

## ARNOT POWER STATION

Private Bag X 2

Rietkuil

1097

### CHEMICAL ANALYSIS

Date Received : 31 October 2013

Date Reported : 20 November 2013

Quantity Analyzed: 2

Our Ref: APN / 341 - 342 / 1 / 10/13

Order No: 3070155060

Att : Tshidi Mosehle

I341

	Analysis Results mg/l	Raw Water	SANS Standards -241 (2011) Domestic Water
			Standard Limits
<b>Physical requirements</b>			
	Colour as Pt-Co	5	
	Conductivity at 25° C in mS/m	21.8	≤ 170
	Total Dissolved Solids	138	≤ 1 200
	Odour	Inoffensive	Inoffensive
	pH-Value at 25 ° C	7.67	≥ 5.0 to ≤ 9.7
	Taste	Inoffensive	Inoffensive
	Turbidity as N.T.U.	2.30	Operational ≤ 1.0 - Aesthetic ≤ 5.0
	Total Alkalinity as CaCO <sub>3</sub>	55	
<b>Macro Determinants</b>			
	Free & Saline Ammonia NH <sub>3</sub> as N	<0.20	
	Calcium as Ca	12.7	
	Chlorides as Cl	9.97	≤300
	Fluoride as F	<0.20	≤1.5
	Magnesium as Mg	11.6	
	Nitrate & Nitrite as N	0.11	≤ 11
	Potassium as K	3.28	
	Sodium as Na	14.3	≤ 200
	Sulphate as SO <sub>4</sub>	33.7	Acute Health ≤ 500 - Aesthetic ≤ 250
	Zinc as Zn	0.02	≤5

All heavy metal analyses have been performed on filtered samples.

Tests marked with an asterisk \* are not SANAS accredited

These results are related only to the items tested

These results must be read in conjunction with the Uncertainty of Measurement list as provided by Regen Waters Laboratory

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Att : Tshidi Mosehle

I341

	Analysis Results µg/l	Raw Water	SANS Standards -241 (2011) Domestic Water
			Standard Limits
<b>Micro Determinants µg/l</b>			
	Aluminium as Al	40	≤ 300
	Antimony as Sb	<1.0	≤20
	Arsenic as As	<1.0	≤10
	Cadmium as Cd	<1.0	≤3
	Total Chromium as Cr	<1.0	≤50
	Cobalt as Co	<1.0	≤500
	Copper as Cu	2.11	≤2000
	Cyanide as CN *	<70	≤70
	Iron as Fe	160	Chronic Health ≤ 2000 - Aesthetic ≤ 300
	Lead as Pb	2.88	≤10
	Manganese as Mn	<10	Chronic Health ≤ 500 - Aesthetic ≤ 100
	Mercury as Hg	<1.0	≤6
	Nickel as Ni	<1.0	≤70
	Selenium as Se	<1.0	≤10
	Vanadium as V	2.82	≤200
<b>Organics Determinand mg/l</b>			
	Total Organic Carbon*	4.83	≤ 10
<b>Total Trihalomethanes mg/l</b>			
	Phenolic Compounds*	Attached	≤ 0.01

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### QUALITY CONTROL CHECKS

Cation Balance	2.29
Anion Balance	2.09
% Difference	4.6
Measured TDS	138
Calculated TDS	120
Limits > 1.0 - <1.2	1.2
Calcul TDS / E.C. (0.55 - 0.70)	0.5

P.L.G UYS (M.D.)  
Technical Signatory

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Att : Tshidi Mosehle

I342

	Analysis Results mg/l	Potable Water	SANS Standards -241 (2011) Domestic Water
			Standard Limits
<b>Physical requirements</b>			
	Colour as Pt-Co	<5.0	
	Conductivity at 25° C in mS/m	15.2	≤ 170
	Total Dissolved Solids	108	≤ 1 200
	Odour	Inoffensive	Inoffensive
	pH-Value at 25 ° C	8.40	≥ 5.0 to ≤ 9.7
	Taste	Inoffensive	Inoffensive
	Turbidity as N.T.U.	0.59	Operational ≤ 1.0 - Aesthetic ≤ 5.0
	Total Alkalinity as CaCO <sub>3</sub>	59	
<b>Macro Determinants</b>			
	Free & Saline Ammonia NH <sub>3</sub> as N	<0.20	
	Calcium as Ca	11.5	
	Chlorides as Cl	6.53	≤300
	Fluoride as F	<0.20	≤1.5
	Magnesium as Mg	8.55	
	Nitrate & Nitrite as N	0.25	≤ 11
	Potassium as K	1.40	
	Sodium as Na	10.4	≤ 200
	Sulphate as SO <sub>4</sub>	12.3	Acute Health ≤ 500 - Aesthetic ≤ 250
	Zinc as Zn	0.02	≤5

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I342

	Analysis Results µg/l	Potable Water	SANS Standards -241 (2011) Domestic Water
			Standard Limits
<b>Micro Determinants µg/l</b>			
	Aluminium as Al	90	≤ 300
	Antimony as Sb	<1.0	≤20
	Arsenic as As	<1.0	≤10
	Cadmium as Cd	<1.0	≤3
	Total Chromium as Cr	<1.0	≤50
	Cobalt as Co	<1.0	≤500
	Copper as Cu	1.39	≤2000
	Cyanide as CN *	<70	≤70
	Iron as Fe	10	Chronic Health ≤ 2000 - Aesthetic ≤ 300
	Lead as Pb	2.87	≤10
	Manganese as Mn	<10	Chronic Health ≤ 500 - Aesthetic ≤ 100
	Mercury as Hg	<1.0	≤6
	Nickel as Ni	<1.0	≤70
	Selenium as Se	<1.0	≤10
	Vanadium as V	2.60	≤200
<b>Organics Determinand mg/l</b>			
	Total Organic Carbon*	1.07	≤ 10
<b>Total Trihalomethanes mg/l</b>			
	Phenolic Compounds*	Attached	≤ 0.01

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### QUALITY CONTROL CHECKS

Cation Balance	1.77
Anion Balance	1.64
% Difference	3.8
Measured TDS	108
Calculated TDS	98
Limits > 1.0 - <1.2	1.1
Calcul TDS / E.C. (0.55 - 0.70)	0.6

P.L.G UYS (M.D.)  
Technical Signatory