

Dunloe Sands Quarry

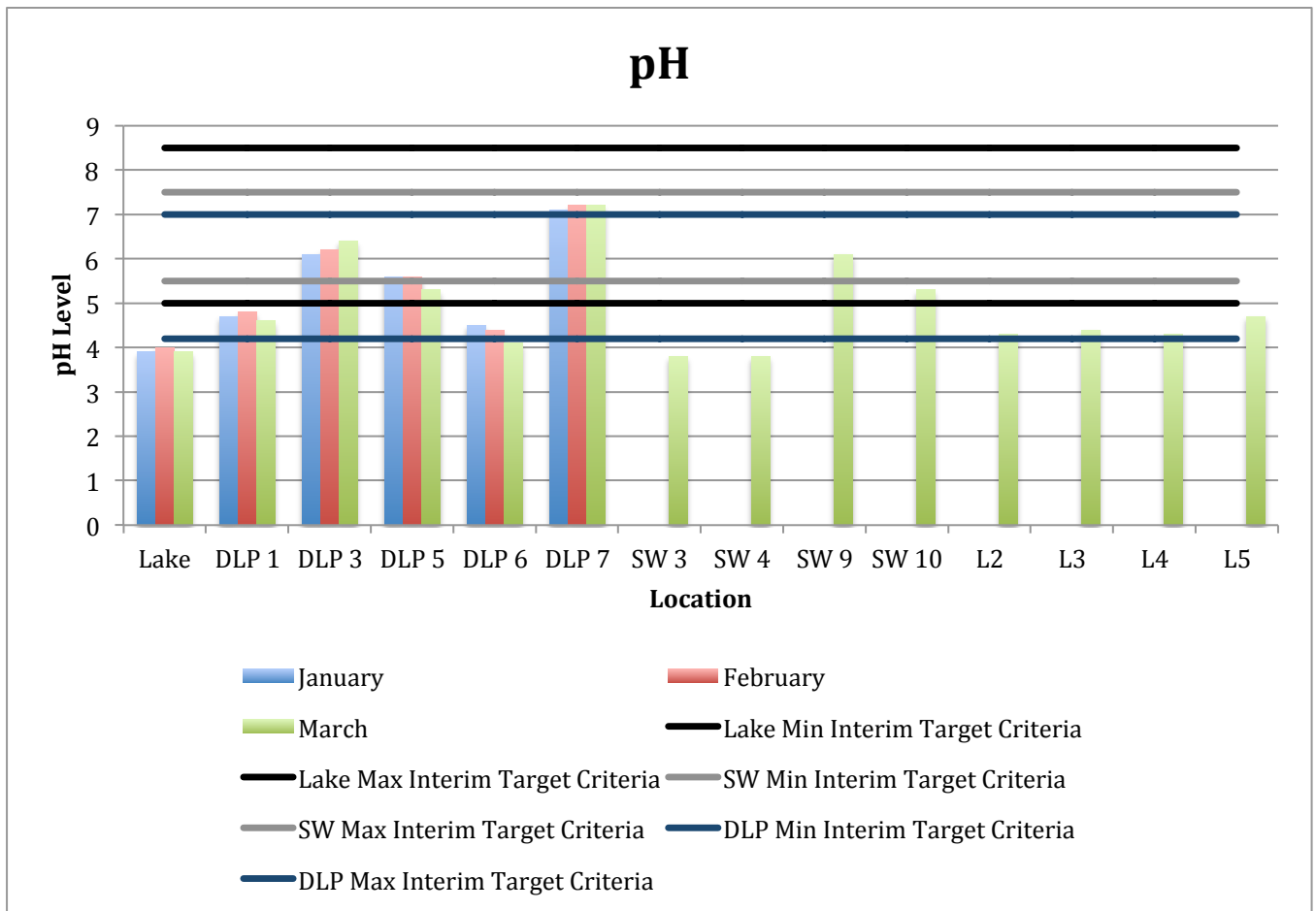
January 2016 – March 2016
3 Month Monitoring Report

1.0 - Lake, Groundwater and Surface Water (Surrounding Environment) Monitoring Results

