GROUNDWATER RESOURCE INFORMATION PROJECT
EASTERN CAPE PROVINCE

GROUNDWATER INFORMATION SOURCE REFERENCE SHEET

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A: SOURCE DESCRIPTION

District Municipality:	Amatole		Chris Hani	X	O.R Tambo	
	Ukhahlamba		Cacadu		Alfred Nzo	
Local Municipality:	Inkwanca Local Municipality					
Institution where Information is held:	AGES					
Branch of Institution:	East London					
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B: TYPE OF INFORMATION

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C: GEOHYDROLOGICAL CATEGORIZATION

Project Type -	Source development		Feasibility Study		Sanitation Study:	
	Specify Other:					

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	S	E

	Yes	No	Complete	Incomplete
Lithological & Construction Logs				
Hydrocensus Data				
Pump Testing Data				
Chemical Water Analysis Data				
Geohydrological Data				
Spring Data				
Remote Sensing Data				
Map Data				

Comments:

Reviewed by: Date: Signed:

REPORT: **2007 / 07 / 09 / GWSE**

Africa Geo-Environmental Services (Pty) Ltd.

Report on the Phase 1 Hydrogeological Investigation:

HYDROGEOLOGICAL INVESTIGATION INTO THE STERKSTROOM AREA – Phase 1 based on Tender W8783 Chris Hani District Municipality EASTERN CAPE PROVINCE

Prepared for:

Department of Water Affairs & Forestry

July 2007

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Technical Report:

HYDROGEOLOGICAL INVESTIGATION INTO THE STERKSTROOM AREA – Phase 1 based on Tender W8783
Chris Hani District Municipality
EASTERN CAPE PROVINCE

July 2007

Conducted on behalf of:
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1 INTRODUCTION

1.1 Terms of reference

Africa Geo-Environmental Services South Africa (Pty) Ltd (AGES), Eastern Cape office, was appointed by the Department of Water Affairs and Forestry to assess the groundwater resource situation for the Sterkstroom Area in the Inkwanca Local Municipality of the Chris Hani District Municipality in the Eastern Cape Province. The investigation was based on the Term Tender W8783 for Chris Hani Municipality that AGES was awarded.

This report summarizes the findings obtained from Phase 1 of the investigation, with details on the desktop study and hydrocensus data obtained during the survey of the project area.

1.2 Objectives

The objectives of the investigation is to conduct a hydrogeological investigation within a 2 km radius of the existing bulk water pipeline that transports water from the Colossal Dam located on a private farm to the Sterkstroom town. The aim of the investigation is to assess the possibility of alternative groundwater sources within this area in order to possibly augment the water supply from Colossal Dam and reducing the cost of water supply to Sterkstroom town. The investigation entails a multi-faceted approach whereas Phase 1 only entailed a desktop study, detailed hydrocensus and remote sensing to of the project area in order to identify possible existing and new groundwater sources that can be further investigated in Phase 2.

1.3 Scope of work

The investigation generally entailed the following key actions:

- Evaluate all available and applicable groundwater data and geohydrological information, including national and provincial groundwater databases.
- Remote sensing and aerial photography
- Site characterisation and hydrogeological mapping
- Identify existing boreholes, springs and streams
- Identify existing groundwater potential and pollution sources
- Identify high potential zones

1.4 Location

Sterkstroom town is situated approximately 50km to the northwest of Queenstown in the Inkwanca Local Municipality of the Chris Hani District Municipality (Figure 1). The project area entails the areas within a 2km radius of the existing water supply pipeline from the Colossal Dam approximately 18 km east of Sterkstroom into Sterkstroom town. Grounds belonging to the Municipality (*Lismore farm*) was also surveyed as part of this investigation.

Figure 1: ***Regional locality relative to Queenstown (Google Earth)***

1.5 Information Sources

The following sources of information were utilized as part of this investigation:

1. Geological map (scale 1:250 000): 3126 Queenstown
2. Hydrogeological map (scale 1:500 000): 3126 Queenstown
3. Topographical map (scale 1:50 000) – 3126DA Sterkstroom (2), 1978
4. Bertram WE, (1987). *'n Ondersoek na die watervoorsieningsprobleme van Sterkstroom Munisipaliteit en die moontlikhede vir die ontwikkeling van addisionele groundwater bronne. Direktoraat: Geohidrologie, Departement Waterwese, Kaapstad.* Report Gh3554.
5. Myburgh JA, De Jager, FN, (2002). Hydrogeological investigation. Pump Testing Evaluation of existing boreholes at Sterkstroom – Eastern Cape Province. GeoCon Report EC/02/02/HG
6. Wegelin WA, (2005). Water Conservation and Water Demand Management Strategy Chris Hani District Municipality. Molteno and Sterkstroom Pilot Project Completion report. Project No. P0124.
7. DWAF (Pretoria) Directorate Hydrogeological Services. *Eastern Cape basic borehole site information and water level monitoring data* (electronic format).
8. Bryan S. (2007). Carnarvon Estates water supply data.

2 METHODOLOGY

2.1 Evaluation of existing groundwater data and information

Groundwater data and information were derived from technical reports as mentioned in paragraph 1.5 of this report as well as through liaison with parties concerned, acquiring the necessary information regarding the water supply history, present water demand and water supply and the general condition of the towns' pump infrastructure.

2.2 Hydrogeological survey

A detailed hydrocensus of the project area was conducted on the 28th of November to 1 December 2006 during which applicable information of all boreholes within the demarcated survey area was obtained.

Where possible the applicable parameters were measured in the field, viz. coordinates, static water levels, borehole infrastructure, depth etc. The evaluation of the hydrocensus data converge/focus on the availability and utilization of groundwater on a regional scale for domestic water supply to Sterkstroom town, and to assess the regional water levels and basic groundwater flow directions.

The hydrocensus survey was conducted on a total of fourteen (14) properties, including the Sterkstroom Townlands. Detailed results of the survey are discussed in the results section of this report.

2.3 Remote sensing

Remote sensing of the project area was conducted utilizing 1:50 000 scale ASTER satellite imagery of the project area with the aid of a GIS software program. The images are overlayed on top of the project area and geological lineaments are mapped as shape files within the GIS software. The lineaments are expected to represent small fractures, joints, faults or dolerite dyke intrusions where preferential groundwater flow, recharge and accumulation are most likely to occur.

The lineaments are interpreted along with the geology of the area in order to identify areas with a higher expected groundwater potentials that will be earmarked for detailed geophysical profiling and exploration drilling during the following phases (Phases 2 and 3) of the investigation.

3 RESULTS

3.1 Hydrogeological Setting

According to the geological map the study area is covered by alluvium and underlain by sandstone and mudstone of the Burgersdorp formation from the Tarkastad subgroup; and by mudstone, shale, gritty sandstone and occasional coal seams of the Molteno formation (Map 1). These formations belong to the middle to upper section of the Karoo Supergroup sequence of rocks. The sedimentary formations dip at angles of approximately 3° to the north. The Karoo Sequence has been intruded by Dolerite in the form of sills (horizontal structures) and dykes (vertical structures) during the late Karoo volcanism. Numerous dolerite dykes and a very large dolerite sill occur within and in the immediate surroundings of the study area.

The geology map does not indicate the presence of any major faults or landsat derived lineaments within the direct vicinity of the study area.

According to the hydrogeological map of Queenstown Sterkstroom town is a large-scale groundwater abstraction area with an estimated annual groundwater usage of between 0.1 and 1 million m^3, mainly for domestic purposes. The underlying geology of the study area consists of 1) alluvium, 2) mafic intrusive rocks and by 3) argillaceous and arenaceous rocks. Groundwater occurrences in the alluvium are expected in fractured zones with successful boreholes expected to yield between 0.5 and 2.0 litres per second. Groundwater occurrences in the mafic intrusive rocks (dolerite) and argillaceous and arenaceous rocks are expected intergranular and in fractured zones, with successful boreholes expected to yield between 0.5 and 2.0 litres per second.

3.2 Sterkstroom Water Supply

The biggest portion of the current water supply to the town of Sterkstroom is derived from the Carnavon water supply network while the remaining water demand is provided from municipal production boreholes located within the towns' immediate surroundings. Water is bought by the Municipality at great expense from the Colossal dam. The status of the water supply infrastructure is of concern as a lot of water losses are expected and reported due to the low level of maintenance on infrastructure such as pipelines etc. Details on the existing water supply systems are discussed in the paragraphs below.

3.2.1 Carnavon Estate Water Supply Scheme (Colossal Dam)

- The two springs at Carnavon, located on the farm *Groot Vley 191*, supply water to the Municipality of Sterkstroom as from October 1983 (448m^3/d). The five municipal boreholes (EC/001/CH; EC/002/CH; EC/003/CH, EC/004/CH and EC/005/CH) at that time were not able to keep up with the daily demand due to lowering water levels and decreasing borehole yields (Reference 4).
- The South Africa Railway Services (*Suid-Afrikaanse Vervoerdienste*) used the Carnavon source from 1903 to 1983 (*pers. comm.* Mr. Myburgh).
- Water supply from Carnarvon went via the railway pipe line to town until 2004 when a new line was commissioned to accommodate the increasing demand for water due to large scale development of low cost housing and the establishment of water borne sewerage system. The supply via the railway

pipeline varies between 280m3/day (1985) and 740m3/day (2003) with the latter figure as the maximum volume the pipeline could manage with a booster pump connected.

- Since 2004, water is piped from the Carnavon pump station, through a 160-200mmΦ PVC pipeline, over a distance of approximately 17km, along the R344 road, to reservoir/s in Sterkstroom. The design capacity for the new pipeline is 1200L/min
- The flow rate of the two springs (measured in February 1953) totals to 6.03L/s or 21.7m^3/hr (Reference 4).
- The present average monthly supply from the springs totals to 15000m^3 (*pers. comm.* Mr. S. Brown – responsible person for water works at Carnavorn Estates).
- The water is bought at great expense for the Municipality from the farm and therefore less expensive groundwater sources are required to supplement the pipeline and reduce the volume required from Carnarvon to a minimal.

The position of the dam and pipeline in respect of Sterkstroom town is indicated in Map 2.

Photo 1: Collosal Dam on Carnarvon Estate

3.2.2 Municipal Borehole Water Supply Scheme

- The five municipal boreholes (EC/001/CH; EC/002/CH; EC/003/CH, EC/004/CH and EC/005/CH) was the only source of water to Sterkstroom town up to September 1983.
- The allocated 5.19 litres per second water supply (449m^3/d) from the springs had fulfilled the water demand of the town for a few years with only the minimum support required from the towns' own production borehole scheme.

- The calculated average water demand in 1987 was approximately 490m^3/d with a peak demand of 730m^3/day (Reference 4). Additional water supply was derived from the town's production borehole scheme to meet this water demand.
- During the hydrogeological investigation of 2002 by SA GeoConsultants (Pty) Ltd, only one of nine production boreholes was found to be operational (EC/009/CH). The other eight boreholes were abandonment (destroyed with bricks; pumps in disrepair; electrical boxes vandalized and one borehole not in use). The drinking quality of EC/009/CH classified as drinking Class 3 (Poor water quality). This water is unfit for human consumption if used untreated due to faecal contamination. Chlorination of the water was recommended as essential prior to use.
- The pump testing evaluation report of 2002 (Reference 5) recommends a daily abstraction volume total to 117m^3/d from three production boreholes (EC/002/CH; EC/006/CH and EC/008/CH) with suitable drinking water qualities.
- The 2005 water demand figure of 648m^3/d (Reference 6) was based on the water consumption of 108 litres per capita per day (108L/c/d x 5999 population). A deficit in the water demand of approximately 150m^3/d necessitated the additional use of the towns' production boreholes.
- During the hydrocensus of 2006, a total of 4 production boreholes utilized by the municipality were identified, i.e. private borehole at Mr. Myburghs' house in town; EC/004/CH; EC/008/CH and EC/019/CH at *Lismore* farm. At the time of the hydrocensus, borehole EC/008/CH, EC/019/CH and the private borehole on Myburghs' property were not operational due to broken down pumping equipment.
- Production Borehole EC/004/CH was re-drilled in 2003, approximately 5 meters from the original borehole due to the structural failure of the borehole. According to the 2002 report, the original borehole EC/004/CH yielded drinking Class 4 (dangerous water quality) due to faecal contamination. No records could be traced concerning water quality of the re-drilled borehole but the water quality is expected to be of the same quality, requiring chlorination prior to use.
- According to reports, the borehole at Mr. Myburghs' house delivers approximately 210m^3/d (17.5m^3/hr for 12hrs/d). This borehole has been used by the municipality for the past 4 years according to Mr. Myburgh. The source is currently not operational due to faulty pump equipment. Water quality and sustainability of the Myburghs' borehole is unknown due to no existing pump testing or water quality analysis data being available. It is recommended that this borehole be pump tested and the water quality analyzed prior to refurbishment and utilization.
- The Municipality acquired the farm *Lismore* (*Cadestral Farm Le Grange Estate*) for additional groundwater supply. Faulty pump equipment hampered the use of production borehole EC/019/CH. The recommended yield of the borehole was given as 31.10 m^3/d with a Class 2 (marginal drinking water quality) due to moderately elevated levels of turbidity and total hardness.
- Borehole EC/006/CH was tested in 2002 and recommended for sustainable abstraction at 21.60m^3/d. This borehole is currently not utilized by the municipality as a production or monitoring borehole.
- Borehole EC/002/CH was tested in 2002 and recommended for sustainable abstraction at 80.64m^3/d. This borehole is currently not utilized by the municipality as a production or monitoring borehole.

- A sustainable recommended daily water supply of 148m^3/d from existing production boreholes are not utilized at present mainly due to defective equipment. With Mr. Myburgh's current supply (210m^3/d) added, the total available water from existing production boreholes amounts to approximately 358m^3/d. The daily supply from the Carnavon springs average to 500m^3/d. It is evident that the upgrading of the current borehole infrastructure will amount to a great reduction in the amount of water that will be required from Carnavon.
- The present water demand is calculated to 650m^3/d (0.36% annual population growth in the Eastern Cape – www.dwaf.gov.za – Water Services: National Information System)
- Additional groundwater supply is possible from the existing boreholes that are located within a 2km radius of the existing pipeline from Carnavon to Sterkstroom as identified during the hydrocensus phase of this project. The boreholes are recommended for determinative pump testing and water quality analysis in order to make suitable long term abstraction recommendations.

3.3 Hydrocensus

The hydrocensus of the project area entails the identification and surveying of all groundwater supply sources including boreholes and springs. Results of a previous hydrocensus conducted in 1987 as well as the results of the hydrocensus conducted as part of this investigation are reported in the paragraphs below:

3.3.1 1987 Hydrocensus Survey

A previous hydrocensus was carried out in 1987 in the surroundings of the study area, covering 21 cadastral farms with 230 survey points (Reference 4). The findings from this survey can be summarized as follows:

- Static water levels measured at the boreholes was found to vary between 2 and 20mgbl, with an average water level depth of 10mbgl.
- The average borehole depths recorded at the time was approximately 36m.
- Production boreholes in Sterkstroom town indicated a considerable decrease in water level. No significant decrease in the regional water level was noted.
- The majority of boreholes identified had yields of less than 1 liter per second, with only a few higher yielding boreholes identified (> 5 Liters per second)
- Groundwater is mainly associated with the contact zone between dolerite and sedimentary rock.
- High yielding boreholes are linked to fractured sandstone which may have an association with underlying dolerite intrusions.
- Groundwater supply from the alluvium is unknown / not utilized at the time of the hydrocensus.
- Bigger scale groundwater abstraction is mostly associated with the presence of rivers and streams in the immediate vicinity of boreholes.
- Two areas were identified as possible targets for further development viz, farm *Lismore* (current production field) and the area north of the towns' production scheme, including adjacent farms *Klipkraal No.9* and *Donkerhoek No.8*.

3.3.2 2006 Hydrocensus Survey

A total of 92 boreholes were identified and surveyed on 14 properties within a radius of 2km along the water supply pipeline from Carnarvon Estates to Sterkstroom town (Map 2). The municipal property *Lismore* was included in the hydrocensus. The hydrocensus results are briefly discussed under the bullets below and summarized in Table 1. Detailed hydrocensus sheets are attached in Appendix A for reference.

- Twenty-one (21) or 23% of the identified boreholes are located within the boundaries of the Sterkstroom Townlands, with 5 boreholes located on the municipal farm *Lismore*.
- Only 58% of the identified boreholes are currently in use mainly for domestic and agricultural use, while 38 % of the remaining boreholes are not used and 4 % destroyed or in disrepair.
- The water use in the study area, outside the Sterkstroom groundwater production field, is minimal with low water demands from livestock, households and small scale agricultural use.
- Embankment dams are well distributed in the study area and provide sufficient supply of surface water which is mainly used for stock watering purposes.
- In the entire Study Area (excluding Sterkstroom) only three boreholes are equipped with electrical pumps (submersible & mono type). These boreholes are located on the farms *Donkerhoek, Hexrivier* and *Primgradia*. The remaining boreholes are all windmill equipped / driven.
- Identified springs situated to the west of Carnarvon Estates are generally low yielding. Spring water normally gravitates and accumulates in a nearby embankment dam.
- The combined flow from the Carnarvon springs was measured as 6.03 liters per second in 1953. Due to the current infrastructure setup the yields of the springs could not be measured.
- Static water levels in Sterkstroom town vary between 7.80 mbgl and 17.50 mbgl while levels in the remainder of the study area are between 0.8 mbgl and 15.71 mbgl. The shallower static water levels occur in the topographical higher portion of the study area.
- A total of eighteen (18) boreholes that are located within the 2 km radius of the existing water supply pipeline or municipal production boreholes are identified for determinative pump testing in order to determine the long-term sustainable abstraction rates and water quality of these boreholes. The borehole details are indicated in Table 2. Of the 18 boreholes, 12 boreholes are situated within the towns' boundaries including the two *Lismore* boreholes and 6 boreholes are on private land. Fifteen (15) of the 18 boreholes are within a radius of 5km from the current production field.
- It is reported that untreated effluent from the Waste Water Treatment Works (WWTW - Techroveer activated sludge) are spilled on the neighboring farm *Themeda (Cadastral Farm Le Grange)* causing tape worm (*taenia saginata*) infection, affecting cattle grazing on the land. Spillage of effluent into the Hex River is also reported. This matter requires urgent attention and specialized surface and groundwater sampling to determine the extent of pollution.
- Faecal contamination traced in some production boreholes will have to be investigated.

TABLE 1: Summary of Hydrocensus data 2006

Ref. No.	Farm Name	Farm No.	Bh. No.	DWAF Bh Nr allocated	Waypoint Nr.	Type	Lat	Long	Usage	Condition	Status of water point	Purpose of site	Remarks	BH Depth	SWL	Survey Date	Contact Person	Contact Number
A 01	Grootvley / Carnarvon Estate	191		EC / S10 / 165	WP 237	Spring	-31.59418	26.73039	Non-Urban	In use	Production	Stockwatering	Water gravitates to earth dam	0.00	0.00	29-Nov-06	R. Halse	045-966 0408
A 02	Grootvley / Carnarvon Estate	191		EC / S10 / 166	WP 238	Windmill	-31.59575	26.73400	Non-Urban	In use	Production	Stockwatering				29-Nov-06	R. Halse	045-966 0408
A 03	Grootvley / Carnarvon Estate	191		EC / S10 / 167	WP 240	Windmill	-31.59274	26.72751	Non-Urban	In use	Production	Stockwatering				29-Nov-06	R. Halse	045-966 0408
A 04	Grootvley / Carnarvon Estate	191		EC / S10 / 168	WP 242	Windmill	-31.58344	26.72397	Non-Urban	In use	Production	Stockwatering				29-Nov-06	R. Halse	045-966 0408
A 05	Grootvley / Carnarvon Estate	191		EC / S10 / 169	WP 243	Windmill	-31.58918	26.71571	Non-Urban	In use	Production	Stockwatering				29-Nov-06	R. Halse	045-966 0408
A 06	Grootvley / Carnarvon Estate	191		EC / S10 / 170	WP 244	Windmill	-31.60008	26.71577	Non-Urban	In use	Production	Domestic & stockwatering				29-Nov-06	R. Halse	045-966 0408
A 07	Grootvley / Carnarvon Estate	191		EC / S10 / 171	WP 245	Seepage	-31.59365	26.73273	Non-Urban	In use	Production	Stockwatering	Seepage point - water gravitates to earth dam	0.00	0.00	29-Nov-06	R. Halse	045-966 0408
A 08	Piet Kuil	126	97	EC / S31 / 97	WP 246	Windmill	-31.53251	26.61508	Non-Urban	Not in use	Broken installation	None				29-Nov-06	F. Kruger	045-839 5878
A 09	Piet Kuil	126		EC / S31 / 12	WP 247	Windmill	-31.53602	26.62195	Non-Urban	In use	Production	Domestic & stockwatering				29-Nov-06	F. Kruger	045-839 5878
A 10	Piet Kuil	126		EC / S31 / 13	WP 248	Windmill	-31.54799	26.64713	Non-Urban	In use	Production	Stockwatering				29-Nov-06	F. Kruger	045-839 5878
A 11	Piet Kuil	126		EC / S31 / 14	WP 249	Spring	-31.54667	26.64620	Non-Urban	In use	Production	Stockwatering	Water gravitates to cement reservoir	0.00	0.00	29-Nov-06	F. Kruger	045-839 5878
A 12	Piet Kuil	126		EC / S31 / 15	WP 250	Open Hole	-31.56362	26.64601	Non-Urban	Not in use	Bh open, not in use, former windmill installation	None	Former WM installation	33.77	15.71	29-Nov-06	F. Kruger	045-839 5878
A 13	Kloppersfontein / Esperanza	27		EC / S31 / 16	WP 251	Open Hole	-31.56862	26.64328	Non-Urban	Not in use	Borehole next to concrete reservoir, very shallow WL	None	Very shallow WL	14.91	0.80	29-Nov-06	F. Kruger	045-839 5878
A 14	Kloppersfontein / Esperanza	27		EC / S31 / 17	WP 252	Spring	-31.57424	26.64901	Urban	In use	Production	Stockwatering	Flows over weir into cement reservoir			29-Nov-06	F. Kruger	045-839 5878
A 15	Piet Kuil	126		EC / S31 / 18	WP 253	Windmill	-31.55812	26.63142	Urban	In use	Production	Stockwatering	WL very shallow			29-Nov-06	F. Kruger	045-839 5878
A 16	Piet Kuil	126		EC / S31 / 19	WP 254	Spring	-31.55820	26.63235	Non-Urban	In use	Production	Stockwatering	Cased bh in cement with 6" PVC with cement slap on top. Water is piped downhill to cement reservoir from where a [illegible]			29-Nov-06	F. Kruger	045-839 5878
A 17	Primgradia	184		EC / S31 / 20	WP 256	Spring	-31.54766	26.64942	Non-Urban	In use	Production	Stockwatering	Spring flows into earth dam			30-Nov-06	M. Jordaan	045-966 9054
A 18	Primgradia	184		EC / S31 / 21	WP 257	Open Hole	-31.55810	26.65041	Non-Urban	Not in use	Bh blocked/collapsed	None	Bh open - no protection	9.34	Dry	30-Nov-06	M. Jordaan	045-966 9054
A 19	Primgradia	184		EC / S31 / 22	WP 258	Borehole	-31.56054	26.65769	Non-Urban	Not in use	Bh destroyed / bh cover with plated / clamp with pipe / pipes [illegible]	None	Pipes still in bh			30-Nov-06	M. Jordaan	045-966 9054
A 20	Primgradia	184		EC / S31 / 23	WP 259	Open Hole	-31.56057	26.65763	Non-Urban	Not in use	Bh blocked/collapsed	None	Thick rope in bh			30-Nov-06	M. Jordaan	045-966 9054
A 21	Primgradia	184		EC / S31 / 24	WP 260	Windmill	-31.56969	26.65966	Non-Urban	In use	Production	Stockwatering				30-Nov-06	M. Jordaan	045-966 9054
A 22	Strathfield	185		EC / S31 / 25	WP 261	Spring	-31.57702	26.66386	Non-Urban	In use	Production	Stockwatering	Production, water gravitates into earth dam			30-Nov-06	M. Jordaan	045-966 9054
A 23	Strathfield	185		EC / S31 / 26	WP 262	Borehole	-31.56954	26.67994	Non-Urban	Not in use	Bh blocked/collapsed	None	Pipes still in bh			30-Nov-06	M. Jordaan	045-966 9054
A 24	Strathfield	185		EC / S31 / 27	WP 263	Windmill	-31.56944	26.68018	Non-Urban	In use	Production	Stockwatering				30-Nov-06	M. Jordaan	045-966 9054
A 25	Strathfield	185		EC / S31 / 28	WP 264	Open Hole	-31.56904	26.68139	Non-Urban	Not in use	Bh blocked/collapsed	None	Bees/wasp nest in bh			30-Nov-06	M. Jordaan	045-966 9054
A 26	Strathfield	185		EC / S31 / 29	WP 265	Windmill	-31.56872	26.68129	Non-Urban	Not in use	Broken installation	None	WM stem broken, wasps around bh			30-Nov-06	M. Jordaan	045-966 9054
A 27	Strathfield	185		EC / S31 / 30	WP 266	Open Hole	-31.56860	26.68127	Non-Urban	Not in use	Bh blocked/collapsed	None	Bee/wasp nest inside. Strong water according owner.			30-Nov-06	M. Jordaan	045-966 9054
A 28	Yardley Chase / Kaalhoek	8	3	EC / S31 / 31	WP 267	Windmill	-31.58058	26.68803	Non-Urban	In use	Production	Stockwatering				30-Nov-06	J. du Plessis	083-604 0229
A 29	Yardley Chase / Kaalhoek	8		EC / S31 / 32	WP 268	Solar installation	-31.58345	26.67039	Non-Urban	In use	Production	Stockwatering				30-Nov-06	J. du Plessis	083-604 0229
A 30	Yardley Chase / Kaalhoek	8		EC / S31 / 33	WP 270	Windmill	-31.58413	26.66924	Non-Urban	Not in use	Broken installation	None	Not pumping, probably a problem with installation			30-Nov-06	J. du Plessis	083-604 0229
A 31	Strathfield	185		EC / S31 / 34	WP 271	Open Hole	-31.56397	26.67044	Non-Urban	Destroyed	Bh blocked/collapsed	None	Bh covered with base plate	8.50	Dry	30-Nov-06	M. Jordaan	045-966 9054
A 32	Strathfield	185		EC / S31 / 35	WP 272	Windmill	-31.55515	26.66607	Non-Urban	In use	Production	Stockwatering	Excessive algae growth on pipes			30-Nov-06	M. Jordaan	045-966 9054
A 33	Primgradia	184		EC / S31 / 36	WP 273	Open Hole	-31.54706	26.66998	Non-Urban	Not in use	Former wm installation, not in use	None	Former WM installation	45.60	9.73	30-Nov-06	M. Jordaan	045-966 9054
A 34	Thomasfontein	183		EC / S31 / 37	WP 274	Windmill	-31.55380	26.66745	Non-Urban	In use	Production	Stockwatering				30-Nov-06	M. Jordaan	045-966 9054
A 35	Primgradia	184		EC / S31 / 38	WP 275	Submersible pump	-31.56046	26.66287	Non-Urban	In use	Production	Domestic & stockwatering	Poultry farm - eggs			30-Nov-06	M. Jordaan	045-966 9054

