Deloitte & Touche

Faro Mine Complex
Anvil Range Pit Lakes
2007 Evaluation of In-Situ Treatment

2007/08 Task 39 - FINAL

Prepared for:

Deloitte and Touche Inc.

On behalf of

Faro Mine Closure Planning Office

Prepared by:

SRK Consulting
Engineers and Scientists

Project Reference Number
SRK 1CD003.097

May 2008

Faro Mine Complex
Anvil Range Pit Lakes
2007 Evaluation of In-Situ Treatment

2007/08 Task 39 - FINAL

Deloitte and Touche Inc.

Interim Receiver of Anvil Range Mining Corporation
Suite 1900, 79 Wellington Street West
Toronto, ON M5K 1B9

On behalf of

Faro Mine Closure Planning Office

SRK Consulting (Canada) Inc.
Suite 2200, 1066 West Hastings Street
Vancouver, B.C. V6E 3X2

Tel: 604.681.4196 Fax: 604.687.5532
E-mail: vancouver@srk.com Web site: **www.srk.com**

SRK Project Number 1CD003.097

May 2008

Executive Summary

Investigations undertaken in 2004 concluded that biological treatment should be continued in the Grum Pit and tested in the Faro Pit. The 2005 investigations in the Grum Pit concluded that biological treatment should be continued there. However, the 2005 fertilization program in the Faro Pit interfered with the performance of the Faro Mill water treatment system, and biological treatment in the Faro Pit was discontinued. In 2007, continued water quality and physical limnological monitoring were recommended in the Faro and Vangorda Pits. Additionally, consistent with 2006, the rate of fertilization was reduced to ensure that nutrient concentrations are essentially depleted at the end of the season. This report provides presents and discusses the results from the 2007 biological treatment program in the Grum Pit and the monitoring of the Faro and Vangorda Pits.

The monitoring results indicated that nutrient concentrations of phosphate species have essentially been depleted from the surface water in the Faro Pit. An assessment of the annual contaminant loadings indicate that the annual zinc loading to the Faro Pit is about 20 tonnes per year, of which about 5 tonnes originates from the Zone II Pit. The sulphate loading is about 735 tonnes with about 129 tonnes originating from the Zone II Pit.

The Grum Pit water responded well again to fertilization and achieved excellent algal growth. Revised mass balance calculations for the surface layer indicated that 3000 to 4000 kg of zinc enters the pit lake annually. Initial estimates placed the zinc loading to the Grum Pit lake at only 350 kg per annum. The biological removal effects a zinc reduction of about 4,500 kg per annum. It is because the total loadings to the pit lake had been underestimated that the biological treatment did not appear to perform as predicted. Nevertheless, the most recent results suggest that the treatment rate is starting to overtake the loading and that continued biological treatment will significantly improve the water quality in the pit lake over the next two to three years. The reason that the loadings to the pit lake have been underestimated appears to have been to due to inadequately estimating the loading that would be released from the talus as it is inundated due to rises in the water level. The 2007 results further demonstrated that the residual level of phosphate and other nutrients in the water column can be controlled effectively by ceasing fertilizer applications in mid to late summer.

Monitoring in the Vangorda Pit indicates increasing zinc concentrations at depth, suggesting that zinc is being dissolved from treatment sludges that were previously deposited in the pit. This explanation is supported by pH values of less than 6 observed at depth.

It is recommended that monitoring of both the Faro and Vangorda Pits be continued in 2008. Mass balance calculations should be carried forward to verify the current estimates of metal loadings to each pit.

Based on the zinc removal rates observed for the Grum Pit and the level of control established in 2007, it is recommended that the fertilization program be continued in 2008.

* * *

Report Title:	Anvil Range Pit Lakes 2007 Evaluation of In-Situ Treatment
Prepared by:	SRK Consulting Project 1CD003.097
Date Submitted:	May 2008
Supersedes:	Supplemental to SRK Consulting Project 1CD003.088
Number of Pages:	31/ 73 (Body / Total report)
Number of appendices:	2

Table of Contents

Executive Summary i

1 Introduction 1

2 Fertilization and Monitoring Program 2

2.1 Grum Pit 2

2.2 Vangorda and Faro Pits 2

3 Results and Discussion 4

3.1 Faro Pit 4

3.1.1 In-situ Monitoring 4

3.1.2 Nutrients 5

3.1.3 Algal Growth 5

3.1.4 Zinc Concentrations 5

3.1.5 Summary 10

3.2 Grum Pit 10

3.2.1 In-situ Monitoring 10

3.2.2 Nutrients 11

3.2.3 Algal Growth 14

3.2.4 Zinc Concentrations and Loadings 16

3.2.5 Sulphate Concentrations and Loadings 21

3.2.6 Summary 22

3.2.7 Comparison of Initial Estimates and Actual Loadings 22

3.3 Vangorda Pit 23

3.3.1 Concentrations 23

3.3.2 Loadings 26

4 Conclusions and Recommendations 28

4.1 Conclusions 28

4.1.1 Faro Pit 28

4.1.2 Grum Pit 28

4.1.3 Vangorda Pit 29

4.2 Recommendations 29

4.2.1 Faro Pit 29

4.2.2 Grum Pit 29

4.2.3 Vangorda Pit 30

5 References 31

List of Tables

Table 2.1: Summary of Fertilization and Monitoring Program for 2007 3
Table 3.1: Estimated Net Loadings to the Faro Pit 9
Table 3.2: Initial Estimates of Net Loadings to the Grum Pit 23
Table 3.3: Summary of Estimated Annual Loading to the Vangorda Pit Lake 27

List of Figures

Figure 3.1: In-situ Parameters Measured in the Faro Pit 4
Figure 3.2: Total Phosphate-P Concentrations Measured in the Faro Pit 7
Figure 3.3: Ammonia-N Concentrations Measured in the Faro Pit 7
Figure 3.4: Chlorophyll ‘a’ Concentrations Measured in the Faro Pit 8
Figure 3.5: Total Zinc Concentrations Measured in the Faro Pit 8
Figure 3.6: In-situ Parameters Measured in the Grum Pit 11
Figure 3.7: Dissolved Orthophosphate-P and Total Phosphate-P Concentrations in the Grum Pit 12
Figure 3.8: Ammonia-N Concentration at Various Depths in the Grum Pit 13
Figure 3.9: Nitrate-N and Nitrite-N Concentrations at Various Depths in the Grum Pit 14
Figure 3.10: Chlorophyll ‘a’ Depth Profiles Measured in the Grum Pit 15
Figure 3.11: Chlorophyll ‘a’ Concentrations Measured in the Grum Pit Over Time 16
Figure 3.12: Grum Pit Total Zinc Concentration Over Time 17
Figure 3.13: Grum Pit Dissolved Zinc Concentration Over Time 18
Figure 3.14: Grum Pit Zinc Inventory in Surface Water to a Depth of 10 m 20
Figure 3.15: Zinc Inventory of the Grum Pit at Depth (below 10 m from Surface) with Time 20
Figure 3.16: Sulphate Concentrations in the Grum Pit Lake at Various Depths 21
Figure 3.17: Total Sulphate Inventory in the Grum Pit Lake 21
Figure 3.18: Vangorda Pit pH Trends 24
Figure 3.19: Vangorda Pit Lake Sulphate and Zinc Concentration Trends 24
Figure 3.20: Vangorda Pit Lake Cobalt and Nickel Concentration Trends 25
Figure 3.21: Vangorda Pit Lake Cadmium and Copper Concentration Trends 26
Figure 3.22: Electrical Conductivity Trends in the Vangorda Pit Lake 27

List of Appendices

Appendix A: In-situ Field Parameter Results
Appendix B: Pit Lake Water Quality Monitoring Results

1 Introduction

An initial assessment of biological treatment to remove zinc from water contained in the pit lakes at the Anvil Range Complex was positive and lead to pit lake fertilization and limno-corral testing programs carried out by Lorax Environmental Services Inc. in association with Laberge Environmental Services. Following that assessment, an in-situ evaluation program has been carried out at the Grum Pit since 2004. The fertilization and monitoring have been carried out by Laberge Environmental Services. A program of physical limnological monitoring was also initiated in 2004 and continued in 2005.

The findings from the previous programs (2004 to 2006) are reported elsewhere (SRK 2006a, SRK 2006b, and SRK 2007). The initial results indicated that the Grum Pit water responded rapidly to fertilization with excellent phytoplankton growth occurring within two weeks of fertilization. Zinc removal by phytoplankton was demonstrated to the extent that total zinc concentrations in the near-surface water were reduced to below 0.3 mg/L.

Previous physical limnology assessments indicated that the three pit lakes (Faro, Grum and Vangorda) exhibit different physical properties, and specifically that the stability of the layer structure varies from one pit to another. The results also indicated fresh water input is occurring to the surface of the Grum Pit through summer and early fall.

The 2006 investigations concluded that biological treatment should be continued in the Grum Pit during 2007. Consistent with the 2006 program, the duration of the 2007 fertilization program was limited to coincide with the active biological growth period thus minimising residual nutrients at the end of the open water season. The 2007 fertilization program was limited to the Grum pit and did not include the in the Faro Pit or the Vangorda pits. Limited water quality monitoring continued in both the Faro Pit and Vangorda Pit during 2007.

2 Fertilization and Monitoring Program

2.1 Grum Pit

The fertilization and monitoring of the pit lakes was undertaken by Laberge Environmental Services. A summary of the 2007 sampling and monitoring program is provided in Table 2.1. Each fertilization of the Grum Pit entailed distribution by boat of about 1.5 drums (320 L) of the fertilizer mix to the surface of the pit lake. The fertilization program was consistent with the 2006 program.

Fertilization of the Grum pit commenced on 11 June 2007. The fertilizer addition was repeated weekly until 1 August 2008.

Samples from the water column were collected at six depths from surface (1m, 3m, 5m, 15m, 30m, and 40m) on 12 June, 11 July, 8 August and 5 September 2007. Concurrent with each water sampling event, CTD casts using a Seabird were made of the water column and in-situ measurements were completed at each water sample depth. Field parameters included measurement of pH, temperature, TDS conductivity and dissolved oxygen.

2.2 Vangorda and Faro Pits

The Vangorda and Faro pit lakes were not fertilized during the 2007 season. Water samples were collected from six depths in Vangorda pit (1m, 3m, 5m, 15m, 30m, and 40m) and seven depths in Faro pit (1m, 3m, 5m, 15m, 30m, 60m and 80m) on 12 June, 11 July, 8 August and 5 September 2007. Concurrently, CTD casts were made and in-situ measurements were conducted at each of the sample depths. Field parameters included measurement of pH, temperature, TDS conductivity and dissolved oxygen.

All water samples were submitted to a laboratory in Vancouver operated by ALS Laboratory Group for analysis. Complete field parameter results, including field reports prepared by Laberge are provided in Appendix A and analytical results for the water quality samples are provided in Appendix B.

Table 2.1: Summary of Fertilization and Monitoring Program for 2007

Date	Pit Lake	Fertilize	Field Parameters	Water Quality	Chlorophyll 'a'
26 Mar 07 (under ice)	Vangorda	-	X	X	-
	Faro	-	X	X	-
	Grum	-	X	X	-
11 &12 Jun 07	Vangorda		X	X	-
	Faro	-	X	X	-
	Grum	X	X	X	X
18 Jun 07	Vangorda	-	-	-	-
	Faro	-	-	-	-
	Grum	X	-	-	-
25 Jun 07	Vangorda	-	-	-	-
	Faro	-	-	-	-
	Grum	X	-	-	-
2 Jul 07	Vangorda	-	-	-	-
	Faro	-	-	-	-
	Grum	X	-	-	-
10 & 11 Jul 07	Vangorda	-	X	-	-
	Faro	-	X	-	-
	Grum	X	X	X	X
16 Jul 07	Vangorda	-	-	-	-
	Faro	-	-	-	-
	Grum	X	-	-	-
23 Jul 07	Vangorda	-	-	-	-
	Faro	-	-	-	-
	Grum	X	-	-	-
1 Aug 07	Vangorda	-	-	-	-
	Faro	-	-	-	-
	Grum	X	-	-	-
8 Aug 07	Vangorda	-	-	-	-
	Faro	-	-	-	-
	Grum	-	X	X	X
5 Sep 07	Vangorda	-	X	X	-
	Faro	-	X	X	-
	Grum	-	X	X	X

3 Results and Discussion

3.1 Faro Pit

3.1.1 In-situ Monitoring

In-situ monitoring results (see Figure 3.1) indicated that a thermocline developed in the Faro Pit at a depth of about 5 to 6 m below the water surface. The highest surface temperature recorded was about 13°C measured in July. This however may not have been the maximum since monitoring was only on a monthly basis. The EC results indicated that the chemocline continues to exist at a depth of between 15 and 30 m below surface.

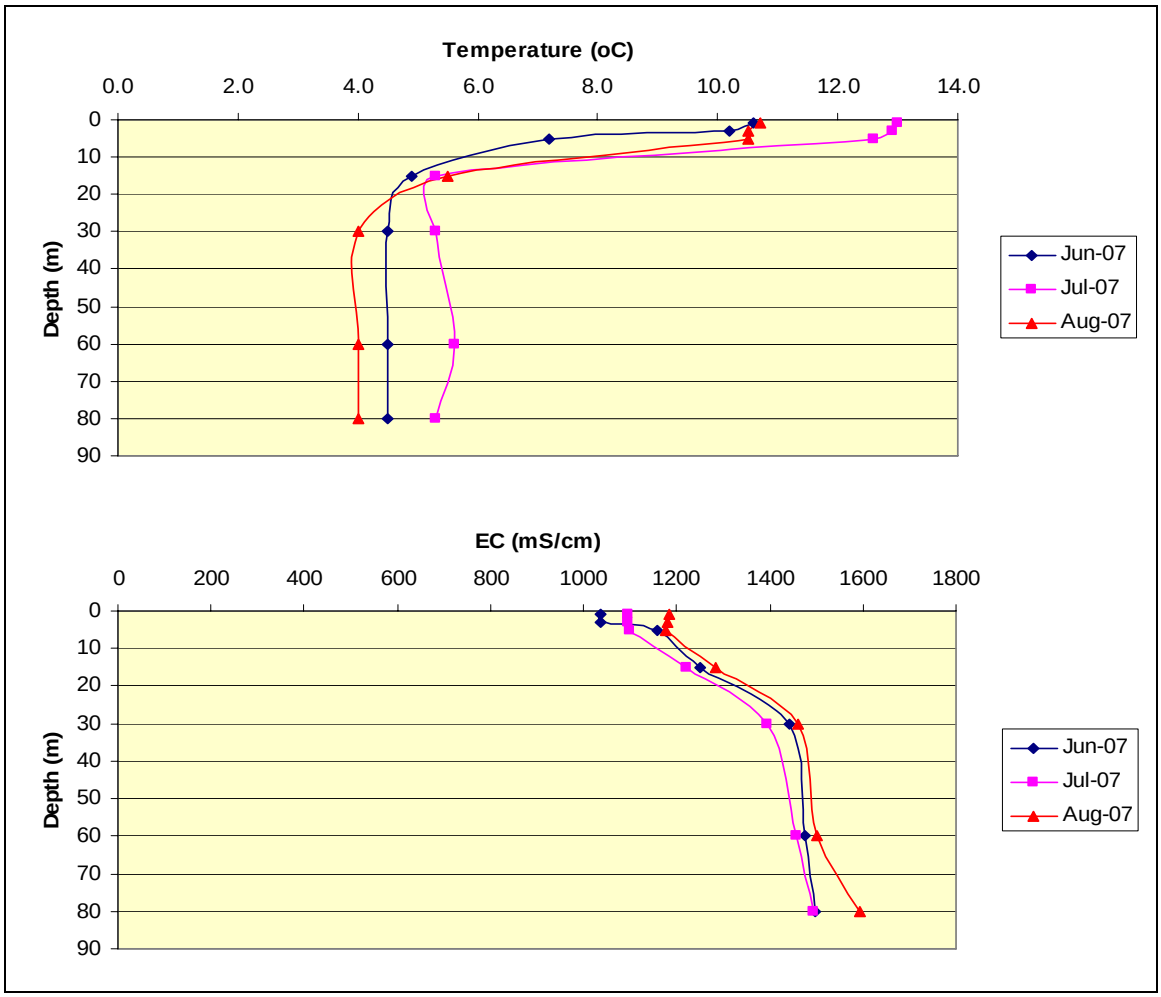

Figure 3.1: In-situ Parameters Measured in the Faro Pit

3.1.2 Nutrients

Total phosphate concentrations over time at various depths in the Faro Pit are shown for 2005 to 2007 in Figure 3.2. As shown, in 2005 an increase in the phosphate concentration occurred as a result of fertilization. In 2006, concentrations in general decreased in the near-surface water (to a depth of about 15 m below surface) ranging from about 0.002 to 0.004 mg/L, and a further decrease was observed for 2007, with concentrations tending to be below the detection limit of 0.002 mg/L by the end of summer. At depth (30 m and below), concentrations appear to have decreased as well, with an average concentration of slightly below 0.004 mg/L.

Note that the August 9, 2006 result at a depth of 30 m and the June 12, 2007 result at a depth of 80 m appear to be anomalous.

As shown in Figure 3.3, ammonia-N was present in the pit lake prior to commencement of fertilization in 2005, and may have increased marginally in the surface layer (down to a depth of about 15 m) during 2006. However, during 2007 the concentrations in the near-surface water (down to between 5 and 15 m) decreased significantly but were consistent with the range of concentrations recorded previously. Note that ammonia in waste rock seepage is likely contributing to ammonia concentrations in the pit lake on an ongoing basis; hence the decrease in ammonia was lower than for phosphate.

3.1.3 Algal Growth

The chlorophyll ‘a’ concentrations at various depths in the near-surface water of the Faro pit lake are illustrated in Figure 3.4. The Faro Pit was fertilized three times in 2005, and a rapid increase in chlorophyll ‘a’ is indicated for the July 6, 2005 depth profile. Since then, however, the chlorophyll ‘a’ concentration has remained at or near the detection limit with no significant algal growth indicated during 2006 or 2007.

3.1.4 Zinc Concentrations

Total zinc concentrations at various monitoring depths over time are shown in Figure 3.5. A chemocline exists in the Faro Pit at a depth between 15 and 30 m below surface, which is clearly indicated by the separation between the near-surface (down to 15 m) concentration of about 15 mg/L and a concentration of less than 4 mg/L at depth (30 m and deeper). The monitoring results for 2005 suggested a net removal of zinc from water immediately near the surface as was evident, for example, with the results from depths of 1, 3 and 5 m. In contrast, the results for 2006 showed a net increase from 2005, with no near-surface decrease in zinc concentrations over the summer period. During 2007, the zinc concentrations in the near-surface water were similar to that observed in 2006. The results support the conclusion that the 2005 fertilization resulted in a significant removal of zinc from the near-surface layer.

At depth, zinc concentrations remained unchanged during 2006. The zinc profile is consistent with the chemocline indicated by previous limnological monitoring.

The average concentration in the surface layer (to a depth of 15 m) increased from about 12 mg/L in September 2005 to about 15 mg/L by September 2006. This increase suggests a net loading of about 26 tonnes of zinc to the pit lake during the year ending September 2006, compared to a net removal of between 36 (excluding estimated wall rock loadings) and 62 tonnes (including estimated wall rock loadings) for the corresponding period ending September 2005. During 2007, the average concentration remained approximately the same in the near-surface water. Assuming there was no net exchange with the water below the chemocline, then the total loading to the pit lake corresponds to the annual treated volume. The estimated annual loadings for 2006 and 2007 are summarised in Table 3.1. The first three columns of the table provide the date, the elevation and the corresponding estimated total volume of water in the pit lake. The next column provides the estimated change, i.e. volume of water removed from the pit. Assuming all of that water originates from the near-surface water, then the average concentration in the near-surface water can be used to calculate the net change or loading from the pit lake, and hence the net loading to the pit lake. The next three columns estimate the loading associated with the water pumped to the pit lake from the Zone II Pit. The volume pumped was obtained from the pumping hours recorded for each season, and the average concentration for all of the available historic data was used to estimate the corresponding loading. The net loading that is entering the pit from the wall rocks and all of the waste rock seepage combined is then estimated by the difference of flows and loadings. The concentration is back-calculated and represents the average concentration of all other flows combined.

The results suggest that the total zinc loading to the pit lake is about 20 tonnes per year, of which about 5 tonnes originates from the Zone II Pit. The balance originates from the pit wall rock runoff and the waste rock seepage combined. The total sulphate loading is on the order of 735 tonnes per year, with about 129 tonnes originating from the Zone II Pit. (Note that the mass balance calculations for 2005 may be confounded by the fact that biological removal occurred during that period. Notwithstanding, the results for the three consecutive years appear to correlate reasonably well.)

It is not possible to distinguish between loadings from the wall rocks and the waste rock seepage respectively because the flows from the Faro Valley dumps, for example, vary considerably over the season (e.g. 20 to 121 mg/L zinc, and flows ranging from 2 to >1,000 L/min) and only spot measurements of flows and concentrations are available. Zinc concentrations in wall rock seeps have been noted to range from below the detection limit to 875 mg/L. However, flows other than those associated with the Faro Valley Dumps are generally low. This would suggest that the majority of the loading may be associated with seepage from the waste rock dumps.

Overall annual loadings to the Faro Pit previously estimated (SRK, 2006b) was about 259 tonnes of sulphate (compared to about 735 tonnes actual loading) and 24 tonnes of zinc (compared to about 20 tonnes actual).

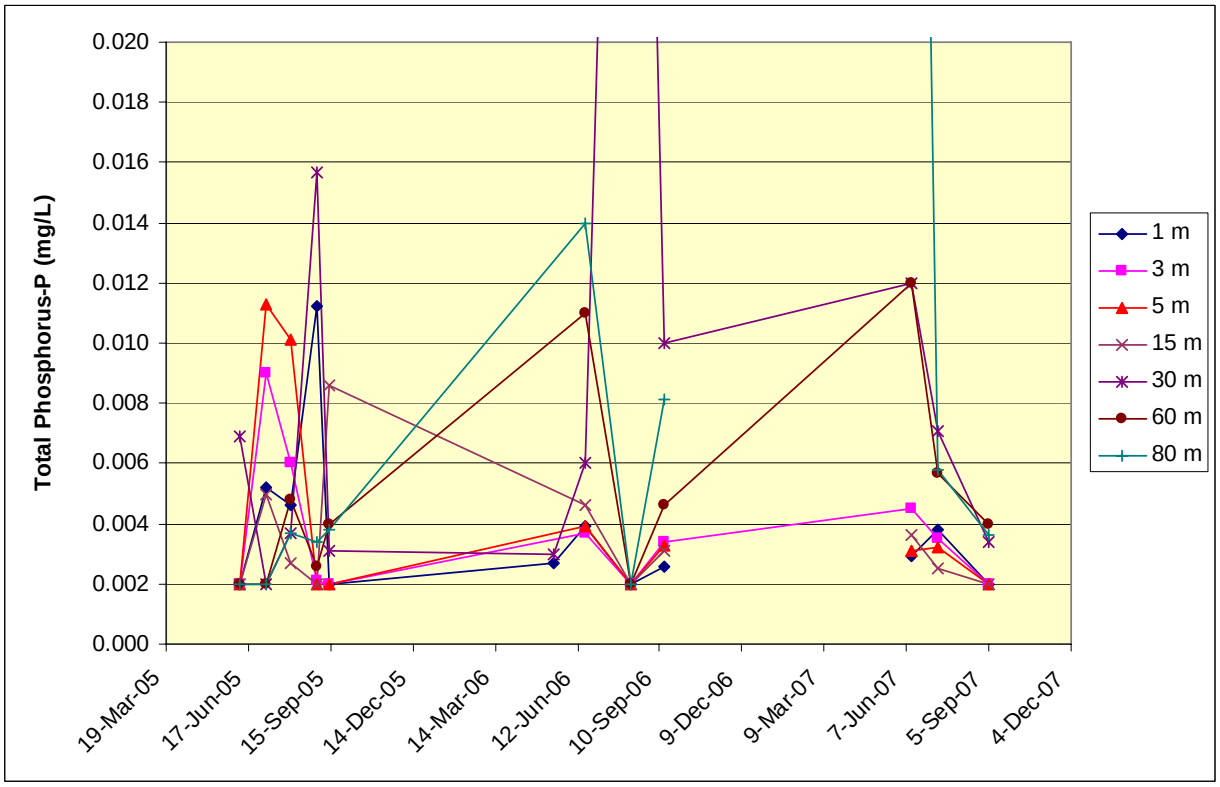

Figure 3.2: Total Phosphate-P Concentrations Measured in the Faro Pit

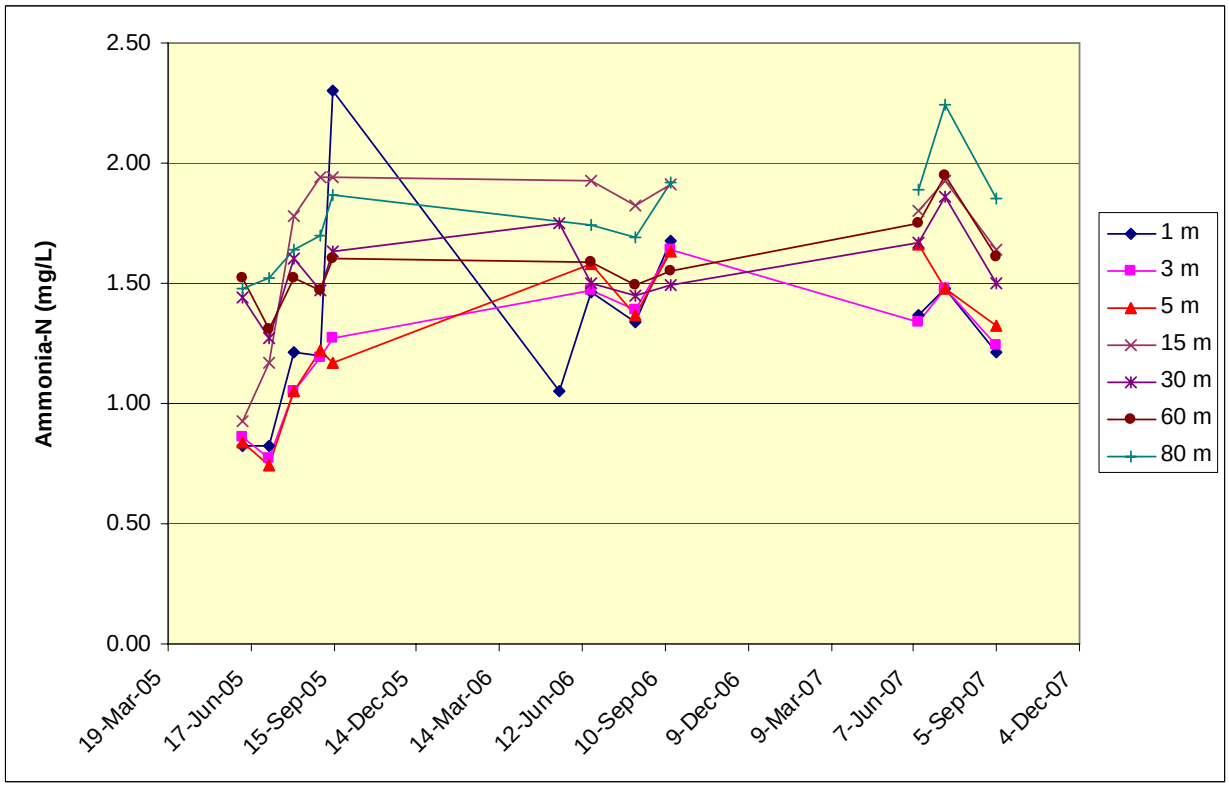

Figure 3.3: Ammonia-N Concentrations Measured in the Faro Pit

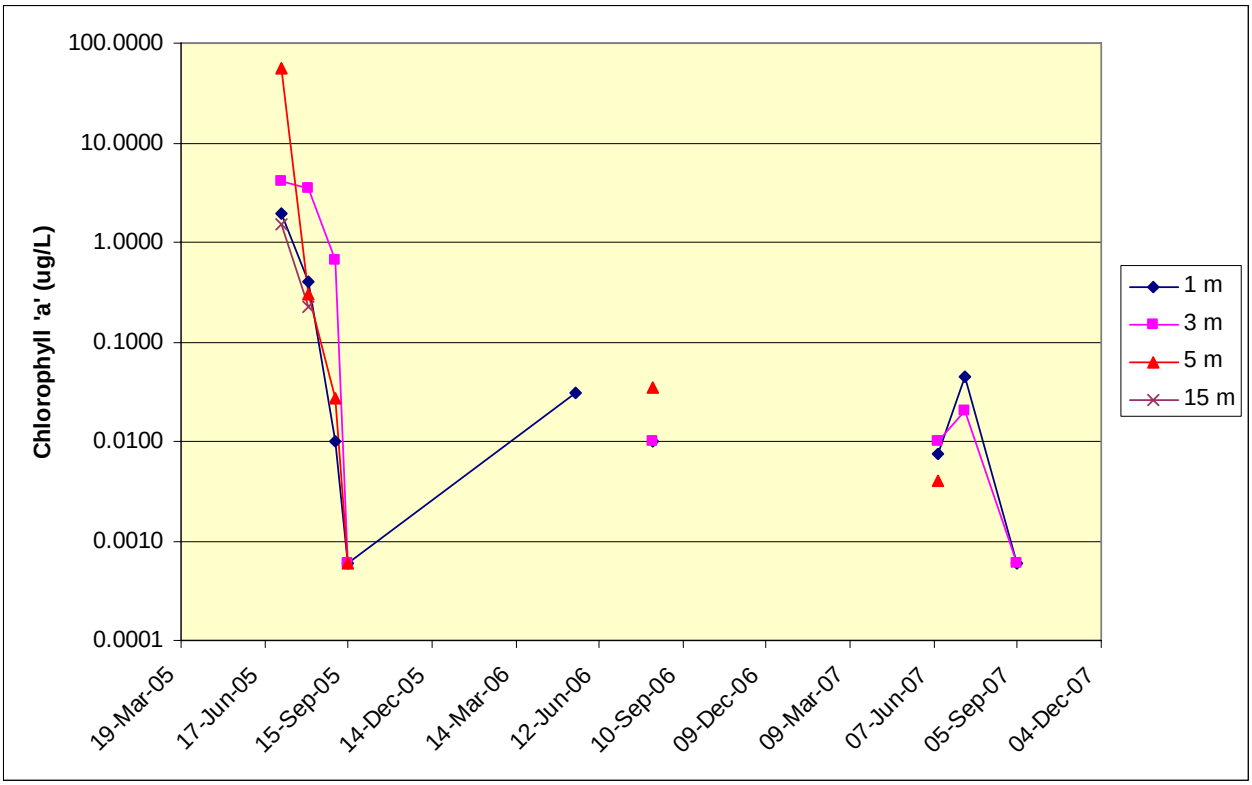

Figure 3.4: Chlorophyll 'a' Concentrations Measured in the Faro Pit

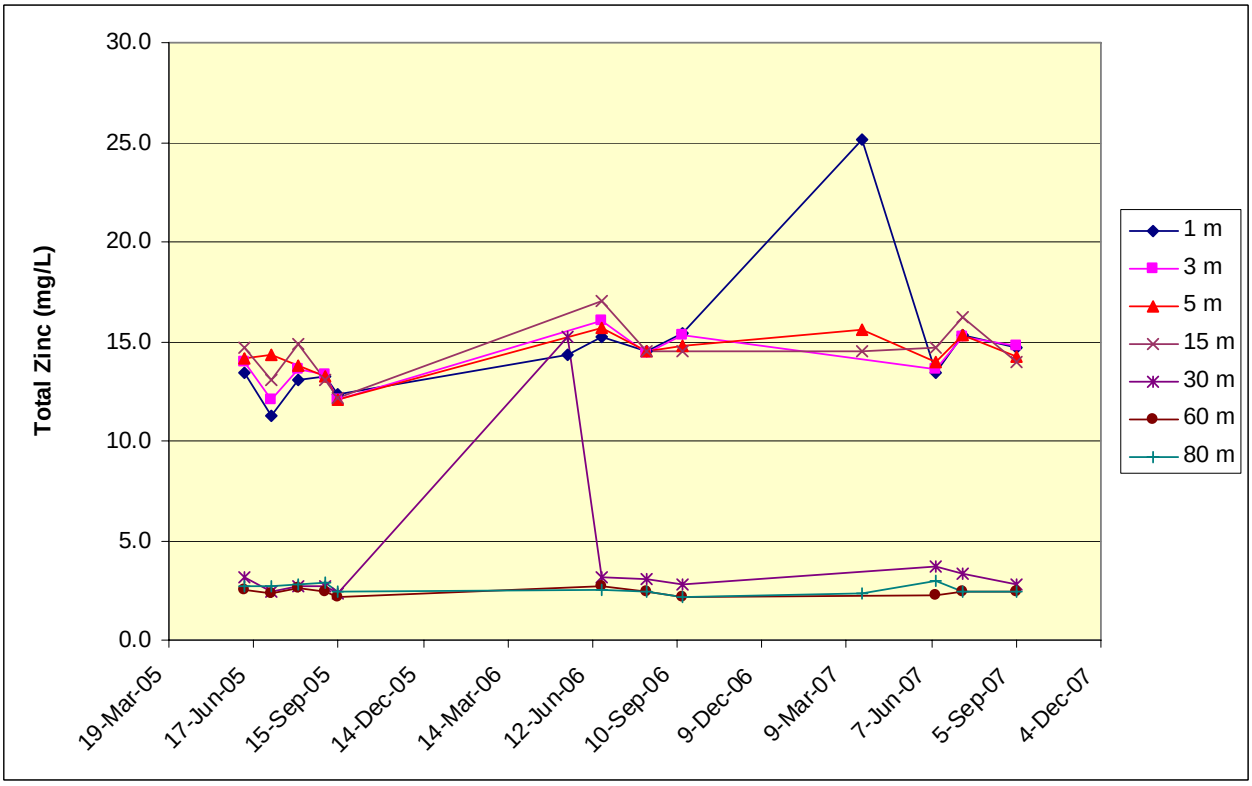

Figure 3.5: Total Zinc Concentrations Measured in the Faro Pit

Table 3.1: Estimated Net Loadings to the Faro Pit

Date	Elevation (m)	Total Volume	Pit Lake Balance			Zone 2 Pit			Wall Rock, Dumps Seepage, Ditch Leakage		
			ZINC								
			Change (m^3)	Zn (mg/L)	Load (Tonnes)	Volume (m^3)	Zn (mg/L)	Zn (Tonnes)	Flow (m^3)	Zn (mg/L)	(Tonnes)
18-May-05	1176.5	5.12.E+07									
19-Sep-05	1174.5	4.96.E+07	1.57E+06	13.04	20.5	7.E+04	72	5.0	1.50E+06	10.3	15.4
31-May-06	1176.1	5.08.E+07									
8-Sep-06	1174.5	4.96.E+07	1.22E+06	15.19	18.5	8.E+04	72	5.4	1.14E+06	11.4	13.1
22-May-07	1176.5	5.11.E+07									
11-Sep-07	1174.6	4.97.E+07	1.42E+06	14.71	20.9	7.E+04	72	5.0	1.35E+06	11.8	15.9
			SULPHATE								
			Change (m3)	SO_4 (mg/L)	Load (Tonnes)	Volume (m3)	SO_4 (mg/L)	Load (Tonnes)	Flow (m3)	SO_4 (mg/L)	Load (Tonnes)
18-May-05	1176.5	5.12.E+07									
19-Sep-05	1174.5	4.96.E+07	1.57E+06	573	898.8	7.E+04	1800	126.0	1.50E+06	515.7	772.8
31-May-06	1176.1	5.08.E+07									
8-Sep-06	1174.5	4.96.E+07	1.22E+06	554	674.7	8.E+04	1800	135.4	1.14E+06	471.9	539.3
22-May-07	1176.5	5.11.E+07									
11-Sep-07	1174.6	4.97.E+07	1.42E+06	561	796.0	7.E+04	1800	124.6	1.35E+06	497.4	671.4

3.1.5 Summary

In summary, in the absence of fertilization in 2006 and 2007, orthophosphate remained below detection, and total phosphorus was depleted from the surface layer to a depth of about 15 m. At depth, while there appeared to be a marginal increase in total phosphorus, a net decline in the concentrations occurred over the summer season. The presence of the chemocline, as indicated by the limnological assessment, would prevent this phosphorus from re-entering the surface water.

Due to the depletion of phosphorus from the surface layer, and as indicated by the very low chlorophyll "a" concentrations, no significant algal bloom was observed in 2007.

Mass balance calculations indicate that during 2005, some amount of zinc had likely been removed from the water column as a result of the algal bloom induced by fertilization. During 2006 and 2007, however, no significant algal blooms had occurred and it can be inferred that the mass balance calculations can be used to determine overall loadings from all of the sources that may be contributing to the pit lake. Since the zinc concentrations did not show an appreciable increase or decrease over that period, it can be assumed that the net loading to the pit equals the total mass removed. Based on the available data, it is estimated that about 20 tonnes of zinc are annually entering the pit lake. About 25 % of this loading is associated with the water pumped from the Zone II Pit. The balance of the loading represents the combined loadings from the wall rocks and waste rock seepage that enters the pit lake. Monitoring results for seepage from the wall rocks suggest that most of this loading is likely from the waste rock dumps.

3.2 Grum Pit

3.2.1 In-situ Monitoring

In-situ monitoring results indicated that a thermocline developed in the Grum Pit to a depth of about 5 m below the water surface. A maximum surface water temperature of about 15^{o}C was measured in July. The electrical conductivity profiles indicated the development of freshwater layer after ice-melt, which remained for the open water season. The results for September indicated a marginal increase in salinity at the surface. However, since the thermocline remained at that time, the increased salinity at depth appears to be anomalous. (Down-mixing would have caused a decrease in the EC hence the results are likely due to erroneous measurements for September.).

