

TYPE A WATER LICENSE

2AM-JER0410

Jericho Diamond Mine

2006 ANNUAL REPORT

March 2007

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1 INTRODUCTION

This Annual Report is prepared as per Part B, Section 2 of the Type A Water License NWB1JER0410 (now 2AM-JER0410) issued to Tahera Diamond Corporation, by the Nunavut Water Board 22 December 2004.

2 MONTHLY AND ANNUAL QUANITITES OF FRESHWATER OBTAINED FROM CARAT LAKE (Schedule B, Item 1A)

During 2006, freshwater was obtained from Carat Lake for domestic water use in the accommodations complex, emulsion plant, construction offices, maintenance complex, batch plant, dust control and the operation of the process plant. The table below provides the monthly and annual quantity of freshwater used. The annual water licence limit of 350,000 m^3 was exceeded in 2006 by 37955 m^3. Changes in the process plant as well as an anticipated longer timeframe for reclaim from the PKCA should reduce the annual consumption in 2007 to below the 350,000 m^3 annual limit.

Table 2.1– Freshwater Use January – December 2006 (in cubic meters – m^3)

Month	Domestic Water Use	Process Plant	Cumulative Totals
January	941.3	1976.2	2917.5
February	1669.1	36559.1	38228.2
March	901.2	35119.3	36020.5
April	786.8	32424.6	33211.4
May	710.3	34119.2	34829.5
June	769.0	33253.5	34022.5
July	786.8	36263.7	37050.5
August	682.2	41059.9	41742.1
September	555.5	28245.3	28800.8
October	410.8	35470.6	35881.4
November	646.5	31870.0	32516.5
December	546.5	32187.5	32734.0
Annual Total	**9406.0**	**378548.9**	**387954.9**

Maximum Limit as per Type A Water License **350, 400 m^3**

3 MONTHLY AND ANNUAL QUANITITIES OF RECYCLED WATER (Schedule B, Item 1B)

During 2006, 19116.4 m^3 of water was recycled from the PKC and the east sump. This recycled water (11364.3 m^3) from the PKC was used in the diamond processing plant and dust suppression on PKC roads. Water reclaimed from the east sump was used for dust suppression on pit haul roads. Table 3.1 summarizes monthly quantities recycled.

Table 3.1 – Quantities of Recycled Water from all sources.

Month	PKC (m^3)	East Sump (m^3)	
January	0.0	0.0	
February	0.0	0.0	
March	0.0	0.0	
April	0.0	0.0	
May	0.0	0.0	
June	0.0	2932.5	
July	0.0	2673.1	
August	0.0	2146.5	
September	11161.7	0.0	
October	0.0	0.0	
November	0.0	0.0	
December	202.6	0.0	
Total	**11364.3**	**7752.1**	**Annual Total 19116.4**

4 MONTHLY AND ANNUAL QUANTITIES OF SOLIDS IN TONNES AND LIQUID FRACTIONS OF EACH WASTE STREAM DISCHARGED TO THE PROCESSED KIMBERLITE CONTAINMENT AREA (PKCA) (Schedule B, Item 1C)

During 2006 there were three input sources of waste to the PKCA (East Sump, Sewage Treatment Plant (STP) and Process Plant). The east sump contributed 74233.5 m^3 of waste water to the PKCA. The east sump acts as a settling pond for waters being pumped from the open pit. The STP contributed 5429.2 m^3 of treated sewage to the PKCA. The process made up the bulk of the volumetric contribution to the PKCA, with 389317.4 m^3 water and 117550.0 tonnes of solids being deposited in 2006. Total volumetric discharges to the PKCA from all sources were 468980.1 m^3 of waste water and 117550 tonnes of solids.

Month	East Sump (m3)	Treated Sewage) (m3)	Fine Rejects (Tonnes)	Process Effluent (m3)
Jan-06	0	534.8	749.5	1976.2
Feb-06	0	143.8	7281.2	36559.1
Mar-06	0	630.8	7606.8	35119.3
Apr-06	0	550.8	7420.7	32424.6
May-06	20015.0	478.5	8058.0	34119.2
Jun-06	29759.0	450.8	7100.0	33253.5
Jul-06	16995.5	437.2	8051.0	36263.7
Aug-06	7248.0	545.9	9524.0	41059.9
Sep-06	216.0	530.0	16422.0	39013.9
Oct-06	0	287.6	16683.0	35470.6
Nov-06	0	456.4	14728.8	31869.9
Dec-06	0	382.6	13925.0	32187.5
Total	**74233.5**	**5429.2**	**117550.0**	**389317.4**

5 MONTHLY AND ANNUAL QUANITITIES OF ANY DISCHARGES FROM THE PROCESSED KIMBERLITE CONTAINMENT AREA (Schedule B, Item 1D)

Discharges from the PKCA took place from July through November in 2006. 412907.4 m^3 of water was discharged from the PKC into the receiving environment.

Month	Volume discharged from the PKC (m^3)
January	0.0
February	0.0
March	0.0
April	0.0
May	0.0
June	0.0
July	54403.1
August	110449.6
September	45380.8
October	183459.9
November	19214.0
December	0.0
Annual Total	**412907.4**

6 MONTHLY AND ANNUAL QUANTITIES OF MINE WATER AND DYKE SEEPAGE PUMPED FROM ALL FACILITIES TO THE PROCESSED CONTAINMENT AREA (Schedule B, Item 1E)

Table 6.1 summarizes the monthly and annual volumes of water pumped from the Jericho pit. All mine water pumped from Jericho pit was pumped to the East Sump (natural pond) immediately east of the camp pad. Waters from the East Sump were used for dust suppression on pit haul roads as well as pumped to the PKCA.

Table 6.1 – Quantities in m^3 of mine water pumped to the PKC.

Month	Volume pumped from Pit to East Sump (m3)	Volume pumped from East Sump to PKC(m3)
January	0.0	0.0
February	0.0	0.0
March	0.0	0.0
April	0.0	0.0
May	34848.0	20015.0
June	22492.0	29759.0
July	22641.0	16995.5
August	13768.0	7248.0
September	10337.0	216.0
October	0.0	0.0
November	0.0	0.0
December	0.0	0.0
Total	**104086.0**	**74233.5**

7 MONTHLY AND ANNUAL QUANTITIES OF TREATED EFFLUENT DISCHARGED FROM THE WASTE WATER TREATMENT FACILITY (Schedule B, Item 1F)

All discharges from the sewage treatment plant (STP) in 2006 were deposited into the PKCA. A total of 5429.2 m^3 of treated sewage was discharged from the STP to the PKCA.

Table 7.1 – Quantities in m^3 discharged from Waste Water Treatment Facility to PKC.

Month	Volume Treated – WWTP Treated Effluent (m^3)
January	534.8
February	143.8
March	630.8
April	550.8
May	478.5
June	450.8
July	437.2
August	545.9
September	530.0
October	287.6
November	456.4
December	382.6
Total	**5429.2**

8 MONTHLY AND ANNUAL QUANTITIES OF SEWAGE SOLIDS REMOVED FROM THE WASTE WATER TREATMENT FACILITY (Schedule B, Item 1G)

In order to maintain efficient functioning of the sewage treatment plant settled solids are removed from the aeration tank twice monthly or as required based on camp population. Settled solids are collected using a vacuum truck and deposited into a designated basin located on the till dump. A total of 586.5 m^3 of settled sludge was deposited into the designated basin on the till dump during 2006.

Table 8.1 – Sewage Solids Removed January – December 2006

Month	Sewage Solids Removed (m^3)
January	20.3
February	27.0
March	35.1
April	47.3
May	54.0
June	142.0
July	39.7
August	39.7
September	45.6
October	41.0
November	61.0
December	33.8
Total	**586.5**

9 ANNUAL QUANTITIES OF OVERBURDEN, WASTE ROCK, ORE STOCKPILED AND ORE PROCESSED STORED (Schedule B, Item 1H)

Month	Quantity of Waste Rock (tonnes)	Quantity of Esker (tonnes)	Quantity of till (tonnes)	Ore Processed (tonnes)
Jan-06	2,205	313	0	1,376
Feb-06	51,300	0	66,500	33,962
Mar-06	117,700	0	42,400	29,354
Apr-06	118,600	0	38,600	44,707
May-06	94,400	1,700	57,900	48,871
Jun-06	130,200	400	23,100	51,534
Jul-06	252,900	200	13,500	54,351
Aug-06	159,000	0	183,600	57,339
Sep-06	189,567	0	254,990	46,591
Oct-06	254,800	0	287,200	52,574
Nov-06	396,464	30,043	173,143	58,425
Dec-06	411,500	16,800	96,600	61,303
Total	**2,178,636**	**49,456**	**1,237,533**	**540,387**

10 SUMMARY REPORT OF SNP DATA GENERATED (Schedule B, Item 1i)

Tabular Summaries of SNP data from site water stations JER-SW1 – JER-SW4 and JER-SW8, including QA/QC data collected in 2006 as required by the Type A Water License are included in Appendix A.

Tabular summaries and a summary report of SNP data JER-WQ1 to JER-WQ20, including QA/QC data collected in 2006 as required by the Type A Water License are included in Appendix B as part of the Annual AEMP Report completed by Mainstream Aquatics.

In accordance with the Schedule K of water licence NWB1JER0410 (now 2AM-JER410) there were 136 samples collected from 25 monitoring locations. In addition there were 38 QA/QC samples which included field replicates, field blanks and travel blanks. The QA/QC samples equaled 28% of samples collected at monitoring locations. Table 10.1 provides a monthly and annual summary of sampling activities.

During PKCA discharge, in accordance with Part G, Item 7 toxicity tests of effluent were conducted once prior to and monthly during discharge. Results are attached in Appendix C.

As per the Waste Rock Management Plan, samples were collected from drill cuttings in the pit, coarse processed kimberlite, fine processed kimberlite and recovery rejects. Results of this program have been complied by SRK Consulting and are found in Appendix D.

As per Schedule K, Table 3, monthly temperature readings were taken at the east and west dams. Results of the temperature readings can be found in Appendix E.

Table 10.1 – Monthly and annual summary of SNP sampling including QA/QC

		Month												
	Station	January	February	March	April	May	June	July	August	September	October	November	December	**Totals**
SNP Station Sampling	JER-SW1	1	1	1		2	1	1	1		2	1	1	12
	JER-SW2						1	1	1	1				4
	JER-SW3		1	1	1	1	1	1	1	1	1	1	1	11
	JER-SW4		1	1	1	1	1	1	1	1	1	1	1	11
	JER-SW8						1	1	1	1				4
	JER-WQ1						1	1	1	1				4
	JER-WQ10				1		1	1	1	1			1	6
	JER-WQ11				1		1	1	1	1			1	6
	JER-WQ12						1	1	1	1				4
	JER-WQ13				1		1	2	1	1			1	7
	JER-WQ14						1	1	1	1			1	5
	JER-WQ15						1	1		1				3
	JER-WQ16							1						1
	JER-WQ17							1						1
	JER-WQ18							1						1
	JER-WQ19							1	1					2
	JER-WQ2						1	3	3	3	5	1		16
	JER-WQ20							1	1					2
	JER-WQ3						1	1	2	1				5
	JER-WQ4				1		1	1	1	1			1	6
	JER-WQ5						1	1	1	1				4
	JER-WQ6				1		1	1	1	1			1	6
	JER-WQ7						1	1	1	1				4
	JER-WQ8				1		1	1	1	1			1	6
	JER-WQ9						1	1	1	1			1	5
	Annual Total Samples	1	3	3	8	4	20	28	24	21	9	4	11	136
QA/QC	Duplicates	0	0	1	1	0	1	2	2	3	2	0	1	13
	Field Blanks	0	1	1	1	0	0	2	2	3	2	0	1	13
	Travel Blanks	0	1	1	1	0	0	2	2	3	1	0	1	12
	Total QA/QC	0	2	3	3	0	1	6	6	9	5	0	3	38
	Percentage QA/QC	**0%**	**67%**	**100%**	**38%**	**0%**	**5%**	**21%**	**25%**	**43%**	**56%**	**0%**	**27%**	**28%**

11 SUMMARY OF CONSTRUCTION ACTIVITIES AND UPDATED MINE PLAN (Schedule B, Item1J)

January:
February:

March:

C1 Diversion

After snow removal from the stream channel upstream of the water intake road, the till plug was started.

Dams Construction

The West Dam is still progressing, the horizontal segment of thermosyphons was covered and the frozen core constructed to the 517m elevation.

The east dam was constructed to the hinge point and A & A Technical is to be mobilized in early April to complete the liner and geotextile installation.

April:

C1 Diversion

The till plug was completed along with some secondary blasting needed to maintain proper design slopes. The edges of the channel were rip-rapped and A & A Technical Services was mobilized to begin the lining of the section upstream of the fresh water intake road.

Construction of Dams

West Dam construction continued with the horizontal segment of thermosyphons being covered and the frozen core constructed to the 519m elevation. The final 523m elevation was not achieved and the core was covered to allow resumption next winter.

The East Dam was completed to the liner and geotextile stage and covering of the dam commenced. The majority of the fill was a rock/till mix and then coarse PK.

May:

Infrastructure demobilized from the Carat exploration camp

C1 Diversion

The C1 Diversion was only partially constructed (Reach A and Reach B) prior to spring breakup however all of the Lake C1 water outlet steam is now effectively diverted around the pit.

Dams Construction

The covering of the west dam with insulating rock was completed.

The east dam was completed to the liner and geotextile stage and covering of the dam commenced.

June:

Two site cleanup days were completed (June 11th and 25th) to collect debris from construction.

July:

Reclaim water: Pipeline pad was constructed between Long Lake and process plant. System is scheduled for pipe placement and operation in September.

Dams: Annual Geotechnical Inspection was conducted by EBA during the month.

August:

Reclaim water: System put into operation.

September:

The reclaim water system was operational. Modifications were made to the recovery circuit to allow the WHIMS unit to operate off of process water instead of raw water from Carat Lake. This should allow the reclaim system to effectively reduce water consumption for 2007.

November:

December:

Removal of the ROM rock cover over the West Dam frozen core began.

12 SUMMARY OF ANY MODIFICATION AND/OR MAJOR MAINTENANCE WORK AND/OR DEMOLITION WORK AND ANY ASSOCIATED STRUCTURES (Schedule B, Item 1K)

As the Jericho Diamond Mine was in its first year of operations during 2006, there were no modifications or major maintenance works conducted.

The old Exploration camp adjacent to Carat Lake was completely demobilized including the removal of all structures. Hydrocarbon testing will commence in the summer of 2007 to determine if contamination of the infrastructure lay down exists.

13 SUMMARY OF ALL WORK CARRIED OUT UNDER MANAGEMENT PLANS WITH LICENSE (Schedule B, Item 1L)

Collection of waste rock, coarse processed kimberlite, fine processed kimberlite and recovery rejects was undertaken in 2006 as per the Waste Rock Management Plan. Results of this sampling can be found in Appendix D.

An annual seepage survey was conducted by SRK Engineers and Consultants in July 2006 as required by Water Licence Part L, Item 9. A report by SRK was submitted pursuant to Item 9 on October 5th, 2006.

Thermistor monitoring data were submitted monthly to the Board from the date of installation through December 2006 as required by Water Licence Part K, Item 5. The summary of this data can be found in Appendix E.

14 PROGRESS REPORTS ON ANY STUDIES REQUESTED BY THE BOARD THAT RELATE TO WASTE MANAGEMENT, WATER USE OR RECLAMATION AND A BRIEF DESCRIPTION OF ANY FUTURE STUDIES PLANNED BY THE LICENSEE (Schedule B, Item 1M)

Revegetation research did not commence in 2006 and is scheduled for 2007.

No other studies were requested by the Board in 2006.

15 REPORT IDENTIFYING WHETHER RECYCLE WILL BE IMPLEMENTED AT THE PKCA FOR THE REMAINING YEARS OF OPERATION, AND IF NOT, PROVIDING A DETAILED RATIONALE FOR WHY RECYCLE IS NOT CONSIDERED A VALID MANAGEMENT PRACTICE (Schedule B, Item N)

Water recycling from the PKCA will be instituted per the PKCA Management Plan, Section 4.2.6, submitted 10 March 2006. An estimated 57,600 m^3 annually will be recycled to the processing plant. A reclaim line was constructed in the summer of 2007 and recycled water will be utilized as much as possible.

16 RESULTS OF THE AQUATIC EFFECTS MONITORING PROGRAM IN ACCORDANCE WITH PART L INCLUDING QA/QC MEASURES (Schedule B, Item O)

The Annual AEMP Report produced by Mainstream Aquatics is attached in Appendix B.

During PKCA discharge, in accordance with Part G, acute toxicity tests were conducted prior to and monthly on discharge effluent. Results are attached in Appendix C.

During PKCA discharge, in accordance with Schedule L, Item D, chronic toxicity tests were conducted monthly from water collected at the edge of the 200 m mixing zone in Lake C3. Results are attached in Appendix C.

17 REVISIONS TO THE CONTIGENCY PLAN (Schedule B, Item P)

The revised Contingency Plan will be submitted to the Nunavut Water Board by April 15th, 2007.

18 LIST OF UNAUTHORIZED DISCHARGES (Schedule B, Item Q)

Date of Spill	Contractor	Equipment Type	Cause of Spill	Location of Spill	Fluid Type	Spill Volume (L)
27-Jan-06	Clark Builders	40 tonne Crane	Hydraulic hose ruptured	McCaws Drilling shop yard	Hydraulic Oil	60
29-Jan-06	Tahera	Lift Station for Sewage Treatment Plant	Float Mechanism malfunction	Main Camp Lift Station	Sewage Effluent	1800
6-Mar-06	Nuna Logistics	Oil Cube being moved by loader	Cube slipped off forks of loader	Waste Transfer Area	040 Engine Oil	1000
7-Mar-06	Gisbourne Mechanical	Piping in tank farm	Plugs missing on valves	Main Fuel Tank Farm	Diesel	100
7-Mar-06	Nuna Logistics	Fuel Dispensing Module	Operator Error - Over filled fuel tank	Main Fuel Tank Farm	Diesel	25
8-Apr-06	Nuna Logistics	Fuel and Lube Truck	Operator Error - Overfilled fuel truck	Fuel Dispensing Module	Diesel	100
10-Apr-06	Gisbourne Mechanical	Emulsion Plant Fuel Tank	Pump Failure	Emulsion Plant	Diesel	600
25-Apr-06	Nuna Logistics	Day Tank	Operator Error - overfilled fuel tank	Fuel Tank Farm	Diesel	600
18-Aug-06	Nuna Logistics	345 Backhoe	Ruptured Hydraulic Line	Jericho Pit	Hydraulic Oil	20
23-Nov-06	McCaws Drilling and Blasting	Drill	Ruptured Hydraulic Line	Jericho Pit	Hydraulic Oil	14-16
17-Dec-06	McCaws Drilling and Blasting	Drill	Ruptured Hydraulic Line	Jericho Pit	Hydraulic Oil	30-40
17-Dec-06	Connors Drilling	Drill Return Tank	Hose from tank slipped off	JD-01 Area	Drill Cuttings	100
29-Dec-06	Buffalo Airways	DC-4 Aircraft	Aircraft overshot runway	Airstrip	Diesel, Aviation Fuel, Hydraulic Oil	5000 diesel, 50 Aviation Fuel, 5 hydraulic oil

19 OUTLINE OF SPILL TRAINING EXERCISES CARRIED OUT (Schedule B, Item R)

Mock Spill D-300 Contwoyto Lake

Date: January 15, 2006
Temperature: -26, wind-chill -30 clear sunny day.
Test conducted by: Dale Craig Safety Supervisor Nuna Contracting
Crews tested: Nuna Contracting and Tahera ERT members

January 15, 2006 at 13:41 a simulated hydraulic spill from a D-300 onto the ice on Contwoyto Lake was called in by Larry Klassen (Loader Operator) to Wes Danielson (Nuna Superintendent). Soloman Ullulaq (D-300 Operator) shut down unit and Larry started to pile snow around the D-300 to berm the hydraulic spill approximately 25 gallons, area size on ground 6' wide by 10' long.

Time Line Spill Control

- Mock spill occurred at 13:40
- Spill reported at 13:41 to Wes Danielson
- Loader operator started to build a snow berm around the D-300 at 13:42 from material found on lake
- Wes Danielson called Rob Schellenberger to pickup spill containment equipment from onsite storage 13:45
- Wes Danielson called SAS to survey the spill site
- Loader operator completed snow berm at 14: 06
- Spill contained and controlled at 14:06
- Rob Schellenberger was back with environment spill kit at 14:15
- D-300 was repaired by maintenance and moved by 14:45
- Contaminated snow picked up and moved
- Lake ice scraped down and removed
- Site cleanup completed by 14:55

The site cleanup was completed in a timely manner with few improvements required.

20 REVISIONS TO THE CLOSURE AND RECLAMATION PLAN (Schedule B, Item S)

An updated Closure and Reclamation Plan reflecting ground disturbance to 31 December 2005 was submitted to NWB 10 February 2006. An updated RECLAIM reclamation cost spreadsheet was submitted to the Water Board on March 30th, 2007.

21 SUMMARY OF CLOSURE AND RECLAMATION WORK UNDERTAKEN AND AN OUTLINE OF ANY WORK ANITICIPATED FOR THE FOLLOWING YEAR, INCLUDING ANY CHANGES TO IMPLEMENTATION AND SCHEDULING (Schedule B, Item T)

Jericho Diamond Mine was in its first year of operations during 2006 and no closure or reclamation work has been conducted.

Dr. Anne Naeth of the University of Alberta will be commencing with re-vegetation research work at the Jericho Site in 2007. The scope of work has yet to be determined.

22 UPDATED ESTIMATE OF THE TOTAL CURRENT MINE RESTORATION LIABILITY BASED UPON RESULTS OF MINE RECLAMATION RESEARCH, MONITORING DURING MINE CONSTRUCTION AND DEVELOPMENT AND ANY MODIFICATION TO THE MINE PLAN (Schedule B, Item U)

The updated reclamation and closure plan, cited in Section 20 above included an updated reclamation liability estimate in the amount of $7,620,373. This amount reflects the cost for an independent contractor to reclaim the Jericho site as it existed at the end of 2006. This Cost Update was submitted to the Water Board on March 30th, 2007.

23 SUMMARY REPORT DESCRIBING PUBLIC CONSULTATION AND PARTICIPATION WITH LOCAL ORGANIZATIONS AND THE RESIDENTS OF NEARBY COMMUNITIES, INCLUDING A SCHEDULE OF UPCOMING COMMUNITY EVENTS/INFORMATION SESSIONS (Schedule B, Item V)

Tahera Diamond Corporation is in the midst of developing a community consultation schedule for 2007 and this information will be forwarded to the Board once completed.

24 SUMMARY OF ACTIONS TAKEN TO ADDRESS CONCERNS OR DEFECIENCIES LISTED IN INSPECTION REPORTS AND/OR COMPLIANCE REPORTS FILED BY AN INSPECTOR (Schedule B, Item W)

A total of two (2) inspections were conducted by Land Use and Water Use Inspectors during 2006.

On August 12th, Andrew Keim and Henry Kablalik from Indian and Northern Affairs Canada (INAC) were on site to conduct an inspection. Andrew and Henry were on site for 2 days where water sampling and a site inspection was conducted. Findings of the inspection which required action are listed below:

- Concern over the staining of fill material in the tank farm due to inefficient couplings. Inspector was notified that it was Tahera's plan to replace couplings on the piping of the tank farm to ensure sufficient flexibility. All flex-couplings have been replaced to account for movement of the tanks.
- The tank farm transfer stations did not have emergency procedures posted for the event of a spill. The Inspector requested that procedures be posted. Procedures for spill response have been posted in the transfer stations.
- The presence of ungulate tracks within the tank farm was identified by Inspectors and it was requested that a barrier to be put in place to prevent caribou from entering the containment area. Fences are currently in construction to place around the tank farm during the caribou migration season and will be placed in the spring of 2007.
- The inspector observed the leaning of tank #8 in the Phase 1 tank farm. A fuel tank farm design is currently being engineered and will be submitted shortly. Fuel tanks currently in Phase 1 will be moved to Phase 3 where appropriate engineered fill foundation will be placed to ensure the stability of the tanks.
- The presence of fuel stained material within the tank farms was a concern with the Inspectors. Remediation will occur in the summer months and will include raking the fill within the berms to expose material to the sun in attempts to volatize the hydrocarbon contaminated fill. The excavation of the fill within the berms is not advisable as the integrity of the liner may be compromised.

Samples were collected by Andrew Keim at SNP stations JER-WQ01, JER-WQ03, JER-WQ16 and JER-SW08 during this inspection. None of the criteria set out in Part G, Section 6 were exceeded.

On November 18th, 2006, Baba Pederson, Ian Rumboldt and Erika Solski from INAC were on site to conduct an inspection. Bab, Ian and Erika were on site for one day where an inspection was undertaken and water samples collected. One concern was communicated by the inspectors and is listed below:

- Burnable garbage was present in the open burn pit and it was suggested that burning take place more frequently to prevent build up. A fence was also suggested to avoid wind blown debris. A rock berm has been installed around the burn pit to inhibit burnable materials from being blown around.

Samples were collected by Erika Solski at SNP stations JER-WQ01, JER-WQ16, JER-SW08 and a potable water sample from camp. Results of these samples are not known.

25 ANY OTHER DETAILS ON WATER USE OR WASTE DISPOSAL REQUESTED BY THE BOARD BY NOVEMBER 1ST (Schedule B, Item X)

There were no additional requests by the Board prior to November 1st.

APPENDIX A

Site Water Quality Data

Stn.Code		SNPTB	SNPTB	SNPTB	SNPTB	SNPTB	SNPTB	SNPTB	SNPTB
Station Name		SNPTB	SNPTB	SNPTB	SNPTB	SNPTB	SNPTB	SNPTB	SNPTB
Sample Class		M	M	M	M	M	M	M	M
Sample No.		Jun-82	Jun-22	Jun-75	Jun-22	Jun-53	Jun-27	Jun-15	06-10794
Sample Comments									
Collect Date/Time		21/02/2006	16/03/2006	08/04/2006	12/07/2006	19/07/2006	04/08/2006	09/08/2006	01/09/2006
Water Temperature	Deg C								
Field pH	pH								
Field Conductivity	us/cm								
Field Dissolved Oxygen	mg/L								
Oxidation Reduction Potential	mV								
pH @ 25°C	pH	6.57	6.21	6.10			6.22	6.06	5.56
Conductivity @ 25°C	us/cm	2	3	2			2	2	1
T-Dissolved Solids180°C	mg/L	<10	<10	<10			4	<4	<4
Total Suspended Solids @105°C	mg/L	<2	<2	<2			<2	<2	<2
Turbidity	NTU	<1	<1	<1			<1	<1	<1
T-Hardness as CaCO3	mg/L	<6.0	<6.0	<6.0			<6	<6	<6
T-Alkalinity as CaCO3	mg/L	5	6	5			4	5	2
Acidity as CaCO3	mg/L	2	3	1			<1	<1	<1
Hydroxide (as CaCO3)	mg/L	<1	<1	<1			<1	<1	<1
Balance (+ions/-ions)	Ratio	<0.01	0.14	<0.01			<0.01	<0.01	<0.01
Carbonate	mg/L	<1	<1	<1			<1	<1	<1
Bicarbonate	mg/L	6	8	6			5	6	2
Chloride	mg/L	<0.1	<0.1	<0.1			<0.1	<0.1	<0.1
Fluoride	mg/L	<0.02	0.03	0.02			<0.02	<0.02	<0.02
Sulphate	mg/L	<0.5	<0.5	<0.5			<0.5	<0.5	<0.5
Carbon (Total Inorganic)	mg/L	<1	<1	<1			<0.1	0.4	0.2
Carbon (Total Organic)	mg/L	<1	<1	<1			0.1	<0.1	<0.1
Ammonia - Nitrogen	mg/L	<0.1	<0.1	<0.1			0.02	0.09	<0.01
Nitrate - Nitrogen	mg/L	<0.05	<0.05	<0.05			<0.05	<0.05	<0.05
Nitrite - Nitrogen	mg/L	<0.05	<0.05	<0.05			<0.05	<0.05	<0.05
Total Kjeldahl Nitrogen	mg/L						<0.2		<0.2
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20	<0.20			<0.20	<0.20	<0.20
Dissolved Ortho Phosphate	mg/L								
Total Phosphate As P	mg/L								
Biochemical Oxygen Demand	mg/L				<2		<2		
MF - Fecal Coliforms	CFU/100mL				<1		<1	<1	
Oil & Grease (Infrared)	mg/L								
Dissolved Aluminum	mg/L	<0.002	<0.002	<0.002		<0.002	<0.002	<0.002	<0.002
Dissolved Antimony	mg/L	<0.0001	<0.0001	<0.0001		<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Arsenic	mg/L	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Barium	mg/L	<0.003	<0.003	<0.003		<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Boron	mg/L	<0.004	<0.004	<0.004		<0.001	<0.001	<0.001	<0.001
Dissolved Cadmium	mg/L	<0.00005	<0.00005	<0.00005		<0.00005	<0.00002	<0.00002	<0.00002
Dissolved Calcium	mg/L	<0.5	<0.5	<0.5		0.34	<0	<0	<0
Dissolved Chromium	mg/L	<0.0004	<0.0004	<0.0004		<0.0003	<0.0003	<0.0003	<0.0003
Dissolved Cobalt	mg/L	<0.00005	<0.00005	<0.00005		<0.00002	<0.00002	<0.00002	<0.00002
Dissolved Copper	mg/L	<0.0010	<0.0010	<0.0010		<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Iron	mg/L	<0.10	<0.10	<0.10		<0.10	<0.10	<0.10	<0.10
Dissolved Lead	mg/L	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Lithium	mg/L					<0.0010	<0.0010	<0.0010	<0.0010
Dissolved Magnesium	mg/L	<0.5	<0.5	<0.5		0.47	<0	<0	<0
Dissolved Manganese	mg/L	<0.010	<0.010	<0.010		<0.010	<0.010	<0.010	<0.010
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Molybdenum	mg/L	<0.0003	<0.0003	<0.0003		<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Nickel	mg/L	<0.0001	<0.0001	<0.0001		<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Phosphorus	mg/L					<0.005	<0.01	<0.01	<0.01
Dissolved Potassium	mg/L	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5
Dissolved Selenium	mg/L	<0.0004	<0.0004	<0.0004		<0.0006	<0.0006	<0.0006	<0.0006
Dissolved Silicon	mg/L	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01
Dissolved Silver	mg/L	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Sodium	mg/L	<0.5	<0.5	<0.5		0.5	<0.5	<0.5	<0.5
Dissolved Strontium	mg/L	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Thallium	mg/L	<0.00002	<0.00002	<0.00002		<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Tin	mg/L					<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Titanium	mg/L					<0.0005	<0.0005	<0.0005	<0.0005
Dissolved Uranium	mg/L	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Vanadium	mg/L	<0.0005	<0.0005	<0.0005		<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Zinc	mg/L	<0.002	<0.002	<0.002		<0.001	<0.001	<0.001	<0.001
Total Aluminum	mg/L	<0.005	<0.005	<0.005		<0.0025	<0.0025	<0.0025	<0.0025
Total Antimony	mg/L	<0.0001	<0.0001	<0.0001		<0.00005	<0.00005	<0.00005	<0.00005
Total Arsenic	mg/L	<0.0004	<0.0004	<0.0004		<0.0002	<0.0002	<0.0002	<0.0002
Total Barium	mg/L	<0.005	<0.005	<0.005		<0.00005	<0.00005	<0.00005	<0.00005
Total Beryllium	mg/L	<0.0005	<0.0005	<0.0005		<0.0001	<0.0001	<0.0001	<0.0001
Total Boron	mg/L	<0.010	<0.010	<0.010		<0.001	<0.001	<0.001	<0.001
Total Cadmium	mg/L	<0.0001	<0.0001	<0.0001		<0.00005	<0.00002	<0.00002	<0.00002
Total Calcium	mg/L	<0.50	<0.50	<0.50		0.36	<0.05	<0.05	<0.05
Total Chromium	mg/L	<0.0009	<0.0009	<0.0009		<0.0005	<0.0005	<0.0005	<0.0005
Total Cobalt	mg/L	<0.0001	<0.0001	<0.0001		<0.00005	<0.00005	<0.00005	<0.00005
Total Copper	mg/L	<0.0010	<0.0010	<0.0010		<0.0010	<0.0010	<0.0010	<0.0010
Total Iron	mg/L	<0.10	<0.10	<0.10		<0.10	<0.10	<0.10	<0.10
Total Lead	mg/L	<0.0001	<0.0001	<0.0001		<0.00005	<0.00005	<0.00005	<0.00005
Total Lithium	mg/L					<0.005	<0.005	<0.005	<0.005
Total Magnesium	mg/L	<0.50	<0.50	<0.50		<0.05	<0.05	<0.05	<0.05
Total Manganese	mg/L	<0.01	<0.01	<0.01		<0.010	<0.01	<0.01	<0.01
Total Mercury	mg/L	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005
Total Molybdenum	mg/L	<0.0005	<0.0005	<0.0005		<0.00005	<0.00005	<0.00005	<0.00005
Total Nickel	mg/L	<0.0006	<0.0006	<0.0006		<0.0001	<0.0001	<0.0001	<0.0001
Total Phosphorus	mg/L	<0.02	<0.02	<0.02		<0.020	<0.02	<0.02	<0.02
Total Potassium	mg/L	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5
Total Selenium	mg/L	<0.0008	<0.0008	<0.0008		<0.0010	<0.0010	<0.0010	<0.0010
Total Silicon	mg/L	0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01
Total Silver	mg/L	<0.0002	<0.0002	<0.0002		<0.0001	<0.0001	<0.0001	<0.0001
Total Sodium	mg/L	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5
Total Strontium	mg/L	<0.0002	<0.0002	<0.0002		<0.0005	<0.0005	<0.0005	<0.0005
Total Thallium	mg/L	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005
Total Tin	mg/L					<0.0001	<0.0001	<0.0001	<0.0001
Total Titanium	mg/L					<0.0005	<0.0005	<0.0005	<0.0005
Total Uranium	mg/L	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005
Total Vanadium	mg/L	<0.0001	<0.0001	<0.0001		<0.0005	<0.0005	<0.0005	<0.0005
Total Zinc	mg/L	<0.002	<0.002	<0.002		<0.001	<0.001	<0.001	<0.001

Stn.Code		SNPTB	SNPTB	SNPTB	SNPTB	
Station Name		SNPTB	SNPTB	SNPTB	SNPTB	
Sample Class		M	M	M	M	
Sample No.		06-11366	06-11735	06-12307	L464346-13	
Sample Comments						PKCA Discharge
Collect Date/Time		12/09/2006	24/09/2006	02/10/2006	17/12/2006	Criteria
Water Temperature	Deg C					
Field pH	pH					
Field Conductivity	us/cm					
Field Dissolved Oxygen	mg/L					
Oxidation Reduction Potential	mV					
pH @ 25°C	pH	5.89	5.62	5.68		6.0-8.8
Conductivity @ 25°C	us/cm	3	2	2		
T-Dissolved Solids180°C	mg/L	<4	<4	<4		4000
Total Suspended Solids @105°C	mg/L	<2	<2	<2		25
Turbidity	NTU	<1	<1	<1		
T-Hardness as CaCO3	mg/L	<6	<6	<6	<0.50	
T-Alkalinity as CaCO3	mg/L	7	6	5		
Acidity as CaCO3	mg/L	<1	2	2		
Hydroxide (as CaCO3)	mg/L	<1	<1	<1		
Balance (+ions/-ions)	Ratio	<0.01	<0.01	<0.01		
Carbonate	mg/L	<1	<1	<1		
Bicarbonate	mg/L	8	8	6		
Chloride	mg/L	<0.1	<0.1	<0.1		1000
Fluoride	mg/L	<0.02	<0.02	<0.02		
Sulphate	mg/L	<0.5	<0.5	<0.5		
Carbon (Total Inorganic)	mg/L	<0.1	<0.1	<0.1		
Carbon (Total Organic)	mg/L	<0.1	0.3	0.1	<0.50	
Ammonia - Nitrogen	mg/L	0.01	0.02			12
Nitrate - Nitrogen	mg/L	<0.05	<0.05	<0.05		56
Nitrite - Nitrogen	mg/L	<0.05	<0.05	<0.05		5
Total Kjeldahl Nitrogen	mg/L					
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20	<0.20		
Dissolved Ortho Phosphate	mg/L					
Total Phosphate As P	mg/L					
Biochemical Oxygen Demand	mg/L					25
MF - Fecal Coliforms	CFU/100mL					20
Oil & Grease (Infrared)	mg/L					5
Dissolved Aluminum	mg/L	<0.002	<0.002	<0.002		2
Dissolved Antimony	mg/L	<0.00005	<0.00005	<0.00005		
Dissolved Arsenic	mg/L	<0.0001	<0.0001	<0.0001		
Dissolved Barium	mg/L	<0.00005	<0.00005	<0.00005		
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.0001		
Dissolved Boron	mg/L	<0.001	<0.001	<0.001		
Dissolved Cadmium	mg/L	<0.00002	<0.00002	<0.00002		
Dissolved Calcium	mg/L	<0	<0	0.1		
Dissolved Chromium	mg/L	<0.0003	<0.0003	<0.0003		
Dissolved Cobalt	mg/L	<0.00002	<0.00002	<0.00002		
Dissolved Copper	mg/L	<0.0001	<0.0001	<0.0001		
Dissolved Iron	mg/L	<0.10	<0.10	<0.10		
Dissolved Lead	mg/L	<0.00005	<0.00005	<0.00005		
Dissolved Lithium	mg/L	<0.0010	<0.0010	<0.0010		
Dissolved Magnesium	mg/L	<0	<0	<0		
Dissolved Manganese	mg/L	<0.010	<0.010	<0.010		
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00005		
Dissolved Molybdenum	mg/L	<0.00005	<0.00005	0.00011		
Dissolved Nickel	mg/L	<0.00005	<0.00005	<0.00005		
Dissolved Phosphorus	mg/L	<0.01	<0.01	<0.01		
Dissolved Potassium	mg/L	<0.5	<0.5	<0.5		
Dissolved Selenium	mg/L	<0.0006	<0.0006	<0.0006		
Dissolved Silicon	mg/L	<0.01	<0.01	<0.01		
Dissolved Silver	mg/L	<0.00005	<0.00005	<0.00005		
Dissolved Sodium	mg/L	<0.5	<0.5	<0.5		
Dissolved Strontium	mg/L	<0.0001	<0.0001	<0.0001		
Dissolved Thallium	mg/L	<0.00005	<0.00005	<0.00005		
Dissolved Tin	mg/L	<0.0001	<0.0001	<0.0001		
Dissolved Titanium	mg/L	<0.0005	<0.0005	<0.0005		
Dissolved Uranium	mg/L	<0.00005	<0.00005	<0.00005		
Dissolved Vanadium	mg/L	<0.0001	<0.0001	<0.0001		
Dissolved Zinc	mg/L	<0.001	<0.001	<0.001		
Total Aluminum	mg/L	<0.0025	<0.0025	<0.0025	<0.0010	3
Total Antimony	mg/L	<0.00005	<0.00005	<0.00005	<0.00010	
Total Arsenic	mg/L	<0.0002	<0.0002	<0.0002	<0.00010	0.1
Total Barium	mg/L	<0.00005	<0.00005	<0.00005	<0.000050	
Total Beryllium	mg/L	<0.0001	<0.0001	<0.0001	<0.00050	
Total Boron	mg/L	<0.001	<0.001	<0.001	<0.010	
Total Cadmium	mg/L	<0.00002	<0.00002	<0.00002	<0.000050	0.0024
Total Calcium	mg/L	<0.05	<0.05	0.05	<0.050	
Total Chromium	mg/L	<0.0005	<0.0005	<0.0005	<0.00050	0.17
Total Cobalt	mg/L	<0.00005	<0.00005	<0.00005	<0.00010	
Total Copper	mg/L	<0.0010	<0.0010	<0.0010	<0.00010	0.04
Total Iron	mg/L	<0.10	<0.10	<0.10	<0.030	
Total Lead	mg/L	<0.00005	<0.00005	<0.00005	<0.000050	0.02
Total Lithium	mg/L	<0.005	<0.005	<0.005	<0.0050	
Total Magnesium	mg/L	<0.05	<0.05	<0.05	<0.050	
Total Manganese	mg/L	<0.01	<0.01	<0.01	<0.000050	
Total Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.000050	
Total Molybdenum	mg/L	<0.00005	<0.00005	<0.00005	<0.000050	1.5
Total Nickel	mg/L	<0.0001	<0.0001	<0.0001	<0.00050	0.1
Total Phosphorus	mg/L	<0.02	<0.02	<0.02		0.4
Total Potassium	mg/L	<0.5	<0.5	<0.5	<0.50	
Total Selenium	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	
Total Silicon	mg/L	<0.01	<0.01	<0.01	<0.050	
Total Silver	mg/L	<0.0001	<0.0001	<0.0001	<0.000010	
Total Sodium	mg/L	<0.5	<0.5	<0.5	<0.50	
Total Strontium	mg/L	<0.0005	<0.0005	<0.0005	<0.00010	
Total Thallium	mg/L	<0.00005	<0.00005	<0.00005	<0.00010	
Total Tin	mg/L	<0.0001	<0.0001	<0.0001	<0.00010	
Total Titanium	mg/L	<0.0005	<0.0005	<0.0005	<0.010	
Total Uranium	mg/L	<0.00005	<0.00005	<0.00005	<0.000010	1
Total Vanadium	mg/L	<0.0005	<0.0005	<0.0005	<0.0010	
Total Zinc	mg/L	<0.001	<0.001	<0.001	<0.0010	0.5

Stn.Code		SNPFB	SNPFB	SNPFB	SNPFB	SNPFB	SNPFB	SNPFB	SNPFB	SNPFB	SNPFB	SNPFB	SNPFB	SNPFB	
Station Name		SNPFB	SNPFB	SNPFB	SNPFB	SNPFB	SNPFB	SNPFB	SNPFB	SNPFB	SNPFB	SNPFB	SNPFB	SNPFB	
Sample Class		M	M	M	M	M	M	M	M	M	M	M	QAQC	M	
Sample No.		Jun-81	Jun-21	Jun-74	Jun-21	Jun-52	Jun-28	Jun-14	06-10793	06-11367	06-11736	06-12306	06-13331	L464346-12	
Sample Comments															PKCA Discharge Criteria
Collect Date/Time		21/02/2006	16/03/2006	08/04/2006	12/07/2006	19/07/2006	04/08/2006	09/08/2006	01/09/2006	12/09/2006	24/09/2006	02/10/2006	23/10/2006	17/12/2006	
Water Temperature	Deg C														
Field pH	pH														
Field Conductivity	us/cm														
Field Dissolved Oxygen	mg/L														
Oxidation Reduction Potential	mV														
pH @ 25°C	pH	6.55	6.24	6.11			6.57	6.10	5.54	5.81	5.61	5.79	5.57		6.0-8.8
Conductivity @ 25°C	us/cm	4	2	2			4	3	3	1	2	2	2		
T-Dissolved Solids180°C	mg/L	<10	<10	<10			<4	4	<4	4	<4	<4	<4		4000
Total Suspended Solids @105°C	mg/L	<2	<2	<2			<2	<2	<2	<2	<2	<2	<2		25
Turbidity	NTU	<1	<1	<1			<1	<1	<1	<1	<1	<1	1		
T-Hardness as CaCO3	mg/L	<6.0	<6.0	<6.0			<6	<6	<6	<6	<6	<6	<6	<0.50	
T-Alkalinity as CaCO3	mg/L	5	7	5			6	6	5	7	7	4	5		
Acidity as CaCO3	mg/L	<1	2	1			<1	<1	<1	<1	1	2	2		
Hydroxide (as CaCO3)	mg/L	<1	<1	<1			<1	<1	<1	<1	<1	<1	<1		
Balance (+ions/-ions)	Ratio	<0.01	<0.01	<0.01			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
Carbonate	mg/L	<1	<1	<1			<1	<1	<1	<1	<1	<1	<1		
Bicarbonate	mg/L	6	8	6			7	7	6	9	8	5	6		
Chloride	mg/L	<0.1	<0.1	<0.1			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1		1000
Fluoride	mg/L	<0.02	0.03	0.02			<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02		
Sulphate	mg/L	<0.5	<0.5	<0.5			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
Carbon (Total Inorganic)	mg/L	<1	<1	<1			<0.1	0.6	0.2	<0.1	<0.1	<0.1	<0.1		
Carbon (Total Organic)	mg/L	<1	<1	<1			<0.1	<0.1	<0.1	<0.1	0.2	0.1	0.1	<0.50	
Ammonia - Nitrogen	mg/L	<0.1	<0.1	<0.1			0.01	0.11	0.01	0.01	0.02	0.01	0.12		12
Nitrate - Nitrogen	mg/L	<0.05	<0.05	<0.05			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		56
Nitrite - Nitrogen	mg/L	<0.05	<0.05	<0.05			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05		5
Total Kjeldahl Nitrogen	mg/L						<0.2		<0.2						
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20	<0.20			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20		
Dissolved Ortho Phosphate	mg/L														
Total Phosphate As P	mg/L														
Biochemical Oxygen Demand	mg/L				<2		<2								25
MF - Fecal Coliforms	CFU/100mL				<1		<1	<1							20
Oil & Grease (Infrared)	mg/L														5
Dissolved Aluminum	mg/L	<0.002	<0.002	<0.002			<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		2
Dissolved Antimony	mg/L	<0.0001	<0.0001	<0.0001			<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005		
Dissolved Arsenic	mg/L	<0.0001	<0.0001	<0.0001			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		
Dissolved Barium	mg/L	<0.003	<0.003	<0.003			<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00007		
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.0001			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		
Dissolved Boron	mg/L	<0.004	<0.004	<0.004			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
Dissolved Cadmium	mg/L	<0.00005	<0.00005	<0.00005			<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002		
Dissolved Calcium	mg/L	<0.5	<0.5	<0.5			<0	<0	<0	<0	<0	<0	<0		
Dissolved Chromium	mg/L	<0.0004	<0.0004	<0.0004			<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003		
Dissolved Cobalt	mg/L	<0.00005	<0.00005	<0.00005			<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002		
Dissolved Copper	mg/L	<0.0010	<0.0010	<0.0010			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0003		
Dissolved Iron	mg/L	<0.10	<0.10	<0.10			<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10		
Dissolved Lead	mg/L	<0.00005	<0.00005	<0.00005			<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005		
Dissolved Lithium	mg/L						<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010		
Dissolved Magnesium	mg/L	<0.5	<0.5	<0.5			<0	<0	<0	<0	<0	<0	<0		
Dissolved Manganese	mg/L	<0.010	<0.010	<0.010			<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010		
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00005			<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005		
Dissolved Molybdenum	mg/L	<0.0003	<0.0003	<0.0003			<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005		
Dissolved Nickel	mg/L	<0.0001	<0.0001	<0.0001			<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005		
Dissolved Phosphorus	mg/L						<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
Dissolved Potassium	mg/L	<0.5	<0.5	<0.5			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
Dissolved Selenium	mg/L	<0.0004	<0.0004	<0.0004			<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006		
Dissolved Silicon	mg/L	<0.01	<0.01	<0.01			<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01		
Dissolved Silver	mg/L	<0.00005	<0.00005	<0.00005			<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005		
Dissolved Sodium	mg/L	<0.5	<0.5	<0.5			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5		
Dissolved Strontium	mg/L	<0.0001	<0.0001	<0.0001			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		
Dissolved Thallium	mg/L	<0.00002	<0.00002	<0.00002			<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005		
Dissolved Tin	mg/L						<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		
Dissolved Titanium	mg/L						<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		
Dissolved Uranium	mg/L	<0.00005	<0.00005	<0.00005			<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005		
Dissolved Vanadium	mg/L	<0.0005	<0.0005	<0.0005			<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001		
Dissolved Zinc	mg/L	<0.002	<0.002	<0.002			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001		
Total Aluminum	mg/L	<0.005	<0.005	<0.005		<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0025	<0.0010	3
Total Antimony	mg/L	<0.0001	<0.0001	<0.0001		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00010	
Total Arsenic	mg/L	<0.0004	<0.0004	<0.0004		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.00010	0.1
Total Barium	mg/L	<0.005	<0.005	<0.005		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.000050	
Total Beryllium	mg/L	<0.0005	<0.0005	<0.0005		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00050	
Total Boron	mg/L	<0.010	<0.010	<0.010		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.010	
Total Cadmium	mg/L	<0.0001	<0.0001	<0.0001		<0.00005	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.000050	0.0024
Total Calcium	mg/L	<0.50	<0.50	<0.50		0.18	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	
Total Chromium	mg/L	<0.0009	<0.0009	<0.0009		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00050	0.17
Total Cobalt	mg/L	<0.0001	<0.0001	<0.0001		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00010	
Total Copper	mg/L	<0.0010	<0.0010	<0.0010		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.00010	0.04
Total Iron	mg/L	<0.10	<0.10	<0.10		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.030	
Total Lead	mg/L	<0.0001	<0.0001	<0.0001		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.000050	0.02
Total Lithium	mg/L					<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0050	
Total Magnesium	mg/L	<0.50	<0.50	<0.50		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	
Total Manganese	mg/L	<0.01	<0.01	<0.01		<0.010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.000050	
Total Mercury	mg/L	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.000050	
Total Molybdenum	mg/L	<0.0005	<0.0005	<0.0005		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.000050	1.5
Total Nickel	mg/L	<0.0006	<0.0006	<0.0006		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00050	0.1
Total Phosphorus	mg/L	<0.02	<0.02	<0.02		<0.020	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02		0.4
Total Potassium	mg/L	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	
Total Selenium	mg/L	<0.0008	<0.0008	<0.0008		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Total Silicon	mg/L	0.03	<0.01	0.02		<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.050	
Total Silver	mg/L	<0.0002	<0.0002	<0.0002		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.000010	
Total Sodium	mg/L	<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.50	
Total Strontium	mg/L	<0.0002	<0.0002	<0.0002		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.00010	
Total Thallium	mg/L	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00010	
Total Tin	mg/L					<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	
Total Titanium	mg/L					<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.010	
Total Uranium	mg/L	<0.00005	<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.000010	1
Total Vanadium	mg/L	<0.0001	<0.0001	<0.0001		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0010	
Total Zinc	mg/L	<0.002	<0.002	<0.002		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0010	0.5

Stn.Code		JER-SW1	JER-SW1	JER-SW1	JER-SW1	JER-SW1	JER-SW1	JER-SW1	JER-SW1	JER-SW1	JER-SW1
Station Name		STP Effluent	STP Effluent	STP Effluent	STP Effluent	STP Effluent	STP Effluent	STP Effluent	STP Effluent	STP Effluent	STP Effluent
Sample Class		M	M	M	M	M	M	M	M	M	M
Sample No.		06-1061-D	06-1061	06-1573-D	06-1573	Jun-17	Jun-68	Jun-98	Jun-04	06-8595-D	Jun-95
Sample Comments							April Sample				
Collect Date/Time		11/01/2006	11/01/2006	15/02/2006	15/02/2006	16/03/2006	01/05/2006	31/05/2006	21/06/2006	12/07/2006	12/07/2006
Water Temperature	Deg C				n/m	6.73	25.61	20.9	21.24		14.36
Field pH	pH		7.46		n/m	9.78	7.81	7.91	7.67		6.73
Field Conductivity	us/cm		1079		n/m	157	1118	1159	1057		121
Field Dissolved Oxygen	mg/L				n/m	11.66	0.60	0.67	0.33		9.95
Oxidation Reduction Potential	mV		-119.30		n/m	250.70	173.60	114.50	-78.80		264.00
pH @ 25°C	pH	7.48	7.43	7.82	7.81	7.70	7.73	7.89	7.64	7.85	7.84
Conductivity @ 25°C	us/cm	1040	1000	1060	1080	1100	1090	1110	1030	860	878
T-Dissolved Solids180°C	mg/L	412	408	396	404	400	420	428	456	416	392
Total Suspended Solids @105°C	mg/L	110	109		39	38	15	33	49	16	16
Turbidity	NTU	110	110	36	37	26	39	14	44	27	26
T-Hardness as CaCO3	mg/L	31.7	31.6	21.9	22.1	26.3		23.4	26.5	33.3	34.3
T-Alkalinity as CaCO3	mg/L	366	363	371	371	365	370	382	351	277	277
Acidity as CaCO3	mg/L		-283		-350	-313	-295	-301	-246		-220.8
Hydroxide (as CaCO3)	mg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Balance (+ions/-ions)	Ratio	0.55	0.54	0.63	0.64	0.55		0.55	0.67	0.63	0.64
Carbonate	mg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bicarbonate	mg/L	446	443	453	453	446	451	465	428	338	338
Chloride	mg/L	39.8	39.7	37.6	36.9	44.5	53.3	44.6	53.6	51.8	52.4
Fluoride	mg/L	0.07	0.07	0.06	0.06	0.07	0.05	0.06	0.05	0.05	0.05
Sulphate	mg/L	55.7	56	70.4	69	93.7	67.6	72.6	75.8	64.4	65.9
Carbon (Total Inorganic)	mg/L	86	85	84	84	80	83.6	81.8	75.7	57.6	57.5
Carbon (Total Organic)	mg/L	107	107		64	47	50.4	40.5	62.9	48.2	60.9
Ammonia - Nitrogen	mg/L	69.2	66.7	78.8	73.4	75.7	110	82.7	61.2	29.8	29.8
Nitrate - Nitrogen	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.93	0.10	0.09
Nitrite - Nitrogen	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Kjeldahl Nitrogen	mg/L										
Phosphate - Ortho - Phosphoru	mg/L	8.97	8.96	8.24	8	7.16	8.20	7.90	7.81	7.38	7.48
Dissolved Ortho Phosphate	mg/L										
Total Phosphate As P	mg/L										
Biochemical Oxygen Demand	mg/L		126		39	15	49	30	76		44
MF - Fecal Coliforms	CFU/100mL		50000000		300000	100000	11000	160000	250000		5100
Oil & Grease (Infrared)	mg/L		20.6				5.1				
Dissolved Aluminum	mg/L	0.032	0.029	0.057	0.057	0.041	0.042	0.033	0.040	0.070	0.074
Dissolved Antimony	mg/L	0.0004	0.0004	0.0009	0.0009	0.0008	0.0031	0.0020	0.0008	0.00126	0.00128
Dissolved Arsenic	mg/L	0.0009	0.0009	0.0012	0.0013	0.0009	0.0014	0.0011	0.0006	0.0007	0.0008
Dissolved Barium	mg/L	0.018	0.017	0.013	0.013	0.012	0.0106	0.00535	0.00670	0.0161	0.0165
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Boron	mg/L	0.027	0.026	0.026	0.026	0.032	0.023	0.035	0.018	0.041	0.040
Dissolved Cadmium	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00008	0.00007	0.00006	0.00006
Dissolved Calcium	mg/L	7.4	7.4	5.0	5.1	6.3	5.9	5.3	6.6	8.9	9.1
Dissolved Chromium	mg/L	0.0078	0.0072	0.0060	0.0057	0.0056	0.0076	0.0072	0.0012	0.0033	0.0035
Dissolved Cobalt	mg/L	0.00016	0.00015	0.00028	0.00027	0.00012	<0.00005	0.00024	0.00020	0.00036	0.00036
Dissolved Copper	mg/L	0.0170	0.0159	0.0655	0.0615	0.0654	0.0564	0.0583	0.0658	0.0683	0.0667
Dissolved Iron	mg/L	0.33	0.33	0.37	0.36	0.24	0.43	0.50	0.56	0.93	0.95
Dissolved Lead	mg/L	0.00043	0.00041	0.00144	0.00153	0.00083	0.00135	0.00147	0.00077	0.00096	0.00102
Dissolved Lithium	mg/L									0.0215	0.0218
Dissolved Magnesium	mg/L	3.2	3.2	2.3	2.3	2.6	2.6	2.5	2.4	2.7	2.8
Dissolved Manganese	mg/L	<0.010	<0.010	0.014	0.014	0.015	0.015	0.015	0.026	<0.010	<0.010
Dissolved Mercury	mg/L	0.00015	0.00015	<0.00005	0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Molybdenum	mg/L	<0.0003	<0.0003	0.0012	0.0009	0.0007	0.00071	0.00109	0.00047	0.00083	0.00094
Dissolved Nickel	mg/L	0.0039	0.0036	0.0041	0.0040	0.0030	0.00444	0.00399	0.00654	0.00642	0.00642
Dissolved Phosphorus	mg/L	8.49	8.29							7.56	8.03
Dissolved Potassium	mg/L	20.1	19.8	20.7	20.7	19.8	22.3	26.8	24.2	23.6	24.2
Dissolved Selenium	mg/L	0.0005	0.0006	0.0020	0.0020	0.0010	0.0012	0.0026	<0.0006	0.0009	0.0010
Dissolved Silicon	mg/L	3.31	3.30	4.29	4.28	3.09	2.62	2.23	3.06	2.75	2.82
Dissolved Silver	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Sodium	mg/L	94.2	92	122	123	109	89	105	131	91.8	93.6
Dissolved Strontium	mg/L	0.0239	0.0233	0.0288	0.0288	0.0264	0.0272	0.0185	0.0202	0.0269	0.0270
Dissolved Thallium	mg/L	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Tin	mg/L									0.0019	0.0018
Dissolved Titanium	mg/L									<0.0005	<0.0005
Dissolved Uranium	mg/L	<0.00005	<0.00005	0.00010	0.00010	0.00009	0.00014	0.00022	0.00011	0.00014	0.00014
Dissolved Vanadium	mg/L	0.0042	0.0042	<0.0005	<0.0005	0.0022	0.0023	0.0095	<0.0001	0.0009	0.0011
Dissolved Zinc	mg/L	0.014	0.014	0.039	0.037	0.032	0.028	0.031	0.042	0.049	0.047
Total Aluminum	mg/L	0.383	0.362	0.155	0.166	0.149	0.118	0.0987	0.142	0.0791	0.0799
Total Antimony	mg/L	0.0037	0.0037	0.0021	0.0025	0.0023	0.00502	0.00224	0.00091	0.00080	0.00082
Total Arsenic	mg/L	0.0013	0.0015	0.0012	0.0013	0.0012	0.0013	0.0007	0.0006	0.0005	0.0006
Total Barium	mg/L	0.020	0.020	0.012	0.013	0.013	0.0105	0.00890	0.0112	0.00961	0.00953
Total Beryllium	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001
Total Boron	mg/L	0.028	0.029	0.028	0.030	0.035	0.022	0.028	0.018	0.040	0.040
Total Cadmium	mg/L	0.0003	0.0003	<0.0001	<0.0001	0.0001	0.00011	0.00011	0.00013	<0.00005	<0.00005
Total Calcium	mg/L	9.86	9.89	9.09	9.74	7.95	7.72	7.16	8.47	8.11	7.98
Total Chromium	mg/L	0.0113	0.0102	0.0095	0.0094	0.0072	0.0076	0.0038	0.0027	0.0030	0.0029
Total Cobalt	mg/L	0.0007	0.0007	0.0004	0.0005	0.0003	0.00021	0.00034	0.00025	0.00030	0.00031
Total Copper	mg/L	0.244	0.244	0.0953	0.101	0.110	0.122	0.105	0.0867	0.133	0.130
Total Iron	mg/L	1.19	1.19	0.64	0.68	0.54	0.50	0.62	0.70	0.87	0.90
Total Lead	mg/L	0.0049	0.0049	0.0026	0.0029	0.0023	0.00143	0.00188	0.00139	0.00077	0.00077
Total Lithium	mg/L									0.024	0.023
Total Magnesium	mg/L	3.53	3.54	3.24	3.25	3.20	3.24	3.26	2.90	2.44	2.39
Total Manganese	mg/L	0.04	0.04	0.04	0.05	0.03	0.03	0.03	0.03	<0.01	<0.01
Total Mercury	mg/L	0.00017	0.00017	0.00010	0.00009	<0.00005	<0.00005	0.00005	<0.00005	<0.00005	<0.00005
Total Molybdenum	mg/L	0.0022	0.0024	0.0018	0.0020	0.0015	0.00120	0.00143	0.00086	0.00030	0.00036
Total Nickel	mg/L	0.0111	0.0107	0.0048	0.0052	0.0045	0.0054	0.0060	0.0070	0.0059	0.0061
Total Phosphorus	mg/L	12.9	13	10.2	10.1	18.5	9.43	0.42	8.64	10.1	10.1
Total Potassium	mg/L	22.8	22.3	23.5	23.4	20.7	21.5	23.2	17.1	22.3	21.8
Total Selenium	mg/L	0.0018	0.0019	0.0012	0.0014	0.0009	0.0011	<0.0010	<0.0010	<0.0010	<0.0010
Total Silicon	mg/L	4.43	4.44	4.30	4.34	4.10	2.66	3.09	2.99	2.42	2.38
Total Silver	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001
Total Sodium	mg/L	100	98.1	120	120	111	89.9	120	103	87.4	85.5
Total Strontium	mg/L	0.0256	0.0256	0.0289	0.0292	0.0277	0.0264	0.0188	0.0204	0.0203	0.0207
Total Thallium	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Total Tin	mg/L									0.0004	0.0005
Total Titanium	mg/L									<0.0005	<0.0005
Total Uranium	mg/L	0.00020	0.00020	0.00012	0.00013	0.00016	0.00015	<0.00005	0.00017	<0.00005	<0.00005
Total Vanadium	mg/L	0.0041	0.0040	0.0015	0.0016	0.0021	0.0033	0.0031	<0.0005	<0.0005	<0.0005
Total Zinc	mg/L	0.279	0.280	0.091	0.100	0.086	0.064	0.052	0.085	0.039	0.040

Stn.Code		JER-SW1	JER-SW1	JER-SW1	JER-SW1	JER-SW1	
Station Name		STP Effluent	STP Effluent	STP Effluent	STP Effluent	STP Effluent	
Sample Class		M	M	M	M	M	
Sample No.		Jun-26	Jun-13	06-12308	06-14365	L464346-11	
Sample Comments				September sample collected in October, report on September monthly report			PKCA Discharge Criteria
Collect Date/Time		19/07/2006	09/08/2006	02/10/2006	13/11/2006	18/12/2006	
Water Temperature	Deg C		24.28	21.68		19.66	
Field pH	pH		7.52	7.51		7.12	
Field Conductivity	us/cm		677	817		944	
Field Dissolved Oxygen	mg/L		1.14	1.78		2.03	
Oxidation Reduction Potential	mV		315.40	621.20		425.20	
pH @ 25°C	pH		7.62	7.75	7.68	8.01	6.0-8.8
Conductivity @ 25°C	us/cm		633	780	818	916	
T-Dissolved Solids180°C	mg/L		384	356	320	369	4000
Total Suspended Solids @105°C	mg/L		31	10	18	3	25
Turbidity	NTU		16	13	17	7.01	
T-Hardness as CaCO3	mg/L		31	28.8	31.9	33.6	
T-Alkalinity as CaCO3	mg/L		166	246	281	324	
Acidity as CaCO3	mg/L		-144	-214	-239	10.5	
Hydroxide (as CaCO3)	mg/L		<1	<1	<1	<1.0	
Balance (+ions/-ions)	Ratio		0.83	0.63	0.62		
Carbonate	mg/L		<1	<1	<1	<1.0	
Bicarbonate	mg/L		202	301	343	324	
Chloride	mg/L		42	42.2	35.1	46	1000
Fluoride	mg/L		0.06	0.05	0.05		
Sulphate	mg/L		57.7	60.7	57.2	59.6	
Carbon (Total Inorganic)	mg/L		40	55.2	70.3	70.5	
Carbon (Total Organic)	mg/L		34.9	35.9	40.3	36.7	
Ammonia - Nitrogen	mg/L		13.5	57.2	52.8	59.9	12
Nitrate - Nitrogen	mg/L		0.15	0.17	0.17	0.04	56
Nitrite - Nitrogen	mg/L		2.28	0.50	<0.05	0.358	5
Total Kjeldahl Nitrogen	mg/L						
Phosphate - Ortho - Phosphoru	mg/L		7.59	6.50	5.58	8.6	
Dissolved Ortho Phosphate	mg/L					9.6	
Total Phosphate As P	mg/L					9.9	
Biochemical Oxygen Demand	mg/L		30	10	35	13	25
MF - Fecal Coliforms	CFU/100mL		60000	470000	300000	900	20
Oil & Grease (Infrared)	mg/L	2.3					5
Dissolved Aluminum	mg/L		0.059	0.030	0.052	0.0301	2
Dissolved Antimony	mg/L		0.00011	0.00115	0.00060	0.00092	
Dissolved Arsenic	mg/L		0.0009	0.0007	0.0006	0.00049	
Dissolved Barium	mg/L		0.00669	0.00720	0.00728	0.00708	
Dissolved Beryllium	mg/L		<0.0001	<0.0001	<0.0001	<0.0010	
Dissolved Boron	mg/L		0.023	0.027	0.046	<0.020	
Dissolved Cadmium	mg/L		<0.00002	0.00003	0.00002	<0.00010	
Dissolved Calcium	mg/L		8.2	7.6	8.1	8.14	
Dissolved Chromium	mg/L		0.0104	0.0048	0.0032	<0.0010	
Dissolved Cobalt	mg/L		0.00004	0.00020	0.00019	0.00028	
Dissolved Copper	mg/L		0.0445	0.0525	0.0408	0.0623	
Dissolved Iron	mg/L		0.82	0.55	0.61	0.501	
Dissolved Lead	mg/L		0.00097	0.00074	0.00132	0.00056	
Dissolved Lithium	mg/L		0.0056	0.0317	0.0344	0.035	
Dissolved Magnesium	mg/L		2.6	2.4	2.84	3.23	
Dissolved Manganese	mg/L		0.019	0.018	0.030	0.019	
Dissolved Mercury	mg/L		<0.00005	<0.00005	<0.00005	<0.000050	
Dissolved Molybdenum	mg/L		0.00083	0.00095	0.00029	0.00081	
Dissolved Nickel	mg/L		0.00413	0.00337	0.00751	0.0078	
Dissolved Phosphorus	mg/L		10.6	8.34	6.82		
Dissolved Potassium	mg/L		20.1	21.1	23	25.6	
Dissolved Selenium	mg/L		0.0011	0.0008	0.0006	<0.0020	
Dissolved Silicon	mg/L		3	2.30	6.27	7.3	
Dissolved Silver	mg/L		<0.00005	<0.00005	<0.00005	<0.000020	
Dissolved Sodium	mg/L		86	81.1	82.3	92.4	
Dissolved Strontium	mg/L		0.0138	0.0158	0.0183	0.022	
Dissolved Thallium	mg/L		<0.00005	0.00009	<0.00005	<0.00020	
Dissolved Tin	mg/L		0.0002	0.0010	0.0002	0.00147	
Dissolved Titanium	mg/L		<0.0005	<0.0005	<0.0005	<0.010	
Dissolved Uranium	mg/L		0.00009	0.00013	<0.00005	0.000153	
Dissolved Vanadium	mg/L		0.0028	0.0038	0.0024	<0.0020	
Dissolved Zinc	mg/L		0.044	0.026	0.068	0.0473	
Total Aluminum	mg/L		0.0790	0.0621	0.0847	0.0501	3
Total Antimony	mg/L		0.00086	0.00089	0.00103	0.00101	
Total Arsenic	mg/L		0.0002	0.0007	<0.0002	0.00049	0.1
Total Barium	mg/L		0.00647	0.00832	0.00858	0.00797	
Total Beryllium	mg/L		<0.0001	<0.0001	<0.0001	<0.0010	
Total Boron	mg/L		0.026	0.029	0.053	<0.020	
Total Cadmium	mg/L		<0.00002	0.00004	0.00005	<0.00010	0.0024
Total Calcium	mg/L		8.75	8.05	8.3	8.05	
Total Chromium	mg/L		0.0104	0.0032	0.0040	0.0012	0.17
Total Cobalt	mg/L		0.00024	0.00025	0.00028	0.00035	
Total Copper	mg/L		0.0499	0.0809	0.0946	0.0827	0.04
Total Iron	mg/L		1.03	0.69	0.83	0.647	
Total Lead	mg/L		0.00082	0.00093	0.00093	0.00087	0.02
Total Lithium	mg/L		0.006	0.036	0.041	0.036	
Total Magnesium	mg/L		2.77	2.76	2.8	3.23	
Total Manganese	mg/L		0.02	0.02	0.03	0.0261	
Total Mercury	mg/L		<0.00005	<0.00005	<0.00005	<0.000050	
Total Molybdenum	mg/L		0.00082	0.00104	0.00120	0.00102	1.5
Total Nickel	mg/L		0.0043	0.0052	0.0108	0.0079	0.1
Total Phosphorus	mg/L		10.7	9.14	7.24		0.4
Total Potassium	mg/L		21.3	21.3	21.3	24.4	
Total Selenium	mg/L		0.0011	<0.0010	<0.0010	<0.0020	
Total Silicon	mg/L		3.19	2.57	6.38	6.89	
Total Silver	mg/L		<0.0001	<0.0001	<0.0001	0.000033	
Total Sodium	mg/L		89.4	78.2	80.9	92.2	
Total Strontium	mg/L		0.0152	0.0168	0.0210	0.0219	
Total Thallium	mg/L		<0.00005	<0.00005	<0.00005	<0.00020	
Total Tin	mg/L		0.0003	0.0012	0.0012	0.00133	
Total Titanium	mg/L		<0.0005	<0.0005	<0.0005	<0.010	
Total Uranium	mg/L		0.00008	0.00011	0.00016	0.000172	1
Total Vanadium	mg/L		0.0027	0.0006	0.0031	<0.0020	
Total Zinc	mg/L		0.042	0.048	0.052	0.0564	0.5

Stn.Code		JER-SW2	JER-SW2	JER-SW2	JER-SW2	
Station Name		Jericho Pit Sump	Jericho Pit Sump	Jericho Pit Sump	Jericho Pit Sump	
Sample Class		M	M	M	M	
Sample No.		Jun-33	Jun-96	Jun-19	06-11364	
Sample Comments						
Collect Date/Time		21/06/2006	11/07/2006	09/08/2006	14/09/2006	PKCA Discharge Criteria
Water Temperature	Deg C	5.71	4.76	9.9	3.02	
Field pH	pH	7.73	7.15	7.53	8.16	
Field Conductivity	us/cm	794	800	582	654	
Field Dissolved Oxygen	mg/L	12.23	10.90	9.82	13.04	
Oxidation Reduction Potential	mV	182.60	312.10	432.70	254.80	
pH @ 25°C	pH	7.71	7.82	7.60	8.10	6.0-8.8
Conductivity @ 25°C	us/cm	609	760	642	852	
T-Dissolved Solids180°C	mg/L	340	552	4	550	4000
Total Suspended Solids @105°C	mg/L	15	14	127	3	25
Turbidity	NTU	24	8	170	10	
T-Hardness as CaCO3	mg/L	157	255	173	272	
T-Alkalinity as CaCO3	mg/L	68	88	37	61	
Acidity as CaCO3	mg/L	16	12	9	6	
Hydroxide (as CaCO3)	mg/L	<1	<1	<1	<1	
Balance (+ions/-ions)	Ratio	0.67	0.83	0.77	0.87	
Carbonate	mg/L	<1	<1	<1	<1	
Bicarbonate	mg/L	82	107	45	74	
Chloride	mg/L	25.3	30.1	11.8	21.3	1000
Fluoride	mg/L	0.16	0.12	0.13	0.11	
Sulphate	mg/L	13.1	19.6	21.1	41.7	
Carbon (Total Inorganic)	mg/L	12.3	17.4	7.8	11.6	
Carbon (Total Organic)	mg/L	3.0	4.6	3.3	5.0	
Ammonia - Nitrogen	mg/L	20.3	8.10	11.5	14.5	12
Nitrate - Nitrogen	mg/L	45.9	57.6	55.2	65.9	56
Nitrite - Nitrogen	mg/L	0.77	1.80	1.62	2.11	5
Total Kjeldahl Nitrogen	mg/L					
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20	<0.20	<0.20	
Dissolved Ortho Phosphate	mg/L					
Total Phosphate As P	mg/L					
Biochemical Oxygen Demand	mg/L					25
MF - Fecal Coliforms	CFU/100mL					20
Oil & Grease (Infrared)	mg/L					5
Dissolved Aluminum	mg/L	0.123	0.013	0.568	<0.002	2
Dissolved Antimony	mg/L	0.0005	0.00057	0.00074	0.00038	
Dissolved Arsenic	mg/L	0.0007	0.0010	0.0015	0.0010	
Dissolved Barium	mg/L	0.277	0.341	0.130	0.412	
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	
Dissolved Boron	mg/L	0.030	0.073	0.037	0.054	
Dissolved Cadmium	mg/L	<0.00005	<0.00005	0.00004	<0.00002	
Dissolved Calcium	mg/L	33.3		38.2	52.1	
Dissolved Chromium	mg/L	0.0003	0.0011	0.0024	0.0016	
Dissolved Cobalt	mg/L	0.00154	0.00156	0.00196	0.00146	
Dissolved Copper	mg/L	0.0142	0.0160	0.0167	0.0067	
Dissolved Iron	mg/L	<0.10	<0.10	0.53	0.17	
Dissolved Lead	mg/L	0.00196	0.00029	0.00088	<0.00005	
Dissolved Lithium	mg/L		0.0098	0.0072	0.0048	
Dissolved Magnesium	mg/L	18	28.3	18.9	34.5	
Dissolved Manganese	mg/L	0.100	0.134	0.248	0.031	
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	
Dissolved Molybdenum	mg/L	0.00648	0.0103	0.0143	0.0233	
Dissolved Nickel	mg/L	0.0144	0.0342	0.0129	0.0289	
Dissolved Phosphorus	mg/L		<0.005	0.03	<0.01	
Dissolved Potassium	mg/L	4.3	7.1	14.2	13.2	
Dissolved Selenium	mg/L	0.0011	0.0023	0.0011	0.0013	
Dissolved Silicon	mg/L	3.17	4.07	4.03	3.16	
Dissolved Silver	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	
Dissolved Sodium	mg/L	13.2	16.4	11.2	17.4	
Dissolved Strontium	mg/L	0.134	0.405	0.653	2.09	
Dissolved Thallium	mg/L	<0.00005	<0.00005	0.00006	0.00013	
Dissolved Tin	mg/L		0.0038	0.0002	0.0009	
Dissolved Titanium	mg/L		0.0009	0.0221	0.0010	
Dissolved Uranium	mg/L	0.115	0.122	0.00564	0.0171	
Dissolved Vanadium	mg/L	0.0006	0.0009	0.0022	0.0011	
Dissolved Zinc	mg/L	<0.001	0.026	0.004	<0.001	
Total Aluminum	mg/L	0.162	0.0523	3.02	0.0764	3
Total Antimony	mg/L	0.00022	0.00050	0.00063	0.00039	
Total Arsenic	mg/L	0.0013	0.0019	0.0011	0.0012	0.1
Total Barium	mg/L	0.304	0.344	0.139	0.442	
Total Beryllium	mg/L	<0.0001	<0.0001	0.0001	<0.0001	
Total Boron	mg/L	0.060	0.079	0.036	0.065	
Total Cadmium	mg/L	<0.00005	<0.00005	0.00018	<0.00002	0.0024
Total Calcium	mg/L	33.4	51.3	41.6	54.2	
Total Chromium	mg/L	0.0016	0.0021	0.0124	0.0014	0.17
Total Cobalt	mg/L	0.00168	0.00154	0.00276	0.00182	
Total Copper	mg/L	0.0158	0.0138	0.0250	0.0087	0.04
Total Iron	mg/L	0.16	0.13	3.24	0.23	
Total Lead	mg/L	0.00240	0.00047	0.00192	0.00023	0.02
Total Lithium	mg/L		0.010	0.008	0.006	
Total Magnesium	mg/L	16.4	26.3	21.5	38.1	

Stn.Code		JER-SW2	JER-SW2	JER-SW2	JER-SW2	
Station Name		Jericho Pit Sump	Jericho Pit Sump	Jericho Pit Sump	Jericho Pit Sump	
Sample Class		M	M	M	M	
Sample No.		Jun-33	Jun-96	Jun-19	06-11364	
Sample Comments						PKCA Discharge
Collect Date/Time		21/06/2006	11/07/2006	09/08/2006	14/09/2006	Criteria
Total Manganese	mg/L	0.13	0.12	0.34	0.03	
Total Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	
Total Molybdenum	mg/L	0.00650	0.00974	0.0133	0.0254	1.5
Total Nickel	mg/L	0.0158	0.0357	0.0157	0.0358	0.1
Total Phosphorus	mg/L	0.05	<0.020	0.11	<0.02	0.4
Total Potassium	mg/L	4.4	6.5	16.4	14.8	
Total Selenium	mg/L	<0.0010	0.0017	0.0016	<0.0010	
Total Silicon	mg/L	3.04	3.62	7.32	3.35	
Total Silver	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	
Total Sodium	mg/L	11.7	15.5	11.9	20.7	
Total Strontium	mg/L	0.157	0.360	0.660	2.17	
Total Thallium	mg/L	<0.00005	<0.00005	0.00009	<0.00005	
Total Tin	mg/L		0.0038	0.0007	0.0008	
Total Titanium	mg/L		0.0022	0.180	0.0046	
Total Uranium	mg/L	0.130	0.131	0.00595	0.0174	1
Total Vanadium	mg/L	0.0010	0.0008	0.0072	0.0007	
Total Zinc	mg/L	0.005	0.012	0.015	0.002	0.5

Stn.Code		JER-SW3	JER-SW3	JER-SW3	JER-SW3	JER-SW3	JER-SW3	JER-SW3	JER-SW3	JER-SW3	JER-SW3	JER-SW3	
Station Name		Process Plant Supernatant	Process Plant Supernatant	Process Plant Supernatant	Process Plant Supernatant	Process Plant Supernatant	Process Plant Supernatant	Process Plant Supernatant	Process Plant Supernatant	Process Plant Supernatant	Process Plant Supernatant	Process Plant Supernatant	
Sample Class		M	M	M	M	M	M	M	M	M	M	M	
Sample No.		Jun-83	Jun-18	Jun-74	Jun-87	Jun-35	Jun-27	06-10469	06-11365	06-12784	L459864-1	L464346-10	
Sample Comments						Sample collected on June 6th but water samples not collected until June 21st		No Nutrients Preservatives					
Collect Date/Time		21/02/2006	16/03/2006	12/04/2006	25/05/2006	21/06/2006	19/07/2006	28/08/2006	13/09/2006	15/10/2006	27/11/2006	17/12/2006	PKCA Discharge Criteria
Water Temperature	Deg C		0.21	16.32		17.68		17.79	18.98		21.7	17.34	
Field pH	pH		9.08	9.48		8.55		9.36	9.07		9.06	9.58	
Field Conductivity	us/cm		194	198		368		223	178		271	172	
Field Dissolved Oxygen	mg/L		6.14	7.88		6.01		5.70	5.00		11.45	6.62	
Oxidation Reduction Potential	mV		366.00	457.00		150.00		424.70	242.60		510.00	323	
pH @ 25°C	pH	8.86	8.38	8.30	7.55	8.28	7.82	9.32	9.20	7.38	8.89	8.97	6.0-8.8
Conductivity @ 25°C	us/cm	215	133	203	263	359	366	211	211	255	267	165	
T-Dissolved Solids180°C	mg/L	84	64	124	152	204	204	120	112	176	187	99	4000
Total Suspended Solids @105°C	mg/L	<2	18	19	60	16	140	<2	3	37	7.2	5	25
Turbidity	NTU	2	22	29	39	5	72	1	2	27	4.78	2.47	
T-Hardness as CaCO3	mg/L	75.4	47.4		59.5	105	67.7	63.7	60.5	54.8	51.8	19.5	
T-Alkalinity as CaCO3	mg/L	58	56	55	34	50	52	50	48	45	33.1	29.7	
Acidity as CaCO3	mg/L	<1	3	2	4	4	<1	<1	<1	3	<1.0	<1.0	
Hydroxide (as CaCO3)	mg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	
Balance (+ions/-ions)	Ratio	0.85	0.93		0.89	0.77	0.71	0.88	1.01	0.88			
Carbonate	mg/L	7	<1	<1	<1	<1	<1	14	<1	<1	14.5	14.1	
Bicarbonate	mg/L	57	69	67	41	61	63	32	42	55	18.5	15.7	
Chloride	mg/L	5.5	4.3	12.6	5.5	7.2	8.8	9.0	9.9	13.7	3.98	5.51	1000
Fluoride	mg/L	0.38	0.22	0.26	0.22	0.35	0.27	0.39	0.65	0.36			
Sulphate	mg/L	4.3	2.9	6	30.1	4.9	16.6	7.8	17.5	13.5	3.76	8.73	
Carbon (Total Inorganic)	mg/L	8	8	9.5	5.7	7.0	4.0	7.7	6.4	9.0	2.77	4.49	
Carbon (Total Organic)	mg/L	1	2	1.3	1.3	1.0	1.9	1.2	1.0	3.6	1.83	1.66	
Ammonia - Nitrogen	mg/L	4.6	0.3	0.61	1.21	7.76	1.91	4.45	2.62	1.58	5.12	4.71	12
Nitrate - Nitrogen	mg/L	10.4	0.68	4.71	11.9	28.3	20	9.17	5.47	7.54	22.7	7.84	56
Nitrite - Nitrogen	mg/L	0.21	0.42	0.11	0.34	2.13	0.50	0.29	<0.05	<0.05	0.63	0.173	5
Total Kjeldahl Nitrogen	mg/L							3.2					
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.78	<0.20	<0.20	<0.20	<0.0010	<0.0010	
Dissolved Ortho Phosphate	mg/L										0.003	0.0034	
Total Phosphate As P	mg/L										0.0068	0.0053	
Biochemical Oxygen Demand	mg/L												25
MF - Fecal Coliforms	CFU/100mL												20
Oil & Grease (Infrared)	mg/L												5
Dissolved Aluminum	mg/L	0.004	0.013	0.037	0.003	0.021	0.052	0.024	<0.002	<0.002	0.0036	<0.0010	2
Dissolved Antimony	mg/L	0.0010	0.0019	0.0010	0.0020	0.0006	0.00087	0.00105	0.00055	0.00094	0.00089	0.00076	
Dissolved Arsenic	mg/L	0.0003	0.0004	0.0007	0.0008	0.0002	0.0003	0.0006	0.0003	0.0005	0.00038	0.00018	
Dissolved Barium	mg/L	0.060	0.111	0.110	0.140	0.256	0.182	0.141	0.0899	0.144	0.281	0.111	
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00050	<0.00050	
Dissolved Boron	mg/L	0.019	0.024	0.029	0.027	0.013	0.031	0.051	0.078	0.083	0.017	0.037	
Dissolved Cadmium	mg/L	<0.00005	<0.00005	<0.00005	0.00074	<0.00005	<0.00005	<0.00002	<0.00002	<0.00002	<0.000050	<0.000050	
Dissolved Calcium	mg/L	11.7	7.3	8.5	12.9	13.5	12.1	7.9	8.2	10.9	13.7	6.09	
Dissolved Chromium	mg/L	0.0007	0.0011	<0.0004	0.0005	0.0016	0.0030	0.0072	0.0009	0.0013	<0.00050	<0.00050	
Dissolved Cobalt	mg/L	0.00007	0.00011	0.00010	0.00020	0.00064	0.00085	0.00006	<0.00002	0.00003	<0.00010	<0.00010	
Dissolved Copper	mg/L	0.0042	0.0046	0.0012	0.0021	0.0007	0.0007	0.0009	0.0018	0.0011	0.00084	0.00019	
Dissolved Iron	mg/L	0.11	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.24	<0.10	<0.030	<0.030	
Dissolved Lead	mg/L	0.00010	<0.00005	<0.00005	<0.00005	0.00006	0.00017	0.00008	<0.00005	<0.00005	<0.000050	<0.000050	
Dissolved Lithium	mg/L						0.0024	0.0047	0.0025	0.0020	<0.0050	<0.0050	
Dissolved Magnesium	mg/L	11.2	7.1	7.9	6.6	17.2	9.1	10.7	9.7	6.73	4.3	1.04	
Dissolved Manganese	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.000102	<0.000050	
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.000050	<0.000050	
Dissolved Molybdenum	mg/L	0.0023	0.0018	0.00510	0.0303	0.00326	0.0101	0.00390	0.00431	0.00964	0.00271	0.00342	
Dissolved Nickel	mg/L	0.0022	<0.0001	0.00148	0.0200	0.0103	0.0166	0.00271	0.00089	0.00360	0.00329	<0.00050	
Dissolved Phosphorus	mg/L						0.078	<0.01	0.02	<0.01			
Dissolved Potassium	mg/L	4.3	4.6	5.1	11.2	6.4	13	9.8	11.7	11.7	13.9	14.7	
Dissolved Selenium	mg/L	<0.0004	<0.0004	<0.0004	<0.0006	<0.0006	<0.0006	0.0015	<0.0006	<0.0006	<0.0010	<0.0010	
Dissolved Silicon	mg/L	4.14	8.27	8.13	67.4	4.33	4.49	4.84	2.54	3.47	2.99	4.53	
Dissolved Silver	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.000010	<0.000010	
Dissolved Sodium	mg/L	5.2	5.4	12.4	14	10.1	11.7	7.7	6.2	10.8	14	15	
Dissolved Strontium	mg/L	0.0423	0.0383	0.0443	0.392	0.0858	0.358	0.111	0.286	0.389	0.465	0.298	
Dissolved Thallium	mg/L	0.00002	<0.00002	<0.00002	0.00007	0.00011	0.00011	0.00006	0.00013	0.00010	<0.00010	<0.00010	
Dissolved Tin	mg/L						0.0002	<0.0001	<0.0001	0.0002	<0.00010	<0.00010	
Dissolved Titanium	mg/L						<0.0005	<0.0005	<0.0005	<0.0005	<0.010	<0.010	
Dissolved Uranium	mg/L	<0.00005	0.00010	0.00009	<0.00005	0.00035	0.00020	0.00005	<0.00005	<0.00005	<0.000010	<0.000010	
Dissolved Vanadium	mg/L	0.0008	0.0013	0.0016	0.0004	0.0004	0.0006	0.0009	0.0009	0.0008	<0.0010	<0.0010	
Dissolved Zinc	mg/L	0.003	<0.002	0.003	<0.001	0.001	0.009	0.001	<0.001	<0.001	0.0022	<0.0010	
Total Aluminum	mg/L	0.030	0.818	0.357	4.35	0.140	0.0501	0.0215	0.140	1.61	0.0468	0.032	3
Total Antimony	mg/L	0.0010	0.0022	0.00109	0.00125	0.00020	0.00159	0.00134	0.00064	0.00087	0.00079	0.00069	
Total Arsenic	mg/L	<0.0004	0.0007	0.0008	0.0012	0.0003	0.0003	0.0004	0.0004	0.0007	0.00041	0.00018	0.1
Total Barium	mg/L	0.069	0.187	0.130	0.298	0.255	0.229	0.135	0.113	0.214	0.281	0.108	
Total Beryllium	mg/L	<0.0005	<0.0005	<0.0005	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.00050	<0.00050	
Total Boron	mg/L	0.020	0.026	0.030	0.028	0.030	0.038	0.051	0.090	0.096	0.017	0.038	
Total Cadmium	mg/L	<0.0001	<0.0001	<0.00010	<0.00005	<0.00005	0.00006	0.00002	0.00006	<0.00002	<0.000050	<0.000050	0.0024
Total Calcium	mg/L	11.8	17.8	9.16	24.2	17.3	18.6	7.61	8.20	14.6	13.8	6.55	
Total Chromium	mg/L	<0.0009	0.0438	0.0025	0.0683	0.0162	0.0449	0.0079	0.0050	0.0312	0.00101	0.00061	0.17
Total Cobalt	mg/L	0.0002	0.0083	0.00088	0.0190	0.00284	0.00932	<0.00005	0.00087	0.00632	0.0003	0.00021	
Total Copper	mg/L	0.0130	0.0139	0.0036	0.0149	0.0057	0.0043	0.0022	0.0015	0.0065	0.00101	0.00032	0.04
Total Iron	mg/L	<0.10	5.37	0.71	16	0.50	4.06	<0.10	0.55	5	0.145	0.108	
Total Lead	mg/L	0.0004	0.0020	0.00035	0.00278	0.00069	0.00158	0.00015	0.00016	0.00192	<0.000050	<0.000050	0.02
Total Lithium	mg/L						<0.005	<0.005	<0.005	0.005	<0.0050	<0.0050	
Total Magnesium	mg/L	11.3	22.7	9.43	37	17.8	22.8	10.4	11	20.6	4.8	1.38	
Total Manganese	mg/L	<0.01	0.08	0.01	0.26	0.02	0.08	<0.01	0.01	0.088	0.00251	0.00157	
Total Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.000050	<0.000050	
Total Molybdenum	mg/L	0.0025	0.0022	0.00586	0.0280	0.00234	0.00968	0.00416	0.00469	0.00945	0.0026	0.00331	1.5
Total Nickel	mg/L	0.0066	0.122	0.0096	0.344	0.0400	0.150	0.0028	0.0171	0.112	0.00762	0.00405	0.1
Total Phosphorus	mg/L	0.03	0.21	0.08	0.13	0.06	0.076	<0.02	<0.02	0.11			0.4
Total Potassium	mg/L	4.9	5.7	5.1	12.7	6.5	13.4	9.5	12.1	12.5	13.9	14.1	
Total Selenium	mg/L	<0.0008	<0.0008	<0.0008	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Total Silicon	mg/L	4.11	21.6	10.4	67.4	4.52	11.7	4.79	3.43	14.7	3.26	4.57	
Total Silver	mg/L	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	0.0004	<0.0001	<0.0001	<0.0001	<0.000010	<0.000010	
Total Sodium	mg/L	5.3	5.0	12.6	40.7	8.9	13.4	7.1	6.9	12.3	14	14.7	
Total Strontium	mg/L	0.0507	0.0637	0.0473	0.414	0.104	0.346	0.106	0.284	0.434	0.464	0.292	
Total Thallium	mg/L	<0.00005	<0.00005	<0.00005	0.00006	0.00011	0.00008	<0.00005	<0.00005	0.00008	<0.00010	<0.00010	
Total Tin	mg/L						0.0001	<0.0001	<0.0001	0.0002	<0.00010	<0.00010	
Total Titanium	mg/L						0.0089	<0.0005	0.0152	0.118	<0.010	<0.010	
Total Uranium	mg/L	0.00014	0.00344	0.00032	0.00130	0.00225	0.00196	<0.00005	0.00020	0.00203	0.000024	0.000021	1
Total Vanadium	mg/L	0.0008	0.0045	0.0016	0.0099	0.0019	0.0036	0.0017	0.0006	0.0049	<0.0010	<0.0010	
Total Zinc	mg/L	0.007	0.015	0.005	0.010	0.017	0.009	0.004	<0.001	0.016	<0.0010	<0.0010	0.5

Stn.Code		JER-SW4	JER-SW4	JER-SW4	JER-SW4	JER-SW4	JER-SW4	JER-SW4	JER-SW4	JER-SW4	JER-SW4
Station Name		PKCA Pond	PKCA Pond	PKCA Pond	PKCA Pond	PKCA Pond	PKCA Pond	PKCA Pond	PKCA Pond	PKCA Pond	PKCA Pond
Sample Class		Water	Water	Water	Water	Water	Water	Water	Water	Water	Water
Sample No.		M	M	M	F1	M	M	M	M	M	F1
Sample Comments		06-2080-D	Jun-80	Jun-19	Jun-20	Jun-67	Jun-85	Jun-27	Jun-97	Jun-09	Jun-10
Collect Date/Time		21/02/2006	21/02/2006	16/03/2006	16/03/2006	30/04/2006	29/05/2006	29/06/2006	11/07/2006	09/08/2006	09/08/2006
Water Temperature	Deg C				25.39	0.44	3.57	13.61	13.63	16.36	16.37
Field pH	pH				7.66	6.44	7.08	5.94	7.12	6.32	6.36
Field Conductivity	us/cm				1192	149	125	120	121	144	144
Field Dissolved Oxygen	mg/L				0.15	0.82	14.26	10.25	8.09	10.87	10.66
Oxidation Reduction Potential	mV				-76.60	296.30	194.10	417.50	314.80	497.60	497.40
pH @ 25°C	pH		8.55	7.87	7.88	7.25	7.57	7.6	7.64	7.62	7.73
Conductivity @ 25°C	us/cm		232	190	191	117	126	126	124	152	146
T-Dissolved Solids180°C	mg/L		112	112	<10	80	60	56	76	84	84
Total Suspended Solids @105°C	mg/L		<2	3	4	<2	4	3	4	4	<2
Turbidity	NTU		2	5	5	2	9	5	3	3	3
T-Hardness as CaCO3	mg/L	68.3	66.9	54.6	56.4		29.9	37.2	36.2	40.5	48.3
T-Alkalinity as CaCO3	mg/L		82	68	68	30	37	32	32	36	36
Acidity as CaCO3	mg/L	<1	<1	12	10	5	4	4	4	3	3
Hydroxide (as CaCO3)	mg/L		<1	<1	<1	<1	<1	<1	<1	<1	<1
Balance (+ions/-ions)	Ratio		0.84	1.07	0.86		0.80	0.92	0.86	0.82	0.92
Carbonate	mg/L		4	<1	<1	<1	<1	<1	<1	<1	<1
Bicarbonate	mg/L		92	84	83	37	45	39	39	43	44
Chloride	mg/L		9.3	1.4	8.1	6.8	4.8	4.6	4.8	6.0	5.9
Fluoride	mg/L		0.24	0.18	0.18	0.04	0.09	0.1	0.09	0.11	0.10
Sulphate	mg/L		10.4	0.8	6.6	4.3	5.1	6.4	5.4	6.7	7.0
Carbon (Total Inorganic)	mg/L	14	15	12	12	7.3	6.6	5.3	5.3	7.9	7.9
Carbon (Total Organic)	mg/L	4	4	3	3	4.7	3.6	3.4	4.0	4.1	4.1
Ammonia - Nitrogen	mg/L	5.8	5.8	3.5	3.4	0.91	1.83	0.7	0.78	0.03	0.03
Nitrate - Nitrogen	mg/L		2.31	0.32	1.98	2.34	2.35	3.01	3.57	4.95	4.90
Nitrite - Nitrogen	mg/L		0.14	0.09	0.15	<0.05	<0.05	0.15	0.18	0.09	0.08
Total Kjeldahl Nitrogen	mg/L										
Phosphate - Ortho - Phosphoru	mg/L		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Dissolved Ortho Phosphate	mg/L										
Total Phosphate As P	mg/L										
Biochemical Oxygen Demand	mg/L										
MF - Fecal Coliforms	CFU/100mL										
Oil & Grease (Infrared)	mg/L										
Dissolved Aluminum	mg/L	0.033	0.032	0.076	0.064	0.007	0.023	0.01	0.015	0.013	0.009
Dissolved Antimony	mg/L	0.0005	0.0005	0.0009	0.0008	<0.0001	0.0004	0.00025	0.00025	0.00039	0.00034
Dissolved Arsenic	mg/L	0.0007	0.0007	0.0008	0.0009	0.0004	0.0005	0.0004	0.0006	0.0003	0.0004
Dissolved Barium	mg/L	0.023	0.023	0.022	0.021	0.0129	0.0196	0.0124	0.0275	0.0220	0.0219
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Boron	mg/L	0.028	0.026	0.018	0.019	0.005	0.011	0.002	0.013	0.015	0.014
Dissolved Cadmium	mg/L	0.00009	0.00009	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00003	<0.00002
Dissolved Calcium	mg/L	9.8	9.6	9.3	9.6	9.0	5.4	8.1	7.9	8.6	10.6
Dissolved Chromium	mg/L	0.0009	0.0008	0.0012	0.0012	0.0005	0.0007	<0.0003	0.0007	0.0030	0.0017
Dissolved Cobalt	mg/L	0.00011	0.00012	0.00015	0.00014	<0.00005	0.00012	<0.00002	0.00007	0.00019	0.00016
Dissolved Copper	mg/L	0.0054	0.0055	0.0018	0.0017	0.0024	0.0050	<0.0001	0.0044	0.0027	0.0027
Dissolved Iron	mg/L	<0.10	<0.10	0.11	0.11	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dissolved Lead	mg/L	0.00037	0.00037	<0.00005	<0.00005	0.00008	0.00031	<0.00005	0.00007	0.00006	0.00009
Dissolved Lithium	mg/L								0.0013	0.0013	0.0014
Dissolved Magnesium	mg/L	10.7	10.5	7.6	7.9	3.8	4.0	4.1	4	4.6	5.3
Dissolved Manganese	mg/L	0.016	0.016	0.014	0.016	0.077	0.010	<0.010	<0.010	<0.010	0.013
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Molybdenum	mg/L	0.0030	0.0030	0.0021	0.0021	<0.00030	0.00185	0.00126	0.00180	0.00199	0.00174
Dissolved Nickel	mg/L	0.0078	0.0080	<0.0001	<0.0001	0.00052	0.00283	0.00133	0.00177	0.00198	0.00169
Dissolved Phosphorus	mg/L								<0.005	0.01	<0.01
Dissolved Potassium	mg/L	6.8	6.7	4.6	4.8	1.2	3.3	2.3	2.6	3.5	3.3
Dissolved Selenium	mg/L	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Dissolved Silicon	mg/L	2.04	2.03	4.16	3.80	1.11	2.17	1.43	1.16	1.02	1.03
Dissolved Silver	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Sodium	mg/L	9.8	9.6	8.3	8.4	4.5	5.4	5.4	4.8	5.4	5.3
Dissolved Strontium	mg/L	0.0851	0.0868	0.0645	0.0650	0.0284	0.0591	0.058	0.0727	0.0766	0.0778
Dissolved Thallium	mg/L	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Tin	mg/L								<0.0001	<0.0001	<0.0001
Dissolved Titanium	mg/L								<0.0005	<0.0005	0.0006
Dissolved Uranium	mg/L	0.00134	0.00134	0.00142	0.00148	0.00028	0.00086	0.00115	0.00166	0.00135	0.00132
Dissolved Vanadium	mg/L	0.0009	0.0008	0.0010	0.0010	0.0005	0.0006	0.0003	0.0008	0.0009	0.0005
Dissolved Zinc	mg/L	0.006	0.005	<0.002	<0.002	0.003	0.008	<0.001	0.012	0.002	<0.001
Total Aluminum	mg/L	0.033	0.032	0.092	0.102	0.0191	0.166	0.132	0.0544	0.0205	0.0180
Total Antimony	mg/L	0.0008	0.0007	0.0009	0.0009	<0.00010	0.00029	0.00025	0.00019	0.00035	0.00034
Total Arsenic	mg/L	0.0008	0.0008	0.0010	0.0011	0.0004	0.0004	0.0006	0.0005	<0.0002	<0.0002
Total Barium	mg/L	0.023	0.024	0.024	0.024	0.0119	0.0145	0.0166	0.0153	0.0203	0.0207
Total Beryllium	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Boron	mg/L	0.026	0.027	0.020	0.018	<0.010	0.008	0.007	0.012	0.014	0.014
Total Cadmium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.00010	<0.00005	<0.00005	<0.00005	<0.00002	<0.00002
Total Calcium	mg/L	10.1	10.2	11.2	11.2	8.85	6.75	7.71	7.26	11.5	11.5
Total Chromium	mg/L	<0.0009	<0.0009	0.0014	0.0016	<0.0009	<0.0005	<0.0005	0.0014	0.0032	0.0035
Total Cobalt	mg/L	<0.0001	<0.0001	0.0002	0.0002	0.00013	0.00022	0.00006	0.00010	0.00012	0.00010
Total Copper	mg/L	0.0056	0.0055	0.0036	0.0028	0.0024	0.0013	0.0023	0.0025	0.0027	0.0032
Total Iron	mg/L	<0.10	<0.10	0.12	0.13	0.12	0.29	0.15	<0.10	<0.10	<0.10
Total Lead	mg/L	0.0004	0.0004	<0.0001	<0.0001	<0.00010	0.00015	0.00015	<0.00005	0.00078	0.00009
Total Lithium	mg/L								<0.005	<0.005	<0.005
Total Magnesium	mg/L	10.3	10.4	8.37	8.21	3.77	4.49	3.98	3.59	5.62	5.58
Total Manganese	mg/L	0.02	0.02	0.03	0.02	0.10	0.06	<0.01	<0.01	0.03	0.03
Total Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Total Molybdenum	mg/L	0.0033	0.0032	0.0025	0.0024	<0.00050	0.00188	0.0018	0.00145	0.00177	0.00176
Total Nickel	mg/L	0.0084	0.0084	0.0055	0.0053	<0.0006	0.0033	0.0018	0.0018	0.0022	0.0018
Total Phosphorus	mg/L		0.11	0.19	0.18	0.06	0.04	<0.02	<0.020	<0.02	<0.02
Total Potassium	mg/L	8.2	8.3	5.2	5.1	1.4	2.9	2.9	2.6	3.6	3.6
Total Selenium	mg/L	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Silicon	mg/L	2.09	2.12	4.03	4.48	0.95	2.39	1.58	1.14	1.10	1.08
Total Silver	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Sodium	mg/L	10.5	10.7	8.0	7.8	4.7	6.0	5.6	4.8	5.4	5.3
Total Strontium	mg/L	0.0895	0.0918	0.0699	0.0691	0.0281	0.0486	0.0576	0.0640	0.0773	0.0797
Total Thallium	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Total Tin	mg/L								<0.0001	<0.0001	<0.0001
Total Titanium	mg/L								0.0011	<0.0005	<0.0005
Total Uranium	mg/L	0.00145	0.00145	0.00160	0.00148	0.00036	0.00052	0.00143	0.00143	0.00126	0.00133
Total Vanadium	mg/L	0.0010	0.0011	0.0011	0.0011	0.0006	0.0009	0.0009	<0.0005	0.0018	0.0018
Total Zinc	mg/L	0.008	0.008	0.003	<0.002	0.004	<0.001	0.003	0.005	0.004	0.002

Stn.Code		JER-SW4	JER-SW4	JER-SW4	JER-SW4	JER-SW4	JER-SW4	
Station Name		PKCA Pond Water	PKCA Pond Water	PKCA Pond Water	PKCA Pond Water	PKCA Pond Water	PKCA Pond Water	
Sample Class		F1	M	F1	M	M	M	
Sample No.		06-11733	06-11732	06-13330	06-13329	L459864-2	L464346-9	
Sample Comments								PKCA Discharge Criteria
Collect Date/Time		24/09/2006	24/09/2006	23/10/2006	23/10/2006	27/11/2006	17/12/2006	
Water Temperature	Deg C	6.14	6.17			0.32	1.32	
Field pH	pH	7.04	7			6.95	6.89	
Field Conductivity	us/cm	197	197			279	274	
Field Dissolved Oxygen	mg/L	12.45	11.94			15.91	6.02	
Oxidation Reduction Potential	mV	377.90	377.80			522.70	355	
pH @ 25°C	pH	7.67	7.55	7.37	7.46	7.78	7.43	6.0-8.8
Conductivity @ 25°C	us/cm	197	196	225	227	268	261	
T-Dissolved Solids180°C	mg/L	112	96	128	136	156	166	4000
Total Suspended Solids @105°C	mg/L	3	2	4	3	<3	<2.3	25
Turbidity	NTU	2	2	4	3	1.15	0.6	
T-Hardness as CaCO3	mg/L	65	65	76.4	76.3	89.8	95.9	
T-Alkalinity as CaCO3	mg/L	45	44	51	48	58.1	56.6	
Acidity as CaCO3	mg/L	3	4	3	3	2	2.4	
Hydroxide (as CaCO3)	mg/L	<1	<1	<1	<1	<1.0	<1.0	
Balance (+ions/-ions)	Ratio	0.90	0.92	0.93	0.95			
Carbonate	mg/L	<1	<1	<1	<1	<1.0	<1.0	
Bicarbonate	mg/L	55	54	63	59	58.1	56.6	
Chloride	mg/L	7.6	7.5	10	9.9	11.9	12.7	1000
Fluoride	mg/L	0.13	0.13	0.16	0.16			
Sulphate	mg/L	9.6	9.7	11.8	11.7	15.9	16.5	
Carbon (Total Inorganic)	mg/L	9	9.1	11.3	11.3	11.5	13.7	
Carbon (Total Organic)	mg/L	3.4	3.6	3.2	3.2	4.27	3.71	
Ammonia - Nitrogen	mg/L	0.02	0.02	0.17	0.22	0.109	0.201	12
Nitrate - Nitrogen	mg/L	7.48	6.87	8.22	8.44	10.8	11.5	56
Nitrite - Nitrogen	mg/L	<0.05	<0.05	<0.05	<0.05	0.0311	0.0527	5
Total Kjeldahl Nitrogen	mg/L							
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20	<0.20	<0.20	<0.0010	<0.0010	
Dissolved Ortho Phosphate	mg/L					0.0031	0.0035	
Total Phosphate As P	mg/L					0.0141	0.0101	
Biochemical Oxygen Demand	mg/L							25
MF - Fecal Coliforms	CFU/100mL							20
Oil & Grease (Infrared)	mg/L							5
Dissolved Aluminum	mg/L	0.003	0.004	0.007	0.007	0.0052	0.0012	2
Dissolved Antimony	mg/L	0.00022	0.00023	0.00039	0.00039	0.00051	0.00048	
Dissolved Arsenic	mg/L	0.0005	0.0005	0.0005	0.0006	0.00053	0.00054	
Dissolved Barium	mg/L	0.0401	0.0399	0.0493	0.0510	0.0639	0.0692	
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.00050	<0.00050	
Dissolved Boron	mg/L	0.021	0.021	0.031	0.030	0.034	0.037	
Dissolved Cadmium	mg/L	<0.00002	<0.00002	0.00004	0.00003	<0.000050	<0.000050	
Dissolved Calcium	mg/L	13.5	13.5	15.4	15.3	18	19.5	
Dissolved Chromium	mg/L	0.0006	0.0004	<0.0003	<0.0003	<0.00050	<0.00050	
Dissolved Cobalt	mg/L	0.00008	0.00009	0.00009	0.00009	<0.00010	<0.00010	
Dissolved Copper	mg/L	0.0047	0.0025	0.0030	0.0032	0.00826	0.00192	
Dissolved Iron	mg/L	<0.10	<0.10	<0.10	<0.10	<0.030	<0.030	
Dissolved Lead	mg/L	<0.00005	<0.00005	0.00015	0.00015	0.000069	<0.000050	
Dissolved Lithium	mg/L	0.0015	0.0015	0.0018	0.0018	<0.0050	<0.0050	
Dissolved Magnesium	mg/L	7.6	7.6	9.2	9.2	10.9	11.5	
Dissolved Manganese	mg/L	<0.010	<0.010	<0.010	<0.010	0.000245	0.000148	
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.000050	<0.000050	
Dissolved Molybdenum	mg/L	0.00251	0.00257	0.00321	0.00326	0.00359	0.00371	
Dissolved Nickel	mg/L	0.00167	0.00162	0.00187	0.00186	0.00239	0.0023	
Dissolved Phosphorus	mg/L	<0.01	<0.01	<0.01	<0.01			
Dissolved Potassium	mg/L	4.5	4.2	5.9	5.9	8.42	9.59	
Dissolved Selenium	mg/L	<0.0006	<0.0006	<0.0006	<0.0006	<0.0010	<0.0010	
Dissolved Silicon	mg/L	1.01	1.01	1	1.01	1.32	1.67	
Dissolved Silver	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.000010	<0.000010	
Dissolved Sodium	mg/L	5.6	5.6	7.2	7.2	11.5	12.3	
Dissolved Strontium	mg/L	0.132	0.134	0.181	0.183	0.237	0.265	
Dissolved Thallium	mg/L	0.00010	0.00010	<0.00005	<0.00005	<0.00010	<0.00010	
Dissolved Tin	mg/L	0.0001	<0.0001	0.0001	0.0002	<0.00010	<0.00010	
Dissolved Titanium	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.010	<0.010	
Dissolved Uranium	mg/L	0.00108	0.00110	0.00139	0.00143	0.00124	0.000999	
Dissolved Vanadium	mg/L	0.0004	0.0004	<0.0001	<0.0001	<0.0010	<0.0010	
Dissolved Zinc	mg/L	<0.001	<0.001	0.011	0.008	0.0205	0.0019	
Total Aluminum	mg/L	0.0126	0.0095	0.0493	0.0568	0.0192	0.0035	3
Total Antimony	mg/L	0.00026	0.00028	0.00058	0.00064	0.00052	0.00044	
Total Arsenic	mg/L	0.0005	0.0005	0.0006	0.0006	0.00055	0.00049	0.1
Total Barium	mg/L	0.0425	0.0416	0.0528	0.0526	0.0644	0.0659	
Total Beryllium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.00050	<0.00050	
Total Boron	mg/L	0.022	0.022	0.028	0.028	0.033	0.036	
Total Cadmium	mg/L	<0.00002	<0.00002	0.00004	0.00008	0.000056	<0.000050	0.0024
Total Calcium	mg/L	13.8	13.6	15.1	15.2	17.9	18.5	
Total Chromium	mg/L	0.0009	0.0008	0.0029	0.0031	<0.00050	<0.00050	0.17
Total Cobalt	mg/L	0.00015	0.00014	0.00016	0.00017	0.00014	<0.00010	
Total Copper	mg/L	0.0025	0.0023	0.0036	0.0040	0.00715	0.00236	0.04
Total Iron	mg/L	<0.10	<0.10	<0.10	0.15	0.034	<0.030	
Total Lead	mg/L	<0.00005	<0.00005	0.00270	0.00214	0.000247	<0.000050	0.02
Total Lithium	mg/L	<0.005	<0.005	<0.005	<0.005	<0.0050	<0.0050	
Total Magnesium	mg/L	8.13	8.01	9.24	9.27	11	10.8	
Total Manganese	mg/L	0.01	0.01	<0.01	<0.01	0.00368	0.00312	
Total Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.000050	<0.000050	
Total Molybdenum	mg/L	0.00283	0.00279	0.00322	0.00325	0.0035	0.00361	1.5
Total Nickel	mg/L	0.0013	0.0014	0.0026	0.0074	0.00249	0.0024	0.1
Total Phosphorus	mg/L	<0.02	<0.02	<0.02	<0.02			0.4
Total Potassium	mg/L	4.7	4.6	5.8	5.8	8.39	9.21	
Total Selenium	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Total Silicon	mg/L	1.08	1.08	1.22	1.23	1.39	1.6	
Total Silver	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.000010	<0.000010	
Total Sodium	mg/L	6.1	6.0	7.2	7.2	11.4	11.8	
Total Strontium	mg/L	0.140	0.135	0.172	0.175	0.239	0.253	
Total Thallium	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00010	<0.00010	
Total Tin	mg/L	<0.0001	<0.0001	0.0002	0.0004	<0.00010	<0.00010	
Total Titanium	mg/L	<0.0005	<0.0005	0.0048	0.0033	<0.010	<0.010	
Total Uranium	mg/L	0.00132	0.00128	0.00143	0.00143	0.00127	0.00133	1
Total Vanadium	mg/L	<0.0005	<0.0005	0.0008	0.0008	<0.0010	<0.0010	
Total Zinc	mg/L	0.194	<0.001	0.018	0.019	0.0177	0.0018	0.5