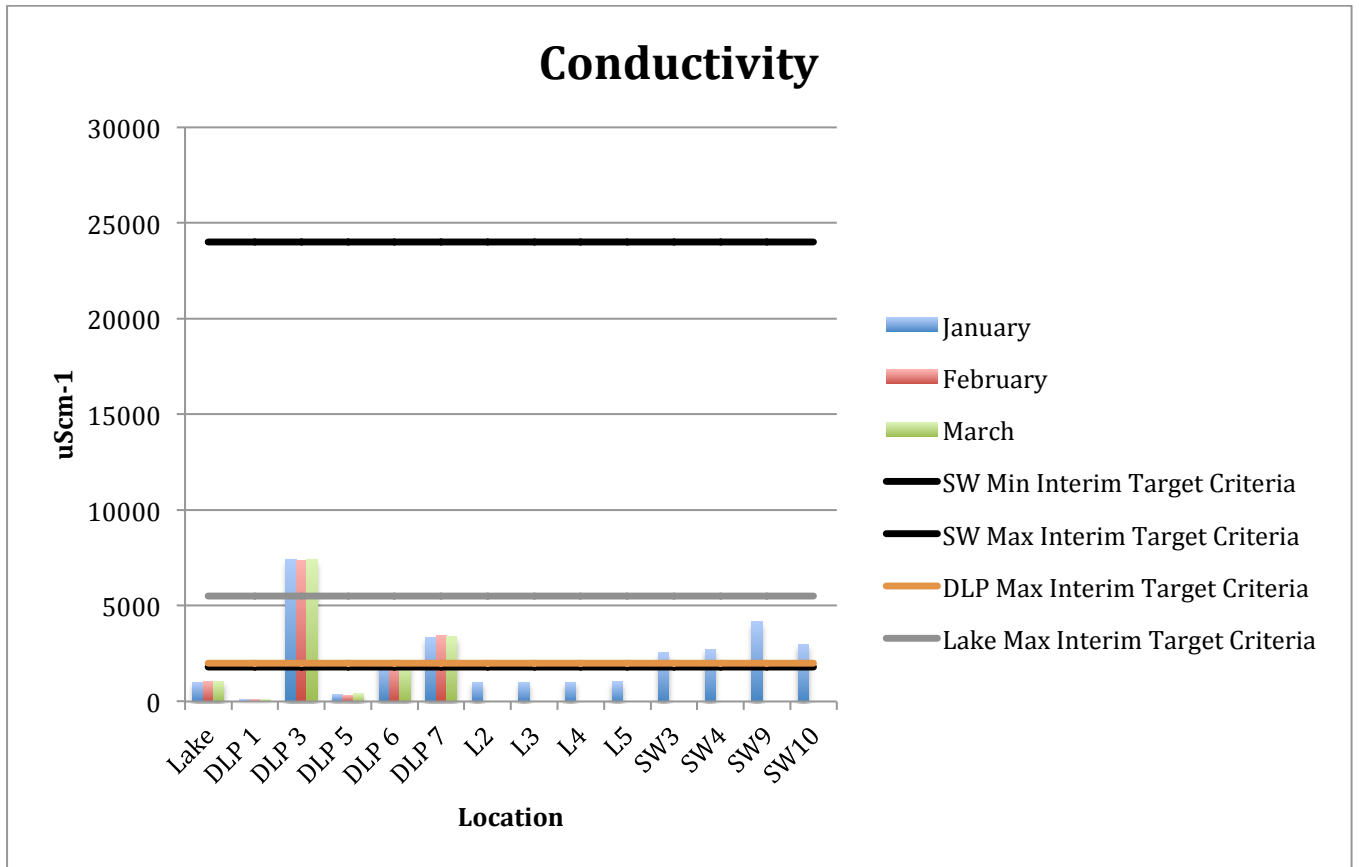
Table 1: Lake Algae Sampling

	25/01/16	08/02/16	24/02/16	10/03/16	24/03/16
Cyanophyta (cells/mL)	-	-	-	-	-
Chlorophyta (cells/mL)	34000	-	3700	1575	7600