Ref. No.	Farm Name	Farm No.	Bh. No.	DWAF Bh Nr allocated	Waypoint Nr.	Type	Lat	Long	Usage	Condition	Status of water point	Purpose of site	Remarks	BH Depth	SWL	Survey Date	Contact Person	Contact Number
A 36	Primgradia	184		EC / S31 / 39	WP 276	Open Hole	-31.55826	26.66071	Non-Urban	Destroyed	Bh blocked/collapsed	None	Blocked with stones 1m below surface		Dry	30-Nov-06	M. Jordaan	045-966 9054
A 37	Donkerhoek	8		EC / S31 / 40	WP 277	Open Hole	-31.51657	26.57067	Non-Urban	Destroyed	Bh blocked/collapsed	None	Casing open - not protected/covered	6.66	6.66	30-Nov-06	L. van der Walt	045-857 0092
A 38	Donkerhoek	8		EC / S31 / 41	WP 283	Mono head with electrical motor	-31.51545	26.56759	Non-Urban	In use	Production	Irrigation & Stockwatering & Domestic	Main water source, bh in engine room			30-Nov-06	L. van der Walt	045-857 0092
A 39	Donkerhoek	8		EC / S31 / 42	WP 280	Mono head with electrical motor	-31.51686	26.56760	Non-Urban	Not in use	Production	Standby	Standby source, bh in engine room			30-Nov-06	L. van der Walt	045-857 0092
A 40	Donkerhoek	8		EC / S31 / 43	WP 281	Open Hole	-31.51684	26.56773	Non-Urban	Not in use	Bh not installed, former windmill installation	None	Bh not installed, former WM installation	11.03	7.13	30-Nov-06	L. van der Walt	045-857 0092
A 41	Donkerhoek	8		EC / S31 / 44	WP 282	Windmill	-31.51672	26.56818	Non-Urban	In use	Production	Stockwatering	Pumps into cement reservoir			30-Nov-06	L. van der Walt	045-857 0092
A 42	Donkerhoek	8		EC / S31 / 45	WP 284	Open Hole	-31.51513	26.56742	Non-Urban	Not in use	Not equipped, can be used a production bh	None		40.45	7.26	30-Nov-06	L. van der Walt	045-857 0092
A 43	Donkerhoek	8		EC / S31 / 46	WP 285	Open Hole	-31.51508	26.56948	Non-Urban	Destroyed	Bh blocked/collapsed	None	Bh collapsed/ant nest	5.20	Dry	30-Nov-06	L. van der Walt	045-857 0092
A 44	Donkerhoek	8		EC / S31 / 47	WP 286	Windmill	-31.51475	26.57057	Non-Urban	In use	Production	Domestic & stockwatering	Bh equipped with WM & submersible pump			30-Nov-06	L. van der Walt	045-857 0092
A 45	Donkerhoek	8		EC / S31 / 48	WP 279	Mono head with electrical motor	-31.51682	26.56801	Non-Urban	Not in use	Production	None	Very little data available			30-Nov-06	L. van der Walt	045-857 0092
A 46	Donkerhoek	8		EC / S31 / 49	WP 278	Submersible pump	-31.51713	26.56822	Non-Urban	Not in use	Production	None	Currently not in use, pumps to cement reservoir, formally equipped with a "kragkop"			30-Nov-06	L. van der Walt	045-857 0092
A 47	Donkerhoek	8	12	EC / S31 / 50	WP 287	Windmill	-31.49902	26.56585	Non-Urban	In use	Production	Stockwatering	Bh pumps into earth dam (Game camp)			30-Nov-06	L. van der Walt	045-857 0092
A 48	Donkerhoek	8		EC / S31 / 51	WP 288	Windmill	-31.51659	26.56269	Non-Urban	In use	Production	Stockwatering	Pumps to cement dam			30-Nov-06	L. van der Walt	045-857 0092
A 49	Hospitaalkamp / Le Grange Estate	24		EC / S31 / 52	WP 289	Windmill	-31.56341	26.63217	Non-Urban	Not in use	Broken installation	None	WM stem broken		12.63	30-Nov-06	S. Steyn	045-966 9200
A 50	Lower Gretna	6		EC / S31 / 53	WP 292	Windmill	-31.53009	26.63290	Non-Urban	In use	Production	Stockwatering	Shallow WL < 6m			1-Dec-06	Mrs. Phillips	045-966 9003
A 51	Lower Gretna	6		EC / S31 / 54	WP 291	Windmill	-31.52950	26.63619	Non-Urban	In use	Production	Domestic & stockwatering	Shallow WL < 6m			1-Dec-06	Mrs. Phillips	045-966 9003
A 52	Lower Gretna	6		EC / S31 / 55	WP 293	Windmill	-31.52833	26.61449	Non-Urban	In use	Production	Stockwatering	Shallow WL < 6m			1-Dec-06	Mrs. Phillips	045-966 9003
A 53	Lower Gretna	6		EC / S31 / 56	WP 294	Windmill	-31.51712	26.62266	Non-Urban	In use	Production	Stockwatering	Shallow WL < 6m			1-Dec-06	Mrs. Phillips	045-966 9003
A 54	Lower Gretna	6		EC / S31 / 57	WP 295	Windmill	-31.51973	26.63423	Non-Urban	In use	Production	Stockwatering	Shallow WL < 6m			1-Dec-06	Mrs. Phillips	045-966 9003
A 55	Lower Gretna	6		EC / S31 / 58	WP 296	Windmill	-31.51603	26.64441	Non-Urban	In use	Production	Stockwatering	Shallow WL < 6m			1-Dec-06	Mrs. Phillips	045-966 9003
A 56	Themeda / Le Grange Estate	24		EC / S31 / 59	WP 290	Windmill	-31.56331	26.58375	Non-Urban	In use	Production	Stockwatering	Shallow WL < 6m			1-Dec-06	S. Steyn	045-966 9200
A 57	Lower Gretna	6		EC / S31 / 60	WP 297	Windmill	-31.52574	26.63891	Non-Urban	In use	Production	Stockwatering	Shallow WL < 6m			1-Dec-06	Mrs. Phillips	045-966 9003
A 58	Lower Gretna	6		EC / S31 / 61	WP 298	Windmill	-31.53023	26.63761	Non-Urban	In use	Production	Stockwatering	Shallow WL < 6m		5.33	1-Dec-06	Mrs. Phillips	045-966 9003
A 59	Lower Gretna	6		EC / S31 / 62	WP 299	Windmill	-31.53023	26.63679	Non-Urban	In use	Production	Stockwatering	Shallow WL < 6m			1-Dec-06	Mrs. Phillips	045-966 9003
A 60	Lower Gretna	6		EC / S31 / 63	WP 300	Old Lister engine	-31.53005	26.63652	Non-Urban	Not in use	Equipped but not used	None	Shallow WL < 6m		4.95	1-Dec-06	Mrs. Phillips	045-966 9003
Z 01	Myburgh's House (SterkstroomTownlands)	Sterkstroom Townlands		EC / S31 / 64		Open hole	-31.56039	26.55462	Non-Urban	Not in use	Production	None	Owner says he is still going to equip bh	40.00	13.40	28-Nov-06	Mr. Myburgh	045-966 0151
Z 02	Myburgh's House (SterkstroomTownlands)	Sterkstroom Townlands		EC / S31 / 65		Submersible pump	-31.56090	26.55529	Urban	In use	Production	Municipality	Yield 17500l/hr@12hrs/day	60.00		28-Nov-06	Mr. Myburgh	045-966 0151
Z 03	Myburgh's House (SterkstroomTownlands)	Sterkstroom Townlands		EC / S31 / 66		Submersible pump	-31.56073	26.55517	Non-Urban	In use	Production	Garden & Domestic		75.00	13.20	28-Nov-06	Mr. Myburgh	045-966 0151
Z 04	Municipality - Sterkstroom Townlands	Sterkstroom Townlands	EC-004-CH	EC / S31 / 67		Submersible pump	-31.54041	26.55285	Urban	In use	Production	Municipality	Bh re-drilled in 2003, 2m from bh drilled in 1968			28-Nov-06	Municipality	045-966 0008
Z 05	Lismore (Municipal Farm)/Le Grange Estate	24		EC / S31 / 68		Submersible pump	-31.60385	26.56596	Urban	In use	Production	Municipality	Operator says bh very strong using 70mm steel pipe			28-Nov-06	Municipality	045-966 0008
Z 06	Lismore (Municipal Farm)/Le Grange Estate	24	EC-019-CH	EC / S31 / 69		Submersible pump	-31.60048	26.56567	Urban	Not in use	Production	Municipality	Problems with electricity supply			28-Nov-06	Municipality	045-966 0008
Z 07	Mr. Malgas (SterkstroomTownlands)	Sterkstroom Townlands		EC / S31 / 70		Windmill	-31.55230	26.55592	Non-Urban	Not in use	Broken installation	None	WM broken			28-Nov-06	Mr. Malgas	
Z 08	Mr. Erasmus (SterkstroomTownlands)	Sterkstroom Townlands		EC / S31 / 71		Windmill	-31.55434	26.54996	Non-Urban	Not in use	Broken installation	None	WM broken	75.00		28-Nov-06	Mr. Erasmus	082-779 7239

Ref. No.	Farm Name	Farm No.	Bh. No.	DWAF Bh Nr allocated	Waypoint Nr.	Type	Lat	Long	Usage	Condition	Status of water point	Purpose of site	Remarks	BH Depth	SWL	Survey Date	Contact Person	Contact Number
Z 09	Mr. Erasmus (SterkstroomTownlands)	Sterkstroom Townlands		EC / S31 / 72		Submersible pump	-31.55503	26.55007	Non-Urban	In use	Production	Garden & Domestic	Water sample taken. PID=42m. Yield 1L/spumping 8hrs/day	78.00		28-Nov-06	Mr. Erasmus	082-779 7239
Z 10	Mrs. AJ Marreys (Marais) - Sterkstroom Townlands	Sterkstroom Townlands		EC / S31 / 73		Windmill	-31.55103	26.55379	Non-Urban	In use	Production	Domestic & stockwatering	Leak in pipe			29-Nov-06	Mrs. Marairs	045-966 0062
Z 11	Mrs. AJ Marreys (Marais) - Sterkstroom Townlands	Sterkstroom Townlands		EC / S31 / 74		Windmill	-31.55108	26.55456	Non-Urban	In use	Production	Domestic & stockwatering	Bh drilled 22 years ago			29-Nov-06	Mrs. Marairs	045-966 0062
Z 12	Mrs. AJ Marreys (Marais) - Sterkstroom Townlands	Sterkstroom Townlands		EC / S31 / 75		Windmill	-31.55163	26.55542	Non-Urban	In use	Production	Garden & Stockwatering	Bh in fenced area in town - no house on property			29-Nov-06	Mrs. Marairs	045-966 0062
Z 13	Mr. Wessels House (Sterkstroom Townlands)	Sterkstroom Townlands		EC / S31 / 76		Submersible pump	-31.55099	26.55482	Non-Urban	Not in use	Broken installation	None	Pump is broken - Frankin single phase	30.00	14.00	29-Nov-06	Mr. Wessels	082-747 4323
Z 14	Municipality - Sterkstroom Townlands	Sterkstroom Townlands	EC-008-CH	EC / S31 / 77		Submersible pump	-31.55549	26.57030	Urban	Not in use	Production	Municipality	Electrical problems			29-Nov-06	Municipality	045-966 0008
Z 15	SterkstroomTownlands	Sterkstroom Townlands		EC / S31 / 78		Windmill	-31.55341	26.55451	Non-Urban	In use	Production	Garden & Stockwatering	Bh near tar road, opposite Health Centre			29-Nov-06	Opp. Sterkstroom Health Centre	
Z 16	Geyer plot, 90 John Voster St - Sterkstroom Townlands	Sterkstroom Townlands		EC / S31 / 79		Windmill	-31.55642	26.55405	Urban	In use	Production	Irrigation				29-Nov-06	Mr. Geyer	
Z 17	Magistrate Court - SterkstroomTownlands	Sterkstroom Townlands		EC / S31 / 80		Windmill	-31.55547	26.55094	Urban	Not in use	Bh needs to be equiped again, not sealed, no pipes	None	Bh open not sealed - ? Pump test bh	56.00	17.50	29-Nov-06	Magistrates Court	
Z 18	Lismore (Municipal Farm)/Le Grange Estate	24		EC / S31 / 81		Windmill	-31.60396	26.55854	Non-Urban	Not in use	Also water supply to community garden	None	Bh open - no pipes installed		6.10	29-Nov-06	Municipality	045-966 0008
Z 19	Lismore (Municipal Farm)/Le Grange Estate	24		EC / S31 / 82		Windmill	-31.60379	26.55875	Non-Urban	Not in use	Broken installation	None	Busy fixing for community garden, apparently soil is collapsing around casing			29-Nov-06	Municipality	045-966 0008
Z 20	Lismore (Municipal Farm)/Le Grange Estate	24		EC / S31 / 83		Windmill	-31.60423	26.55914	Non-Urban	Not in use	No pipes installed, casing open	None	Bh open - no pipes installed		7.52	29-Nov-06	Municipality	045-966 0008
Z 21	Hex River Community Farm	7		EC / S31 / 84		Mono head with electrical motor	-31.52754	26.59149	Non-Urban	In use	Production	Irrigation & Stockwatering & Domestic	Probably strong borehole - recently equipped - diesel engine before. +-6L/s @ 8hrs/day			29-Nov-06	Hex River Community	
Z 22	Hex River Community Farm	7		EC / S31 / 85		Windmill	-31.52768	26.58992	Non-Urban	Not in use	Broken installation	None	Broken WM			29-Nov-06	Hex River Community	
Z 23	Hex River Community Farm	7		EC / S31 / 86		Windmill	-31.54131	26.60482	Non-Urban	In use	Production	Stockwatering	WM recently fixed			29-Nov-06	Hex River Community	
Z 24	Hex River Community Farm	7		EC / S31 / 87		Windmill	-31.53016	26.59236	Non-Urban	Not in use	Broken installation	None	WM is broken, in pipes in hole, rock on top, not properly sealed	34.00	5.63	29-Nov-06	Hex River Community	
Z 25	Hex River Community Farm	7		EC / S31 / 88		Windmill	-31.52841	26.59193	Non-Urban	Not in use	Bh blocked/collapsed	None	Blocked & pipe line broken - more than 3 decades in use		8.00	29-Nov-06	Hex River Community	
Z 26	Clinic (Sterkstroom Townlands)	Sterkstroom Townlands		EC / S31 / 89		Windmill	-31.55269	26.55353	Non-Urban	Not in use	Nurses want to use bh for irrigation in small garden	None	Bh open , no pipes installed	43.00	9.00	29-Nov-06	Dept. of Health	045-966 0085
Z 27	Cecil Wentzel (Sterkstroom Townlands)	Sterkstroom Townlands		EC / S31 / 90		Submersible pump	-31.56477	26.55720	Non-Urban	In use	Production	Irrigation (Garden)	Yield 4L/s @4hrs/day	30.00	7.80	30-Nov-06	C. Wentzel	045-966 0045
Z 28	Cecil Wentzel (Sterkstroom Townlands)	Sterkstroom Townlands		EC / S31 / 91		Submersible pump	-31.56483	26.55742	Non-Urban	In use	Production	Irrigation (Garden)	Yield 1L/s @4hrs/day		8.00	30-Nov-06	C. Wentzel	045-966 0045
Z 29	Cecil Wentzel (Sterkstroom Townlands)	Sterkstroom Townlands		EC / S31 / 92		Submersible pump	-31.56505	26.55590	Non-Urban	In use	Production	Irrigation (Garden)	Use as standby		13.00	30-Nov-06	C. Wentzel	045-966 0045
Z 30	Joe (Sterkstroom Townlands)	Sterkstroom Townlands		EC / S31 / 93		Windmill	-31.56484	26.55425	Non-Urban	In use	Production	Irrigation (Garden)	Pumping to nearby reservoir for house and garden			30-Nov-06	Joe	
Z 31	Municipality - Sterkstroom Townlands	Sterkstroom Townlands		EC / S31 / 94		Windmill	-31.54935	26.57470	Non-Urban	Not in use	Broken installation	None	WM broken - water for old game reserve (Koos Ras Game Reserve)			30-Nov-06	Municipality	045-966 0008
Z 32	Municipality - Sterkstroom Townlands	Sterkstroom Townlands		EC / S31 / 95		Old Mine Works	-31.54998	26.57260	Non-Urban	Not in use	Abandoned pit	None				30-Nov-06		
Z 33	Municipality - Sterkstroom Townlands	Sterkstroom Townlands		EC / S31 / 96		Mono head with electrical motor	-31.54056	26.53776	Not in use	Broken installation	None	Mono pump in disrepair. Chris Hani Borehole EC/007/CH	Not survey data from 2002 Report (Reference 5)					

3.4 High Potential Zones & Lineaments

A brief lineament study and analysis of the project area and surroundings was conduced as described in Paragraph 2.3 of this report. The lineaments were derived on a GIS-based program utilizing 1:50 000 scale ASTER satellite imagery.

Numerous geological lineaments were identified in the study area as indicated in Map 3. The lineaments are mostly associated with minor faulting and jointing of the underlying bedrock formations and with dolerite dyke and sheet related fractures induced during intrusion of the igneous rocks into the sedimentary strata. The general orientations of the lineaments are generally north-south and east-west respectively. Lineament mapping towards the most eastern section of the project area was difficult due to the alluvial deposits in the area covering otherwise exposed rock formations.

Based on the results from the structural geological assessment and lineament mapping of the study area and its surroundings, high potential zones were identified as indicated in Map 3.

The highest potential zone is generally associated with the large alluvial deposits to the east of the town combined with the occurrence of dolerite dykes and satellite lineament clusters. This area (Zone 1 on map) is expected to have the highest storativity and transmissivity compared to the other zones. Futher detailed geophysical exploration of this zone is recommended prior to exploration drilling and yield assessments. Additional hydrocensus surveys will have to be conducted in portions of this zone outside of the existing project area to verify current abstraction volumes and to identify existing groundwater consumers.

3.5 Follow up actions required

It is evident from the results of this study that the water supply from Carnarvon Estates to Sterkstroom town can be eliminated by utilizing existing production boreholes that are currently in disrepair in combination with the utilization of additional production boreholes located within the project area. The following boreholes as identified in the hydrocensus as summarized in Table 2 are earmarked for determinative pump testing In order to identify the most suitable boreholes in terms of sustainable abstraction volumes and rates for the town.

Exploration drilling and groundwater source development is not necessary at this stage due to the large amount of available existing boreholes that can be equipped and utilized as a first option.

TABLE 2: Boreholes allocated and prioritised for sustainability testing

Priority	DWAF BH Nr	Ref. No.	Farm Name	Farm No.	Type	Lat	Long	Condition	Status of water point	Purpose of site	Remarks	BH Depth	SWL
1	EC / S31 / 96	Z33	Municipality - Sterkstroom Townlands	Sterkstroom Townlands	Mono head with electrical motor	-31.54056	26.53778	Not in use	Broken installation	None	Mono pump in disrepair. Chris Hani Borehole EC/007/CH		
2	EC / S31 / 65	Z2	Myburgh's House (SterkstroomTownlands)	Sterkstroom Townlands	Submersible pump	-31.56090	26.55529	In use	Production	Municipal	Yield 17500l/hr@12hrs/day	60.00	
3	EC / S31 / 66	Z3	Myburgh's House (SterkstroomTownlands)	Sterkstroom Townlands	Submersible pump	-31.56073	26.55517	In use	Production	Garden & Domestic		75.00	13.20
4	EC / S31 / 64	Z 1	Myburgh's House (SterkstroomTownlands)	Sterkstroom Townlands	Open hole	-31.56039	26.55462	Not in use	Not equipped	None	Owner says he is still going to equip bh	46.00	13.40
5	EC / S31 / 89	Z 26	Clinic (Sterkstroom Townlands)	Sterkstroom Townlands	Windmill	-31.55269	26.55353	Not in use	Not equipped	None	Bh open,no pipes installed	43.00	9.00
6	EC / S31 / 76	Z 13	Mr. Wessels House (Sterkstroom Townlands)	Sterkstroom Townlands	Submersible pump	-31.55099	26.55482	Not in use	Broken installation	None	Pump is broken - Frankin single phase	30.00	14.00
7	EC / S31 / 92	Z 29	Cecil Wentzel (Sterkstroom Townlands)	Sterkstroom Townlands	Submersible pump	-31.56505	26.55590	In use	Production	Irrigation (Garden)	Use as standby		13.00
8	EC / S31 / 90	Z 27	Cecil Wentzel (Sterkstroom Townlands)	Sterkstroom Townlands	Submersible pump	-31.56477	26.55720	In use	Production	Irrigation (Garden)	Yield 4L/s @4hrs/day	30.00	7.80
9	EC / S31 / 94	Z 31	Municipality - Sterkstroom Townlands	Sterkstroom Townlands	Windmill	-31.54935	26.57470	Not in use	Broken installation	None	WM broken - water for old game reserve (Koos Ras Game Reserve)		
10	EC / S31 / 95	Z 32	Municipality - Sterkstroom Townlands	Sterkstroom Townlands	Old Mine Works	-31.54998	26.57260	Not in use	Abandoned pit/shaft	None			
11	EC / S31 / 81	Z 18	Lismore (Municipal Farm)/Le Grange Estate	24	Windmill	-31.60396	26.55854	Not in use	Not equipped	None	Bh open - no pipes installed		6.10
12	EC / S31 / 83	Z 20	Lismore (Municipal Farm)/Le Grange Estate	24	Windmill	-31.60423	26.55914	Not in use	Not equipped	None	Bh open - no pipes installed		7.52
13	EC / S31 / 45	A 42	Donkerhoek	8	Open Hole	-31.51513	26.56742	Not in use	Not equipped	None		40.45	7.26
14	EC / S31 / 87	Z 24	Hex River Community Farm	7	Windmill	-31.53016	26.59236	Not in use	Broken installation	None	WM is broken, pipes in hole, rock on top, not properly sealed	34.00	5.63
15	EC / S31 / 88	Z 25	Hex River Community Farm	7	Windmill	-31.52841	26.59193	Not in use	Bh blocked/collapsed	None	Blocked & pipeline broken - more than 3 decades in use		8.00
16	EC / S31 / 15	A 12	Piet Kuil	126	Open Hole	-31.56362	26.64801	Not in use	Not equipped	None	Former WM installation	33.77	15.71
17	EC / S31 / 16	A 13	Kloppersfontein / Esperanza	27	Open Hole	-31.56862	26.64328	Not in use	Not equipped	None	Very shallow WL	14.91	0.80
18	EC / S31 / 36	A 33	Primgradia	184	Open Hole	-31.54706	26.66998	Not in use	Not equipped	None	Former WM installation	45.60	9.73

4 SUMMARY

- AGES was appointed by DWAF to carry out a hydrogeological investigation at the town of Sterkstroom and bordering farms around the pipeline (Carnavon to Sterkstroom)

- The area is covered by alluvium and underlain by the sandstone and shale of the Burgersdorp Formation; mudstone, shale, gritty sandstone and occasional coal seams of the Molteno Formations. The Molteno Formation overlay the Burgersdorp Formation. Dolerite intruded the sedimentary rock in the form of sills/sheets and dykes.

- Groundwater data and information were derived from technical reports and personal communication with parties concerned acquiring information regarding the history of water supply, present demand and supply and the general condition of the towns' pump infrastructure.

- A hydrocensus (28/11/06 – 01/12/06) was carried out, gathering information of all boreholes within the demarcated survey area. A total of 92 water points in the form of boreholes and springs were surveyed as indicated in Map 2.

- A brief structural geological and lineament mapping was conducted in the project area utilizing 1:50 000 scale ASTER satellite imagery. Lineament orientations generally exhibit a north-south and east-west trend, with high potential zones mostly associated with dolerite dyke intrusions in alluvial deposit areas and lineament clusters (Map 3).

- From the results of this investigation it is evident that the total water demand of Sterkstroom Town can be met utilizing existing groundwater sources and rehabilitating / remediating municipal boreholes that are currently in disrepair, thereby eliminating the purchasing of water from Carnarvon Estates. Boreholes earmarked for determinative yield testing is indicated in Table 2 and in Map 4 for reference.

- Additional source development in identified high potential zones are not essential at this stage, but further geophysical exploration is recommended.

5 RECOMMENDATIONS

- Exact spring flow measurements should be taken at Carnarvon Estates in order to verify volumes and rates of flow. The last recorded measurement was taken in 1953.

- All production boreholes within the municipal boundary must be sampled and water chemistry results assessed and evaluated to determine whether faecal or any other noxious contaminates exists within the aquifer. Faecal pollution may cause adverse effects in consumers if left untreated.

- Pollution source/s depicted in boreholes EC/004/CH (old); EC/005/CH and EC/009/CH will have to be verified through detailed groundwater sampling and analysis.

- Boreholes as tabulated in Table 2 is earmarked for determinative pump testing to determine and verify sustainable abstraction rates and volumes. Pump testing of the old mine shaft to the east of town and borehole EC/007/CH is also recommended. This phase should initiate as soon as possible as these boreholes are all located within close proximity to current water supply infrastructure.

- Rehabilitation and repair to faulty pump equipment at previous production boreholes EC/002/CH; EC/008/CH; EC/019/CH and Myburghs' borehole should be conducted as a matter of urgency.

- Borehole EC/006/CH must be equipped and utilized.