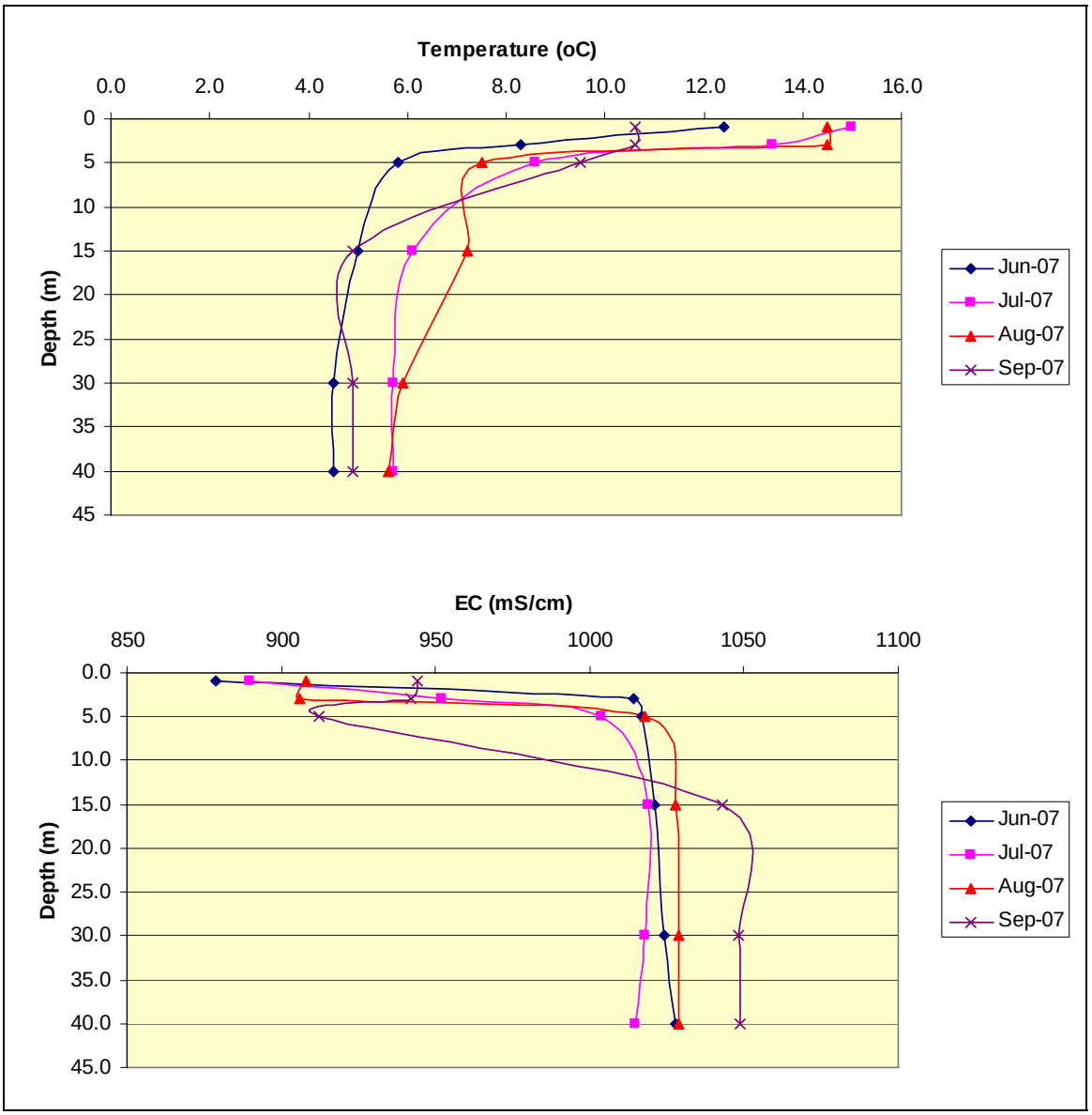

Figure 3.6: In-situ Parameters Measured in the Grum Pit

3.2.2 Nutrients

Concentrations dissolved orthophosphate-P and total phosphate-P at various depths over time are provided in Figure 3.7. As shown, during 2005 orthophosphate was consumed throughout summer, however, by fall the uptake ceased and its concentration increased due to late-season fertilization. With early termination of the fertilization during 2006, the residual orthophosphate concentrations were well below those observed at the end of 2005. During 2007, improved control of fertilization and early termination ensured that phosphate concentrations peaked at a significantly lower value, with a maximum orthophosphate concentration of 0.005 mg/L and a total phosphate phosphorus concentration of about 0.03 mg/L. At the end of 2007, orthophosphate decreased to below detection and total phosphate concentrations were at or below 0.01 mg/L.

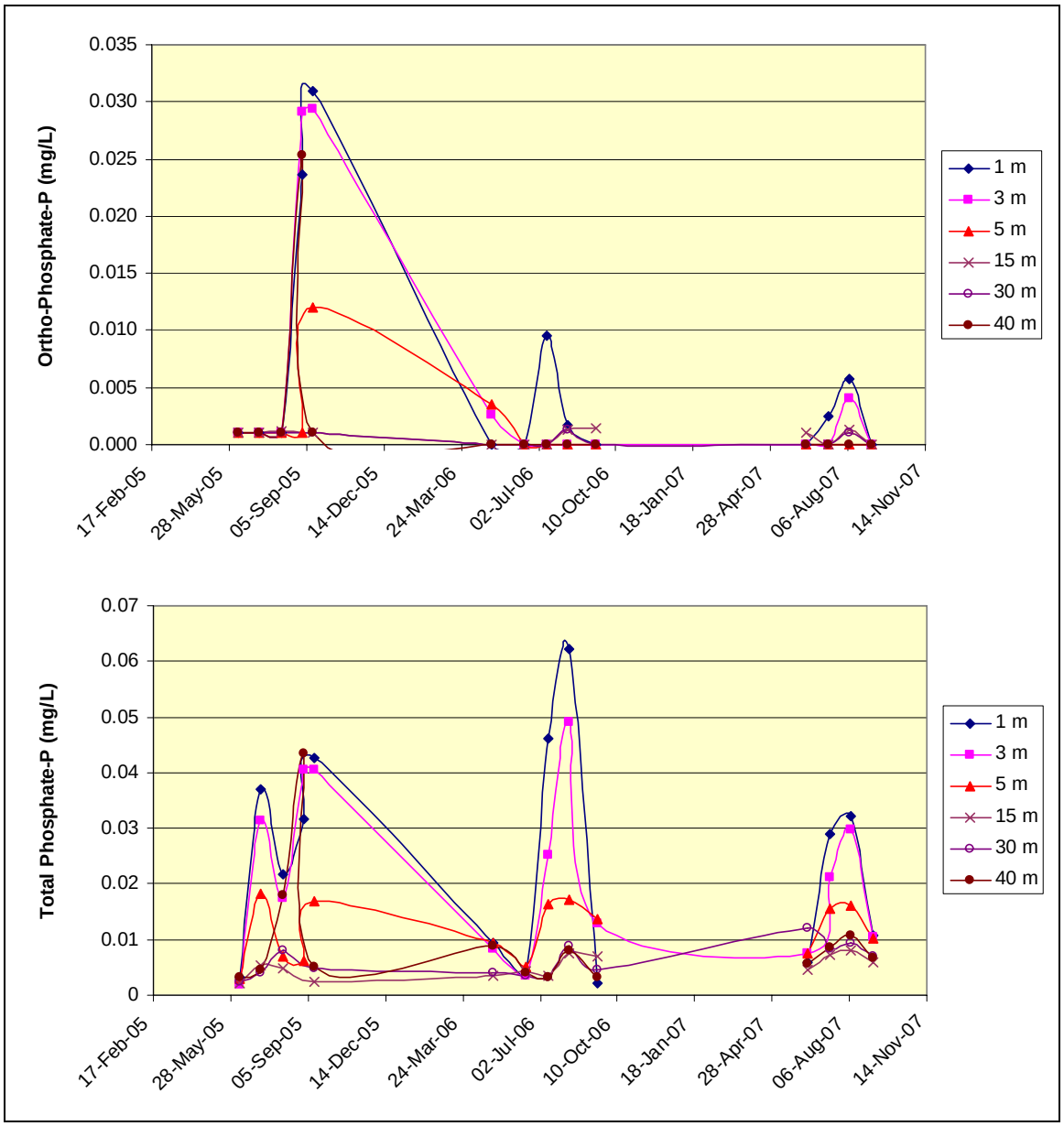

Figure 3.7: Dissolved Orthophosphate-P and Total Phosphate-P Concentrations in the Grum Pit

Concentration profiles for ammonia-N in the Grum Pit water column are shown in Figure 3.8. As noted for orthophosphate-P, early termination of the fertilization program resulted in low ammonia-N concentrations by the end of the season. Similarly, the peak concentrations were lower in 2006 and again so in 2007, with a maximum measured ammonia concentration of about 0.13 mg/L in the near-surface water.

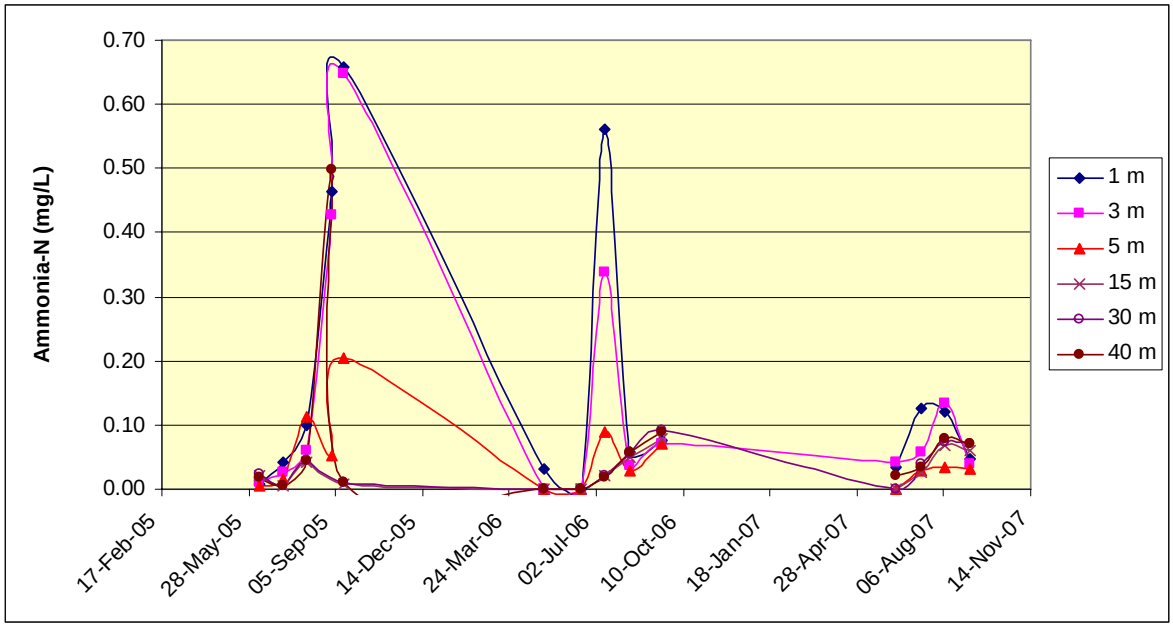

Figure 3.8: Ammonia-N Concentration at Various Depths in the Grum Pit

Similar concentration plots have been prepared for nitrate-N and nitrite-N as shown in Figure 3.9.

Nitrite-N is generated from the partial oxidation of ammonia-N. Consequently, nitrite-N is generated during the open water season and, as shown in Figure 3.9, increases during the summer months and reaches a maximum by the end of the season. However, as shown by the early season results, it is generally depleted from the water column by the end of winter, when it is further oxidized to nitrate. The maximum nitrite-N concentration detected during 2007 was about 0.009 mg/L, which was well below the CCME guideline of 0.197 mg/L for the protection of freshwater aquatic life.

While nitrate-N concentrations at the start of 2006 were somewhat elevated above 2005 levels in the near-surface water, concentrations in 2007 decreased to values similar to those observed in 2005. It is anticipated that nitrate-N will be removed when anoxic conditions develop under the ice during the 2007/08 winter due to de-nitrification.

It is apparent from these results that residual nutrient levels can be controlled effectively by controlling the fertilization rate and period.

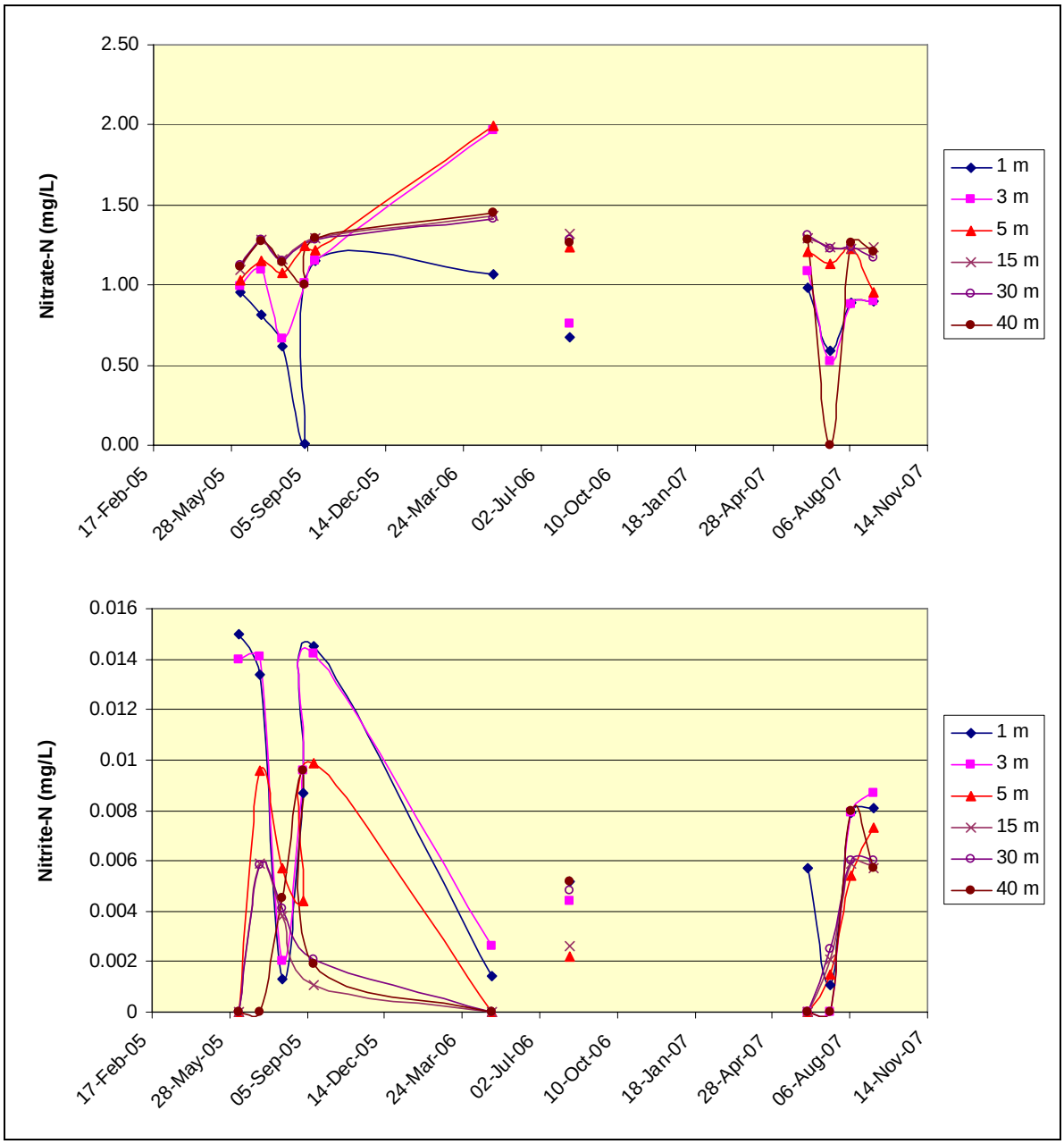

Figure 3.9: Nitrate-N and Nitrite-N Concentrations at Various Depths in the Grum Pit

3.2.3 Algal Growth

Rapid growth with high algal densities was achieved in the Grum Pit, as illustrated by the chlorophyll 'a' depth profiles shown in Figure 3.10. The results for 2007 show that peak algal densities were observed as early as 12 June at a depth of about 3 m below surface. Chlorophyll concentrations were substantially reduced by mid-August and almost depleted from the water column by early September, with maximum concentrations at about 5 m below surface. This is consistent with the algae settling from the water column at the end of the season.

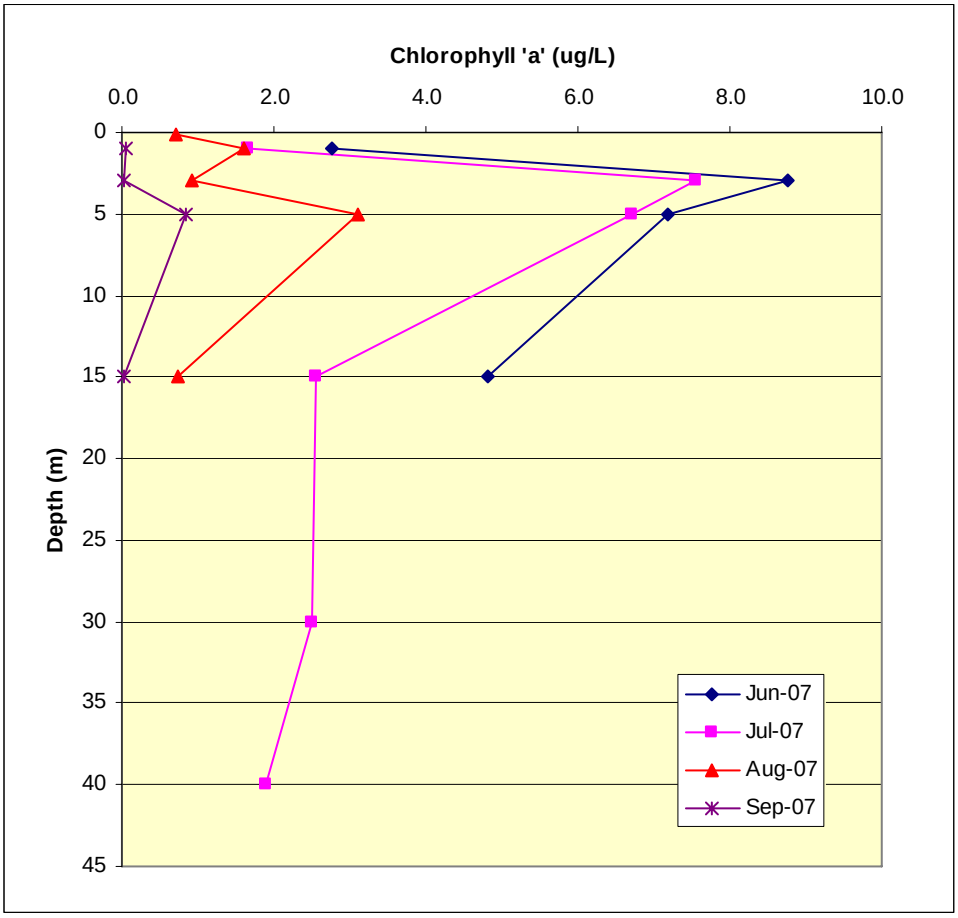

Figure 3.10: Chlorophyll 'a' Depth Profiles Measured in the Grum Pit

Chlorophyll concentrations are compared with that from previous years in Figure 3.11. As shown, the maximum concentrations during 2007 were below those observed in 2006, which in turn were below those observed in 2005.

As during previous years, the results further indicate that, by the end of August, essentially most of the growth had been lost (settled) from the water column, with concentrations for September at or below the detection limit.

Although chlorophyll 'a' concentrations were lower in 2006 and 2007 than peak concentrations in 2005, visually the revised fertilization program did not appear to affect biological activity within the pit lake. (Note that sampling times may not necessarily coincide with peak algal concentrations).

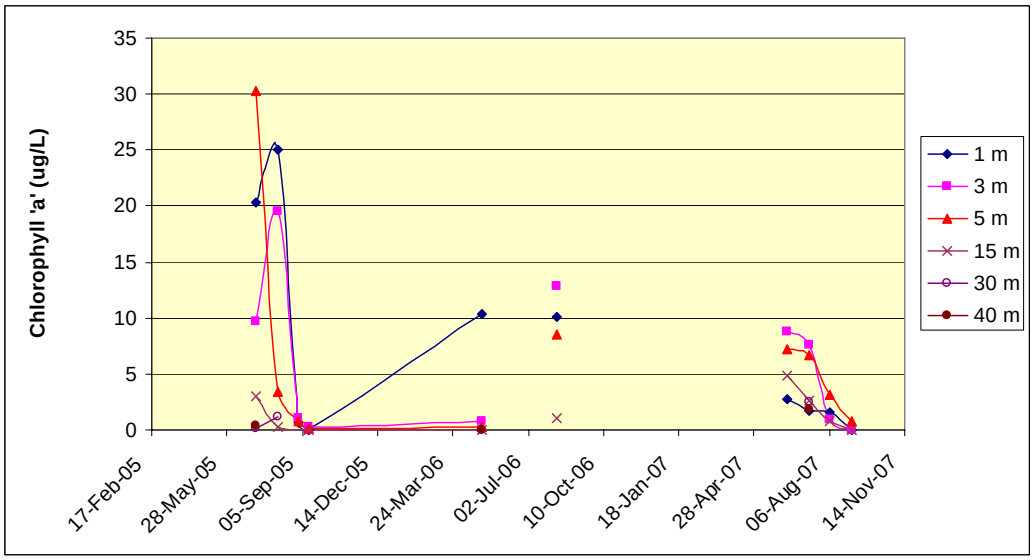

Figure 3.11: Chlorophyll 'a' Concentrations Measured in the Grum Pit Over Time

3.2.4 Zinc Concentrations and Loadings

Total zinc concentrations in Grum Pit water at various depths between 2005 and 2007 are provided in Figure 3.12. For clarity, the first part of the figure shows the concentrations in the near-surface water whereas the second part shows that at depth. A similar comparison of dissolved zinc concentration profiles is provided in Figure 3.13.

Removal of total zinc from the surface layer (above the thermocline) is clearly evident from the seasonal decrease in the zinc concentration. (Note that the decreases in zinc concentration at the 1 m and 3 m depths are significantly greater than can be accounted for by dilution by rainfall, further supporting the hypothesis of biological removal.) The observed decrease in zinc concentrations for 2007 in the near-surface water was very similar to that recorded for previous years. The lowest near-surface total zinc concentration observed during 2007 was 0.40 mg/L compared to 0.4 mg/L and 0.27 during 2005 and 2006, respectively. The lowest dissolved concentration in 2007 was 0.2 mg/L, compared to 0.06 mg/L and 0.14 mg/L and during 2005 and 2006, respectively. Annually the concentration increases as the lake turns over and the 'clean' surface water mixes with deeper water at higher concentration. There is also additional loading that enters the system from wall rocks and runoff. Combined, these effects increase the end-of-season concentration. However, there is a noticeable downward trend in the peak concentrations of the surface water indicating that there is a net removal, and that the total removal exceeds the total loading to the pit lake.

The clear separation in concentrations between the surface layer water and the deeper water further confirms that the pit lake is meromictic and that the water column does not mix in full during seasonal turnover. This is illustrated in particular by the September and May results for each year. Complete mixing would have resulted in a constant concentration with depth. However, as shown, there is a clear segregation between the results at depth (15m and below) and in the near-surface waters. The results suggest that the depth of mixing is somewhere between 5 and 15 m.

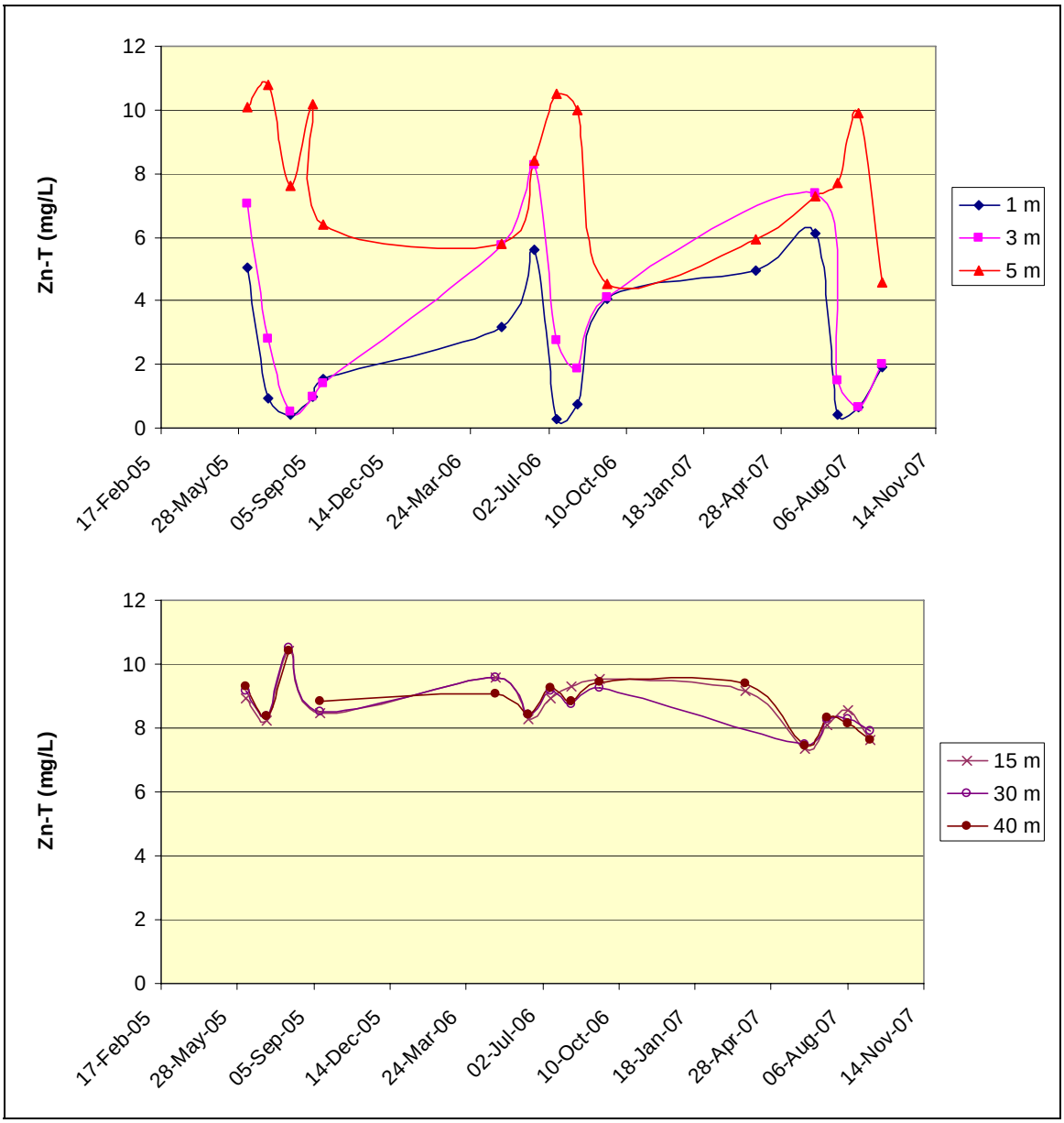

Figure 3.12: Grum Pit Total Zinc Concentration Over Time

As shown in the second part of the plots, the zinc concentrations for the first time have shown a noticeable decrease at depth for both total and dissolved zinc. Since mixing during annual turnover of the water column does not extend to the deeper elevations, the decrease in zinc cannot be attributed to dilution. At present it cannot however be determined if the removal is as a result of the onset of sulphate reducing conditions, or due to increased sorption to algal matter as it settles from the water column.

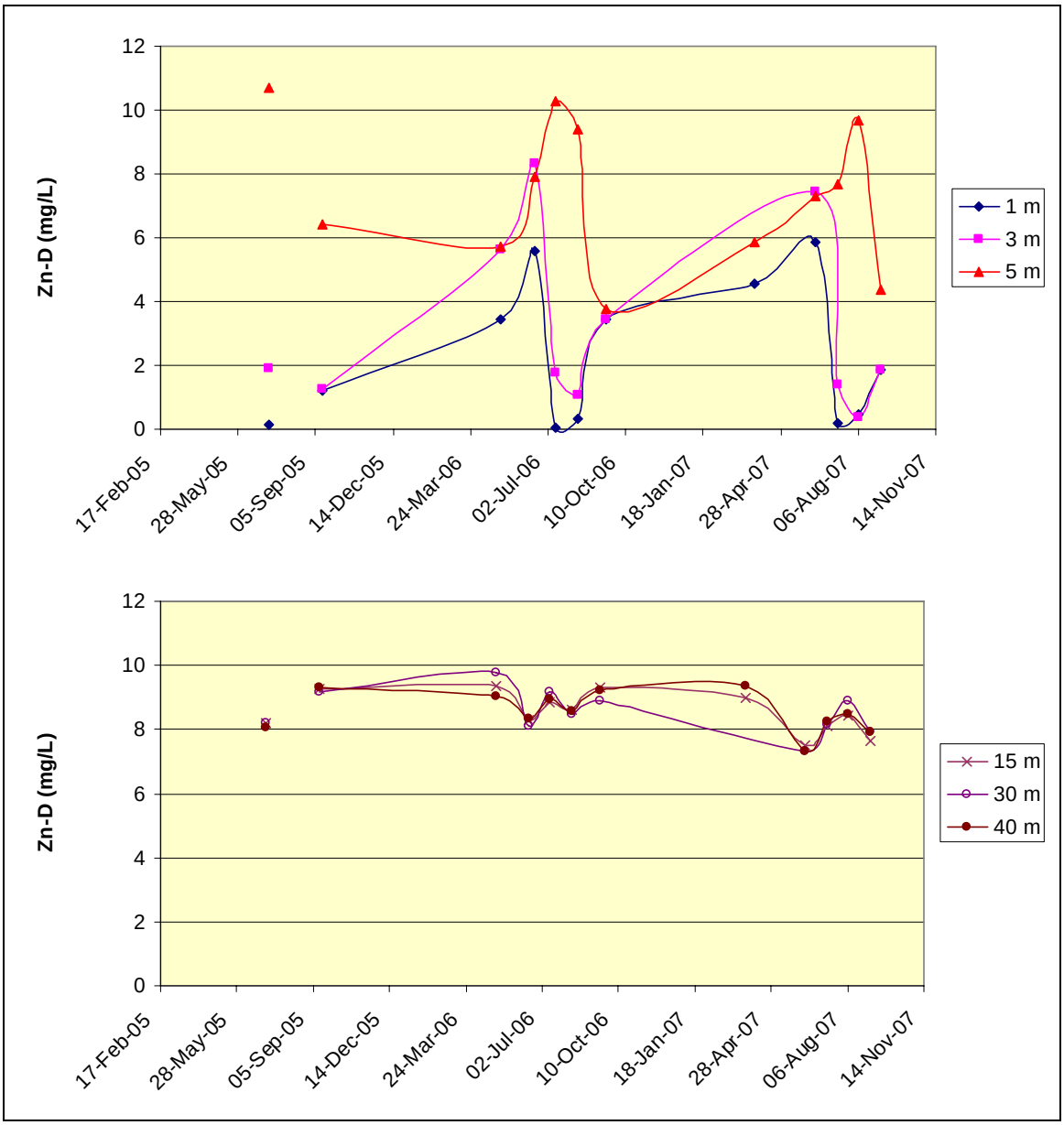

Figure 3.13: Grum Pit Dissolved Zinc Concentration Over Time

The maximum zinc concentration (both total and dissolved) at 5 m depth each year exceeds that at depth. It was previously postulated that this may be due to algal accumulation at the thermocline. However, it is noted that for the August 2007 results, when the peak concentration is recorded, the chlorophyll "a" concentration is much lower at the 5m level than at other times. Hence it is unlikely that the higher zinc concentration is associated with the algae. Furthermore, since both total and dissolved zinc concentrations for three years in a row exceeded the total concentration at depth, it would suggest that there may be a source of zinc at or below the surface of the pit lake. The source could be either groundwater entering the system, or, the result of zinc dissolution from the talus accumulated on the benches due to inundation as the water level rises.

Zinc metal removal was estimated by calculating the total pit lake inventory from the water concentration profiles and the volume curve at each timestep. The calculations were revised from the previous method by adopting fixed depth intervals (1, 3, 5, 15, 30 and 40 m) rather than utilizing all of the data available at each timestep. The approach was revised when it was realized that, even though the greater number of data sets will yield a more accurate assessment of the actual inventory, by not systematically utilizing the fixed depths causes differences in volumes assigned across the mixing zone. Because of the significant difference in concentration between the surface water and the water at depth, this could lead to significant errors in the estimation of the total inventory, and as a result, the effects on the surface water where most of the reactions are occurred can be masked. Therefore, to more clearly illustrate the changes that occur due to algal growth, the load balance calculations for the surface layer water to a depth of 10 m (i.e. halfway between 5 and 15 m) were completed and are illustrated in Figure 3.14. For comparison, the corresponding inventory of zinc in the water below a depth of 10 m is shown in Figure 3.15. As shown, the inventory appears top remain relatively constant at depth.

As shown in Figure 3.14, the load contained in the surface water at the end of 2004 was about 6,500 kg. Over winter and early spring of 2004/05, the inventory increased by about 2,000 kg. During the summer of 2005, about 4,500 kg were removed, but over winter and spring of 2005/06, a net loading of about 4,000 kg raised the inventory to slightly below 9,000 kg. Again about 4,500 kg were removed during the summer of 2006. The winter and early spring loading for 2006/07 was about 3,000 kg to 4,000 kg. During the 2007 summer about 4000 kg of zinc were removed. These results indicate that the annual removal of zinc is consistently about 4,000 to 4,500 kg per summer season. Because monitoring is intermittent and not continuous it is possible that maximum and minimum concentrations may not be captured by the sampling events. For example, the year-end results for 2004 may not have coincided with the lowest result for that season. Nonetheless, if the high and low inventories on the curves are considered, the results appear to indicate a decreasing trend as the water level rises. For example the total inventory has decreased from about 9000 kg in the surface water to about 8000 kg in 2007. If the removals remained constant then, by inference, the loadings to the surface layer would have decreased. This would be consistent with a reduction in oxidation release with the inundation of reactive wall rock.

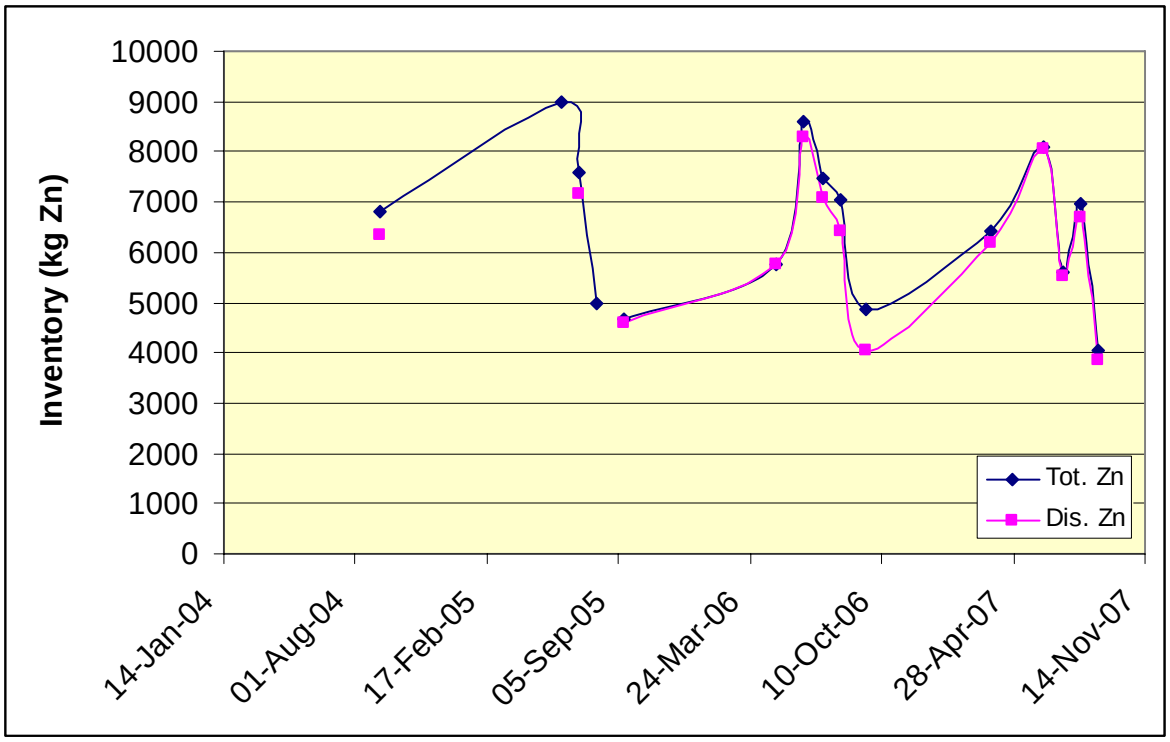

Figure 3.14: Grum Pit Zinc Inventory in Surface Water to a Depth of 10 m

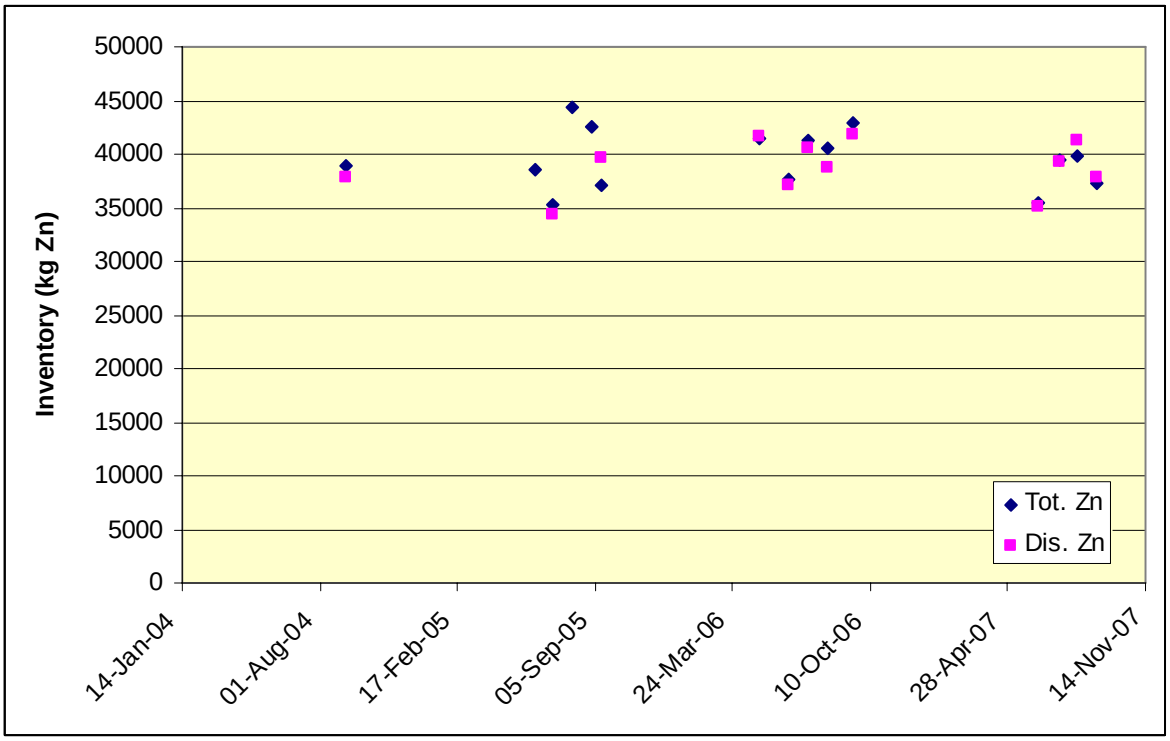

Figure 3.15: Zinc Inventory of the Grum Pit at Depth (below 10 m from Surface) with Time

3.2.5 Sulphate Concentrations and Loadings

The sulphate concentrations at various depths over time in the Grum Pit lake are shown in Figure 3.16. Apparent from the plot is the fluctuation in the surface water appears to coincide to some extent with the periods of loadings to the pit lake observed for zinc. The variability in concentrations appears to be increasing over time. Nonetheless, overall the concentrations appear to fluctuate within a narrow range. The total sulphate inventory in the water body was calculated as shown in Figure 3.17. If the end-of-season inventories are compared, it appears that there is a net sulphate loading on the order of about 100 tonnes entering the pit lake each year.