Stn.Code		JER-SW8	JER-SW8	JER-SW8	JER-SW8	JER-SW8	
Station Name		Collection Pond C (East Sump)	Collection Pond C (East Sump)	Collection Pond C (East Sump)	Collection Pond C (East Sump)	Collection Pond C (East Sump)	
Sample Class		M	M	M	M	M	
Sample No.		Jun-34	Jun-98	Jun-12	Jun-28	06-11734	
Sample Comments					Inspector Samples		PKCA Discharge Criteria
Collect Date/Time		21/06/2006	11/07/2006	09/08/2006	13/08/2006	24/09/2006	
Water Temperature	Deg C	13.7	16.11	15.35	15.37	5.6	
Field pH	pH	7.68	7.7	6.54	7.12	7.32	
Field Conductivity	us/cm	269	327	427	433	575	
Field Dissolved Oxygen	mg/L	8.64	8.27	9.37	10.77	11.96	
Oxidation Reduction Potential	mV	165.20	299.40	446.20	299.00	379.60	
pH @ 25°C	pH	7.68	7.72	7.73	7.64	7.66	6.0-8.8
Conductivity @ 25°C	us/cm	263	339	425	423	554	
T-Dissolved Solids180°C	mg/L	210	240	312	316	133	4000
Total Suspended Solids @105°C	mg/L	12	<2	<2		2	25
Turbidity	NTU	41	12	4	3	2	
T-Hardness as CaCO3	mg/L	81.6	109	153	161	202	
T-Alkalinity as CaCO3	mg/L	42	42	39	36	47	
Acidity as CaCO3	mg/L	14	8	4	4	4	
Hydroxide (as CaCO3)	mg/L	<1	<1	<1	<1	<1	
Balance (+ions/-ions)	Ratio	0.81	0.85	0.92	0.97	0.90	
Carbonate	mg/L	<1	<1	<1	<1	<1	
Bicarbonate	mg/L	52	52	47	45	58	
Chloride	mg/L	13.4	14.7	18.9	18.7	22.3	1000
Fluoride	mg/L	0.08	0.09	0.12	0.12	0.11	
Sulphate	mg/L	9.3	12.1	22.6	23.4	26.5	
Carbon (Total Inorganic)	mg/L	7.0	6.7	8.3	7.6	9.6	
Carbon (Total Organic)	mg/L	4.2	4.4	4.3	4.5	4.9	
Ammonia - Nitrogen	mg/L	3.42	2.67	1.00	1.21	4.21	12
Nitrate - Nitrogen	mg/L	14.3	20.8	30.3	30.9	43.5	56
Nitrite - Nitrogen	mg/L	0.24	0.48	0.50	0.48	<0.05	5
Total Kjeldahl Nitrogen	mg/L						
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	
Dissolved Ortho Phosphate	mg/L						
Total Phosphate As P	mg/L						
Biochemical Oxygen Demand	mg/L						25
MF - Fecal Coliforms	CFU/100mL						20
Oil & Grease (Infrared)	mg/L				0.3		5
Dissolved Aluminum	mg/L	0.344	0.035	0.052		0.004	2
Dissolved Antimony	mg/L	0.0002	0.00027	0.00029		0.00026	
Dissolved Arsenic	mg/L	0.0006	0.0006	0.0002		0.0006	
Dissolved Barium	mg/L	0.0613	0.0666	0.0722		0.106	
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.0001		<0.0001	
Dissolved Boron	mg/L	0.014	0.032	0.033		0.039	
Dissolved Cadmium	mg/L	<0.00005	<0.00005	0.00002		0.00002	
Dissolved Calcium	mg/L	18	24.4	33.4	34.7	40.1	
Dissolved Chromium	mg/L	0.0009	0.0011	0.0020		0.0012	
Dissolved Cobalt	mg/L	0.00090	0.00053	0.00055		0.00074	
Dissolved Copper	mg/L	0.0051	0.0047	0.0021		0.0024	
Dissolved Iron	mg/L	0.26	<0.10	<0.10		<0.10	
Dissolved Lead	mg/L	0.00108	0.00007	0.00016		<0.00005	
Dissolved Lithium	mg/L		0.0046	0.0042		0.0047	
Dissolved Magnesium	mg/L	8.9	11.6	16.9	18.1	24.7	
Dissolved Manganese	mg/L	0.015	<0.010	0.034		0.016	
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00005		<0.00005	
Dissolved Molybdenum	mg/L	0.00216	0.00386	0.00441		0.00527	
Dissolved Nickel	mg/L	0.00983	0.00632	0.00573		0.00625	
Dissolved Phosphorus	mg/L		<0.005	0.02		<0.01	
Dissolved Potassium	mg/L	2.5	3.7	5.9	6.4	7.8	
Dissolved Selenium	mg/L	<0.0006	<0.0006	0.0008		<0.0006	
Dissolved Silicon	mg/L	2.36	1.53	1.58		1.32	
Dissolved Silver	mg/L	<0.00005	<0.00005	<0.00005		<0.00005	
Dissolved Sodium	mg/L	6.7	7.3	10.5	11.3	11.4	
Dissolved Strontium	mg/L	0.0868	0.174	0.255		0.602	
Dissolved Thallium	mg/L	<0.00005	<0.00005	<0.00005		0.00017	
Dissolved Tin	mg/L		0.0004	<0.0001		0.0004	
Dissolved Titanium	mg/L		0.0013	0.0030		0.0007	
Dissolved Uranium	mg/L	0.0107	0.0158	0.0120		0.0132	
Dissolved Vanadium	mg/L	0.0009	0.0010	0.0005		0.0004	
Dissolved Zinc	mg/L	<0.001	0.009	0.001		0.002	
Total Aluminum	mg/L	0.370	0.137	0.0943	0.0779	0.0400	3
Total Antimony	mg/L	<0.00005	0.00021	0.00027	0.00025	0.00032	
Total Arsenic	mg/L	0.0007	0.0009	0.0003	0.0006	0.0009	0.1
Total Barium	mg/L	0.0612	0.0689	0.0789	0.0829	0.115	
Total Beryllium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Total Boron	mg/L	0.024	0.033	0.035	0.034	0.040	
Total Cadmium	mg/L	<0.00005	<0.00005	<0.00002	0.00002	<0.00002	0.0024
Total Calcium	mg/L	19	22.1	35.9	32.7	37.9	
Total Chromium	mg/L	0.0019	0.0024	0.0061	0.0041	0.0016	0.17
Total Cobalt	mg/L	0.00080	0.00065	0.00054	0.00067	0.00082	
Total Copper	mg/L	0.0056	0.0036	0.0022	0.0025	0.0027	0.04
Total Iron	mg/L	0.45	0.22	<0.10	<0.10	<0.10	
Total Lead	mg/L	0.00120	0.00029	0.00013	0.00019	0.00009	0.02

Stn.Code		JER-SW8	JER-SW8	JER-SW8	JER-SW8	JER-SW8	
Station Name		Collection Pond C (East Sump)	Collection Pond C (East Sump)	Collection Pond C (East Sump)	Collection Pond C (East Sump)	Collection Pond C (East Sump)	
Sample Class		M	M	M	M	M	
Sample No.		Jun-34	Jun-98	Jun-12	Jun-28	06-11734	
Sample Comments					Inspector Samples		PKCA Discharge Criteria
Collect Date/Time		21/06/2006	11/07/2006	09/08/2006	13/08/2006	24/09/2006	
Total Lithium	mg/L		<0.005	<0.005	<0.005	0.005	
Total Magnesium	mg/L	8.38	10.7	18.2	17.1	25.7	
Total Manganese	mg/L	0.04	<0.01	0.04	0.03	0.02	
Total Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	0.00005	
Total Molybdenum	mg/L	0.00198	0.00358	0.00432	0.00444	0.00591	1.5
Total Nickel	mg/L	0.0089	0.0076	0.0057	0.0057	0.0067	0.1
Total Phosphorus	mg/L	0.08	<0.020	<0.02	<0.02	<0.02	0.4
Total Potassium	mg/L	2.7	3.6	6.3	6	8.2	
Total Selenium	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Total Silicon	mg/L	2.28	1.74	1.63	1.34	1.49	
Total Silver	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Total Sodium	mg/L	5.6	7.0	10.5	9.6	12.4	
Total Strontium	mg/L	0.0903	0.162	0.254	0.267	0.628	
Total Thallium	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
Total Tin	mg/L		<0.0001	0.0001	<0.0001	0.0005	
Total Titanium	mg/L		0.0083	0.0028	0.0010	0.0032	
Total Uranium	mg/L	0.0117	0.0157	0.0126	0.0121	0.0152	1
Total Vanadium	mg/L	0.0010	0.0007	0.0018	0.0011	<0.0005	
Total Zinc	mg/L	0.007	0.005	0.002	0.003	0.018	0.5

APPENDIX B

SNP Sample Stations WQ-01 to WQ-20
Water Chemistry Data

Stn.Code		JER-WQ1	JER-WQ1	JER-WQ1	JER-WQ1	JER-WQ1	JER-WQ1	JER-WQ1	
Station Name		Carat Lake Freshwater Intake	Carat Lake Freshwater Intake	Carat Lake Freshwater Intake	Carat Lake Freshwater Intake	Carat Lake Freshwater Intake	Carat Lake Freshwater Intake	Carat Lake Freshwater Intake	
Sample Class		M	M	M	M	M	M	M	
Sample No.		Jun-02	Jun-00	Jun-99	L420594-14	Jun-11	Jun-27	06-11252	
Sample Comments							Inspector Samples		PKCA Discharge Criteria
Collect Date/Time		27/06/2006	12/07/2006	12/07/2006	07/08/2006	09/08/2006	13/08/2006	11/09/2006	
Water Temperature	Deg C	5.17		12.39	15.4	15.22	14.33	9.87	
Field pH	pH	6.45		5.86	7.9	5.3	5.63	5.52	
Field Conductivity	us/cm	12		11.3	8	13	12	9	
Field Dissolved Oxygen	mg/L	14.19		10.56		10.42	10.79	10.80	
Oxidation Reduction Potential	mV	256.30		280.20		495.70	361.20	292.00	
pH @ 25°C	pH						6.78		6.0-8.8
Conductivity @ 25°C	us/cm						17		
T-Dissolved Solids180°C	mg/L						15		4000
Total Suspended Solids @105°C	mg/L	<2	<2	<2		<2		<2	25
Turbidity	NTU	2	2	2		1	1	1	
T-Hardness as CaCO3	mg/L						<6		
T-Alkalinity as CaCO3	mg/L						6		
Acidity as CaCO3	mg/L						2		
Hydroxide (as CaCO3)	mg/L						<1		
Balance (+ions/-ions)	Ratio						0.50		
Carbonate	mg/L						<1		
Bicarbonate	mg/L						7		
Chloride	mg/L						0.4		1000
Fluoride	mg/L						0.06		
Sulphate	mg/L						1.6		
Carbon (Total Inorganic)	mg/L						1.1		
Carbon (Total Organic)	mg/L						3.0		
Ammonia - Nitrogen	mg/L				0.015		0.02		12
Nitrate - Nitrogen	mg/L						0.08		56
Nitrite - Nitrogen	mg/L						<0.05		5
Total Kjeldahl Nitrogen	mg/L								
Phosphate - Ortho - Phosphoru	mg/L						<0.20		
Dissolved Ortho Phosphate	mg/L								
Total Phosphate As P	mg/L								
Biochemical Oxygen Demand	mg/L						<2		25
MF - Fecal Coliforms	CFU/100mL	<1	<1	<1		2	<1	<1	20
Oil & Grease (Infrared)	mg/L								5
Dissolved Aluminum	mg/L	0.016	0.018	0.019	0.0193	0.019		0.013	2
Dissolved Antimony	mg/L	<0.00005	<0.00005	<0.00005	0.0000053	<0.00005		<0.00005	
Dissolved Arsenic	mg/L	<0.0001	0.0002	0.0002	0.000163	0.0002		<0.0001	
Dissolved Barium	mg/L	<0.00005	0.00213	0.00219	0.00163	0.00164		0.00215	
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.0001	0.0000032	<0.0001		<0.0001	
Dissolved Boron	mg/L	<0.001	0.001	0.001	0.0681	0.001		0.002	
Dissolved Cadmium	mg/L	<0.00005	<0.00005	<0.00005	0.0000023	<0.00002		0.00002	
Dissolved Calcium	mg/L	1.13	1.06	1.02	1.03	1.35	0.7	0.45	
Dissolved Chromium	mg/L	<0.0003	<0.0003	<0.0003	0.000105	0.0008		0.0011	
Dissolved Cobalt	mg/L	<0.00002	<0.00002	<0.00002	0.0000181	0.00004		<0.00002	
Dissolved Copper	mg/L	<0.0001	0.0027	0.0053	0.00139	0.0022		<0.0001	
Dissolved Iron	mg/L	<0.10	<0.10	<0.10	0.0101	<0.10		<0.10	
Dissolved Lead	mg/L	<0.00005	0.00005	0.00009	0.0000107	<0.00005		0.00008	
Dissolved Lithium	mg/L		<0.0010	<0.0010	0.00121	<0.0010		<0.0010	
Dissolved Magnesium	mg/L	0.55	0.44	0.44	0.445	0.51	0.3	0.38	
Dissolved Manganese	mg/L	<0.010	<0.010	<0.010	0.00201	<0.010		<0.010	
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005		<0.00005	
Dissolved Molybdenum	mg/L	<0.00005	0.00007	0.00012	0.0000228	<0.00005		0.00008	
Dissolved Nickel	mg/L	<0.00005	0.00040	0.00034	0.000277	0.00025		0.00026	
Dissolved Phosphorus	mg/L		<0.005	<0.005	0.002	<0.01		<0.01	
Dissolved Potassium	mg/L	<0.5	<0.5	<0.5	0.283	<0.5	<0.5	<0.5	
Dissolved Selenium	mg/L	<0.0006	<0.0006	<0.0006	<0.0001	<0.0006		<0.0006	
Dissolved Silicon	mg/L	0.14	0.13	0.12	0.212	0.26		0.14	
Dissolved Silver	mg/L	<0.00005	<0.00005	<0.00005	0.0000049	<0.00005		<0.00005	
Dissolved Sodium	mg/L	<0.5	<0.5	<0.5	0.44	<0.5	<0.5	<0.5	
Dissolved Strontium	mg/L	0.0043	0.0065	0.0060	0.00453	0.0048		0.0051	
Dissolved Thallium	mg/L	<0.00005	<0.00005	<0.00005	0.0000009	<0.00005		<0.00005	
Dissolved Tin	mg/L		<0.0001	<0.0001	<0.00003	<0.0001		<0.0001	
Dissolved Titanium	mg/L		<0.0005	<0.0005	0.000367	<0.0005		<0.0005	
Dissolved Uranium	mg/L	0.00013	0.00016	0.00018	0.000145	0.00019		0.00011	
Dissolved Vanadium	mg/L	<0.0001	0.0003	0.0002	0.0000665	0.0005		0.0005	
Dissolved Zinc	mg/L	<0.001	0.004	0.007	0.0039	0.002		0.002	
Total Aluminum	mg/L	0.0342	0.0278	0.0301	0.0203	0.0262	0.0208	0.0210	3
Total Antimony	mg/L	<0.00005	<0.00005	<0.00005	0.0000054	<0.00005	<0.00005	<0.00005	
Total Arsenic	mg/L	<0.0002	<0.0002	<0.0002	0.000167	<0.0002	<0.0002	<0.0002	0.1
Total Barium	mg/L	0.00201	0.00168	0.00167	0.00163	0.00152	0.00188	0.00187	
Total Beryllium	mg/L	<0.0001	<0.0001	<0.0001	0.0000032	<0.0001	<0.0001	0.0002	
Total Boron	mg/L	<0.001	<0.001	<0.001	0.0808	<0.001	<0.001	0.002	
Total Cadmium	mg/L	<0.00005	<0.00005	<0.00005	0.0000038	<0.00002	<0.00002	0.00004	0.0024
Total Calcium	mg/L	1.11	0.88	0.86	1.03	1.42	1.14	1.04	
Total Chromium	mg/L	<0.0005	0.0013	0.0016	0.000138	0.0019	0.0015	0.0043	0.17
Total Cobalt	mg/L	<0.00005	<0.00005	<0.00005	0.0000195	<0.00005	<0.00005	<0.00005	
Total Copper	mg/L	<0.0010	<0.0010	<0.0010	0.00146	0.0021	<0.0010	<0.0010	0.04
Total Iron	mg/L	0.13	<0.10	<0.10	0.0129	<0.10	<0.10	<0.10	
Total Lead	mg/L	<0.00005	<0.00005	<0.00005	0.0000132	<0.00005	<0.00005	<0.00005	0.02

Stn.Code		JER-WQ1	JER-WQ1	JER-WQ1	JER-WQ1	JER-WQ1	JER-WQ1	JER-WQ1	
Station Name		Carat Lake Freshwater Intake	Carat Lake Freshwater Intake	Carat Lake Freshwater Intake	Carat Lake Freshwater Intake	Carat Lake Freshwater Intake	Carat Lake Freshwater Intake	Carat Lake Freshwater Intake	
Sample Class		M	M	M	M	M	M	M	
Sample No.		Jun-02	Jun-00	Jun-99	L420594-14	Jun-11	Jun-27	06-11252	
Sample Comments							Inspector Samples		PKCA Discharge Criteria
Collect Date/Time		27/06/2006	12/07/2006	12/07/2006	07/08/2006	09/08/2006	13/08/2006	11/09/2006	
Total Lithium	mg/L		<0.005	<0.005	0.00146	<0.005	<0.005	<0.005	
Total Magnesium	mg/L	<0.50	0.22	0.21	0.459	0.61	0.56	0.54	
Total Manganese	mg/L	<0.010	<0.010	<0.010	0.00202	<0.010	<0.01	<0.010	
Total Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.00005	<0.00005	
Total Molybdenum	mg/L	0.00005	<0.00005	<0.00005	0.0000235	<0.00005	<0.00005	<0.00005	1.5
Total Nickel	mg/L	0.0002	0.0003	0.0003	0.000294	0.0002	0.0007	0.0003	0.1
Total Phosphorus	mg/L		<0.020	<0.020	0.003	<0.02	<0.02	<0.02	0.4
Total Potassium	mg/L	<0.5	<0.5	<0.5	0.285	<0.5	<0.5	<0.5	
Total Selenium	mg/L	<0.0010	<0.0010	<0.0010	<0.0001	<0.0010	<0.0010	<0.0010	
Total Silicon	mg/L	0.15	0.12	0.12	0.217	0.26	0.20	0.16	
Total Silver	mg/L	<0.0001	<0.0001	<0.0001	0.000007	<0.0001	<0.0001	<0.0001	
Total Sodium	mg/L	<0.5	<0.5	<0.5	0.44	<0.5	<0.5	<0.5	
Total Strontium	mg/L	0.0044	0.0046	0.0050	0.00458	0.0046	0.0044	0.0052	
Total Thallium	mg/L	<0.00005	<0.00005	<0.00005	0.0000009	<0.00005	<0.00005	<0.00005	
Total Tin	mg/L		<0.0001	<0.0001	0.0000336	<0.0001	<0.0001	<0.0001	
Total Titanium	mg/L		<0.0005	<0.0005	0.000426	<0.0005	<0.0005	<0.0005	
Total Uranium	mg/L	0.00015	0.00010	0.00012	0.000147	0.00019	0.00014	0.00014	1
Total Vanadium	mg/L	<0.0005	<0.0005	<0.0005	0.0000706	0.0015	<0.0005	0.0028	
Total Zinc	mg/L	0.002	0.003	0.004	0.00465	0.002	0.002	0.002	0.5

Stn.Code		JER-WQ2 PKCA Discharge	JER-WQ2 PKCA Discharge	JER-WQ2 PKCA Discharge	JER-WQ2 PKCA Discharge	JER-WQ2 PKCA Discharge	JER-WQ2 PKCA Discharge	JER-WQ2 PKCA Discharge	JER-WQ2 PKCA Discharge	JER-WQ2 PKCA Discharge	JER-WQ2 PKCA Discharge	JER-WQ2 PKCA Discharge	JER-WQ2 PKCA Discharge	JER-WQ2 PKCA Discharge
Station Name		M	M	M	M	F1	M	M	M	M	F1	M	M	M	F1
Sample Class		Jun-93	Jun-01	Jun-28	Jun-09	Jun-25	Jun-24	06-10110	06-10468	06-10791	06-10792	06-11251	06-11255	06-12305	
Sample No.															
Sample Comments									No Nutrients Preservatives			Sample lid for the routine bottle was broken upon receipt at the lab. Therefore no routine parameters are available.			
Collect Date/Time		19/06/2006	12/07/2006	19/07/2006	26/07/2006	04/08/2006	04/08/2006	17/08/2006	28/08/2006	01/09/2006	01/09/2006	08/09/2006	11/09/2006	02/10/2006	
Water Temperature	Deg C	13.84	14.17	14.10	12.98		16.3	13.24	11.02	9.58	9.11	9.13	9.46	1.67	
Field pH	pH	7.24	6.63	6.17	7.09		7.34	6.9	6.04	6.52	6.85	7.27	7.04	6.89	
Field Conductivity	us/cm	119	121	121.3	117		141	159	167	171	171	135	138	205	
Field Dissolved Oxygen	mg/L	7.98	8.52	10.55	12.09		22.10	10.62	9.37	12.36	10.49	12.22	11.68	12.96	
Oxidation Reduction Potential	mV	175.40	265.40	457.00	181.70		284.00	215.00	519.00	363.30	371.80	396.10	262.10	644.70	
pH @ 25°C	pH	7.64	7.63	7.53	7.59	7.65	7.66	7.16	7.71	7.46	7.18		7.73	7.75	
Conductivity @ 25°C	us/cm	116	122	136	123	146	147	161	164	161	158		176	197	
T-Dissolved Solids180°C	mg/L	72	76	100	104	96	60	92	116	108	96		120	116	
Total Suspended Solids @105°C	mg/L	4	4	<2	2	3	2	<2	<2	<2	<2		2	<2	
Turbidity	NTU	6	4	3	2	2	2	2	2	2	2		2	2	
T-Hardness as CaCO3	mg/L	30.2	36.9	39.6	35.8	46.5	46.4	57.7	59.4	57.9	56.4		58.6	63.3	
T-Alkalinity as CaCO3	mg/L	32	33	32	31	34	35	36	39	41	38		41	44	
Acidity as CaCO3	mg/L	3	7	2	2	3	2	4	3	3	5		4	3	
Hydroxide (as CaCO3)	mg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	<1	
Balance (+ions/-ions)	Ratio	1	0.87	0.85	0.90	0.92	0.90	0.99	0.96	0.92	0.93		0.87	0.91	
Carbonate	mg/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<1	<1	
Bicarbonate	mg/L	39	40	40	38	41	43	44	47	50	47		50	54	
Chloride	mg/L	3.2	4.8	5.3	5.5	5.8	5.8	6.2	6.9	7.2	7.2		7.2	7.2	
Fluoride	mg/L	0.08	0.09	0.09	0.08	0.10	0.10	0.12	0.10	0.10	0.10		0.11	0.13	
Sulphate	mg/L	3.6	5.1	6.2	5.4	7.2	7.1	8.4	8.0	8.3	8.4		8.5	8.9	
Carbon (Total Inorganic)	mg/L	5.2	5.3	4.2	3.9	4.6	4.6	8.9	8.8	9.5	8.9		8.8	8.8	
Carbon (Total Organic)	mg/L	3.6	3.9	3.6	3.8	3.6	3.8	4.2	3.9	4.0	3.9		3.5	3.2	
Ammonia - Nitrogen	mg/L	1.46	0.82	0.35	0.26	0.05	0.08	0.18	0.03	0.03	0.03	0.03	0.02	0.02	
Nitrate - Nitrogen	mg/L	1.62	3.53	4.20	3.90	5.13	5.13	5.83	5.95	6.02	5.90		7.40	6.98	
Nitrite - Nitrogen	mg/L	<0.05	0.19	0.11	<0.05	0.09	0.09	<0.05	<0.05	<0.05	<0.05		<0.05	<0.05	
Total Kjeldahl Nitrogen	mg/L					0.7	0.6	0.6	0.7	0.6	0.5				
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20		<0.20	<0.20	
Dissolved Ortho Phosphate	mg/L														
Total Phosphate As P	mg/L														
Biochemical Oxygen Demand	mg/L	<2	3			<2	<2								
MF - Fecal Coliforms	CFU/100mL	<1	<1			<1	<1								
Oil & Grease (Infrared)	mg/L	0.1	0.2			<0.1	<0.1								
Dissolved Aluminum	mg/L	0.071	0.013	<0.002	0.016	0.005	0.006	0.009	0.008	0.003	0.005		0.018	0.002	
Dissolved Antimony	mg/L	0.0003	0.00025	<0.00005	0.00027	<0.00005	<0.00005	0.00024	0.00033	0.00048	0.00036	0.00045	0.00040	0.00035	
Dissolved Arsenic	mg/L	0.0007	0.0006	<0.0001	0.0004	0.0002	0.0002	0.0002	0.0005	0.0008	0.0006	<0.0001	<0.0001	0.0006	
Dissolved Barium	mg/L	0.0144	0.0261	<0.00005	0.00823	0.0198	0.0186	0.0277	0.0283	0.0241	0.0292	0.0358	0.0318	0.0405	
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Dissolved Boron	mg/L	0.009	0.012	<0.001	0.010	0.016	0.015	0.022	0.016	0.012	0.013	0.017	0.015	0.022	
Dissolved Cadmium	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	<0.00002	0.00003	<0.00002	
Dissolved Calcium	mg/L	6.1	8	8.7	7.4	10.2	10.2	12.8	13	12.7	12.3	11.4	12.6	12.9	
Dissolved Chromium	mg/L	0.0006	<0.0003	<0.0003	0.0019	0.0013	0.0010	0.0041	0.0062	0.0041	0.0042	0.0073	0.0059	0.0007	
Dissolved Cobalt	mg/L	0.00011	0.00009	<0.00002	0.00015	0.00003	0.00003	0.00012	0.00017	0.00010	0.00011	0.00010	0.00009	0.00012	
Dissolved Copper	mg/L	0.0012	0.0049	<0.0001	0.0017	<0.0001	<0.0001	0.0026	0.0064	0.0018	0.0024	<0.0001	0.0002	0.0028	
Dissolved Iron	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Dissolved Lead	mg/L	0.00008	0.00007	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00012	0.00014	0.00008	0.00013	0.00010	0.00006	
Dissolved Lithium	mg/L		0.0012	0.0010	<0.0010	0.0013	0.0013	0.0016	0.0015	0.0019	0.0020	0.0014	0.0014	0.0015	
Dissolved Magnesium	mg/L	3.6	4.1	4.3	4.2	5.1	5.1	6.3	6.6	6.4	6.2	6.60	6.6	7.5	
Dissolved Manganese	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	0.019	0.019	0.015	0.016	<0.010	<0.010	0.020	
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
Dissolved Molybdenum	mg/L	0.00149	0.00165	<0.00005	0.00150	0.00196	0.00207	0.00243	0.00208	<0.00005	<0.00005	0.00249	0.00231	0.00270	
Dissolved Nickel	mg/L	0.00204	0.00182	<0.00005	0.00146	0.00156	0.00142	0.00180	0.00191	0.00172	0.00182	0.00196	0.00194	0.00163	
Dissolved Phosphorus	mg/L		0.005	<0.005	0.014	<0.01	0.02	<0.01	<0.01	0.01	0.01	<0.01	<0.01	<0.01	
Dissolved Potassium	mg/L	3.1	2.7	2.7	3.0	3.5	3.5	3.7	3.8	4.1	3.8	3.0	3.9	4.2	
Dissolved Selenium	mg/L	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	0.0008	<0.0006	<0.0006	<0.0006	
Dissolved Silicon	mg/L	1.44	1.13	1.19	1.04	0.99	0.98	1.20	1.16	1.03	1.05	1.09	1.05	0.90	
Dissolved Silver	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
Dissolved Sodium	mg/L	5.4	4.9	4.5	5.8	5.5	5.4	5.4	5.1	5.3	5.4	5.2	5.5	5.6	
Dissolved Strontium	mg/L	0.0572	0.0744	<0.0001	0.0457	0.0853	0.0844	0.0959	0.110	0.0895	0.109	0.113	0.105	0.136	
Dissolved Thallium	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00005	<0.00005	<0.00005	<0.00005	0.00007	
Dissolved Tin	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	0.0003	
Dissolved Titanium	mg/L		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0009	<0.0005	
Dissolved Uranium	mg/L	0.00102	0.00123	<0.00005	0.00068	0.00095	0.00076	0.00139	0.00132	0.00108	0.00114	0.00112	0.00115	0.00112	
Dissolved Vanadium	mg/L	0.0013	0.0006	<0.0001	0.0013	0.0020	0.0020	0.0014	0.0012	0.0011	0.0020	0.0027	0.0026	0.0008	
Dissolved Zinc	mg/L	<0.001	0.008	<0.001	<0.001	<0.001	<0.001	0.001	0.001	0.001	0.003	0.003	0.005	0.004	
Total Aluminum	mg/L	0.0889	0.0577	0.0200	0.0246	0.0224	0.0229	0.0113	0.0376	0.0105	0.0130	0.0143	0.0160	0.0226	
Total Antimony	mg/L	0.00033	0.00024	<0.00005	0.00025	0.00010	0.00008	0.00064	0.00105	0.00124	0.00034	0.00130	0.00021	<0.00005	
Total Arsenic	mg/L	0.0005	0.0006	<0.0002	<0.0002	0.0050	0.0006	0.0005	0.0004	0.0009	0.0007	<0.0002	<0.0002	0.0007	
Total Barium	mg/L	0.0126	0.0158	0.00010	0.00943	0.0215	0.0217	0.0259	0.0280	0.0273	0.0279	0.0372	0.0362	0.0418	
Total Beryllium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Total Boron	mg/L	0.009	0.012	0.005	0.009	0.015	0.014	0.020	0.017	0.018	0.017	0.016	0.020	0.022	
Total Cadmium	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00002	<0.00002	<0.00002	0.00006	<0.00002	<0.00002	<0.00002	0.00002	0.00003	
Total Calcium	mg/L	5.91	7.23	9.14	8.55	10.9	10.4	12.8	12.6	12.9	12.9	13.2	13.4	14.3	
Total Chromium	mg/L	0.0010	0.0016	0.0008	0.0017	0.0033	0.0023	0.0042	0.0066	0.0047	0.0054	0.0102	0.0091	0.0006	
Total Cobalt	mg/L	0.00016	0.00010	<0.00005	0.00011	0.00005	0.00005	0.00016	0.00014	0.00015	0.00015	0.00008	0.00009	0.00035	
Total Copper	mg/L	<0.0010	0.0024	<0.0010	<0.0010	<0.0010	<0.0010	0.0025	0.0057	0.0039	0.0029	<0.0010	<0.0010	0.0042	
Total Iron	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.12	<0.10	<0.10	<0.10	<0.10	<0.10	
Total Lead	mg/L	0.00016	0.00012	<0.00005	0.00010	0.00005	0.00006	0.00009	0.00040	0.00025	0.00011	0.00008	0.00011	0.00072	
Total Lithium	mg/L		<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	
Total Magnesium	mg/L	3.32	3.55	4.56	4.28	5.56	5.11	5.90	6.43	6.62	6.62	7.16	7.40	8.45	
Total Manganese	mg/L	0.02	<0.01	0.02	<0.01	0.02	0.01	0.02	0.03	0.02	0.02	0.014	0.01	0.06	
Total Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
Total Molybdenum	mg/L	0.00155	0.00145	<0.00005	0.00144	0.00199	0.00185	0.00225	0.00263	0.00273	0.00265	0.00352	0.00285	0.00250	
Total Nickel	mg/L	0.0021	0.0019	<0.0001	0.0020	0.0022	0.0019	0.0024	0.0025	0.0023	0.0022	0.0024	0.0021	0.0025	
Total Phosphorus	mg/L	0.03	<0.020	0.071	0.062	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
Total Potassium	mg/L	2.5	2.5	3.0	2.7	3.6	3.2	3.5	3.8	3.9	3.9	4.1	4.2	4.8	
Total Selenium	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0015	0.0020	0.0017	0.0022	0.0010	<0.0010	
Total Silicon	mg/L	1.24	1.14	1.29	1.02	1.23	1.14	1.17	1.25	1.06	1.08	1.11	1.12	1.07	
Total Silver	mg/L	<0.0001	<0.0001	0.0019	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Total Sodium	mg/L	4.7	4.7	5.6	9.1	6.2	5.4	5.0	5.0	5.3	5.2	5.6	5.8	6.1	
Total Strontium	mg/L	0.0522	0.0638	<0.0005	0.0504	0.0826	0.0809	0.0936	0.105	0.111	0.110	0.129	0.119	0.139	
Total Thallium	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
Total Tin	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0004	0.0003	<0.0001	<0.0001	<0.0001	<0.0001	
Total Titanium	mg/L		0.0009	0.0045	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	0.0016	
Total Uranium	mg/L	0.00121	0.00136	<0.00005	0.00087	0.00146	0.00146	0.00133	0.00122	0.00134	0.00134	0.00148	0.00127	0.00123	
Total Vanadium	mg/L	0.0007	<0.0005	<0.0005	0.0011	0.0012	0.0008	0.0016	0.0019	0.0019	0.0020	0.0042	0.0044	<0.0005	
Total Zinc	mg/L	0.002	0.004	0.007	0.002	0.003	0.002	0.003	0.017	0.004	0.003	0.003	0.006	0.020	

Stn.Code		JER-WQ2 PKCA Discharge	JER-WQ2 PKCA Discharge	JER-WQ2 PKCA Discharge	JER-WQ2 PKCA Discharge	JER-WQ2 PKCA Discharge	JER-WQ2 PKCA Discharge	JER-WQ2 PKCA Discharge	JER-WQ2 PKCA Discharge	
Station Name										
Sample Class		M	M	L1	M	L1	M	M	M	
Sample No.		06-12304	06-12517	06-12783-D	06-12783	06-13328-D	06-13328	06-13909	06-14152	
Sample Comments										PKCA Discharge
Collect Date/Time		02/10/2006	09/10/2006	16/10/2006	16/10/2006	23/10/2006	23/10/2006	30/10/2006	06/11/2006	Criteria
Water Temperature	Deg C	1.76							2.59	
Field pH	pH	6.75							6.85	
Field Conductivity	us/cm	206							229	
Field Dissolved Oxygen	mg/L	13.62							11.46	
Oxidation Reduction Potential	mV	645.40							504.10	
pH @ 25°C	pH	7.78	7.63		7.39		7.44	7.33	7.50	6.0-8.8
Conductivity @ 25°C	us/cm	195	206		213		212	222	228	
T-Dissolved Solids180°C	mg/L	124	112		136		128	136	160	4000
Total Suspended Solids @105°C	mg/L	4	<2	11	11		2	<2	<2	25
Turbidity	NTU	3	2		18		2	2	2	
T-Hardness as CaCO3	mg/L	63.4	68.9		69.2		72.7	77.6	78.3	
T-Alkalinity as CaCO3	mg/L	44	45		36		46	47	50	
Acidity as CaCO3	mg/L	3	4		2		2	<1	4	
Hydroxide (as CaCO3)	mg/L	<1	<1		<1		<1	<1	<1	
Balance (+ions/-ions)	Ratio	0.92	0.91		1.01		0.94	1.02	0.96	
Carbonate	mg/L	<1	<1		<1		<1	<1	<1	
Bicarbonate	mg/L	53	55		44		56	57	62	
Chloride	mg/L	7.0	8.8		9.0		9.4	9.2	9.8	1000
Fluoride	mg/L	0.14	0.13		0.15		0.14	0.13	0.15	
Sulphate	mg/L	8.8	10.0		10.6		11.3	11	10.6	
Carbon (Total Inorganic)	mg/L	8.8	9.2		9.0		11	10.7	12	
Carbon (Total Organic)	mg/L	3.2	3.1		3.2		3.3	3.3	3.6	
Ammonia - Nitrogen	mg/L	0.03	0.01		0.13		0.17	0.24	0.24	12
Nitrate - Nitrogen	mg/L	7.03	8.29		7.69		7.84	7.92	8.47	56
Nitrite - Nitrogen	mg/L	<0.05	<0.05		<0.05		<0.05	<0.05	<0.05	5
Total Kjeldahl Nitrogen	mg/L									
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20		<0.20		<0.20	<0.20	<0.20	
Dissolved Ortho Phosphate	mg/L									
Total Phosphate As P	mg/L									
Biochemical Oxygen Demand	mg/L		<2							25
MF - Fecal Coliforms	CFU/100mL		<1							20
Oil & Grease (Infrared)	mg/L		0.1							5
Dissolved Aluminum	mg/L	0.002	<0.002	0.004	0.004	0.004	0.004	0.003	<0.002	2
Dissolved Antimony	mg/L	0.00036	0.00029	0.00030	0.00030	0.00039	0.00040	0.00034	0.00037	
Dissolved Arsenic	mg/L	0.0005	0.0005	0.0006	0.0005	0.0006	0.0006	0.0006	0.0006	
Dissolved Barium	mg/L	0.0404	0.0406	0.0333	0.0329	0.0433	0.0437	0.0406	0.0439	
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Dissolved Boron	mg/L	0.021	0.021	0.021	0.020	0.026	0.026	0.025	0.023	
Dissolved Cadmium	mg/L	<0.00002	<0.00002	<0.00002	<0.00002	0.00004	0.00004	<0.00002	<0.00002	
Dissolved Calcium	mg/L	13	13.8	14.1	14.1	14.8	14.8	15.6	15.8	
Dissolved Chromium	mg/L	0.0007	<0.0003	0.0006	0.0005	<0.0003	<0.0003	0.0009	0.0006	
Dissolved Cobalt	mg/L	0.00017	0.00008	0.00008	0.00009	0.00012	0.00012	0.00012	0.00007	
Dissolved Copper	mg/L	0.0026	0.0029	0.0022	0.0019	0.0037	0.0037	0.0025	0.0020	
Dissolved Iron	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Dissolved Lead	mg/L	0.00007	<0.00005	<0.00005	<0.00005	0.00006	0.00007	<0.00005	<0.00005	
Dissolved Lithium	mg/L	0.0015	0.0015	0.0012	0.0012	0.0016	0.0016	0.0017	0.0016	
Dissolved Magnesium	mg/L	7.5	8.4	8.3	8.26	8.7	8.7	9.4	9.4	
Dissolved Manganese	mg/L	0.027	<0.010	<0.010	<0.010	0.011	0.011	0.016	<0.010	
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
Dissolved Molybdenum	mg/L	0.00270	0.00257	0.00247	0.00254	0.00277	0.00272	0.00235	0.00258	
Dissolved Nickel	mg/L	0.00157	0.00154	0.00141	0.00137	0.00168	0.00174	0.00173	0.00177	
Dissolved Phosphorus	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	
Dissolved Potassium	mg/L	4.2	5	5.0	5.0	5.4	5.3	5.8	5.8	
Dissolved Selenium	mg/L	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	
Dissolved Silicon	mg/L	0.91	0.97	1.02	1.02	0.89	0.89	1.10	1.01	
Dissolved Silver	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
Dissolved Sodium	mg/L	5.7	6.3	6.2	6.2	6.7	6.7	7.8	7.6	
Dissolved Strontium	mg/L	0.138	0.142	0.131	0.136	0.159	0.157	0.214	0.218	
Dissolved Thallium	mg/L	0.00007	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
Dissolved Tin	mg/L	<0.0001	<0.0001	0.0001	<0.0001	0.0002	0.0001	<0.0001	<0.0001	
Dissolved Titanium	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	
Dissolved Uranium	mg/L	0.00114	0.00129	0.00073	0.00075	0.00129	0.00129	0.00091	0.00113	
Dissolved Vanadium	mg/L	0.0009	0.0010	0.0008	0.0008	<0.0001	<0.0001	0.0011	0.0008	
Dissolved Zinc	mg/L	0.005	0.003	0.002	0.001	0.016	0.017	0.004	<0.001	
Total Aluminum	mg/L	0.0561	0.0181		0.328	0.0305	0.0338	0.0288	0.0065	3
Total Antimony	mg/L	<0.00005	0.00032		0.00030	0.00052	0.00055	0.00030	0.00033	
Total Arsenic	mg/L	0.0008	0.0004		0.0006	0.0006	0.0006	0.0004	0.0006	0.1
Total Barium	mg/L	0.0427	0.0416		0.0359	0.0424	0.0457	0.0388	0.0440	
Total Beryllium	mg/L	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Total Boron	mg/L	0.020	0.023		0.023	0.025	0.025	0.024	0.025	
Total Cadmium	mg/L	0.00010	<0.00002		<0.00002	0.00008	0.00007	<0.00002	0.00002	0.0024
Total Calcium	mg/L	14.5	14		13.9	14.6	14.7	14.8	15.5	
Total Chromium	mg/L	<0.0005	0.0008		<0.0005	0.0020	0.0020	0.0005	<0.0005	0.17
Total Cobalt	mg/L	0.00036	0.00015		0.00027	0.00018	0.00019	0.00014	0.00008	
Total Copper	mg/L	0.0058	0.0025		0.0025	0.0048	0.0050	0.0022	0.0021	0.04
Total Iron	mg/L	0.34	0.10		0.31	<0.10	<0.10	<0.10	<0.10	
Total Lead	mg/L	0.00075	0.00005		0.00016	0.00056	0.00062	<0.00005	0.00012	0.02
Total Lithium	mg/L	<0.005	<0.005		<0.005	<0.005	<0.005	<0.005	<0.005	
Total Magnesium	mg/L	8.42	8.43		8.45	8.71	8.77	8.89	9.30	
Total Manganese	mg/L	0.06	0.02		0.015	0.02	0.02	0.02	<0.01	
Total Mercury	mg/L	<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
Total Molybdenum	mg/L	0.00282	0.00261		0.00260	0.00280	0.00281	0.00244	0.00265	1.5
Total Nickel	mg/L	0.0022	0.0006		0.0019	0.0022	0.0023	0.0014	0.0019	0.1
Total Phosphorus	mg/L	<0.02	<0.02		<0.02	<0.02	<0.02	<0.02	<0.02	0.4
Total Potassium	mg/L	4.8	5.1		5.0	5.4	5.4	5.3	5.7	
Total Selenium	mg/L	<0.0010	<0.0010		<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Total Silicon	mg/L	1.10	1		1.81	1.04	1.06	1.11	1.04	
Total Silver	mg/L	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Total Sodium	mg/L	6.0	6.4		7.0	6.8	6.8	7.3	7.6	
Total Strontium	mg/L	0.136	0.141		0.138	0.156	0.156	0.197	0.210	
Total Thallium	mg/L	<0.00005	<0.00005		<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	
Total Tin	mg/L	0.0016	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	0.0003	
Total Titanium	mg/L	0.0022	0.0008		0.0203	0.0011	0.0019	0.0013	<0.0005	
Total Uranium	mg/L	0.00118	0.00133		0.00093	0.00130	0.00130	0.00107	0.00118	1
Total Vanadium	mg/L	0.0005	<0.0005		0.0011	0.0008	0.0008	0.0005	<0.0005	
Total Zinc	mg/L	0.008	0.003		0.004	0.028	0.029	<0.001	0.004	0.5

Stn.Code		JER-WQ3	JER-WQ3	JER-WQ3	JER-WQ3	JER-WQ3	JER-WQ3	
Station Name		Stream C3 Upstream of Lake C3	Stream C3 Upstream of Lake C3	Stream C3 Upstream of Lake C3	Stream C3 Upstream of Lake C3	Stream C3 Upstream of Lake C3	Stream C3 Upstream of Lake C3	
Sample Class		M	M	M	M	M	M	
Sample No.		Jun-08	Jun-08	Jun-02	L420594-15	Jun-25	06-10854	
Sample Comments						Inspector Samples		PKCA Discharge
Collect Date/Time		20/06/2006	21/06/2006	11/07/2006	06/08/2006	13/08/2006	05/09/2006	Criteria
Water Temperature	Deg C	12.43		14.36	12.5	14.52	8.07	
Field pH	pH	6.52		6.6	7.8	6.03	6.08	
Field Conductivity	us/cm	13		32	89	81	82	
Field Dissolved Oxygen	mg/L	11.24		9.60		11.04	10.57	
Oxidation Reduction Potential	mV	192.50		333.60		404.10	255.00	
pH @ 25°C	pH		6.75	7.08		7.07	7.21	6.0-8.8
Conductivity @ 25°C	us/cm		16	34		84	106	
T-Dissolved Solids180°C	mg/L		11	20		60	30	4000
Total Suspended Solids @105°C	mg/L		<2	<2			<2	25
Turbidity	NTU		1	2		1	<1	
T-Hardness as CaCO3	mg/L		11.8	10.1		19.4	32	
T-Alkalinity as CaCO3	mg/L		9	10		12	15	
Acidity as CaCO3	mg/L		4	<1		1	2	
Hydroxide (as CaCO3)	mg/L		<1	<1		<1	<1	
Balance (+ions/-ions)	Ratio		1.02	0.89		0.86	0.93	
Carbonate	mg/L		<1	<1		<1	<1	
Bicarbonate	mg/L		11	12		15	18	
Chloride	mg/L		0.7	2.6		5.5	6.7	1000
Fluoride	mg/L		0.03	0.04		0.06	0.04	
Sulphate	mg/L		1.2	0.6		6.0	8.4	
Carbon (Total Inorganic)	mg/L		0.1	0.7		3.0	3.5	
Carbon (Total Organic)	mg/L		3.6	3.5		3.0	2.5	
Ammonia - Nitrogen	mg/L		0.01	0.02	<0.005	0.01	<0.01	12
Nitrate - Nitrogen	mg/L		<0.05	0.32		2.53	4.52	56
Nitrite - Nitrogen	mg/L		<0.05	<0.05		<0.05	<0.05	5
Total Kjeldahl Nitrogen	mg/L			<0.2			0.3	
Phosphate - Ortho - Phosphoru	mg/L		<0.20	<0.20		<0.20	<0.20	
Dissolved Ortho Phosphate	mg/L							
Total Phosphate As P	mg/L							
Biochemical Oxygen Demand	mg/L					<2		25
MF - Fecal Coliforms	CFU/100mL					<1		20
Oil & Grease (Infrared)	mg/L							5
Dissolved Aluminum	mg/L		0.035	0.026	0.021		0.014	2
Dissolved Antimony	mg/L		<0.0001	<0.00005	0.000125		<0.00005	
Dissolved Arsenic	mg/L		0.0002	0.0003	0.000257		0.0003	
Dissolved Barium	mg/L		0.00286	0.00347	0.00864		0.0125	
Dissolved Beryllium	mg/L		<0.0001	<0.0001	<0.000003		<0.0001	
Dissolved Boron	mg/L		<0.001	0.001	0.094		0.002	
Dissolved Cadmium	mg/L		<0.00005	<0.00005	0.0000353		<0.00002	
Dissolved Calcium	mg/L		0.6	2.3	6.13	3.8	6.3	
Dissolved Chromium	mg/L		<0.0003	0.0003	0.000449		0.0040	
Dissolved Cobalt	mg/L		<0.00002	0.00005	0.000106		0.00005	
Dissolved Copper	mg/L		<0.0001	0.0064	0.00179		0.0005	
Dissolved Iron	mg/L		<0.10	<0.10	0.0172		<0.10	
Dissolved Lead	mg/L		0.00016	<0.00005	0.000279		<0.00005	
Dissolved Lithium	mg/L			<0.0010	0.00188		<0.0010	
Dissolved Magnesium	mg/L		2.5	1.1	2.61	2.4	4.0	
Dissolved Manganese	mg/L		<0.010	<0.010	0.00166		<0.010	
Dissolved Mercury	mg/L		<0.00005	<0.00005	<0.00001		<0.00005	
Dissolved Molybdenum	mg/L		0.00010	0.00008	0.000425		<0.00005	
Dissolved Nickel	mg/L		0.00021	0.00048	0.000527		0.00070	
Dissolved Phosphorus	mg/L			<0.005	0.002		<0.01	
Dissolved Potassium	mg/L		<0.5	<0.5	2.12	1.1	1.7	
Dissolved Selenium	mg/L		<0.0006	<0.0006	0.000168		<0.0006	
Dissolved Silicon	mg/L		0.27	0.54	1.01		0.90	
Dissolved Silver	mg/L		<0.00005	<0.00005	0.0000107		<0.00005	
Dissolved Sodium	mg/L		<0.5	1.6	5.14	4.4	5.4	
Dissolved Strontium	mg/L		0.0046	0.0099	0.0299		0.0229	
Dissolved Thallium	mg/L		<0.00005	<0.00005	0.0000074		<0.00005	
Dissolved Tin	mg/L			<0.0001	<0.00003		<0.0001	
Dissolved Titanium	mg/L			<0.0005	0.000515		<0.0005	
Dissolved Uranium	mg/L		0.00013	0.00011	0.0000833		<0.00005	
Dissolved Vanadium	mg/L		<0.0001	0.0006	0.000185		0.0014	
Dissolved Zinc	mg/L		<0.001	0.003	0.00246		0.006	
Total Aluminum	mg/L		0.0543	0.0359	0.0251	0.0368	0.0192	3
Total Antimony	mg/L		<0.00005	<0.00005	0.000128	<0.00005	<0.00005	
Total Arsenic	mg/L		<0.0002	0.0003	0.000266	<0.0002	0.0006	0.1
Total Barium	mg/L		0.00204	0.00319	0.00869	0.00874	0.0121	
Total Beryllium	mg/L		<0.0001	<0.0001	<0.000003	<0.0001	<0.0001	
Total Boron	mg/L		0.003	0.001	0.113	0.004	0.006	
Total Cadmium	mg/L		<0.00005	<0.00005	0.0000356	0.00002	<0.00002	0.0024
Total Calcium	mg/L		1.02	1.98	6.19	4.44	6.89	
Total Chromium	mg/L		0.0006	0.0016	0.00055	0.0019	0.0063	0.17
Total Cobalt	mg/L		<0.00005	<0.00005	0.000108	0.00010	0.00006	
Total Copper	mg/L		0.0011	0.0010	0.00185	0.0014	<0.0010	0.04
Total Iron	mg/L		<0.10	<0.10	0.0182	<0.10	<0.10	
Total Lead	mg/L		0.00006	<0.00005	0.000292	0.00011	<0.00005	0.02
Total Lithium	mg/L			<0.005	0.00241	<0.005	<0.005	

Stn.Code		JER-WQ3	JER-WQ3	JER-WQ3	JER-WQ3	JER-WQ3	JER-WQ3	
Station Name		Stream C3 Upstream of Lake C3	Stream C3 Upstream of Lake C3	Stream C3 Upstream of Lake C3	Stream C3 Upstream of Lake C3	Stream C3 Upstream of Lake C3	Stream C3 Upstream of Lake C3	
Sample Class		M	M	M	M	M	M	
Sample No.		Jun-08	Jun-08	Jun-02	L420594-15	Jun-25	06-10854	
Sample Comments						Inspector Samples		PKCA Discharge
Collect Date/Time		20/06/2006	21/06/2006	11/07/2006	06/08/2006	13/08/2006	05/09/2006	Criteria
Total Magnesium	mg/L		0.50	0.80	2.68	2.68	4.24	
Total Manganese	mg/L		<0.01	<0.01	0.00173	<0.01	<0.01	
Total Mercury	mg/L		<0.00005	<0.00005	<0.00001	<0.00005	<0.00005	
Total Molybdenum	mg/L		0.00008	<0.00005	0.000433	<0.00005	0.00020	1.5
Total Nickel	mg/L		0.0007	0.0006	0.000581	0.0007	0.0008	0.1
Total Phosphorus	mg/L		0.02	<0.020	0.003	<0.02	<0.02	0.4
Total Potassium	mg/L		<0.5	<0.5	2.14	1.1	1.6	
Total Selenium	mg/L		<0.0010	<0.0010	0.000216	<0.0010	<0.0010	
Total Silicon	mg/L		0.21	0.48	1.06	0.75	0.92	
Total Silver	mg/L		<0.0001	<0.0001	0.0000155	<0.0001	<0.0001	
Total Sodium	mg/L		<0.5	1.6	5.21	3.7	4.4	
Total Strontium	mg/L		0.0042	0.0080	0.0303	0.0146	0.0247	
Total Thallium	mg/L		<0.00005	<0.00005	0.0000102	<0.00005	<0.00005	
Total Tin	mg/L			<0.0001	<0.0000300	<0.0001	<0.0001	
Total Titanium	mg/L			<0.0005	0.000518	<0.0005	<0.0005	
Total Uranium	mg/L		0.00022	0.00006	0.0000841	<0.00005	<0.00005	1
Total Vanadium	mg/L		<0.0005	<0.0005	0.000205	<0.0005	0.0018	
Total Zinc	mg/L		0.003	0.004	0.00299	0.007	0.005	0.5

Stn.Code		JER-WQ4	JER-WQ4	JER-WQ4	JER-WQ4	JER-WQ4	JER-WQ4	
Station Name		Lake C3 South Basin	Lake C3 South Basin	Lake C3 South Basin	Lake C3 South Basin	Lake C3 South Basin	Lake C3 South Basin	
Sample Class		M	M	M	M	M	M	
Sample No.		Jun-72	Jun-27	Jun-03	L420594-16	06-10848	L464346-3	
Sample Comments								PKCA Discharge
Collect Date/Time		08/04/2006	21/06/2006	11/07/2006	06/08/2006	05/09/2006	17/12/2006	Criteria
Water Temperature	Deg C	1.54	11.72	14.01	16.6	9.12	0.5	
Field pH	pH	5.19	7.08	5.71	7.7	6.2	6.36	
Field Conductivity	us/cm	22	11	10	6	11	22	
Field Dissolved Oxygen	mg/L	12.34	11.02	10.30		11.30	9.22	
Oxidation Reduction Potential	mV	446.90	169.70	445.50		261.30	340	
pH @ 25°C	pH	6.87	6.66	6.80		6.91	6.74	6.0-8.8
Conductivity @ 25°C	us/cm	23	13	14		14	21.8	
T-Dissolved Solids180°C	mg/L	<10	11	12		12	20	4000
Total Suspended Solids @105°C	mg/L	3	<2	<2		<2	<2.3	25
Turbidity	NTU	2	1	2		1	0.63	
T-Hardness as CaCO3	mg/L	<6.0	<6	<6		<6	8.17	
T-Alkalinity as CaCO3	mg/L	11	7	8		7	7.4	
Acidity as CaCO3	mg/L	3	14	2		2	2.4	
Hydroxide (as CaCO3)	mg/L	<1	<1	<1		<1	<1.0	
Balance (+ions/-ions)	Ratio	0.43	0.36	0.63		0.75		
Carbonate	mg/L	<1	<1	<1		<1	<1.0	
Bicarbonate	mg/L	13	9	9		8	7.4	
Chloride	mg/L	0.5	0.4	0.2		0.5	<0.50	1000
Fluoride	mg/L	0.05	0.03	0.03		0.04		
Sulphate	mg/L	1.0	1.3	<0.5		1.7	1.83	
Carbon (Total Inorganic)	mg/L	<1	<0.1	<0.1		1.2	1.19	
Carbon (Total Organic)	mg/L	3	2.9	2.7		2.6	4.57	
Ammonia - Nitrogen	mg/L	<0.1	<0.01	0.02	<0.005	<0.01	0.0085	12
Nitrate - Nitrogen	mg/L	<0.05	<0.05	<0.05		<0.05	0.0619	56
Nitrite - Nitrogen	mg/L	<0.05	<0.05	<0.05		<0.05	<0.0010	5
Total Kjeldahl Nitrogen	mg/L			<0.2		0.3		
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20	<0.20		<0.20	<0.0010	
Dissolved Ortho Phosphate	mg/L						0.0029	
Total Phosphate As P	mg/L						0.0045	
Biochemical Oxygen Demand	mg/L							25
MF - Fecal Coliforms	CFU/100mL							20
Oil & Grease (Infrared)	mg/L							5
Dissolved Aluminum	mg/L	0.022	0.025	0.024	0.0242	0.012	0.0135	2
Dissolved Antimony	mg/L	<0.0001	<0.0001	<0.00005	0.0000063	<0.00005	<0.00010	
Dissolved Arsenic	mg/L	0.0003	0.0002	0.0002	0.000179	0.0003	0.00025	
Dissolved Barium	mg/L	<0.003	0.00284	0.00202	0.00161	0.00084	0.0029	
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.0001	<0.000003	<0.0001	<0.00050	
Dissolved Boron	mg/L	<0.004	<0.001	<0.001	0.05	<0.001	<0.010	
Dissolved Cadmium	mg/L	<0.00005	<0.00005	<0.00005	0.0000073	<0.00002	<0.000050	
Dissolved Calcium	mg/L	0.7	<0.5	1.0	1.01	1.3	1.77	
Dissolved Chromium	mg/L	<0.0004	<0.0003	<0.0003	0.000204	0.0004	<0.00050	
Dissolved Cobalt	mg/L	<0.00005	<0.00002	<0.00002	0.0000264	<0.00002	<0.00010	
Dissolved Copper	mg/L	<0.0010	<0.0001	0.0031	0.00164	0.0002	0.00122	
Dissolved Iron	mg/L	<0.10	<0.10	<0.10	0.0231	<0.10	<0.030	
Dissolved Lead	mg/L	0.00006	<0.00005	<0.00005	0.0000702	<0.00005	<0.000050	
Dissolved Lithium	mg/L			<0.0010	0.00125	<0.0010	<0.0050	
Dissolved Magnesium	mg/L	<0.5	<0.5	0.4	0.47	0.6	0.909	
Dissolved Manganese	mg/L	<0.010	<0.010	<0.010	0.00261	<0.010	<0.000050	
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.000050	
Dissolved Molybdenum	mg/L	<0.0003	<0.00005	<0.00005	0.0000247	<0.00005	<0.000050	
Dissolved Nickel	mg/L	<0.0001	<0.00005	0.00036	0.000284	0.00028	<0.00050	
Dissolved Phosphorus	mg/L			<0.005	0.002	<0.01		
Dissolved Potassium	mg/L	<0.5	<0.5	<0.5	0.314	<0.5	0.55	
Dissolved Selenium	mg/L	<0.0004	<0.0006	<0.0006	<0.0001	<0.0006	<0.0010	
Dissolved Silicon	mg/L	0.42	0.25	0.14	0.261	0.23	0.434	
Dissolved Silver	mg/L	<0.00005	<0.00005	<0.00005	0.000004	<0.00005	<0.000010	
Dissolved Sodium	mg/L	0.6	<0.5	<0.5	0.508	0.6	0.83	
Dissolved Strontium	mg/L	0.0079	0.0036	0.0062	0.00443	0.0042	0.00849	
Dissolved Thallium	mg/L	<0.00002	<0.00005	<0.00005	0.0000008	<0.00005	<0.00010	
Dissolved Tin	mg/L			<0.0001	<0.00003	<0.0001	<0.00010	
Dissolved Titanium	mg/L			<0.0005	0.000304	<0.0005	<0.010	
Dissolved Uranium	mg/L	0.00017	0.00013	0.00014	0.000136	0.00011	0.000191	
Dissolved Vanadium	mg/L	<0.0005	<0.0001	0.0002	0.0000759	0.0009	<0.0010	
Dissolved Zinc	mg/L	0.002	<0.001	0.003	0.00329	0.002	0.0012	
Total Aluminum	mg/L	0.027	0.0494	0.0340	0.0255	0.0177	0.0217	3
Total Antimony	mg/L	<0.0001	<0.00005	<0.00005	0.0000063	<0.00005	<0.00010	
Total Arsenic	mg/L	<0.0004	0.0002	<0.0002	0.00018	0.0003	0.00025	0.1
Total Barium	mg/L	<0.005	0.00167	0.00175	0.00163	0.00171	0.00297	
Total Beryllium	mg/L	<0.0005	<0.0001	<0.0001	0.0000046	<0.0001	<0.00050	
Total Boron	mg/L	<0.010	0.003	<0.001	0.0581	0.002	<0.010	
Total Cadmium	mg/L	<0.0001	<0.00005	<0.00005	0.0000073	<0.00002	<0.000050	0.0024
Total Calcium	mg/L	1.61	0.79	0.80	1.01	1.25	1.83	
Total Chromium	mg/L	<0.0009	<0.0005	0.0012	0.000204	0.0017	<0.00050	0.17
Total Cobalt	mg/L	<0.0001	<0.00005	<0.00005	0.0000284	<0.00005	<0.00010	
Total Copper	mg/L	<0.0010	0.0012	<0.0010	0.00164	<0.0010	0.00303	0.04
Total Iron	mg/L	<0.10	<0.10	<0.10	0.0237	<0.10	<0.030	
Total Lead	mg/L	0.0001	0.00008	<0.00005	0.0000719	<0.00005	<0.000050	0.02
Total Lithium	mg/L			<0.005	0.00	<0.005	<0.0050	
Total Magnesium	mg/L	0.84	0.68	0.17	0.472	0.66	0.927	

Stn.Code		JER-WQ4	JER-WQ4	JER-WQ4	JER-WQ4	JER-WQ4	JER-WQ4	
		Lake C3	Lake C3	Lake C3	Lake C3	Lake C3	Lake C3	
Station Name		South Basin	South Basin	South Basin	South Basin	South Basin	South Basin	
Sample Class		M	M	M	M	M	M	
Sample No.		Jun-72	Jun-27	Jun-03	L420594-16	06-10848	L464346-3	
Sample Comments								PKCA Discharge
Collect Date/Time		08/04/2006	21/06/2006	11/07/2006	06/08/2006	05/09/2006	17/12/2006	Criteria
Total Manganese	mg/L	<0.01	<0.01	<0.01	0.00261	<0.01	0.00311	
Total Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.000050	
Total Molybdenum	mg/L	<0.0005	<0.00005	<0.00005	0.0000255	0.00011	<0.000050	1.5
Total Nickel	mg/L	0.0007	0.0004	0.0004	0.000307	0.0003	<0.00050	0.1
Total Phosphorus	mg/L	0.02	0.04	<0.020	0.003	0.02		0.4
Total Potassium	mg/L	<0.5	<0.5	<0.5	0.314	<0.5	0.55	
Total Selenium	mg/L	<0.0008	<0.0010	<0.0010	<0.0001	<0.0010	<0.0010	
Total Silicon	mg/L	0.39	0.17	0.14	0.264	0.23	0.451	
Total Silver	mg/L	<0.0002	<0.0001	<0.0001	0.0000056	<0.0001	<0.000010	
Total Sodium	mg/L	<0.5	<0.5	<0.5	0.516	<0.5	0.85	
Total Strontium	mg/L	0.0077	0.0040	0.0047	0.00449	0.0054	0.00868	
Total Thallium	mg/L	<0.00005	<0.00005	<0.00005	0.0000008	<0.00005	<0.00010	
Total Tin	mg/L			<0.0001	0.000052	<0.0001	<0.00010	
Total Titanium	mg/L			<0.0005	0.000409	<0.0005	<0.010	
Total Uranium	mg/L	0.00020	0.00015	0.00011	0.00014	0.00014	0.000284	1
Total Vanadium	mg/L	0.0003	<0.0005	<0.0005	0.0000759	0.0015	<0.0010	
Total Zinc	mg/L	0.003	0.005	0.005	0.00376	0.002	0.002	0.5

Stn.Code		JER-WQ5	JER-WQ5	JER-WQ5	JER-WQ5	JER-WQ5	
Station Name		Lake C3 Outlet	Lake C3 Outlet	Lake C3 Outlet	Lake C3 Outlet	Lake C3 Outlet	
Sample Class		F1	M	M	M	M	
Sample No.		Jun-29	Jun-28	Jun-04	L420594-17	06-10853	
Sample Comments							PKCA Discharge
Collect Date/Time		21/06/2006	21/06/2006	11/07/2006	06/08/2006	05/09/2006	Criteria
Water Temperature	Deg C	10.14	10.13	14.21	16.5	8.97	
Field pH	pH	5.75	5.65	6.02	7.7	6.39	
Field Conductivity	us/cm	11	11	11	6	11	
Field Dissolved Oxygen	mg/L	11.69	13.75	9.65		11.10	
Oxidation Reduction Potential	mV	197.80	201.00	361.80		247.70	
pH @ 25°C	pH	6.69	6.65	6.77		6.89	6.0-8.8
Conductivity @ 25°C	us/cm	14	14	12		15	
T-Dissolved Solids180°C	mg/L	12	13	<4		17	4000
Total Suspended Solids @105°C	mg/L	<2	<2	<2		<2	25
Turbidity	NTU	1	1	2		1	
T-Hardness as CaCO3	mg/L	<6	<6	<6		<6	
T-Alkalinity as CaCO3	mg/L	8	7	8		8	
Acidity as CaCO3	mg/L	4	10	2		2	
Hydroxide (as CaCO3)	mg/L	<1	<1	<1		<1	
Balance (+ions/-ions)	Ratio	0.32	0.33	0.67		0.67	
Carbonate	mg/L	<1	<1	<1		<1	
Bicarbonate	mg/L	9	8	9		10	
Chloride	mg/L	0.5	0.6	0.2		0.5	1000
Fluoride	mg/L	0.03	0.03	0.03		0.04	
Sulphate	mg/L	1.6	1.8	<0.5		2.0	
Carbon (Total Inorganic)	mg/L	<0.1	<0.1	<0.1		1.3	
Carbon (Total Organic)	mg/L	2.6	2.7	2.7		2.4	
Ammonia - Nitrogen	mg/L	0.01	0.01	0.01	<0.005	<0.01	12
Nitrate - Nitrogen	mg/L	<0.05	<0.05	<0.05		0.06	56
Nitrite - Nitrogen	mg/L	<0.05	<0.05	<0.05		<0.05	5
Total Kjeldahl Nitrogen	mg/L			<0.2		<0.2	
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20	<0.20		<0.20	
Dissolved Ortho Phosphate	mg/L						
Total Phosphate As P	mg/L						
Biochemical Oxygen Demand	mg/L						25
MF - Fecal Coliforms	CFU/100mL						20
Oil & Grease (Infrared)	mg/L						5
Dissolved Aluminum	mg/L	0.021	0.022	0.018	0.0196	0.014	2
Dissolved Antimony	mg/L	<0.0001	<0.0001	<0.00005	0.000007	<0.00005	
Dissolved Arsenic	mg/L	0.0001	0.0001	0.0002	0.00019	0.0003	
Dissolved Barium	mg/L	0.00340	0.00256	0.00701	0.00157	0.00132	
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.0001	<0.000003	<0.0001	
Dissolved Boron	mg/L	<0.001	<0.001	<0.001	0.0111	<0.001	
Dissolved Cadmium	mg/L	<0.00005	<0.00005	<0.00005	0.0000125	0.00002	
Dissolved Calcium	mg/L	<0.5	<0.5	1.0	0.991	1.3	
Dissolved Chromium	mg/L	<0.0003	<0.0003	<0.0003	0.000121	0.0011	
Dissolved Cobalt	mg/L	<0.00002	<0.00002	<0.00002	0.0000267	<0.00002	
Dissolved Copper	mg/L	0.0051	0.0015	0.0027	0.00151	0.0010	
Dissolved Iron	mg/L	<0.10	<0.10	<0.10	0.0218	<0.10	
Dissolved Lead	mg/L	0.00007	0.00022	<0.00005	0.000091	<0.00005	
Dissolved Lithium	mg/L			<0.0010	0.00084	<0.0010	
Dissolved Magnesium	mg/L	<0.5	<0.5	0.4	0.447	0.6	
Dissolved Manganese	mg/L	<0.010	<0.010	<0.010	0.00278	<0.010	
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	
Dissolved Molybdenum	mg/L	<0.00005	<0.00005	0.00020	0.0000424	<0.00005	
Dissolved Nickel	mg/L	0.00006	0.00005	0.00025	0.000305	0.00024	
Dissolved Phosphorus	mg/L			<0.005	0.002	<0.01	
Dissolved Potassium	mg/L	<0.5	<0.5	<0.5	0.335	<0.5	
Dissolved Selenium	mg/L	<0.0006	<0.0006	<0.0006	<0.0001	<0.0006	
Dissolved Silicon	mg/L	0.22	0.23	0.14	0.246	0.29	
Dissolved Silver	mg/L	<0.00005	<0.00005	<0.00005	0.0000026	<0.00005	
Dissolved Sodium	mg/L	<0.5	<0.5	<0.5	0.51	0.7	
Dissolved Strontium	mg/L	0.0036	0.0037	0.0060	0.00447	0.0053	
Dissolved Thallium	mg/L	<0.00005	<0.00005	<0.00005	0.000001	<0.00005	
Dissolved Tin	mg/L			<0.0001	<0.00003	<0.0001	
Dissolved Titanium	mg/L			<0.0005	0.000292	<0.0005	
Dissolved Uranium	mg/L	0.00013	0.00013	0.00014	0.000134	0.00011	
Dissolved Vanadium	mg/L	<0.0001	<0.0001	0.0002	0.0000717	0.0007	
Dissolved Zinc	mg/L	<0.001	<0.001	0.002	0.00374	0.005	
Total Aluminum	mg/L	0.0448	0.0483	0.0566	0.0253	0.0177	3
Total Antimony	mg/L	<0.00005	<0.00005	<0.00005	0.0000073	<0.00005	
Total Arsenic	mg/L	<0.0002	<0.0002	<0.0002	0.00019	0.0002	0.1
Total Barium	mg/L	0.00160	0.00156	0.00168	0.0016	0.00155	
Total Beryllium	mg/L	<0.0001	<0.0001	<0.0001	<0.000003	<0.0001	
Total Boron	mg/L	0.002	0.003	<0.001	0.012	0.001	
Total Cadmium	mg/L	<0.00005	<0.00005	<0.00005	0.0000128	<0.00002	0.0024
Total Calcium	mg/L	0.77	0.78	0.80	0.994	1.29	
Total Chromium	mg/L	<0.0005	<0.0005	0.0012	0.000125	0.0020	0.17
Total Cobalt	mg/L	<0.00005	<0.00005	<0.00005	0.0000267	<0.00005	
Total Copper	mg/L	<0.0010	<0.0010	<0.0010	0.00151	<0.0010	0.04
Total Iron	mg/L	<0.10	<0.10	<0.10	0.0231	<0.10	
Total Lead	mg/L	<0.00005	<0.00005	<0.00005	0.0000942	<0.00005	0.02
Total Lithium	mg/L			<0.005	0.00091	<0.005	

Stn.Code		JER-WQ5	JER-WQ5	JER-WQ5	JER-WQ5	JER-WQ5	
Station Name		Lake C3 Outlet	Lake C3 Outlet	Lake C3 Outlet	Lake C3 Outlet	Lake C3 Outlet	
Sample Class		F1	M	M	M	M	
Sample No.		Jun-29	Jun-28	Jun-04	L420594-17	06-10853	
Sample Comments							PKCA Discharge
Collect Date/Time		21/06/2006	21/06/2006	11/07/2006	06/08/2006	05/09/2006	Criteria
Total Magnesium	mg/L	<0.50	<0.50	0.17	0.454	0.66	
Total Manganese	mg/L	<0.01	<0.01	<0.01	0.00285	<0.01	
Total Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	
Total Molybdenum	mg/L	<0.00005	<0.00005	<0.00005	0.0000425	<0.00005	1.5
Total Nickel	mg/L	0.0003	0.0004	0.0003	0.000323	0.0003	0.1
Total Phosphorus	mg/L	<0.02	0.04	<0.020	0.004	<0.02	0.4
Total Potassium	mg/L	<0.5	<0.5	<0.5	0.343	<0.5	
Total Selenium	mg/L	<0.0010	<0.0010	<0.0010	<0.0001	<0.0010	
Total Silicon	mg/L	0.18	0.18	0.14	0.252	0.28	
Total Silver	mg/L	<0.0001	<0.0001	<0.0001	0.0000047	<0.0001	
Total Sodium	mg/L	<0.5	<0.5	<0.5	0.511	<0.5	
Total Strontium	mg/L	0.0037	0.0038	0.0046	0.00451	0.0054	
Total Thallium	mg/L	<0.00005	<0.00005	<0.00005	0.0000011	<0.00005	
Total Tin	mg/L			<0.0001	<0.0000300	<0.0001	
Total Titanium	mg/L			0.0008	0.000294	<0.0005	
Total Uranium	mg/L	0.00014	0.00015	0.00011	0.000138	0.00014	1
Total Vanadium	mg/L	<0.0005	<0.0005	<0.0005	0.0000732	0.0014	
Total Zinc	mg/L	0.002	0.002	0.007	0.00811	0.002	0.5

Stn.Code		JER-WQ6	JER-WQ6	JER-WQ6	JER-WQ6	JER-WQ6	JER-WQ6	JER-WQ6	
Station Name		Carat Lake Centre Basin	Carat Lake Centre Basin	Carat Lake Centre Basin	Carat Lake Centre Basin	Carat Lake Centre Basin	Carat Lake Centre Basin	Carat Lake Centre Basin	
Sample Class		M	M	M	M	M	M	F1	
Sample No.		Jun-73	Jun-03	Jun-05	L420594-18	06-11253	L464346-4	L464346-5	
Sample Comments									PKCA Discharge Criteria
Collect Date/Time		08/04/2006	27/06/2006	11/07/2006	07/08/2006	10/09/2006	17/12/2006	17/12/2006	
Water Temperature	Deg C	0.39	6.93	12.23	15.9	10.23	0.3	0.3	
Field pH	pH	6.17	6.09	5.72	7.8	5.31	6.47	6.44	
Field Conductivity	us/cm	14	12	11	6	9	22	23	
Field Dissolved Oxygen	mg/L	13.53	14.75	10.99		11.58	9.49	9.49	
Oxidation Reduction Potential	mV	390.80	264.60	423.70		291.70	329	336	
pH @ 25°C	pH	6.82	6.75	6.81		6.73	6.78	6.78	6.0-8.8
Conductivity @ 25°C	us/cm	17	15	14		14	22.3	22.2	
T-Dissolved Solids180°C	mg/L	13	13	4		8	17	19	4000
Total Suspended Solids @105°C	mg/L	<2	<2	<2		<2	<2.3	<2.3	25
Turbidity	NTU	<1	2	2		1	1.16	0.58	
T-Hardness as CaCO3	mg/L	<6.0	<6	<6		<6	8.53	8.67	
T-Alkalinity as CaCO3	mg/L	9	7	7		9	10.2	8.6	
Acidity as CaCO3	mg/L	<1	2	4		1	2.2	2.2	
Hydroxide (as CaCO3)	mg/L	<1	<1	<1		<1	<1.0	<1.0	
Balance (+ions/-ions)	Ratio	0.39	0.68	0.73		0.30			
Carbonate	mg/L	<1	<1	<1		<1	<1.0	<1.0	
Bicarbonate	mg/L	11	9	9		11	10.2	8.6	
Chloride	mg/L	0.4	0.2	0.2		0.2	0.64	0.65	1000
Fluoride	mg/L	0.04	0.04	0.03		0.03			
Sulphate	mg/L	0.6	1.2	<0.5		<0.5	1.66	1.67	
Carbon (Total Inorganic)	mg/L	<1	0.2	<0.1		1.0	1.25	1.27	
Carbon (Total Organic)	mg/L	3	4.4	2.7		2.5	4.29	4.36	
Ammonia - Nitrogen	mg/L	<0.1	0.03	0.01	<0.005	0.01	0.0199	0.0205	12
Nitrate - Nitrogen	mg/L	<0.05	<0.05	<0.05		<0.05	0.0917	0.0961	56
Nitrite - Nitrogen	mg/L	<0.05	<0.05	<0.05		<0.05	<0.0010	<0.0010	5
Total Kjeldahl Nitrogen	mg/L			<0.2					
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20	<0.20		<0.20	<0.0010	<0.0010	
Dissolved Ortho Phosphate	mg/L						0.0024	0.0029	
Total Phosphate As P	mg/L						0.0086	0.0047	
Biochemical Oxygen Demand	mg/L								25
MF - Fecal Coliforms	CFU/100mL								20
Oil & Grease (Infrared)	mg/L								5
Dissolved Aluminum	mg/L	0.013	0.020	0.016	0.0198	0.014	0.0099	0.01	2
Dissolved Antimony	mg/L	<0.0001	<0.00005	<0.00005	0.0000058	<0.00005	<0.00010	<0.00010	
Dissolved Arsenic	mg/L	0.0002	<0.0001	0.0002	0.000167	<0.0001	0.00022	0.00022	
Dissolved Barium	mg/L	<0.003	<0.00005	0.0115	0.0016	0.00208	0.00253	0.00257	
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.0001	<0.000003	<0.0001	<0.00050	<0.00050	
Dissolved Boron	mg/L	<0.004	<0.001	<0.001	0.0165	0.001	<0.010	<0.010	
Dissolved Cadmium	mg/L	<0.00005	<0.00005	<0.00005	0.0000047	<0.00002	<0.000050	<0.000050	
Dissolved Calcium	mg/L	0.6	1.1	1.0	0.993	0.5	1.87	1.9	
Dissolved Chromium	mg/L	<0.0004	<0.0003	<0.0003	0.000366	0.0008	<0.00050	<0.00050	
Dissolved Cobalt	mg/L	<0.00005	<0.00002	<0.00002	0.0000144	<0.00002	<0.00010	<0.00010	
Dissolved Copper	mg/L	<0.0010	<0.0001	0.0036	0.00152	<0.0001	0.00117	0.00118	
Dissolved Iron	mg/L	<0.10	<0.10	<0.10	0.00583	<0.10	<0.030	<0.030	
Dissolved Lead	mg/L	<0.00005	<0.00005	<0.00005	0.0000279	<0.00005	<0.000050	<0.000050	
Dissolved Lithium	mg/L			<0.0010	<0.00002	<0.0010	<0.0050	<0.0050	
Dissolved Magnesium	mg/L	<0.5	<0.5	0.4	0.467	0.4	0.938	0.954	
Dissolved Manganese	mg/L	<0.010	<0.010	<0.010	0.00183	<0.010	0.000081	0.000303	
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.000050	<0.000050	
Dissolved Molybdenum	mg/L	<0.0003	<0.00005	<0.00005	0.0000198	<0.00005	<0.000050	<0.000050	
Dissolved Nickel	mg/L	<0.0001	<0.00005	0.00035	0.000293	0.00025	0.00127	0.00055	
Dissolved Phosphorus	mg/L			<0.005	0.002	<0.01			
Dissolved Potassium	mg/L	<0.5	<0.5	<0.5	0.302	<0.5	0.57	0.58	
Dissolved Selenium	mg/L	<0.0004	<0.0006	<0.0006	<0.0001	<0.0006	<0.0010	<0.0010	
Dissolved Silicon	mg/L	0.19	0.14	0.13	0.234	0.14	0.284	0.298	
Dissolved Silver	mg/L	<0.00005	<0.00005	<0.00005	0.0000045	<0.00005	<0.000010	<0.000010	
Dissolved Sodium	mg/L	<0.5	<0.5	<0.5	0.467	<0.5	0.89	0.92	
Dissolved Strontium	mg/L	0.0055	0.0038	0.0064	0.00437	0.0052	0.00823	0.00834	
Dissolved Thallium	mg/L	<0.00002	<0.00005	<0.00005	0.0000106	<0.00005	<0.00010	<0.00010	
Dissolved Tin	mg/L			<0.0001	0.0000468	<0.0001	<0.00010	<0.00010	
Dissolved Titanium	mg/L			<0.0005	<0.00004	<0.0005	<0.010	<0.010	
Dissolved Uranium	mg/L	0.00011	0.00014	0.00014	0.000135	0.00012	0.00015	0.000145	
Dissolved Vanadium	mg/L	<0.0005	<0.0001	0.0002	0.000144	0.0003	<0.0010	<0.0010	
Dissolved Zinc	mg/L	<0.002	<0.001	0.002	0.00228	0.003	0.001	0.0015	
Total Aluminum	mg/L	0.013	0.0332	0.0276	0.0217	0.0185	0.0162	0.0159	3
Total Antimony	mg/L	<0.0001	<0.00005	<0.00005	0.0000059	<0.00005	<0.00010	<0.00010	
Total Arsenic	mg/L	<0.0004	<0.0002	<0.0002	0.000171	<0.0002	0.00021	0.00022	0.1
Total Barium	mg/L	<0.005	0.00212	0.00167	0.00161	0.00182	0.0025	0.00252	
Total Beryllium	mg/L	<0.0005	<0.0001	<0.0001	0.0000052	<0.0001	<0.00050	<0.00050	
Total Boron	mg/L	<0.010	0.001	<0.001	0.0195	0.002	<0.010	<0.010	
Total Cadmium	mg/L	<0.0001	<0.00005	<0.00005	0.0000048	0.00003	<0.000050	<0.000050	0.0024
Total Calcium	mg/L	1.28	1.07	0.88	0.998	1.04	1.83	1.83	
Total Chromium	mg/L	<0.0009	<0.0005	0.0011	0.000372	0.0033	<0.00050	<0.00050	0.17
Total Cobalt	mg/L	<0.0001	<0.00005	<0.00005	0.0000149	<0.00005	<0.00010	<0.00010	
Total Copper	mg/L	<0.0010	0.0011	<0.0010	0.00152	<0.0010	0.0014	0.00142	0.04
Total Iron	mg/L	<0.10	<0.10	<0.10	0.00583	<0.10	<0.030	<0.030	
Total Lead	mg/L	<0.0001	0.00049	<0.00005	0.0000279	<0.00005	<0.000050	<0.000050	0.02

Stn.Code		JER-WQ6	JER-WQ6	JER-WQ6	JER-WQ6	JER-WQ6	JER-WQ6	JER-WQ6	
Station Name		Carat Lake Centre Basin	Carat Lake Centre Basin	Carat Lake Centre Basin	Carat Lake Centre Basin	Carat Lake Centre Basin	Carat Lake Centre Basin	Carat Lake Centre Basin	
Sample Class		M	M	M	M	M	M	F1	
Sample No.		Jun-73	Jun-03	Jun-05	L420594-18	06-11253	L464346-4	L464346-5	
Sample Comments									PKCA Discharge
Collect Date/Time		08/04/2006	27/06/2006	11/07/2006	07/08/2006	10/09/2006	17/12/2006	17/12/2006	Criteria
Total Lithium	mg/L			<0.005	<0.00002	<0.005	<0.0050	<0.0050	
Total Magnesium	mg/L	0.64	<0.50	0.20	0.473	0.54	0.906	0.916	
Total Manganese	mg/L	<0.01	<0.01	<0.01	0.00185	<0.01	0.00216	0.00223	
Total Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.000050	<0.000050	
Total Molybdenum	mg/L	<0.0005	0.00006	<0.00005	0.0000203	<0.00005	<0.000050	<0.000050	1.5
Total Nickel	mg/L	0.0008	0.0003	0.0003	0.000298	<0.0001	0.00071	0.00069	0.1
Total Phosphorus	mg/L	<0.02	0.03	<0.020	0.002	<0.02			0.4
Total Potassium	mg/L	<0.5	<0.5	<0.5	0.302	<0.5	0.55	0.56	
Total Selenium	mg/L	<0.0008	<0.0010	<0.0010	<0.0001	<0.0010	<0.0010	<0.0010	
Total Silicon	mg/L	0.21	0.12	0.13	0.243	0.16	0.304	0.304	
Total Silver	mg/L	<0.0002	<0.0001	<0.0001	0.0000063	<0.0001	<0.000010	<0.000010	
Total Sodium	mg/L	<0.5	0.7	<0.5	0.468	<0.5	0.87	0.88	
Total Strontium	mg/L	0.0056	0.0045	0.0048	0.00443	0.0050	0.00806	0.0081	
Total Thallium	mg/L	<0.00005	<0.00005	<0.00005	0.0000114	<0.00005	<0.00010	<0.00010	
Total Tin	mg/L			<0.0001	0.000063	<0.0001	<0.00010	<0.00010	
Total Titanium	mg/L			<0.0005	<0.00004	<0.0005	<0.010	<0.010	
Total Uranium	mg/L	0.00014	0.00014	0.00009	0.000144	0.00015	0.000215	0.000213	1
Total Vanadium	mg/L	0.0003	<0.0005	<0.0005	0.000147	0.0029	<0.0010	<0.0010	
Total Zinc	mg/L	<0.002	0.006	0.002	0.00297	0.002	0.0011	0.0013	0.5

Stn.Code		**JER-WQ7**	**JER-WQ7**	**JER-WQ7**	**JER-WQ7**	
Station Name		**Carat Lake Outlet**	**Carat Lake Outlet**	**Carat Lake Outlet**	**Carat Lake Outlet**	
Sample Class		**M**	**M**	**M**	**M**	
Sample No.		**Jun-94**	**Jun-06**	**L420594-19**	**06-11254**	
Sample Comments						PKCA Discharge
Collect Date/Time		18/06/2006	11/07/2006	07/08/2006	10/09/2006	Criteria
Water Temperature	Deg C	5.84	14.51	15.8	11.25	
Field pH	pH	7.00	6.12	7.7	5.65	
Field Conductivity	us/cm	12	12	6	9	
Field Dissolved Oxygen	mg/L	10.52	10.79		10.89	
Oxidation Reduction Potential	mV	221.50	407.20		277.60	
pH @ 25°C	pH	6.76	6.81		6.75	6.0-8.8
Conductivity @ 25°C	us/cm	14	14		14	
T-Dissolved Solids180°C	mg/L	32	12		8	4000
Total Suspended Solids @105°C	mg/L	2	<2		<2	25
Turbidity	NTU	1	2		1	
T-Hardness as CaCO3	mg/L	<6	<6		<6	
T-Alkalinity as CaCO3	mg/L	6	8		9	
Acidity as CaCO3	mg/L	3	2		1	
Hydroxide (as CaCO3)	mg/L	<1	<1		<1	
Balance (+ions/-ions)	Ratio	0.6	0.67		0.28	
Carbonate	mg/L	<1	<1		<1	
Bicarbonate	mg/L	8	10		11	
Chloride	mg/L	0.4	0.2		0.3	1000
Fluoride	mg/L	0.03	0.03		0.03	
Sulphate	mg/L	0.8	<0.5		0.6	
Carbon (Total Inorganic)	mg/L	0.1	<0.1		1	
Carbon (Total Organic)	mg/L	2.7	2.7		2.6	
Ammonia - Nitrogen	mg/L	0.02	0.01	<0.005	0.01	12
Nitrate - Nitrogen	mg/L	<0.05	<0.05		<0.05	56
Nitrite - Nitrogen	mg/L	<0.05	<0.05		<0.05	5
Total Kjeldahl Nitrogen	mg/L		<0.2			
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20		<0.20	
Dissolved Ortho Phosphate	mg/L					
Total Phosphate As P	mg/L					
Biochemical Oxygen Demand	mg/L					25
MF - Fecal Coliforms	CFU/100mL					20
Oil & Grease (Infrared)	mg/L					5
Dissolved Aluminum	mg/L	0.015	0.019	0.0186	0.013	2
Dissolved Antimony	mg/L	<0.0001	<0.00005	0.0000058	<0.00005	
Dissolved Arsenic	mg/L	0.0002	0.0001	0.000165	<0.0001	
Dissolved Barium	mg/L	0.00156	0.00284	0.00159	0.00206	
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.000003	<0.0001	
Dissolved Boron	mg/L	<0.001	<0.001	0.0249	<0.001	
Dissolved Cadmium	mg/L	<0.00005	<0.00005	<0.000002	<0.00002	
Dissolved Calcium	mg/L	0.7	1.1	1	0.5	
Dissolved Chromium	mg/L	<0.0003	<0.0003	0.000261	0.0005	
Dissolved Cobalt	mg/L	0.00002	<0.00002	0.0000153	<0.00002	
Dissolved Copper	mg/L	<0.0001	0.0029	0.00147	<0.0001	
Dissolved Iron	mg/L	<0.10	<0.10	0.00572	<0.10	
Dissolved Lead	mg/L	<0.00005	0.00006	0.0000085	<0.00005	
Dissolved Lithium	mg/L		<0.0010	0.00006	<0.0010	
Dissolved Magnesium	mg/L	<0.5	0.4	0.473	0.4	
Dissolved Manganese	mg/L	<0.010	<0.010	0.00184	<0.010	
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00001	<0.00005	
Dissolved Molybdenum	mg/L	<0.00005	0.00006	0.0000247	<0.00005	
Dissolved Nickel	mg/L	0.00025	0.00042	0.00027	0.00025	
Dissolved Phosphorus	mg/L		<0.005	0.002	<0.01	
Dissolved Potassium	mg/L	<0.5	<0.5	0.292	<0.5	
Dissolved Selenium	mg/L	<0.0006	<0.0006	<0.0001	<0.0006	
Dissolved Silicon	mg/L	0.26	0.14	0.261	0.15	
Dissolved Silver	mg/L	0.00006	<0.00005	0.0000014	<0.00005	
Dissolved Sodium	mg/L	<0.5	<0.5	0.449	<0.5	
Dissolved Strontium	mg/L	0.0044	0.0061	0.00445	0.0052	
Dissolved Thallium	mg/L	<0.00005	<0.00005	0.0000074	<0.00005	
Dissolved Tin	mg/L		<0.0001	<0.00003	<0.0001	
Dissolved Titanium	mg/L		<0.0005	<0.00004	<0.0005	
Dissolved Uranium	mg/L	0.00011	0.00014	0.000138	0.00011	
Dissolved Vanadium	mg/L	0.0002	0.0003	0.000122	0.0005	
Dissolved Zinc	mg/L	<0.001	0.004	0.00128	0.002	
Total Aluminum	mg/L	0.0211	0.0283	0.0219	0.0239	3
Total Antimony	mg/L	<0.00005	<0.00005	0.0000062	<0.00005	
Total Arsenic	mg/L	<0.0002	<0.0002	0.000165	<0.0002	0.1
Total Barium	mg/L	0.00177	0.00163	0.00164	0.00202	
Total Beryllium	mg/L	<0.0001	<0.0001	<0.000003	0.0002	
Total Boron	mg/L	<0.001	<0.001	0.0291	0.001	
Total Cadmium	mg/L	<0.00005	<0.00005	<0.000002	0.00005	0.0024
Total Calcium	mg/L	1.08	0.88	1.02	1.08	
Total Chromium	mg/L	0.0014	0.0013	0.000268	0.0034	0.17
Total Cobalt	mg/L	0.00006	<0.00005	0.0000179	<0.00005	
Total Copper	mg/L	0.0076	<0.0010	0.00155	<0.0010	0.04
Total Iron	mg/L	<0.10	<0.10	0.00581	<0.10	
Total Lead	mg/L	<0.00005	<0.00005	0.0000172	<0.00005	0.02
Total Lithium	mg/L		<0.005	0.00024	<0.005	
Total Magnesium	mg/L	<0.50	0.19	0.473	0.55	

Stn.Code		JER-WQ7	JER-WQ7	JER-WQ7	JER-WQ7	
Station Name		Carat Lake Outlet	Carat Lake Outlet	Carat Lake Outlet	Carat Lake Outlet	
Sample Class		M	M	M	M	
Sample No.		Jun-94	Jun-06	L420594-19	06-11254	
Sample Comments						PKCA Discharge
Collect Date/Time		18/06/2006	11/07/2006	07/08/2006	10/09/2006	Criteria
Total Manganese	mg/L	<0.01	<0.01	0.00189	<0.01	
Total Mercury	mg/L	<0.00005	<0.00005	<0.00001	<0.00005	
Total Molybdenum	mg/L	<0.00005	<0.00005	0.0000247	<0.00005	1.5
Total Nickel	mg/L	0.0005	0.0004	0.000302	0.0002	0.1
Total Phosphorus	mg/L	0.02	<0.020	0.003	<0.02	0.4
Total Potassium	mg/L	<0.5	<0.5	0.298	<0.5	
Total Selenium	mg/L	<0.0010	<0.0010	<0.0001	0.0012	
Total Silicon	mg/L	0.15	0.12	0.265	0.18	
Total Silver	mg/L	<0.0001	<0.0001	0.0000028	<0.0001	
Total Sodium	mg/L	<0.5	<0.5	0.457	<0.5	
Total Strontium	mg/L	0.0044	0.0046	0.0045	0.0052	
Total Thallium	mg/L	<0.00005	<0.00005	0.0000074	<0.00005	
Total Tin	mg/L		<0.0001	0.0000347	<0.0001	
Total Titanium	mg/L		<0.0005	0.000043	<0.0005	
Total Uranium	mg/L	0.00012	0.00010	0.000144	0.00014	1
Total Vanadium	mg/L	<0.0005	<0.0005	0.000123	0.0029	
Total Zinc	mg/L	0.007	0.003	0.00395	0.003	0.5

Stn.Code		JER-WQ8	JER-WQ8	JER-WQ8	JER-WQ8	JER-WQ8	JER-WQ8	JER-WQ8	
Station Name		Jericho Lake North Basin	Jericho Lake North Basin	Jericho Lake North Basin	Jericho Lake North Basin	Jericho Lake North Basin	Jericho Lake North Basin	Jericho Lake North Basin	
Sample Class		M	F1	M	M	M	M	M	
Sample No.		Jun-78	Jun-77	Jun-95	Jun-07	L420594-20	06-10849	L464346-6	
Sample Comments									PKCA Discharge Criteria
Collect Date/Time		10/04/2006	10/04/2006	18/06/2006	11/07/2006	05/08/2006	05/09/2006	17/12/2006	
Water Temperature	Deg C	3.13	3.09	10.74	14.2	15.3	9.11	1.27	
Field pH	pH	6.25	6.29	6.85	6.31	7.9	5.92	6.53	
Field Conductivity	us/cm	18	17	12	12	5	9	20	
Field Dissolved Oxygen	mg/L	10.19	10.22	8.64	10.04		10.91	9.79	
Oxidation Reduction Potential	mV	410.90	410.00	237.20	375.20		299.40	319	
pH @ 25°C	pH	6.93	6.94	6.83	6.82		6.83	6.7	6.0-8.8
Conductivity @ 25°C	us/cm	20	21	14	14		12	19.9	
T-Dissolved Solids180°C	mg/L	16	17	16	8		14	15	4000
Total Suspended Solids @105°C	mg/L	<2	<2	<2	<2		<2	<2.3	25
Turbidity	NTU	<1	1	1	1		1	0.47	
T-Hardness as CaCO3	mg/L	<6.0	<6.0	<6	<6		<6	7.58	
T-Alkalinity as CaCO3	mg/L	11	11	7	9		6	9.2	
Acidity as CaCO3	mg/L	3	2	2	2		<1	2.1	
Hydroxide (as CaCO3)	mg/L	<1	<1	<1	<1		<1	<1.0	
Balance (+ions/-ions)	Ratio	0.42	0.38	0.6	0.59		0.67		
Carbonate	mg/L	<1	<1	<1	<1		<1	<1.0	
Bicarbonate	mg/L	13	13	8	11		8	9.2	
Chloride	mg/L	0.5	0.5	0.4	0.3		0.4	<0.50	1000
Fluoride	mg/L	0.05	0.05	0.03	0.03		0.04		
Sulphate	mg/L	0.7	0.9	0.8	<0.5		1.7	1.43	
Carbon (Total Inorganic)	mg/L	<1	<1	<0.1	<0.1		1.1	1.16	
Carbon (Total Organic)	mg/L	3	3	2.6	2.7		2.6	4.32	
Ammonia - Nitrogen	mg/L	<0.1	<0.1	0.02	0.01	<0.005	0.01	0.0145	12
Nitrate - Nitrogen	mg/L	<0.05	<0.05	<0.05	<0.05		<0.05	<0.0050	56
Nitrite - Nitrogen	mg/L	<0.05	<0.05	<0.05	<0.05		<0.05	<0.0010	5
Total Kjeldahl Nitrogen	mg/L				0.2		0.2		
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20	<0.20	<0.20		<0.20	<0.0010	
Dissolved Ortho Phosphate	mg/L							0.002	
Total Phosphate As P	mg/L							0.0065	
Biochemical Oxygen Demand	mg/L								25
MF - Fecal Coliforms	CFU/100mL								20
Oil & Grease (Infrared)	mg/L								5
Dissolved Aluminum	mg/L	0.014	0.013	0.014	0.015	0.0214	0.014	0.0097	2
Dissolved Antimony	mg/L	<0.0001	<0.0001	<0.0001	<0.00005	0.0000068	<0.00005	<0.00010	
Dissolved Arsenic	mg/L	0.0003	0.0002	0.0002	0.0002	0.000184	0.0001	0.00023	
Dissolved Barium	mg/L	<0.003	<0.003	0.00147	0.00182	0.00158	0.00162	0.00245	
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	0.0000032	<0.0001	<0.00050	
Dissolved Boron	mg/L	<0.004	<0.004	<0.001	<0.001	0.0301	<0.001	<0.010	
Dissolved Cadmium	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	0.0000053	<0.00002	<0.000050	
Dissolved Calcium	mg/L	0.8	0.7	0.7	1.0	0.982	1.0	1.67	
Dissolved Chromium	mg/L	<0.0004	<0.0004	<0.0003	<0.0003	0.000237	0.0009	<0.00050	
Dissolved Cobalt	mg/L	<0.00005	<0.00005	0.00002	<0.00002	0.0000229	<0.00002	<0.00010	
Dissolved Copper	mg/L	<0.0010	<0.0010	<0.0001	0.0020	0.00176	0.0003	0.00116	
Dissolved Iron	mg/L	<0.10	<0.10	<0.10	<0.10	0.0138	<0.10	<0.030	
Dissolved Lead	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	0.0000572	<0.00005	<0.000050	
Dissolved Lithium	mg/L				<0.0010	<0.00002	<0.0010	<0.0050	
Dissolved Magnesium	mg/L	<0.5	<0.5	<0.5	0.5	0.465	0.5	0.828	
Dissolved Manganese	mg/L	<0.010	<0.010	<0.010	<0.010	0.00274	<0.010	<0.000050	
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.000050	
Dissolved Molybdenum	mg/L	<0.0003	<0.0003	<0.00005	<0.00005	0.0000337	<0.00005	<0.000050	
Dissolved Nickel	mg/L	<0.0001	<0.0001	0.00025	0.00030	0.000364	0.00031	<0.00050	
Dissolved Phosphorus	mg/L				<0.005	0.002	<0.01		
Dissolved Potassium	mg/L	<0.5	<0.5	<0.5	<0.5	0.303	<0.5	0.51	
Dissolved Selenium	mg/L	<0.0004	<0.0004	<0.0006	<0.0006	<0.0001	<0.0006	<0.0010	
Dissolved Silicon	mg/L	0.23	0.23	0.24	0.11	0.243	0.19	0.226	
Dissolved Silver	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	0.0000511	<0.00005	<0.000010	
Dissolved Sodium	mg/L	<0.5	<0.5	<0.5	<0.5	0.443	<0.5	0.77	
Dissolved Strontium	mg/L	0.0080	0.0072	0.0042	0.0059	0.00444	0.0050	0.00723	
Dissolved Thallium	mg/L	<0.00002	<0.00002	<0.00005	<0.00005	0.0000068	<0.00005	<0.00010	
Dissolved Tin	mg/L				<0.0001	<0.00003	<0.0001	<0.00010	
Dissolved Titanium	mg/L				<0.0005	<0.00004	<0.0005	<0.010	
Dissolved Uranium	mg/L	0.00012	0.00011	0.00011	0.00013	0.000124	0.00011	0.00011	
Dissolved Vanadium	mg/L	<0.0005	<0.0005	0.0001	0.0002	0.000102	0.0009	<0.0010	
Dissolved Zinc	mg/L	<0.002	<0.002	<0.001	0.002	0.00302	0.004	<0.0010	
Total Aluminum	mg/L	0.012	0.011	0.0202	0.0245	0.0237	0.0164	0.0143	3
Total Antimony	mg/L	<0.0001	<0.0001	<0.00005	<0.00005	0.0000068	<0.00005	<0.00010	
Total Arsenic	mg/L	<0.0004	<0.0004	<0.0002	<0.0002	0.000198	0.0003	0.00023	0.1
Total Barium	mg/L	<0.005	<0.005	0.00148	0.00151	0.00159	0.00153	0.0025	
Total Beryllium	mg/L	<0.0005	<0.0005	<0.0001	<0.0001	0.0000032	<0.0001	<0.00050	
Total Boron	mg/L	<0.010	<0.010	0.001	<0.001	0.0341	0.002	<0.010	
Total Cadmium	mg/L	<0.0001	<0.0001	<0.00005	<0.00005	0.000007	<0.00002	<0.000050	0.0024
Total Calcium	mg/L	1.70	1.68	0.87	0.89	0.99	1.12	1.69	
Total Chromium	mg/L	<0.0009	<0.0009	<0.0005	0.0008	0.000254	0.0020	<0.00050	0.17
Total Cobalt	mg/L	<0.0001	<0.0001	<0.00005	<0.00005	0.0000262	<0.00005	<0.00010	
Total Copper	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.00178	<0.0010	0.00137	0.04
Total Iron	mg/L	<0.10	<0.10	<0.10	<0.10	0.0159	<0.10	<0.030	
Total Lead	mg/L	<0.0001	<0.0001	<0.00005	<0.00005	0.0000603	<0.00005	<0.000050	0.02

Stn.Code		JER-WQ8	JER-WQ8	JER-WQ8	JER-WQ8	JER-WQ8	JER-WQ8	JER-WQ8	
Station Name		Jericho Lake North Basin	Jericho Lake North Basin	Jericho Lake North Basin	Jericho Lake North Basin	Jericho Lake North Basin	Jericho Lake North Basin	Jericho Lake North Basin	
Sample Class		M	F1	M	M	M	M	M	
Sample No.		Jun-78	Jun-77	Jun-95	Jun-07	L420594-20	06-10849	L464346-6	
Sample Comments									PKCA Discharge Criteria
Collect Date/Time		10/04/2006	10/04/2006	18/06/2006	11/07/2006	05/08/2006	05/09/2006	17/12/2006	
Total Lithium	mg/L				<0.005	0.000152	<0.005	<0.0050	
Total Magnesium	mg/L	0.83	0.82	<0.50	0.20	0.471	0.57	0.831	
Total Manganese	mg/L	<0.01	<0.01	<0.01	<0.01	0.00275	<0.01	0.0018	
Total Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.000050	
Total Molybdenum	mg/L	<0.0005	<0.0005	<0.00005	<0.00005	0.0000393	<0.00005	<0.000050	1.5
Total Nickel	mg/L	<0.0006	<0.0006	0.0003	0.0003	0.000374	0.0004	<0.00050	0.1
Total Phosphorus	mg/L	0.02	<0.02	0.04	<0.020	0.004	<0.02		0.4
Total Potassium	mg/L	<0.5	<0.5	<0.5	<0.5	0.303	<0.5	0.52	
Total Selenium	mg/L	<0.0008	<0.0008	<0.0010	<0.0010	<0.0001	<0.0010	<0.0010	
Total Silicon	mg/L	0.24	0.24	0.13	0.11	0.257	0.19	0.243	
Total Silver	mg/L	<0.0002	<0.0002	<0.0001	<0.0001	0.0000634	<0.0001	<0.000010	
Total Sodium	mg/L	<0.5	<0.5	<0.5	<0.5	0.449	<0.5	0.75	
Total Strontium	mg/L	0.0074	0.0075	0.0040	0.0044	0.00446	0.0048	0.00735	
Total Thallium	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	0.0000068	<0.00005	<0.00010	
Total Tin	mg/L				<0.0001	0.0000303	<0.0001	<0.00010	
Total Titanium	mg/L				<0.0005	<0.00004	<0.0005	<0.010	
Total Uranium	mg/L	0.00015	0.00014	0.00012	0.00007	0.000131	0.00013	0.000166	1
Total Vanadium	mg/L	0.0002	0.0003	<0.0005	<0.0005	0.000102	0.0015	<0.0010	
Total Zinc	mg/L	<0.002	<0.002	<0.001	0.003	0.00405	0.003	0.0012	0.5