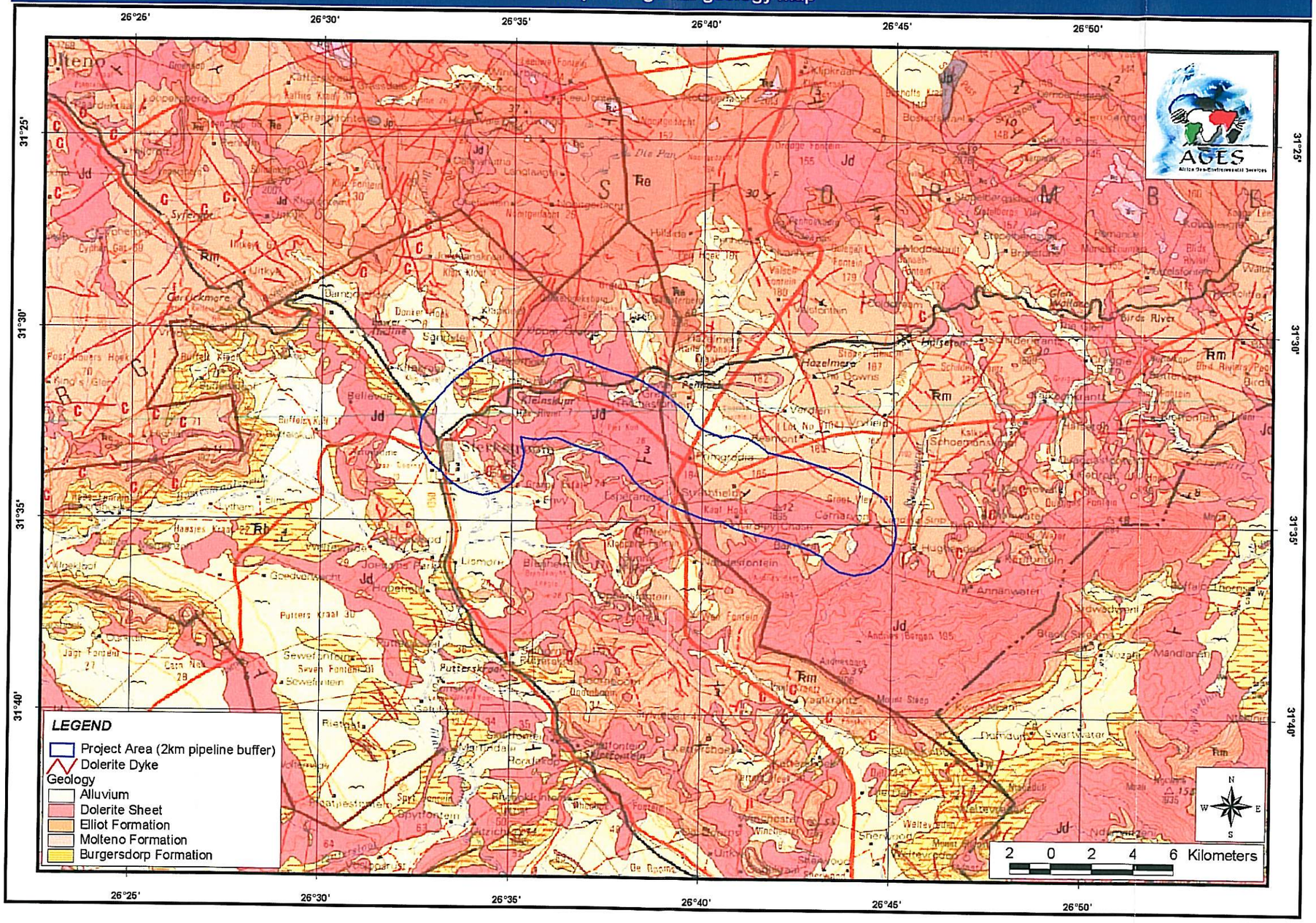
- Geophysical profiling should be conducted in identified high potential zones in order to identify potential exploration drilling targets and structures as part of the next phase of the investigation.

- Incorporate the on-site-sanitation of the low-cost-housing-development into town's sewerage system to minimize possible groundwater pollution (Reference 5). Alternatively the groundwater protocol for on-site sanitation should be applied and potential contamination assessed.

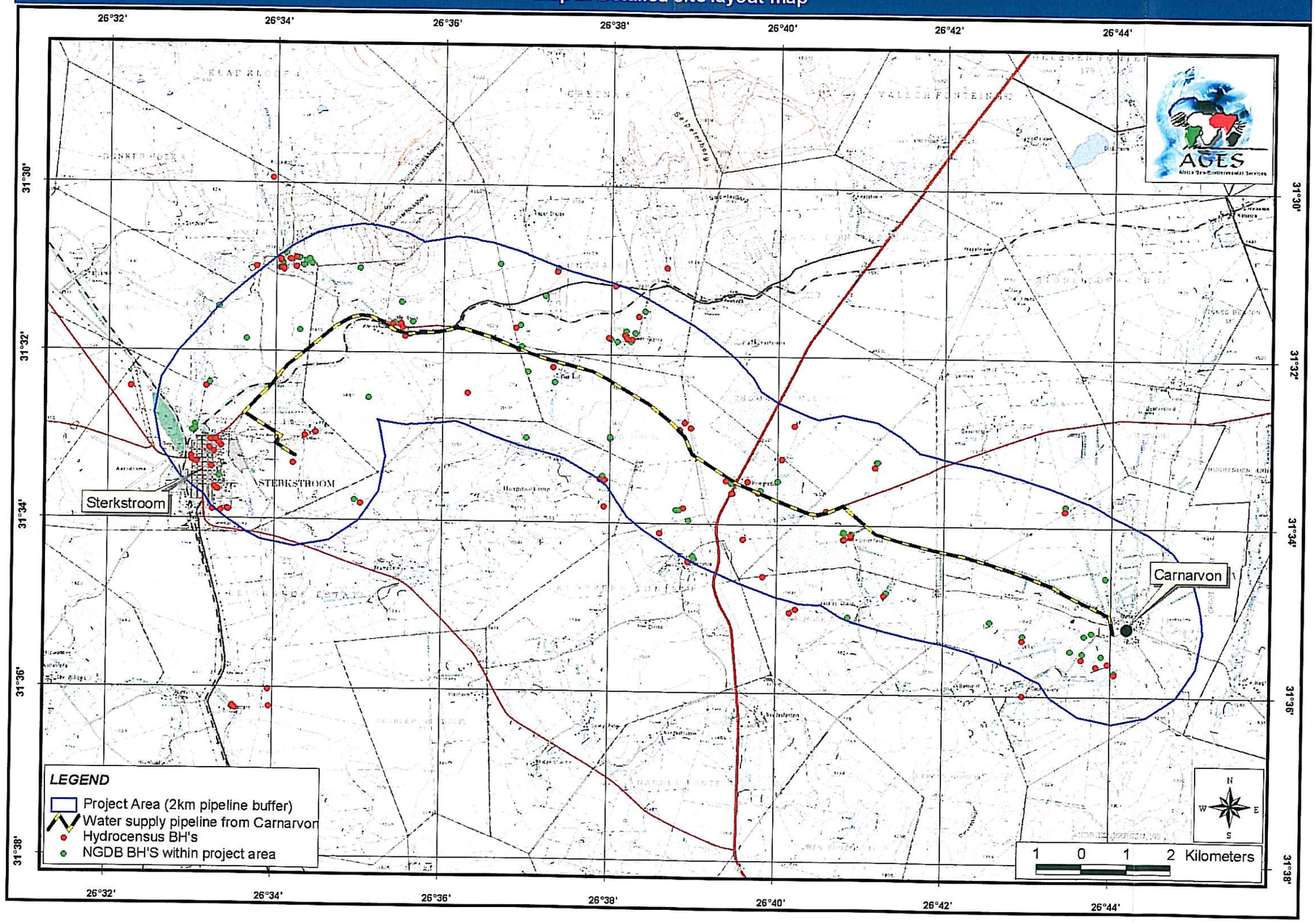
- An engineering geological and hydrogeological investigation must be conducted at the towns' Waste Water Treatment Works due to the proximity and location of towns' production boreholes to this site in order to assess possible contamination hazards (Reference 5).

PROJECT MAPS

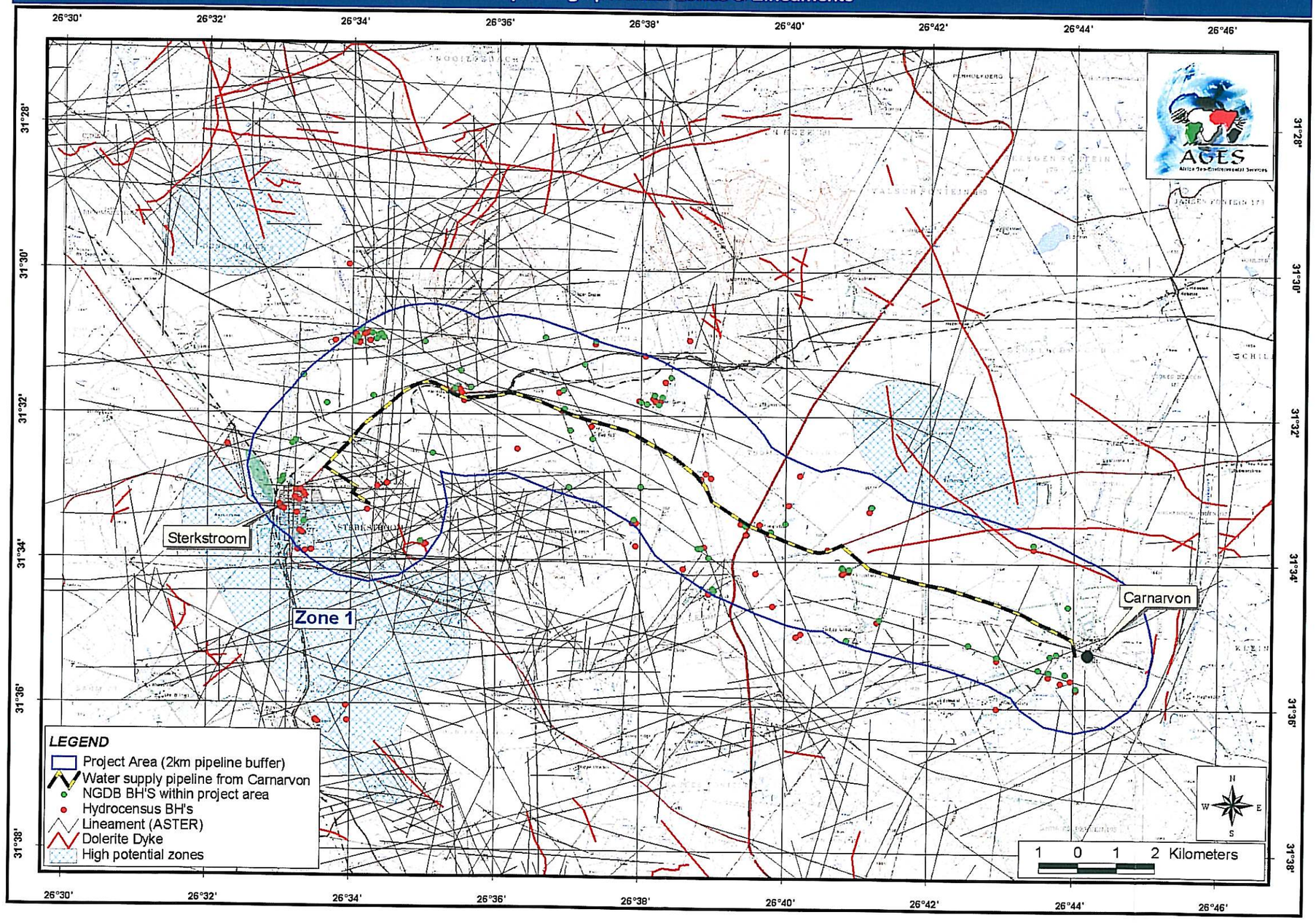
PROJECT: STERKSTROOM GEOHYDROLOGICAL INVESTIGATION BASED ON TENDER W8783
Map 1: Regional geology map



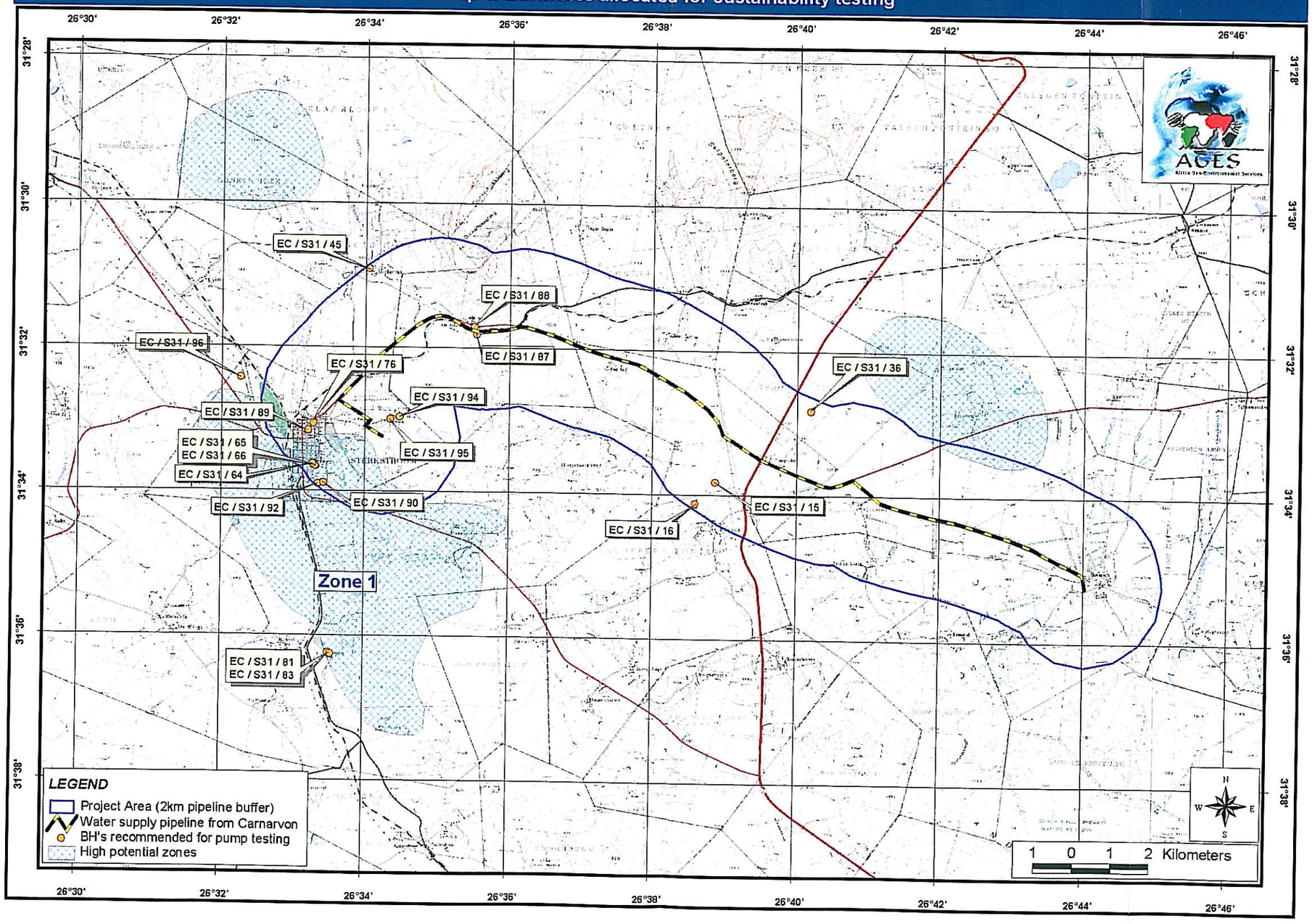
PROJECT: STERKSTROOM GEOHYDROLOGICAL INVESTIGATION BASED ON TENDER W8783
Map 2: Detailed site layout map



PROJECT: STERKSTROOM GEOHYDROLOGICAL INVESTIGATION BASED ON TENDER W8783
Map 3: High potential zones & Lineaments



PROJECT: STERKSTROOM GEOHYDROLOGICAL INVESTIGATION BASED ON TENDER W8783
Map 4: Boreholes allocated for sustainability testing



APPENDIX A

Hydrocensus field survey sheets

BOREHOLE SURVEY - FORM A: DWAF UPGRADING SPRING

MAP REFERENCE: 3126 DA (1)

BOREHOLE NUMBER: EC/S10/165

DATE: 29/11/06

Waypoint 237 (Annelize's GPS.

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		Grootvley / Carnarvon Estates			191	Farm

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
N/A	N/A	Read from topo map after plotting	31.59418°	26 73037

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
(U)	N	Spring water supply to pipeline

BOREHOLE USAGE

NOT IN USE: G	Estimated yield (l/s):		Based on: Seepage, difficult to see "eye" of spring marsh area	
IN USE: (U)	Community water supply: DA	Stock watering: AS	Irrigation: AI	Other: Spring - supply water to pipeline
DESTROYED: D	Pumping period per day (hrs):		→ continuous flow variation in yield → yield seasonal dependent	

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	N/A mm	N/A mm	N/A m	N/A m	NA m	

HANDPUMP	Type	Depth installed	Condition	Comments
	—	m	G M P	

MOTORISED			kW	RPM	Pulley diameter	Condition
	Diesel					G M P
	Electrical					
	Comments:	Free flow				
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition
	—	G M P

RETICULATION

Reservoir	
Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition
	—		G M P

ELEMENTS

Description	Installation depth	Condition
		G M P

PUMP HOUSE

		Floor	Flow meter		Reading	Pressure gauge	
Type: —							
Condition:		G M P	Yes	No	—	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

Spring → "eye" not been observed → marshy area + dense vegetation.

Fluctuation in yield → seasonal variations.

Reservoir WP 239

New number marked:	Yes	No
Sample taken:	Yes	(No)

Owner:

Inspection carried out by: A. Wiersma

DWAF representative:

Community representative:

Pump operator:

Took photographs

Waypoint 239 Reservoirs

CARNARVON ESTATE

PO Box 9 Sterkstroom 5425 • South Africa

Tel: +27 45 9660408 • Fax: +27 45 9660953 045 9669617

Cell: 082 496 4048

Email: carnarvon@worldonline.co.za

Robin & Berta Halse

l/c/d. NGDB

Fikklie Well / Colossal Dam / Reservoir
Ground dam.

Demand 108 l/c/d. (108 l)

160mm ø Diam PVC pipeline
200mm ø

Households: Steckskoom
Masakhe
Hoffmansville

Cubile

Capacity of Reservoirs M^3.
Mega liter. Kl -

$100 M^3 = 1{,}000{,}000\ l$.
$1 M^3 = 10{,}000\ l$

Artesian Wells
4 pump stations Existing

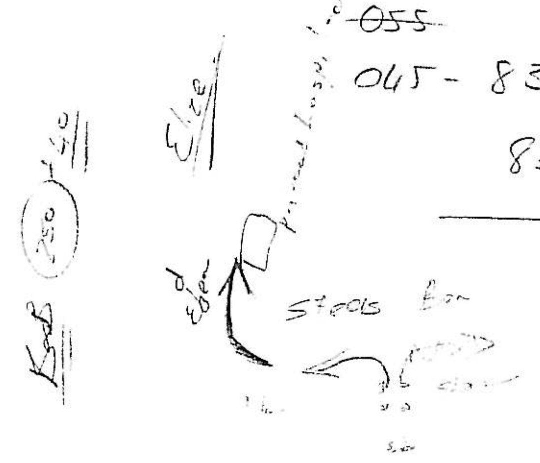
Geology

Groundwater resource situation.

Sleeping place in ø/town.

~~055~~
045 - 838372
838372

Cawdot
Bnl
Eol



WINDMILL

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: 3126DA (2)

BOREHOLE NUMBER: EC/S10/166

DATE: 29/11/06

Waypoint 228 (Annelize's GPS 12)

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		Grootvlei / Carnarvon Estates			191	Farm

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
-	Not known	Read from topo map after plotting	31.59575	26.73400

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	(N)	Stockwatering

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):		Based on:					
IN USE:	(U)	Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other:	
DESTROYED:	D	Pumping period per day (hrs):		Wind dependent					

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	Unable to measure mm	mm	m	m	m	Unable to measure due to baseclamp & pipes in bh.

	Type	Depth installed	Condition			Comments
HANDPUMP	—	m	G	M	P	

MOTORISED			kW	RPM	Pulley diameter	Condition		
	Diesel							
	Electrical			—	—	G	M	P
	Comments:	Windmill → small type → "Suiderkruis".						
	Engine No.:							

PUMP HEAD

Type	Pulley diameter	Condition		
Suiderkruis —	5" 1.5m Ø —	(G)	M	P

RETICULATION

Reservoir			
Type:	—	Capacity:	—

PIPES

Diameter	Number of pipes	Total length	Condition		
unknown	←	→	G	M	P

ELEMENTS

Description	Installation depth	Condition		
unknown		G	M	P

PUMP HOUSE

		Floor			Flow meter			Pressure gauge	
Type:	—						Reading		
Condition:		G	~~M~~	P	Yes	(No)		~~Yes~~	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
	—

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

Near to earth dam (Collosal dam)
WL apparently shallow.
Installation unknown →
according to former bh's in area 100' ft (33m) deep WL about 9 - 12m deep.

New number marked:	Yes	No
Sample taken:	Yes	No

Owner: Mr. Hales see business card

According to Mr. Hales → this bh's WL very shallow

Inspection carried out by: A. Nkoeng

DWAF representative:

Community representative:

Pump operator:

Took photograph.

WINDMILL

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: 3126DA (3)

BOREHOLE NUMBER: EC/S10/167 WP 240 (AN's GPS)

DATE: 29/11/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION
						Village, school, etc
		Groot Vlei/Carnarvon Estates			191	Farm.

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES		WATER USE: CONSUMER		PURPOSE OF SITE
New	Old		Lat.	Lon.	URBAN	NON-URBAN	Production, Standby, etc
-	unknown	Read off after plotting	31 59274	26 72751	U	(N)	Stock watering

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):		Based on: Wind dependant → broke on WM not pumping				
IN USE:	(U)	Community water supply:	DA	Stock watering	(AS)	Irrigation:	AI	Other:
DESTROYED:	D	Pumping period per day (hrs):						

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	N/A mm	mm	m	m	m	Unable to measure due to loose clamp on

	Type	Depth installed	Condition			Comments
HANDPUMP	N/A	m	G	M	P	

MOTORISED	Diesel		kW	RPM	Pulley diameter	Condition	
	Electrical					G	M
	Comments:	N/A					
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition		
—	—	G	M	P

RETICULATION

Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition		
	Unknown		G	M	P

ELEMENTS

Description	Installation depth	Condition	
		G	M

PUMP HOUSE

		Floor			Flow meter		Reading	Pressure gauge	
Type:									
Condition:		G	M	P	Yes	No		Yes	N

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse	—	
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	2m height @ = 10M	Concrete dam
Pipeline	from bh to dam m	30

COMMENTS:

No concrete info about individual bh's i.e. pump inlet depth, depth, thickness & WL available for sure with this knowledge only back on Friday at homestead

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: Mr. Hales

Inspection carried out by: A. Wiersema

DWAF representative:

Community representative:

Pump operator:

Acc. to Mr. Hales → this bh deeper than surrounding bh's → tracer tests was done to see relation with aquifer and spring. Acc. to Mr. Hales ~~tests~~ proved

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

Windmill

MAP REFERENCE: 3126DA (4)

BOREHOLE NUMBER: EC/S10/168

DATE: 29/11/06

GENERAL

Klaypoint 242 (AWS GPS)

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE/DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		Greatley / Connemara Estates			191	Farm

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
-	Not known	read off on top map after plotting	-31.56346	26.72397

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	(N)	Stock watering

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	(U)
DESTROYED:	D

Estimated yield (l/s):		Based on:				
Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other:
Pumping period per day (hrs):		Wind				

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Not able to measure due to base clamp and pipes in bh.

	Type	Depth installed	Condition			Comments
HANDPUMP		m	G	M	P	

MOTORISED	Diesel		kW	RPM	Pulley diameter	Condition G / M
	Electrical					
	Comments:					
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition
unknown	unknown	(G) M P

RETICULATION

Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition
unknown	unknown	unknown	G M P

ELEMENTS

Description	Installation depth	Condition
unknown		G M

PUMP HOUSE

		Floor			Flow meter		Pressure gauge
Type:					Reading		
Condition:		G	M	P	Yes (No)		Yes N

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric	(117 m³)	
Reservoir	10m Ø x 1.5 height	Cement
Pipeline	From W/M bh to reservoir m	15

COMMENTS:

Reservoir (dam cement dry)

brake on Windmill

Not able to give info re:

bh para meters

Bh in Northern portion of property

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: Mr Hales

Inspection carried out by: A Swierangoe

DWAF representative:

Community representative:

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

Windmill

MAP REFERENCE: 3126 DA (5)

BOREHOLE NUMBER: EC/S10/169

DATE: 29/11/98

WP 243 (AW's GPS)

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		Groot Vley / Cameron Estates			191	Farm

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
-	Not known	read off after plotting	31.58916	26.71571

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	(N)	Stock watering

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):		Based on: Wind				
IN USE:	(U)	Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other:
DESTROYED:	D	Pumping period per day (hrs):		Windmill				

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	mm	mm	m	m	m	Not able to measure. Sealed with plate & bh pipes

HANDPUMP	Type	Depth installed	Condition			Comments
	N/A	m	G	M	P	

MOTORISED			kW	RPM	Pulley diameter	Condition		
	Diesel							
	Electrical					G	M	P
	Comments:							
	Engine No.:							

PUMP HEAD

Type	Pulley diameter	Condition		
Aermotor Soul	8 ft — 2.42 m	(G)	M	P

RETICULATION

Reservoir			
Type:	—	Capacity:	—

PIPES

Diameter	Number of pipes	Total length	Condition		
Unknown			G	M	P

ELEMENTS

Description	Installation depth	Condition		
unknown		G	M	P

PUMP HOUSE

	Floor			Flow meter		Reading	Pressure gauge	
Type: — Condition: —	G	M	P	Yes	No	—	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
—	—

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	7 m x 1.5 (≈40 m³)	Cement
Pipeline	m	

COMMENTS:
GPS co-ordinates 4m from bh, to soggy to get near bh
Stewards & Loyds head

New number marked: Yes / (No)

Sample taken: Yes / (No)

Owner: Mr Haleys

Inspection carried out by: A Wierenga

DWAF representative:

Community representative:

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

WINDMILL

MAP REFERENCE: 3226DA (6)

BOREHOLE NUMBER: EC/S10/170

DATE: 29/4/05

AW's GPS WP 244

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		? Grootvlei / (Stagger Inn)			191	Farm

Carnarvon Estates

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
-	✓		-31.60008	26.71577

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	(N) circled	Stock + household

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):		Based on: Wind based				
IN USE:	(U) circled	Community water supply:	DA	Stock watering:	(AS) circled	Irrigation:	AI	Other:
DESTROYED:	D	Pumping period per day (hrs):						

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	mm	mm	m	m	m	Not able to measure base clamp + pipes in hole.

