



water affairs

Department:
Water Affairs
REPUBLIC OF SOUTH AFRICA

MINISTRY OF WATER AND
ENVIRONMENTAL AFFAIRS

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MINISTER OF WATER AND ENVIRONMENTAL AFFAIRS

NATIONAL ASSEMBLY: QUESTION 3215 FOR WRITTEN REPLY

A draft reply to the above question asked by Mrs A T Lovemore (DA) is attached for your consideration.

ACTING DIRECTOR-GENERAL

DATE: 4/11/2011

DRAFT REPLY APPROVED/AMENDED

MRS B E E MOLEWA, MP
MINISTER OF WATER AND ENVIRONMENTAL AFFAIRS

DATE: 2011/11/03

NATIONAL ASSEMBLY

FOR WRITTEN REPLY

QUESTION NO 3215

DATE OF PUBLICATION IN INTERNAL QUESTION PAPER: 21 OCTOBER 2011
(INTERNAL QUESTION PAPER NO. 33)

3215. Mrs A T Lovemore (DA) to ask the Minister of Water and Environmental Affairs:

- (1) Since her reply to question 1903 on 18 August 2010, what are the results of the (a) chemical and (b) bacteriological analyses of the samples that had been taken since 5 May 2010;
- (2) whether the Department of Water Affairs has taken any action to compel compliance with discharge standards and pollution prevention measures in terms of the National Water Act, Act 36 of 1998; if not, why not; if so, what (a) action and (b) has been the response by the responsible parties in each case?

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REPLY:

- (1)(a) The results of the chemical analysis of the water samples that had been taken from the Baakens River during the financial year 2010/11 and the interpretation report are attached as **Annexure A** and **C** respectively.
- (1)(b) The results of the bacteriological analysis of the water samples that had been taken from the Baakens River during the financial year 2010/11 are attached as **Annexure B** and **C**.
- (2) No, the Department has not taken an action against the Nelson Mandela Bay Municipality yet. However, to assist the Municipality in managing the sewer infrastructure within the Baakens River Catchment, the Department supported the Nelson Mandela Bay Municipality with their water use license application. The water use license was issued in terms of Section 21(c) and (i) of the National Water Act, 1998 (Act No.36 of 1998) on 29 March 2011. The water use license allowed the Municipality to upgrade an existing bulk sewer collector pipeline in the Baakens River Catchment; by replacing the existing 600mm diameter pipe with a 700mm diameter sewer pipeline for 1502m length. The upgrading of the sewer line will reduce the manhole blockages leading to sewage spillage into the Baakens River and that will prevent further deterioration of the Baakens River water quality. The upgrading had already been completed in the beginning of October 2011 and a handover inspection was undertaken on 27 October 2011.
- (2)(a) Falls away.
- (2)(b) Falls away.

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ANNEXURE A
BAAKENS RIVER CHEMICAL ANALYTICAL RESULTS: 2010/11

BAAKENS RIVER AT TRAMWAY BUILDING

DATE	pH	COND	TSS	OA	COD	NH3	PO4	NO3	Turbidity	TDS
2010/02/11	7.7	165	10		21	<0.08	0.03	2.44		
2010/03/10	7.4	162	<10		<20	<0.08	0.03	2.48		
2010/05/04	7.6	125	13		<20	0.43	0.09	1.44		
2011/03/22	7.3	161	<10		37	0.25	0	1.56		
2011/05/26	7.4	74	36		77	0.26	0.11	0.68		
2011/07/18	7.7	158	15		56	<0.08	0.06	2.24		
2011/08/24	7.8	158	12		<20	0.3	0.1	0.18		
2011/09/19	7.6	173	10		56	0.09	0.05	1.37		

BAAKENS RIVER AT D/S OF BRICKMAKERS KLOOF BRIDGE

DATE	pH	COND	TSS	OA	COD	NH3	PO4	NO3	Turbidity	TDS
2010/02/11	7.7	162	28		36	<0.08	0.03	0.82		
2010/03/10	7.6	159	33		<20	<0.08	0.02	0.74		
2010/05/04	7.6	116	12		<20	0.32	0.07	0.81		
2011/03/22	7.6	154	15		37	0.34	0	0.38		
2011/05/26	7.4	73	28		31	0.21	0.1	0.59		
2011/07/18	7.7	156	12		73	<0.08	0.05	2.11		
2011/08/24	7.8	158	13		23	0.33	0.11	0.08		
2011/09/19	7.6	172	22		63	0.08	0.05	0.96		

BAAKENS RIVER AT D/S 3RD AVENUE BRIDGE NEWTON PARK

DATE	pH	COND	TSS	OA	COD	NH3	PO4	NO3	Turbidity	TDS
2010/02/11	8	139	<10		36	<0.08	0.04	0.33		
2010/03/10	7.5	144	22		<20	5.11	0.24	0.36		
2010/05/04	7.7	133	<10		<20	0.45	0.07	1.14		
2011/03/22	7.2	119	12		303	2.19	0.16	<0.01		
2011/05/26	7.3	100	18		38	0.22	0.08	0.5		
2011/07/18	7.6	151	20		77	0.35	0.07	1.81		
2011/08/24	7.7	143	264		35	0.16	0.05	1.42		
2011/09/19	7.6	173	11		74	0.09	0.06	0.67		

