198	0.045	0.807	0.104	0.052	0.026	4.189
1921	1.999	50.453	44.861	20.865	11.243	6.322	3.783	2.882	1.305	0.823	2.225	0.493
1922	0.991	15.606	21.623	83.937	45.979	21.985	10.401	6.274	3.699	2.348	1.423	0.834
1923	0.618	29.773	20.979	7.740	9.725	16.739	3.188	1.867	1.082	0.677	0.417	0.403
1924	12.873	14.550	27.858	55.838	37.698	100.631	92.559	46.769	23.796	17.305	8.008	5.616
1925	59.950	34.661	17.624	8.826	4.969	6.953	2.218	10.467	1.386	0.872	0.540	0.310
1926	0.234	0.260	4.596	0.177	0.122	19.174	2.292	1.354	0.807	0.514	0.312	0.182
1927	22.264	26.440	19.464	89.375	22.444	11.940	6.749	3.984	2.344	1.484	0.911	4.034
1928	1.328	2.719	12.727	4.557	192.935	55.472	25.789	13.219	6.893	4.354	2.642	20.399
1929	16.081	8.029	9.377	260.962	29.775	74.409	20.790	10.453	5.858	3.710	2.259	1.321
1930	0.826	2.590	12.798	2.395	4.706	1.510	3.958	1.198	0.703	0.443	0.339	0.156
1931	0.104	3.620	13.930	5.025	29.967	0.970	88.516	48.160	26.528	14.550	7.473	4.323
1932	2.734	11.536	12.951	74.973	73.425	31.266	10.420	6.093	3.620	2.291	1.380	0.859
1933	2.890	19.631	30.566	9.815	5.308	3.239	2.223	1.629	0.531	0.334	0.629	0.120
1934	0.129	1.214	6.617	2.066	2.173	0.116	0.029	0.031	0.000	0.012	0.000	0.000
1935	0.000	0.000	0.029	21.409	3.963	10.045	5.062	7.419	2.363	1.192	0.715	0.433
1936	0.283	86.587	37.275	33.293	176.968	72.586	32.974	17.459	8.595	5.488	3.289	2.471
1937	1.304	0.772	148.597	42.200	22.168	12.312	7.020	3.734	2.442	2.090	0.987	0.610
1938	0.737	1.905	130.844	165.605	134.112	48.340	19.815	10.730	5.947	5.146	4.060	2.273
1939	1.382	46.028	15.846	14.917	5.126	95.725	52.539	33.749	26.558	17.529	8.793	5.815
1940	3.362	27.542	15.349	49.472	4.446	8.440	6.683	2.042	1.197	1.705	0.592	0.280
1941	0.175	0.258	87.430	32.176	17.805	19.929	2.498	1.476	19.119	2.877	1.764	1.246
1942	0.935	7.323	4.978	4.609	3.923	52.721	88.534	48.125	21.920	25.699	10.706	7.502
1943	4.994	8.736	2.557	15.945	74.028	10.649	5.716	3.602	3.284	1.346	0.813	5.377
1944	2.719	1.456	17.265	3.871	16.000	37.552	7.358	3.722	2.217	1.403	0.852	0.487
1945	0.509	0.192	7.403	29.270	49.214	11.701	6.751	3.805	2.243	1.420	0.849	3.227
1946	0.324	0.252	6.289	25.906	26.381	62.673	13.525	7.132	4.166	2.612	1.579	1.145
1947	1.027	6.076	12.664	2.024	17.211	2.634	0.640	0.266	0.141	0.086	0.055	1.944
1948	0.076	2.076	3.410	46.929	16.707	5.328	38.588	58.296	11.926	6.665	4.023	2.688
1949	1.549	1.063	93.821	12.455	11.125	4.706	1.695	1.510	0.618	0.391	0.234	0.130
1950	0.097	0.052	2.378	3.197	0.039	1.257	0.012	0.000	0.000	0.000	11.849	8.671
1951	4.723	2.682	9.848	1.352	0.930	0.971	0.234	0.156	0.078	0.894	0.063	0.026
1952	0.026	0.207	15.687	4.259	2.201	1.954	3.947	1.134	0.661	0.421	0.259	1.099
1953	0.097	33.728	6.890	4.216	16.523	15.402	5.202	23.817	4.445	2.451	1.540	2.321
1954	4.793	3.263	3.694	14.547	20.051	32.674	15.939	10.055	4.450	2.827	1.721	1.015