HANDPUMP	Type	Depth installed	Condition			Comments
	—	m	G	M	P	

MOTORISED			kW	RPM	Pulley diameter	Condition
	Diesel					
	Electrical		/ (struck through)			G M P
	Comments:					
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition		
SxL type	8' = 2.4M	(G) circled	M	P

RETICULATION

Reservoir	
Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition		
50mm ∅	unknown	unknown	(G) circled	M	P

ELEMENTS

Description	Installation depth	Condition		
—	—	G	M	P

PUMP HOUSE

Type: / (struck through)	Floor			Flow meter		Reading	Pressure gauge	
Condition:	G	~~M~~	P	Yes	(No) circled	—	~~Yes~~	~~No~~

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
—	—

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	7.5m x 1m ∅	Cement
Pipeline	(±175 m3) m	

COMMENTS:

SxL type head

New number marked: Yes (No) circled

Sample taken: Yes (No) circled

Owner: Mr. Hales

Inspection carried out by: A. Wiereage

DWAF representative:

Community representative:

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

WP 245 Seepage

MAP REFERENCE: 3326 DA 7

BOREHOLE NUMBER: EC/S10/171

DATE: 29/11/06

GENERAL

Seepage point down dam wall

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		Greenley / Carnarven Estates			191	Farm

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
	N/A	Get from topo map after plotting	31.59365	26.73273

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc:
U	(N)	Seepage point

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	(U)
DESTROYED:	D

Estimated yield (l/s):	—	Based on: Seepage					
Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other:	
Pumping period per day (hrs):	—						

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	

	Type	Depth installed	Condition			Comments
HANDPUMP	—	m	G	M	P	

		kW	RPM	Pulley diameter	Condition		
MOTORISED	Diesel						
	Electrical				G	M	P
	Comments:						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition		
—	—	G	M	P

RETICULATION

Reservoir			
Type:	—	Capacity:	—

PIPES

Diameter	Number of pipes	Total length	Condition		
—	—	—	G	M	P

ELEMENTS

Description	Installation depth	Condition		
—	—	G	M	P

PUMP HOUSE

		Floor			Flow meter			Pressure gauge	
Type:						Reading			
Condition:	—	G	M	P	Yes	No	—	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
—	—

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	

COMMENTS:

Seeps into drainage pathway to abstraction point where pipeline begins

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: Mr. Hales

Inspection carried out by: A. Nieuwenga

DWAF representative:

Community representative:

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

WINDMILL

MAP REFERENCE: 3126DA (8)

BOREHOLE NUMBER: EC/S31/~~012~~ 097

DATE: 29/11/06

WP 046

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		PIET KUIL			126	Farm

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES		WATER USE: CONSUMER		PURPOSE OF SITE
New	Old (circled)		Lat.	Lon.	URBAN	NON-URBAN	Production, Standby, etc.
	No number	± 1498M	31.53251	26.61508	(U)	(N)	

BOREHOLE USAGE

NOT IN USE:	(C)	Estimated yield (l/s):		Based on: Wind			
IN USE:	U	Community water supply:	DA	Stock watering:	(AS)	Irrigation: AI	Other:
DESTROYED:	D	Pumping period per day (hrs):					

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	mm	mm	m	m	m	Unable to take measurement

HANDPUMP	Type	Depth installed	Condition			Comments
	N/A	m	G	M	P	base clamp and pipes in bh

MOTORISED			kW	RPM	Pulley diameter	Condition
	Diesel					
	Electrical					G / M / P
	Comments:					
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition		
Loyds	6" wheel (1.8M)	G	M	(P)

RETICULATION

Reservoir			
Type:	—	Capacity:	—

PIPES

Diameter	Number of pipes	Total length	Condition		
37 mm	unknown	unknown.	G	M	P

ELEMENTS

Description	Installation depth	Condition		
unknown	unknown	G	M	P

PUMP HOUSE

		Floor			Flow meter	Reading	Pressure gauge
Type:							
Condition:		G ~~M~~	~~P~~	Yes	(No)	—	~~Yes~~ ~~No~~

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
—	—

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	Ø 4M x 2m height; 3m x 3m height	Cement (25 (16m³)
Pipeline	m	

COMMENTS:

Bh not in use "Kop" broken

2 cement dams next to bh

HEAD (Loyds)

Kiewiet Farmworker assist

New number marked:	Yes	~~No~~
Sample taken:	Yes	~~No~~

Owner: F. Kruger (Frikkie Kruger)

Inspection carried out by: A. Wierenga

DWAF representative:

Community representative:

Pump operator: KIEWIET

Border Irrigation & General Agencies CC

Frikkie K...

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

WINDMILL

MAP REFERENCE: 3226DA (9)

BOREHOLE NUMBER: EC/S31/12

DATE: 29/11/96

GENERAL

WP 2477

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION: Village, school, etc
		PIET KUIL	726	Farm

BOREHOLE NUMBER: New	BOREHOLE NUMBER: Old	ALTITUDE (masl)	G.P.S. COORDINATES: Lat.	G.P.S. COORDINATES: Lon.
-	Not known	read from topo map.	-31.53602°	26.62195°

WATER USE: CONSUMER: URBAN	WATER USE: CONSUMER: NON-URBAN	PURPOSE OF SITE: Production, Standby, etc.
U	(N)	Domestic & Stock water

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	(U)
DESTROYED:	D

Estimated yield (l/s):	unknown	Based on:	Windmill				
Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other:	& Domestic
Pumping period per day (hrs):	unknown	Wind dependant					

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	— mm	— mm	— m	— m	— m	Unable to measure (base clamp & pipes in hole)

	Type	Depth installed	Condition: G	M	P	Comments
HANDPUMP	—	m				—

		kW	RPM	Pulley diameter	Condition: G	M	P
MOTORISED	Diesel						
	Electrical						
	Comments:						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition: G	M	P
Climax	8" Wheel (2.4m)	(G)	M	P

RETICULATION

Reservoir: Type:	Capacity:
—	—

PIPES

Diameter	Number of pipes	Total length	Condition: G	M	P
50 mm	10	33m	(G)	M	P

ELEMENTS

Description	Installation depth	Condition: G	M	P
unknown				

PUMP HOUSE

		Floor: G	M	P	Flow meter: Yes	No	Reading	Pressure gauge: Yes	No
Type:									
Condition:	—						—		

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
—	—

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	1.5m height Ø 9m (42m³)	Cement
Pipeline	m	

COMMENTS:

Climax Head

distance from bh to reservoir

94m

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: F Kruger

Inspection carried out by: A. Herring

DWAF representative:

Community representative:

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

WINDMILL

MAP REFERENCE: 3126 DA (10)

BOREHOLE NUMBER: EC/S31/13 WP 278

DATE: 29/1/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE/DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		PIET KUIL			326	FARM

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES		WATER USE: CONSUMER		PURPOSE OF SITE
New	Old		Lat.	Lon.	URBAN	NON-URBAN	Production, Standby, etc.
	unknown	read from topo map	-31.54799	26.64713		(N)	Stock watering

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):		Based on: Windmill				
IN USE:	(U)	Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other:
DESTROYED:	D	Pumping period per day (hrs):						

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Unable to measure (base plate/clamp & pipes in bh)

	Type	Depth installed	Condition			Comments
HANDPUMP	—	m	G	M	P	—

			kW	RPM	Pulley diameter	Condition		
MOTORISED	Diesel					G	M	P
	Electrical							
	Comments:							
	Engine No.:							

PUMP HEAD

Type	Pulley diameter	Condition		
Loyds	8" wheel (2.4m)	(G)	M	P

RETICULATION

Type:	Capacity:
—	—

PIPES

Diameter	Number of pipes	Total length	Condition		
32mm	unknown	unknown	(G)	M	P

ELEMENTS

Description	Installation depth	Condition		
unknown		G	M	P

PUMP HOUSE

		Floor			Flow meter		Pressure gauge
Type:						Reading	
Condition:	—	G	M	P	Yes (No)	—	Yes ~~No~~

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
—	—

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	7m ø 2m height (77m³)	concrete RC
Pipeline	77m³ m	

COMMENTS:

Head "Loyds".

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: F. Kruger

Inspection carried out by: P. Wiersema

DWAF representative:

Community representative:

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

Spring

MAP REFERENCE: 3126 DA (1)

BOREHOLE NUMBER: EC/S31/14

DATE: 29/11/06

GENERAL

WP 249

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE/DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		PIET KUIL	R6	Farm

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.	WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
—	—	1545 (GPS)	-31.54667	26.64820	U	(N)	

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):		Based on: Free flowing					
IN USE:	(U)	Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other:	
DESTROYED:	D	Pumping period per day (hrs):		SPRING					

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	

	Type	Depth installed	Condition			Comments
HANDPUMP		m	G	M	P	

MOTORISED	Diesel		kW	RPM	Pulley diameter	Condition G / M / P
	Electrical					
	Comments:					
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition G	M	P

RETICULATION

Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition G	M	P

ELEMENTS

Description	Installation depth	Condition G	M	P

PUMP HOUSE

		Floor G	M	P	Flow meter Yes	No	Reading	Pressure gauge Yes	No
Type:									
Condition:									

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

Water from spring channelled to cement reservoir (gravity flow) 50m west of spring

Geology outcrop very fine grained mudstone (looks almost chert)

In winter spring stronger flowing than in summer.

New number marked:	Yes	No
Sample taken:	Yes	No

Owner: F. Kruger

Inspection carried out by: A. Nieuwoudt

DWAF representative:

Community representative: KIGWIET

Pump operator:

Took photographs

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

OPEN HOLE

MAP REFERENCE: 3126 DA (12)

BOREHOLE NUMBER: EC/S31/15

DATE: 29/11/06

WP 950

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION (Village, school, etc)
		PIET KUIL			826	Farm

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
-	/	± 1591 (GPS)	-31 56362	26.64801

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	(N)	

BOREHOLE USAGE

NOT IN USE:	(G)
IN USE:	U
DESTROYED:	D

Estimated yield (l/s):		Based on: Not in use					
Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other:	
Pumping period per day (hrs):							

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	160 mm	6 mm	unknown m	33.77 m	15.71 m	Stick-up = 0.39 mag

	Type	Depth installed	Condition			Comments
HANDPUMP	/	m	G	M	P	

MOTORISED	Diesel		kW	RPM	Pulley diameter	Condition G / M / P
	Electrical					
	Comments:					
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition		
/	/	G	M	P

RETICULATION

Reservoir			
Type:	/	Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
/	/	/	G	M	P

ELEMENTS

Description	Installation depth	Condition		
/		G	M	P

PUMP HOUSE

		Floor			Flow meter		Pressure gauge	
Type:	/					Reading		
Condition:		G	M	P	Yes	(No)	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
/	/

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	

COMMENTS: BH open, not in use, former windmill installation
BH next to concrete reservoir
water to reservoir
from spring
BH near Vodacom cellphone
Tower

New number marked: Yes / (No)

Sample taken: Yes / (No)

Owner: F. Kruger

Inspection carried out by: A. Wiersenga

DWAF representative:

Community representative:

Pump operator: Kleniet

OPEN HOLE

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: 3126 DA (13)

BOREHOLE NUMBER: EC/S31/16

DATE: 29/11/06

WP 251

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		Riet/Kuil/Esperanza			27	Farm

Kloppersfontein/Esperanza

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
-	—	± 1556 m	S = -31.56862	E = 26.64328

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	N	Not in use

BOREHOLE USAGE

NOT IN USE:	(G)	Estimated yield (l/s):	—	Based on: —			
IN USE:	U	Community water supply:	DA	Stock watering:	AS	Irrigation: AI	Other: —
DESTROYED:	D	Pumping period per day (hrs):	—				

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	155 ID mm	1.0mm	unknown m	14.91 m	0.80 m	WL near surface. Stick-up 0.15 magl.

HANDPUMP	Type	Depth installed	Condition			Comments
	—	m	G	M	P	

MOTORISED		kW	RPM	Pulley diameter	Condition
	Diesel				
	Electrical	—			G M P
	Comments:				
	Engine No.:				

PUMP HEAD

Type	Pulley diameter	Condition		
—	—	G	M	P

RETICULATION

Reservoir	
Type: —	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition		
			G	M	P

ELEMENTS

Description	Installation depth	Condition		
		G	M	P

PUMP HOUSE

		Floor			Flow meter		Reading	Pressure gauge	
Type: —							—		
Condition:		G	M	P	Yes	(No)		Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
	—

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	

COMMENTS:

Bh next to concrete reservoir
Very shallow WL
(biesies growing in area indication of shallow WL)

New number marked:	Yes	(No)
Sample taken:	Yes	(No)

Owner: F. Kruger

Inspection carried out by: A. Wierenga

DWAF representative:

Community representative:

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING SPRING MAP REFERENCE: 3126 DA (14)

BOREHOLE NUMBER: EC/S31/17 DATE: 29/11/06

WP 252 (Spring)

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		Alemeure / Esperanza			27	Farm.

KLOPPERSFONTEIN / Esperanza.

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
-	unknown	Read from topo map after plotting	-31.57424°	26.64901°

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
(U)	N	Production

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):		Based on: Difficult to measure flows over weir				
IN USE:	(U)	Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other:
DESTROYED:	D	Pumping period per day (hrs):		Free flowing				

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	N/A mm	mm	m	m	m	

	Type	Depth installed	Condition			Comments
HANDPUMP	—	m	G	M	P	

MOTORISED			kW	RPM	Pulley diameter	Condition
	Diesel					
	Electrical					G M P
	Comments:	—				
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition		
—	—	G	M	P

RETICULATION

Reservoir			
Type:	—	Capacity:	—

PIPES

Diameter	Number of pipes	Total length	Condition		
—	—	—	G	M	P

ELEMENTS

Description	Installation depth	Condition
		G M P

PUMP HOUSE

		Floor			Flow meter		Reading	Pressure gauge	
Type:	—								
Condition:		G	M	P	Yes	(No)	—	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
—	—

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	

COMMENTS:

Spring flows over weir water channelled to a cement reservoir from where water is pumped with diesel engine to a cattle post near Vodacom tower

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: F. Kruger

Inspection carried out by: A. Wierenga.

DWAF representative: Took photographs

Community representative:

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

WINDMILL

MAP REFERENCE: 3126 DA (15)

BOREHOLE NUMBER: EC/S31/18

DATE: 29/11/06

GENERAL

WP 253 Windmill

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		PIET KUIL	#26	farm

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
-	No No	Read from Topo Map after plotting	-31.55812	26.63142

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc:
(U)	N	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	(U)
DESTROYED:	D

Estimated yield (l/s):		Based on: Windmill Installation					
Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other:	
Pumping period per day (hrs):							

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	u mm	mm	m	m	m	unable to take readings. (base clamp & pipes in borehole)

	Type	Depth installed	Condition			Comments
HANDPUMP		m	G	M	P	

MOTORISED	Diesel		kW	RPM	Pulley diameter	Condition	
	Electrical					G	M P
	Comments:						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition		
Old type Head	Head ϕ 6" (1.8M)	(G)	M	P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
unknown	unknown	unknown	G	M	P

ELEMENTS

Description	Installation depth	Condition		
unknown	unknown	G	M	P

PUMP HOUSE

		Floor			Flow meter		Pressure gauge	
Type:					Reading			
Condition:		G	M	P	Yes	No	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

Windmill west of spring (fountain)
WL shallow → "sitter" almost @ surface

New number marked:	Yes	(No)	
Sample taken:	Yes	(No)	

Owner: F Kruger

Inspection carried out by: A. Wierenga

DWAF representative:

Community representative:

Pump operator: KIEWIET

(16)

BOREHOLE SURVEY - FORM A: DWAF UPGRADING SPRING MAP REFERENCE: 3126 DA

BOREHOLE NUMBER: EC/S31/19 spring WP 254 x 255 DATE: 29/11/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		PIET KUIL			#26	Farm

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.	WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
-	N/A	555 read from topo map	-31 55820	26.63235 254	U	(N)	Production

after plotting -31.55890 26.63176 WP 255 (Annelie must check this out)

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):		Based on: Unable to measure				
IN USE:	(U)	Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other:
DESTROYED:	D	Pumping period per day (hrs):						

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	N/A mm	mm	m	m	m	

HANDPUMP	Type	Depth installed	Condition			Comments
	N/A	m	G	M	P	

MOTORISED			KW	RPM	Pulley diameter	Condition		
	Diesel							
	Electrical					G	M	P
	Comments:	N/A						
	Engine No.:							

PUMP HEAD

Type	Pulley diameter	Condition		
—	—	G	M	P

RETICULATION

Reservoir			
Type:	—	Capacity:	—

PIPES

Diameter	Number of pipes	Total length	Condition		
—	—	—	G	M	P

ELEMENTS

Description	Installation depth	Condition		
—	—	G	M	P

PUMP HOUSE

		Floor			Flow meter		Reading	Pressure gauge	
Type:	—								
Condition:	—	G	~~M~~	P	Yes	(No)	—	~~Yes~~	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
	—

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel	—	
Electric	—	
Reservoir		
Pipeline	m	m

COMMENTS:

Spring (fountain) cased off in cement well ± 1m in ϕ with cement seal on top (took photographs) water is piped to downhill to cement reservoir where a solar pump pumps water to uphill to a reservoir on higher ground

New number marked: Yes | No

Sample taken: Yes | No

Owner: F. Kruger

Inspection carried out by: A. Wierenga.

DWAF representative:

Community representative:

Pump operator: KIEWIET

Took photographs

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

SPRING

MAP REFERENCE: 3326 D (17)

BOREHOLE NUMBER: EC/S31/20

DATE: 30/11/06

GENERAL

NP 256

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION: Village, school, etc
		(Primgrodia)	184	Farm

BOREHOLE NUMBER: New	BOREHOLE NUMBER: Old	ALTITUDE (masl)	G.P.S. COORDINATES: Lat.	G.P.S. COORDINATES: Lon.
-	-	read off after plotting on topo map	31.54766	26.66942

WATER USE: CONSUMER: URBAN	WATER USE: CONSUMER: NON-URBAN	PURPOSE OF SITE: Production, Standby, etc.
U	(N)	Production

BOREHOLE USAGE

NOT IN USE:	(2)	Estimated yield (l/s):		Based on:			
IN USE:	(U)	Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI
DESTROYED:	D	Pumping period per day (hrs):		Free-flowing			

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	N/A mm	mm	m	m	m	

HANDPUMP	Type	Depth installed	Condition	Comments
	N/A	m	G M P	

MOTORISED		kW	RPM	Pulley diameter	Condition
	Diesel				
	Electrical				G M P
	Comments:				
	Engine No.:				

PUMP HEAD

Type	Pulley diameter	Condition
		G M P

RETICULATION

Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition
			G M P

ELEMENTS

Description	Installation depth	Condition
		G M P

PUMP HOUSE

Type:	Floor			Flow meter		Pressure gauge	
Condition:				Reading			
	G	M	P	Yes	No	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	

COMMENTS:

Spring flows into earth dam

(took photograph) under

gravity

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: Mr. M. Jackson

045 - 9669054

Inspection carried out by: A. Wiersema

DWAF representative:

Community representative:

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

OPEN HOLE

MAP REFERENCE: 3126 DA (K)

BOREHOLE NUMBER: EC/S31/21

DATE: 30/11/06

GENERAL

WP 257 257

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION: Village, school, etc.
		Pringle	184	

BOREHOLE NUMBER: New	Old	ALTITUDE (masl)	G.P.S. COORDINATES: Lat.	Lon.
		±1587 (GPS)	-31.55810°	26.656410°

WATER USE: CONSUMER: URBAN	NON-URBAN	PURPOSE OF SITE: Production, Standby, etc.
U	(NU)	Not in use

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):		Based on:					
IN USE:	U	Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other:	
DESTROYED:	D	Pumping period per day (hrs):							

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	165 mm	1 mm	Unable to measure	9.34 m	Dry m	Bh open – no protection.

	Type	Depth installed	Condition			Comments
HANDPUMP		m	G	M	P	

		kW	RPM	Pulley diameter	Condition		
MOTORISED	Diesel				G	M	P
	Electrical						
	Comments:						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition		
		G	M	P

RETICULATION

Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition		
			G	M	P

ELEMENTS

Description	Installation depth	Condition		
		G	M	P

PUMP HOUSE

Type:		Floor			Flow meter		Pressure gauge	
Condition:		G	M	P	Yes / No	Reading	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

Borehole collapsed / blocked next to cement reservoir. through gets water from bh at source @ homestead WP 260

New number marked: Yes / (No)

Sample taken: Yes / (No)

Owner: M. Jordaan

Inspection carried out by: A. Wiersuga

DWAF representative:

Community representative:

Pump operator: Elvis

NOT IN USE

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: 3126DA (K)

BOREHOLE NUMBER: EC/S31/22

DATE: 30/11/06

GENERAL

NP 255

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		Pringadia	184	Farm

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.	WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE
-	No Nr.	read off from top map	-31.56054°	26.65769	U	(N)	Not in use

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):		Based on:							
IN USE:	U	Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other:			
DESTROYED:	(D)	Pumping period per day (hrs):									

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Not open - bh pipes still in hole former windmill installation

	Type	Depth installed	Condition G	Condition M	Condition P	Comments
HANDPUMP		m				

		kW	RPM	Pulley diameter	Condition G	Condition M	Condition P
MOTORISED	Diesel						
	Electrical						
	Comments:						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition G	Condition M	Condition P

RETICULATION

Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition G	Condition M	Condition P

ELEMENTS

Description	Installation depth	Condition G	Condition M	Condition P

PUMP HOUSE

		Floor G	Floor M	Floor P	Flow meter Yes	Flow meter No	Flow meter Reading	Pressure gauge Yes	Pressure gauge No
Type:									
Condition:									

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

BH destroyed / bh cover with plate / clamp with pipe/pipes still in hole

New number marked:	Yes	(No)
Sample taken:	Yes	(No)

Owner: M. Jordaan

Inspection carried out by: A. Nieuwenga

DWAF representative:

Community representative:

Pump operator: Elvis

OPEN HOLE

BOREHOLE SURVEY - FORM A: DWAF UPGRADING Blocked/ MAP REFERENCE: 31 26 DA (20)

BOREHOLE NUMBER: EC/S31/23 Collapsed DATE: 30/11/06

GENERAL WP 2079

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		Pungoda	184	Farm

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
-	Not known	Read off topo Map	-31.56057	26.65763

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	(N)	Not in use

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):		Based on:				
IN USE:	U	Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other:
DESTROYED:	(D)	Pumping period per day (hrs):						

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	160 mm	6 mm	— m	— m	— m	Unable to measure Struck rope (rock) in bh

	Type	Depth installed	Condition G	Condition M	Condition P	Comments
HANDPUMP		m				

MOTORISED	Diesel		kW	RPM	Pulley diameter	Condition G / M / P
	Electrical					
	Comments:					
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition G	Condition M	Condition P

RETICULATION

Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition G	Condition M	Condition P

ELEMENTS

Description	Installation depth	Condition G	Condition M	Condition P

PUMP HOUSE

		Floor G	Floor P	Flow meter	Flow meter Reading	Pressure gauge Yes	Pressure gauge No
Type:							
Condition:							

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

BH Blocked / collapsed

Very shallow

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: M. Jordaan

Inspection carried out by: A. Mooney

DWAF representative:

Community representative:

Pump operator: ELVIS

WINDMILL

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

WINDMILL MAP REFERENCE: 3126 DA ?(a)

BOREHOLE NUMBER: EC/S31/24

DATE: 30/11/05

WP 360

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		Primgadia			184	Farm

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES		WATER USE: CONSUMER		PURPOSE OF SITE
New	Old		Lat.	Lon.	URBAN	NON-URBAN	Production, Standby, etc.
-	Unknown	±1618 (GPS)	-31.56960	26.65986°	~~U~~	(N)	production

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):		Based on: Windmill cylinder				
IN USE:	(U)	Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other:
DESTROYED:	D	Pumping period per day (hrs):		Wind dependent				

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Unable to measure pipes & cover plate (clamps)

	Type	Depth installed	Condition			Comments
HANDPUMP		— m	G	M	P	

			kW	RPM	Pulley diameter	Condition
MOTORISED	Diesel					
	Electrical		—			G M P
	Comments:					
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition		
unknown	unknown	G	M	P

RETICULATION

Reservoir			
Type:	—	Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
25mm plastic pipe	# (9) ✓	27m ✓	(G)	M	P

ELEMENTS

Description	Installation depth	Condition		
3" (76mm)	27m	(G)	M	P

PUMP HOUSE

		Floor			Flow meter		Reading	Pressure gauge	
Type:									
Condition:	—	G	M	P	Yes	(No)	—	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
—	—

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric	(25m³)	
Reservoir	4m ø x 2m height	Cement Reservoir.
Pipeline	m	m

COMMENTS: WINDMILL

pH = 6.83 (TDS meter not working)

Change steel pipes with black plastic pipes

This bh supplies water to through @ destroyed! block bh WP357 water with gravity

New number marked: Yes | (No)

Sample taken: Yes | (No)

Owner: M. Jordaan

Inspection carried out by: A. Wiorenz

DWAF representative:

Community representative: ELVIS

Pump operator:

SPRING
SPRING

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: 3126 DA

BOREHOLE NUMBER: EC/S31/25

DATE: 30/11/05

WP 34

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		Strathfield			185	Farm

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
-	—	1620 (GPS)	-31 57 702	26 66 386

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	(N)	Production

BOREHOLE USAGE

NOT IN USE: G	Estimated yield (l/s):		Based on: Free Flow	
IN USE: (U)	Community water supply:	DA	Stock watering: (AS)	Irrigation: AI — Other: —
DESTROYED: D	Pumping period per day (hrs):		Free flowing	

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	— mm	— mm	m	— m	m	—

HANDPUMP	Type	Depth installed	Condition	Comments
	—	— m	G M P	—

MOTORISED		kW	RPM	Pulley diameter	Condition
Diesel					
Electrical		—	—		G M P
Comments:	—				
Engine No.:	—				

PUMP HEAD

Type	Pulley diameter	Condition
—	—	G M P

RETICULATION

Reservoir			
Type:	—	Capacity:	—

PIPES

Diameter	Number of pipes	Total length	Condition
—	—	—	G M P

ELEMENTS

Description	Installation depth	Condition
	—	G M P

PUMP HOUSE

	Floor	Flow meter	Reading	Pressure gauge
Type: —			—	
Condition: —	G M P	Yes No		Yes No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
	—

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:	—	
Diesel		
Electric		
Reservoir	—	
Pipeline	m	m

COMMENTS:

Spring gives lot in
south donga.
Molteno / basalt contact
Spring & seepage

New number marked:	Yes	~~No~~
Sample taken:	Yes	~~No~~

Owner: M. Jordaan

Inspection carried out by: A Wieringa.

DWAF representative: -

Community representative:

Pump operator: Elvis

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

BH Not in use

MAP REFERENCE: 3126 DA

BOREHOLE NUMBER: EC/S31/26 WP 262

DATE: 30/11/05

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		Strathhold	185	farm

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
	Not Known	Read from topo map	31.56954	26 67994

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	(N)	Not in use

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):		Based on:				
IN USE:	U	Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other:
DESTROYED:	(D)	Pumping period per day (hrs):						

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Not able to measure due to bh/base clamp and pipes in bh.