Stn.Code		JER-WQ9	JER-WQ9	JER-WQ9	JER-WQ9	JER-WQ9	
Station Name		Jericho River Downstream	Jericho River Downstream	Jericho River Downstream	Jericho River Downstream	Jericho River Downstream	
Sample Class		M	M	M	M	M	
Sample No.		Jun-96	Jun-08	L420594-21	06-10850	L464346-7	
Sample Comments							PKCA Discharge Criteria
Collect Date/Time		18/06/2006	11/07/2006	05/08/2006	05/09/2006	17/12/2006	
Water Temperature	Deg C	11.78	14.36	16.3	8.55	0.25	
Field pH	pH	7.84	5.84	7.6	5.65	6.54	
Field Conductivity	us/cm	13	12	5	10	24	
Field Dissolved Oxygen	mg/L	9.40	9.38		11.03	7.92	
Oxidation Reduction Potential	mV	210.60	381.00		303.10	314	
pH @ 25°C	pH	6.78	6.78		6.79	6.77	6.0-8.8
Conductivity @ 25°C	us/cm	14	14		12	23.7	
T-Dissolved Solids180°C	mg/L	28	12		14	18	4000
Total Suspended Solids @105°C	mg/L	<2	<2		<2	<2.3	25
Turbidity	NTU	1	1		1	0.58	
T-Hardness as CaCO3	mg/L	<6	<6		<6	9.26	
T-Alkalinity as CaCO3	mg/L	7	8		7	11	
Acidity as CaCO3	mg/L	3	2		2	2.5	
Hydroxide (as CaCO3)	mg/L	<1	<1		<1	<1.0	
Balance (+ions/-ions)	Ratio	0.5	0.64		0.66		
Carbonate	mg/L	<1	<1		<1	<1.0	
Bicarbonate	mg/L	8	9		8	11	
Chloride	mg/L	0.4	0.3		0.4	0.57	1000
Fluoride	mg/L	0.03	0.03		0.04		
Sulphate	mg/L	0.9	<0.5		1.6	1.7	
Carbon (Total Inorganic)	mg/L	<0.1	<0.1		1.2	1.55	
Carbon (Total Organic)	mg/L	2.6	2.5		2.5	4.48	
Ammonia - Nitrogen	mg/L	0.02	0.01	<0.005	<0.01	0.0346	12
Nitrate - Nitrogen	mg/L	<0.05	<0.05		<0.05	0.0366	56
Nitrite - Nitrogen	mg/L	<0.05	<0.05		<0.05	<0.0010	5
Total Kjeldahl Nitrogen	mg/L		<0.2		0.2		
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20		<0.20	<0.0010	
Dissolved Ortho Phosphate	mg/L					0.0029	
Total Phosphate As P	mg/L					0.0049	
Biochemical Oxygen Demand	mg/L						25
MF - Fecal Coliforms	CFU/100mL						20
Oil & Grease (Infrared)	mg/L						5
Dissolved Aluminum	mg/L	0.013	0.014	0.0183	0.010	0.0092	2
Dissolved Antimony	mg/L	<0.0001	<0.00005	0.000009	<0.00005	<0.00010	
Dissolved Arsenic	mg/L	0.0003	0.0002	0.000188	0.0002	0.00023	
Dissolved Barium	mg/L	0.00152	0.00236	0.002	0.00141	0.00326	
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.000003	<0.0001	<0.00050	
Dissolved Boron	mg/L	<0.001	<0.001	0.0373	<0.001	<0.010	
Dissolved Cadmium	mg/L	<0.00005	<0.00005	0.0000275	<0.00002	<0.000050	
Dissolved Calcium	mg/L	0.6	1.0	1.04	1.1	2.02	
Dissolved Chromium	mg/L	<0.0003	<0.0003	0.000184	0.0009	<0.00050	
Dissolved Cobalt	mg/L	0.00002	<0.00002	0.0000401	<0.00002	<0.00010	
Dissolved Copper	mg/L	<0.0001	0.0028	0.00166	0.0016	0.00117	
Dissolved Iron	mg/L	<0.10	<0.10	0.0205	<0.10	<0.030	
Dissolved Lead	mg/L	<0.00005	0.00079	0.000193	<0.00005	<0.000050	
Dissolved Lithium	mg/L		<0.0010	0.00011	<0.0010	<0.0050	
Dissolved Magnesium	mg/L	<0.5	0.4	0.477	0.5	1.02	
Dissolved Manganese	mg/L	<0.010	<0.010	0.00642	<0.010	0.000242	
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00001	<0.00005	<0.000050	
Dissolved Molybdenum	mg/L	<0.00005	<0.00005	0.0000338	<0.00005	<0.000050	
Dissolved Nickel	mg/L	0.00019	0.00093	0.000256	0.00023	<0.00050	
Dissolved Phosphorus	mg/L		<0.005	0.002	<0.01		
Dissolved Potassium	mg/L	<0.5	<0.5	0.312	<0.5	0.58	
Dissolved Selenium	mg/L	<0.0006	<0.0006	<0.0001	<0.0006	<0.0010	
Dissolved Silicon	mg/L	0.08	0.11	0.268	0.24	0.514	
Dissolved Silver	mg/L	<0.00005	<0.00005	0.0000881	<0.00005	<0.000010	
Dissolved Sodium	mg/L	<0.5	<0.5	0.468	<0.5	0.87	
Dissolved Strontium	mg/L	0.0043	0.0058	0.00466	0.0036	0.00865	
Dissolved Thallium	mg/L	<0.00005	<0.00005	0.0000046	<0.00005	<0.00010	
Dissolved Tin	mg/L		<0.0001	<0.00003	0.0003	<0.00010	
Dissolved Titanium	mg/L		<0.0005	0.000063	<0.0005	<0.010	
Dissolved Uranium	mg/L	0.00011	0.00012	0.000126	0.00009	0.000138	
Dissolved Vanadium	mg/L	0.0001	0.0002	0.0000946	0.0010	<0.0010	
Dissolved Zinc	mg/L	<0.001	0.002	0.00977	0.001	<0.0010	
Total Aluminum	mg/L	0.0271	0.0217	0.0205	0.0167	0.0215	3
Total Antimony	mg/L	<0.00005	<0.00005	0.0000091	<0.00005	<0.00010	
Total Arsenic	mg/L	<0.0002	<0.0002	0.000188	<0.0002	0.00022	0.1
Total Barium	mg/L	0.00154	0.00145	0.00201	0.00166	0.00337	
Total Beryllium	mg/L	<0.0001	<0.0001	0.0000033	<0.0001	<0.00050	
Total Boron	mg/L	0.003	<0.001	0.0383	0.002	<0.010	
Total Cadmium	mg/L	<0.00005	<0.00005	0.0000281	<0.00002	<0.000050	0.0024
Total Calcium	mg/L	0.85	0.86	1.05	1.16	2.04	
Total Chromium	mg/L	0.0012	0.0010	0.0002	0.0022	<0.00050	0.17
Total Cobalt	mg/L	0.00005	<0.00005	0.0000402	<0.00005	<0.00010	
Total Copper	mg/L	<0.0010	<0.0010	0.00166	<0.0010	0.0014	0.04
Total Iron	mg/L	<0.10	<0.10	0.0219	<0.10	0.046	
Total Lead	mg/L	<0.00005	<0.00005	0.000194	<0.00005	<0.000050	0.02
Total Lithium	mg/L		<0.005	0.00029	<0.005	<0.0050	

Stn.Code		JER-WQ9	JER-WQ9	JER-WQ9	JER-WQ9	JER-WQ9	
Station Name		Jericho River Downstream	Jericho River Downstream	Jericho River Downstream	Jericho River Downstream	Jericho River Downstream	
Sample Class		M	M	M	M	M	
Sample No.		Jun-96	Jun-08	L420594-21	06-10850	L464346-7	
Sample Comments							PKCA Discharge Criteria
Collect Date/Time		18/06/2006	11/07/2006	05/08/2006	05/09/2006	17/12/2006	
Total Magnesium	mg/L	<0.50	0.19	0.48	0.60	1.01	
Total Manganese	mg/L	<0.01	<0.01	0.00642	<0.01	0.015	
Total Mercury	mg/L	<0.00005	<0.00005	<0.00001	<0.00005	<0.000050	
Total Molybdenum	mg/L	<0.00005	<0.00005	0.0000341	<0.00005	<0.000050	1.5
Total Nickel	mg/L	0.0005	0.0003	0.000258	0.0004	<0.00050	0.1
Total Phosphorus	mg/L	<0.02	<0.020	0.004	<0.02		0.4
Total Potassium	mg/L	<0.5	<0.5	0.312	<0.5	0.58	
Total Selenium	mg/L	<0.0010	<0.0010	<0.0001	<0.0010	<0.0010	
Total Silicon	mg/L	0.14	0.10	0.269	0.25	0.513	
Total Silver	mg/L	<0.0001	<0.0001	0.000122	<0.0001	<0.000010	
Total Sodium	mg/L	<0.5	<0.5	0.47	<0.5	0.86	
Total Strontium	mg/L	0.0043	0.0044	0.00466	0.0050	0.00871	
Total Thallium	mg/L	<0.00005	<0.00005	0.0000046	<0.00005	<0.00010	
Total Tin	mg/L		<0.0001	<0.0000300	<0.0001	<0.00010	
Total Titanium	mg/L		<0.0005	0.000242	<0.0005	<0.010	
Total Uranium	mg/L	0.00012	0.00008	0.000129	0.00013	0.00021	1
Total Vanadium	mg/L	<0.0005	<0.0005	0.000104	0.0018	<0.0010	
Total Zinc	mg/L	<0.001	0.002	0.0106	0.003	0.0012	0.5

Stn.Code		JER-WQ10	JER-WQ10	JER-WQ10	JER-WQ10	JER-WQ10	JER-WQ10	JER-WQ10	
Station Name		Control Lake	Control Lake	Control Lake	Control Lake	Control Lake	Control Lake	Control Lake	
Sample Class		L1	M	M	M	M	M	M	
Sample No.		06-4971-D	Jun-71	Jun-04	Jun-09	L420594-22	06-10847	L464346-2	
Sample Comments				No field measurements					PKCA Discharge Criteria
Collect Date/Time		08/04/2006	08/04/2006	27/06/2006	11/07/2006	03/08/2006 9:00	05/09/2006	17/12/2006 12:01	
Water Temperature	Deg C		0.71	N/A	12.87	16.2	9.55	0.62	
Field pH	pH		6.06	N/A	5.75	7.5	5.98	6.33	
Field Conductivity	us/cm		17	N/A	10	3	8	18	
Field Dissolved Oxygen	mg/L		22.83	N/A	10.50		10.41	10.27	
Oxidation Reduction Potential	mV		414.20	N/A	473.50		268.00	300	
pH @ 25°C	pH	6.80	6.79	6.69	6.73		6.76	6.59	6.0-8.8
Conductivity @ 25°C	us/cm	17	17	14	13		11	17.8	
T-Dissolved Solids180°C	mg/L	14	14	12	12		14	13	4000
Total Suspended Solids @105°C	mg/L		3	<2	<2		<2	<2.3	25
Turbidity	NTU	1	1	1	2		1	0.55	
T-Hardness as CaCO3	mg/L	<6.0	<6.0	<6	<6		<6	6.73	
T-Alkalinity as CaCO3	mg/L	9	9	7	7		6	5.3	
Acidity as CaCO3	mg/L		2	3	1		1	2.1	
Hydroxide (as CaCO3)	mg/L	<1	<1	<1	<1		<1	<1.0	
Balance (+ions/-ions)	Ratio	0.46	0.53	0.64	0.66		0.63		
Carbonate	mg/L	<1	<1	<1	<1		<1	<1.0	
Bicarbonate	mg/L	11	10	8	9		7	5.3	
Chloride	mg/L	0.4	0.4	0.2	0.2		0.3	<0.50	1000
Fluoride	mg/L	0.05	0.05	0.05	0.03		0.03		
Sulphate	mg/L	0.6	0.6	1.3	<0.5		1.5	1.46	
Carbon (Total Inorganic)	mg/L	<1	<1	<0.1	<0.1		1.0	0.96	
Carbon (Total Organic)	mg/L	3	3	2.9	2.6		2.4	3.95	
Ammonia - Nitrogen	mg/L	<0.1	<0.1	0.02	0.01	<0.005	0.01	0.0177	12
Nitrate - Nitrogen	mg/L	<0.05	<0.05	<0.05	<0.05		<0.05	0.0257	56
Nitrite - Nitrogen	mg/L	<0.05	<0.05	<0.05	<0.05		<0.05	<0.0010	5
Total Kjeldahl Nitrogen	mg/L				<0.2		0.2		
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20	<0.20	<0.20		<0.20	<0.0010	
Dissolved Ortho Phosphate	mg/L							0.0024	
Total Phosphate As P	mg/L							0.0044	
Biochemical Oxygen Demand	mg/L								25
MF - Fecal Coliforms	CFU/100mL								20
Oil & Grease (Infrared)	mg/L								5
Dissolved Aluminum	mg/L	0.017	0.016	0.020	0.028	0.0232	0.016	0.0114	2
Dissolved Antimony	mg/L	<0.0001	<0.0001	<0.00005	<0.00005	0.000008	<0.00005	<0.00010	
Dissolved Arsenic	mg/L	0.0002	0.0002	<0.0001	0.0002	0.000192	0.0002	0.00021	
Dissolved Barium	mg/L	<0.003	<0.003	<0.00005	0.00187	0.00175	0.00178	0.00237	
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	0.0000037	<0.0001	<0.00050	
Dissolved Boron	mg/L	<0.004	<0.004	<0.001	<0.001	0.0384	<0.001	<0.010	
Dissolved Cadmium	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	0.0000196	<0.00002	<0.000050	
Dissolved Calcium	mg/L	0.6	0.6	1.0	0.9	0.879	0.9	1.47	
Dissolved Chromium	mg/L	<0.0004	<0.0004	<0.0003	<0.0003	0.000192	0.0006	<0.00050	
Dissolved Cobalt	mg/L	<0.00005	<0.00005	<0.00002	<0.00002	0.0000245	<0.00002	<0.00010	
Dissolved Copper	mg/L	<0.0010	<0.0010	0.0003	0.0023	0.00198	0.0007	0.0012	
Dissolved Iron	mg/L	<0.10	<0.10	<0.10	<0.10	0.0172	<0.10	<0.030	
Dissolved Lead	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	0.000231	<0.00005	<0.000050	
Dissolved Lithium	mg/L				<0.0010	<0.00002	<0.0010	<0.0050	
Dissolved Magnesium	mg/L	<0.5	<0.5	<0.5	0.4	0.418	0.4	0.742	
Dissolved Manganese	mg/L	<0.010	<0.010	<0.010	<0.010	0.00207	<0.010	<0.000050	
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.000050	
Dissolved Molybdenum	mg/L	<0.0003	<0.0003	<0.00005	<0.00005	0.0000261	<0.00005	<0.000050	
Dissolved Nickel	mg/L	<0.0001	<0.0001	0.00016	0.00103	0.00028	0.00033	0.00124	
Dissolved Phosphorus	mg/L				<0.005	0.001	<0.01		
Dissolved Potassium	mg/L	<0.5	<0.5	<0.5	<0.5	0.295	<0.5	<0.50	
Dissolved Selenium	mg/L	<0.0004	<0.0004	<0.0006	<0.0006	<0.0001	<0.0006	<0.0010	
Dissolved Silicon	mg/L	0.29	0.30	0.15	0.14	0.263	0.21	0.337	
Dissolved Silver	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	0.000334	<0.00005	<0.000010	
Dissolved Sodium	mg/L	<0.5	<0.5	<0.5	<0.5	0.42	<0.5	0.71	
Dissolved Strontium	mg/L	0.0060	0.0061	0.0037	0.0062	0.00428	0.0033	0.00701	
Dissolved Thallium	mg/L	<0.00002	<0.00002	<0.00005	<0.00005	0.000004	<0.00005	<0.00010	
Dissolved Tin	mg/L				<0.0001	<0.00003	<0.0001	<0.00010	
Dissolved Titanium	mg/L				<0.0005	0.000101	<0.0005	<0.010	
Dissolved Uranium	mg/L	0.00013	0.00013	0.00011	0.00012	0.000141	0.00015	0.000163	
Dissolved Vanadium	mg/L	<0.0005	<0.0005	<0.0001	0.0002	0.0000858	0.0009	<0.0010	
Dissolved Zinc	mg/L	<0.002	<0.002	<0.001	0.002	0.00614	0.004	0.0012	
Total Aluminum	mg/L	0.017	0.018	0.0331	0.0284	0.0259	0.0198	0.0188	3
Total Antimony	mg/L	<0.0001	<0.0001	<0.00005	<0.00005	0.000009	0.00007	<0.00010	
Total Arsenic	mg/L	<0.0004	<0.0004	0.0002	<0.0002	0.000197	0.0003	0.00022	0.1
Total Barium	mg/L	<0.005	<0.005	0.00190	0.00156	0.00184	0.00162	0.00233	
Total Beryllium	mg/L	<0.0005	<0.0005	<0.0001	<0.0001	0.0000039	<0.0001	<0.00050	
Total Boron	mg/L	<0.010	<0.010	<0.001	<0.001	0.0442	0.001	<0.010	
Total Cadmium	mg/L	<0.0001	<0.0001	<0.00005	<0.00005	0.0000222	<0.00002	<0.000050	0.0024
Total Calcium	mg/L	1.28	1.29	0.91	0.77	0.902	0.99	1.41	
Total Chromium	mg/L	<0.0009	<0.0009	<0.0005	0.0011	0.000219	0.0015	<0.00050	0.17
Total Cobalt	mg/L	<0.0001	<0.0001	<0.00005	<0.00005	0.0000317	<0.00005	<0.00010	
Total Copper	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	0.00201	<0.0010	0.00136	0.04
Total Iron	mg/L	<0.10	<0.10	<0.10	<0.10	0.0188	<0.10	<0.030	
Total Lead	mg/L	<0.0001	<0.0001	<0.00005	<0.00005	0.00025	0.00024	<0.000050	0.02
Total Lithium	mg/L				<0.005	<0.00002	<0.005	<0.0050	
Total Magnesium	mg/L	0.66	0.67	<0.50	0.16	0.426	0.52	0.718	
Total Manganese	mg/L	<0.01	<0.01	<0.01	<0.01	0.00214	<0.01	0.00159	
Total Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.000050	
Total Molybdenum	mg/L	<0.0005	<0.0005	<0.00005	<0.00005	0.000027	0.00006	<0.000050	1.5
Total Nickel	mg/L	<0.0006	<0.0006	0.0002	0.0003	0.000302	0.0004	0.00054	0.1
Total Phosphorus	mg/L	0.02	<0.02	<0.02	<0.020	0.002	<0.02		0.4
Total Potassium	mg/L	<0.5	<0.5	<0.5	<0.5	0.297	<0.5	<0.50	
Total Selenium	mg/L	<0.0008	<0.0008	<0.0010	<0.0010	<0.0001	0.0011	<0.0010	

Stn.Code		JER-WQ10	JER-WQ10	JER-WQ10	JER-WQ10	JER-WQ10	JER-WQ10	JER-WQ10	
Station Name		Control Lake	Control Lake	Control Lake	Control Lake	Control Lake	Control Lake	Control Lake	
Sample Class		L1	M	M	M	M	M	M	
Sample No.		06-4971-D	Jun-71	Jun-04	Jun-09	L420594-22	06-10847	L464346-2	
Sample Comments				No field measurements					PKCA Discharge Criteria
Collect Date/Time		08/04/2006	08/04/2006	27/06/2006	11/07/2006	03/08/2006 9:00	05/09/2006	17/12/2006 12:01	
Total Silicon	mg/L	0.32	0.33	0.13	0.14	0.271	0.22	0.342	
Total Silver	mg/L	<0.0002	<0.0002	<0.0001	<0.0001	0.000338	<0.0001	<0.000010	
Total Sodium	mg/L	<0.5	<0.5	<0.5	<0.5	0.434	<0.5	0.68	
Total Strontium	mg/L	0.0064	0.0063	0.0041	0.0044	0.00441	0.0045	0.00669	
Total Thallium	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	0.0000044	<0.00005	<0.00010	
Total Tin	mg/L				<0.0001	0.0000439	<0.0001	<0.00010	
Total Titanium	mg/L				<0.0005	0.000177	<0.0005	<0.010	
Total Uranium	mg/L	0.00018	0.00018	0.00014	0.00008	0.000142	0.00016	0.000236	1
Total Vanadium	mg/L	0.0003	0.0004	<0.0005	<0.0005	0.0000894	0.0017	<0.0010	
Total Zinc	mg/L	0.002	0.002	0.003	0.003	0.0077	0.013	0.0011	0.5

Stn.Code		JER-WQ11	JER-WQ11	JER-WQ11	JER-WQ11	JER-WQ11	JER-WQ11	
Station Name		Cigar Lake (2nd Control)	Cigar Lake (2nd Control)	Cigar Lake (2nd Control)	Cigar Lake (2nd Control)	Cigar Lake (2nd Control)	Cigar Lake (2nd Control)	
Sample Class		M	M	M	M	M	M	
Sample No.		Jun-76	Jun-05	Jun-10	L420594-23	06-10846	L464346-1	
Sample Comments			No field measurements					PKCA Discharge Criteria
Collect Date/Time		10/04/2006	27/06/2006	11/07/2006	04/08/2006	05/09/2006	17/12/2006	
Water Temperature	Deg C	1.51	N/A	12.8	14	9.48	0.65	
Field pH	pH	6.06	N/A	5.55	7.7	5.94	6.4	
Field Conductivity	us/cm	17	N/A	12	7	9	20	
Field Dissolved Oxygen	mg/L	14.48	N/A	10.92		10.79	12.78	
Oxidation Reduction Potential	mV	408.70	N/A	412.30		284.80	309	
pH @ 25°C	pH	6.99	6.80	6.86		6.82	6.83	6.0-8.8
Conductivity @ 25°C	us/cm	19	15	14		12	20.1	
T-Dissolved Solids180°C	mg/L	16	8	<4		13	12	4000
Total Suspended Solids @105°C	mg/L	<2	<2	<2		<2	<2.3	25
Turbidity	NTU	1	1	2		1	0.45	
T-Hardness as CaCO3	mg/L	<6.0	<6	<6		<6	7.61	
T-Alkalinity as CaCO3	mg/L	11	8	9		7	8.8	
Acidity as CaCO3	mg/L	3	2	3		<1	2.7	
Hydroxide (as CaCO3)	mg/L	<1	<1	<1		<1	<1.0	
Balance (+ions/-ions)	Ratio	0.35	0.63	0.58		0.62		
Carbonate	mg/L	<1	<1	<1		<1	<1.0	
Bicarbonate	mg/L	13	9	11		9	8.8	
Chloride	mg/L	0.4	0.4	0.3		0.4	<0.50	1000
Fluoride	mg/L	0.05	0.04	0.03		0.04		
Sulphate	mg/L	<0.5	0.9	<0.5		1.3	1.15	
Carbon (Total Inorganic)	mg/L	<1	0.3	0.1		1.2	1.3	
Carbon (Total Organic)	mg/L	3	2.6	2.5		2.3	4.88	
Ammonia - Nitrogen	mg/L	<0.1	0.01	0.02	<0.005	0.01	0.018	12
Nitrate - Nitrogen	mg/L	<0.05	<0.05	<0.05		<0.05	<0.0050	56
Nitrite - Nitrogen	mg/L	<0.05	<0.05	<0.05		<0.05	<0.0010	5
Total Kjeldahl Nitrogen	mg/L			<0.2		<0.2		
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20	<0.20		<0.20	0.0012	
Dissolved Ortho Phosphate	mg/L						0.0024	
Total Phosphate As P	mg/L						0.0039	
Biochemical Oxygen Demand	mg/L							25
MF - Fecal Coliforms	CFU/100mL							20
Oil & Grease (Infrared)	mg/L							5
Dissolved Aluminum	mg/L	0.009	0.010	0.011	0.0146	0.009	0.0046	2
Dissolved Antimony	mg/L	<0.0001	<0.00005	<0.00005	0.0000045	<0.00005	<0.00010	
Dissolved Arsenic	mg/L	0.0002	<0.0001	0.0002	0.000134	0.0002	0.00017	
Dissolved Barium	mg/L	<0.003	0.00076	0.0115	0.00135	0.00121	0.00185	
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.0001	<0.000003	<0.0001	<0.00050	
Dissolved Boron	mg/L	<0.004	<0.001	<0.001	0.0448	<0.001	<0.010	
Dissolved Cadmium	mg/L	<0.00005	<0.00005	<0.00005	0.0000045	<0.00002	<0.000050	
Dissolved Calcium	mg/L	0.6	1.2	1.1	1.12	1.1	1.77	
Dissolved Chromium	mg/L	<0.0004	<0.0003	<0.0003	0.000211	<0.0003	<0.00050	
Dissolved Cobalt	mg/L	<0.00005	<0.00002	<0.00002	0.0000208	<0.00002	<0.00010	
Dissolved Copper	mg/L	<0.0010	<0.0001	0.0034	0.00155	0.0001	0.00151	
Dissolved Iron	mg/L	<0.10	<0.10	<0.10	0.00819	<0.10	<0.030	
Dissolved Lead	mg/L	<0.00005	<0.00005	0.00006	0.0000268	<0.00005	<0.000050	
Dissolved Lithium	mg/L			<0.0010	0.000031	<0.0010	<0.0050	
Dissolved Magnesium	mg/L	<0.5	<0.5	0.4	0.436	0.5	0.777	
Dissolved Manganese	mg/L	<0.010	<0.010	<0.010	0.00178	<0.010	<0.000050	
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.000050	
Dissolved Molybdenum	mg/L	<0.0003	<0.00005	<0.00005	0.0000239	<0.00005	<0.000050	
Dissolved Nickel	mg/L	<0.0001	<0.00005	0.00054	0.000189	0.00020	<0.00050	
Dissolved Phosphorus	mg/L			<0.005	0.001	<0.01		
Dissolved Potassium	mg/L	<0.5	<0.5	<0.5	0.308	<0.5	0.63	
Dissolved Selenium	mg/L	<0.0004	<0.0006	<0.0006	<0.0001	<0.0006	<0.0010	
Dissolved Silicon	mg/L	0.30	0.18	0.16	0.281	0.25	0.358	
Dissolved Silver	mg/L	<0.00005	<0.00005	<0.00005	0.0000067	<0.00005	<0.000010	
Dissolved Sodium	mg/L	<0.5	<0.5	<0.5	0.451	<0.5	0.79	
Dissolved Strontium	mg/L	0.0064	0.0041	0.0064	0.00444	0.0040	0.00679	
Dissolved Thallium	mg/L	<0.00002	<0.00005	<0.00005	0.0000047	<0.00005	<0.00010	
Dissolved Tin	mg/L			<0.0001	<0.00003	<0.0001	0.00142	
Dissolved Titanium	mg/L			<0.0005	0.000068	<0.0005	<0.010	
Dissolved Uranium	mg/L	0.00010	0.00011	0.00011	0.000126	0.00023	0.000087	
Dissolved Vanadium	mg/L	<0.0005	<0.0001	0.0002	0.0000859	0.0009	<0.0010	
Dissolved Zinc	mg/L	<0.002	<0.001	0.003	0.00415	0.002	0.0027	
Total Aluminum	mg/L	0.010	0.0231	0.0185	0.0199	0.0136	0.0108	3
Total Antimony	mg/L	<0.0001	<0.00005	<0.00005	0.0000062	0.00094	<0.00010	
Total Arsenic	mg/L	<0.0004	<0.0002	<0.0002	0.000135	0.0003	0.00018	0.1
Total Barium	mg/L	<0.005	0.00164	0.00136	0.00135	0.00118	0.00193	
Total Beryllium	mg/L	<0.0005	<0.0001	<0.0001	0.0000032	<0.0001	<0.00050	
Total Boron	mg/L	<0.010	<0.001	<0.001	0.0449	0.002	<0.010	
Total Cadmium	mg/L	<0.0001	<0.00005	<0.00005	0.0000055	<0.00002	<0.000050	0.0024
Total Calcium	mg/L	1.66	1.17	1.00	1.12	1.21	1.87	
Total Chromium	mg/L	<0.0009	<0.0005	0.0008	0.000211	0.0019	<0.00050	0.17
Total Cobalt	mg/L	<0.0001	<0.00005	<0.00005	0.0000209	<0.00005	<0.00010	
Total Copper	mg/L	<0.0010	<0.0010	<0.0010	0.0017	<0.0010	0.00178	0.04
Total Iron	mg/L	<0.10	<0.10	<0.10	0.0104	<0.10	<0.030	

Stn.Code		JER-WQ11	JER-WQ11	JER-WQ11	JER-WQ11	JER-WQ11	JER-WQ11	
Station Name		Cigar Lake (2nd Control)	Cigar Lake (2nd Control)	Cigar Lake (2nd Control)	Cigar Lake (2nd Control)	Cigar Lake (2nd Control)	Cigar Lake (2nd Control)	
Sample Class		M	M	M	M	M	M	
Sample No.		Jun-76	Jun-05	Jun-10	L420594-23	06-10846	L464346-1	
Sample Comments			No field measurements					PKCA Discharge Criteria
Collect Date/Time		10/04/2006	27/06/2006	11/07/2006	04/08/2006	05/09/2006	17/12/2006	
Total Lead	mg/L	<0.0001	0.00005	<0.00005	0.0000311	0.00010	0.000228	0.02
Total Lithium	mg/L			<0.005	0.000032	<0.005	<0.0050	
Total Magnesium	mg/L	0.74	<0.50	0.19	0.44	0.53	0.814	
Total Manganese	mg/L	<0.01	<0.01	<0.01	0.00185	<0.01	0.00108	
Total Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.000050	
Total Molybdenum	mg/L	<0.0005	<0.00005	<0.00005	0.0000281	0.00038	<0.000050	1.5
Total Nickel	mg/L	<0.0006	0.0001	0.0002	0.000197	0.0003	<0.00050	0.1
Total Phosphorus	mg/L	0.06	<0.02	<0.020	0.003	<0.02		0.4
Total Potassium	mg/L	<0.5	<0.5	<0.5	0.317	<0.5	0.61	
Total Selenium	mg/L	<0.0008	<0.0010	<0.0010	<0.0001	<0.0010	<0.0010	
Total Silicon	mg/L	0.32	0.13	0.15	0.288	0.25	0.359	
Total Silver	mg/L	<0.0002	<0.0001	<0.0001	0.0000067	<0.0001	<0.000010	
Total Sodium	mg/L	<0.5	<0.5	<0.5	0.455	<0.5	0.81	
Total Strontium	mg/L	0.0069	0.0044	0.0043	0.00445	0.0046	0.00693	
Total Thallium	mg/L	<0.00005	<0.00005	<0.00005	0.0000048	<0.00005	<0.00010	
Total Tin	mg/L			<0.0001	<0.0000300	<0.0001	0.00147	
Total Titanium	mg/L			<0.0005	0.000114	<0.0005	<0.010	
Total Uranium	mg/L	0.00015	0.00012	0.00007	0.000121	0.00018	0.000156	1
Total Vanadium	mg/L	0.0004	<0.0005	<0.0005	0.0000884	0.0016	<0.0010	
Total Zinc	mg/L	0.021	0.002	0.003	0.00445	0.004	0.0027	0.5

Stn.Code		JER-WQ12	JER-WQ12	JER-WQ12	JER-WQ12	JER-WQ12	
Station Name		Stream C1 Upstream of Carat Lk	Stream C1 Upstream of Carat Lk	Stream C1 Upstream of Carat Lk	Stream C1 Upstream of Carat Lk	Stream C1 Upstream of Carat Lk	
Sample Class		M	M	M	F1	M	
Sample No.		Jun-06	Jun-11	L420594-24	06-11363	06-11362	
Sample Comments							PKCA Discharge Criteria
Collect Date/Time		27/06/2006	11/07/2006	06/08/2006	12/09/2006	12/09/2006	
Water Temperature	Deg C	8.57	13.74	10.1		6.1	
Field pH	pH	6.43	6.77	8.0		6.31	
Field Conductivity	us/cm	12	53	107		56	
Field Dissolved Oxygen	mg/L	12.66	9.35			12.02	
Oxidation Reduction Potential	mV	250.00	334.00			209.60	
pH @ 25°C	pH	6.75	7.35		7.38	7.40	6.0-8.8
Conductivity @ 25°C	us/cm	15	57		79	80	
T-Dissolved Solids180°C	mg/L	13	48		40	28	4000
Total Suspended Solids @105°C	mg/L	<2	<2		8	<2	25
Turbidity	NTU	2	3		6	1	
T-Hardness as CaCO3	mg/L	<6	20.2		30.4	29.8	
T-Alkalinity as CaCO3	mg/L	8	18		25	20	
Acidity as CaCO3	mg/L	2	2		3	2	
Hydroxide (as CaCO3)	mg/L	<1	<1		<1	<1	
Balance (+ions/-ions)	Ratio	0.65	0.90		0.90	0.99	
Carbonate	mg/L	<1	<1		<1	<1	
Bicarbonate	mg/L	10	22		31	25	
Chloride	mg/L	0.2	3		3.9	4.0	1000
Fluoride	mg/L	0.04	0.04		0.04	0.04	
Sulphate	mg/L	1.1	1.2		3.3	3.6	
Carbon (Total Inorganic)	mg/L	0.2	2.1		4.3	4.3	
Carbon (Total Organic)	mg/L	2.8	3.5		4.2	4.2	
Ammonia - Nitrogen	mg/L	0.02	0.01	0.007	0.04	0.02	12
Nitrate - Nitrogen	mg/L	<0.05	0.91		1.17	1.22	56
Nitrite - Nitrogen	mg/L	<0.05	<0.05		<0.05	<0.05	5
Total Kjeldahl Nitrogen	mg/L		0.2				
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20		<0.20	<0.20	
Dissolved Ortho Phosphate	mg/L						
Total Phosphate As P	mg/L						
Biochemical Oxygen Demand	mg/L						25
MF - Fecal Coliforms	CFU/100mL						20
Oil & Grease (Infrared)	mg/L						5
Dissolved Aluminum	mg/L	0.024	0.021	0.0372	0.011	0.008	2
Dissolved Antimony	mg/L	<0.00005	<0.00005	0.0000773	<0.00005	<0.00005	
Dissolved Arsenic	mg/L	0.0001	0.0004	0.000296	0.0003	0.0003	
Dissolved Barium	mg/L	0.00175	0.00892	0.0125	0.00987	0.00941	
Dissolved Beryllium	mg/L	<0.0001	<0.0001	0.0000063	<0.0001	<0.0001	
Dissolved Boron	mg/L	<0.001	0.003	0.0514	0.003	0.002	
Dissolved Cadmium	mg/L	<0.00005	<0.00005	0.0000028	<0.00002	<0.00002	
Dissolved Calcium	mg/L	1.1	5.1	7.58	7.3	7.2	
Dissolved Chromium	mg/L	0.0005	<0.0003	0.000452	0.0005	0.0005	
Dissolved Cobalt	mg/L	<0.00002	0.00005	0.0000809	0.00004	0.00005	
Dissolved Copper	mg/L	0.0002	0.0043	0.00253	0.0025	0.0031	
Dissolved Iron	mg/L	<0.10	<0.10	0.0246	<0.10	<0.10	
Dissolved Lead	mg/L	0.00010	0.00006	0.0000715	<0.00005	<0.00005	
Dissolved Lithium	mg/L		<0.0010	0.00097	<0.0010	<0.0010	
Dissolved Magnesium	mg/L	0.5	1.8	2.21	2.9	2.9	
Dissolved Manganese	mg/L	<0.010	<0.010	0.00709	0.015	0.016	
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00001	<0.00005	<0.00005	
Dissolved Molybdenum	mg/L	<0.00005	0.00031	0.000409	<0.00005	<0.00005	
Dissolved Nickel	mg/L	0.00006	0.00129	0.000918	0.00109	0.00100	
Dissolved Phosphorus	mg/L		<0.005	0.002	0.02	0.02	
Dissolved Potassium	mg/L	<0.5	0.5	1.04	0.5	0.5	
Dissolved Selenium	mg/L	<0.0006	<0.0006	<0.0001	<0.0006	<0.0006	
Dissolved Silicon	mg/L	0.15	0.56	1.4	1.37	1.38	
Dissolved Silver	mg/L	<0.00005	<0.00005	0.0000054	<0.00005	<0.00005	
Dissolved Sodium	mg/L	<0.5	1.4	2.17	1.6	1.6	
Dissolved Strontium	mg/L	0.0046	0.0243	0.03	0.0229	0.0218	
Dissolved Thallium	mg/L	<0.00005	<0.00005	0.0000142	<0.00005	<0.00005	
Dissolved Tin	mg/L		<0.0001	<0.00003	0.0061	0.0001	
Dissolved Titanium	mg/L		<0.0005	0.000702	<0.0005	<0.0005	
Dissolved Uranium	mg/L	<0.00005	0.00118	0.00144	0.00139	0.00130	
Dissolved Vanadium	mg/L	0.0001	0.0003	0.000306	0.0004	0.0004	
Dissolved Zinc	mg/L	<0.001	0.004	0.00255	0.003	0.003	
Total Aluminum	mg/L	0.0372	0.0770	0.0428	0.0396	0.0429	3
Total Antimony	mg/L	<0.00005	<0.00005	0.0000806	<0.00005	<0.00005	
Total Arsenic	mg/L	<0.0002	0.0003	0.000301	0.0002	0.0003	0.1
Total Barium	mg/L	0.00210	0.00890	0.0126	0.0103	0.0105	
Total Beryllium	mg/L	<0.0001	<0.0001	0.0000076	<0.0001	<0.0001	
Total Boron	mg/L	<0.001	0.003	0.0673	0.002	0.002	
Total Cadmium	mg/L	<0.00005	<0.00005	0.0000041	<0.00002	<0.00002	0.0024
Total Calcium	mg/L	1.12	4.64	7.63	7.03	7.07	
Total Chromium	mg/L	<0.0005	0.0014	0.000462	<0.0005	<0.0005	0.17
Total Cobalt	mg/L	<0.00005	<0.00005	0.0000829	0.00013	0.00013	
Total Copper	mg/L	0.0012	0.0016	0.00265	0.0028	0.0031	0.04
Total Iron	mg/L	<0.10	<0.10	0.0249	<0.10	0.12	
Total Lead	mg/L	0.00008	0.00009	0.000101	0.00006	0.00014	0.02

Stn.Code		JER-WQ12	JER-WQ12	JER-WQ12	JER-WQ12	JER-WQ12	
Station Name		Stream C1 Upstream of Carat Lk	Stream C1 Upstream of Carat Lk	Stream C1 Upstream of Carat Lk	Stream C1 Upstream of Carat Lk	Stream C1 Upstream of Carat Lk	
Sample Class		M	M	M	F1	M	
Sample No.		Jun-06	Jun-11	L420594-24	06-11363	06-11362	
Sample Comments							PKCA Discharge
Collect Date/Time		27/06/2006	11/07/2006	06/08/2006	12/09/2006	12/09/2006	Criteria
Total Lithium	mg/L		<0.005	0.00097	<0.005	<0.005	
Total Magnesium	mg/L	<0.50	1.45	2.22	2.96	2.98	
Total Manganese	mg/L	<0.01	<0.01	0.00721	0.02	0.02	
Total Mercury	mg/L	<0.00005	<0.00005	<0.00001	<0.00005	<0.00005	
Total Molybdenum	mg/L	<0.00005	0.00011	0.000413	0.00012	0.00017	1.5
Total Nickel	mg/L	0.0004	0.0012	0.000938	0.0012	0.0014	0.1
Total Phosphorus	mg/L	<0.02	<0.020	0.003	<0.02	<0.02	0.4
Total Potassium	mg/L	<0.5	<0.5	1.04	0.6	0.6	
Total Selenium	mg/L	<0.0010	<0.0010	0.000175	<0.0010	<0.0010	
Total Silicon	mg/L	0.13	0.61	1.43	1.41	1.43	
Total Silver	mg/L	<0.0001	<0.0001	0.0000062	<0.0001	<0.0001	
Total Sodium	mg/L	<0.5	1.4	2.2	1.8	1.8	
Total Strontium	mg/L	0.0047	0.0216	0.0302	0.0238	0.0239	
Total Thallium	mg/L	<0.00005	<0.00005	0.000015	<0.00005	<0.00005	
Total Tin	mg/L		<0.0001	<0.0000300	<0.0001	0.0002	
Total Titanium	mg/L		0.0011	0.000705	0.0010	0.0013	
Total Uranium	mg/L	0.00016	0.00139	0.00144	0.00164	0.00165	1
Total Vanadium	mg/L	<0.0005	<0.0005	0.000309	<0.0005	<0.0005	
Total Zinc	mg/L	0.003	0.005	0.00512	0.005	0.007	0.5

Stn.Code		JER-WQ13	JER-WQ13	JER-WQ13	JER-WQ13	JER-WQ13	JER-WQ13	JER-WQ13	
Station Name		Lake C1	Lake C1	Lake C1	Lake C1	Lake C1	Lake C1	Lake C1	
Sample Class		M	M	M	M	M	M	M	
Sample No.		Jun-79	Jun-30	Jun-12	Jun-13	L420594-25	06-10852	L464346-8	
Sample Comments			Zooplankton Visible						PKCA Discharge Criteria
Collect Date/Time		10/04/2006	21/06/2006	11/07/2006	12/07/2006	06/08/2006	05/09/2006	17/12/2006	
Water Temperature	Deg C	1.57	15.15	15.84		16.3	8.73	0.21	
Field pH	pH	6.3	6.26	7.05		7.8	6.54	6.76	
Field Conductivity	us/cm	32	24	33		34	36	77	
Field Dissolved Oxygen	mg/L	11.55	10.41	9.07			11.10	9.01	
Oxidation Reduction Potential	mV	427.40	193.10	334.20			268.40	341	
pH @ 25°C	pH	7.03	6.92	7.03	7.02		7.14	7.07	6.0-8.8
Conductivity @ 25°C	us/cm	33	26	37	36		48	74.7	
T-Dissolved Solids180°C	mg/L		16	31	20		38	53	4000
Total Suspended Solids @105°C	mg/L	<2	2	<2	<2		<2	<2.3	25
Turbidity	NTU	<1	2	2	2		1	0.59	
T-Hardness as CaCO3	mg/L	8.8	<6	11.8	11.9		16.8	29.7	
T-Alkalinity as CaCO3	mg/L	14	11	10	11		13	23.2	
Acidity as CaCO3	mg/L	3	4	3	2		2	2.4	
Hydroxide (as CaCO3)	mg/L	<1	<1	<1	<1		<1	<1.0	
Balance (+ions/-ions)	Ratio	0.61	0.45	0.85	0.83		0.88		
Carbonate	mg/L	<1	<1	<1	<1		<1	<1.0	
Bicarbonate	mg/L	17	13	12	14		16	23.2	
Chloride	mg/L	1.6	1.6	2.6	2.5		3.3	5.7	1000
Fluoride	mg/L	0.04	0.03	0.03	0.03		0.03		
Sulphate	mg/L	0.6	1.6	0.7	0.6		2.6	4.42	
Carbon (Total Inorganic)	mg/L	1	0.4	0.4	0.4		2.4	3.91	
Carbon (Total Organic)	mg/L	4	3.5	3.7	3.6		3.6	5.92	
Ammonia - Nitrogen	mg/L	<0.1	0.01	0.02	0.02	0.013	0.01	0.0255	12
Nitrate - Nitrogen	mg/L	0.30	0.30	0.61	0.60		0.78	1.36	56
Nitrite - Nitrogen	mg/L	<0.05	<0.05	<0.05	<0.05		<0.05	0.002	5
Total Kjeldahl Nitrogen	mg/L			0.2	0.3		0.3		
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20	<0.20	<0.20		<0.20	<0.0010	
Dissolved Ortho Phosphate	mg/L							0.004	
Total Phosphate As P	mg/L							0.0069	
Biochemical Oxygen Demand	mg/L								25
MF - Fecal Coliforms	CFU/100mL								20
Oil & Grease (Infrared)	mg/L								5
Dissolved Aluminum	mg/L	0.025	0.060	0.026	0.026	0.025	0.018	0.0041	2
Dissolved Antimony	mg/L	<0.0001	<0.0001	<0.00005	<0.00005	0.0000273	<0.00005	<0.00010	
Dissolved Arsenic	mg/L	0.0002	0.0002	0.0002	0.0002	0.000192	<0.0001	0.00022	
Dissolved Barium	mg/L	<0.003	0.00487	0.00372	0.0182	0.00375	0.00199	0.00551	
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	0.0000057	<0.0001	<0.00050	
Dissolved Boron	mg/L	<0.004	<0.001	0.002	0.002	0.09	<0.001	<0.010	
Dissolved Cadmium	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	0.0000043	<0.00002	<0.000050	
Dissolved Calcium	mg/L	1.7	1.2	2.6	2.6	3.04	3.6	6.47	
Dissolved Chromium	mg/L	<0.0004	<0.0003	0.0031	<0.0003	0.000414	0.0034	<0.00050	
Dissolved Cobalt	mg/L	<0.00005	<0.00002	0.00008	0.00002	0.0000431	<0.00002	<0.00010	
Dissolved Copper	mg/L	<0.0010	0.0003	0.0034	0.0057	0.00221	0.0014	0.00203	
Dissolved Iron	mg/L	<0.10	<0.10	<0.10	<0.10	0.0322	<0.10	<0.030	
Dissolved Lead	mg/L	<0.00005	<0.00005	0.00009	0.00007	0.0000594	0.00006	<0.000050	
Dissolved Lithium	mg/L			<0.0010	<0.0010	0.00043	<0.0010	<0.0050	
Dissolved Magnesium	mg/L	1.1	0.7	1.3	1.3	1.32	1.9	3.28	
Dissolved Manganese	mg/L	<0.010	<0.010	<0.010	<0.010	0.00355	<0.010	<0.000050	
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.000050	
Dissolved Molybdenum	mg/L	<0.0003	0.00007	0.00021	0.00012	0.0000605	<0.00005	0.000104	
Dissolved Nickel	mg/L	<0.0001	0.00062	0.00430	0.00101	0.000384	0.00064	0.00061	
Dissolved Phosphorus	mg/L			<0.005	<0.005	0.002	<0.01		
Dissolved Potassium	mg/L	<0.5	<0.5	<0.5	<0.5	0.417	<0.5	0.7	
Dissolved Selenium	mg/L	<0.0004	<0.0006	<0.0006	<0.0006	0.000112	<0.0006	<0.0010	
Dissolved Silicon	mg/L	0.97	0.47	0.51	0.52	0.729	0.86	1.31	
Dissolved Silver	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	0.0000059	<0.00005	<0.000010	
Dissolved Sodium	mg/L	0.8	0.7	1.0	1.0	1.62	1.5	2.79	
Dissolved Strontium	mg/L	0.0095	0.0074	0.0121	0.0120	0.0103	0.0119	0.0199	
Dissolved Thallium	mg/L	<0.00002	<0.00005	<0.00005	<0.00005	0.0000091	<0.00005	<0.00010	
Dissolved Tin	mg/L			0.0002	<0.0001	<0.00003	<0.0001	<0.00010	
Dissolved Titanium	mg/L			<0.0005	<0.0005	0.00011	<0.0005	<0.010	
Dissolved Uranium	mg/L	0.00061	0.00052	0.00044	0.00043	0.000476	0.00062	0.00205	
Dissolved Vanadium	mg/L	<0.0005	<0.0001	0.0003	0.0003	0.000168	0.0013	<0.0010	
Dissolved Zinc	mg/L	<0.002	<0.001	0.003	0.003	0.00533	0.003	<0.0010	
Total Aluminum	mg/L	0.025	0.0949	0.0414	0.0449	0.0293	0.0240	0.0092	3
Total Antimony	mg/L	<0.0001	<0.00005	<0.00005	<0.00005	0.0000279	<0.00005	<0.00010	
Total Arsenic	mg/L	<0.0004	<0.0002	<0.0002	<0.0002	0.000193	0.0004	0.0002	0.1
Total Barium	mg/L	<0.005	0.00399	0.00365	0.00349	0.00376	0.00399	0.00555	
Total Beryllium	mg/L	<0.0005	<0.0001	<0.0001	<0.0001	0.000007	<0.0001	<0.00050	
Total Boron	mg/L	<0.010	0.004	0.002	0.002	0.109	0.003	<0.010	
Total Cadmium	mg/L	<0.0001	<0.00005	<0.00005	<0.00005	0.0000043	<0.00002	<0.000050	0.0024
Total Calcium	mg/L	2.97	1.90	2.35	2.32	3.04	3.99	6.4	
Total Chromium	mg/L	<0.0009	0.0015	0.0013	0.0013	0.000445	0.0045	<0.00050	0.17
Total Cobalt	mg/L	<0.0001	<0.00005	<0.00005	<0.00005	0.000044	<0.00005	<0.00010	
Total Copper	mg/L	<0.0010	0.0020	0.0012	0.0012	0.00221	0.0011	0.00238	0.04
Total Iron	mg/L	<0.10	<0.10	<0.10	<0.10	0.0322	<0.10	<0.030	
Total Lead	mg/L	<0.0001	0.00015	<0.00005	0.00011	0.0000642	0.00010	<0.000050	0.02
Total Lithium	mg/L			<0.005	<0.005	0.00049	<0.005	<0.0050	
Total Magnesium	mg/L	1.46	0.96	0.96	0.95	1.38	2.11	3.26	

Stn.Code		JER-WQ13	JER-WQ13	JER-WQ13	JER-WQ13	JER-WQ13	JER-WQ13	JER-WQ13	
Station Name		Lake C1	Lake C1	Lake C1	Lake C1	Lake C1	Lake C1	Lake C1	
Sample Class		M	M	M	M	M	M	M	
Sample No.		Jun-79	Jun-30	Jun-12	Jun-13	L420594-25	06-10852	L464346-8	
Sample Comments			Zooplankton Visible						PKCA Discharge Criteria
Collect Date/Time		10/04/2006	21/06/2006	11/07/2006	12/07/2006	06/08/2006	05/09/2006	17/12/2006	
Total Manganese	mg/L	<0.01	<0.01	<0.01	<0.01	0.00355	<0.01	0.00286	
Total Mercury	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.000050	
Total Molybdenum	mg/L	<0.0005	0.00006	<0.00005	<0.00005	0.0000607	0.00006	0.000115	1.5
Total Nickel	mg/L	<0.0006	0.0011	0.0007	0.0006	0.000411	0.0007	0.00066	0.1
Total Phosphorus	mg/L	0.02	0.03	<0.020	<0.020	0.003	<0.02		0.4
Total Potassium	mg/L	<0.5	<0.5	<0.5	<0.5	0.424	<0.5	0.7	
Total Selenium	mg/L	<0.0008	<0.0010	<0.0010	<0.0010	0.000116	<0.0010	<0.0010	
Total Silicon	mg/L	0.90	0.48	0.47	0.47	0.734	0.89	1.28	
Total Silver	mg/L	<0.0002	<0.0001	<0.0001	<0.0001	0.000008	<0.0001	<0.000010	
Total Sodium	mg/L	0.6	<0.5	1.0	1.0	1.67	1.1	2.75	
Total Strontium	mg/L	0.0100	0.0080	0.0097	0.0092	0.0103	0.0120	0.0196	
Total Thallium	mg/L	<0.00005	<0.00005	<0.00005	<0.00005	0.0000092	<0.00005	<0.00010	
Total Tin	mg/L			<0.0001	<0.0001	<0.0000300	<0.0001	<0.00010	
Total Titanium	mg/L			<0.0005	<0.0005	0.000269	<0.0005	<0.010	
Total Uranium	mg/L	0.00072	0.00058	0.00046	0.00041	0.000485	0.00078	0.00265	1
Total Vanadium	mg/L	0.0003	<0.0005	<0.0005	<0.0005	0.000173	0.0016	<0.0010	
Total Zinc	mg/L	<0.002	0.006	0.003	0.010	0.00639	0.003	<0.0010	0.5

Stn.Code		JER-WQ14	JER-WQ14	JER-WQ14	JER-WQ14	
Station Name		Lake C4	Lake C4	Lake C4	Lake C4	
Sample Class		M	M	M	M	
Sample No.		Jun-31	Jun-14	L420594-26	06-10851	
Sample Comments		Volvox algae in sample				PKCA Discharge Criteria
Collect Date/Time		21/06/2006	11/07/2006	06/08/2006	05/09/2006	
Water Temperature	Deg C	16.45	16.37	17	8.3	
Field pH	pH	7.33	6.85	8.0	6.29	
Field Conductivity	us/cm	14	15	11	16	
Field Dissolved Oxygen	mg/L	7.79	8.54		11.47	
Oxidation Reduction Potential	mV	154.30	358.20		284.30	
pH @ 25°C	pH	6.85	7.18		7.14	6.0-8.8
Conductivity @ 25°C	us/cm	16	20		21	
T-Dissolved Solids180°C	mg/L	13	12		22	4000
Total Suspended Solids @105°C	mg/L	<2	<2		<2	25
Turbidity	NTU	1	1		1	
T-Hardness as CaCO3	mg/L	<6	6.7		9.5	
T-Alkalinity as CaCO3	mg/L	9	10		12	
Acidity as CaCO3	mg/L	6	2		2	
Hydroxide (as CaCO3)	mg/L	<1	<1		<1	
Balance (+ions/-ions)	Ratio	0.38	0.73		0.80	
Carbonate	mg/L	<1	<1		<1	
Bicarbonate	mg/L	11	13		14	
Chloride	mg/L	0.5	0.3		0.4	1000
Fluoride	mg/L	0.02	0.03		0.03	
Sulphate	mg/L	1.1	<0.5		1.0	
Carbon (Total Inorganic)	mg/L	0.2	0.5		2.2	
Carbon (Total Organic)	mg/L	4.3	4.9		4.7	
Ammonia - Nitrogen	mg/L	0.01	0.01	0.009	0.01	12
Nitrate - Nitrogen	mg/L	<0.05	<0.05		<0.05	56
Nitrite - Nitrogen	mg/L	<0.05	<0.05		<0.05	5
Total Kjeldahl Nitrogen	mg/L		0.4		0.4	
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20		<0.20	
Dissolved Ortho Phosphate	mg/L					
Total Phosphate As P	mg/L					
Biochemical Oxygen Demand	mg/L					25
MF - Fecal Coliforms	CFU/100mL					20
Oil & Grease (Infrared)	mg/L					5
Dissolved Aluminum	mg/L	0.026	0.032	0.0273	0.022	2
Dissolved Antimony	mg/L	<0.0001	<0.00005	0.0000116	<0.00005	
Dissolved Arsenic	mg/L	0.0001	0.0002	0.000195	0.0002	
Dissolved Barium	mg/L	0.00192	0.00274	0.00192	0.00146	
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.000003	<0.0001	
Dissolved Boron	mg/L	<0.001	<0.001	0.111	<0.001	
Dissolved Cadmium	mg/L	<0.00005	<0.00005	0.0000116	<0.00002	
Dissolved Calcium	mg/L	0.7	1.7	1.79	2.3	
Dissolved Chromium	mg/L	<0.0003	<0.0003	0.000209	0.0008	
Dissolved Cobalt	mg/L	<0.00002	0.00002	0.0000379	<0.00002	
Dissolved Copper	mg/L	0.0011	0.0050	0.00188	0.0007	
Dissolved Iron	mg/L	<0.10	<0.10	0.149	0.14	
Dissolved Lead	mg/L	<0.00005	0.00007	0.0000656	<0.00005	
Dissolved Lithium	mg/L		<0.0010	<0.00002	<0.0010	
Dissolved Magnesium	mg/L	<0.5	0.6	0.644	0.9	
Dissolved Manganese	mg/L	<0.010	<0.010	0.00521	<0.010	
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00001	<0.00005	
Dissolved Molybdenum	mg/L	0.00005	0.00008	0.0000433	<0.00005	
Dissolved Nickel	mg/L	0.00020	0.00087	0.000345	0.00029	
Dissolved Phosphorus	mg/L		<0.005	0.002	<0.01	
Dissolved Potassium	mg/L	<0.5	<0.5	0.275	<0.5	
Dissolved Selenium	mg/L	<0.0006	<0.0006	<0.0001	<0.0006	
Dissolved Silicon	mg/L	0.24	0.27	0.42	0.63	
Dissolved Silver	mg/L	<0.00005	<0.00005	0.0000697	<0.00005	
Dissolved Sodium	mg/L	<0.5	<0.5	0.502	0.5	
Dissolved Strontium	mg/L	0.0041	0.0078	0.00472	0.0051	
Dissolved Thallium	mg/L	<0.00005	<0.00005	0.0000016	<0.00005	
Dissolved Tin	mg/L		<0.0001	<0.00003	<0.0001	
Dissolved Titanium	mg/L		<0.0005	0.000147	<0.0005	
Dissolved Uranium	mg/L	0.00016	0.00022	0.000212	0.00019	
Dissolved Vanadium	mg/L	0.0001	0.0004	0.000201	0.0014	
Dissolved Zinc	mg/L	<0.001	0.006	0.00268	0.002	
Total Aluminum	mg/L	0.0417	0.0472	0.0324	0.0252	3
Total Antimony	mg/L	<0.00005	<0.00005	0.0000131	<0.00005	
Total Arsenic	mg/L	<0.0002	<0.0002	0.000213	0.0004	0.1
Total Barium	mg/L	0.00176	0.00206	0.00203	0.00212	
Total Beryllium	mg/L	<0.0001	<0.0001	0.0000031	<0.0001	
Total Boron	mg/L	<0.001	<0.001	0.112	0.001	
Total Cadmium	mg/L	<0.00005	<0.00005	0.000012	<0.00002	0.0024
Total Calcium	mg/L	1.22	1.49	1.84	2.48	
Total Chromium	mg/L	<0.0005	0.0012	0.000213	0.0024	0.17
Total Cobalt	mg/L	<0.00005	<0.00005	0.0000407	<0.00005	
Total Copper	mg/L	<0.0010	0.0053	0.00202	0.0015	0.04
Total Iron	mg/L	0.11	0.12	0.155	0.17	
Total Lead	mg/L	<0.00005	<0.00005	0.0000762	<0.00005	0.02
Total Lithium	mg/L		<0.005	<0.00002	<0.005	

Stn.Code		JER-WQ14	JER-WQ14	JER-WQ14	JER-WQ14	
Station Name		Lake C4	Lake C4	Lake C4	Lake C4	
Sample Class		M	M	M	M	
Sample No.		Jun-31	Jun-14	L420594-26	06-10851	
Sample Comments		Volvox algae in sample				PKCA Discharge Criteria
Collect Date/Time		21/06/2006	11/07/2006	06/08/2006	05/09/2006	
Total Magnesium	mg/L	<0.50	0.33	0.657	1.01	
Total Manganese	mg/L	0.01	<0.01	0.0054	<0.01	
Total Mercury	mg/L	<0.00005	<0.00005	<0.00001	<0.00005	
Total Molybdenum	mg/L	<0.00005	<0.00005	0.0000445	<0.00005	1.5
Total Nickel	mg/L	0.0008	0.0005	0.000386	0.0008	0.1
Total Phosphorus	mg/L	0.03	<0.020	0.005	<0.02	0.4
Total Potassium	mg/L	<0.5	<0.5	0.285	<0.5	
Total Selenium	mg/L	<0.0010	<0.0010	<0.0001	<0.0010	
Total Silicon	mg/L	0.18	0.25	0.467	0.66	
Total Silver	mg/L	<0.0001	<0.0001	0.000113	<0.0001	
Total Sodium	mg/L	<0.5	<0.5	0.518	<0.5	
Total Strontium	mg/L	0.0033	0.0048	0.00482	0.0058	
Total Thallium	mg/L	<0.00005	<0.00005	0.0000016	<0.00005	
Total Tin	mg/L		<0.0001	<0.0000300	<0.0001	
Total Titanium	mg/L		<0.0005	0.000263	<0.0005	
Total Uranium	mg/L	0.00014	0.00019	0.000214	0.00023	1
Total Vanadium	mg/L	<0.0005	<0.0005	0.000202	0.0017	
Total Zinc	mg/L	0.002	0.008	0.00366	0.002	0.5

Stn.Code		JER-WQ15	JER-WQ15	JER-WQ15	
		Stream C4 Upstream	Stream C4 Upstream	Stream C4 Upstream	
Station Name		Carat Lake	Carat Lake	Carat Lake	
Sample Class		M	M	M	
Sample No.		Jun-32	Jun-15	06-11731	
Sample Comments					PKCA Discharge
Collect Date/Time		21/06/2006	11/07/2006	24/09/2006	Criteria
Water Temperature	Deg C	14.92	14.84	5.95	
Field pH	pH	5.72	6.01	5.95	
Field Conductivity	us/cm	13	15	26	
Field Dissolved Oxygen	mg/L	9.29	9.31	11.97	
Oxidation Reduction Potential	mV	194.60	337.30	387.40	
pH @ 25°C	pH	6.85	7.05	6.87	6.0-8.8
Conductivity @ 25°C	us/cm	16	19	30	
T-Dissolved Solids180°C	mg/L	12	16	19	4000
Total Suspended Solids @105°C	mg/L	<2	<2	<2	25
Turbidity	NTU	1	2	<1	
T-Hardness as CaCO3	mg/L	<6	7.2	11.1	
T-Alkalinity as CaCO3	mg/L	10	12	17	
Acidity as CaCO3	mg/L	5	3	3	
Hydroxide (as CaCO3)	mg/L	<1	<1	<1	
Balance (+ions/-ions)	Ratio	0.33	0.72	0.64	
Carbonate	mg/L	<1	<1	<1	
Bicarbonate	mg/L	12	14	20	
Chloride	mg/L	0.5	0.3	0.6	1000
Fluoride	mg/L	0.02	0.03	0.03	
Sulphate	mg/L	0.9	<0.5	1.3	
Carbon (Total Inorganic)	mg/L	0.4	0.7	2.8	
Carbon (Total Organic)	mg/L	3.7	3.9	5.7	
Ammonia - Nitrogen	mg/L	0.03	0.01	0.02	12
Nitrate - Nitrogen	mg/L	<0.05	<0.05	0.06	56
Nitrite - Nitrogen	mg/L	<0.05	<0.05	<0.05	5
Total Kjeldahl Nitrogen	mg/L		0.2		
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20	<0.20	
Dissolved Ortho Phosphate	mg/L				
Total Phosphate As P	mg/L				
Biochemical Oxygen Demand	mg/L				25
MF - Fecal Coliforms	CFU/100mL				20
Oil & Grease (Infrared)	mg/L				5
Dissolved Aluminum	mg/L	0.032	0.031	0.010	2
Dissolved Antimony	mg/L	<0.0001	<0.00005	<0.00005	
Dissolved Arsenic	mg/L	<0.0001	0.0002	0.0002	
Dissolved Barium	mg/L	0.00401	0.00351	0.00174	
Dissolved Beryllium	mg/L	<0.0001	<0.0001	<0.0001	
Dissolved Boron	mg/L	<0.001	<0.001	<0.001	
Dissolved Cadmium	mg/L	<0.00005	<0.00005	<0.00002	
Dissolved Calcium	mg/L	0.8	1.9	2.7	
Dissolved Chromium	mg/L	<0.0003	<0.0003	<0.0003	
Dissolved Cobalt	mg/L	<0.00002	<0.00002	<0.00002	
Dissolved Copper	mg/L	0.0001	0.0048	0.0014	
Dissolved Iron	mg/L	<0.10	<0.10	<0.10	
Dissolved Lead	mg/L	<0.00005	<0.00005	<0.00005	
Dissolved Lithium	mg/L		<0.0010	<0.0010	
Dissolved Magnesium	mg/L	<0.5	0.6	1.1	
Dissolved Manganese	mg/L	<0.010	<0.010	<0.010	
Dissolved Mercury	mg/L	<0.00005	<0.00005	<0.00005	
Dissolved Molybdenum	mg/L	<0.00005	0.00006	<0.00005	
Dissolved Nickel	mg/L	0.00013	0.00063	0.00027	
Dissolved Phosphorus	mg/L		<0.005	<0.01	
Dissolved Potassium	mg/L	<0.5	<0.5	<0.5	
Dissolved Selenium	mg/L	<0.0006	<0.0006	<0.0006	
Dissolved Silicon	mg/L	0.26	0.30	0.69	
Dissolved Silver	mg/L	<0.00005	<0.00005	<0.00005	
Dissolved Sodium	mg/L	<0.5	<0.5	<0.5	
Dissolved Strontium	mg/L	0.0041	0.0075	0.0068	
Dissolved Thallium	mg/L	<0.00005	<0.00005	<0.00005	
Dissolved Tin	mg/L		<0.0001	<0.0001	
Dissolved Titanium	mg/L		<0.0005	<0.0005	
Dissolved Uranium	mg/L	0.00022	0.00020	0.00013	
Dissolved Vanadium	mg/L	0.0001	0.0003	0.0002	
Dissolved Zinc	mg/L	<0.001	0.007	0.001	
Total Aluminum	mg/L	0.0491	0.0363	0.0176	3
Total Antimony	mg/L	<0.00005	<0.00005	<0.00005	
Total Arsenic	mg/L	<0.0002	<0.0002	<0.0002	0.1
Total Barium	mg/L	0.00209	0.00296	0.00218	
Total Beryllium	mg/L	<0.0001	<0.0001	<0.0001	
Total Boron	mg/L	0.002	<0.001	<0.001	
Total Cadmium	mg/L	<0.00005	<0.00005	<0.00002	0.0024
Total Calcium	mg/L	1.28	1.67	2.71	
Total Chromium	mg/L	<0.0005	0.0008	<0.0005	0.17
Total Cobalt	mg/L	<0.00005	<0.00005	<0.00005	
Total Copper	mg/L	0.0013	<0.0010	0.0017	0.04
Total Iron	mg/L	<0.10	<0.10	0.12	
Total Lead	mg/L	<0.00005	<0.00005	<0.00005	0.02
Total Lithium	mg/L		<0.005	<0.005	

Stn.Code		JER-WQ15	JER-WQ15	JER-WQ15	
		Stream C4	Stream C4	Stream C4	
		Upstream	Upstream	Upstream	
Station Name		Carat Lake	Carat Lake	Carat Lake	
Sample Class		M	M	M	
Sample No.		Jun-32	Jun-15	06-11731	
Sample Comments					PKCA Discharge
Collect Date/Time		21/06/2006	11/07/2006	24/09/2006	Criteria
Total Magnesium	mg/L	<0.50	0.37	1.14	
Total Manganese	mg/L	<0.01	<0.01	<0.01	
Total Mercury	mg/L	<0.00005	<0.00005	<0.00005	
Total Molybdenum	mg/L	<0.00005	<0.00005	<0.00005	1.5
Total Nickel	mg/L	0.0003	0.0004	<0.0001	0.1
Total Phosphorus	mg/L	0.04	0.027	<0.02	0.4
Total Potassium	mg/L	<0.5	<0.5	<0.5	
Total Selenium	mg/L	<0.0010	<0.0010	<0.0010	
Total Silicon	mg/L	0.20	0.27	0.72	
Total Silver	mg/L	<0.0001	<0.0001	<0.0001	
Total Sodium	mg/L	<0.5	<0.5	<0.5	
Total Strontium	mg/L	0.0037	0.0052	0.0066	
Total Thallium	mg/L	<0.00005	<0.00005	<0.00005	
Total Tin	mg/L		<0.0001	<0.0001	
Total Titanium	mg/L		<0.0005	<0.0005	
Total Uranium	mg/L	0.00019	0.00016	0.00019	1
Total Vanadium	mg/L	<0.0005	<0.0005	<0.0005	
Total Zinc	mg/L	0.002	0.005	0.035	0.5

Stn.Code		**JER-WQ16**	**JER-WQ16**	
Station Name		**Lynne Lake**	**Lynne Lake**	
Sample Class		**M**	**M**	
Sample No.		**Jun-16**	**Jun-26**	
Sample Comments			**Inspector Samples**	PKCA Discharge
Collect Date/Time		11/07/2006	13/08/2006	Criteria
Water Temperature	Deg C	13.26	14.27	
Field pH	pH	6.29	5.91	
Field Conductivity	us/cm	15	16	
Field Dissolved Oxygen	mg/L	9.62	11.63	
Oxidation Reduction Potential	mV	368.60	368.60	
pH @ 25°C	pH	6.95	6.89	6.0-8.8
Conductivity @ 25°C	us/cm	17	19	
T-Dissolved Solids180°C	mg/L	12	16	4000
Total Suspended Solids @105°C	mg/L	<2		25
Turbidity	NTU	1	1	
T-Hardness as CaCO3	mg/L	6.4	<6	
T-Alkalinity as CaCO3	mg/L	9	8	
Acidity as CaCO3	mg/L	2	2	
Hydroxide (as CaCO3)	mg/L	<1	<1	
Balance (+ions/-ions)	Ratio	0.73	0.51	
Carbonate	mg/L	<1	<1	
Bicarbonate	mg/L	12	9	
Chloride	mg/L	0.4	0.5	1000
Fluoride	mg/L	0.02	0.05	
Sulphate	mg/L	<0.5	1.1	
Carbon (Total Inorganic)	mg/L	0.3	1.4	
Carbon (Total Organic)	mg/L	3.1	3.4	
Ammonia - Nitrogen	mg/L	0.03	0.01	12
Nitrate - Nitrogen	mg/L	0.10	0.10	56
Nitrite - Nitrogen	mg/L	<0.05	<0.05	5
Total Kjeldahl Nitrogen	mg/L	0.2		
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20	
Dissolved Ortho Phosphate	mg/L			
Total Phosphate As P	mg/L			
Biochemical Oxygen Demand	mg/L			25
MF - Fecal Coliforms	CFU/100mL			20
Oil & Grease (Infrared)	mg/L			5
Dissolved Aluminum	mg/L	0.026		2
Dissolved Antimony	mg/L	<0.00005		
Dissolved Arsenic	mg/L	0.0002		
Dissolved Barium	mg/L	0.00217		
Dissolved Beryllium	mg/L	<0.0001		
Dissolved Boron	mg/L	<0.001		
Dissolved Cadmium	mg/L	<0.00005		
Dissolved Calcium	mg/L	1.5	0.9	
Dissolved Chromium	mg/L	<0.0003		
Dissolved Cobalt	mg/L	<0.00002		
Dissolved Copper	mg/L	0.0031		
Dissolved Iron	mg/L	<0.10		
Dissolved Lead	mg/L	0.00006		
Dissolved Lithium	mg/L	<0.0010		
Dissolved Magnesium	mg/L	0.6	0.4	
Dissolved Manganese	mg/L	<0.010		
Dissolved Mercury	mg/L	<0.00005		
Dissolved Molybdenum	mg/L	0.00005		
Dissolved Nickel	mg/L	0.00080		
Dissolved Phosphorus	mg/L	<0.005		
Dissolved Potassium	mg/L	<0.5	<0.5	
Dissolved Selenium	mg/L	<0.0006		
Dissolved Silicon	mg/L	0.22		
Dissolved Silver	mg/L	<0.00005		
Dissolved Sodium	mg/L	<0.5	<0.5	
Dissolved Strontium	mg/L	0.0063		
Dissolved Thallium	mg/L	<0.00005		
Dissolved Tin	mg/L	<0.0001		
Dissolved Titanium	mg/L	<0.0005		
Dissolved Uranium	mg/L	0.00008		
Dissolved Vanadium	mg/L	0.0003		
Dissolved Zinc	mg/L	0.008		
Total Aluminum	mg/L	0.0355	0.0295	3
Total Antimony	mg/L	<0.00005	<0.00005	
Total Arsenic	mg/L	<0.0002	<0.0002	0.1
Total Barium	mg/L	0.00168	0.00152	
Total Beryllium	mg/L	<0.0001	<0.0001	
Total Boron	mg/L	<0.001	<0.001	
Total Cadmium	mg/L	<0.00005	<0.00002	0.0024
Total Calcium	mg/L	1.35	1.51	
Total Chromium	mg/L	0.0010	0.0013	0.17
Total Cobalt	mg/L	<0.00005	<0.00005	
Total Copper	mg/L	<0.0010	0.0012	0.04
Total Iron	mg/L	<0.10	<0.10	
Total Lead	mg/L	<0.00005	<0.00005	0.02
Total Lithium	mg/L	<0.005	<0.005	
Total Magnesium	mg/L	0.35	0.69	

Stn.Code		**JER-WQ16**	**JER-WQ16**	
Station Name		**Lynne Lake**	**Lynne Lake**	
Sample Class		**M**	**M**	
Sample No.		**Jun-16**	**Jun-26**	
Sample Comments			**Inspector Samples**	PKCA Discharge
Collect Date/Time		11/07/2006	13/08/2006	Criteria
Total Manganese	mg/L	<0.01	<0.01	
Total Mercury	mg/L	<0.00005	<0.00005	
Total Molybdenum	mg/L	<0.00005	<0.00005	1.5
Total Nickel	mg/L	0.0004	0.0003	0.1
Total Phosphorus	mg/L	<0.020	<0.02	0.4
Total Potassium	mg/L	<0.5	<0.5	
Total Selenium	mg/L	<0.0010	<0.0010	
Total Silicon	mg/L	0.20	0.23	
Total Silver	mg/L	<0.0001	<0.0001	
Total Sodium	mg/L	<0.5	<0.5	
Total Strontium	mg/L	0.0043	0.0038	
Total Thallium	mg/L	<0.00005	<0.00005	
Total Tin	mg/L	<0.0001	<0.0001	
Total Titanium	mg/L	<0.0005	<0.0005	
Total Uranium	mg/L	<0.00005	0.00007	1
Total Vanadium	mg/L	<0.0005	<0.0005	
Total Zinc	mg/L	0.010	0.002	0.5

Stn.Code		**JER-WQ17**	
Station Name		**Key Lake**	
Sample Class		**M**	
Sample No.		**Jun-17**	
Sample Comments			PKCA Discharge Criteria
Collect Date/Time		11/07/2006	
Water Temperature	Deg C	15.14	
Field pH	pH	6.84	
Field Conductivity	us/cm	15	
Field Dissolved Oxygen	mg/L	8.88	
Oxidation Reduction Potential	mV	340.00	
pH @ 25°C	pH	7.03	6.0-8.8
Conductivity @ 25°C	us/cm	17	
T-Dissolved Solids180°C	mg/L	15	4000
Total Suspended Solids @105°C	mg/L	<2	25
Turbidity	NTU	2	
T-Hardness as CaCO3	mg/L	6.5	
T-Alkalinity as CaCO3	mg/L	9	
Acidity as CaCO3	mg/L	1	
Hydroxide (as CaCO3)	mg/L	<1	
Balance (+ions/-ions)	Ratio	0.75	
Carbonate	mg/L	<1	
Bicarbonate	mg/L	12	
Chloride	mg/L	0.3	1000
Fluoride	mg/L	0.02	
Sulphate	mg/L	<0.5	
Carbon (Total Inorganic)	mg/L	0.4	
Carbon (Total Organic)	mg/L	3.3	
Ammonia - Nitrogen	mg/L	0.02	12
Nitrate - Nitrogen	mg/L	0.08	56
Nitrite - Nitrogen	mg/L	<0.05	5
Total Kjeldahl Nitrogen	mg/L	<0.2	
Phosphate - Ortho - Phosphoru	mg/L	<0.20	
Dissolved Ortho Phosphate	mg/L		
Total Phosphate As P	mg/L		
Biochemical Oxygen Demand	mg/L		25
MF - Fecal Coliforms	CFU/100mL		20
Oil & Grease (Infrared)	mg/L		5
Dissolved Aluminum	mg/L	0.028	2
Dissolved Antimony	mg/L	<0.00005	
Dissolved Arsenic	mg/L	0.0002	
Dissolved Barium	mg/L	0.00227	
Dissolved Beryllium	mg/L	<0.0001	
Dissolved Boron	mg/L	<0.001	
Dissolved Cadmium	mg/L	<0.00005	
Dissolved Calcium	mg/L	1.5	
Dissolved Chromium	mg/L	<0.0003	
Dissolved Cobalt	mg/L	<0.00002	
Dissolved Copper	mg/L	0.0032	
Dissolved Iron	mg/L	<0.10	
Dissolved Lead	mg/L	<0.00005	
Dissolved Lithium	mg/L	<0.0010	
Dissolved Magnesium	mg/L	0.7	
Dissolved Manganese	mg/L	<0.010	
Dissolved Mercury	mg/L	<0.00005	
Dissolved Molybdenum	mg/L	<0.00005	
Dissolved Nickel	mg/L	0.00047	
Dissolved Phosphorus	mg/L	<0.005	
Dissolved Potassium	mg/L	<0.5	
Dissolved Selenium	mg/L	<0.0006	
Dissolved Silicon	mg/L	0.21	
Dissolved Silver	mg/L	<0.00005	
Dissolved Sodium	mg/L	<0.5	
Dissolved Strontium	mg/L	0.0060	
Dissolved Thallium	mg/L	<0.00005	
Dissolved Tin	mg/L	<0.0001	
Dissolved Titanium	mg/L	<0.0005	
Dissolved Uranium	mg/L	0.00006	
Dissolved Vanadium	mg/L	0.0003	
Dissolved Zinc	mg/L	0.003	
Total Aluminum	mg/L	0.0433	3
Total Antimony	mg/L	<0.00005	
Total Arsenic	mg/L	<0.0002	0.1
Total Barium	mg/L	0.00149	
Total Beryllium	mg/L	<0.0001	
Total Boron	mg/L	0.001	
Total Cadmium	mg/L	<0.00005	0.0024
Total Calcium	mg/L	1.42	
Total Chromium	mg/L	0.0010	0.17
Total Cobalt	mg/L	<0.00005	
Total Copper	mg/L	0.0016	0.04
Total Iron	mg/L	<0.10	
Total Lead	mg/L	<0.00005	0.02
Total Lithium	mg/L	<0.005	
Total Magnesium	mg/L	0.39	

Stn.Code		**JER-WQ17**	
Station Name		**Key Lake**	
Sample Class		**M**	
Sample No.		**Jun-17**	
Sample Comments			PKCA Discharge Criteria
Collect Date/Time		11/07/2006	
Total Manganese	mg/L	<0.01	
Total Mercury	mg/L	<0.00005	
Total Molybdenum	mg/L	<0.00005	1.5
Total Nickel	mg/L	0.0004	0.1
Total Phosphorus	mg/L	<0.020	0.4
Total Potassium	mg/L	<0.5	
Total Selenium	mg/L	<0.0010	
Total Silicon	mg/L	0.19	
Total Silver	mg/L	<0.0001	
Total Sodium	mg/L	<0.5	
Total Strontium	mg/L	0.0046	
Total Thallium	mg/L	<0.00005	
Total Tin	mg/L	<0.0001	
Total Titanium	mg/L	<0.0005	
Total Uranium	mg/L	<0.00005	1
Total Vanadium	mg/L	<0.0005	
Total Zinc	mg/L	0.003	0.5

Stn.Code		**JER-WQ18**	
Station Name		**Ash Lake**	
Sample Class		**M**	
Sample No.		**Jun-18**	
Sample Comments			PKCA Discharge Criteria
Collect Date/Time		11/07/2006	
Water Temperature	Deg C	15.72	
Field pH	pH	7.05	
Field Conductivity	us/cm	15	
Field Dissolved Oxygen	mg/L	8.64	
Oxidation Reduction Potential	mV	327.50	
pH @ 25°C	pH	7.03	6.0-8.8
Conductivity @ 25°C	us/cm	18	
T-Dissolved Solids180°C	mg/L	8	4000
Total Suspended Solids @105°C	mg/L	<2	25
Turbidity	NTU	2	
T-Hardness as CaCO3	mg/L	6.6	
T-Alkalinity as CaCO3	mg/L	11	
Acidity as CaCO3	mg/L	3	
Hydroxide (as CaCO3)	mg/L	<1	
Balance (+ions/-ions)	Ratio	0.69	
Carbonate	mg/L	<1	
Bicarbonate	mg/L	14	
Chloride	mg/L	0.4	1000
Fluoride	mg/L	0.02	
Sulphate	mg/L	<0.5	
Carbon (Total Inorganic)	mg/L	0.5	
Carbon (Total Organic)	mg/L	3.0	
Ammonia - Nitrogen	mg/L	0.02	12
Nitrate - Nitrogen	mg/L	<0.05	56
Nitrite - Nitrogen	mg/L	<0.05	5
Total Kjeldahl Nitrogen	mg/L	0.2	
Phosphate - Ortho - Phosphoru	mg/L	<0.20	
Dissolved Ortho Phosphate	mg/L		
Total Phosphate As P	mg/L		
Biochemical Oxygen Demand	mg/L		25
MF - Fecal Coliforms	CFU/100mL		20
Oil & Grease (Infrared)	mg/L		5
Dissolved Aluminum	mg/L	0.023	2
Dissolved Antimony	mg/L	<0.00005	
Dissolved Arsenic	mg/L	0.0002	
Dissolved Barium	mg/L	0.0104	
Dissolved Beryllium	mg/L	<0.0001	
Dissolved Boron	mg/L	<0.001	
Dissolved Cadmium	mg/L	<0.00005	
Dissolved Calcium	mg/L	1.6	
Dissolved Chromium	mg/L	<0.0003	
Dissolved Cobalt	mg/L	<0.00002	
Dissolved Copper	mg/L	0.0033	
Dissolved Iron	mg/L	<0.10	
Dissolved Lead	mg/L	<0.00005	
Dissolved Lithium	mg/L	<0.0010	
Dissolved Magnesium	mg/L	0.6	
Dissolved Manganese	mg/L	<0.010	
Dissolved Mercury	mg/L	<0.00005	
Dissolved Molybdenum	mg/L	0.00005	
Dissolved Nickel	mg/L	0.00046	
Dissolved Phosphorus	mg/L	<0.005	
Dissolved Potassium	mg/L	<0.5	
Dissolved Selenium	mg/L	<0.0006	
Dissolved Silicon	mg/L	0.22	
Dissolved Silver	mg/L	<0.00005	
Dissolved Sodium	mg/L	<0.5	
Dissolved Strontium	mg/L	0.0054	
Dissolved Thallium	mg/L	<0.00005	
Dissolved Tin	mg/L	<0.0001	
Dissolved Titanium	mg/L	<0.0005	
Dissolved Uranium	mg/L	0.00010	
Dissolved Vanadium	mg/L	0.0003	
Dissolved Zinc	mg/L	0.002	
Total Aluminum	mg/L	0.0373	3
Total Antimony	mg/L	<0.00005	
Total Arsenic	mg/L	<0.0002	0.1
Total Barium	mg/L	0.00199	
Total Beryllium	mg/L	<0.0001	
Total Boron	mg/L	<0.001	
Total Cadmium	mg/L	<0.00005	0.0024
Total Calcium	mg/L	1.41	
Total Chromium	mg/L	0.0011	0.17
Total Cobalt	mg/L	<0.00005	
Total Copper	mg/L	<0.0010	0.04
Total Iron	mg/L	<0.10	
Total Lead	mg/L	<0.00005	0.02
Total Lithium	mg/L	<0.005	
Total Magnesium	mg/L	0.34	

Stn.Code		**JER-WQ18**	
Station Name		**Ash Lake**	
Sample Class		**M**	
Sample No.		**Jun-18**	
Sample Comments			PKCA Discharge Criteria
Collect Date/Time		11/07/2006	
Total Manganese	mg/L	<0.01	
Total Mercury	mg/L	<0.00005	
Total Molybdenum	mg/L	<0.00005	1.5
Total Nickel	mg/L	0.0003	0.1
Total Phosphorus	mg/L	<0.020	0.4
Total Potassium	mg/L	<0.5	
Total Selenium	mg/L	<0.0010	
Total Silicon	mg/L	0.20	
Total Silver	mg/L	<0.0001	
Total Sodium	mg/L	<0.5	
Total Strontium	mg/L	0.0036	
Total Thallium	mg/L	<0.00005	
Total Tin	mg/L	<0.0001	
Total Titanium	mg/L	<0.0005	
Total Uranium	mg/L	0.00005	1
Total Vanadium	mg/L	<0.0005	
Total Zinc	mg/L	0.005	0.5

Stn.Code		**JER-WQ19**	**JER-WQ19**	
Station Name		**JER-WQ19**	**JER-WQ19**	
Sample Class		**M**	**M**	
Sample No.		**Jun-19**	**L420594-29**	
Sample Comments				PKCA Discharge
Collect Date/Time		11/07/2006	07/08/2006	Criteria
Water Temperature	Deg C	14.26	15.2	
Field pH	pH	6.49	7.8	
Field Conductivity	us/cm	52	6	
Field Dissolved Oxygen	mg/L	9.27		
Oxidation Reduction Potential	mV	291.30		
pH @ 25°C	pH	7.31		6.0-8.8
Conductivity @ 25°C	us/cm	58		
T-Dissolved Solids180°C	mg/L	40		4000
Total Suspended Solids @105°C	mg/L	<2		25
Turbidity	NTU	2		
T-Hardness as CaCO3	mg/L	19.9		
T-Alkalinity as CaCO3	mg/L	18		
Acidity as CaCO3	mg/L	1		
Hydroxide (as CaCO3)	mg/L	<1		
Balance (+ions/-ions)	Ratio	0.80		
Carbonate	mg/L	<1		
Bicarbonate	mg/L	22		
Chloride	mg/L	3.3		1000
Fluoride	mg/L	0.04		
Sulphate	mg/L	3.7		
Carbon (Total Inorganic)	mg/L	2.1		
Carbon (Total Organic)	mg/L	3.5		
Ammonia - Nitrogen	mg/L	0.02	<0.005	12
Nitrate - Nitrogen	mg/L	0.86		56
Nitrite - Nitrogen	mg/L	<0.05		5
Total Kjeldahl Nitrogen	mg/L			
Phosphate - Ortho - Phosphoru	mg/L	<0.20		
Dissolved Ortho Phosphate	mg/L			
Total Phosphate As P	mg/L			
Biochemical Oxygen Demand	mg/L			25
MF - Fecal Coliforms	CFU/100mL			20
Oil & Grease (Infrared)	mg/L			5
Dissolved Aluminum	mg/L	0.022	0.0177	2
Dissolved Antimony	mg/L	<0.00005	0.0000056	
Dissolved Arsenic	mg/L	0.0003	0.000146	
Dissolved Barium	mg/L	0.00891	0.00163	
Dissolved Beryllium	mg/L	<0.0001	<0.000003	
Dissolved Boron	mg/L	0.003	0.0195	
Dissolved Cadmium	mg/L	<0.00005	0.0000031	
Dissolved Calcium	mg/L	5.0	1.1	
Dissolved Chromium	mg/L	<0.0003	0.000112	
Dissolved Cobalt	mg/L	0.00006	0.0000151	
Dissolved Copper	mg/L	0.0053	0.0017	
Dissolved Iron	mg/L	<0.10	0.014	
Dissolved Lead	mg/L	0.00008	0.000013	
Dissolved Lithium	mg/L	<0.0010	0.00084	
Dissolved Magnesium	mg/L	1.8	0.441	
Dissolved Manganese	mg/L	<0.010	0.00223	
Dissolved Mercury	mg/L	<0.00005	<0.00001	
Dissolved Molybdenum	mg/L	0.00029	0.0000229	
Dissolved Nickel	mg/L	0.00110	0.000286	
Dissolved Phosphorus	mg/L	<0.005	0.002	
Dissolved Potassium	mg/L	<0.5	0.285	
Dissolved Selenium	mg/L	<0.0006	<0.0001	
Dissolved Silicon	mg/L	0.49	0.115	
Dissolved Silver	mg/L	<0.00005	0.0000042	
Dissolved Sodium	mg/L	1.4	0.424	
Dissolved Strontium	mg/L	0.0243	0.00455	
Dissolved Thallium	mg/L	<0.00005	<0.0000006	
Dissolved Tin	mg/L	<0.0001	<0.00003	
Dissolved Titanium	mg/L	0.0008	0.000463	
Dissolved Uranium	mg/L	0.00105	0.000137	
Dissolved Vanadium	mg/L	0.0003	0.0000702	
Dissolved Zinc	mg/L	0.005	0.00331	
Total Aluminum	mg/L	0.167	0.0213	3
Total Antimony	mg/L	<0.00005	0.0000056	
Total Arsenic	mg/L	0.0003	0.000162	0.1
Total Barium	mg/L	0.0107	0.00172	
Total Beryllium	mg/L	<0.0001	<0.000003	
Total Boron	mg/L	0.003	0.0204	
Total Cadmium	mg/L	<0.00005	0.0000034	0.0024
Total Calcium	mg/L	5.16	1.12	
Total Chromium	mg/L	0.0013	0.000141	0.17
Total Cobalt	mg/L	0.00010	0.0000202	
Total Copper	mg/L	0.0018	0.00184	0.04
Total Iron	mg/L	0.17	0.0169	
Total Lead	mg/L	0.00014	0.00002	0.02
Total Lithium	mg/L	<0.005	0.00084	
Total Magnesium	mg/L	1.64	0.458	
Total Manganese	mg/L	<0.01	0.0023	

Stn.Code		**JER-WQ19**	**JER-WQ19**	
Station Name		**JER-WQ19**	**JER-WQ19**	
Sample Class		**M**	**M**	
Sample No.		**Jun-19**	**L420594-29**	
Sample Comments				PKCA Discharge
Collect Date/Time		11/07/2006	07/08/2006	Criteria
Total Mercury	mg/L	<0.00005	<0.00001	
Total Molybdenum	mg/L	0.00011	0.0000246	1.5
Total Nickel	mg/L	0.0013	0.000345	0.1
Total Phosphorus	mg/L	<0.020	0.003	0.4
Total Potassium	mg/L	0.5	0.292	
Total Selenium	mg/L	<0.0010	<0.0001	
Total Silicon	mg/L	0.67	0.137	
Total Silver	mg/L	<0.0001	0.000005	
Total Sodium	mg/L	1.4	0.442	
Total Strontium	mg/L	0.0234	0.0046	
Total Thallium	mg/L	<0.00005	<0.0000003	
Total Tin	mg/L	<0.0001	<0.0000300	
Total Titanium	mg/L	0.0028	0.000539	
Total Uranium	mg/L	0.00113	0.000137	1
Total Vanadium	mg/L	0.0005	0.0000817	
Total Zinc	mg/L	0.005	0.00474	0.5

Stn.Code		**JER-WQ20**	**JER-WQ20**	
Station Name		**JER-WQ20**	**JER-WQ20**	
Sample Class		**M**	**M**	
Sample No.		**Jun-20**	**L420594-30**	
Sample Comments				PKCA Discharge
Collect Date/Time		11/07/2006	06/08/2006	Criteria
Water Temperature	Deg C	14.4	16.3	
Field pH	pH	6.49	7.7	
Field Conductivity	us/cm	31	4	
Field Dissolved Oxygen	mg/L	9.78		
Oxidation Reduction Potential	mV	336.20		
pH @ 25°C	pH	7.08		6.0-8.8
Conductivity @ 25°C	us/cm	37		
T-Dissolved Solids180°C	mg/L	31		4000
Total Suspended Solids @105°C	mg/L	<2		25
Turbidity	NTU	1		
T-Hardness as CaCO3	mg/L	10.1		
T-Alkalinity as CaCO3	mg/L	12		
Acidity as CaCO3	mg/L	2		
Hydroxide (as CaCO3)	mg/L	<1		
Balance (+ions/-ions)	Ratio	0.77		
Carbonate	mg/L	<1		
Bicarbonate	mg/L	14		
Chloride	mg/L	3.0		1000
Fluoride	mg/L	0.04		
Sulphate	mg/L	1.0		
Carbon (Total Inorganic)	mg/L	0.7		
Carbon (Total Organic)	mg/L	3.5		
Ammonia - Nitrogen	mg/L	0.01	0.006	12
Nitrate - Nitrogen	mg/L	0.31		56
Nitrite - Nitrogen	mg/L	<0.05		5
Total Kjeldahl Nitrogen	mg/L			
Phosphate - Ortho - Phosphoru	mg/L	<0.20		
Dissolved Ortho Phosphate	mg/L			
Total Phosphate As P	mg/L			
Biochemical Oxygen Demand	mg/L			25
MF - Fecal Coliforms	CFU/100mL			20
Oil & Grease (Infrared)	mg/L			5
Dissolved Aluminum	mg/L	0.056	0.0197	2
Dissolved Antimony	mg/L	<0.00005	0.0000068	
Dissolved Arsenic	mg/L	0.0003	0.000192	
Dissolved Barium	mg/L	0.00358	0.00168	
Dissolved Beryllium	mg/L	<0.0001	<0.000003	
Dissolved Boron	mg/L	0.001	0.0162	
Dissolved Cadmium	mg/L	<0.00005	0.0000063	
Dissolved Calcium	mg/L	2.3	1.08	
Dissolved Chromium	mg/L	<0.0003	0.000168	
Dissolved Cobalt	mg/L	0.00006	0.0000283	
Dissolved Copper	mg/L	0.0040	0.00143	
Dissolved Iron	mg/L	<0.10	0.0272	
Dissolved Lead	mg/L	<0.00005	0.0000409	
Dissolved Lithium	mg/L	<0.0010	0.0008	
Dissolved Magnesium	mg/L	1.1	0.462	
Dissolved Manganese	mg/L	<0.010	0.00303	
Dissolved Mercury	mg/L	<0.00005	<0.00001	
Dissolved Molybdenum	mg/L	0.00007	0.0000256	
Dissolved Nickel	mg/L	0.00074	0.000291	
Dissolved Phosphorus	mg/L	<0.005	0.001	
Dissolved Potassium	mg/L	<0.5	0.313	
Dissolved Selenium	mg/L	<0.0006	0.000125	
Dissolved Silicon	mg/L	0.53	0.143	
Dissolved Silver	mg/L	<0.00005	0.0000033	
Dissolved Sodium	mg/L	1.6	0.526	
Dissolved Strontium	mg/L	0.0099	0.0048	
Dissolved Thallium	mg/L	<0.00005	<0.0000006	
Dissolved Tin	mg/L	<0.0001	<0.00003	
Dissolved Titanium	mg/L	<0.0005	0.000482	
Dissolved Uranium	mg/L	0.00011	0.000134	
Dissolved Vanadium	mg/L	0.0003	0.0000668	
Dissolved Zinc	mg/L	0.007	0.00375	
Total Aluminum	mg/L	0.0411	0.0397	3
Total Antimony	mg/L	<0.00005	0.0000075	
Total Arsenic	mg/L	0.0002	0.000202	0.1
Total Barium	mg/L	0.00343	0.00185	
Total Beryllium	mg/L	<0.0001	0.0000046	
Total Boron	mg/L	0.002	0.0171	
Total Cadmium	mg/L	<0.00005	0.0000068	0.0024
Total Calcium	mg/L	2	1.12	
Total Chromium	mg/L	0.0015	0.000169	0.17
Total Cobalt	mg/L	<0.00005	0.00003	
Total Copper	mg/L	0.0012	0.00147	0.04
Total Iron	mg/L	<0.10	0.0328	
Total Lead	mg/L	<0.00005	0.0000451	0.02
Total Lithium	mg/L	<0.005	0.00088	
Total Magnesium	mg/L	0.78	0.471	
Total Manganese	mg/L	<0.01	0.00312	

Stn.Code		**JER-WQ20**	**JER-WQ20**	
Station Name		**JER-WQ20**	**JER-WQ20**	
Sample Class		**M**	**M**	
Sample No.		**Jun-20**	**L420594-30**	
Sample Comments				PKCA Discharge
Collect Date/Time		11/07/2006	06/08/2006	Criteria
Total Mercury	mg/L	<0.00005	<0.00001	
Total Molybdenum	mg/L	<0.00005	0.0000311	1.5
Total Nickel	mg/L	0.0005	0.000297	0.1
Total Phosphorus	mg/L	<0.020	0.003	0.4
Total Potassium	mg/L	<0.5	0.329	
Total Selenium	mg/L	<0.0010	0.000133	
Total Silicon	mg/L	0.48	0.199	
Total Silver	mg/L	<0.0001	0.0000045	
Total Sodium	mg/L	1.6	0.526	
Total Strontium	mg/L	0.0082	0.00485	
Total Thallium	mg/L	<0.00005	<0.0000003	
Total Tin	mg/L	<0.0001	0.000031	
Total Titanium	mg/L	<0.0005	0.00081	
Total Uranium	mg/L	0.00007	0.000137	1
Total Vanadium	mg/L	<0.0005	0.000136	
Total Zinc	mg/L	0.002	0.00391	0.5

2006 Aquatic Effects Monitoring Report

JERICHO DIAMOND PROJECT
2006 AQUATIC EFFECTS MONITORING PROGRAM REPORT

Prepared for

Tahera Diamond Corporation
Toronto, Ontario

By

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AQUATICS LTD

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Responsibilities during the 2006 Jericho Aquatic Effects Monitoring (AEM) Program were as follows:

Mainstream Aquatics	- collection of zooplankton, phytoplankton, benthic macroinvertebrates, sediment, sediment deposition data, water quality (August only), dissolved oxygen profiles - summary of historical fish data - data analyses and reporting
Tahera Diamond Corporation	- collection of water chemistry samples (except August) - collection of winter dissolved oxygen profiles
AMEC Laboratories (Edmonton AB)	- water chemistry analyses
Alberta Research Council Laboratories	- water chemistry analyses (metals and mercury)
ALS- Envirotest Laboratories (Edmonton AB)	- water chemistry analyses (nutrients)
Norwest Laboratories (Edmonton, AB)	- sediment chemistry
Dave Beliveau	- phytoplankton identification, chlorophyll estimates - sediment deposition toatl weight and ashed weight
Emil Dratnal	- benthic macroinvertebrate identification and sorting
Barbara Dratnal	- zooplankton identification

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1.0 INTRODUCTION

1.1 BACKGROUND

The Jericho Diamond Project was initiated in 1995 based on the discovery of a kimberlite pipe adjacent to the southern shore of an unnamed lake (locally known as Carat Lake). The Jericho Diamond Project has undergone environmental review by the Nunavut Impact Review Board (NIRB), which recommended that the Project be approved, subject to several terms and conditions. NIRB issued a Project Certificate on 20 July 2004, after receiving approval from the Minister of Indian and Northern Affairs. The conditions included development and implementation of a comprehensive environmental monitoring program, part of which included an Aquatic Effects Monitoring Plan (AEMP). The Nunavut Water Board (NWB) issued Water License NWBJER0410 on 22 December 2004 pursuant to DIAND Ministerial Approval which was received on 26 January 2005. The NWB adopted the NIRB recommendations regarding the AEMP.

General baseline studies of the aquatic environment in the Jericho study area have been ongoing since 1995. Structured pre-development monitoring studies occurred in 2004 and 2005. The Jericho Diamond Mine became fully operational in January 2006.

This document presents the results of the 2006 Aquatic Effects Monitoring (AEM) Program. A detailed discussion of the rationale and design of the AEM Program is presented in Mainstream and AMEC (2005).

1.2 PURPOSE AND OBJECTIVES

The purpose of the 2006 AEM Program was to monitor the potential effects of the Jericho Diamond Project on the aquatic environment. The goals of the program were to:

- Protect the health and integrity of the aquatic environment.
- Confirm impact predictions.
- Ascertain whether mitigation measures are effective.
- Adjust mitigation where appropriate.

The primary objective of the 2006 Jericho AEM Program was to continue collections of data that describe selected components of the aquatic environment. Where appropriate, comparisons were made to historical baseline data (1995-2000), 2004 data, and 2005 data. A secondary objective of the 2006 Jericho AEM Program was to provide a summary of historical baseline data that described the fish community, as per

instructions outlined in NWB letter titled "Follow-up to NWB-TDC Meeting on September 25th-26th, 2006" (dated September 30, 2006). Data collected between 1995 and 2005 were used for the fish summary.

1.3 STUDY AREA

The ore bearing deposit and mine infrastructure is located immediately south of Carat Lake (Figure 1.1). Potential contaminant sources that could affect the aquatic environment, the mode of transport, and the receiving waterbodies are listed in Table 1.1. The modes of transport are licensed discharge, surface runoff, and airborne dust. In general the constituents of concern are nutrients, contaminants, and sediments.

Licensed discharge from the Processed Kimberlite Containment Area (PKCA) is released into Lake C3 via Stream C3. Surface runoff and airborne contaminants have the potential to enter lakes and streams.

Table 1.1 Discharge sources, potential mode of entry, and receiving waterbodies, Jericho Diamond Project.

Source	Mode[a]	Receiving Waterbodies
• Discharge from PKCA	• Discharge	• Stream C3 and Lake C3
• Stream C1 Diversion	• Runoff[b]	• Stream C1 and Carat Lake
• Drainage ditch to Lake C4[c]	• Runoff[b]	• Stream C4, Lake C4, and Carat Lake
• Waste rock dump	• Airborne	• Lynne Lake, Key Lake, Ash Lake

[a] Discharge - licensed discharge into receiving waterbodies; Runoff – surface runoff; Airborne - dust.
[b] Mine station runoff will be collected and directed to the PKCA for release.
[c] Not constructed at the time of report submission 2006.

Receiving waterbodies are placed into two groups based on location and flow direction. The Jericho River group is part of the Jericho River system, which flows in a northerly direction to the Kathawachaga River system situated approximately 15 km downstream of the Project. Waterbodies monitored in this group include Lake C1, Lake C3, Lake C4, Carat Lake, Jericho Lake, Jericho River, Stream C1, Stream C3, and Stream C4.

The Lynne Lake group consists of a series of small waterbodies and ephemeral watercourses situated immediately east and north of the Project, which drain into Contwoyto Lake. Waterbodies monitored in this group include Ash Lake, Key Lake, and Lynne Lake.

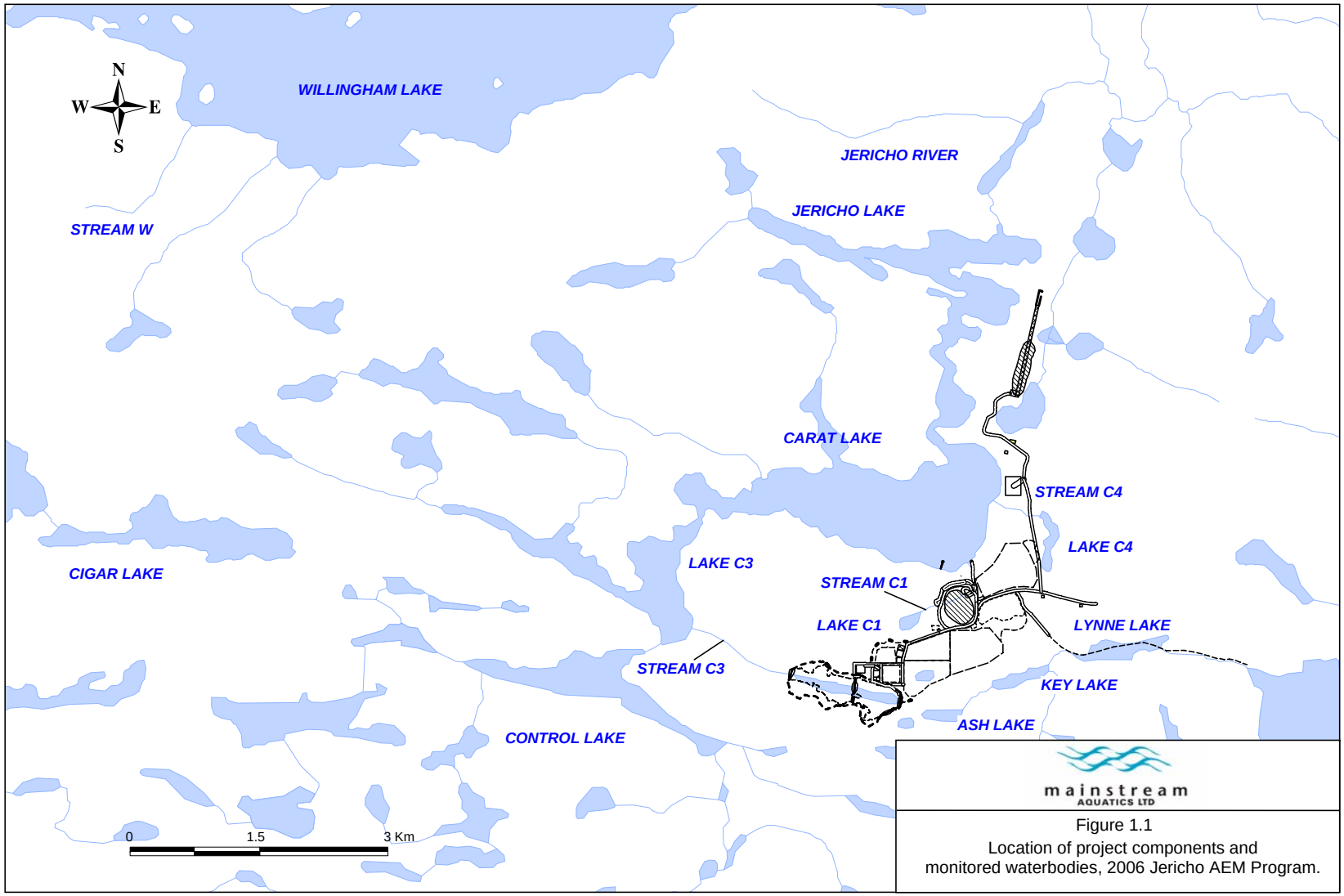


Figure 1.1
Location of project components and monitored waterbodies, 2006 Jericho AEM Program.

Two control lakes are incorporated in the AEM Program to provide data from nonaffected waterbodies. These include Control Lake located immediately upstream of Lake C3 and Cigar Lake located outside the watershed, 10 km west of the Project. A control stream (Stream W) was added to the original list specified in the AEMP to collect slimy sculpin for metal tissue contaminants. Suitable streams were not available in Cigar Lake or Control Lake. Stream W, which flows into Willingham Lake is located 5 km north of Cigar Lake.

2.0 DESIGN

Components monitored during the 2006 AEM Program were as follows:

- water chemistry
- sediment chemistry
- dissolved oxygen and temperature; secchi depth
- sediment deposition
- phytoplankton
- zooplankton
- benthic macroinvertebrates

Appendix A lists the geodetic locations of all stations sampled in 2006.

2.1 WATER CHEMISTY

2.1.1 Parameters

Table 2.1 provides a list of water chemistry parameters that were analysed and the detection limits. Both total and dissolved metals were analysed.

Table 2.1 Water chemistry monitoring parameters and detection limits, 2006 Jericho AEM Program.

