

AGENT: Eco Industries  
 CLIENT : ABC Mining Ltd.  
 SAMPLE : WATER SAMPLE  
 BATCH No: 2016-132

ANALYTICAL No:  
 DATE RECEIVED: 23-Oct-16  
 DATE REPORTED: 24-Oct-16

RESULTS: PARAMETER	DESIRED LEVEL	LEVEL FOUND	INTERPRETATION	kg/ha applied in 25mm water	COMMENTS (relative to impact on soil/plant)
Water Characteristics:					* pH is only reliable within 15 minutes of sampling.
pH(water)^	6.5 - 8.5	7.9	High		* Moderately alkaline
Total Alkalinity CaCO <sub>3</sub> m	<150	48	Moderate		* Unsuitable for some plants
Bicarbonate" :O <sub>3</sub> mg/L	< 400	59	Very Low	34	* kg lime equivalent applied/Ha/25mm water
Carbonate" CO <sub>3</sub> mg	-	0	Below LOD		* Carbonates are not present if pH <8.3
Calcium" mg/L	< 500	12.0	Very Low	3	* Allowable level for irrigation
Magnesium" mg/L	< 125	7.4	Very Low	2	* Suitable level for irrigation
Hardness mg/L	< 150	61	Low		* OK for domestic use
Saturation Index LSI	-0.5_+0.5	-1.0	High Risk		* Likely corrosive
Sodium^ mg/L	< 180	53	Low	14	* Suitable level for irrigation
Chloride* mg/L	< 350	62	Low	16	* OK for overhead sprinklers in sensitive crops .
EC∞@ μS/cm	< 280	320	Moderate		* Require medium salt tolerant plants
SAR~	< 5.5	3.0	Low		*
Impact on Livestock:					SAR will not affect soil permeability at this low level.
TDS or 'Salts" ^ mg/L	< 175	227	Moderate		* Suitable for humans & livestock of all ages
Macro Elements:					
Nitrate^ mg NO <sub>3</sub> /L	< 50	<5	Below LOD		
Phosphorus mg/L	< 1	<0.05	Below LOD		
Sulphate^ mg SO <sub>4</sub> /L	< 250	30.4	Low	8	* Suitable level for irrigation
Potassium" mg/L	< 20	3.1	Very Low		
Trace Elements:					<b>References:</b>
Aluminium* mg/L	< 5	<0.05	Below LOD		* Australian Water Quality Guidelines, ANZECC, 1992.
Iron^ mg/L	< 0.3	<0.05	Below LOD		^ Australian Drinking Water Guidelines, 1994
Cobalt* mg/L	< 0.01	<0.005	Below LOD		" Brookside Laboratories Drinking Water for Livestock Guidelines 1972
Copper* mg/L	< 0.1	0.011	Very Low		` WHO 2009 Heavy Metals in drinking water
Manganese^ mg/L	< 0.1	<0.005	Below LOD		* & EPA USA 1994
Zinc* mg/L	2	<0.01	Below LOD		
Boron* mg/L	0.5	<0.05	Extremely High		
Molybdenum* mg/L	0.01	<0.005	Below LOD		<b>Legend:</b>
Heavy Metals:					∞ Electrical Conductivity in μS/cm = dS/m x1000 = mS/mx10
Antimony ` mg/L	20				LOD = Level of Detection
Arsenic ` mg/L	< 10				~ Sodium Absorption Ratio = Na/√(Ca+Mg)*0.5 in m.e./L
Barium ` mg/L	700				TDS = Total Dissolved Salts
Beryllium* mg/L	< 100				NA = Not Applicable or Not Tested
Boron* mg/L	< 500				'@ EC: 1000 μS/cm = 1mS/cm = 1 dS/m
Cadmium* mg/L	< 10				
Chromium* mg/L	1000				<b>Methods of Analysis used by APAL:</b>
Cobalt* mg/L	10				pH: smartSCAN pH meter
Copper* mg/L	<100				Total Alkalinity & CO <sub>3</sub> : calculation from pH & HCO <sub>3</sub>
Lead* mg/L	200				Saturation Index: calculation from pH, CO <sub>3</sub> , HCO <sub>3</sub>
Manganese* mg/L	<100				EC & TDS: Cyberscan conductivity meter
Mercury* mg/L	2				SAR & Hardness: calculation from ICP-OES analysis
Molybdenum* mg/L	<10				HCO <sub>3</sub> : H <sub>2</sub> SO <sub>4</sub> titration + Cyberscan conductivity meter
Nickel* mg/L	200				Cl: AgNO <sub>3</sub> & AgCl electrode
Selenium* mg/L	20				NITRATE: reflectrometry (MerkRQ Flex10)
Tin ` mg/L	NA				MACRO & TRACE ELEMENTS: ICP-OES analysis
Vanadium* mg/L	NA				<b>Heavy Metal analysis performed by Eurofins mgt</b>
Zinc* mg/L	2000				
Cyanide mg/L	NA				
Fluoride mg/L	NA				