	Type	Depth installed	Condition	Comments
HANDPUMP		m	G / M / P	

MOTORISED	Diesel		kW	RPM	Pulley diameter	Condition G / M / P
	Electrical					
	Comments:					
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition G	M	P

RETICULATION

Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition G	M	P

ELEMENTS

Description	Installation depth	Condition G	M	P

PUMP HOUSE

Type:	Condition:	Floor G	M	P	Flow meter Yes	No	Reading	Pressure gauge Yes	No
						(No)			

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

BH collapsed / blocked pipe and the pipe clamp still in hole

New number marked: Yes / (No)

Sample taken: Yes / (No)

Owner: M. Jordaan

Inspection carried out by: A. Wiersinga

DWAF representative:

Community representative:

Pump operator: Elvis

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

WINDMILL / NINDNILL

MAP REFERENCE: 3126 DA

BOREHOLE NUMBER: EC/S31/27

DATE: 30/11/06

WP 363

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION: Village, school, etc
		Strathfield	185	Farm

BOREHOLE NUMBER: New	BOREHOLE NUMBER: Old	ALTITUDE (masl)	G.P.S. COORDINATES: Lat.	G.P.S. COORDINATES: Lon.
-	Not known	1580 m (GPS)	-31.56944	26.68018°

WATER USE: CONSUMER: URBAN	WATER USE: CONSUMER: NON-URBAN	PURPOSE OF SITE: Production, Standby, etc.
U	(N)	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	(U)
DESTROYED:	D

Estimated yield (l/s):	—	Based on: Wind / cylinder					
Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other:	
Pumping period per day (hrs):	—						

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	— mm	— mm	— m	— m	— m	Not able to measure

	Type	Depth installed	Condition			Comments
HANDPUMP	—	— m	G	M	P	—

		kW	RPM	Pulley diameter	Condition		
MOTORISED	Diesel				G	M	P
	Electrical						
	Comments:						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition		
Climax Head	Unknown	(G)	M	P

RETICULATION

Reservoir

Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition		
25mm PVC	2 (3)	(9) m *	(G)	M	P

ELEMENTS

Description	Installation depth	Condition		
3" (76mm)	9	(G)	M	P

PUMP HOUSE

		Floor			Flow meter			Pressure gauge	
Type:	.....					Reading			
Condition:	.....	G	M	P	Yes	No	—	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
—	—

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

25 mm blue pipe on side

replace steel pipes with plastic

pipes

pump to reservoir a couple 100's

away

New number marked:	Yes	(No)
Sample taken:	Yes	(No)

Owner: M. Jordaan

Inspection carried out by: A. Wiersema

DWAF representative:

Community representative: Elvis

Pump operator:

OPEN BH

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: 3126 DA (25) X

BOREHOLE NUMBER: EC/S31/28 WP 364

DATE: 30/11/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION: Village, school, etc
		Smith Field	185	Farm

BOREHOLE NUMBER: New	Old	ALTITUDE (masl)	G.P.S. COORDINATES: Lat.	Lon.
	Not known	65 Read from topo map after plotting	-31.56904	26.68139°

WATER USE: CONSUMER: URBAN	NON-URBAN	PURPOSE OF SITE: Production, Standby, etc.
U	N	Not in use

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	U
DESTROYED:	D

Estimated yield (l/s):	/	Based on:					
Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other:	
Pumping period per day (hrs):	/						

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Not able to measure Bees/wasps in hole

	Type	Depth installed	Condition			Comments
HANDPUMP		m	G	M	P	

MOTORISED	Diesel		kW	RPM	Pulley diameter	Condition: G / M / P
	Electrical					
	Comments:					
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition: G	M	P

RETICULATION

Reservoir

Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition: G	M	P

ELEMENTS

Description	Installation depth	Condition: G	M	P

PUMP HOUSE

		Floor: G	M	P		Flow meter: Yes	No	Reading	Pressure gauge: Yes	No
Type:										
Condition:	/							/		

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

Bees in hole / wasps.
Acc. to chips on ground
black shale

New number marked: Yes / (No)

Sample taken: Yes / (No)

Owner: M. Jordaan

Inspection carried out by: A. Kleeruga.

DWAF representative:

Community representative:

Pump operator: Elvis

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

windmill

MAP REFERENCE: (2629) 3126 DA

BOREHOLE NUMBER: EC/S31/29

What is problem with bh detail. NONE acc. to farmer.

DATE: 30/11/05

GENERAL

INP 265

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION (Village, school, etc)
		(Stinkfield)			185	Farm

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
	Not known	1579 M	-31.56572	26 68129

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	(N)	Not used

BOREHOLE USAGE

NOT IN USE:	(G)
IN USE:	U
DESTROYED:	D

Estimated yield (l/s):		Based on:					
Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other:	Not in use
Pumping period per day (hrs):							

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Not able to measure

	Type	Depth installed	Condition			Comments
HANDPUMP		m	G	M	P	

		kW	RPM	Pulley diameter	Condition		
MOTORISED	Diesel						
	Electrical				G	M	P
	Comments:						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition		
Climax	8 ft 2.4 M	(G)	M	P

RETICULATION

Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition		
Unknown	unknown		G	M	P

ELEMENTS

Description	Installation depth	Condition		
Unknown.		G	M	P

PUMP HOUSE

		Floor			Flow meter		Reading	Pressure gauge	
Type:									
Condition:		G	M	P	Yes	No		Yes	No

NECESSARY ACTIVITIES

Borehydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

windmill stone broken

Not in use

Keeps around bh

Acc. farmer this is a strong bh.

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: M. Jacobs

Inspection carried out by: A. Wevenga

DWAF representative:

Community representative:

Pump operator: Elvis

OPEN HOLE (27)

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: 3126 CA

BOREHOLE NUMBER: EC/S31/30

DATE: 30/11/06

GENERAL WP 266

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		(Slaai Gold)	185	farm

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.	WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
-	Not known	Read off from topo map after plotting	-31.56860	26.68127	U	(N)	Not in use

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):		Based on:
IN USE:	U	Community water supply:	DA	Stock watering: (AS) Irrigation: AI Other:
DESTROYED:	D	Pumping period per day (hrs):		

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Not able to measure Wasps inside hole

	Type	Depth installed	Condition G	Condition M	Condition P	Comments
HANDPUMP		m				

		kW	RPM	Pulley diameter	Condition G	Condition M	Condition P
MOTORISED	Diesel						
	Electrical						
	Comments:						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition G	Condition M	Condition P
Lloyds Aermotor	8 ft = 2.4m		(M)	

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES East Condition

Diameter	Number of pipes	Total length	Condition G	Condition M	Condition P
Unknown	No pipes in hole				

ELEMENTS

Description	Installation depth	Condition G	Condition M	Condition P
No pipes in hole				

PUMP HOUSE

		Floor G	Floor M	Floor P	Flow meter	Flow meter Reading	Pressure gauge Yes	Pressure gauge No
Type:								
Condition:					Yes	No		

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

BH not equiped

Pipes / rods not inside

Could not measure WL as depth

BH not to broken cement

dam (reservoir) Strong water according to owner

New number marked:	Yes	(No)
Sample taken:	Yes	(No)

Owner: M Jordaan

Inspection carried out by: A Viljoen

DWAF representative:

Community representative:

Pump operator: Elvis

Jan du Plessis (28)

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

WINDMILL MAP REFERENCE: 3126 D1

BOREHOLE NUMBER: EC/S31/31 083-604-0229 WP 367 DATE: 30/11/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO		SITE DESCRIPTION Village, school, etc
		(Yardley Chase) KAALHOEK		8	Farm

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.	WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
-	Not known	1617M	-31.58058	26 68503	U	(N)	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	(U)
DESTROYED:	D

Estimated yield (l/s):		Based on: Wind					
Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other:	
Pumping period per day (hrs):		Wind dependent					

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Not able to measure installed → base clamp pipes in bk.

	Type	Depth installed	Condition			Comments
HANDPUMP	—	m	G	M	P	—

MOTORISED	Diesel		kW	RPM	Pulley diameter	Condition G M P
	Electrical					
	Comments:					
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition		
Sail Head	6" = 1.8M	(G)	M	P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
25mm plastic pipe	Unknown	Unknown	(G)	M	P

ELEMENTS

Description	Installation depth	Condition		
Unknown	Unknown	G	M	P

PUMP HOUSE

		Floor			Flow meter		Reading	Pressure gauge	
Type:		G	M	P	Yes	(No)		Yes	No
Condition:									

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	10,000 L	plastic
Pipeline	m	m

COMMENTS:

Not able to measure WL

pipes + cover plate on hole

New number marked:	Yes	(No)
Sample taken:	Yes	(No)

Owner: J. du Plessis

083 - 604 - 0229

Inspection carried out by: A Mbelenga

DWAF representative:

Community representative:

Pump operator: Elvis & Germo

BOREHOLE SURVEY - FORM A: DWAF UPGRADING SOLAR PUMP MAP REFERENCE: 3126DA (29)

BOREHOLE NUMBER: EC/S31/32 DATE: 30/11/06

WP 268

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		(Yardley Chase) KAALHOEK	(5)	Farm

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
-	Not known	Read off from topomaps after plotting	31 58345	26.67039

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	(N)	Production

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):		Based on: Solar capacity	
IN USE:	(U)	Community water supply:	DA	Stock watering: (AS)	Irrigation: AI / Other: Domestic
DESTROYED:	D	Pumping period per day (hrs):		Sun dependant normally 8hrs/day.	

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Unable to measure pump in hole.

	Type	Depth installed	Condition	Comments
HANDPUMP		m	G M P	

MOTORISED		kW	RPM	Pulley diameter	Condition
	Diesel				
	Electrical				(G) M P
	Comments:				
	Engine No.:	SOLAR → info about depth and size of pump unknown.			

PUMP HEAD

Type	Pulley diameter	Condition
		G M P

RETICULATION

Reservoir	
Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition
Unknown			G M P

ELEMENTS

Description	Installation depth	Condition
unknown.		G M P

PUMP HOUSE

		Floor	Flow meter	Reading	Pressure gauge
Type:					
Condition:		G M P	Yes No		Yes No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

Solar installation submersible pump on old WM installation. pumps to galv reservoir

New number marked: Yes (No)

Sample taken: (Yes) No

Owner: J. du Plessis

WATER SAMPLE

Inspection carried out by: A Wierenga

DWAF representative:

Community representative:

Pump operator: Elvis & Gerrie

Wp 269 - GMF

WINDMILL

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: 3126 DA (30)

BOREHOLE NUMBER: EC/S31/33

DATE: 30/11/06

WP 270

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		(Yardley Chase) KAALHOEK	8	Farm

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.	WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
-		read off after plotting on map	-31.5843	26.669240	U	(N)	Not in use

BOREHOLE USAGE

NOT IN USE: (G)	Estimated yield (l/s):		Based on: Unknown	
IN USE: U	Community water supply:	DA	Stock watering: (AS)	Irrigation: AI Other:
DESTROYED: D	Pumping period per day (hrs):			

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	unknown mm	mm	m	m	m	Not able to measure due to pipes in bh + bore clamp

HANDPUMP	Type	Depth installed	Condition	Comments
	N/A	m	G M P	

MOTORISED		kW	RPM	Pulley diameter	Condition
Diesel					
Electrical					G M P
Comments:	N/A				
Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition
Sucl	unknown	G M P

RETICULATION

Reservoir	
Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition
unknown			G M P

ELEMENTS

Description	Installation depth	Condition
—	—	G ~~M~~ P

PUMP HOUSE

	Floor	Flow meter	Reading	Pressure gauge
Type:				
Condition: —	G ~~M~~ P	Yes (No)	—	Yes ~~No~~

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
	—

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
~~Diesel~~		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

Windmill not pumping probably problem with installation

Not able to measure WL entrance for dipmeter to small

New number marked: Yes (No)

Sample taken: Yes (No)

bh next to earth dam fed by fountain.

Owner: J. du Plessis

Inspection carried out by: A. Nkorenya

DWAF representative:

Community representative:

Pump operator: Gerrie + Elvis

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

OPEN HOLE (1:50 000)

MAP REFERENCE: 3126 DA

BOREHOLE NUMBER: EC/S31/34

DATE: 30/11/06

You WP 271

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		(Strathfield).			185	Farm

BOREHOLE NUMBER		ALTITUDE (mast)	G.P.S. COORDINATES	
New	Old	1585	Lat.	Lon.
-	Not known.	to be read off	-31.56397	26.67644

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	(N)	Not used.

BOREHOLE USAGE

NOT IN USE: (G)	Estimated yield (l/s):		Based on: Not pumping					
IN USE: U	Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other: Not pumping	
DESTROYED: (D)	Pumping period per day (hrs):		Not equipped.					

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	160 mm	2 mm	unknown m	8.50 m	DRY m	BH probably collapsed

	Type	Depth installed	Condition	Comments
HANDPUMP	/	/ m	G M P	/

MOTORISED			kW	RPM	Pulley diameter	Condition
	Diesel					
	Electrical					G M P
	Comments:	/				
	Engine No.:	/				

PUMP HEAD

Type	Pulley diameter	Condition
/	/	G M P

RETICULATION

Reservoir			
Type:	/	Capacity:	/

PIPES

Diameter	Number of pipes	Total length	Condition
/	/	/	G M P

ELEMENTS

Description	Installation depth	Condition
/	/	G M P

PUMP HOUSE

		Floor	Flow meter		Pressure gauge
Type:				Reading	
Condition:	/	G M P	Yes No	/	Yes No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
	/

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		/
Diesel		
Electric	/	
Reservoir	/	
Pipeline	m	m

COMMENTS:

BH covered with base plate

BH hole collapsed.

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: M Jordaan

Inspection carried out by: A. Nkarenga.

DWAF representative: -

Community representative:

Pump operator: Elvis -

(32)

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

WINDMILL

MAP REFERENCE: 3126 DA

BOREHOLE NUMBER: EC/S31/35

Thomas

DATE: 30/11/05

WP 372

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		Shall Fold			185	Farm.

BOREHOLE NUMBER		ALTITUDE (mast)	G.P.S. COORDINATES		WATER USE: CONSUMER		PURPOSE OF SITE
New	Old		Lat.	Lon.	URBAN	NON-URBAN	Production, Standby, etc.
	Not known	to be read off	-31.55515°	26.68607°	U	(N)	Production.

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):		Based on: Wind dependant				
IN USE:	(U)	Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other: Unsp
DESTROYED:	D	Pumping period per day (hrs):		Wind dependant				

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Unable to measure due to bag clump & pipes in hole

	Type	Depth installed	Condition			Comments
HANDPUMP		m	G	M	P	

		kW	RPM	Pulley diameter	Condition		
MOTORISED	Diesel				G	M	P
	Electrical						
	Comments:						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition		
Lloyds Aermotor	Unknown	(G)	M	P

RETICULATION

Borehole

Type:	Capacity:

PIPES

& London

Diameter	Number of pipes	Total length	Condition		
Unknown			G	M	P

ELEMENTS

Description	Installation depth	Condition		
3" (76m)	unknown	G	M	P

PUMP HOUSE

		Floor			Flow meter		Reading	Pressure gauge	
Type:		G	M	P	Yes	No		Yes	No
Condition:									

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

Equipment in bole t
base plate → excessive
algae growth on pipes
Galvanized pipes replace with
plastic pipe 1 1/2"

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: M. Jadoo

Inspection carried out by: M. Wiersma

DWAF representative:

Community representative:

Pump operator: E/NS

OPEN HOLE

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: 3126DA (33)

BOREHOLE NUMBER: EC/531/36

DATE: 30/11/06

WP · 273

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION: Village, school, etc
		Pringle dam	184	Farm

BOREHOLE NUMBER: New	BOREHOLE NUMBER: Old	ALTITUDE (mast)	G.P.S. COORDINATES: Lat.	G.P.S. COORDINATES: Lon.
	Not known	1558	-31.54706	26.66998°

WATER USE: CONSUMER: URBAN	WATER USE: CONSUMER: NON-URBAN	PURPOSE OF SITE: Production, Standby, etc.
U	(N)	None

BOREHOLE USAGE

NOT IN USE:	(G)
IN USE:	U
DESTROYED:	D

Estimated yield (l/s): ..... Based on: .....

Community water supply: DA | Stock watering: AS | Irrigation: AI | Other: .....

Pumping period per day (hrs): .....

NOT IN USE

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	154 mm	4 mm	[illegible] m	45.6 m	9.73 m	Stick-up 0.37 m

	Type	Depth installed	Condition: G	M	P	Comments
HANDPUMP		m	G	M	P	

		kW	RPM	Pulley diameter	Condition: G	M	P
MOTORISED	Diesel						
	Electrical						
	Comments:						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition: G	M	P

RETICULATION

Reservoir

Type: ..... Capacity: .....

PIPES

Diameter	Number of pipes	Total length	Condition: G	M	P

ELEMENTS

Description	Installation depth	Condition: G	M	P

PUMP HOUSE

Type: .....

Condition: .....

Floor: G	M	P	Flow meter: Yes	No	Reading	Pressure gauge: Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS: former WM installation

NOT IN USE

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: M. Jadaan

Inspection carried out by: A. Wiersma

DWAF representative: .....

Community representative: .....

Pump operator: Elvis

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

WINDMILL

MAP REFERENCE: 3126 DA (34)

BOREHOLE NUMBER: EC/S31/37

WP 274

DATE: 30/11/05

GENERAL

T.E.C. AREA	VILLAGE	FARM NAME	PROVINCE/DISTRICT AND FARM NO		SITE DESCRIPTION Village, school, etc
		Meiners farm		183	Farm

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
	Not known	1559	-31 55 380	26.66745°

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	(N)	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	(U)
DESTROYED:	D

Estimated yield (l/s):		Based on: Cylinder x Wind					
Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other:	
Pumping period per day (hrs):		Wind					

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Unable to measure

	Type	Depth installed	Condition			Comments
HANDPUMP		m	G	M	P	

		kW	RPM	Pulley diameter	Condition		
MOTORISED	Diesel				G	M	P
	Electrical						
	Comments:						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition		
Climax	8 ft (2.4m)	(G)	M	P

RETICULATION

Type:	Reservoir	Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
1 1/4" (32mm)	9	± 27 M	(G)	M	P

ELEMENTS

Description	Installation depth	Condition		
~~Underground~~ 3" (76mm)	27M	G	M	P

PUMP HOUSE

		Floor			Flow meter		Reading	Pressure gauge	
Type:		G	M	P	Yes	(No)		Yes	No
Condition:									

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

Windmill.
ex steel/galv pipes in hole

New number marked:	Yes	(No)
Sample taken:	Yes	(No)

Owner: M. Jordaan

Inspection carried out by: A Wierenga

DWAF representative:

Community representative: Elsie

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

SUBMERSIBLE PUMP

MAP REFERENCE: 3226 AM

BOREHOLE NUMBER: EC/S31/38

DATE: 20/11/06

WP 275

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION (Village, school, etc)
		Primgaalia	184	Farm

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
-	Not known	1563 (GPS)	-31.56046	26.66287

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	(N)	Production, Poultry farm

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	(U)
DESTROYED:	D

Estimated yield (l/s): 8000 l/hr Based on: ± 2.2 l/s ⇒ info from farmer ... to be confirm

Community water supply: DA | Stock watering: (AS) | Irrigation: AI | Other: with farmer

Pumping period per day (hrs): 6

27 m + 2/3 water

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Not able to measure no entrance into hole

	Type	Depth installed	Condition	Comments
HANDPUMP		m	G / M / P	

		kW	RPM	Pulley diameter	Condition
MOTORISED	Diesel				
	Electrical	X			G / M / P
	Comments:	Submersible pump.			
	Engine No.:				

PUMP HEAD

Type	Pulley diameter	Condition
		G / M / P

RETICULATION

Reservoir		
Type:		Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition
			G / M / P

ELEMENTS

Description	Installation depth	Condition
Unknown	27	(G) / M / P

PUMP HOUSE

		Floor			Flow meter		Pressure gauge	
Type:					Reading			
Condition:		G	M	P	Yes	No	NONE	Yes / No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
✓	✓

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

Cable length 27 m (installation depth)

"Original" bh on farm

Pumps to house

New number marked: Yes / (No)

Sample taken: Yes / (No)

Owner: M. Jadeon

Inspection carried out by: A. Wierenga

DWAF representative:

Community representative:

Pump operator: Elvis

BOREHOLE SURVEY - FORM A: DWAF UPGRADING Open hole

MAP REFERENCE: 3126 DA (30)

BOREHOLE NUMBER: EC/S31/39 WP 276

DATE: 30/11/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		Pringadia / Nkamkashankasa			184	Farm

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
-	Not known	get info from topo map after plotting	-31.55836	26.66071

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	(N)	Destroyed / blocked.

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):	—	Based on: N/A				
IN USE:	U	Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other: —
DESTROYED:	(D)	Pumping period per day (hrs):	—					

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	150 mm	4 mm	1 m	1 m	DRY m	

	Type	Depth installed	Condition			Comments
HANDPUMP	—	— m	G	M	P	—

			KW	RPM	Pulley diameter	Condition		
MOTORISED	Diesel							
	Electrical					G	M	P
	Comments:	—						
	Engine No.:							

PUMP HEAD

Type	Pulley diameter	Condition		
—	—	G	~~M~~	P

RETICULATION

Reservoir			
Type:	—	Capacity:	—

PIPES

Diameter	Number of pipes	Total length	Condition		
—	—	—	G	~~M~~	P

ELEMENTS

Description	Installation depth	Condition		
—	—	G	~~M~~	P

PUMP HOUSE

		Floor			Flow meter		Reading	Pressure gauge	
Type:	—								
Condition:	—	G	M	P	Yes	No	—	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
	—

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel	—	
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

Borehole @ shed

Blocked with stones 1M below surface

New number marked:	Yes	(No)
Sample taken:	Yes	(No)

Owner: M. Jordaan

Inspection carried out by: A. Wierenga

DWAF representative:

Community representative:

Pump operator: Elvis

OPEN HOLE (37)

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: 3?2-DA

BOREHOLE NUMBER: EC/S31/40

DATE: 30/11/01

WP 277

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		Donkerhoek			8	Farm

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
-	unknown	read off topo map after plotting	-31.51657	26.57067

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE (Production, Standby, etc.)
U	(N)	NOT IN USE

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	U
DESTROYED:	(D)

Estimated yield (l/s):		Based on:				
Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other: ....
Pumping period per day (hrs):						

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	150 mm	2 mm	6.86 m	6,86 m	6.?? m	Stick-up = 0.56 magl.

HANDPUMP	Type	Depth installed	Condition			Comments
		m	G	M	P	

MOTORISED			KW	RPM	Pulley diameter	Condition		
	Diesel							
	Electrical					G	M	P
	Comments:							
	Engine No.:							

PUMP HEAD

Type	Pulley diameter	Condition		
		G	M	P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
			G	M	P

ELEMENTS

Description	Installation depth	Condition		
		G	M	P

PUMP HOUSE

		Floor			Flow meter		Reading	Pressure gauge	
Type:									
Condition:		G	M	P	Yes	No		Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

COMMENTS:

Bh situated below earth dam wall in field next to Game fence

Bh collapsed

Bh/casing open not protected

New number marked: Yes (No)

Sample taken: Yes (No)

Owner

Inspection carried out by: A. Lirenga

DWAF representative:

Community representative:

Pump operator: Blackie

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MONO

MAP REFERENCE: 3126 DA (35)

BOREHOLE NUMBER: EC/S31/4 WP 253

DATE: 30/11/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE/DISTRICT AND FARM NO	SITE DESCRIPTION: Village, school, etc
		Dakeshack	8	Farm

BOREHOLE NUMBER: New	Old	ALTITUDE (masl)	G.P.S. COORDINATES: Lat.	Lon.
-	not known	1400 (GPS)	-31 51545	26 56759

WATER USE: CONSUMER: URBAN	NON-URBAN	PURPOSE OF SITE: Production, Standby, etc.
U	(N)	Production

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):		Based on:				
IN USE:	(U)	Community water supply:	DA	Stock watering:	(AS)	Irrigation:	(AI)	Other: Domestic
DESTROYED:	D	Pumping period per day (hrs):	24 hrs					

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	unknown mm	unknown mm	unknown m	unknown m	unknown m	Not available to measure

	Type	Depth installed	Condition: G	M	P	Comments
HANDPUMP	—	— m				—

			kW	RPM	Pulley diameter	Condition: G	M	P
MOTORISED	Diesel		unknown?	unknown?	Ø 10	(G)		
	Electrical	X						
	Comments:	unable to read plate (spec) on electrical motor						
	Engine No.:	MONO HEAD DRIVEN BY ELECTRICAL MOTOR						

PUMP HEAD

Type	Pulley diameter	Condition: G	M	P
Mainmeesta	25 mm	(G)		

RETICULATION

Reservoir: Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition: G	M	P
2 1/2"	unknown	unknown			

ELEMENTS

Description	Installation depth	Condition: G	M	P
unknown				

PUMP HOUSE

Type:	Floor: G	M	P	Yes	No	Flow meter: Reading	Pressure gauge: Yes	No
Cement Structure → previously host diesel Engine								
Condition: Good	(G)				(No)	—		

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
/	/

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment	/	
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

Main water source

Ch in Engine room

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: C Vd Walt

Inspection carried out by: A Wiecenga

DWAF representative:

Community representative:

Pump operator: Blackie

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MONO

MAP REFERENCE: 3126 DA (31)

BOREHOLE NUMBER: EC/531/42 WP 280

DATE: 30/11/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION: Village, school, etc
		Donkerhoek	8	

BOREHOLE NUMBER: New	Old	ALTITUDE (masl)	G.P.S. COORDINATES: Lat.	Lon.	WATER USE: CONSUMER: URBAN	NON-URBAN	PURPOSE OF SITE: Production, Standby, etc.
-		1397 m (GPS)	31.51686	06.57660	U	(N)	Production Standby

BOREHOLE USAGE

NOT IN USE:	(G)	Estimated yield (l/s):		Based on:					
IN USE:	U	Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other:	
DESTROYED:	D	Pumping period per day (hrs):							

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Not able to measure @ closed, No entrance

	Type	Depth installed	Condition			Comments
HANDPUMP		m	G	M	P	

			kW	RPM	Pulley diameter	Condition		
MOTORISED	Diesel		unknown	unknown	PCM	(G)	M	P
	Electrical	X						
	Comments:	MONO HEAD DRIVEN BY ELECTRICAL MOTOR						
	Engine No.:							

PUMP HEAD

Type	Pulley diameter	Condition		
Mono B 1431 50mm	280 mm	(G)	M	P

RETICULATION

Reservoir: Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition		
	Unknown		G	M	P

ELEMENTS

Description	Installation depth	Condition		
Unknown		G	M	P

PUMP HOUSE

		Floor				Flow meter: Reading	Pressure gauge	
Type:	Pump house previously build to hold diesel engine.							
Condition:	Good.	(G)	M	P	Yes	(No)	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
	/

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

Very little info available

BH in pump house

New number marked:	Yes	(No)
Sample taken:	Yes	(No)

Owner: L v/d Wald

Inspection carried out by: A Weyenga

DWAF representative:

Community representative:

Pump operator: Blackie.