Water Quality Parameter	**Detection Limits** (mg/L or parameter units)
Physical Tests	
Conductivity (µS/cm) (field and lab)	2
Hardness ($CaCO_3$)	6
pH (field and lab)	0.01
Hydroxide	0.01
Total Suspended Solids	3
Total Dissolved Solids	10
Turbidity (NTU)	1
Temperature (°C)	1
Dissolved Anions	
Alkalinity-Total $CaCO_3$	5
Acidity ($CaCO_3$)	1
Carbonate (CO_3)	1
Bicarbonate (HCO_3)	1
Chloride (Cl)	1
Sulphate (SO_4)	0.5

Table 2.1 Water chemistry monitoring parameters and detection limits, 2006 Jericho AEM Program.

Water Quality Parameter	Detection Limits (mg/L or parameter units)
Nutrients	
Nitrate (NO_3)	0.05
Nitrite (NO_2)	0.05
Ammonia (NH_3)	0.10
Total Dissolved Phosphorus	0.005
Total Phosphorus	0.050
Orthophosphate	0.2
Total & Dissolved Metals	
Aluminum (Al)	0.02
Arsenic (As)	0.0004
Barium (Ba)	0.0005
Beryllium (Be)	0.0005
Boron (B)	0.01
Cadmium (Cd)	0.0001
Calcium (Ca)	0.05
Chromium (Cr)	0.0009
Cobalt (Co)	0.0001
Copper (Cu)	0.001
Iron (Fe)	0.03
Lead (Pb)	0.0001
Magnesium (Mg)	0.05
Manganese (Mn)	0.01
Mercury (Hg)	0.0001
Molybdenum (Mo)	0.0005
Nickel (Ni)	0.0006
Potassium (K)	0.5
Selenium (Se)	0.0008
Sodium (Na)	0.5
Strontium (Sr)	0.0001
Uranium (U)	0.00005
Vanadium (Va)	0.0001
Zinc (Zn)	0.002
Organic Parameters	
Total Organic Carbon (TOC)	0.01
Total Inorganic Carbon (TIC)[a]	1
Biological Parameters	
Biological Oxygen Demand (BOD) [a]	
Fecal Coliform[a]	

[a] Parameters added to the original Aquatic Effects Monitoring Plan parameters as per NWB conditions.

Parameters measured in the field for each station were as follows:

- Sampler's name
- Station number
- Single or replicate samples
- Date and time
- Type and number of sample bottles filled
- pH
- Water temperature
- Conductivity
- Dissolved oxygen

All information was kept in a field log book and data entered into a water quality database.

2.1.2 Stations and Locations

A list of water chemistry monitoring stations and locations, as well as the purpose for monitoring is presented in Table 2.2, Appendix A1. Figure 2.1 depicts locations of water chemistry monitoring stations.

Table 2.2 Water chemistry monitoring stations and purpose, 2006 Jericho AEM Program.

Station	Location	Purpose
JER-WQ1	Freshwater Intake	Monitor potable water quality
JER-WQ2	PKCA Discharge	Compliance with water license
JER-WQ3	Stream C3 above Mouth	Near field PKCA discharge
JER-WQ4	Lake C3 South Basin	Near field PKCA discharge
JER-WQ5	Lake C3 Outlet	Far field PKCA discharge
JER-WQ6	Carat Lake Centre Basin	Near field; near mine, non-discharge effects[a]
JER-WQ7	Carat Lake Outlet	Far field; near mine, non-discharge effects
JER-WQ8	Jericho Lake North Basin	Far field
JER-WQ9	Jericho River Downstream of Jericho Lake	Far field on IOL
JER-WQ10	Control Lake	Upstream control
JER-WQ11	Cigar Lake (2nd Control)	Outside basin control
JER-WQ12	Stream C1 above Mouth	Near mine, non-discharge effects
JER-WQ13	Lake C1	Near mine, non-discharge effects
JER-WQ14	Lake C4	Near mine, non-discharge effects
JER-WQ15	Stream C4 above Mouth	Near mine, non-discharge effects
JER-WQ16	Lynne Lake	Near mine, non-discharge effects
JER-WQ17	Key Lake	Near mine, non-discharge effects
JER-WQ18	Ash Lake	Near mine, non-discharge effects
JER-WQ19	Stream C1 outlet in Carat Lake	Near field; near mine discharge
JER-WQ20	Stream C3 outlet in Lake C3	Near field PKCA discharge

[a] Non-discharge includes surface runoff, accidental spill, and airborne dust.

2.1.3 Frequency and Replication

Table 2.3 lists the water chemistry monitoring frequency at each station. A single replicate was collected from each station during each sampling event.

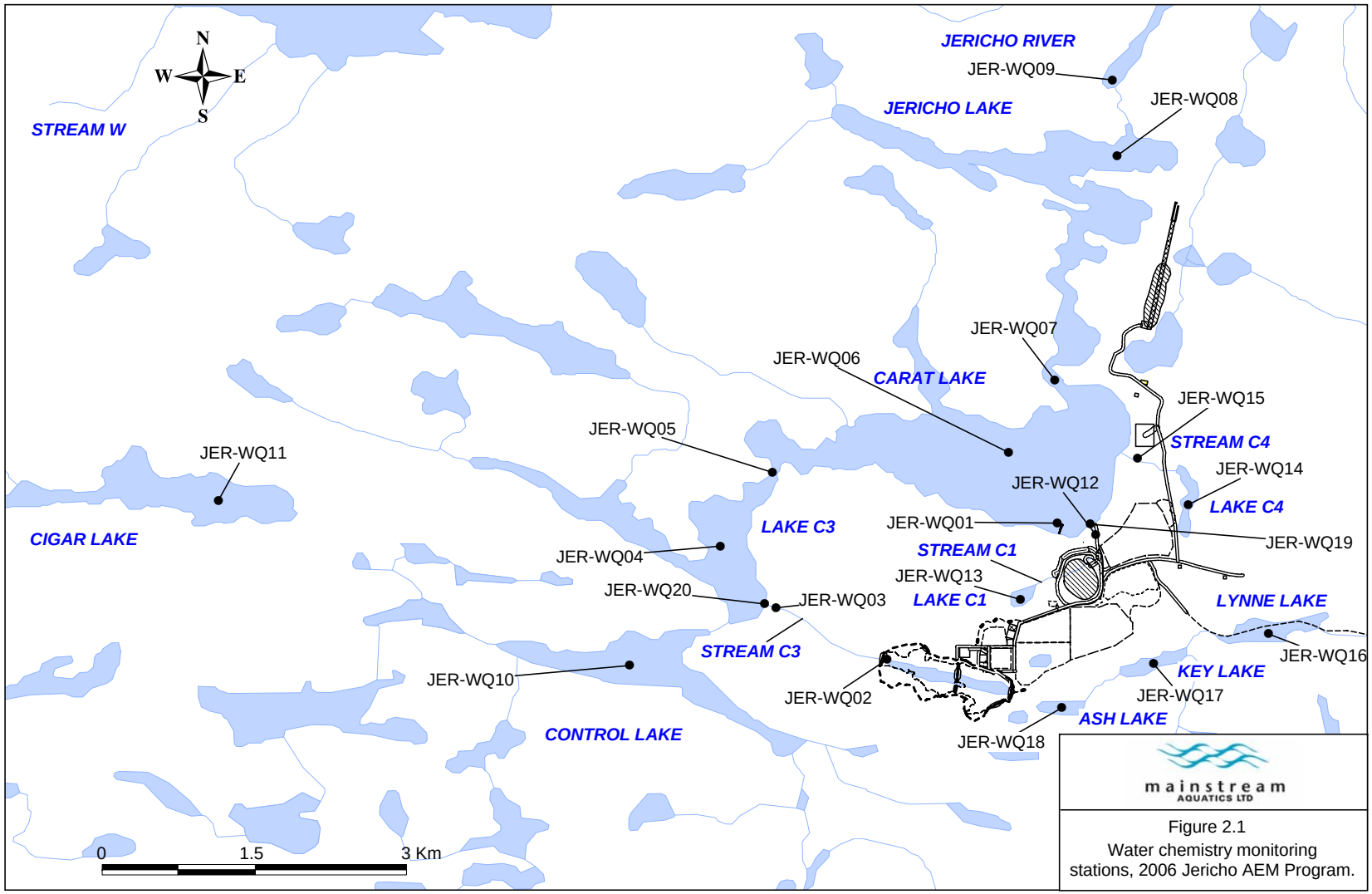


Figure 2.1
Water chemistry monitoring stations, 2006 Jericho AEM Program.

Table 2.3 Water chemistry monitoring parameters and frequency, Jericho AEM Program.

Station	Location	Project Phase	Parameter	Frequency
JER-WQ1	Carat Lake Freshwater Intake	Pre-construction		
		Construction		
		Operation	PW	M2
JER-WQ2	PKCA Discharge	Pre-construction		
		Construction	Turbidity (correlate with TSS)	D
		Operation	R, ICP-T, ICP-D, N, B	W, M2
JER-WQ3	Stream C3 Upstream of Lake C3	Pre-construction	R, ICP-T, ICP-D, N	M2
		Construction	R, ICP-T, ICP-D, N	M2
		Operation	R, ICP-T, ICP-D, N	M2
JER-WQ4	Lake C3 South Basin	Pre-construction	R, ICP-T, ICP-D, N, DO	A1
		Construction	R, ICP-T, ICP-D, N	M1
		Operation	R, ICP-T, ICP-D, N	M1
JER-WQ5	Lake C3 Outlet	Pre-construction		
		Construction	R, ICP-T, ICP-D, N	M2
		Operation	R, ICP-T, ICP-D, N	M2
JER-WQ6	Carat Lake Centre Basin	Pre-construction	DO	A1
		Construction	R, ICP-T, ICP-D, N	M1
		Operation	R, ICP-T, ICP-D, N	M1
JER-WQ7	Carat Lake Outlet	Pre-construction		
		Construction	R, ICP-T, ICP-D, N	M2
		Operation	R, ICP-T, ICP-D, N	M2
JER-WQ8	Jericho Lake North Basin	Pre-construction	R, ICP-T, ICP-D, N, DO	A1
		Construction	R, ICP-T, ICP-D, N	M1
		Operation	R, ICP-T, ICP-D, N	M1
JER-WQ9	Jericho River Downstream of Jericho Lake	Pre-construction		
		Construction	R, ICP-T, ICP-D, N	M1
		Operation	R, ICP-T, ICP-D, N	M1
JER-WQ10	Control Lake	Pre-construction		
		Construction	R, ICP-T, ICP-D, N	M1
		Operation	R, ICP-T, ICP-D, N	M1
JER-WQ11	Cigar Lake (2nd Control)	Pre-construction		
		Construction	R, ICP-T, ICP-D, N	M1
		Operation	R, ICP-T, ICP-D, N	M1
JER-WQ12	Stream C1 Upstream of Carat Lake	Pre-construction		
		Construction	R, ICP-T, ICP-D, N	M2
		Operation	R, ICP-T, ICP-D, N	M2
JER-WQ13	Lake C1	Pre-construction	R, ICP-T, ICP-D, N, DO	A1
		Construction	R, ICP-T, ICP-D, N	M1
		Operation	R, ICP-T, ICP-D, N	M1
JER-WQ14	Lake C4	Pre-construction	R, ICP-T, ICP-D, N, DO	A1
		Construction	R, ICP-T, ICP-D, N	M2
		Operation	R, ICP-T, ICP-D, N	M2
JER-WQ15	Stream C4 Upstream of Carat Lake	Pre-construction		
		Construction	R, ICP-T, ICP-D, N	M2
		Operation	R, ICP-T, ICP-D, N	M2
JER-WQ16	Lynne Lake	Pre-construction		
		Construction		
		Operation	R, ICP-T, ICP-D, N	A2
JER-WQ17	Key Lake	Pre-construction		
		Construction		
		Operation	R, ICP-T, ICP-D, N	A2
JER-WQ18	Ash Lake	Pre-construction		
		Construction		
		Operation	R, ICP-T, ICP-D, N	A2
JER-WQ19	Stream C1 outlet in Carat Lake	Pre-construction		
		Construction		
		Operation	R, ICP-T, ICP-D, N	A2
JER-WQ20	Stream C3 outlet in Lake C3	Pre-construction		
		Construction		
		Operation	R, ICP-T, ICP-D, N	A2

A1: Annual Once in Winter
A2: Annual Once in Summer
M1: Monthly: Mid-Apr, Jun, Jul, Aug, Sep, Mid-Dec
M2: Monthly: Jun, Jul, Aug, Sep
W: Weekly
D: Daily

The frequency of sampling dates is listed in Table 2.4.

Table 2.4 Water chemistry frequency of sampling dates, 2006 Jericho AEM Program.

Station	Location	Frequency Class	2006 Sampling Dates
JER-WQ1	Carat Lake Freshwater Intake	M2	June, July (2), Aug, Sept
JER-WQ2	PKCA Discharge	W, M2	June, July, Aug, Sept
JER-WQ3	Stream C3 Upstream of Lake C3	M2	June, July, Aug, Sept
JER-WQ4	Lake C3 South Basin	M1	May, June, July, Aug, Sept, Dec
JER-WQ5	Lake C3 Outlet	M2	June, July, Aug, Sept
JER-WQ6	Carat Lake Centre Basin	M1	May, July, Aug, Sept
JER-WQ7	Carat Lake Outlet	M2	June, July, Aug, Sept
JER-WQ8	Jericho Lake North Basin	M1	May, July, Aug, Sept
JER-WQ9	Jericho River Downstream of Jericho Lake	M1	June, July, Aug, Sept, Dec
JER-WQ10	Control Lake	M1	May, July, Aug, Dec
JER-WQ11	Cigar Lake (2nd Control)	M1	May, July, Aug, Dec
JER-WQ12	Stream C1 Upstream of Carat Lake	M2	June (2), July, Aug, Sept
JER-WQ13	Lake C1	M1	May, June, July, Aug
JER-WQ14	Lake C4	M2	June, July, Aug, Sept
JER-WQ15	Stream C4 Upstream of Carat Lake	M2	June, July, Aug
JER-WQ16	Lynne Lake	A2	July
JER-WQ17	Key Lake	A2	July
JER-WQ18	Ash Lake	A2	July
JER-WQ19	Stream C1 outlet in Carat lake	A2	July
JER-WQ20	Stream C3 outlet in Lake C3	A2	July

A1: Annual Once in Winter M1: Monthly: Mid-Apr, Jun, Jul, Aug, Sep, Mid-Dec W: Weekly
A2: Annual Once in Summer M2: Monthly: Jun, Jul, Aug, Sep D: Daily

2.2 SEDIMENT CHEMISTRY

2.2.1 Parameters

Table 2.5 lists the analyses and detection limits for sediment samples.

Table 2.5 Sediment chemistry monitoring parameters and detection limits, 2006 Jericho AEM Program.

Constituent		Detection Limit	Units	Constituent		Detection Limit	Units
Moisture		0.01	%	Mercury	Hg	0.001	µg/g
				Molybdenum	Mo	4	µg/g
Aluminum	Al	10	µg/g	Nickel	Ni	2	µg/g
Antimony	Sb	10	µg/g	Phosphorus	PO4	20	µg/g
Arsenic	As	0.05	µg/g	Selenium	Se	0.5	µg/g
Barium	Ba	0.1	µg/g	Silver	Ag	2	µg/g
Beryllium	Be	1	µg/g	Sodium	Na	5	µg/g
Boron	B	0.5	µg/g	Strontium	Sr	0.1	µg/g
Cadmium	Cd	0.25	µg/g	Tin	Sn	5	µg/g
Calcium	Ca	1	µg/g	Titanium	Ti	0.3	µg/g
Chromium	Cr	2	µg/g	Uranium	U	0.05	µg/g
Cobalt	Co	1	µg/g	Vanadium	V	0.5	µg/g
Copper	Cu	1	µg/g	Zinc	Zn	1	µg/g
Iron	Fe	2	µg/g				
Lead	Pb	1	µg/g	Total Organic Carbon	C	0.01	%
Magnesium	Mg	0.1	µg/g	Total Kjeldahl Nitrogen	N	0.005	%
Manganese	Mn	0.2	µg/g	Phosphorus	PO_4	40	µg/g

A particle size analysis was completed on one replicate from each station.

2.2.2 Stations and Locations

A list of sediment chemistry monitoring stations and locations, as well as the purpose for monitoring is presented in Table 2.6, Appendix A1 and illustrated in Figure 2.2.

Table 2.6 Sediment chemistry monitoring stations and purpose, 2006 Jericho AEM Program.

Station	Location	Purpose
JER-WQ4	Lake C3 South Basin	Near field PKCA discharge
JER-WQ6	Carat Lake Centre Basin	Near field; near mine, non-discharge effects[a]
JER-WQ8	Jericho Lake North Basin	Far field
JER-WQ9	Jericho River Downstream of Jericho Lake	Far field control on IOL
JER-WQ10	Control Lake	Upstream control
JER-WQ11	Cigar Lake (2nd Control)	Outside basin control
JER-WQ13	Lake C1	Near mine, non-discharge effects[a]

[a] Non-discharge includes surface runoff, accidental spill, and airborne dust.

2.2.3 Frequency and Replication

Five replicates were collected from each station during each sampling event.

2.3 LAKE PROFILE PARAMETERS

2.3.1 Parameters

Lake profile parameters include dissolved oxygen (mg/L), water temperature (^{o}C), and secchi depth (m).

2.3.2 Stations and Locations

Summer dissolved oxygen, temperature profiles and secchi depths were taken at stations listed in Table 2.7, Appendix A1. Station locations are highlighted in Figure 2.3.

Table 2.7 Dissolved oxygen and temperature monitoring stations and waterbodies, 2006 Jericho AEM Program.

Station	Location	Purpose
JER-DO10	Control Lake	Upstream control
JER-DO11	Cigar Lake	Out of basin control
JER-DO04	Lake C3	Near-field; PKCA discharge
JER-DO06	Carat Lake	Near-field; Stream C1 discharge
JER-DO08	Jericho Lake	Far-field

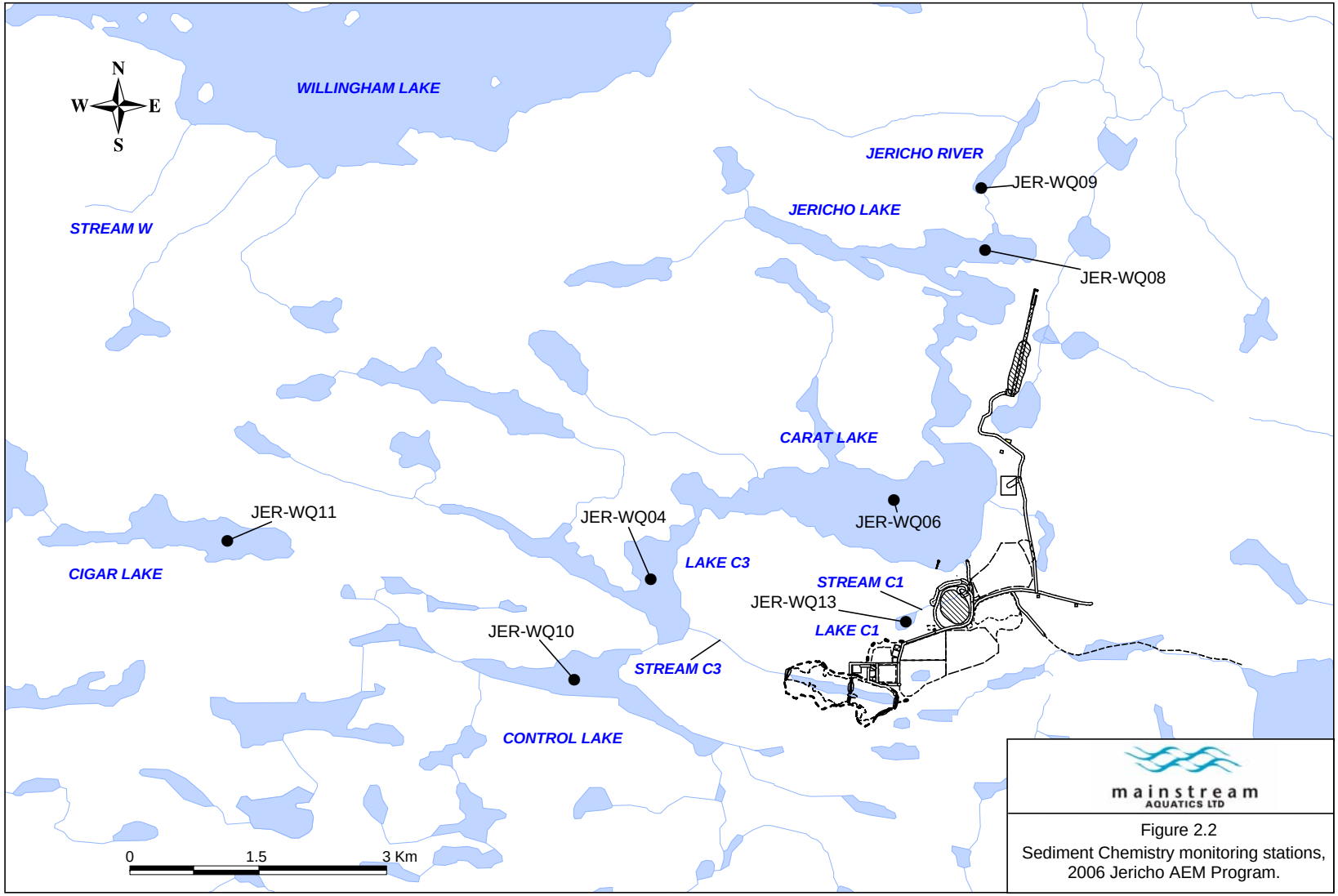


Figure 2.2
Sediment Chemistry monitoring stations, 2006 Jericho AEM Program.

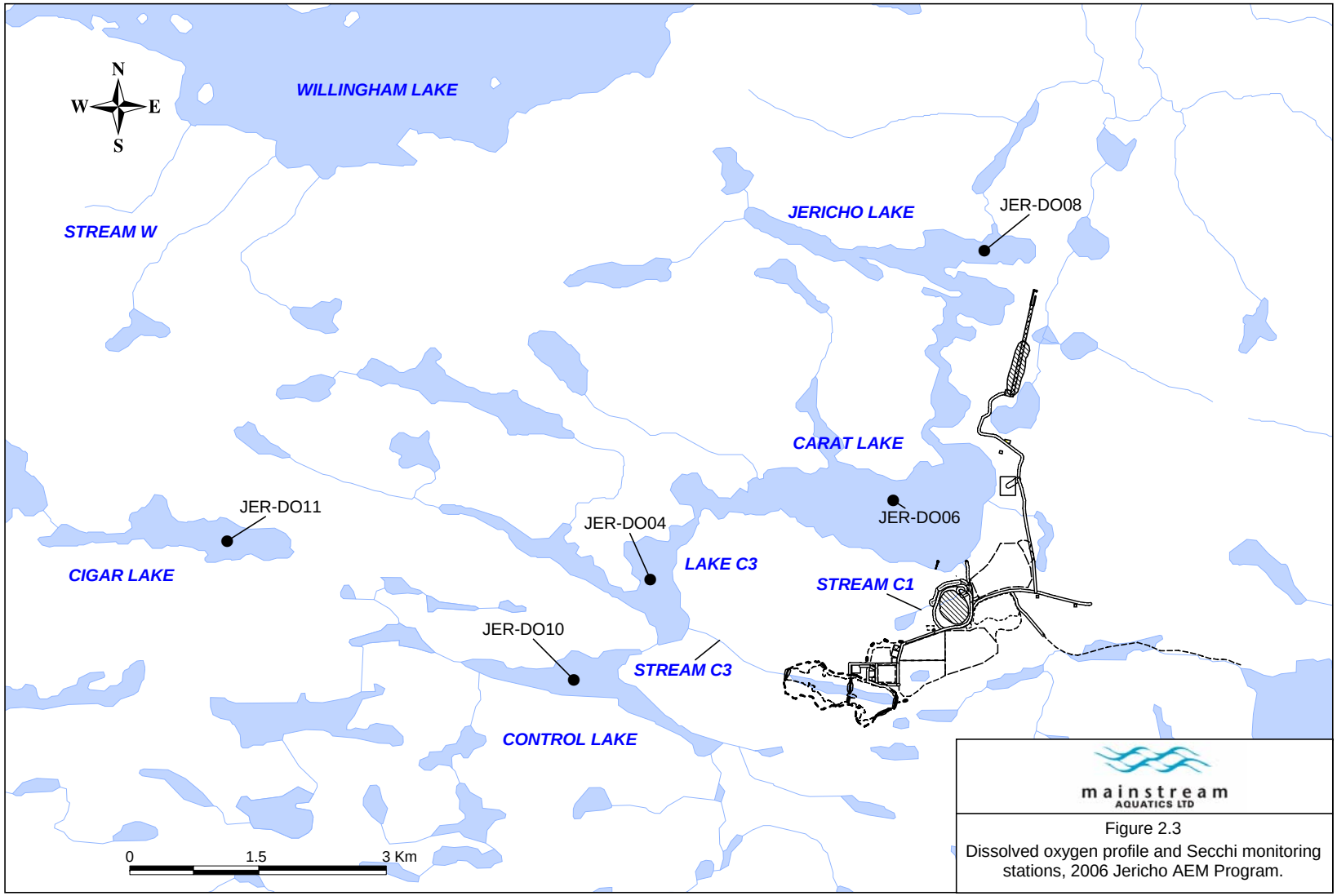


Figure 2.3
Dissolved oxygen profile and Secchi monitoring stations, 2006 Jericho AEM Program.

2.3.3. Frequency and Replication

Data were collected once during the summer sampling period.

2.4 SEDIMENT DEPOSITION

2.4.1 Parameters

Parameters investigated included weight of sediment deposited and sediment deposition rate.

2.4.2 Stations and Locations

A list of sediment deposition monitoring stations and locations, as well as the purpose for monitoring are presented in Table 2.8, Appendix A1 and illustrated in Figure 2.4.

Table 2.8 Sediment deposition monitoring stations and locations, purpose, and sample dates, 2006 Jericho AEM Program.

Station	Location	Purpose	Dates	
			Set	Retrieve
JER-SD23	Control Lake	Upstream control	8-Jul-05	3-Aug-06
JER-SD25	Cigar Lake	Outside basin control	11-Jul-05	4-Aug-06
JER-SD20	Lake C3 at Stream C3	Near-field; PKCA discharge	10-Jul-05	5-Aug-06
JER-SD05	Lake C3 outlet	Far-field; PKCA discharge	11-Jul-05	27-Jul-06
JER-SD19	Carat Lake at Stream C1	Near-field; Stream C1 discharge	10-Jul-05	24-Jul-06
JER-SD21	Carat Lake west of causeway	Near-field; causeway effects	10-Jul-05	24-Jul-06
JER-SD22	Carat Lake east of causeway	Near-field; causeway effects	12-Jul-05	24-Jul-06
JER-SD07	Carat Lake outlet	Far-field; Stream C1 discharge	12-Jul-05	26-Jul-06
JER-SD26	Jericho Lake	Far-field	11-Jul-05	27-Jul-06

2.4.3 Frequency and Replication

One sediment deposition sample was collected from each station in summer 2006 and the traps reset. Set and retrieval dates for the 2006 results are presented in Table 2.8.

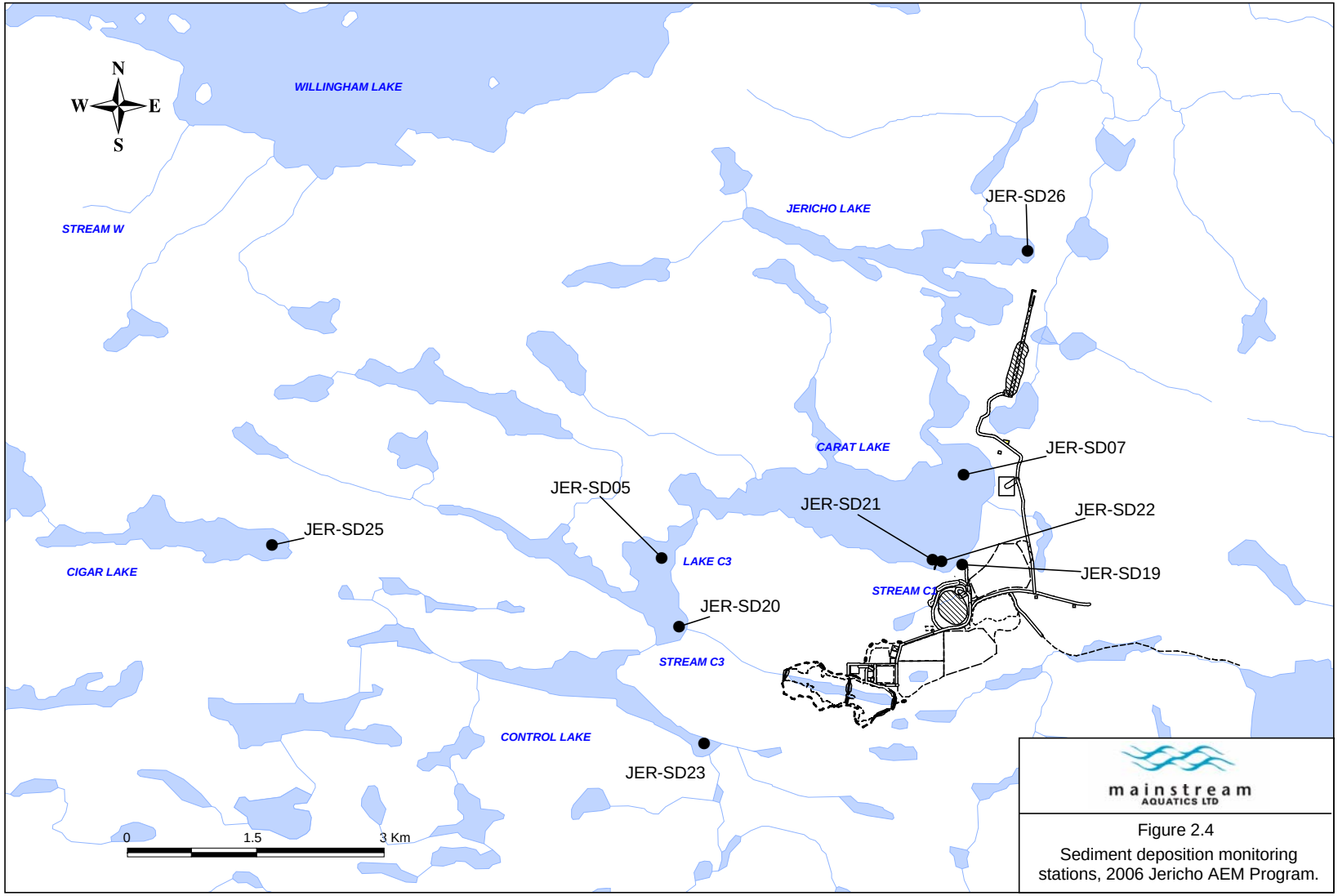


Figure 2.4
Sediment deposition monitoring stations, 2006 Jericho AEM Program.

2.5 NONVERTEBRATE AQUATIC BIOTA

2.5.1 Parameters

Parameters monitored for aquatic biota are listed in Table 2.9.

Table 2.9 Monitored indicators and parameters, 2006 Jericho AEM Program.

Indicator	Parameter
Phytoplankton	Taxa richness; taxa diversity; density; biovolume; biovolume index (Chl. *a*)
Zooplankton	Taxa richness; taxa diversity; density; biomass
Benthic macroinvertebrates	Taxa richness; taxa diversity; density

2.5.2 Stations and Locations

A list of aquatic biota monitoring stations and locations, as well as the purpose for monitoring is presented in Table 2.10, Appendix A1 and illustrated in Figure 2.5 (phytoplankton and zooplankton) and Figure 2.6 (benthic macroinvertebrates).

Station location was based on the type of indicator monitored. These were sedentary indicators (benthic macroinvertebrates) and nonsedentary indicators (phytoplankton and zooplankton)

Table 2.10 Aquatic biota monitoring stations, locations, and purpose, 2006 Jericho AEM Program.

Station	Location	Phytoplankton	Zooplankton	Benthic Macroinvertebrates	Purpose
JER-AB10	Control Lake	✓	✓		Upstream control
JER-AB23	Control Lake			✓	Upstream control
JER-AB11	Cigar Lake	✓	✓		Outside basin control
JER-AB25	Cigar Lake			✓	Outside basin control
JER-AB04	Lake C3 South Basin	✓	✓		Near-field; PKCA discharge
JER-AB20	Lake C3 at Stream C3			✓	Near-field; PKCA discharge
JER-AB05	Lake C3 outlet			✓	Far-field; PKCA discharge
JER-AB06	Carat Lake Center Basin	✓	✓		Near-field; Stream C1 discharge
JER-AB19	Carat Lake at Stream C1			✓	Near-field; Stream C1 discharge
JER-AB07	Carat Lake outlet			✓	Far-field; Stream C1 discharge
JER-AB08	Jericho Lake	✓	✓		Far field
JER-AB26	Jericho Lake			✓	Far field

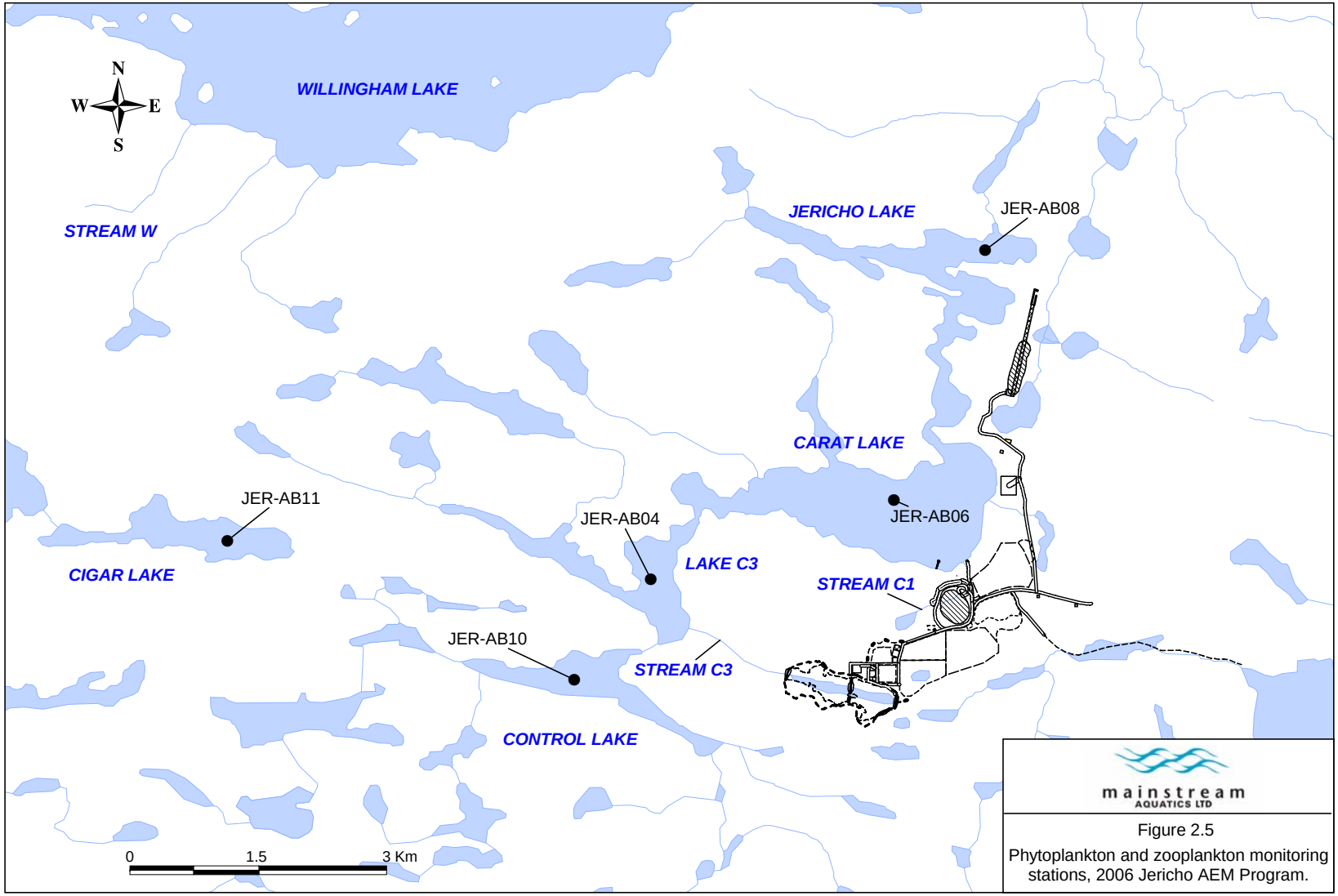


Figure 2.5
Phytoplankton and zooplankton monitoring stations, 2006 Jericho AEM Program.

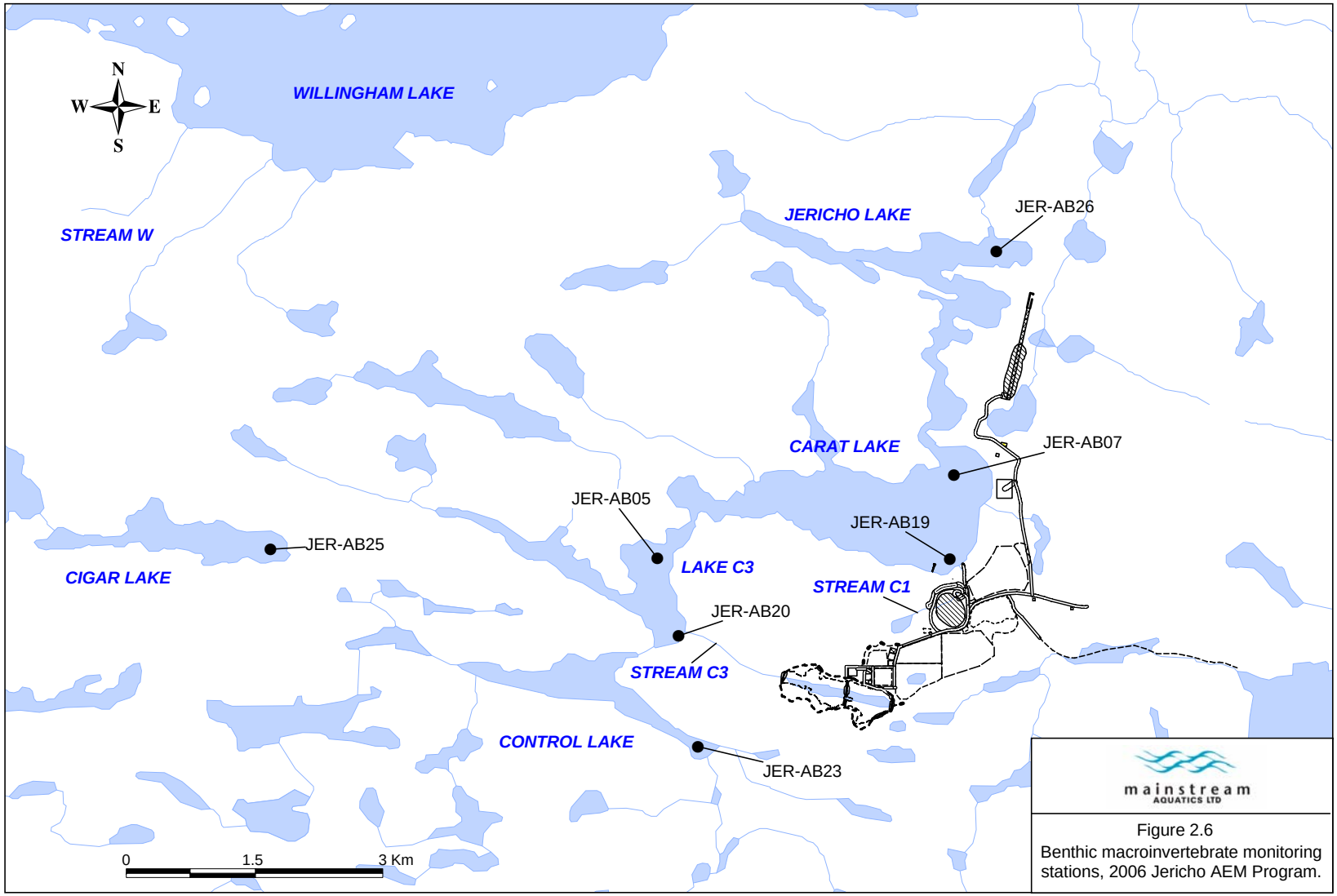


Figure 2.6
Benthic macroinvertebrate monitoring stations, 2006 Jericho AEM Program.

2.5.3 Frequency and Replication

The timing of sample collection and number of replicates are listed in Table 2.11.

Table 2.11 Sampling timing and replication for aquatic biota, 2006 Jericho AEM Program.

Indicator	Sample Timing	No. Replicates
Phytoplankton	20 July to 5 August	7
Zooplankton	20 July to 5 August	7
Benthic macroinvertebrates	22 to 23 June	5

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3.0 METHODS

3.1 WATER CHEMISTRY

3.1.1 Field

Tahera Diamond Corporation was responsible for collection of water quality samples in most months with the exception of August, when Mainstream staff completed the sampling. The following description is based on AEM Program protocols (Mainstream 2005). Prior to sampling raw water, sample bottles were rinsed three times; pre-treated sample bottles were not rinsed. During summer, water was collected by submersing bottles 0.25 m below the surface in lakes and below the surface in streams, uncapping and allowing bottles to fill, recapping and then resurfacing. During periods of ice cover (i.e., the April and December sampling periods), holes were drilled through the ice cover by a gas powered ice auger for the collection of surface grab water samples. Samples were collected approximately 1.0 m below the water surface exposed in the holes using a Van Dorn sampler. Rinsing of sample containers with in-situ water was impractical due to the cold weather; consequently, laboratory prepared sample containers were used. In August, low-level mercury was sampled using prepared mercury bottles and using clean hands dirty hands technique. All samples were kept cool during storage and were air transported to the analytical laboratory. All filtering was done in the laboratory. Chain of custody forms were used to track samples.

3.1.2 Laboratory

General water parameters (pH, dissolved anions, nutrients) were analyzed in accordance with procedures described in "Methods for Chemical Analysis of Water and Wastes" (United States Environmental Protection Agency 1983), "Manual for the Chemical Analysis of Water, Wastewaters, Sediments and Biological Tissues" (British Columbia Ministry of the Environment), and/or "Standard Methods for the Examination of Water and Wastewater" (American Public Health Association 1992).

Total and dissolved metals and organic parameter samples were analyzed in accordance with procedures described in "Standard Methods for the Examination of Water and Wastewater", 18th Edition (American Public Health Association, 1992). Several methods were employed for metals analysis, including Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) and Atomic Absorption Spectrophotometry (AA) to obtain the required detection limit for each element. Organic parameters were analyzed using a gas chromatograph - flame ionization detector (GC/FID). Mercury was analyzed by cold vapour AA.

3.2 SEDIMENT CHEMISTRY

3.2.1 Field

Sediment samples were collected with a stainless steel Ekman grab sampler and processed with a Teflon coated spoon. Samples were taken from the top 10 cm of the dredgate from the central part of the grab. The Ekman grab sampler and sampling spoon were thoroughly washed with sample station lake water prior to collecting the sample. Sediment samples were placed in clean plastic bags rinsed with lake water. Sample information was marked on the outside of the bag with a waterproof ink marker. Only new bags were used to store samples.

3.2.2 Laboratory

Sediments were analyzed for total extractable metals consistent with 1999 and 2000 methods (ASEPA 2000).

3.3 LAKE PROFILE PARAMETERS

Dissolved oxygen concentration (± 0.1 mg/L) and water temperature (± 0.1 C°) were measured in the field using an Oxyguard Handy Beta dissolved oxygen-temperature meter. Depth profile measurements were collected at 1.0 m intervals. Water transparency was measured using a standard 20 cm diameter Secchi disk to the nearest 0.1 m.

3.4 SEDIMENT DEPOSITION

Methodology and analysis procedures generally followed those described in DDMI (2003).

3.4.1 Field

The design of the traps was similar to those described in the CRC Handbook of Techniques for Aquatic Sediments Sampling (Mudroch and MacKnift 1991). Sediment deposition traps consisted of a flotation and retrieval apparatus, a dacron rope, an anchor, and a 500 mL plastic sediment deposition collection bottle suspended in the water column (Figure 3.1). The bottle position and orientation was maintained by placing the bottle inside a PVC pipe (30.5 cm long x 10 cm diameter) that was secured to the rope.

Traps were located at stations having an approximate depth of 6 m (range 6.0 m to 6.3 m). The sediment deposition collection bottle was located 1.2 m above the lake bottom. The flotation and retrieval apparatus was positioned 2.5 m below the water surface to prevent disturbance from ice.

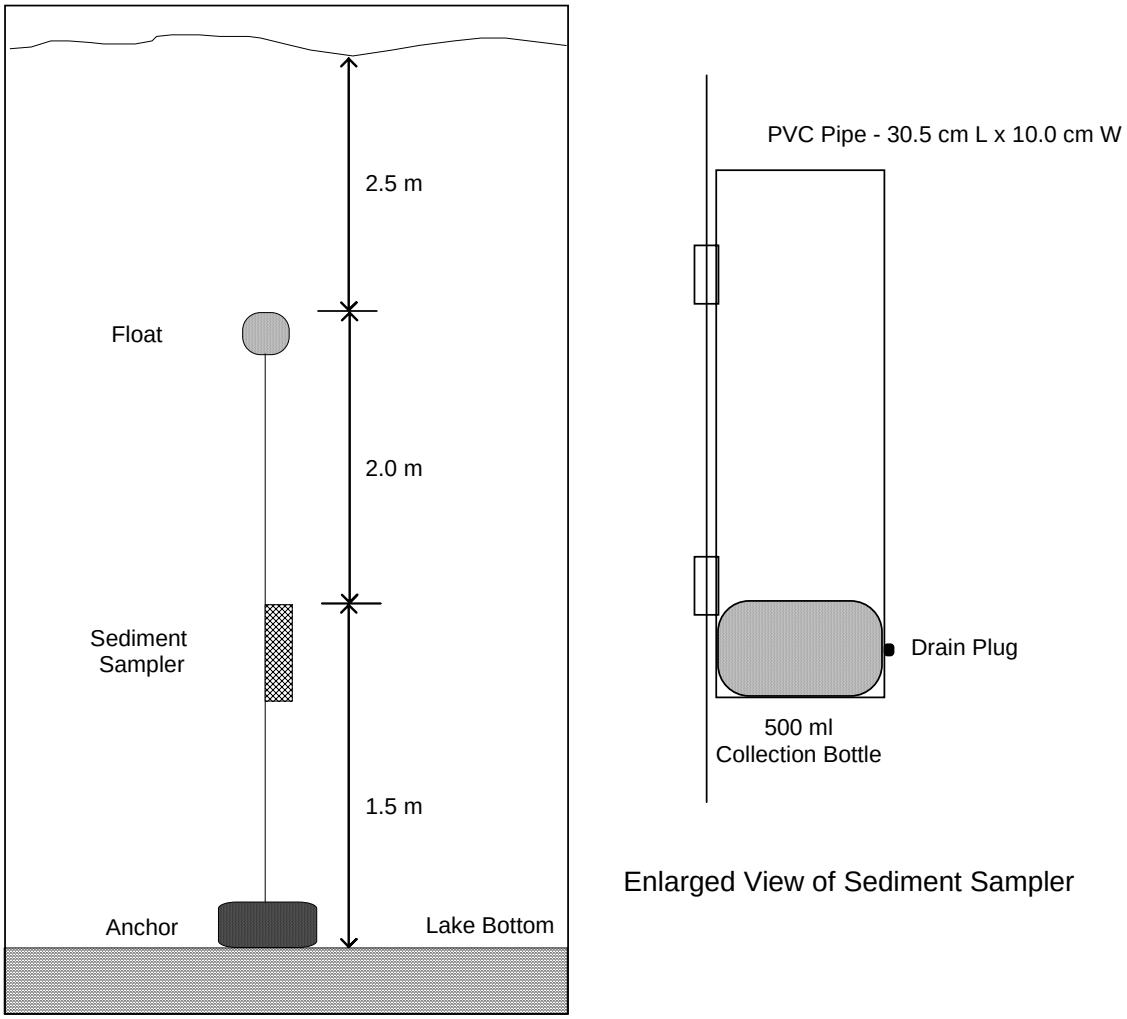


Figure 3.1 Sediment deposition traps used during the 2006 Jericho AEM Program.

Sediment deposition traps were set in July/August 2005 and left for a period of approximately one year before retrieval in 2006. Retrieval entailed gently lifting the trap until the PVC pipe reached the surface, releasing water within the pipe by removing the drain plug, and then securely capping the collection bottle before removal from the PVC pipe.

Water and sediment from the sediment deposition collection bottle were sent to the designated contractor for processing.

3.4.2 Laboratory

The sediment deposition sample was thoroughly mixed and then filtered onto pre-weighed #47 Gelman GF/AE filters (nominal pore size 1 micron recommended for testing dissolved and suspended solids in water as described in Standard Methods for the Examination of Water and Wastewater) utilizing a Millipore filter funnel and hand vacuum pump. The entire volume of each sample was filtered utilizing successive filters as required. Filters were air dried, folded inward (in half) and individually stored in numbered foil packs.

Once all samples were processed, filters were dried, weighed, and ashed as follows.

1. Oven dried for 24 hours at 105°C.
2. Weighed utilizing a Mettler M58A airlock/mechanical weight pan insertion balance (±5 µg).
3. Ashed in a muffle furnace for one hour at 550°C, cooled and reweighed.

3.5 PHYTOPLANKTON

3.5.1 Field

Phytoplankton was collected following procedures described in Findlay and Kling (2003). Samples were collected from the water column within the euphotic zone, which was assumed to be a water depth equal to two times the Secchi depth. In lakes that were shallower than two times the Secchi depth, samples encompassed the entire water column to 1 m above the lake bottom to avoid contamination with sediment.

Each replicate consisted of a composite of five samples from the euphotic zone collected using an integrated sampler. The integrated sampler consisted of a weighted 3 cm diameter polyethylene tube. The tube was gently lowered vertically into the water column and the top capped off before being lifted out of the water and drained into a bucket. The composite sample in the bucket was thoroughly mixed and a 970 mL volume subsample collected as a replicate. The process was repeated for each replicate.

Each replicate was placed in pre-labeled 1000 mL container and preserved with a combination acid-Lugol's solution (0.5% by volume; 10 mL) and a formaldehyde acetic acid solution (2% by volume; 20 mL). All replicates were stored in the dark.

Replicates destined specifically for chlorophyll *a* analysis were collected separately. A pre-determined 300 mL volume of subsample from the mixed compostation sample was filtered onto Whatman GF/C filter paper, covered with anhydrous $MgCO_3$, and frozen.

Equipment was thoroughly rinsed before and after sampling at each station to prevent contamination. All samples were labeled with the station and replicate identifier, time, date, depth, volume sampled, preservative amount, and name of the collector.

3.5.2 Laboratory

Phytoplankton samples were processed by a qualified phytoplankton taxonomist using procedures outlined in Lund *et al.* (1958). Prior to analyses, samples were gently inverted and a 10 to 100 mL subsample was dispensed into sedimentation chambers (Lund *et al.*1958). Subsample volume was dependant on the ability to count a minimum of 200 phytoplankton cells or units (colonies, chains or filaments). Samples were processed after a 24 h sedimentation period. A species list was developed by scanning the entire basal area of the chamber with an inverted microscope (Wild™ M-40). Diatom identification was accomplished by concentrating a subsample onto a coverslip, clearing utilizing a muffle furnace and then mounting in Styrax. These were then examined under a compound microscope. Taxonomic keys used for identification included Prescott (1970), Taft and Taft (1971), and Webber (1971).

To calculate cell density (cells/mL), individual cells were enumerated within a specified area of the sedimentation chamber. This was accomplished by counting the number of cells along horizontal transects placed across the specified area. One or more transects were processed until the minimum number of 200 cells or units were counted. To calculate the cell density, the number of cells within the specified area was extrapolated to the subsample and then to the entire sample.

Cell biovolume ($\mu m^3/m^3$) was calculated by first measuring the physical dimensions (length, width, and depth) of 10 to 30 cells of each species in the sample. Representative cell biovolume were then generated by calculating individual cell volumes for all cells measured (utilizing the nearest geometric shape[s]) and averaging these to produce an estimated cell biovolume for each species. The cell biovolume estimate for

the subsample was then extrapolated to the entire sample (Note: averaging cell dimensions rather than individual cell volume estimates to produce a representative cell volume can seriously underestimate the representative cell volume used). Species that were encountered during the qualitative assessment, but not enumerated (i.e., very low numbers, nonviable, or located outside the enumeration transects) were recorded as present and included in the total taxa present for that sample.

Chlorophyll *a* analysis was conducted using the spectrophotometric-acetone extraction method described by Moss (1967a, 1967b). This method corrects for the presence of phaeophytin *a*, which may be present in decaying algal cells. This is achieved by acidification of the sample after initial measurement and referencing results to predetermined calibration curves.

3.6 ZOOPLANKTON

3.6.1 Field

Zooplankton was collected following the general procedures described in Paterson (2003). Each zooplankton sample consisted of a composite of five vertical hauls, each of which included two times the euphotic zone (i.e., four times the Secchi depth). In lakes that were shallower than four times the Secchi depth, hauls encompassed the entire water column to 1 m above the lake bottom to avoid contamination with sediment. Zooplankton were collected with a Wisconsin plankton net constructed with Nitex® mesh (net mouth diameter 130 mm; 0.064 x 0.064 mm mesh). For each haul, the net was lowered to the desired depth and then retrieved at a constant rate of 1.0 m/s. Samples were preserved immediately in 5% formaldehyde and stored in labeled 500 mL polyethylene bottles. All samples were labeled with a station identifier, time, date, depth, and name of the collector. Equipment was thoroughly rinsed before and after sampling at each station to prevent contamination.

3.6.2 Laboratory

Prior to enumeration, all taxa found in the sample were identified to the lowest possible taxonomic level under a compound microscope. All the identified taxa were then examined under a stereomicroscope to determine the capability of their identification at 50x magnification. The taxonomic keys and papers used for identification include the following: Brandlowa *et al.*1972, Brooks 1957, Chengalath *et al.*1971, Clifford 1991, Deevey and Deevey 1971, Dodson and Frey 1991, Elliot 1977, Grothe and Grothe 1977, Pennak 1978, Ruttner-Kolisko 1974, Stemberger 1979, Wilson 1959, and Yeatman 1959.

Following identification, each sample was thoroughly mixed by stirring and shaking, and a sub-sample was withdrawn using a wide mouth Gilson pipette. The sub-sample was placed in a counting trough,

which was secured to the stage of a stereomicroscope, to count the number of individuals of each species encountered in the sub-sample. To ensure a complete transfer of all organisms from the Gilson pipette to the trough, the tip of the pipette was washed, the wash water examined microscopically, and organisms, if found, were added to the sub-sample.

The round counting trough, constructed of polished Plexiglas, allows the analysis of 1 – 25 mL volume sub-samples. The trough was thoroughly tested for use in the analysis of zooplankton samples at the University of Calgary and was judged superior to the Sedwick-Rafter counting cell for macro-zooplankton. It was used primarily because it allows the processing of a relatively large volume of sub-samples, shows a great resistance to ambient vibrations, and allows the processing of samples without a cover. If further examination of a particular specimen was necessary with a compound microscope, it was easily extracted from the trough. For each sample three sub-sample replicates of 5 to 25 mL were examined.

The density of enumerated zooplankton was eventually calculated per 1 m^3 using the following equation:

$$\mathbf{s\ (m^3) = \Sigma\ s\ in\ subsample * (sample\ volume / total\ volume\ of\ subsamples) * (1 / field\ volume\ in\ m^3)}$$

where: **s** = number of individuals (density)

3.7 BENTHIC MACROINVERTEBRATES

3.7.1 Field

Benthic macroinvertebrates were sampled following general procedures described in Rosenberg *et al.* (2003) immediately following ice-out in early July. Sampling during the early open water period was deemed appropriate for two reasons. First, it is logistically more feasible to sample during open water compared to winter when ice limits access to stations. Second, collections made during the open water period before emergence (transformation of larvae/pupae into adults) provides a good representation of the benthic macroinvertebrate community.

Stations were located in water depths of approximately 5 m. A Standard Ekman Bottom Grab Sampler (13.5 cm x 13.5 cm x 20.5 cm) with an aperture area equal to 0.023 m^2 was used to collect five replicates at each station. To address the issue of high within-station variation caused by clumped benthic macroinvertebrate distribution, and to increase the probability of encountering rare taxa, each replicate consisted of a composite of three Ekman grabs.

The quality of the sample was examined (i.e., jaws were closed and the grab was full) before it was processed. If deemed of poor quality, the sample was rejected and the procedure repeated. Immediately after collection with the Ekman grab sampler each replicate was sieved through a 243 µm mesh net (34 cm wide x 66 cm long x 34 cm deep). This mesh size was selected prior to the commencement of baseline monitoring and was based on consultation with a benthic specialist. The purpose of this sieving device was to remove as much sediment as possible in the field prior to preservation, while preventing the loss of benthic macroinvertebrates from the sample. The collected material was moved back and forth along the lake surface water to remove excess sediments. Each replicate was then placed in labelled polyethylene sample bag and preserved in 10% formalin.

3.7.2 Laboratory

Sorting of benthic macroinvertebrate samples, preservation of sorted animals, identification and enumeration of macroinvertebrates follow procedures recommended by Alberta Environment (1990) and Environment Canada (2002a, 2002b).

Benthic macroinvertebrates were removed from the accompanying debris using a dissecting microscope at 10x magnification. Rose Bengal stain was added to the samples first to improve sorting efficiency. Each sample was then separated into coarse and fine fractions by washing thoroughly through two sieves, with mesh sizes of 1000 µm and 200 µm. The content of each sieve was transferred to a large beaker where warm water was added to separate organic material from sand. The contents were swirled the floating organic matter was decanted into a 200 µm sieve. The process was repeated until all the organic matter was separated from the sand.

Each separated fraction of the sample was examined, portion by portion, on a gridded Petri dish under a dissecting microscope until all benthic macroinvertebrates were removed. Sorted macroinvertebrates were stored in vials and preserved in 80% ethanol.

For samples containing large numbers of macroinvertebrates the fine fraction was subsampled, following the procedure outlined in Wrona *et al.*(1982). Samples were divided into two components for processing: elutriated and sediment. The organisms were collected by repeatedly rinsing and elutriating the sample until organisms were no longer observed. The entire elutriated and sediment components of the sample were then processed.

Macroinvertebrates were sorted by major taxonomic group and identified to the lowest practical taxonomic level (genus where possible) using a dissecting microscope (6-42x magnification). Chironomids were identified to family or tribe. Identifications were performed using the following taxonomic keys and papers: Brinkhurst 1986, Clifford 1991, McAlpine *et al.*1981, Merritt and Cummins 1984, Oliver and Roussel 1983, Pennak 1989, Stewart and Stark 1988, Thorp and Covich 1991, Wiggins 1977.

Once processing was completed samples were preserved in 80% ethanol.

3.8 FISH

3.8.1 Field

No field collections of fish were undertaken during the 2006 Jericho AEM Program. In general, the historical data presented in this report was generated using gill nets to collect fish in lakes and using backpack electrofisher to collect fish in streams. Detailed descriptions of field methods are presented in specific baseline study reports.

3.8.2 Laboratory

No laboratory work of fish was undertaken during the 2006 Jericho AEM Program. Detailed descriptions of laboratory methods are presented in specific baseline study reports.

3.9 MONITORNG QUALITY ASSURANCE

3.9.1 Water Chemistry

Field

Duplicate water samples were submitted to the analytical laboratory for quality control and quality assurance; these samples were submitted as blinds and were labeled so that the lab would not know which sample they represented. In addition, split samples were taken (the water was collected simultaneously) in order to test the laboratories precision. Splits and blinds were collected for 10% of the total number of samples per sampling session. To ascertain sample contamination due to handling of the samples, field blanks were incorporated into the sampling process. A field blank consisted of a set of bottles filled with demineralized, de-ionized water (supplied by the lab). Blanks were processed in the same manner as a collected water sample. These blanks were used for each sampling session.

Laboratory

Laboratory analytical reports contain pertinent information regarding the sample (s) submitted for analyses. This information includes the date the sample was collected and received by the lab, date of analysis, technician's initials, parameters, methodology, method reference, method detection limit, and results. The report is reviewed by the lab QA/QC coordinator and lab manager for completeness and accuracy. All documentation associated with the analysis including raw data, chromatograms, calibration curves, calculations, etc. are kept in that file.

Instruments were calibrated prior to analyses using a series of high-purity standards that cover the working range of the instrument. Instrument responses were collated in an appropriate quality control sheet and this data was plotted regularly to monitor for inappropriate changes.

Duplicate analysis was performed on every tenth sample submitted to the lab. With every batch of samples, a method blank was prepared with deionized water and/or extraction solvent and was analyzed to verify the absence of interferences or contaminants associated with storage, preparation and instrumental analyses.

Quality control and assurance procedures followed those of the Canadian Association for Environmental Analytical Laboratories (CAEAL).

3.9.2 Sediment Chemistry

Similar to water chemistry, duplicate water samples were submitted to the analytical laboratory for quality control and quality assurance; these samples were submitted as blinds and were labeled so that the lab would not know which sample they represented. In addition, split samples were taken (the sediment was collected simultaneously) in order to test the laboratories precision. Splits and blinds were collected for 10% of the total number of samples per sampling session.

3.9.3 Nonvertebrate Aquatic Biota

The following QA/QC procedures were used for nonvertebrate data.

1. Strict sampling protocols were adhered to ensure consistency in technique for each parameter.
2. Consistency of identifications for each indicator was achieved by using the same taxonomist.
3. Ten percent of samples were analyzed by other qualified persons to ensure the accuracy of identifications and counts.
4. Split samples were collected from 5% of the samples using the following protocols.

a. Benthic macroinvertebrates: Splits were not taken for benthic macroinvertebrates because of difficulty in collecting an unbiased, accurate split.
b. Phytoplankton: Splits were collected and processed the same way as replicates. A replicate was collected by first thoroughly mixing the composite sample and then collecting a subsample. A split was generated by obtaining two replicate subsamples from the same composite sample. The information for the split was then compared to its associated replicate to determine precision of the subsample and accuracy of taxonomic identifications.
c. Zooplankton: Splits were collected and processed the same way as replicates. A split was obtained by thoroughly mixing the replicate, dividing it into two equal volumes, and preserving in two separate bottles. The information for the split was compared to its associated replicate to determine the accuracy of taxonomic identifications. It was not used to evaluate precision of subsamples because subsampling of zooplankton does not occur in the field.

5. For benthic macroinvertebrates the residue of the sample was examined to determine sorting efficiency. If the residue contained a number of organisms that exceeded 10% of the entire sample, the sample was re-processed. A reference collection of more difficult taxa to identify was completed and verified by a qualified taxonomist.
6. All samples were archived for future reference.

3.9.4 Sampling Precision

Water and Sediment Chemistry

Precision in laboratory analyses of water and sediment chemistry samples was evaluated by comparing differences (percent error) in parameter values for replicates and split samples. Percent error was calculated as follows:

Percent Error = Absolute Value ([Replicate Value – Split Value]/Replicate Value) * 100

Measurements below detection for one or both samples (replicate and/or split) were excluded from the calculation. Summaries included median and maximum percent error.

Nonvertebtrates

Collecting small replicate samples may yield statistical inaccuracy due to the naturally heterogeneous dispersion of species and limitations of sampling techniques. Measuring the degree of precision for the collected replicates ensures that data retain acceptable statistical power. A standard error equal to 20% of the mean (D = 0.2) is considered a reasonable error and maintaining sampling precision within this error is recommended by Alberta Environment (1990) and Environment Canada (2002a). Precision of replicate samples was calculated using the formula (based on a Poisson distribution):

$$D = \frac{1}{\bar{x}}\sqrt{\frac{s^2}{n}}$$

where: $\bar{x}$ = mean value; s^2 = variance; and n = number of replicate samples.

In cases where the precision exceeded the recommended 0.2 the number of replicates (n) required to obtain $D \leq 0.2$, was determined by the following formula:

$$n = \frac{s^2}{D^2 \quad \overline{x^2}}$$

Precision was determined for all parameters where statistical analyses were done for benthic macroinvertebrate, zooplankton, and phytoplankton data.

3.10 DATA ANALYSES

3.10.1 Statistical Approach

General

Data analyses involved generating summary metrics (mean, standard deviation, minimum, and maximum) for each parameter. This was followed by evaluation of spatial differences among stations using univariate parametric statistical tests. Prior to summaries and statistical analyses the data for each parameter were examined to ensure appropriateness for evaluation.

Data analyses followed accepted protocols, where appropriate, that are described in Environment Canada (2002). Methods for evaluation involved the following:

- One-way Analysis of Variance (ANOVA)
- Mann-Whitney U Test
- Linear or Nonlinear Regression
- Visual (graphical) Analysis

Data were first explored in order to meet the assumptions required for parametric statistical analyses. When these assumptions were not met, nonparametric tests were employed.

Data that were significantly non-normal were identified using three methods:

1) The g1 and g2 statistic where dividing either statistic (g1 or g2) by its standard error approximated a test of whether these data were non-normal (i.e., skewed or kurtotic data). If the result of the test was greater than 2.0, then the data were deemed to be significantly skewed or kurtotic.
2) Histograms where normally distributed data resulted in the graph having a characteristic bell shape.
3) Use of probability plots to compare the distribution of the data against that which would be expected given a normal or other theoretical distribution to determine if the two distributions were similar.

Where parametric ANOVA was completed assumptions of equality of variance was tested using Levene's Test for Homogeneity of Variances. When variances were deemed to be similar, the F-statistic and corresponding Tukey's b post-hoc tests were used to determine differences among groups. In the case where the assumption of equal variances was violated, the Welch statistic replaced the F-statistic and post-hoc tests were limited to the Dunnett T3 post-hoc test. Statistical significance was accepted at $p \leq 0.05$ for all tests.

Statistical Power

Power analysis was used for each parameter to determine if a statistical difference between stations could be identified using procedures outlined in Dallal *et al.* 2002. Power analysis is a standard analytical procedure based on the relationship between sample size and sample variation (Sokal and Rohlf 1981). A One-way ANOVA design was employed and assumed independent samples unless otherwise specified. The test assumed an alpha level (α) of 0.05, and a power ($1-\beta$) of 0.8. All evaluations were completed using SYSTAT™ Version 10.2 software.

3.10.2 Water Chemistry

The approach to water quality analyses was different than the general analyses methods described above. The majority of parameters tested were below analytical detection, and therefore, the number of data points to allow for statistical comparisons were limited. Means were calculated for all parameters where one value was above detection limit for a given station. Where values were below analytical detection the value was assumed to be half the detection limit. In addition, comparisons were based on similar sampling periods only; if one station had samples taken in summer and winter and another station had samples taken only in summer only summer means were compared.

3.10.3 Sediment Chemistry

Sediment chemistry data analyses included measures of central tendency (range, mean or median, standard deviation) at each station. As well, spatial variability in key parameters (arsenic, copper, chromium, nickel, uranium and zinc, which were chosen in 2004 based on concerns expressed during the project review; AMEC 2004) was investigated. To test whether there were differences among stations upstream, near and downstream from the mine discharge, a single factor analysis of variance (ANOVA) was calculated for selected parameters with normalized data for stations within the Jericho River system (Control, C3, Carat, Jericho lakes and Jericho River downstream of Jericho Lake). Temporal trends within stations were assessed with graphical analysis and ANOVA.

3.10.4 Sediment Deposition

Parameters investigated included total sediment weight, ashed weight (represented inorganic component of total sediment weight), percent ashed weight (ashed weight/total sediment weight) and sedimentation rate ($mg/cm^2/day$). Sedimentation rate was calculated as follows:

Sedimentation Rate = total sediment weight/aperture area of collection bottle/days-at-age

3.10.5 Lake Profile Parameters

Lake profile parameters (dissolved oxygen, temperature, and secchi depth) were graphed and compared among stations and between years.

3.10.6 Nonvertebrate Aquatic Biota

Data analyses involved generating summary metrics (mean, standard deviation, minimum, and maximum) for each parameter. ANOVA was completed to test for between-station and between-year differences for each summary parameter. Summary parameters for phytoplankton included taxa richness, Simpson's Index of Diversity, total density, total biovolume, and chlorophyll *a* concentrations. Summary parameters for zooplankton included taxa richness, Simpson's Index of Diversity, total density, total copepod density, total rotifer density, and total cladoceran density. Summary parameters for benthic macroinvertebrates included taxa richness, Simpson's Index of Diversity, total density, chironomid density, and oligochaete density. Prior to summaries and statistical analyses the data for each parameter were examined to ensure appropriateness for evaluation.

3.10.7 Fish

A description of the general approach for data analyses is provided followed by information for specific parameters.

Approach

The general data analysis approach and data considerations are as follows:

1. Historical data used to describe fish species populations were restricted to the pre-development period (i.e., before 2006).
2. Summaries were presented in order to "describe" fish species population characteristics that occurred prior to development of the Jericho Mine. The information was not used to "monitor" spatial or temporal changes in fish population characteristics. This latter approach will be adopted during future AEM programs to monitor potential mine effects. The next year of fish collections will occur in 2008.

3. To minimize the issue associated with variable fish capture probabilities caused by combining data from several types of fish collection techniques, analyses for most parameters were restricted to fish collected using gill nets in lakes and fish collected using backpack electrofisher in streams. The only exception was the species diversity parameter, which incorporated fish collected using all fish capture methods employed during Jericho studies.
4. Fish data were stratified by lake and stream for presentation purposes because these habitats contained different species and life stage assemblages.
5. To maximize available sample sizes, species summaries were presented for individual lakes and streams (all years combined) and for individual species (all waterbodies and years combined). It is acknowledged that this approach can mask temporal effects (all years combined) and spatial effects (all waterbodies combined), which can hinder data interpretation. This limitation is deemed acceptable because species populations in the Jericho area are stable, unexploited, slow growing, and generally long lived, and the data were used only for descriptive purposes.

Index of Abundance

Catch rate was used to provide an index of fish abundance in lakes. Catch rate of fish in lakes was generated using gill net data. Catch rate was calculated by dividing the number of fish captured by unit effort. Unit effort was the area of the gill net divided by the duration of the gill net set. The resulting unit of effort used to quantify gill net catch rate was 100 m^2/12 h.

Density Estimate

Density estimates were used to quantify fish abundance in streams. The multi-pass depletion-removal method described by Zippin (1958) was used to develop density estimates. This method involved isolating a defined section of stream and conducting several standardized sampling passes through the isolated section. The cumulative catch was used to generate a density estimate based on the maximum-likelihood equation utilized by Van Deventer and Platts (1983).

Length and Age Distributions

Length and age distributions were presented for dominant species. It should be noted that age samples were not selected at random; therefore, the information cannot be used as an accurate description of fish population age structure.

Length-weight Relationship

The length-weight relationship for large-fish species populations were described using a two-parameter exponential decay curvilinear equation as follows:

$$Weight\ (g) = ae^{-bLength(mm)}$$

Where *a* equals the y intercept, *b* equals the line slope, and *e* is the base of the natural logarithm.

Length-at-Age Relationship

The length-at-age relationship was described using the average length of each age-class with the von Bertalanffy growth equation (Busacker *et al.*1990) as follows:

$$L_t = L_\infty \left[1 - e^{\{-K(t-t_0)\}}\right]$$

Where t represents the age of the fish in years from the starting time t_0, maximum length equals L_∞, K represents the growth coefficient, and e is the base of the natural logarithm.

Apparent Mortality Rate

A "catch curve" population mortality rate was developed following (Ricker 1975). An estimate of instantaneous total mortality (Z) was first calculated using simple linear regression based on the number of fish in fully vulnerable age classes (descending portion of the age distribution) and converted to survival (S) based on the following equation:

$$S = e^{-Z}$$

Where S equals survival, e is the base of the natural logarithm, and Z is instantaneous mortality.

Apparent mortality rate equaled 1-S. Caution should be used when interpreting mortality rate because the age sample used in the analyses was not random and small sample sizes made it difficult to ascertain whether the age cohorts used to generate the catch curves were fully vulnerable to sampling.

Gonad Weight

Gonad weight of mature fish was used to calculate gonadosomatic index (GSI), which is gonad weight/fish weight x 100.

Feeding Habitats

Stomach contents were assessed in the field using the points method described by Thompson (1959). Stomach contents were summarized in terms of percent occurrence, percent composition, and mean fullness. Only stomachs that contained food items were included in the analyses. Percent occurrence was the number of stomachs in which an item occurred divided by the total number of stomachs that contained an item (x 100). As such, the percentage value for all items combined could exceed 100%. Percent composition was presented for the four major food categories. These were fish, insects, molluscs/gastropods, and zooplankton. Percent composition was: the total number of points for a major food category divided by the total number of points (x 100). Mean fullness was calculated by converting

points assigned to each stomach to percent based on a maximum fullness scale of 20 points (e.g., 5 points/20 points [which is the highest possible points value] = 25%). An average percentage value was then generated using stomachs that contained food items.

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4.0 RESULTS

4.1 WATER CHEMISTRY

Due to limitations outlined in Section 3.10.2, comparisons of water quality parameters are generally based on minimum and maximum values rather than means. Means presented in graphs should be interpreted with caution as values can be inflated when high detection limits are used. In addition, the data limitations also precluded the use of graphical representation in many cases. Generally, graphs are provided where data are above the analytical detection limit and where the parameter is of specific interest.

Data used to summarize 2006 water chemistry are presented in Appendix B.

4.1.1 Carat Lake Freshwater Intake (JER01)

All total metal concentrations were below the Health Canada Water Quality & Health Bureau (2006) Canadian Drinking Water Quality Guidelines (CDWQG) at the Carat Lake Freshwater Intake station (JER01) in 2006 and 2005 (Tables 4.1 and 4.2, Appendix Tables B1 and B2).

A single sample collected 20 July 2005 (Mainstream 2006) contained high concentrations, and therefore, was deemed to be contaminated and was not included in any analyses or in Table 4.2. The sample had a total aluminum concentration of 1.44 mg/L, which was 14.4 times above the recommended guideline value of 0.10 mg/L (Table 4.2); a copper concentration of 1.64 mg/L, which was above the CDWQG for the aesthetic objective of 1.0 mg/L; and a total lead concentration of 0.138 mg/L was 13.8 times above the CDWQG guideline of 0.01 mg/L. However, a duplicate sample taken during this sampling event indicated that concentrations in the sample were anomalies. Specifically, the quality control duplicate sample, taken in the field during the 20 July 2005, had a total lead concentration of 0.0004 mg/L, a total copper concentration of 0.0025 mg/L, and a total aluminum concentration of 0.023 mg/L, which were all in accordance with CDWQ guidelines.

There was evidence of the presence of fecal coliforms; 1 CFU was found in the 20 July 2005 sampling period. However, the fecal coliform count was below detection in the duplicate sample. Turbidity values were slightly above the recommended CDWQG of 1.0 NTU for the July and August samples (2.0 NTU) and were at the guideline level (1.0 NTU) for the September sampling period.

Table 4.1 Water chemistry parameters (mg/L, unless noted) at Carat Lake Freshwater Intake monitoring station (JER01) in 2005 and 2006.

Parameter	Year	Mean	SD	Min	Max	n	Canadian Drinking Water Quality Guidelines		
							Maximum	Average	Aesthetic
Fecal Coliforms	2005			<1	1	4	*[a]		
	2006			<1	2	4			
pH	2005	6.87	0.29	6.45	7.1	4	6.5 to 8.5		
	2006	**6.23**	1.02	**5.3**	7.9	5			
TDS	2005			12	12	1			500
	2006			15	15	1			
Turbidity	2005	**1.67**	0.58	1	**2**	3	1		5
	2006	**1.40**	0.55	1	**2**	5			
Chloride	2005			0.6	0.6	1			250
	2006			0.4	0.4	1			
Fluoride	2005			0.06	0.06	1	1.5		
	2006			0.60	0.60	1			
Nitrate	2005			0.05	0.05	1	45		
	2006			0.08	0.08	1			
Nitrite	2005			0.025	0.025	1	3.2		
	2006			0.025	0.025	1			
Sulphate	2005			1.7	1.7	1			500
	2006			1.6	1.6	1			

[a] No sample can have CFU present.

Table 4.2 Total metal concentrations at Carat Lake Freshwater Intake monitoring station (JER01) in 2005 and 2006.

Parameter	Year	Mean	SD	Min	Max	n	Canadian Drinking Water Quality Guidelines		
							Maximum	Average	Aesthetic
Aluminum	2005	0.045	0.021	0.021	0.060	3	0.1		
	2006	0.025	0.006	0.02	0.034	6			
Antimony	2005			<0.0001	<0.0001	4		0.006	
	2006			0.000005	<0.00005	6			
Arsenic	2005			<0.0004	<0.0004	4	0.005		
	2006	0.0001	0.00003	0.0001	0.0002	6			
Barium	2005			<0.005	<0.005	4	1.0		
	2006	0.0018	0.0002	0.0015	0.002	6			
Boron	2005			<0.010	<0.010	4	5.0		
	2006	0.014	0.033	<0.001	0.081	6			
Cadmium	2005	0.0006	0.0003	<0.0009	0.0010	4	0.005		
	2006	0.0016	0.0015	0.0001	0.0043	6			
Copper	2005	0.0015	0.0012	<0.0010	0.0029	4			1.0
	2006	0.0009	0.0007	<0.0010	0.0021	6			
Iron	2005	0.077	0.031	0.050	0.110	3			≤0.3
	2006	0.057	0.039	0.013	0.130	6			
Lead	2005	0.00018	0.00019	<0.0001	0.0004	3	0.01		
	2006	0.00002	0.000005	0.00001	<0.00005	6			
Magnesium	2005	0.600	0.018	0.580	0.620	4			
	2006	0.438	0.169	0.210	0.610	6			
Manganese	2005	0.007	0.0026	0.004	0.009	3			0.05
	2006			0.002	<0.010	6			
Molybdenum	2005			<0.0005	<0.0005	4			
	2006			0.00002	<0.00005	6			
Nickel	2005	0.0030	0.0055	<0.0006	0.0112	4			
	2006	0.0003	0.0002	0.0002	0.0007	6			
Potassium	2005	0.250	0.000	0.250	0.250	4			
	2006	0.256	0.014	0.250	0.285	6			
Selenium	2005			<0.0008	<0.0008	4	0.01		
	2006			<0.0001	<0.001	6			
Sodium	2005	0.613	0.259	<0.5	0.800	4			≤200
	2006	0.282	0.078	<0.5	0.440	6			
Strontium	2005			0.0055	0.0055	1			
	2006	0.0047	0.0003	0.0044	0.0052	6			
Uranium	2005	0.00016	0.00002	0.00013	0.00018	4	0.02	0.02	
	2006	0.00015	0.00002	0.00012	0.00019	6			
Vanadium	2005	0.0005	0.0004	0.0002	0.0010	4			
	2006	0.0009	0.0011	0.0001	0.0028	6			
Zinc	2005	0.0285	0.0438	<0.002	0.093	4			<5.0
	2006	0.0028	0.0012	0.002	0.0047	6			

4.1.2 PKCA Discharge (JER02)

In 2005 and 2006, effluent quality guidelines were met for most parameters for both maximum average concentration guidelines and maximum concentration for individual grab sample guidelines (Tables 4.3 and 4.4, Appendix Tables B1 and B2. In one instance lab pH was below the required value of 6 to 8.8 (June 2005; 5.75); however, the field pH value was in accordance with guidelines (7.3).

Table 4.3 Selected total metal concentrations (mg/L) for PKCA Discharge (JER02) and comparison to effluent quality requirements.

Parameter	Year	Mean	SD	Min	Max	n	Requirements	
							Chronic[a]	Max. Grab
Aluminum	1995-2000	0.014	0.003	0.011	0.016	3	1.5	3.0
	2005	0.036	0.030	0.012	0.080	4		
	2006	0.030	0.025	0.011	0.089	10		
Arsenic	1995-2000	0.0001	0.0001	0.0001	0.0002	3	0.05	0.1
	2005	0.0003	0.0001	<0.0004	0.0004	4		
	2006	0.0004	0.0003	<0.0002	0.0009	10		
Cadmium	1995-2000			<0.0005	<0.0005	3	0.0012	0.0024
	2005			<0.0001	<0.0002	4		
	2006	0.00002	0.00003	<0.00005	0.00002	10		
Chromium	1995-2000						0.087	0.17
	2005			<0.0009	<0.0009			
	2006	0.0042	0.0034	0.0008	0.0102			
Copper	1995-2000	0.0007	0.0001	0.0006	0.0007	3	0.02	0.04
	2005	0.0023	0.0018	<0.0010	0.0048	4		
	2006	0.0018	0.0018	<0.0010	0.0057	10		
Lead	1995-2000	0.00007	0.00007	<0.00005	0.00015	3	0.01	0.02
	2005	0.00011	0.00013	<0.00010	0.00030	4		
	2006	0.00014	0.00011	<0.00005	0.00040	10		
Molybdenum	1995-2000			<0.00005	<0.00005	3	0.73	1.5
	2005			<0.00050	<0.00050	4		
	2006	0.00203	0.00099	<0.00005	0.00352	10		
Nickel	1995-2000	0.0001	0	0.0001	0.0001	3	0.05	0.1
	2005			<0.0006	<0.0006	4		
	2006	0.0020	0.0007	<0.0001	0.0025	10		
Uranium	1995-2000			0.00012	0.00012	1	0.5	1.0
	2005	0.00023	0.00011	0.0001	0.00033	4		
	2006	0.00116	0.00043	<0.00005	0.00148	10		
Zinc	1995-2000			<0.001	<0.001	3	0.25	0.50
	2005	0.004	0.0024	<0.002	0.006	4		
	2006	0.005	0.0045	0.002	0.017	10		

[a] Refers to maximum average concentration (4 sample running average).

Table 4.4 Selected water chemistry parameters concentrations (mg/L) for PKCA Discharge (JER02) and comparison to effluent quality requirements.

Parameter	Year	Mean	SD	Min	Max	n	Chronic[a]	Maximum Grab
Ammonia	1995-2000			<0.005	<0.005	3	6	12
	2005			<0.1	<0.1	4		
	2006	0.326	0.468	0.020	1.460	10		
Nitrate	1995-2000	0.0029	0.0030	<0.001	0.008	6	28	56
	2005	0.20	0.27	<0.05	0.6	4		
	2006	4.84	1.72	1.62	7.4	9		
Nitrite	2005			<0.05	<0.05	4	2.5	5.0
	2006	0.06	0.06	<0.05	0.19	9		
Total Phosphorus	1995-2000	<0.30				3	0.2	0.4
	2005	0.026	0.012	0.02	0.055	8		
	2006	0.023	0.024	<0.02	0.071	10		
Ortho-P	1995-2000							
	2005	<0.20				4		
	2006	<0.20				9		
Chloride	1995-2000	0.37	0.20	<0.5	0.6	3	500	1000
	2005	1.13	0.43	0.7	1.7	4		
	2006	5.79	1.29	3.2	7.2	9		
pH	1995-2000						6 to 8.8	6 to 8.8
	2005	6.84	0.43	6.45	7.3	3		
	2006	6.77	0.51	6.04	7.34	7		
BOD	2005			<0.2	<0.2	8	15.0	25.0
	2006	1.67	1.15	<0.2	3	3		
Fecal Coliforms[a]	2005			<1	1	8	10	20
	2006			<1	<1	3		
TSS	1995-2000			<3	<3	3	15.0	25.0
	2005	3.25	4.50	<2	10	4		
	2006	2.00	1.22	<2	4	9		
TDS	1995-2000	11.33	0.58	11	12	3	2000	4000
	2005	9.75	9.50	<10	24	4		
	2006	94.22	20.80	60	120	9		

[a] CFU/100 mL.
[b] Refers to maximum average concentration (4 sample running average).

4.1.3 Aquatics Effects Monitoring

Dissolved Anions

Acidity

CCME (2005) Canadian Water Quality Guidelines for the Protection of Aquatic Life (CWQG) currently do not have a recommended CWQG value for acidity. In general, acidity (as CO_3) was below 6 mg/L at most monitored stations during all monitoring periods (Tables B1 to B3). In 2006, higher values (maximums) were recorded at Lake C3 station (JER04) (14.0 mg/L) and the Lake C3 outlet station (JER05) (10 mg/L). Other than possibly the Lake C3 stations there was no indication that acidity had

changed from baseline (1995-2000) where comparisons were possible. Where comparisons to baseline data were not possible, there was no indication that concentrations had changed from 2005 to 2006.

Alkalinity

Alkalinity levels are important because changes in alkalinity and hardness can affect metal uptake by aquatic organisms. Alkalinity has been proposed to be a more important factor in determining metal toxicity to aquatic organisms than hardness (Davies and Brinkman 1993). For example, research has demonstrated that alkalinity is more important than hardness in controlling Cu^{2+} concentration (Pagenkopf *et al.*1974, Erickson *et al.*1996).

There is not a CWQG for alkalinity. USEPA guidelines indicate that continuous concentrations should be maintained at 20 mg/L unless natural conditions are less. Because waterbodies in the Jericho study area have naturally low alkalinity this guideline value is not applicable.

Alkalinity at monitoring stations ranged from <4 mg/L to 18 mg/L from 1995 to 2006 where samples were taken (Tables B4 to B6). There was no evidence of changes in alkalinity from baseline (1995 to 2000) to recent sampling periods (2005 and 2006), where comparisons were possible. Nor did alkalinity change from 2005 and 2006. Stream stations (JER03, JER12, JER15) tended to have slightly higher alkalinity (>10 mg/L) compared to other stations. This also applied to one lake (Lake C1, JER13).

Carbonate

Carbonate (CO_3) concentrations were less than the detection limit (1 mg/L) for all stations monitored from 1995 to 2006. There is not currently a CWQG value for carbonate.

Bicarbonate

Like carbonate, there are no CWQGs for bicarbonate. In general, values at all monitoring stations ranged from 6 mg/L to 22 mg/L in the 2005 and 2006 sampling periods (Tables B7 to B9). Highest values were recorded at the Stream C1 outlet station in winter (22 mg/L). Winter bicarbonate values were generally higher than those in summer at stations where comparisons were possible.

Chloride

CWQGs currently do not have a recommended value for chloride. However, USEPA guidelines indicate that concentrations should not chronically exceed 230 mg/L and maximum concentrations should not exceed 860 mg/L. Chloride concentrations at the Jericho study areas stations were well under these

guideline values; generally under 4.0 mg/L (Tables B10 to B12). In 2000, Stream C3 (JER03) and Cigar Lake (JER11), where 2006 maximum concentrations were 6.7 mg/L and 14.0 mg/L, respectively.

Sulphate

Sulphates occur naturally in numerous minerals, including barite ($BaSO_4$), epsomite ($MgSO_4$) and gypsum ($CaSO_4$). Sulphate levels in Canadian lakes typically range from 3 to 30 mg/L (Katz 1977). There are no CWQC or USEPA guidelines for sulphate. In general, sulphate values at Jericho study area monitoring stations were under 4.0 mg/L (Tables B13 to B15). In 2006, maximum values were recorded at Stream C3 (JER03) and Cigar Lake (JER11); values were 8.4 mg/L and 9.0 mg/L, respectively. There was no evidence of changes in sulphate concentrations through time.

Physical Tests

Conductivity

Conductivity measured in the field at Jericho Lake study area monitoring stations was generally less than 20 µmhos/cm (Tables B16 to B18; Figure 4.1), which was typical of oligotrophic lake systems. Higher conductivity was recorded at Stream C3 (JER03) and Stream C1 (JER12). Stream C3 values ranged from 26.0 µmhos/cm to 30.5 µmhos/cm in 2005 and 13.0 µmhos/cm to 89.0 µmhos/cm in 2006. Stream C1 values ranged from 31.0 µmhos/cm to 40.3 µmhos/cm in 2005 and 12.0 µmhos/cm to 107.0 µmhos/cm in 2006. Elevated values were recorded at the Lake C1 station (JER13); values ranged from 24.0 µmhos/cm to 34.0 µmhos/cm in 2005 and 2006. A single elevated value of 31.0 µmhos/cm was also recorded at Stream C1 outlet (JER20) in 2006. Baseline data were not available; therefore, it is unknown if conductivity was naturally higher at these stations. However, the relatively high values compared to other stations indicated a potential effect from mine activities.

Laboratory conductivity (measured once the samples reached the laboratory) patterns were similar to the conductivity recorded in the field (Tables B19 and B21).

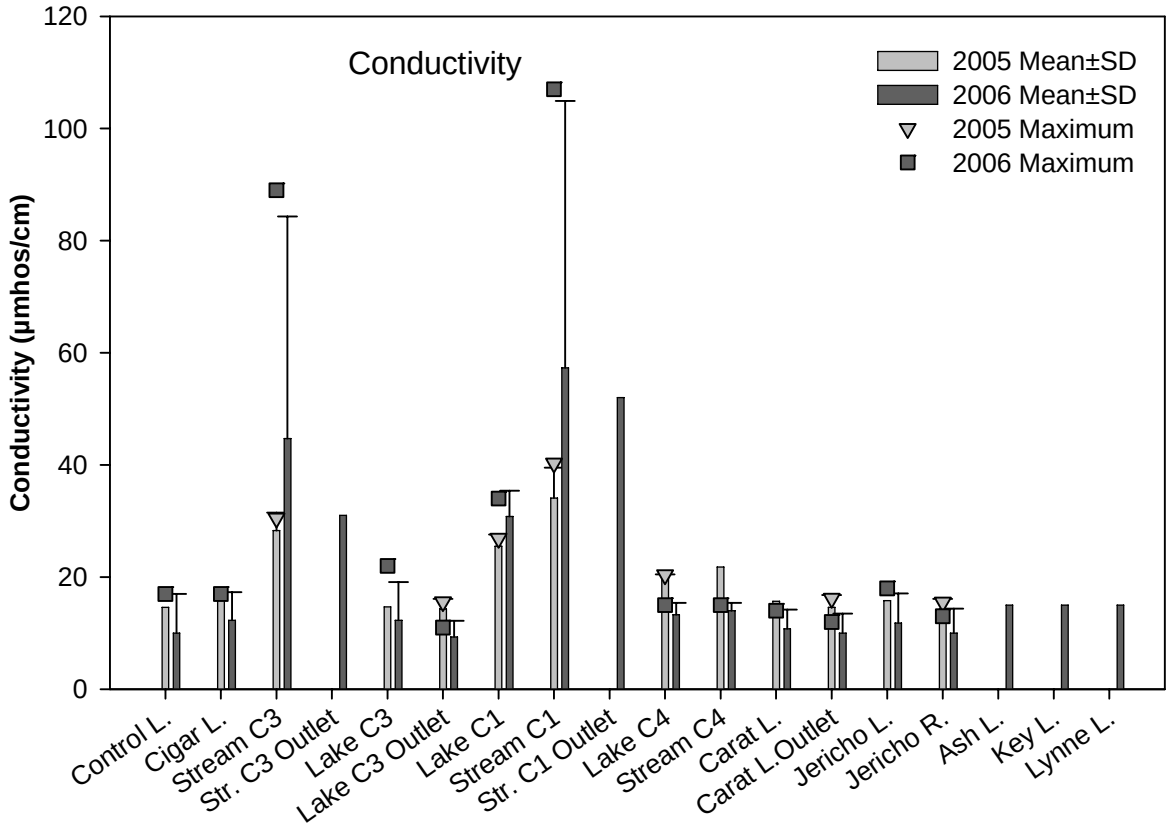


Figure 4.1 Specific conductivity (field) in summer at monitoring stations in the Jericho study area.

Hardness

As mentioned previously, water hardness and alkalinity are thought to be important properties governing the toxicity of metals. In natural waters, hardness is predominantly determined by calcium (Ca^{2+}) and magnesium (Mg^{2+}) cations, while alkalinity is controlled by the bicarbonate system (i.e., HCO^- and CO_3^{-2}) (Davies and Brinkman 1993). Alkalinity and hardness are both expressed as calcium carbonate ($CaCO_3$). However, in some waters there can be a large difference between the two (e.g. low alkalinity can coincide with high hardness). Although hardness does not control speciation of metals in water, it influences metal toxicity because Ca^{2+} and Mg^{2+} ions will compete with free metal ions for binding stations on fish gill surfaces (Davies and Brinkman 1993).

In 2006, water hardness (as $CaCO_3$) was <10.0 mg/L at most stations (Tables B22 to B24; Figure 4.2). Exceptions occurred at Stream C3 (JER03), Lake C3 at the stream C3 outlet (JER20), Lake C1 (JER13), Stream C1 (JER12), and Carat Lake at the Stream C1 outlet (JER19). Hardness at these stations approached 20 mg/L. In addition, hardness appeared to increase between 2005 and 2006, at Stream C3 (JER03) and Stream C1 (JER12). Despite this apparent change, values remained low and were at levels that would not cause an increase in metal toxicity to aquatic biota.

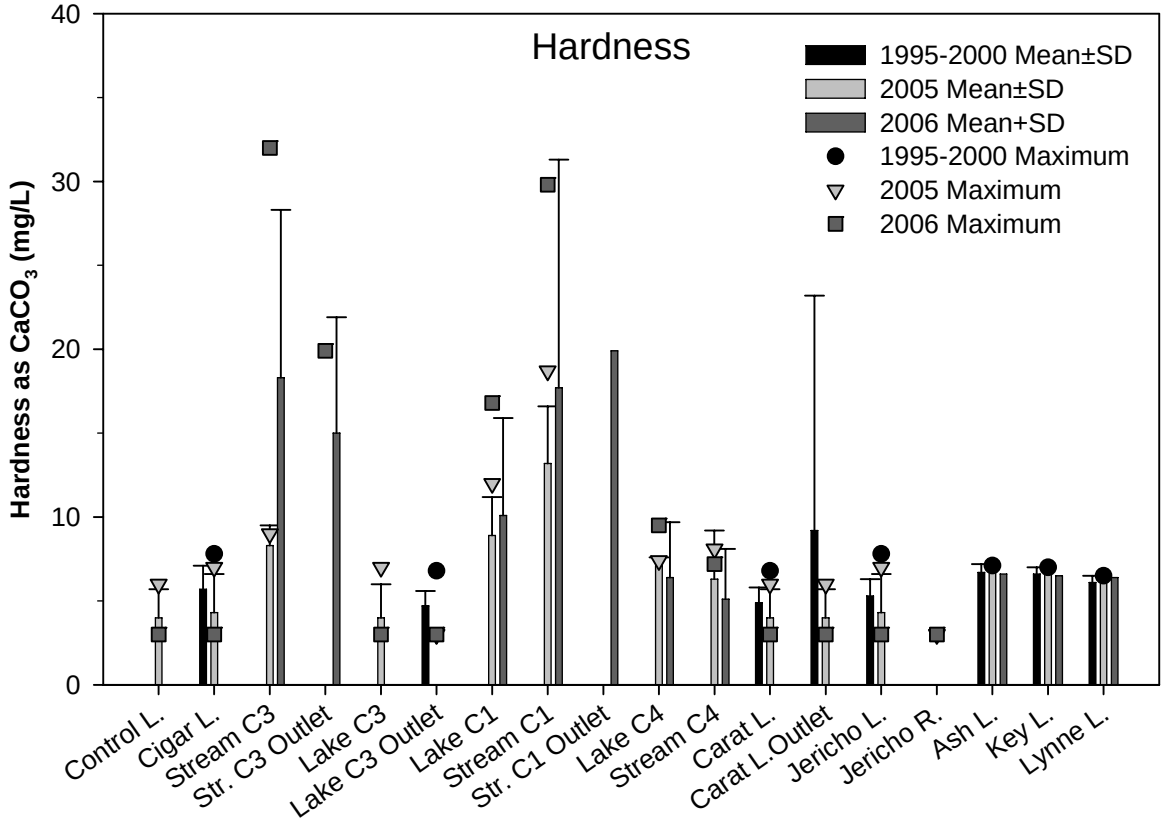


Figure 4.2 Hardness (as $CaCO_3$) in summer at monitoring stations in the Jericho study area.

pH (field)

The pH of water has a major influence on the physical and chemical forms of metals and metal compounds in the aquatic environment because it controls the solubility and concentrations of major metal species (Campbell and Stokes 1985). In general, increasing the acidity of a solution increases the concentration of free metal ions in that solution because H^+ compete with metal ions for binding stations on inorganic and organic molecules. It has therefore been assumed that metals are more likely to be toxic to biota in acidic than in neutral waters (Campbell and Stokes 1985). More recent research suggests that a decrease in pH can result in a decreased biological response for some metals (Cd, Cu, and Zn). This is because a decrease in pH leads to an increase in the concentration of H^+ ions in solution, and that these ions compete for binding stations on cell surfaces with free metal ions. These results suggest that changes in pH can affect metal speciation and toxicity in complex, and often obscure ways, and that metal species other than the free metal ion can be toxic.

At all Jericho monitoring stations, mean field pH values ranged from 6.4 to 7.7 in 2005 and 2006 (Tables B25 to B27; Figure 4.3). At some stations point measures of pH in 2006 were below 6.0. These occurred at Jericho River (JER09), Control Lake (JER10), Stream C4 (JER15), Lake C3 (JER04), and Lake C3 outlet (JER05) monitoring stations (range of 5.2 to 5.8). These low pH values occurred at different times throughout the season. Interestingly, 2006 maximum recorded values at these stations were over 7.4, indicating seasonally variable pH. Historically, pH values in these systems have not been below 6.0. In 2005, pH values at these stations were above 6.0.

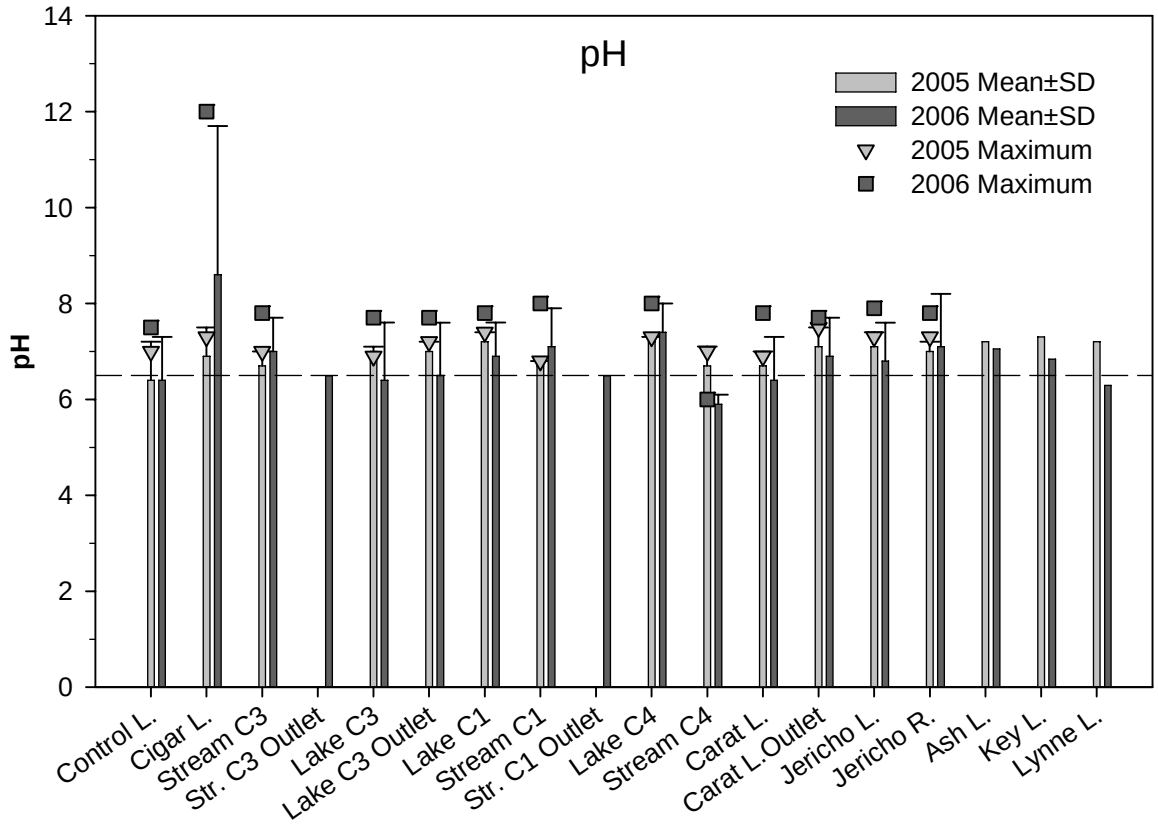


Figure 4.3 pH (field) in summer at monitoring stations in the Jericho study area. Horizontal line represents pH 6.5.

In terms of CWQGs, pH values should be between 6.5 and 9.0 to ensure the protection of aquatic life. However, because reference stations exhibited low pH values it may be that pH values can naturally reach low levels in the Jericho study area. Moreover, surveys of lakes in the region have found a wide range of pH values. For example, lakes between Yellowknife and Contwoyto Lake yielded pH values between 6.3 and 7.3 (e.g., Moore *et al.*1979; Tibbatts *et al.*1987). Healey and Woodall (1973) and Falk (1979) reported summer pH values ranging from 7.4 to 9.3 and from 6.6 to 7.9, respectively, for several lakes in the Yellowknife area.

Hydroxide

Hydroxide (OH) concentrations were below the detection limit (<1 mg/L) for all stations in 2005 and 2006. Hydroxide was not measured during baseline studies. Hydroxide contributes to the total alkalinity of water and it is almost never present in natural waters.

Total Dissolved Solids (TDS)

There are currently no CWQGs for total dissolved solids. In general mean TDS mean concentrations at all stations were generally similar and low (<30.0 mg/L) (Tables B28 to B30; Figure 4.4). Higher point measures of TDS concentrations were recorded at several stations in 2005 and 2006 (30.0 to 60.0 mg/L), but no clear temporal or spatial trends were apparent.

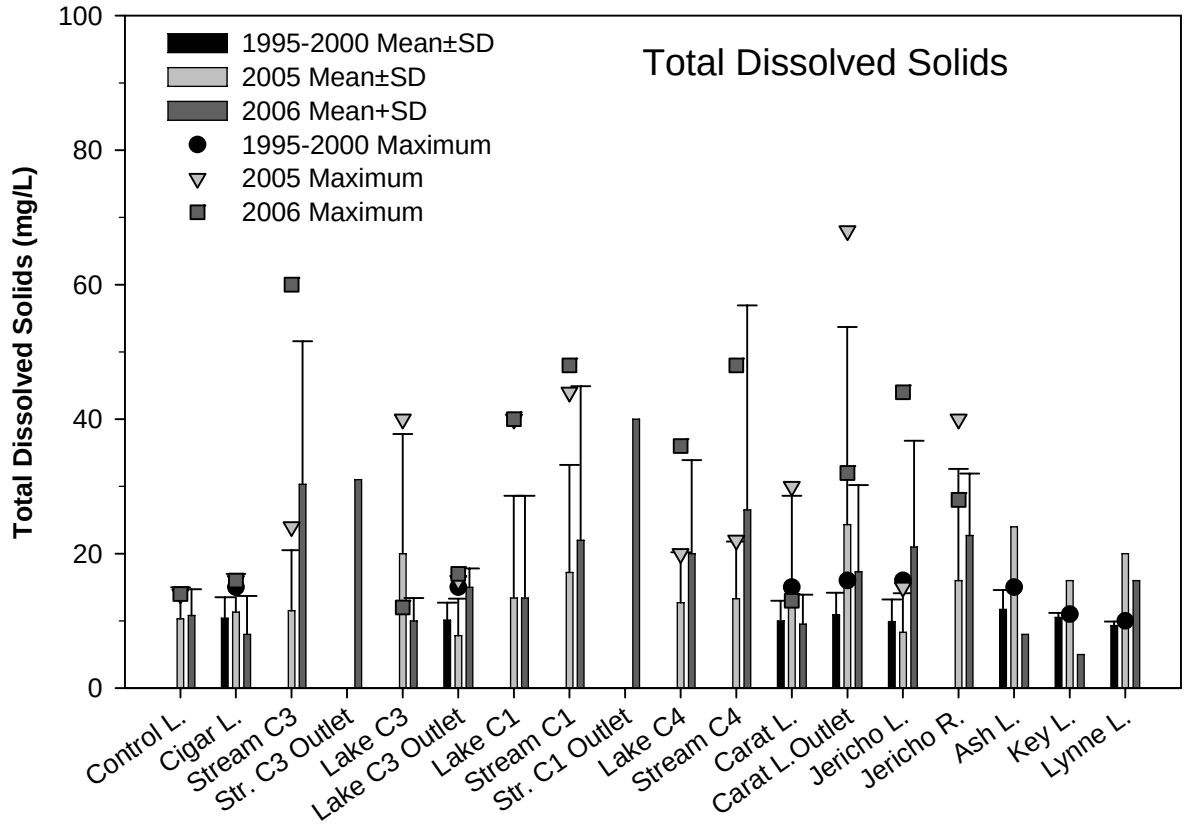


Figure 4.4 Total dissolved solids (TDS) in summer at monitoring stations in the Jericho study area.

Total Suspended Solids (TSS)

CWQGs for TSS in lotic systems indicate that during clear flow TSS concentrations should not deviate more than 25 mg/L from background conditions for short term exposure (24 hours) and no more than 5 mg/L from background for long-term exposure. For high flow conditions guidelines indicate that

concentrations should not exceed 25 mg/L from background conditions when background levels are between 25 mg/L and 250 mg/L.

In general, TSS concentrations were very low (under 4.0 mg/L) at all monitoring stations during all monitoring periods (Tables B31 to B33). One exception to this was during baseline monitoring where a TSS concentration of 18.0 mg/L was recorded at the Cigar Lake station in August of 1996. This likely was an anomaly.

Total Organic Carbon (TOC)

Organic matter, which can be measured proximately by TOC, plays an important role in aquatic systems as it affects biogeochemical processes, nutrient cycling, biological availability, and chemical transport and interactions. High organic content often equates to increased growth of microorganisms, which can contribute to the depletion of oxygen supplies in some systems. Organic matter can bind metals, rendering them less bioavailable to aquatic biota. However, some of these complexes may also exert a toxic effect on aquatic organisms (Campbell 1995). For example, increased concentrations of dissolved organic carbon increased the toxicity of the free Cu^{2+} to the cladoceran *Daphnia magna* (Erickson *et al.*1996). Similarly, Winner (1984) found that adding humic acid (DOC) increased the acute and chronic toxicity of cadmium in *Daphnia magna*. Currently, understanding of how these organo-metal complexes negatively impact aquatic organisms is not clear. It is clear however, that increases in organic matter will not simply bind metals and render them unavailable (Campbell 1995).

Mean TOC concentrations at monitored stations were generally below 5 mg/L and maximum values ranged from 2.7 to 6.7 mg/L (Table B34 to B36). A survey of 13 arctic lakes near the south-west of Contwoyto Lake indicated that dissolved organic carbon (DOC) values of arctic lakes in this region are generally between 1.6 to 3.8 mg/L (Pienitz *et al.*1997). Total organic carbon would be slightly higher; therefore, the TOC results at Jericho were within the expected range for regional conditions.

