Australian Perry Agricultural Laboratory

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WATER ANALYSIS RESULTS

AGENT:	ABC CONSULTING	ANALYTICAL No:	LFW 001
CLIENT :	ABC FARMS	DATE RECEIVED:	23-Jun-08
SAMPLE :	WATER	DATE REPORTED:	27-Jun-08
BATCH No:	2008-52	Reporting Consultant:	Dr Colin Trengove

RESULTS: NUTRIENT		DESIRED LEVEL	FOUND		Kg/Ha per 25mm water applied	COMMENTS
Hardness	mg/L	<500	590	Extremely High		
pH(water)^		6.5 - 8.5	7.1	Moderate		
EC∞	µS/cm	< 280	1570	High		
TDS+ or 'Salts" ^	mg/L	< 500	1068	High	274	Require salt tolerance & good drainage
SAR~		< 5.5	3.8	Low	1	SAR will not affect soil permeability at this low
Aluminium	mg/L	< 5	0.01	Below LOD		
Cobalt	mg/L	< 0.01	0.00	Below LOD		
Copper"	mg/L	< 0.1	0.01	Below LOD		
Iron^	mg/L	< 0.3	0.03	Very Low		
Manganese^	mg/L	< 0.1	0.00	Below LOD		
Zinc"	mg/L	2	0.01	Very Low		Desire <0.2 on acidic soils or <2.0 on neutral
Boron"	mg/L	< 2	0.04	Low		or alkaline soils.
Calcium"	mg/L	< 500	165	Moderate	42	
Potassium"	mg/L	< 20	4.1	Low	1.0	
Magnesium"	mg/L	< 125	43	Low	11	Suitable for irrigation
Sodium^	mg/L	< 180	209	High	54	Unsuitable for sustained irrigation
Molybdenum	mg/L	< 0.01	0.00	Below LOD		
Phosphorus	mg/L	< 1	0.03	Very Low		
Sulphate^	mg/L	< 250	116	Moderate	30	Allowable level for irrigation
Chloride#	mg/L	< 350	227	Moderate	58	OK for under-tree sprinklers in moderately
Nitrate^	mg/L	< 50	<5.0	Below LOD		sensitive crops (grapes, potato, tomato).
Bicarbonate"	mg/L	400	1.6	Low		
Arsenic	mg/L	< 0.01				
Barium	mg/L	< 0.01				
Berylium	mg/L	< 0.01				
Cadmium	mg/L	< 0.010				
Chromium	mg/L	< 1				
Fluoride"	mg/L	< 1				
Lead	mg/L	< 0.2				
Lithium	mg/L	< 2.5				
Nickel	mg/L	< 0.2				
Vanadium	mg/L	< 0.01				

THESE DESIRED LEVELS ARE BASED ON DESIRED WATER QUALITY GUIDELINES#

 # Australian Water Quality Guidelines, ANZECC, 1992.

** Level Of Detection or test sensitivity*

^ Australian Drinking Water Guidelines, 1994

+ Total Dissolved Salts

∞ Electrical Conductivity in µS/cm = dS/mx1000 = mS/mx10

*~ Sodium Absorption Ratio = Na/√(Ca+Mg)*0.5 in m.e./L*

" Brookside Laboratories Drinking Water for Livestock Guidelines 1972

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WATER ANALYSIS REPORT

CLIENT :	ABC FARMS	**DATE REPORTED:**	27-Jun-08
SAMPLE :	WATER	**Reporting Consultant:**	Dr Colin Trengove

INTERPRETIVE COMMENTS:

* *Water is extremely hard as it contains an excess in total of calcium, magnesium & iron. Severe scaling may occur & it should not be used for domestic purposes.*
* *Low SAR indicates the sodium to calcium + magnesium index is suitable for very sensitive crops such as deciduous fruits, nuts, citrus & avocado. However, may still see leaf tip burn or leaf scorch.*
* *Specific plant species which are suited to this level of salinity (TDS) include:*

  Pastures & fodders: Cocksfoot, Perennial ryegrass + more tolerant species: Oats (hay), Wheat (hay), Rye (hay), Lucerne, Sudan grass, Paspalum dilatatum, Strawberry clover, Sweet clovers, Millet, Wimmera ryegrass, Rhodes grass, Couch grass, Barley, Birdsfoot trefoil.

  Fruits: Mulberry, Apple, Pear, Rasberry, Quince + more tolerant species including Olive, Fig, Pomegranate, Cantaloupe.

  Vegetables: Cauliflower, Bell pepper, Cabbage, Broccoli, Tomato, Broad beans, Field beans, Sweet potato, Artichoke + more tolerant species including Spinach, Asparagus, Kale, Garden beets, Gherkins.

  Ornamentals: Geranium, Gladiolus, Zinnia, Rose, Aster, Poinsettia, Musa. Podocarpus + numerous more tolerant species.
* *Sodium: Rated S2 - Medium-sodium water can be used on coarse-textured (sandy) or organic soils that take water well.*
* *EC Salinity Class 3 - High-salinity water cannot be used on soils with restricted drainage. Suitable for use on medium and high salt tolerant crops only. Even with adequate drainage, special management for salinity control may be required.*
* *The moderate pH reflects a modest total cation content ie sodium, calcium, magnesium and potassium.*
* *EC is high due to high combined content of sodium and chloride.*
* *Sulphates are moderate. Remaining minerals are either low or below the level of detection.*

CONCLUSIONS:

* *The high TDS indicates that this water is generally only suitable for irrigation on well drained soils with salt-tolerant plants - refer interpretive comments above.*
* *The EC indicates that this water is suitable for moderately salt-tolerant species such as cocksfoot, strawberry clover, ryegrass, cereals and paspalum, but not sub, red or white clover.*
* *The TDS indicates that this water is suitable for consumption by sheep & cattle of all ages. Note: young stock perform best where the TDS is less than 3,000.*
* *Apart from the relatively high sodium content, no other minerals in this water are of concern.*