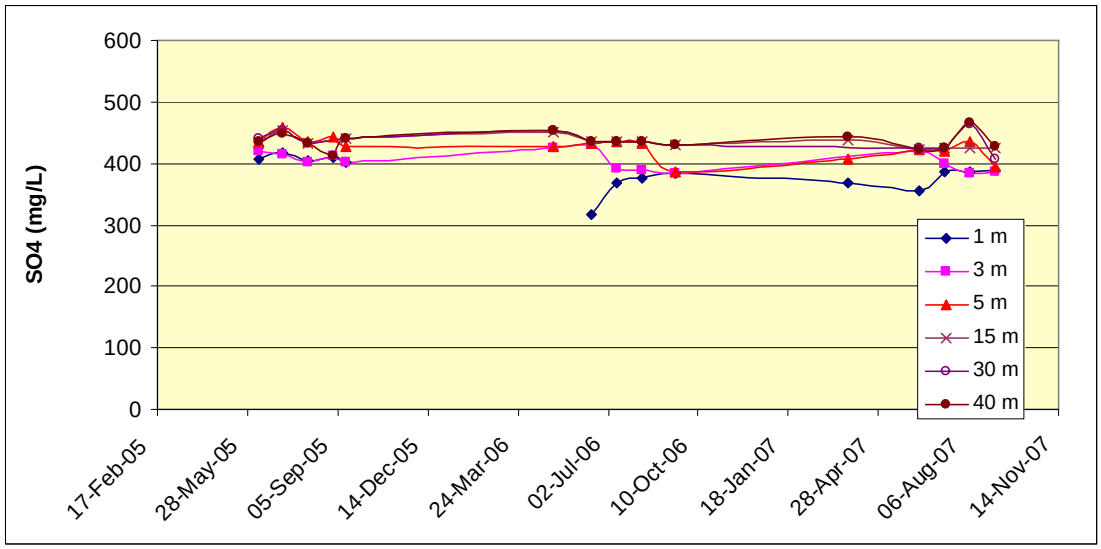

Figure 3.16: Sulphate Concentrations in the Grum Pit Lake at Various Depths

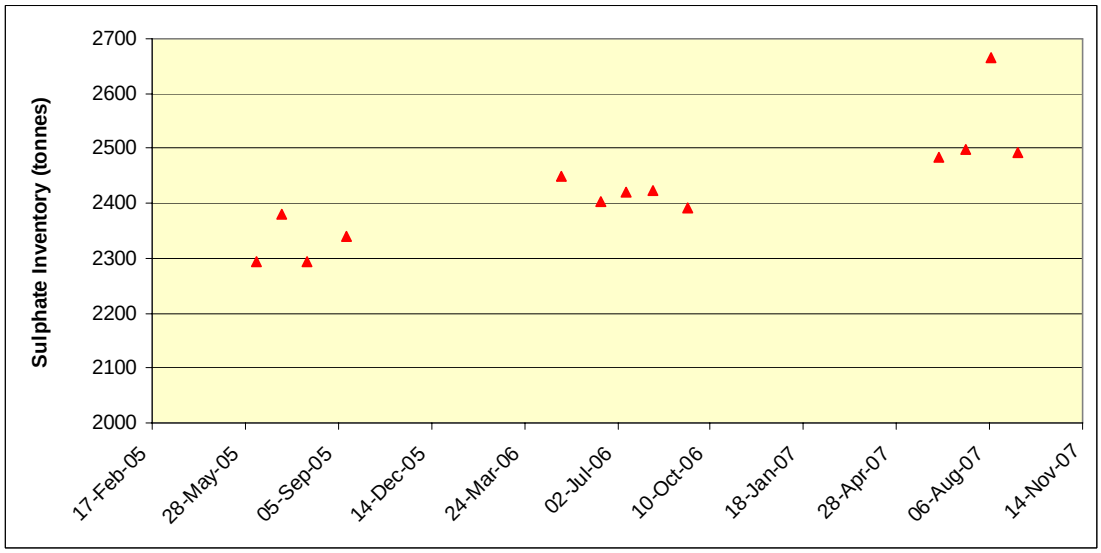

Figure 3.17: Total Sulphate Inventory in the Grum Pit Lake

3.2.6 Summary

The results indicate that the Grum Pit again responded well to fertilization and that excellent algal growth was achieved in 2006. Elimination of late summer fertilization has also been shown to be an effective method to control nutrient levels by the end of the season, and as indicated by the end-of-year results, nutrient levels were very low and would not pose an environmental risk if similar fertilization strategies are continued in future years.

Surface water mass balance calculations for 2004 through 2007 suggest that zinc loadings to the Grum Pit had been underestimated in the past. Actual loadings are on the order of 3,000 to 4,000 kg per annum, and appear to be decreasing over time. The removals achieved to date have consistently been on the order of 4,000 to 4,500 kg per season. Therefore, in the last two seasons the removal rate has exceeded to loading to the pit lake. If loadings continue to decrease over time, then the zinc concentrations in the surface water is expected to decrease significantly over the next two seasons since the removal capacity would start to exceed the total loading to the pit lake.

The results for 2007 further may suggest that removal could also be commencing in the deeper water (similar to the Faro observations of zinc removal below the chemocline) possibly due to reducing conditions. The 2008 monitoring program should provide some verification as to whether or not any removal is occurring.

The net loading of sulphate to the pit lake is estimated to be about 100 tonnes per year.

3.2.7 Comparison of Initial Estimates and Actual Loadings

Water quality predictions previously completed for the Grum Pit lake were based on the estimated loadings presented in Table 3.2 (extracted from SRK, 2005). As discussed above, the actual zinc loadings from the wall rocks and release from talus during inundation, are about ten times higher than previously estimated (compare 3,000 to 4,000 kg with 350 kg per annum). (It should be noted that the higher concentrations obtained in site monitoring of the pit lake, during which samples are obtained adjacent the pit wall rocks, is consistent with dissolution of zinc from the talus when compared to the lower measurements obtained at the centre of the pit lake.)

The sulphate loadings have been only marginally underestimated (65 tonnes per annum compared to actual loadings of about 100 tonnes per annum).

As a result of the initial estimates of zinc loadings underestimating the actual loading to the pit, the performance of the biological treatment system appears to have been less effective than initially expected. However, as shown above, the biological treatment system effectively removes the annual loading, and it appears that the treatment efficacy will improve as the water level increases.

Table 3.2: Initial Estimates of Net Loadings to the Grum Pit

	Initial Loading	After spill elevation reached
Parameter	**Loading (kg/year)**	**Loading (kg/year)**
Cl	83	58
SO_4	65 000	41 000
Ca	14 000	8 800
Mg	12 000	7 800
K	350	230
Na	420	260
Al	7	5
Cd	0.6	0.3
Co	3	1
Cu	0.5	0.3
Fe	180	42
Pb	2	1
Mn	45	11
Ni	16	7
Zn	350	80

3.3 Vangorda Pit

The Vangorda pit lake has been allowed to recover naturally since 23 August 2005, at which time the lake elevation had been lowered to about 1074.5 m asl. The lake elevation increased to about 1088.5 m asl by 6 September 2007 (corresponding to a rise in elevation of about 14 m), with a net cumulative inflow of about 780,000 m^3. About 350,000 m^3 of water entered the pit lake between September 2006 and September 2007.

3.3.1 Concentrations

The surface water quality in the Vangorda Pit has been allowed to develop over the past two years without interference from pumping. The resultant water quality is indicative of the natural loadings that are being generated by the wall rocks and the in-pit dumps. First, the surface water has become acidic during 2007 as shown in Figure 3.18. The pH at depth, however, still remains circum neutral. Second, there is a distinct difference in the make-up of the surface water and the water at depth; sulphate, zinc, cobalt and nickel concentrations are lower in the surface water than at depth (see Figure 3.19 and Figure 3.20), whereas cadmium and copper concentrations are elevated above those at depth (Figure 3.21).

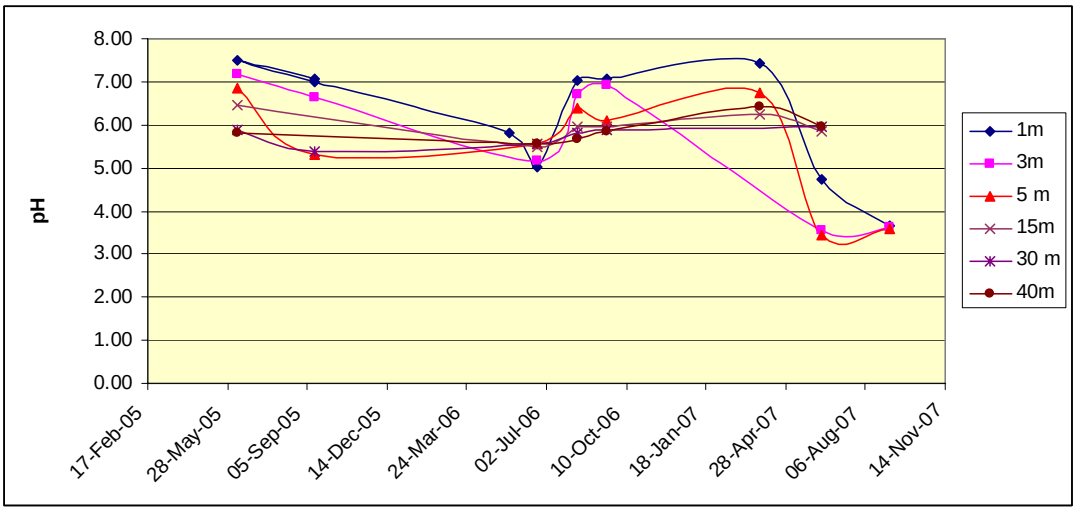

Figure 3.18: Vangorda Pit pH Trends

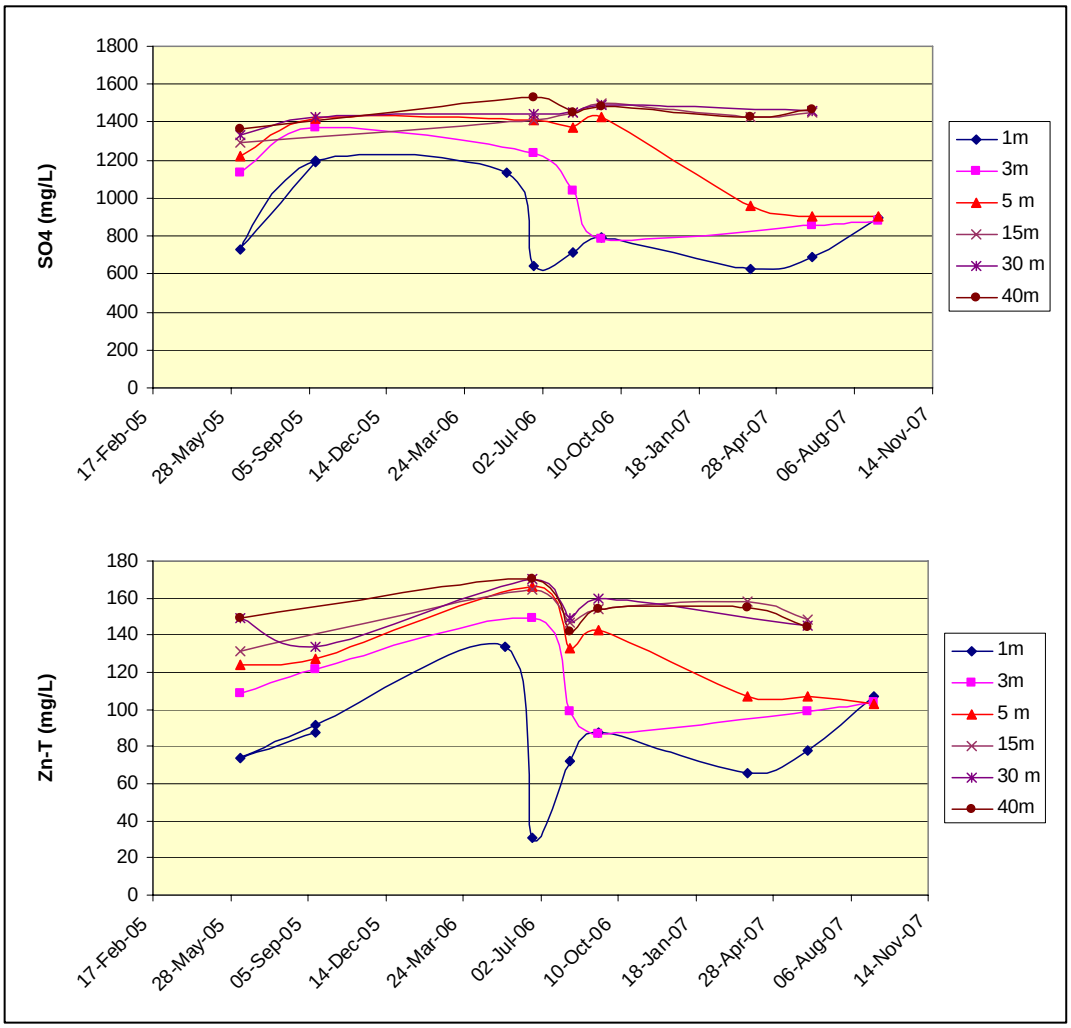

Figure 3.19: Vangorda Pit Lake Sulphate and Zinc Concentration Trends

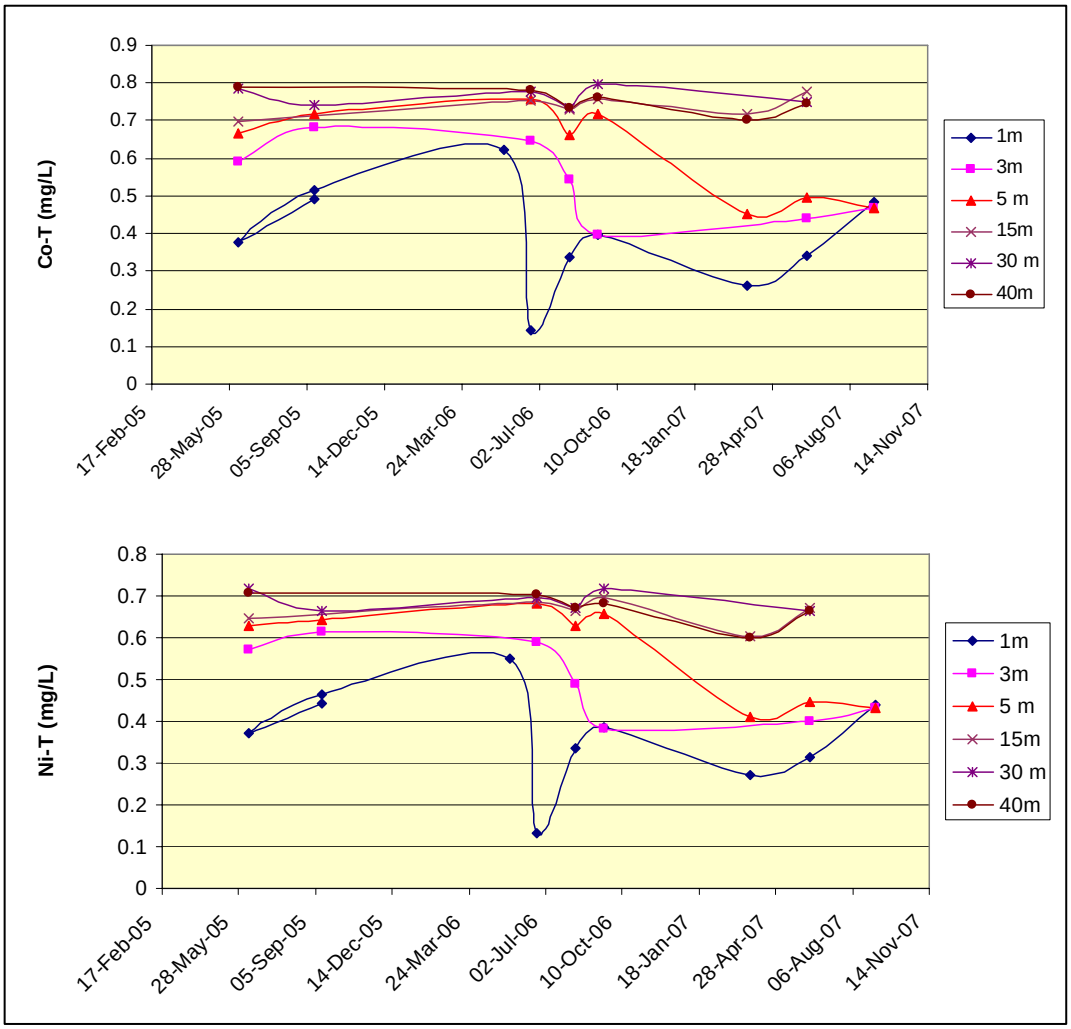

Figure 3.20: Vangorda Pit Lake Cobalt and Nickel Concentration Trends

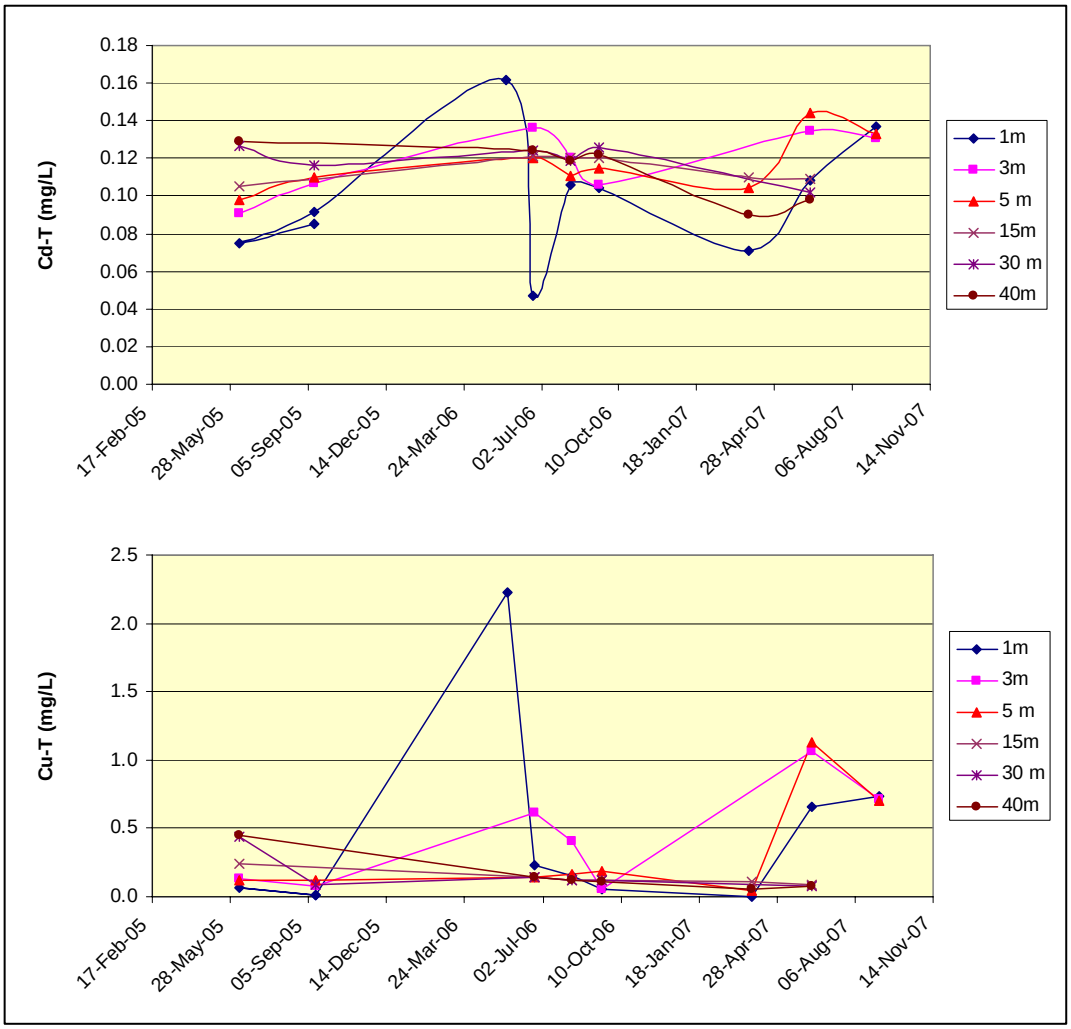

Figure 3.21: Vangorda Pit Lake Cadmium and Copper Concentration Trends

These differences in water quality between the current inflow and the water serve to confirm that quality of the water at depth is controlled by the sludges that had been deposited in the pit lake. Furthermore, acidification of the surface layer suggests that should mixing of the water to depth occur, then treatment sludges that may remain at depth will be subject to dissolution and zinc concentrations could increase at depth.

3.3.2 Loadings

The Vangorda Pit lake was monitored only three times during 2007, and the third time only to a depth of 5 m, which precludes calculation of an overall inventory balance for the pit lake. However, as shown in Figure 3.22, conductivity measurements suggest that the water in the surface layer freshened rapidly in 2006. For example, for the 1 m and 3 m depths, the conductivity decreased from slightly below 2,000 mS/cm to about 1,300 mS/cm. From 2006 to 2007, the same trend was observed for the 5 m depth water, and the conductivity at the 5 m depth corresponded to that at the 3 m depth. Since the water level increased by about 2 m over the 06/07 winter, these results suggest

that the fresh surface water layer that formed was very stable and that the change was brought about by the higher elevation (in absolute terms) that the water sample was taken at. As a consequence, it is concluded that a reasonable approximation of the total contaminant loadings to the pit lake for the period September 2006 to September 2007 is equal to the total contaminant inventory in the surface water layer.

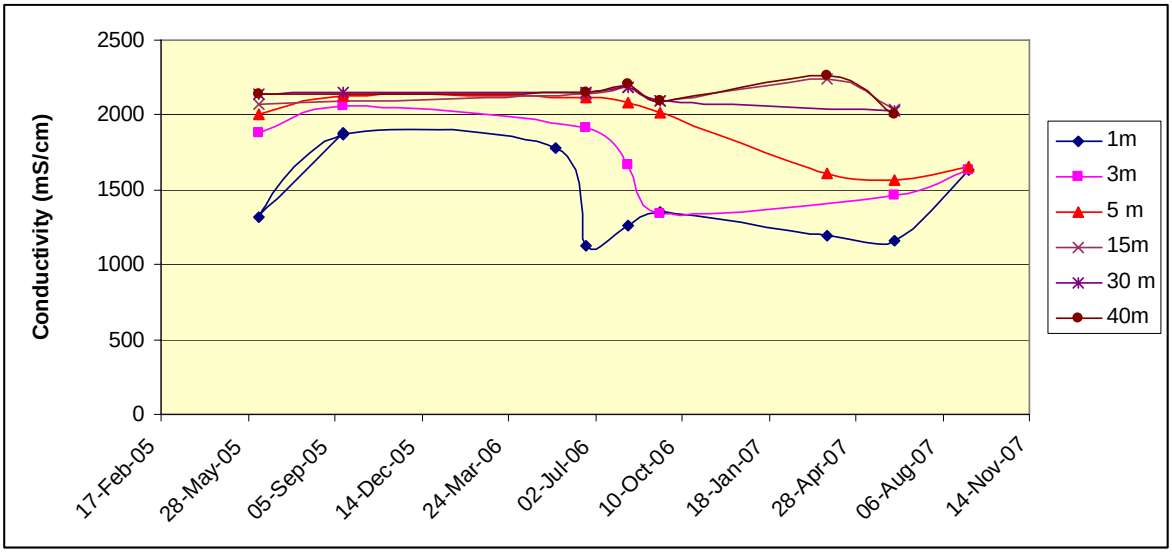

Figure 3.22: Electrical Conductivity Trends in the Vangorda Pit Lake

The estimated annual loadings of various contaminants to the pit lake are summarised in Table 3.3. The last column in the table shows the loadings estimated previously for the pit lake water quality predictions. As shown, the estimates generally underestimated the actual loadings by about 1 order of magnitude.

Table 3.3: Summary of Estimated Annual Loading to the Vangorda Pit Lake

Solute	Concentration (mg/L)	Loading (kg/year)	2004 Estimate (kg/year)
Sulphate	894	313,000	14,000
Cadmium	0.13	47	2
Cobalt	0.47	165	6
Copper	0.72	251	19
Iron	16	5,600	460
Manganese	27	9,600	650
Nickel	0.43	152	6
Zinc	105	37,000	2,000

4 Conclusions and Recommendations

4.1 Conclusions

The conclusions from the 2007 biological treatment program for the Anvil Range pit lakes are summarised below.

4.1.1 Faro Pit

In the absence of fertilization in 2007, ortho-phosphate remained below analytical method detection limits, and total phosphorus was depleted from the surface layer to a depth of about 15 m. At depth, a marginal increase in total phosphorus was indicated. The presence of the chemocline, as indicated by the limnological assessment, would however prevent this phosphorus from re-entering the surface layer water.

Revised mass balance calculations indicate that, during the past three years, on average about 20 tonnes zinc have entered the water column, of which about 5 tonnes was associated with water pumped from the Zone II Pit. The corresponding sulphate loading is on average about 735 tonnes, of which about 129 tonnes are associated with the pump back from the Zone II Pit. While previous estimates of the sulphate loadings were low compared to actual loadings, the previous estimate for the zinc loading reasonably correlated with the actual loading.

Verification of the current estimates can be obtained by continuing the pit lake monitoring program through 2008.

4.1.2 Grum Pit

The results indicate that the Grum Pit again responded well to fertilization and that excellent algal growth was achieved in 2006. Elimination of late summer fertilization has also been shown to be an effective method for controlling nutrient levels at the end of the season. At the end of the 2007 season, nutrient levels had decreased to concentrations well below guidelines for the protection of freshwater aquatic life.

Revised mass balance calculations for the surface layer water showed that the annual loading to the pit lake is on the order of 3,000 to 4,000 kg per annum. Zinc loadings to the Grum Pit lake have been underestimated in the past by about one order of magnitude. The mass balance calculations further indicate that between 4,000 and 4,500 kg total zinc had been removed from the surface water during 2007. The actual loading and removal may be higher than estimated since the water level continued to rise during the summer period when removal and loading occurred concurrently, but cannot be distinguished within the monitoring data.

The results further suggest that removal at greater depth may also be occurring, albeit at very low levels at present. Monitoring during 2008 should verify these interpretations.

4.1.3 Vangorda Pit

The monitoring results for 2006 and 2007, during which water was not pumped from the pit, indicate that the water flowing into the pit is substantially different from the water at depth. The water at surface is in the process of acidifying, generally has a lower salt content and has lower sulphate, zinc cobalt and nickel concentrations. In contrast, the copper and cadmium concentrations in the surface water are increasing. These results confirm that water at depth has been affected by the dissolution of treatment sludges deposited previously in the Vangorda Pit, which has resulted in the high zinc concentrations.

Mass balance calculations indicate that the zinc loading at about 37 tonnes is substantially higher than previous estimates of about 2 tonnes. Previous estimates for many other parameters similarly underestimated actual loadings.

4.2 Recommendations

4.2.1 Faro Pit

It is recommended that profiling of the pit lake be undertaken at regular intervals during 2008 and mass balance calculations be completed to verify estimates of overall current loadings and support future water quality predictions. It is further recommended that improved monitoring of the flows from the Faro Valley dump be undertaken to enable a better estimation of the total loading from this source so that the pit lake loadings can further be broken down to distinguish between waste rock and wall rock loadings. Improved monitoring of the Faro Valley dump flows would require that a regular monitoring station be established to allow weekly or fortnightly monitoring of flow and water quality.

4.2.2 Grum Pit

Based on the observed performance of biological treatment in the Grum Pit, it is recommended that the fertilization program be continued in 2008. Fertilization should again be terminated by mid-August to prevent the build-up of residual nutrients in the water column.

The higher than predicted loadings to the pit lake are likely a consequence of inundation of talus on the benches as the water level rises. To verify this, it is recommended that samples be obtained from the talus and be subjected to leach extraction tests to estimate total stored solute content. Furthermore, near-shore sampling at shallow depths should be undertaken to verify solute release from the wall rocks. Mass balance calculations should again be completed for 2008 to verify overall loadings.

4.2.3 Vangorda Pit

At this time it is not foreseen that the Vangorda Pit will be utilized as an ancillary treatment system. Fertilization of this pit lake is therefore not recommended. However, it is recommended that the water column water quality profile be monitored to verify the load calculations. Monitoring should be undertaken on a monthly basis, commencing at open water conditions, and should be continued to September 2008.

This report, **"Faro Mine Complex - Anvil Range Pit Lakes 2007 Evaluation of In-Situ Treatment, 2007/08 Task 39 – FINAL",** was prepared by SRK Consulting (Canada) Inc.

Prepared by

ORIGINAL SIGNED AND STAMPED

John Chapman, P.Eng.
Principal Engineer

Reviewed by

ORIGINAL SIGNED AND STAMPED

Cameron Scott, P.Eng.
Principal Engineer

5 References

SRK Consulting, 2006a, *Anvil Range Pit Lakes, Evaluation of in-Situ Treatment , 2004/05 Task 14c*. Prepared for Deloitte and Touche Inc., SRK Project Reference Number 1CD003.046, March 2006.

SRK Consulting, 2006b, *Anvil Range Pit Lakes, Evaluation of In Situ Treatment, 2005/06 Task 20c*. Prepared for Deloitte and Touche Inc., SRK Project Reference Number 1CD003.072, July 2006.

SRK Consulting, 2007, *Anvil Range Pit Lakes, Evaluation of In Situ Treatment, 2006/07 Task 22*. Prepared for Deloitte and Touche Inc., SRK Project Reference Number 1CD003.088, July 2007.

Appendix A
In-situ Field Parameter Results

Laberge ENVIRONMENTAL SERVICES
P.O. Box 21072
Whitehorse, Y.T.
Y1A 6P7

Office Phone: 867-668-6838
Cell Phone: 867-668-1043
Fax: 867-667-6956

MEMORANDUM

Date: November 3, 2007

To: Cam Scott, John Chapman – SRK

From: Bonnie Burns – LES

Re**:** **Summary of 2007 Open Water Pit Lakes Bio Treatment Study**

Grum Pit Lake

Commencing on June 11th, 1.5 barrels (320 L) of fertilizer was applied weekly to Grum Pit Lake until August 1st. As experienced last year, the liquid fertilizer had separated and solids were present in the bottom fifth of each barrel. This was mixed as much as possible during application however a significant amount of solids remained after each barrel was pumped into the lake.

Water samples were collected from 6 depths (1m, 3m, 5m, 15, 30, and 40m) on June 12th, July 11th, August 8th and September 5th. Water samples were analyzed by ALS, and SRK received all analytical data directly. In-situ measurements were conducted at each depth. This data has been compiled and is presented in the attached excel file.

Concurrent with each sampling event, CTD casts were made using a Seabird CTD obtained from Roger Peiters, UBC. All downloaded data has been sent to Roger Peiters for analysis.

On August 8th a one hundred litre bulk sample was collected from Grum Pit Lake and sent to Canadian Environmental and Metallurgical Inc.

Photographs were taken during each visit and selected photos are presented below.

The climate station located on the raft in the Grum Pit Lake was downloaded on June 12th, August 8th and September 5th. All data has previously been forwarded to SRK.

Vangorda and Faro Pit Lakes

No fertilization of the Vangorda and Faro Pit Lakes was undertaken during the 2007 season.

Water samples were collected from 6 depths in Vangorda Pit (1m, 3m, 5m, 15, 30, and 40m) and 7 depths in Faro Pit (1m, 3m, 5m, 15m, 30m, 60m and 80m) on June 12th, July 11th, August 8th and September 5th. Water samples were analyzed by ALS, and SRK received all analytical data directly.

In-situ measurements were conducted at each depth. This data has been compiled and is presented in the attached excel file.

Concurrent with each sampling event, CTD casts were made.

June 20, 2007 – Grum Pit Lake

June 27, 2007 – Grum Pit Lake

July 3, 2007. Fertilizing Grum Pit.

July 3 2007 – Grum Pit Lake

July 11, 2007 – Grum Pit Lake

July 25, 2007 – Grum Pit Lake

On August 8th a one hundred litre bulk sample was collected from Vangorda Pit Lake and sent to Canadian Environmental and Metallurgical Inc.

Summary

The 2007 season represents the fourth year of biological treatment to the Grum Pit Lake. Algae grow rapidly after the first application of fertilizer. This is confirmed visually (colour change of the water) and analytically by the increase in chlorophyll *a* concentrations in the water column. As indicated by the analytical data, the algae successfully removed zinc from the water column. The greatest reduction tends to occur in the top metre or so, from around mid July to mid August. Concentrations of total zinc have met the discharge criteria of 0.5 mg/L during this time period for each of the years sampled. Therefore, with very little effort and expenses approximately 200,000 m^3 (200,000m^{2*} x 1 m) of waste water has been biologically treated sufficiently, over a four to eight week period, to meet discharge criteria on an annual basis.

Consequently, as a consideration, the top metre of water in the Grum Pit could theoretically be decanted directly into the environment with no further treatment, every summer. A thorough examination of the analytical data would be required to ensure that no other parameters exceed discharge criteria. There has been expressed concern regarding increased concentrations of nutrients. However, concentrations of these anions remain low, especially with the shorter fertilization period and the lower volume of fertilizer applied during the past two seasons.

* The surface area of the Grum Pit has been estimated at 200,000 m^2 (Lorax Environmental and SRK Consulting, 2004. Assessment of Biological Treatment of the Faro, Grum and Vangorda Pit Lakes).

INSITU DATA FOR VANGORDA PIT, SUMMER OF 2007

Week #	Date	Station	pH	Temp oC	TDS mg/L	Cond.mS/cm	D.O. mg/L	Secchi (m)
1	2007-06-12	VP_1	5.72	13.1	1234	1449	9.1	2.4
1	2007-06-12	VP_3	3.83	8.2	1365	1509	7.6	
1	2007-06-12	VP_5	3.77	4.9	1441	1656	7.1	
1	2007-06-12	VP_15	5.88	4.8	1928	2220	6.0	
1	2007-06-12	VP_30	6.07	4.7	1960	2260	8.3	
1	2007-06-12	V_40	6.09	4.5	1957	---	6.5	
5	2007-07-10	VP_1	4.23	14.7	---	1413	9.7	3.1
5	2007-07-10	VP_3	4.13	14.6	---	1436	7.4	
5	2007-07-10	VP_5	3.53	10.1	---	1662	7.3	
5	2007-07-10	VP_15	5.57	5.3	---	2230	7.8	
5	2007-07-10	VP_30	5.80	5.0	---	2200	8.0	
5	2007-07-10	VP_40	5.87	5.1	---	2200	7.4	
13	2007-09-05	VP_1	3.74	11.2	1501	1688	---	2.0
13	2007-09-05	VP_3	3.77	11.1	1496	1681	---	
13	2007-09-05	VP_5	3.79	---	1500	1685	---	
13	2007-09-05	VP_15	5.40	4.9	1995	2240	---	
13	2007-09-05	VP_30	5.89	4.8	---	2260	---	
13	2007-09-05	VP_40	6.02	4.8	---	2260	---	

INSITU DATA FOR FARO PIT, SUMMER OF 2007

Week #	Date	Station	pH	Temp oC	TDS mg/L	Cond.mS/cm	D.O. mg/L	Secchi (m)
1	2007-06-12	FP_1	7.65	10.6	900	1038	8.2	3.9
1	2007-06-12	FP_3	7.65	10.2	903	1038	8.4	
1	2007-06-12	FP_5	7.59	7.2	1007	1158	8.9	
1	2007-06-12	FP_15	7.50	4.9	1082	1252	8.1	
1	2007-06-12	FP_30	7.30	4.5	1262	1443	6.0	
1	2007-06-12	FP_60	7.06	4.5	1287	1477	5.9	
1	2007-06-12	FP_80	6.89	4.5	1304	1498	5.5	
5	2007-07-11	FP_1	7.30	13.0	---	1094	7.9	7.5
5	2007-07-11	FP_3	7.22	12.9	---	1097	7.9	
5	2007-07-11	FP_5	7.08	12.6	---	1099	8.5	
5	2007-07-11	FP_15	6.87	5.3	---	1220	10.1	
5	2007-07-11	FP_30	6.85	5.3	---	1395	6.7	
5	2007-07-11	FP_60	6.89	5.6	---	1456	6.0	
5	2007-07-11	FP_80	7.09	5.3	---	1493	7.2	
13	2005-08-31	FP_1	7.41	10.7	1054	1184	---	7.5
13	2005-08-31	FP_3	7.41	10.5	1049	1179	---	
13	2005-08-31	FP_5	7.47	10.5	1049	1178	---	
13	2005-08-31	FP_15	7.28	5.5	1143	1283	---	
13	2005-08-31	FP_30	7.09	4.0	1301	1462	---	
13	2005-08-31	FP_60	6.97	4.0	975	1500	---	
13	2005-08-31	FP_80	6.89	4.0	1036	1595	---	

INSITU DATA FOR GRUM PIT, SUMMER OF 2007

Week #	Date	Station	pH	Temp oC	TDS mg/L	Cond.mS/cm	D.O. mg/L	Secchi (m)
1	2007-06-12	GP_1	7.88	12.4	765	879	9.3	1.2
1	2007-06-12	GP_3	7.87	8.3	885	1014	9.4	
1	2007-06-12	GP_5	7.73	5.8	885	1017	8.9	
1	2007-06-12	GP_15	7.61	5.0	888	1021	7.9	
1	2007-06-12	GP_30	7.55	4.5	891	1024	6.8	
1	2007-06-12	GP_40	7.51	4.5	894	1028	6.4	
5	2007-07-11	GP_1	8.96	15.0	---	890	10.2	1.0
5	2007-07-11	GP_3	8.68	13.4	---	952	11.8	
5	2007-07-11	GP_5	7.71	8.6	---	1004	8.4	
5	2007-07-11	GP_15	7.50	6.1	---	1019	8.2	
5	2007-07-11	GP_30	7.43	5.7	---	1018	8.5	
5	2007-07-11	GP_40	7.37	5.7	---	1015	7.9	
9	2007-08-08	GP_1	8.63	14.5	791	908	7.5	---
9	2007-08-08	GP_3	8.63	14.5	788	906	6.6	
9	2007-08-08	GP_5	7.65	7.5	885	1018	6.6	
9	2007-08-08	GP_15	7.38	7.2	894	1628	7.1	
9	2007-08-08	GP_30	7.28	5.9	895	1029	6.8	
9	2007-08-08	GP_40	7.25	5.6	896	1029	6.4	
13	2007-09-05	GP_1	8.32	10.6	840	944	---	2.0
13	2007-09-05	GP_3	8.38	10.6	838	942	---	
13	2007-09-05	GP_5	7.99	9.5	865	912	---	
13	2007-09-05	GP_15	7.57	4.9	928	1043	---	
13	2007-09-05	GP_30	7.50	4.9	933	1048	---	
13	2007-09-05	GP_40	7.47	4.9	934	1049	---	

Appendix B
Pit Lake Water Quality Monitoring Results

Faro Pit - 2005 to 2007 Monitoring Results

RESULTS OF ANALYSIS

Depth (m)	1	3	5	15	30	60	80
Sample ID	FP-1 FARO PIT @1m	FP-3 FARO PIT @3m	FP-5 FARO PIT @5m	FP-15 FARO PIT @15m	FP-30 FARO PIT @30m	FP-60 FARO PIT @60m	FP-80 FARO PIT @80m
Date Sampled	8-Jun-05	8-Jun-05	8-Jun-05	8-Jun-05	8-Jun-05	8-Jun-05	8-Jun-05
Time Sampled	14:45	15:00	15:08	15:15	15:20	15:30	15:45
ALS Sample ID	1	2	3	4	5	6	7
Nature	Water	Water	Water	Water	Water	Water	Water
Depth	1	3	5	15	30	60	80
Physical Tests							
Hardness (as CaCO3)							
Conductivity (uS/cm)	1160	1160	1170	1260	1410	1430	1480
ORP							
pH	7.60	7.73	7.80	7.42	7.34	7.32	7.29
Total Suspended Solids	<3.0	<3.0	<3.0	<3.0	36.6	44.6	49.3
Dissolved Anions							
Alkalinity-Total CaCO3	103	101	106	110	101	105	73.0
Sulphate SO4	546	544	558	608	688	708	733
Bromide (Br)							
Chloride (Cl)							
Nutrients							
Ammonia Nitrogen N	0.820	0.860	0.840	0.930	1.44	1.52	1.48
Nitrate Nitrogen N	0.257	0.193	0.200	0.192	<0.050	<0.050	<0.050
Nitrite Nitrogen N	0.014	<0.010	0.014	0.015	<0.010	<0.010	0.011
Nitrite/Nitrate Nitrogen N							
Dissolved ortho-Phosphate P	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Phosphate P	0.002	0.002	0.002	0.002	0.0069	0.002	0.002
Total Metals							
Aluminum T-Al	0.0262	0.0324	0.0353	0.0200	0.0192	0.0114	0.0129
Antimony T-Sb	0.00156	0.00165	0.00164	0.00167	<0.00020	<0.00020	<0.00020
Arsenic T-As	0.00024	0.00023	0.00022	0.00024	0.00091	0.00217	0.00172
Barium T-Ba	0.0165	0.0168	0.0167	0.0168	0.0155	0.0167	0.0164
Beryllium T-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth T-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron T-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium T-Cd	0.0139	0.0144	0.0144	0.0150	0.00048	0.00013	0.00015
Calcium T-Ca	147	135	135	138	185	202	193
Chromium T-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt T-Co	0.0442	0.0460	0.0466	0.0474	0.0335	0.0326	0.0309
Copper T-Cu	0.0172	0.0183	0.0184	0.0168	0.00728	<0.0016	<0.0014
Iron T-Fe	0.154	0.167	0.185	0.136	16.1	21.4	22.2
Lead T-Pb	0.00219	0.00260	0.00251	0.00140	0.00132	0.00094	0.00122
Lithium T-Li	0.050	0.051	0.051	0.054	0.063	0.066	0.065
Magnesium T-Mg	64.3	59.4	58.8	58.6	65.3	72.1	69.0
Manganese T-Mn	2.38	2.47	2.48	2.76	3.42	3.54	3.65
Molybdenum T-Mo	0.00257	0.00258	0.00262	0.00280	0.00384	0.00333	0.00284
Nickel T-Ni	0.0989	0.103	0.106	0.106	0.0717	0.0681	0.0719
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	7.5	6.9	6.9	7.1	12.0	13.6	12.3
Selenium T-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon T-Si	3.03	2.78	2.77	2.63	2.50	2.80	2.70
Silver T-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium T-Na	21.3	19.6	19.5	19.7	31.3	35.4	32.0
Strontium T-Sr	0.470	0.486	0.491	0.510	0.535	0.561	0.609
Thallium T-Tl	0.00064	0.00065	0.00067	0.00069	0.00024	0.00024	0.00024
Tin T-Sn	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00275	0.00288	0.00293	0.00291	0.00282	0.00369	0.00464
Vanadium T-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc T-Zn	13.4	14.0	14.1	14.7	3.12	2.48	2.73
Dissolved Metals							
Aluminum D-Al							
Antimony D-Sb							
Arsenic D-As							
Barium D-Ba							
Beryllium D-Be							
Bismuth D-Bi							
Boron D-B							
Cadmium D-Cd							
Calcium D-Ca							
Chromium D-Cr							
Cobalt D-Co							
Copper D-Cu							
Iron D-Fe							
Lead D-Pb							
Lithium D-Li							
Magnesium D-Mg							
Manganese D-Mn							
Molybdenum D-Mo							
Nickel D-Ni							
Phosphorus D-P							
Potassium D-K							
Selenium D-Se							
Silicon D-Si							
Silver D-Ag							
Sodium D-Na							
Strontium D-Sr							
Thallium D-Tl							
Tin D-Sn							
Titanium D-Ti							
Uranium D-U							
Vanadium D-V							
Zinc D-Zn							
Organic Parameters							
Chlorophyll a (a,b)							