Total Inorganic Carbon (TIC)

Total inorganic carbon is the sum of inorganic carbon species in a solution. The inorganic carbon species include carbon dioxide, carbonic acid, bicarbonate anion, and carbonate anion and can indicate the buffering capacity of a lake.

In general, dissolved inorganic carbon concentrations were low (maximum values generally <3.5 mg/L) at monitored stations in the Jericho study area (Tables B37 to B39).

Temperature (field)

Aquatic biota in arctic lakes can be sensitive to alterations in water temperature. For example, research has shown strong relationships between spring temperatures and compositional structure of diatoms, chrysophytes and zooplankton (Sorvari *et al.* 2002). CWQGs indicate that natural patterns of thermal stratification or turnover dates should not be altered. They also should not exceed maximum weekly average temperatures nor exceed maximum short term temperatures.

Surface water temperatures ranged from 0.1 ºC to 16.6 ºC in 2006 (Table B40 to B42).

Turbidity

CWQGs for turbidity are generally more applicable to lotic systems and indicate that turbidity should not increase more than 8 NTU from background levels for any short- term exposure (24-h period) and 2 NTU for any long-term exposure (between 24-h and 30-d). Increases in turbidity have the potential to affect aquatic biota in several ways. For example, turbidity can decrease light penetration and lead to decreases in primary production and high sediment concentrations often associated with turbidity can also interfere with the gills of filter feeding organisms.

Maximum turbidity values in monitored lakes were below or equal to 3.0 NTU in all years at monitored stations (Tables B43 to B45).

Nutrients

Nitrate

Nitrate is a bioavailable form of nitrogen that can be a limiting nutrient for primary producers in aquatic systems. CWQGs indicate an interim guideline value of 13 mg/L for nitrate.

Nitrate values were well below CWQG during all monitoring periods and at all monitored stations, but changes between 2005 and 2006 were recorded (Tables B46 to B48; Figure 4.5). In Stream C3 (JER03), mean nitrate values increased from 0.058 mg/L to 1.849 mg/L. In Stream C1 (JER12) mean values increased from 0.440 mg/L to 0.718 mg/L. In Lake C1 (JER13) mean values increased from 0.133 mg/L to 0.498 mg/L. In contrast, nitrate concentrations at other monitoring stations were below 0.100 mg/L in both years. Similarly, a survey of 13 arctic lakes near south-west of Contwoyto Lake indicated that nitrate values in arctic lakes in this region are very low (Pienitz *et al.*1997).

The monitoring results demonstrated differences in nitrate concentrations at some stations between 2005 and 2006 in the Jericho study area. This may indicate mine effects. Despite this change, nitrate concentrations were well below the CWQG guideline.

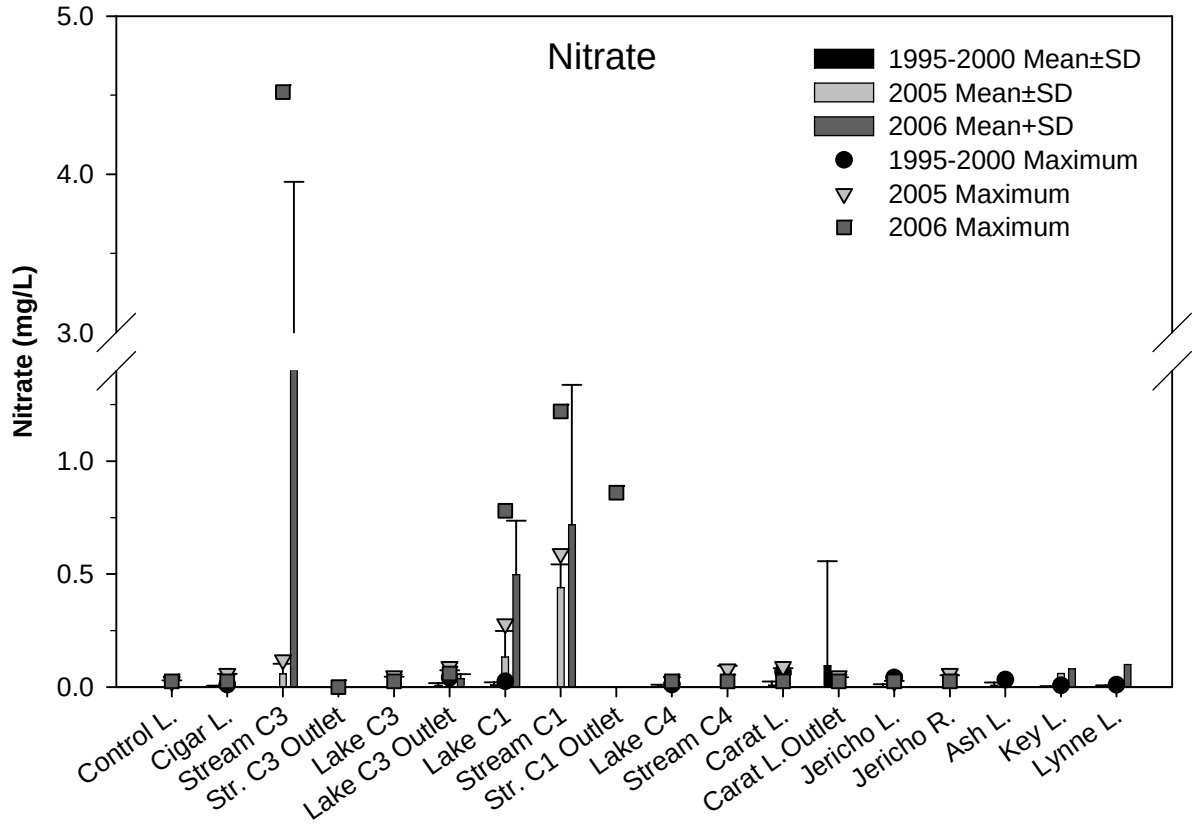


Figure 4.5 Nitrate concentrations in summer at monitoring stations in the Jericho study area.

Nitrite

In all samples nitrite was below the analytical detection limit of 0.05 mg/L. This is not surprising as Pienitz *et al.* (1997) found that nitrite concentrations in 13 regional lakes ranged from 0.001 mg/L to 0.003 mg/L.

Ammonia

CWQGs for ammonia are temperature and pH dependent. At a pH of 8 and temperature of 10˚C, CWQG indicate that ammonia concentrations should be below 1.37 mg/L, whereas at a pH of 6.5 and temperature of 10˚C, which is similar to most of our monitored water bodies in the Jericho study area, ammonia should be below 2.20 mg/L. Ammonia maximum and mean concentrations were below this guideline value at all monitored water bodies in the Jericho study area, with a single exception (Tables B49 to B51). In 2006, the ammonia concentration at the monitoring station in Cigar Lake (JER11) was 2.5 mg/L.

Because Cigar Lake is a reference lake and the high value was recorded only once, it is likely an anomaly. Values that were above analytical detection limits ranged from 0.008 mg/L to 0.037 mg/L and were within the range recorded by Pienitz *et al.* (1997) in 13 regional lakes.

Phosphate (PO_4)

There are currently no CWQC or USEPA guidelines for phosphate and generally total phosphorus rather than phosphate is used to monitor changes in phosphorus concentration. Although phosphate is the most bioavailable form of phosphorus, it is often rapidly taken up by algae causing very low concentrations in the surrounding water, which makes it a poor proximate for nutrient enrichment. Phosphate concentrations were generally very low (Tables B52-B54).

Total Phosphorus

Total phosphorus (TP) levels can help to determine the level of productivity of a waterbody. Lakes are considered ultra-oligotophic when TP is <0.004 in mg/L, oligotrophic when TP is between 0.004 mg/L and 0.010 mg/L, mesotrophic when TP is between 0.01 and 0.02 mg/L, meso-eutrophic when TP is between 0.02 mg/L and 0.035 mg/L, eutrophic when TP is between 0.035 mg/L and 0.100 mg/L, and hypereutrophic when TP is >0.100 mg/L. CWQGs for phosphorus are based on maintaining baseline trophic status of waterbodies. Increases in phosphorus can cause increases in primary productivity, particularly if the system is phosphorus limited. Research indicates that high arctic ponds are generally phosphorus limited (Wilhelm *et al*. 2004). Waterbodies in the Jericho study area are oligotrophic to mesotrophic, which is similar to what has been reported in arctic tundra lakes (Pienitz *et al.*1997).

Mean total phosphorus concentrations ranged from 0.004 mg/L to 0.013 mg/L in those stations sampled in 1995-2000, from 0.017 mg/L to 0.026 mg/L in 2005, and from 0.008 mg/L to 0.034 mg/L in 2006 (Tables B55 to B57).

Metals

An aquatic organism can be exposed to metals in food (particulates) and solution (dissolved and on colloids), and can be exposed to a variety of physicochemical forms, each of which can differ in its accessibility to the organism (Luoma 1983). Although it is generally thought that metals in the dissolved fraction are the most bioavailable to aquatic organisms this may not be necessarily true, particularly in the presence of natural dissolved organic matter (Campbell 1995). Further, the definition of dissolved varies and often differs depending on the filter used to separate dissolved fractions (EVS 1997). As such, the results discussion is restricted to total metals.

Aluminum (Al)

As discussed previously, dissolved organic carbon, pH, and alkalinity (Ca^{2+}) could affect the toxicity of metals to aquatic organisms. This is true for aluminum. Although it is thought that decreases in pH and hardness increase toxicity, the effects of these parameters have not been quantified.

CWQGs indicate that if pH >6.0 Ca^{2+} < 4 mg/L and DOC <2 mg/L, a guideline value for aluminum of 0.005 mg/L should be applied. If pH ≥6.5, Ca^{2+} ≥4 mg/L and DOC ≥2 mg/L then a much higher guideline value of 0.100 mg/L should be applied. USEPA guidelines recommend that the four-day average concentration of aluminum not exceed .087 mg/L more than once every three years on average when the ambient pH is between 6.5 and 9.0.

Aluminum concentrations were naturally high in the study area waterbodies; concentrations at stations monitored from 1995 to 2006 were generally above the CWQG value of 0.005 mg/L for pH less than 6.5 (Figure 4.6, Tables B58 to B60). Examples of high baseline aluminum concentrations include 0.244 mg/L in Cigar Lake (JER11), 0.122 mg/L in Ash Lake (JER18), and 0.124 mg/L in Key Lake (JER17).

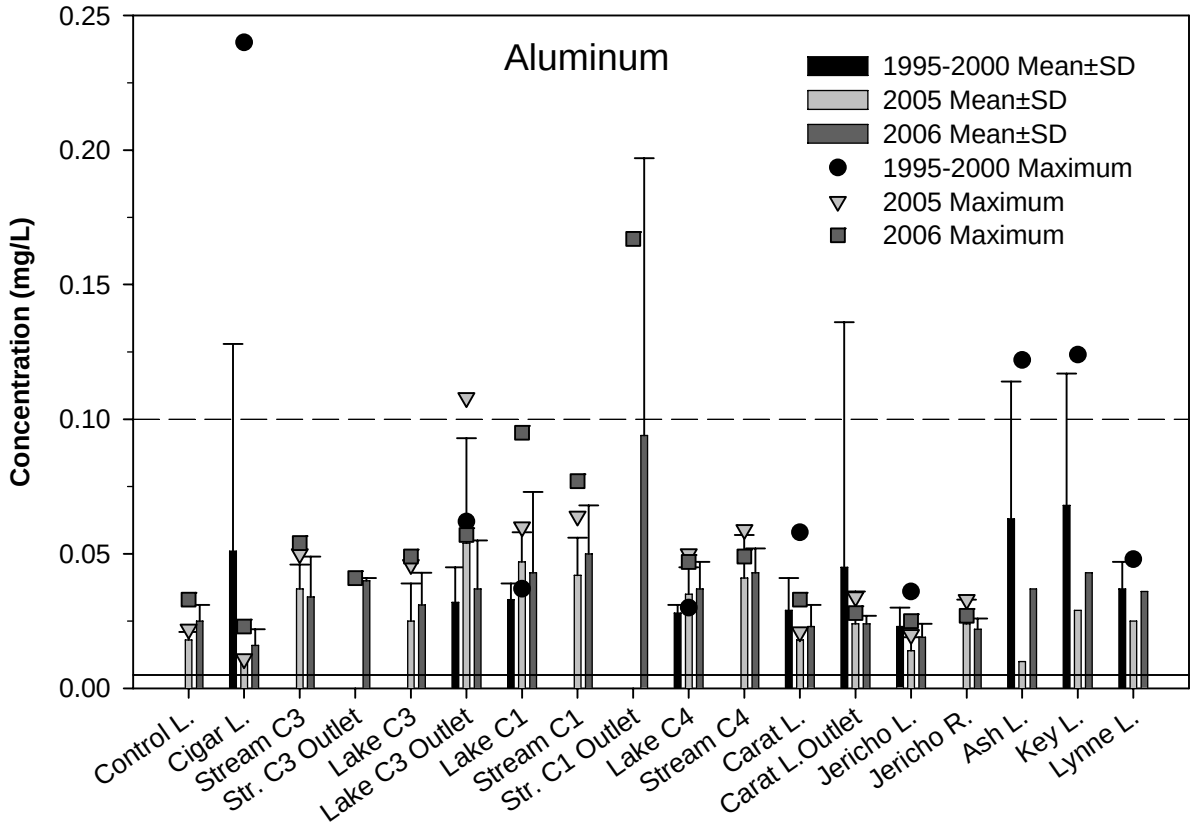


Figure 4.6 Total aluminum concentrations in summer at monitoring stations in the Jericho study area. Guideline values are 0.10 mg/L and 0.005 mg/L depending on pH, alkalinity, and DOC.

In 2006, mean aluminum concentrations ranged from 0.016 mg/L to 0.037 mg/L, which were all above the CWQG of 0.005 mg/L for pH less than 6.5. In 2006, highest maximum concentrations were recorded at Stream C1 outlet into Carat Lake (JER19) (0.167 mg/L), Stream C1 (JER12) (0.077 mg/L), and Lake C1 (JER13) (0.095 mg/L), Stream C4 (JER15) (0.046 mg/L), and Lake C4 (JER14) (0.047 mg/L).

There was some evidence that aluminum concentrations may have increased from background levels at Lake C1 (JER13). Maximum concentrations were 0.037 mg/L in 2000, 0.0600 mg/L in 2005, and 0.095 mg/L in 2006. At present there is no way to ascertain whether this trend is real or an anomaly.

Field pH measurements were higher than 6.5 some of the time (see pH) and as such, the 0.100 mg/L guideline could be applied (e.g., Lake C1). In these cases, most aluminum values would be below the guideline.

Arsenic (As)

In general, average concentrations of arsenic in freshwater are in the range of 0.0016 mg/L to 0.068 mg/L (Kopp and Kroner 1970). In terms of potential affects on aquatic biota, Speyer and Leduc (1975) found that 1.0 mg/L of arsenic in water can cause water imbalance and disrupt lipid biosynthesis in fish. Freshwater invertebrates, on the other hand, appear to vary in their sensitivity to arsenic. In general arsenic does not bioaccumulate in benthic invertebrates (Woolson 1974).

CWQG indicate that arsenic concentrations should not exceed 0.005 mg/L. USEPA guidelines indicate maximum concentrations should not exceed 0.34 mg/L and continuous concentrations be maintained at 0.15 mg/L. USEPA water quality criterion for arsenic was derived from data for arsenic (III) but is applicable to total arsenic (arsenic V and III).

Arsenic concentrations at monitoring stations in the Jericho study area were substantially below the CWQG value and were generally under the ADL (0.0001 mg/L in 1995-2000, 0.004 mg/L in 2005, 0.0001 mg/L or 0.0002 mg/L in 2006) (Figure 4.7, Tables B61 to B63). Some exceptions to this occurred during baseline monitoring where arsenic concentrations of 0.0067 mg/L and 0.0050 mg/L were recorded in Carat Lake stations (JER06 and JER07). Because these values were recorded during baseline monitoring and high values were recorded only once, it was likely an anomaly. In general arsenic was very low at both exposure and reference lakes and streams in the Jericho study area.

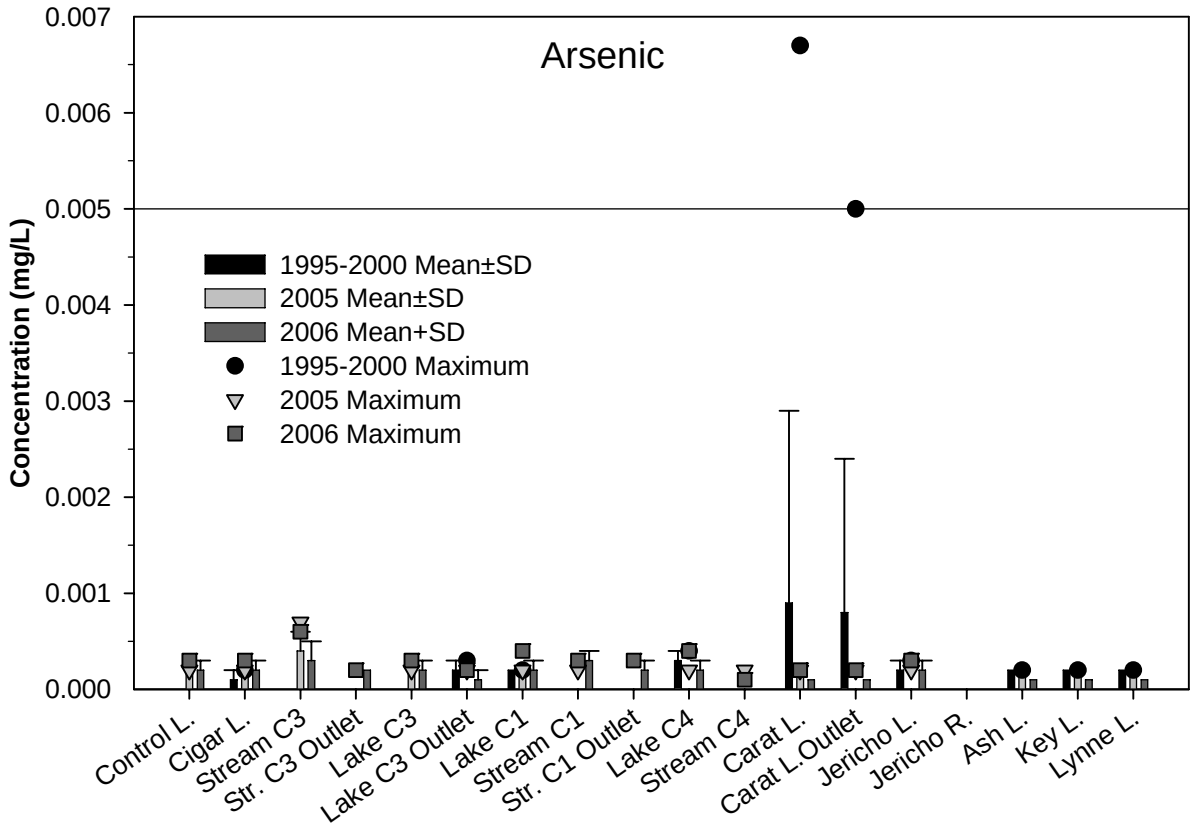


Figure 4.7 Total arsenic concentrations in summer at monitoring stations in the Jericho study area. CWQG value is 0.005 mg/L.

Cadmium (Cd)

Long-term exposure to elevated concentrations of cadmium can result in its accumulation in soft tissues such as the liver and kidney, and may result in disrupted ion metabolism (Pryde 1973). CWQGs for cadmium are dependent on the water hardness. Lakes in the Jericho study area can be characterized as having low alkalinity and hardness (6.73-89.8 mg/L as $CaCO_3$). CWQGs indicate that at hardness from 10 mg/L and 50 mg/L cadmium concentrations should not exceed 0.000005 mg/L to 0.000018 mg/L.

The majority of samples were below detection limits in all waterbodies. The analytical detection limits used were <0.00002 mg/L to <0.0001 mg/L and were not low enough to detect if values were in accordance with guidelines.

Chromium (Cr)

Chromium in freshwater systems should not exceed 0.001 mg/L according to CWQG. USEPA guidelines indicate that concentrations should not chronically exceed 0.011 mg/L and maximum concentrations should not exceed 0.016 mg/L.

In 2005 and 2006, maximum concentrations of chromium at most stations, including reference stations Control Lake (JER10) and Cigar Lake (JER11), were above CWQGs (Figure 4.8, Tables B64 to B66). Numerous stations exhibited elevated maximum chromium values in 2006. These included Control Lake (JER10) (0.0015 mg/L), Cigar Lake (JER11) (0.0019 mg/L), Stream C3 (JER03) (0.0063 mg/L), Lake C3 (JER04) (0.0017 mg/L), Carat Lake (JER06) (0.0033 mg/L), Stream C1 (JER12) (0.0014 mg/L), Lake C1 (JER13) (0.0045 mg/L), and Lake C4 (JER14) (0.0024 mg/L), Jericho Lake (JER08) (0.0020 mg/L), and Jericho River (JER09) (0.0022 mg/L).

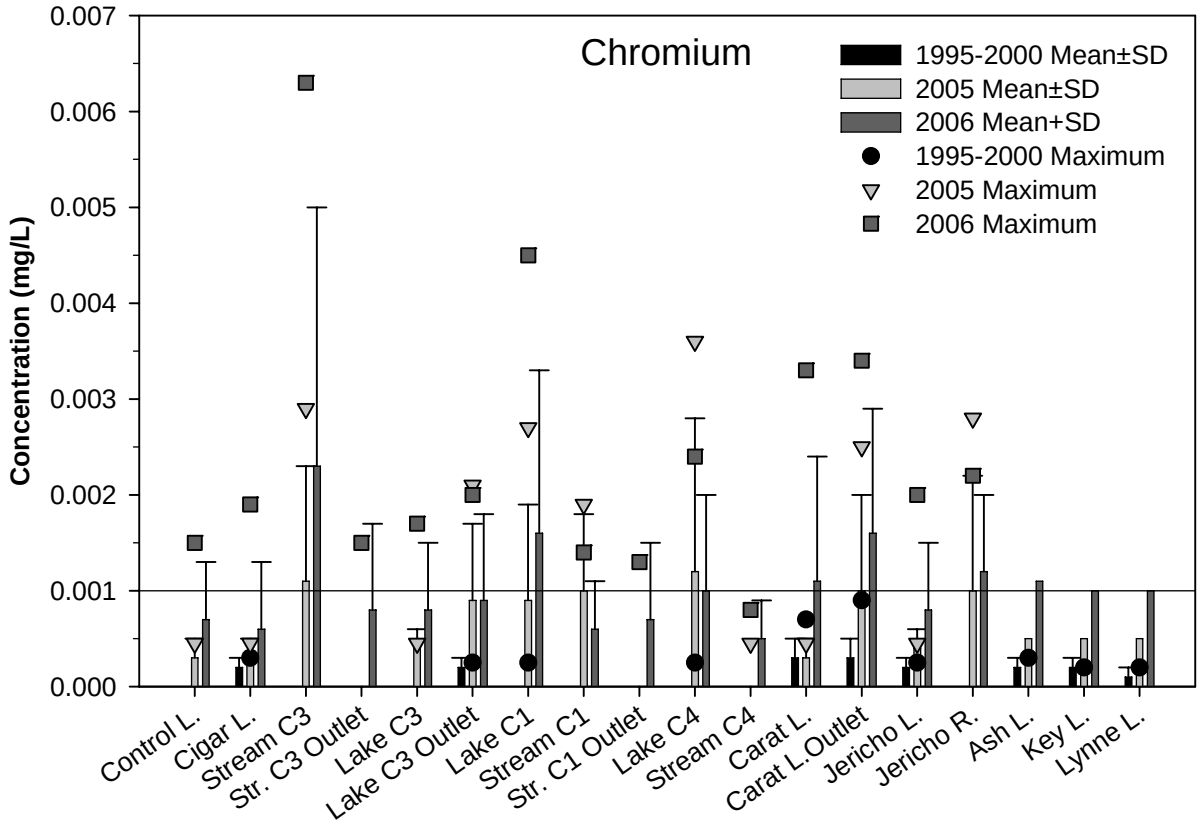


Figure 4.8 Total chromium concentrations in summer at monitoring stations in the Jericho study area. Guideline value is 0.001 mg/L.

In general, maximum values at reference stations in 2005 and 2006 ranged from 0.0015 mg/L to 0.0019 mg/L, whereas maximum values at all other stations ranged from 0.0008 mg/L to 0.0063 mg/L. Where comparisons to baseline were possible, chromium levels appeared to increase from baseline. During sampling from 1995 to 2000, maximum concentrations at monitored stations were below the CWQG. In 2005 and 2006 the majority of values were not. This difference would suggest a change from baseline. But it is unrealistic to assume that the change would be so distinct and would occur at all categories of stations (near field, far field, and reference), particularly in 2005 when the mine was not fully operation. Monitoring in 2007 will provide additional temporal data to ascertain whether this trend is real or an artifact of changes in analytical procedure and detection limits.

Copper (Cu)

CWQGs for copper are dependent on water hardness. Lakes in the Jericho Lake study area can be characterized as having low hardness (6.73-89.8 mg/L as $CaCO_3$). CWQGs indicate that at hardness values between 0-120 mg/L, copper concentrations should not exceed 0.002 mg/L.

Copper is an essential element and is required for normal functioning of biological organisms (Lewis 1995). In fish, copper forms part of several enzymes and glycoproteins, it promotes iron absorption and transport, and it is necessary for hemoglobin synthesis (Sorensen 1991). At high concentrations copper can become toxic to fish and results in damage to tissues and organs, altered physiology and behaviour, and ultimately reduced growth, survival, and reproduction (Sorensen 1991). However, copper is not considered to be a cumulative systemic poison because most of it is excreted from the body (Falk *et al.*1973). Despite this, chronic exposure can cause copper to concentrate in the liver, muscle, and brain tissues (Demayo and Taylor 1981).

Toxicity of copper to aquatic organisms is complex and highly variable (Lewis 1995). In general, low alkalinity, low hardness, and the absence of organic substances tend to increase toxicity. However, absolute effects of copper are controlled by the form of copper causing the toxicity and the presence of other elements in the environment. Copper toxicity also varies depending on the taxonomic group and the mode of entry. Copper is a well known biocide (e.g., copper sulphate) used in aquatic systems to inhibit excessive algal and macrophyte growth, therefore, it can be a toxicant to plants (Lewis 1995). In benthic macroinvertebrates, effects will vary depending on order (Clements *et al.*1988) and whether the organisms are herbivores, detrivores, or predators (Leland *et al.*1989). In fish, it would appear that salmonids are more sensitive to elevated copper levels than other taxonomic groups and smaller fish are affected more severely than larger fish (Sorensen 1991).

Copper concentrations in the reference systems, Control Lake (JER10) and Cigar Lake (JER11) exceeded of CWQG in some instances (Figure 4.9, Tables B67 to B69). Specifically, at Control Lake (JER10) in winter 2005, the copper concentration was 0.0025 mg/L and in summer 2006 the maximum concentration recorded was 0.002 mg/L, which is equal to the guideline value. Similarly, at Cigar Lake (JER11), in winter 2005 the copper concentration was 0.0040 mg/L and in summer 2006 the maximum concentration recorded was 0.0034 mg/L. This indicates that copper may be naturally elevated in study waterbodies.

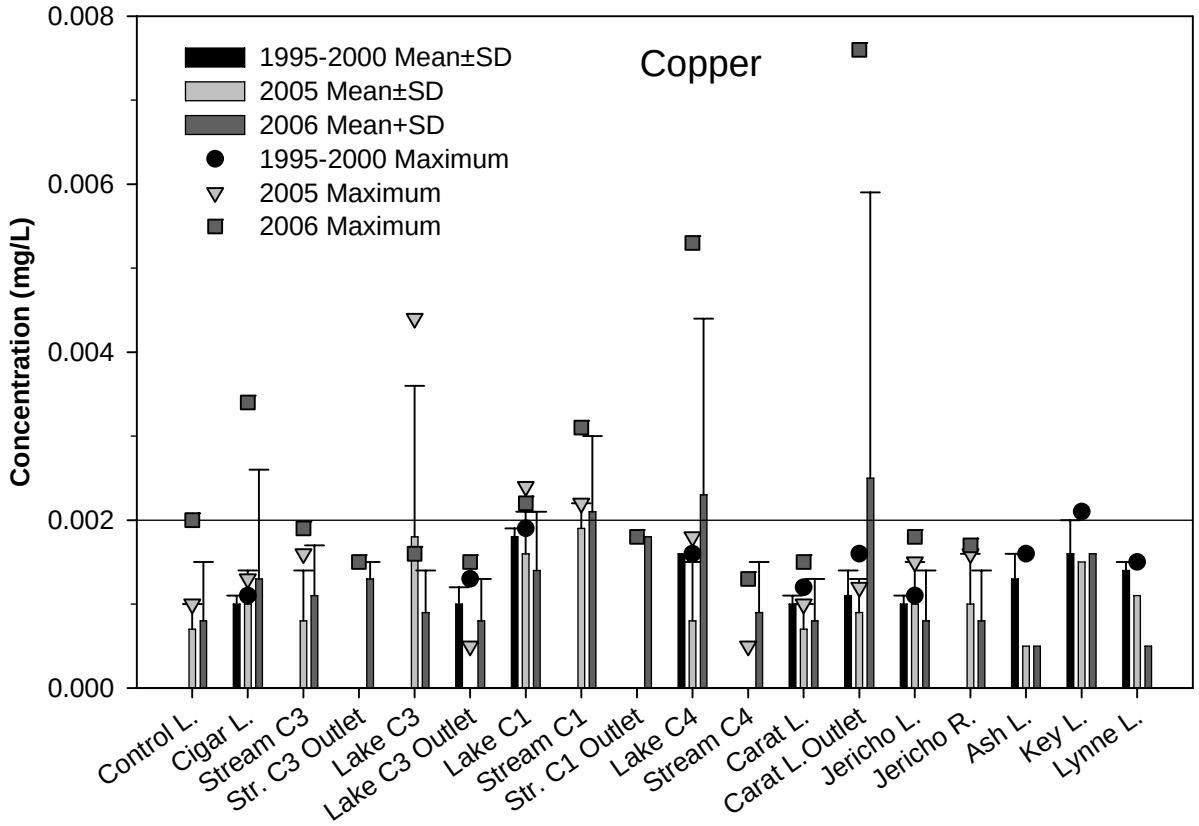


Figure 4.9 Total copper concentrations in summer at monitoring stations in the Jericho study area. Guideline value is 0.002 mg/L.

In 2006, maximum copper concentrations at some monitoring stations also were above CWQGs. These included Stream C3 (JER03) in winter (0.0030 mg/L), Lake C1 (JER13) (0.0022 mg/L) and Stream C1 (JER12) (0.0031 mg/L), Lake C4 (JER14) (0.0053 mg/L), and Carat Lake outlet (JER07) (0.0076 mg/L) in summer.

The corresponding baseline maximum concentration values and 2005 values for most of these stations were lower and below CWQG; exception was Lake C1 (JER13). This suggests a potential change in

copper concentrations. Given the elevated copper concentrations recorded at control stations, the changes were likely related to the high, variable background levels in Jericho study area waterbodies.

Lead (Pb)

Lead is a heavy metal that has been shown to bioaccumulate in aquatic organisms leading to acute and chronic effects. The effects of lead concentrations on aquatic biota are dependent on hardness. Lakes in the Jericho study area can be characterized as having low hardness (6.73-89.8 mg/L as $CaCO_3$). As such, the CWQG for lead of 0.001 mg/L is generally applicable to waterbodies in this region. Concentrations of lead at all monitoring stations in all monitoring years were considerably below the guideline value and the highest recorded concentration was 0.00060 mg/L (JER14, 2005) (Tables B70 to B72).

Molybdenum (Mo)

Moybdenum is a micronutrient required for the nutrition of many biota (Wetzel 1983), but may be toxic in high doses. The interim CWQG to protect aquatic life is 0.073 mg/L of molybdenum.

Concentrations of molybdenum in monitored waterbodies were very low, did not exceed CWQG, and frequently were below detection limits in all years (Tables B73 to B75).

Nickel (Ni)

Similar to lead, nickel is a heavy metal that has been shown to bioaccumulate in aquatic organisms leading to acute and chronic effects. The effects of nickel concentrations on aquatic biota are dependent on hardness. As stated previously, lakes in the Jericho study area can be characterized as having low hardness (6.73-89.8 mg/L as $CaCO_3$). As such the CWQG for nickel of 0.025 mg/L is generally applicable to this region.

Concentrations of nickel at all monitoring stations in all monitoring years were considerably below the guideline value and the highest recorded concentration was 0.0014 mg/L at Stream C1 (JER12) in 2006 (Figure 4.10, Tables B76 to B78).

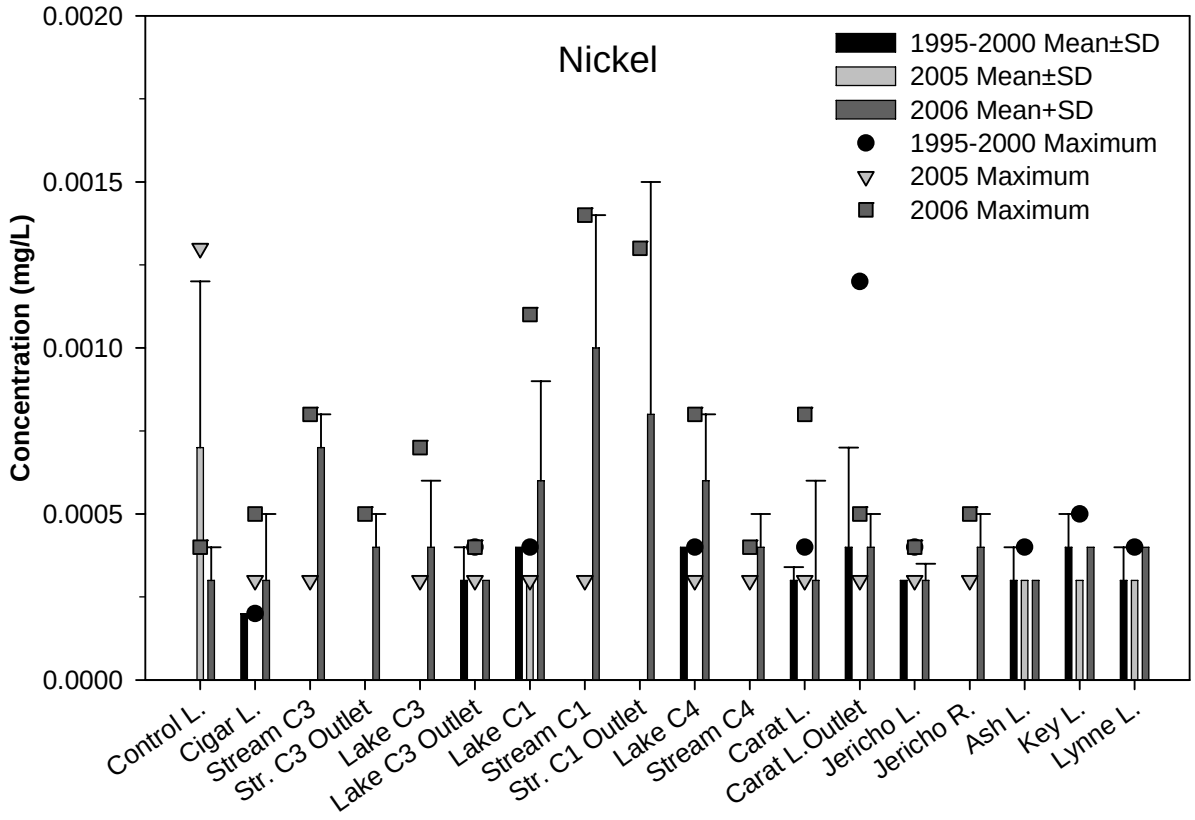


Figure 4.10 Total nickel concentrations in summer at monitoring stations in the Jericho study area. Guideline value is 0.025 mg/L.

Uranium (U)

Uranium concentrations at all Jericho study area monitoring stations were extremely low in 2006 and ranged from less than the ADL (0.00005 mg/L) to 0.00020 mg/L at all stations (Tables B79 to B81). One exception was in Lake C1 (JER13) where a concentration of 0.00270 mg/L was recorded during winter. Concentrations were low at this station throughout 2006 (0.00046 mg/L to 0.00078 mg/g) and 2005 (0.00050 mg/L to 0.00096 mg/L). Values in 2005 and during baseline sampling were low at all monitoring stations where data was collected. There are currently no CWQG or USEPA guidelines for uranium.

Zinc (Zn)

Zinc is a heavy metal that has been shown to bioaccumulate in aquatic organisms leading to acute and chronic effects. The CWQG for zinc is 0.030 mg/L.

Concentrations of zinc at all monitoring stations in all monitoring years were below the CWQG value (Figure 4.11, Tables B82 to B84). At some stations, including reference stations, maximum values were high relative to other stations. For example, in 2006 zinc concentrations of 0.0130 mg/L and 0.0200 mg/L were recorded at the Control Lake station (JER10) and the Cigar Lake station (JER11), respectively. In 2005, a zinc concentration of 0.0140 mg/L was recorded in Stream C3 (JER03). During baseline monitoring a maximum zinc concentration of 0.0190 mg/L was recorded in Carat Lake (JER06). These data suggest that zinc concentrations in this region are variable.

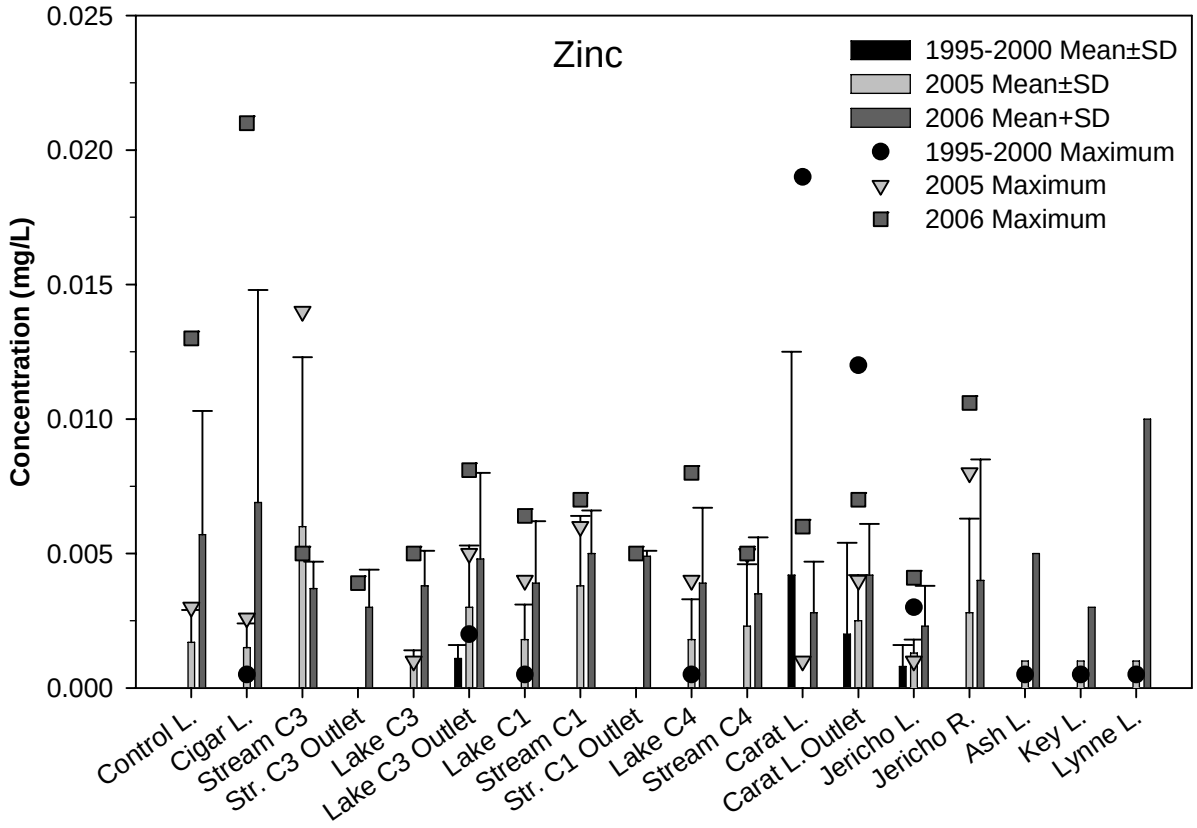


Figure 4.11 Total zinc concentrations in summer at monitoring stations in the Jericho study area. Guideline value is 0.030 mg/L.

Secondary Metals

Calcium (Ca)

Calcium is an important micronutrient due to its essential role in ion transport (Wetzel 1983). There are currently no CWQG or USEPA guidelines for calcium. Mean calcium concentrations were generally the same between years, though there was some variability between stations (Tables B85 to B87). Stream C1 (JER12) had the highest mean calcium concentrations in both 2005 (3.364 mg/L) and 2006 (5.115 mg/L). Control Lake (JER10) and Lake C3 outlet (JER05) had the lowest mean calcium concentrations (<1.124 mg/L).

Barium (Ba)

Barium concentrations at the Control Lake (JER10) ranged from 0.0018 mg/L to 0.0025 mg/L in 2005 and 0.0012 mg/L to 0.0025 mg/L in 2006 (Tables B88 to B90). Concentrations were higher in Cigar Lake (JER11) (ranged from 0.0016 mg/L to 0.0210 mg/L in 2005 and 0.0012 mg/L to 0.0115 mg/L in 2006). Barium concentrations in most other waterbodies ranged from less than the ADL of <0.005 mg/L to 0.0126 mg/L in 2005 and 2006, which is within the range found for the control stations.

One exception was in Lake C1 (JER13) where a concentration of 0.0027 mg/L was recorded during winter. However, concentrations at this station throughout 2006 (0.0005 mg/L to 0.0008 mg/g) and 2005 (0.0005 mg/L to 0.0010 mg/L) were low and it is most likely that the high value was an anomaly. There are currently no CWQG or USEPA guidelines for barium.

Boron (B)

Boron is a micronutrient required by many aquatic organisms (Wetzel 1983). There are currently no CWQG or USEPA guidelines for boron. Mean boron concentrations generally appeared to be similar between stations and years (Tables B91 to B93).

Beryllium (Be)

Beryllium is extremely toxic, noted as a carcinogen and is associated with lung disease (Taylor *et al.* 2003). There are currently no CWQG or USEPA guidelines for beryllium. Beryllium concentrations were below method detection limits for the majority of samples.

Cobalt (Co)

Cobalt is a micronutrient required for the nutrition of many biota (Wetzel 1983), but can be toxic in high doses. There are currently no CWQG or USEPA guidelines for cobalt. Cobalt concentrations were below method detection limits for the majority of samples.

Iron (Fe)

Iron is of importance in aquatic ecosystems both because it is an essential micronutrient that can limit the growth of primary producers, and because it can play a critical role in nutrient cycling (Wetzel 1983). However, at high concentrations iron can be toxic (Wetzel 1983). CWQG and USEPA guidelines indicate that iron levels should not exceed 0.300 mg/L.

Iron concentrations were below the recommended guidelines in all samples, except a single sample that was collected during baseline (1995-2000) in Lake C4 (0.340 mg/L) (Tables B94 to B96). All subsequent samples in Lake C4 in 2005 and 2006 were below recommended guidelines, so it is likely the sample with the high concentration of iron from 1995-2000 was an anomaly.

Magnesium (Mg)

There are currently no CWQG or USEPA guidelines for magnesium. Mean magnesium concentrations were generally lower in 2006 compared to both 1995-2000 and 2005, with a few exceptions (Tables B97 to B99). However, mean magnesium concentrations appeared to have increased slightly at some stations. These included Stream C1 (JER12) (from 1.240 mg/L in 2005 to 1.725 mg/L in 2006), Lake C1 (JER13) (from 1.250 mg/L in 1995-2000 to 0.968 mg/L in 2005 and 1.374 mg/L in 2006), Stream C3 (from 0.918 mg/L in 2005 to 2.055 mg/L in 2006), and Lake C3 (from 0.520 mg/L in 2005 to 0.564 mg/L in 2006).

Manganese (Mn)

Similar to iron, manganese is important for the regulation of nutrient cycling and as an essential nutrient for a variety of biota, but can be toxic at high concentrations (Wetzel 1983). There are currently no CWQG or USEPA guidelines for manganese. Manganese concentrations were generally very low in the study area, and were frequently below detection limits (Tables B100 to B102).

Mercury (Hg)

Mercury is a metal of concern as it can affect growth and cause neurological and reproductive disorders. In addition, it can bioaccumulate in the food chain. CWQGs for inorganic mercury indicate concentrations should not exceed 0.026 mg/L. USEPA guidelines indicate levels should not exceed a maximum concentration of 0.0016 mg/L and a chronic mean of 0.0009 mg/L. In the monitored lakes in this study, trace mercury did not exceed CWQG.

Potassium (K)

Potassium is an important cation for aquatic biota due to its role in ion transport and exchange. It is highly soluble and generally abundant in natural waters, therefore modification of potassium content is uncommon (Wetzel 1983). There are currently no CWQG or USEPA guidelines for potassium.

Mean potassium concentrations were generally similar among stations and years (Tables B103 to B105). In 2005 and 2006, mean concentrations ranged from 0.250 mg/L to 0.307 mg/L and 0.250 mg/L to 1.060 mg/L respectively.

Mean potassium concentrations did increase between 2005 and 2006 in Stream C3 (JER03) and Stream C1 (JER12). In Stream C3 mean potassium concentrations went from 0.250 mg/L to 1.060 mg/L. In Stream C1 they went from 0.250 mg/L to 0.535 mg/L. Baseline data were not available for comparison at either station.

Sodium (Na)

As with potassium, sodium is an important cation for aquatic biota due to its role in ion transport and exchange. Species specific thresholds of sodium are required for biota to maintain optimal growth, and very high concentrations of sodium from anthropogenic sources have been associated with algal blooms (Wetzel 1983). However, as sodium is naturally abundant, anthropogenic alteration of sodium content of freshwater is rare (Wetzel 1983). There are currently no CWQG or USEPA guidelines for sodium.

Mean sodium concentrations at monitored stations ranged from 0.388 mg/L to 1.225 mg/L in 2005 and 0.287 mg/L to 2.865 mg/L in 2006 (Tables B106 to B108). Stream C3 (JER03) had the highest mean sodium concentrations in both years (1.225 mg/L in 2005 to 2.865 mg/L in 2006). In general, mean sodium concentrations were higher at most stations in 2005 than 2006, where comparisons were possible. In comparison Lake C3 (JER04) mean sodium concentrations decreased from 0.693 mg/L in 2005 to 0.303 mg/L in 2006. Stream C1 (JER12) sodium increased from 0.730 mg/L in 2005 to 1.413 mg/L in 2006. In Lake C1 (JER13) sodium increased from 0.624 mg/L in 2005 to 0.924 mg/L in 2006. Sodium concentrations are not available for most stations prior to 2005, with the exception of Carat Lake outlet (JER07) where mean sodium concentrations were higher in 1995-2000 than in 2005 or 2006 years.

Given the variation in sodium concentrations between waterbodies and years the results may reflect temporal and spatial variation as well as differences in analytical methods.

Selenium (Se)

Selenium is an essential element but, like many substances, can be toxic at elevated concentrations. Uptake by aquatic organisms is via respiratory structures and effects include disruption of physiological processes. In general, chronic toxicity in the aquatic environment is related to selenium tissue burdens rather than water column inorganic selenium concentrations. CWQGs indicate that selenium

concentrations should not exceed 0.001 mg/L whereas the USEPA guideline suggests that selenium concentrations should not chronically exceed 0.005 mg/L.

In general, selenium concentrations were below the ADL (<0.0008 mg/L to <0.0010 mg/L) in all monitoring years at all stations (Tables B109 to B111). Some exceptions were at the Carat Lake outlet (JER07) where concentrations in 2006 ranged from 0.0001 mg/L to 0.0012 mg/L; the latter was above the guideline. During baseline monitoring concentrations at this station ranged from <0.0005 mg/L to 0.2750 mg/L, the latter also being above the guideline. This suggested that selenium concentrations could be naturally high in Carat Lake. In Control Lake (JER10), a maximum selenium concentration of 0.0011 mg/L was recorded in 2006. This adds support to the idea that selenium concentrations above guideline values may occur naturally in some Jericho area waterbodies.

Strontium (Sr)

Biologically, strontium behaves similarly to calcium, although radioactive forms of the element can be toxic. There are currently no CWQG or USEPA guidelines for strontium. Strontium concentrations were generally stable between stations and years with a few exceptions (Tables B112 to B114). In 1995-2000, concentrations ranged from to 0.0037 mg/L to 0.0169 mg/L. In 2005, concentrations ranged from 0.0450 mg/L to 0.0143 mg/L (Stream C1). In 2006, concentrations ranged from 0.0036 mg/L to 0.020 mg/L. These data suggested some spatial and temporal variability in strontium concentrations, which could be explained by natural variability, as well as differences in analytical methods between sampling years.

Vanadium (V)

There are currently no CWQG or USEPA guidelines for vanadium. Vanadium is an essential component of some enzymes, particularly the vanadium nitrogenase used by some nitrogen-fixing bacteria. Vanadium concentrations at all station in the Jericho study area ranged from below ADL to 0.0029 mg/L (Tables B115 to B117). There was no spatial pattern between stations and control stations had similar concentrations to exposure sights. In addition vanadium concentrations were similar between sampling years, where comparisons were possible.

4.1.4 QAQC

Quality assurance and quality control were done on Carat Lake, Lake C3, PKCA and Stream C1 for proficiencies in lab analysis. This was done by comparing parameters of replicate to split samples for six stations (Appendix B3).

In general analytical precision of laboratories was within acceptable limits. Median percent error of comparisons ranged from 2.5% (JER-12; 12 September) to 10.2% (JER06; 10 August). Highest percent error values were 6000% for dissolved tin (JER12; 12 September), 186% for total zinc (JER06; 10 August), and 265% for dissolved antimony (JER02; 1 September). These can be considered outliers because the majority of remaining high percent errors did not exceed 100%. In general percent error remained below 25%. The one exception was the comparison for JER06 on 10 August. Over 10% of the comparisons in this sample exceeded 100% error.

4.2 SEDIMENT CHEMISTRY

4.2.1 Particle Size

Particle size distribution, in terms of percent composition, is presented in Figure 4.12. With the exception of the Jericho River station (JER09), composition of lake sediment was similar among stations; silt was the dominant soil type (52% to 65%) followed by lesser amounts of sand (15% to 36%) and clay (13% to 36%). Sediment composition at the Jericho River station was comprised mostly of sand (90%), followed by less amounts of silt (8%) and clay (2%).

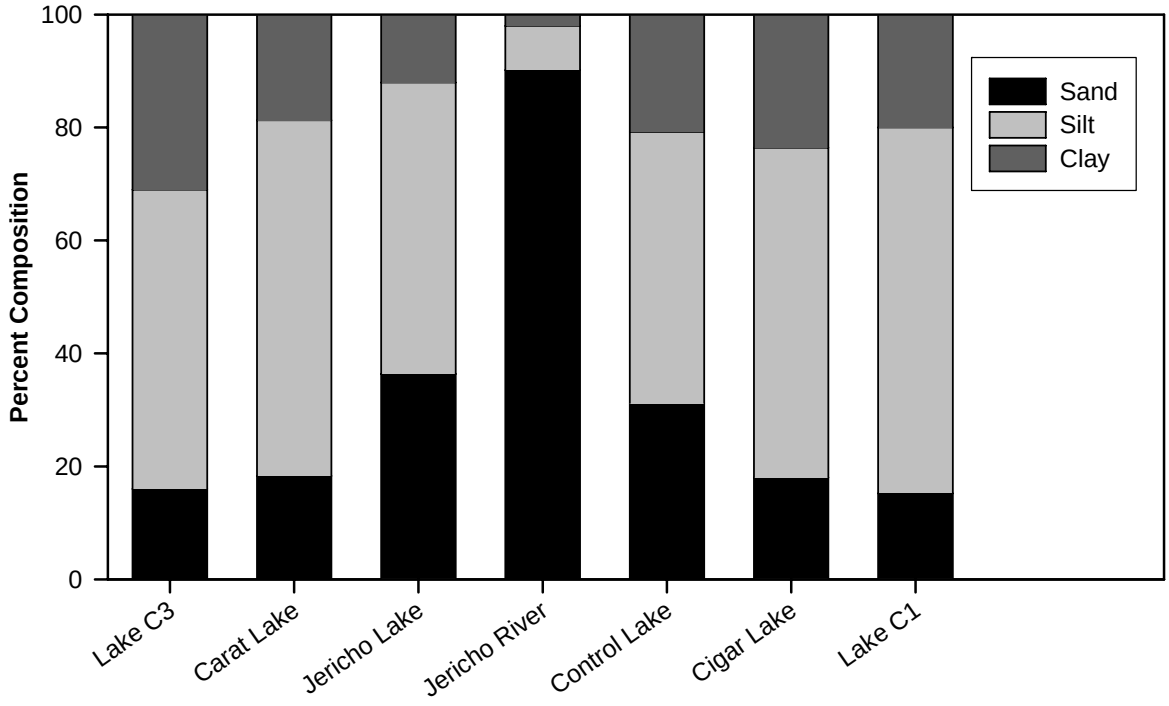


Figure 4.12 Percent composition of soil types for sediment collected at monitoring stations during the 2006 AEM Program.

4.2.2 Metal Concentrations

A summary of sediment concentrations means, maximums, and minimums for all parameters measured in 2006 are available in Table 4.5. Raw data are presented in Appendix C. Arsenic, copper, chromium, nickel, uranium and zinc were selected for detailed analyses based on concerns expressed during the project review (AMEC 2004). Between-station differences in sediment mean arsenic, copper, chromium, nickel, uranium and zinc concentrations from samples collected in 2006 were investigated using ANOVA; results are presented in Figure 4.13.

Table 4.5 Sediment chemistry means and ranges for selected parameters, 2006 Jericho AEM Program. When calculating means, values below detection limit were assumed to be half of the detection.

Parameter	Control Lake			Cigar Lake			Lake C3			Lake C1			Carat Lake			Jericho Lake			Jericho River		
	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
PO4	4.1	<5	8	3.0	<5	5	4.1	<5	7	2.5	<5	3.0	8.0	5	11	24.4	12	36	6.2	<5	10
TKN	0.57	0.55	0.58	0.47	0.45	0.49	0.42	0.39	0.45	0.44	0.42	0.45	0.34	0.31	0.37	0.59	0.56	0.64	0.04	0.02	0.06
TOC	6.88	6.83	6.93	5.26	5.06	5.65	4.97	4.65	5.50	5.12	4.93	5.38	3.96	3.65	4.32	7.03	6.84	7.47	0.54	0.37	0.66
Boron	0.68	0.6	0.7	1.14	0.8	2.0	1.20	1.0	2.0	0.84	0.8	0.9	0.84	0.7	1.0	2.94	2.7	3.1	0.2	0.1	0.3
Aluminum	21140	20400	22600	20320	18600	21200	18100	17000	19300	15560	14300	16400	18940	18000	20100	15160	14500	15900	6126	5920	6490
Arsenic	77.88	54.7	88.8	24.92	16.0	35.8	95.94	69.1	131.0	20.98	17.0	25.2	73.72	54.8	89.1	13.36	9.5	20.6	2.14	1.9	2.5
Barium	105.6	100	112	111.8	99	138	77.4	74	82	99.8	92	116	75.8	72	82	64.6	62	66	21.4	18	24
Beryllium	0.84	0.8	0.9	0.80	0.7	0.9	0.84	0.8	0.9	0.92	0.8	1.0	0.72	0.7	0.8	0.76	0.7	0.8	0.2	0.2	0.2
Bismuth	1.62	1.3	2.4	1.42	1.2	2.2	1.38	1.1	1.9	1.06	1.0	1.1	1.08	1.0	1.2	1.26	1.2	1.3	0.7	0.6	0.9
Cadmium	0.434	0.40	0.50	0.520	0.43	0.57	0.300	0.23	0.38	0.280	0.24	0.30	0.462	0.41	0.53	0.364	0.35	0.39	0.056	0.03	0.09
Calcium	2480	2400	2600	1920	1800	2000	2040	2000	2100	2360	2300	2500	1900	1700	2100	2420	2100	2600	1280	1200	1300
Chromium	51.74	49.0	54.1	46.20	42.0	49.6	42.92	41.0	45.7	33.36	30.5	34.9	43.04	41.2	44.7	35.60	33.6	36.8	13.88	13.3	14.7
Cobalt	37.28	32.9	41.3	38.60	32.0	56.6	14.48	12.0	17.8	31.34	27.3	39.0	35.74	27.4	42.8	8.94	7.9	11.4	4.86	4.6	5.0
Copper	89.8	84	94	96.0	89	104	74.2	71	79	81.0	75	86	76.4	75	78	81.2	78	84	10.6	6	27
Iron	1E+05	130000	140000	85260	54800	105000	83740	66500	115000	114400	105000	128000	78120	64400	91800	28520	23100	36400	9730	8780	10500
Lead	14.08	13.5	14.6	11.38	11.0	12.0	9.12	8.8	9.6	8.20	7.7	8.6	7.76	7.3	8.1	6.46	5.9	7.3	2.36	2.0	3.2
Magnesium	6000	5800	6300	5320	4900	5600	5140	4800	5400	4340	4000	4500	5640	5300	6100	3880	3600	4000	3220	3100	3400
Manganese	4516	3740	5510	9944	4850	19400	714.4	427	998	6056	4420	7770	2354	1650	3760	256	222	296	175.4	134	214
Molybdenum	3.0	3	3	4.0	3	5	3.4	3	4	3.0	3	3	3.0	3	3	2.8	2	3	0.5	<1	<1
Nickel	34.02	32.0	36.8	36.48	35.6	38.0	28.56	27.4	29.5	26.82	25.4	28.5	31.98	31.1	32.8	23.62	22.0	25.0	11.92	11.0	12.7
Phosphorus	2086	1960	2370	1260	1170	1330	1298	1190	1430	972	920	1030	1478	1310	1650	1446	1360	1550	330	280	370
Selenium	1.36	1.2	1.5	1.22	1.0	1.4	0.88	0.7	1.0	1.04	1.0	1.2	0.94	0.9	1.0	0.94	0.9	1.0	0.15	<0.3	0.2
Silver	0.44	0.4	0.5	0.40	0.4	0.4	0.28	0.2	0.3	0.30	0.3	0.3	0.40	0.4	0.4	0.30	0.3	0.3	0.05	<0.1	<0.1
Strontium	16.8	16	18	13.2	13	14	13.0	13	13	13.4	13	14	11.8	11	12	13.2	12	14	5.8	5	7
Tin	4.0	4	4	3.4	2	4	3.4	3	4	4.0	4	4	3.8	3	4	2.0	2	2	3.6	3	4
Titanium	782.8	676	867	803.6	714	854	770.4	740	821	593.2	531	647	790.4	731	843	585.8	565	632	357	335	416
Vanadium	55.12	53.2	58.4	45.60	43.0	47.9	50.52	48.3	53	45.08	41.8	46.7	51.50	49.5	54.0	47.20	44.8	50.1	17.66	16.5	19.2
Uranium	14.80	14.0	16.1	16.52	15.5	18.0	13.02	12.6	13.3	17.90	11.8	20.8	10.68	9.9	11.3	13.08	12.4	14.2	1.52	1.1	1.8
Zinc	95.4	89	101	92.2	85	97	93.6	66	107	69.0	65	74	90.2	88	95	82.6	77	87	29.4	24	41
Moisture	84.36	82.8	85.2	85.22	84.1	86.8	84.30	83.5	86.5	85.42	83.6	86.5	77.96	75.2	80.4	85.50	82.3	88.0	26.78	23.4	29.2

For the 2006 data, Levene's test for homogeneity of variances identified that variances were not equal between stations for arsenic (Levene's statistic=4.04, p=0.005), nickel (Levene's statistic=2.85, p=0.027), uranium (Levene's statistic=3.68, p=0.008), and zinc (Levene's statistic=2.62, p=0.038). As such Welch statistic and Dunnett T3 post-hoc tests were used in place of the F-statistic and Tukey's post-hoc tests for comparisons among stations for these parameters. In addition to comparison among stations, aforementioned key parameters were compared to Canadian Sediment Quality Guidelines for the Protection of Aquatic Life (CCME 2002). CCME criteria for sediments are based on the Interim Sediment Quality Guideline (ISQG) and Probable Effects Level (PEL) listed in Table 4.6.

Table 4.6 Canadian Environmental Quality Guidelines for Freshwater Sediment for selected measured parameters, 2006 Jericho AEM Program.

Parameter	Interim Sediment Quality Guideline (mg/kg)	Probable Effects Level (mg/kg)
Arsenic	5.9	17.0
Chromium	37.3	90.0
Copper	35.7	197
Zinc	123	315

In 2006, sediment concentrations of arsenic, chromium, copper, nickel, uranium, and zinc generally were lowest at the Jericho River station (JER09), presumably due to the soil composition at that station, which was dominated by sand rather than silts and clays (Figure 4.12). Concentrations were generally high at both control stations, Control Lake (JER10) and Cigar Lake (JER11). The exception to this pattern was arsenic, which was comparatively low at the Cigar Lake station. A detailed presentation of results is found below.

Arsenic

Mean concentrations of arsenic in sediments were significantly higher at Lake C3 (95.9 mg/kg), Control Lake (77.9 mg/kg), and Carat Lake (73.7 mg/kg) stations compared to all other stations ($p<0.020$). In addition, mean concentrations of arsenic in sediments were significantly higher at the Cigar Lake (24.9 mg/kg), Lake C1 (21.0 mg/kg), and Jericho Lake (13.4 mg/kg) stations than at the Jericho River station (2.14 mg/kg) ($p<0.038$). In general sediment arsenic values in 2006 were above the ISQG (5.9 mg/kg) as well as the recommended PEL (17.0 mg/kg) at all stations except at the Jericho River station and Jericho Lake station (for the ISQG only).

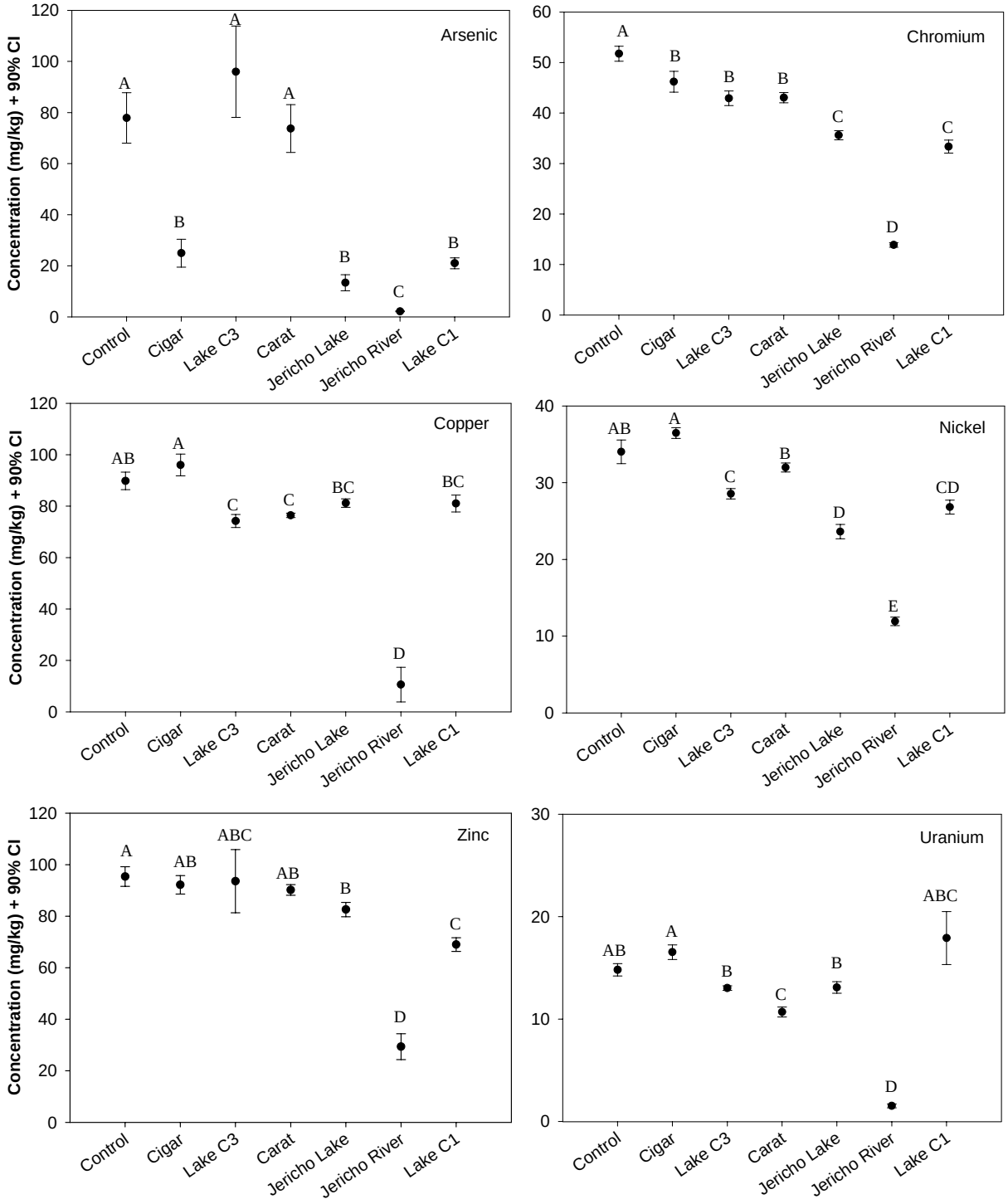


Figure 4.13 Mean concentrations and 90% confidence intervals of major metals at monitoring stations, 2006 AEM Program. Letters represent statistical differences among stations at p=0.05.

Copper

Mean concentration of copper at the Jericho River station (10.6 mg/kg) was significantly less than at all other stations ($p<0.001$). Mean sediment copper concentration at the Cigar Lake station (96.0 mg/kg) was significantly higher than at most other stations ($p<0.002$). The one exception was the Control Lake station (89.8 mg/kg), which also had a similar concentration. Sediment concentrations at the Control Lake station were significantly higher than the Lake C3 station (74.2 mg/kg), Carat Lake station (76.4 mg/kg), and the Jericho River station ($p<0.005$), but sediment concentrations were not significantly different than the Jericho Lake (81.2 mg/kg), Lake C1 (81.0 mg/kg) and Cigar Lake stations ($p>0.118$).

In 2006, sediment mean copper concentrations at the control stations, Cigar Lake (96.0 mg/kg) and Control Lake (89.8 mg/kg), were above the ISQG value of 35.7 mg/kg, but below the recommended PEL of 197.0 mg/kg. Mean copper concentrations in 2006 at all other stations except the Jericho River station were also greater than the ISQG.

Nickel

Mean sediment concentration of nickel was significantly higher at the Cigar Lake station (36.5 mg/kg) than at most other stations ($p<0.002$), excepting the Control Lake station (34.0 mg/kg). Mean sediment nickel concentration at the Control Lake station was also significantly higher than most other stations ($p<0.030$), with the exception of the Cigar Lake and Carat Lake stations (32.0 mg/kg). Mean sediment concentrations were significantly higher at the Carat Lake station than at the Lake C3 (28.6 mg/kg), Lake C1 (26.8 mg/kg), Jericho Lake (23.6 mg/kg), and Jericho River stations (11.9 mg/kg) ($p<0.005$). Lake C3 had higher sediment nickel concentrations than the Jericho Lake and Jericho River stations. The Jericho River station had significantly lower sediment nickel concentration than all other stations ($p<0.001$). There are currently no established Canadian Sediment Quality Guidelines for the Protection of Aquatic life for nickel concentrations in sediment.

Zinc

Similar to other major metals, mean sediment concentration of zinc at the Jericho River station (29.4 mg/kg) was significantly lower than at all other stations ($p<0.006$) in 2006. Mean sediment concentration of zinc was also significantly lower at the Lake C1 (69.0 mg/kg) monitoring station than most other stations ($p<0.002$); exceptions were the Lake C3 station (93.6 mg/kg) and the Jericho River station. It should be noted that high within station variability at the Lake C3 station reduced the ability to detect statistical differences. Mean sediment concentration of zinc was significantly higher at the Control station (95.4 mg/kg) than at the Jericho River, Jericho Lake (82.6 mg/kg), and Lake C1

(69.0 mg/kg) monitoring stations ($p<0.040$), but concentrations were not different than at the Cigar Lake (92.2 mg/kg), Lake C3 (93.6 mg/kg), and Carat Lake (90.2 mg/kg) stations ($p>0.654$). All concentrations at all stations were below the ISQG value of 123.0 mg/kg and PEL value of 315.0 mg/kg in 2006.

Uranium

Mean sediment uranium concentration was highest at the Lake C1 station (17.9 mg/kg). Due to high within station variability at this station, the station was significantly higher than only the Jericho River station (1.52 mg/kg). Mean uranium sediment concentration at the Jericho River station was significantly lower than all other stations ($p<0.005$). Mean uranium sediment concentration at the Cigar Lake station (16.5 mg/kg) was significantly higher than at the Jericho River (1.52 mg/kg), Carat Lake (10.68 mg/kg), Jericho Lake (13.1 mg/kg), and Lake C3 (13.0 mg/kg) stations ($p<0.01$), whereas the mean concentration at the Control Lake station (14.8 mg/kg) was only significantly higher than the Carat Lake and Jericho River stations ($p<0.001$). There are currently no established Canadian Sediment Quality Guidelines for the Protection of Aquatic life for uranium concentrations in sediment.

4.2.3 Historical Trends

Historical data used for comparison are presented in Table 4.7. Results of historical comparisons are presented in Figure 4.14 to Figure 4.20.

Table 4.7 Summary of historical sediment chemistry sampling data used for comparisons to 2006 data, 2006 Jericho AEM Program.

Waterbody	Collection Year
Cigar Lake	2004
Control Lake	2000, 2004
Lake C3	1999, 2000, 2004
Carat Lake	2000, 2004
Lake C1	2000, 2004
Jericho Lake	2000, 2004
Jericho River	2004

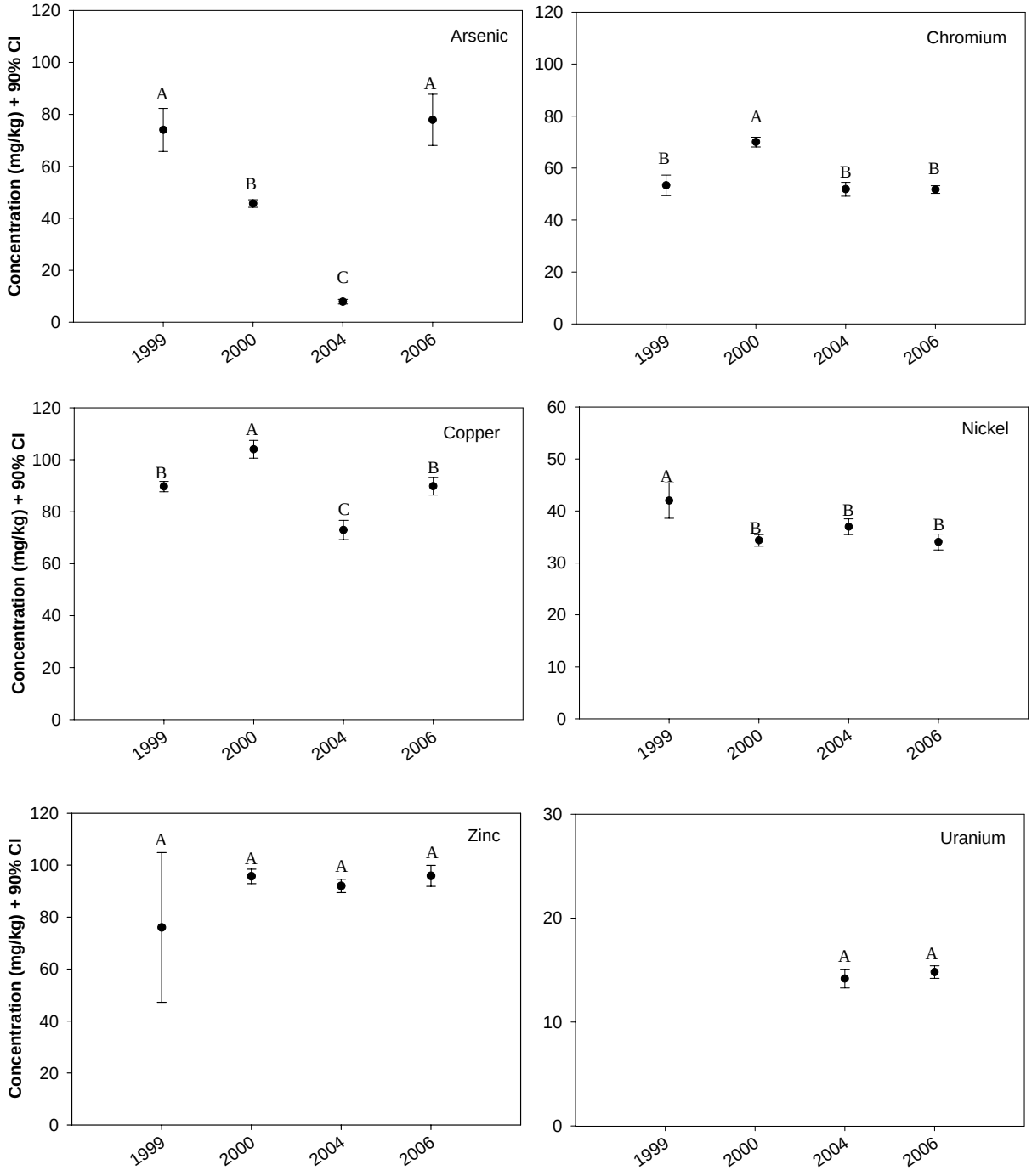


Figure 4.14 Mean sediment concentrations for selected metals at the Control Lake monitoring station in 1999, 2000, 2004, and 2006. Letters represent statistical differences among years at p=0.05.

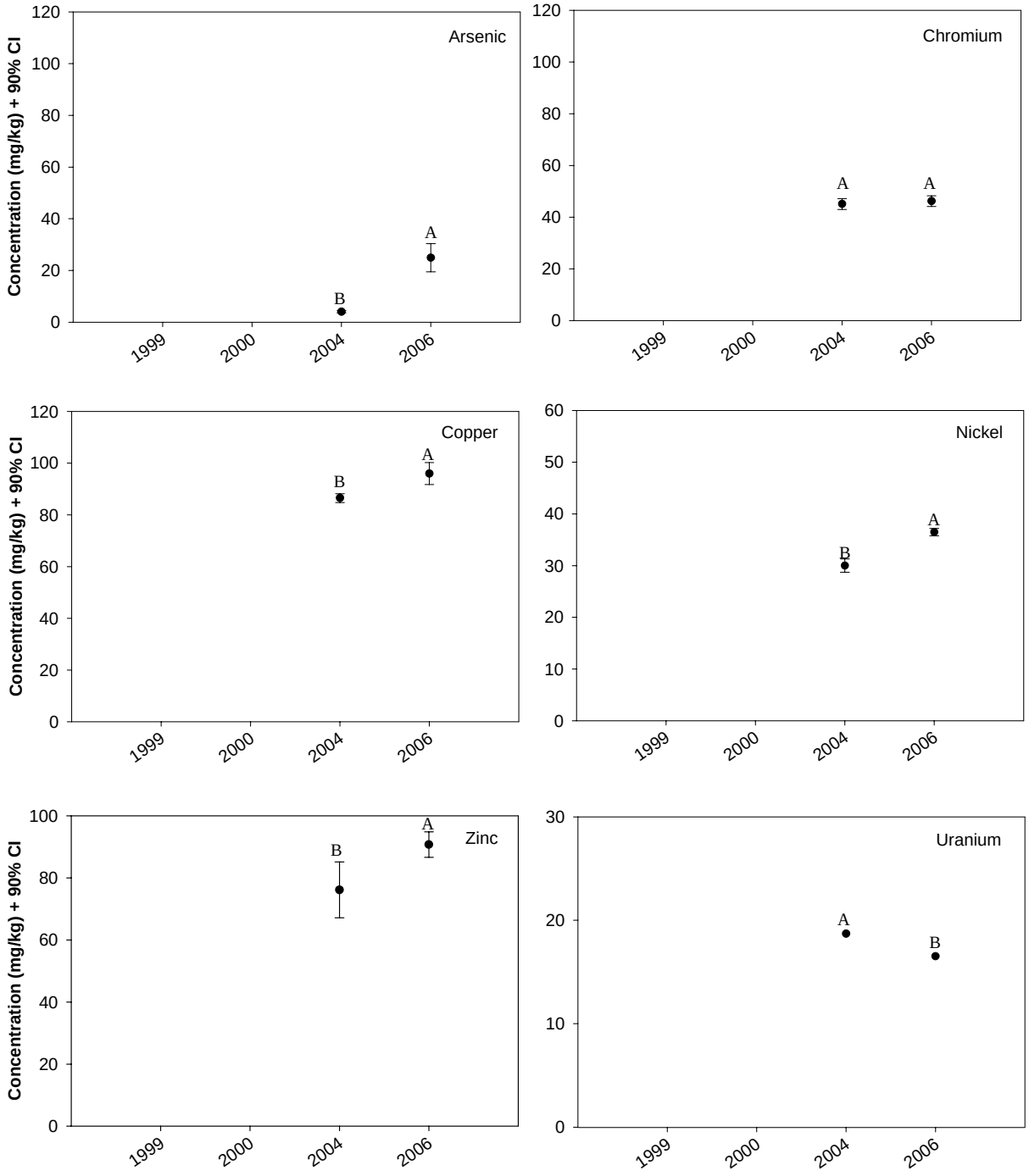


Figure 4.15 Mean sediment concentrations for selected metals at the Cigar Lake monitoring station in 2004 and 2006. Letters represent statistical differences among years at p=0.05.

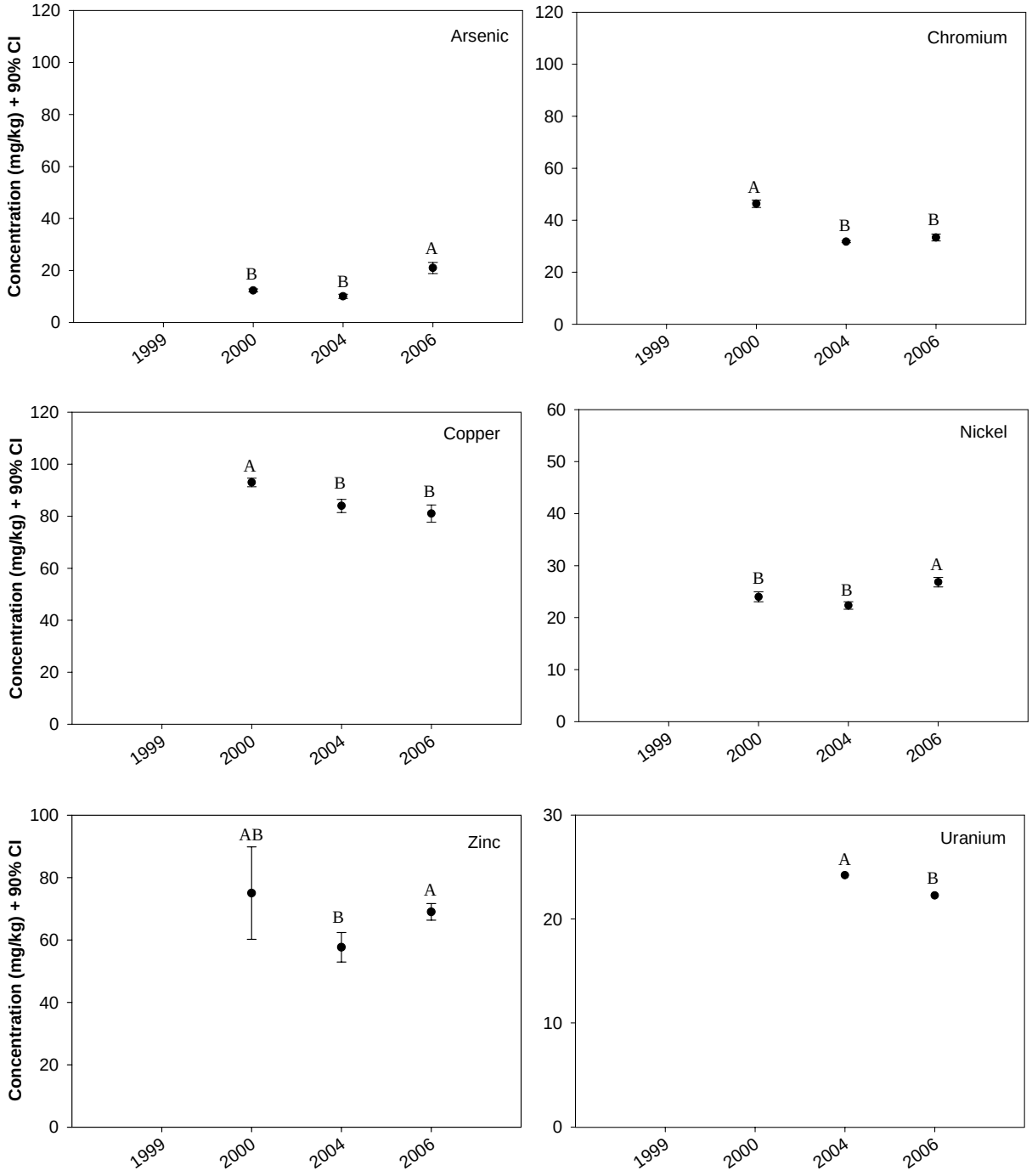


Figure 4.16 Mean sediment concentrations for selected metals at the Lake C1 monitoring station in 2000, 2004, and 2006. Letters represent statistical differences among years at p=0.05.

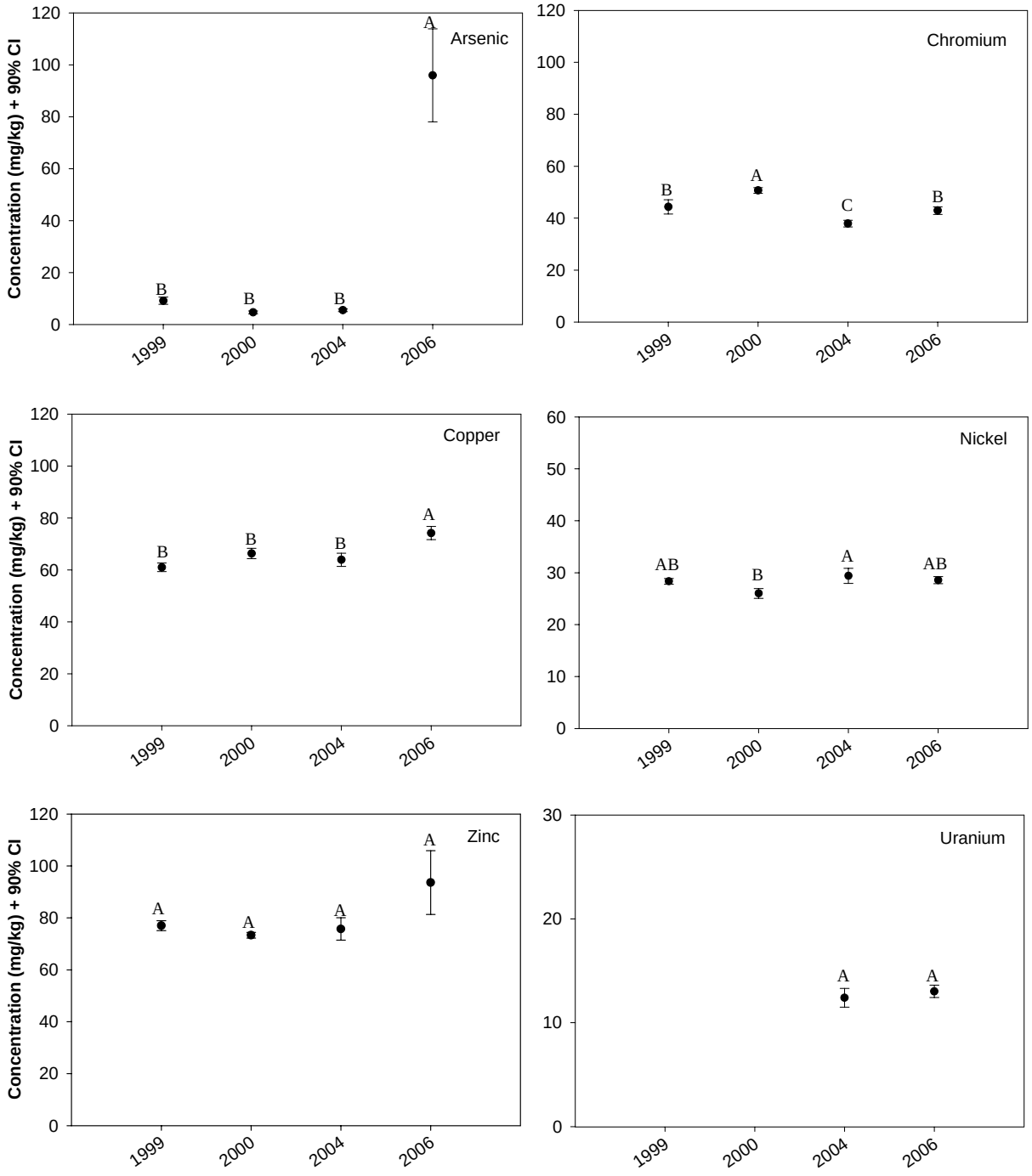


Figure 4.17 Mean sediment concentrations for selected metals at the Lake C3 monitoring station in 1999, 2000, 2004, and 2006. Letters represent statistical differences among years at p=0.05.

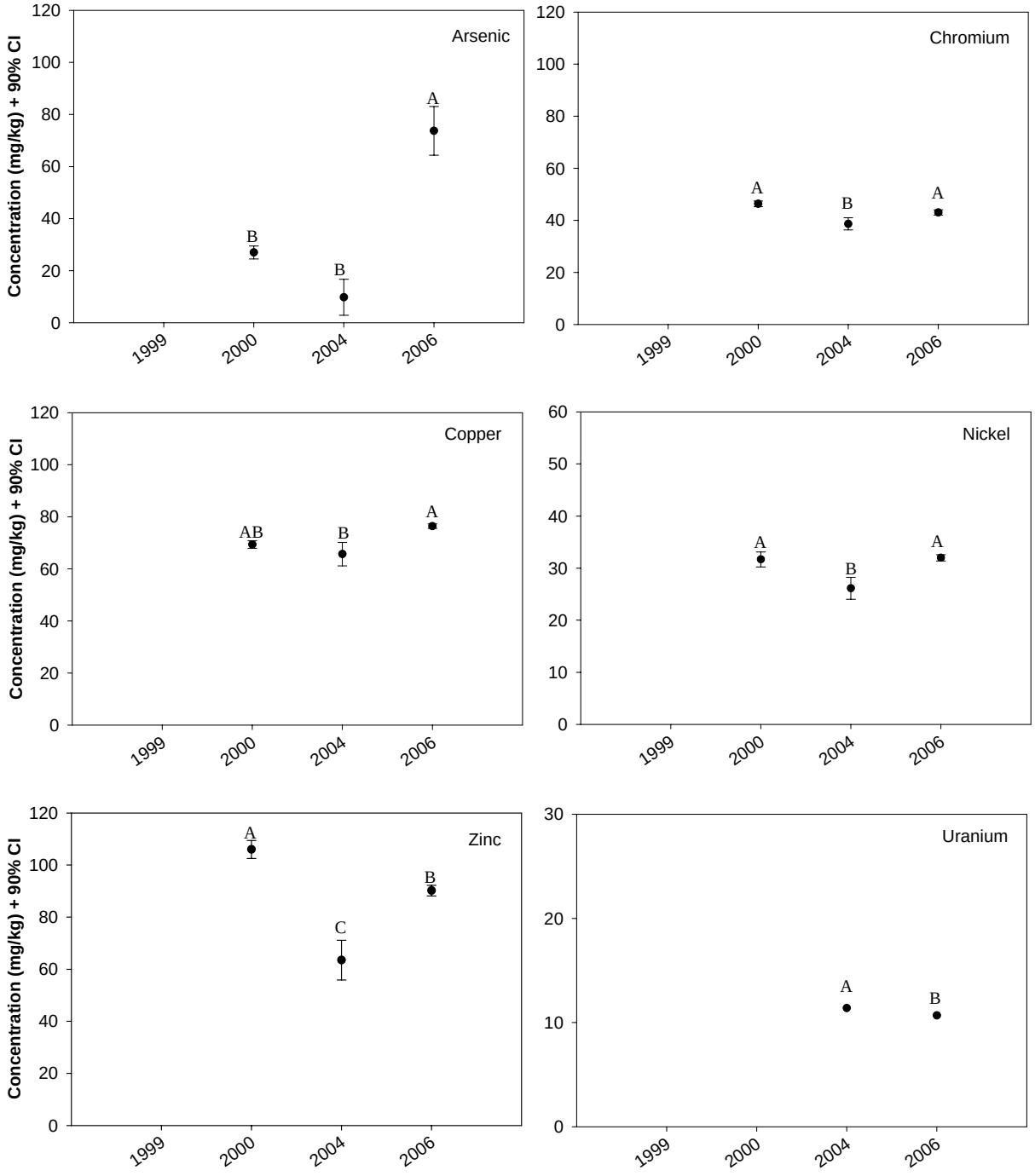


Figure 4.18 Mean sediment concentrations for selected metals at the Carat Lake monitoring station in 2000, 2004, and 2006. Letters represent statistical differences among years at p=0.05..

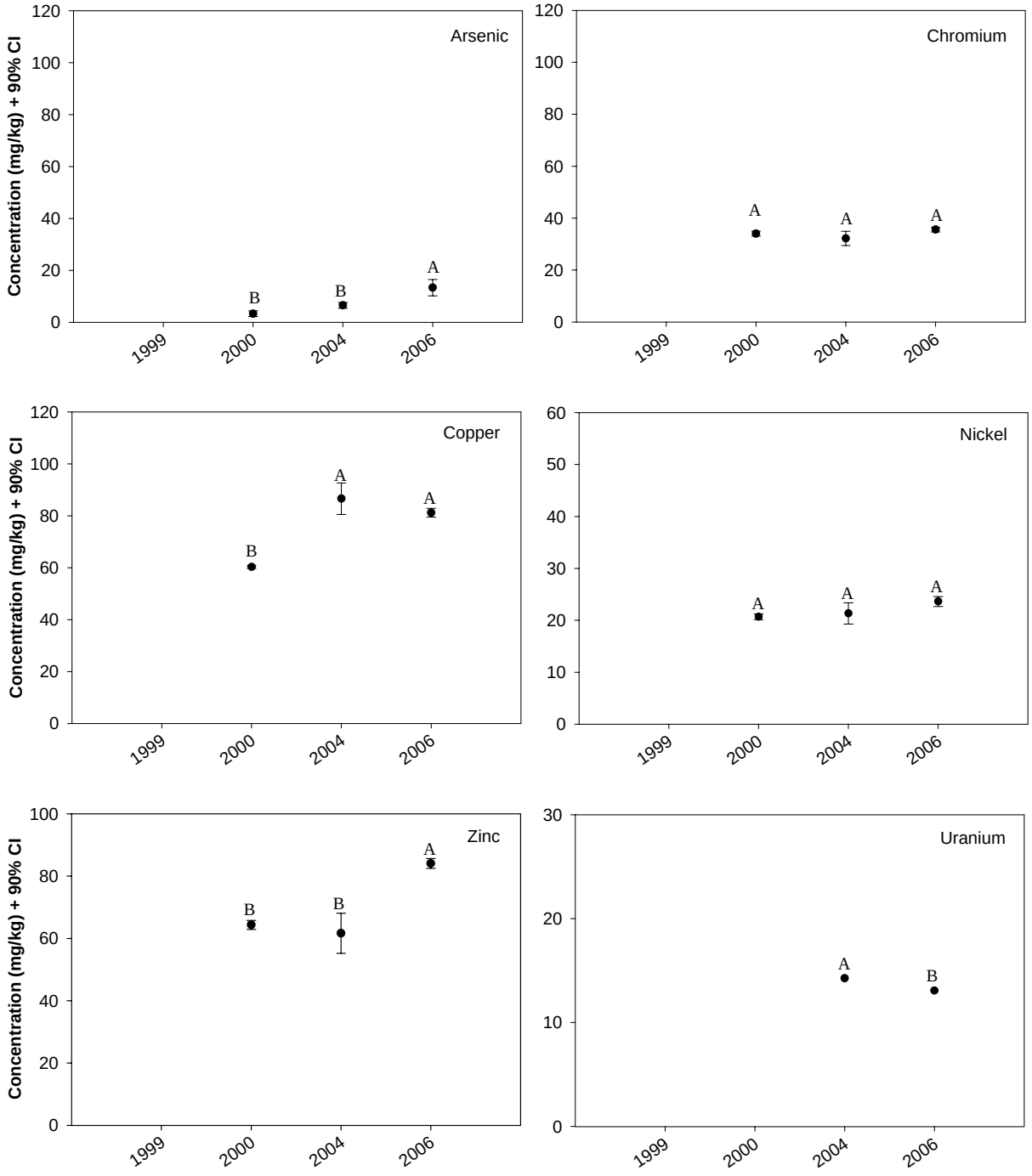


Figure 4.19 Mean sediment concentrations for selected metals at the Jericho Lake monitoring station in 2000, 2004 and 2006. Letters represent statistical differences among years at p=0.05.

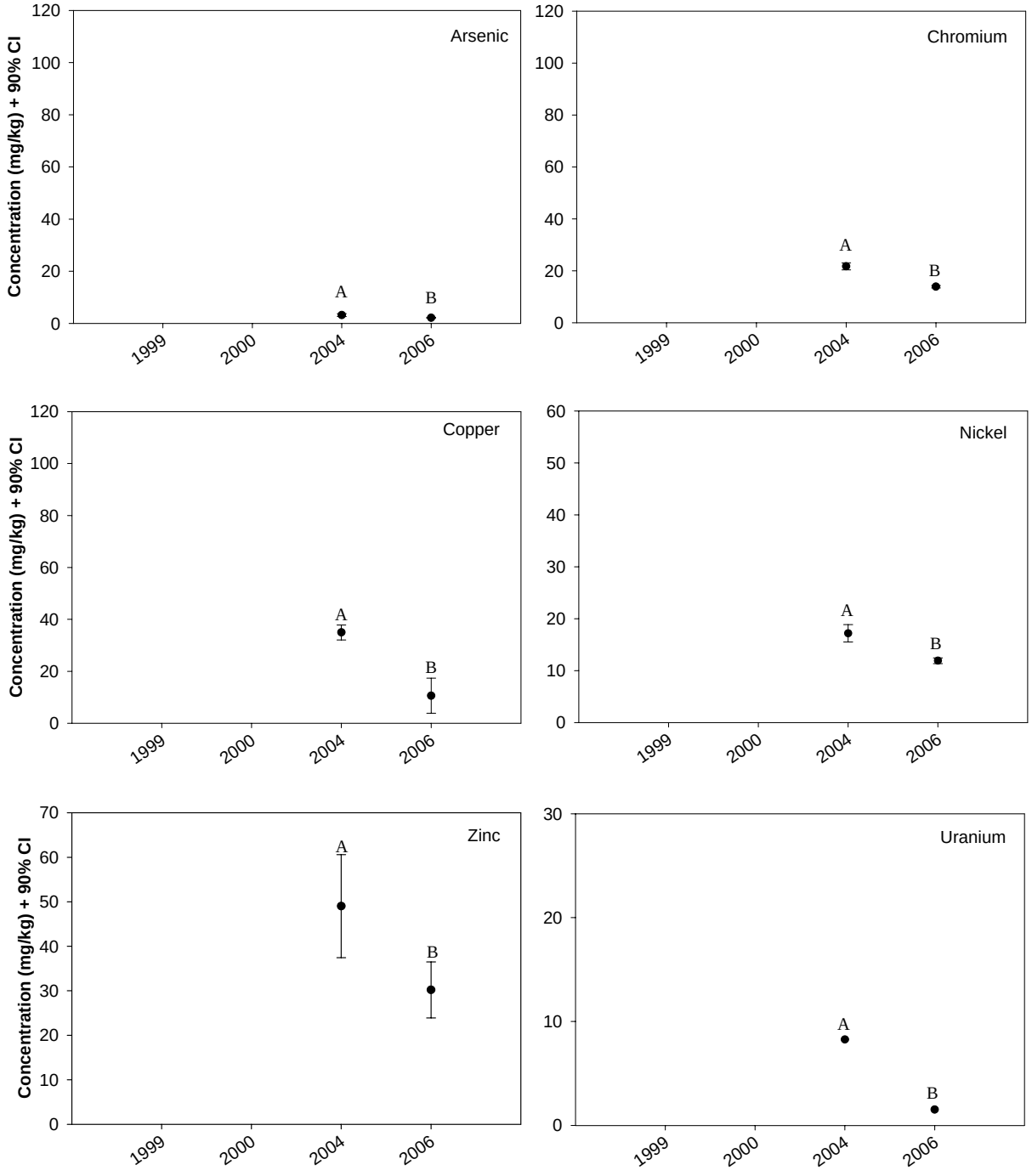


Figure 4.20 Mean sediment concentrations for selected metals at the Jericho River monitoring station in 2004 and 2006. Letters represent statistical differences among years at p=0.05.

Arsenic

High arsenic levels recorded at control lakes were temporally variable and above the ISQG (5.9 mg/kg). Mean sediment arsenic concentrations at the Control Lake monitoring station were significantly higher in 2006 (77.9 mg/kg) and 1999 (74.0 mg/kg) than during 2000 (45.7 mg/kg, $p<0.009$) and 2004 (7.9 mg/kg, $p<0.001$). Moreover, at the Control Lake station, arsenic concentrations in sediment were significantly lower in 2004 compared to 2000 ($p<0.001$). At the other control station, Cigar Lake, mean sediment arsenic concentrations were significantly lower in 2004 (4.1 mg/kg) than during 2006 (24.9 mg/kg, $p=0.003$, t-statistic=6.29). Data at control lakes showed that sediment arsenic concentrations were temporally variable. Arsenic levels in sediment can be naturally higher than guideline values.

Sediment arsenic concentrations at Control Lake, Cigar Lake, Lake C1, Lake C3, Carat Lake, and Jericho Lake stations were significantly higher in 2006 compared to baseline (1999 to 2004). At the Lake C3 station mean sediment arsenic concentrations in 2006 were 95.9 mg/kg compared to 9.2 mg/kg (1999), 4.7 mg/kg (2000), and 5.4 mg/kg (2004) ($p<0.007$). At the Lake C1 station, mean sediment arsenic concentrations were significantly higher in 2006 (21.0 mg/kg) than in 2000 (12.3 mg/kg) and in 2004 (10.1 mg/kg) ($p<0.009$). At the Carat Lake station, mean sediment arsenic concentrations were significantly higher in 2006 (73.7 mg/kg) than during 2000 (27.0 mg/kg, $p<0.009$) and 2004 (9.8 mg/kg) ($p<0.001$). Sediment was not collected at the Carat Lake and Lake C1 stations in 1999 so it was not possible to ascertain whether, like the control stations, sediment arsenic concentration would have been high during that period. At the Jericho Lake station, mean sediment arsenic concentration was significantly higher in 2006 (13.4 mg/kg) than during 2000 (3.3 mg/kg) and 2004 (6.5 mg/kg) ($p\leq0.010$). Arsenic concentrations in sediment were relatively low at the Jericho River station and mean sediment arsenic concentrations were significantly higher in 2004 (3.2 mg/kg) than in 2006 (2.1 mg/kg, $p=0.018$, t-statistic=2.97). This is contrary to the pattern for all other monitoring stations, but may be explained by differences in soil composition as this station. The majority of the sediment was comprised of sand in 2006 and sand has a reduced capacity to bind arsenic compared to silt or clay.

The reason for the difference between 2006 arsenic levels and baseline levels in most lakes is difficult to ascertain. One could conclude potential mine effects, but this is does not explain the increase in sediment arsenic levels at both control stations, nor does it account for the short time frame of the effect. The mine became operational in winter 2006 and PKCA discharge in 2006 did not occur until after sediment chemistry samples were collected. Within lake factors are known to influence the flux of arsenic from the lake water to/from the sediment. These processes could provide an alternate explanation for the results.

Chromium

Chromium concentrations at the Control Lake station historically have been high and were above ISQG (37.3 mg/kg). Mean sediment chromium concentrations at the Control Lake station were significantly higher in 2000 (70.0 mg/kg) than during 1999 (53.3 mg/kg), 2004 (51.8 mg/kg) and 2006 (51.7 mg/kg) ($p<0.001$). At the Cigar Lake station, mean sediment chromium concentrations were investigated in 2004 and 2006; concentrations were not significantly different in 2004 (45.1 mg/kg) compared to 2006 (46.2 mg/kg) ($p=0.548$, t-statistic=0.63).

Changes at other monitored stations were consistent with year to year changes in concentrations found at the Control Lake station. At the Lake C3 station mean sediment chromium concentrations were significantly higher in 2000 (50.7 mg/kg) than in 1999 (44.3 mg/kg), 2006 (42.9 mg/kg) and 2004 (37.9 mg/kg) ($p<0.020$); chromium concentrations were significantly lower in 2004 compared to 2006 and 1999 ($p<0.009$). Similarly, at the Carat Lake station, mean sediment chromium concentrations were significantly higher in 2000 (46.3 mg/kg) and 2006 (43.0 mg/kg) than 2004 (38.6 mg/kg) ($p<0.030$). At the Lake C1 station mean sediment chromium concentrations were significantly higher in 2000 (46.3 mg/kg) than during 2004 (31.8 mg/kg) and 2006 (33.4 mg/kg) ($p<0.001$). At the Jericho Lake station, mean sediment chromium concentrations were not significantly different between 2000 (34.0 mg/kg), 2004 (32.2 mg/kg) and 2006 (35.6 mg/kg) ($p>0.200$). Conversely, mean sediment chromium concentrations at the far-field Jericho River monitoring station were significantly higher in 2004 (21.7 mg/kg) compared to 2006 (13.9 mg/kg) ($p<0.001$, t-statistic=9.03). These data indicated that chromium sediment concentrations varied spatially, but did not exhibit temporal trends.

Copper

Similar to chromium, the concentration of copper in sediment at the control stations was high historically (above ISQG of 35.7 mg/kg) and temporally variable. Mean sediment copper concentrations at the Control Lake station were significantly higher in 2000 (104.0 mg/kg) than in 2006 (89.8 mg/kg), 1999 (89.7 mg/kg), and 2004 (72.94 mg/kg) ($p<0.008$). Copper concentrations in sediment at the Control Lake station were also significantly lower in 2004 than all other years ($p<0.002$). At the Cigar Lake control station mean sediment copper concentrations were significantly higher in 2006 (96.0 mg/kg) than in 2004 (86.5 mg/kg) ($p=0.009$, t-statistic=3.43). In general, sediment mean copper concentrations at the two control stations were higher than ISQGs in all years where data were collected.

Like the control stations, mean sediment copper concentrations at the Lake C1 station were significantly higher in 2000 (93.0 mg/kg) than in 2006 (81.0 mg/kg) and 2004 (84.0 mg/kg) ($p<0.020$). Conversely,

mean sediment copper concentrations at the Lake C3 station were significantly higher in 2006 (74.2 mg/kg) than in 2000 (66.3 mg/kg), 2004 (63.9 mg/kg), and 1999 (61.0 mg/kg) ($p<0.020$) and concentrations were significantly lower in 2004 than all other years ($p<0.020$). Mean sediment copper concentrations at the Carat Lake station were also significantly higher in 2006 (76.4 mg/kg) than in 2004 (65.7 mg/kg) ($p=0.004$) but not significantly different than 2000 (69.3 mg/kg) ($p=0.083$). Sediment copper concentrations at these three stations were higher than ISQGs in all years.

At the Jericho Lake station, mean sediment copper concentrations were significantly lower in 2000 (60.3 mg/kg) than in 2006 (81.2 mg/kg) and 2004 (86.6 mg/kg) ($p\leq0.005$), whereas mean concentrations in 2004 were not significantly different from 2006 ($p=0.480$); concentrations were above ISQG in all years. At the Jericho River station, mean sediment copper concentrations were significantly higher in 2004 (35.0 mg/kg) compared to 2006 (10.6 mg/kg) ($p=0.001$, t-statistic=5.46). Concentrations at the Jericho River station were below the ISQG in both 2004 and 2006; this station was the only one where sediment had concentrations of copper below the guideline. This finding is likely due to the difference in sediment composition at this station (mostly sand compared to silt/clay at the other stations).

Nickel

Nickel concentrations at the control stations were temporally variable. Mean sediment nickel concentrations at the Control Lake station were significantly higher in 1999 (42.0 mg/kg) than during 2004 (37.0 mg/kg), 2000 (34.3 mg/kg) and 2006 (34.0 mg/kg) ($p<0.05$). Mean sediment nickel concentrations at the Cigar Lake station were significantly higher in 2006 (36.5 mg/kg) than in 2004 (30.0 mg/kg) ($p<0.001$, t-statistic=7.33). Overall, sediment nickel concentrations were between 30.0 to 42.0 mg/kg at both control stations.

Mean sediment nickel concentrations at the Lake C3 station were significantly higher in 2004 (29.4 mg/kg) than during 2000 (26.0 mg/kg), whereas concentrations in 1999 (28.3 mg/kg) and 2006 (28.6 mg/kg) were not statistically different from each other or than in 2000 or 2004. There was no temporal pattern in sediment nickel concentrations at the Lake C3 monitoring station. Mean sediment nickel concentrations at the Lake C1 monitoring station were significantly higher in 2006 (26.8 mg/kg) than in 2004 (22.3 mg/kg) and 2000 (24.0 mg/kg), although mean concentrations were lower than at both control stations. Although mean sediment nickel concentrations at the Carat Lake station were significantly higher in 2006 (32.0 mg/kg) and 2000 (31.7 mg/kg) than during 2004 (26.1 mg/kg) ($p<0.040$), there was not a significant difference in concentrations in 2000 compared to 2006.

At the Jericho Lake station mean concentrations were not significantly different between 2000 (20.7 mg/kg), 2004 (21.3 mg/kg) and 2006 (23.6 mg/kg) ($p>0.140$). Mean sediment nickel concentrations were significantly higher in 2004 (17.2 mg/kg) than in 2006 (11.9 mg/kg) ($p=0.001$, t-statistic=4.90).

In summary, there was no evidence that nickel concentrations at monitored stations were outside the range of baseline conditions and there were no temporal trends in the data.

Zinc

Mean sediment zinc concentrations at the Control Lake station were not significantly different between 1999 (76.0 mg/kg), 2000 (95.7 mg/kg), 2004 (92.0 mg/kg), and 2006 (95.9 mg/kg). However, mean sediment zinc concentrations at the Cigar Lake control station were significantly higher in 2006 (90.7 mg/kg) than in 2004 (76.1 mg/kg) ($p<0.041$, t-statistic=2.42).