1955	1.018	2.065	7.545	2.493	69.593	39.149	15.797	8.663	4.979	3.145	1.911	1.165
1956	0.833	1.826	7.468	2.585	24.934	8.503	2.101	1.315	0.773	5.409	2.020	65.647
1957	79.750	42.159	21.787	32.431	49.504	5.687	3.639	2.017	1.171	0.742	0.441	0.256
1958	7.273	22.651	19.443	10.223	12.349	1.417	0.841	2.242	0.308	0.192	0.115	1.392
1959	0.309	1.127	7.336	0.320	1.878	1.781	0.080	0.029	0.017	0.011	0.006	0.063
1960	0.121	5.391	40.728	22.050	52.792	38.553	21.417	18.073	8.564	5.552	3.110	4.255
1961	10.346	11.610	2.746	1.740	13.871	4.740	2.105	0.881	0.442	0.292	0.273	0.149
1962	0.228	0.223	6.961	9.234	19.970	46.822	12.387	6.385	3.800	74.428	15.281	7.702
1963	7.104	8.899	2.924	57.923	5.620	2.823	7.042	1.373	0.816	0.512	0.298	0.188
1964	10.687	15.866	10.517	4.948	11.593	1.791	1.051	0.626	0.386	0.243	0.471	0.564
1965	0.848	0.193	0.466	30.534	10.205	4.049	2.318	1.458	0.859	0.547	0.325	0.188
1966	0.130	0.727	10.868	6.870	111.808	80.554	20.259	10.126	5.551	3.509	2.133	1.319
1967	0.821	6.771	3.052	3.684	0.783	22.834	2.161	1.015	0.621	0.382	0.232	0.138
1968	0.157	0.297	1.975	18.865	8.191	19.191	4.291	21.024	8.107	4.819	2.838	1.998
1969	15.247	10.504	7.063	3.752	3.357	2.548	1.163	0.771	0.310	0.200	0.188	1.271
1970	5.183	8.059	1.395	6.492	1.282	1.424	9.733	9.575	4.118	2.679	1.637	0.905
1971	5.026	9.240	9.429	26.945	154.752	39.516	16.418	13.060	8.971	5.664	3.295	1.942
1972	1.220	8.854	2.424	6.447	8.960	1.213	0.451	0.250	0.144	0.094	0.289	71.355
1973	95.100	37.675	25.921	25.009	9.777	19.597	2.721	1.705	1.016	1.392	0.386	0.218
1974	0.154	15.123	14.187	18.292	56.441	56.503	25.645	10.899	6.122	3.803	2.313	37.527
1975	52.632	17.981	38.586	39.213	39.633	17.746	9.580	14.359	5.689	3.605	2.179	1.278
1976	1.960	1.351	9.473	21.562	153.948	58.873	28.186	15.058	7.784	4.801	2.917	33.809
1977	21.570	9.104	42.609	94.512	24.625	45.899	14.766	7.847	4.556	2.875	1.758	1.469
1978	23.252	17.414	10.309	7.166	4.186	2.933	5.453	2.098	1.295	0.825	0.510	0.410
1979	0.434	0.218	0.527	5.300	7.807	0.140	0.011	0.000	0.012	0.000	0.000	1.071
1980	0.070	11.148	9.155	3.177	10.402	9.217	1.816	81.115	26.770	13.762	7.095	54.347
1981	20.574	21.560	8.129	3.943	5.836	12.325	0.812	0.509	0.297	0.187	0.103	0.065
1982	0.849	0.827	0.097	0.109	0.000	0.000	0.000	5.524	1.419	0.443	0.365	0.156
1983	0.123	34.269	20.219	197.589	262.186	43.891	18.821	9.379	6.778	12.151	9.223	14.950
1984	8.925	4.891	7.575	17.606	300.227	41.913	21.145	11.166	5.912	3.735	2.260	1.398
1985	1.867	2.671	3.429	16.696	8.396	3.813	0.697	0.380	0.239	0.148	0.084	0.038
1986	0.283	1.538	12.798	24.931	2.508	0.371	16.126	3.861	2.281	1.430	1.769	62.455
1987	60.460	19.977	14.067	15.093	28.798	52.614	27.428	15.153	7.494	5.101	2.975	3.103
1988	11.946	13.187	18.562	4.647	14.282	32.038	4.548	2.758	1.647	1.038	0.629	0.363