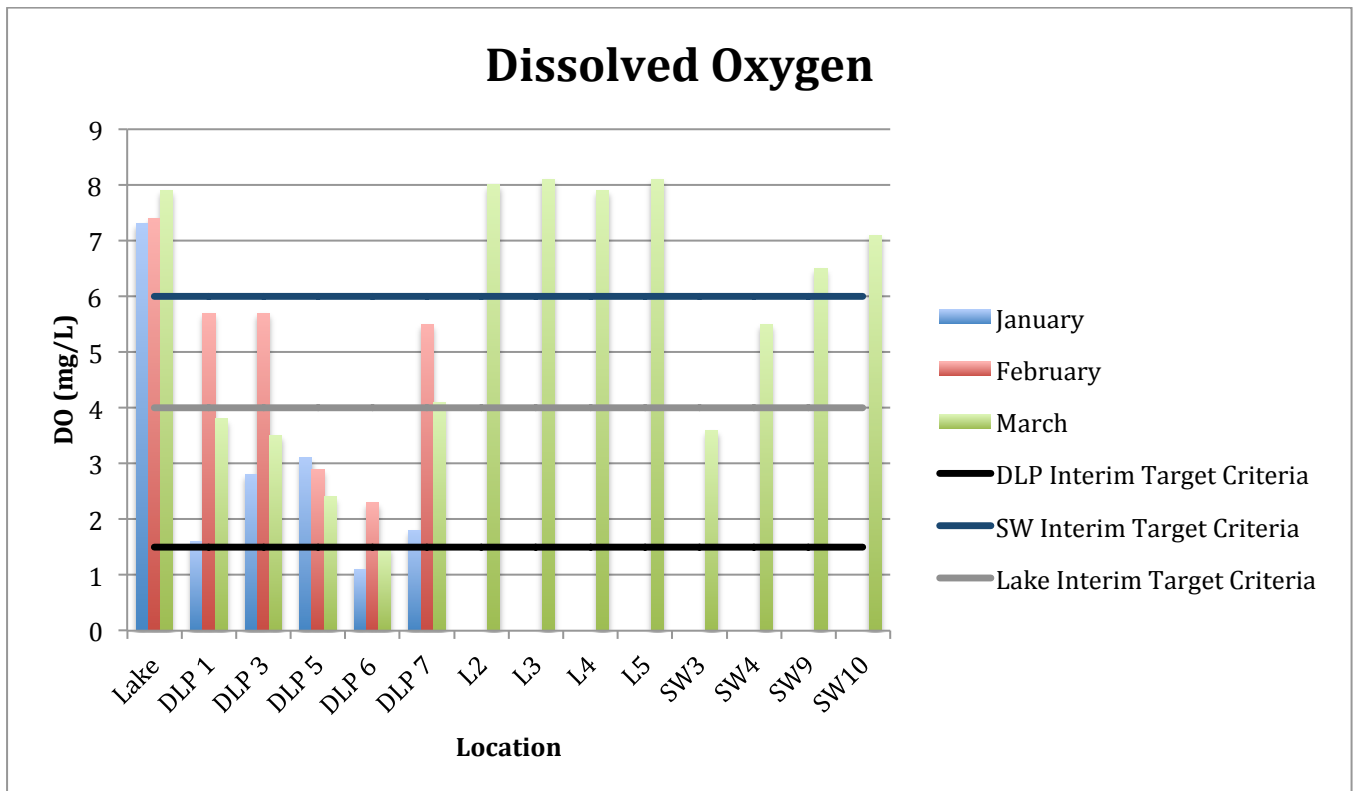
Graph 1: pH Sampling



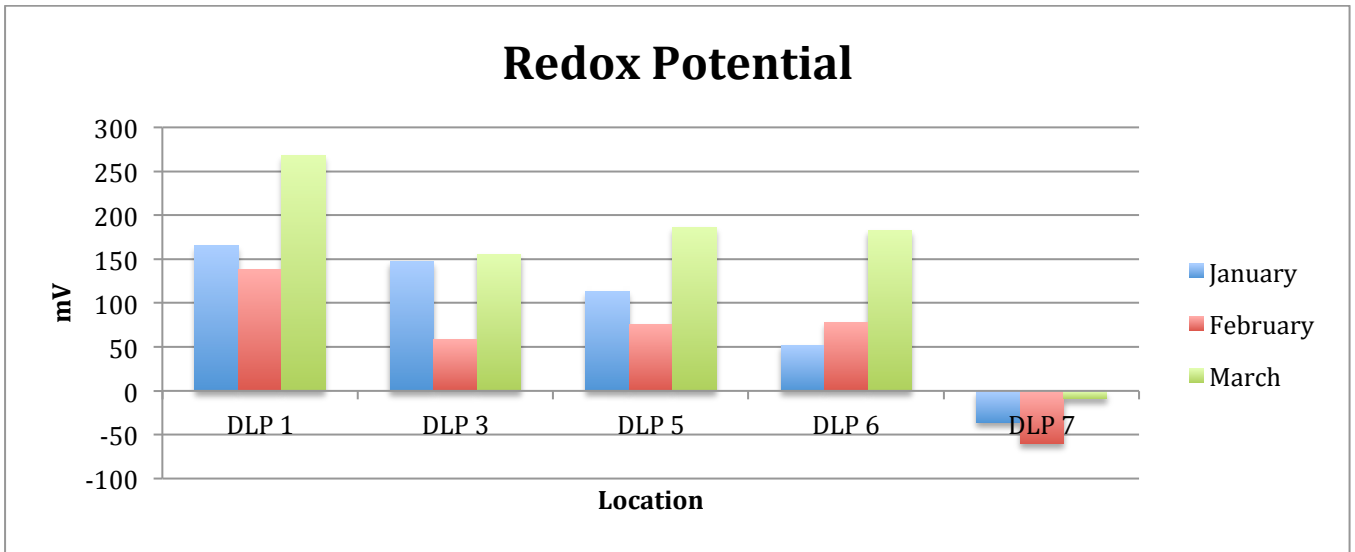