Zinc concentrations in sediment at other monitored stations were not above baseline levels. Mean sediment zinc concentrations at the Lake C3 station were not significantly different between 1999 (77.0 mg/kg), 2000 (73.3 mg/kg), 2004 (75.7 mg/kg), and 2006 (93.6 mg/kg). Mean sediment zinc concentrations at the Lake C1 monitoring station were significantly different between 2000 (75.0 mg/kg) and 2004 (57.6 mg/kg) ($p=0.034$), whereas concentrations in 2006 (69.0 mg/kg) were not statistically different than in 2000 or 2004. Mean sediment zinc concentrations at the Carat Lake station were significantly higher in 2000 (106.0 mg/kg) than 2006 (90.2 mg/kg) ($p=0.028$) and 2004 (63.5 mg/kg) ($p<0.001$). Concentrations in 2006 were also significantly higher than in 2004 ($p<0.001$).

At the Jericho Lake station, mean sediment zinc concentrations were significantly higher in 2006 (84.1 mg/kg) than 2004 (61.7 mg/kg) and 2000 (64.3 mg/kg) ($p\leq0.010$), whereas mean concentrations in 2004 were not significantly different than in 2000 ($p=0.876$).

In summary, there was little evidence that sediment zinc concentrations at most monitored stations were outside the range of baseline conditions and there were no temporal trends in the data. The only exception was higher concentrations in Jericho Lake in 2006 compared to other years. The result was not consistent with trends in near-field stations such as Lake C3, lake C1, and Carat Lake. Therefore, the Jericho Lake results were likely reflected annual variability in sediment zinc concentrations rather than a temporal trend.

Uranium

Uranium concentrations at the control monitoring stations are relatively low based on two years of data (2004 and 2006). Mean uranium concentrations of sediment at the Control Lake station were not significantly different between 2004 (14.2 mg/kg) and 2006 (14.8 mg/kg) ($p=0.373$, t-statistic=0.94). Mean uranium concentrations of sediment at the Cigar Lake station were significantly higher in 2004 (18.7 mg/kg) than in 2006 (16.5 mg/kg) ($p=0.003$, t-statistic=4.30).

Mean sediment uranium concentrations at all other stations were consistent with control station results. In addition, there was no consistent temporal pattern between 2004 and 2006. Mean uranium concentrations of sediment at the Lake C3 station were significantly lower in 2004 (12.4 mg/kg) than in 2006 (13.0 mg/kg) ($p=0.021$, t-statistic=2.88). Mean uranium concentrations of sediment at the Lake C1 monitoring station were significantly higher in 2004 (22.6 mg/kg) than in 2006 (17.9 mg/kg) ($p=0.022$, t-statistic=2.82). Mean uranium concentrations of sediment at the Carat Lake station were not significantly different in 2004 (11.4 mg/kg) compared to 2006 (10.7 mg/kg, $p=0.363$) (t-statistic=0.964). At the Jericho Lake station, mean uranium concentrations of sediment were not significantly different in 2004 (14.3 mg/kg) compared to 2006 (13.1 mg/kg) ($p=0.066$, t-statistic=2.13). At the Jericho River station, mean uranium concentrations in 2004 (8.3 mg/kg) were significantly higher than in 2006 (1.52 mg/kg) ($p<0.001$, t-statistic=17.27).

4.2.4 QAQC

Quality assurance and quality control were done on two sediment chemistry replicates (JER06 and JER11) for proficiencies in laboratory analyses (Appendix C2).

Analytical precision of laboratories was within acceptable limits. Median percent error of comparisons was <6%. Maximum percent error values for each comparison were 50% for boron (JER11) and 25% for silver (JER06). In general percent error values remained below 10%.

The power of statistical analyses of the 2006 data is presented in Table 4.8.

Table 4.8 Power analysis results for sediment chemistry, 2006 Jericho AEM Program.

Parameter	No. Replicates	Standard Deviation	No. of Comparisons [a]	Sample size for Power ≥ 0.8	Actual Power of Test [b]
Arsenic	5	9.33	7	2	1.000
Chromium	5	1.7	7	2	1.000
Copper	5	4.4	7	2	1.000
Nickel	5	1.2	7	2	1.000
Zinc	5	6.2	7	2	1.000
Uranium	5	1.04	7	2	1.000

[a] All waterbodies combined for each parameter
[b] Significance level set at $\alpha = 0.05$ and power = 0.8

4.3 LAKE PROFILE PARAMETERS

Study area lakes were sampled for temperature and dissolved oxygen during July and August 2006. Raw data are presented in Appendix D.

In summer 2006, surface dissolved oxygen levels at all stations ranged from 9.5 mg/L to 10.1 mg/L (Figure 4.21). With the exception of Jericho Lake and Lake C3 oxygen levels increased with depth. Dissolved oxygen levels close to the bottom ranged from 8.1 to 12.1 mg/L. Temperatures exhibited high variation, ranging from 18.2°C at the surface to 5.8°C close to the bottom. All lakes were stratified with most lakes displaying a strong thermocline between 10 m and 13 m. Carat Lake was the exception; it exhibited a weak thermocline.

Summer data from previous years indicated that monitored lakes tended to show weak thermoclines, which differed from the 2006 findings (Figures 4.22 to 4.25). This may have been due to the time of year data were collected (i.e., July and August versus September) or annual differences in study area weather patterns. In late July 2000, Carat and Control Lakes were thermally stratified and thermoclines occurred from 7 to 12 m. Data collected from study area lakes between in late July 2004 displayed similar patterns to those recorded in 2006 with slight variations in thermocline depth. Profile data collected between 8 and 10 July 2005 did not exhibit stratification except for a weak thermocline in Jericho Lake. Profile data collected at a later date (11 to 14 August) during 2005 showed evidence that most study area lakes had started to undergo mixing; all except Control Lake and Lake C3.

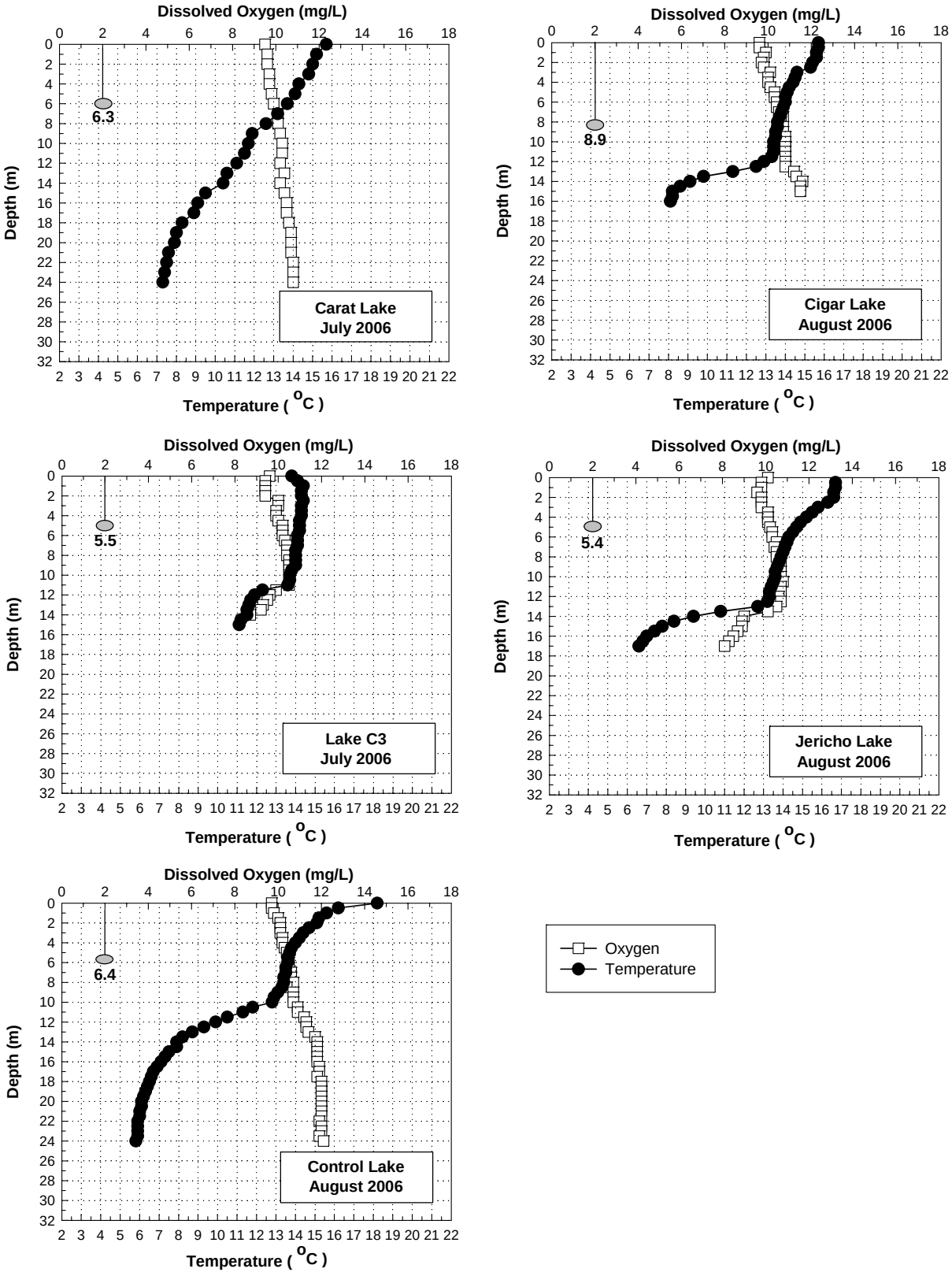


Figure 4.21 Dissolved oxygen and temperature profiles at monitoring stations, 2006 Jericho AEM Program.

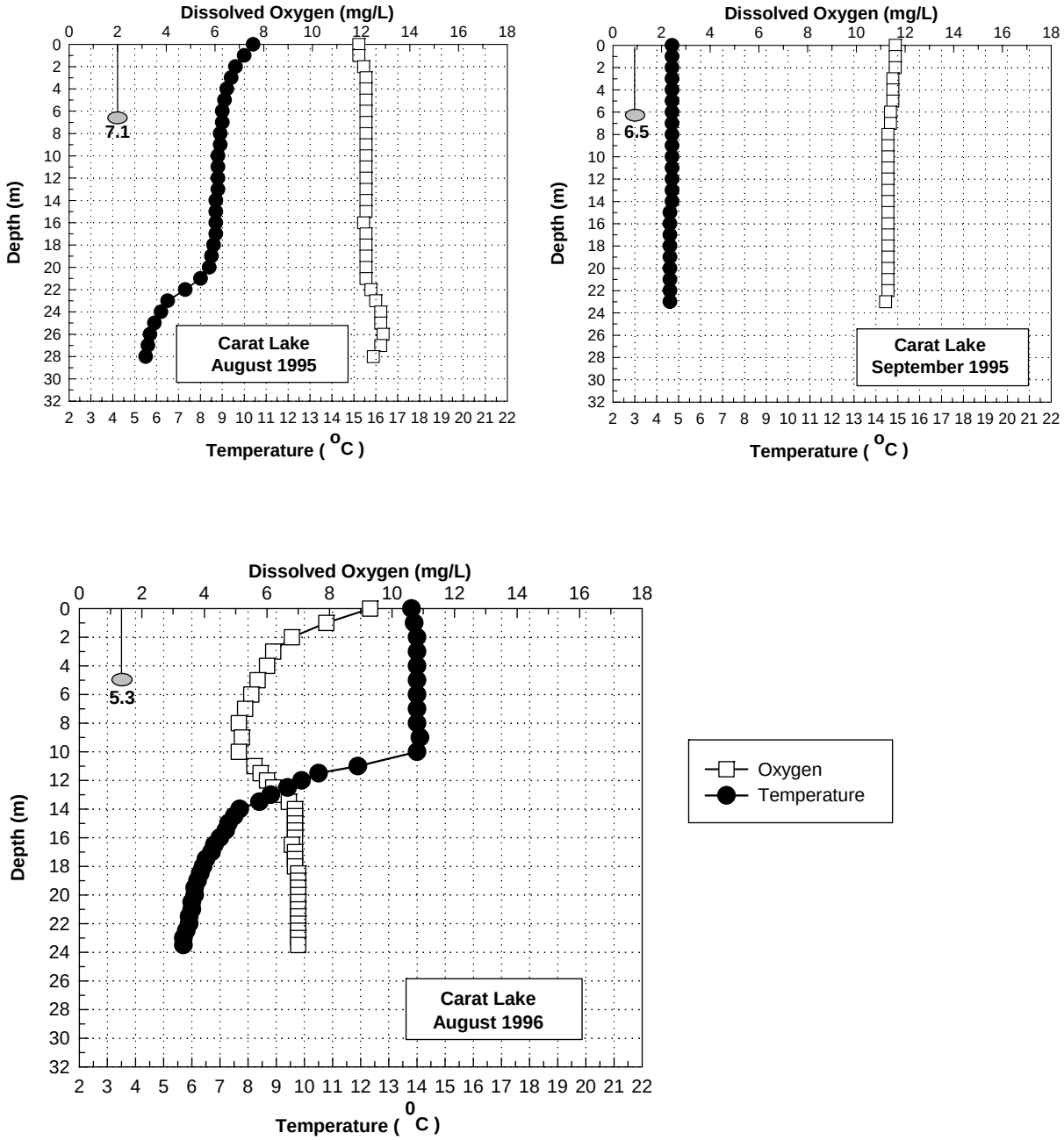


Figure 4.22 Dissolved oxygen and temperature profiles at stations monitored in 1995 and 1996, Jericho baseline studies.

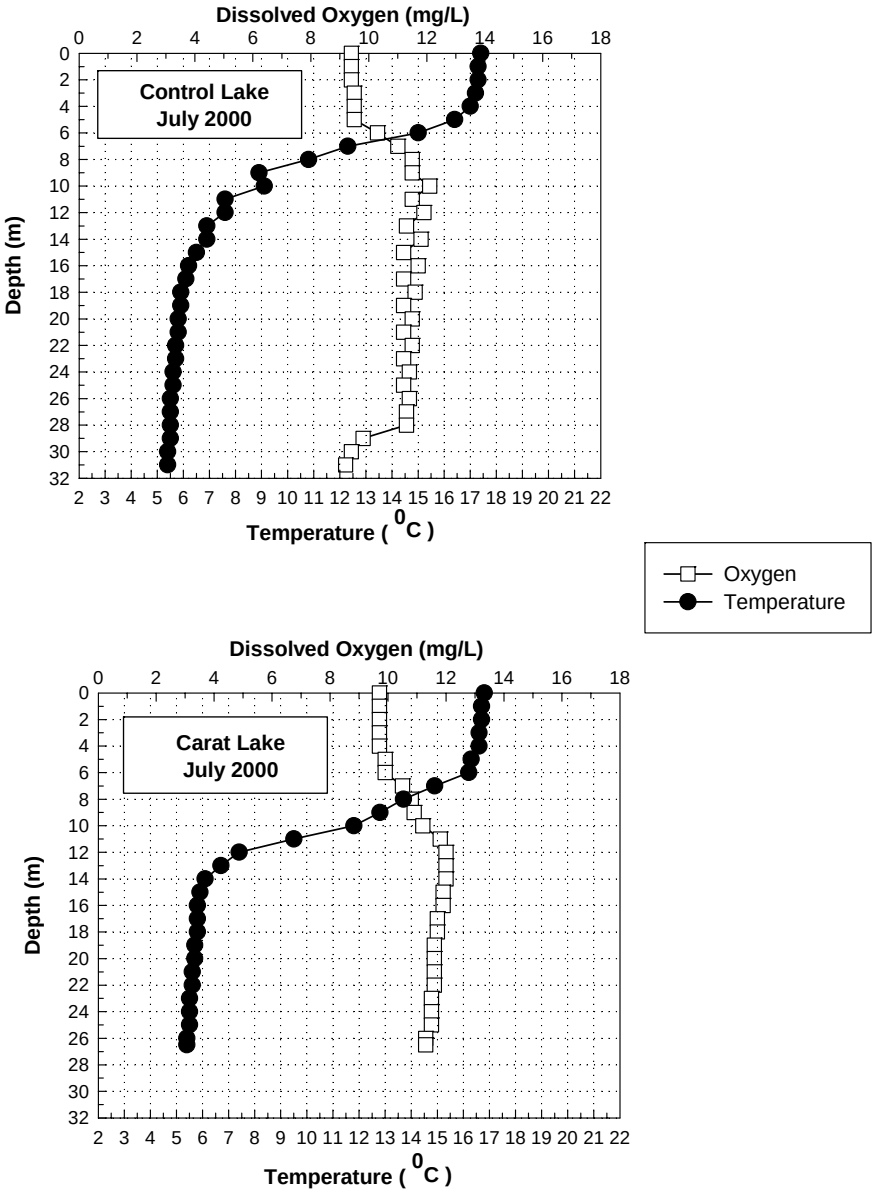


Figure 4.23 Dissolved oxygen and temperature profiles at stations monitored in 2000, Jericho baseline studies.

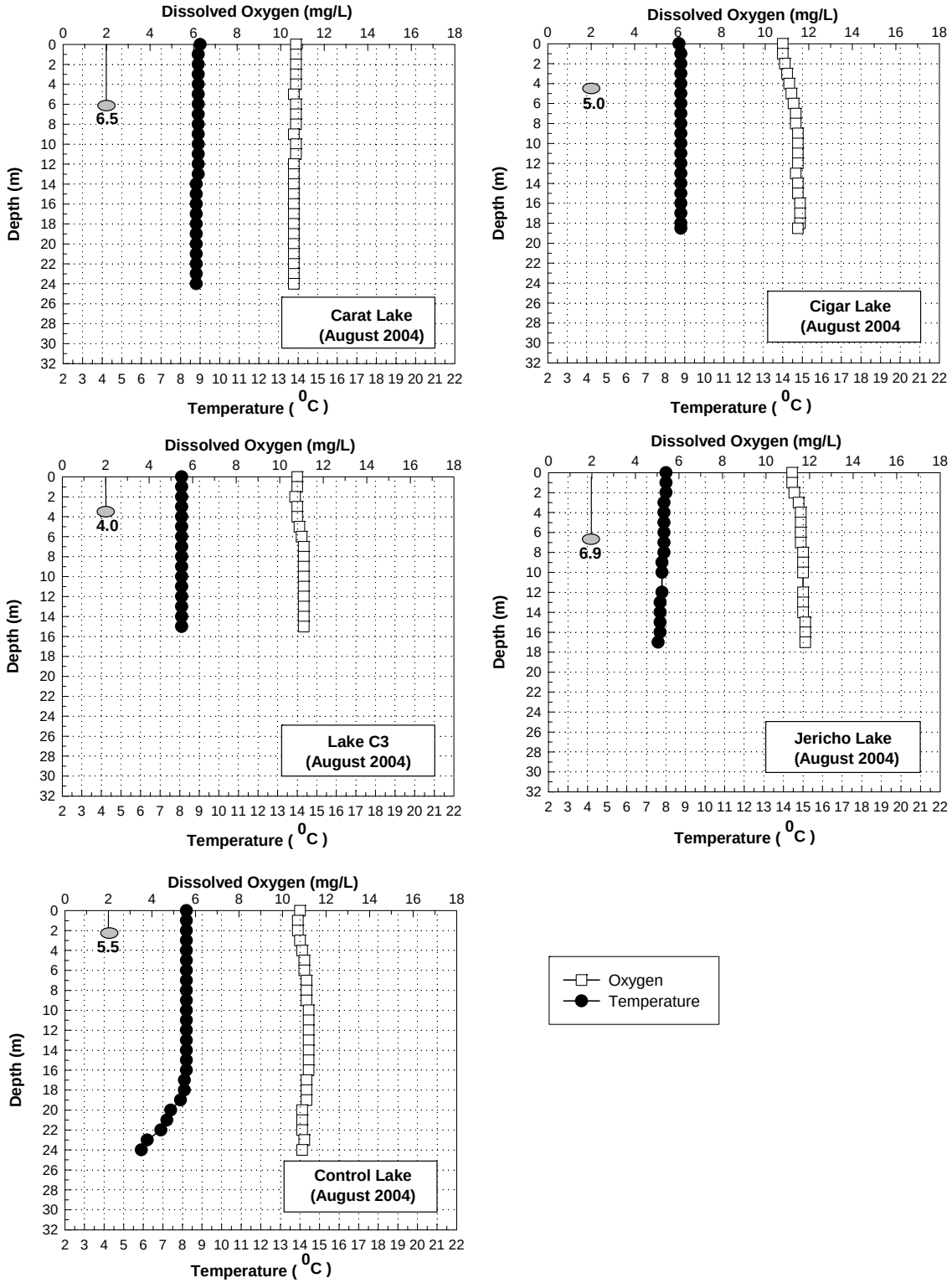


Figure 4.24 Dissolved oxygen and temperature profiles at monitoring stations, 2004 Jericho AEM Program.

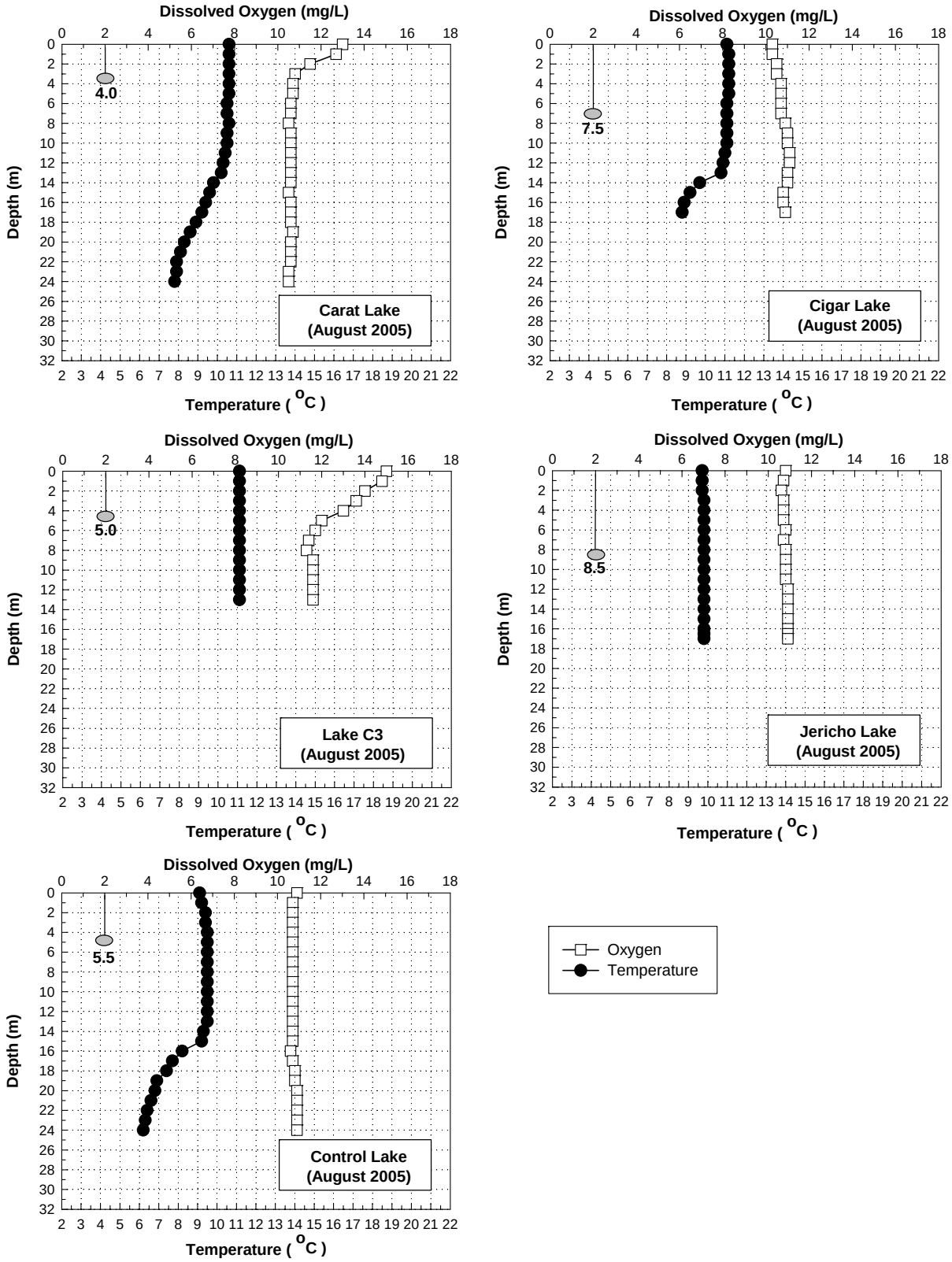


Figure 4.25 Dissolved oxygen and temperature profiles at monitoring stations, 2005 AEM Program.

Secchi depths in summer 2006 at five monitoring stations ranged from 5.4 m to 8.9 m (Figure 4.21). Secchi depths were similar in Lake C3 and Jericho Lake (5.5 and 5.4 m respectively) and they were similar at Carat and Control Lakes (6.3 and 6.4 m respectively). Cigar Lake exhibited the deepest secchi depth (8.9 m).

Secchi depths at monitored stations exhibited some variation between years. At Carat Lake secchi depths varied from 4.0 m in August 2005 to 7.1 m in August 1995. Readings taken in Control Lake varied from 5.0 to 8.3 m in July 2005 and July 2004, respectively. Similarly, readings in Lake C3 varied from 4.4 m in July 2005 to 6.4 m in July 2004. In Cigar Lake lowest readings were recorded in August 2004 whereas highest were recorded in July of that same year. Lowest values in Jericho Lake were recorded in July 2004 (4.0 m) with highest values recorded in August 2005 (8.5 m).

Winter dissolved oxygen and temperature profiles were collected at four lakes by Tahera in April 2005 (Figure 4.26). Profiles showed that oxygen remained above 6 mg/L in most waterbodies except Carat Lake. Dissolved oxygen fell below 6 mg/L within 2 m of the lake bottom of Carat Lake.

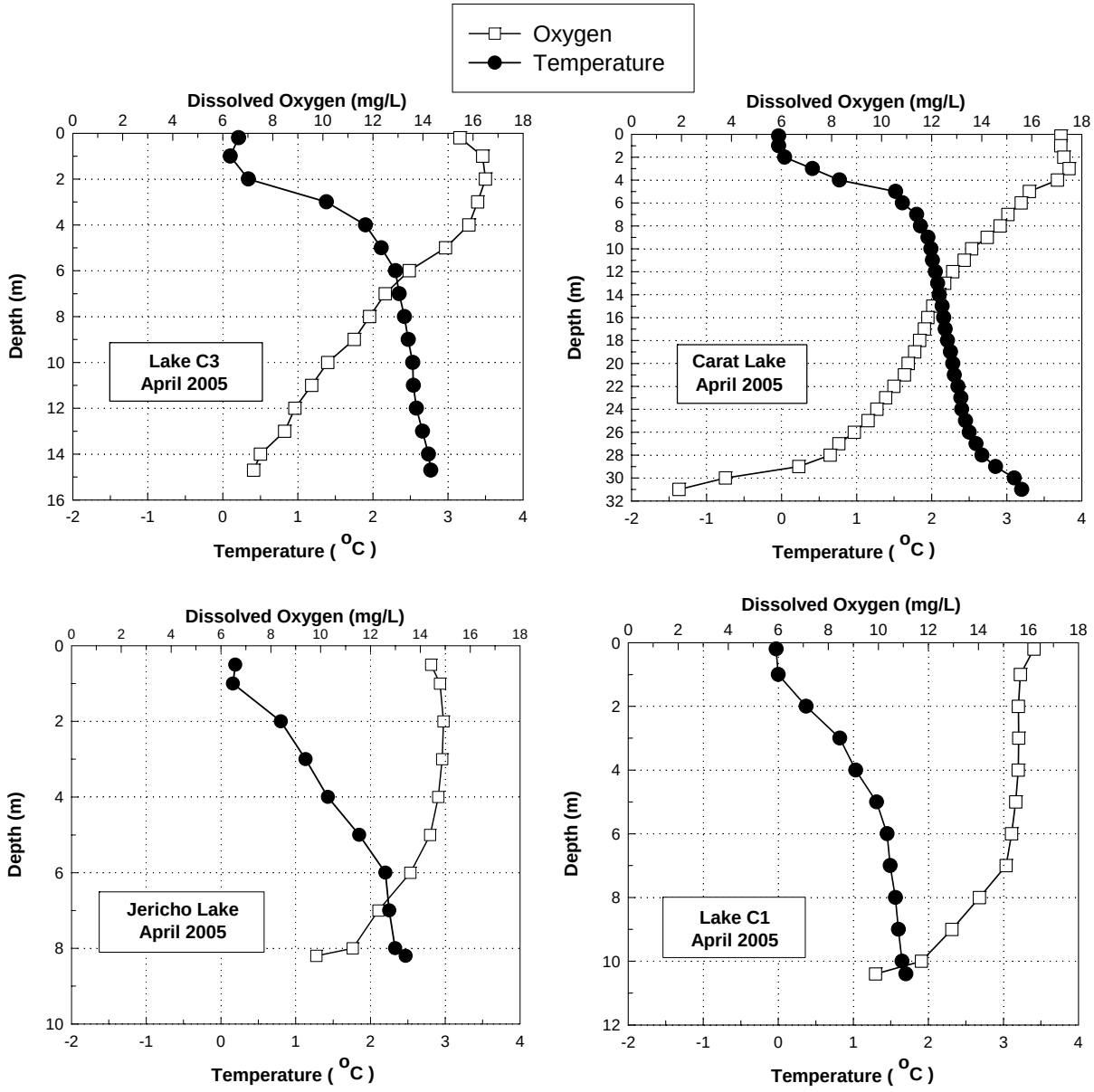


Figure 4.26 Dissolved oxygen and temperature profiles at stations monitored in April 2005 by Tahera Diamond Corporation, Jericho Study Area.

4.4 SEDIMENT DEPOSITION

4.4.1 Comparisons among Stations

Summary information is presented in Table 4.9 and raw data are presented in Appendix E. Data were not available for Station JER20 because the sediment deposition trap was destroyed by suspected ice movement. The days at large for sediment deposition traps ranged from 314 to 318 days.

Table 4.9 Sediment deposition data at stations monitored between 2005 and 2006, Jericho AEM Program.

Station	Location	Days at Large	Total Weight (mg)	Ashed Weight (mg)	Percent Ashed Weight	Sedimentation Rate (mg/cm^2/day)
JER23	Control Lake	314	33.1	24.3	73.3	7.91×10^{-4}
JER25	Cigar Lake	318	15.2	9.1	59.7	2.98×10^{-4}
JER20	Lake C3 at Stream C3[a]					
JER05	Lake C3 outlet	317	25.5	19.0	74.4	6.34×10^{-4}
JER19	Carat Lake at Stream C1	314	65.4	54.8	83.8	1.84×10^{-3}
JER21	Carat Lake west of causeway	314	54.6	45.7	83.7	1.54×10^{-3}
JER22	Carat Lake east of causeway	314	112.0	96.5	86.1	3.26×10^{-3}
JER07	Carat Lake outlet	318	47.5	36.9	77.6	1.24×10^{-3}
JER26	Jericho Lake	317	27.1	16.4	60.6	5.34×10^{-4}

[a] Trap destroyed by ice; no data available.

Total sediment weights varied among the stations with the lowest occurring at Cigar Lake (15.2 mg) and the highest occurring at the station JER22 located immediately east of the Water Intake Causeway on Carat Lake (112.0 mg). All four stations in Carat Lake demonstrated higher total sediment weights than stations in each of the remaining lakes. Ashed weight, which represented the nonorganic component of total sediment weight, showed the same spatial pattern as total sediment weight.

Percent ashed weight varied among stations. Percent ashed weight was lowest at Cigar Lake (59.7%) and highest at station JER22 located immediately east of the Water Intake Causeway on Carat Lake (96.5%). As for, total sediment weight and ashed weight, percent ashed weight was highest at the four stations in Carat Lake (>77%) compared to stations in each of the remaining lakes.

Sediment deposition rates at all stations were low ($<3.3 \times 10^{-3}$ mg/cm^2/day). As expected deposition rates were highest at stations with highest total sediment weights.

The data indicate sediment deposition was higher in Carat Lake compared to other monitored waterbodies. The highest value occurred at station JER22 immediately east of the Water Intake Causeway on Carat Lake. Measured parameters for Lake C3 and Jericho Lake were similar to values at the control lakes.

4.4.2 Historical Trends

Sediment deposition data collected from stations monitored for the 2004 to 2005 period were available for comparison to data collected during the 2005-2006 period (Figure 4.27). The results indicate that total sediment weight and sediment deposition rates at all stations were much higher in 2005 compared to 2006. With the exception of the very high values in Control Lake, the spatial pattern was consistent among years. Carat Lake stations (JER19 and JER07) exhibited elevated values compared to stations in other lakes.

The percent ashed weight was generally similar among years. Of interest is the apparent positive relationship between total sediment weight and percent ashed weight. This relationship was statistically significant (Spearman's rho = 0.648; p=0.043, *n*=10). This suggests that total sediment weight is a good index of deposition of nonorganic sediments (i.e., soils).

4.5 PHYTOPLANKTON

Between-station differences in phytoplankton richness, Simpson's Index of Diversity values, total density, total biovolume, and chlorophyll *a* concentrations for samples collected in 2006 were investigated using ANOVA (One-way Analysis of Variance). A summary of means, standard deviations, maximums, minimums, and statistical significance is found in Table 4.10. Raw data are presented in Appendix F. For the 2006 data, Levene's test for homogeneity of variances identified that variances were not equal between stations for chlorophyll *a* concentrations (Levene's statistic=11.29, $p<0.001$) and total density (Levene's statistic=3.68, p=0.015). As such, the Welch statistic and Dunnett T3 post-hoc tests were used in place of the F-statistic and Tukey's post-hoc tests for mean comparisons among stations for these parameters. All other parameters did not have significantly different variances; therefore, the F-statistic and Tukey's post-hoc tests were used for comparisons.

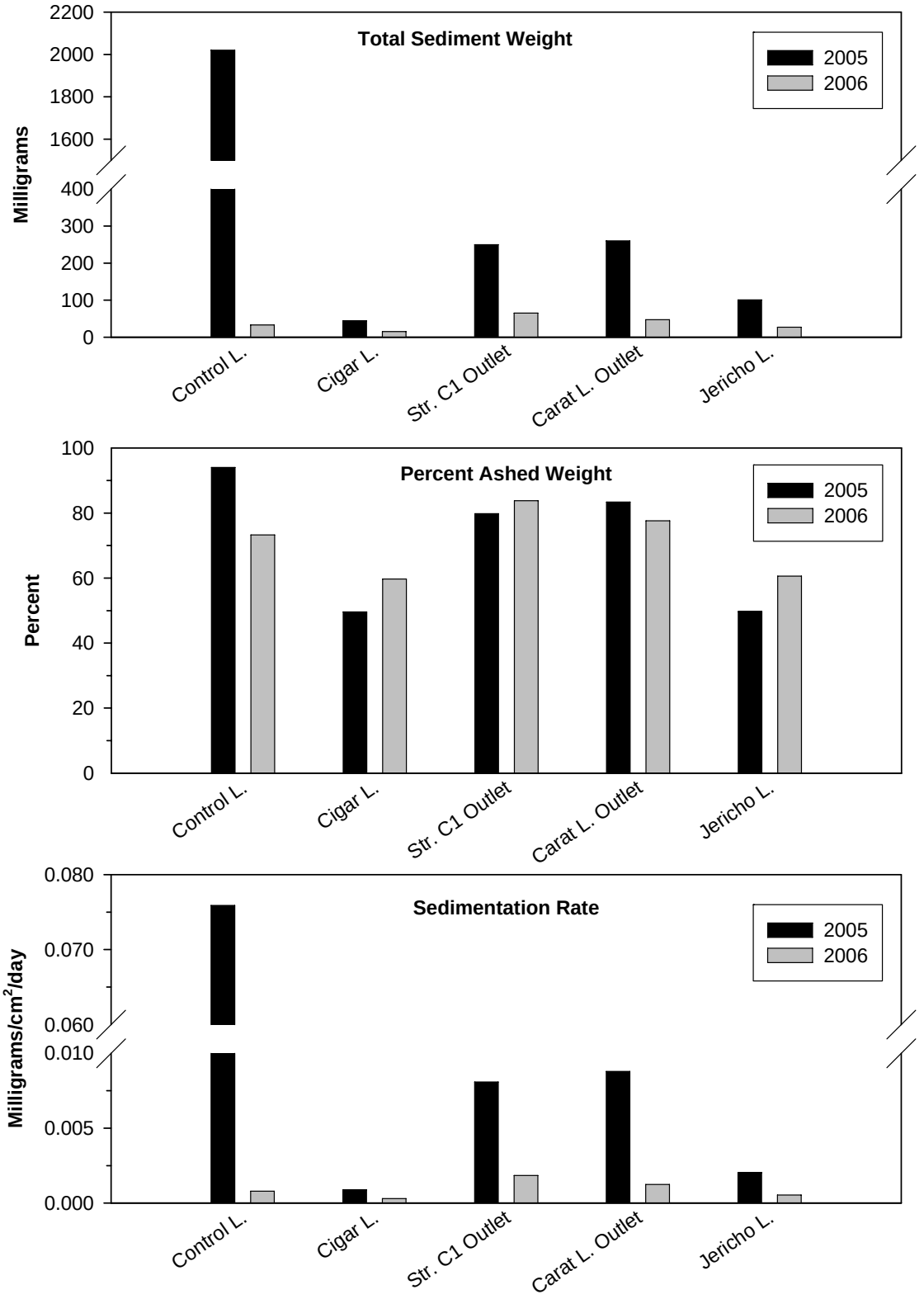


Figure 4.27 Comparisons of selected sediment deposition parameters at stations monitored in 2005 and 2006, Jericho AEM Program.

Table 4.10 Phytoplankton parameter summary metrics at monitored stations, 2006 Jericho AEM Program.

Parameter	Lake	Station	Sample Size	Mean	Standard Deviation	Minimum	Maximum	Significance[a]
Richness (No. taxa)	Cigar	JER11	7	55.4	4.9	49	64	A
	Control	JER10	7	60.9	7.2	55	74	A
	C3	JER04	7	60.6	5.4	53	67	A
	Carat	JER06	7	54.9	3.6	50	59	A
	Jericho	JER08	7	63.4	10.3	56	86	A
Diversity (Simpson's D)	Cigar	JER11	7	0.54	0.07	0.39	0.61	A
	Control	JER10	7	0.45	0.08	0.35	0.53	A
	C3	JER04	7	0.41	0.15	0.16	0.62	A
	Carat	JER06	7	0.55	0.04	0.49	0.61	A
	Jericho	JER08	7	0.47	0.17	0.25	0.76	A
Total Density (cells/mL)	Cigar	JER11	7	9,033.7	1,869.1	6,959.6	12,008.6	A
	Control	JER10	7	7,081.9	1,328.9	4,909.8	9,070.2	A
	C3	JER04	7	11,284.9	5,501.6	5,498.5	21,155.2	A
	Carat	JER06	7	7,865.0	1,867.4	4,639.2	9,722.6	A
	Jericho	JER08	7	7,588.7	3,265.2	2,951.3	12,876.2	A
Total Biovolume (μm^3/mL)	Cigar	JER11	7	262,849.8	67,782.8	205,022.3	365,710.9	AB
	Control	JER10	7	223,092.0	51,202.3	157,792.6	287,200.4	B
	C3	JER04	7	351,793.9	98,531.7	222,288.0	461,920.9	A
	Carat	JER06	7	277,951.4	38,497.0	224,592.8	338,163.8	AB
	Jericho	JER08	7	373,928.2	115,598.4	192,774.8	525,403.0	A
Chlorophyll *a* (mg/m^3)	Cigar	JER11	7	1.6	0.6	1.1	2.8	AB
	Control	JER10	7	1.5	1.0	0.7	3.3	AB
	C3	JER04	7	2.5	1.1	1.4	4.0	A
	Carat	JER06	7	4.0	3.4	0.4	8.6	AB
	Jericho	JER08	7	0.9	0.1	0.8	1.1	B

[a] See Section 3.10 for description of statistical methods. Letters represent statistical differences among stations at p=0.05.

4.5.1 Taxa Richness

Mean taxa richness (# of different taxa) in 2006 ranged from 54.9 to 63.4 at all monitoring stations (Figure 4.28). Although the Jericho Lake station had highest mean richness (63.4) followed by the Control Lake (60.9), Lake C3 (60.6), Cigar (55.4), and Carat Lake (54.9) monitoring stations, none of these relationships were statistically significant (F-statistic= 2.16, p=0.09).

In 2005, mean taxa richness ranged from 59.4 to 75.0 at all stations. In addition, the Jericho Lake station had significantly higher mean richness (75.0) than all other stations (Mainstream 2006). The Control Lake station exhibited the next highest mean taxa richness (66.3) and had significantly higher taxa richness than both Lake C3 (53.6) and Carat Lake (57.7). In 2004, mean taxa richness at individual stations demonstrated yearly variability (Mainstream 2005). For example, the mean taxa richness at the Control Lake station (26.5) was the lowest of all stations surveyed in 2004 whereas in 2005 this station had the second highest richness (66.3).

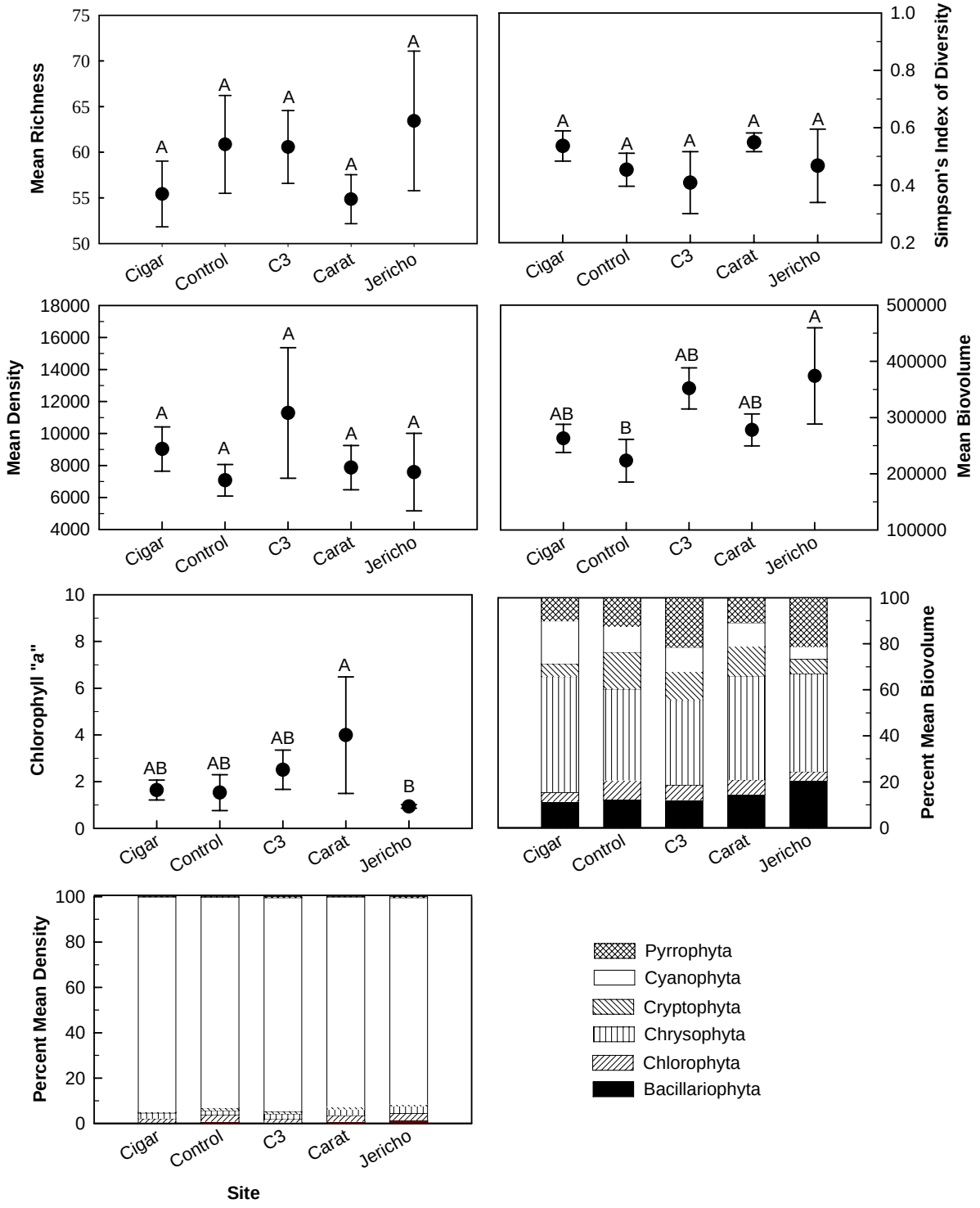


Figure 4.28 Phytoplankton parameter summary metrics monitored in 2006, Jericho AEM Program. Error bars represent 95% confidence intervals. Letter indicates statistical significance at p=0.05. Density units are in number of organisms per milliliter. Biovolume units are in micrometers cubed per milliliter. Chlorophyll "a" units are in milligrams per cubic meter.

4.5.2 Simpson's Index of Diversity

In 2006, mean Simpson's Index of Diversity values ranged from 0.41 to 0.55 and values were not significantly different between monitoring stations (F-statistic=1.89, p=0.137). Highest values were recorded at the Carat Lake station (0.55), followed by the Cigar Lake (0.54), Jericho Lake (0.47), Control Lake (0.45), and Lake C3 (0.41) stations. These diversity values are low compared to other sampling years (2004 and 2005).

The relationships between waterbodies, in terms of Simpson's Index of Diversity, were similar between the 2004, 2005, and 2006 sampling periods; mean Simpson's diversity was high at Cigar Lake, Control Lake, and Lake C3 stations and lower at Jericho Lake. However comparatively low values found at Carat Lake in 2004 and 2005 were not found in 2006. In addition Simpson's Index of Diversity values were similar between years in 2005 and 2004, mean Simpson's D value ranged from 0.51 to 0.75 in 2004 and 0.60 to 0.74 in 2005, but values were lower in 2006 (0.41 to 0.55).

4.5.3 Total Density

Mean total density in 2006 ranged from 7,081.9 organisms/mL to 11,284.9 organisms/mL and values were not significantly different among stations (Welch statistic=1.74, p=0.195). Highest densities occurred at the Lake C3 station (11,284.9 organisms/mL) followed by the Cigar Lake (9033.7 organisms/mL), Carat Lake (7865.0 organisms/mL), Jericho Lake (7588.7 organisms/mL), and Control Lake (7081.9 organisms/mL) stations.

In 2005 densities were lower than in 2006. Specifically, mean total density was significantly higher at the Jericho Lake station (4778.9 organisms/mL) than all other stations (range 2911.1 to 3301.6 organisms/mL). But similar to 2006, there were no statistical differences in mean total densities between the remaining stations. Values in 2006 were also generally higher than in 2004. In 2004, densities at Lake C3 and Control Lake stations were within 10% of 2005 values whereas Carat Lake station were 23% higher. Jericho Lake station density was lower in 2005 than 2005 by 24% whereas Cigar Lake station density was 40% higher in 2005 compared to 2004. High yearly variation in densities at some stations may decrease the ability to detect spatial changes at these stations.

4.5.4 Total Biovolume

Mean biovolume was highest at the Jericho Lake station (373,928.2 μm^3/mL), followed by the Lake C3 (351,793.9 μm^3/mL), Carat Lake (277,951.4 μm^3/mL), Cigar Lake (262,849.8 μm^3/mL), and Control Lake (223,092.0 μm^3/mL) stations. Mean biovolume was significantly higher at the Jericho Lake and the Lake C3 monitoring stations than the Control Lake station ($p=0.01$ and 0.04, respectively) whereas all other relationships were not statistically significant. Mean biovolume comparisons between stations did not follow the same pattern as found for mean density, likely due to differences in community composition between stations.

Similar to 2006, mean biovolume in 2005 was highest at the Jericho Lake station. However, in 2006, the Control Lake station had the lowest mean biovolume whereas in 2005 the Lake C3 station had lowest biovolume values. Interestingly, stations that had the lowest biovolumes in 2004 (Carat and Jericho) had the highest biovolumes in 2005 and 2006, likely due to natural yearly fluctuations in phytoplankton biovolume at each station.

4.5.5 Chlorophyll *a*

In 2006, mean chlorophyll *a* concentrations were highest at the Carat Lake station (4.0 mg/m^3) followed by Lake C3 (2.5 mg/m^3), Cigar Lake (1.6 mg/m^3), Control Lake (1.5 mg/m^3), and Jericho Lake (0.9 mg/m^3) stations. Values at the Carat Lake station were significantly higher than the Jericho Lake station ($p=0.015$), whereas differences between all other stations were not statistically significant.

In 2005, on the other hand, mean values were highest at the Jericho Lake station (0.62 mg/m^3) followed by the Control Lake (0.56 mg/m^3) and Carat Lake (0.44 mg/m^3) stations and after that the Lake C3 (0.38 mg/m^3) and the Cigar Lake (0.32 mg/m^3) stations. In terms of statistical significance, the Jericho Lake station was significantly higher in chlorophyll *a* concentrations than the Cigar Lake and Lake C3 stations. In contrast to 2006, the Cigar Lake station had the lowest chlorophyll *a* concentration in both the 2004 (0.38 mg/m^3) and 2005 (0.32 mg/m^3). In general, patterns between stations were variable on a year to year basis. They did not indicate effects due to mining activity as values at exposure stations were within the range found at control stations.

4.5.6 Dominant Taxa

The phytoplankton data (density and biovolume) were summarized by major taxonomic group. In terms of density, the dominant group in all waterbodies was Cyanophyta. Cyanophyta comprised over 77% of the total density of phytoplankton for all stations.

Chrysophyta was the dominant group in all waterbodies based on biovolume; 34% to 55% of the total biovolume at each station was dominated by Chrysophyta. Bacillariophyta percent of total biovolume ranged from 13% to 35% for all stations and was highest at Cigar Lake (35%) and Carat Lake stations (27%). Chlorophyta percent of total biovolume ranged from 9% to 24% at all stations with the Control Lake station being highest. Pyrrophyta percent of total biovolume ranged from 7% to 17% at all stations. Cyanophyta and Cryptophyta made up less than 10% of the total biovolume at all stations.

Data for 2006 were consistent with 2004 and 2005 data. In all years, Cyanophyta dominated in terms of density and Crysophyta was the dominant group based on biovolume.

4.5.7 Historical Trends

between-year differences in phytoplankton richness, Simpson's Index of Diversity values, total density, total biovolume, and chlorophyll *a* concentrations for samples collected in 2004, 2005, and 2006 were investigated using ANOVA (One-way Analysis of Variance). For the Lake C3 monitoring station, Levene's test for homogeneity of variances identified that variances were not equal between years for chlorophyll *a* concentrations (Levene's statistic=20.9, $p<0.001$) and total density (Levene's statistic=11.5, $p=0.001$). For the Carat Lake monitoring station, Levene's test for homogeneity of variances identified that variances were not equal between years for chlorophyll *a* concentrations (Levene's statistic=16.2, $p<0.001$), total density (Levene's statistic=7.1, $p=0.006$), and Simpson's Index of Diversity (Levene's statistic=5.2, $p=0.018$). For the Cigar Lake monitoring station, Levene's test for homogeneity of variances identified that variances were not equal between years for chlorophyll *a* concentrations (Levene's statistic=5.6, $p=0.013$) and total density (Levene's statistic=12.2, $p<0.001$). For the Control Lake monitoring station, Levene's test for homogeneity of variances identified that variances were not equal between years for chlorophyll *a* concentrations (Levene's statistic=10.1, $p=0.001$). For the Jericho Lake station, Levene's test for homogeneity of variances identified that variances were not equal between years for total density (Levene's statistic=5.0, $p<0.019$). As such, the Welch statistic and Dunnett T3 post-hoc tests were used in place of the F-statistic and Tukey's post-hoc tests for mean comparisons among stations for these parameters. All other parameters did not have significantly different variances; therefore, the F-statistic and Tukey's post-hoc tests were used for comparisons.

Control Lake

Richness values (# of different taxa) were significantly higher in 2005 (66.3) and 2006 (60.9) than in 2004 (27.3) ($p<0.001$) (Figure 4.29). Values were not significantly different between 2005 and 2006. Total phytoplankton Simpson's Index of Diversity values were significantly higher in 2005 (0.73) and 2004 (0.72) than in 2006 (0.45) ($p<0.001$). Values were not significantly different in 2005 and 2004. Phytoplankton total density was significantly higher in 2006 (7081.9 organisms/mL) than in 2004 (3502.4 organisms/mL) and 2005 (3127.9 organisms/mL) ($p=<0.001$). Values in 2005 were not significantly different than in 2004. Total phytoplankton biovolume was not significantly different in 2004 (491,788.3 μm^3/mL), 2005 (413,833.4 μm^3/mL), and 2006 (223,092.0 μm^3/mL) (F-statistic=2.08, p=0.15). Total phytoplankton chlorophyll *a* concentrations were not significantly different in 2006 (1.53 mg/L), 2005 (0.56 mg/L) and 2004 (0.53 mg/L) (Welch statistic=2.87, p=0.107), due to high variability in 2006.

Cyanophyta were the dominant group of phytoplankton in all years, comprising over 70% of the phytoplankton community (based on density). However, from 2004 to 2006 Cyanophyta showed increasing dominance; specifically dominance increased from 74% in 2004, to 77% in 2005, and up to 93% in 2006. While Cyanophyta increased in relative abundance, Chlorophyta and Chrysophyta showed decreases in relative abundance. Chlorophyta decreased in relative abundance from 13% in 2004, to 10% in 2005, and down to 3% in 2006 whereas Chrysophyta decreased in relative abundance from 7% to 8% in 2004 and 2005, respectively to 2% in 2006.

In terms of biovolume, the relatively large bodied chrysophytes comprised the greatest relative biovolume in the phytoplankton community with percent composition values of over 40% in all years. Chlorophytes comprised between 9 to 24% of the relative phytoplankton biovolume, whereas bacillophytes comprised between 12 to 18% of the biovolume. The smaller bodied cyanophytes, which made of over 70% of the phytoplankton density, comprised only 3 to 11% of the biovolume. The larger bodied pyrrophytes comprised between 4 to 13% of the biovolume (whereas they comprised less than 1% of the density in all years) and the chrysophytes comprised 8 to 16% of the biovolume. From 2004 to 2006, chlorophytes decreased in relative biovolume from 20% in 2004 and 24% in 2005 to only 9% in 2006. Similarly, bacillophytes decreased from a relative abundance of 18% in 2004 to 13% in 2005, and 12% in 2006. Crysophytes, on the other hand, increased in relative biovolume from 8% in 2004, 10% in 2005, to 16% in 2006. Similarly, cyanophtyes increased in relative abundance from 3% in 2004 and 4% in 2005 to 11% in 2006 as did pyrrophytes (4% in 2004, 9% in 2005, and 13% in 2006).

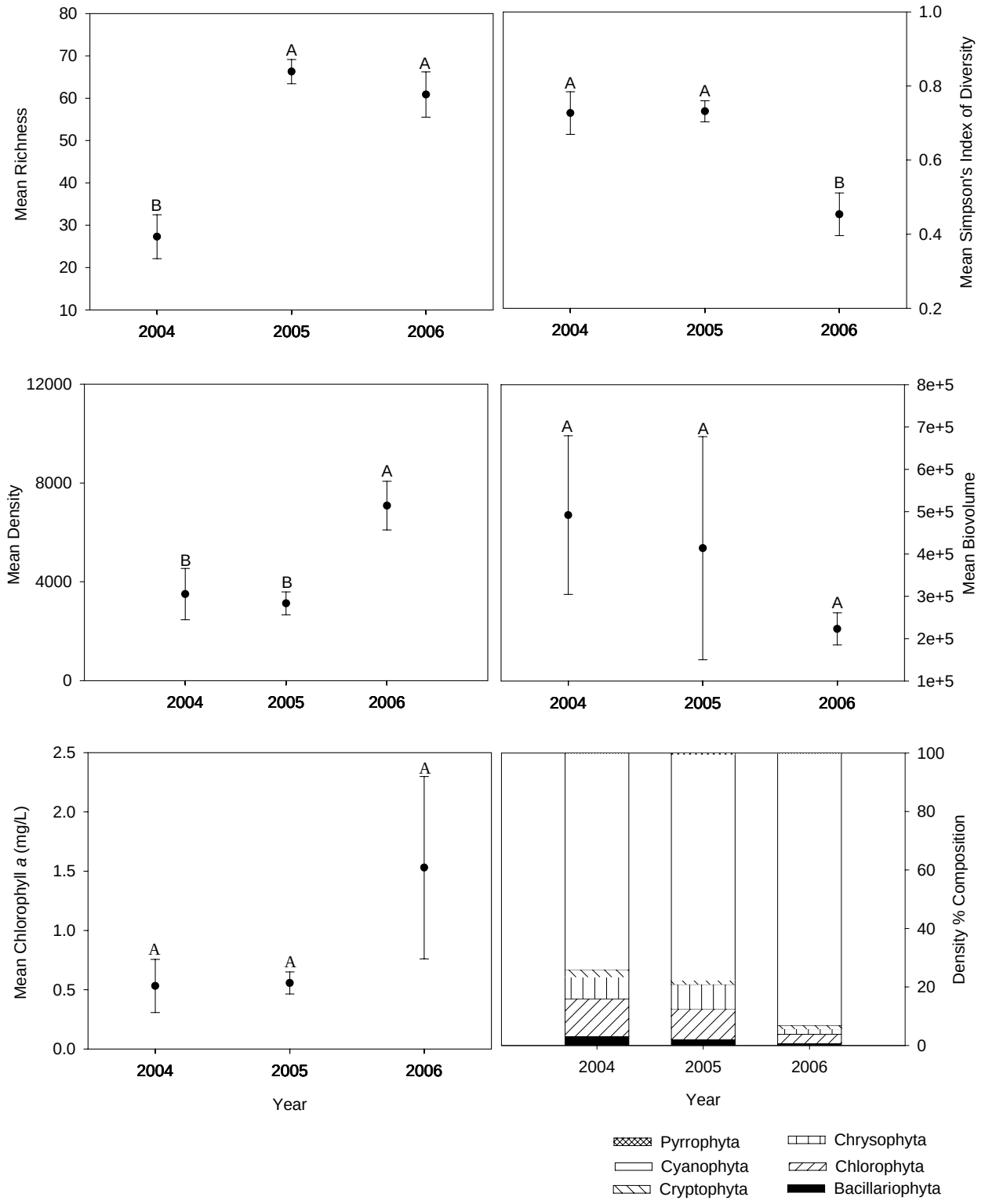


Figure 4.29 Comparison of selected parameters from phytoplankton collected in Control Lake in 2004, 2005, and 2006. Error bars represent 95% confidence intervals. Letter indicates statistical significance at p=0.05. Density units are in No. organisms per milliliter. Biovolume units are in micrometers cubed per milliliter. Chlorophyll "a" units are in milligrams per cubic meter.

Cigar Lake

Total phytoplankton richness (# of different taxa) was not significantly different in 2004 (55.4), 2005 (59.4), and 2006 (55.4) (F-statistic=1.33, p= 0.29; Figure 4.30). Total phytoplankton Simpson's Index of Diversity values were significantly higher in 2005 (0.74) and 2004 (0.73) than in 2006 (0.54) (p=0.001). Values were not significantly different in 2004 and 2005. Phytoplankton total density was significantly higher in 2006 (9033.7 organisms/mL) than in 2005 (3126.2 organisms/mL) and 2004 (1936.7 organisms/mL) (p=0.006 and <0.001, respectively). Mean total density was also significantly higher in 2005 than in 2004 (p<0.001). Total phytoplankton biovolume was significantly higher in 2004 (524,025.8 μm^3/mL) than in 2006 (262,849.8 μm^3/mL), and 2005 (227,140.7 μm^3/mL) (p<0.001). Values were not significantly different in 2005 and 2006. Total phytoplankton chlorophyll *a* concentrations were significantly higher in 2006 (1.64 mg/L) than in 2005 (0.32 mg/L) and 2004 (0.16 mg/L) (p=0.002 and 0.001, respectively). Values in 2005 were not significantly different than in 2004.

Cyanophyta were the dominant group of phytoplankton in all years, comprising over 59% of the phytoplankton community (based on density). However, from 2004 to 2006 Cyanophyta showed increasing dominance; specifically dominance increased from 59% in 2004, to 88% in 2005, and up to 95% in 2006. While Cyanophyta increased in relative abundance, Chrysophyta showed considerable decreases in relative abundance. Specifically, Chrysophyta decreased in relative abundance from 29% in 2004, to 3% in 2005 and 2% in 2006. Chlorophyta also showed a decrease in relative abundance from 8% in 2004, to 6% in 2005, and down to 2% in 2006.

Similar to the Control Lake station, the relatively large bodied chrysophytes comprised the greatest relative biovolume in the phytoplankton community with percent composition values of over 40% in all years. Chlorophytes comprised between 4 to 9% of the relative phytoplankton biovolume, whereas bacillophytes comprised between 6 to 35% of the biovolume. The smaller bodied cyanophytes, which made of over 59% of the phytoplankton density, comprised only 1 to 18% of the phytoplankton biovolume. Larger bodied pyrrophytes comprised between 4 to 10% of the biovolume (they comprised <1% of the density in all years) and the cryptophytes comprised 3 to 6% of the biovolume.

From 2004 to 2006, chrysophytes decreased in relative biovolume from 20% in 2004 and 24% in 2005 to only 9% in 2006. Similarly, bacillophytes decreased from a relative abundance of 18% in 2004 to 13% in 2005, and 12% in 2006. Crysophytes, on the other hand, increased in relative biovolume form 8% in 2004, 10% in 2005, to 16% in 2006. Similarly, cyanophtyes increased in relative abundance from 3% in 2004 and 4% in 2005 to 11% in 2006 as did pyrrophytes (4% in 2004, 9% in 2005, and 13% in 2006).

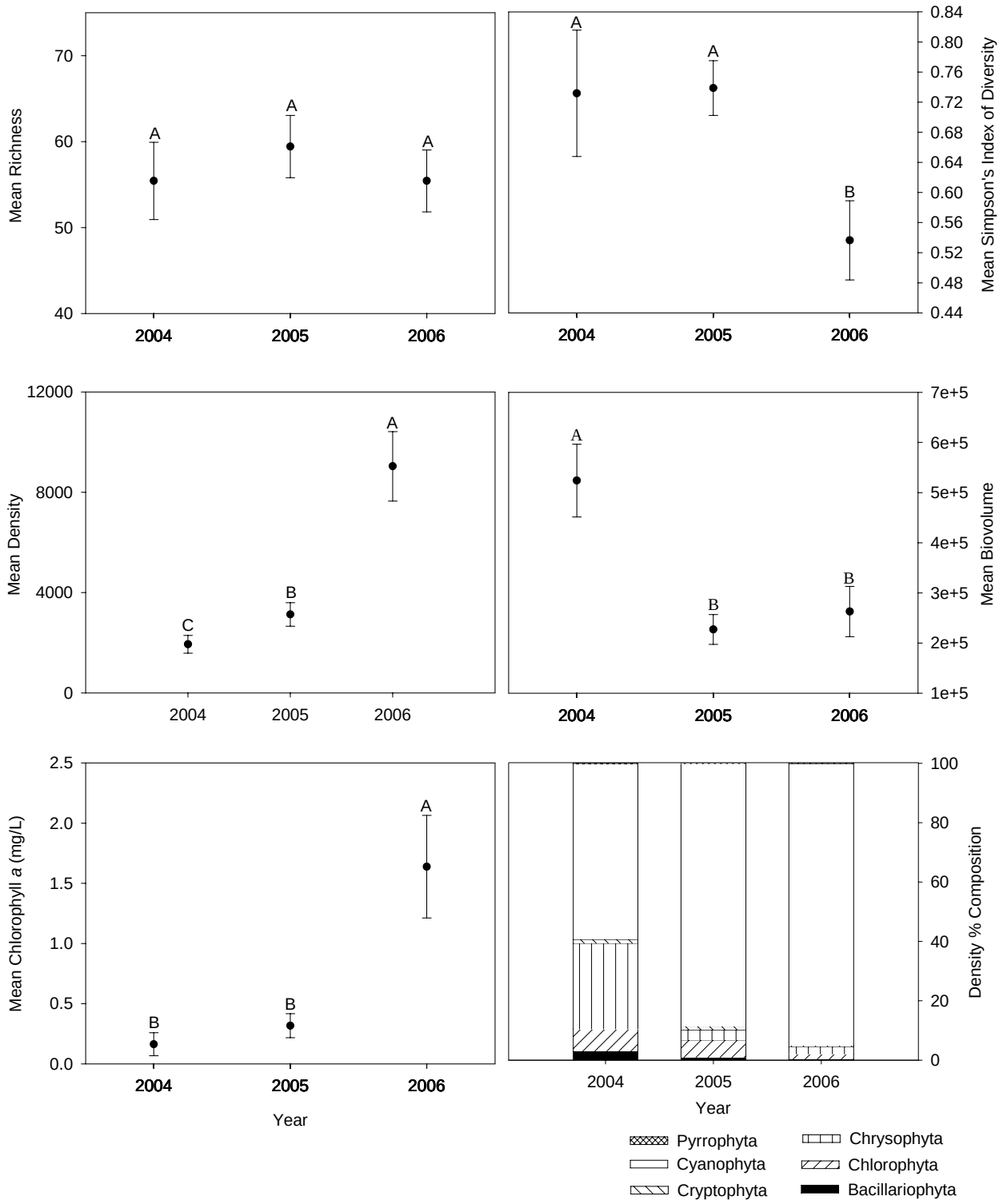


Figure 4.30 Comparison of selected parameters from phytoplankton collected in Cigar Lake in 2004, 2005, and 2006. Error bars represent 95% confidence intervals. Letter indicates statistical significance at p=0.05. Density units are in No. organisms per milliliter. Biovolume units are in micrometers cubed per milliliter. Chlorophyll "a" units are in milligrams per cubic meter.

Lake C3

Total phytoplankton richness (# of different taxa) was significantly higher in 2004 (62.6) than in 2005 (53.6) ($p=0.023$), but was not significantly higher than in 2006 (60.6) (Figure 4.31). Richness values were not significantly different in 2005 and 2006. Total phytoplankton Simpson's Index of Diversity values were significantly higher in 2004 (0.75) and 2005 (0.70) than in 2006 (0.40) ($p<0.001$). Values in 2004 and 2005 were not significantly different. Total phytoplankton densities were significantly higher in 2006 (11,284.9 organisms/mL) than in 2005 (2,990.1 organisms/mL) and 2004 (2751.4 organisms/mL) ($p=0.019$ and 0.017, respectively). Values in 2004 and 2005 were not significantly different. Total phytoplankton biovolume was significantly higher in 2004 (348,335.1 μm^3/mL) and 2006 (351,733.9 μm^3/mL) than in 2005 (157,963.5 μm^3/mL) ($p=0.001$). Values in 2004 and 2006 were not significantly different. Total phytoplankton chlorophyll *a* concentrations were significantly higher in 2006 (2.51 mg/L) than in 2004 (0.47 mg/L) and 2005 (0.38 mg/L) ($p=0.008$ and 0.007, respectively). Values in 2004 and 2005 were not significantly different.

Cyanophyta were the dominant group of phytoplankton in all years, comprising over 70% of the phytoplankton community (based on density). However, from 2004 to 2006 Cyanophyta showed increasing dominance; specifically dominance increased from 72% in 2004, to 84% in 2005, and up to 94% in 2006. While Cyanophyta increased in relative abundance, Chrysophyta decreased in relative abundance from 11% in 2004, to 4% in 2005 and 2% in 2006 and Chlorophyta decreased in relative abundance from 11% in 2004, to 10% in 2005, and down to 2% in 2006.

Similar to other monitored lakes, at Lake C3, patterns of dominance in taxonomic groups in terms of percent of the total phytoplankton biovolume, were different than those found based on percent of the total phytoplankton density. Specifically, the relatively large bodied chrysophytes comprised between 37% and 60%of the total phytoplankton biovolume in 2004, 2005 and 2006 whereas they comprised 2% to 11% of the total phytoplankton density. On the other hand, the smaller bodied cyanophytes comprised between 2% and 11% of the total phytoplankton biovolume, whereas they comprised 72% to 94% of the total phytoplankton density. Pyrrophytes comprised 3% to 5% of the total phytoplankton biovolume from 2004 to 2006, whereas they comprised less than 1% of the density in the same years. Similarly, the cryptophytes comprised 11%, 17%, and 20% of the total phytoplankton biovolume in 2004, 2005, and 2006, respectively, whereas they comprised less than 1% of the total phytoplankton density in the same years. Bacillophytes comprised 12% to 14% of the total phytoplankton biovolume in 2004, 2005, and 2006 but less than 4% of the total phytoplankton density. Chlorophytes comprised 7% to 15% of the total phytoplankton biovolume in 2004, 2005, and 2006, which was similar to relative abundances for total phytoplankton density. Although the dominance of phytoplankton groups changed depending on whether assessment was based on total biovolume or total density, communities were generally similar among years.

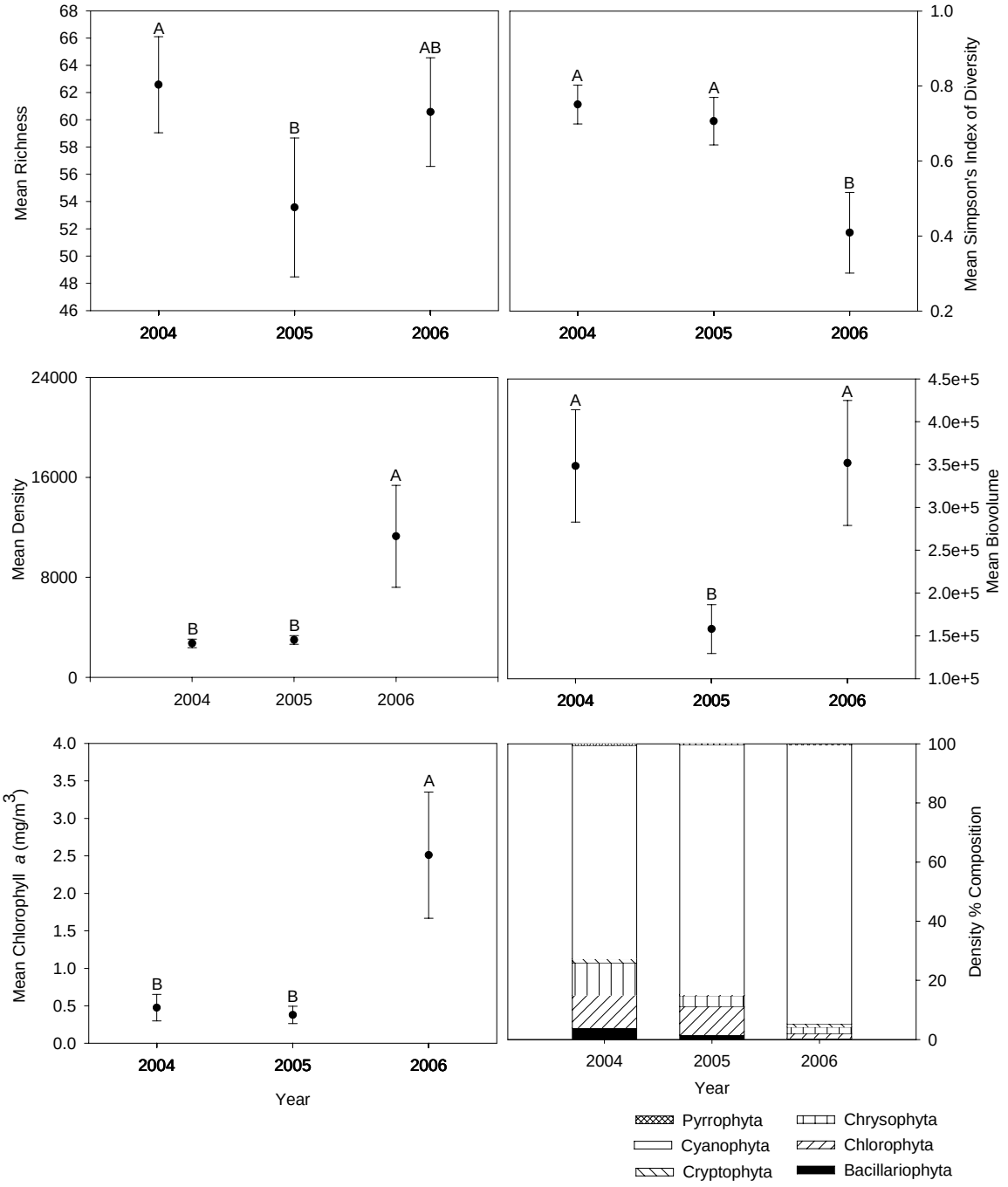


Figure 4.31 Comparison of selected parameters from phytoplankton collected in Lake C3 in 2004, 2005, and 2006. Error bars represent 95% confidence intervals. Letter indicates statistical significance at p=0.05. Density units are in No. organisms per milliliter. Biovolume units are in micrometers cubed per milliliter. Chlorophyll "a" units are in milligrams per cubic meter.

Carat Lake

Total phytoplankton richness (# of different taxa) was significantly higher in 2004 (61.7) than in 2006 (54.9) (p=0.031), but was not higher than in 2005 (57.7) (Figure 4.32). Richness values were not significantly different in 2005 and 2006. Total phytoplankton Simpson's Index of Diversity values were not significantly different in 2004 (0.51), 2005 (0.65), and 2006 (0.54) (Welch statistic=2.78, p=0.11). Phytoplankton total densities were significantly higher in 2006 (7865.0 organisms/mL) than in 2005 (4333.5 organisms/mL) and 2004 (3301.6 organisms/mL) (p=0.006 and 0.001, respectively). Moreover, values in 2005 were significantly greater than in 2004 (p=0.027). Total phytoplankton biovolume was not significantly different in 2004 (229,295.5 μm^3/mL), 2005 (291,002.0 μm^3/mL), and 2006 (277,951.4 μm^3/mL) (F-statistic=2.62, p=0.10). Total phytoplankton chlorophyll *a* concentrations were also not significantly different in 2006 (4.00 mg/L), 2005 (0.44 mg/L) and 2004 (0.42 mg/L) (Welch statistic=3.68, p=0.06), due to high variability in 2006.

Cyanophyta were the dominant group of phytoplankton at the Carat Lake monitoring location in all years, comprising over 82% of the phytoplankton community (based on density). Compared to Lake C3, Jericho Lake, Cigar Lake, and Control Lake Cyanophyta did not show considerable increases in phytoplankton community dominance. Specifically, dominance was 87% in 2004, 82% in 2005, and 94% in 2006. Chrysophyta relative abundance was also relatively stable with values of 4% in 2004, 6% in 2005, and 3% in 2006. Chlorophyta's relative abundance, on the other hand, decreased from 8% to 10% 2004 and 2005 to 3% in 2006.

Similar to other monitored lakes, at Carat Lake, patterns of dominance in taxonomic groups in terms of percent of the total phytoplankton biovolume, were different that those found based on percent of the total phytoplankton density. Specifically, the relatively large bodied chrysophytes comprised between 34% and 46% of the total phytoplankton biovolume in 2004, 2005 and 2006 whereas they comprised 4% to 6% of the total phytoplankton density. On the other hand, the smaller bodied cyanophytes comprised between 4% and 10% of the total phytoplankton biovolume, whereas they comprised 82% to 93% of the total phytoplankton density. Pyrrophytes comprised 2% to 13% of the total phytoplankton biovolume from 2004 to 2006, whereas they comprised less than 2% of the density in the same years. Similarly, the cryptophytes comprised 7%, 15%, and 11% of the total phytoplankton biovolume in 2004, 2005, and 2006, respectively, whereas they comprised less than 1% of the total phytoplankton density in the same years. Bacillophytes comprised 15% to 27% of the total phytoplankton biovolume in 2004, 2005, and 2006 but less than 3% of the total phytoplankton density. Chlorophytes comprised 6% to 18% of the total phytoplankton biovolume in 2004, 2005, and 2006, which was similar to relative abundances for total phytoplankton density. Although the dominance of phytoplankton groups was different depending on whether assessment was based on total biovolume or total density, communities were similar among years.

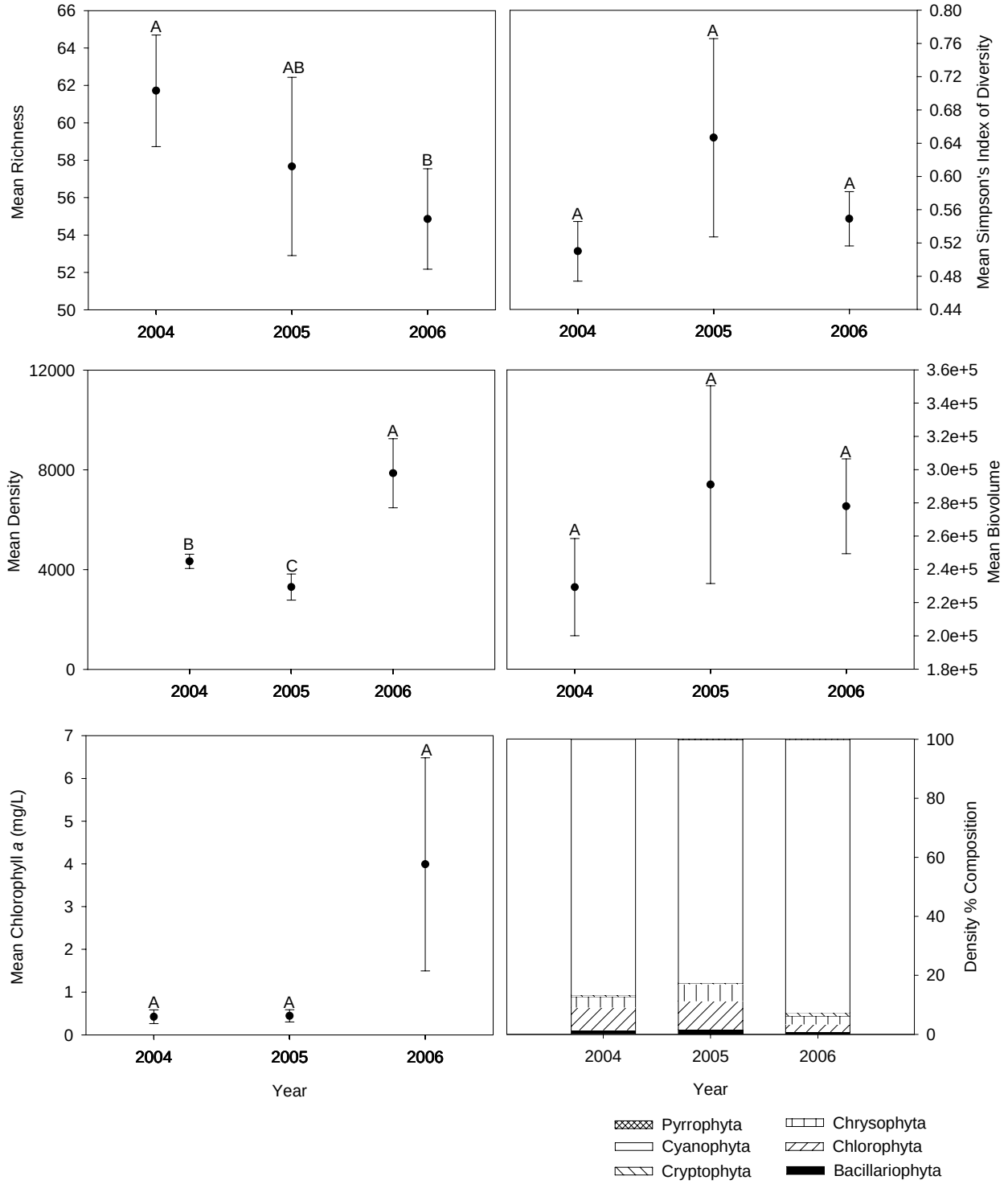


Figure 4.32 Comparison of selected parameters from phytoplankton collected in Carat Lake in 2004, 2005, and 2006. Error bars represent 95% confidence intervals. Letter indicates statistical significance at p=0.05. Density units are in No. organisms per milliliter. Biovolume units are in micrometers cubed per milliliter. Chlorophyll "a" units are in milligrams per cubic meter.

Jericho Lake

Total phytoplankton richness (# of different taxa) was significantly higher in 2005 (75.0) than in 2004 (64.6) and 2006 (63.4) (p=0.034 and 0.018, respectively) (Figure 4.33). Richness values were not significantly different in 2004 and 2006. Total phytoplankton Simpson's Index of Diversity values were significantly higher in 2005 (0.64) and 2004 (0.65) than in 2006 (0.47) (p=0.036 and 0.031, respectively). Values were not significantly different in 2004 and 2005. Phytoplankton total density was highest in 2006 (7588.7) but, due to high variability, was not significantly higher than in 2005 (4778.9 organisms/mL, p=0.162) and 2004 (3699.8 organisms/mL, p=0.052). Mean total density, however, was significantly higher in 2005 than in 2004 (p=0.01). Total phytoplankton biovolume was not significantly different in 2004 (303,357.3 μm^3/mL), 2005 (356,234.0 μm^3/mL), and 2006 (373,928.2 μm^3/mL) (F-statistic=1.10, p=0.35). Total phytoplankton chlorophyll *a* concentrations were significantly higher in 2006 (0.94 mg/L) than in 2005 (0.61 mg/L) and 2004 (0.30 mg/L) (p=0.001 and <0.001, respectively). Values in 2005 were also significantly higher than in 2004 (p=0.001).

Cyanophyta were the dominant group of phytoplankton in all years, comprising over 80% of the phytoplankton community (based on density). From 2004 to 2006 Cyanophyta increased in dominance; from 80% in 2004, to 85% in 2005, and up to 91% in 2006. While Cyanophyta increased in relative abundance, Chrysophyta decreased in relative abundance from 9% in 2004, to 7% in 2005 and 3% in 2006 and Chlorophyta decreased in relative abundance from 7% in 2004, to 5% in 2005, to 3% in 2006.

In terms of biovolume, the relatively large bodied chrysophytes had the highest relative abundance in all years (43% to 55%). The smaller bodied cyanophytes, which made up over 80% of total phytoplankton density from 2004 to 2006, comprised only 4% to 5% of the total phytoplankton biovolume. Similarly, the pyrrophytes comprised 6% of the total phytoplankton biovolume from 2004 to 2006 whereas they comprised only 1% of the density. Also, the cryptophytes comprised 4%, 14%, and 21% of the total phytoplankton biovolume in 2004, 2005, and 2006, respectively, whereas they comprised only 1% of the total density in the same years. Bacillophyte relative abundance based on biovolume (7% to 20%) was also higher, in general, than relative abundance based on density (1% to 3%) in 2004, 2005, and 2006. In general, there were not temporal patterns in relative abundance of taxonomic groups in Jericho Lake, with the exception of the cryptophytes and chlorophytes. Cryptophyte relative abundance, in terms of biovolume, increased from 2004 (4%), 2005 (14%) and 2006 (21%) whereas chlorophyte relative abundance decreased increased from 2004 (14%), 2005 (13%) and 2006 (4%). Although the dominance of phytoplankton groups was dependent on whether assessment was based on total biovolume or total density, communities were generally similar among years.

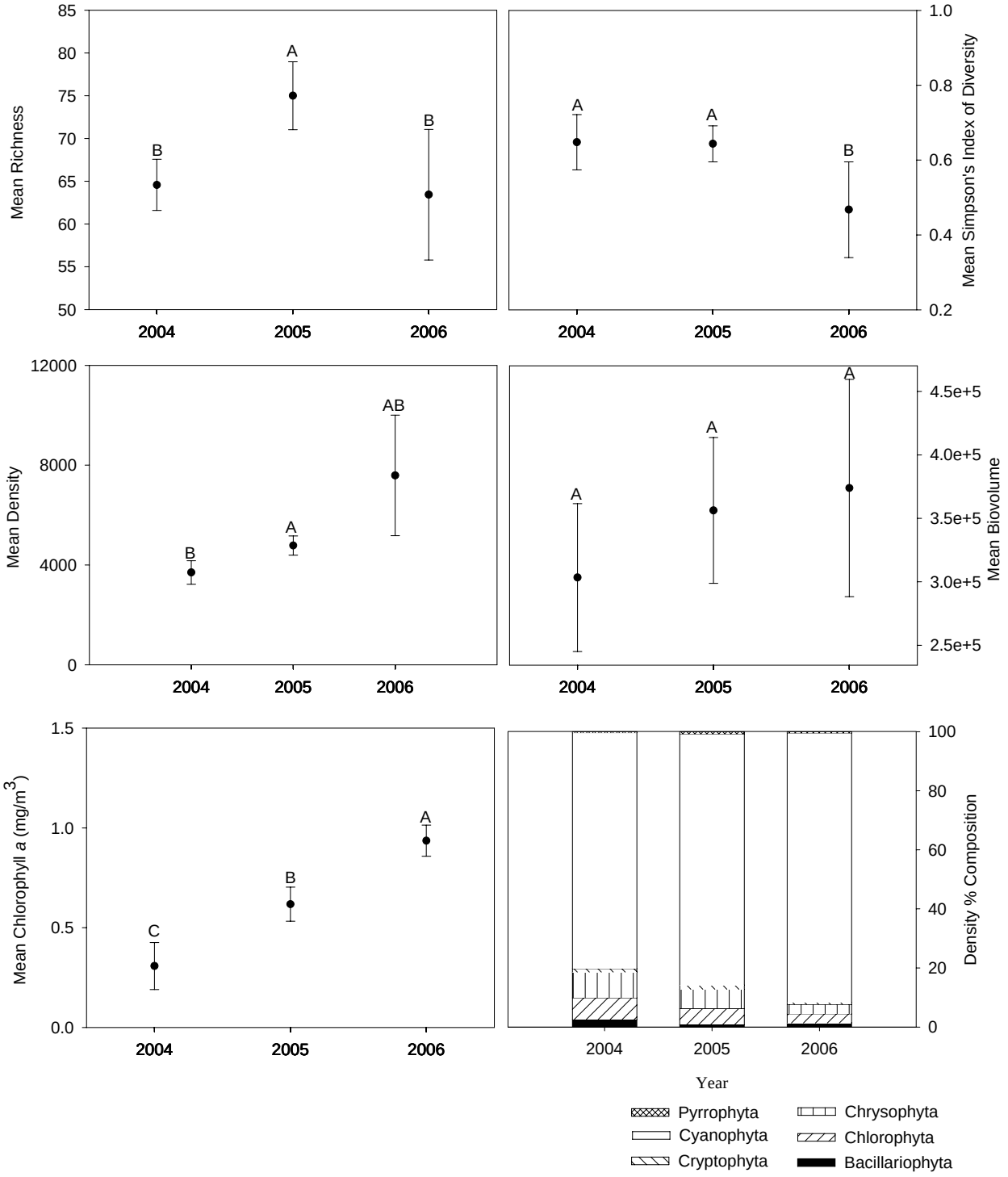


Figure 4.33 Comparison of selected parameters from phytoplankton collected in Jericho Lake in 2004, 2005, and 2006. Error bars represent 95% confidence intervals. Letter indicates statistical significance at p=0.05. Density units are in No. organisms per milliliter. Biovolume units are in micrometers cubed per milliliter. Chlorophyll "a" units are in milligrams per cubic meter.

4.5.8 QA/QC

Quality assurance and quality control was done for proficiency of enumeration and identification on Carat Lake (Appendix F2).

In the laboratory phytoplankton samples were subsampled and density and biovolume were estimated. Percent error of enumeration and identification was tested by comparing density and biovolume of individual taxa, groups and total individuals. Overall percent error was as follows: total density (32%), total biovolume (8.4%), and number of taxa (7.7%). Percent errors for groups and individual taxa ranged from 0% to 100%. In general, percent error exceeded 25% for most comparisons.

Power analyses were completed for each parameter comparison in 2006. Data are presented in Table 4.11.

Table 4.11 Power analysis results for phytoplankton, 2006 Jericho AEM Program.

Parameter	No. Replicates	Standard Deviation	No. of Comparisons [a]	Sample size for Power ≥ 0.8	Actual Power of Test [b]
Richness	7	6.3	5	10	0.629
Diversity	7	0.1	5	10	0.639
Total Density	7	2766.4	5	10	0.653
Total Biovolume	7	73838.7	5	6	0.928
Chlorophyll *a*	7	1.24	5	5	0.981

[a] All waterbodies combined for each parameter
[b] Significance level set at $\alpha = 0.05$ and power = 0.8

4.6 ZOOPLANKTON

Between-station differences in zooplankton richness, Simpson's Index of Diversity values, total density, cladoceran density, rotifer density, and copepod density from samples collected in 2006 were investigated using ANOVA. A summary of means, standard deviations, maximums, minimum, and statistical significance is found in Table 4.12. Raw data are presented in Appendix G. For the 2006 data, Levene's test for homogeneity of variances identified that variances were not equal between stations for total density (Levene's statistic=2.96, p=0.036) and copepoda density (Levene's statistic=13.42, p<0.001). As such Welch statistic and Dunnett T3 post-hoc tests were used in place of the F-statistic and Tukey's post-hoc tests for comparisons among stations for these parameters. All other parameters did not have significantly different variances; therefore, the F-statistic and Tukey's post-hoc tests were used.

4.6.1 Taxa Richness

Zooplankton taxa richness (# of different taxa) was variable among waterbodies and mean richness ranged from 13.3 taxa (Jericho Lake) to 15.3 taxa (Lake C3) (Figure 4.34). Mean taxa richness was not significantly higher different between stations (F-statistic=2.39, p=0.074).

Richness values in 2006 were lower than those found in 2005 (Mainstream 2006). In 2005, zooplankton taxa richness was variable among waterbodies and mean richness ranged from 14.5 taxa (Jericho Lake) to 19 taxa (Control Lake). In comparison to 2004 data, richness was lower than in 2006; mean number of taxa ranged from 10.1 at the Cigar Lake station to 12.4 at the Control Lake station in 2004 (Mainstream 2005). This suggests that species richness was variable between years.

Table 4.12 Zooplankton parameter summary metrics at monitored stations, 2006 Jericho AEM Program.

Parameter	Lake	Station	Sample Size	Mean	SD	Min	Max	Significance[a]
Richness (No. taxa)	Control	JER10	7	14.4	1.0	13	16	A
	C3	JER04	7	15.3	1.0	14	17	A
	Carat	JER06	6	15.0	1.4	13	17	A
	Jericho	JER08	7	13.3	1.3	12	16	A
Diversity Index (Simpson's D)	Cigar	JER11	7	0.801	0.006	0.791	0.810	C
	Control	JER10	7	0.822	0.011	0.808	0.836	B
	C3	JER04	7	0.799	0.013	0.786	0.817	C
	Carat	JER06	6	0.841	0.006	0.834	0.850	C
	Jericho	JER08	7	0.789	0.011	0.772	0.803	A
Total Density ($No./m^3$)	Cigar	JER11	7	33104.9	2552.3	28634.7	36096.1	A
	Control	JER10	7	21695.0	1930.9	17792.9	23316.9	B
	C3	JER04	6	34654.1	5177.5	27708.4	41336.6	A
	Carat	JER06	7	25726.5	3378.0	20941.0	29730.7	B
	Jericho	JER08	7	21408.3	1856.0	18338.9	23258.2	B
Cladocera Density ($No./m^3$)	Cigar	JER11	7	78.1	50.4	0.0	156.3	A
	Control	JER10	7	13.1	24.0	0.0	61.0	C
	C3	JER04	7	14.4	19.8	0.0	50.2	C
	Carat	JER06	6	138.8	60.9	61.7	246.7	B
	Jericho	JER08	7	5.2	13.7	0.0	36.2	C
Copepoda Density ($No./m^3$)	Cigar	JER11	7	15720.9	1324.5	13790.0	17501.2	B
	Control	JER10	7	6186.7	494.9	5676.6	6989.0	C
	C3	JER04	7	22179.9	4056.0	17202.7	27951.2	A
	Carat	JER06	6	15040.1	1569.0	13230.8	17394.3	B
	Jericho	JER08	7	4309.6	590.1	3544.8	5100.2	C
Rotifera Density ($No./m^3$)	Cigar	JER11	7	17305.8	1444.9	14766.6	19181.0	A
	Control	JER10	7	15495.2	1803.0	11902.6	16877.3	A
	C3	JER04	7	12459.8	1618.2	10505.8	15168.5	B
	Carat	JER06	6	10547.6	2049.2	6939.2	12213.0	B
	Jericho	JER08	7	17093.5	1720.9	14106.8	18845.3	A

[a] Different letter indicates statistical significance. Letters represent statistical differences among statistics at p=0.05.

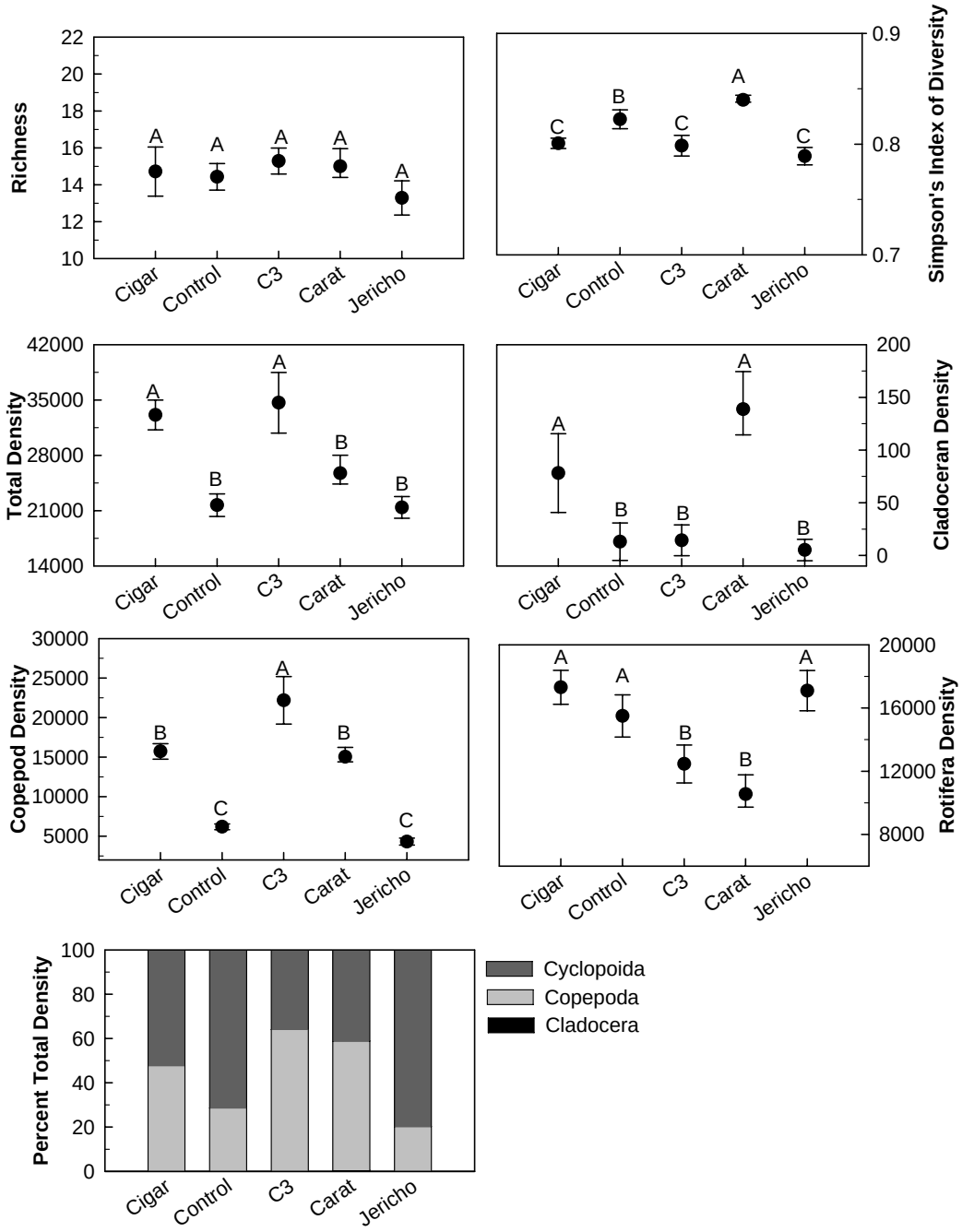


Figure 4.34 Zooplankton parameter summary metrics monitored in 2006, Jericho AEM Program. Error bars represent 95% confidence intervals. Letter indicates statistical significance at p=0.05. Density units are in number of organisms per cubic meter.

4.6.2 Simpson's Index of Diversity

In 2006, zooplankton Simpson's Index of Diversity ranged from 0.789 (Jericho Lake) to 0.841 (Carat Lake). Moreover, mean Simpson's Index of Diversity was significantly higher at the near-field Carat Lake station (0.839) than all other stations ($p<0.040$). The Control Lake station also had significantly higher Simpson's Index of Diversity values than the Cigar Lake (0.801), Lake C3 (0.799) and Jericho Lake (0.789) stations ($p<0.04$).

Similar to 2006, the Jericho Lake station (0.804) exhibited lower mean Simpson's Index of Diversity values compared to all other stations in 2005. However in 2005, the Control Lake station (0.833) had significantly higher Simpson's Index of Diversity values than Carat Lake (0.817) and Jericho Lake (0.804) stations. Mean Simpson's Index of Diversity values in 2006 were higher than in 2004 for all waterbodies; mean values in 2004 ranged from 0.596 to 0.776 for all stations.

4.6.3 Total Density

In 2006, mean density of zooplankton ranged from a low of 21,408.3 organisms/m^3 (Jericho Lake) to a high of 34,654.1 organims/m^3 (Lake C3). Mean density was significantly higher at the Lake C3 station (34,654.1 organisms/m^3) and Cigar Lake station (33,104.9 organisms/m^3) than at the Carat Lake (25,726.5 organisms/m^3), Control Lake (21,695.0 organisms/m^3), and Jericho Lake (21,408.3 organisms/m^3) stations ($p<0.05$).

In 2005, mean density of zooplankton ranged from a low of 9,627.1 organisms/m^3 (Lake C3) to a high of 29,051.2 organims/m^3 (Carat Lake), which was generally lower than in 2006. Mean density was lowest at the Lake C3 station; this station had significantly lower densities than all stations except the Cigar Lake station. The highest densities were found at the Carat Lake station; this station had significantly higher mean densities than the Cigar Lake and Lake C3 stations. Mean total density of zooplankton were similar among Cigar Lake, Control Lake, and Jericho Lakes stations.

Mean values in 2004 were also lower than those found in 2006. Mean values in 2004 ranged from a low of 15,338.8 organisms/m^3 to a high of 22,647.5 organisms/m^3. There were not significant differences among waterbodies for the 2004 sampling period, suggesting that zooplankton abundance is variable between years and differences between stations are either not always statistically detectable or present.

4.6.4 Cladoceran Density

In 2006, mean cladoceran density was significantly higher at the Carat Lake station (138.8 organisms/m^3) and Cigar Lake station (78.1 organisms/m^3) than at the Lake C3 (14.3 organisms/m^3), Control Lake (13.1 organisms/m^3), and Jericho Lake (5.2 organisms/m^3) stations ($p \leq 0.05$). Densities at Carat Lake were also higher than at the Cigar Lake ($p=0.05$). Interestingly cladoceran densities were higher at the Carat Lake station than the Lake C3 station despite that Lake C3 had greater densities of zooplankton overall.

Similar to the overall trend in total zooplankton density among waterbodies found in 2006, mean cladoceran density in 2005 was significantly higher at the Carat Lake station (295.7 organisms/m^3) than all other waterbodies. In general, Lake C3 station had low cladoceran densities in all years.

4.6.5 Copepod Density

In 2006, mean copepod density was significantly higher at the Lake C3 station (22,179.9 organisms/m^3) than all other stations ($p<0.02$). Mean copepod density was also significantly higher at the Cigar Lake (15,720.9 organisms/m^3) and Carat Lake (15,040.1 organisms/m^3) stations than at the Control Lake (6186.7 organisms/m^3) and Jericho Lake (4309.6 organisms/m^3) stations ($p<0.003$). All other comparisons between stations were not statistically significant. Opposite to 2006 data, in 2005 the Lake C3 station had a significantly lower mean copepod density than other stations excluding Cigar Lake. In all years Carat Lake exhibited high densities of copepods.

4.6.6 Rotifer Density

In 2006, mean rotifer density was significantly greater at the Cigar Lake (17,305.8 organisms/m^3), Jericho Lake (17,093.5 organisms/m^3), and Control Lake (15,495.2) stations than at the Lake C3 (12,459.8 organisms/m^3) and Carat Lake (10,547.4 organisms/m^3) stations ($p<0.04$). In 2005, the Lake C3 station also had the low mean density of rotifers (5204.2 organisms/m^3). However in 2005, the Carat Lake station had the highest (14,768.2 organisms/m^3).

4.6.7 Dominant Taxa

In 2006, the dominant taxonomic zooplankton groups in terms of density were rotifers and copepods. At the Control Lake and Jericho stations cyclopoids dominated (>70%) whereas at the Cigar Lake, Lake C3, and Carat Lake stations copepods dominated. In 2005, copepod and rotifera dominance was split equally

between these groups. In 2004, copepods (including cyclopoids) were the dominant taxonomic group. Cladocerans comprised less than or equal to 1% of all organisms present at all stations. Cladocerans remained a small component, in terms of relative density, of the zooplankton community in all years.

4.6.8 Historical Trends

Control Lake

Levene's test for homogeneity of variances identified that variances were not equal between years at the Lake C3 monitoring station for Simpson's Index of Diversity values (Levene's statistic=13.1, $p<0.001$). As such, Welch statistic and Dunnett T3 post-hoc tests were used in place of the F-statistic and Tukey's post-hoc tests. All other parameters did not have significantly different variances; therefore, the F-statistic and Tukey's post-hoc tests were used for comparisons among years.

Mean taxonomic richness (# of different taxa) was significantly higher in 2005 (19.0) than in 2006 (14.4) and 2004 (12.4) ($p<0.001$); mean richness was significantly higher in 2006 compared to 2004 ($p=0.023$) (Figure 4.35). Similarly, mean Simpson's Index of Diversity values were higher in 2005 (0.83) and 2006 (0.82) than in 2004 (0.70) ($p=0.002$); mean values were not significantly different in 2005 and 2006 ($p=0.175$). Total zooplankton density, however, was not significantly different in 2004 (23,977.2 organisms/m^3), 2005 (20,553.4 organisms/m^3), and 2006 (21,695.0 organisms/m^3, $p=0.534$). There were differences in the densities of the major zooplankton groups between sampling years. Copepod densities were significantly higher in 2005 (11,110.1 organisms/m^3) compared to 2006 (6,186.7 organisms/m^3) ($p=0.009$); densities in 2004 (8,271.9 organisms/m^3) were not significantly different than in 2005 or 2006 ($p>0.150$). Conversely, mean rotifer density was significantly lower in 2005 (9359.3 organisms/m^3) compared to 2004 (15530.7 organisms/m^3) and 2006 (15495.2 organisms/m^3) ($p<0.020$); lower populations of rotifers were compensated for by higher populations of copepods in 2005. Although cladoceran densities were relatively low overall at the Control Lake monitoring station, mean densities were significantly higher in 2004 (174.5 organisms/m^3) than in 2005 (84.0 organisms/m^3) and 2006 (13.1 organisms/m^3) ($p<0.003$); mean density was also significantly higher in 2005 compared to 2006 ($p=0.010$). Interestingly patterns of densities at the Control Lake station were similar to those found at the Jericho Lake station. These lakes may respond similarly to landscape level environmental variables and this may be reflected in the zooplankton communities. Mean cladoceran density was significantly higher in 2004 (174.5 organisms/m^3) than in 2005 (84.0 organisms/m^3, $p=0.002$) and 2006 (13.1 organisms/m^3, $p<0.001$); cladoceran density was also significantly higher in 2005 compared to 2006 ($p=0.010$).

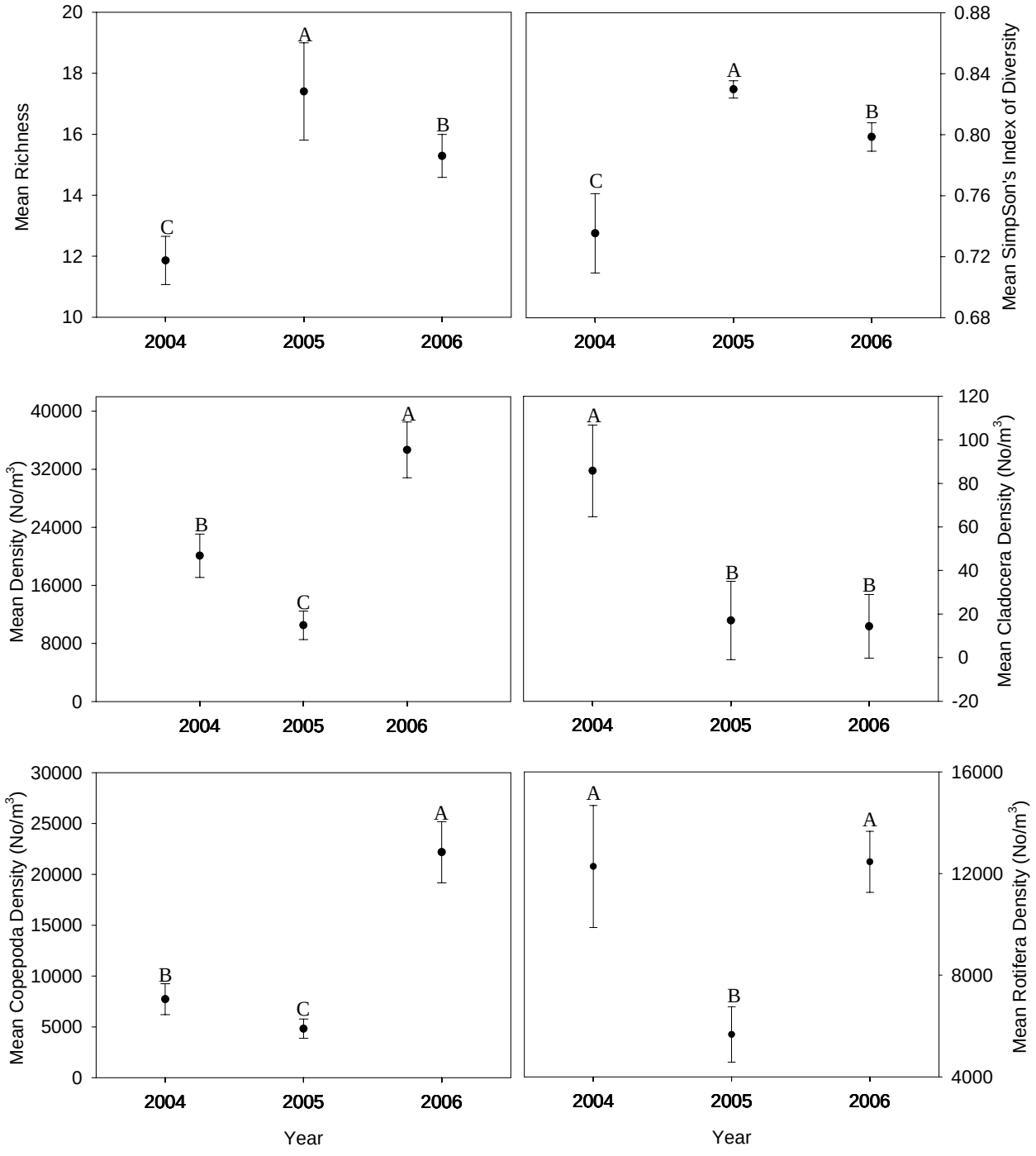


Figure 4.35 Comparison of selected parameters from zooplankton collected in Control Lake in 2004, 2005, and 2006. Error bars 95% confidence intervals. Letter indicates statistical significance at p=0.05.