1989	0.903	85.528	201.787	33.271	15.950	24.710	12.908	6.298	3.726	2.365	1.432	0.842
1990	0.557	2.295	7.601	81.316	41.502	19.735	7.184	131.320	23.219	11.566	6.536	3.853
1991	2.674	1.669	2.130	2.193	5.346	1.301	0.155	0.071	0.052	0.026	0.026	0.000
1992	0.000	0.748	10.124	2.080	0.975	39.685	5.187	3.281	1.927	1.224	0.729	0.452
1993	36.432	9.923	10.717	6.074	16.217	2.026	3.111	0.623	0.314	0.186	0.121	0.079
1994	3.176	6.938	31.476	11.153	1.343	0.673	12.618	33.845	13.296	6.638	3.898	2.297
1995	1.467	9.878	67.518	63.878	120.835	44.199	18.725	15.722	6.210	8.375	2.914	1.666
1996	38.598	14.074	16.700	15.876	7.328	14.120	83.837	24.717	11.840	8.625	8.307	7.221
1997	8.238	16.031	18.794	12.349	11.476	11.575	3.755	2.410	1.420	0.896	0.544	0.313
1998	2.298	6.120	13.306	19.417	7.920	3.178	0.649	0.370	0.230	0.142	0.861	0.095
1999	0.113	5.304	26.826	33.597	67.323	74.157	46.606	29.461	14.283	7.876	4.713	7.682
2000	8.673	66.538	42.809	18.515	11.803	5.314	30.376	13.623	5.221	3.295	2.016	6.148
2001	1.535	41.291	53.883	25.663	10.492	6.154	3.636	2.287	1.365	26.902	3.281	4.079
2002	1.183	6.632	10.223	1.497	7.710	0.191	0.062	0.039	0.049	0.024	0.018	0.032
2003	0.012	4.490	1.356	60.499	43.080	19.260	7.880	4.447	2.631	8.905	4.487	1.798

2007 12.403 51.101 19.198 8.180 3.327 2.118 6.373 1.018 0.591 0.378 0.237 0.149
 2008 0.082 57.296 5.804 35.095 50.611 35.381 3.387 2.224 1.261 0.795 10.603 1.499
 2009 5.473 1.936 1.804 35.233 5.335 3.051 5.510 1.034 0.611 0.380 0.224 0.144

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FILE : Nvii8 I

UNITS : MCM

YEAR	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1920	0.065	0.017	0.048	0.066	0.026	0.010	0.000	0.026	0.019	0.020	0.000	0.026
1921	0.022	0.000	0.000	0.000	0.000	0.000	0.005	0.000	0.000	0.000	0.044	0.000
1922	0.000	0.000	0.057	0.000	0.072	0.010	0.052	0.020	0.062	0.000	0.000	0.000
1923	0.000	0.032	0.000	0.000	0.011	0.000	0.000	0.000	0.040	0.008	0.009	0.000
1924	0.000	0.022	0.000	0.010	0.000	15.874	18.612	12.120	7.915	4.389	2.201	1.026
1925	0.732	0.385	0.261	0.175	0.062	0.023	0.054	0.086	0.025	0.000	0.016	0.046
1926	0.008	0.000	0.043	0.000	0.012	0.039	0.046	0.000	0.038	0.000	0.000	0.023
1927	0.000	0.000	0.000	0.000	0.053	0.000	0.000	0.082	0.031	0.000	0.037	0.000
1928	0.000	0.063	0.043	0.018	0.000	0.076	0.031	0.046	0.033	0.076	0.000	0.000
1929	0.000	0.050	0.000	8.964	0.587	0.335	0.248	0.116	0.170	0.051	0.063	0.000
1930	0.058	0.000	0.000	0.000	0.091	1.978	1.911	0.000	0.030	0.023	0.000	0.015
1931	0.008	0.052	2.155	0.083	21.979	6.527	15.688	39.813	14.049	6.994	3.793	1.691
1932	0.932	0.595	0.453	0.271	0.883	0.970	0.000	0.046	0.081	0.038	0.030	0.020
1933	0.000	0.040	0.007	0.192	2.536	2.132	1.051	0.797	9.784	3.778	2.416	1.347
1934	0.827	0.460	0.308	0.136	0.115	0.072	0.021	5.153	1.395	0.731	0.504	0.183