Graph 2: Electrical Conductivity



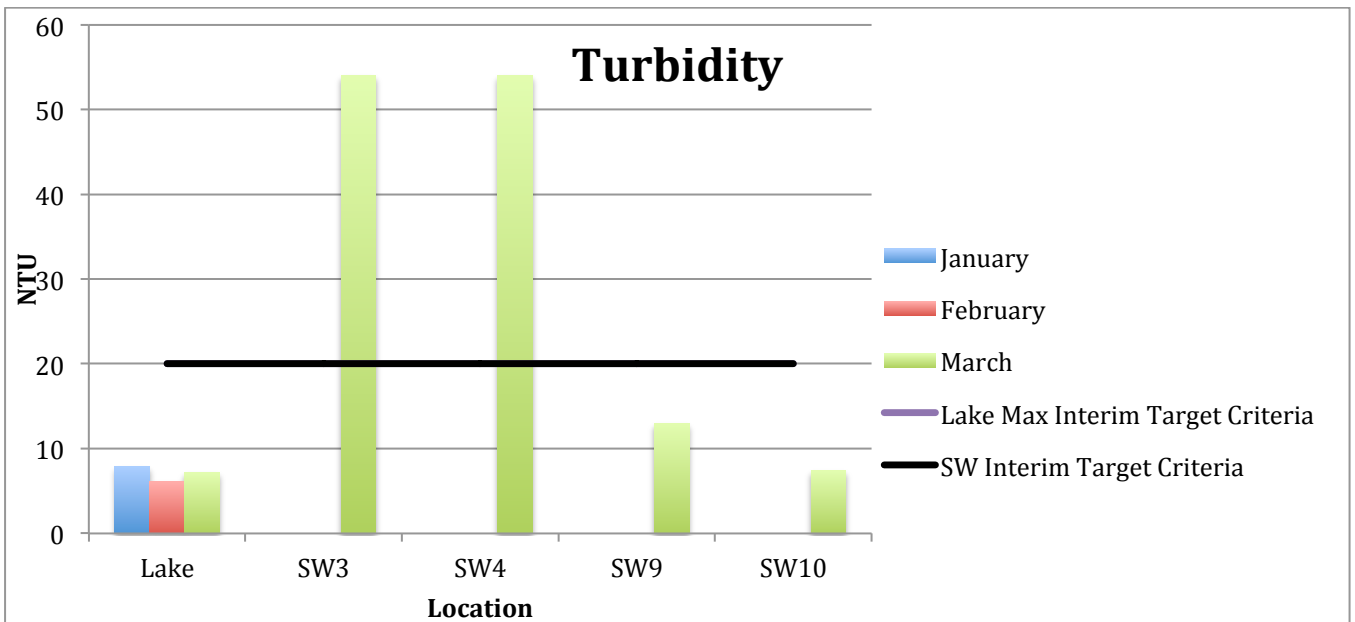