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

open hole

MAP REFERENCE: 3126 DA

BOREHOLE NUMBER: EC/S31/43

DATE: 30/11/06

WP 281

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION (Village, school, etc)
		Dalerhek			8	Farm

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
-	Unknown	1403	-31.51684	26.56773

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	(N)	Not in use

BOREHOLE USAGE

NOT IN USE:	(G)
IN USE:	U
DESTROYED:	D

Estimated yield (l/s):	None	Based on:					
Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other:	
Pumping period per day (hrs):	-						

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	154 mm	4 mm	103 m	11.02 m	7.13 m	

	Type	Depth installed	Condition			Comments
HANDPUMP	-	- m	G	M	P	-

MOTORISED	Diesel		kW	RPM	Pulley diameter	Condition G M P
	Electrical					
	Comments:					
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition		
		G	M	P

RETICULATION

Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
			G	M	P

ELEMENTS

Description	Installation depth	Condition		
		G	M	P

PUMP HOUSE

		Floor			Flow meter		Pressure gauge	
Type:						Reading		
Condition:		G	M	P	Yes	No	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
	-

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric	-	
Reservoir		
Pipeline	m	m

COMMENTS:

BH not installed for now

Windmill installation

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: Old Walt

Inspection carried out by: A Nieuwenga

DWAF representative:

Community representative:

Pump operator: Jacko

WINDMILL (41)

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: 3124

BOREHOLE NUMBER: EC/S31/44

DATE: 30/11/01

GENERAL WP 252

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		Donkerhoek			8	Farm

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
-	unknown	1411 M (GPS)	-31.51672	26.56818

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	(N)	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	(U)
DESTROYED:	D

Estimated yield (l/s):		Based on: Windmill					
Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other:	
Pumping period per day (hrs):		Wind					

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	unable to measure due to cover plate/slab and pipes in bh

	Type	Depth installed	Condition			Comments
HANDPUMP	—	m	G	(M)	P	—

		kW	RPM	Pulley diameter	Condition		
	Diesel						
MOTORISED	Electrical				G	M	P
	Comments:						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition		
Climax	8 ft = 2.4m	(G)	M	P

RETICULATION

Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition		
2 1/2"	unknown	unknown	(G)	M	P

ELEMENTS

Description	Installation depth	Condition		
Unknown (probably 4" = 100mm)	B unknown	G	M	P

PUMP HOUSE

		Floor			Flow meter	Pressure gauge	
Type:					Reading		
Condition:	—	G	M	P	Yes / No	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
—	—

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric	(170m)	
Reservoir	11m ø 1.8m height	(concrete reservoir)
Pipeline	m	m

COMMENTS:

pump in cement

reservoir (see size)

New number marked:	Yes	(No)
Sample taken:	Yes	(No)

Owner: L v/d Walt

Inspection carried out by: A. Wiesenga

DWAF representative:

Community representative:

Pump operator: Blacked

OPEN HOLE

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: 3126 D4 CB (42)

BOREHOLE NUMBER: EC/S31/45

DATE: 30/11/06

GENERAL WP 284

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION (Village, school, etc)
		Donker Kock	(8)	Farm

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
-	Not known	1405 m (GPS)	-31 51 513	026 56 742

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	(N)	Not in use

BOREHOLE USAGE

NOT IN USE:	(G)
IN USE:	U
DESTROYED:	D

Estimated yield (l/s):		Based on:					
Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other:	Not in use open hole
Pumping period per day (hrs):							

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	155 mm	5 mm	12 m	40.45 m	7.26 m	Stick-up = 0.14 m

	Type	Depth installed	Condition			Comments
			G	M	P	
HANDPUMP		m				

		kW	RPM	Pulley diameter	Condition		
	Diesel				G	M	P
MOTORISED	Electrical						
	Comments:						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition		
		G	M	P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
			G	M	P

ELEMENTS

Description	Installation depth	Condition		
		G	M	P

PUMP HOUSE

Type:		Floor			Flow meter		Reading	Pressure gauge	
Condition:		G	M	P	Yes	No		Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

New number marked:	Yes	(No)	Owner: C via well
Sample taken:	Yes	(No)	

Inspection carried out by: A. Wierenga

DWAF representative:

Community representative:

Pump operator: Bladie

(43)

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

OPEN HOLE

MAP REFERENCE: 3126DA

BOREHOLE NUMBER: EC/S31/46

DATE: 30/11/06

WP 285

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		D-nkerhoek	(8)	Farm

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
-		1404	-31.51508	26.56948

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	N	

BOREHOLE USAGE

NOT IN USE: G	Estimated yield (l/s):		Based on:				
IN USE: U	Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other: Collapsed
DESTROYED: (D)	Pumping period per day (hrs):						

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	155 mm	2 mm	520 m	520 m	DRY m	BH Collapsed.

	Type	Depth installed	Condition	Comments
HANDPUMP		m	G M P	

MOTORISED		kW	RPM	Pulley diameter	Condition
Diesel					
Electrical					G M P
Comments:					
Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition
		G M P

RETICULATION

Reservoir	
Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition
			G M P

ELEMENTS

Description	Installation depth	Condition
		G M P

PUMP HOUSE

	Floor	Flow meter Reading	Pressure gauge
Type:			
Condition:	G M P	Yes No	Yes No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

Previously Windmill installation

BH collapsed / ant nest

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: L v/d Walt

Inspection carried out by: A. Wierenga

DWAF representative:

Community representative: Black c.

Pump operator:

(44)

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

WINDMILL + SUBMER PUMP

MAP REFERENCE: ____________

BOREHOLE NUMBER: EC/S31/47 __________ WP 286

DATE: 30/11/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		Donkerhoek.				Farm.

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
-	Unknown	1405 m (GPS)	-31 51475	26.57057

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	(N)	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	(U)
DESTROYED:	D

Estimated yield (l/s):		Based on: Unknown				
Community water supply:	DA	Stock watering: AS	Irrigation:	AI	Other: Domestic	
Pumping period per day (hrs):		Wind dependant				

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	— mm	— mm	— m	— m	— m	Unable to measure due to cover plate (clamp) & pipes in hole

HANDPUMP	Type	Depth installed	Condition			Comments
	—	m	~~G~~	M	P	—

MOTORISED			kW	RPM	Pulley diameter	Condition		
	Diesel							
	Electrical	X				G	M	P
	Comments:	Submersible pump together with windmill cylinder						
	Engine No.:							

PUMP HEAD

Type	Pulley diameter	Condition		
Southern cross	Bfl = 2.4M	G	M	P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
2" (50mm)	Unknown	Unknown	G	M	P

ELEMENTS

Description	Installation depth	Condition		
3" (75mm)	unknown	G	M	P

PUMP HOUSE

		Floor			Flow meter		Reading	Pressure gauge	
Type:	—						—		
Condition:	—	G	~~M~~	P	Yes	No		Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:
BH equipped with windmill & submersible pump
BH NE of House

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: L v/d Walt

Inspection carried out by: A Wiereng.

DWAF representative:

Community representative:

Pump operator: Blackie

BOREHOLE SURVEY - FORM A: DWAF UPGRADING MONO MAP REFERENCE: 3126 DA (45)

BOREHOLE NUMBER: EC/S31/48 DATE: 30/11/ [illegible]

GENERAL

Donkerhoek WP 279

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		Donkerhoek	(8)	Farm

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
-	unknown	1401 m (GPS)	-31.51682°	26.56801°

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	(N)	Production

BOREHOLE USAGE

NOT IN USE: (G)	Estimated yield (l/s):		Based on: Strong yielding
IN USE: U	Community water supply:	DA	Stock watering: (AS) Irrigation: (AI) Other:
DESTROYED: D	Pumping period per day (hrs):		Not in use

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	mm	mm	m	m	m	Not able to measure

HANDPUMP	Type	Depth installed	Condition	Comments
	N/A	m	G M P	

MOTORISED					
Diesel		kW	RPM	Pulley diameter	Condition
Electrical	X			80 mm	G M P
Comments:	Mono head with Electrical Motor				
Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition
~~Monositer~~ Mono BP15284	~~50mm~~/25 mm	(G) M P

RETICULATION

Reservoir	
Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition
unknown	<———	———>	G M P

ELEMENTS

Description	Installation depth	Condition
		G M P

PUMP HOUSE

		Floor	Flow meter	Reading	Pressure gauge
Type:					
Condition:		G M P	Yes No		Yes No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

Very little data available

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: L vld Walt

Inspection carried out by: A. Wievenga

DWAF representative:

Community representative:

Pump operator: Blackie

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

SUBMERSIBLE

MAP REFERENCE: 3126 DA (46)

BOREHOLE NUMBER: EC/S31/49 WP 278 DATE: 30/11/06

GENERAL Donkerhoek

T.E.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		Donkerhoek			(8)	Farm

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
-	Unknown	plot read off on map	-31.51713	26.56822

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	(N)	Production

BOREHOLE USAGE

NOT IN USE:	(G)	Estimated yield (l/s):		Based on:				
IN USE:	U	Community water supply:	DA	Stock watering:	(AS)	Irrigation:	(AI)	Other: Bh Not in use
DESTROYED:	D	Pumping period per day (hrs):						

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	— mm	— mm	— m	— m	— m	Unable to measure pipe/pump in hole.

HANDPUMP	Type	Depth installed	Condition			Comments
		m	G	M	P	

MOTORISED			kW	RPM	Pulley diameter	Condition		
	Diesel							
	Electrical	X	Submersible → Capacity unknown		—	G	M	P
	Comments:							
	Engine No.:							

PUMP HEAD

Type	Pulley diameter	Condition		
	—	G	M	P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
unknown	←	→	G	M	P

ELEMENTS

Description	Installation depth	Condition		
Unknown	—	G	M	P

PUMP HOUSE

	Floor			Flow meter		Reading	Pressure gauge	
Type: —								
Condition: —	G	M	P	Yes	No	—	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
	—

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

Submersible pump - currently not in use pump to a cement reservoir inside field - formally equipped with a "kragkop"

New number marked: Yes (No)

Sample taken: Yes No

Owner: L v/d Walt

Inspection carried out by: A. Nerenge

DWAF representative:

Community representative:

Pump operator: B [illegible]

BOREHOLE SURVEY - FORM A: DWAF UPGRADING WINDMILL MAP REFERENCE: 3126 DA

BOREHOLE NUMBER: EC/S31/50 DATE: 30/11/06

WP 287

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		Donkerhoek			(8)	Farm (750 ha)

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
-	Not known	1423 m (GPS)	-31 49902	26 56 585 0

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	(N)	

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):		Based on: Wind				
IN USE:	(U)	Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other:
DESTROYED:	D	Pumping period per day (hrs):		Wind				

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	mm	mm	m	m	m	Unable to measure

HANDPUMP	Type	Depth installed	Condition			Comments
	—	— m	G	M	P	—

MOTORISED			KW	RPM	Pulley diameter	Condition		
	Diesel							
	Electrical		/			G	M	P
	Comments:	/						
	Engine No.:	/						

PUMP HEAD

Type	Pulley diameter	Condition		
Stewarts & Lloyds	8 ft 24 m	(G)	M	P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
unknown	⟵	⟶	G	M	P

ELEMENTS

Description	Installation depth	Condition		
unknown	⟺	G	M	P

PUMP HOUSE

		Floor			Flow meter		Reading	Pressure gauge	
Type:									
Condition:	/	G	M	P	Yes	No	—	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
	//

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

BH pump into earth dam

(Game Camp)

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: L v/d Walt

Inspection carried out by: A Nkenge

DWAF representative:

Community representative:

Pump operator: Blackie

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

WINDMILL

(48)

MAP REFERENCE: 3126 DA

BOREHOLE NUMBER: EC/S31/51 WP 288

DATE: 30/11/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school etc
		Donkerhoek	(8)	Farm

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
-	Not known	1400 m (GPS)	-31.51659	26.56269

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	(N)	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	(U)
DESTROYED:	D

Estimated yield (l/s):		Based on: Windmill				
Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other: —
Pumping period per day (hrs):						

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Not able to measure due to cover plate & pipes in BH

	Type	Depth installed	Condition			Comments
HANDPUMP	—	— m	G	M	P	—

MOTORISED	Diesel		kW	RPM	Pulley diameter	Condition	
	Electrical					G	M P
	Comments:						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition		
Lloyds; Aermotor	8 ft wheel = 24	(G)	M	P

RETICULATION

Type:	Capacity:
—	—

PIPES

Diameter	Number of pipes	Total length	Condition		
2 1/2 = (62 mm)	unknown	unknown	G	M	P

ELEMENTS

Description	Installation depth	Condition		
Windmill	probably 4" (100m)	G	M	P

PUMP HOUSE

		Floor			Flow meter		Pressure gauge	
Type:	—					Reading		
Condition:	—	G	M	P	Yes	No	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
	—

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:	—	—
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

BH pumps to cement dam in game camp a couple 100m's from BH in direction west

New number marked:	Yes	(No)
Sample taken:	Yes	(No)

Owner: L v/d Walt

Inspection carried out by: A Wiersma

DWAF representative:

Community representative: Blackie

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

WINDMILL

MAP REFERENCE: 3126 DA (147)

DATE: 30/11/06

BOREHOLE NUMBER: EC|S31|52 WP 289

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION: Village, school, etc
		(Hospital Kamp) LE GRANGE ESTATE	24	farm

BOREHOLE NUMBER: New	Old	ALTITUDE (mast)	G.P.S. COORDINATES: Lat.	Lon.
	Not known	1538 M (GPS)	-31.56341	26.63217

WATER USE: CONSUMER: URBAN	NON-URBAN	PURPOSE OF SITE: Production, Standby, etc.
U	N	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	U
DESTROYED:	D

Estimated yield (l/s):		Based on: Wind	
Community water supply:	DA	Stock watering: AS	Irrigation: AI Other:
Pumping period per day (hrs):		Wind dependant	

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	unknown mm	mm	m	m	12,63 m	Only able to measure WL Cover with plate/clamp

	Type	Depth installed	Condition: G	M	P	Comments
HANDPUMP	—	— m				—

		kW	RPM	Pulley diameter	Condition: G	M	P
MOTORISED	Diesel						
	Electrical						
	Comments:	WINDMILL					
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition: G	M	P
unknown	8" - 2.4M	G	M	P

RETICULATION

Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition: G	M	P
1 1/2" (32 MM)	unknown	unknown			

ELEMENTS

Description	Installation depth	Condition: G	M	P
probably 3" (75 mm)	unknown			

PUMP HOUSE

		Floor: G	M	P	Flow meter: Yes	No	Reading	Pressure gauge: Yes	No
Type:									
Condition:	—						—		

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
—	—

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric	(25 m²)	
Reservoir	4m ϕ x 2M height	concrete
Pipeline	m	m

COMMENTS: Windmill
BH steel broken
BH pumps to dam (each)
+ cement dam

New number marked: Yes | (No)

Sample taken: Yes | (No)

Owner: S Steyn

045-9669200

Inspection carried out by: A Hieronymus

DWAF representative:

Community representative:

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

Windmill

Starrosh W/Mill WP 292

MAP REFERENCE: 3126 DA (5a)

BOREHOLE NUMBER: EC/S31/53

DATE: 1/12/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION (Village, school, etc.)
		Lower Grelna	6	Farm

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
	Unknown	1479 (GPS)	-31.53009°	26.63290°

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE (Production, Standby, etc.)
U	(N)	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	(U)
DESTROYED:	D

Estimated yield (l/s):		Based on: Wind					
Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other:	
Pumping period per day (hrs):		Wind					

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	No diam	mm	m	m	m	Not able to measure base plate x pipes in hole

	Type	Depth installed	Condition G	Condition M	Condition P	Comments
HANDPUMP		m				

		kW	RPM	Pulley diameter	Condition G	Condition M	Condition P
MOTORISED	Diesel						
	Electrical						
	Comments:	WINDMILL					
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition G	Condition M	Condition P
Unknown	5" (1.5M)	(G)	M	P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition G	Condition M	Condition P
1½" = 32mm	3	9	(G)	M	P

ELEMENTS

Description	Installation depth	Condition G	Condition M	Condition P
Cylinder screen (2")	9	(G)	M	P

PUMP HOUSE

		Floor G	Floor M	Floor P	Flow meter	Flow meter Reading	Pressure gauge
Type:					Yes		Yes
Condition:					(No)		No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

WL probably @ 3M

2 pipes in water

1 pipe out of water

New number marked:	Yes	(No)
Sample taken:	Yes	(No)

Owner: Mrs Phillips

045 - 9669003

Inspection carried out by: A. Hieronga

DWAF representative:

Community representative:

Pump operator:

WINDMILL

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: 3126 DA (51)

BOREHOLE NUMBER: EC/S31/54 WP 291

DATE: 1/12/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME:	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION: Village, school, etc
		Lower Etna	6	Farm

BOREHOLE NUMBER: New	Old	ALTITUDE (masl)	G.P.S. COORDINATES: Lat.	Lon.	WATER USE: CONSUMER: URBAN	NON-URBAN	PURPOSE OF SITE: Production, Standby, etc.
-	Unknown	read from topo map	-31.52950	26.63619°	U	N	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	U
DESTROYED:	D

Estimated yield (l/s):		Based on: Wind				
Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other: Domestic & Livestock.
Pumping period per day (hrs):						

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Unable to measure too small to measure WL

	Type	Depth installed	Condition			Comments
HANDPUMP	/	m	G	M	P	/

			kW	RPM	Pulley diameter	Condition		
MOTORISED	Diesel					G	M	P
	Electrical							
	Comments:	/						
	Engine No.:							

PUMP HEAD

Type	Pulley diameter	Condition		
Climax	10ft = 3.30m	G	M	P

RETICULATION

Reservoir			
Type:	/	Capacity:	/

PIPES

Diameter	Number of pipes	Total length	Condition		
50mm	7	21m	G	M	P

ELEMENTS

Description	Installation depth	Condition		
3" (76mm)	21	G	M	P

PUMP HOUSE

		Floor			Flow meter	Reading	Pressure gauge	
Type:	.....							
Condition:	..... /	G	M	P	Yes	No	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
/	/

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric	/	
Reservoir		
Pipeline	m	m

COMMENTS:

RL / windmill behind house

WL probably between 3-6m deep (rough)

New number marked: Yes / No

Sample taken: Yes / No

Owner: Mrs. ~~Price~~ Phillips

Inspection carried out by: A. Nieuwoudt

DWAF representative:

Community representative:

Pump operator:

WINDMILL

(52)

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: 3126 DA

BOREHOLE NUMBER: EC/S31/55 WP 293 Las/cop

DATE: 1/12/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION: Village, school, etc
		Lower Etna	(6)	Farm

BOREHOLE NUMBER: New	Old	ALTITUDE (masl)	G.P.S. COORDINATES: Lat.	Lon.
-	unknown	1500 (GPS)	-31.52833	26.61449

WATER USE: CONSUMER: URBAN	NON-URBAN	PURPOSE OF SITE: Production, Standby, etc.
U	(N)	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	(U)
DESTROYED:	D

Estimated yield (l/s):		Based on: Wind					
Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other:	
Pumping period per day (hrs):		Wind					

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Unable to measure - due to base clamp & pipes in bh

	Type	Depth installed	Condition			Comments
HANDPUMP		m	G	M	P	

			kW	RPM	Pulley diameter	Condition		
MOTORISED	Diesel					G	M	P
	Electrical							
	Comments:	WINDMILL						
	Engine No.:							

PUMP HEAD

Type	Pulley diameter	Condition		
unknown	6" → 1.80m	(G)	M	P

RETICULATION

Reservoir: Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition		
1½" = 32mm	7	21	(G)	M	P

ELEMENTS

Description	Installation depth	Condition		
2" = 50mm cylinder	21 m	(G)	M	P

PUMP HOUSE

		Floor			Flow meter: Reading	Pressure gauge	
Type:		G	M	P	Yes (No)	Yes	No
Condition:							

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

WL probably 2m

6 pipes in water

New number marked:	Yes	(No)
Sample taken:	Yes	(No)

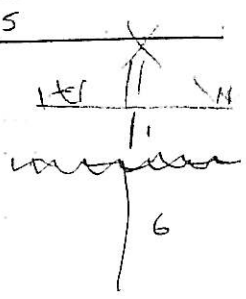
Owner: Mrs Prince Phillips

Inspection carried out by: A. Wiersang

DWAF representative:

Community representative:

Pump operator:



(53)

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

WINDMILL VLEI WP 294

MAP REFERENCE: 3126 DA

BOREHOLE NUMBER: EC/S31/56

DATE: 1/12/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION (Village, school, etc)
		Lower Grafton		Farm

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
-	Unknown	1518 m (GPS)	-31.51712°	26.62266°

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	(N)	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	(U)
DESTROYED:	D

Estimated yield (l/s):		Based on: Wind				
Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other: ~~Borehole~~
Pumping period per day (hrs):		Wind				

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Unable to measure due to baseplate and pipes in

	Type	Depth installed	Condition			Comments
HANDPUMP		m	G	M	P	

		kW	RPM	Pulley diameter	Condition		
MOTORISED	Diesel				G	M	P
	Electrical						
	Comments:	WINDMILL					
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition		
Sal	8" = 2.4m	(G)	M	P

RETICULATION

Rising main			
Type:	—	Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
50 mm	7	21	G	M	P

ELEMENTS

Description	Installation depth	Condition		
3" (76m)	21 m	(G)	M	P

PUMP HOUSE

		Floor					Flow meter Reading		Pressure gauge	
Type:										
Condition:		G	M	P	Yes	(No)			Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	4M ϕ x 1.6M height	concrete
Pipeline	m	m

COMMENTS: "VLEI" name of lot.
WL probably 3m.
6 pipes in water.

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: Mrs Phillips.

Inspection carried out by: A. Wiorenga.

DWAF representative:

Community representative:

Pump operator: Gaboela.

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

WINDMILL

MAP REFERENCE: 3126DA (54)

BOREHOLE NUMBER: EC/S31/57

Klein Icamp WP 295

DATE: 1/12/96

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		Lower Gretna	6	Farm

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (mas)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
	Unknown	From topo map	-31.51973°	26.63423°

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	(N)	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	(U)
DESTROYED:	D

Estimated yield (l/s):		Based on: Wind					
Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other:	
Pumping period per day (hrs):		Wind					

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	No able to measure – base plate & pipes in hole

	Type	Depth installed	Condition			Comments
HANDPUMP		m	G	M	P	

			kW	RPM	Pulley diameter	Condition		
MOTORISED	Diesel					G	M	P
	Electrical							
	Comments:	Windm.11						
	Engine No.:							

PUMP HEAD

Type	Pulley diameter	Condition		
Climax	6" = 1.5M	(G)	M	P

RETICULATION

Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition		
1 1/2" = 32mm	6	18	(G)	M	P

ELEMENTS

Description	Installation depth	Condition		
Sonnycylinder	18m	(G)	M	P

PUMP HOUSE

		Floor			Flow meter		Pressure gauge	
Type:						Reading		
Condition:		G	M	P	Yes	(No)	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
	✓

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric	6	
Reservoir	3M X 1.5M	Concrete
Pipeline	m	m

COMMENTS:

"Bh "Klein Icamp"

Hl probably 3M ; 5 pipes in water

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: Mrs. Phillips

Inspection carried out by: A. Hlongwane

DWAF representative:

Community representative:

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

PIETERSBURG MAP REFERENCE: 3126 DA (55)

BOREHOLE NUMBER: EC/S31/58 WP 296 DATE: 1/12/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE/DISTRICT AND FARM NO	SITE DESCRIPTION (Village, school, etc)
		Lower Creina	(6)	Farm.

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (mast)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
-	None	Get from topo map	-31.51603	26.64441

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE (Production, Standby, etc.)
U	(N)	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	(U)
DESTROYED:	D

Estimated yield (l/s):		Based on: kind					
Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other:	
Pumping period per day (hrs):		Wind					

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Unable to measure due to loose pipes in hole

	Type	Depth installed	Condition			Comments
HANDPUMP		m	G	M	P	

MOTORISED	Diesel		kW	RPM	Pulley diameter	Condition G / M / P
	Electrical					
	Comments:	Windmill				
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition		
Sail	6ft = 1.5m	(G)	M	P

RETICULATION

Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition		
50mm (1½")	6	18	(G)	M	P

ELEMENTS

Description	Installation depth	Condition		
2" = 50mm	18m	(G)	M	P

PUMP HOUSE

		Floor			Flow meter		Pressure gauge
Type:						Reading	
Condition:		G	M	P	Yes	(No)	Yes / No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

WL probably 3m - 5

Pipes in water

Post name "Pietersburg"

New number marked: Yes / (No)

Sample taken: Yes / (No)

Owner: Mrs. Phillips

Inspection carried out by: A. Wiersema

DWAF representative:

Community representative:

Pump operator:

WINDMILL

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: 3126 DA (56)

BOREHOLE NUMBER: EC/S31/59

DATE: 1/12/05

WP 290

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION (Village, school, etc)
		Le Grange (Themeda Estates)	24	Farm

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
-	not known	1422 (GPS)	-31.56331	26.58375

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	(N)	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	(U)
DESTROYED:	D

Estimated yield (l/s):		Based on: Windmill					
Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other:	
Pumping period per day (hrs):		Wind based					

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Not able to measure hole in base plate too small for dipper probe

	Type	Depth installed	Condition			Comments
HANDPUMP	N/A	m	G	M	P	

	Diesel		kW	RPM	Pulley diameter	Condition
MOTORISED	Electrical					G M P
	Comments:	Windmill				
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition
Unknown	8ft = 2.42m	(G) M P

RETICULATION

Reservoir			
Type:	-	Capacity:	-

PIPES

Diameter	Number of pipes	Total length	Condition
1½" = 32m	unknown	unknown	G M P

ELEMENTS

Description	Installation depth	Condition
unknown		G M P

PUMP HOUSE

		Floor			Flow meter		Pressure gauge	
Type:					Reading			
Condition:		G	M	P	Yes	(No)	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	3m ø x 1.5m	cement-
Pipeline	m	m

COMMENTS:

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: S. Steyn

Inspection carried out by: A. Nieuwoudt

DWAF representative:

Community representative:

Pump operator:

WINDMILL (57)

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: 3126 DA

BOREHOLE NUMBER: EC/S31/60 Pos: Land

DATE: 1/12/06

GENERAL NP 297

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		LOWER GRETNA	6	Farm

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
	Unknown	1490 (GPS)	-31 52574	26 62891

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	(N)	Farm Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	(U)
DESTROYED:	D

Estimated yield (l/s):		Based on: Wind					
Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other:	
Pumping period per day (hrs):							

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Not able to measure

base plate + pipes in bh

	Type	Depth installed	Condition			Comments
HANDPUMP		m	G	M	P	

			kW	RPM	Pulley diameter	Condition		
MOTORISED	Diesel					G	M	P
	Electrical							
	Comments:	WINDMILL						
	Engine No.:							

PUMP HEAD

Type	Pulley diameter	Condition		
CLIMAX	18" = 3.3 M	(G)	M	P

RETICULATION

Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition		
2" = 50mm	7	21	(G)	M	P

ELEMENTS

Description	Installation depth	Condition		
3" = 75M	21	(G)	M	P

PUMP HOUSE

		Floor			Flow meter		Reading	Pressure gauge	
Type:									
Condition:		G	M	P	Yes	No		Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

WL about 3-5 M

5-6 pipes in water.