1935	0.154	0.118	0.015	1.043	0.027	17.413	3.390	6.943	5.165	4.832	2.778	1.261
1936	0.779	2.858	3.087	1.695	0.708	5.710	2.496	1.649	0.791	0.501	0.367	0.242
1937	0.139	0.112	5.406	10.066	5.035	1.815	0.890	0.573	0.370	0.250	0.200	0.124
1938	0.050	0.027	1.139	0.065	3.925	1.645	0.939	1.378	3.072	2.094	1.317	0.709
1939	0.544	1.640	0.156	0.520	0.489	19.911	11.600	42.238	20.756	12.282	6.411	3.370
1940	1.776	10.968	4.412	2.188	1.008	0.706	0.368	0.314	0.187	0.076	0.106	0.000
1941	0.000	0.009	0.136	4.385	4.151	6.040	2.063	2.111	1.956	1.145	0.661	0.345
1942	0.239	0.398	3.712	0.074	0.176	47.728	17.649	13.005	6.253	9.055	4.179	1.929
1943	2.118	0.608	0.481	0.437	7.520	5.231	1.052	0.641	12.365	5.390	3.007	8.885
1944	4.290	3.562	1.806	0.605	6.027	15.812	7.412	4.175	1.995	1.053	0.608	0.385
1945	0.241	0.147	2.528	1.343	0.082	0.075	7.897	1.531	0.800	0.445	0.242	0.226
1946	0.158	0.087	0.100	0.130	0.096	1.922	6.482	2.895	1.430	0.829	0.504	0.313
1947	0.140	0.089	0.063	1.224	1.692	0.038	0.134	0.000	0.000	0.008	0.000	0.337
1948	0.000	0.000	0.000	1.890	3.392	0.713	14.518	17.323	1.873	1.046	0.627	0.372
1949	0.184	0.202	3.651	0.754	0.093	0.095	0.054	0.138	0.020	0.013	0.008	0.005
1950	0.114	0.013	0.081	0.000	0.014	5.781	0.804	0.385	0.230	0.092	1.502	0.035
1951	0.034	0.055	10.555	0.055	0.000	0.149	0.062	0.217	2.355	15.598	6.185	3.238
1952	1.579	1.037	1.037	0.756	0.612	0.663	0.163	0.172	0.116	0.061	0.093	0.257
1953	0.027	0.057	21.129	0.072	0.648	0.555	0.080	5.545	0.196	0.081	0.022	0.000
1954	0.595	2.032	0.644	2.353	2.067	2.903	1.479	0.799	0.478	0.290	0.184	0.195
1955	0.102	0.047	0.000	0.002	0.000	9.024	0.087	0.036	1.145	0.000	0.026	0.037
1956	0.000	0.578	12.114	10.966	5.654	2.890	1.874	1.847	0.692	0.855	0.200	3.119
1957	18.373	6.505	5.454	5.550	9.951	5.043	2.593	1.323	0.753	0.477	0.248	0.174
1958	0.106	0.000	0.085	0.109	0.000	0.062	0.000	0.847	0.021	0.000	0.000	0.762
1959	0.411	0.247	0.313	0.280	1.004	0.474	22.636	11.564	3.582	1.871	1.013	0.642
1960	0.698	1.720	8.382	4.325	7.411	1.093	0.656	0.447	17.278	10.510	7.975	4.265
1961	4.659	2.430	0.687	0.406	0.264	7.154	6.327	2.838	1.409	0.847	1.085	0.510
1962	0.268	5.469	3.023	1.331	0.711	1.877	0.360	0.139	10.264	38.021	9.598	4.981
1963	2.714	1.334	1.645	3.875	0.799	0.644	4.118	1.614	0.663	0.426	0.251	0.160
1964	2.418	1.939	0.737	0.473	0.281	0.203	0.076	0.171	1.460	1.309	3.434	6.208
1965	5.837	2.834	1.512	4.983	0.663	0.449	0.349	0.156	0.122	0.049	0.005	0.111
1966	0.000	0.026	0.000	0.063	0.048	0.022	6.658	1.009	0.505	2.388	0.643	0.399
1967	0.939	0.264	0.089	0.000	0.243	0.013	0.046	0.000	0.067	0.000	0.199	0.000
1968	0.062	0.112	0.000	0.000	0.071	21.897	13.308	6.633	3.495	1.782	0.948	1.566
1969	1.897	0.168	0.140	0.099	0.036	0.030	0.023	0.795	0.055	0.000	0.078	0.003
1970	0.606	0.685	0.249	0.825	0.386	1.032	0.535	86.015	7.732	8.327	3.584	1.753