Graph 3: Dissolved Oxygen



Graph 4: Redox Potential



Graph 5: Turbidity



Graph 6: Suspended Solids

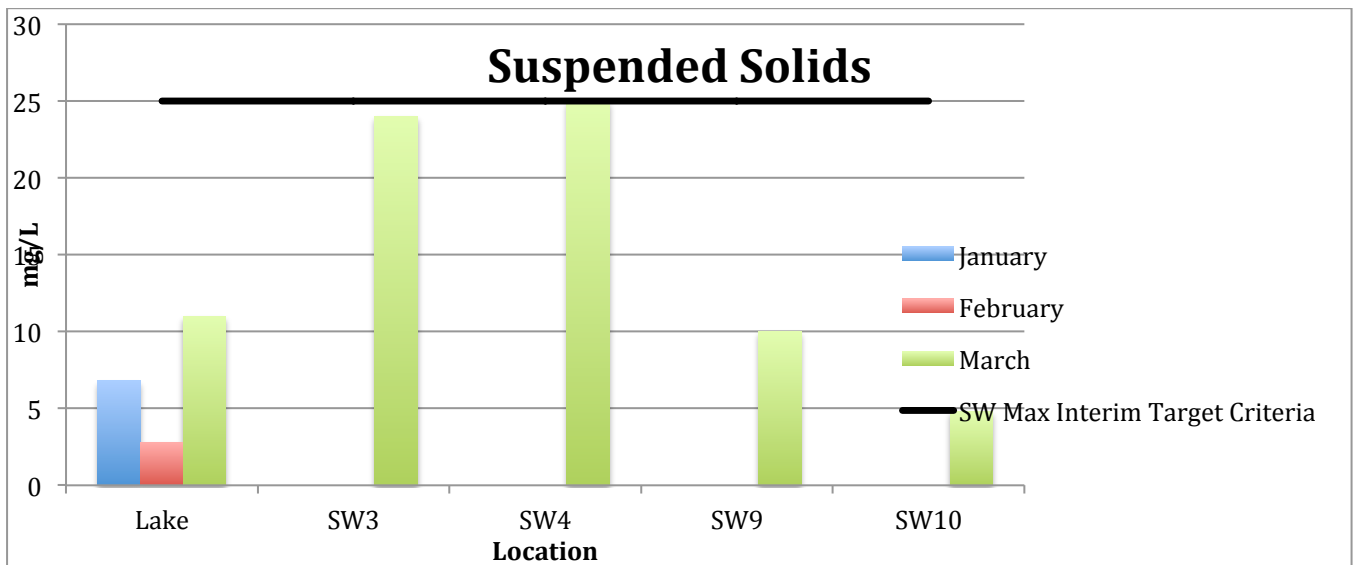
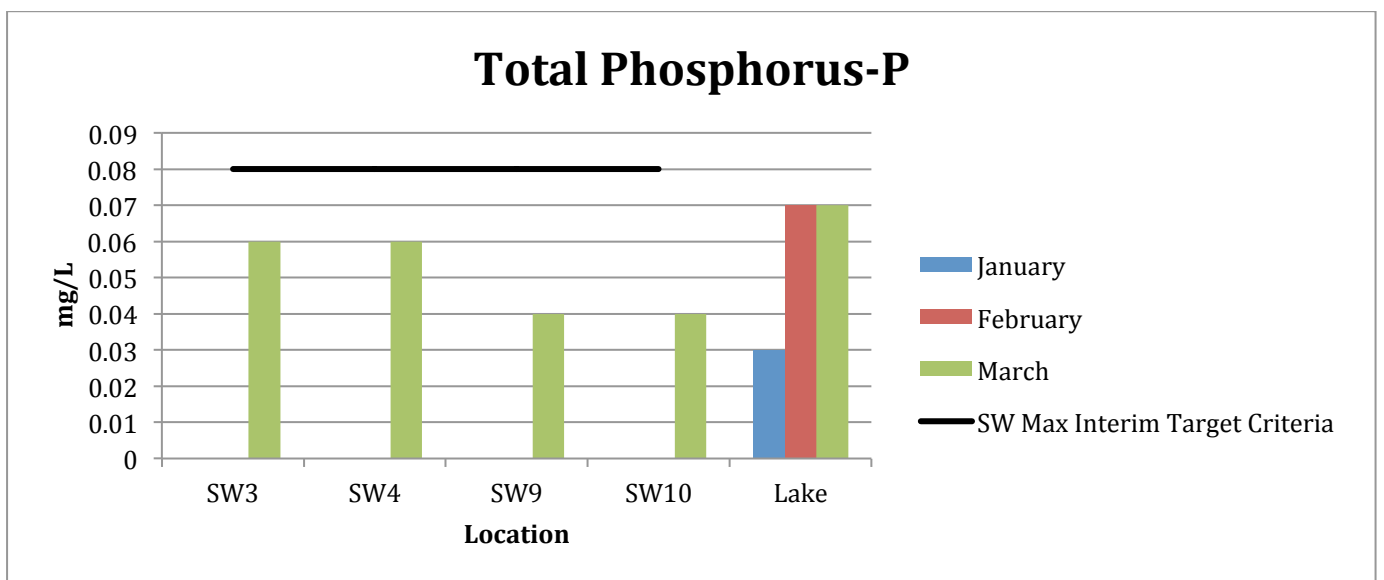