Cigar Lake

Levene's test for homogeneity of variances identified that variances were not equal between years at the Carat Lake monitoring station for Simpson's Index of Diversity values (Levene's statistic=9.25, p=0.002). As such, Welch statistic and Dunnett T3 post-hoc tests were used in place of the F-statistic and Tukey's post-hoc tests for comparisons among stations for these parameters. Variances of all other parameters were not significantly different between years and therefore the F-statistic and Tukey's post-hoc tests were used for comparisons.

Mean taxonomic richness was significantly higher in 2005 (16.8) and 2006 (14.7) than in 2004 (10.1) ($p<0.001$) (Figure 4.36). Mean richness was not significantly higher in 2005 compared to 2006 ($p=0.052$). Mean Simpson's Index of Diversity values were significantly higher in 2005 (0.83) and 2006 (0.80) than in 2004 (0.60) ($p<0.001$). Mean Simpson's Index of Diversity values were also significantly higher in 2005 compared to 2006 ($p=0.011$). Total zooplankton density at the Cigar monitoring station was significantly higher in 2006 (33,104.9 organisms/m^3) compared to 2005 (19,875.4 organisms/m^3) and 2004 (18,587.5 organisms/m^3) ($p<0.001$). Both copepod and rotifer densities were higher in 2006 than in 2005 and 2004, indicating that both groups were driving the relationship of higher densities in 2006. Specifically, mean rotifer density was significantly higher in 2006 (17,305.8 Organisms/m^3) than in 2004 (11,746.7 organisms/m^3) and 2005 (9,214.5 organisms/m^3) ($p<0.001$) and mean copepod density was significantly higher in 2006 (15,720.9 organisms/m^3) compared to 2005 (10,489.8 organisms/m^3, $p=0.010$) and 2004 (6,650.0 organisms/m^3, $p<0.001$). Copepod densities were also significantly higher 2005 compared to 2004 ($p=0.005$). This is opposite to rotifer densities which were higher in 2004 compared to 2005, though not significantly ($p=0.082$). This pattern is consistent with the patterns found at the Jericho Lake and Control Lake stations where if rotifera density is high, copepoda density is low; it is not clear why densities were high for both in 2006. Mean cladocera density was significantly higher in 2004 (190.9 organisms/m^3) than in 2006 (78.1 organisms/m^3) ($p=0.019$); 2005 density (159.4 organisms/m^3) was not significantly different that in either 2004 or 2006 ($p>0.110$).

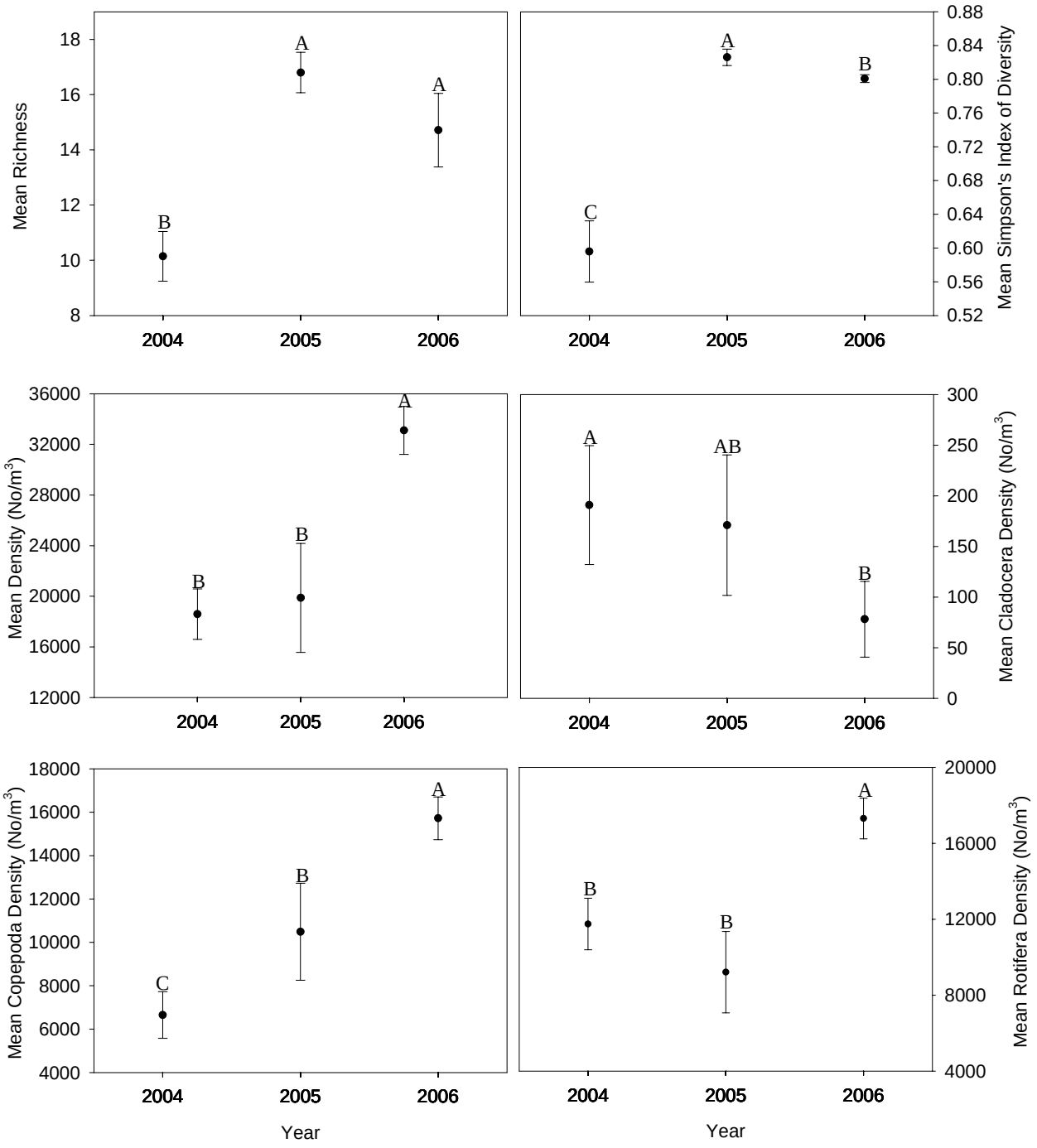


Figure 4.36 Comparison of selected parameters from zooplankton collected in Cigar Lake in 2004, 2005, and 2006. Error bars 95% confidence intervals. Letter indicates statistical significance at p=0.05.

Lake C3

Levene's test for homogeneity of variances identified that variances were not equal between years at the Lake C3 monitoring station for rotifer density (Levene's statistic=4.35, p=0.031), copepod density (Levene's statistic=6.74, p=0.008), and Simpson's Index of Diversity values (Levene's statistic=6.07, p=0.011). As such, Welch statistic and Dunnett T3 post-hoc tests were used in place of the F-statistic and Tukey's post-hoc tests for comparisons among stations for these parameters. All other parameters (total density, richness, and cladoceran density) did not have significantly different variances; therefore, the F-statistic and Tukey's post-hoc tests were used for comparison.

Both mean taxonomic richness and Simpson's Index of Diversity values had highest values in 2005 followed by 2006 and then 2004 (Figure 4.37). Specifically, mean taxonomic richness was significantly higher in 2005 (17.4) than in 2006 (15.3) and 2004 (11.9) ($p<0.03$). Further, mean richness was significantly higher in 2006 compared to 2004 ($p<0.001$). Similarly, mean Simpson's Index of Diversity values were higher in 2005 (0.83) than in 2006 (0.80) and 2004 (0.74) (p=0.001); mean values were significantly higher in 2006 compared to 2004, as well (p=0.007). Total zooplankton density, on the other hand, was significantly higher in 2006 (34,654.1 organisms/m^3) than in 2004 (20,080.8 organisms/m^3) and 2005 (10,506.1 organisms/m^3, $p<0.001$). Density was also significantly higher in 2004 compared to 2005 (p=0.003). That the diversity measures showed an opposite pattern to total density suggests that large increases in density are generally due to increases in one taxonomic group rather than increases in all taxonomic groups. Cladoceran densities were low relative to rotifer and copepod densities in all years and as such would not significantly influence total density or diversity values. However, mean cladoceran density was significantly higher in 2004 (85.8 organisms/m^3) than in 2005 (17.1 organisms/m^3) and 2006 (14.3 organisms/m^3) ($p<0.001$). Mean rotifer density was significantly lower in 2005 (5,667.2 organisms/m^3) than in 2004 (12,275.3 organisms/m^3) and 2006 (12,459.8 organisms/m^3) ($p<0.003$). Mean copepod density was significantly higher in 2006 (22,179.9 organisms/m^3) than in 2004 (7719.6 organisms/m^3) and 2005 (4821.8 organisms/m^3) ($p<0.001$). Densities were also significantly lower in 2005 than 2004 (p=0.007).

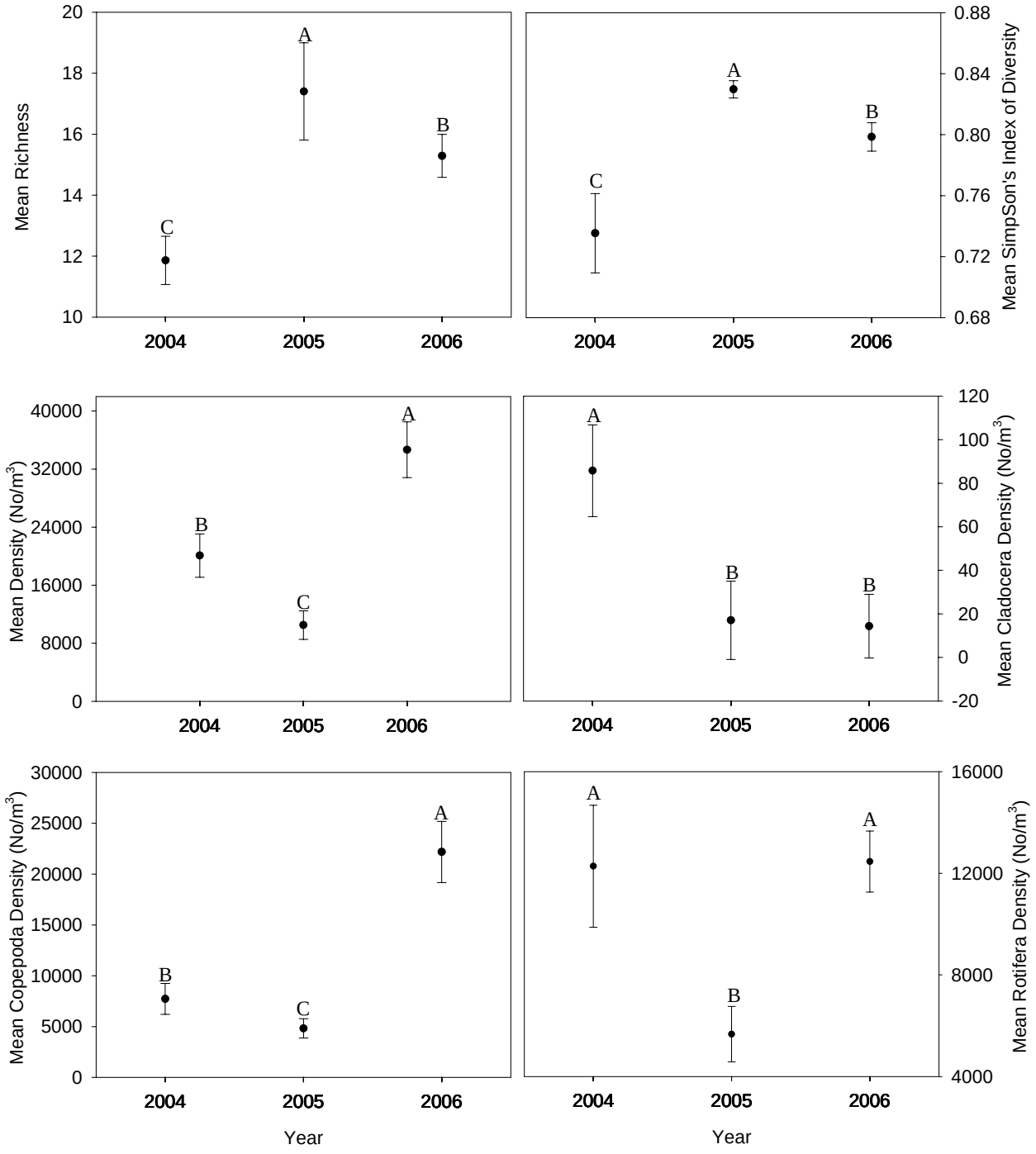


Figure 4.37 Comparison of selected parameters from zooplankton collected in Lake C3 in 2004, 2005, and 2006. Error bars 95% confidence intervals. Letter indicates statistical significance at p=0.05.

Carat Lake

Levene's test for homogeneity of variances identified that variances were not equal between years at the Carat Lake monitoring station for Simpson's Index of Diversity values (Levene's statistic=6.43, p=0.010). As such, Welch statistic and Dunnett T3 post-hoc tests were used in place of the F-statistic and Tukey's post-hoc tests for comparisons among stations. Variances mean all other parameters were not significantly different and therefore the F-statistic and Tukey's post-hoc tests were used for comparisons among years.

Mean taxonomic richness was significantly higher in 2005 (15.2) and 2006 (15.0) than in 2004 (10.3) ($p<0.001$) (Figure 4.38). Mean Simpson's Index of Diversity values were significantly higher in 2006 (0.84) than in 2005 (0.82) and 2004 (0.78) ($p<0.001$). Mean values were significantly higher in 2005 compared to 2004, as well ($p=0.002$). Total zooplankton density at the Carat Lake monitoring station was significantly lower in 2004 (15,437.5 organisms/m^3) than in 2006 (25,726.5 organisms/m^3) and 2005 (29,051.2 organisms/m^3, $p<0.001$). In 2004, there were relatively low densities of zooplankton as well as low diversity, indicating that, in general, decreased densities may have been due to decreases in specific taxa. Results of comparisons between sampling years for major taxonomic groups are consistent with this. Mean cladoceran density was significantly lower in 2006 (138.8 organisms/m^3) than in 2005 (295.7 organisms/m^3) and 2004 (428.0 organisms/m^3) ($p<0.030$). Mean rotifer density was significantly lower in 2004 (4,682.8 organisms/m^3) than in 2006 (10,547.6 organisms/m^3) and 2005 (14,768.2 organisms/m^3) ($p<0.001$). Mean rotifer density was also significantly lower in 2006 compared to 2005 ($p=0.003$). Mean copepod density was significantly lower in 2004 (10,325.7 organisms/m^3) than in 2005 (13,987.3 organisms/m^3) and 2006 (15,040.1 organisms/m^3) ($p<0.004$).

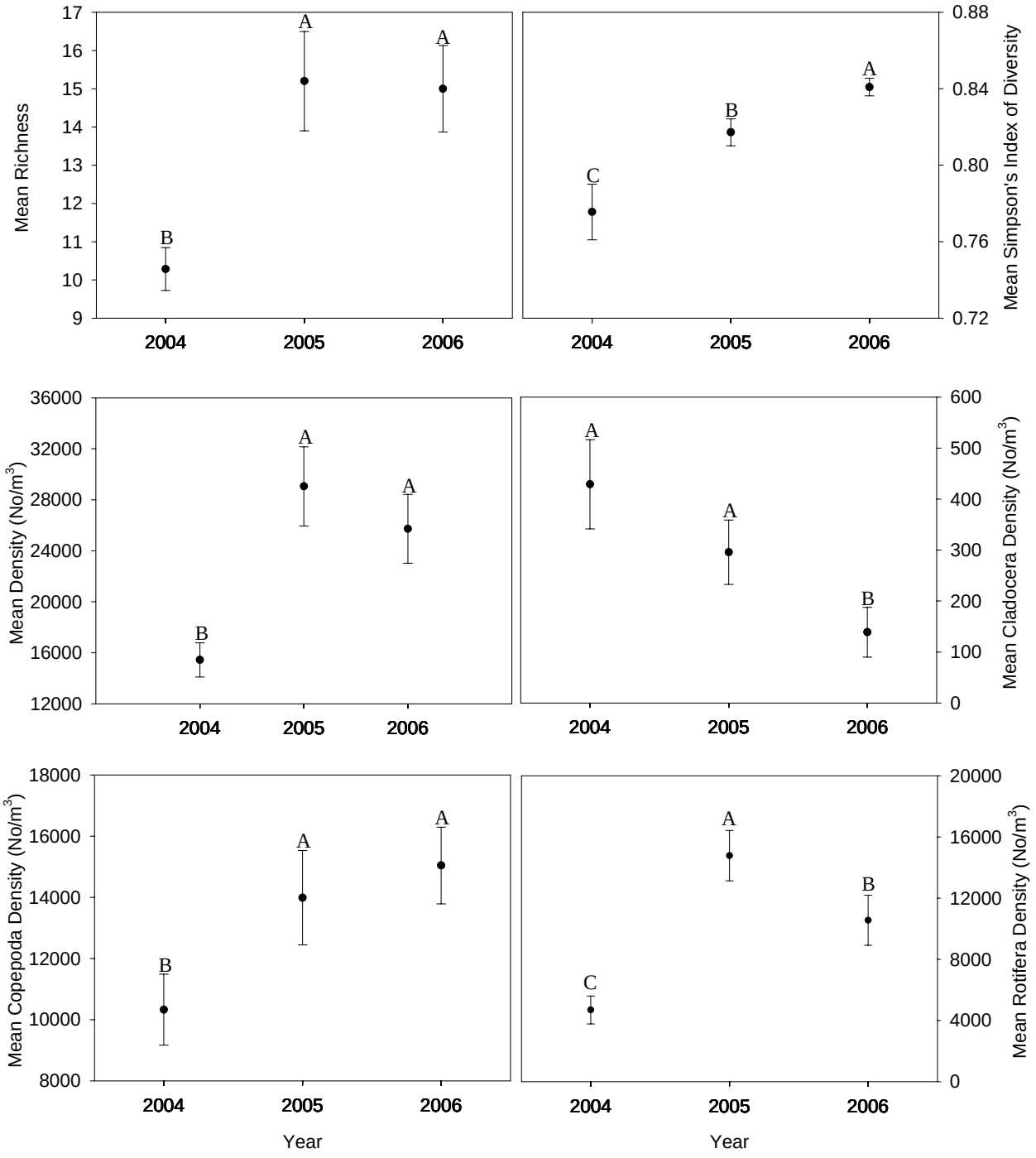


Figure 4.38 Comparison of selected parameters from zooplankton collected in Carat Lake in 2004, 2005, and 2006. Error bars 95% confidence intervals. Letter indicates statistical significance at p=0.05.

Jericho Lake

Levene's test for homogeneity of variances identified that variances were not equal between years at the Lake C3 monitoring station for total density (Levene's statistic=4.17, p=0.035), copepod density (Levene's statistic=9.36, p=0.002), and cladoceran density (Levene's statistic=12.16, p=0.001). As such, Welch statistic and Dunnett T3 post-hoc tests were used in place of the F-statistic and Tukey's post-hoc tests for comparisons among stations for these parameters. Variances for all other parameters (rotifer density, richness, Simpson's Index of Diversity) were not significantly different and therefore the F-statistic and Tukey's post-hoc tests were used for comparisons among years for these parameters.

Mean taxonomic richness was significantly higher in 2005 (14.6) and 2006 (13.3) than in 2004 (11.1) ($p<0.009$) (Figure 4.39). Similarly, mean Simpson's Index of Diversity values were significantly higher in 2005 (0.80) and 2006 (0.79) than in 2004 (0.75) ($p<0.001$). Despite differences in diversity between years, total zooplankton density at the Jericho Lake monitoring station did not differ significantly between 2004 (21,871.6 organisms/m^3), 2005 (24,873.0 organisms/m^3), and 2006 (21,408.3 organisms/m^3) (Welch statistic=0.273, p=769). There were differences in the densities of the major zooplankton groups between 2004, 2005, and 2006, however. Although copepod densities were not significantly different in 2004 (5,947.5 organisms/m^3), 2005 (14,105.6 organisms/m^3), and 2006 (4,309.6 organisms/m^3) ($p>0.090$), abundances were notably higher in 2005. Conversely, rotifer density was significantly lower in 2005 (10,736.0 organisms/m^3) compared to 2004 (15,722.4 organisms/m^3) and 2006 (17,093.5 organisms/m^3) ($p<0.046$). It appears that lower populations of rotifers in 2005 were compensated for by higher populations of copepods. Although cladoceran densities were relatively low overall at the Jericho Lake monitoring station, mean densities were significantly higher in 2004 (201.8 organisms/m^3) than in 2005 (31.4 organisms/m^3) and 2006 (5.2 organisms/m^3) (p=0.001).

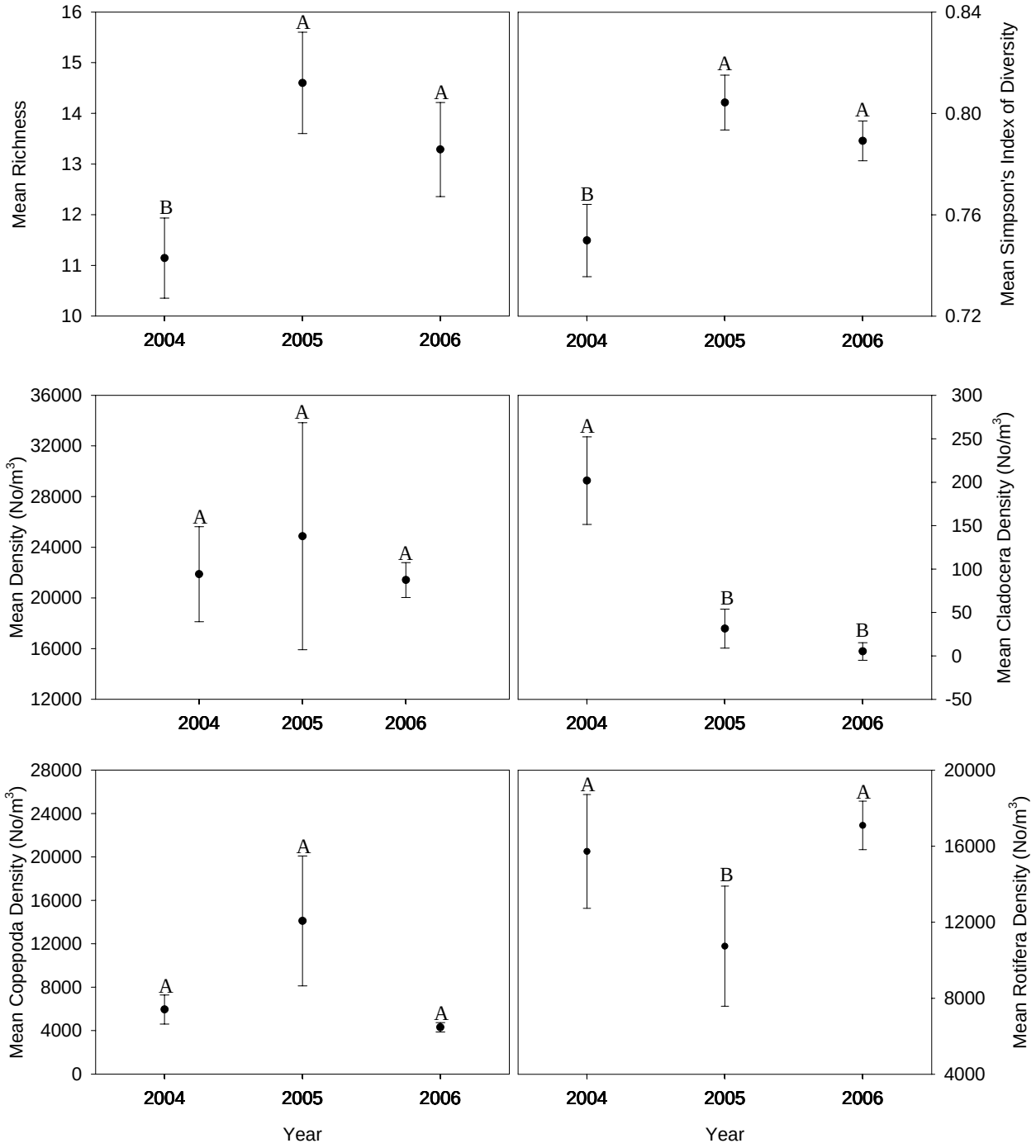


Figure 4.39 Comparison of selected parameters from zooplankton collected in Jericho Lake in 2004, 2005, and 2006. Error bars 95% confidence intervals. Letter indicates statistical significance at p=0.05.

4.6.9 QA/QC

QAQC results are presented in Appendix G2.

QA/QC of identifications showed that 24 out of 25 (96%) taxa were identified in the QA/QC identification compared to the initial identification. *Trichocerca* sp. was the only species that was not encountered during the QA/QC identifications, but since it was extremely rare (0.17% in Control Lake and 0.06% in Lake C3) its being overlooked was not questioned.

Sorting efficiencies were calculated to ensure that endpoint calculations are reasonably reliable and without bias between samples. At least 10% of all samples were resorted. Sorting efficiencies were found to be between 92.2 (Control Lake) and 98.1% (Lake C3).

QAQC was done to determine percent error in taxa identification and enumeration by comparing results for a single split sample. Percent error on the number of taxa identified was 17.6% (3 rare species were not identified). Percent error on total taxa density was 24.0%. Percent errors for taxonomic groups and dominant taxa were ≤28%.

Power analyses were completed for each parameter comparison in 2006. Data are presented in Table 4.13.

Table 4.13 Power analysis results for zooplankton, 2006 Jericho AEM Program.

Parameter	No. Replicates	Standard Deviation	No. of Comparisons [a]	Sample size for Power ≥ 0.8	Actual Power of Test [b]
Richness	7	1.28	5	9	0.664
Diversity	7	0.01	5	2	1.000
Total Density	7	3348.94	5	3	1.000
Cladocera Density	7	35.38	5	3	1.000
Copepoda Density	7	12495.64	5	10	0.617
Rotifera Density	7	14456.14	5	63	0.116

[a] All waterbodies combined for each parameter
[b] Significance level set at $\alpha = 0.05$ and power = 0.8

4.7 BENTHIC MACROINVERTEBRATES

Summary information is presented in Table 4.14 and Figure 4.40. Raw data are presented in Appendix H.

Table 4.14 Benthic macroinvertebrate parameter summary metrics at monitored stations, 2006 Jericho AEM Program.

Parameter	Lake	Station	Sample	Mean	SD	Minimum	Maximum	Significance[a]
Richness (No. taxa)	Cigar	JER25	5	13.8	0.8	13	15	AB
	Control	JER23	5	14.4	1.3	13	16	AB
	C3 (near)	JER20	5	14.4	0.6	14	15	AB
	C3 (far)	JER05	5	12.8	1.3	12	15	AB
	Carat (near)	JER19	5	14.8	1.3	13	16	A
	Carat (far)	JER07	5	12.8	0.8	12	14	AB
	Jericho	JER26	5	12.6	1.1	11	14	B
Diversity (Simpson's D)	Cigar	JER25	5	0.78	0.04	0.71	0.81	D
	Control	JER23	5	0.85	0.02	0.82	0.87	AB
	C3 (near)	JER20	5	0.87	0.01	0.85	0.88	A
	C3 (far)	JER05	5	0.81	0.02	0.78	0.83	BCD
	Carat (near)	JER19	5	0.79	0.03	0.75	0.83	CD
	Carat (far)	JER07	5	0.84	0.02	0.81	0.86	ABC
	Jericho	JER26	5	0.84	0.02	0.81	0.87	AB
Total Density ($No./m^2$)	Cigar	JER25	5	8946.2	2314.0	5883.1	10940.0	AB
	Control	JER23	5	7277.0	1390.1	5622.1	9201.5	AB
	C3 (near)	JER20	5	5477.3	2787.9	1188.2	8143.5	B
	C3 (far)	JER05	5	8827.3	3222.2	6332.2	13867.2	AB
	Carat (near)	JER19	5	10143.2	1479.7	8071.3	11693.5	AB
	Carat (far)	JER07	5	10888.0	3335.0	7201.7	16040.5	AB
	Jericho	JER26	5	5202.1	2649.5	3057.6	9549.2	B
Chironomid Density ($No./m^2$)	Cigar	JER25	5	6274.2	1709.7	4390.5	7607.3	AB
	Control	JER23	5	2750.2	559.3	2202.5	3463.1	C
	C3 (near)	JER20	5	2889.3	822.8	1782.3	3767.4	C
	C3 (far)	JER05	5	3721.0	1216.4	2811.1	5709.1	BC
	Carat (near)	JER19	5	6624.8	1360.8	5303.3	8360.7	A
	Carat (far)	JER07	5	6488.6	2185.9	4810.7	10172.0	AB
	Jericho	JER26	5	2466.2	1153.0	1260.6	4303.5	C
Oligochaete Density ($No./m^2$)	Cigar	JER25	5	312.3	235.1	101.4	710.0	BC
	Control	JER23	5	469.5	270.8	115.9	840.4	B
	C3 (near)	JER20	5	999.8	276.5	507.2	1159.2	A
	C3 (far)	JER05	5	52.2	58.5	0.0	144.9	BC
	Carat (near)	JER19	5	318.8	97.2	217.4	434.7	BC
	Carat (far)	JER07	5	249.9	294.9	29.0	739.0	BC
	Jericho	JER26	5	8.7	13.0	0.0	29.0	BC

[a] Different letter indicates statistical significance. Letters represent statistical differences among statistics at p=0.05.

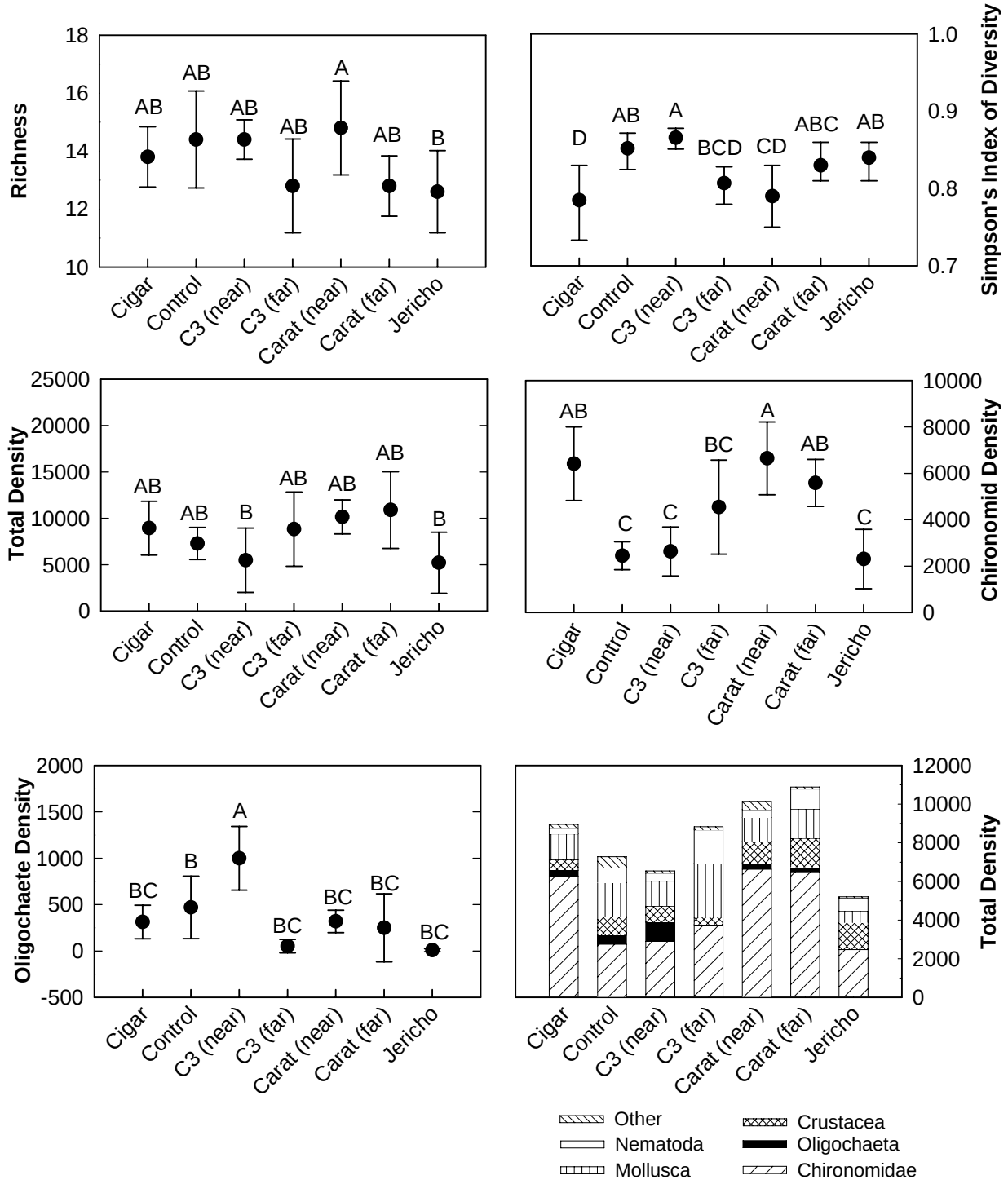


Figure 4.40 Benthic macroinvertebrate parameter summary metrics at monitored stations, 2006 Jericho AEM Program. Error bars represent 95% confidence intervals. Letters indicate statistical significance at p=0.05. Density units are in number of organisms/m^2.

4.7.1 Taxa Richness

Exploration of richness data through probability plots, skewness and kurtosis evaluation, and histograms indicated that the data for each stations was normally distributed and therefore was not in violation of this assumption of ANOVA tests. Moreover Levene's test for homogeneity of variances resulted in this other assumption of ANOVA being met (Levene's statistic=1.08, p=0.398). ANOVA demonstrated the presence of significant differences in mean richness between stations (F-statistic=3.57, p=0.009). Further Tukey HSD post-hoc tests identified that mean richness was significantly higher at near Carat Lake station (14.8) than at the Jericho Lake station (12.6) (p=0.046). In general mean taxa richness was higher at control stations Cigar Lake, Control Lake, and the near Carat Lake and Lake C3 stations than at the far Lake C3 and Carat Lake stations and the Jericho Lake station.

4.7.2 Simpson's Index of Diversity

Mean Simpson's Index of Diversity values were found to be normally distributed (not significantly skewed or kurtotic). Levene's test for homogeneity of variance indicated that variances were not statistically different between stations (Levene's statistic=1.66, p=0.169). ANOVA revealed that mean Simpson's Index of Diversity values were significantly different at stations (F-statistic=8.64, p<0.001). Tukey's post hoc tests revealed that mean Simpson's Index of Diversity values were significantly lower at the Cigar Lake station than all other stations excluding a station on Carat Lake (near) and Lake C3 (far). The low value at the Carat Lake station was significantly lower than at the stations in Jericho Lake, Control Lake, and a station on Lake C3 (far). Moreover, the far station on Lake C3 was significantly lower than the mean Simpson's Index of Diversity value at the near station on Lake C3, but mean values were not statistically different than the remaining stations.

4.7.3 Total Density

Exploration of density data through probability plots, skewness and kurtosis evaluation, and histograms indicated that the data for each station was normally distributed and therefore was not in violation of this assumption of ANOVA tests. Also, variances were found to be equal between stations, which is another assumption of the ANOVA test (Levene's statistic=0.911, p=0.501). There were significant differences in mean density between stations (p=0.008); Tukey HSD post-hoc tests identified that mean density at the far station on Carat Lake was significantly higher than at the Jericho Lake station and the near station on Lake C3 (p=0.023, 0.034, respectively). In general, mean total densities were highest at the Carat Lake stations and lowest at the near station on Lake C3 and the Jericho Lake station.

Chironomids

Exploration of density data through probability plots, skewness and kurtosis evaluation, and histograms indicated that the data for each station was normally distributed and therefore was not in violation of this assumption of ANOVA. Also, variances were found to be equal between stations, which is another assumption of the ANOVA test (Levene's statistic=1.76, p=0.144). ANOVA indicated significant differences among stations (F-statistic=9.61, p=<0.001), whereas post hoc Tukey tests indicated that mean chironomid density was significantly higher at the near station on Carat Lake (6624.8 organisms/m^2) than all other stations ($p \leq 0.05$) with the exception of the far station on Carat Lake (6488.6 organisms/m^2) and the station at Cigar Lake (6274.2 organisms/m^2). In addition, mean chironomid density at the Carat Lake far station was significantly higher than at the near station on Lake C3 (2889.3 organisms/m^2) and the Control Lake (2750.2 organisms/m^2) and Jericho Lake (2466.2 organisms/m^2) stations, but not the near station on Lake C3 (3721.0 organisms/m^2).

Oligochaetes

Exploration of density data through probability plots, skewness and kurtosis evaluation, and histograms indicated that the data for each station was normally distributed and therefore was not in violation of this assumption of ANOVA. Also, variances were found to be equal between stations, which is another assumption of the ANOVA test (Levene's statistic=2.36, p=0.06). ANOVA indicated significant differences among stations (F-statistic=12.47, p=<0.001), whereas post hoc Tukey tests indicated that mean oligochaete density was significantly higher at the near station on Lake C3 (999.8 organisms/m^2) than all other stations (p<0.007). In addition, mean oligochaete density at the Control Lake station (469.5 organisms/m^2) was significantly higher than at the Jericho Lake station (8.7 organisms/m^2), where lowest densities were recorded.

Dominant Taxonomic Groups

Chironomids were the numerically dominant taxa at all stations though their relative importance varied by station. High total mean densities found at the Cigar Lake station as well as both Carat Lake stations were generally the result of high relative numbers of chironomids, rather than a proportional increase in all taxa. In contrast, high relative densities at the far station on Lake C3 were the result of high numbers of molluscs and nematodes. Although oligochaetes can be numerically dominant in these systems, oligochaetes were found at the lowest densities compared to other major taxonomic groups at all stations with the exception of the near station on Lake C3 where. Mollusca followed by Crustacea were important taxonomic groups at all stations. Overall, data suggest that 1) the importance of major taxonomic groups was not consistent among stations and 2) that increases in a single taxonomic group (nematodes or chironomids) can lead to high overall station macroinvertebrate density.

4.7.4 Historical Trends

Taxa Richness

In general, mean richness (# of different taxa) at monitoring stations did not demonstrate significant changes during 1999 to 2006 monitoring periods, with the exception of the Carat Lake stations (Figure 4.41). Specifically, mean richness values at the Carat Lake far station were significantly higher in 2005 than in 2004 ($p=0.033$); mean richness values at the Carat Lake near station were significantly higher in 2006 than in 2004 ($p=0.007$). On the other hand, richness values at the Lake C3 near station (F-statistic=1.81, $p=0.19$), Lake C3 far station (F-statistic=0.00, $p=1.00$), Control Lake station (F-statistic=2.42, $p=0.10$), Cigar Lake station (F-statistic=0.63, $p=0.55$), and the Jericho Lake station (F-statistic=2.33, $p=0.14$) were not significantly different between years, where comparisons were possible.

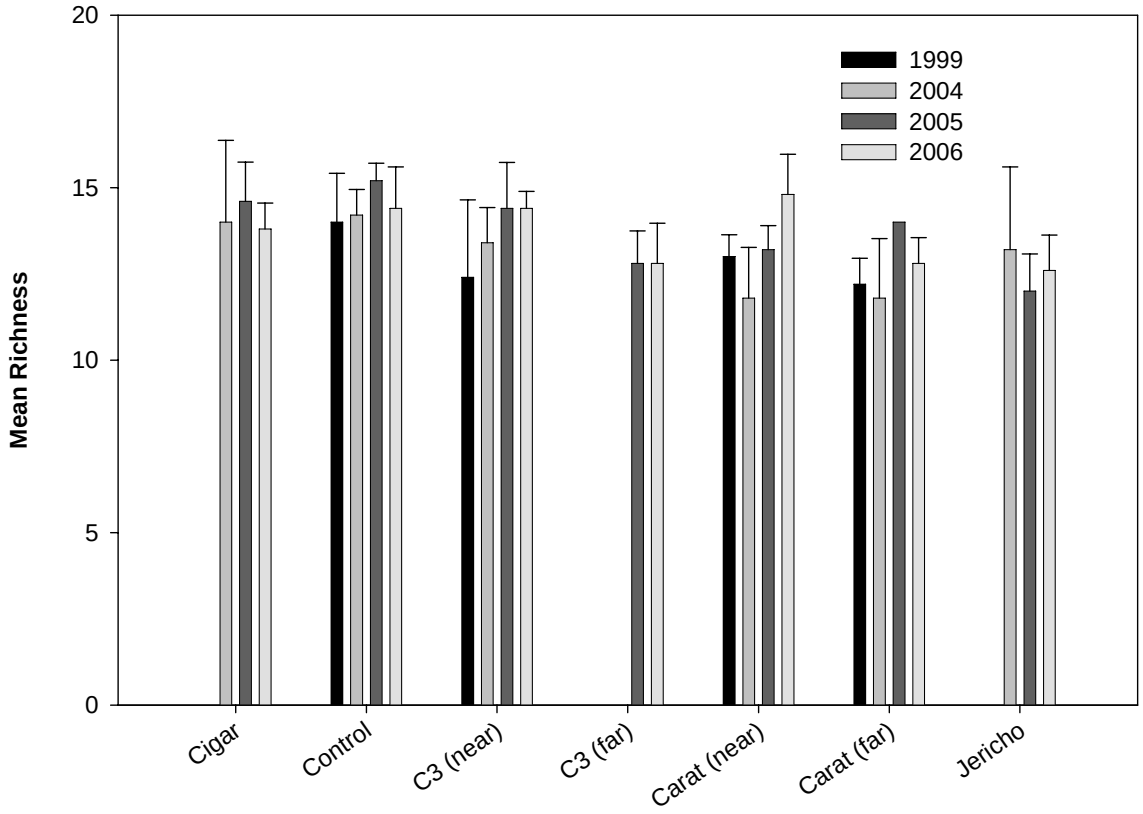


Figure 4.41 Mean benthic macroinvertebrate taxonomic richness at monitoring stations during the 1999, 2004, 2005, and 2006 spring sampling periods. Error bar represents upper 95% confidence interval.

Simpson's Index of Diversity

In general, mean Simpson's Index of Diversity values showed an increase from the 2004 to 2006 monitoring periods (Figure 4.42). The exception to this trend was at the Carat Lake stations where peak values occurred in 2005. When 1999 data were included, there was a general linear increase in values through time at the near station on Lake C3 and the far station on Carat Lake. Conversely at the Control Lake station and Carat Lake near station, 1999 values were higher than most other years. These data trends indicated that local station factors were influencing diversity values, at some stations, and as such diversity values were less dependent on annual factors such as weather.

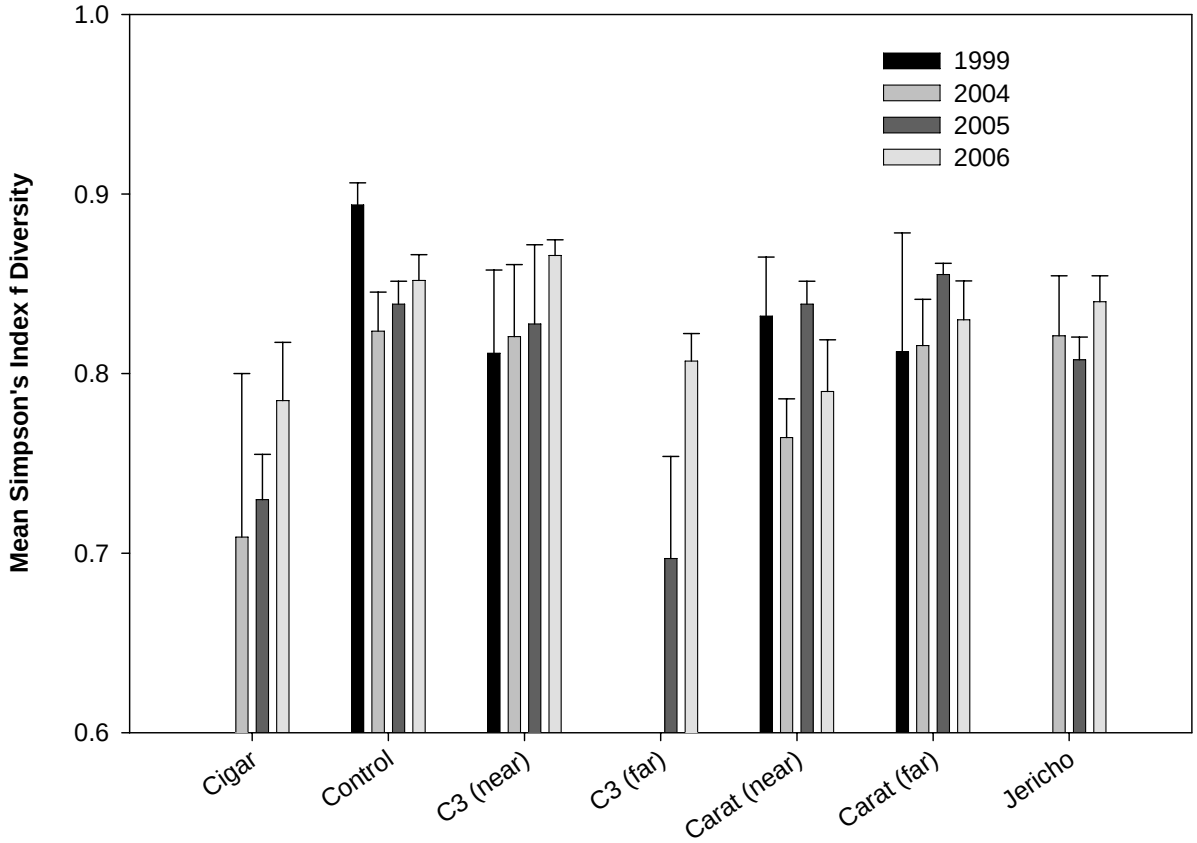


Figure 4.42 Mean benthic macroinvertebrate Simpson's Index of Diversity at monitoring stations during the 1999, 2004, 2005, and 2006 spring sampling periods. Error bar represents upper 95% confidence interval.

At the Cigar Lake between-year patterns were not statistically significant due to high within station variability (F-statistic=1.594, p=0.243). At the Control Lake monitoring station Simpson's Index of Diversity values were significantly higher during 1999 than all other years (p=0.03); all other relationships were not statistically significant. Although diversity values at the Lake C3 near station appeared greater in 2006 compared to previous years, this pattern was not statistically significant

(ANOVA; F-statistic=1.415, p=0.275). At the Lake C3 far station however, Simpson's Index of Diversity values were significantly higher during 2006 than 2005 (t-statistic=3.63, p=0.007); data were not collected during 1999 or 2004. At the Carat Lake near station Simpson's Index of Diversity values were significantly lower in 2004 compared to 1999 (p=0.010) and 2005 (p=0.006), but were not statistically different than in 2006 (p=0.622); all other relationships were not statistically significant. At the Carat Lake far station and Jericho Lake station, Simpson's Index of Diversity values were not significantly different between years (F-statistic=1.057, p=0.395 and F-statistic=1.477, p=0.267, respectively).

Total Density

There were two temporal patterns that were apparent at benthic monitoring stations in regards to total density of benthic macroinvertebrates (Figure 4.43). At the Control Lake station and both Carat Lake stations mean densities increased from 2004 to 2006, whereas at the Cigar Lake, Lake C3 (near) and Jericho Lake stations density increased from 2004 to 2005 and then decreased from 2005 to 2006. Mean densities during the 1999 sampling period were highest at Control Lake, Lake C3 (near), and Carat Lake stations than for all other years; at the Carat Lake near station 1999 densities were lower than what would be expected based on trends for the other stations.

ANOVA indicated that between-station differences were significant for the Control Lake station (F-statistic=43.98, p<0.01), Cigar Lake station (F-statistic=6.28, p<0.01), Carat Lake near station (F-statistic=13.22, p<0.01), Carat Lake far station (F-statistic=4.83, p=0.01) and the Lake C3 far station (F-statistic=10.08, p=0.01). Significant differences between years were not found for the Lake C3 near station (F-statistic=2.93, p=0.07) and the Jericho Lake station (F-statistic=1.57, p=0.25). At the Cigar Lake station, mean densities in 2005 were significantly higher than in 2006 (p=0.01) but not statistically different than 2004 (p=0.11); densities in 2004 and 2006 were not statistically different (p=0.42). At the Control Lake station, mean densities of benthic macroinvertebrates were significantly higher in 1999 compared to all other years (p<0.01). In addition, mean densities were significantly lower in 2004 compared to 2006 (p=0.02); all other comparisons were not significant. At the Lake C3 near station, mean densities were highest in 1999 followed by 2005, 2006, and then 2004; none of these relationships were significant (F-statistic=2.93, p=0.07).

At the Lake C3 far station, mean densities were not recorded during 1999 and 2004; densities were significantly lower in 2006 compared to 2005 (t-statistic=3.17, p=0.02).

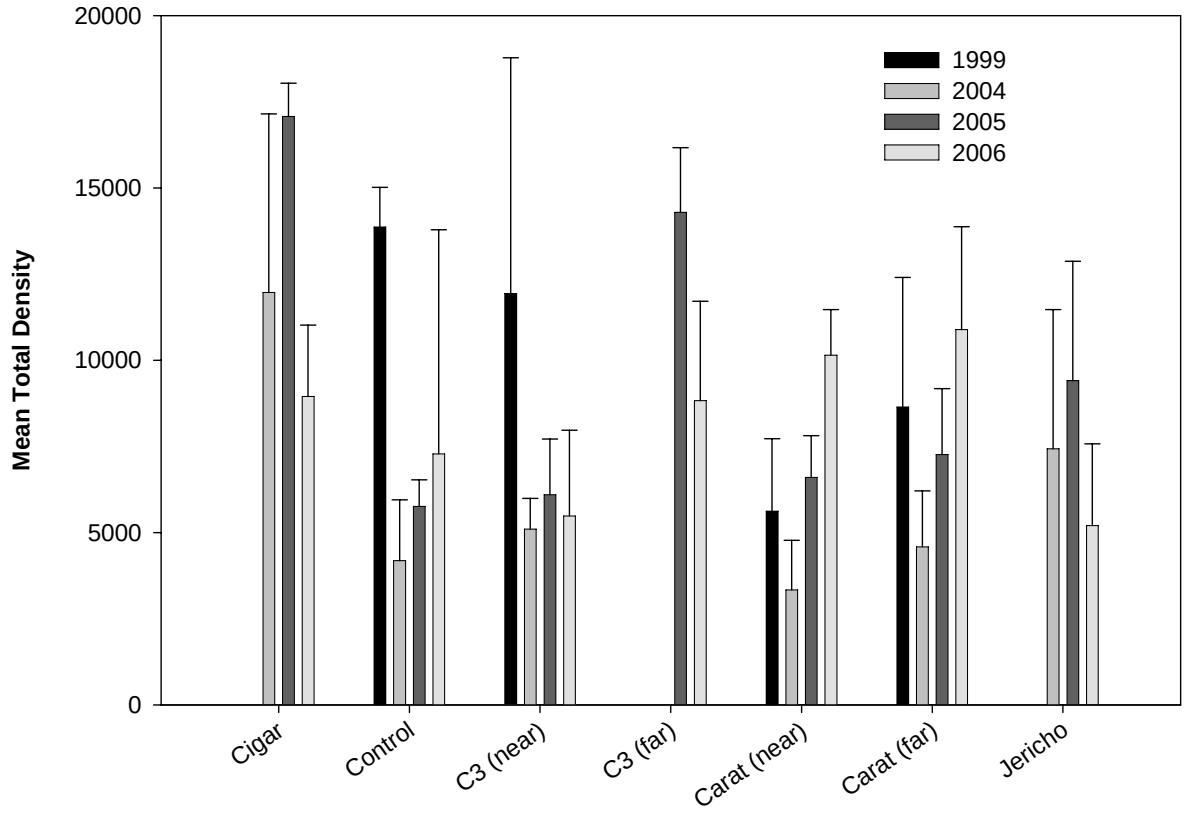


Figure 4.43 Mean benthic macroinvertebrate density at monitoring stations during the 1999, 2004, 2005, and 2006 spring sampling periods. Error bar represents upper 95% confidence interval.

At the Carat Lake far station, mean density during 2004 was significantly lower than in 2006 ($p=0.021$) but not 1999 or 2005. Mean densities at this station were not significantly different in 1999, 2005, and 2006. At the Carat Lake near station, density during 2004 was significantly lower than in 2005 and 2006 ($p<0.05$) but not 1999 ($p=0.20$). Moreover, mean macroinvertebrate density was significantly higher in 2006 than during all other years ($p<0.03$).

Chironomids

In general chironomid density was temporally variable at stations (Figure 4.44). However at the controls (Cigar Lake and Control Lake) and Jericho Lake stations chironomid densities were generally lower or equal in 2006 compared with 1999 to 2005 data. Conversely at the stations on Lake C3 and Carat Lake, chironomid densities appeared highest in 2006 compared to all other years. In terms of statistical significance, at the Cigar Lake station mean chironomid density was significantly higher in 2005 than in 2006 ($p=0.005$) and 2004 ($p=0.030$). At the Control Lake station mean chironomid density was significantly higher in 1999 than in 2004, 2005, and 2006 ($p<0.001$). At the Carat Lake near station mean chironomid density in 2006 was significantly higher than in 1999, 2004, and 2005 ($p<0.001$). Similarly, at

the Carat Lake far station mean chironomid density in 2006 was significantly higher than in 1999, 2004, and 2005 ($p<0.030$). At the Lake C3 near and far stations mean chironomid density was not significantly different between years (F-statistic=2.29, p=0.117, t-statistic=1.52, p=0.093, respectively), where comparisons were possible. At the Jericho Lake station mean chironomid density was significantly higher in 2005 than in 2004 (p=0.002) and 2006 (p=0.007).

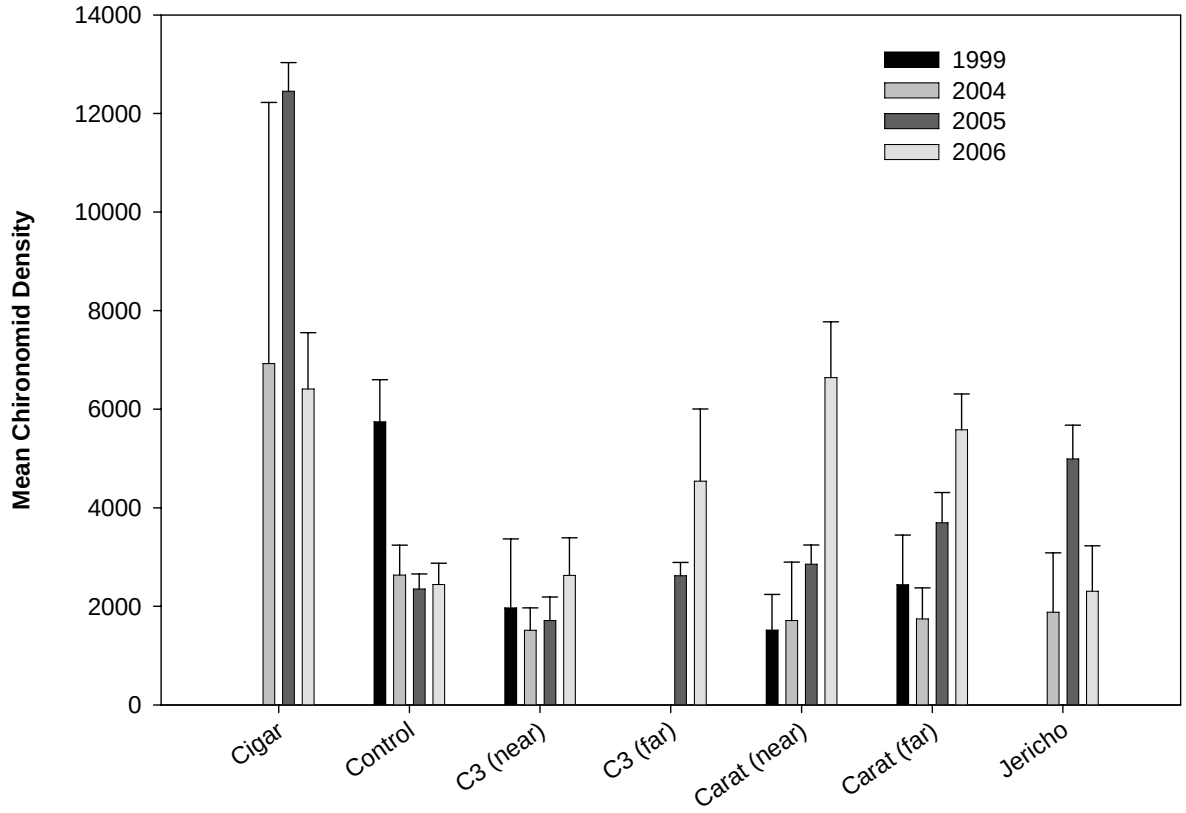


Figure 4.44 Mean chironomid density at monitoring stations during the 1999, 2004, 2005, and 2006 spring sampling periods. Error bar represents upper 95% confidence interval.

Oligochaetes

Oligochaete density was temporally variable at some stations, with oligochaete densities in some years tripling densities in other years, whereas at other stations oligochaete densities were similar throughout sampling years (Figure 4.45). For example, oligochaete densities were consistently low at the Jericho Lake station, Carat Lake near station, and Lake C3 far station (only two years of data). In terms of statistical significance, mean oligochaete density was not significantly different between years at the Cigar Lake station (F-statistic=0.262, p=0.774), Carat Lake near station (F-statistic=0.840, p=0.492), and Lake C3 far station (t-statistic=1.519, p=0.167). In general, oligochaete densities were higher at the Control Lake station, Carat Lake far station, and Lake C3 near station, and oligochaete densities were

highly variable among years. At the Control Lake station and Carat Lake far station, mean oligochaete density was significantly higher in 1999 than in 2004, 2005, and 2006 ($p<0.001$); none of the other relationships between years were statistically significant. Conversely, at the Lake C3 near station, mean oligochaete density was significantly higher in 2006 than in 1999, 2004, and 2005 ($p=0.02$). At the Jericho Lake station, mean oligochaete density was significantly higher in 2005 than in 2006 ($p=0.023$) but not 2004 ($p>0.05$); all other relationships between years were not statistically significant.

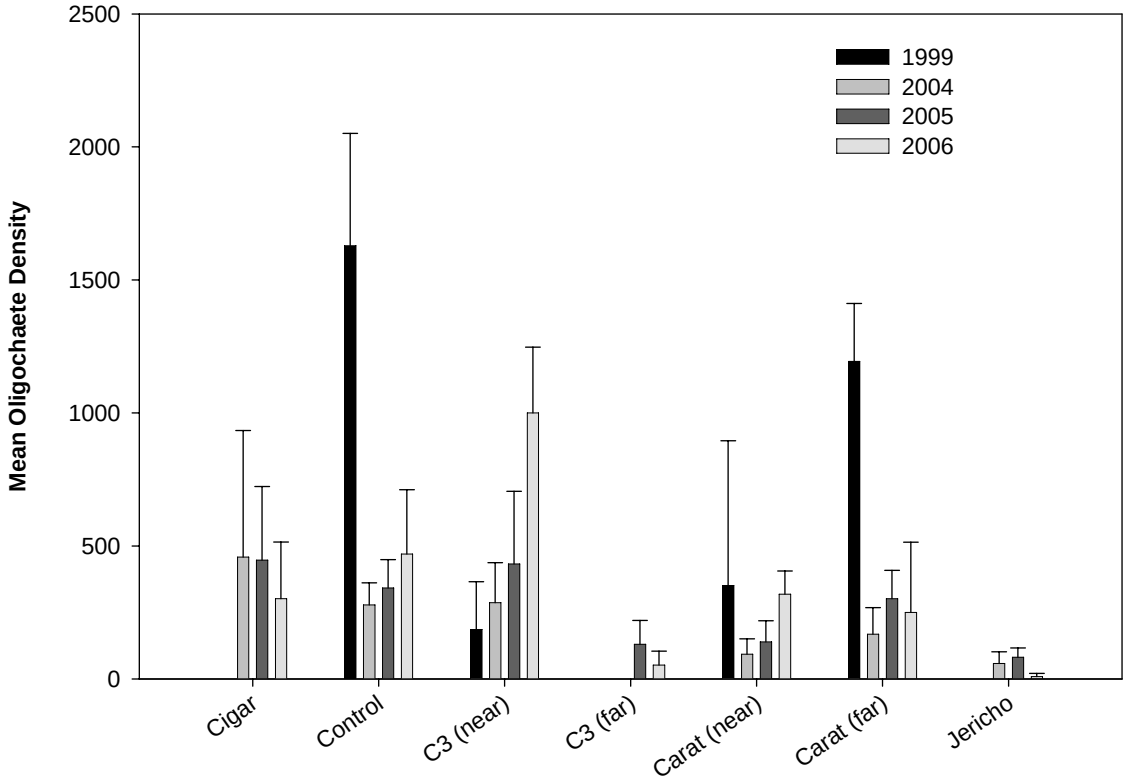


Figure 4.45 Mean oligochaete density (organisms/m^2) at monitoring stations during the 1999, 2004, 2005, and 2006 spring sampling periods. Error bar represents upper 95% confidence interval.

4.7.5 QAQC

QA/QC procedures were completed for sorting precision, identification accuracy and computer data entry (Appendix H2). Residues from two randomly selected samples (10% of total samples) were resorted by a person not involved in the first sorting. The sorting errors were found to be no more than 1.87% (mean=0.67%), which allowed the assumption of a 95% recovery from all samples, as required by Environment Canada (1993). A reference collection of selected taxa more complicated for identification was completed and was verified by a qualified taxonomist (Robert Saunders, Calgary).

The total numbers of taxa and numbers of individuals per sample were manually calculated from rough data, and again computed following computer data entry. Similar results ensured correct data entry. To ensure that data integrity and correctness were further maintained, spreadsheets were verified by recalculating sums of columns and rows at every stage of data computation.

Power analyses were completed for each parameter comparison in 2006. Data are presented in Table 4.15.

Table 4.15 Power analysis results for benthic macroinvertebrates, 2006 Jericho AEM Program.

Parameter	No. of Replicates	Standard Deviation	No. of Comparisons [a]	Sample size for Power ≥ 0.8	Actual Power of Test [b]
Richness	5	1.03	7	4	0.926
Diversity	5	0.02	7	3	1.000
Total Density	5	2075.56	7	4	0.987
Chironomid Density	5	1051.04	7	2	1.000
Oligochaete Density	5	178	7	2	1.000

[a] All waterbodies combined for each parameter
[b] Significance level set at $\alpha = 0.05$ and power = 0.8

4.8 FISH COMMUNITY CHARACTERISTICS

Several parameters were summarized for fish species populations in the Jericho study area (Table 4.16). Most have been identified as monitoring parameters in the Jericho Aquatic Effects Monitoring Plan (Mainstream and AMEC 2005). Data summaries for specific lakes are presented in Appendix I.

Summaries were restricted to data for four lakes (Cigar Lake, Lake C3, Carat Lake, and Jericho Lake) and three streams (Stream W, Stream C3, and Stream C1). Cigar Lake and Stream W are control waterbodies, while the remaining waterbodies potentially could be affected by mining activities.

All waterbodies are part of the Jericho Aquatic Effects Monitoring Program. Figure 1.1 shows the locations of these waterbodies in relation to the Jericho Mine.

Table 4.16 Parameters summarized from pre-development baseline fish data collected in the Jericho Study Area between 1995 and 2005.

Indicator	Parameter	
Fish	Community Structure	Species diversity Abundance index (No. fish per $10m^2$/12h) in lakes Density estimate (No. per 100 m) in streams
	Population Structure	Length distribution Age distribution
	Reproductive Potential	Sex ratio Age at sexual maturity Spawning status Gonad weight
	Population Health	Length-weight relationship Growth rate Mortality rate Feeding habits

4.8.1 Species Diversity

At total of six species were recorded in the selected waterbodies of the Jericho study area (Table 4.17). These included Arctic grayling (*Thymallus arcticus*), Arctic char (*Salvelinus alpinus*), burbot (*Lota lota*), lake trout (*Salvelinus namaycush*), round whitefish (*Prosopium cylindraceum*), and slimy sculpin (*Cottus cognatus*). In general, lake trout and round whitefish were the dominant large-fish species numerically, Arctic char was intermediate. All three were recorded in all lakes. Arctic grayling and burbot were scarce numerically. Arctic grayling was restricted to Carat Lake.

Slimy sculpin was the only small-fish species recorded. It was located primarily in streams flowing into lakes. The absence of this species in Cigar Lake likely is explained by the lack of stream sampling in this area. It also should be noted that ninespine stickle (*Pungitius pungitius*) was recorded in the O series of lakes in the Jericho study area (RL&L 1997).

4.8.2 Fish Abundance in Lakes

Fish abundance in lakes was restricted to evaluations of the three dominants species: Arctic char, lake trout, and round whitefish. Catch rates were generated from gill net catch data.

Table 4.17 Number and percent composition of fish species recorded in waterbodies during Jericho pre-development baseline studies.

Species	Cigar Lake		Lake C3[a]		Carat Lake[b]		Jericho Lake	
	Number	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Arctic char	9	8.5	61	11.0	219	13.9	77	19.7
Arctic grayling	-	-	-	-	40	2.5	-	-
Burbot	-	-	2	0.4	8	0.5	1	0.3
Lake trout	79	74.5	181	32.5	559	35.5	217	55.6
Round whitefish	18	17.0	84	15.1	189	12.0	14	3.6
Slimy sculpin	-	-	229	41.1	560	35.6	81	20.8
Total	**106**	**100.0**	**557**	**100.0**	**1575**	**100.0**	**390**	**100.0**

[a] Includes fish recorded in Stream C3.
[b] Includes fish recorded in Stream C1.

The results indicated low catch rates for all three species populations in all four lakes (Figure 4.46). Mean catch rates rarely exceeded 2 fish per 100 m^2/12h for Arctic char and round whitefish. Mean catch rates for lake trout were higher, but rarely exceeded 5 fish per 100 m^2/12h. The very large standard deviation around the mean (generally > 100%) precluded assessment of temporal or spatial differences.

4.8.3 Fish Abundance in Streams

Estimates of fish abundance were available for spring (June and early July) and summer (August) in Stream C1 for 1999 (summer only), 2004, and 2005, and in Stream C3 for 2004 and 2005. Estimates of fish abundance were not available for Stream W.

Figure 4.47 provides a summary of density estimates (No. fish per 100 m) for Arctic char, lake trout, and slimy sculpin spring and summer periods. Slimy sculpin was the most abundant species in Stream C1; density estimates exceeded 30 fish per 100 m. Arctic char and lake trout densities were generally below 20 fish per 100m and varied by season. Densities of these two species tended to be higher in spring compared to summer.

Fish densities in Stream C3 generally were low. In spring, slimy sculpin densities exceeded 20 fish per 100 m, but then decreased to less than 10 fish per 100 m in summer. Arctic char and lake trout densities were very low in spring (<5 fish per 100 m) and these two species were absent from the density estimate sample during the summer period. As for gill net catch rate, the large variation around the densities precludes an assessment of temporal or spatial trends in fish abundance in streams.

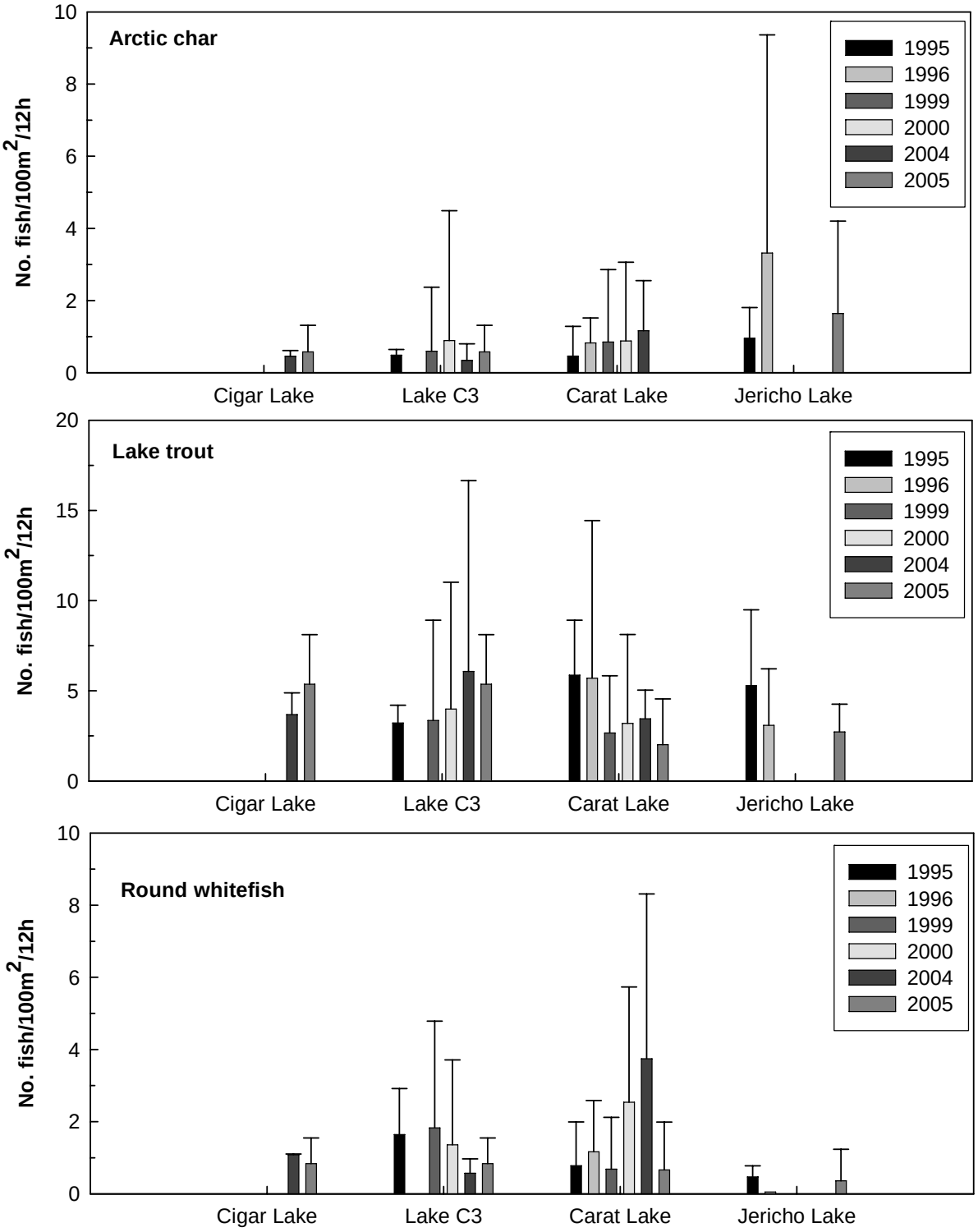


Figure 4.46 Mean gill net catch rates of Arctic char, lake trout, and round whitefish in lakes during Jericho pre-development baseline studies. Error bar represents standard error.

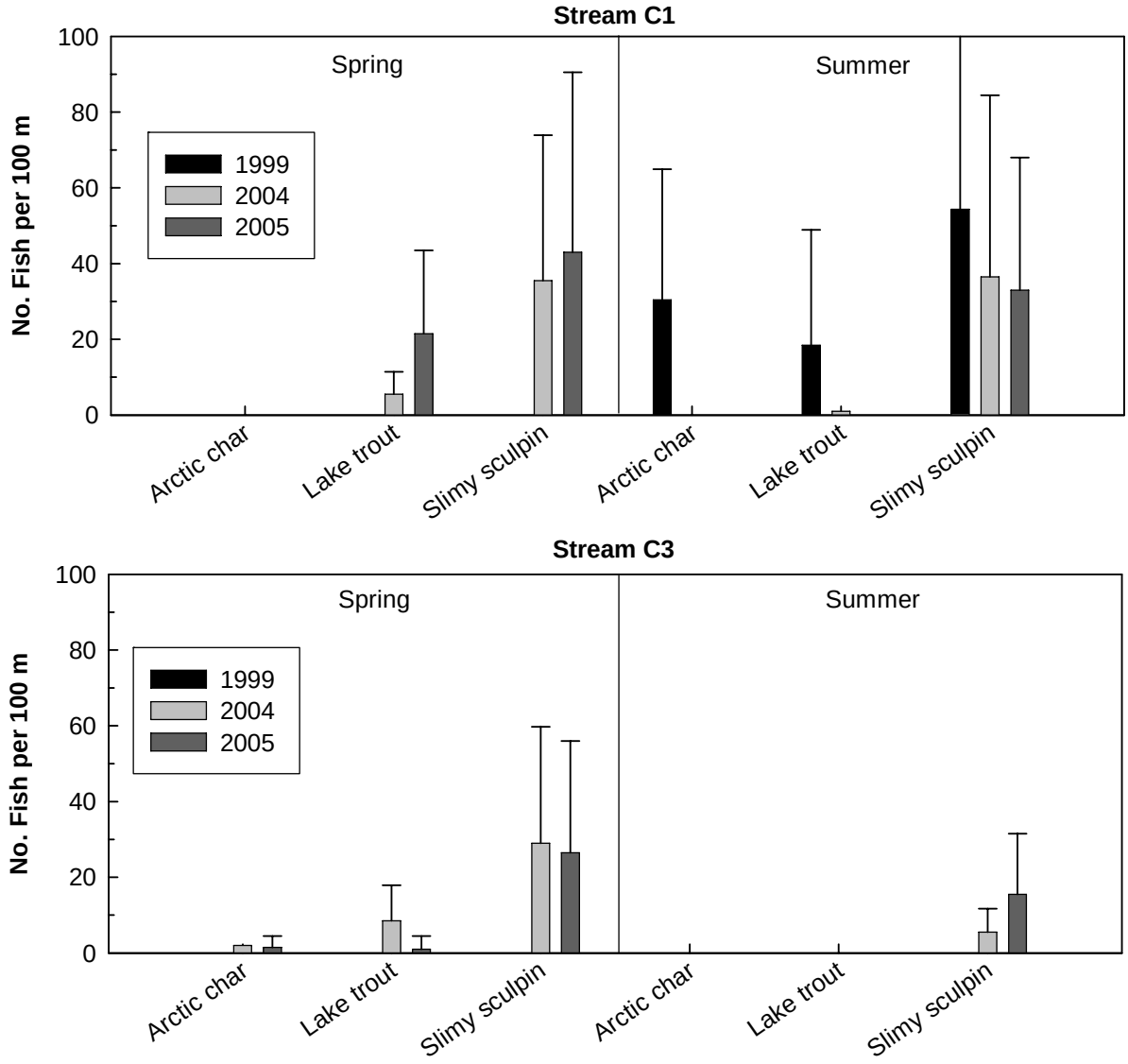


Figure 4.47 Density estimates of Arctic char, lake trout, and slimy sculpin in streams during Jericho pre-development baseline studies. Error bar represents upper 95% confidence interval.

4.8.4 Length Distribution

Length distributions of Arctic char, lake trout, and round whitefish are presented in Figure 4.48; Appendix I1. Length distributions of all three species were dominated by larger fish. Arctic char and lake trout distributions exhibited bimodal distributions.

The length distribution of slimy sculpin is presented in Figure 4.48; Appendix I2. Length classes ranged from 10 mm to 110 mm interval indicating a range of age groups (i.e., fry, juveniles, and adults).

Table 4.18 provides summary statistics for fish species recorded in streams during baseline studies. The information demonstrated that streams were used by smaller, younger fish of the large-fish species. Median lengths of Arctic char, Arctic grayling, lake trout, and round whitefish suggested that Age 1 fish predominated. Minimum lengths suggested the presence of Age 0.

Table 4.18 Summary length statistics for fish species recorded in streams during Jericho pre-development baseline studies (all years combined).

Species	Stream W				Stream C1				Stream C3			
	n	**Median**	**Min.**	**Max.**	**n**	**Median**	**Min.**	**Max.**	**n**	**Median**	**Min.**	**Max.**
Arctic char					95	48	21	142	17	55	33	178
Arctic grayling					25	51	41	85				
Burbot	1	202	202	202	6	96.5	81	132	1	90	90	90
Lake trout					95	58	31	177	26	42	29	80
Round whitefish					8	86	53	108				
Slimy sculpin	95	65	33	115	355	55	16	86	184	61	23	88

4.8.5 Age Structure

Age structure summaries for dominant large-fish species in lakes are presented in Figure 4.49; Appendix I3. These include age distribution, catch curve of the vulnerable component of the sample population, and apparent mortality rate. Summaries are based on nonrandom samples of fish ages and combined data for several years and/or waterbodies; therefore, results should be interpreted with caution.

Arctic char, lake trout, and round whitefish sample populations in lakes were dominated by older fish. Maximum recorded ages of lake trout and round whitefish were 45 and 30 years, respectively. The descending limb of catch curves for lake trout and round whitefish exhibited low slopes; apparent mortality rates for both species were low (<13%). Age data for Arctic char were insufficient to develop catch curves or apparent mortality rates, but it is likely that this sample population would exhibit similar characteristics.

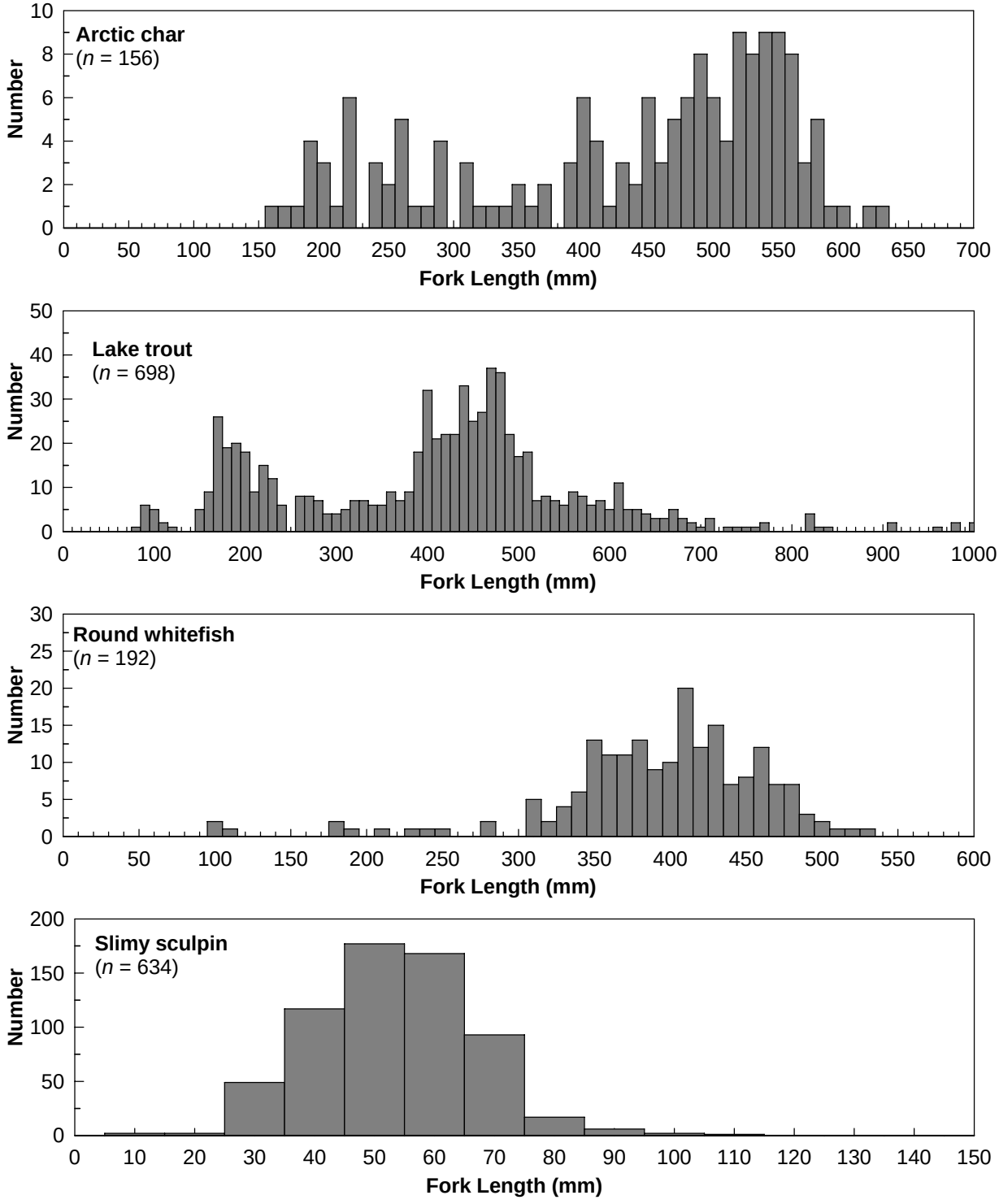


Figure 4.48 Length distributions of Arctic char, lake trout, and round whitefish in lakes and slimy sculpin in streams during Jericho pre-development baseline studies (all years and lakes combined).

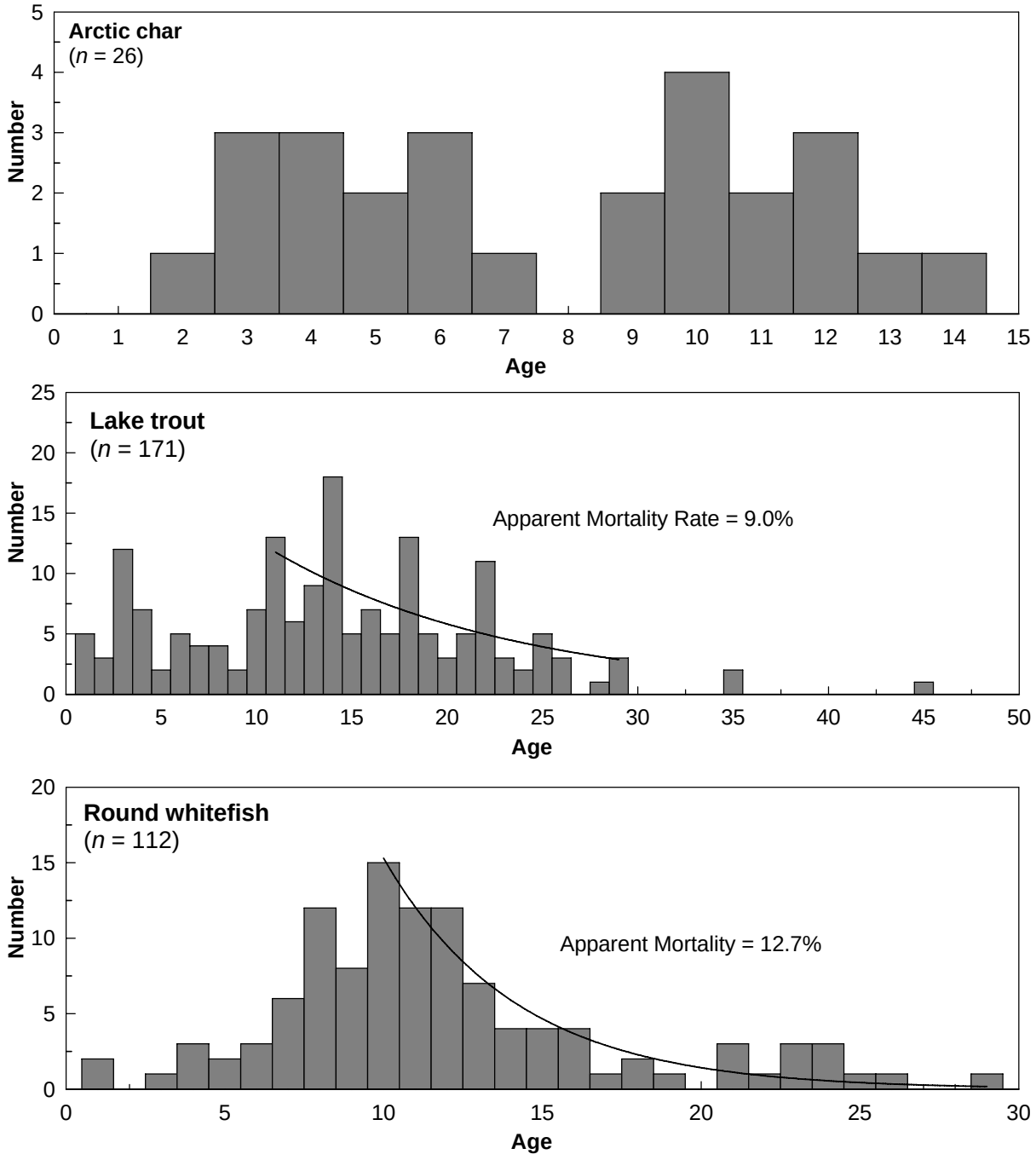


Figure 4.49 Age distributions, catch curves, and apparent mortality rates of Arctic char, lake trout, and round whitefish in lakes during Jericho pre-development baseline studies (all years and lakes combined).

4.8.6 Length-weight Relationship

Length-weight relationships for dominant large-fish species in lakes are presented in Figure 4.50; Appendix I4.

4.8.7 Growth Rate

Length-at-age relationships for dominant large-fish species in lakes are presented in Figure 4.51; Appendix I6. Data are based on small, non-random samples and combined data for several years and/or waterbodies; therefore, the results should be interpreted with caution.

Arctic char, lake trout, and round whitefish were slow growing as evidenced by low von Bertalanffy growth coefficients ($K < 0.19$). The K value for lake trout ($K = 0.03$) likely was influenced by the small sample sizes and large variation in length-at-age of older fish, and therefore, it may not be accurate.

4.8.8. Reproductive Status

Table 4.19 provides a summary of the reproductive status of dominant large-fish species in lakes. The sex ratio of lake trout and round whitefish approximated a 50:50 ratio males to females. The Arctic char sample population was skewed towards males (64:34), which may be an artifact of sample bias rather that the actual sex ratio. Based on very small sample sizes ($n \leq 3$) age-at-maturity was Age 10 for Arctic char (both sexes), Age 11 for lake trout (both sexes), and Age 6 (males), and Age 7 (females) for round whitefish.

Sample populations of mature fish of all three species contained substantial percentages of nonspawners, which provided a strong indication of alternate year spawning or multi-year rest periods between spawning. The percentages of nonspawners were Arctic char (26%), lake trout (45%), and round whitefish (31%).

Table 4.19 Sex ratio, age-at-maturity, and spawning status for Arctic char, lake trout, and round whitefish in lakes during Jericho pre-development baseline studies.

Species	Sample Size	Sex Ratio (male to female)	Age-at-maturity (sample size)		Status of Mature Fish (%)	
			Male	Female	Spawner	Nonspawner
Arctic char	100	64:34	10 (1)	10 (2)	74	26
Lake trout	414	58:42	11 (3)	11 (1)	55	45
Round whitefish	159	55:45	6 (1)	7 (2)	69	31

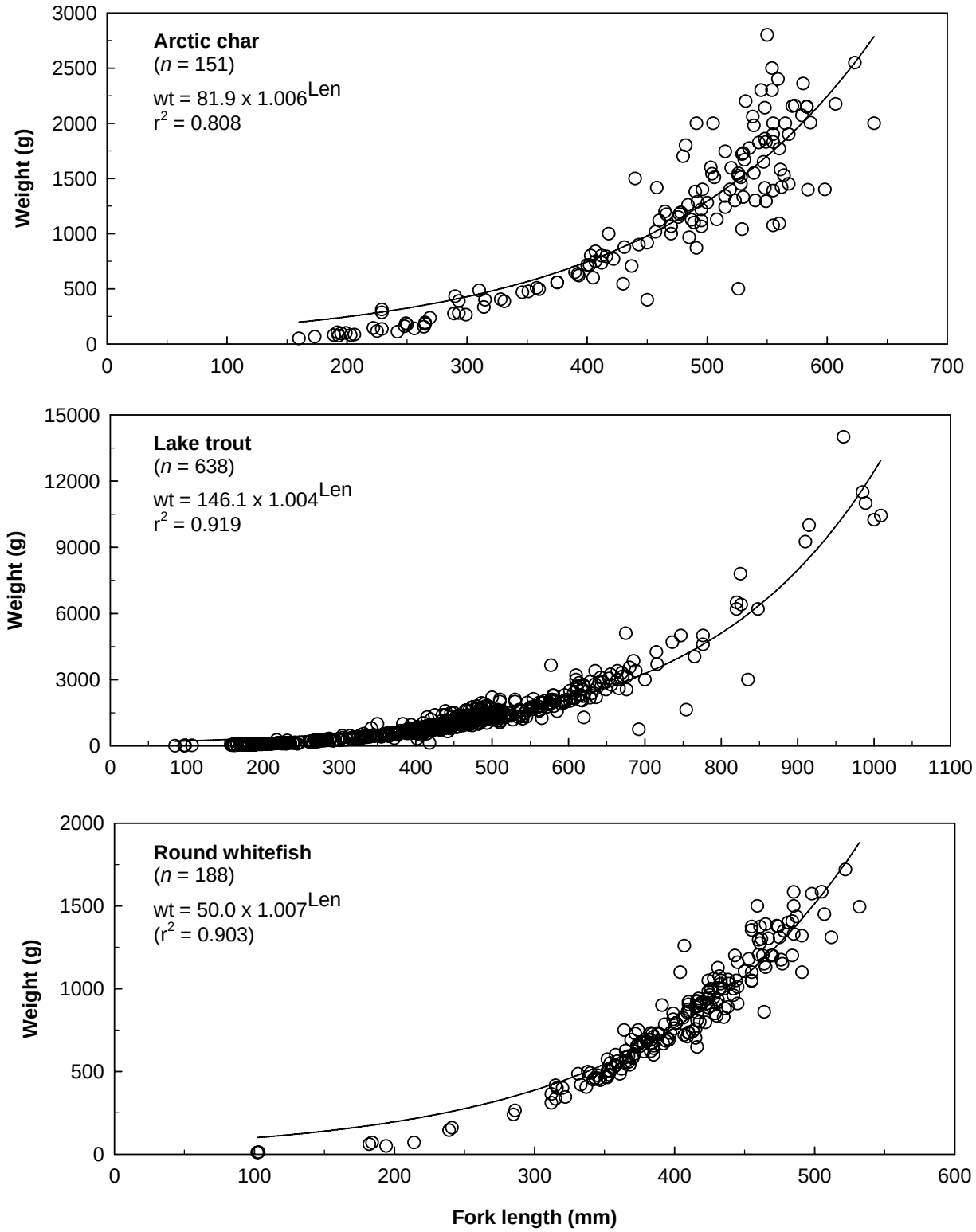


Figure 4.50 Length-weight relationships of Arctic char, lake trout, and round whitefish in lakes during Jericho pre-development baseline studies (all years and lakes combined).

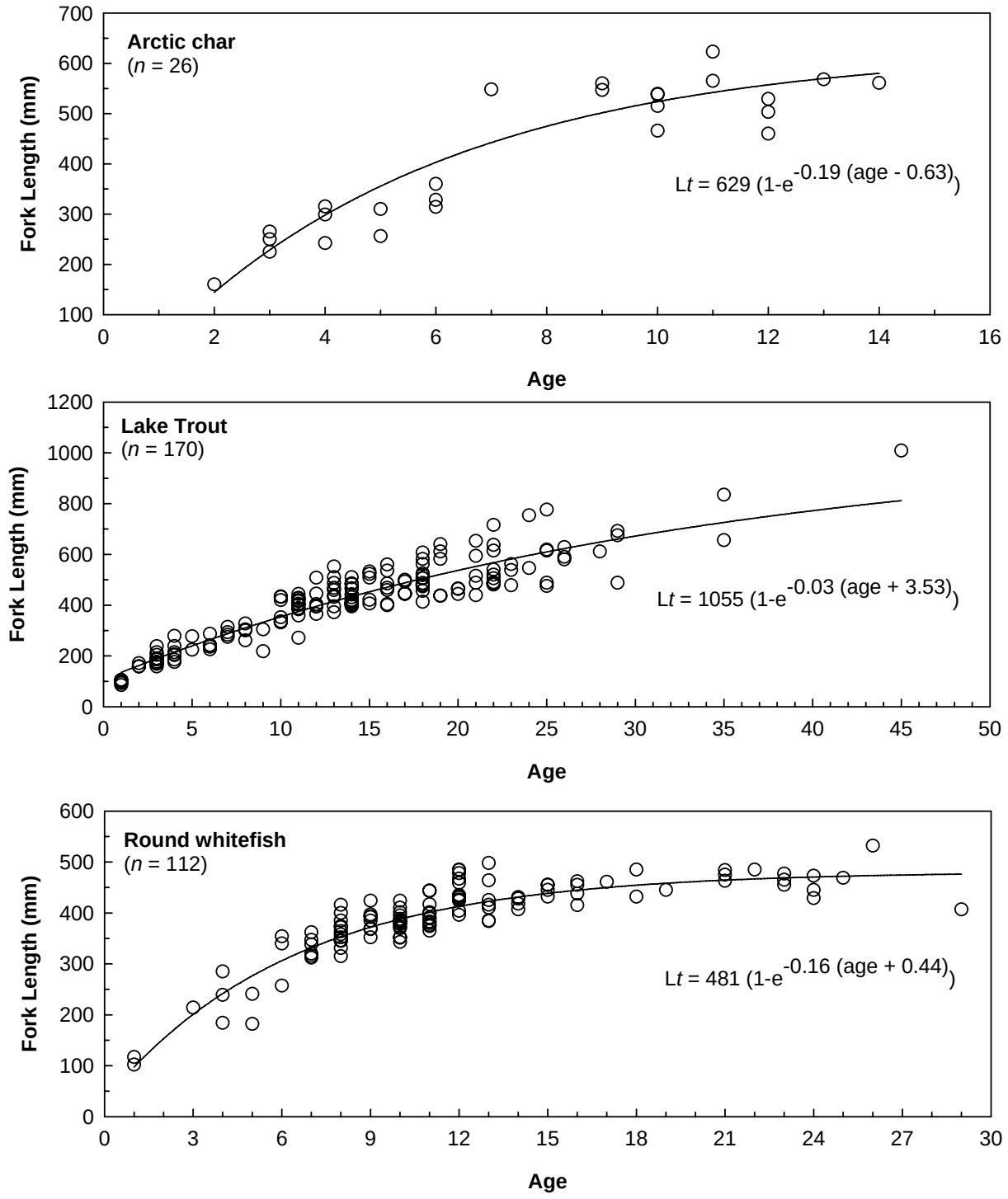


Figure 4.51 Length-at-age relationships of Arctic char, lake trout, and round whitefish in lakes during Jericho pre-development baseline studies (all years and lakes combined).

Gonadosomatic index (GSI) summaries for lake trout and round whitefish are presented in Table 4.20. GSI data were not collected for Arctic char during historical baseline studies.

Table 4.20 Summary of gonadosomatic index (GSI) values for lake trout and round whitefish collected from lakes during Jericho pre-development baseline studies.

Species	Sex	Sample Size	Mean	Minimum	Maximum
Lake trout	Female	9	6.88	2.26	14.27
	Male	13	2.25	0.74	4.00
Round whitefish	Female	14	4.24	1.39	6.65
	Male	21	3.34	0.85	4.50

4.8.9 Feeding Habitats

Summaries of feeding habitats for dominant large-fish species in lakes are presented in Figure 4.52; Appendix I5. Parameters include percent occurrence, percent composition, and mean fullness.

Zooplankton was a dominant food item in the stomachs of Arctic char, lake trout, and round whitefish in terms of percent occurrence. Arctic char consumed much more zooplankton compared to all other major food groups (82% versus <11%). Zooplankton also dominated lake trout stomach contents (52%), but insects (30%) and fish (15%) also were important. Zooplankton was important in the diet of round whitefish (36%), but the insect food group dominated in terms of percent composition (46%). Round whitefish also consumed molluscs and gastropods, which together accounted for 13% of consumed food items.

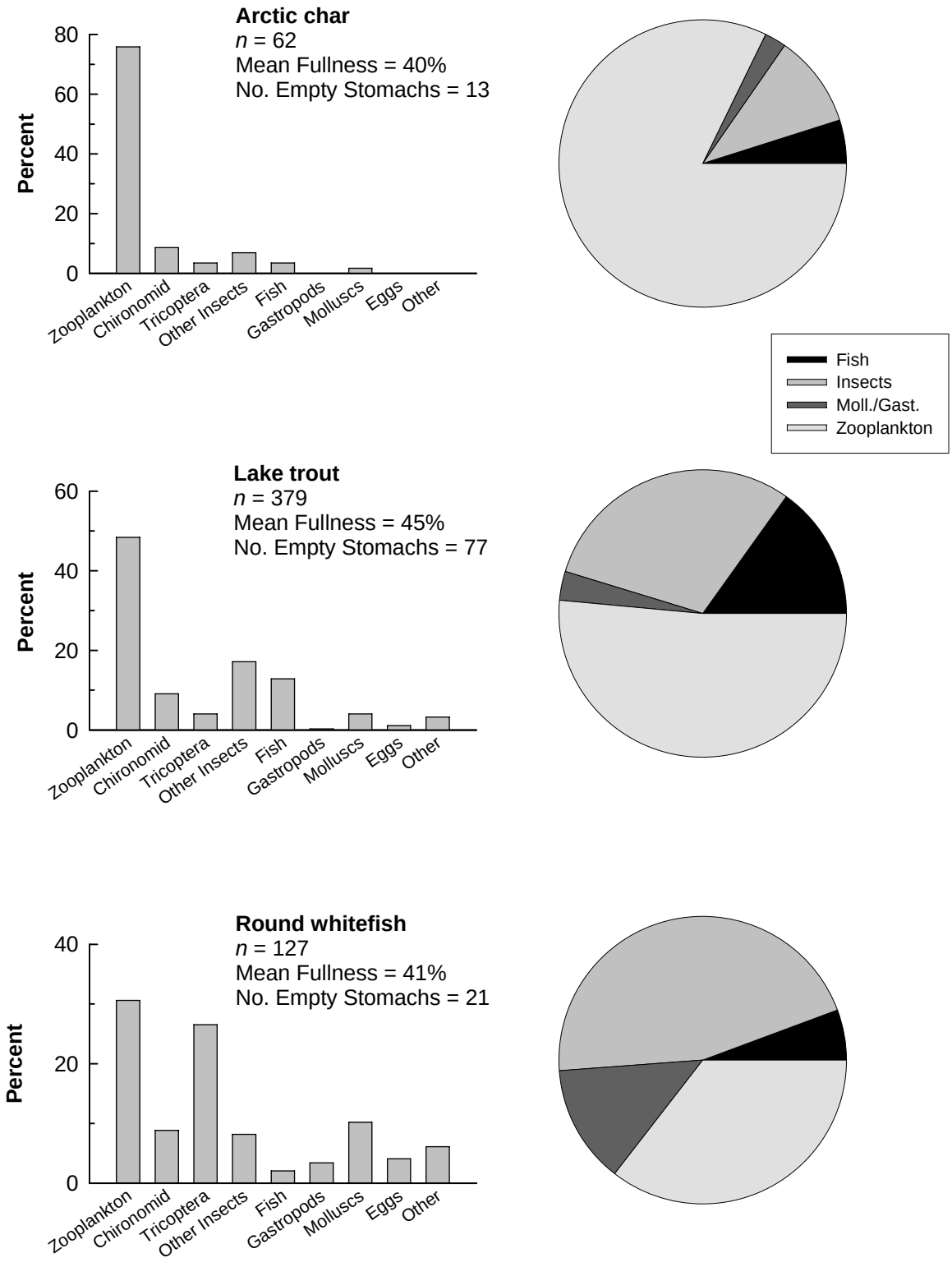


Figure 4.52 Percent occurrence (histogram) and percent composition (pie chart) of major food items recorded in Arctic char, lake trout, and round whitefish stomachs in lakes during Jericho pre-development baseline studies (all years and waterbodies combined).

5.0 SUMMARY

Indicators monitored in 2006 during the Jericho AEM Program included water chemistry, sediment chemistry, lake profile parameters (dissolved oxygen, temperature profiles, and secchi depth), sediment deposition, phytoplankton, zooplankton, and benthic macroinvertebrate communities. Parameter data were compared among monitoring stations in 2006 and to previously collected data, where possible. Historical fish community characteristics were described using pre-development baseline data (i.e., 1995 to 2005).

Water Chemistry

In general, waterbodies in the Jericho study area were slightly acidic, oligotrophic to mesotrophic in trophic status, and had low hardness, alkalinity and overall buffering capacity. In general, water chemistry and physical parameters were within recommended Canadian guidelines for drinking water, protection of freshwater aquatic life, and effluent guidelines specified in the water license. For the Carat Lake Freshwater Intake station (JER01) all parameters were within Canadian Drinking Water Quality guideline values. Similarly, monitoring at the PKCA discharge station (JER02) indicated that water quality at this station was in accordance with effluent guidelines outlined in the water license. Most water chemistry and physical parameters at stations monitored for water quality as part of the Aquatics Effects Monitoring Program were in accordance with recommended Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life, with three exceptions. Concentrations of the trace metals, aluminum, chromium and copper were in exceedence of guidelines at most monitoring stations (including controls), which suggested high background levels in Jericho study area waterbodies.

Temporal changes in some water chemistry parameters were recorded. Conductivity at Stream C3 (JER03), Stream C3 outlet (JER20), Lake C1 (JER13), Stream C1 (JER12), and Stream C1 outlet (JER19), exhibited an increasing trend from 2005 to 2006. In addition, hardness appeared to increase between 2005 and 2006, at Stream C3 (JER03) and Stream C1 (JER12). Nitrate values were well below CWQGs during all monitoring periods and at all monitored stations, but changes between 2005 and 2006 were recorded. Increasing concentrations were recorded in Stream C3 (JER03), Lake C1 (JER13), and Stream C1 (JER12). There was some evidence that aluminum concentrations increased from background levels at Lake C1 (JER13). Maximum point measures were 0.037 mg/L in 2000, 0.0600 mg/L in 2005, and 0.0949 mg/L in 2006. At present it is not known whether this trend is real or an anomaly. For chromium maximum concentrations from 1995 to 2000 at monitored stations were below the CWQG. In 2005 and 2006 the majority of chromium maximum values were above the guideline. This difference

would suggest a change from baseline. However, such a distinct change at all stations (near field, far field, and reference), particularly in 2005 when the mine was not fully operation, makes mine effects improbable. An alternate explanation would be a change in analytical procedure or detection limits.

Sediment Chemistry

Arsenic, copper, chromium, nickel, uranium and zinc were analyzed. In general, Jericho area lakes had high arsenic and copper sediment concentrations and they were often in exceedence of the ISQGs. Values for other parameters were below guidelines. In general all selected parameters were spatially and temporally variable. Arsenic was the only metal that exhibited higher concentrations in 2006 compared to baseline.

Sediment arsenic concentrations at several monitored stations in 2006 were higher than baseline arsenic concentrations (2000 and 2004). One could conclude that the difference represented potential mine effects, but this does not explain the increase in sediment arsenic levels at both controls, nor does it account for the short time frame of the effect. The mine became operational in winter 2006 and PKCA discharge in 2006 did not occur until after sediment chemistry samples were collected. Within lake factors are known to influence the flux of arsenic from the lake water to/from the sediment. These processes could provide an explanation for the results.

Lake Profile

In summer 2006, all lakes were stratified with most lakes displaying a strong thermocline between 10 m and 13 m; Carat Lake exhibited a weak thermocline. Data from previous years indicated low to weak thermoclines. This difference likely was due to differences in the time of year the data were collected (July and August versus September) or natural variability in weather.

In summer dissolved oxygen concentrations were near saturation at the water surface in all monitored lakes. Dissolved oxygen concentrations decreased with depth, but remained high at all monitored stations. In winter 2005, dissolved oxygen concentrations were high in most lakes; the one exception was in the zone immediately adjacent to the lake bottom of Carat Lake.

Sediment Deposition

In 2006, sediment deposition rate was higher at Carat Lake stations compared to stations in other lakes. In addition, percent ashed weight, which represents the nonorganic component of deposited sediment, was

higher at these stations in comparison to other stations. Sediment deposition values in 2006 were lower than values recorded in 2005.

Phytoplankton

In 2006, phytoplankton densities were similar among lakes and high in comparison to past monitoring years. Compared to 2004 and 2005, there also were changes in phytoplankton densities between lakes. Overall, chlorophyll *a* levels were highly variable spatially. Near-field and far-field lakes did not have predictably higher or lower productivity than control lakes. Chlorophyll *a* also was highly variable from year to year. Community structure in terms of dominant taxonomic groups was consistent among lakes and among years, indicating that phytoplankton community structure was stable. In summary, high yearly variation in several parameters may decrease the ability to detect potential effects of mining on phytoplankton.

Zooplankton

Zooplankton densities were highly variable among lakes and between years. In 2006, highest densities occurred in Lake C3 and lowest densities in Jericho Lake. In contrast, 2005 densities were highest in Carat Lake and lowest densities in Lake C3. Community composition was relatively consistent among lakes for the dominant taxonomic groups. However; there were differences for cladocerans. Cladocerans made up a very small proportion of the overall community in terms of density, but numbers were higher in Carat Lake than most other lakes. This indicated that zooplankton community structure varied among waterbodies. In summary, between-year comparisons showed that zooplankton abundance was highly variable between years and patterns were not consistent between waterbodies. Again, high temporal and spatial variability may make it difficult to identify potential effects of mining activity on the zooplankton community.

Benthic Macroinvertebrates

Benthic macroinvertebrate community densities were highly variable among years at each monitoring station and patterns among stations were not consistent. Although Cigar Lake had considerably higher densities than all other stations in both 2004 and 2005, in 2006 Carat Lake had the highest densities. In 2004 and 2005 Carat Lake had relatively low densities compared to other stations. This indicated that relationships between stations were temporally variable. In general, chironomids were the dominant taxonomic group in all waterbodies in 2006. This was generally similar to 2005; an exception occurred in 2005 at Lake C3 when nematodes dominated. Dominance of taxonomic groups also appeared to vary

between years. Overall, these data demonstrated high between-year variations in benthic community characteristics.

Fish

The fish community in waterbodies in the Jericho study area prior to mine development was comprised of a simply species assemblage (six species). Numerically dominant large-fish species were Arctic char, lake trout, and round whitefish. Slimy sculpins were the most abundant small-fish species. Population structure and population health parameters investigated indicated that the sample populations of large fish were stable, contained a wide age range of older fish, and were slow growing. These data were typical of unexploited sub-arctic fish populations.