BAAKENS RIVER AT TARGETKLOOF D/S CHELMSFORD AVENUE BRIDGE

DATE	pH	COND	TSS	OA	COD	NH3	PO4	NO3	Turbidity	TDS
2010/02/11	8	139	<10		32	<0.08	0.04	1.03		
2010/03/10	7.2	161	79		28	<0.08	0.03	0.86		
2010/05/04	7.7	110	18		<20	<0.08	0.04	0.67		
2011/03/22	7.2	133	<10		49	0.16	0.04	0.4		
2011/05/26	7.3	67	20		<20	0.2	0.1	0.45		
2011/07/18	7.5	154	15		68	<0.08	0.05	2		
2011/08/24	7.6	147	18		<20	0.96	0.13	1.45		
2011/09/19	7.7	164	11		71	0.14	0.04	0.7		

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ANNEXURE B
BAAKENS RIVER BACTERIOLOGICAL ANALYTICAL RESULTS : 2010/11

BAAKENS RIVER AT TRAMWAY BUILDING

DATE	FAECAL COLIFORMS
2010/02/11	900
2010/03/10	13,800
2010/05/04	6100
2011/03/22	176
2011/05/26	1,110
2011/07/18	490
2011/08/24	2140
2011/09/19	1260

BAAKENS RIVER AT D/S OF BRICKMAKERS KLOOF BRIDGE

DATE	FAECAL COLIFORMS
2010/02/11	1,700
2010/03/10	2,800
2010/04/05	48000
2011/03/22	50
2011/05/26	830
2011/07/18	730
2011/08/24	2100
2011/09/19	5100

BAAKENS RIVER AT D/S 3RD AVENUE BRIDGE NEWTON PARK

DATE	FAECAL COLIFORMS
2010/02/11	140
2010/03/10	1,300
2010/05/04	342
2011/03/22	90
2011/05/26	550
2011/07/18	57000
2011/08/24	10500
2011/09/19	9000

BAAKENS RIVER AT TARGETKLOOF D/S CHELMSFORD AVENUE BRIDGE

DATE	FAECAL COLIFORMS
2010/02/11	178
2010/03/10	900
2010/05/04	300
2011/03/22	84
2011/05/26	770
2011/07/18	1210
2011/08/24	16500
2011/09/19	530

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ANNEXURE C

DISCUSSION AND INTERPRETATION OF THE ANALYTICAL RESULTS

The Baakens River is a coastal town river. It is not used for drinking as the Department does not allow generally communities to drink untreated water. Samples are analyzed for pH, Electrical Conductivity, Chemical Oxygen Demand, Nitrates, Total Suspended Solids, Ortho-Phosphates and Faecal coliforms which are recognized as indicators of sewage pollution determinants. The results are evaluated against the South African Water Quality Guidelines for Recreational use and Aquatic Ecosystem (**Department of Water Affairs and Forestry, Volumes 2&7, 1996**) as demonstrated in table 1 below. This is informed by the relevant water use of the river and the Baakens River is predominantly providing recreational service and a habitat of various aquatic biotas.

Table 1 showing below South.African. Target Water Quality Range for Recreational Contact and Aquatic Ecosystem (Standards)

Parameters	Ammonia (mg/l)	COD (mg/l)	EC (mS/m) at 25°C	Faecal coliforms (per 100 ml)	Nitrates/ nitrites (mg/l N)	Orthophosphate (mg/l)	pH at 25°C	TSS (mg/l) at 105 °C
Recreational	-	-	<70	0-130	-	-	6.5- 8.5	<100
Aquatic Ecosystem	0.7	-	<70	0	0.5	0.25	6-8	<100

Chemical Analytical Results

i). pH

pH values of samples analysed in 2010/11 range from 7.1 to 8. The results show compliance with the target water quality range for recreational contact and Aquatic ecosystem.

ii). Ammonia (NH₃)

ammonia concentrations in the water sampled show compliance to the water quality target range stipulated by the South African water quality standards for ecosystem use, however non compliance is noted in samples taken at D/S 3rd Avenue Bridge Newton Park in March 2010 and March 2011.

iii). Total suspended solids (TSS)

Total suspended solids concentration of water samples taken during this period was found to be less than 100 mg/l. That is within values (< 100 mg/l) subscribed in South African Water Quality Guidelines for the aquatic ecosystem and recreational contact.

iv). Orthophosphate (PO₄)

The values orthophosphate varied with the lowest value of 0mg/l and highest value 00.08 and within the specified limits

v). Nitrates/ Nitrites (NO₃)

Concentrations levels of nitrates/nitrites for water sampled at reflected as 0.18 mg/l to 2.48 mg/l for nitrates/nitrites. The concentration of 2.48 falls within the category of moderate risk.



(vi). Electrical Conductivity (EC)

The electrical conductivity (EC) values varied between 73 to 173 mS/m and is above recommended levels of unpolluted fresh water which is less than 70 mS/m as reflected in table 1

Generally the chemical results are within the target water quality range for recreational and aquatic ecosystem use except for conductivity.

Bacteriological analytical results

Results are showing high count of faecal coliforms which in most cases pose high risk for recreational contact. Further investigation undertaken by the Department revealed that manhole blockages around the Baakens River due to the current 600 mm diameter sewer pipe which is not coping with the increased volumes from new developments attributes to this bad quality. This is now mitigated by the extension of the above sewer pipe line to 700 mm diameter which has been handed over to the Nelson Mandela Bay Municipality 27 October 2011.