Table 2: Lake Oil and Grease Sampling

Oil and Grease	January 2016	February 2016	March 2016
Lake (mg/L)	6	<2	<2
Interim Target Criteria (mg/L)	10	10	10

Graph 7: Total Phosphorus-P



Graph 8: Total-N

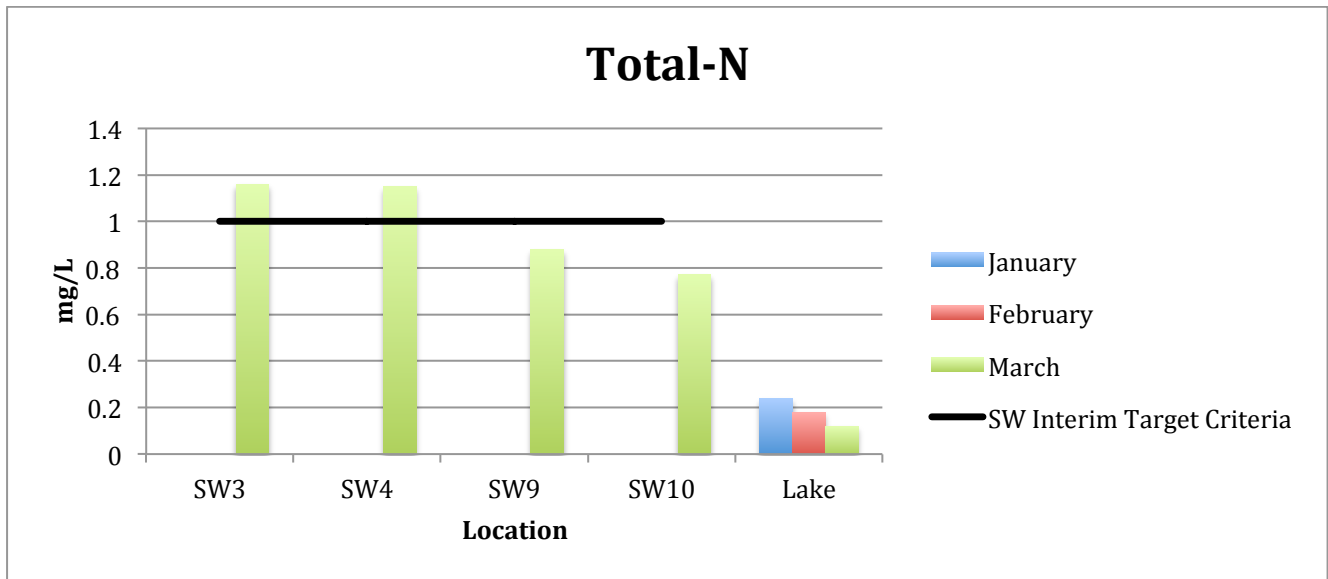


Table 3: Magnesium Chemical Analysis

	Lake	DLP 1	DLP 3	DLP 5	DLP 6	DLP 7
March 2016 (mg/L)	14	0.2	117	3.9	24	38
Sample Interim Target (mg/L)	40	40	40	40	40	40

Table 4: Sodium Chemical Analysis

	Lake	DLP 1	DLP 3	DLP 5	DLP 6	DLP 7
March 2016 (mg/L)	43	10	1280	42	18	637
Sample Interim Target (mg/L)	280	280	280	280	280	280

Table 5: Potassium Chemical Analysis

	Lake	DLP 1	DLP 3	DLP 5	DLP 6	DLP 7
March 2016 (mg/L)	9	<5	44	<5	10	26
Sample Interim Target (mg/L)	17.5	17.5	17.5	17.5	17.5	17.5

Table 6: Sulfur as Sulfate Chemical Analysis

	Lake	DLP 1	DLP 3	DLP 5	DLP 6	DLP 7
March 2016 (mg/L)	382	9.4	176	13	1380	260
Sample Interim Target (mg/L)	175	175	175	175	175	175

Table 7: Aluminium Chemical Analysis

	Lake	DLP 1	DLP 3	DLP 5	DLP 6	DLP 7
March 2016 (mg/L)	10.9	0.27	0.07	0.15	94.1	0.36
Sample Interim Target (mg/L)	0.75	0.75	0.75	0.75	0.75	0.75

Table 8: Arsenic Chemical Analysis

	Lake	DLP 1	DLP 3	DLP 5	DLP 6	DLP 7
March 2016 (mg/L)	0.002	0.001	0.001	<0.001	0.026	0.001
Sample Interim Target (mg/L)	<0.005	0.005	0.005	0.005	0.005	0.005

Table 9: Iron Chemical Analysis

	Lake	DLP 1	DLP 3	DLP 5	DLP 6	DLP 7
March 2016 (mg/L)	1.24	4.22	2.18	4.60	428	1.77
Sample Interim Target (ug/L)	<7.5	7.5	7.5	7.5	7.5	7.5

Table 10: Manganese Chemical Analysis

	Lake	DLP 1	DLP 3	DLP 5	DLP 6	DLP 7
March 2016 (mg/L)	0.881	0.007	0.625	0.022	3.75	0.084
Sample Interim Target (mg/L)	0.15	0.15	0.15	0.15	0.15	0.15

Table 11: Ammonia Chemical Analysis

	Lake	DLP 1	DLP 3	DLP 5	DLP 6	DLP 7
February 2016 (mg/L)	0.05	0.1	0.53	0.22	10.7	0.05
Sample Interim Target (mg/L)	20	20	20	20	20	20

Table 12: Chlorophyll 'a' Chemical Analysis

	Lake
February 2016 (ug/L)	2
Sample Interim Target (ug/L)	2-10

2.0 – Air Quality Monitoring

Table 13: Deposited Dust Chemical Analysis

Units (g/m²/mth)	January	February	March
D1	0.3	0.4	0.2
D2	0.4	0.6	4.7
D3	0.5	0.5	0.3
D4	0.6	0.5	0.5