New number marked: Yes (No)

Sample taken: Yes (No)

Owner: Mrs Phillips

Inspection carried out by: A. Mbeng

DWAF representative:

Community representative:

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

WINDMILL MAP REFERENCE: 3126 DA (55)

BOREHOLE NUMBER: EC/S31/61 WP 298 — BH in GANG near house

DATE: 1/12/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		LOWER GRETNA	6	Farm

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
-	unknown	1495 (GPS)	-31 53023	26 63761

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE: Production, Standby, etc.
U	(N)	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	(U)
DESTROYED:	D

Estimated yield (l/s):		Based on: Windmill					
Community water supply:	DA	Stock watering:	(AS)	Irrigation:	AI	Other: & DOMESTIC	
Pumping period per day (hrs):							

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	6 mm	mm	m	unknown m	5.33 m	Only WL measured

	Type	Depth installed	Condition			Comments
		m	G	M	P	
HANDPUMP						

MOTORISED	Diesel		kW	RPM	Pulley diameter	Condition	
	Electrical					G	M P
	Comments:	WINDMILL					
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition		
CLIMAX	10 FT = 3.3 M	(G)	M	P

RETICULATION

Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition		
2 1/2" = 762	7	21	(G)	M	P

ELEMENTS

Description:	Installation depth:	Condition		
4" = 100 mm	21	(G)	M	P

PUMP HOUSE

		Floor					Flow meter Reading	Pressure gauge	
Type:		G	M	P	Yes	No		Yes	No
Condition:									

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
	✓ above

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

Only 2 pipes in WL

5 pipes in water

New number marked:	Yes	(No)
Sample taken:	Yes	(No)

Owner: Mrs. Phillips

Inspection carried out by: A. Mlenga

DWAF representative:

Community representative:

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

WINDMILL

MAP REFERENCE: 3126 DA (59)

BOREHOLE NUMBER: EC/S31/62

Bh in Land Homestead (WP 299

DATE: 1/12/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		Lower Gekha			6	farm

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
-	unknown	1493 (GPS)	-31 53023	26.636.79

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	(N)	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	(U)
DESTROYED:	D

Estimated yield (l/s):		Based on: WINDMILL					
Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other: ~~do~~ Domestic	
Pumping period per day (hrs):							

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Unable to measure due to base plate + pipes in hole

	Type	Depth installed	Condition			Comments
HANDPUMP		m	G	M	P	

MOTORISED	Diesel		kW	RPM	Pulley diameter	Condition G M P
	Electrical					
	Comments:	WINDMILL				
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition		
CLIMAX	10" = 33M	(G)	M	P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
2½" (7x)	6	18	(G)	M	P

ELEMENTS

Description	Installation depth	Condition		
4" (100mm)	18	(G)	M	P

PUMP HOUSE

		Floor			Flow meter		Pressure gauge	
Type:					Reading			
Condition:		G	M	P	Yes	(No)	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

WL probably around 6m from surface

4 pipes in water

New number marked:	Yes	(No)
Sample taken:	Yes	(No)

Owner: Mrs. Phillips

Inspection carried out by: A Wiese-gn

DWAF representative:

Community representative:

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

BH NOT IN USE

MAP REFERENCE: 3126 DA(6)

BOREHOLE NUMBER: EC/531/63 — BH with Lister WP 300

DATE: 1/12/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION: Village, school, etc
		Lower Grethai	9	Farm

BOREHOLE NUMBER: New	Old	ALTITUDE (masl)	G.P.S. COORDINATES: Lat.	Lon.
	unknown	1585 (GPS)	-31.53005	26.63652

WATER USE: CONSUMER: URBAN	NON-URBAN	PURPOSE OF SITE: Production, Standby, etc.
U	(N)	~~Rec~~ Not in use

BOREHOLE USAGE

NOT IN USE:	(G)
IN USE:	U
DESTROYED:	D

Estimated yield (l/s):		Based on: unknown					
Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other:	Not in use
Pumping period per day (hrs):							

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	4.95 m	Not able to measure depth bh equipped

	Type	Depth installed	Condition			Comments
		m	G	M	P	
HANDPUMP						

		kW	RPM	Pulley diameter	Condition		
MOTORISED	Diesel				G	M	P
	Electrical						
	Comments: Old Lister Engine						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition		
		G	M	P

RETICULATION

Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition		
			G	M	P

ELEMENTS

Description	Installation depth	Condition		
		G	M	P

PUMP HOUSE

		Floor			Flow meter		Pressure gauge	
Type:						Reading		
Condition:		G	M	P	Yes	(No)	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

New number marked:	Yes	(No)	Owner: Mrs. Phillips.
Sample taken:	Yes	(No)	

Inspection carried out by: A. Walenga

DWAF representative:

Community representative:

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: _____

BOREHOLE NUMBER: NW EC/S31/64

DATE: 23-11-06

GENERAL Ntabazana

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		Myburgh's House	CH	

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
-			31.58039	26.55402

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
~~U~~	N	Production

BOREHOLE USAGE

NOT IN USE:	X
IN USE:	U
DESTROYED:	D

Estimated yield (l/s):		Based on:					
Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other:	
Pumping period per day (hrs):							

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
~~OPEN HOLE~~	165 mm	34 mm	m	46 m	13,4 m	The Owner said he still going to equip it.

	Type	Depth installed	Condition G	Condition M	Condition P	Comments
HANDPUMP		m				

		kW	RPM	Pulley diameter	Condition G	Condition M	Condition P
MOTORISED	Diesel						
	Electrical						
	Comments:						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition G	Condition M	Condition P

RETICULATION

Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition G	Condition M	Condition P
30 mm					

ELEMENTS

Description	Installation depth	Condition G	Condition M	Condition P

PUMP HOUSE

		Floor G	Floor M	Floor P	Flow meter	Flow meter Reading	Pressure gauge Yes	Pressure gauge No
Type:								
Condition:								

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	20 m	
Pipeline	20 m m	m

COMMENTS:

New number marked:	Yes	~~No~~	Owner: MR MYBURGH
Sample taken:	Yes	~~No~~	

Inspection carried out by: ZUKILE NGWATA

DWAF representative:

Community representative: NITUNC CINSAN

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE:

BOREHOLE NUMBER: MYBURGH/MUNICIPAL B/H EC/S31/65 Sterkstroom

DATE: 28/11/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
	Sterkstroom.	MYBURGH'S HOUSE in	CH	in backyard of owner.

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
~~3~~			31. 56090	26. 55529

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U X	N	Production.

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	~~U~~ X
DESTROYED:	D

Estimated yield (l/s):	17500 l/h (e/h 17.5 m³/hr.)	Based on: Owners information					
Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other: Town supply	
Pumping period per day (hrs):	12 hrs						

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	mm	65 mm	14 m	(60) ~~54~~ m	— m	No place for dip meter

~~HANDPUMP~~	Type	Depth installed	Condition			Comments
	Installed el pump	~~60~~ 54 m	~~G~~ X	M	P	

~~MOTORISED~~			KW	RPM	Pulley diameter	Condition		
	Diesel							
	Electrical	X				G	M	P
	Comments:							
	Engine No.:							

PUMP HEAD

Type	Pulley diameter	Condition		
		G	M	P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
			G	M	P

ELEMENTS

Description	Installation depth	Condition		
		G	M	P

PUMP HOUSE

		Floor			Flow meter			Pressure gauge	
Type:							Reading		
Condition:		G	M	P	Yes	No	666207	~~Yes~~	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	±2 km	
Pipeline	m	m

COMMENTS:

The farmer is supporting municipality with this b/h(10m there a w/m (windmill) for the farmer.

New number marked:	Yes	~~No~~
Sample taken:	Yes	~~No~~

Owner: MR MYBURGH

Inspection carried out by: ZUKILE NGWADA (045) 9660151

DWAF representative:

Community representative:

Pump operator: MITLING CINJANI

MAP REFERENCE: ....

DATE: 28/4/05

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

BOREHOLE NUMBER: EC/S31/66 Skelkstroom

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO		SITE DESCRIPTION Village, school, etc
		MYBURGH'S HOUSE		CH	

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
			31.56073	26-55517

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U X	N	Own use

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	X
DESTROYED:	D

Estimated yield (l/s):		Based on:	
Community water supply:	DA	Stock waterings: AS	Irrigation: AI (crossed out) / Other: House
Pumping period per day (hrs):			

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	15 m	75 m	~~[illegible]~~ m 13,2 m	

	Type	Depth installed	Condition			Comments
~~HANDPUMP~~ installation of pump		35 m	G	M	P	

MOTORISED (X)		kW	RPM	Pulley diameter	Condition
Diesel		5			G M P
Electrical					
Comments:	W/m Converted to be Electric sub pump				
Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition
National Pump 2012		G M P

RETICULATION

Reservoir		
Type:		Capacity:

ELEMENTS

Description	Installation depth	Condition
		G M P

PIPES

Diameter	Number of pipes	Total length	Condition
			G ~~M~~ P

PUMP HOUSE

	Floor	Flow meter		Reading	Pressure gauge
Type:					Yes / No
Condition:	G M P	Yes	No		

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric	YES	
Reservoir	2050 TANK next to it	2500l elevated plastic tank
Pipeline	m	

COMMENTS:

This b/h supply his house ~~and~~ the garden

Owner: MR MYBURGH

New number marked:	Yes	~~No~~
Sample taken:	Yes	~~No~~

Inspection carried out by: Zukile NGINAJA

DWAF representative:

Community representative: NTLING GNJAN

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE:

BOREHOLE NUMBER: EC/004/CH EC/S31/67 ✱ Stockstroom

DATE: 28/11/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		NO2/MUNICIPALITY	NO 2	

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
-			31,54041	26,55285

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	N	Production.

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	X
DESTROYED:	D

Estimated yield (l/s):		Based on: No data					
Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other: TOWN	
Pumping period per day (hrs):	12 hrs						

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	// m	redrilled 003

	Type	Depth installed	Condition			Comments
HANDPUMP		m	G	M	P	

			kW	RPM	Pulley diameter	Condition
MOTORISED (crossed out)	Diesel					
	Electrical	✓				X M P
	Comments:					
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition		
PumpMAKER		X	M	P

RETICULATION

Reservoir	
Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition		
50mm			X	M	P

ELEMENTS

Description	Installation depth	Condition		
		G	M	P

PUMP HOUSE

Type: steel Electric box

Condition: Good

Floor			Flow meter		Reading	Pressure gauge	
G	M	P	Yes	No	15359 (300)	X (Yes)	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	1 km	
Pipeline	m	m

COMMENTS:

The b/h was re drilled after the next to the open one (3m) which was drilled in 1968

MAIN Production bh.

New number marked:	Yes (X)	No
Sample taken:	Yes	No

Owner: MUNICIPALITY

Inspection carried out by: ZUKIE NGINAIA

DWAF representative:

Community representative:

Pump operator: NITIING GINJANI

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: __________

BOREHOLE NUMBER: ? EC/S31/68 STERKSTROOM

DATE: 28/11/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
	Sterkstroom	Lizmo (Municipal Farm)				

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
-			31,60385	26,56596

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U X	N	Production B.

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	(U)
DESTROYED:	D

Estimated yield (l/s):		Based on:					
Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other:	
Pumping period per day (hrs):		⇐					

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	? mm	? mm	? m	? m	? m	No information about the B/H

HANDPUMP	Type	Depth installed	Condition			Comments
		m	~~G~~ NA	M	P	

MOTORISED			kW	RPM	Pulley diameter	Condition		
	Diesel							
	Electrical	X				G	M	P
	Comments:	Submersible ⇒ Condition Good.						
	Engine No.:							

PUMP HEAD

Type	Pulley diameter	Condition		
		G	M	P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
			G	M	P

ELEMENTS

Description	Installation depth	Condition		
		G	M	P

PUMP HOUSE

	Floor			Flow meter		Pressure gauge	
Type:					Reading		
Condition: good	G	M	P	Yes	No	41279	(Yes)	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re~~drill~~

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse	(fenced)	
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:
The ~~B/H~~ Operator say the B/H is very strong ⇒ & is using 40mm 70 mm steel pipeline (

New number marked:	Yes	No
Sample taken:	Yes	No

Owner: Municipality

Inspection carried out by: Zukile Nginasa

DWAF representative:

Community representative:

Pump operator: Nitling Cinjani

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: ____________

BOREHOLE NUMBER: EC/019/C14 EC/S31/69 (Skeit Stream) *

DATE: 28/11/06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
	Skeldam.	Lizmor / Municipality				Municipality Farm

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
X			31.60048	26.56567

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
X	N	Production.

BOREHOLE USAGE

NOT IN USE:	X
IN USE:	X
DESTROYED:	D

Estimated yield (l/s):		Based on:				
Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other: ....
Pumping period per day (hrs):	~~24~~ h Nast					

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	/ m	/ m	AGES REPORT

	Type	Depth installed	Condition			Comments
HANDPUMP		m	G	M	P	

			kW	RPM	Pulley diameter	Condition		
~~MOTORISED~~	Diesel							
	Electrical	✓				G	M	P
	Comments:	Not pumping → problems with electricity supply						
	Engine No.:							

PUMP HEAD

Type	Pulley diameter	Condition		
		X	M	P

RETICULATION

Reservoir	
Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition		
~~60~~ 70mm			X	M	P

ELEMENTS

Description	Installation depth	Condition		
		G	M	P

PUMP HOUSE

		Floor			Flow meter		Reading	Pressure gauge	
Type:	....								
Condition:	good	G	M	P	Yes	No		Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse	(fenced)	
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

AGES will have records.
next to it there is destroyed
casing (C/4)
It's not pumping
there Electric problem

New number marked:	Yes	No
Sample taken:	Yes	No

Owner: MUNICIPALITY

Inspection carried out by: ZUKILE NGINAJA.
DWAF representative: ....
Community representative: ....
Pump operator: NITLING CINJANI

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

BOREHOLE NUMBER: ND EC/531/70

MAP REFERENCE: _____

DATE: 27-11-06

GENERAL Mbokotwana town

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE/DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		MR MALGHAS	CH	

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (mast)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
ND			31.55230	26.55592

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	N	Production

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):		Based on:				
IN USE:	U	Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other:
DESTROYED:	X	Pumping period per day (hrs):						

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	the w/m is destroyed but there is still water in the hole

	Type	Depth installed	Condition	Comments
W/M HANDPUMP		m	G / M / P X	

		kW	RPM	Pulley diameter	Condition
MOTORISED	Diesel				G / M / P
	Electrical				
	Comments:				
	Engine No.:				

PUMP HEAD

Type	Pulley diameter	Condition
		G / M / P

RETICULATION

Reservoir Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition
50 mm			G / M / X

ELEMENTS

Description	Installation depth	Condition
		G / M / P

PUMP HOUSE

		Floor			Flow meter		Pressure gauge	
Type:					Reading			
Condition:		G	M	P	Yes	No	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
	X

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	5m	
Pipeline	5m m	m

COMMENTS:

the b/h can be fixed cause all the w/m broken

New number marked: Yes / X

Sample taken: Yes / X

Owner: MR MAIGHAS

Inspection carried out by: Zukile NGWASA

DWAF representative:

Community representative: 31-55209 NITLING GNJANI

Pump operator: 26-55593

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: __________

BOREHOLE NUMBER: No EC/S31/71

DATE: __________

GENERAL steynsrroom town

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		Mr Erasmus				

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
NO			31.55434	26.54996

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	N	Standby

BOREHOLE USAGE

NOT IN USE:	X	Estimated yield (l/s):		Based on:				
IN USE:	U	Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other: laundry
DESTROYED:	D	Pumping period per day (hrs):						

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	mm	mm	m	75 m	— m	

W/M ~~HANDPUMP~~	Type	Depth installed	Condition			Comments
		45 m	G	M	X	The windmill is ~~[illegible]~~ broke

MOTORISED			kW	RPM	Pulley diameter	Condition
	Diesel					
	Electrical					G M P
	Comments:					
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition		
		G	M	P

RETICULATION

Reservoir	
Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition		
			G	M	P

ELEMENTS

Description	Installation depth	Condition		
		G	M	P

PUMP HOUSE

	Floor			Flow meter		Reading	Pressure gauge	
Type: .... Condition:	G	M	P	Yes	No		Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	30 m	
Pipeline	30 m m	m

COMMENTS:
The w/m can be fixed but they are using ~~[illegible]~~ submersible pump 20m from this one
~~Sample Taken~~

New number marked: Yes | ~~No~~

Sample taken: Yes | ~~No~~

Owner: Mr Erasmus

Inspection carried out by: Zukile Ngwana ~~sample taken~~

DWAF representative: ....

Community representative: Ricky Erasmus

Pump operator: ....

House No
0827197239

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: __________

BOREHOLE NUMBER: NO EC/S31/72

DATE: 29-11-06

GENERAL stutterheim

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		MR ERASMUS				

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
NO			31.55503	26.55007

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U X	N	Production

BOREHOLE USAGE

NOT IN USE: G	Estimated yield (l/s):	1.5	Based on:					
IN USE: X	Community water supply:	DA	Stock waterings:	AS	Irrigation:	AI	Other:	all
DESTROYED: D	Pumping period per day (hrs):	8 hrs						

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	78 m	— m	

	Type	Depth installed	Condition			Comments
HANDPUMP		42 m	X	M	P	

MOTORISED (crossed out)		kW	RPM	Pulley diameter	Condition		
	Diesel						
	Electrical (crossed out)				X	M	P
	Comments:						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition		
		G	M	P

RETICULATION

Reservoir	
Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition		
			G	M	P

ELEMENTS

Description	Installation depth	Condition		
		G	M	P

PUMP HOUSE

		Floor			Flow meter		Reading	Pressure gauge	
Type:	....								
Condition:	....	G	M	P	Yes	No		Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	20m	
Pipeline	20m m	m

COMMENTS: (NB Sample taken) We ~~couldn't~~ try & get a w/l because the b/h is pumping & there's no enough space for ~~deep~~ ~~note~~ meter to go through

	Yes	No
New number marked:		X
Sample taken:	X	

Owner: MR ERASMUS

Inspection carried out by: ZUKILE NGWASA.

DWAF representative:

Community representative: RICKY ERASMUS / (0827797239)

Pump operator: MZWANDILE SOKO

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: ________

BOREHOLE NUMBER: NO EC/S31/73

DATE: 29-11-06

GENERAL: Sterkstroom

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
	.	Mrs AJ MARREYS				

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
NO			31.55130	26.55379

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	N	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	N ✓
DESTROYED:	D

Estimated yield (l/s):		Based on:	
Community water supply:	DA	Stock waterings: X AS	Irrigation: X AI	Other:
Pumping period per day (hrs):			

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	

	Type	Depth installed	Condition	Comments
W/M ~~HAND~~ PUMP		m	G M(X) P	

MOTORISED			kW	RPM	Pulley diameter	Condition
	Diesel					
	Electrical					G M P
	Comments:					
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition
		G M P

RETICULATION

Reservoir	
Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition
40mm			G M(X) P

ELEMENTS

Description	Installation depth	Condition
		G M P

PUMP HOUSE

		Floor	Flow meter	Flow meter Reading	Pressure gauge
Type:					
Condition:		G M P	Yes No		Yes No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	20 m	
Pipeline	20 m m	m

COMMENTS:

~~there are no people and house for the hole~~

those w/m are 22 yrs old

there's a lick in a pipe

New number marked: Yes / No (X)

Sample taken: Yes / No (X)

Owner: Mrs MARREYS 045-9660062

Inspection carried out by: Zukile NGWAJA

DWAF representative:

Community representative: NITLING ~~Gosomn~~ CINJANI

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: _____

BOREHOLE NUMBER: NO EC/S31/74

DATE: 29-11-06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
	STEERS ROOM	MRS AJ MARREYS	CH	

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
-			31.55103	26.55256

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
X	N	Production

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):	2 l/s	Based on:					
IN USE:	X	Community water supply:	DA	Stock watering:	X	AS	Irrigation:	X	AI
DESTROYED:	D	Pumping period per day (hrs):		Other:					

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	

	Type	Depth installed	Condition			Comments
~~HANDPUMP~~ W/M		m	X	M	P	

MOTORISED	Diesel		kW	RPM	Pulley diameter	Condition	
	Electrical					G	M P
	Comments:						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition		
		G	M	P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
50mm			G	X	P

ELEMENTS

Description	Installation depth	Condition		
		G	M	P

PUMP HOUSE

		Floor			Flow meter		Pressure gauge	
Type:					Reading			
Condition:		G	M	P	Yes	No	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	30m	
Pipeline	30m m	m

COMMENTS:

These b/h was drilled 22 years ago, so the lady does not know any information about them

New number marked:	Yes	X
Sample taken:	Yes	X

Owner: MRS MARREYS

045 - 9660062

Inspection carried out by: .....

DWAF representative: .....

Community representative: .....

Pump operator: .....

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: __________

BOREHOLE NUMBER: NO EC/S31/75

DATE: 29-11-06

GENERAL sterkstroom

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
ND		Municipality site/MRS MARREY	CH	small town site

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
ND			31.55163	26.55542

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	N	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	X
DESTROYED:	D

Estimated yield (l/s):		Based on:				
Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other: .....
Pumping period per day (hrs):	w/m					

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	mm	mm	m	m	m	

w/m ~~HANDPUMP~~	Type	Depth installed	Condition			Comments
		m	X	M	P	

MOTORISED			kW	RPM	Pulley diameter	Condition		
	Diesel							
	Electrical					G	M	P
	Comments:							
	Engine No.:							

PUMP HEAD

Type	Pulley diameter	Condition		
		G	M	P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
50mm			G	X	P

ELEMENTS

Description	Installation depth	Condition		
		G	M	P

PUMP HOUSE

		Floor			Flow meter		Reading	Pressure gauge	
Type:	.....								
Condition:	.....	G	M	P	Yes	No		Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	70	
Pipeline	70 m	m

COMMENTS:

The w/m is in a fenced ~~mas~~ small yard in town/ no house / recently Mrs Mareys bought it

New number marked: Yes ~~No~~

Sample taken: Yes ~~No~~

Owner: MUNICIPALITY/MRS MARREY 045-9660062

Inspection carried out by: ZIKILE NGWANA.

DWAF representative: .....

Community representative: NITLING CINJANI

Pump operator: .....

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: _____

BOREHOLE NUMBER: No EC/S31/16

DATE: 29-11-06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION: Village, school, etc
		MR VESSELS HOUSE	CH	

BOREHOLE NUMBER: New	BOREHOLE NUMBER: Old	ALTITUDE (masl)	G.P.S. COORDINATES: Lat.	G.P.S. COORDINATES: Lon.
-			31.55097	26.55432

WATER USE: CONSUMER: URBAN	WATER USE: CONSUMER: NON-URBAN	PURPOSE OF SITE: Production, Standby, etc.
U	N	Production

BOREHOLE USAGE

NOT IN USE:	X
IN USE:	X
DESTROYED:	D

Estimated yield (l/s):		Based on:					
Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other:	
Pumping period per day (hrs):	4	8					

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	165 mm	40 mm	10 m	30 m	14 m	

HANDPUMP	Type	Depth installed	Condition	Comments
		25 m	G / M / P	

MOTORISED		kW	RPM	Pulley diameter	Condition
X	Diesel				
	Electrical				G / M / P
	Comments:				
	Engine No.:				

PUMP HEAD

Type	Pulley diameter	Condition
FRANKLIN Single Phase		G / M / P

RETICULATION

Reservoir: Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition
38 mm			G / X / P

ELEMENTS

Description	Installation depth	Condition
		G / M / P

PUMP HOUSE

Type:	Floor			Flow meter		Reading	Pressure gauge	
Condition:	G	M	P	Yes	No		Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	30 m	
Pipeline	30 m	m

COMMENTS:

The pump is broken

New number marked:	Yes	X
Sample taken:	Yes	X

Owner: MR VESSELS

~~045~~ 082 7474323

Inspection carried out by: Zukile Ngwasa

DWAF representative:

Community representative: MR VESSELS

Pump operator:

diameter of casing

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

✳ 14

MAP REFERENCE: ____________

BOREHOLE NUMBER: EC/008/CH EC/S31/077

DATE: 29-11-06

GENERAL

Stekstroom

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		Municipality Land	CH	

BOREHOLE NUMBER		ALTITUDE (masl)	G.P.S. COORDINATES	
New	Old		Lat.	Lon.
			31.55549	26.57030

WATER USE: CONSUMER		PURPOSE OF SITE
URBAN	NON-URBAN	Production, Standby, etc.
U	N	Production

BOREHOLE USAGE

NOT IN USE:	✓	Estimated yield (l/s):		Based on:			
IN USE:	U	Community water supply:	DA	Stock watering: AS	Irrigation:	AI	Other: ....
DESTROYED:	D	Pumping period per day (hrs):					

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	mm	mm	m	m	m	

HANDPUMP	Type	Depth installed	Condition			Comments
		m	G	M	P	

MOTORISED			kW	RPM	Pulley diameter	Condition		
	Diesel							
	Electrical					✓ G	M	P
	Comments:							
	Engine No.:							

PUMP HEAD

Type	Pulley diameter	Condition		
		G	M	P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
			G	M	P

ELEMENTS

Description	Installation depth	Condition		
		G	M	P

PUMP HOUSE

		Floor			Flow meter			Pressure gauge	
Type:	....						Reading		
Condition:	....	G	M	P	Yes	No		Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	100 m	
Pipeline	100 m	m

COMMENTS:

Electric problem

New number marked: Yes / No

Sample taken: Yes / No

Owner: Municipality

Inspection carried out by: Zukile Ngwaja.