Faro Pit - 2005 to 2007 Monitoring Results

RESULTS OF ANALYSIS

Depth (m)	0.1	1	3	5	15	30	60	80
Sample ID	FP-0.1m Faro Pit Sur	FP-1 Faro Pit @1m	FP-3 Faro Pit @3m	FP-5 Faro Pit @5m	FP-15 Faro Pit @15m	FP-30 Faro Pit @30m	FP-60 Faro Pit @60m	FP-80 Faro Pit @80m
Date Sampled	6-Jul-05	6-Jul-05	6-Jul-05	6-Jul-05	6-Jul-05	6-Jul-05	6-Jul-05	6-Jul-05
Time Sampled	10:20	10:30	10:45	11:00	11:20	11:30	11:50	12:15
ALS Sample ID	1	2	3	4	5	6	7	8
Nature	Water	Water	Water	Water	Water	Water	Water	Water
Depth	0.1	1	3	5	15	30	60	80
Physical Tests								
Hardness (as CaCO3)								
Conductivity (uS/cm)	1160	1160	1160	1170	1250	1400	1420	1470
ORP								
pH	7.16	7.24	7.33	6.81	6.94	6.94	6.88	6.84
Total Suspended Solids	<3.0	<3.0	<3.0	4.8	<3.0	27.5	30.8	32.1
Dissolved Anions								
Alkalinity-Total CaCO3	97.2	96.1	101	101	105	97.6	97.4	108
Sulphate SO4	583	575	592	575	725	735	743	778
Bromide (Br)								
Chloride (Cl)								
Nutrients								
Ammonia Nitrogen N	0.800	0.820	0.770	0.740	1.17	1.27	1.31	1.52
Nitrate Nitrogen N	0.420	0.379	0.362	0.315	0.201	5.66	<0.025	<0.025
Nitrite Nitrogen N	0.0086	0.0090	0.0078	0.0095	0.0087	0.137	0.0158	0.0086
Nitrite/Nitrate Nitrogen N								
Dissolved ortho-Phosphate P	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Phosphate P	0.0052	0.0052	0.0090	0.0113	0.0050	0.002	0.002	0.002
Total Metals								
Aluminum T-Al	<0.0050	<0.0050	<0.0050	0.0070	0.0117	0.0108	0.0085	0.0080
Antimony T-Sb	0.00141	0.00136	0.00135	0.00140	0.00150	<0.00020	<0.00020	<0.00020
Arsenic T-As	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00106	0.00181	0.00126
Barium T-Ba	0.0175	0.0169	0.0169	0.0169	0.0169	0.0165	0.0155	0.0164
Beryllium T-Be	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0010	<0.0010
Bismuth T-Bi	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0010	<0.0010
Boron T-B	<0.050	<0.050	<0.050	<0.050	<0.050	<0.020	<0.020	<0.020
Cadmium T-Cd	0.00511	0.00522	0.00626	0.0122	0.0165	0.00077	0.00035	0.00022
Calcium T-Ca	137	139	139	136	158	189	201	202
Chromium T-Cr	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0010	<0.0010
Cobalt T-Co	0.0475	0.0467	0.0463	0.0467	0.0475	0.0309	0.0301	0.0316
Copper T-Cu	0.00384	0.00392	0.00416	0.00704	0.00974	0.00462	0.00166	0.00118
Iron T-Fe	<0.030	<0.030	<0.030	0.032	0.081	20.0	22.7	25.6
Lead T-Pb	0.00094	0.00108	0.00088	0.00141	0.00129	0.00058	0.00064	0.00088
Lithium T-Li	0.048	0.050	0.050	0.049	0.054	0.059	0.059	0.066
Magnesium T-Mg	61.2	61.3	61.7	60.3	66.7	66.3	69.8	68.8
Manganese T-Mn	2.43	2.37	2.34	2.40	2.60	3.17	3.17	3.60
Molybdenum T-Mo	0.00273	0.00260	0.00235	0.00267	0.00260	0.00347	0.00291	0.00272
Nickel T-Ni	0.109	0.105	0.105	0.107	0.105	0.0657	0.0648	0.0736
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	9.0	9.2	8.9	8.7	10.8	15.1	15.7	15.4
Selenium T-Se	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020
Silicon T-Si	3.04	3.11	3.11	3.30	3.19	2.79	2.95	3.03
Silver T-Ag	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000020	<0.000020	<0.000020
Sodium T-Na	21.0	21.3	21.0	20.3	24.6	33.3	33.4	33.5
Strontium T-Sr	0.488	0.470	0.463	0.473	0.470	0.485	0.490	0.585
Thallium T-Tl	0.00070	0.00069	0.00066	0.00066	0.00066	0.00025	0.00024	0.00026
Tin T-Sn	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00020	<0.00020	<0.00020
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00292	0.00288	0.00282	0.00270	0.00285	0.00322	0.00359	0.00484
Vanadium T-V	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020
Zinc T-Zn	11.6	11.3	12.1	14.3	13.1	2.41	2.36	2.66
Dissolved Metals								
Aluminum D-Al	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020
Antimony D-Sb	0.00142	0.00143	0.00137	0.00146	0.00150	<0.00020	<0.00020	<0.00020
Arsenic D-As	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00089	0.00140	0.00059
Barium D-Ba	0.0170	0.0170	0.0164	0.0164	0.0165	0.0159	0.0154	0.0156
Beryllium D-Be	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0010	<0.0010
Bismuth D-Bi	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0010	<0.0010
Boron D-B	<0.050	<0.050	<0.050	<0.050	<0.050	<0.020	<0.020	<0.020
Cadmium D-Cd	0.00094	0.00099	0.00075	0.00116	0.00146	<0.00010	<0.00010	<0.00010
Calcium D-Ca	139	139	140	143	153	191	192	192
Chromium D-Cr	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0010	<0.0010
Cobalt D-Co	0.0470	0.0469	0.0450	0.0447	0.0466	0.0308	0.0304	0.0306
Copper D-Cu	0.00187	0.00202	0.00171	0.00115	0.00161	0.00042	0.00035	0.00037
Iron D-Fe	<0.030	<0.030	<0.030	<0.030	<0.030	19.7	20.8	23.3
Lead D-Pb	0.00040	0.00045	0.00033	0.00050	<0.00025	<0.00010	<0.00010	<0.00010
Lithium D-Li	0.050	0.050	0.047	0.047	0.053	0.056	0.058	0.064
Magnesium D-Mg	62.3	61.3	62.0	63.1	64.6	67.0	64.6	64.9
Manganese D-Mn	2.38	2.39	2.29	2.30	2.60	3.13	3.15	3.51
Molybdenum D-Mo	0.00250	0.00253	0.00243	0.00246	0.00265	0.00329	0.00294	0.00257
Nickel D-Ni	0.107	0.108	0.104	0.103	0.106	0.0656	0.0649	0.0705
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	9.0	9.0	8.9	9.4	10.9	15.6	14.9	14.8
Selenium D-Se	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020
Silicon D-Si	2.97	2.97	3.03	3.50	3.20	2.84	2.81	2.87
Silver D-Ag	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000020	<0.000020	<0.000020
Sodium D-Na	21.1	21.1	20.9	21.7	24.8	34.2	31.7	32.7
Strontium D-Sr	0.477	0.480	0.450	0.455	0.468	0.477	0.499	0.565
Thallium D-Tl	0.00070	0.00068	0.00067	0.00066	0.00069	0.00024	0.00023	0.00024
Tin D-Sn	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00020	<0.00020	<0.00020
Titanium D-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium D-U	0.00289	0.00294	0.00265	0.00256	0.00282	0.00301	0.00345	0.00459
Vanadium D-V	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020
Zinc D-Zn	11.2	11.2	11.1	13.4	12.3	2.36	2.35	2.52
Organic Parameters	FP-0.1 Faro Pit Surfa	FP-1 Faro Pit @1m	FP-3 Faro Pit @3m	FP-5 Faro Pit @5m	FP-15 Faro Pit @15m	FP-30 Faro Pit @30m	FP-60 Faro Pit @60m	FP-80 Faro Pit @80m
Chlorophyll a (a,b)	1.19	1.93	4.13	56.4	1.50	0.047	0.087	0.01

Faro Pit - 2005 to 2007 Monitoring Results

RESULTS OF ANALYSIS

Depth (m)	0.1	1	3	5	15	30	60	80
Sample ID	FP_0.1	FP_1	FP_3	FP_5	FP_15	FP_30	FP_60	FP_80
Date Sampled	3-Aug-05	3-Aug-05	3-Aug-05	3-Aug-05	3-Aug-05	3-Aug-05	3-Aug-05	3-Aug-05
Time Sampled	14:35	14:47	14:55	15:00	15:17	15:23	15:32	15:44
ALS Sample ID	1	2	3	4	5	6	7	8
Nature	Water	Water	Water	Water	Water	Water	Water	Water
Depth	0.1	1	3	5	15	30	60	80
Physical Tests								
Hardness (as CaCO3)								
Conductivity (uS/cm)	1140	1140	1140	1140	1230	1370	1390	1440
ORP								
pH	7.45	7.69	7.78	7.81	7.66	7.41	7.24	7.25
Total Suspended Solids	<3.0	<3.0	<3.0	<3.0	<3.0	36.7	32.0	36.7
Dissolved Anions								
Alkalinity-Total CaCO3	101	95.2	97.5	56.8	104	110	107	112
Sulphate SO4	558	562	561	557	605	691	699	733
Bromide (Br)								
Chloride (Cl)								
Nutrients								
Ammonia Nitrogen N	1.17	1.21	1.05	1.05	1.78	1.60	1.52	1.64
Nitrate Nitrogen N	0.334	0.351	0.348	0.341	0.181	<0.0050	0.0066	<0.0050
Nitrite Nitrogen N	0.0061	0.0062	0.0063	0.0063	0.0060	0.0016	0.0024	0.0022
Nitrite/Nitrate Nitrogen N								
Dissolved ortho-Phosphate P	<0.0010	<0.0010	0.0019	0.0044	<0.0010	<0.0010	<0.0010	<0.0010
Total Phosphate P	0.0025	0.0046	0.0060	0.0101	0.0027	0.0037	0.0048	0.0037
Total Metals								
Aluminum T-Al	0.0119	0.0137	0.0140	0.0140	0.0147	0.0108	0.0129	0.0128
Antimony T-Sb	0.00138	0.00140	0.00140	0.00142	0.00142	<0.00020	<0.00020	<0.00020
Arsenic T-As	<0.00020	<0.00020	<0.00020	0.00020	0.00022	0.00102	0.00168	0.00110
Barium T-Ba	0.0161	0.0163	0.0164	0.0164	0.0161	0.0158	0.0159	0.0160
Beryllium T-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth T-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron T-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium T-Cd	0.00302	0.00315	0.00315	0.00313	0.00968	0.00110	0.00051	0.00035
Calcium T-Ca	138	135	137	135	146	175	191	199
Chromium T-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt T-Co	0.0433	0.0453	0.0461	0.0472	0.0494	0.0319	0.0324	0.0317
Copper T-Cu	0.00423	0.00445	0.00472	0.00463	0.00527	0.00243	0.00093	0.00060
Iron T-Fe	0.062	0.063	0.064	0.063	0.058	17.4	20.9	24.0
Lead T-Pb	0.00184	0.00282	0.00224	0.00252	0.00191	0.00114	0.00144	0.00135
Lithium T-Li	0.049	0.052	0.052	0.054	0.058	0.063	0.066	0.068
Magnesium T-Mg	63.0	62.5	62.8	61.6	62.9	63.1	69.2	71.7
Manganese T-Mn	2.36	2.49	2.56	2.60	2.99	3.49	3.59	3.80
Molybdenum T-Mo	0.00236	0.00247	0.00249	0.00259	0.00270	0.00348	0.00304	0.00266
Nickel T-Ni	0.0959	0.0997	0.103	0.104	0.107	0.0651	0.0667	0.0715
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	6.9	6.8	6.9	6.7	7.8	13.4	13.0	12.7
Selenium T-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon T-Si	2.94	2.90	2.93	2.87	2.72	2.39	2.67	2.79
Silver T-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium T-Na	19.6	19.4	19.8	18.9	21.5	33.5	32.6	32.1
Strontium T-Sr	0.480	0.504	0.514	0.521	0.539	0.525	0.566	0.617
Thallium T-Tl	0.00067	0.00069	0.00070	0.00070	0.00073	0.00025	0.00026	0.00026
Tin T-Sn	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00224	0.00234	0.00237	0.00239	0.00307	0.00330	0.00379	0.00472
Vanadium T-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc T-Zn	12.5	13.1	13.6	13.8	14.9	2.68	2.58	2.76
Dissolved Metals								
Aluminum D-Al								
Antimony D-Sb								
Arsenic D-As								
Barium D-Ba								
Beryllium D-Be								
Bismuth D-Bi								
Boron D-B								
Cadmium D-Cd								
Calcium D-Ca								
Chromium D-Cr								
Cobalt D-Co								
Copper D-Cu								
Iron D-Fe								
Lead D-Pb								
Lithium D-Li								
Magnesium D-Mg								
Manganese D-Mn								
Molybdenum D-Mo								
Nickel D-Ni								
Phosphorus D-P								
Potassium D-K								
Selenium D-Se								
Silicon D-Si								
Silver D-Ag								
Sodium D-Na								
Strontium D-Sr								
Thallium D-Tl								
Tin D-Sn								
Titanium D-Ti								
Uranium D-U								
Vanadium D-V								
Zinc D-Zn								
Organic Parameters	FP_0.1	FP_1	FP_3	FP_5	FP_7	FP_10	FP_15	
Chlorophyll a (a,b)	1.79	0.396	3.51	0.306	0.222	4.59	6.20	

Faro Pit - 2005 to 2007 Monitoring Results

RESULTS OF ANALYSIS

Depth (m)	0.05	0.1	1	3	5	15	30	60
Sample ID	FP_ SURFACE	FP_ SURFACE	FP_1	FP_3	FP_5	FP_15	FP_30	FP_60
Date Sampled	31-Aug-05	31-Aug-05	31-Aug-05	31-Aug-05	31-Aug-05	31-Aug-05	31-Aug-05	31-Aug-05
Time Sampled	10:15	15:15	16:00	16:15	16:22	16:35	16:49	17:15
ALS Sample ID	9	1	2	3	4	5	6	7
Nature	Water	Water	Water	Water	Water	Water	Water	Water
Depth	0.05	0.1	1	3	5	15	30	60
Physical Tests								
Hardness (as CaCO3)								
Conductivity (uS/cm)	0899	1140	1140	1140	1140	1230	1360	1380
ORP								
pH	8.41	7.27	7.46	7.57	7.69	7.51	7.34	7.16
Total Suspended Solids	7.1	<3.0	<3.0	<3.0	3.3	<3.0	60.0	30.6
Dissolved Anions								
Alkalinity-Total CaCO3	124	102	101.0	100	102	110	104	107
Sulphate SO4	412	569	582	567	573	631	712	724
Bromide (Br)								
Chloride (Cl)								
Nutrients								
Ammonia Nitrogen N	0.45	1.07	1.20	1.19	1.22	1.94	1.47	1.47
Nitrate Nitrogen N	1.010	0.356	0.410	0.365	0.371	0.197	<0.025	<0.025
Nitrite Nitrogen N	0.0098	0.0308	0.0255	0.0159	0.0091	0.0167	0.0067	0.0060
Nitrite/Nitrate Nitrogen N								
Dissolved ortho-Phosphate P	0.0363	<0.0010	0.0072	<0.0010	<0.0010	<0.0010	0.0016	0.0017
Total Phosphate P	0.0540	0.0025	0.0112	0.0021	0.002	0.0020	0.0157	0.0026
Total Metals								
Aluminum T-Al	0.0700	0.0109	0.0155	0.0118	0.0107	0.0069	0.0088	0.0096
Antimony T-Sb	0.00520	0.00126	0.00135	0.00138	0.00132	0.00112	<0.00020	<0.00020
Arsenic T-As	0.00087	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00092	0.00162
Barium T-Ba	0.0317	0.0153	0.0159	0.0155	0.0156	0.0145	0.0155	0.0150
Beryllium T-Be	<0.0010	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0010
Bismuth T-Bi	<0.0010	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0010
Boron T-B	<0.020	<0.050	<0.050	<0.050	<0.050	<0.050	<0.020	<0.020
Cadmium T-Cd	0.00077	0.00313	0.00324	0.00323	0.00328	0.00408	0.00087	0.00029
Calcium T-Ca	098	144	142	143	135	146	173	180
Chromium T-Cr	<0.0010	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0010
Cobalt T-Co	0.0136	0.0426	0.0420	0.0435	0.0431	0.0429	0.0302	0.0290
Copper T-Cu	0.00140	0.00423	0.00464	0.00442	0.00433	0.00132	<0.0020	<0.0010
Iron T-Fe	0.124	0.162	0.183	0.160	0.148	00.0	17.4	19.9
Lead T-Pb	0.00168	0.00264	0.00373	0.00278	0.00265	0.00105	0.00074	0.00067
Lithium T-Li	0.023	0.049	0.049	0.047	0.050	0.054	0.063	0.064
Magnesium T-Mg	64.4	66.0	64.2	63.0	59.6	60.0	60.7	62.1
Manganese T-Mn	0.19	2.22	2.19	2.25	2.24	2.50	3.18	3.17
Molybdenum T-Mo	0.00332	0.00217	0.00219	0.00223	0.00212	0.00214	0.00317	0.00269
Nickel T-Ni	0.1120	0.0941	0.0955	0.0963	0.0969	0.0945	0.0630	0.0617
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	2.2	7.7	7.4	7.3	7.0	08.2	12.0	12.5
Selenium T-Se	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020
Silicon T-Si	2.48	3.22	3.15	3.16	2.95	2.74	2.47	2.55
Silver T-Ag	<0.000020	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000020	<0.000020
Sodium T-Na	09.6	21.9	21.4	20.8	19.9	22.3	30.4	31.2
Strontium T-Sr	0.607	0.478	0.475	0.483	0.485	0.483	0.522	0.541
Thallium T-Tl	0.00119	0.00063	0.00062	0.00062	0.00062	0.00058	0.00022	0.00022
Tin T-Sn	<0.00020	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00020	<0.00020
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00402	0.00195	0.00193	0.00192	0.00196	0.00240	0.00319	0.00374
Vanadium T-V	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020
Zinc T-Zn	01.0	13.2	13.2	13.3	13.2	13.10	2.69	2.43
Dissolved Metals								
Aluminum D-Al								
Antimony D-Sb								
Arsenic D-As								
Barium D-Ba								
Beryllium D-Be								
Bismuth D-Bi								
Boron D-B								
Cadmium D-Cd								
Calcium D-Ca								
Chromium D-Cr								
Cobalt D-Co								
Copper D-Cu								
Iron D-Fe								
Lead D-Pb								
Lithium D-Li								
Magnesium D-Mg								
Manganese D-Mn								
Molybdenum D-Mo								
Nickel D-Ni								
Phosphorus D-P								
Potassium D-K								
Selenium D-Se								
Silicon D-Si								
Silver D-Ag								
Sodium D-Na								
Strontium D-Sr								
Thallium D-Tl								
Tin D-Sn								
Titanium D-Ti								
Uranium D-U								
Vanadium D-V								
Zinc D-Zn								
Organic Parameters	FP- SURFACE	FP_ SURFACE	FP_1	FP_3	FP_5			
Chlorophyll a (a,b)	0.001	0.507	0.010	0.657	0.027			

Faro Pit - 2005 to 2007 Monitoring Results

RESULTS OF ANALYSIS

Depth (m)	80	0.1	1	3	5	15	30	60	80
Sample ID	FP_80	FP-0.1	FP-1	FP-3	FP-5	FP-15	FP-30	FP-60	FP-80
Date Sampled	31-Aug-05	14-Sep-05	14-Sep-05	14-Sep-05	14-Sep-05	14-Sep-05	14-Sep-05	14-Sep-05	14-Sep-05
Time Sampled	17:45	19:00	19:07	19:12	19:16	19:25	19:40	19:55	20:15
ALS Sample ID	8	1	2	3	4	5	6	7	8
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water
Depth	80	0.1	1	3	5	15	30	60	80
Physical Tests									
Hardness (as CaCO3)									
Conductivity (uS/cm)	1440	1180	1180	1180	1190	1250	1390	1410	1460
ORP									
pH	7.02	6.69	6.86	7.03	7.12	7.20	7.32	7.22	7.14
Total Suspended Solids	37.6	<3.0	<3.0	<3.0	<3.0	<3.0	31.2	34.5	39.8
Dissolved Anions									
Alkalinity-Total CaCO3	118	90.0	93.4	96.7	107	97.7	83.4	90.0	93.2
Sulphate SO4	761	569	570	572	572	632	711	720	761
Bromide (Br)									
Chloride (Cl)									
Nutrients									
Ammonia Nitrogen N	1.700	1.33	2.30	1.27	1.17	1.94	1.63	1.60	1.87
Nitrate Nitrogen N	<0.025	0.344	0.351	0.346	0.349	0.199	<0.025	<0.025	<0.025
Nitrite Nitrogen N	0.0082	0.0052	0.0052	0.0051	0.0054	0.0093	0.0075	0.0056	0.0051
Nitrite/Nitrate Nitrogen N									
Dissolved ortho-Phosphate P	0.0017	<0.0010	<0.0010	<0.0010	<0.0010	0.0085	0.0026	0.0029	0.0027
Total Phosphate P	0.0034	0.002	0.002	0.002	0.002	0.0086	0.0031	0.0040	0.0038
Total Metals									
Aluminum T-Al	0.0205	0.0179	0.0143	0.0105	0.0100	0.0068	0.0079	0.0092	0.0138
Antimony T-Sb	<0.00020	0.00133	0.00147	0.00145	0.00142	0.00134	<0.00020	<0.00020	<0.00020
Arsenic T-As	0.00136	0.00023	0.00025	0.00021	0.00021	<0.00020	0.00128	0.00163	0.00154
Barium T-Ba	0.0166	0.0160	0.0173	0.0165	0.0162	0.0167	0.0156	0.0155	0.0182
Beryllium T-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth T-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron T-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium T-Cd	0.00016	0.00346	0.00351	0.00340	0.00345	0.00284	0.00073	0.00024	0.00022
Calcium T-Ca	202.0	153	152	147	154	164	188	203	205
Chromium T-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt T-Co	0.0322	0.0429	0.0449	0.0446	0.0445	0.0454	0.0307	0.0301	0.0307
Copper T-Cu	<0.0010	0.00493	0.00537	0.00499	0.00478	<0.0020	<0.0018	<0.0012	<0.0012
Iron T-Fe	24.800	0.224	0.243	0.216	0.230	0.072	18.6	21.7	23.8
Lead T-Pb	0.00284	0.00261	0.00403	0.00283	0.00286	0.00115	0.00067	0.00072	0.00289
Lithium T-Li	0.072	0.047	0.050	0.049	0.047	0.053	0.059	0.060	0.065
Magnesium T-Mg	70.1	67.6	67.4	65.4	68.0	67.2	65.5	68.9	68.1
Manganese T-Mn	3.720	2.36	2.49	2.49	2.46	2.84	3.36	3.45	3.77
Molybdenum T-Mo	0.00264	0.00234	0.00244	0.00238	0.00235	0.00251	0.00337	0.00286	0.00267
Nickel T-Ni	0.074	0.0952	0.0994	0.0991	0.0980	0.0994	0.0630	0.0624	0.0705
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	13.2	7.7	7.6	7.4	7.8	9.1	12.3	13.4	13.0
Selenium T-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon T-Si	2.91	3.27	3.28	3.18	3.32	3.00	2.60	2.77	2.81
Silver T-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium T-Na	33.8	21.3	20.9	20.4	21.3	24.1	29.8	32.0	31.1
Strontium T-Sr	0.661	0.470	0.492	0.487	0.487	0.496	0.503	0.525	0.604
Thallium T-Tl	0.00023	0.00066	0.00067	0.00066	0.00067	0.00064	0.00023	0.00023	0.00021
Tin T-Sn	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00515	0.00200	0.00211	0.00209	0.00202	0.00256	0.00329	0.00369	0.00504
Vanadium T-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc T-Zn	2.84	11.8	12.3	12.1	12.1	12.2	2.37	2.15	2.40
Dissolved Metals									
Aluminum D-Al		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Antimony D-Sb		0.00140	0.00139	0.00139	0.00136	0.00138	<0.00020	<0.00020	<0.00020
Arsenic D-As		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Barium D-Ba		0.0159	0.0160	0.0161	0.0161	0.0158	0.0149	0.0145	0.0137
Beryllium D-Be		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth D-Bi		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron D-B		<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium D-Cd		0.00337	0.00348	0.00353	0.00361	<0.00010	<0.00010	<0.00010	<0.00010
Calcium D-Ca		151	148	149	147	161	194	192	209
Chromium D-Cr		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt D-Co		0.0438	0.0445	0.0441	0.0443	0.0451	0.0312	0.0305	0.0306
Copper D-Cu		0.00289	0.00300	0.00295	0.00295	<0.00060	<0.00040	<0.00040	<0.00060
Iron D-Fe		<0.030	<0.030	<0.030	<0.030	<0.030	1.70	1.71	1.96
Lead D-Pb		0.00014	0.00024	0.00016	0.00016	<0.00010	<0.00010	<0.00010	<0.00010
Lithium D-Li		0.047	0.046	0.047	0.047	0.051	0.058	0.059	0.064
Magnesium D-Mg		66.7	65.1	65.7	64.3	64.7	67.1	65.3	69.2
Manganese D-Mn		2.45	2.49	2.50	2.48	2.90	3.54	3.59	3.83
Molybdenum D-Mo		0.00231	0.00230	0.00242	0.00237	0.00243	0.00017	<0.00010	<0.00010
Nickel D-Ni		0.101	0.101	0.102	0.103	0.103	0.0675	0.0658	0.0731
Phosphorus D-P		<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K		7.6	7.4	7.5	7.3	8.9	12.7	12.4	12.9
Selenium D-Se		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon D-Si		3.23	3.13	3.17	3.09	2.88	2.32	2.28	2.46
Silver D-Ag		<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium D-Na		20.8	20.2	20.5	20.2	23.4	31.3	30.2	30.6
Strontium D-Sr		0.493	0.506	0.513	0.508	0.519	0.544	0.568	0.650
Thallium D-Tl		0.00064	0.00063	0.00062	0.00061	0.00060	0.00021	<0.00020	<0.00020
Tin D-Sn		<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium D-Ti		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium D-U		0.00187	0.00188	0.00192	0.00193	0.00239	0.00114	0.00122	0.00157
Vanadium D-V		<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc D-Zn		12.1	12.4	12.6	12.5	12.4	2.00	1.84	2.04
Organic Parameters		FP-1	FP-3	FP-5	FP-7				
Chlorophyll a (a,b)		0.0006	0.0006	0.0006	0.0006	-		-	-

Faro Pit - 2005 to 2007 Monitoring Results

RESULTS OF ANALYSIS

Depth (m)	1	10	30	1	3	5	15	30	60	80
Sample ID	FARO PIT 1m	FARO PIT 10m	FARO PIT 30m	FP 1m Faro Pit @	FP 3m Faro Pit @	FP 5m Faro Pit @	FP 15m Faro Pit @	FP 30m Faro Pit @	FP 60m Faro Pit @	FP 80m Faro Pit @
Date Sampled	17-May-06	17-May-06	17-May-06	21-Jun-06	21-Jun-06	21-Jun-06	21-Jun-06	21-Jun-06	21-Jun-06	21-Jun-06
Time Sampled	10:00	10:30	11:00	16:00	16:15	16:20	16:35	16:45	17:00	17:20
ALS Sample ID	01	02	03	07	08	09	10	11	12	13
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Depth										
Physical Tests										
Hardness (as CaCO3)										
Conductivity (uS/cm)	0956	1250	1250	1090	1100	1140	1280	1410	1430	1490
ORP										
pH	7.16	7.45	7.53	6.96	7.20	7.33	7.39	7.35	7.25	7.15
Total Suspended Solids	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	<3.0	28	33.3	40
Dissolved Anions										
Alkalinity-Total CaCO3	84.3	105	111	097	98.0	097	104	102.0	107.0	116.0
Sulphate SO4	452	614	614	528	533	556	628	714	721	755
Bromide (Br)										
Chloride (Cl)										
Nutrients										
Ammonia Nitrogen N	1.05	1.66	1.75	1.46	1.47	1.58	1.93	1.50	1.59	1.74
Nitrate Nitrogen N	0.271	0.314	0.317	0.329	0.328	0.334	0.314	<0.0050	<0.0050	<0.0050
Nitrite Nitrogen N										
Nitrite/Nitrate Nitrogen N										
Dissolved ortho-Phosphate P	<0.0010	<0.0010	<0.0010	<0.0010	0.0012	<0.0010	<0.0010	0.0013	0.0011	<0.010
Total Phosphate P	0.0027	0.0026	0.003	0.0039	0.004	0.0039	0.0046	<0.0060	0.0110	0.0140
Total Metals										
Aluminum T-Al	0.0529	0.0325	0.0646	0.0188	0.0211	0.0232	0.0280	0.0187	0.0123	0.0120
Antimony T-Sb	0.00066	0.00130	0.00128	0.00096	0.00098	0.00105	0.00124	<0.00020	<0.00020	<0.00020
Arsenic T-As	<0.00020	0.00025	0.00024	<0.00020	<0.00020	<0.00020	0.00022	0.00104	0.00157	0.00139
Barium T-Ba	0.0169	0.0167	0.0162	0.0170	0.0178	0.0175	0.0184	0.0170	0.0163	0.0160
Beryllium T-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth T-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron T-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium T-Cd	0.00798	0.00215	0.00259	0.00525	0.00546	0.00471	0.00371	0.00019	<0.00010	<0.00010
Calcium T-Ca	103	156	155	113	145	121	148	205	175	179
Chromium T-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt T-Co	0.0336	0.0472	0.0459	0.0424	0.0450	0.0451	0.0501	0.0348	0.0345	0.0319
Copper T-Cu	0.0284	0.00720	0.01290	0.01340	0.01440	0.01410	0.00709	<0.0010	<0.0010	<0.00020
Iron T-Fe	0.346	0.172	0.201	0.164	00.4	00.3	00.2	20.400	20.300	23.400
Lead T-Pb	0.00302	0.00133	0.00185	0.00188	0.00192	0.00174	0.00134	0.00069	0.00065	0.00093
Lithium T-Li	0.036	0.057	0.052	0.045	0.050	0.050	0.058	0.067	0.070	0.073
Magnesium T-Mg	48.7	68.6	68.1	58.2	66.5	56.1	66.2	72.6	62.7	63.8
Manganese T-Mn	1.80	2.80	2.65	2.58	2.78	2.77	3.32	4.13	4.34	4.42
Molybdenum T-Mo	0.00136	0.00245	0.00211	0.00170	0.00182	0.00183	0.00226	0.00332	0.00299	0.00272
Nickel T-Ni	0.079	0.111	0.107	0.096	0.1020	0.1060	0.1120	0.0728	0.072	0.074
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.60	<0.30	<0.30	<0.60	<0.30	<0.30
Potassium T-K	5.6	9.3	9.4	5.3	06.7	06.6	08.4	12.6	11.8	12.0
Selenium T-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon T-Si	3.35	3.43	3.40	2.70	3.11	2.82	3.14	2.65	2.52	2.62
Silver T-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000035	0.000057	<0.000020
Sodium T-Na	13.7	22.9	23.1	17.7	20.6	19.3	23.7	35.7	30.4	30.8
Strontium T-Sr	0.385	0.589	0.529	0.503	0.543	0.541	0.631	0.638	0.671	0.745
Thallium T-Tl	0.00042	0.00065	0.00060	0.00054	0.00058	0.00057	0.00066	0.00025	0.00022	<0.00020
Tin T-Sn	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.020	<0.010	<0.010	<0.020	<0.010	<0.010
Uranium T-U	0.00151	0.00245	0.00244	0.00205	0.00221	0.00221	0.00250	0.00349	0.00409	0.00556
Vanadium T-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc T-Zn	14.3	16.6	15.2	15.2	16.00	15.70	17.00	03.2	02.7	02.6
Dissolved Metals										
Aluminum D-Al	0.0065	0.0089	0.0124	<0.0020	0.0034	0.0042	0.0084	0.0088	0.0043	0.0042
Antimony D-Sb	0.00064	0.00125	0.00120	0.00094	0.00096	0.00099	0.00118	<0.00020	<0.00020	<0.00020
Arsenic D-As	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00095	0.00062	0.00043
Barium D-Ba	0.0164	0.0167	0.0160	0.0168	0.0170	0.0173	0.0175	0.0169	0.0155	0.0152
Beryllium D-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth D-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron D-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium D-Cd	0.00771	0.00204	0.00258	0.00528	0.00535	0.00479	0.00357	<0.00010	<0.00010	<0.00010
Calcium D-Ca	104	155	156	114	137	125	145	203	165	169
Chromium D-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt D-Co	0.0339	0.0477	0.0457	0.0434	0.0440	0.0470	0.0481	0.0358	0.0323	0.0328
Copper D-Cu	0.0198	0.00199	0.00425	0.00954	0.00899	0.00907	0.00217	<0.00050	<0.00050	<0.00020
Iron D-Fe	<0.030	<0.030	<0.030	<0.030	<0.060	<0.030	<0.030	20.1	18.8	22.2
Lead D-Pb	<0.00010	0.00014	0.00021	0.00022	0.00011	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Lithium D-Li	0.037	0.057	0.051	0.048	0.048	0.051	0.057	0.069	0.065	0.072
Magnesium D-Mg	49.1	68.2	68.4	59.8	63.3	57.6	64.8	71.8	59.1	60.2
Manganese D-Mn	1.80	2.83	2.66	2.67	2.69	2.88	3.17	4.24	4.07	4.50
Molybdenum D-Mo	0.00131	0.00247	0.00219	0.00169	0.00169	0.00183	0.00213	0.00340	0.00283	0.00278
Nickel D-Ni	0.079	0.113	0.105	0.098	0.0992	0.1090	0.1090	0.0744	0.0679	0.075
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.60	<0.30	<0.30	<0.60	<0.30	<0.30
Potassium D-K	5.6	9.4	9.3	5.9	06.4	06.5	07.8	12.4	11.4	11.4
Selenium D-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon D-Si	3.30	3.35	3.38	2.69	2.94	2.87	3.03	2.62	2.35	2.46
Silver D-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	0.000061	0.000057	0.000045
Sodium D-Na	14.0	22.8	22.8	18.1	19.4	18.9	21.8	35.1	29.0	29.9
Strontium D-Sr	0.390	0.595	0.530	0.515	0.523	0.557	0.602	0.653	0.649	0.762
Thallium D-Tl	0.00041	0.00063	0.00061	0.00056	0.00054	0.00059	0.00066	0.00023	0.00021	<0.00020
Tin D-Sn	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium D-Ti	<0.010	<0.010	<0.010	<0.010	<0.020	<0.010	<0.010	<0.020	<0.010	<0.010
Uranium D-U	0.00139	0.00243	0.00236	0.00207	0.00212	0.00228	0.00236	0.00352	0.00395	0.00563
Vanadium D-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc D-Zn	14.4	16.8	15.2	15.3	15.40	16.00	16.50	03.2	02.5	02.6
Organic Parameters										
Chlorophyll a (a,b)	0.0303	-	-	-	-	-	-	-	-	-