3.0 – Vegetation Monitoring

3.1 – Rehabilitation Monitoring Forms



FORM A: ROUTINE QUARTERLY REHABILITATION MONITORING SHEET		
<p>General Management</p> <p>Has there been a fire within the last quarter? <u>NO</u></p> <p>Do the bushfire trails or adjacent pasture areas require slashing or maintenance to reduce fire risk? <u>NO</u></p> <p>Is there evidence of rubbish dumping within the rehabilitation zones? <u>NO</u></p> <p>Is there evidence of plant theft within the rehabilitation zone? <u>NO</u></p> <p>Does it appear that the rehabilitation zone has been utilized for stockpiling, vehicle parking, building waste dumping, cattle grazing or person traffic? <u>NO</u></p> <p>If yes, acknowledge below what works were undertaken to rectify/restore and the date _____</p>	<p>Weeds</p> <p>Have any areas of weeds re-established within the rehabilitation zones during the last quarter? <u>NO</u></p> <p>What species? _____</p> <p>What management was undertaken to eradicate these weeds? _____</p> <p>If management was undertaken acknowledge that such was performed in accordance with the approved rehabilitation management plan. _____</p>	<p>Vegetation regeneration</p> <p>Natural regeneration is occurring in (record height range estimate):</p> <ul style="list-style-type: none"> - Tree species <u>30cm - 5m</u> - Shrub species <u>30cm - 2m</u> - ground covers <u>1m</u> <p>What are the dominant species within each layer?</p> <ul style="list-style-type: none"> - Tree <u>Melanca quinquevittata</u> - Shrub <u>Howea acutifolia</u> - ground covers _____ <p>Have you noticed any new native plant species since the last monthly inspection? <u>YES</u></p> <p>If yes name the species or take a photograph <u>Acronychia imrayata</u></p> <p>Acknowledge that the required routine photographs have been taken within the rehabilitation zones</p>
<p>Biodiversity</p> <p>Have you spotted native fauna within the rehabilitation zone during inspection? <u>YES</u></p> <p>If yes, what types?</p> <p>Koala _____</p> <p>Kangaroo/wallaby <u>YES</u></p> <p>Possums/gliders _____</p> <p>Small mammal (i.e. bandicoot, echidna) <u>YES</u></p> <p>Reptiles (i.e. snakes/lizards) <u>YES</u></p> <p>Birds of prey <u>YES</u></p> <p>Large nectar feeding birds (i.e. lorikeets, parrots, cockatoos) <u>NO</u></p> <p>Small tree and ground birds (i.e. finches, fairy wrens, treecreepers) <u>YES</u></p> <p>Glossy Black Cockatoos <u>NO</u></p> <p>Other _____</p>	<p>Modifications</p> <p>Have there been any structural additions (eg. new tracks, buildings) to the rehabilitation zones since the last visit? <u>NO</u></p> <p>What actions were undertaken to remove any illegal modifications? _____</p> <p>Condition of fences</p> <ul style="list-style-type: none"> - <u>Good</u> - Need minor repair - Poor (need replacement) 	<p>Are any of the following performance criteria exceeded (refer Section 4.5 below)?</p> <p>Declared Weeds? <u>NO</u></p> <p>Extent of other Weeds? <u>NO</u></p> <p>Survival Rate of Plants? <u>Good</u></p> <p>Condition of Plants? <u>Good</u></p> <p>Canopy Coverage? <u>OK</u></p> <p>Tree, Small Tree & Shrub Diversity? <u>Good</u></p> <p>Groundcover Coverage? <u>OK</u></p> <p>General Coverage/Success? <u>OK</u></p> <p>If yes, what corrective action was performed (i.e. plant showed drought stress and so watering was undertaken, plant was dead so a replacement plant was pocket planted, canopy plant coverage was not achieved so relevant pioneer plants were pocket planted).</p>



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3.2 – Rehabilitation Visual Monitoring



Image 1: Zone 1



Image 2: Zone 1



Image 3: Zone 1



Image 4: Zone 1



Image 5: Zone 2



Image 6: Zone 2



Map 1: Photograph Locations