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20 Pentrich Road, PO Box 3391, Pietermaritzburg, 3200, KwaZulu-Natal, South Africa • S 29°37.934, E 30°22.685  
Tel: +27 (0) 33 346 1444 • Fax: +27 (0) 33 346 1445 • E-mail: talbot@talbot.co.za • http://www.talbot.co.za

2015/01/19

### ANALYTICAL REPORT

OUR REF: uMGUNGUNDLOVU MUNICIPALITY 56/15 (Interim)  
 COMPANY NAME: uMGUNGUNDLOVU MUNICIPALITY  
 CONTACT ADDRESS: P O BOX 3235, PIETERMARITZBURG, 3200  
 CONTACT PERSON: ROYAL NZUZA  
 SAMPLE TYPE: WASTEWATER  
 DATE SUBMITTED: 2015/01/06

Determinand	Units	Method No	DWA relaxed Effluent Standards As per DWA license no. 21067202	Results	
				56/15	57/15
				HOWICK/STW FINAL 06.01.15	HOWICK/STW RAW 06.01.14
Ammonia	mg N/l	64	6	1.77	16.9
Chemical oxygen demand (total)	mg O <sub>2</sub> /l	3	75 after removal of algae	202	1 158
Chloride	mg Cl/l	16	Not specified	39	
Conductivity at 25°C	mS/m	2	70 mS/m above intake to a max of 250 mS/m	46	72
<i>E. coli</i>	colonies per 100ml	31	500	500	
Free chlorine*	mg Cl <sub>2</sub> /l	-	0.25	0.46	
Nitrate/Nitrite	mg N/l	65	15	1.03	
Orthophosphate	mg P/l	66	1	0.147	4.35
Oxygen absorbed	mg O <sub>2</sub> /l	39	Not specified	17	64
pH at 25°C	pH units	1	5.5 – 9.5	7.6	6.6
Suspended solids at 105°C	mg/l	5	25	156	310
Total alkalinity	mg CaCO <sub>3</sub> /l	10	Not specified	97	115

Determinand	Units	Method No	Results	
			58/15	59/15
			HOWICK/STW SECONDARY 1 06.01.15	HOWICK/STW SECONDARY 3 06.01.15
Ammonia	mg N/l	64	0.30	2.03
Nitrate/Nitrite	mg N/l	65	2.34	0.07
Oxygen absorbed	mg O <sub>2</sub> /l	39	2	3
pH at 25°C	pH units	1	7.3	7.2
Total alkalinity	mg CaCO <sub>3</sub> /l	10	89	111

Directors: Dr MMJ-F Talbot, Mr FD Urbaniak-Hedley (British), Mrs VR Talbot  
 Talbot & Talbot (Pty) Ltd - Company Registration Number 2000/021732/07

Determinand	Units	Method No	Results	
			60/15	61/15
			HOWICK/STW ML 1 06.01.15	HOWICK/STW ML 3 06.01.15
pH at 25°C	pH units	1	7.1	7.0
Suspended solids at 105°C	mg/l	5	5 245	3 650

Determinand	Units	Method No	Results	
			62/15	63/15
			HOWICK UPSTREAM 06.01.15	HOWICK DOWNSTREAM 06.01.15
Ammonia	mg N/l	64	0.10	<0.08
Chemical oxygen demand (total)	mg O <sub>2</sub> /l	3	<20	<20
<i>E. coli</i>	colonies per 100ml	31	14 000	980
Nitrate/Nitrite	mg N/l	65	0.41	0.75
Orthophosphate	mg P/l	66	0.005	<0.002
pH at 25°C	pH units	1	7.5	7.7
Suspended solids at 105°C	mg/l	5	<10	<10

Technical Signatory: Chemistry \_\_\_\_\_ Bacteriology \_\_\_\_\_

- This report relates only to the samples tested. This report shall not be reproduced, except in full, without the written approval of **TALBOT LABORATORIES**.
- Tests marked with an asterisk (\*) in this report are not SANAS accredited and are not included in the Schedule of Accreditation for our laboratory.
- Opinions and interpretations expressed herein are outside the scope of SANAS accreditation.
- Results reported in ( ) were analysed after preservation according to the laboratory's preservation procedure.
- Note: Results marked with a double asterisk (\*\*) have been sub-contracted to a peer laboratory.
- Note: Estimates of Uncertainty of Measurement may be obtained from the laboratory if required.

**APPENDIX  
UNCERTAINTY OF MEASUREMENT**

Determinand	Units	Uncertainty of measurement (MoU)	Determinand	Units	Uncertainty of measurement (MoU)
Ammonia	mg/l	± 0.24	Oxygen absorbed	mg/l	± 0.44
Chemical oxygen demand (filtered)	mg/l	± 7.00	pH at 25°C	pH units	± 0.06
Chemical oxygen demand (sett)	mg/l	± 7.00	Potassium	mg/l	± 1.12
Chemical oxygen demand (total)	mg/l	± 7.00	Sodium	mg/l	± 5.08
Chloride	mg/l	± 2.10	Sulphate	mg/l	± 2.90
Conductivity at 25°C	mS/m	± 0.46	Suspended solids at 105°C	mg/l	± 4.08
Dissolved calcium	mg/l	± 1.28	Total iron	mg/l	± 0.03
Dissolved copper	mg/l	± 0.02	Total alkalinity	mg/l	± 3.54
Dissolved iron	mg/l	± 0.03	Total calcium	mg/l	± 1.28
Dissolved lead	mg/l	± 0.04	Total copper	mg/l	± 0.02
Dissolved magnesium	mg/l	± 2.58	Total dissolved solids at 180°C	mg/l	± 3.76
Dissolved manganese	mg/l	± 0.04	Total lead	mg/l	± 0.04
Dissolved nickel	mg/l	± 0.04	Total magnesium	mg/l	± 2.58
Dissolved zinc	mg/l	± 0.03	Total manganese	mg/l	± 0.04
Fluoride	µg/l	± 72.24	Total nickel	mg/l	± 0.04
Hexavalent chromium	mg/l	± 0.02	Total solids at 105°C	mg/l	± 1.74
Nitrate/Nitrite	mg/l	± 0.24	Total zinc	mg/l	± 0.03
Orthophosphate	mg/l	± 0.02	Turbidity	NTU	± 0.34

Estimates of Uncertainty of Measurement for microbiological analyses can be provided on request.