Faro Pit - 2005 to 2007 Monitoring Results

RESULTS OF ANALYSIS

Depth (m)	1	3	5	15	30	60	80
Sample ID	FP_1 Faro Pit @1m	FP_3 Faro Pit @3m	FP_5 Faro Pit @5m	FP_15 Faro Pit @15	FP_30 Faro Pit @30	FP_60 Faro Pit @60	FP_80 Faro Pit @80
Date Sampled	9-Aug-06	9-Aug-06	9-Aug-06	9-Aug-06	9-Aug-06	9-Aug-06	9-Aug-06
Time Sampled	17:00	17:20	17:35	17:45	18:00	18:15	18:30
ALS Sample ID	13	14	15	16	17	18	19
Nature	Water	Water	Water	Water	Water	Water	Water
Depth							
Physical Tests							
Hardness (as CaCO3)							
Conductivity (uS/cm)	1160	1150	1150	1280	1400	1420	1490
ORP							
pH	6.84	7.26	7.37	7.37	7.50	7.48	7.43
Total Suspended Solids	<3.0	<3.0	<3.0	<3.0	25.7	25	31
Dissolved Anions							
Alkalinity-Total CaCO3	075	102	103	111	96.6	110	140
Sulphate SO4	549	552	552	619	679	700	720
Bromide (Br)							
Chloride (Cl)							
Nutrients							
Ammonia Nitrogen N	1.34	1.39	1.37	1.82	1.45	1.49	1.69
Nitrate Nitrogen N	0.335	0.338	0.34	0.22	<0.0050	<0.0050	<0.0050
Nitrite Nitrogen N	0.003	0.0037	0.0038	0.0038	<0.0010	<0.0010	<0.0010
Nitrite/Nitrate Nitrogen N	0.338	0.342	0.344	0.223	<0.0050	<0.0050	<0.0050
Dissolved ortho-Phosphate P	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Phosphate P	<0.0020	<0.0020	<0.0020	<0.0020	0.0580	<0.0020	<0.0020
Total Metals							
Aluminum T-Al	0.0092	0.0044	0.0049	0.0138	0.0186	0.0126	0.0105
Antimony T-Sb	0.00110	0.00101	0.00104	0.00112	<0.00020	<0.00020	<0.00020
Arsenic T-As	0.00023	<0.00020	<0.00020	<0.00020	0.00087	0.00123	0.00098
Barium T-Ba	0.0174	0.0168	0.0171	0.0174	0.0166	0.0157	0.0158
Beryllium T-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth T-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron T-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium T-Cd	0.00556	0.00539	0.00529	0.00308	0.00014	<0.00010	<0.00010
Calcium T-Ca	135	137	137	149	192	191	207
Chromium T-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt T-Co	0.0439	0.0440	0.0445	0.0473	0.0351	0.0332	0.0320
Copper T-Cu	0.01230	0.00611	0.00612	0.00377	0.0012	0.00081	0.0007
Iron T-Fe	0.044	00.0	00.0	00.1	20.400	22.600	28.000
Lead T-Pb	0.00099	0.00074	0.00087	0.00078	0.00062	0.00063	0.00072
Lithium T-Li	0.054	0.055	0.056	0.065	0.073	0.074	0.079
Magnesium T-Mg	62.8	63.8	64.1	64.8	68.6	67.5	72.7
Manganese T-Mn	2.37	2.58	2.60	3.19	4.06	4.05	4.27
Molybdenum T-Mo	0.00168	0.00171	0.00186	0.00214	0.00334	0.00290	0.00271
Nickel T-Ni	0.109	0.1080	0.1100	0.1090	0.0735	0.069	0.073
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	7.2	07.3	07.2	09.0	13.5	13.1	13.6
Selenium T-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon T-Si	3.08	3.12	3.14	2.84	2.65	2.62	2.92
Silver T-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium T-Na	20.0	20.2	20.1	24.3	34.5	33.9	35.6
Strontium T-Sr	0.501	0.575	0.577	0.632	0.673	0.684	0.759
Thallium T-Tl	0.00059	0.00057	0.00058	0.00059	0.00023	0.00022	<0.00020
Tin T-Sn	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00236	0.00230	0.00235	0.00228	0.00354	0.00399	0.00535
Vanadium T-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc T-Zn	14.5	14.40	14.50	14.50	03.0	02.4	02.4
Dissolved Metals							
Aluminum D-Al	0.0024	0.0061	0.0022	0.0060	0.0063	0.0053	0.0038
Antimony D-Sb	0.00107	0.00102	0.00102	0.00105	<0.00020	<0.00020	<0.00020
Arsenic D-As	0.0002	<0.00020	<0.00020	<0.00020	0.00075	0.00085	0.00062
Barium D-Ba	0.0169	0.0166	0.0168	0.0164	0.0157	0.0155	0.0149
Beryllium D-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth D-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron D-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium D-Cd	0.00548	0.00531	0.00536	0.00295	<0.00010	<0.00010	<0.00010
Calcium D-Ca	137	132	136	151	192	190	208
Chromium D-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt D-Co	0.0434	0.0431	0.0453	0.0449	0.0337	0.0330	0.0311
Copper D-Cu	0.01140	0.00525	0.0054	0.00105	0.0006	0.00057	0.00052
Iron D-Fe	<0.030	<0.030	<0.030	<0.030	20.3	22.6	27.9
Lead D-Pb	0.00026	0.0003	0.00032	0.00012	<0.00010	<0.00010	0.00012
Lithium D-Li	0.053	0.055	0.055	0.061	0.069	0.074	0.077
Magnesium D-Mg	63.3	61.6	63.0	65.7	68.4	67.2	72.3
Manganese D-Mn	2.33	2.55	2.63	3.03	3.91	4.05	4.19
Molybdenum D-Mo	0.00165	0.00176	0.00183	0.00198	0.00332	0.00288	0.00252
Nickel D-Ni	0.107	0.1090	0.1100	0.1020	0.0709	0.068	0.072
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	7.4	07.2	07.2	09.1	13.3	13.3	13.7
Selenium D-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon D-Si	3.12	3.01	3.06	2.88	2.64	2.60	2.89
Silver D-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium D-Na	20.3	19.9	20.1	24.3	34.5	34.5	35.5
Strontium D-Sr	0.495	0.567	0.582	0.598	0.637	0.678	0.740
Thallium D-Tl	0.00059	0.00057	0.00058	0.00056	0.00022	0.00021	<0.00020
Tin D-Sn	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium D-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium D-U	0.00233	0.00226	0.00232	0.00213	0.00328	0.00388	0.00524
Vanadium D-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc D-Zn	14.3	14.10	14.50	13.60	02.9	02.4	02.3
Organic Parameters							
Chlorophyll a (a,b)	<0.010	<0.010	0.035	-	-	-	-

Faro Pit - 2005 to 2007 Monitoring Results

RESULTS OF ANALYSIS

Depth (m)	1	3	5	15	30	60	80
Sample ID	FP_1 (Faro @1m)	FP_3 (Faro @3m)	FP_5 (Faro @5m)	FP_15 (Faro @15m	FP_30 (Faro @30m	FP_60 (Faro @60m	FP_80 (Faro @80m
Date Sampled	15-Sep-06	15-Sep-06	15-Sep-06	15-Sep-06	15-Sep-06	15-Sep-06	15-Sep-06
Time Sampled	17:35	17:45	18:00	18:15	18:32	18:50	19:05
ALS Sample ID	14	15	16	17	18	19	20
Nature	Water	Water	Water	Water	Water	Water	Water
Depth							
Physical Tests							
Hardness (as CaCO3)							
Conductivity (uS/cm)	1140	1150	1150	1250	1360	1380	1440
ORP							
pH	7.78	7.80	7.82	7.68	7.34	7.25	7.17
Total Suspended Solids	<3.0	<3.0	<3.0	<3.0	31.2	32.6	36.6
Dissolved Anions							
Alkalinity-Total CaCO3	101	96.9	103	105	106	108	118
Sulphate SO4	549	553	554	607	682	695	699
Bromide (Br)							
Chloride (Cl)							
Nutrients							
Ammonia Nitrogen N	1.68	1.64	1.63	1.91	1.49	1.55	1.92
Nitrate Nitrogen N	0.330	0.328	0.328	0.211	<0.0050	<0.0050	<0.0050
Nitrite Nitrogen N							
Nitrite/Nitrate Nitrogen N							
Dissolved ortho-Phosphate P	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Phosphate P	0.0026	0.0034	0.0033	0.0031	0.0100	0.0046	0.0081
Total Metals							
Aluminum T-Al	0.0048	0.0049	0.0045	0.0062	0.0080	0.0095	0.0175
Antimony T-Sb	0.00102	0.00103	0.00101	0.00099	<0.00020	<0.00020	<0.00020
Arsenic T-As	<0.00020	<0.00020	<0.00020	<0.00020	0.00086	0.00124	0.00126
Barium T-Ba	0.0178	0.0178	0.0175	0.0177	0.0162	0.0160	0.0157
Beryllium T-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth T-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron T-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium T-Cd	0.00515	0.00508	0.00480	0.00336	<0.00010	<0.00010	<0.00010
Calcium T-Ca	146	144	144	161	193	196	207
Chromium T-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt T-Co	0.0459	0.0461	0.0446	0.0478	0.0338	0.0334	0.0320
Copper T-Cu	0.00573	0.00594	0.00566	0.00248	0.00118	0.00098	0.00091
Iron T-Fe	0.104	0.098	0.100	0.167	21.2	24.0	28.9
Lead T-Pb	0.00098	0.00099	0.00098	0.00089	0.00063	0.00060	0.00065
Lithium T-Li	0.055	0.055	0.053	0.059	0.066	0.067	0.075
Magnesium T-Mg	67.4	66.6	66.3	69.7	68.2	68.3	71.4
Manganese T-Mn	2.64	2.65	2.52	3.07	3.74	3.86	4.12
Molybdenum T-Mo	0.00179	0.00186	0.00184	0.00193	0.00309	0.00274	0.00260
Nickel T-Ni	0.113	0.115	0.111	0.109	0.0721	0.0709	0.0768
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	9.3	9.2	9.1	11.1	15.3	15.4	15.3
Selenium T-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon T-Si	3.40	3.36	3.31	3.17	2.79	2.85	3.08
Silver T-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium T-Na	22.4	22.1	21.9	26.2	34.3	34.2	34.5
Strontium T-Sr	0.570	0.593	0.565	0.601	0.613	0.659	0.743
Thallium T-Tl	0.00063	0.00059	0.00060	0.00058	0.00022	0.00022	0.00020
Tin T-Sn	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00244	0.00250	0.00245	0.00221	0.00342	0.00407	0.00559
Vanadium T-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc T-Zn	15.4	15.3	14.8	14.5	2.80	2.17	2.16
Dissolved Metals							
Aluminum D-Al	<0.0020	<0.0020	<0.0020	0.0062	0.0030	0.0042	0.0033
Antimony D-Sb	0.00098	0.00094	0.00101	0.00097	<0.00020	<0.00020	<0.00020
Arsenic D-As	<0.00020	<0.00020	<0.00020	<0.00020	0.00075	0.00104	0.00100
Barium D-Ba	0.0172	0.0171	0.0173	0.0170	0.0162	0.0151	0.0152
Beryllium D-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth D-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron D-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium D-Cd	0.00498	0.00478	0.00487	0.00327	<0.00010	<0.00010	<0.00010
Calcium D-Ca	144	142	144	159	189	192	204
Chromium D-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt D-Co	0.0451	0.0437	0.0441	0.0461	0.0346	0.0317	0.0317
Copper D-Cu	0.00472	0.00443	0.00444	0.00088	0.00105	0.00088	0.00080
Iron D-Fe	<0.030	<0.030	<0.030	0.066	20.6	23.0	28.4
Lead D-Pb	0.00017	0.00023	0.00014	<0.00010	0.00013	0.00010	<0.00010
Lithium D-Li	0.055	0.052	0.052	0.057	0.066	0.067	0.073
Magnesium D-Mg	66.2	65.7	66.6	69.3	66.7	66.6	70.2
Manganese D-Mn	2.59	2.52	2.52	2.92	3.79	3.70	4.02
Molybdenum D-Mo	0.00185	0.00182	0.00178	0.00194	0.00316	0.00267	0.00251
Nickel D-Ni	0.111	0.109	0.110	0.105	0.0730	0.0681	0.0746
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	9.0	9.1	9.0	11.2	14.9	14.7	15.1
Selenium D-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon D-Si	3.31	3.31	3.30	3.16	2.71	2.72	3.00
Silver D-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium D-Na	21.9	22.0	22.0	26.1	33.3	32.7	34.3
Strontium D-Sr	0.570	0.560	0.567	0.581	0.633	0.632	0.717
Thallium D-Tl	0.00059	0.00057	0.00059	0.00057	0.00023	0.00021	<0.00020
Tin D-Sn	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium D-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium D-U	0.00240	0.00238	0.00237	0.00209	0.00348	0.00393	0.00545
Vanadium D-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc D-Zn	15.0	14.6	14.4	13.8	2.79	2.07	2.08
Organic Parameters							
Chlorophyll a (a,b)	-	-	-	-	-	-	-

Faro Pit - 2005 to 2007 Monitoring Results

RESULTS OF ANALYSIS

Depth (m)	1	5	15	80	1	3	5	15	30	60	80
Sample ID	F1 FARO @1M	F-5 FARO @5M	F-15 FARO @15M	F-80 FARO @80M	FPL-1M	FPL-3M	FPL-5M	PFL-15M	FPL-30M	FPL-60M	FPL-80M
Date Sampled	26-Mar-07	26-Mar-07	26-Mar-07	26-Mar-07	12-Jun-07	12-Jun-07	12-Jun-07	12-Jun-07	12-Jun-07	12-Jun-07	12-Jun-07
Time Sampled	15:20	15:48	15:59	16:45	17:45	18:05	18:15	18:30	18:40	18:55	19:20
ALS Sample ID	L491616-5	L491616-6	L491616-7	L491616-8	L518525-14	L518525-15	L518525-16	L518525-17	L518525-18	L518525-19	L518525-20
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Depth											
Physical Tests											
Hardness (as CaCO3)					568	574	656	726	829	812	862
Conductivity (uS/cm)	1010	1270	1270	1490	1000	1000	1130	1180	1310	1320	1340
ORP					120	120	120	130	130	-10	-30
pH	7.73	7.90	7.90	7.85	7.85	7.85	7.79	7.75	7.17	7.11	7.15
Total Suspended Solids	<3.0	<3.0	<3.0	47.2	<3.0	<3.0	<3.0	<3.0	30	30.7	135
Dissolved Anions											
Alkalinity-Total CaCO3											
Sulphate SO4	487	606	605	734	502	503	571	604	687	710	733
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.52	1.19	1.21	1.44	0.95	0.9	1.03	1.11	1.28	1.29	1.31
Nutrients											
Ammonia Nitrogen N					1.37	1.34	1.66	1.80	1.67	1.75	1.89
Nitrate Nitrogen N					0.327	0.331	0.377	0.421	<0.0050	<0.0050	<0.0050
Nitrite Nitrogen N					0.0022	0.003	0.003	0.0029	<0.0010	<0.0010	<0.0010
Nitrite/Nitrate Nitrogen N					0	0	0	0.424	<0.0050	<0.0050	<0.0050
Dissolved ortho-Phosphate P					<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Phosphate P					0.0029	0.0045	0.0031	0.0036	0.0120	0.0120	0.0600
Total Metals											
Aluminum T-Al	<0.20	<0.20	<0.20	<0.20	0.0318	0.0347	0.0306	0.0282	0.0166	0.0097	0.8590
Antimony T-Sb	<0.20	<0.20	<0.20	<0.20	0.00068	0.00066	0.00086	0.00082	<0.00050	<0.00050	0.00233
Arsenic T-As	<0.20	<0.20	<0.20	<0.20	<0.00050	<0.00050	<0.00050	<0.00050	0.00062	0.00179	0.0545
Barium T-Ba	0.0140	0.0170	0.0170	0.0240	0.0171	0.0167	0.0175	0.0171	0.0160	0.0151	0.5410
Beryllium T-Be	<0.0050	<0.0050	<0.0050	<0.0050	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Bismuth T-Bi	<0.20	<0.20	<0.20	<0.20	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Boron T-B	<0.10	<0.10	<0.10	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Cadmium T-Cd	0.02800	<0.010	<0.010	<0.010	0.00784	0.00829	0.00656	0.00664	0.00086	<0.00025	0.00098
Calcium T-Ca	112	163	160	206	134	131	152	169	209	219	226
Chromium T-Cr	<0.010	<0.010	<0.010	<0.010	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Cobalt T-Co	0.0330	0.0460	0.0460	0.0310	0.0417	0.0422	0.0460	0.0478	0.0378	0.0344	0.0356
Copper T-Cu	0.04000	<0.010	<0.010	<0.010	0.0189	0.01950	0.01330	0.01040	0.00232	0.00069	0.03320
Iron T-Fe	0.043	0.033	<0.030	26.400	0.2	0.2	0.3	0.231	20.600	25.900	35.900
Lead T-Pb	<0.050	<0.050	<0.050	<0.050	0.00223	0.00190	0.00191	0.00112	0.00069	0.00084	0.27200
Lithium T-Li	0.038	0.056	0.059	0.067	0.050	0.048	0.056	0.062	0.074	0.074	0.080
Magnesium T-Mg	60.0	69.6	69.1	68.1	62.4	60.1	68.5	75.3	74.0	75.1	77.2
Manganese T-Mn	1.74	2.74	2.81	3.88	2.13	2.14	2.40	2.58	3.67	3.75	3.89
Molybdenum T-Mo	<0.030	<0.030	<0.030	<0.030	0.00132	0.00132	0.00152	0.00160	0.00305	0.00250	0.00264
Nickel T-Ni	0.111	0.111	0.109	0.067	0.0980	0.0989	0.1090	0.115	0.078	0.070	0.076
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	4.6	10.3	10.3	14.8	6.8	6.7	8.0	9.2	13.9	14.5	15.5
Selenium T-Se	<0.20	<0.20	<0.20	<0.20	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Silicon T-Si	6.96	3.63	3.51	2.96	3.03	2.94	3.15	3.32	2.74	2.82	4.21
Silver T-Ag	<0.010	<0.010	<0.010	<0.010	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000449
Sodium T-Na	10.7	22.0	22.4	31.2	17.0	16.8	20.1	22.9	31.9	32.6	34.5
Strontium T-Sr	0.397	0.611	0.616	0.679	0.462	0.459	0.529	0.567	0.597	0.629	0.656
Thallium T-Tl	<0.20	<0.20	<0.20	<0.20	<0.00050	<0.00050	0.00054	0.00057	<0.00050	<0.00050	<0.00050
Tin T-Sn	<0.030	<0.030	<0.030	<0.030	0.00076	0.00215	0.00296	0.00248	0.00284	0.00091	0.00406
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.033
Uranium T-U					0.00201	0.00199	0.00239	0.00239	0.00325	0.00430	0.00579
Vanadium T-V	<0.030	<0.030	<0.030	<0.030	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Zinc T-Zn	25.1	15.6	14.5	2.3	13.40	13.60	14.00	14.7	3.7	2.2	2.9
Dissolved Metals											
Aluminum D-Al	<0.20	<0.20	<0.20	<0.20	0.0079	0.0081	0.0541	0.0052	0.0073	0.0056	0.0184
Antimony D-Sb	<0.20	<0.20	<0.20	<0.20	0.00063	0.00064	0.00083	0.00081	<0.00050	<0.00050	<0.00050
Arsenic D-As	<0.20	<0.20	<0.20	<0.20	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00162	0.00169
Barium D-Ba	0.0130	0.0160	0.0160	0.0130	0.0157	0.0165	0.0172	0.0171	0.0154	0.0149	0.0142
Beryllium D-Be	<0.0050	<0.0050	<0.0050	<0.0050	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Bismuth D-Bi	<0.20	<0.20	<0.20	<0.20	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Boron D-B	<0.10	<0.10	<0.10	<0.10	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Cadmium D-Cd	0.02700	<0.010	<0.010	<0.010	0.0077	0.00784	0.00673	0.00655	0.00088	<0.00025	<0.00025
Calcium D-Ca	112	159	152	203	129	131	150	168	210	207	221
Chromium D-Cr	<0.010	<0.010	<0.010	<0.010	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Cobalt D-Co	0.0340	0.0450	0.0440	0.0310	0.0404	0.0425	0.0461	0.0479	0.0361	0.0341	0.0316
Copper D-Cu	0.03800	<0.010	<0.010	<0.010	0.0126	0.0128	0.00892	0.00761	<0.00050	<0.00050	<0.00050
Iron D-Fe	<0.030	<0.030	<0.030	25.9	<0.030	<0.030	<0.030	<0.030	20.5	24.4	28.1
Lead D-Pb	<0.050	<0.050	<0.050	<0.050	<0.00025	<0.00025	<0.00025	<0.00025	0.00213	<0.00025	0.00103
Lithium D-Li	0.038	0.055	0.053	0.070	0.046	0.048	0.056	0.058	0.066	0.073	0.075
Magnesium D-Mg	59.7	67.3	65.0	67.6	59.7	60.1	68.1	74.7	74.1	71.4	75.2
Manganese D-Mn	1.73	2.70	2.66	3.92	2.06	2.17	2.45	2.61	3.51	3.71	3.74
Molybdenum D-Mo	<0.030	<0.030	<0.030	<0.030	0.00119	0.00129	0.00156	0.00164	0.00274	0.00256	0.00231
Nickel D-Ni	0.110	0.107	0.104	0.067	0.0952	0.0996	0.1090	0.115	0.073	0.069	0.069
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	4.6	10.1	9.7	15.0	6.6	6.7	7.9	9.1	13.8	14.1	14.7
Selenium D-Se	<0.20	<0.20	<0.20	<0.20	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Silicon D-Si	6.89	3.57	3.31	2.95	2.90	2.91	3.12	3.30	2.73	2.68	2.87
Silver D-Ag	<0.010	<0.010	<0.010	<0.010	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Sodium D-Na	10.6	21.7	21.2	31.5	16.5	16.9	19.9	22.7	31.5	32.4	33.2
Strontium D-Sr	0.396	0.598	0.578	0.689	0.450	0.479	0.534	0.577	0.574	0.624	0.650
Thallium D-Tl	<0.20	<0.20	<0.20	<0.20	<0.00050	<0.00050	0.00052	0.00054	<0.00050	<0.00050	<0.00050
Tin D-Sn	<0.030	<0.030	<0.030	<0.030	0.0018	0.00248	0.00124	0.00266	0.00235	0.00084	0.00197
Titanium D-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium D-U					0.00188	0.00198	0.00232	0.00242	0.00308	0.00409	0.00513
Vanadium D-V	<0.030	<0.030	<0.030	<0.030	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Zinc D-Zn	24.7	15.2	14.6	2.4	12.80	13.50	14.10	14.7	3.5	2.2	2.2
Organic Parameters											
Chlorophyll a (a,b)					0.00759	0.01	0.00396	-	-	-	-

Faro Pit - 2005 to 2007 Monitoring Results

RESULTS OF ANALYSIS

Depth (m)	1	3	5	15	30	60	80
Sample ID	FPL-1M	FPL-3M	FPL-5M	FPL-15M	FPL-30M	FPL-60M	FPL-80M
Date Sampled	11-Jul-07	11-Jul-07	11-Jul-07	11-Jul-07	11-Jul-07	11-Jul-07	11-Jul-07
Time Sampled	10:33	10:27	10:22	10:15	10:07	09:55	10:55
ALS Sample ID	L529776-7	L529776-8	L529776-9	L529776-10	L529776-11	L529776-12	L529776-13
Nature	Water	Water	Water	Water	Water	Water	Water
Depth							
Physical Tests							
Hardness (as CaCO3)	651	617	613	715	788	766	820
Conductivity (uS/cm)	1100	1100	1100	1230	1370	1380	1430
ORP	60	70	80	100	-20	-30	-20
pH	7.70	7.80	7.84	7.62	7.06	7.02	6.94
Total Suspended Solids	<3.0	<3.0	<3.0	<3.0	29	29	37
Dissolved Anions							
Alkalinity-Total CaCO3							
Sulphate SO4	533	535	535	608	692	707	734
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	0.93	0.93	0.92	1.06	1.22	1.24	1.27
Nutrients							
Ammonia Nitrogen N	1.48	1.48	1.48	1.93	1.86	1.95	2.24
Nitrate Nitrogen N	0.381	0.371	0.388	0.405	<0.0050	<0.0050	<0.0050
Nitrite Nitrogen N	0.0067	0.0045	0.0051	0.0058	0.0012	<0.0010	<0.0010
Nitrite/Nitrate Nitrogen N	0.388	0.375	0.393	0.41	<0.0050	<0.0050	<0.0050
Dissolved ortho-Phosphate P	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Phosphate P	0.0038	0.0035	0.0032	0.0025	0.0071	0.0057	0.0058
Total Metals							
Aluminum T-Al	0.0128	0.0119	0.0134	0.0158	0.0130	0.0116	0.0126
Antimony T-Sb	0.00065	0.00061	0.00064	0.00086	<0.00020	<0.00020	<0.00020
Arsenic T-As	<0.00050	<0.00050	<0.00050	<0.00050	0.00061	0.00126	0.00103
Barium T-Ba	0.0166	0.0164	0.0167	0.0172	0.0149	0.0141	0.0140
Beryllium T-Be	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0010	<0.0010
Bismuth T-Bi	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0010	<0.0010
Boron T-B	<0.050	<0.050	<0.050	<0.050	<0.020	<0.020	<0.020
Cadmium T-Cd	0.00808	0.00774	0.00807	0.00634	0.00027	<0.00010	<0.00010
Calcium T-Ca	145	140	143	166	204	206	208
Chromium T-Cr	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0010	<0.0010
Cobalt T-Co	0.0434	0.0429	0.0437	0.0470	0.0333	0.0311	0.0292
Copper T-Cu	0.00873	0.00855	0.00895	0.0093	0.0020	<0.00080	<0.00060
Iron T-Fe	0.1	0.1	0.1	0.146	21.800	25.000	29.500
Lead T-Pb	0.00102	0.00096	0.00094	0.00111	0.00083	0.00093	0.00102
Lithium T-Li	0.052	0.050	0.051	0.062	0.067	0.068	0.071
Magnesium T-Mg	70.2	66.0	68.6	74.8	75.2	73.0	74.8
Manganese T-Mn	2.20	2.18	2.22	2.59	3.38	3.39	3.59
Molybdenum T-Mo	0.00125	0.00119	0.00129	0.00154	0.00277	0.00244	0.00224
Nickel T-Ni	0.1080	0.1050	0.1080	0.1170	0.0703	0.064	0.067
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	7.7	7.2	7.3	9.0	13.9	14.2	13.7
Selenium T-Se	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020
Silicon T-Si	3.32	3.21	3.26	3.37	2.80	2.81	2.92
Silver T-Ag	<0.000050	<0.000050	<0.000050	<0.000050	<0.000020	<0.000020	<0.000020
Sodium T-Na	19.1	17.9	18.2	21.8	32.3	32.7	32.0
Strontium T-Sr	0.503	0.503	0.510	0.585	0.576	0.585	0.663
Thallium T-Tl	0.00054	0.00052	0.00053	0.00059	0.00022	0.00021	<0.00020
Tin T-Sn	<0.00050	<0.00050	<0.00050	<0.00050	<0.00020	<0.00020	<0.00020
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00204	0.00200	0.00201	0.00262	0.00330	0.00392	0.00540
Vanadium T-V	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020
Zinc T-Zn	15.30	15.20	15.30	16.2	3.4	2.5	2.4
Dissolved Metals							
Aluminum D-Al	<0.0050	<0.0050	<0.0050	<0.0050	0.0041	0.0039	0.0021
Antimony D-Sb	0.0006	0.0006	0.00066	0.00082	<0.00020	<0.00020	<0.00020
Arsenic D-As	<0.00050	<0.00050	<0.00050	<0.00050	0.0005	0.0008	0.00021
Barium D-Ba	0.0163	0.0165	0.0167	0.0168	0.0147	0.0138	0.0135
Beryllium D-Be	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0010	<0.0010
Bismuth D-Bi	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0010	<0.0010
Boron D-B	<0.050	<0.050	<0.050	<0.050	<0.020	<0.020	<0.020
Cadmium D-Cd	0.00803	0.00781	0.00811	0.00617	0.00017	<0.00010	<0.00010
Calcium D-Ca	146	138	138	163	199	193	205
Chromium D-Cr	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0010	<0.0010
Cobalt D-Co	0.0426	0.0432	0.0438	0.0467	0.0333	0.0312	0.0289
Copper D-Cu	0.00644	0.00621	0.0064	0.0066	<0.00040	<0.00040	<0.00040
Iron D-Fe	<0.030	<0.030	<0.030	<0.030	20.7	23.8	29.1
Lead D-Pb	<0.00025	<0.00025	<0.00025	<0.00025	<0.00010	0.00015	<0.00010
Lithium D-Li	0.050	0.052	0.053	0.061	0.066	0.067	0.071
Magnesium D-Mg	69.8	66.0	65.0	74.8	70.8	68.8	74.7
Manganese D-Mn	2.20	2.22	2.24	2.60	3.39	3.39	3.60
Molybdenum D-Mo	0.00127	0.00123	0.00125	0.00162	0.00266	0.00248	0.00226
Nickel D-Ni	0.1050	0.1060	0.1070	0.1160	0.0703	0.064	0.068
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	7.4	7.2	7.1	8.8	13.1	13.0	13.7
Selenium D-Se	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020
Silicon D-Si	3.30	3.14	3.10	3.31	2.70	2.64	2.87
Silver D-Ag	<0.000050	<0.000050	<0.000050	<0.000050	<0.000020	<0.000020	<0.000020
Sodium D-Na	18.8	17.7	17.5	21.4	30.6	30.4	32.0
Strontium D-Sr	0.502	0.507	0.511	0.572	0.576	0.592	0.665
Thallium D-Tl	<0.00050	0.00053	0.00052	0.00059	0.00022	<0.00020	<0.00020
Tin D-Sn	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	<0.00020	<0.00020
Titanium D-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium D-U	0.00192	0.00197	0.00201	0.00249	0.00317	0.00389	0.00539
Vanadium D-V	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0020	<0.0020
Zinc D-Zn	15.20	15.30	15.20	15.9	3.3	2.2	2.2
Organic Parameters							
Chlorophyll a (a,b)	0.044	0.02	-	-	-	-	-

Faro Pit - 2005 to 2007 Monitoring Results

RESULTS OF ANALYSIS

Depth (m)	1	3	5	15	30	60	80
Sample ID	FP-1 FARO PIT@1m	FP-3 FARO PIT@3m	FP-5 FARO PIT@5m	P-15 FARO PIT@15	FP-30 FARO PIT30m	P-60 FARO PIT@60	P-80 FARO PIT @80
Date Sampled	5-Sep-07	5-Sep-07	5-Sep-07	5-Sep-07	5-Sep-07	5-Sep-07	5-Sep-07
Time Sampled	17:35	17:45	18:10	18:25	18:40	18:50	19:00
ALS Sample ID	L551912-5	L551912-6	L551912-7	L551912-8	L551912-9	L551912-10	L551912-21
Nature	Water	Water	Water	Water	Water	Water	Water
Depth							
Physical Tests							
Hardness (as CaCO3)	634	634	640	707	765	795	846
Conductivity (uS/cm)	1180	1180	1180	1290	1430	1460	1530
ORP	110	110	110	130	-10	-10	10
pH	7.91	7.94	7.96	7.79	7.46	7.44	7.37
Total Suspended Solids	<3.0	<3.0	<3.0	<3.0	24.4	27.8	23.8
Dissolved Anions							
Alkalinity-Total CaCO3							
Sulphate SO4	562	556	561	610	716	744	776
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<1.0	<0.50	<0.50
Chloride (Cl)	1.06	1.05	1.06	1.16	<10	<5.0	<5.0
Nutrients							
Ammonia Nitrogen N	1.21	1.24	1.32	1.64	1.5	1.61	1.85
Nitrate Nitrogen N	0.433	0.43	0.435	0	<0.10	<0.050	<0.050
Nitrite Nitrogen N	0.0061	0.0076	0.0074	0	<0.020	0	0
Nitrite/Nitrate Nitrogen N							
Dissolved ortho-Phosphate P	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Phosphate P	0.002	0.002	0.002	0	0.0034	0.0040	0.0036
Total Metals							
Aluminum T-Al	0.0203	<0.0050	<0.0050	0.0088	0.0064	0.0066	0.0364
Antimony T-Sb	0.00072	0.00069	0.00075	0.00076	<0.00020	<0.00050	<0.00050
Arsenic T-As	<0.00050	<0.00050	<0.00050	<0.00050	0.00068	0.00093	0.00117
Barium T-Ba	0.0179	0.0180	0.017	0.017	0.015	0.015	0.015
Beryllium T-Be	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025
Bismuth T-Bi	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025
Boron T-B	<0.050	<0.050	<0.050	<0.050	<0.020	<0.050	<0.050
Cadmium T-Cd	0.00820	0.00808	0.00801	0.006	0.00015	<0.00025	<0.00025
Calcium T-Ca	140	142	138	156	189	197	211
Chromium T-Cr	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025
Cobalt T-Co	0.0456	0.0449	0.0446	0.049	0.034	0.034	0.030
Copper T-Cu	0.00679	0.00657	0.0064	0.007	<0.0010	0.00065	0.00059
Iron T-Fe	0.1	0.1	0.1	0.160	21.000	24.1	30.0
Lead T-Pb	0.00094	0.00097	0.001	0.00068	0.00051	0.00071	0.00119
Lithium T-Li	0.055	0.054	0.056	0.061	0.068	0.071	0.074
Magnesium T-Mg	67.3	69.0	66.3	71.4	68.5	70.5	73.7
Manganese T-Mn	2.25	2.23	2.20	2.61	3.37	3.48	3.49
Molybdenum T-Mo	0.00134	0.00150	0.00129	0.00139	0.00273	0.00242	0.00188
Nickel T-Ni	0.1150	0.1140	0.1140	0.118	0.071	0.070	0.073
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	8.6	8.9	8.3	10.3	14.4	15.0	14.7
Selenium T-Se	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050
Silicon T-Si	3.44	3.56	3.38	3.26	2.75	2.85	3.12
Silver T-Ag	<0.000050	<0.000050	<0.000050	<0.000050	<0.000020	<0.000050	<0.000050
Sodium T-Na	19.2	20.0	18.9	22.9	29.9	30.8	30.5
Strontium T-Sr	0.522	0.522	0.506	0.562	0.555	0.591	0.640
Thallium T-Tl	0.00058	0.00057	0.00056	0.00054	0.00021	<0.00050	<0.00050
Tin T-Sn	<0.00050	<0.00050	<0.00050	<0.00050	<0.00020	<0.00050	<0.00050
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00200	0.00199	0.00199	0.00225	0.00359	0.00427	0.00575
Vanadium T-V	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050
Zinc T-Zn	14.70	14.80	14.20	14.0	2.8	2.4	2.43
Dissolved Metals							
Aluminum D-Al	<0.0050	<0.0050	<0.0050	<0.0050	0.0021	<0.0050	0.0099
Antimony D-Sb	0.00065	0.00066	0.00072	0.00072	<0.00020	<0.00050	<0.00050
Arsenic D-As	<0.00050	<0.00050	<0.00050	<0.00050	0.00069	0.00081	0.00092
Barium D-Ba	0.0174	0.0173	0.0173	0.017	0.015	0.014	0.014
Beryllium D-Be	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025
Bismuth D-Bi	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025
Boron D-B	<0.050	<0.050	<0.050	<0.050	<0.020	<0.050	<0.050
Cadmium D-Cd	0.00826	0.00805	0.00802	0.006	<0.00010	<0.00025	<0.00025
Calcium D-Ca	142	142	144	162	191	201	215
Chromium D-Cr	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	<0.0025	<0.0025
Cobalt D-Co	0.0450	0.0449	0.0451	0.049	0.034	0.034	0.031
Copper D-Cu	0.00544	0.00555	0.00536	0.003	<0.00020	<0.00050	<0.00050
Iron D-Fe	<0.030	<0.030	<0.030	<0.030	21.1	24.4	30.5
Lead D-Pb	0.00025	<0.00025	<0.00025	<0.00025	<0.00010	<0.00025	<0.00025
Lithium D-Li	0.055	0.054	0.056	0.063	0.067	0.071	0.075
Magnesium D-Mg	68.2	68.0	68.3	73.4	69.8	71.2	75.3
Manganese D-Mn	2.21	2.21	2.24	2.68	3.32	3.44	3.58
Molybdenum D-Mo	0.00144	0.00134	0.00129	0.00146	0.00271	0.00236	0.00197
Nickel D-Ni	0.1130	0.1120	0.1140	0.121	0.070	0.069	0.076
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	8.6	8.7	8.6	10.6	14.8	15.2	15.4
Selenium D-Se	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050
Silicon D-Si	3.48	3.52	3.50	3.36	2.80	2.89	3.26
Silver D-Ag	<0.000050	<0.000050	<0.000050	<0.000050	<0.000020	<0.000050	<0.000050
Sodium D-Na	19.4	19.9	19.2	23.4	30.4	31.4	32.8
Strontium D-Sr	0.517	0.509	0.514	0.570	0.551	0.580	0.656
Thallium D-Tl	0.00056	0.00054	0.00054	0.00056	0.00023	<0.00050	<0.00050
Tin D-Sn	<0.00050	<0.00050	<0.00050	<0.00050	<0.00020	<0.00050	<0.00050
Titanium D-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium D-U	0.00195	0.00198	0.00199	0.00227	0.00348	0.00408	0.00592
Vanadium D-V	<0.0050	<0.0050	<0.0050	<0.0050	<0.0020	<0.0050	<0.0050
Zinc D-Zn	14.60	14.40	14.50	**14.5**	2.8	2.4	2.51
Organic Parameters							
Chlorophyll a (a,b)	<0.00060	<0.00060	-	-	-	-	-

Grum Pit - 2005 -2007 Monitoring Results
RESULTS OF ANALYSIS

Depth (m)	1	3	5	10	15	30	40
Sample ID	GP-1 GRUM PIT @1m	GP-3 GRUM PIT @3m	GP-5 GRUM PIT @5m	GP-10 GRUM PIT @10m	GP-15 GRUM PIT @15m	GP-30 GRUM PIT @30m	GP-40 GRUM PIT @40m
Date Sampled	9/06/2005	9/06/2005	9/06/2005	9/06/2005	9/06/2005	9/06/2005	9/06/2005
Time Sampled	11:40	11:50	12:00	12:10	12:15	23:30	12:45
ALS Sample ID	8	9	10	11	12	13	14
Nature	Water	Water	Water	Water	Water	Water	Water
Physical Tests							
Hardness (as CaCO3)							
Conductivity (uS/cm)	1000	1030	1080	1070	1070	1070	1030
ORP							
pH	8.07	8.07	7.99	7.99	8.00	8.11	8.01
Total Suspended Solids	3.3	3.9	4.6	3.9	<3.0	11.3	<3.0
Dissolved Anions							
Alkalinity-Total CaCO3	157	164	187	172	179	176	172
Sulphate SO4	408	421	435	437	433	440	436
Chloride (Cl)							
Fluoride (F)							
Bromide (Br)							
Nutrients							
Ammonia Nitrogen N	0.0067	0.0100	0.0053	0.0153	0.0200	0.0240	0.0180
Nitrate Nitrogen N	0.958	0.989	1.03	1.07	1.10	1.12	1.11
Nitrite Nitrogen N	0.015	0.014	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrite/Nitrate Nitrogen N							
Dissolved ortho-Phosphate P	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Phosphate P	0.0031	0.002	0.0029	0.0039	0.0021	0.0025	0.0031
Total Metals							
Aluminum T-Al	0.0331	0.0353	0.0340	0.0261	0.0216	0.0291	0.0217
Antimony T-Sb	0.00602	0.00697	0.00772	0.00758	0.00751	0.00772	0.00786
Arsenic T-As	0.00069	0.00073	0.00077	0.00106	0.00097	0.00145	0.00213
Barium T-Ba	0.0410	0.0442	0.0460	0.0461	0.0458	0.0466	0.0474
Beryllium T-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth T-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron T-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium T-Cd	0.00525	0.00585	0.00668	0.00673	0.00656	0.00678	0.00674
Calcium T-Ca	114	122	127	126	125	123	119
Chromium T-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt T-Co	0.0206	0.0231	0.0251	0.0245	0.0240	0.0250	0.0256
Copper T-Cu	0.00140	0.00173	0.00322	0.00350	0.00324	0.00328	0.00326
Iron T-Fe	0.050	0.053	0.044	0.038	0.042	0.087	0.132
Lead T-Pb	0.00128	0.00155	0.00157	0.00173	0.00119	0.00147	0.00135
Lithium T-Li	0.022	0.025	0.025	0.024	0.025	0.025	0.025
Magnesium T-Mg	66.8	70.8	72.0	71.3	70.0	68.9	66.0
Manganese T-Mn	0.387	0.438	0.500	0.489	0.487	0.505	0.528
Molybdenum T-Mo	0.00312	0.00330	0.00345	0.00333	0.00345	0.00346	0.00369
Nickel T-Ni	0.173	0.195	0.215	0.209	0.207	0.213	0.220
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	2.3	2.4	2.5	2.5	2.5	2.2	2.4
Selenium T-Se	<0.0020	<0.0020	<0.0020	0.0020	<0.0020	0.0020	<0.0020
Silicon T-Si	2.67	2.91	3.07	3.02	2.96	2.95	2.81
Silver T-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium T-Na	9.0	9.8	10.3	10.4	10.2	9.2	9.7
Strontium T-Sr	0.691	0.750	0.780	0.772	0.775	0.784	0.814
Thallium T-Tl	0.00093	0.00103	0.00094	0.00095	0.00094	0.00102	0.00100
Tin T-Sn	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00423	0.00396	0.00517	0.0126	0.00862	0.00873	0.00922
Vanadium T-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc T-Zn	5.05	7.07	10.1	9.38	8.93	9.15	9.32
Dissolved Metals							
Aluminum D-Al							
Antimony D-Sb							
Arsenic D-As							
Barium D-Ba							
Beryllium D-Be							
Bismuth D-Bi							
Boron D-B							
Cadmium D-Cd							
Calcium D-Ca							
Chromium D-Cr							
Cobalt D-Co							
Copper D-Cu							
Iron D-Fe							
Lead D-Pb							
Lithium D-Li							
Magnesium D-Mg							
Manganese D-Mn							
Molybdenum D-Mo							
Nickel D-Ni							
Phosphorus D-P							
Potassium D-K							
Selenium D-Se							
Silicon D-Si							
Silver D-Ag							
Sodium D-Na							
Strontium D-Sr							
Thallium D-Tl							
Tin D-Sn							
Titanium D-Ti							
Uranium D-U							
Vanadium D-V							
Zinc D-Zn							
Organic Parameters							
Chlorophyll a (a,b)							