1971	1.026	0.618	1.377	1.069	10.898	13.114	6.567	7.694	6.035	3.408	1.594	0.865
1972	0.598	1.419	0.300	3.395	0.000	0.231	0.016	0.046	0.000	0.026	6.357	4.212
1973	5.225	0.942	3.816	4.181	0.513	0.347	0.212	1.298	1.532	0.900	0.502	0.295
1974	0.175	2.841	0.061	16.397	9.693	5.066	3.175	3.547	0.960	0.558	0.296	8.498
1975	4.690	1.712	2.394	6.867	12.511	25.234	24.826	11.508	6.373	6.266	2.032	0.967
1976	2.394	0.551	2.736	0.281	32.944	33.891	9.162	5.138	2.618	1.351	0.751	0.499
1977	0.356	0.118	1.162	11.432	5.718	3.730	1.936	1.626	0.793	3.236	0.726	0.467
1978	1.363	0.571	0.373	0.172	0.061	0.377	0.040	0.000	0.000	0.000	0.019	0.031
1979	0.000	0.000	0.153	0.038	0.044	0.000	0.001	0.079	0.028	0.023	0.015	1.466
1980	0.064	0.000	0.285	0.745	0.060	0.000	0.000	5.748	6.151	3.294	1.624	8.431
1981	4.020	1.876	1.043	0.606	0.637	3.270	7.325	4.526	2.422	1.104	0.734	0.392
1982	0.226	0.130	0.146	0.136	0.000	0.000	0.000	0.046	0.138	1.961	5.433	2.747
1983	1.596	1.674	1.285	19.926	74.173	9.451	5.559	2.683	2.187	2.817	3.506	2.125
1984	1.119	0.610	0.335	2.686	8.039	7.058	3.685	1.849	3.719	13.721	5.544	6.603
1985	4.467	3.722	1.373	1.127	0.389	0.218	9.083	0.761	1.219	0.238	0.160	0.104
1986	0.039	0.052	0.001	2.340	0.000	2.792	0.444	0.322	0.523	0.125	4.685	81.544
1987	55.333	8.408	4.745	2.342	9.393	16.125	7.623	4.278	2.013	1.111	0.720	0.450
1988	0.367	1.941	14.995	3.054	6.490	2.447	1.140	0.695	0.408	0.290	0.078	0.641
1989	0.151	6.930	12.118	4.137	1.891	1.128	0.746	0.460	0.200	0.134	0.161	0.084
1990	2.901	0.067	0.052	3.711	2.222	6.092	6.327	23.052	7.536	4.155	2.052	1.112
1991	0.694	0.435	0.278	0.178	0.112	0.031	0.023	0.054	0.044	0.051	0.089	0.000
1992	0.000	0.000	0.619	0.012	1.778	0.119	0.107	0.008	0.000	0.000	0.000	0.015
1993	13.569	1.674	0.965	0.570	0.280	0.471	0.390	0.042	0.000	0.014	0.268	0.005
1994	1.322	0.039	0.000	0.072	0.000	0.153	5.496	3.010	3.118	1.657	0.730	0.465
1995	0.274	0.741	0.145	2.785	6.784	11.260	4.872	2.586	1.267	2.993	2.037	0.997
1996	8.179	0.585	0.209	0.281	0.114	0.068	3.226	0.414	1.054	1.704	3.126	2.510
1997	0.918	4.469	8.947	4.009	9.168	2.017	0.979	0.635	0.384	0.203	0.163	0.138
1998	0.039	0.060	0.808	4.000	13.053	5.572	2.805	1.387	0.753	0.489	0.403	0.167
1999	6.052	1.386	2.306	2.598	4.380	25.409	16.539	9.937	6.875	3.737	1.863	0.009
2000	0.565	0.380	0.266	4.928	0.092	5.121	5.931	2.532	1.114	0.714	0.418	6.236
2001	1.331	4.057	1.861	1.154	0.561	0.336	0.467	0.130	0.109	2.184	3.588	1.723
2002	0.938	0.470	0.336	0.190	0.128	0.135	0.000	0.035	0.139	0.180	0.142	0.069
2003	0.000	0.076	0.044	1.509	4.767	1.400	0.463	0.457	0.166	0.169	0.053	0.484
2004	0.000	0.103	2.117	0.073	5.048	0.039	0.000	0.337	2.718	0.137	0.105	0.065
2005	0.090	0.294	0.000	1.995	2.050	0.151	0.085	0.278	0.000	0.000	2.121	0.169
2006	0.100	0.393	0.115	0.497	0.435	0.000	0.594	0.000	0.000	0.000	0.034	0.000