DWAF representative:

Community representative:

Pump operator: Cinjani Nitling (Sipito)

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: _____

BOREHOLE NUMBER: NO EC/531/78

DATE: 29-11-06

GENERAL Sterkstroom

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		Health centre	CH	

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
NO			31.55341	26.55451

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	N	

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	X
DESTROYED:	D

Estimated yield (l/s):		Based on:
Community water supply:	DA	Stock watering: AS Irrigation: AI Other:
Pumping period per day (hrs):	w/m	depend on wind

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	— mm	~ mm	~ m	— m	— m	

w/m HANDPUMP	Type	Depth installed	Condition	Comments
		m	X G M P	

MOTORISED		kW	RPM	Pulley diameter	Condition
	Diesel				
	Electrical				G M P
	Comments:				
	Engine No.:				

PUMP HEAD

Type	Pulley diameter	Condition
		G M P

RETICULATION

Reservoir		
Type:		Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition
			G M P

ELEMENTS

Description	Installation depth	Condition
		G M P

PUMP HOUSE

Type:		Floor			Flow meter		Pressure gauge	
Condition:					Reading			
		G	M	P	Yes	No	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

The w/m is pumping to the staff irrigation, the G/h is near the tarred road but there nobody in the house

New number marked: Yes No

Sample taken: Yes No

Owner: ??

opp to STERKSTROOM HEALTH CENTRE

Inspection carried out by: ZUKILE NCANANA

DWAF representative:

Community representative: NOTUNG CINJANI

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

16

MAP REFERENCE: _____

BOREHOLE NUMBER: NO EC/531/79

DATE: 29-11-96

GENERAL Stekkiboom

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE/DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		GEYER SMALL FARM		Small Farm

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
NO			31.55642	26.55405

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	N	Production

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):		Based on:					
IN USE:	X	Community water supply:	DA	Stock watering:	AS	Irrigation:	X	AI	Other:
DESTROYED:	D	Pumping period per day (hrs):							

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Family use water for irrigation

	Type	Depth installed	Condition G	Condition M	Condition P	Comments
~~HAND PUMP~~ W/M		m	G	X	P	

		kW	RPM	Pulley diameter	Condition G	Condition M	Condition P
MOTORISED	Diesel						
	Electrical						
	Comments:						
	Engine No:						

PUMP HEAD

Type	Pulley diameter	Condition G	Condition M	Condition P

RETICULATION

Reservoir Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition G	Condition M	Condition P

ELEMENTS

Description	Installation depth	Condition G	Condition M	Condition P

PUMP HOUSE

		Floor G	Floor M	Floor P	Flow meter		Flow meter Reading	Pressure gauge	
Type:									
Condition:					Yes	No		Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	6m	
Pipeline	6 m m	m

COMMENTS:

New number marked: Yes ~~No~~

Sample taken: Yes ~~No~~

Owner: GEYER

90 John Foster Street

Inspection carried out by: Zukile Ngwaja

DWAF representative:

Community representative: John Chibba

Pump operator:

MAP REFERENCE: ___________

DATE: 29-11-06

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

BOREHOLE NUMBER: NO EC/S31/80

GENERAL stenstrom

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc
		MAGISTRATE COART				MAGISTRATE COURT

BOREHOLE NUMBER New	Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	Lon.
NO			31.55547	26.55094

WATER USE: CONSUMER URBAN	NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U (X)	N	Production

Based on: ~~Operator?~~ ~~Domestic~~ water

BOREHOLE USAGE

NOT IN USE:	X
IN USE:	U
DESTROYED:	D

Estimated yield (l/s):		Stock watering:	AS	Irrigation:	AI
Community water supply:	DA				
Pumping period per day (hrs):					

Other:

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
~~OPEN HOLE~~	165 mm	64 mm	m	56 m	17,5 m	It used to supply water to the court

The hole is open with a cement block still ~~to~~ in good condition

W/M ~~HANDPUMP~~	Type	Depth installed	Condition	Comments
		m	G / M / P (X)	

MOTORISED

		kW	RPM	Pulley diameter	Condition
Diesel					G / M / P
Electrical					
Comments:					
Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition
		G / M / P

RETICULATION

Reservoir Type:		Capacity:

ELEMENTS

Description	Installation depth	Condition
		G / M / P

PIPES

Diameter	Number of pipes	Total length	Condition
			G / M / P

PUMP HOUSE

Type: ....

Condition: ....

Floor	Flow meter	Reading	Pressure gauge
G / M / P	Yes / No		Yes / No

NECESSARY ACTIVITIES

Geohydrological activities

Test	~~Rehabilitation~~ / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	2m	m
Pipeline	6m	

COMMENTS:
The b/h need to be equipped again but its ~~cleaned~~ ~~again~~ silted, no pipes around.

Owner: MAGISTRATE COART

New number marked:	Yes	No (X)
Sample taken:	Yes	No (X)

Inspection carried out by: ZUKIE NGWAJA

DWAF representative:

Community representative: VUSUMZI

Pump operator:

(Was it not possible to measure depth of hole and diameter?)

If possible please measure

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: _____

BOREHOLE NUMBER: NO EC/531/81

DATE: 29-11-06

GENERAL Stekstroom

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE/DISTRICT AND FARM NO			SITE DESCRIPTION Village, school, etc.
		Uzimo / Municipality				

BOREHOLE NUMBER		ALTITUDE (mast)	G.P.S. COORDINATES		WATER USE: CONSUMER		PURPOSE OF SITE
New	Old		Lat.	Lon.	URBAN	NON-URBAN	Production, Standby, etc.
NO			31.60396	26.55854	U	N	Production

BOREHOLE USAGE

NOT IN USE:	X	Estimated yield (l/s):		Based on:					
IN USE:	U	Community water supply:	DA	Stock watering:	AS	Irrigation:	XI	Other:	
DESTROYED:	D	Pumping period per day (hrs):							

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
X	mm	mm	m	m	6,1 m	The B/H is open

H/P	Type	Depth installed	Condition			Comments
H/PUMP		m	G	M	P	there are no pipes in it

MOTORISED			kW	RPM	Pulley diameter	Condition		
	Diesel					G	M	P
	Electrical							
	Comments:							
	Engine No.:							

PUMP HEAD

Type	Pulley diameter	Condition		
		G	M	P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
			G	M	P

ELEMENTS

Description	Installation depth	Condition		
		G	M	P

PUMP HOUSE

Type:		Floor			Flow meter		Reading	Pressure gauge	
Condition:		G	M	P	Yes	No		Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	20 m	
Pipeline	20 m m	m

COMMENTS:

This is also going supply Community Garden

New number marked: Yes / No X

Sample taken: Yes / No X

Owner: Municipality

Inspection carried out by: Zukile Ngwata

DWAF representative:

Community representative:

Pump operator: Nitling Cinjani

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: _____

BOREHOLE NUMBER: NO NUMBER EC/SB1/82

DATE: 29-11-06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		LIZMO FARM/MUNICIPAL		

BOREHOLE NUMBER New	~~Old~~	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	Lon.
NO			31.60379	26.55875

WATER USE: CONSUMER URBAN	NON-URBAN	PURPOSE OF SITE Production, ~~Standby~~, etc.
U	N	

BOREHOLE USAGE

NOT IN USE:	X
IN USE:	U
DESTROYED:	D

Estimated yield (l/s):		Based on:					
Community water supply:	DA	Stock watering:	AS	Irrigation: X	AI	Other:	
Pumping period per day (hrs):							

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	? m	? m	? m	

W/M ~~HAND PUMP~~	Type	Depth installed	Condition G	M	P	Comments
		m			X	

MOTORISED		kW	RPM	Pulley diameter	Condition G	M	P
	Diesel						
	Electrical						
	Comments:						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition G	M	P
W/M				X

RETICULATION

Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition G	M	P

ELEMENTS

Description	Installation depth	Condition G	M	P

PUMP HOUSE

Type:		Floor G	M	P	Flow meter Yes	No	Reading	Pressure gauge Yes	No
Condition:									

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	40m	
Pipeline	40m m	m

COMMENTS:

They are busy digging at the Community GARDEN/but the soil is collapsing around casing

New number marked:	Yes	~~No~~ X
Sample taken:	Yes	~~No~~ X

Owner: MUNICIPALITY

Inspection carried out by: ZUKILE NGWATA

DWAF representative:

Community representative:

Pump operator: NTLING CINJANI

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: _____

BOREHOLE NUMBER: NO EC/S31/83

DATE: 29-11-06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION: Village, school, etc
		Uzmo/Municipality		

BOREHOLE NUMBER: New	Old	ALTITUDE (masl)	G.P.S. COORDINATES: Lat.	Lon.
NO			31.60423	26.55914

WATER USE: CONSUMER: URBAN	NON-URBAN	PURPOSE OF SITE: Production, Standby, etc.
U	N	Community Garden

BOREHOLE USAGE

NOT IN USE:	X	Estimated yield (l/s):		Based on:			
IN USE:	U	Community water supply:	DA	Stock watering:	X	Irrigation:	AI
DESTROYED:	~~X~~	Pumping period per day (hrs):					

EXISTING EQUIPMENT

OPEN HOLE X	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	mm	mm	m	m	7,52 m	

W/m HANDPUMP	Type	Depth installed	Condition	Comments
		m	G / M / P X	There are no pipes inside the casing is open

MOTORISED		kW	RPM	Pulley diameter	Condition
	Diesel				G / M / P
	Electrical				
	Comments:				
	Engine No.:				

PUMP HEAD

Type	Pulley diameter	Condition
		G / M / P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition
			G / M / P

ELEMENTS

Description	Installation depth	Condition
		G / M / P

PUMP HOUSE

Type:		Floor			Flow meter		Pressure gauge	
Condition:					Reading			
		G	M	P	Yes	No	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	30 m	
Pipeline	m	m

COMMENTS:

.....

.....

.....

.....

.....

New number marked: Yes / ~~No~~

Sample taken: Yes / ~~No~~

Owner: MUNICIPALITY

Inspection carried out by: ZUKILE NGWAZA

DWAF representative:

Community representative:

Pump operator: NITLING CINJANI

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: _____

BOREHOLE NUMBER: NO EC/S31/84

DATE: 29-11-06

GENERAL Nekstoom

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO		SITE DESCRIPTION Village, school, etc
		Hex River Comm Farm			

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
NO			31.52754	26.59149

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	N	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	U
DESTROYED:	D

Estimated yield (l/s):	± 6½	Based on:					
Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other:	both & town
Pumping period per day (hrs):	8 hrs						

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	Gx has equipment recently

	Type	Depth installed	Condition			Comments
HANDPUMP		m	G	M	P	

MOTORISED	Diesel		kW	RPM	Pulley diameter	Condition G / M / P
	Electrical					G / M / P
	Comments:					
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition G	M	P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
25mm			G	M	P

ELEMENTS

Description	Installation depth	Condition G	M	P

PUMP HOUSE

		Floor G	M	P	Flow meter	Reading	Pressure gauge	
Type:					Yes	No		Yes / No
Condition:								

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	120 m	
Pipeline	120 m	m

COMMENTS:

The old pipeline was 80mm. It means this might be a strong b/h but there is small one now, & there was diesel engine before

New number marked: Yes / No

Sample taken: Yes / No

Owner: Hex River Community

Inspection carried out by: ZUKILE NGWATA

DWAF representative:

Community representative: NITLING CINJANI

Pump operator: L. NGAIO

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: _____

BOREHOLE NUMBER: No EC/S31/85

DATE: 29-11-06

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE/DISTRICT AND FARM NO	SITE DESCRIPTION (Village, school, etc)
	H3	Hex River Farm	C/H	

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
NO			31.52768	26.53992

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE (Production, Standby, etc.)
U	N	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	U
DESTROYED:	DX

Estimated yield (l/s):		Based on:					
Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other:	
Pumping period per day (hrs):							

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	mm	mm	m	m	m	

w/m HANDPUMP	Type	Depth installed	Condition G	Condition M	Condition P	Comments
		m				

MOTORISED		kW	RPM	Pulley diameter	Condition G	Condition M	Condition P
Diesel							
Electrical							
Comments:							
Engine No.:							

PUMP HEAD

Type	Pulley diameter	Condition G	Condition M	Condition P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition G	Condition M	Condition P

ELEMENTS

Description	Installation depth	Condition G	Condition M	Condition P

PUMP HOUSE

Type:		Floor G	Floor M	Floor P	Flow meter		Flow meter Reading	Pressure gauge	
Condition:					Yes	No		Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill
	X

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	10 m	
Pipeline	m	m

COMMENTS:

It was a w/m but its blocked

New number marked: Yes / No X

Sample taken: Yes / No X

Owner: Hex River Community

Inspection carried out by: Zukile Ngwaza

DWAF representative:

Community representative: Nitling Cinjani

Pump operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: _____

BOREHOLE NUMBER: NO EC/S31/86

DATE: 29-11-96

GENERAL Steilstroom

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE/DISTRICT AND FARM NO	SITE DESCRIPTION (Village, school, etc)
		HEX RIVER COMMUNITY FARM	H3	

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
NO			31.54131	26.60482

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE: Production, Standby, etc.
U	N	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	X
DESTROYED:	D

Estimated yield (l/s): 0,84 Based on: .....

Community water supply: DA Stock watering: X AS Irrigation: AI Other: .....

Pumping period per day (hrs): .....

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	mm	mm	m	m	m	

W/M HANDPUMP	Type	Depth installed	Condition			Comments
		m	X	M	P	

MOTORISED		kW	RPM	Pulley diameter	Condition		
	Diesel				G	M	P
	Electrical						
	Comments:						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition		
		G	M	P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
30 mm			G	M	P

ELEMENTS

Description	Installation depth	Condition		
		G	M	P

PUMP HOUSE

Type:		Floor			Flow meter		Pressure gauge	
Condition:					Reading			
		G	M	P	Yes	No	Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	80 m	
Pipeline	80 m	m

COMMENTS:

The W/m has been justified recently, as it is only for stock watering

New number marked: Yes / No

Sample taken: Yes / No

Owner: HEX River Community

Inspection carried out by: Zukile NGWASA

DWAF representative: .....

Community representative: NITLING GINJANI

Pump operator: L. NGALO

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: _____

BOREHOLE NUMBER: NO EC/S31/87

DATE: 29-11-06

GENERAL STERKSTROOM

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
	H3	HEX River Com FARM	H3	

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
NO			31.53016	26,59236

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	N	

BOREHOLE USAGE

NOT IN USE:	X
IN USE:	U
DESTROYED:	D

Estimated yield (l/s):		Based on:					
Community water supply:	DA	Stock watering:	X	AS	Irrigation:	AI	Other:
Pumping period per day (hrs):							

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	165 mm	38 mm	m	34 m	5,63 m	

	Type	Depth installed	Condition G	Condition M	Condition P	Comments
W/m HAND PUMP		m				

		kW	RPM	Pulley diameter	Condition G	Condition M	Condition P
MOTORISED	Diesel / Electrical						
	Comments:						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition G	Condition M	Condition P

RETICULATION

Reservoir Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition G	Condition M	Condition P
25 mm					X

ELEMENTS

Description	Installation depth	Condition G	Condition M	Condition P

PUMP HOUSE

Type:		Floor G	Floor M	Floor P	Flow meter	Flow meter Reading	Pressure gauge Yes	Pressure gauge No
Condition:					Yes / No			

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	20m	
Pipeline	m	m

COMMENTS:

They say there not enough water in this 2 holes, & the W/m was taken they just put a rock on top of the casing it not close properly

New number marked: Yes / X

Sample taken: Yes / X

Owner: HEX River Community

Inspection carried out by: Zukile NGWATA

DWAF representative:

Community representative: L. NGALO

Pump operator: Measure D (not clear)

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: __________

BOREHOLE NUMBER: NO EC/S31/88

DATE: 29-11-06

GENERAL slabsteem

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		HEX River	~~EC~~ 43	

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
NO			31.52841	2659193

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	N	Production

BOREHOLE USAGE

NOT IN USE:	G	Estimated yield (l/s):		Based on:				
IN USE:	U	Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other: ....
DESTROYED:	D	Pumping period per day (hrs):						

EXISTING EQUIPMENT

~~OPEN HOLE~~	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	mm	mm	m	? m	8,0 m	

W/m HANDPUMP	Type	Depth installed	Condition			Comments
		m	G	M	P	

MOTORISED			kW	RPM	Pulley diameter	Condition
	Diesel					
	Electrical					G / M / P
	Comments:					
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition		
		G	M	P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
50mm	?		G	M	~~P~~

ELEMENTS

Description	Installation depth	Condition		
		G	M	P

PUMP HOUSE

		Floor			Flow meter		Reading	Pressure gauge	
Type:	....								
Condition:	....	G	M	P	Yes	No		Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	10m	
Pipeline	m	m

COMMENTS:

Blocked & the pipeline is broken. It has not been in use for more than 3 decade.

New number marked: Yes / ~~No~~

Sample taken: Yes / ~~No~~

Owner: HEX RIVER COMMUNITY

Inspection carried out by: ZUKILE NGWAJA

DWAF representative: ....

Community representative: ....

Pump operator: L. NGALO

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: ________

BOREHOLE NUMBER: Nb EC/S31/89

DATE: 29-11-06

GENERAL STERKSTROOM TOWN CLINIC

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		Clinic	CH	

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
NO			31.55269	26.55352

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	N	Production

BOREHOLE USAGE

NOT IN USE:	X	Estimated yield (l/s):	1 l/s	Based on:				
IN USE:	U	Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other:
DESTROYED:	D	Pumping period per day (hrs):						

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments Odd w/m
	425 mm	42 mm	m	43 m	9M m	

W/M ~~HANDPUMP~~	Type	Depth installed	Condition			Comments
		m	G	M	P	The b/h is open, no pipe around

MOTORISED			KW	RPM	Pulley diameter	Condition
	Diesel					
	Electrical					G M
	Comments:					
	Engine No.:					

PUMP HEAD

Type	Pulley diameter	Condition		
		G	M	P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
			G	M	P

ELEMENTS

Description	Installation depth	Condition	
		G	M

PUMP HOUSE

		Floor			Flow meter			Pressure gauge	
Type:							Reading		
Condition:		G	M	P	Yes	No		Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	~~Rehabilitation~~ / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	20m	
Pipeline	20m m	

COMMENTS:

The nurses want to use this b/h for irrigation on their small garden

New number marked:	Yes	No X
Sample taken:	Yes	No X

Owner: Dept of Health

Inspection carried out by: ZUKILE NGINASA

DWAF representative:

Community representative: Ms MAIGHAS ~~(Dr A~~ (NURSE) 0459660085

Pump operator:

(Borehole depth and casing diameter

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: _____

BOREHOLE NUMBER: No EC/S31/91

DATE: 30-11-96

GENERAL Stokstaan

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE/DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		CECIL WENTZEL	C H	

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (mast)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
NO			31.56483	26.55742

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	N	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	X
DESTROYED:	D

Estimated yield (l/s): 4 c/s Based on: .....

Community water supply: DA | Stock watering: AS | Irrigation: AI | Other: .....

Pumping period per day (hrs): 4

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	165 mm	52 mm	? m	? m	8m m	

	Type	Depth installed	Condition G	Condition M	Condition P	Comments
HANDPUMP		m				

		kW	RPM	Pulley diameter	Condition G	Condition M	Condition P
MOTORISED	Diesel						
	Electrical						
	Comments: The owner says its a very strong b/h						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition G	Condition M	Condition P

RETICULATION

Reservoir Type:	Capacity:

PIPES

Diameter	Number of pipes	Total length	Condition G	Condition M	Condition P
60 mm				X	

ELEMENTS

Description	Installation depth	Condition G	Condition M	Condition P

PUMP HOUSE

Type:	Floor G	Floor M	Floor P	Flow meter	Flow meter Reading	Pressure gauge
Condition:				Yes / No		Yes / No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

This b/h is mainly for irrigation on the garden

New number marked: Yes X

Sample taken: Yes No

Owner: CECIL WENTZEL

Inspection carried out by: Zukile NGWASA.

DWAF representative: .....

Community representative: CECIL WENTZEL

Pump operator: .....

MAP REFERENCE: ________

DATE: 30-11-06

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

BOREHOLE NUMBER: NO EC/S31/92

PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
CH	

FARM NAME: Stektoom

GENERAL

T.L.C. AREA	VILLAGE
	CECIL WENTZEL

WATER USE: CONSUMER URBAN	NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	N	Production

BOREHOLE NUMBER New	Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	Lon.
			31. 5650S	26.55590

Based on: .... Irrigation: AI Other: ....

Stock watering: AS

BOREHOLE USAGE	
NOT IN USE:	G
IN USE:	X
DESTROYED:	D

Estimated yield (l/s):	
Community water supply:	DA
Pumping period per day (hrs):	4 hrs

Borehole depth	Static water level	Comments
m	13 m	

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Comments
OPEN HOLE	165 mm	61 mm	m	

HANDPUMP	Type	Depth installed	Condition G / M / P	Pulley diameter	Condition G / M / P
		m			

RPM:

kW:

MOTORISED	
Diesel	
Electrical	✓
Comments:	
Engine No.:	

PUMP HEAD Type	Pulley diameter	Condition G / M / P

RETICULATION

Reservoir — Capacity: — Type:

ELEMENTS Description	Installation depth	Condition G / M / P

PIPES Diameter	Number of pipes	Total length	Condition G / M / P
20 mm			M (crossed)

Flow meter — Reading — Pressure gauge: Yes

PUMP HOUSE		Floor G / M / P	Yes / No
Type:	....		
Condition:	....		

NECESSARY ACTIVITIES

Geohydrological activities	Rehabilitation / Re-drill
Test	

Engineering activities Item	Upgrade / Service	Constru...
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	20m m	
Pipeline	20 m	

COMMENTS:

They use this b/h as a standby

Owner: ~~Zukil~~ CECIL WENT... 045-96600...

New number marked: Yes X

Sample taken: Yes X

Inspection carried out by: ZUKILE NGWAJA

DWAF representative: NITUNG CINJANI

... representative:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

BOREHOLE NUMBER: NO EC/S31/93

MAP REFERENCE: _____

DATE: 30-11-95

GENERAL

T.E.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION (Village, school, etc)
		30 E		

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
NO			31.56484	26.55425

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE (Production, Standby, etc.)
U	N	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	X
DESTROYED:	D

Estimated yield (l/s):		Based on:					
Community water supply:	DA	Stock watering:	AS	Irrigation:	X	AI	Other:
Pumping period per day (hrs):							

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	165 mm	mm	m	m	m	

W/M HANDPUMP	Type	Depth installed	Condition	Comments
		m	G M P	

MOTORISED		kW	RPM	Pulley diameter	Condition
	Diesel				G M P
	Electrical				
	Comments:				
	Engine No.:				

PUMP HEAD

Type	Pulley diameter	Condition
		G M P

PIPES

Diameter	Number of pipes	Total length	Condition
30 mm			G M P

PUMP HOUSE

Type: .....

Condition: .....

Floor			Flow meter		Pressure gauge	
G	M	P	Yes	No	Reading	Yes / No

RETICULATION

Reservoir

Type: Capacity:

ELEMENTS

Description	Installation depth	Condition
		G M P

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir	10m	
Pipeline	10m m	m

COMMENTS:

The W/M is pumping to the nearby reservoir to the home & garden

New number marked: Yes / No

Sample taken: Yes / No

Owner: 30 E Corner Bree street

Inspection carried out by: ZUKILE NGWADA

DWAF representative:

Community representative: NITUNG CINJANI

Borehole operator:

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

MAP REFERENCE: _____

BOREHOLE NUMBER: NO EC/531/94

DATE: 30-11-06

GENERAL steinbrom

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc
		MUNICIPALITY		

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
-			31.54935	26.57670

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	N	Production

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	U
DESTROYED:	DX

Estimated yield (l/s):		Based on:				
Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other:
Pumping period per day (hrs):						

EXISTING EQUIPMENT

OPEN HOLE	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
	165 mm	45 mm	m	— m	- m	

LW/MM HANDPUMP	Type	Depth installed	Condition			Comments
		m	G	M	P	

MOTORISED						
Diesel		kW	RPM	Pulley diameter	Condition	
Electrical					G	M
Comments:						
Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition		
		G	M	P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
			G	M	P

ELEMENTS

Description	Installation depth	Condition		
		G	M	P

PUMP HOUSE

Type:		Floor			Flow meter			Pressure gauge	
					Reading				
Condition:		G	M	P	Yes	No		Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	m

COMMENTS:

The windmill is broken & it was at the old game reserve

New number marked: Yes NX

Sample taken: Yes No

Owner: MUNICIPALITY

Inspection carried out by: ZAKHELE

DWAF representative:

Community representative:

Pump operator: NTLENG GINSAN

EC/531/95

THE MINE

30/11/06

- They dug it long time ago during Olden.
- There water inside
- ~~It's~~ Its not going down, its going Vertically down.
- Its like a cave but the water is not running

31. 54998

26. 57260

NB No samples taken

BOREHOLE SURVEY - FORM A: DWAF UPGRADING

BOREHOLE NUMBER: EC/S31/96

MAP REFERENCE: _____

DATE: _____

GENERAL

T.L.C. AREA	VILLAGE	FARM NAME	PROVINCE DISTRICT AND FARM NO	SITE DESCRIPTION Village, school, etc.
		Municipality		

BOREHOLE NUMBER New	BOREHOLE NUMBER Old	ALTITUDE (masl)	G.P.S. COORDINATES Lat.	G.P.S. COORDINATES Lon.
-			31·54060	26·53780

WATER USE: CONSUMER URBAN	WATER USE: CONSUMER NON-URBAN	PURPOSE OF SITE Production, Standby, etc.
U	N	monopump in disrepair

BOREHOLE USAGE

NOT IN USE:	G
IN USE:	U
DESTROYED:	D

Estimated yield (l/s):		Based on:					
Community water supply:	DA	Stock watering:	AS	Irrigation:	AI	Other:	
Pumping period per day (hrs):							

EXISTING EQUIPMENT

	Casing ID	Wall thickness	Casing depth	Borehole depth	Static water level	Comments
OPEN HOLE	mm	mm	m	m	m	

	Type	Depth installed	Condition			Comments
HANDPUMP		m	G	M	P	

		kW	RPM	Pulley diameter	Condition		
MOTORISED	Diesel						
	Electrical				G	M	P
	Comments:						
	Engine No.:						

PUMP HEAD

Type	Pulley diameter	Condition		
		G	M	P

RETICULATION

Reservoir			
Type:		Capacity:	

PIPES

Diameter	Number of pipes	Total length	Condition		
			G	M	P

ELEMENTS

Description	Installation depth	Condition		
		G	M	P

PUMP HOUSE

		Floor			Flow meter		Reading	Pressure gauge	
Type:									
Condition:		G	M	P	Yes	No		Yes	No

NECESSARY ACTIVITIES

Geohydrological activities

Test	Rehabilitation / Re-drill

Engineering activities

Item	Upgrade / Service	Construct
Pumphouse		
Borehole equipment		
Driving unit:		
Diesel		
Electric		
Reservoir		
Pipeline	m	

COMMENTS:

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.....

.....

New number marked: Yes / No

Sample taken: Yes / No

Owner: _____

Inspection carried out by: .....

DWAF representative: .....

Community representative: .....

Pump operator: .....