Grum Pit - 2005 -2007 Monitoring Results
RESULTS OF ANALYSIS

Depth (m)	0.1	1	3	5	10	15	30	40
Sample ID	GP-0.1 Grum Surface	GP-1 Grum Pit @ 1m	GP-3 Grum Pit @3m	GP-5 Grum Pit @5m	GP-10 Grum Pit @10m	GP-15 Grum Pit @15m	GP-30 Grum Pit @30m	GP-40 Grum Pit @40m
Date Sampled	6/07/2005	6/07/2005	6/07/2005	6/07/2005	6/07/2005	6/07/2005	6/07/2005	6/07/2005
Time Sampled	15:00	15:10	15:15	15:30	15:50	16:05	16:45	17:00
ALS Sample ID	9	10	11	12	13	14	15	16
Nature	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests								
Hardness (as CaCO3)								
Conductivity (uS/cm)	970	972	1010	1050	1060	1060	1060	1060
ORP								
pH	8.40	8.64	8.32	7.82	7.66	7.66	7.68	7.68
Total Suspended Solids	6.8	8.1	6.1	4.1	<3.0	<3.0	<3.0	<3.0
Dissolved Anions								
Alkalinity-Total CaCO3	152	152	169	174	173	171	167	183
Sulphate SO4	430	416	415	459	457	453	453	448
Chloride (Cl)								
Fluoride (F)								
Bromide (Br)								
Nutrients								
Ammonia Nitrogen N	0.0470	0.0413	0.0250	0.0170	0.0100	< 0.005	< 0.005	< 0.005
Nitrate Nitrogen N	0.821	0.816	1.10	1.15	1.27	1.28	1.28	1.27
Nitrite Nitrogen N	0.0126	0.0134	0.0141	0.0096	0.0060	0.0059	0.0058	<0.0050
Nitrite/Nitrate Nitrogen N								
Dissolved ortho-Phosphate P	0.001	0.001	0.001	0.001	0.001	0.001	0.001	0.001
Total Phosphate P	0.0398	0.0371	0.0314	0.0182	0.0089	0.0054	0.0041	0.0046
Total Metals								
Aluminum T-Al	0.0207	0.0264	0.0126	0.0187	0.0176	0.0096	0.0112	0.0112
Antimony T-Sb	0.00584	0.00582	0.00605	0.00740	0.00773	0.00754	0.00747	0.00760
Arsenic T-As	0.00044	0.00045	0.00048	0.00055	0.00093	0.00101	0.00198	0.00262
Barium T-Ba	0.0430	0.0429	0.0415	0.0457	0.0459	0.0447	0.0446	0.0448
Beryllium T-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth T-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron T-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium T-Cd	0.00280	0.00268	0.00466	0.00761	0.00711	0.00666	0.00676	0.00677
Calcium T-Ca	111	113	118	117	122	127	131	117
Chromium T-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt T-Co	0.0196	0.0193	0.0207	0.0255	0.0251	0.0240	0.0246	0.0244
Copper T-Cu	0.00069	0.00109	0.00086	0.00169	0.00250	0.00269	0.00257	0.00249
Iron T-Fe	<0.040	0.036	0.047	0.050	<0.030	0.037	0.142	0.179
Lead T-Pb	0.00091	0.00092	0.00128	0.00144	0.00130	0.00131	0.00134	0.00146
Lithium T-Li	0.023	0.022	0.023	0.026	0.025	0.026	0.025	0.026
Magnesium T-Mg	65.0	65.5	67.9	65.6	67.8	70.5	71.1	66.2
Manganese T-Mn	0.296	0.289	0.342	0.503	0.493	0.477	0.488	0.492
Molybdenum T-Mo	0.00338	0.00327	0.00325	0.00386	0.00336	0.00326	0.00336	0.00324
Nickel T-Ni	0.161	0.156	0.171	0.217	0.216	0.209	0.213	0.216
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	3.1	3.1	3.3	3.2	3.3	3.5	3.5	3.2
Selenium T-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon T-Si	2.33	2.37	2.72	3.42	3.22	3.32	3.37	3.10
Silver T-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium T-Na	10.2	10.1	10.6	10.8	10.9	11.4	11.7	10.9
Strontium T-Sr	0.658	0.648	0.633	0.719	0.715	0.707	0.714	0.721
Thallium T-Tl	0.00109	0.00107	0.00117	0.00105	0.00099	0.00098	0.00107	0.00115
Tin T-Sn	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00446	0.00442	0.00368	0.00248	0.0104	0.00923	0.00939	0.00944
Vanadium T-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc T-Zn	0.943	0.919	2.78	10.8	9.37	8.24	8.39	8.38
Dissolved Metals								
Aluminum D-Al	0.0054	<0.0020	<0.0020	0.0097	<0.0020	0.0030	<0.0020	<0.0020
Antimony D-Sb	0.00601	0.00583	0.00606	0.00756	0.00749	0.00738	0.00728	0.00729
Arsenic D-As	0.00037	0.00033	0.00034	0.00034	0.00073	0.00075	0.00061	0.00066
Barium D-Ba	0.0425	0.0414	0.0416	0.0442	0.0444	0.0439	0.0434	0.0430
Beryllium D-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth D-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron D-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium D-Cd	0.00152	0.00082	0.00353	0.00674	0.00689	0.00665	0.00669	0.00666
Calcium D-Ca	115	112	113	118	120	125	116	119
Chromium D-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt D-Co	0.0188	0.0179	0.0210	0.0242	0.0240	0.0240	0.0240	0.0236
Copper D-Cu	0.00050	0.00025	0.00034	0.00658	0.00139	0.00213	0.00199	0.00181
Iron D-Fe	<0.030	<0.030	<0.030	0.063	<0.030	<0.030	<0.030	<0.030
Lead D-Pb	0.00043	0.00020	0.00047	0.00181	0.00063	0.00073	<0.00010	<0.00010
Lithium D-Li	0.022	0.021	0.024	0.025	0.025	0.025	0.025	0.025
Magnesium D-Mg	67.4	65.8	65.0	67.3	66.7	68.3	67.2	67.5
Manganese D-Mn	0.269	0.248	0.338	0.477	0.476	0.477	0.480	0.475
Molybdenum D-Mo	0.00337	0.00324	0.00340	0.00334	0.00321	0.00329	0.00330	0.00333
Nickel D-Ni	0.155	0.147	0.175	0.207	0.204	0.207	0.209	0.206
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	3.2	3.1	3.2	3.3	3.2	3.4	3.2	3.3
Selenium D-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon D-Si	2.34	2.23	2.46	3.45	3.17	3.25	3.05	3.11
Silver D-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium D-Na	10.6	10.3	10.4	11.2	10.7	11.1	11.0	11.0
Strontium D-Sr	0.667	0.642	0.658	0.695	0.697	0.704	0.711	0.697
Thallium D-Tl	0.00110	0.00105	0.00116	0.00100	0.00094	0.00096	0.00105	0.00110
Tin D-Sn	<0.00020	<0.00020	<0.00020	0.00058	<0.00020	<0.00020	<0.00020	<0.00020
Titanium D-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium D-U	0.00445	0.00431	0.00380	0.00263	0.00999	0.00922	0.00923	0.00915
Vanadium D-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc D-Zn	0.431	0.144	1.90	10.7	8.98	8.19	8.19	8.06
Organic Parameters	GP-0.1 Grum Surfa	GP-1 Grum Pit @ 1	GP-3 Grum Pit @3n	GP-5 Grum Pit @5n	GP-10 Grum Pit @1	GP-15 Grum Pit @1	GP-30 Grum Pit @3	GP-40 Grum Pit @4
Chlorophyll a (a,b)	24.1	20.3	9.65	30.3	3.34	2.99	0.196	0.333

Grum Pit - 2005 -2007 Monitoring Results
RESULTS OF ANALYSIS

Depth (m)	0.1	1	3	5	10	15	30	40
Sample ID	GP_0.1	GP_1	GP_3	GP_5	GP_10	GP_15	GP_30	GP_40
Date Sampled	3/08/2005	3/08/2005	3/08/2005	3/08/2005	3/08/2005	3/08/2005	3/08/2005	3/08/2005
Time Sampled	10:00	10:08	10:18	10:28	10:38	10:48	11:00	11:08
ALS Sample ID	9	10	11	12	13	14	15	16
Nature	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests								
Hardness (as CaCO3)								
Conductivity (uS/cm)	897	894	897	1040	1050	1050	1050	1060
ORP								
pH	8.72	8.80	8.80	7.97	7.93	7.95	7.98	7.50
Total Suspended Solids	10.7	9.3	9.3	4.0	<3.0	<3.0	4.7	9.3
Dissolved Anions								
Alkalinity-Total CaCO3	113	108	117	171	174	173	176	178
Sulphate SO4	407	405	401	436	439	432	433	433
Chloride (Cl)								
Fluoride (F)								
Bromide (Br)								
Nutrients								
Ammonia Nitrogen N	0.127	0.0993	0.0600	0.114	0.0407	0.0427	0.0453	0.0453
Nitrate Nitrogen N	0.616	0.621	0.664	1.08	1.20	1.16	1.15	1.14
Nitrite Nitrogen N	0.0014	0.0013	0.0020	0.0057	0.0041	0.0038	0.0041	0.0045
Nitrite/Nitrate Nitrogen N								
Dissolved ortho-Phosphate P	0.001	0.001	0.001	0.001	0.0015	0.0012	0.001	0.001
Total Phosphate P	0.0215	0.0216	0.0174	0.0070	0.0063	0.0047	0.0081	0.0179
Total Metals								
Aluminum T-Al	0.0630	0.0551	0.0672	0.0363	0.0151	0.0139	0.0674	0.0961
Antimony T-Sb	0.00513	0.00514	0.00497	0.00747	0.00832	0.00835	0.00833	0.00845
Arsenic T-As	0.00069	0.00069	0.00067	0.00092	0.00155	0.00170	0.00222	0.00248
Barium T-Ba	0.0257	0.0254	0.0249	0.0462	0.0498	0.0494	0.0498	0.0511
Beryllium T-Be	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth T-Bi	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron T-B	<0.010	<0.010	<0.010	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium T-Cd	0.000562	0.000598	0.000713	0.00579	0.00781	0.00755	0.00746	0.00786
Calcium T-Ca	97.1	95.5	96.5	121	128	127	128	130
Chromium T-Cr	<0.00050	<0.00050	<0.00050	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt T-Co	0.0153	0.0153	0.0147	0.0242	0.0256	0.0258	0.0261	0.0262
Copper T-Cu	0.00096	0.00133	0.00091	0.00143	0.00188	0.00202	0.00198	0.00216
Iron T-Fe	0.084	0.083	0.089	0.117	0.097	0.117	0.226	0.320
Lead T-Pb	0.000837	0.000964	0.000940	0.00168	0.00136	0.00149	0.00166	0.00204
Lithium T-Li	0.0243	0.0239	0.0234	0.026	0.027	0.028	0.027	0.028
Magnesium T-Mg	69.1	68.2	68.3	69.4	72.5	71.5	74.2	73.9
Manganese T-Mn	0.218	0.222	0.223	0.484	0.531	0.530	0.546	0.556
Molybdenum T-Mo	0.00344	0.00339	0.00324	0.00358	0.00364	0.00361	0.00359	0.00374
Nickel T-Ni	0.123	0.121	0.119	0.206	0.228	0.227	0.231	0.230
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	2.2	2.2	2.2	2.3	2.4	2.5	2.6	2.5
Selenium T-Se	0.0017	0.0019	0.0016	<0.0020	<0.0020	0.0021	<0.0020	0.0022
Silicon T-Si	2.35	2.31	2.31	2.83	3.00	2.95	3.05	3.09
Silver T-Ag	<0.000010	<0.000010	<0.000010	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium T-Na	9.2	9.1	9.1	9.4	10.2	10.3	10.4	10.2
Strontium T-Sr	0.582	0.587	0.567	0.739	0.792	0.796	0.810	0.821
Thallium T-Tl	0.00114	0.00114	0.00111	0.00116	0.00108	0.00109	0.00114	0.00114
Tin T-Sn	<0.00010	<0.00010	<0.00010	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00384	0.00383	0.00366	0.00512	0.00980	0.00989	0.00986	0.00991
Vanadium T-V	<0.0010	<0.0010	<0.0010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc T-Zn	0.421	0.427	0.526	7.62	10.3	10.4	10.5	10.4
Dissolved Metals								
Aluminum D-Al								
Antimony D-Sb								
Arsenic D-As								
Barium D-Ba								
Beryllium D-Be								
Bismuth D-Bi								
Boron D-B								
Cadmium D-Cd								
Calcium D-Ca								
Chromium D-Cr								
Cobalt D-Co								
Copper D-Cu								
Iron D-Fe								
Lead D-Pb								
Lithium D-Li								
Magnesium D-Mg								
Manganese D-Mn								
Molybdenum D-Mo								
Nickel D-Ni								
Phosphorus D-P								
Potassium D-K								
Selenium D-Se								
Silicon D-Si								
Silver D-Ag								
Sodium D-Na								
Strontium D-Sr								
Thallium D-Tl								
Tin D-Sn								
Titanium D-Ti								
Uranium D-U								
Vanadium D-V								
Zinc D-Zn								

Organic Parameters	GP_0.1	GP_1	GP_3	GP_5	GP_7	GP_10	GP_15
Chlorophyll a (a,b)	13.5	25.0	19.5	3.35	1.25	0.220	1.18

Grum Pit - 2005 -2007 Monitoring Results
RESULTS OF ANALYSIS

Depth (m)	1	3	4	5	7	10	20	40
Sample ID	GP_1	GP_3	GP_40	GP_5	GP_7	GP_10	GP_20	GP_40
Date Sampled	31/08/2005	31/08/2005	31/08/2005	31/08/2005	31/08/2005	31/08/2005	31/08/2005	31/08/2005
Time Sampled	10:30	10:40	12:10	10:55	11:15	11:30	11:45	12:10
ALS Sample ID	10	11	16	12	13	14	15	16
Nature	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests								
Hardness (as CaCO3)								
Conductivity (uS/cm)	901	898	904	1040	1030	1040	1040	904
ORP								
pH	8.51	8.55	8.48	7.82	7.83	7.34	7.60	8.48
Total Suspended Solids	6.4	5.7	5.7	<3.0	5.7	<3.0	6.4	5.7
Dissolved Anions								
Alkalinity-Total CaCO3	120	118	120	185	178	176	180	120
Sulphate SO4	410	413	411	443	443	442	449	411
Chloride (Cl)								
Fluoride (F)								
Bromide (Br)								
Nutrients								
Ammonia Nitrogen N	0.463	0.427	0.497	0.0520	0.0473	0.0247	0.0347	0.497
Nitrate Nitrogen N	0.005	1.01	0.998	1.25	1.27	1.29	1.26	0.998
Nitrite Nitrogen N	0.0087	0.0096	0.0096	0.0044	0.0061	0.0104	0.0092	0.0096
Nitrite/Nitrate Nitrogen N								
Dissolved ortho-Phosphate P	0.0237	0.0291	0.0253	0.001	0.0013	0.001	0.0033	0.0253
Total Phosphate P	0.0316	0.0406	0.0435	0.0063	0.0071	0.0036	0.0078	0.0435
Total Metals								
Aluminum T-Al	0.0397	0.0514	0.0283	0.0308	0.0280	0.0165	0.0757	0.0283
Antimony T-Sb	0.00516	0.00509	0.00536	0.00653	0.00645	0.00659	0.00681	0.00536
Arsenic T-As	0.00090	0.00087	0.00093	0.00088	0.00086	0.00135	0.00160	0.00093
Barium T-Ba	0.0313	0.0304	0.0322	0.0429	0.0424	0.0426	0.0434	0.0322
Beryllium T-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth T-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron T-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium T-Cd	0.00083	0.00077	0.00084	0.00331	0.00366	0.00624	0.00630	0.00084
Calcium T-Ca	99.3	100	102	133	139	137	127	102
Chromium T-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt T-Co	0.0137	0.0129	0.0142	0.0238	0.0232	0.0229	0.0237	0.0142
Copper T-Cu	0.00127	0.00116	0.00124	0.00102	0.00099	0.00129	0.00118	0.00124
Iron T-Fe	0.076	0.081	0.068	0.106	0.099	0.115	0.213	0.068
Lead T-Pb	0.00159	0.00139	0.00156	0.00186	0.00159	0.00157	0.00138	0.00156
Lithium T-Li	0.023	0.022	0.025	0.025	0.024	0.026	0.026	0.025
Magnesium T-Mg	65.0	66.5	64.5	72.6	75.7	73.0	68.8	64.5
Manganese T-Mn	0.189	0.179	0.199	0.489	0.475	0.480	0.513	0.199
Molybdenum T-Mo	0.00331	0.00323	0.00340	0.00305	0.00292	0.00295	0.00293	0.00340
Nickel T-Ni	0.112	0.106	0.117	0.208	0.202	0.202	0.206	0.117
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	2.2	2.3	2.3	2.7	2.8	2.9	2.6	2.3
Selenium T-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon T-Si	2.46	2.54	2.44	3.34	3.45	3.29	3.11	2.44
Silver T-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000023	<0.000020
Sodium T-Na	9.4	9.8	9.5	11.4	11.7	11.3	10.7	9.5
Strontium T-Sr	0.610	0.583	0.628	0.779	0.763	0.780	0.801	0.628
Thallium T-Tl	0.00119	0.00116	0.00122	0.00105	0.00104	0.00106	0.00110	0.00122
Tin T-Sn	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00386	0.00373	0.00390	0.00753	0.00788	0.00906	0.00898	0.00390
Vanadium T-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc T-Zn	0.996	0.976	1.08	10.2	9.82	9.96	10.0	
Dissolved Metals								
Aluminum D-Al	-	-	-	-	-	-	-	-
Antimony D-Sb								
Arsenic D-As								
Barium D-Ba								
Beryllium D-Be								
Bismuth D-Bi								
Boron D-B								
Cadmium D-Cd								
Calcium D-Ca								
Chromium D-Cr								
Cobalt D-Co								
Copper D-Cu								
Iron D-Fe								
Lead D-Pb								
Lithium D-Li								
Magnesium D-Mg								
Manganese D-Mn								
Molybdenum D-Mo								
Nickel D-Ni								
Phosphorus D-P								
Potassium D-K								
Selenium D-Se								
Silicon D-Si								
Silver D-Ag								
Sodium D-Na								
Strontium D-Sr								
Thallium D-Tl								
Tin D-Sn								
Titanium D-Ti								
Uranium D-U								
Vanadium D-V								
Zinc D-Zn								
Organic Parameters	GP_ SURFACE	GP_1		GP_3	GP_5	GP_7	GP_10	
Chlorophyll a (a,b)	0.639	1.01		0.847	2.64	3.06	3.91	

Grum Pit - 2005 -2007 Monitoring Results
RESULTS OF ANALYSIS

Depth (m)	0.1	1	3	5	10	15	30	40
Sample ID	GP-0.1	GP-1	GP-3	GP-5	GP-10	GP-15	GP-30	GP-40
Date Sampled	14/09/2005	14/09/2005	14/09/2005	14/09/2005	14/09/2005	14/09/2005	14/09/2005	14/09/2005
Time Sampled	11:45	12:07	12:14	12:20	12:27	12:31	12:45	13:15
ALS Sample ID	9	10	11	12	13	14	15	16
Nature	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests								
Hardness (as CaCO3)								
Conductivity (uS/cm)	938	937	945	1060	1080	1070	1070	1070
ORP								
pH	7.93	7.97	8.07	7.79	7.61	7.66	7.68	7.72
Total Suspended Solids	3.8	3.8	<3.0	5.2	4.5	3.2	6.5	7.8
Dissolved Anions								
Alkalinity-Total CaCO3	128	123	127	173	171	209	182	193
Sulphate SO4	403	403	402	428	439	440	441	441
Chloride (Cl)								
Fluoride (F)								
Bromide (Br)								
Nutrients								
Ammonia Nitrogen N	0.530	0.657	0.647	0.204	0.0107	0.0067	0.0107	0.0107
Nitrate Nitrogen N	1.16	1.15	1.15	1.22	1.33	1.29	1.28	1.29
Nitrite Nitrogen N	0.0134	0.0145	0.0142	0.0099	0.0021	0.0011	0.0021	0.0019
Nitrite/Nitrate Nitrogen N								
Dissolved ortho-Phosphate P	0.0297	0.0310	0.0294	0.0120	0.001	0.001	0.001	0.001
Total Phosphate P	0.0436	0.0426	0.0406	0.0170	0.0042	0.0023	0.0049	0.0052
Total Metals								
Aluminum T-Al	0.0476	0.0501	0.0487	0.0585	<0.0020	0.0711	0.137	0.156
Antimony T-Sb	0.00554	0.00553	0.00527	0.00651	0.00694	0.00697	0.00684	0.00704
Arsenic T-As	0.00103	0.00101	0.00095	0.00082	0.00041	0.00157	0.00188	0.00215
Barium T-Ba	0.0335	0.0338	0.0323	0.0422	0.0480	0.0431	0.0442	0.0458
Beryllium T-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth T-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron T-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium T-Cd	0.00107	0.00116	0.00109	0.00312	0.00489	0.00618	0.00621	0.00640
Calcium T-Ca	106	102	98.1	128	131	129	125	120
Chromium T-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt T-Co	0.0140	0.0143	0.0137	0.0217	0.0150	0.0226	0.0229	0.0235
Copper T-Cu	0.00136	0.00144	0.00125	0.00110	<0.00060	0.00120	0.00123	0.00134
Iron T-Fe	0.104	0.094	0.093	0.132	<0.030	0.223	0.346	0.371
Lead T-Pb	0.00180	0.00196	0.00181	0.00247	0.00025	0.00136	0.00157	0.00166
Lithium T-Li	0.022	0.023	0.022	0.024	0.024	0.024	0.023	0.024
Magnesium T-Mg	65.6	62.7	60.9	68.8	70.6	69.0	67.0	64.1
Manganese T-Mn	0.224	0.231	0.213	0.479	0.524	0.520	0.537	0.559
Molybdenum T-Mo	0.00345	0.00350	0.00324	0.00327	0.00381	0.00308	0.00308	0.00314
Nickel T-Ni	0.115	0.117	0.110	0.184	0.108	0.196	0.195	0.203
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	2.4	2.2	2.2	2.6	2.6	2.5	2.4	2.3
Selenium T-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon T-Si	2.56	2.47	2.36	3.10	3.06	3.09	3.09	2.98
Silver T-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium T-Na	9.3	8.5	8.6	10.0	11.0	10.4	10.3	9.7
Strontium T-Sr	0.583	0.590	0.559	0.707	0.855	0.727	0.729	0.756
Thallium T-Tl	0.00121	0.00123	0.00116	0.00116	0.00110	0.00108	0.00111	0.00115
Tin T-Sn	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00408	0.00408	0.00385	0.00445	0.00377	0.00875	0.00882	0.00916
Vanadium T-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc T-Zn	1.50	1.52	1.42	6.39	1.56	8.47	8.50	8.85
Dissolved Metals								
Aluminum D-Al	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Antimony D-Sb	0.00513	0.00531	0.00537	0.00612	0.00665	0.00713	0.00699	0.00709
Arsenic D-As	0.00064	0.00069	0.00069	0.00042	0.00029	0.00047	0.00048	0.00050
Barium D-Ba	0.0321	0.0326	0.0328	0.0408	0.0463	0.0447	0.0434	0.0437
Beryllium D-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth D-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron D-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium D-Cd	0.00081	0.00075	0.00077	0.00261	0.00622	0.00651	0.00637	0.00639
Calcium D-Ca	100	96.5	96.8	124	133	128	123	114
Chromium D-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt D-Co	0.0133	0.0137	0.0137	0.0214	0.0201	0.0238	0.0233	0.0236
Copper D-Cu	<0.0010	<0.0010	<0.0010	<0.0010	<0.00060	<0.0010	<0.0010	<0.0010
Iron D-Fe	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Lead D-Pb	0.00029	0.00032	0.00035	0.00053	<0.00010	<0.00010	<0.00010	0.00029
Lithium D-Li	0.021	0.021	0.021	0.023	0.023	0.023	0.022	0.023
Magnesium D-Mg	61.1	60.0	59.9	65.5	70.2	68.0	65.6	61.2
Manganese D-Mn	0.196	0.197	0.200	0.469	0.544	0.555	0.560	0.580
Molybdenum D-Mo	0.00337	0.00350	0.00356	0.00325	0.00351	0.00333	0.00325	0.00328
Nickel D-Ni	0.111	0.115	0.116	0.187	0.157	0.214	0.209	0.213
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	2.2	<2.0	2.1	2.5	2.6	2.5	2.4	2.2
Selenium D-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon D-Si	2.30	2.23	2.25	2.86	3.07	2.94	2.84	2.65
Silver D-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium D-Na	8.5	8.0	8.2	9.7	10.9	10.5	10.2	9.2
Strontium D-Sr	0.604	0.615	0.624	0.754	0.840	0.799	0.790	0.812
Thallium D-Tl	0.00113	0.00111	0.00117	0.00109	0.00105	0.00111	0.00112	0.00114
Tin D-Sn	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium D-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium D-U	0.00395	0.00397	0.00392	0.00420	0.00144	0.00931	0.00916	0.00915
Vanadium D-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc D-Zn	1.18	1.19	1.24	6.44	2.07	9.28	9.17	9.29

Organic Parameters	GP-0.1	GP-1	GP-3	GP-5	GP-7	GP-10
Chlorophyll a (a,b)	0.136	0.0006	0.240	0.152	0.0416	0.0335

Grum Pit - 2005 -2007 Monitoring Results
RESULTS OF ANALYSIS

Depth (m)	1	3	5	15	30	40	1	3	5	15	30	40
Sample ID	GRUM 1m	GRUM 3m	GRUM 5m	GRUM 15m	GRUM 30m	GRUM 40m	GL-1 GRUM@1m	GL-3 GRUM@3m	GL-5 GRUM@5m	GL-15 GRUM@15m	GL-30 GRUM@30m	GL-40 GRUM@40m
Date Sampled	2/05/2006	2/05/2006	2/05/2006	2/05/2006	2/05/2006	2/05/2006	14/06/2006	14/06/2006	14/06/2006	14/06/2006	14/06/2006	14/06/2006
Time Sampled	11:15	11:25	11:40	11:50	12:00	12:15	12:00	12:15	12:30	12:45	13:10	13:30
ALS Sample ID	1	2	3	4	5	6	1	2	3	4	5	6
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests												
Hardness (as CaCO3)												
Conductivity (uS/cm)	765	994	1000	1040	1050	1050	783	1020	1020	1020	1020	1020
ORP												
pH	7.90	7.77	7.81	7.65	7.65	7.70	7.98	7.90	7.90	7.88	7.89	7.88
Total Suspended Solids	<3.0	<3.0	<3.0	<3.0	<3.0	4.4	3.7	3.0	<3.0	3.7	<3.0	3.7
Dissolved Anions												
Alkalinity-Total CaCO3	191	167	167	172	187	172	117	174	160	181	161	172
Sulphate SO4	256	425	428	451	453	454	317	431	433	435	434	435
Chloride (Cl)												
Fluoride (F)												
Bromide (Br)												
Nutrients												
Ammonia Nitrogen N	0.032	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Nitrate Nitrogen N	1.070	1.970	1.99	1.43	1.41	1.45						
Nitrite Nitrogen N	0.0014	0.0026	<0.0010	<0.0010	<0.0010	<0.0010						
Nitrite/Nitrate Nitrogen N							0.980	1.350	1.37	1.46	1.45	1.45
Dissolved ortho-Phosphate P	<0.0010	0.0026	0.0035	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Phosphate P	0.0094	0.0083	0.0095	0.0035	0.0040	0.0088	0.0042	0.0036	0.0052	0.0044	0.0035	0.0040
Total Metals												
Aluminum T-Al	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.0388	0.0388	0.0289	0.0719	0.0442	0.0482
Antimony T-Sb	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.00430	0.00609	0.00604	0.00644	0.00651	0.00651
Arsenic T-As	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.00060	0.00083	0.00085	0.00095	0.00104	0.00118
Barium T-Ba	0.0820	0.0500	0.0490	0.0450	0.0460	0.0450	0.0348	0.0453	0.0460	0.0492	0.0490	0.0500
Beryllium T-Be	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth T-Bi	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron T-B	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium T-Cd	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.00316	0.00439	0.00437	0.00458	0.00470	0.00470
Calcium T-Ca	096	113	111	117	119	115	93.4	122	126	127	126	127
Chromium T-Cr	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt T-Co	0.01200	0.01900	0.02200	<0.010	<0.010	<0.010	0.00547	0.00746	0.00744	0.00772	0.00757	0.00769
Copper T-Cu	<0.010	<0.010	0.01200	<0.010	<0.010	<0.010	0.00161	0.00177	0.00149	0.00150	0.00143	0.00139
Iron T-Fe	<0.030	0.045	0.058	0.05	0.091	0.2	0.061	0.063	0.055	0.105	0.082	0.105
Lead T-Pb	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.00239	0.00151	0.00099	0.00101	0.00084	0.00094
Lithium T-Li	0.017	0.021	0.024	0.024	0.022	0.025	0.018	0.025	0.026	0.024	0.024	0.026
Magnesium T-Mg	48.7	69.3	69.0	67.7	68.4	67.5	54.2	71.0	72.8	72.9	72.4	73.0
Manganese T-Mn	0.2400	0.3890	0.389	0.034	0.034	0.100	0.1120	0.157	0.156	0.161	0.163	0.167
Molybdenum T-Mo	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.00195	0.00281	0.00279	0.00299	0.00290	0.00298
Nickel T-Ni	0.095	0.170	0.169	0.212	0.207	0.202	0.132	0.193	0.193	0.193	0.194	0.192
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	2.6	3.1	3.0	3.0	3.2	3.0	2.1	2.8	2.8	2.9	2.8	2.9
Selenium T-Se	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon T-Si	4.34	3.24	3.16	2.97	3.00	3.02	2.43	3.12	3.20	3.26	3.18	3.23
Silver T-Ag	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium T-Na	10.6	10.9	10.6	10.0	10.9	10.2	8.1	10.9	10.9	11.0	10.9	11.1
Strontium T-Sr	0.592	0.682	0.671	0.710	0.763	0.729	0.562	0.808	0.808	0.868	0.877	0.881
Thallium T-Tl	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.00073	0.00096	0.00092	0.00094	0.00094	0.00099
Tin T-Sn	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U							0.00659	0.00886	0.00880	0.0092	0.0092	0.0092
Vanadium T-V	<0.030	<0.030	0.038	0.035	0.032	0.032	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc T-Zn	3.170	5.73	5.79	9.60	9.56	9.06	5.580	8.28	08.4	8.26	8.42	8.41
Dissolved Metals												
Aluminum D-Al	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.0058	0.0225	0.0028	0.0239	<0.0020	<0.0020
Antimony D-Sb	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.00422	0.00609	0.00619	0.00650	0.00633	0.00649
Arsenic D-As	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.00043	0.00073	0.00072	0.00076	0.00070	0.00075
Barium D-Ba	0.0770	0.0510	0.0480	0.0450	0.0430	0.0440	0.0339	0.0451	0.0463	0.0483	0.0474	0.0480
Beryllium D-Be	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth D-Bi	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron D-B	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium D-Cd	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.00304	0.00442	0.00436	0.00455	0.00461	0.00459
Calcium D-Ca	97.5	110	110	116	121	115	91.5	123	123	125	124	129
Chromium D-Cr	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt D-Co	0.01200	0.01800	0.01900	<0.010	<0.010	<0.010	0.00543	0.00754	0.00704	0.00740	0.00732	0.00747
Copper D-Cu	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.00146	0.00149	0.00133	0.00137	0.00127	0.00125
Iron D-Fe	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Lead D-Pb	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.00142	0.00075	0.00046	0.00046	0.00022	0.00016
Lithium D-Li	0.017	0.024	0.022	0.023	0.021	0.021	0.018	0.026	0.024	0.025	0.024	0.024
Magnesium D-Mg	49.5	68.3	68.1	66.9	70.2	66.7	53.0	71.1	71.1	72.1	71.1	74.4
Manganese D-Mn	0.2520	0.3810	0.385	<0.0050	<0.0050	0.043	0.1030	0.154	0.148	0.159	0.156	0.159
Molybdenum D-Mo	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.00205	0.00284	0.00291	0.00302	0.00295	0.00305
Nickel D-Ni	0.107	0.162	0.167	0.206	0.218	0.202	0.134	0.193	0.184	0.192	0.187	0.188
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	2.6	3.0	3.0	3.1	3.1	3.1	2.1	2.8	2.8	2.8	2.8	2.9
Selenium D-Se	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon D-Si	4.20	3.13	3.08	2.88	3.03	2.90	2.32	3.08	3.08	3.13	3.09	3.22
Silver D-Ag	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium D-Na	10.5	10.9	10.3	10.5	10.1	10.2	7.9	10.8	10.6	10.8	10.8	11.1
Strontium D-Sr	0.592	0.680	0.659	0.736	0.738	0.738	0.573	0.812	0.836	0.886	0.843	0.856
Thallium D-Tl	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.00073	0.00096	0.00093	0.00094	0.00095	0.00097
Tin D-Sn	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium D-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium D-U							0.00652	0.00883	0.00890	0.0091	0.0089	0.0091
Vanadium D-V	<0.030	0.033	<0.030	0.037	0.034	<0.030	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc D-Zn	3.420	5.61	5.74	9.36	9.77	9.02	5.5800	8.34	07.9	8.29	8.11	8.32
Organic Parameters												
Chlorophyll a (a,b)	10.4	00.7	0.24	0.04	0.024	<0.010	-	-	-	-	-	-

Grum Pit - 2005 -2007 Monitoring Results
RESULTS OF ANALYSIS

Depth (m)	1	3	5	15	30	40	1	3	5	15	30	40
Sample ID	GL_1 (Grum@ 1m)	GL_3 (Grum@ 3m)	GL_5 (Grum@ 5m)	GL_15 (Grum@ 15m)	GL_30 (Grum@ 30m)	GL_40 (Grum@ 40m)	GL_1 (GRUM@ 1m)	GL_3 (GRUM@ 3m)	GL_5 (GRUM@ 5m)	GL_15 (GRUM@ 15m)	GL_30 (GRUM@ 30m)	GL_40 (GRUM@ 40m)
Date Sampled	12/07/2006	12/07/2006	12/07/2006	12/07/2006	12/07/2006	12/07/2006	9/08/2006	9/08/2006	9/08/2006	9/08/2006	9/08/2006	9/08/2006
Time Sampled	13:15	13:45	14:00	14:30	14:45	15:10	10:00	10:20	10:40	10:55	11:10	11:30
ALS Sample ID	1	2	3	4	5	6	1	2	3	4	5	6
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests												
Hardness (as CaCO3)												
Conductivity (uS/cm)	820	0920	1030	1030	1040	1030	892	938	1070	1060	1070	1070
ORP												
pH	8.00	8.06	7.91	7.90	7.91	7.89	7.91	8.05	7.51	7.54	7.61	7.66
Total Suspended Solids	6.4	8.4	3.8	<3.0	<3.0	3.8	3.7	6.3	<3.0	<3.0	<3.0	3.0
Dissolved Anions												
Alkalinity-Total CaCO3	107	151	176	169	176	179	128	140	176	171	174	175
Sulphate SO4	369	391	434	435	435	436	375	389	433	434	434	434
Chloride (Cl)												
Fluoride (F)												
Bromide (Br)												
Nutrients												
Ammonia Nitrogen N	0.56	0.337	0.089	0.02	0.0213	0.0193	0.0570	0.037	0.028	0.05	0.055	0.058
Nitrate Nitrogen N							0.68	0.76	1.24	1.32	1.28	1.26
Nitrite Nitrogen N							0.0052	0.0044	0.0022	0.0026	0.0048	0.0052
Nitrite/Nitrate Nitrogen N	0.179	0.86	1.33	1.44	1.44	1.43	0.681	0.767	1.24	1.32	1.28	1.26
Dissolved ortho-Phosphate P	0.0095	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0017	<0.0010	<0.0010	0.0013	0.0013	<0.0010
Total Phosphate P	0.0461	0.0252	0.0164	0.0034	0.0032	0.0033	0.0623	0.0490	0.0172	0.0076	0.0089	0.0080
Total Metals												
Aluminum T-Al	0.0426	0.0314	0.0179	0.0232	0.0214	0.0403	0.0052	0.0042	<0.0020	0.007	0.0182	0.0185
Antimony T-Sb	0.00439	0.00471	0.00605	0.00588	0.00599	0.00606	0.00521	0.00551	0.00683	0.00681	0.00655	0.00661
Arsenic T-As	0.00086	0.00059	0.00080	0.00107	0.00110	0.00163	0.00077	0.00069	0.00069	0.00099	0.00157	0.00137
Barium T-Ba	0.0277	0.0408	0.0497	0.0470	0.0472	0.0476	0.037	0.040	0.051	0.048	0.047	0.047
Beryllium T-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth T-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron T-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium T-Cd	0.00090	0.00300	0.00494	0.00432	0.00448	0.00457	0.00055	0.00098	0.00224	0.00464	0.00436	0.00437
Calcium T-Ca	88.5	110	123	121	121	115	102.0	105	126	124	127	122
Chromium T-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt T-Co	0.00525	0.00647	0.00814	0.00771	0.00783	0.00823	0.006	0.006	0.009	0.00864	0.00857	0.00868
Copper T-Cu	0.00109	0.00086	0.00093	0.00102	0.00126	0.00118	0.00086	0.00065	0.001	0.00086	0.00098	0.00086
Iron T-Fe	0.063	0.048	0.047	0.071	0.065	0.128	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Lead T-Pb	0.00075	0.00089	0.00103	0.00114	0.00105	0.00109	0.00066	0.00061	0.00059	0.00042	0.00082	0.00056
Lithium T-Li	0.021	0.021	0.025	0.026	0.025	0.025	0.023	0.026	0.027	0.028	0.028	0.027
Magnesium T-Mg	61.9	67.0	72.5	71.1	70.9	67.2	65.2	65.3	72.5	72.1	73.6	70.8
Manganese T-Mn	0.088	0.125	0.181	0.170	0.173	0.186	0.069	0.095	0.199	0.1820	0.2240	0.2330
Molybdenum T-Mo	0.00256	0.00262	0.00286	0.00284	0.00285	0.00280	0.00307	0.00312	0.00301	0.0031	0.00299	0.0033
Nickel T-Ni	0.123	0.151	0.205	0.194	0.197	0.202	0.123	0.141	0.215	0.210	0.195	0.200
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	2.2	2.3	2.7	2.6	2.6	2.5	2.5	2.5	2.8	2.8	2.9	2.8
Selenium T-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon T-Si	2.16	2.52	3.15	2.93	2.94	2.81	2.48	2.52	3.05	3.02	3.11	3.01
Silver T-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium T-Na	8.8	09.3	10.5	10.0	09.8	09.5	09.7	10.0	10.9	11.2	11.2	10.9
Strontium T-Sr	0.590	0.749	0.882	0.847	0.858	0.870	0.659	0.700	0.850	0.917	0.872	0.872
Thallium T-Tl	0.00084	0.00095	0.00107	0.00099	0.00100	0.00105	0.00095	0.00102	0.00113	0.00109	0.0011	0.00111
Tin T-Sn	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00317	0.00271	0.00667	0.01050	0.01040	0.01070	0.00363	0.00354	0.00808	0.011	0.0106	0.0104
Vanadium T-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc T-Zn	0.27	2.77	10.50	8.95	9.16	9.27	0.74	1.85	9.97	9.30	8.75	8.83
Dissolved Metals												
Aluminum D-Al	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0025	0.0024	<0.0020	<0.0020	<0.0020	<0.0020
Antimony D-Sb	0.00440	0.00449	0.00599	0.00581	0.00583	0.00584	0.00501	0.0052	0.00649	0.00637	0.00632	0.00648
Arsenic D-As	0.00054	0.00039	0.00059	0.00068	0.00073	0.00091	0.0007	0.00056	0.00051	0.00076	0.00072	0.00072
Barium D-Ba	0.0261	0.0376	0.0479	0.0452	0.0460	0.0453	0.036	0.038	0.048	0.045	0.045	0.043
Beryllium D-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth D-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron D-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium D-Cd	0.00013	0.00158	0.00445	0.00426	0.00424	0.00428	0.00028	0.00067	0.00176	0.00433	0.00431	0.00421
Calcium D-Ca	88.6	104	121	122	122	116	97.0	101	119	121	119	116
Chromium D-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt D-Co	0.00471	0.00601	0.00805	0.00756	0.00776	0.00809	0.005	0.006	0.008	0.00809	0.00835	0.00843
Copper D-Cu	0.00031	0.00034	0.00068	0.00069	0.00074	0.00072	0.00079	0.00058	0.00052	0.00075	0.00075	0.00071
Iron D-Fe	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Lead D-Pb	<0.00010	0.00035	0.00034	0.00025	0.00028	<0.00010	0.00037	0.00036	0.00037	0.0002	0.00011	<0.00010
Lithium D-Li	0.020	0.020	0.024	0.024	0.024	0.024	0.023	0.024	0.027	0.026	0.027	0.027
Magnesium D-Mg	62.2	64.0	71.4	71.3	70.8	68.1	61.3	62.8	68.7	69.3	68.0	67.4
Manganese D-Mn	0.074	0.113	0.177	0.167	0.171	0.181	0.061	0.084	0.189	0.173	0.194	0.2260
Molybdenum D-Mo	0.00271	0.00260	0.00293	0.00274	0.00292	0.00284	0.00301	0.00293	0.00284	0.00299	0.00293	0.00333
Nickel D-Ni	0.111	0.139	0.201	0.192	0.197	0.196	0.116	0.131	0.203	0.197	0.193	0.196
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	2.2	2.2	2.6	2.7	2.7	2.5	2.3	2.5	2.6	2.7	2.6	2.7
Selenium D-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon D-Si	2.09	2.28	3.07	2.91	2.90	2.79	2.24	2.36	3.07	3.01	2.95	2.92
Silver D-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium D-Na	8.9	08.8	10.2	10.3	10.1	09.9	09.1	09.7	10.4	10.7	10.3	10.4
Strontium D-Sr	0.579	0.661	0.871	0.832	0.854	0.845	0.638	0.668	0.797	0.863	0.857	0.873
Thallium D-Tl	0.00081	0.00083	0.00103	0.00097	0.00100	0.00101	0.00095	0.001	0.00108	0.00102	0.00106	0.0011
Tin D-Sn	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium D-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium D-U	0.00305	0.00273	0.00653	0.01010	0.01030	0.01010	0.00352	0.00353	0.00643	0.0104	0.0103	0.0102
Vanadium D-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc D-Zn	0.06	1.75	10.30	8.87	9.17	8.96	0.34	1.08	9.41	8.60	8.50	8.56
Organic Parameters												
Chlorophyll a (a,b)	-	-	-	-	-	-	10.1	12.800	8.500	1.100	-	-

