

MEMORANDUM

Lake Disappointment: Riparian Zone Assessment Draft

To: Daniel Tenardi	From: Ryan Lawrence	Date: 22 July 2016
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Riparian Zone Tecticornia

Objective of Investigation

To investigate the relationship between tecticornia and depth to ground water in the riparian zone and lake sediments.

Methodology

- Bores to measure groundwater levels at quarterly intervals were installed during May 2016 (Figures 1 and 2).
 At the time Lake Disappointment was flooded with a standing water level of up to 0.10m.
- Tecticornia has a shallow root system extending to a maximum depth of 0.3m below ground level (Figure 3).
- Bores were installed to a depth of 1.0m below ground level. The soil profile becomes less clay dominated with increasing sand content away from the lake (Figures 4 to 7 and Table 1).



Figure 1: Bore Locations and Indicative Soil Profile.

Unit 2, 464 Murray Street Perth WA 6000 Tel: +61 8 9382 8286 email: <u>info@pendragonenvironmental.com</u> www.pendragonenvironmental.com





Figure 2: Location of Bores across the Riparian Zone.



Figure 3: Depth of Roots.





Figure 4: Soil Profile at Bore F.



Figure 5: Soil Profile at Bore C.





Figure 6: Soil Profile at Bore E.



Figure 7: Soil Profile at Bore G.



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Table 1: Bore Profile Descriptions.

Fine Moisten Fingers - dab in clay and silt. Silt feels smooth, not sticky, dries powdery and dusts off easily. Clay becomes sticky, dries flaky and is hard to remove when dry.

soil has a narrow range of grain sizes, poorly sorted has a wide range of grain siz



Bore	Distance from lake	Groundwater Depth (m below ground level)				
DOIG	(m)	May 2016	June 2016			
A	0	0.26	0.21			
В	5	0.31	0.32			
С	10	0.49	0.49			
D	20	0.47	0.46			
E	35	0.46	0.46			
F	55	0.78	0.78			
G	65	-	-			

Table 2: Ground Water Levels.

Currently, the groundwater level remains fairly constant; it should be noted that the surface of the lake remains fairly wet due to frequent rain.

It is recommended:

- Groundwater levels are to be monitored at quarterly intervals.
- Samples of groundwater should be obtained at the end of August and bi-annually afterwards.
- Should further disturbances be necessary within the riparian zone, then the opportunity should be taken to
 undertaken further intrusive excavations or trenching to ascertain changes in soil properties throughout the
 perimeter of the lake and riparian zone.
- The bores should be surveyed accurately (x, y and z) to calculate the groundwater level gradient across the riparian zone.