Grum Pit - 2005 -2007 Monitoring Results
RESULTS OF ANALYSIS

Depth (m)	0.1	1	3	5	15	30	40	1	5	15	40
Sample ID	GRUM_ SURFACE	GL_1 (GRUM @1m)	GL_3 (GRUM @3m)	GL_5 (GRUM @5m)	GL_15 (GRUM @15m)	GL_30 (GRUM @30m)	GL_40 (GRUM @40m)	GL-1 GRUM @1M	G-5 GRUM @5M	G-15 GRUM @15M	G-40 GRUM @40M
Date Sampled	15/09/2006	15/09/2006	15/09/2006	15/09/2006	15/09/2006	15/09/2006	15/09/2006	26-Mar-07	26-Mar-07	26-Mar-07	26-Mar-07
Time Sampled	10:10	10:15	10:20	10:30	10:47	10:59	11:15	10:40	12:30	12:40	13:05
ALS Sample ID	13	1	2	3	4	5	6	L491616-1	L491616-2	L491616-3	L491616-4
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests											
Hardness (as CaCO3)											
Conductivity (uS/cm)	914	912	913	924	1030	1040	1040	964	1020	1080	1100
ORP											
pH	7.97	7.90	8.08	8.09	7.90	7.90	7.91	8.01	8.09	8.02	8.05
Total Suspended Solids	<3.0	4.8	4.6	5.2	<3.0	3.9	3.9	7.9	<3.0	<3.0	<3.0
Dissolved Anions											
Alkalinity-Total CaCO3	144	146	145	146	174	174	171				
Sulphate SO4	377	384	384	386	430	431	431	367	408	438	444
Chloride (Cl)								<0.50	<0.50	<0.50	<0.50
Fluoride (F)											
Bromide (Br)								<0.050	<0.050	<0.050	<0.050
Nutrients											
Ammonia Nitrogen N	0.0713	0.0753	0.0700	0.0720	0.0780	0.0913	0.0893				
Nitrate Nitrogen N											
Nitrite Nitrogen N											
Nitrite/Nitrate Nitrogen N	0.783	0.824	0.823	0.849	1.30	1.24	1.24				
Dissolved ortho-Phosphate P	<0.0010	<0.0010	<0.0010	<0.0010	0.0014	<0.0010	<0.0010				
Total Phosphate P	0.0125	**2.13**	0.0129	0.0137	0.0071	0.0045	0.0033				
Total Metals											
Aluminum T-Al	0.0771	0.0793	0.0766	0.0900	0.0227	0.0456	0.0444	<0.20	<0.20	<0.20	<0.20
Antimony T-Sb	0.00476	0.00489	0.00501	0.00506	0.00633	0.00609	0.00618	<0.20	<0.20	<0.20	<0.20
Arsenic T-As	0.00108	0.00109	0.00106	0.00110	0.00132	0.00178	0.00176	<0.20	<0.20	<0.20	<0.20
Barium T-Ba	0.0416	0.0424	0.0425	0.0435	0.0490	0.0479	0.0480	0.059	0.047	0.044	0.041
Beryllium T-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<0.0050	<0.0050	<0.0050
Bismuth T-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.20	<0.20	<0.20	<0.20
Boron T-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.10	<0.10	<0.10	<0.10
Cadmium T-Cd	0.00103	0.00098	0.00099	0.00102	0.00441	0.00417	0.00433	<0.010	<0.010	<0.010	<0.010
Calcium T-Ca	114	110	110	111	124	125	125	115	125	131	134
Chromium T-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.010	<0.010	<0.010	<0.010
Cobalt T-Co	0.00679	0.00663	0.00673	0.00692	0.00863	0.00912	0.00908	<0.010	<0.010	<0.010	<0.010
Copper T-Cu	0.00147	0.00198	0.00177	0.00185	0.00121	0.00115	0.00119	<0.010	<0.010	<0.010	<0.010
Iron T-Fe	0.161	0.148	0.143	0.145	0.080	0.176	0.156	0.19	0.07	0.051	0.128
Lead T-Pb	0.00239	0.00256	0.00239	0.00239	0.00115	0.00106	0.00104	<0.050	<0.050	<0.050	<0.050
Lithium T-Li	0.023	0.023	0.023	0.024	0.026	0.026	0.026	0.019	0.023	0.023	0.024
Magnesium T-Mg	69.1	67.2	67.1	68.2	72.5	72.6	72.3	61	69.6	70.5	73.2
Manganese T-Mn	0.122	0.120	0.117	0.127	0.212	0.256	0.254	0.152	0.149	0.0287	0.0457
Molybdenum T-Mo	0.00276	0.00286	0.00280	0.00288	0.00285	0.00276	0.00290	<0.030	<0.030	<0.030	<0.030
Nickel T-Ni	0.146	0.146	0.144	0.151	0.209	0.202	0.205	0.133	0.159	0.192	0.195
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	3.3	3.2	3.2	3.3	3.5	3.5	3.4	3.1	3.4	3.5	3.5
Selenium T-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.20	<0.20	<0.20	<0.20
Silicon T-Si	3.07	2.99	2.97	3.02	3.06	3.18	3.11	4.2	3.5	3.25	3.26
Silver T-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.010	<0.010	<0.010	<0.010
Sodium T-Na	11.6	11.4	11.3	11.5	11.7	12.0	11.6	10.7	10.8	10.9	11
Strontium T-Sr	0.732	0.716	0.727	0.750	0.892	0.870	0.878	0.747	0.798	0.863	0.881
Thallium T-Tl	0.00103	0.00102	0.00103	0.00103	0.00110	0.00116	0.00117	<0.20	<0.20	<0.20	<0.20
Tin T-Sn	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.030	<0.030	<0.030	<0.030
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00498	0.00489	0.00483	0.00527	0.0105	0.0104	0.0103				
Vanadium T-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.030	<0.030	<0.030	<0.030
Zinc T-Zn	4.19	4.07	4.09	4.55	9.55	9.24	9.42	4.97	5.94	9.14	9.41
Dissolved Metals											
Aluminum D-Al	0.0200	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.20	<0.20	<0.20	<0.20
Antimony D-Sb	0.00490	0.00484	0.00480	0.00497	0.00614	0.00588	0.00606	<0.20	<0.20	<0.20	<0.20
Arsenic D-As	0.00097	0.00068	0.00065	0.00070	0.00081	0.00061	0.00065	<0.20	<0.20	<0.20	<0.20
Barium D-Ba	0.0460	0.0404	0.0401	0.0411	0.0476	0.0452	0.0472	0.061	0.046	0.043	0.04
Beryllium D-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0050	<0.0050	<0.0050	<0.0050
Bismuth D-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.20	<0.20	<0.20	<0.20
Boron D-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.10	<0.10	<0.10	<0.10
Cadmium D-Cd	0.00091	0.00079	0.00084	0.00086	0.00411	0.00394	0.00399	<0.010	<0.010	<0.010	<0.010
Calcium D-Ca	110	109	107	109	120	124	122	110	125	128	135
Chromium D-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.010	<0.010	<0.010	<0.010
Cobalt D-Co	0.00645	0.00642	0.00636	0.00657	0.00837	0.00869	0.00893	<0.010	<0.010	<0.010	<0.010
Copper D-Cu	0.00155	0.00143	0.00128	0.00138	0.00081	0.00075	0.00074	<0.010	<0.010	<0.010	<0.010
Iron D-Fe	0.121	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Lead D-Pb	0.00578	0.00095	0.00098	0.00097	0.00027	<0.00010	<0.00010	<0.050	<0.050	<0.050	<0.050
Lithium D-Li	0.023	0.022	0.022	0.023	0.025	0.023	0.025	0.019	0.021	0.024	0.024
Magnesium D-Mg	66.2	66.1	65.7	67.1	69.3	71.9	70.2	57.5	68.6	70.3	72.6
Manganese D-Mn	0.108	0.109	0.107	0.114	0.204	0.244	0.249	0.141	0.147	<0.0050	0.0184
Molybdenum D-Mo	0.00278	0.00307	0.00284	0.00286	0.00299	0.00284	0.00297	<0.030	<0.030	<0.030	<0.030
Nickel D-Ni	0.140	0.141	0.140	0.144	0.201	0.196	0.197	0.122	0.156	0.189	0.196
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	3.2	3.1	3.2	3.2	3.4	3.5	3.4	2.9	3.3	3.4	3.6
Selenium D-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.20	<0.20	<0.20	<0.20
Silicon D-Si	2.81	2.72	2.74	2.80	3.01	3.09	3.01	4.05	3.43	3.17	3.25
Silver D-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.010	<0.010	<0.010	<0.010
Sodium D-Na	11.1	11.1	11.3	11.4	11.6	11.9	11.6	10.3	10.8	10.8	11
Strontium D-Sr	0.706	0.713	0.712	0.750	0.871	0.847	0.872	0.718	0.794	0.857	0.873
Thallium D-Tl	0.00101	0.00100	0.00100	0.00102	0.00107	0.00111	0.00116	<0.20	<0.20	<0.20	<0.20
Tin D-Sn	0.00264	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.030	<0.030	<0.030	<0.030
Titanium D-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium D-U	0.00478	0.00490	0.00484	0.00509	0.0102	0.0100	0.0103				
Vanadium D-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.030	<0.030	<0.030	<0.030
Zinc D-Zn	3.48	3.46	3.43	3.75	9.33	8.89	9.22	4.56	5.84	8.99	9.38
Organic Parameters											
Chlorophyll a (a,b)	-	-	-	-	-	-	-				

Grum Pit - 2005 -2007 Monitoring Results
RESULTS OF ANALYSIS

Depth (m)	1	3	5	15	30	40	1	3	5	15	30	40
Sample ID	GPL-1M	GPL-3M	GPL-5M	GPL-15M	GPL-30M	GPL-40M	GPL-1M	GPL-3M	GPL-5M	GPL-15M	GPL-30M	GPL-40M
Date Sampled	12-Jun-07	12-Jun-07	12-Jun-07	12-Jun-07	12-Jun-07	12-Jun-07	11-Jul-07	11-Jul-07	11-Jul-07	11-Jul-07	11-Jul-07	11-Jul-07
Time Sampled	14:15	14:30	14:40	14:55	15:00	15:20	13:05	13:15	13:35	13:48	14:05	14:15
ALS Sample ID	L518525-7	L518525-8	L518525-9	L518525-10	L518525-11	L518525-12	L529776-14	L529776-15	L529776-16	L529776-17	L529776-18	L529776-19
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests												
Hardness (as CaCO3)	558	673	645	654	648	645	543	577	596	606	592	581
Conductivity (uS/cm)	839	976	978	981	993	993	900	953	1020	1030	1030	1030
ORP	50	70	80	90	90	90	20	40	80	80	80	80
pH	8.1	8.07	8.03	8	7.96	7.95	8.87	8.64	7.85	7.84	7.83	7.76
Total Suspended Solids	8	5.3	6	4	4.7	5.3	<3.0	5.7	<3.0	3	4.3	5
Dissolved Anions												
Alkalinity-Total CaCO3												
Sulphate SO4	356	421	422	423	424	423	385	398	419	424	424	424
Chloride (Cl)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)												
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Nutrients												
Ammonia Nitrogen N	0.035	0.043	<0.020	<0.020	<0.020	0.022	0.126	0.057	0.028	0.027	0.039	0.035
Nitrate Nitrogen N	0.987	1.09	1.21	1.29	1.31	1.28	0.594	0.529	1.13	1.24	1.23	<0.0050
Nitrite Nitrogen N	0.0057	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0011	<0.0010	0.0015	0.0021	0.0025	<0.0010
Nitrite/Nitrate Nitrogen N	0.993	1.09	1.21	1.29	1.31	1.28	0.595	0.529	1.13	1.24	1.23	<0.0050
Dissolved ortho-Phosphate P	<0.0010	<0.0010	<0.0010	0.0011	<0.0010	<0.0010	0.0025	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Phosphate P	0.0058	0.0074	0.0076	0.0045	0.0121	0.0057	0.029	0.0212	0.0156	0.0073	0.0082	0.0087
Total Metals												
Aluminum T-Al	0.0776	0.063	0.0503	0.0493	0.102	0.0929	0.0272	0.0354	0.0281	0.0429	0.0594	0.0814
Antimony T-Sb	0.00415	0.00499	0.00506	0.00497	0.00505	0.00494	0.00386	0.00416	0.00464	0.00484	0.00488	0.00481
Arsenic T-As	0.00076	0.00078	0.00076	0.00076	0.00081	0.00095	0.00048	0.00051	0.00076	0.0008	0.001	0.00106
Barium T-Ba	0.0406	0.0464	0.0471	0.0471	0.048	0.0484	0.0424	0.0455	0.0458	0.0465	0.0468	0.048
Beryllium T-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth T-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron T-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium T-Cd	0.00251	0.00298	0.00292	0.00294	0.00293	0.00289	0.00127	0.00216	0.0027	0.00282	0.00277	0.00275
Calcium T-Ca	107	127	140	132	141	125	112	115	124	124	123	118
Chromium T-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt T-Co	0.00413	0.00401	0.00391	0.00396	0.00404	0.00413	0.00378	0.00401	0.00417	0.00414	0.00435	0.00456
Copper T-Cu	0.00198	0.00151	0.00101	0.00095	0.00108	0.00104	0.00091	0.00067	0.00091	0.00079	0.00084	0.00092
Iron T-Fe	0.137	0.112	0.099	0.088	0.128	0.159	0.043	0.036	0.063	0.083	0.133	0.128
Lead T-Pb	0.00236	0.00179	0.00117	0.00097	0.00103	0.00119	0.001	0.00109	0.00108	0.00098	0.00137	0.00132
Lithium T-Li	0.021	0.025	0.026	0.025	0.026	0.025	0.022	0.023	0.023	0.025	0.025	0.025
Magnesium T-Mg	61.4	72	79.1	75.9	80.1	71.1	66.8	69.5	72	73.5	70.9	70.2
Manganese T-Mn	0.0931	0.1	0.102	0.102	0.107	0.108	0.0619	0.0911	0.11	0.115	0.124	0.127
Molybdenum T-Mo	0.00216	0.00256	0.0026	0.00254	0.00252	0.00254	0.00242	0.00257	0.00261	0.00257	0.00257	0.00253
Nickel T-Ni	0.152	0.176	0.176	0.178	0.177	0.178	0.117	0.146	0.174	0.178	0.181	0.183
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	2.3	2.9	3.1	2.9	3.1	2.7	2.4	2.6	2.7	2.7	2.7	2.6
Selenium T-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon T-Si	2.56	2.98	3.26	3.1	3.27	2.94	2.45	2.62	3.07	3.06	3.04	2.94
Silver T-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium T-Na	8	10.2	10.7	10.2	10.9	9.6	8.7	9.2	9.7	9.9	9.6	9.5
Strontium T-Sr	0.64	0.769	0.769	0.77	0.764	0.766	0.682	0.743	0.76	0.771	0.775	0.781
Thallium T-Tl	0.00078	0.00091	0.00085	0.00084	0.00088	0.00087	0.00081	0.00085	0.00088	0.00088	0.00088	0.00091
Tin T-Sn	0.00103	0.00024	0.00069	0.00058	0.00089	0.00089	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00834	0.0097	0.00981	0.00981	0.00976	0.00978	0.00411	0.00302	0.00954	0.0106	0.0106	0.0107
Vanadium T-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc T-Zn	6.1	7.39	7.28	7.36	7.48	7.45	0.401	1.51	7.7	8.07	8.26	8.34
Dissolved Metals												
Aluminum D-Al	0.0034	<0.0030	0.0027	<0.0020	0.0139	0.0041	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0046
Antimony D-Sb	0.00416	0.00513	0.00502	0.00516	0.00504	0.00501	0.00387	0.00418	0.00472	0.00478	0.00487	0.00484
Arsenic D-As	0.0005	0.0006	0.00062	0.00063	0.00061	0.00069	0.00039	0.00039	0.0006	0.00062	0.00063	0.00064
Barium D-Ba	0.0388	0.0457	0.0458	0.0464	0.047	0.0465	0.0418	0.0451	0.0453	0.0455	0.0454	0.0462
Beryllium D-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth D-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron D-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium D-Cd	0.00259	0.00293	0.00284	0.00294	0.00286	0.00289	0.00034	0.00152	0.0023	0.00275	0.00262	0.00278
Calcium D-Ca	115	139	133	135	134	133	110	115	122	124	121	118
Chromium D-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt D-Co	0.004	0.00388	0.00391	0.00388	0.00399	0.00404	0.00366	0.00398	0.00409	0.00413	0.00429	0.00435
Copper D-Cu	0.00125	0.00121	0.0008	0.00076	0.00079	0.00076	0.00037	0.00026	0.00047	0.00047	0.00044	0.00047
Iron D-Fe	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Lead D-Pb	0.00093	0.00083	0.00049	0.00039	0.00036	0.00034	0.00042	0.00034	0.00045	0.0003	0.00015	0.00015
Lithium D-Li	0.021	0.026	0.025	0.025	0.025	0.026	0.021	0.024	0.024	0.025	0.024	0.025
Magnesium D-Mg	65.8	79.2	76.1	77	76	75.6	65.1	70.4	71	72	70.6	69.2
Manganese D-Mn	0.088	0.0993	0.101	0.102	0.104	0.106	0.0526	0.0891	0.108	0.115	0.122	0.125
Molybdenum D-Mo	0.00221	0.00271	0.00267	0.00278	0.00271	0.0026	0.00246	0.00267	0.00253	0.00257	0.00255	0.00257
Nickel D-Ni	0.15	0.18	0.175	0.18	0.177	0.176	0.114	0.146	0.174	0.18	0.178	0.182
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	2.5	3.1	2.9	3	2.9	2.9	2.4	2.5	2.7	2.7	2.7	2.6
Selenium D-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon D-Si	2.64	3.2	3.03	3.06	3.05	3.02	2.36	2.63	2.96	2.99	2.91	2.86
Silver D-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium D-Na	8.6	11	10.2	10.6	10.4	10.3	8.6	9.3	9.7	9.9	9.6	9.3
Strontium D-Sr	0.636	0.771	0.773	0.78	0.763	0.763	0.677	0.748	0.756	0.775	0.761	0.776
Thallium D-Tl	0.00076	0.00092	0.00087	0.00086	0.00087	0.00085	0.00082	0.00083	0.00088	0.00088	0.00085	0.00089
Tin D-Sn	0.00037	0.00038	0.00045	0.00094	0.00093	0.00087	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium D-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium D-U	0.0081	0.00984	0.00985	0.00982	0.00987	0.00967	0.00405	0.00286	0.00935	0.0107	0.0104	0.0105
Vanadium D-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc D-Zn	5.86	7.44	7.32	7.5	7.33	7.34	0.2	1.4	7.67	8.12	8.16	8.24
Organic Parameters												
Chlorophyll a (a,b)	2.75	8.77	7.18	4.82	-	-	1.65	7.56	6.71	2.56	2.49	1.9

Grum Pit - 2005 -2007 Monitoring Results
RESULTS OF ANALYSIS

Depth (m)	0.1	1	3	5	15	30	40
Sample ID	GL-0.1	GL-1	GL-3	GL-5	GL-15	GL-30	GL-40
Date Sampled	7-Aug-07	7-Aug-07	7-Aug-07	7-Aug-07	7-Aug-07	7-Aug-07	7-Aug-07
Time Sampled	09:15	09:30	09:50	10:30	11:00	11:30	12:00
ALS Sample ID	L540525-1	L540525-2	L540525-3	L540525-4	L540525-5	L540525-6	L540525-7
Nature	Water	Water	Water	Water	Water	Water	Water
Physical Tests							
Hardness (as CaCO3)	553	572	558	648	610	619	605
Conductivity (uS/cm)	943	944	943	1070	1070	1070	1070
ORP	200	200	190	200	200	190	190
pH	8.57	8.57	8.59	7.98	7.99	7.98	8
Total Suspended Solids	6.2	6.2	5.5	6.2	<3.0	4.9	6.2
Dissolved Anions							
Alkalinity-Total CaCO3							
Sulphate SO4	441	387	384	436	424	464	467
Chloride (Cl)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)	0.341	0.335	0.33	0.371	0.364	0.363	0.365
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Nutrients							
Ammonia Nitrogen N	0.197	0.12	0.134	0.033	0.069	0.073	0.079
Nitrate Nitrogen N	0.939	0.886	0.884	1.23	1.23	1.24	1.26
Nitrite Nitrogen N	0.0073	0.0079	0.0079	0.0054	0.0059	0.006	0.008
Nitrite/Nitrate Nitrogen N							
Dissolved ortho-Phosphate P	0.007	0.0058	0.0041	<0.0010	0.0013	0.001	<0.0010
Total Phosphate P	0.0331	0.0322	0.0298	0.016	0.0081	0.0094	0.0107
Total Metals							
Aluminum T-Al	0.0752	0.085	0.0974	0.0494	0.0521	0.0571	0.0497
Antimony T-Sb	0.00375	0.00392	0.00379	0.00482	0.00483	0.00467	0.00474
Arsenic T-As	0.001	0.00099	0.00096	0.00092	0.00092	0.00119	0.00129
Barium T-Ba	0.0372	0.0381	0.038	0.048	0.0466	0.0467	0.047
Beryllium T-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth T-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron T-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium T-Cd	0.00078	0.00074	0.00075	0.0025	0.00257	0.00251	0.00243
Calcium T-Ca	118	120	120	129	138	134	133
Chromium T-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt T-Co	0.00364	0.00382	0.00364	0.00467	0.00443	0.00505	0.00501
Copper T-Cu	0.00149	0.00187	0.00156	0.00086	0.00069	0.00077	0.00078
Iron T-Fe	0.122	0.127	0.14	0.084	0.098	0.15	0.155
Lead T-Pb	0.00152	0.00163	0.00148	0.00162	0.00109	0.00125	0.00126
Lithium T-Li	0.022	0.022	0.022	0.025	0.025	0.025	0.025
Magnesium T-Mg	64.5	65.7	64.2	76.6	68.6	68.1	66.8
Manganese T-Mn	0.0547	0.0625	0.0564	0.135	0.129	0.154	0.155
Molybdenum T-Mo	0.00238	0.00243	0.00246	0.00257	0.00254	0.00262	0.00255
Nickel T-Ni	0.101	0.105	0.103	0.188	0.18	0.182	0.179
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	2.6	2.7	2.6	3.3	2.9	2.9	2.9
Selenium T-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon T-Si	2.62	2.64	2.68	3.12	3.07	2.98	2.97
Silver T-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium T-Na	9.4	9.7	9.6	10.8	10.4	10.5	10.4
Strontium T-Sr	0.609	0.618	0.625	0.778	0.771	0.777	0.782
Thallium T-Tl	0.00086	0.00089	0.00087	0.00094	0.00092	0.00089	0.0009
Tin T-Sn	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00384	0.00392	0.00385	0.0105	0.0107	0.0107	0.0106
Vanadium T-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc T-Zn	0.602	0.643	0.639	9.91	8.58	8.26	8.15
Dissolved Metals							
Aluminum D-Al	0.0034	0.0039	0.0035	0.0033	0.0438	0.0038	0.0042
Antimony D-Sb	0.00392	0.00393	0.00327	0.00477	0.00464	0.00474	0.00466
Arsenic D-As	0.00061	0.00066	0.00053	0.00052	0.00058	0.00053	0.00057
Barium D-Ba	0.0364	0.0364	0.0306	0.0467	0.0444	0.0473	0.0457
Beryllium D-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth D-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron D-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium D-Cd	0.00051	0.00054	0.00035	0.00236	0.00248	0.00245	0.00227
Calcium D-Ca	117	121	118	131	134	136	132
Chromium D-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt D-Co	0.0033	0.00346	0.0028	0.0045	0.00438	0.00505	0.00496
Copper D-Cu	0.00093	0.00115	0.00076	0.00046	0.00041	0.00039	0.0004
Iron D-Fe	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Lead D-Pb	0.00038	0.0004	0.00031	0.00049	0.00019	0.00012	<0.00010
Lithium D-Li	0.022	0.022	0.019	0.025	0.024	0.025	0.025
Magnesium D-Mg	63.2	65.6	64	77.7	66.6	67.6	66.7
Manganese D-Mn	0.0355	0.0417	0.0296	0.128	0.127	0.163	0.155
Molybdenum D-Mo	0.00251	0.00268	0.00216	0.00261	0.00254	0.0026	0.00251
Nickel D-Ni	0.0933	0.0952	0.0783	0.185	0.178	0.184	0.183
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	2.6	2.6	2.6	3.4	2.8	2.8	2.7
Selenium D-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon D-Si	2.47	2.55	2.49	3.11	2.91	2.97	2.88
Silver D-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium D-Na	9.3	9.5	9.6	11.1	10.2	10.4	10.3
Strontium D-Sr	0.621	0.626	0.524	0.774	0.755	0.783	0.78
Thallium D-Tl	0.00088	0.00088	0.00072	0.00091	0.00087	0.0009	0.00089
Tin D-Sn	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium D-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium D-U	0.00382	0.0038	0.00321	0.00856	0.0103	0.0109	0.0108
Vanadium D-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc D-Zn	0.442	0.458	0.362	9.67	8.44	8.88	8.49
Organic Parameters							
Chlorophyll a (a,b)	0.72	1.61	0.913	3.11	0.73	-	-

Grum Pit - 2005 -2007 Monitoring Results
RESULTS OF ANALYSIS

Depth (m)	0.1	1	3	5	15	30	40
Sample ID	GL-0.1 GRUMLAKE NEAR SURFACE	GL-1 GRUMLAKE@ 1M	GL-3 GRUMLAKE@ 3M	GL-5 GRUMLAKE@ 5M	GL-15 GRUMLAKE@ 15M	GL-30 GRUMLAKE@ 30M	GL-40 GRUMLAKE@ 40M
Date Sampled	5-Sep-07	5-Sep-07	5-Sep-07	5-Sep-07	5-Sep-07	5-Sep-07	5-Sep-07
Time Sampled	10:00	10:20	10:30	10:45	11:00	11:30	12:00
ALS Sample ID	L551912-11	L551912-12	L551912-13	L551912-14	L551912-15	L551912-16	L551912-17
Nature	Water	Water	Water	Water	Water	Water	Water
Physical Tests							
Hardness (as CaCO3)	556	565	563	586	612	615	612
Conductivity (uS/cm)	976	969	967	1000	1070	1070	1070
ORP	50	60	60	70	80	90	90
pH	8.37	8.39	8.4	8.26	8.02	8.07	8.01
Total Suspended Solids	<3.0	<3.0	<3.0	<3.0	3.8	<3.0	3.8
Dissolved Anions							
Alkalinity-Total CaCO3							
Sulphate SO4	390	388	387	395	424	408	428
Chloride (Cl)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Fluoride (F)							
Bromide (Br)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Nutrients							
Ammonia Nitrogen N	0.06	0.047	0.04	0.031	0.059	0.072	0.072
Nitrate Nitrogen N	0.91	0.9	0.897	0.957	1.24	1.17	1.21
Nitrite Nitrogen N	0.0087	0.0081	0.0087	0.0073	0.0057	0.006	0.0057
Nitrite/Nitrate Nitrogen N							
Dissolved ortho-Phosphate P	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Phosphate P	0.0121	0.0107	0.0105	0.0101	0.0059	0.0069	0.0068
Total Metals							
Aluminum T-Al	0.0279	0.0183	0.0284	0.0282	0.0377	0.0681	0.0446
Antimony T-Sb	0.00413	0.00403	0.00426	0.0045	0.0049	0.00493	0.00483
Arsenic T-As	0.00086	0.00081	0.00087	0.00085	0.00102	0.00156	0.00164
Barium T-Ba	0.0417	0.0419	0.0427	0.0446	0.0469	0.0479	0.0478
Beryllium T-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth T-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron T-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium T-Cd	0.00104	0.00101	0.00113	0.00142	0.00243	0.00255	0.00258
Calcium T-Ca	113	112	114	119	127	127	126
Chromium T-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt T-Co	0.00409	0.00416	0.00428	0.00455	0.00483	0.00551	0.00569
Copper T-Cu	0.00135	0.00164	0.00142	0.00129	0.00068	0.00079	0.0008
Iron T-Fe	0.056	0.045	0.057	0.055	0.091	0.2	0.185
Lead T-Pb	0.00142	0.00145	0.00149	0.00155	0.00105	0.00122	0.00133
Lithium T-Li	0.023	0.023	0.024	0.024	0.024	0.025	0.026
Magnesium T-Mg	68.5	68.6	70.3	71.8	73.3	74.3	71.8
Manganese T-Mn	0.0719	0.0694	0.0702	0.101	0.151	0.184	0.19
Molybdenum T-Mo	0.00257	0.00268	0.00254	0.00261	0.00244	0.00257	0.00246
Nickel T-Ni	0.117	0.117	0.119	0.145	0.181	0.185	0.184
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	3	3	3.1	3.2	3.4	3.4	3.2
Selenium T-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon T-Si	2.88	2.86	2.94	3.08	3.26	3.31	3.17
Silver T-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium T-Na	9.9	10	10.3	10.4	11	11.1	10.4
Strontium T-Sr	0.636	0.634	0.647	0.683	0.713	0.728	0.734
Thallium T-Tl	0.00094	0.00094	0.00097	0.00095	0.00088	0.00094	0.00096
Tin T-Sn	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00423	0.00417	0.00425	0.00498	0.0104	0.0107	0.0107
Vanadium T-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc T-Zn	1.96	1.92	2	4.58	7.62	7.91	7.64
Dissolved Metals							
Aluminum D-Al	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Antimony D-Sb	0.00399	0.00423	0.00418	0.00443	0.00476	0.00492	0.00492
Arsenic D-As	0.00059	0.00061	0.00065	0.00059	0.00059	0.00049	0.00052
Barium D-Ba	0.0404	0.0416	0.0418	0.0443	0.0459	0.0469	0.0466
Beryllium D-Be	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth D-Bi	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Boron D-B	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Cadmium D-Cd	0.00097	0.00102	0.00108	0.00135	0.00248	0.00256	0.00247
Calcium D-Ca	111	113	112	118	125	126	126
Chromium D-Cr	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Cobalt D-Co	0.00397	0.00406	0.004	0.0044	0.00486	0.00557	0.00557
Copper D-Cu	0.00104	0.00122	0.00104	0.00096	0.00038	0.0004	0.00043
Iron D-Fe	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030
Lead D-Pb	0.00071	0.0007	0.00074	0.00072	0.00012	<0.00010	<0.00010
Lithium D-Li	0.022	0.022	0.023	0.024	0.025	0.026	0.025
Magnesium D-Mg	67.7	69	69	70.6	72.7	72.8	72.5
Manganese D-Mn	0.0623	0.0629	0.0639	0.0932	0.15	0.181	0.188
Molybdenum D-Mo	0.00261	0.00275	0.00258	0.00261	0.00244	0.00263	0.00263
Nickel D-Ni	0.111	0.116	0.116	0.144	0.181	0.186	0.186
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	3	3.1	3	3.1	3.3	3.3	3.2
Selenium D-Se	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Silicon D-Si	2.81	2.83	2.82	2.99	3.13	3.14	3.14
Silver D-Ag	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020
Sodium D-Na	10	10.2	10.1	10.3	10.7	10.7	10.7
Strontium D-Sr	0.625	0.644	0.641	0.686	0.713	0.739	0.738
Thallium D-Tl	0.00092	0.00095	0.00091	0.00096	0.00087	0.00092	0.00095
Tin D-Sn	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium D-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium D-U	0.00415	0.00427	0.00422	0.0049	0.0103	0.0107	0.0108
Vanadium D-V	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Zinc D-Zn	1.82	1.86	1.87	4.38	7.66	7.91	7.92
Organic Parameters							
Chlorophyll a (a,b)	-	0.0416	0.028	0.831	0.0344	-	-

Vangorda Pit - 2005 to 2007 Monitoring Results

RESULTS OF ANALYSIS

Depth (m)	1	3	5	15	30	40
Sample ID	VP-1 VGDA PIT @1m	VP-3 VGDA PIT @3m	VP-5 VGDA PIT @5m	VP-15 VGDA PIT @15m	VP-30 VGDA PIT @30m	VP-40 VGDA PIT @40m
Date Sampled	9-Jun-05	9-Jun-05	9-Jun-05	9-Jun-05	9-Jun-05	9-Jun-05
Time Sampled	17:00	17:10	17:15	17:20	17:30	17:40
ALS Sample ID	15	16	17	18	19	20
Nature	Water	Water	Water	Water	Water	Water
Physical Tests						
Hardness (as CaCO3)						
Conductivity (uS/cm)	1320	1880	2000	2070	2140	2140
ORP						
pH	7.49	7.17	6.86	6.44	5.90	5.82
Total Suspended Solids	4.6	22.9	41.9	56.9	61.9	66.9
Dissolved Anions						
Alkalinity-Total CaCO3	24.8	42.0	18.0	13.2	10.4	10.7
Sulphate SO4	732	1130	1220	1290	1330	1360
Bromide (Br)						
Chloride (Cl)						
Nutrients						
Ammonia Nitrogen N	0.180	0.420	0.470	0.500	0.590	0.550
Nitrate Nitrogen N	0.184	0.055	<0.050	<0.050	<0.050	<0.050
Nitrite Nitrogen N	<0.010	<0.010	<0.010	0.015	<0.010	<0.010
Nitrite/Nitrate Nitrogen N						
Dissolved ortho-Phosphate P	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Phosphate P	0.0038	<0.0060	<0.030	<0.030	<0.030	<0.030
Total Metals						
Aluminum T-Al	0.036	0.068	0.056	0.077	0.214	0.271
Antimony T-Sb	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050	<0.0050
Arsenic T-As	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050	<0.0050
Barium T-Ba	0.0510	0.0347	0.0278	0.0254	0.0284	0.0310
Beryllium T-Be	<0.010	<0.010	<0.010	<0.010	<0.025	<0.025
Bismuth T-Bi	<0.010	<0.010	<0.010	<0.010	<0.025	<0.025
Boron T-B	<0.20	<0.20	<0.20	<0.20	<0.50	<0.50
Cadmium T-Cd	0.0746	0.0909	0.0979	0.105	0.127	0.129
Calcium T-Ca	156	237	252	240	250	248
Chromium T-Cr	<0.010	<0.010	<0.010	<0.010	<0.025	<0.025
Cobalt T-Co	0.376	0.590	0.666	0.699	0.784	0.789
Copper T-Cu	0.0692	0.132	0.120	0.237	0.439	0.445
Iron T-Fe	0.428	4.81	18.4	24.0	37.7	46.8
Lead T-Pb	0.0115	0.0107	0.0052	0.0045	0.0421	0.0432
Lithium T-Li	<0.10	<0.10	<0.10	<0.10	<0.25	<0.25
Magnesium T-Mg	66.7	93.2	99.9	97.8	106	101
Manganese T-Mn	23.0	33.0	37.1	39.5	43.8	43.9
Molybdenum T-Mo	<0.0010	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025
Nickel T-Ni	0.373	0.572	0.630	0.648	0.719	0.706
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	<2.0	2.5	3.0	2.7	2.8	3.5
Selenium T-Se	<0.020	<0.020	<0.020	<0.020	<0.050	<0.050
Silicon T-Si	2.46	2.99	3.18	3.06	3.32	3.31
Silver T-Ag	<0.00020	<0.00020	<0.00020	<0.00020	<0.00050	<0.00050
Sodium T-Na	3.0	4.6	5.3	4.7	4.8	5.9
Strontium T-Sr	0.803	1.14	1.21	1.23	1.36	1.34
Thallium T-Tl	<0.0020	0.0020	0.0022	0.0023	<0.0050	<0.0050
Tin T-Sn	<0.0020	<0.0020	<0.0020	<0.0020	<0.0050	<0.0050
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00059	0.00043	0.00034	0.00036	0.00060	0.00074
Vanadium T-V	<0.020	<0.020	<0.020	<0.020	<0.050	<0.050
Zinc T-Zn	74.0	109	124	131	149	149
Dissolved Metals						
Aluminum D-Al						
Antimony D-Sb						
Arsenic D-As						
Barium D-Ba						
Beryllium D-Be						
Bismuth D-Bi						
Boron D-B						
Cadmium D-Cd						
Calcium D-Ca						
Chromium D-Cr						
Cobalt D-Co						
Copper D-Cu						
Iron D-Fe						
Lead D-Pb						
Lithium D-Li						
Magnesium D-Mg						
Manganese D-Mn						
Molybdenum D-Mo						
Nickel D-Ni						
Phosphorus D-P						
Potassium D-K						
Selenium D-Se						
Silicon D-Si						
Silver D-Ag						
Sodium D-Na						
Strontium D-Sr						
Thallium D-Tl						
Tin D-Sn						
Titanium D-Ti						
Uranium D-U						
Vanadium D-V						
Zinc D-Zn						
Organic Parameters						
Chlorophyll a (a,b)						

Vangorda Pit - 2005 to 2007 Monitoring Results

RESULTS OF ANALYSIS

Depth (m)	0.1	1	3	5	10	20	30
Sample ID	VP-0.1	VP-1	VP-3	VP-5	VP-10	VP-20	VP-30
Date Sampled	14-Sep-05	14-Sep-05	14-Sep-05	14-Sep-05	14-Sep-05	14-Sep-05	14-Sep-05
Time Sampled	15:20	15:30	15:38	15:42	15:46	15:50	16:00
ALS Sample ID	17	18	19	20	21	22	23
Nature	Water	Water	Water	Water	Water	Water	Water
Physical Tests							
Hardness (as CaCO3)							
Conductivity (uS/cm)	1880	1870	2060	2130	2150	2150	2150
ORP							
pH	7.05	7.00	6.65	5.32	5.36	5.37	5.38
Total Suspended Solids	10.5	10.5	38.5	47.2	45.2	43.2	45.8
Dissolved Anions							
Alkalinity-Total CaCO3	12.8	12.8	9.0	8.1	8.2	7.2	7.8
Sulphate SO4	1190	1200	1370	1420	1420	1420	1430
Bromide (Br)							
Chloride (Cl)							
Nutrients							
Ammonia Nitrogen N	0.490	0.460	0.590	0.640	0.620	0.630	0.590
Nitrate Nitrogen N	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Nitrite Nitrogen N	<0.010	0.013	<0.010	0.016	0.019	0.010	0.011
Nitrite/Nitrate Nitrogen N							
Dissolved ortho-Phosphate P	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010
Total Phosphate P	<0.0020	0.0029	0.0020	0.0024	0.0027	0.0032	0.0022
Total Metals							
Aluminum T-Al	0.023	0.030	0.027	<0.050	<0.050	<0.050	<0.050
Antimony T-Sb	<0.0020	<0.0020	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050
Arsenic T-As	<0.0020	<0.0020	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050
Barium T-Ba	0.0193	0.0208	0.0165	0.0137	0.0153	0.0164	0.0148
Beryllium T-Be	<0.010	<0.010	<0.010	<0.025	<0.025	<0.025	<0.025
Bismuth T-Bi	<0.010	<0.010	<0.010	<0.025	<0.025	<0.025	<0.025
Boron T-B	<0.20	<0.20	<0.20	<0.50	<0.50	<0.50	<0.50
Cadmium T-Cd	0.0854	0.0914	0.107	0.110	0.114	0.124	0.116
Calcium T-Ca	240	245	255	255	271	280	281
Chromium T-Cr	<0.010	<0.010	<0.010	<0.025	<0.025	<0.025	<0.025
Cobalt T-Co	0.491	0.517	0.683	0.719	0.761	0.801	0.742
Copper T-Cu	0.0063	0.0073	0.0745	0.124	0.0903	0.0992	0.0899
Iron T-Fe	3.37	3.52	31.8	40.7	49.4	45.3	40.3
Lead T-Pb	0.0096	0.0114	0.0100	0.0056	0.0180	0.0208	0.0223
Lithium T-Li	<0.10	<0.10	<0.10	<0.25	<0.25	<0.25	<0.25
Magnesium T-Mg	86.9	89.7	104	104	109	113	110
Manganese T-Mn	31.3	32.8	40.8	41.3	44.6	47.0	43.4
Molybdenum T-Mo	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0025	<0.0025
Nickel T-Ni	0.443	0.466	0.616	0.644	0.691	0.733	0.666
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	2.7	2.6	2.9	3.1	3.6	3.3	3.0
Selenium T-Se	<0.020	<0.020	<0.020	<0.050	<0.050	<0.050	<0.050
Silicon T-Si	2.38	2.45	3.28	3.35	3.53	3.62	3.45
Silver T-Ag	<0.00020	<0.00020	<0.00020	<0.00050	<0.00050	<0.00050	<0.00050
Sodium T-Na	5.4	5.4	5.4	5.3	6.7	5.8	5.0
Strontium T-Sr	1.17	1.25	1.18	1.23	1.31	1.38	1.28
Thallium T-Tl	0.0022	0.0023	0.0023	<0.0050	<0.0050	<0.0050	<0.0050
Tin T-Sn	<0.0020	<0.0020	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00023	0.00034	0.00027	<0.00050	<0.00050	<0.00050	<0.00050
Vanadium T-V	<0.020	<0.020	<0.020	<0.050	<0.050	<0.050	<0.050
Zinc T-Zn	87.8	91.7	122	127	137	145	134
Dissolved Metals							
Aluminum D-Al	<0.020	<0.020	<0.020	<0.050	<0.050	<0.050	<0.050
Antimony D-Sb	<0.0020	<0.0020	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050
Arsenic D-As	<0.0020	<0.0020	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050
Barium D-Ba	0.0152	0.0146	0.0145	0.0125	0.0116	0.0114	0.0112
Beryllium D-Be	<0.010	<0.010	<0.010	<0.025	<0.025	<0.025	<0.025
Bismuth D-Bi	<0.010	<0.010	<0.010	<0.025	<0.025	<0.025	<0.025
Boron D-B	<0.20	<0.20	<0.20	<0.50	<0.50	<0.50	<0.50
Cadmium D-Cd	0.0935	0.0899	0.115	0.120	0.116	0.117	0.111
Calcium D-Ca	251	238	270	260	279	293	272
Chromium D-Cr	<0.010	<0.010	<0.010	<0.025	<0.025	<0.025	<0.025
Cobalt D-Co	0.502	0.494	0.698	0.735	0.748	0.727	0.722
Copper D-Cu	0.0074	0.0071	0.0642	0.109	0.0717	0.0765	0.0747
Iron D-Fe	0.437	0.396	16.3	18.8	20.7	22.2	19.6
Lead D-Pb	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0025	<0.0025
Lithium D-Li	<0.10	<0.10	<0.10	<0.25	<0.25	<0.25	<0.25
Magnesium D-Mg	92.9	85.1	108	105	113	117	107
Manganese D-Mn	32.8	32.5	42.8	44.1	44.2	43.5	42.8
Molybdenum D-Mo	<0.0010	<0.0010	<0.0010	<0.0025	<0.0025	<0.0025	<0.0025
Nickel D-Ni	0.469	0.461	0.646	0.686	0.682	0.670	0.659
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	2.8	2.5	3.2	3.0	3.3	3.5	3.1
Selenium D-Se	<0.020	<0.020	<0.020	<0.050	<0.050	<0.050	<0.050
Silicon D-Si	2.45	2.24	3.26	3.22	3.43	3.63	3.24
Silver D-Ag	<0.00020	<0.00020	<0.00020	<0.00050	<0.00050	<0.00050	<0.00050
Sodium D-Na	5.7	5.2	5.9	5.3	6.0	6.1	5.2
Strontium D-Sr	1.29	1.27	1.32	1.33	1.33	1.30	1.30
Thallium D-Tl	0.0021	0.0022	0.0023	<0.0050	<0.0050	<0.0050	<0.0050
Tin D-Sn	<0.0020	<0.0020	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050
Titanium D-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium D-U	<0.00020	<0.00020	<0.00020	<0.00050	<0.00050	<0.00050	<0.00050
Vanadium D-V	<0.020	<0.020	<0.020	<0.050	<0.050	<0.050	<0.050
Zinc D-Zn	94.0	92.5	133	139	138	136	134
Organic Parameters	VP-0.1	VP-1	VP-3				
Chlorophyll a (a,b)	0.0309	0.00396	<0.00060	-	-	-	-

Vangorda Pit - 2005 to 2007 Monitoring Results

RESULTS OF ANALYSIS

Depth (m)	1	7	1	3	5	15	30	40
Sample ID	VANGORDA PIT 1m	VANGORDA PIT 7m	VP 1m Vangorda Pit	@ VP 3m Vangorda @ 3r	VP 5m Vangorda @ 5r	VP 15m Vangorda @ 1	VP 30m Vangorda @ 3	VP 40m Vangorda @ 4
Date Sampled	17-May-06	17-May-06	21-Jun-06	21-Jun-06	21-Jun-06	21-Jun-06	21-Jun-06	21-Jun-06
Time Sampled	13:30	14:20	11:50	12:10	12:20	12:35	12:45	13:00
ALS Sample ID	4	5	1	02	03	04	5	6
Nature	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests								
Hardness (as CaCO3)								
Conductivity (uS/cm)	1780	2110	1130	1910	2120	2140	2150	2150
ORP								
pH	5.80	5.89	5.02	5.17	5.55	5.48	5.57	5.57
Total Suspended Solids	17.3	32.0	04.7	14.7	30.7	35.3	37.3	34.0
Dissolved Anions								
Alkalinity-Total CaCO3	04.0	<2.0	24.8	30.4	47.4	47.8	37.0	33.0
Sulphate SO4	1130	1390	0641	1240	1410	1410	1440	1530
Bromide (Br)								
Chloride (Cl)								
Nutrients								
Ammonia Nitrogen N	0.360	0.580	0.167	0.407	0.560	0.551	0.532	0.531
Nitrate Nitrogen N								
Nitrite Nitrogen N								
Nitrite/Nitrate Nitrogen N	0.0600	<0.025	0.0714	0.038	<0.025	<0.025	<0.025	<0.025
Dissolved ortho-Phosphate P	<0.0010	<0.0010	0.0026	0.0013	0.0011	0.0012	0.0014	0.0015
Total Phosphate P	0.0094	0.011	0.0051	0.0049	0.0084	0.0088	0.0138	0.0069
Total Metals								
Aluminum T-Al	1.970	0.127	0.161	0.503	0.162	0.133	<0.40	0.148
Antimony T-Sb	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Arsenic T-As	0.0297	0.0022	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Barium T-Ba	0.0385	0.0259	0.0118	0.0272	0.0273	0.0262	0.0257	0.0252
Beryllium T-Be	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Bismuth T-Bi	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Boron T-B	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Cadmium T-Cd	0.162	0.120	0.047	0.136	0.120	0.121	0.1240	0.124
Calcium T-Ca	202	269	121	209	231	263	246	299
Chromium T-Cr	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cobalt T-Co	0.621	0.797	0.144	0.645	0.758	0.755	0.777	0.781
Copper T-Cu	2.230	0.091	0.235	0.612	0.143	0.146	0.146	0.144
Iron T-Fe	30.500	34.50	06.8	23.4	28.5	35.0	34.20	38.2
Lead T-Pb	0.0975	0.0123	0.0204	0.0455	0.0155	0.0178	0.0270	0.0281
Lithium T-Li	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Magnesium T-Mg	86.2	110.0	048	087	098	111	104.0	121.0
Manganese T-Mn	34.8	47.8	07.9	43.2	51.4	49.7	52.30	52.2
Molybdenum T-Mo	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Nickel T-Ni	0.549	0.725	0.131	0.590	0.681	0.685	0.696	0.704
Phosphorus T-P	<0.60	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.60
Potassium T-K	<4.0	3.5	<2.0	2.3	2.7	3.0	2.8	<4.0
Selenium T-Se	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Silicon T-Si	3.36	3.61	2.43	3.11	3.14	3.56	3.36	3.59
Silver T-Ag	<0.00020	<0.00020	<0.00020	0.00098	0.00092	0.00049	0.00084	0.00080
Sodium T-Na	6.5	6.1	2.7	4.5	4.9	5.3	5.2	6.0
Strontium T-Sr	1.320	1.48	0.31	1.33	1.53	1.46	1.510	1.52
Thallium T-Tl	0.0022	0.0023	<0.0020	0.0026	0.0024	0.0023	0.0023	0.0024
Tin T-Sn	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Titanium T-Ti	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020
Uranium T-U	0.00430	0.00054	0.00051	0.00170	0.00044	0.00056	0.00058	0.00060
Vanadium T-V	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Zinc T-Zn	134.0	162.0	031	149	166	165	170.0	170
Dissolved Metals								
Aluminum D-Al	0.899	0.060	0.110	0.455	0.117	0.112	0.116	0.114
Antimony D-Sb	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Arsenic D-As	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Barium D-Ba	0.0375	0.0245	0.0112	0.0260	0.0258	0.0252	0.0247	0.0242
Beryllium D-Be	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Bismuth D-Bi	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Boron D-B	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Cadmium D-Cd	0.156	0.116	0.046	0.131	0.116	0.122	0.1240	0.123
Calcium D-Ca	211	270	121	213	235	258	249	259
Chromium D-Cr	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Cobalt D-Co	0.647	0.785	0.141	0.615	0.733	0.780	0.772	0.767
Copper D-Cu	1.370	0.081	0.221	0.609	0.136	0.145	0.140	0.138
Iron D-Fe	23.8	31.10	05.7	22.9	27.0	34.4	32.00	32.6
Lead D-Pb	0.03410	<0.0010	0.0125	0.0326	0.0049	0.0092	0.0159	0.0173
Lithium D-Li	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Magnesium D-Mg	87.9	109.0	49.1	089	096	108	103.0	104.0
Manganese D-Mn	36.8	47.0	07.6	40.7	49.4	51.7	51.40	51.1
Molybdenum D-Mo	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Nickel D-Ni	0.587	0.729	0.128	0.556	0.655	0.699	0.685	0.684
Phosphorus D-P	<0.60	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.60
Potassium D-K	<4.0	3.5	<2.0	2.4	2.5	2.9	2.9	<4.0
Selenium D-Se	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Silicon D-Si	3.23	3.56	2.42	3.19	3.08	3.45	3.27	3.06
Silver D-Ag	<0.00020	<0.00020	<0.00020	0.00057	0.00118	0.00063	0.00098	0.00100
Sodium D-Na	5.4	6.1	2.7	4.7	4.6	5.3	5.3	5.0
Strontium D-Sr	1.390	1.45	0.30	1.26	1.47	1.49	1.470	1.47
Thallium D-Tl	0.0023	0.0024	<0.0020	0.0024	0.0023	0.0023	0.0024	0.0023
Tin D-Sn	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Titanium D-Ti	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.020
Uranium D-U	0.00253	0.00036	0.00042	0.00164	0.00040	0.00046	0.00052	0.00054
Vanadium D-V	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020
Zinc D-Zn	138.0	161.0	030	140	161	168	167.0	167
Organic Parameters								
Chlorophyll a (a,b)	0.021	-	-	-	-	-	-	-

Vangorda Pit - 2005 to 2007 Monitoring Results

RESULTS OF ANALYSIS

Depth (m)	1	3	5	15	30	40
Sample ID	VP_1 Vangorda @1m	VP_3 Vangorda @3m	VP_5 Vangorda @5m	VP_15M Vangorda @1	VP_30M Vangorda @3	VP_40 Vangorda @40
Date Sampled	9-Aug-06	9-Aug-06	9-Aug-06	9-Aug-06	9-Aug-06	9-Aug-06
Time Sampled	14:05	14:20	14:35	14:45	14:55	15:10
ALS Sample ID	7	8	9	10	11	12
Nature	Water	Water	Water	Water	Water	Water
Physical Tests						
Hardness (as CaCO3)						
Conductivity (uS/cm)	1260	1670	2080	2180	2190	2210
ORP						
pH	7.04	6.70	6.40	5.96	5.81	5.67
Total Suspended Solids	<3.0	10.3	22.3	33.7	32.3	33.7
Dissolved Anions						
Alkalinity-Total CaCO3	16.8	11.1	12.7	12.6	11.5	13.1
Sulphate SO4	0715	1040	1370	1450	1450	1450
Bromide (Br)						
Chloride (Cl)						
Nutrients						
Ammonia Nitrogen N	0.174	0.271	0.505	0.502	0.522	0.519
Nitrate Nitrogen N	0.049	0.032	<0.12	<0.12	<0.12	<0.12
Nitrite Nitrogen N	0.002	0.002	<0.025	<0.025	<0.025	<0.025
Nitrite/Nitrate Nitrogen N	0.0514	0.0337	<0.12	<0.12	<0.12	<0.12
Dissolved ortho-Phosphate P	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Phosphate P	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Total Metals						
Aluminum T-Al	0.053	0.176	0.171	0.164	0.17	0.176
Antimony T-Sb	<0.0010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Arsenic T-As	<0.0010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Barium T-Ba	0.0249	0.0259	0.0226	0.0218	0.0208	0.0213
Beryllium T-Be	<0.0050	<0.010	<0.010	<0.010	<0.010	<0.010
Bismuth T-Bi	<0.0050	<0.010	<0.010	<0.010	<0.010	<0.010
Boron T-B	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20
Cadmium T-Cd	0.106	0.120	0.111	0.120	0.119	0.119
Calcium T-Ca	137	174	245	249	253	247
Chromium T-Cr	<0.0050	<0.010	<0.010	<0.010	<0.010	<0.010
Cobalt T-Co	0.337	0.544	0.664	0.731	0.733	0.733
Copper T-Cu	0.149	0.408	0.159	0.123	0.12	0.1220
Iron T-Fe	00.6	10.0	29.9	41.0	45.3	42.0
Lead T-Pb	0.0117	0.0371	0.0210	0.0373	0.0410	0.0438
Lithium T-Li	<0.050	<0.10	<0.10	<0.10	<0.10	<0.10
Magnesium T-Mg	58.9	077	103	105	108.0	106
Manganese T-Mn	22.6	31.3	44.0	47.1	48.1	47.9
Molybdenum T-Mo	0.00264	<0.0010	0.0029	0.0023	0.0017	0.0021
Nickel T-Ni	0.337	0.488	0.628	0.664	0.672	0.671
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	<2.0	2.2	3.0	2.9	3.1	2.9
Selenium T-Se	<0.010	<0.020	<0.020	<0.020	<0.020	<0.020
Silicon T-Si	2.74	2.90	3.38	3.34	3.40	3.30
Silver T-Ag	<0.00010	0.00066	<0.00020	<0.00020	<0.00020	<0.00020
Sodium T-Na	3.3	4.0	5.4	5.2	5.7	5.2
Strontium T-Sr	0.88	1.06	1.40	1.45	1.45	1.44
Thallium T-Tl	0.0029	0.0026	0.0023	0.0023	0.0023	0.0023
Tin T-Sn	<0.0010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00041	0.00168	0.00056	0.00054	0.00050	0.00053
Vanadium T-V	<0.010	<0.020	<0.020	<0.020	<0.020	<0.020
Zinc T-Zn	072	099	133	147	149	142
Dissolved Metals						
Aluminum D-Al	<0.010	0.105	0.095	0.100	0.099	0.096
Antimony D-Sb	<0.0010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Arsenic D-As	<0.0010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Barium D-Ba	0.0225	0.0246	0.0224	0.0208	0.0206	0.0199
Beryllium D-Be	<0.0050	<0.010	<0.010	<0.010	<0.010	<0.010
Bismuth D-Bi	<0.0050	<0.010	<0.010	<0.010	<0.010	<0.010
Boron D-B	<0.10	<0.20	<0.20	<0.20	<0.20	<0.20
Cadmium D-Cd	0.106	0.119	0.109	0.117	0.116	0.113
Calcium D-Ca	136	170	242	251	251	247
Chromium D-Cr	<0.0050	<0.010	<0.010	<0.010	<0.010	<0.010
Cobalt D-Co	0.344	0.523	0.670	0.726	0.724	0.707
Copper D-Cu	0.107	0.372	0.153	0.120	0.12	0.1120
Iron D-Fe	<0.030	07.6	28.6	42.2	42.5	41.4
Lead D-Pb	0.0009	0.0130	0.0135	0.0312	0.0361	0.0356
Lithium D-Li	<0.050	<0.10	<0.10	<0.10	<0.10	<0.10
Magnesium D-Mg	58.7	076	099	107	108.0	103
Manganese D-Mn	23.0	30.6	43.8	47.3	47.7	46.0
Molybdenum D-Mo	0.00206	<0.0010	0.0027	0.0022	0.0018	0.0014
Nickel D-Ni	0.355	0.478	0.623	0.663	0.663	0.650
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	<2.0	2.1	2.8	3.1	3	2.9
Selenium D-Se	<0.010	<0.020	<0.020	<0.020	<0.020	<0.020
Silicon D-Si	2.67	2.83	3.21	3.37	3.37	3.20
Silver D-Ag	<0.00010	0.00066	<0.00020	<0.00020	<0.00020	<0.00020
Sodium D-Na	3.2	4.0	5.2	5.5	5.3	5.0
Strontium D-Sr	0.89	1.03	1.42	1.42	1.43	1.39
Thallium D-Tl	0.0028	0.0026	0.0022	0.0022	0.0023	0.0021
Tin D-Sn	<0.0010	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020
Titanium D-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium D-U	0.00016	0.00121	0.00050	0.00050	0.00048	0.00051
Vanadium D-V	<0.010	<0.020	<0.020	<0.020	<0.020	<0.020
Zinc D-Zn	073	095	134	148	139	136
Organic Parameters						
Chlorophyll a (a,b)	<0.010	-	-	-	-	-

Vangorda Pit - 2005 to 2007 Monitoring Results

RESULTS OF ANALYSIS

Depth (m)	1	3	5	15	30	40
Sample ID	VP_1 (vngrda @1m)	VP_3 (vngrda @3m)	VP_5 (vngrda @5m)	VP_15 (vngrda @15m)	VP_30 (vngrda @30m)	VP_40 (vngrda @40m
Date Sampled	15-Sep-06	15-Sep-06	15-Sep-06	15-Sep-06	15-Sep-06	15-Sep-06
Time Sampled	14:15	14:20	14:26	14:36	14:50	15:15
ALS Sample ID	7	8	9	10	11	12
Nature	Water	Water	Water	Water	Water	Water
Physical Tests						
Hardness (as CaCO3)						
Conductivity (uS/cm)	1350	1340	2020	2090	2100	2100
ORP						
pH	7.05	6.92	6.11	5.94	5.88	5.83
Total Suspended Solids	5.2	4.6	33.9	36.6	39.9	39.9
Dissolved Anions						
Alkalinity-Total CaCO3	13.6	13.7	14.1	13.1	14.5	13.7
Sulphate SO4	794	785	1430	1500	1490	1480
Bromide (Br)						
Chloride (Cl)						
Nutrients						
Ammonia Nitrogen N	0.189	0.189	0.603	0.604	0.594	0.567
Nitrate Nitrogen N						
Nitrite Nitrogen N						
Nitrite/Nitrate Nitrogen N	0.0489	0.0466	<0.0050	<0.0050	<0.0050	<0.0050
Dissolved ortho-Phosphate P	<0.0010	0.0029	<0.0010	0.0032	<0.0010	<0.0010
Total Phosphate P	<0.0020	<0.0020	0.0369	0.0047	0.0151	2.13
Total Metals						
Aluminum T-Al	0.070	0.049	0.131	0.189	0.130	0.133
Antimony T-Sb	<0.0020	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050
Arsenic T-As	<0.0020	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050
Barium T-Ba	0.0230	0.0225	0.0243	0.0225	0.0222	0.0223
Beryllium T-Be	<0.010	<0.010	<0.025	<0.025	<0.025	<0.025
Bismuth T-Bi	<0.010	<0.010	<0.025	<0.025	<0.025	<0.025
Boron T-B	<0.20	<0.20	<0.50	<0.50	<0.50	<0.50
Cadmium T-Cd	0.104	0.106	0.115	0.120	0.126	0.122
Calcium T-Ca	155	154	267	269	269	263
Chromium T-Cr	<0.010	<0.010	<0.025	<0.025	<0.025	<0.025
Cobalt T-Co	0.398	0.398	0.718	0.757	0.796	0.762
Copper T-Cu	0.0494	0.0498	0.183	0.117	0.116	0.111
Iron T-Fe	1.31	1.28	31.2	41.8	42.5	41.9
Lead T-Pb	0.0074	0.0077	0.0077	0.0208	0.0285	0.0294
Lithium T-Li	<0.10	<0.10	<0.25	<0.25	<0.25	<0.25
Magnesium T-Mg	74.7	73.8	110	113	114	110
Manganese T-Mn	26.2	26.7	43.4	46.2	48.0	45.8
Molybdenum T-Mo	<0.0010	<0.0010	<0.0025	<0.0025	<0.0025	<0.0025
Nickel T-Ni	0.386	0.383	0.658	0.698	0.718	0.682
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	2.4	2.5	3.9	4.0	3.9	3.8
Selenium T-Se	<0.020	<0.020	<0.050	<0.050	<0.050	<0.050
Silicon T-Si	2.90	2.87	3.50	3.61	3.58	3.50
Silver T-Ag	<0.00020	<0.00020	<0.00050	<0.00050	<0.00050	<0.00050
Sodium T-Na	4.4	4.4	6.8	6.8	6.7	6.4
Strontium T-Sr	0.879	0.877	1.40	1.37	1.42	1.38
Thallium T-Tl	0.0028	0.0027	<0.0050	<0.0050	<0.0050	<0.0050
Tin T-Sn	<0.0020	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	<0.00020	0.00020	0.00061	<0.00050	0.00050	0.00050
Vanadium T-V	<0.020	<0.020	<0.050	<0.050	<0.050	<0.050
Zinc T-Zn	87.3	87.0	143	154	160	154
Dissolved Metals						
Aluminum D-Al	<0.020	0.020	0.112	0.107	0.129	0.058
Antimony D-Sb	<0.0020	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050
Arsenic D-As	<0.0020	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050
Barium D-Ba	0.0226	0.0213	0.0237	0.0226	0.0215	0.0219
Beryllium D-Be	<0.010	<0.010	<0.025	<0.025	<0.025	<0.025
Bismuth D-Bi	<0.010	<0.010	<0.025	<0.025	<0.025	<0.025
Boron D-B	<0.20	<0.20	<0.50	<0.50	<0.50	<0.50
Cadmium D-Cd	0.104	0.104	0.114	0.121	0.116	0.116
Calcium D-Ca	151	151	260	268	263	271
Chromium D-Cr	<0.010	<0.010	<0.025	<0.025	<0.025	<0.025
Cobalt D-Co	0.389	0.387	0.746	0.773	0.752	0.756
Copper D-Cu	0.0296	0.0292	0.184	0.114	0.110	0.109
Iron D-Fe	0.309	0.165	29.9	40.4	40.9	42.6
Lead D-Pb	<0.0010	<0.0010	<0.0025	0.0074	0.0129	0.0140
Lithium D-Li	<0.10	<0.10	<0.25	<0.25	<0.25	<0.25
Magnesium D-Mg	72.8	72.8	108	114	111	115
Manganese D-Mn	26.3	26.0	44.7	46.4	46.0	45.5
Molybdenum D-Mo	<0.0010	<0.0010	<0.0025	<0.0025	<0.0025	<0.0025
Nickel D-Ni	0.372	0.379	0.682	0.710	0.682	0.690
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	2.4	2.4	3.8	3.9	3.8	4.0
Selenium D-Se	<0.020	<0.020	<0.050	<0.050	<0.050	<0.050
Silicon D-Si	2.79	2.79	3.43	3.50	3.46	3.59
Silver D-Ag	<0.00020	<0.00020	<0.00050	<0.00050	<0.00050	<0.00050
Sodium D-Na	4.3	4.3	6.8	6.7	6.4	6.8
Strontium D-Sr	0.868	0.856	1.42	1.39	1.35	1.36
Thallium D-Tl	0.0026	0.0027	<0.0050	<0.0050	<0.0050	<0.0050
Tin D-Sn	<0.0020	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050
Titanium D-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium D-U	<0.00020	<0.00020	0.00066	0.00050	<0.00050	<0.00050
Vanadium D-V	<0.020	<0.020	<0.050	<0.050	<0.050	<0.050
Zinc D-Zn	85.7	85.0	149	156	154	153
Organic Parameters						
Chlorophyll a (a,b)	-	-	-	-	-	-

Vangorda Pit - 2005 to 2007 Monitoring Results

RESULTS OF ANALYSIS

Depth (m)	1	5	15	40
Sample ID	V-1 VANGORDA @1M	V-5 VANGORDA @5M	V-15 VANGORDA @15M	V-40 VANGORDA @40M
Date Sampled	26-Mar-07	26-Mar-07	26-Mar-07	26-Mar-07
Time Sampled	10:00	10:12	10:25	10:40
ALS Sample ID	L491616-9	L491616-10	L491616-11	L491616-12
Nature	Water	Water	Water	Water
Physical Tests				
Hardness (as CaCO3)				
Conductivity (uS/cm)	1190	1610	2240	2260
ORP				
pH	7.41	6.73	6.23	6.43
Total Suspended Solids	<3.0	<3.0	39.9	58.5
Dissolved Anions				
Alkalinity-Total CaCO3				
Sulphate SO4	627	959	1430	1430
Bromide (Br)	<0.050	<0.050	<0.050	<0.050
Chloride (Cl)	<0.50	<0.50	<0.50	<0.50
Nutrients				
Ammonia Nitrogen N				
Nitrate Nitrogen N				
Nitrite Nitrogen N				
Nitrite/Nitrate Nitrogen N				
Dissolved ortho-Phosphate P				
Total Phosphate P				
Total Metals				
Aluminum T-Al	<0.20	<0.20	<0.20	<0.20
Antimony T-Sb	<0.20	<0.20	<0.20	<0.20
Arsenic T-As	<0.20	<0.20	<0.20	<0.20
Barium T-Ba	0.0280	0.0170	0.0160	0.0130
Beryllium T-Be	<0.0050	<0.0050	<0.0050	<0.0050
Bismuth T-Bi	<0.20	<0.20	<0.20	<0.20
Boron T-B	<0.10	<0.10	<0.10	<0.10
Cadmium T-Cd	0.071	0.104	0.110	0.090
Calcium T-Ca	140	178	271	291
Chromium T-Cr	<0.010	<0.010	<0.010	<0.010
Cobalt T-Co	0.263	0.452	0.719	0.703
Copper T-Cu	<0.010	0.041	0.106	0.059
Iron T-Fe	0.1	13.0	48.6	50.80
Lead T-Pb	<0.050	<0.050	<0.050	<0.050
Lithium T-Li	0.025	0.032	0.047	0.049
Magnesium T-Mg	55.8	78.9	111.0	115.0
Manganese T-Mn	18.2	30.6	46.4	46.9
Molybdenum T-Mo	<0.030	<0.030	<0.030	<0.030
Nickel T-Ni	0.271	0.412	0.604	0.600
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30
Potassium T-K	2.2	2.5	3.7	3.9
Selenium T-Se	<0.20	<0.20	<0.20	<0.20
Silicon T-Si	4.12	3.12	3.63	3.78
Silver T-Ag	<0.010	<0.020	<0.020	<0.020
Sodium T-Na	4.2	4.5	5.8	6.0
Strontium T-Sr	0.884	0.998	1.330	1.410
Thallium T-Tl	<0.20	<0.50	<0.50	<0.50
Tin T-Sn	<0.030	<0.030	<0.030	<0.030
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010
Uranium T-U				
Vanadium T-V	<0.030	<0.030	<0.030	<0.030
Zinc T-Zn	66	107	158	155.0
Dissolved Metals				
Aluminum D-Al	<0.20	<0.20	<0.20	<0.20
Antimony D-Sb	<0.20	<0.20	<0.20	<0.20
Arsenic D-As	<0.20	<0.20	<0.20	<0.20
Barium D-Ba	0.0280	0.0170	0.0170	0.0130
Beryllium D-Be	<0.0050	<0.0050	<0.0050	<0.0050
Bismuth D-Bi	<0.20	<0.20	<0.20	<0.20
Boron D-B	<0.10	<0.10	<0.10	<0.10
Cadmium D-Cd	0.073	0.110	0.120	0.096
Calcium D-Ca	137	183	285	290
Chromium D-Cr	<0.010	<0.010	<0.010	<0.010
Cobalt D-Co	0.259	0.457	0.742	0.685
Copper D-Cu	<0.010	0.045	0.112	0.053
Iron D-Fe	<0.030	13.5	49.6	49.40
Lead D-Pb	<0.050	<0.050	<0.050	<0.050
Lithium D-Li	0.025	0.036	0.054	0.049
Magnesium D-Mg	57.1	82.8	119.0	117.0
Manganese D-Mn	18.4	31.3	48.5	46.5
Molybdenum D-Mo	<0.030	<0.030	<0.030	<0.030
Nickel D-Ni	0.276	0.429	0.646	0.611
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30
Potassium D-K	2.3	2.7	4.1	3.9
Selenium D-Se	<0.20	<0.20	<0.20	<0.20
Silicon D-Si	4.31	3.43	4.10	3.96
Silver D-Ag	<0.020	<0.020	<0.020	<0.020
Sodium D-Na	4.2	4.6	6.1	5.9
Strontium D-Sr	0.870	1.020	1.380	1.360
Thallium D-Tl	<0.40	<0.40	<0.40	<0.40
Tin D-Sn	<0.030	<0.030	<0.030	<0.030
Titanium D-Ti	<0.010	<0.010	<0.010	<0.010
Uranium D-U				
Vanadium D-V	<0.030	<0.030	<0.030	<0.030
Zinc D-Zn	66	111	166	153.0
Organic Parameters				
Chlorophyll a (a,b)				

Vangorda Pit - 2005 to 2007 Monitoring Results

RESULTS OF ANALYSIS

Depth (m)	1	3	5	15	30	40	1	3	5
Sample ID	VPL-1M	VPL-3M	VPL-5M	VPL-15M	VPL-30M	VPL-40M	VP-1 VANGORDA PIT LAKE @1M	VP-3 VANGORDA PIT LAKE @3M	VP-5 VANGORDA PIT LAKE @5M
Date Sampled	12-Jun-07	12-Jun-07	12-Jun-07	12-Jun-07	12-Jun-07	12-Jun-07	5-Sep-07	5-Sep-07	5-Sep-07
Time Sampled	10:55	11:05	11:20	11:35	11:45	12:00	13:00	13:15	13:25
ALS Sample ID	L518525-1	L518525-2	L518525-3	L518525-4	L518525-5	L518525-6	L551912-18	L551912-19	L551912-20
Nature	Water	Water	Water	Water	Water	Water	Water	Water	Water
Physical Tests									
Hardness (as CaCO3)	588	697	720	1200	1190	1200	719	706	709
Conductivity (uS/cm)	1160	1460	1570	2040	2030	2000	1630	1630	1650
ORP	260	480	540	180	170	160	430	430	420
pH	4.72	3.55	3.44	5.85	5.96	5.97	3.67	3.63	3.57
Total Suspended Solids	<3.0	6.7	6.0	34.0	44.7	43.3	3.1	3.1	3.8
Dissolved Anions									
Alkalinity-Total CaCO3									
Sulphate SO4	693	856	907	1450	1460	1470	900	881	902
Bromide (Br)	<0.050	<0.050	<0.050	<1.0	<1.0	<1.0	<0.050	<0.050	<0.050
Chloride (Cl)	<0.50	<0.50	<0.50	<10	<10	<10	<0.50	<0.50	<0.50
Nutrients									
Ammonia Nitrogen N	0.164	0.161	0.164	0.582	0.606	0.608	0.127	0.131	0.124
Nitrate Nitrogen N	-	-	-	-	-	-	-	-	-
Nitrite Nitrogen N	-	-	-	-	-	-	-	-	-
Nitrite/Nitrate Nitrogen N	-	-	-	-	-	-			
Dissolved ortho-Phosphate P	-	-	-	-	-	-	-	-	-
Total Phosphate P	-	-	-	-	-	-	-	-	-
Total Metals									
Aluminum T-Al	1.01	1.65	1.880	0.617	0.056	0.062	1.51	1.44	1.46
Antimony T-Sb	<0.0020	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Arsenic T-As	<0.0020	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Barium T-Ba	0.0243	0.0232	0.0229	0.0181	0.0153	0.015	0.022	0.022	0.021
Beryllium T-Be	<0.010	<0.010	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Bismuth T-Bi	<0.010	<0.010	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Boron T-B	<0.20	<0.20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cadmium T-Cd	0.108	0.135	0.144	0.109	0.1020	0.098	0.137	0.131	0.133
Calcium T-Ca	135	158	166	279	286	292	153	156	157
Chromium T-Cr	<0.010	<0.010	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Cobalt T-Co	0.339	0.442	0.494	0.777	0.748	0.745	0.483	0.469	0.466
Copper T-Cu	0.66	1.06	1.1300	0.0900	0.0777	0.0792	0.735	0.712	0.707
Iron T-Fe	8.66	7.3	10.3	47.9	51.0	51.600	15.9	16.0	16.2
Lead T-Pb	0.089	0.125	0.151	<0.0025	0.0042	0.0054	0.278	0.269	0.269
Lithium T-Li	<0.10	<0.10	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Magnesium T-Mg	61.2	74.9	80	120	121	124.0	77.7	78	79
Manganese T-Mn	20.1	26.2	28.6	45.3	45.2	45.3	28.2	27.0	27.2
Molybdenum T-Mo	<0.0010	<0.0010	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Nickel T-Ni	0.316	0.399	0.446	0.672	0.666	0.666	0.440	0.433	0.431
Phosphorus T-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium T-K	<2.0	<2.0	<2.0	3.4	3.3	3.5	2.2	2.2	2.2
Selenium T-Se	<0.020	<0.020	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Silicon T-Si	2.76	3.13	3.19	3.58	3.57	3.66	3.69	3.71	3.77
Silver T-Ag	<0.00020	<0.00020	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Sodium T-Na	2.9	3.4	3.5	5.5	5.5	5.6	3.8	3.8	3.8
Strontium T-Sr	0.704	0.780	0.86	1.36	1.37	1.370	0.837	0.81	0.81
Thallium T-Tl	<0.0020	0.0023	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Tin T-Sn	0.0093	0.0050	0.0222	0.0269	0.0254	0.0278	<0.0050	<0.0050	<0.0050
Titanium T-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium T-U	0.00250	0.00337	0.00359	<0.00050	<0.00050	<0.00050	0.00357	0.00346	0.00345
Vanadium T-V	<0.020	<0.020	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Zinc T-Zn	78.1	99	107	148	145	144.0	107	104	103
Dissolved Metals									
Aluminum D-Al	0.80	1.64	1.690	0.054	0.105	0.06	1.49	1.57	1.41
Antimony D-Sb	<0.0020	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Arsenic D-As	<0.0020	<0.0020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Barium D-Ba	0.0219	0.0231	0.0213	0.0172	0.0146	0.015	0.023	0.021	0.021
Beryllium D-Be	<0.010	<0.010	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Bismuth D-Bi	<0.010	<0.010	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Boron D-B	<0.20	<0.20	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Cadmium D-Cd	0.100	0.135	0.134	0.110	0.103	0.101	0.138	0.132	0.127
Calcium D-Ca	135	157	161	280	282	281	157	155	156
Chromium D-Cr	<0.010	<0.010	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
Cobalt D-Co	0.321	0.441	0.458	0.746	0.759	0.741	0.480	0.466	0.453
Copper D-Cu	0.63	1.08	1.0500	0.0871	0.0783	0.0763	0.736	0.707	0.702
Iron D-Fe	8.45	6.54	8.9	46.7	50.0	50.4	15.6	15.3	15.5
Lead D-Pb	0.083	0.126	0.14	<0.0025	0.0028	0.0034	0.277	0.268	0.263
Lithium D-Li	<0.10	<0.10	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25
Magnesium D-Mg	60.9	73.9	77	121	119	120.0	79.6	78	77
Manganese D-Mn	19.2	26.7	26.7	43.8	45.8	45.4	28.1	26.6	26.3
Molybdenum D-Mo	<0.0010	<0.0010	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025
Nickel D-Ni	0.303	0.401	0.411	0.652	0.662	0.657	0.443	0.429	0.422
Phosphorus D-P	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
Potassium D-K	<2.0	<2.0	<2.0	3.3	3.3	3.3	2.3	2.1	2.1
Selenium D-Se	<0.020	<0.020	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Silicon D-Si	2.73	3.06	3.11	3.57	3.50	3.52	3.75	3.69	3.69
Silver D-Ag	<0.00020	<0.00020	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Sodium D-Na	2.9	3.4	3.5	5.5	5.5	5.5	4.0	3.7	3.6
Strontium D-Sr	0.685	0.797	0.81	1.36	1.37	1.350	0.84	0.80	0.79
Thallium D-Tl	<0.0020	0.0021	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Tin D-Sn	0.0045	0.0081	0.0212	0.0225	0.0270	0.0271	<0.0050	<0.0050	<0.0050
Titanium D-Ti	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Uranium D-U	0.00224	0.00359	0.0032	<0.00050	<0.00050	<0.00050	0.00341	0.00355	0.0032
Vanadium D-V	<0.020	<0.020	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Zinc D-Zn	73.9	100.0	100	143	147	143.0	107	103	101
Organic Parameters									
Chlorophyll a (a,b)	-	-	-	-	-	-	-	-	-