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APPENDIX A
SITE LOCATIONS

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Appendix A1. Station locations and date sampled by Mainstream Aquatics Ltd., 2006 Jericho AEM Program.

Component	Date	Station	Description	UTM Coodinates		Projection
				Easting	Northing	
Benthic invertebrates	23-Jun-06	JER05	Lake C3	474675	7320046	NAD27
	23-Jun-06	JER07	Carat Lake	478193	7321086	NAD27
	23-Jun-06	JER19	Carat Lake	478284	7320152	NAD27
	23-Jun-06	JER20	Lake C3	475049	7319350	NAD27
	22-Jun-06	JER23	Control	475243	7317980	NAD27
	22-Jun-06	JER25	Cigar	470252	7320358	NAD27
	23-Jun-06	JER26	Jericho Lake	478773	7323676	NAD27
Lake Profile	27-Jul-06	JER04	Lake C3	474614	7319831	NAD27
	20-Jul-06	JER06	Carat Lake	477504	7320747	NAD27
	5-Aug-06	JER08	Jericho Lake North basin	478526	7323653	NAD27
	3-Aug-06	JER10	Control Lake	473730	7318699	NAD27
	4-Aug-06	JER11	Cigar Lake	469709	7320262	NAD27
Phytoplankton	27-Jul-06	JER04	Lake C3	474614	7319831	NAD27
	20-Jul-06	JER06	Carat Lake	477504	7320747	NAD27
	5-Aug-06	JER08	Jericho Lake	478526	7323653	NAD27
	3-Aug-06	JER10	Control Lake	473730	7318699	NAD27
	4-Aug-06	JER11	Cigar Lake	470331	7320268	NAD27
Sediment Chemistry	27-Jul-06	JER04	Lake C3	474614	7319831	NAD27
	20-Jul-06	JER06	Carat Lake	477504	7320747	NAD27
	5-Aug-06	JER08	Jericho Lake	478526	7323653	NAD27
	5-Aug-06	JER09	Jericho River	478526	7323653	NAD27
	3-Aug-06	JER10	Control Lake	473730	7318699	NAD27
	5-Aug-06	JER11	Cigar Lake	470331	7320268	NAD27
	6-Aug-06	JER13	Lake C1	477591	7319371	NAD27
Sediment Deposition	27-Jul-06	JER05	Lake C3 outlet	474656	7320029	NAD27
	24-Jul-06	JER07	Carat Lake outlet	478336	7321079	NAD27
	24-Jul-06	JER19	Carat Lake at Stream C1	478176	7320111	NAD27
	27-Jul-06	JER20	Lake C3 at Stream C3	475037	7319343	NAD27
	26-Jul-06	JER21	Carat Lake west of causeway	477908	7320389	NAD27
	22-Jul-06	JER22	Carat Lake east of causeway	478078	7320108	NAD27
	3-Aug-06	JER23	Control Lake	475319	7317992	NAD27
	4-Aug-06	JER25	Cigar Lake	470331	7320268	NAD27
	5-Aug-06	JER26	Jericho Lake	479103	7323660	NAD27
Water Chemistry	7-Aug-06	JER01	Freshwater Intake	478037	7320123	NAD27
	6-Aug-06	JER03	Stream C3 above stream mouth	475079	7319344	NAD27
	6-Aug-06	JER04	Lake C3 South basin	474648	7319840	NAD27
	6-Aug-06	JER05	Lake C3 outlet	474970	7320237	NAD27
	7-Aug-06	JER06	Carat Lake center basin	477475	7320740	NAD27
	7-Aug-06	JER07	Carat Lake Outlet	478054	7321455	NAD27
	5-Aug-06	JER08	Jericho Lake North basin	478526	7323653	NAD27
	5-Aug-06	JER09	Jericho River dwst of Jericho Lake	478506	7324396	NAD27
	3-Aug-06	JER10	Control Lake	473730	7318699	NAD27
	22-Jun-06	JER10	Control Lake	473651	7318720	NAD27
	4-Aug-06	JER11	Cigar Lake	469709	7320262	NAD27
	22-Jun-06	JER11	Cigar Lake	469993	7320214	NAD27
	6-Aug-06	JER12	Stream C1 above stream mouth	478227	7319945	NAD27
	6-Aug-06	JER13	Lake C1	477606	7319359	NAD27
	6-Aug-06	JER14	Lake C4	479255	7320300	NAD27
	7-Aug-06	JER15	Stream C4 above stream mouth	478193	7320037	NAD27
	7-Aug-06	JER19	Stream C1 outlet in Carat Lake	478193	7320037	NAD27
	23-Jun-06	JER19	Stream C1 outlet in Carat Lake	478208	7320002	NAD27
	6-Aug-06	JER20	Stream C3 outlet in Lake C3	475028	7319286	NAD27
	23-Jun-06	JER20	Stream C3 outlet in Lake C3	475094	7319312	NAD27
Zooplankton	27-Jul-06	JER04	Lake C3	474614	7319831	NAD27
	20-Jul-06	JER06	Carat Lake	477504	7320747	NAD27
	5-Aug-06	JER08	Jericho Lake	478526	7323653	NAD27
	3-Aug-06	JER10	Control Lake	473730	7318699	NAD27
	4-Aug-06	JER11	Cigar Lake	469709	7320262	NAD27

Appendix A2. Station locations and sample frequency by Tahera Diamond Corporation, 2006.

Component	Frequency	Station	Description	UTM Coodinates		Projection
				Easting	Northing	
Water Chemistry	Year Round	JER01	Freshwater Intake	478169	7320030	NAD27
	Summer Only	JER02	PKCA Discharge	476085	7318462	NAD27
	Summer Only	JER03	Stream C3 above stream mouth	475252	7319037	NAD27
	Year Round	JER04	Lake C3 South basin	474855	7319474	NAD27
	Summer Only	JER05	Lake C3 outlet	475172	7320387	NAD27
	Year Round	JER06	Carat Lake center basin	477455	7320446	NAD27
	Summer Only	JER07	Carat Lake Outlet	478070	7321201	NAD27
	Year Round	JER08	Jericho Lake North basin	478625	7323522	NAD27
	Year Round	JER09	Jericho River dwst of Jericho Lake	478546	7324276	NAD27
	Year Round	JER10	Control Lake	473684	7318502	NAD27
	Year Round	JER11	Cigar Lake	469654	7320111	NAD27
	Summer Only	JER12	Stream C1 above stream mouth	478467	7319653	NAD27
	Year Round	JER13	Lake C1	477613	7319176	NAD27
	Summer Only	JER14	Lake C4	479260	7320050	NAD27
	Summer Only	JER15	Stream C4 above stream mouth	478784	7320466	NAD27
	Once Per Summer	JER16	Lynne Lake	479915	7318819	NAD27
	Once Per Summer	JER17	Key Lake	478864	7318522	NAD27
	Once Per Summer	JER18	Ash Lake	478050	7318045	NAD27

APPENDIX B
WATER CHEMISTRY

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Table B1 Acidity ($CaCO_3$) concentrations (mg/L) for water quality monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		2.3	1.9
			SD		1.3	1.5
			Min		1.0	<1.0
			Max		4.0	4.0
			n		4	4
Lake C3 (South Basin)	JER04	Summer	Mean		2.4	5.3
			SD		0.5	5.9
			Min		2.0	2.0
			Max		<5.0	14.0
			n		4	4
		Winter			2.000	2.4
Lake C3 (Outlet)	JER05	Summer	Mean	2.4	2.5	4.7
			SD	1.4	1.0	4.6
			Min	<1.0	2.0	2.0
			Max	5.5	4.0	10.0
			n	8	4	3
		Winter		2.0		
Carat Lake (Center Basin)	JER06	Summer	Mean	2.0	2.2	1.9
			SD	0.9	0.3	1.5
			Min	1.0	2.0	<1.0
			Max	3.5	<5	4.0
			n	8	3	4
		Winter		2.0	3.0	2.2
Carat Lake (Outlet)	JER07	Summer	Mean	2.9	1.8	2.0
			SD	1.5	0.5	1.0
			Min	1.7	1.0	1.0
			Max	5.6	2.0	3.0
			n	8	4	3
		Winter		2.0	1.8	
Jericho Lake (North Basin)	JER08	Summer	Mean	2.4	2.6	1.9
			SD	1.2	0.5	1.0
			Min	1.3	2.1	<1.0
			Max	4.8	<5.0	3.0
			n	8	4	4
		Winter		2.0		2.1
Jericho River	JER09	Summer	Mean		2.0	2.3
			SD		1.0	0.6
			Min		1.0	2.0
			Max		3.0	3.0
			n		3	3
		Winter			3.0	2.5

Table B2 Acidity (CaCO3) concentrations (mg/L) for water quality monitoring sites JER010 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		2.5	1.8
			SD		0.5	1.0
			Min		2.0	1.0
			Max		<5.0	3.0
			n		3	4
		Winter			2.0	2.1
Cigar Lake	JER11	Summer	Mean	1.9	2.2	1.5
			SD	1.0	0.3	1.2
			Min	<1	2.0	0.5
			Max	3.9	<5.0	3.0
			n	8	3	4
		Winter		2.0	3.0	2.7
Stream C1	JER12	Summer	Mean		4.0	2.0
			SD		2.0	0.0
			Min		2.0	2.0
			Max		6.0	2.0
			n		5	3
Lake C1	JER13	Summer	Mean		2.4	3.0
			SD		0.5	0.8
			Min		2.0	2.0
			Max		<5.0	4.0
			n		4	4
		Winter				2.4
Lake C4	JER14	Summer	Mean		2.5	3.3
			SD		1.0	2.3
			Min		2.0	2.0
			Max		4.0	6.0
			n		4	3
Stream C4	JER15	Summer	Mean		2.7	4.0
			SD		1.2	1.4
			Min		2.0	3.0
			Max		4.0	5.0
			n		3	2

Table B3 Acidity (CaCO3) concentrations (mg/L) for water quality monitoring sites JER016 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	2.0	3.0	2.0
			SD	0.1		
			Min	1.9		
			Max	2.0		
			n	3	1	1
		Winter		3.0		
Key Lake	JER17	Summer	Mean	2.0	3.0	1.0
			SD	0.1		
			Min	1.9		
			Max	2.0		
			n	3	1	1
		Winter		4.0		
Ash Lake	JER18	Summer	Mean	2.0	2.0	3.0
			SD	0.1		
			Min	1.9		
			Max	2.0		
			n	3	1	1
		Winter		3.0		
Stream C1 (Outlet)	JER19	Summer	Mean			1.0
			SD			
			Min			
			Max			
			n			1
Stream C3 (Outlet)	JER20	Summer	Mean			1.5
			SD			0.7
			Min			1.0
			Max			2.0
			n			2

Table B4 Alkalinity (Total CaCO3, mg/L) for water quality monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		10	12
			SD		1	3
			Min		91	9
			Max		11	15
			n		4	4
		Winter				7
Lake C3 (South Basin)	JER04	Summer	Mean		8	8
			SD		2	2
			Min		5	7
			Max		10	11
			n		4	4
		Winter			15	
Lake C3 (Outlet)	JER05	Summer	Mean	4	7	8
			SD	1	1	1
			Min	31	6	7
			Max	6	9	8
			n	10	4	3
		Winter		5		
Carat Lake (Center Basin)	JER06	Summer	Mean	4	6	8
			SD	1	1	1
			Min	3	5	7
			Max	6	7	9
			n	10	3	4
		Winter		6	16	10
Carat Lake (Outlet)	JER07	Summer	Mean	5	7	8
			SD	1	2	2
			Min	4	6	6
			Max	6	9	9
			n	16	4	3
		Winter		5		
Jericho Lake (North Basin)	JER08	Summer	Mean	5	6	8
			SD	1	1	2
			Min	3	5	6
			Max	6	7	11
			n	15	3	4
		Winter		5	17	10
Jericho River	JER09	Summer	Mean		7	7
			SD		1	1
			Min		5	7
			Max		8	8
			n		4	3
		Winter			18	11

Table B5 Alkalinity (Total CaCO3, mg/L) for water quality monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		6	7
			SD		3	1
			Min		<5	6
			Max		9	9
			n		3	4
		Winter			19	5
Cigar Lake	JER11	Summer	Mean	5	7	9
			SD	1	0	2
			Min	4	7	<4
			Max	7	7	11
			n	8	3	3
		Winter		7	18	9
Stream C1	JER12	Summer	Mean		11	15
			SD		2	6
			Min		9	8
			Max		14	20
			n		5	3
Lake C1	JER13	Summer	Mean		8	12
			SD		2	2
			Min		6	10
			Max		10	14
			n		5	4
		Winter			19	23
Lake C4	JER14	Summer	Mean		10	10
			SD		1	2
			Min		8	9
			Max		11	12
			n		4	3
Stream C4	JER15	Summer	Mean		9	11
			SD		1	1
			Min		8	10
			Max		10	12
			n		3	2

Table B6 Alkalinity (Total CaCO3, mg/L) for water quality monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	5	8	9
			SD	0.4		
			Min	5		
			Max	6		
			n	3	1	1
		Winter		6		
Key Lake	JER17	Summer	Mean	5	7	9
			SD	0.4		
			Min	5		
			Max	6		
			n	3	1	1
		Winter		10		
Ash Lake	JER18	Summer	Mean	6	8	11
			SD	0.2		
			Min	6		
			Max	6		
			n	3	1	1
		Winter		7		
Stream C1 (Outlet)	JER19	Summer	Mean			18
			SD			
			Min			
			Max			
			n			1
		Winter				
Stream C3 (Outlet)	JER20	Summer	Mean			15
			SD			4
			Min			12
			Max			18
			n			2
		Winter				

Table B7 Bicarbonate (HCO_3, mg/L) for water quality monitoring sites JER03 to JER09 in 2005 and 2006.

Location	Site	Time Period	Parameter	2005	2006
Stream C3	JER03	Summer	Mean	13	14
			SD	1	3
			Min	11	11
			Max	14	18
			n	4	4
		Winter			7.4
Lake C3 (South Basin)	JER04	Summer	Mean	10	10
			SD	2	2
			Min	7	8
			Max	7	13
			n	4	4
		Winter		18	
Lake C3 (Outlet)	JER05	Summer	Mean	8	9
			SD	2	1
			Min	7	8
			Max	11	10
			n	4	3
		Winter			
Carat Lake (Center Basin)	JER06	Summer	Mean	7	10
			SD	1	1
			Min	6	9
			Max	8	11
			n	3	4
		Winter		19	10
Carat Lake (Outlet)	JER07	Summer	Mean	8	10
			SD	2	2
			Min	7	8
			Max	11	11
			n	4	3
		Winter			
Jericho Lake (North Basin)	JER08	Summer	Mean	7	10
			SD	1	2
			Min	6	8
			Max	8	13
			n	3	4
		Winter		20	9
Jericho River	JER09	Summer	Mean	8	8
			SD	2	1
			Min	7	8
			Max	10	9
			n	4	3
		Winter		22	11

Table B8 Bicarbonate (HCO_3, mg/L) for water quality monitoring sites JER10 to JER15 in 2005 and 2006.

Location	Site	Time Period	Parameter	2005	2006
Control Lake	JER10	Summer	Mean	8	9
			SD	3	1
			Min	5	7
			Max	11	10
			n	3	4
		Winter		23	5
Cigar Lake	JER11	Summer	Mean	8	8
			SD	0.6	5
			Min	8	0.5
			Max	9	13
			n	3	4
		Winter		22	9
Stream C1	JER12	Summer	Mean	13	19
			SD	3	8
			Min	11	10
			Max	17	25
			n	5	3
		Winter			
Lake C1	JER13	Summer	Mean	11	15
			SD	2	2
			Min	8	12
			Max	13	17
			n	5	4
		Winter		23	23
Lake C4	JER14	Summer	Mean	12	13
			SD	1	2
			Min	10	11
			Max	13	14
			n	4	3
		Winter			
Stream C4	JER15	Summer	Mean	12	13
			SD	2	1
			Min	10	12
			Max	13	14
			n	3	2
		Winter			

Table B9 Bicarbonate (HCO_3, mg/L) for water quality monitoring sites JER16 to JER20 in 2005 and 2006.

Location	Site	Time Period	Parameter	2005	2006
Lynne Lake	JER16	Summer	Mean	9	12
			SD		
			Min		
			Max		
			n	1	1
		Winter			
Key Lake	JER17	Summer	Mean	9	12
			SD		
			Min		
			Max		
			n	1	1
		Winter			
Ash Lake	JER18	Summer	Mean	9	14
			SD		
			Min		
			Max		
			n	1	1
		Winter			
Stream C1 (Outlet)	JER19	Summer	Mean		22
			SD		
			Min		
			Max		
			n		1
		Winter			
Stream C3 (Outlet)	JER20	Summer	Mean		14
			SD		
			Min		
			Max		
			n		1
		Winter			

Table B10 Chloride (Cl, mg/L) concentrations for water quality monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		1.3	3.9
			SD		0. 5	2.7
			Min		0.8	0.7
			Max		1.7	6.7
			n		4	4
		Winter				<0.5
Lake C3 (South Basin)	JER04	Summer	Mean		0.3	0.4
			SD		0.1	0.1
			Min		0.2	0.2
			Max		<1.0	0.5
			n		4	4
		Winter			0.2	
Lake C3 (Outlet)	JER05	Summer	Mean	0.7	0.3	0.4
			SD	0.4	0.1	0.2
			Min	<0.5	0.2	0.2
			Max	1.4	0.3	0.6
			n	10	4	3
		Winter		0.3		
Carat Lake (Center Basin)	JER06	Summer	Mean	0.8	0.3	0.3
			SD	0.4	0.2	0.1
			Min	<0.5	0.2	0.2
			Max	1.3	<1.0	0.4
			n	10	3	4
		Winter		0.8	0.4	0.6
Carat Lake (Outlet)	JER07	Summer	Mean	3.2	0.4	0.3
			SD	9.6	0.1	0.1
			Min	0.0	0.3	0.2
			Max	39.0	0.4	0.4
			n	16	4	3
		Winter		1.3		
Jericho Lake (North Basin)	JER08	Summer	Mean	0.8	0.3	0.4
			SD	0.3	0.2	0.1
			Min	<0.5	0.2	0.3
			Max	1.6	<1.0	0.5
			n	15	3	4
		Winter		1.2	0.2	<0.5
Jericho River	JER09	Summer	Mean		0.2	0.4
			SD		0.0	0.1
			Min		0.2	0.3
			Max		0.2	0.4
			n		4	3
		Winter			0.4	0.6

Table B11 Chloride (Cl, mg/L) concentrations for water quality monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		0.3	0.1
			SD		0.2	0.1
			Min		0.2	0.2
			Max		<1.0	0.4
			n		3	4
		Winter			0.1	<0.5
Cigar Lake	JER11	Summer	Mean	0.4	0.3	3.8
			SD	0.3	0.2	6.8
			Min	<0.5	0.2	0.4
			Max	1.0	<1.0	14.0
			n	8	3	4
		Winter		0.5	0.1	<0.5
Stream C1	JER12	Summer	Mean		2.1	2.4
			SD		0.8	2.0
			Min		1.4	0.2
			Max		3.5	4.0
			n		5	3
		Winter				
Lake C1	JER13	Summer	Mean		0.9	2.3
			SD		0.3	0.8
			Min		0.6	1.6
			Max		1.2	3.3
			n		5	4
		Winter			1.4	5.7
Lake C4	JER14	Summer	Mean		0.3	0.4
			SD		0.1	0.1
			Min		0.1	0.3
			Max		0.4	0.5
			n		4	3

Table B12 Chloride (Cl, mg/L) concentrations for water quality monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	0.3	0.2	0.4
			SD	0.1		
			Min	<0.5		
			Max	0.5		
			n	3	1	1
		Winter		0.9		
Key Lake	JER17	Summer	Mean	0.5	0.3	0.3
			SD	0.2		
			Min	<0.5		
			Max	0.6		
			n	3	1	1
		Winter		<0.5		
Ash Lake	JER18	Summer	Mean		0.5	0.4
			SD			
			Min	<0.5		
			Max	<0.5		
			n	3	1	1
		Winter		<0.5		
Stream C1 (Outlet)	JER19	Summer	Mean			3.3
			SD			
			Min			
			Max			
			n			1
Stream C3 (Outlet)	JER20	Summer	Mean			3.2
			SD			0.2
			Min			3.0
			Max			3.3
			n			2

Table B13 Sulphate (SO_4, mg/L) concentrations for water quality monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		1.1	4.1
			SD		1.0	3.8
			Min		<0.05	0.6
			Max		2.6	8.4
			n		4	4
		Winter				1.83
Lake C3 (South Basin)	JER04	Summer	Mean		0.8	1.1
			SD		0.5	0.6
			Min		<0.05	<0.05
			Max		1.5	1.7
			n		4	4
		Winter			1.7	
Lake C3 (Outlet)	JER05	Summer	Mean	0.9	1.1	1.4
			SD	0.7	0.4	1.0
			Min	<1.0	0.7	<0.05
			Max	2.0	1.6	2.0
			n	10	4	3
		Winter		1.0		
Carat Lake (Center Basin)	JER06	Summer	Mean	0.8	0.8	0.6
			SD	0.5	0.5	0.4
			Min	<1.0	<0.05	<0.05
			Max	1.9	1.3	1.2
			n	10	3	4
		Winter		1.0	2.0	1.66
Carat Lake (Outlet)	JER07	Summer	Mean	1.1	1.6	0.6
			SD	0.7	1.3	0.3
			Min	0.0	0.7	<0.05
			Max	2.1	3.4	0.8
			n	16	4	3
		Winter		1.0		
Jericho Lake (North Basin)	JER08	Summer	Mean	1.0	0.8	0.9
			SD	0.6	0.6	0.6
			Min	<1.0	<0.05	<0.05
			Max	2.0	1.4	1.7
			n	15	3	4
		Winter		1.0	0.9	1.43
Jericho River	JER09	Summer	Mean		0.8	0.9
			SD		0.4	0.7
			Min		<0.05	<0.05
			Max		1.1	1.6
			n		4	3
		Winter			1.0	1.7

Table B14 Sulphate (SO_4, mg/L) concentrations for water quality monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		1.0	0.9
			SD		0.7	0.6
			Min		<0.1	<0.1
			Max		1.5	1.5
			n		3	4
		Winter			0.8	1.5
Cigar Lake	JER11	Summer	Mean	0.8	0.7	2.9
			SD	0.5	0.4	4.1
			Min	<1.0	<0.1	<0.1
			Max	1.8	1.0	9.0
			n	8	3	4
		Winter		1.0	0.3	1.2
Stream C1	JER12	Summer	Mean		0.5	2.0
			SD		0.3	1.4
			Min		<0.1	1.1
			Max		1.0	3.6
			n		5	3
		Winter				
Lake C1	JER13	Summer	Mean		0.9	1.4
			SD		0.9	0.9
			Min		<0.1	0.6
			Max		2.5	2.6
			n		5	4
		Winter			1.0	4.4
Lake C4	JER14	Summer	Mean		0.4	0.8
			SD		0.2	0.5
			Min		<0.1	<0.1
			Max		0.7	1.1
			n		4	3
		Winter				
Stream C4	JER15	Summer	Mean			0.6
			SD			0.5
			Min		<0.1	<0.1
			Max		<0.1	0.9
			n		3	2
		Winter				

Table B15 Sulphate (SO_4, mg/L) concentrations for water quality monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean		<0.1	<0.1
			SD			
			Min	<1.0		
			Max	<1.0		
			n	3	1	1
		Winter		<1.0		
Key Lake	JER17	Summer	Mean		<0.1	<0.1
			SD			
			Min	<1.0		
			Max	<1.0		
			n	3	1	1
		Winter		<1.0		
Ash Lake	JER18	Summer	Mean	1.1	<0.1	<0.1
			SD	1.1		
			Min	<1.0		
			Max	2.4		
			n	3	1	1
		Winter		0.5		
Stream C1 (Outlet)	JER19	Summer	Mean			3.7
			SD			
			Min			
			Max			
			n			1
		Winter				
Stream C3 (Outlet)	JER20	Summer	Mean			2.4
			SD			1.9
			Min			1.0
			Max			3.7
			n			2
		Winter				

Table B16 Field conductivity (µmhos/cm) for water quality monitoring sites JER03 to JER09 in 2005 and 2006.

Location	Site	Time Period	Parameter	2005	2006
Stream C3	JER03	Summer	Mean	28.3	44.7
			SD	3.2	39.6
			Min	26.0	13.0
			Max	30.5	89.0
			n	2	3
		Winter			22
Lake C3 (South Basin)	JER04	Summer	Mean	14.7	12.3
			SD		6.8
			Min		6.0
			Max		22.0
			n	1	4
Lake C3 (Outlet)	JER05	Summer	Mean	14.3	9.3
			SD	1.8	2.9
			Min	13.0	6.0
			Max	15.6	11.0
			n	2	3
Carat Lake (Center Basin)	JER06	Summer	Mean	15.7	10.8
			SD		3.4
			Min		6.0
			Max		14.0
			n	1	4
		Winter			22
Carat Lake (Outlet)	JER07	Summer	Mean	14.6	10.0
			SD	2.2	3.5
			Min	13.0	6.0
			Max	16.2	12.0
			n	2	3
Jericho Lake (North Basin)	JER08	Summer	Mean	15.8	11.8
			SD		5.3
			Min		5.0
			Max		18.0
			n	1	4
		Winter			20
Jericho River	JER09	Summer	Mean	14.3	10.0
			SD	1.8	4.4
			Min	13.0	5.0
			Max	15.5	13.0
			n	2	3

Table B17 Field conductivity (µmhos/cm) for water quality monitoring sites JER10 to JER15 in 2005 and 2006.

Location	Site	Time Period	Parameter	2005	2006
Control Lake	JER10	Summer	Mean	14.6	10.0
			SD		7.0
			Min		3.0
			Max		17.0
			n	1	3
		Winter			18
Cigar Lake	JER11	Summer	Mean	15.9	12.3
			SD		5.0
			Min		7.0
			Max		17.0
			n	1	3
		Winter			20
Stream C1	JER12	Summer	Mean	34.1	57.3
			SD	5.4	47.6
			Min	31.0	12.0
			Max	40.3	107.0
			n	3	3
Lake C1	JER13	Summer	Mean	25.5	30.8
			SD	2.1	4.6
			Min	24.0	24.0
			Max	26.9	34.0
			n	2	4
		Winter			77
Lake C4	JER14	Summer	Mean	20.2	13.3
			SD	0.3	2.1
			Min	20.0	11.0
			Max	20.4	15.0
			n	2	3
Stream C4	JER15	Summer	Mean	21.8	14.0
			SD		1.4
			Min		13.0
			Max		15.0
			n	1	2

Table B18 Field conductivity (µmhos/cm) for water quality monitoring sites JER15 to JER20 in 2005 and 2006.

Location	Site	Time Period	Parameter	2005	2006
Lynne Lake	JER16	Summer	Mean SD Min Max n		15.0 1
Key Lake	JER17	Summer	Mean SD Min Max n		15.0 1
Ash Lake	JER18	Summer	Mean SD Min Max n		15.0 1
Stream C1 (Outlet)	JER19	Summer	Mean SD Min Max n		52.0 1
Stream C3 (Outlet)	JER20	Summer	Mean SD Min Max n		31.0 1

Table B19 Laboratory conductivity (µmhos/cm) for water quality monitoring sites JER03 to JER09 in 2005 and 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		24.0	60.0
			SD		1.8	42.0
			Min		22.0	16.0
			Max		26.0	106.0
			n		4	4
		Winter				21.8
Lake C3 (South Basin)	JER04	Summer	Mean		15.9	16.0
			SD		2.8	4.7
			Min		13.0	13.0
			Max		19.6	23.0
			n		4	4
		Winter			23.000	
Lake C3 (Outlet)	JER05	Summer	Mean	11.5	14.0	13.7
			SD	0.7	2.8	1.5
			Min	11.0	12.0	12.0
			Max	12.0	18.0	15.0
			n	2	4	3
		Winter		6.1		
Carat Lake (Center Basin)	JER06	Summer	Mean	10.5	14.4	15.0
			SD	2.1	2.5	1.4
			Min	9.0	13.0	14.0
			Max	12.0	17.3	17.0
			n	2	3	4
		Winter		6.6	23.0	22.3
Carat Lake (Outlet)	JER07	Summer	Mean	28.3	15.0	14.0
			SD	46.1	3.5	0.0
			Min	4.2	12.0	14.0
			Max	158.0	20.0	14.0
			n	10	4	3
		Winter		6.5		
Jericho Lake (North Basin)	JER08	Summer	Mean	11.5	15.5	15.0
			SD	3.3	4.4	3.5
			Min	5.1	12.0	12.0
			Max	16.0	20.5	20.0
			n	8	3	4
		Winter		6.3	20.0	19.9
Jericho River	JER09	Summer	Mean		14.3	13.3
			SD		3.2	1.2
			Min		12.0	12.0
			Max		19.0	14.0
			n		4	3
		Winter			22.0	23.7

Table B20 Laboratory conductivity (µmhos/cm) for water quality monitoring sites JER10 to JER15 in 2005 and 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		15.2	13.8
			SD		2.0	2.5
			Min		13.0	11.0
			Max		16.7	17.0
			n		3	4
		Winter			19.0	17.8
Cigar Lake	JER11	Summer	Mean	5.2	15.3	11.5
			SD		3.9	8.1
			Min		13.0	0.0
			Max		19.8	19.0
			n	1	3	4
		Winter		9.4	20.0	20.1
Stream C1	JER12	Summer	Mean		34.2	50.7
			SD		6.8	33.0
			Min		30.0	15.0
			Max		46.0	80.0
			n		5	3
		Winter				
Lake C1	JER13	Summer	Mean	29.0	21.9	36.0
			SD	1.4	4.0	9.2
			Min	28.0	17.0	26.0
			Max	30.0	27.7	48.0
			n	2	5	4
		Winter			31.0	74.7
Lake C4	JER14	Summer	Mean	29.5	17.8	19.0
			SD	0.7	1.7	2.6
			Min	29.0	16.0	16.0
			Max	30.0	20.0	21.0
			n	2	4	3
Stream C4	JER15	Summer	Mean		17.3	17.5
			SD		0.6	2.1
			Min		17.0	16.0
			Max		18.0	19.0
			n		3	2

Table B21 Laboratory conductivity (µmhos/cm) for water quality monitoring sites JER15 to JER20 in 2005 and 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean		15.0	17.0
			SD			
			Min			
			Max			
			n		1	1
		Winter		7.4		
Key Lake	JER17	Summer	Mean		16.0	17.0
			SD			
			Min			
			Max			
			n		1	1
		Winter		10.9		
Ash Lake	JER18	Summer	Mean		17.0	18.0
			SD			
			Min			
			Max			
			n		1	1
		Winter		8.4		
Stream C1 (Outlet)	JER19	Summer	Mean			58.0
			SD			
			Min			
			Max			
			n			1
Stream C3 (Outlet)	JER20	Summer	Mean			37.0
			SD			
			Min			
			Max			
			n			1

Table B22 Hardness as $CaCO_3$ (mg/L) for water quality monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		8	18
			SD		1	10
			Min		7	10
			Max		9	32
			n		3	4
		Winter				8
Lake C3 (South Basin)	JER04	Summer	Mean		4	
			SD		2	
			Min		<6	<6
			Max		7	<6
			n		4	4
Lake C3 (Outlet)	JER05	Summer	Mean	5		
			SD	1		
			Min	4	<6	<6
			Max	7	<6	<6
			n	10	4	3
		Winter		7		
Carat Lake (Center Basin)	JER06	Summer	Mean	5	4	
			SD	1	2	
			Min	4	<6	<6
			Max	7	6	<6
			n	10	3	4
		Winter		7		9
Carat Lake (Outlet)	JER07	Summer	Mean	9	4	
			SD	14	2	
			Min	4	<6	<6
			Max	61	6	<6
			n	16	3	3
		Winter		7		
Jericho Lake (North Basin)	JER08	Summer	Mean	5	4	
			SD	1	2	
			Min	4	<6	<6
			Max	8	7	<6
			n	15	3	4
		Winter		7		8
Jericho River	JER09	Summer	Mean			
			SD			
			Min		<6	<6
			Max		<6	<6
			n		4	3
		Winter				9

Table B23 Hardness as $CaCO_3$ (mg/L) for water quality monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		4	
			SD		2	
			Min		<6	<6
			Max		6	<6
			n		3	4
		Winter			7	7
Cigar Lake	JER11	Summer	Mean	6	4	
			SD	1	2	
			Min	5	<6	<2
			Max	8	7	<6
			n	8	3	4
		Winter		7	8	8
Stream C1	JER12	Summer	Mean		13	18
			SD		3	14
			Min		11	<6
			Max		19	30
			n		5	3
Lake C1	JER13	Summer	Mean		9	10
			SD		2	6
			Min		6	<6
			Max		12	17
			n		4	4
		Winter				30
Lake C4	JER14	Summer	Mean		7	6
			SD		1	3
			Min		6	<6
			Max		7	10
			n		4	3
Stream C4	JER15	Summer	Mean		6	5
			SD		3	3
			Min		<6	<6
			Max		8	7
			n		3	2

Table B24 Hardness as $CaCO_3$ (mg/L) for water quality monitoring sites JER15 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	6	6	6
			SD	0		
			Min	6		
			Max	7		
			n	3	1	1
		Winter		7		
Key Lake	JER17	Summer	Mean	7	7	7
			SD	0		
			Min	6		
			Max	7		
			n	3	1	1
		Winter		7		
Ash Lake	JER18	Summer	Mean	7	7	7
			SD	1		
			Min	6		
			Max	7		
			n	3	1	1
		Winter		7		
Stream C1 (Outlet)	JER19	Summer	Mean			20
			SD			
			Min			
			Max			
			n			1
Stream C3 (Outlet)	JER20	Summer	Mean			15
			SD			7
			Min			10
			Max			20
			n			2

Table B25 pH for water quality monitoring sites JER03 to JER09 in 2005 and 2006.

Location	Site	Time Period	Parameter	2005	2006
Stream C3	JER03	Summer	Mean	6.7	7.0
			SD	0.3	0.7
			Min	6.4	6.5
			Max	7.0	7.8
			n	4	3
		Winter			6.4
Lake C3 (South Basin)	JER04	Summer	Mean	7.0	6.4
			SD	0.1	1.2
			Min	6.9	5.2
			Max	6.9	7.7
			n	2	4
		Winter			
Lake C3 (Outlet)	JER05	Summer	Mean	7.0	6.5
			SD	0.2	1.1
			Min	6.9	5.7
			Max	7.2	7.7
			n	3	3
		Winter			
Carat Lake (Center Basin)	JER06	Summer	Mean	6.7	6.4
			SD	0.3	0.9
			Min	6.5	5.7
			Max	6.9	7.8
			n	2	4
		Winter			6.5
Carat Lake (Outlet)	JER07	Summer	Mean	7.1	6.9
			SD	0.4	0.8
			Min	6.9	6.1
			Max	7.5	7.7
			n	3	3
		Winter			
Jericho Lake (North Basin)	JER08	Summer	Mean	7.1	6.8
			SD	0.3	0.8
			Min	6.9	6.3
			Max	7.3	7.9
			n	2	4
		Winter		0.0	6.
Jericho River	JER09	Summer	Mean	7.0	7.1
			SD	0.2	1.1
			Min	6.8	5.8
			Max	7.3	7.8
			n	3	3
		Winter		0.0	

Table B26 pH for water quality monitoring sites JER10 to JER15 in 2005 and 2006.

Location	Site	Time Period	Parameter	2005	2006
Control Lake	JER10	Summer	Mean	6.4	6.4
			SD	0.8	0.9
			Min	5.9	5.8
			Max	7.0	7.5
			n	2	3
		Winter		0.0	6.3
Cigar Lake	JER11	Summer	Mean	6.9	8.6
			SD	0.6	3.1
			Min	6.5	6.1
			Max	7.3	12.0
			n	2	3
		Winter			6.4
Stream C1	JER12	Summer	Mean	6.7	7.1
			SD	0.1	0.8
			Min	6.6	6.4
			Max	6.8	8.0
			n	4	3
		Winter			
Lake C1	JER13	Summer	Mean	7.2	6.9
			SD	0.2	0.7
			Min	7.0	6.3
			Max	7.4	7.8
			n	4	4
		Winter			6.8
Lake C4	JER14	Summer	Mean	7.2	7.4
			SD	0.1	0.6
			Min	7.1	6.9
			Max	7.3	8.0
			n	3	3
		Winter			
Stream C4	JER15	Summer	Mean	6.7	5.9
			SD	0.4	0.2
			Min	6.4	5.7
			Max	7.0	6.0
			n	2	2
		Winter			

Table B27 pH for water quality monitoring sites JER16 to JER20 in 2005 and 2006.

Location	Site	Time Period	Parameter	2005	2006
Lynne Lake	JER16	Summer	Mean	7.2	6.3
			SD		
			Min		
			Max		
			n	1	1
Key Lake	JER17	Summer	Mean	7.3	6.8
			SD		
			Min		
			Max		
			n	1	1
Ash Lake	JER18	Summer	Mean	7.2	7.1
			SD		
			Min		
			Max		
			n	1	1
Stream C1 (Outlet)	JER19	Summer	Mean		6.5
			SD		
			Min		
			Max		
			n		1
Stream C3 (Outlet)	JER20	Summer	Mean		6.5
			SD		
			Min		
			Max		
			n		1

Table B28 Total dissolved solid concentrations (mg/L) for water quality monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		12	30
			SD		9	21
			Min		<10	11
			Max		24	60
			n		4	4
		Winter				20
Lake C3 (South Basin)	JER04	Summer	Mean		20	10
			SD		18	3
			Min		<10	<10
			Max		40	12
			n		4	4
		Winter			40	
Lake C3 (Outlet)	JER05	Summer	Mean	10	8	15
			SD	3	6	3
			Min	7	<10	13
			Max	15	16	17
			n	8	4	2
		Winter		11		
Carat Lake (Center Basin)	JER06	Summer	Mean	10	16	10
			SD	3	13	4
			Min	7	<10	4
			Max	15	30	13
			n	8	3	4
		Winter		13	28	17
Carat Lake (Outlet)	JER07	Summer	Mean	11	24	17
			SD	3	29	13
			Min	5	<10	8
			Max	16	68	32
			n	12	4	3
		Winter		13		
Jericho Lake (North Basin)	JER08	Summer	Mean	10	8	21
			SD	3	6	16
			Min	5	<10	8
			Max	16	15	44
			n	13	3	4
		Winter		9	40	15
Jericho River	JER09	Summer	Mean		16	23
			SD		17	9
			Min		<10	12
			Max		40	28
			n		4	3
		Winter			5	18

Table B29 Total dissolved solid concentrations (mg/L) for water quality monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		10	11
			SD		5	4
			Min		<10	<10
			Max		14	14
			n		3	4
		Winter			30	13
Cigar Lake	JER11	Summer	Mean	10	11	8
			SD	3	6	6
			Min	7	<10	<10
			Max	15	16	16
			n	8	3	4
		Winter		10	30	12
Stream C1	JER12	Summer	Mean		17	22
			SD		16	23
			Min		<10	<10
			Max		44	48
			n		5	3
Lake C1	JER13	Summer	Mean		13	29
			SD		15	12
			Min		<10	16
			Max		40	40
			n		5	3
		Winter			16	53
Lake C4	JER14	Summer	Mean		13	20
			SD		8	14
			Min		<10	12
			Max		20	36
			n		3	3
Stream C4	JER15	Summer	Mean		13	27
			SD		9	30
			Min		<10	<10
			Max		22	48
			n		3	2

Table B30 Total dissolved solid concentrations (mg/L) for water quality monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	9	20	16
			SD	1		
			Min	9		
			Max	10		
			n	3	1	1
		Winter		12		
Key Lake	JER17	Summer	Mean	11	16	<10
			SD	1		
			Min	10		
			Max	11		
			n	2	1	1
		Winter		16		
Ash Lake	JER18	Summer	Mean	12	24	8
			SD	3		
			Min	10		
			Max	15		
			n	3	1	1
		Winter		14		
Stream C1 (Outlet)	JER19	Summer	Mean			40
			SD			
			Min			
			Max			
			n			1
Stream C3 (Outlet)	JER20	Summer	Mean			31
			SD			
			Min			
			Max			
			n			1

Table B31 Total suspended solid concentrations (mg/L) for water quality monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		2	
			SD		1	
			Min		<2	<2
			Max		2	<2
			n		4	3
		Winter				<2
Lake C3 (South Basin)	JER04	Summer	Mean			2
			SD			1
			Min		<2	<2
			Max		<3	3
			n		4	4
		Winter			<2	
Lake C3 (Outlet)	JER05	Summer	Mean	1		
			SD	1		
			Min	<1	<2	<2
			Max	5	<2	<2
			n	10	4	3
		Winter		1		
Carat Lake (Center Basin)	JER06	Summer	Mean	1		
			SD	1		
			Min	<1	<2	<2
			Max	3	<3	<2
			n	10	3	4
		Winter		1	<2	<2
Carat Lake (Outlet)	JER07	Summer	Mean	1		1
			SD	1		1
			Min	0.2	<2	<2
			Max	4	<2	2
			n	14	4	3
		Winter		5		
Jericho Lake (North Basin)	JER08	Summer	Mean	1		
			SD	1		
			Min	<1	<2	<2
			Max	3.0	<3	<2
			n	15	3	4
		Winter		1	1	<2
Jericho River	JER09	Summer	Mean			
			SD			
			Min		<2	<2
			Max		<2	<2
			n		4	3
		Winter			<2	<2

Table B32 Total suspended solid concentrations (mg/L) for water quality monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean			2
			SD			1
			Min		<2	<2
			Max		<3	3
			n		3	4
		Winter				13
Cigar Lake	JER11	Summer	Mean	3		1
			SD	6		1
			Min	<1	<2	<2
			Max	18	<3	2
			n	8	3	4
		Winter		3		<2
Stream C1	JER12	Summer	Mean			
			SD			
			Min		<2	<2
			Max		<2	<2
			n		5	3
Lake C1	JER13	Summer	Mean			1
			SD			1
			Min		<2	<2
			Max		<3	2
			n		5	4
		Winter			<2	<2
Lake C4	JER14	Summer	Mean			
			SD			
			Min		<2	<2
			Max		<2	<2
			n		4	3
Stream C4	JER15	Summer	Mean			
			SD			
			Min		<2	<2
			Max		<2	<2
			n		3	2

Table B33 Total suspended solid concentrations (mg/L) for water quality monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	5	<2	<2
			SD	3		
			Min	3		
			Max	8		
			n	3	1	1
		Winter		3		
Key Lake	JER17	Summer	Mean	2	<2	<2
			SD	2		
			Min	<1		
			Max	4		
			n	3	1	1
		Winter		2		
Ash Lake	JER18	Summer	Mean	2	<2	<2
			SD	2		
			Min	<1		
			Max	4		
			n	3	1	1
		Winter		2		
Stream C1 (Outlet)	JER19	Summer	Mean			<2
			SD			
			Min			
			Max			
			n			1
Stream C3 (Outlet)	JER20	Summer	Mean			
			SD			
			Min			<2
			Max			<2
			n			2

Table B34 Total organic carbon concentrations (mg/L) for water quality monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		2.5	3.2
			SD		1.0	0.6
			Min		1.0	2.5
			Max		3.0	3.6
			n		4	3
		Winter				4.6
Lake C3 (South Basin)	JER04	Summer	Mean		3.1	2.8
			SD		0.8	0.2
			Min		2.0	2.6
			Max		4.0	3.0
			n		4	4
		Winter			4.0	
Lake C3 (Outlet)	JER05	Summer	Mean	3.1	2.5	2.6
			SD	1.1	0.6	0.2
			Min	0.6	2.0	2.4
			Max	4.3	3.0	2.7
			n	9	4	3
		Winter		4.4		
Carat Lake (Center Basin)	JER06	Summer	Mean	3.8	2.6	3.2
			SD	2.9	0.5	0.9
			Min	0.7	2.0	2.5
			Max	11.0	3.0	4.4
			n	9	3	4
		Winter		4.8	4.0	4.3
Carat Lake (Outlet)	JER07	Summer	Mean	4.0	2.5	2.7
			SD	1.9	0.6	0.1
			Min	0.7	2.0	2.6
			Max	9.0	3.0	2.7
			n	13	4	3
		Winter		4.5		
Jericho Lake (North Basin)	JER08	Summer	Mean	3.7	2.7	2.7
			SD	0.6	0.6	0.2
			Min	2.7	2.0	2.6
			Max	4.8	3.1	3.0
			n	13	3	4
		Winter		4.2	4.0	4.3
Jericho River	JER09	Summer	Mean		2.0	2.5
			SD		0.8	0.1
			Min		1.0	2.5
			Max		3.0	2.6
			n		4	3
		Winter			4.0	4.9

Table B35 Total organic carbon concentrations (mg/L) for water quality monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		2.3	2.7
			SD		0.6	0.3
			Min		2.0	2.4
			Max		3.0	3.0
			n		3	4
		Winter			4.0	3.95
Cigar Lake	JER11	Summer	Mean	3.0	2.3	2.0
			SD	1.1	0.5	1.3
			Min	2.1	2.0	0.1
			Max	5.5	2.9	3.0
			n	8	3	4
		Winter		3.9	3.0	4.9
Stream C1	JER12	Summer	Mean		2.4	3.5
			SD		0.5	0.7
			Min		2.0	2.8
			Max		3.0	4.2
			n		5	3
Lake C1	JER13	Summer	Mean		4.9	3.7
			SD		1.3	0.2
			Min		4.0	3.5
			Max		6.7	4.0
			n		5	4
		Winter			5.0	5.9
Lake C4	JER14	Summer	Mean		5.0	4.6
			SD		0.0	0.3
			Min		5.0	4.3
			Max		5.0	4.9
			n		4	3
Stream C4	JER15	Summer	Mean		4.0	3.8
			SD		1.0	0.1
			Min		3.0	3.7
			Max		5.0	3.9
			n		3	2

Table B36 Total organic carbon concentrations (mg/L) for water quality monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	2.7	3.0	3.1
			SD	1.8		
			Min	0.7		
			Max	3.9		
			n	3	1	1
		Winter		5.1		
Key Lake	JER17	Summer	Mean	3.0	3.0	3.3
			SD	2.3		
			Min	0.4		
			Max	4.6		
			n	3	1	1
		Winter		5.9		
Ash Lake	JER18	Summer	Mean	2.7	3.0	3.0
			SD	2.0		
			Min	0.4		
			Max	4.0		
			n	3	1	1
		Winter		4.7		
Stream C1 (Outlet)	JER19	Summer	Mean			3.5
			SD			
			Min			
			Max			
			n			1
Stream C3 (Outlet)	JER20	Summer	Mean			3.5
			SD			0.0
			Min			3.5
			Max			3.5
			n			2

Table B37 Total inorganic carbon concentrations (mg/L) for water quality monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	2005	2006
Stream C3	JER03	Summer	Mean	2.3	1.4
			SD	1.3	1.8
			Min	1.0	0.1
			Max	4.0	3.5
			n	4	3
		Winter			1.2
Lake C3 (South Basin)	JER04	Summer	Mean	0.9	0.5
			SD	0.5	0.5
			Min	<1	<0.1
			Max	0.5	1.2
			n	4	4
		Winter		2.0	
Lake C3 (Outlet)	JER05	Summer	Mean	1.2	0.5
			SD	0.8	0.7
			Min	<1	<0.1
			Max	2.0	1.3
			n	3	3
Carat Lake (Center Basin)	JER06	Summer	Mean	1.4	0.4
			SD	0.5	0.4
			Min	1.0	<0.1
			Max	2.0	1.0
			n	3	4
		Winter		2.0	1.3
Carat Lake (Outlet)	JER07	Summer	Mean	1.8	0.4
			SD	0.5	0.5
			Min	1.0	<0.1
			Max	2.0	1.0
			n	4	3
Jericho Lake (North Basin)	JER08	Summer	Mean	1.2	0.4
			SD	0.8	0.5
			Min	0.5	<0.1
			Max	2.1	1.1
			n	3	4
		Winter		2.0	1.2
Jericho River	JER09	Summer	Mean	0.8	0.4
			SD	0.3	0.7
			Min	<1	<0.1
			Max	1.0	1.2
			n	4	3
		Winter		2.0	1.6

Table B38 Total inorganic carbon concentrations (mg/L) for water quality monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	2005	2006
Control Lake	JER10	Summer	Mean	1.0	0.4
			SD	0.1	0.5
			Min	1.0	<0.1
			Max	1.1	1.0
			n	3	4
		Winter		2.0	1.0
Cigar Lake	JER11	Summer	Mean	1.5	0.5
			SD	0.5	0.5
			Min	1.0	<0.1
			Max	2.0	1.2
			n	3	4
		Winter			1.3
Stream C1	JER12	Summer	Mean	2.4	2.2
			SD	0.9	2.1
			Min	1.0	0.2
			Max	3.0	4.3
			n	5	3
Lake C1	JER13	Summer	Mean	1.8	1.1
			SD	0.8	0.9
			Min	<1	0.4
			Max	2.7	2.4
			n	5	4
		Winter		2.0	3.9
Lake C4	JER14	Summer	Mean	1.6	1.0
			SD	0.8	1.1
			Min	<1	0.2
			Max	2.0	2.2
			n	4	3
Stream C4	JER15	Summer	Mean	1.7	0.6
			SD	0.6	0.2
			Min	1.0	0.4
			Max	2.0	0.7
			n	3	2

Table B39 Total inorganic carbon concentrations (mg/L) for water quality monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	2005	2006
Lynne Lake	JER16	Summer	Mean	2.0	0.3
			SD		
			Min		
			Max		
			n	1	1
Key Lake	JER17	Summer	Mean	2.0	0.4
			SD		
			Min		
			Max		
			n	1	1
Ash Lake	JER18	Summer	Mean	2.0	0.5
			SD		
			Min		
			Max		
			n	1	1
		Winter			
Stream C1 (Outlet)	JER19	Summer	Mean		2.1
			SD		
			Min		
			Max		
			n		1
Stream C3 (Outlet)	JER20	Summer	Mean		1.4
			SD		1.0
			Min		0.7
			Max		2.1
			n		2

Table B40 Water temperature (ºC) for water quality monitoring sites JER03 to JER09 in 2005 and 2006.

Location	Site	Time Period	Parameter	2005	2006
Stream C3	JER03	Summer	Mean	5.1	13.1
			SD	5.0	1.1
			Min	0.1	12.4
			Max	10.0	14.4
			n	3	3
		Winter			0.5
Lake C3 (South Basin)	JER04	Summer	Mean	9.9	11.0
			SD	1.6	6.6
			Min	8.7	1.5
			Max	8.7	16.6
			n	2	4
Lake C3 (Outlet)	JER05	Summer	Mean	4.3	13.6
			SD	5.0	3.2
			Min	0.8	10.1
			Max	7.8	16.5
			n	2	3
Carat Lake (Center Basin)	JER06	Summer	Mean	9.4	8.9
			SD	0.8	6.7
			Min	8.8	0.4
			Max	10.0	15.9
			n	2	4
		Winter			0.3
Carat Lake (Outlet)	JER07	Summer	Mean	7.3	12.1
			SD	3.4	5.4
			Min	5.0	5.8
			Max	11.2	15.8
			n	3	3
Jericho Lake (North Basin)	JER08	Summer	Mean	9.9	10.8
			SD	1.6	5.5
			Min	8.7	3.1
			Max	11.0	15.3
			n	2	4
		Winter			1.3
Jericho River	JER09	Summer	Mean	5.4	14.1
			SD	3.6	2.3
			Min	2.8	11.8
			Max	7.9	16.3
			n	2	3

Table B41 Water temperature (ºC) for water quality monitoring sites JER10 to JER15 in 2005 and 2006.

Location	Site	Time Period	Parameter	2005	2006
Control Lake	JER10	Summer	Mean	9.4	9.9
			SD	0.9	8.2
			Min	8.7	0.7
			Max	10.0	16.2
			n	2	3
		Winter			0.6
Cigar Lake	JER11	Summer	Mean	8.6	8.8
			SD	0.8	6.5
			Min	8.0	1.5
			Max	9.1	14.0
			n	2	3
		Winter			0.7
Stream C1	JER12	Summer	Mean	3.4	10.8
			SD	4.1	2.7
			Min	1.0	8.6
			Max	8.1	13.7
			n	3	3
Lake C1	JER13	Summer	Mean	6.7	12.2
			SD	4.1	7.1
			Min	2.1	1.6
			Max	9.9	16.3
			n	3	4
		Winter			0.2
Lake C4	JER14	Summer	Mean	6.4	16.6
			SD	6.3	0.3
			Min	1.9	16.4
			Max	10.8	17.0
			n	2	3
Stream C4	JER15	Summer	Mean	8.9	14.9
			SD		0.1
			Min		14.8
			Max		14.9
			n	1	2

Table B42 Water temperature (ºC) for water quality monitoring sites JER16 to JER20 in 2005 and 2006.

Location	Site	Time Period	Parameter	2005	2006
Lynne Lake	JER16	Summer	Mean	12.0	13.3
			SD		
			Min		
			Max		
			n	1	1
Key Lake	JER17	Summer	Mean	12.0	15.1
			SD		
			Min		
			Max		
			n	1	1
Ash Lake	JER18	Summer	Mean	13.0	15.7
			SD		
			Min		
			Max		
			n	1	1
Stream C1 (Outlet)	JER19	Summer	Mean		14.3
			SD		
			Min		
			Max		
			n		1
Stream C3 (Outlet)	JER20	Summer	Mean		14.4
			SD		
			Min		
			Max		
			n		1

Table B43 Turbidity (NTU) for water quality monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		2	1
			SD		0	1
			Min		2	<1
			Max		2	2
			n		4	3
		Winter				1
Lake C3 (South Basin)	JER04	Summer	Mean		1	2
			SD		1	1
			Min		0	1
			Max		2	2
			n		4	4
		Winter			1	
Lake C3 (Outlet)	JER05	Summer	Mean	1	2	1
			SD	0	1	1
			Min	0	1	1
			Max	1	2	2
			n	2	5	4
Carat Lake (Center Basin)	JER06	Summer	Mean	0	1	1
			SD	0	1	1
			Min	0	0	<1
			Max	1	2	2
			n	2	5	5
		Winter				1
Carat Lake (Outlet)	JER07	Summer	Mean	1	1	1
			SD	1	1	1
			Min	0	1	1
			Max	2	2	2
			n	4	4	3
Jericho Lake (North Basin)	JER08	Summer	Mean	0	1	1
			SD	0	1	0
			Min	0	0	<1
			Max	0	2	1
			n	2	4	4
		Winter				0
Jericho River	JER09	Summer	Mean		2	1
			SD		1	0
			Min		1	1
			Max		2	1
			n		4	3
		Winter			1	1

Table B44 Turbidity (NTU) for water quality monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		1	1
			SD		1	1
			Min		0	1
			Max		2	2
			n		3	4
		Winter			1	1
Cigar Lake	JER11	Summer	Mean		2	1
			SD		1	0
			Min		0	0
			Max		2	1
			n		4	4
		Winter				0
Stream C1	JER12	Summer	Mean		1	2
			SD		0	1
			Min		<1	1
			Max		1	3
			n		4	3
Lake C1	JER13	Summer	Mean		1	1
			SD		1	1
			Min		0	<1
			Max		3	2
			n		5	4
		Winter			1	1
Lake C4	JER14	Summer	Mean		1	1
			SD		1	0
			Min		<1	1
			Max		2	1
			n		4	3
Stream C4	JER15	Summer	Mean		1	2
			SD		0	1
			Min		1	1
			Max		1	2
			n		3	2

Table B45 Turbidity (NTU) for water quality monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean		2	1
			SD			
			Min			
			Max			
			n		1	1
Key Lake	JER17	Summer	Mean		1	2
			SD			
			Min			
			Max			
			n		1	1
Ash Lake	JER18	Summer	Mean		3	2
			SD			
			Min			
			Max			
			n		1	1
Stream C1 (Outlet)	JER19	Summer	Mean			2
			SD			
			Min			
			Max			
			n			1
Stream C3 (Outlet)	JER20	Summer	Mean			2
			SD			1
			Min			1
			Max			2
			n			2

Table B46 Nitrate concentrations (NO_3, mg/L) for water quality monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		0.058	1.849
			SD		0.045	2.103
			Min		<0.050	<0.050
			Max		0.120	4.520
			n		4	4
		Winter				0.062
Lake C3 (South Basin)	JER04	Summer	Mean		0.028	
			SD		0.017	
			Min		<0.050	<0.050
			Max		0.050	<0.050
			n		4	4
		Winter			0.050	
Lake C3 (Outlet)	JER05	Summer	Mean	0.007	0.041	0.037
			SD	0.010	0.033	0.020
			Min	<0.001	<0.050	<0.050
			Max	0.041	0.090	0.060
			n	18	4	3
		Winter		0.017		
Carat Lake (Center Basin)	JER06	Summer	Mean	0.008	0.039	
			SD	0.016	0.045	
			Min	<0.001	<0.006	<0.050
			Max	0.066	0.090	<0.050
			n	18	3	4
		Winter		0.013	0.025	0.091
Carat Lake (Outlet)	JER07	Summer	Mean	0.094	0.031	
			SD	0.463	0.013	
			Min	<0.001	<0.050	<0.050
			Max	2.500	0.050	<0.050
			n	29	4	3
		Winter		0.010		
Jericho Lake (North Basin)	JER08	Summer	Mean	0.004	0.021	
			SD	0.008	0.007	
			Min	<0.001	0.013	<0.050
			Max	0.042	<0.050	<0.050
			n	28	3	4
		Winter		0.006	<0.050	<0.005
Jericho River	JER09	Summer	Mean		0.034	
			SD		0.018	
			Min		<0.050	<0.050
			Max		0.060	<0.050
			n		4	3
		Winter			<0.050	0.037

Table B47 Nitrate concentrations (NO_3, mg/L) for water quality monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		0.020	
			SD		0.009	
			Min		0.009	<0.050
			Max		<0.050	<0.050
			n		3	3
		Winter			<0.050	0.026
Cigar Lake	JER11	Summer	Mean	0.003	0.029	
			SD	0.003	0.029	
			Min	<0.001	<0.006	<0.050
			Max	0.011	0.060	<0.050
			n	16	3	4
		Winter		0.002	<0.050	<0.005
Stream C1	JER12	Summer	Mean		0.440	0.718
			SD		0.103	0.620
			Min		0.300	<0.050
			Max		0.590	1.220
			n		5	3
Lake C1	JER13	Summer	Mean	0.010	0.133	0.498
			SD	0.011	0.115	0.238
			Min	<0.001	0.014	0.300
			Max	0.025	0.280	0.780
			n	4	5	4
		Winter			0.330	1.360
Lake C4	JER14	Summer	Mean	0.005		
			SD	0.006		
			Min	<0.001	<0.050	<0.050
			Max	0.011	<0.050	<0.050
			n	4	3	4
Stream C4	JER15	Summer	Mean		0.062	
			SD		0.032	
			Min		<0.050	<0.050
			Max		0.080	<0.050
			n		3	2

Table B48 Nitrate concentrations (NO_3, mg/L) for water quality monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	0.003	<0.050	0.100
			SD	0.004		
			Min	0.001		
			Max	0.010		
			n	6	1	1
		Winter		0.006		
Key Lake	JER17	Summer	Mean	0.002	0.060	0.080
			SD	0.002		
			Min	<0.001		
			Max	0.007		
			n	6	1	1
		Winter		0.005		
Ash Lake	JER18	Summer	Mean	0.007	<0.050	<0.050
			SD	0.013		
			Min	0.001		
			Max	0.033		
			n	6	1	1
		Winter		0.008		
Stream C1 (Outlet)	JER19	Summer	Mean			
			SD			
			Min			0.860
			Max			0.860
			n			1
Stream C3 (Outlet)	JER20	Summer	Mean			
			SD			
			Min			0.310
			Max			0.000
			n			1

Table B49 Ammonia concentrations (NH_3, mg/L) for water quality monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean			0.009
			SD			0.008
			Min		<0.100	<0.005
			Max		<0.100	0.020
			n		4	4
		Winter				0.009
Lake C3 (South Basin)	JER04	Summer	Mean			0.017
			SD			0.020
			Min		0.019	<0.005
			Max		<0.100	<0.100
			n		5	5
		Winter			0.050	
Lake C3 (Outlet)	JER05	Summer	Mean	0.011		0.007
			SD	0.008		0.004
			Min	<0.005	<0.100	<0.005
			Max	0.026	<0.100	0.010
			n	8	4	4
		Winter				
Carat Lake (Center Basin)	JER06	Summer	Mean	0.011		0.021
			SD	0.008		0.019
			Min	<0.005	0.037	<0.005
			Max	0.028	<0.100	<0.100
			n	8	3	5
		Winter		0.240	<0.100	0.020
Carat Lake (Outlet)	JER07	Summer	Mean	0.007		0.011
			SD	0.008		0.007
			Min	<0.001	<0.100	<0.005
			Max	0.028	<0.100	0.020
			n	14	4	4
		Winter		0.018		
Jericho Lake (North Basin)	JER08	Summer	Mean	0.009		
			SD	0.010		
			Min	<0.001	0.023	
			Max	0.033	<0.100	
			n	13	3	
		Winter		0.015		0.015
Jericho River	JER09	Summer	Mean			0.009
			SD			0.008
			Min		<0.100	<0.005
			Max		<0.100	0.020
			n		4	4
		Winter			<0.100	0.035

Table B50 Ammonia concentrations (NH_3, mg/L) for water quality monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean			0.019
			SD			0.019
			Min		0.008	<0.005
			Max		<0.100	<0.100
			n		3	5
		Winter			<0.100	0.018
Cigar Lake	JER11	Summer	Mean	0.009		0.515
			SD	0.007		1.110
			Min	<0.005	<0.005	<0.005
			Max	0.019	<0.100	2.500
			n	8	2	5
		Winter		0.019		0.018
Stream C1	JER12	Summer	Mean			0.014
			SD			0.007
			Min		<0.100	0.007
			Max		<0.100	0.020
			n		5	4
Lake C1	JER13	Summer	Mean	0.004		0.013
			SD	0.002		0.005
			Min	<0.005	0.019	0.010
			Max	0.006	<0.100	<0.100
			n	2	5	4
		Winter			0.100	0.026
Lake C4	JER14	Summer	Mean	0.006		0.010
			SD	0.005		0.000
			Min	<0.005	<0.100	0.009
			Max	0.009	<0.100	0.010
			n	2	4.000	4.000
Stream C4	JER15	Summer	Mean			0.020
			SD			0.014
			Min		<0.100	0.010
			Max		<0.100	0.030
			n		3	2

Table B51 Ammonia concentrations (NH_3, mg/L) for water quality monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	0.014	<0.100	0.030
			SD	0.004		
			Min	0.010		
			Max	0.018		
			n	3	1	1
		Winter		0.016		
Key Lake	JER17	Summer	Mean	0.010	<0.100	0.020
			SD	0.010		
			Min	<0.005		
			Max	0.021		
			n	3	1	1
		Winter		0.035		
Ash Lake	JER18	Summer	Mean	0.015	<0.100	0.020
			SD	0.012		
			Min	<0.005		
			Max	0.027		
			n	3	1	1
		Winter		0.015		
Stream C1 (Outlet)	JER19	Summer	Mean			0.011
			SD			0.012
			Min			<0.005
			Max			0.020
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			0.008
			SD			0.003
			Min			0.006
			Max			0.010
			n			2

Table B52 Phosphate concentrations (PO_4, mg/L) for water quality monitoring sites JER 03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean			
			SD			
			Min		<0.200	<0.200
			Max		<0.200	<0.200
			n		4	4
		Winter				0.003
Lake C3 (South Basin)	JER04	Summer	Mean			
			SD			
			Min		<0.001	<0.200
			Max		<0.200	<0.200
			n		3	4
		Winter			<0.200	
Lake C3 (Outlet)	JER05	Summer	Mean	0.001		
			SD	0.001		
			Min	<0.001	<0.200	<0.200
			Max	0.004	<0.200	<0.200
			n	8	4	3
		Winter		0.001		
Carat Lake (Center Basin)	JER06	Summer	Mean	0.002		
			SD	<0.001		
			Min	0.001	<0.001	<0.200
			Max	0.003	<0.2	<0.200
			n	8	2	4
		Winter		<0.001	0.100	0.0024
Carat Lake (Outlet)	JER07	Summer	Mean	0.003		
			SD	0.002		
			Min	<0.001	<0.200	<0.200
			Max	0.006	<0.200	<0.200
			n	8	4	3
		Winter		0.001		
Jericho Lake (North Basin)	JER08	Summer	Mean	0.001		
			SD	0.001		
			Min	<0.001	<0.001	<0.200
			Max	0.003	<0.200	<0.200
			n	8	2	4
		Winter		<0.001	<0.200	0.002
Jericho River	JER09	Summer	Mean			
			SD			
			Min		<0.200	<0.200
			Max		<0.200	<0.200
			n		2	4
		Winter				0.003

Table B53 Phosphate concentrations ($PO_{4,}$ mg/L) for water quality monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean			
			SD			
			Min		<0.001	<0.200
			Max		<0.200	<0.200
			n		2	4
		Winter			<0.200	0.002
Cigar Lake	JER11	Summer	Mean	0.002		
			SD	0.002		
			Min	<0.001	<0.001	<0.200
			Max	0.007	<0.200	<0.500
			n	8	2	4
		Winter		<0.001		0.002
Stream C1	JER12	Summer	Mean			
			SD			
			Min		<0.001	<0.200
			Max		<0.200	<0.200
			n		5	3
		Winter				
Lake C1	JER13	Summer	Mean			
			SD			
			Min		<0.001	<0.200
			Max		<0.200	<0.200
			n		4	3
		Winter			<0.200	0.004
Lake C4	JER14	Summer	Mean			
			SD			
			Min		<0.200	<0.200
			Max		<0.200	<0.200
			n		4	3
		Winter				
Stream C4	JER15	Summer	Mean			
			SD			
			Min		<0.200	<0.200
			Max		<0.200	<0.200
			n		3	2
		Winter				

Table B54 Phosphate concentrations ($PO_{4,}$ mg/L) for water quality monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	0.002	<0.200	<0.200
			SD	0.001		
			Min	<0.001		
			Max	0.003		
			n	3	1	
		Winter		<0.001		
Key Lake	JER17	Summer	Mean	0.004	<0.200	<0.200
			SD	0.001		
			Min	0.003		
			Max	0.005		
			n	3	1	1
		Winter		0.001		
Ash Lake	JER18	Summer	Mean	0.003	<0.200	<0.200
			SD	0.001		
			Min	0.002		
			Max	0.004		
			n	3	1	1
		Winter		0.002		
Stream C1 (Outlet)	JER19	Summer	Mean			<0.200
			SD			
			Min			
			Max			
			n			1
		Winter				
Stream C3 (Outlet)	JER20	Summer	Mean			
			SD			
			Min			<0.200
			Max			<0.200
			n			2
		Winter				

Table B55 Total phosphorus concentrations (mg/L) for water quality monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean			0.011
			SD			0.007
			Min		<0.020	0.003
			Max		<0.050	0.020
			n		8	4
		Winter				0.005
Lake C3 (South Basin)	JER04	Summer	Mean			0.019
			SD			0.014
			Min		<0.02	0.003
			Max		<0.05	0.040
			n		8	5
		Winter			<0.050	
Lake C3 (Outlet)	JER05	Summer	Mean	0.004		0.016
			SD	0.002		0.016
			Min	<0.001	0.020	0.004
			Max	0.005	<0.05	0.040
			n	7	8	4
		Winter		<0.3		
Carat Lake (Center Basin)	JER06	Summer	Mean	0.004	0.017	0.012
			SD	0.002	0.010	0.010
			Min	<0.001	0.004	0.002
			Max	0.007	<0.05	0.030
			n	9	6	5
		Winter		<0.3	0.020	0.009
Carat Lake (Outlet)	JER07	Summer	Mean	0.011		0.011
			SD	0.011		0.007
			Min	<0.001	<0.02	0.003
			Max	0.034	<0.05	0.020
			n	9	8	4
		Winter		0.003		
Jericho Lake (North Basin)	JER08	Summer	Mean	0.004		
			SD	0.002		
			Min	<0.001	0.004	
			Max	0.005	<0.05	
			n	8	7	
		Winter		0.005		0.007
Jericho River	JER09	Summer	Mean			0.009
			SD			0.003
			Min		<0.02	0.004
			Max		0.060	<0.02
			n		10	4
		Winter			<0.050	0.005

Table B56 Total phosphorus concentrations (mg/L) for water quality monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		0.026	0.008
			SD		0.035	0.004
			Min		0.005	0.002
			Max		0.095	<0.02
			n		6	5
		Winter			0.010	0.004
Cigar Lake	JER11	Summer	Mean	0.005		0.017
			SD	0.002		0.024
			Min	<0.001	0.004	0.003
			Max	0.007	<0.050	0.060
			n	9	6	5
		Winter		0.004		0.004
Stream C1	JER12	Summer	Mean			0.008
			SD			0.004
			Min		<0.02	0.003
			Max		0.050	<0.02
			n		10	4
Lake C1	JER13	Summer	Mean	0.005	0.020	0.015
			SD	0.001	0.008	0.011
			Min	0.004	0.010	0.003
			Max	0.005	0.030	0.030
			n	2	10	5
		Winter			<0.02	0.007
Lake C4	JER14	Summer	Mean			0.014
			SD			0.011
			Min	0.005	<0.02	0.005
			Max	0.005	0.066	0.030
			n	2	8	4
Stream C4	JER15	Summer	Mean			0.034
			SD			0.009
			Min		<0.02	0.027
			Max		<0.05	0.040
			n		6	2

Table B57 Total Phosphorus concentrations (mg/L) for water quality monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	0.013		<0.020
			SD	0.012		
			Min	0.005	<0.020	
			Max	0.027	0.073	
			n	3	2	1
		Winter		0.004		
Key Lake	JER17	Summer	Mean	0.007		<0.020
			SD	0.002		
			Min	0.005	<0.020	
			Max	0.008	0.063	
			n	3	2	1
		Winter		0.007		
Ash Lake	JER18	Summer	Mean	0.009		<0.020
			SD	0.003		
			Min	0.006	<0.020	
			Max	0.012	<0.050	
			n	3	2	1
		Winter		0.004		
Stream C1 (Outlet)	JER19	Summer	Mean			
			SD			
			Min			0.003
			Max			<0.020
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			
			SD			
			Min			0.003
			Max			<0.020
			n			2

Table B58 Total aluminum concentrations (mg/L) at monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		0.037	0.034
			SD		0.009	0.015
			Min		0.031	0.019
			Max		0.050	0.054
			n		4	4
		Winter				0.001
Lake C3 (South Basin)	JER04	Summer	Mean		0.025	0.031
			SD		0.014	0.012
			Min		0.015	0.018
			Max		0.046	0.049
			n		4	5
		Winter			0.054	
Lake C3 (Outlet)	JER05	Summer	Mean	0.032	0.054	0.037
			SD	0.013	0.039	0.018
			Min	0.014	0.020	0.018
			Max	0.062	0.108	0.057
			n	10	4	4
		Winter		0.041		
Carat Lake (Center Basin)	JER06	Summer	Mean	0.029	0.018	0.023
			SD	0.012	0.004	0.008
			Min	0.014	0.014	0.013
			Max	0.058	0.021	0.033
			n	10	3	5
		Winter		0.041	0.027	0.016
Carat Lake (Outlet)	JER07	Summer	Mean	0.045	0.024	0.024
			SD	0.091	0.012	0.003
			Min	0.000	0.010	0.021
			Max	0.380	0.034	0.028
			n	16	4	4
		Winter		0.031		
Jericho Lake (North Basin)	JER08	Summer	Mean	0.023	0.014	0.019
			SD	0.007	0.005	0.005
			Min	0.012	0.010	0.012
			Max	0.036	0.020	0.025
			n	15	3	5
		Winter		0.028	0.032	0.014
Jericho River	JER09	Summer	Mean		0.024	0.022
			SD		0.009	0.004
			Min		0.012	0.017
			Max		0.033	0.027
			n		4	4
		Winter			0.032	0.022

Table B59 Total aluminum concentrations (mg/L) at monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		0.018	0.025
			SD		0.003	0.006
			Min		0.016	0.018
			Max		0.022	0.033
			n		3	5
		Winter			0.003	0.019
Cigar Lake	JER11	Summer	Mean	0.051	0.011	0.016
			SD	0.077	0.000	0.006
			Min	0.011	0.010	0.010
			Max	0.240	0.011	0.023
			n	8	3	5
		Winter		0.023	0.008	0.011
Stream C1	JER12	Summer	Mean		0.042	0.050
			SD		0.014	0.018
			Min		0.033	0.037
			Max		0.064	0.077
			n		5	4
Lake C1	JER13	Summer	Mean	0.033	0.054	0.043
			SD	0.006	0.005	0.030
			Min	0.028	0.050	0.024
			Max	0.037	0.060	0.095
			n	2	3	5
		Winter			0.046	0.009
Lake C4	JER14	Summer	Mean	0.028	0.035	0.037
			SD	0.003	0.010	0.010
			Min	0.026	0.027	0.025
			Max	0.030	0.050	0.047
			n	2	4	4
Stream C4	JER15	Summer	Mean		0.041	0.043
			SD		0.016	0.009
			Min		0.030	0.036
			Max		0.059	0.049
			n		3	2

Table B60 Total aluminum concentrations (mg/L) at monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	0.037	0.025	0.036
			SD	0.010		
			Min	0.029		
			Max	0.048		
			n	3	1	1
		Winter		0.076		
Key Lake	JER17	Summer	Mean	0.068	0.029	0.043
			SD	0.049		
			Min	0.038		
			Max	0.124		
			n	3	1	1
		Winter		0.042		
Ash Lake	JER18	Summer	Mean	0.063	0.010	0.037
			SD	0.051		
			Min	0.029		
			Max	0.122		
			n	3	1	1
		Winter		0.040		
Stream C1 (Outlet)	JER19	Summer	Mean			0.094
			SD			0.103
			Min			0.021
			Max			0.167
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			0.040
			SD			0.001
			Min			0.040
			Max			0.041
			n			2

Table B61 Total arsenic concentrations at (mg/L) monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		0.0004	0.0003
			SD		0.0002	0.0002
			Min		<0.0004	<0.0002
			Max		0.0007	0.0006
			n		4	4
		Winter				0.0003
Lake C3 (South Basin)	JER04	Summer	Mean		0.0002	0.0002
			SD		0.0000	0.0001
			Min		<0.0004	<0.0002
			Max		0.0002	0.0003
			n		4	5
		Winter			0.0002	
Lake C3 (Outlet)	JER05	Summer	Mean	0.0002		0.0001
			SD	0.0001		0.0001
			Min	0.0001	<0.0004	<0.0002
			Max	0.0003	<0.0004	0.0002
			n	10	4	4
		Winter		0.0002		
Carat Lake (Center Basin)	JER06	Summer	Mean	0.0009	0.0002	0.0001
			SD	0.0020	0.0000	0.0000
			Min	<0.0001	<0.0004	<0.0002
			Max	0.0067	0.0002	0.0002
			n	10	3	5
		Winter		0.0002	0.0002	0.0002
Carat Lake (Outlet)	JER07	Summer	Mean	0.0008		0.0001
			SD	0.0016		0.0000
			Min	<0.0001	<0.0004	<0.0001
			Max	0.0050	<0.0004	0.0002
			n	16	4	4
		Winter		0.0002		
Jericho Lake (North Basin)	JER08	Summer	Mean	0.0002		0.0002
			SD	0.0001		0.0001
			Min	<0.0001	<0.0004	<0.0002
			Max	0.0003	<0.0004	0.0003
			n	15	3	5
		Winter		0.0002	0.0002	0.0002
Jericho River	JER09	Winter				0.0002

Table B62 Total arsenic concentrations (mg/L) at monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		0.0002	0.0002
			SD		0.0000	0.0001
			Min		0.0002	0.0001
			Max		<0.0004	0.0003
			n		3	5
		Winter			0.0002	0.0002
Cigar Lake	JER11	Summer	Mean	0.0001	0.0002	0.0002
			SD	0.0001	0.0000	0.0001
			Min	<0.0001	0.0002	<0.0002
			Max	0.0002	<0.0004	0.0003
			n	8	3	5
		Winter		0.000	0.000	
Stream C1	JER12	Summer	Mean			0.0003
			SD			0.0001
			Min		<0.0004	<0.0002
			Max		<0.0004	0.0003
			n		5	4
Lake C1	JER13	Summer	Mean	0.0002	0.0002	0.0002
			SD	0.0000	0.0000	0.0001
			Min	0.0002	0.0002	<0.0002
			Max	0.0002	<0.0004	0.0004
			n	2	5	5
		Winter			0.0002	0.0002
Lake C4	JER14	Summer	Mean	0.0003		0.0002
			SD	0.0001		0.0001
			Min	0.0002	<0.0004	<0.0002
			Max	0.0004	<0.0004	0.0004
			n	2	4	4
Stream C4	JER15	Summer	Mean			
			SD			
			Min		<0.0004	<0.0002
			Max		<0.0004	<0.0002
			n		3	2

Table B63 Total arsenic concentrations (mg/L) at monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	0.0002	0.0002	0.0001
			SD	0.0000		
			Min	0.0002		
			Max	0.0002		
			n	3	1	1
		Winter		0.0002		
Key Lake	JER17	Summer	Mean	0.0002	0.0002	0.0001
			SD	0.0000		
			Min	0.0002		
			Max	0.0002		
			n	3	1	1
		Winter		0.0002		
Ash Lake	JER18	Summer	Mean	0.0002	0.0002	0.0001
			SD	0.0000		
			Min	0.0002		
			Max	0.0002		
			n	3	1	1
		Winter		0.0001		
Stream C1 (Outlet)	JER19	Summer	Mean			0.0002
			SD			0.0001
			Min			0.0002
			Max			0.0003
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			0.0002
			SD			0.0000
			Min			0.0002
			Max			0.0002
			n			2

Table B64 Total chromium concentrations (mg/L) at monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		0.0011	0.0023
			SD		0.0012	0.0027
			Min		<0.0009	0.0006
			Max		0.0029	0.0063
			n		4	4
		Winter				<0.0005
Lake C3 (South Basin)	JER04	Summer	Mean		0.0004	0.0008
			SD		0.0002	0.0007
			Min		0.0001	0.0002
			Max		<0.0009	0.0017
			n		4	5
		Winter			<0.0009	
Lake C3 (Outlet)	JER05	Summer	Mean	0.0002	0.0009	0.0009
			SD	0.0001	0.0008	0.0009
			Min	0.0001	<0.0009	<0.0005
			Max	<0.0005	0.0021	0.0020
			n	5	4	4
		Winter		<0.0005		
Carat Lake (Center Basin)	JER06	Summer	Mean	0.0003	0.0003	0.0011
			SD	0.0002	0.0002	0.0013
			Min	0.0001	0.0001	<0.0005
			Max	0.0007	<0.0009	0.0033
			n	5	3	5
		Winter		<0.0005	<0.0009	<0.0005
Carat Lake (Outlet)	JER07	Summer	Mean	0.0003	0.0010	0.0016
			SD	0.0002	0.0010	0.0013
			Min	0.0001	<0.0009	0.0003
			Max	0.0009	0.0025	0.0034
			n	11	4	4
		Winter		<0.0005		<0.0005
Jericho Lake (North Basin)	JER08	Summer	Mean	0.0002	0.0004	0.0008
			SD	0.0001	0.0002	0.0007
			Min	0.0001	0.0002	0.0003
			Max	<0.0005	<0.0009	0.0020
			n	10	3	5
		Winter		0.0003	0.0005	<0.0005
Jericho River	JER09	Summer	Mean		0.0010	0.0012
			SD		0.0012	0.0008
			Min		<0.0009	0.0002
			Max		0.0028	0.0022
			n		4	4
		Winter			0.0005	<0.0005

Table B65 Total chromium concentrations at monitoring sites JE10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		0.0003	0.0007
			SD		0.0002	0.0006
			Min		0.0001	0.0002
			Max		<0.0009	0.0015
			n		3	5
		Winter			0.0005	
Cigar Lake	JER11	Summer	Mean	0.0002	0.0003	0.0006
			SD	0.0001	0.0002	0.0007
			Min	0.0001	0.0001	0.0002
			Max	0.0003	<0.0009	0.0019
			n	3	3	5
		Winter		0.0003	0.0005	<0.0005
Stream C1	JER12	Summer	Mean		0.0010	0.0006
			SD		0.0008	0.0005
			Min		<0.0009	<0.0005
			Max		0.0019	0.0014
			n		5	4
Lake C1	JER13	Summer	Mean		0.0009	0.0016
			SD		0.0010	0.0017
			Min	<0.0005	0.0003	0.0004
			Max	<0.0005	0.0027	0.0045
			n	2	5	5
		Winter			0.0009	<0.0005
Lake C4	JER14	Summer	Mean		0.0012	0.0010
			SD		0.0016	0.0010
			Min	<0.0005	<0.0009	0.0002
			Max	<0.0005	0.0036	0.0024
			n	2	4	4
Stream C4	JER15	Summer	Mean			0.0005
			SD			0.0004
			Min		<0.0009	<0.0005
			Max		<0.0009	0.0008
			n		3	2

Table B66 Total chromium concentrations (mg/L) at monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	0.0001	0.0005	0.0010
			SD	0.0001		
			Min	0.0001		
			Max	0.0002		
			n	3	1	1
		Winter		0.0003		
Key Lake	JER17	Summer	Mean	0.0002	0.0005	0.0010
			SD	0.0001		
			Min	<0.0001		
			Max	0.0002		
			n	3	1	1
		Winter		0.0003		
Ash Lake	JER18	Summer	Mean	0.0002	0.0005	0.0011
			SD	0.0001		
			Min	<0.0001		
			Max	0.0003		
			n	3	1	1
		Winter		<0.0005		
Stream C1 (Outlet)	JER19	Summer	Mean			0.0007
			SD			0.0008
			Min			0.0001
			Max			0.0013
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			0.0008
			SD			0.0009
			Min			0.0002
			Max			0.0015
			n			2

Table B67 Total copper concentrations (mg/L) at monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		0.0008	0.0011
			SD		0.0006	0.0006
			Min		<0.0010	<0.0010
			Max		0.0016	0.0019
			n		4	4
		Winter				0.0030
Lake C3 (South Basin)	JER04	Summer	Mean		0.0018	0.0009
			SD		0.0018	0.0005
			Min		<0.0010	<0.0010
			Max		0.0044	0.0016
			n		4	5
		Winter			0.0005	
Lake C3 (Outlet)	JER05	Summer	Mean	0.0010		0.0008
			SD	0.0002		0.0005
			Min	0.0009	<0.0010	<0.0010
			Max	0.0013	<0.0010	0.0015
			n	5	4	4
		Winter		0.0016		
Carat Lake (Center Basin)	JER06	Summer	Mean	0.0010	0.0007	0.0008
			SD	0.0001	0.0003	0.0005
			Min	0.0009	<0.0010	<0.0010
			Max	0.0012	0.0010	0.0015
			n	5	3	5
		Winter		0.0017	0.0005	0.0014
Carat Lake (Outlet	JER07	Summer	Mean	0.0011	0.0009	0.0025
			SD	0.0003	0.0004	0.0034
			Min	0.0008	<0.0010	<0.0010
			Max	0.0016	0.0012	0.0076
			n	11	4	4
		Winter		0.0014		
Jericho Lake (North Basin)	JER08	Summer	Mean	0.0010	0.0010	0.0008
			SD	0.0001	0.0005	0.0006
			Min	0.0008	<0.0010	<0.0010
			Max	0.0011	0.0015	0.0018
			n	10	3	5
		Winter		0.0011	0.0005	0.00137
Jericho River	JER09	Summer	Mean		0.0010	0.0008
			SD		0.0006	0.0006
			Min		<0.0010	<0.0010
			Max		0.0016	0.0017
			n		4	4
		Winter			0.0005	0.0014

Table B68 Total copper concentrations (mg/L) at monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		0.0007	0.0008
			SD		0.0003	0.0007
			Min		<0.0010	<0.0010
			Max		0.0010	0.0020
			n		3	5
		Winter			0.0025	0.0014
Cigar Lake	JER11	Summer	Mean	0.0010	0.0010	0.0013
			SD	0.0001	0.0004	0.0013
			Min	0.0009	<0.0010	<0.0010
			Max	0.0011	0.0013	0.0034
			n	3	3	5
		Winter		0.0016	0.0040	0.0018
Stream C1	JER12	Summer	Mean		0.0019	0.0021
			SD		0.0003	0.0009
			Min		0.0014	0.0012
			Max		0.0022	0.0031
			n		5	4
Lake C1	JER13	Summer	Mean	0.0018	0.0016	0.0014
			SD	0.0001	0.0005	0.0007
			Min	0.0017	0.0012	<0.0010
			Max	0.0019	0.0024	0.0022
			n	2	5	5
		Winter			<0.0010	0.0024
Lake C4	JER14	Summer	Mean	0.0016	0.0008	0.0023
			SD	0.0000	0.0007	0.0021
			Min	0.0016	<0.0010	<0.0010
			Max	0.0016	0.0018	0.0053
			n	2	4	4
Stream C4	JER15	Summer	Mean			0.0009
			SD			0.0006
			Min		<0.0010	<0.0010
			Max		<0.0010	0.0013
			n		3	2

Table B69 Total copper concentrations (mg/L) at monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	0.0014	0.0011	<0.0010
			SD	0.0001		
			Min	0.0013		
			Max	0.0015		
			n	3	1	1
		Winter		0.0022		
Key Lake	JER17	Summer	Mean	0.0016	0.0015	0.0016
			SD	0.0004		
			Min	0.0014		
			Max	0.0021		
			n	3	1	1
		Winter		0.0027		
Ash Lake	JER18	Summer	Mean	0.0013	<0.0010	<0.0010
			SD	0.0003		
			Min	0.0011		
			Max	0.0016		
			n	3	1	1
		Winter		0.0023		
Stream C1 (Outlet)	JER19	Summer	Mean			0.0018
			SD			0.0000
			Min			0.0018
			Max			0.0018
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			0.0013
			SD			0.0002
			Min			0.0012
			Max			0.0015
			n			2

Table B70 Total lead concentrations (mg/L) at monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		0.00011	0.00010
			SD		0.00013	0.00013
			Min		<0.00010	<0.00005
			Max		0.00030	0.00029
			n		4	4
		Winter				<0.00005
Lake C3 (South Basin)	JER04	Summer	Mean		0.00011	0.00006
			SD		0.00013	0.00003
			Min		<0.00005	<0.00005
			Max		0.00030	0.00010
			n		4	5
		Winter			0.00010	
Lake C3 (Outlet)	JER05	Summer	Mean	0.00006	0.00018	0.00004
			SD	0.00006	0.00022	0.00003
			Min	<0.00005	<0.00010	<0.00005
			Max	0.00017	0.00050	0.00009
			n	5	4	4
		Winter		0.00019		
Carat Lake (Center Basin)	JER06	Summer	Mean	0.00004		0.00012
			SD	0.00002		0.00021
			Min	<0.00005	<0.00005	<0.00005
			Max	0.00008	<0.00010	0.00049
			n	5	3	5
		Winter		0.00007	0.00010	<0.00005
Carat Lake (Outlet	JER07	Summer	Mean	0.00007		0.00002
			SD	0.00009		0.00000
			Min	<0.00005	<0.00010	0.00002
			Max	0.00029	<0.00010	<0.00005
			n	11	4	4
		Winter		0.00006		
Jericho Lake (North Basin)	JER08	Summer	Mean	0.00003		0.00004
			SD	0.00001		0.00002
			Min	<0.00005	<0.00005	<0.00005
			Max	0.00006	<0.00010	0.00006
			n	10	3	5
		Winter		<0.00005	<0.00010	<0.00005
Jericho River	JER09	Summer	Mean		0.00006	0.00007
			SD		0.00003	0.00008
			Min		<0.0001	<0.00005
			Max		0.00010	0.00019
			n		4	4
		Winter			<0.00010	<0.00005

Table B71 Total lead concentrations (mg/L) at monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean			0.00012
			SD			0.00012
			Min		<0.00005	<0.00005
			Max		<0.00010	0.00025
			n		3	5
		Winter			0.00010	<0.00005
Cigar Lake	JER11	Summer	Mean			0.00006
			SD			0.00003
			Min	<0.00005	<0.00005	<0.00005
			Max	<0.00005	<0.00010	0.00010
			n	8	3	5
		Winter		0.00006	0.00020	0.000228
Stream C1	JER12	Summer	Mean		0.00019	0.00010
			SD		0.00019	0.00003
			Min		<0.00010	0.00008
			Max		0.00040	0.00014
			n		5	4
Lake C1	JER13	Summer	Mean	0.00007		0.00008
			SD	0.00006		0.00005
			Min	<0.00005	<0.00005	<0.00005
			Max	0.00011	<0.00010	0.00015
			n	2	5	5
		Winter			0.00005	<0.00005
Lake C4	JER14	Summer	Mean	0.00020	0.00019	0.00004
			SD	0.00014	0.00028	0.00003
			Min	0.00010	<0.00010	<0.00005
			Max	0.00030	0.00060	0.00008
			n	2	4	4
Stream C4	JER15	Summer	Mean			
			SD			
			Min		<0.00010	<0.00005
			Max		<0.00010	<0.00005
			n		3	2

Table B72 Total lead concentrations (mg/L) at monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	0.00004	0.00010	<0.00005
			SD	0.00002		
			Min	<0.00005		
			Max	0.00006		
			n	3	1	1
		Winter		0.00011		
Key Lake	JER17	Summer	Mean	0.00004	0.00020	<0.00005
			SD	0.00002		
			Min	<0.00005		
			Max	0.00006		
			n	3	1	1
		Winter		0.00012		
Ash Lake	JER18	Summer	Mean	0.00016	<0.00010	<0.00005
			SD	0.00021		
			Min	<0.00005		
			Max	0.00040		
			n	3	1	1
		Winter		0.00009		
Stream C1 (Outlet)	JER19	Summer	Mean			0.00008
			SD			0.00008
			Min			0.00002
			Max			0.00014
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			0.00004
			SD			0.00001
			Min			<0.00005
			Max			0.00005
			n			2

Table B73 Total molybdenum concentrations (mg/L) at monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean			0.00018
			SD			0.00018
			Min		<0.00050	<0.00005
			Max		<0.00050	0.00043
			n		4	4
		Winter				<0.00005
Lake C3 (South Basin)	JER04	Summer	Mean			0.00009
			SD			0.00010
			Min		<0.00006	<0.00005
			Max		<0.00050	<0.00050
			n		4	5
		Winter			<0.00050	
Lake C3 (Outlet)	JER05	Summer	Mean			0.00003
			SD			0.00001
			Min	<0.00005	<0.00050	0.00004
			Max	<0.00005	<0.00050	<0.00005
			n	6	4	4
		Winter		<0.00005		
Carat Lake (Center Basin)	JER06	Summer	Mean			0.00003
			SD			0.00002
			Min	<0.00005	<0.00006	0.00002
			Max	<0.00005	<0.00050	0.00006
			n	5	3	4
		Winter		<0.00005	0.00030	<0.00005
Carat Lake (Outlet)	JER07	Summer	Mean	0.00003		0.00003
			SD	0.00023		0.00000
			Min	<0.00005	<0.0005	0.00003
			Max	0.00006	<0.0005	<0.00005
			n	11	4	4
		Winter		0.00000		
Jericho Lake (North Basin)	JER08	Summer	Mean			0.00003
			SD			0.00001
			Min	<0.00005	<0.00006	0.00004
			Max	<0.00005	<0.00050	<0.00005
			n	10	3	4
		Winter		<0.00005	0.00030	<0.00005
Jericho River	JER09	Summer	Mean			0.00003
			SD			0.00001
			Min		<0.00050	0.00003
			Max		<0.00050	<0.00005
			n		4	4
		Winter			0.00030	<0.00005

Table B74 Total molybdenum concentrations (mg/L) at monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean			0.00003
			SD			0.00002
			Min		<0.00006	<0.00005
			Max		<0.00050	0.00006
			n		3	4
		Winter			0.00030	<0.00005
Cigar Lake	JER11	Summer	Mean			0.00012
			SD			0.00018
			Min	<0.00005	<0.00006	0.00003
			Max	<0.00005	<0.00050	<0.00005
			n	8	3	4
		Winter		<0.00005	0.00030	<0.00005
Stream C1	JER12	Summer	Mean			0.00018
			SD			0.00017
			Min		<0.00050	<0.00005
			Max		<0.00050	0.00041
			n		5	4
Lake C1	JER13	Summer	Mean	0.00006		0.00005
			SD	0.00001		0.00002
			Min	0.00005	<0.00006	<0.00005
			Max	0.00006	<0.00050	0.00006
			n	2	5	4
		Winter			0.00030	0.00012
Lake C4	JER14	Summer	Mean			0.00003
			SD			0.00001
			Min	<0.00005	<0.00050	<0.00005
			Max	<0.00005	<0.00050	0.00005
			n	2	4	4
Stream C4	JER15	Summer	Mean			
			SD			
			Min		<0.00050	<0.00005
			Max		<0.00050	<0.00005
			n		3	2

Table B75 Total molybdenum concentrations (mg/L) at monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean		<0.00050	<0.00005
			SD			
			Min	<0.00005		
			Max	<0.00005		
			n	3	1	1
		Winter		<0.00005		
Key Lake	JER17	Summer	Mean		<0.00050	<0.00005
			SD			
			Min	<0.00005		
			Max	<0.00005		
			n	3	1	1
		Winter		0.0000		
Ash Lake	JER18	Summer	Mean		<0.00050	<0.00005
			SD			
			Min	<0.00005		
			Max	<0.00005		
			n	3	1	1
		Winter		<0.00005		
Stream C1 (Outlet)	JER19	Summer	Mean			0.00007
			SD			0.00006
			Min			0.00003
			Max			0.00011
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			0.00003
			SD			0.00000
			Min			0.00003
			Max			<0.00005
			n			2

Table B76 Total nickel concentrations (mg/L) at monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean			0.0007
			SD			0.0001
			Min		<0.0006	0.0006
			Max		<0.0006	0.0008
			n		4	4
		Winter				<0.0005
Lake C3 (South Basin)	JER04	Summer	Mean			0.0004
			SD			0.0002
			Min		<0.0006	0.0003
			Max		<0.0006	0.0007
			n		4	5
		Winter			0.0003	
Lake C3 (Outlet)	JER05	Summer	Mean	0.0003		0.0003
			SD	0.0001		0.0000
			Min	0.0002	<0.0006	0.0003
			Max	0.0004	<0.0006	0.0004
			n	5	4	4
		Winter		0.0004		
Carat Lake (Center Basin)	JER06	Summer	Mean	0.0003		0.0003
			SD	0.0000		0.0003
			Min	0.0003	<0.0006	<0.0001
			Max	0.0004	<0.0006	0.0008
			n	5	3	5
		Winter		0.0005	0.0003	0.00071
Carat Lake (Outlet)	JER07	Summer	Mean	0.0004		0.0004
			SD	0.0003		0.0001
			Min	0.0003	<0.0006	0.0002
			Max	0.0012	<0.0006	0.0005
			n	11	4	4
		Winter		0.0004		
Jericho Lake (North Basin)	JER08	Summer	Mean	0.0003		0.0003
			SD	0.0000		0.0001
			Min	0.0002	<0.0006	0.0003
			Max	0.0004	<0.0006	0.0004
			n	10	3	5
		Winter		0.0004	0.0016	<0.0005
Jericho River	JER09	Summer	Mean			0.0004
			SD			0.0001
			Min		<0.0006	0.0003
			Max		<0.0006	0.0005
			n		4	4
		Winter			0.0016	<0.0005

Table B77 Total nickel concentrations (mg/L) at monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		0.0007	0.0003
			SD		0.0005	0.0001
			Min		0.0003	0.0002
			Max		0.0013	0.0004
			n		3	5
		Winter			<0.0006	0.00054
Cigar Lake	JER11	Summer	Mean	0.0002		0.0003
			SD	0.0000		0.0002
			Min	0.0002	<0.0006	0.0001
			Max	0.0002	<0.0006	0.0005
			n	3	3	5
		Winter		<0.0006	<0.0006	<0.0005
Stream C1	JER12	Summer	Mean			0.0010
			SD			0.0004
			Min		<0.0006	0.0004
			Max		<0.0006	0.0014
			n		5	4
Lake C1	JER13	Summer	Mean	0.0004	0.0003	0.0006
			SD	0.0000	0.0000	0.0003
			Min	0.0004	0.0004	0.0004
			Max	0.0004	<0.0006	0.0011
			n	2	5	5
		Winter			0.0003	0.0007
Lake C4	JER14	Summer	Mean	0.0004		0.0006
			SD	0.0000		0.0002
			Min	0.0004	<0.0006	0.0004
			Max	0.0004	<0.0006	0.0008
			n	2	4	4
Stream C4	JER15	Summer	Mean			0.0004
			SD			0.0001
			Min		<0.0006	0.0003
			Max		<0.0006	0.0004
			n		3	2

Table B78 Total nickel concentrations (mg/L) at monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	0.0003	<0.0006	0.0004
			SD	0.0001		
			Min	0.0003		
			Max	0.0004		
			n	3	1	1
		Winter		0.0005		
Key Lake	JER17	Summer	Mean	0.0004	<0.0006	0.0004
			SD	0.0001		
			Min	0.0003		
			Max	0.0005		
			n	3	1	1
		Winter		0.0004		
Ash Lake	JER18	Summer	Mean	0.0003	<0.0006	0.0003
			SD	0.0001		
			Min	0.0002		
			Max	0.0004		
			n	3	1	1
		Winter		0.0005		
Stream C1 (Outlet)	JER19	Summer	Mean			0.0008
			SD			0.0007
			Min			0.0003
			Max			0.0013
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			0.0004
			SD			0.0001
			Min			0.0003
			Max			0.0005
			n			2

Table B79 Total uranium concentrations (mg/L) at monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		0.00008	0.00010
			SD		0.00004	0.00009
			Min		<0.00005	<0.00005
			Max		0.00010	0.00022
			n		4	4
		Winter				0.00028
Lake C3 (South Basin)	JER04	Summer	Mean		0.00014	0.00015
			SD		0.00004	0.00003
			Min		0.00009	0.00011
			Max		0.00018	0.00020
			n		4	5
		Winter			0.00013	
Lake C3 (Outlet)	JER05	Summer	Mean	0.00022	0.00011	0.00013
			SD	0.00005	0.00006	0.00002
			Min	0.00015	<0.00005	0.00011
			Max	0.00026	0.00017	0.00015
			n	6	4	4
		Winter		0.00027		
Carat Lake (Center Basin)	JER06	Summer	Mean	0.00022	0.00012	0.00013
			SD	0.00005	0.00003	0.00002
			Min	0.00015	0.00009	0.00009
			Max	0.00026	0.00014	0.00015
			n	6	3	5
		Winter		0.00028	0.00012	0.00022
Carat Lake (Outlet)	JER07	Summer	Mean	0.00018	0.00012	0.00013
			SD	0.00005	0.00006	0.00002
			Min	0.00010	<0.00005	0.00010
			Max	0.00025	0.00016	0.00014
			n	8	4	4
		Winter		0.00023		
Jericho Lake (North Basin)	JER08	Summer	Mean	0.00017	0.00010	0.00012
			SD	0.00006	0.00001	0.00003
			Min	0.00010	0.00010	0.00007
			Max	<0.0005	0.00011	0.00015
			n	10	3	5
		Winter		0.00017	0.00011	0.00017
Jericho River	JER09	Summer	Mean		0.00009	0.00011
			SD		0.00005	0.00002
			Min		<0.00005	0.00008
			Max		0.00013	0.00013
			n		4	4
		Winter			0.00011	0.00021

Table B80 Total uranium concentrations (mg/L) at monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		0.00015	0.00014
			SD		0.00002	0.00004
			Min		0.00012	0.00008
			Max		0.00016	0.00018
			n		3	5
		Winter			0.00017	0.00024
Cigar Lake	JER11	Summer	Mean	0.00019	0.00012	0.00014
			SD	0.00009	0.00004	0.00003
			Min	0.00008	0.00008	0.00011
			Max	<0.0005	0.00015	0.00018
			n	5	3	5
		Winter		0.00018	0.00016	0.00016
Stream C1	JER12	Summer	Mean		0.00020	0.00116
			SD		0.00011	0.00068
			Min		0.00011	0.00016
			Max		0.00037	0.00165
			n		5	4
Lake C1	JER13	Summer	Mean	0.00083	0.00069	0.00061
			SD	0.00010	0.00017	0.00014
			Min	0.00076	0.00050	0.00046
			Max	0.00090	0.00096	0.00078
			n	2	5	5
		Winter			0.00059	**0.00265**
Lake C4	JER14	Summer	Mean	0.00028	0.00019	0.00019
			SD	0.00006	0.00007	0.00004
			Min	0.00024	0.00009	0.00014
			Max	0.00032	0.00024	0.00023
			n	2	4	4
Stream C4	JER15	Summer	Mean		0.00024	0.00018
			SD		0.00002	0.00002
			Min		0.00023	0.00016
			Max		0.00026	0.00019
			n		3	2

Table B81 Total uranium concentrations (mg/L) at monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean		0.00006	<0.00005
			SD			
			Min			
			Max			
			n		1	1
		Winter		0.00017		
Key Lake	JER17	Summer	Mean		0.00005	<0.00005
			SD			
			Min			
			Max			
			n		1	1
		Winter		0.00028		
Ash Lake	JER18	Summer	Mean		0.00008	0.00005
			SD			
			Min			
			Max			
			n		1	1
		Winter		0.00003		
Stream C1 (Outlet)	JER19	Summer	Mean			0.00063
			SD			0.00070
			Min			0.00014
			Max			0.00113
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			0.00010
			SD			0.00005
			Min			0.00007
			Max			0.00014
			n			2

Table B82 Total zinc concentrations (mg/L) at monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		0.0060	0.0037
			SD		0.0063	0.0010
			Min		<0.0020	0.0030
			Max		0.0140	0.0050
			n		4	4
		Winter				0.002
Lake C3 (South Basin)	JER04	Summer	Mean		0.0011	0.0038
			SD		0.0003	0.0013
			Min		0.0015	0.0020
			Max		<0.0020	0.0050
			n		4	5
		Winter			0.0040	
Lake C3 (Outlet)	JER05	Summer	Mean	0.0011	0.0030	0.0048
			SD	0.0005	0.0023	0.0032
			Min	<0.0010	<0.0020	0.0020
			Max	0.0020	0.0050	0.0081
			n	5	4	4
		Winter		0.0020		
Carat Lake (Center Basin)	JER06	Summer	Mean	0.0042		0.0028
			SD	0.0083		0.0019
			Min	<0.0010	<0.0020	<0.0020
			Max	0.0190	<0.0020	0.0060
			n	5	3	5
		Winter		0.0020	0.0080	0.0011
Carat Lake (Outlet)	JER07	Summer	Mean	0.0020	0.0025	0.0042
			SD	0.0034	0.0017	0.0019
			Min	<0.0010	<0.0020	0.0030
			Max	0.0120	0.0040	0.0070
			n	11	4	4
		Winter		0.0010		
Jericho Lake (North Basin)	JER08	Summer	Mean	0.0008	0.0013	0.0023
			SD	0.0008	0.0005	0.0015
			Min	<0.0010	0.0010	<0.0010
			Max	0.0030	<0.002	0.0041
			n	10	3	5
		Winter		0.0005	0.0030	0.0012
Jericho River	JER09	Summer	Mean		0.0028	0.0040
			SD		0.0035	0.0045
			Min		<0.0020	<0.0010
			Max		0.0080	0.0106
			n		4	4
		Winter			0.0030	0.0012

Table B83 Total zinc concentrations (mg/L) at monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		0.0017	0.0057
			SD		0.0012	0.0046
			Min		0.0010	0.0020
			Max		0.0030	0.0130
			n		3	5
		Winter			0.0040	0.0011
Cigar Lake	JER11	Summer	Mean		0.0015	0.0069
			SD		0.0009	0.0079
			Min	<0.0010	<0.0020	0.0020
			Max	<0.0010	0.0026	0.0210
			n	8	3	5
		Winter		0.0005	0.0100	0.0027
Stream C1	JER12	Summer	Mean		0.0038	0.0050
			SD		0.0026	0.0016
			Min		<0.0020	0.0030
			Max		0.0060	0.0070
			n		5	4
Lake C1	JER13	Summer	Mean		0.0018	0.0039
			SD		0.0013	0.0023
			Min	<0.0010	<0.0020	<0.0020
			Max	<0.0010	0.0040	0.0064
			n	2	5	5
		Winter			0.0100	<0.0010
Lake C4	JER14	Summer	Mean		0.0018	0.0039
			SD		0.0015	0.0028
			Min	<0.0010	<0.0020	0.0020
			Max	<0.0010	0.0040	0.0080
			n	2	4	4
Stream C4	JER15	Summer	Mean		0.0023	0.0035
			SD		0.0023	0.0021
			Min		<0.0020	0.0020
			Max		0.0050	0.0050
			n		3	2

Table B84 Total zinc concentrations (mg/L) at monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean		<0.0020	0.0100
			SD			
			Min	<0.0010		
			Max	<0.0010		
			n	3	1	1
		Winter		0.0020		
Key Lake	JER17	Summer	Mean		<0.0020	0.0030
			SD			
			Min	<0.0010		
			Max	<0.0010		
			n	3	1	1
		Winter		0.0010		
Ash Lake	JER18	Summer	Mean		<0.0020	0.0050
			SD			
			Min	<0.0010		
			Max	<0.0010		
			n	3	1	1
		Winter		0.0010		
Stream C1 (Outlet)	JER19	Summer	Mean			0.0049
			SD			0.0002
			Min			0.0047
			Max			0.0050
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			0.0030
			SD			0.0014
			Min			0.0020
			Max			0.0039
			n			2

Table B85 Total calcium concentrations (mg/L) at monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		1.800	4.020
			SD		0.367	2.950
			Min		1.250	1.020
			Max		2.000	6.890
			n		4	4
		Winter				1.83
Lake C3 (South Basin)	JER04	Summer	Mean		1.120	1.092
			SD		0.264	0.345
			Min		0.930	0.790
			Max		1.510	1.610
			n		4	5
		Winter			2.110	
Lake C3 (Outlet)	JER05	Summer	Mean	1.124	1.078	0.966
			SD	0.197	0.053	0.237
			Min	0.950	1.020	0.780
			Max	1.610	1.140	1.290
			n	10	4	4
		Winter		1.230		
Carat Lake (Center Basin)	JER06	Summer	Mean	1.142	1.183	1.054
			SD	0.240	0.138	0.146
			Min	0.950	1.080	0.880
			Max	1.710	1.340	1.280
			n	10	3	5
		Winter		1.520	1.980	1.830
Carat Lake (Outlet)	JER07	Summer	Mean	2.198	1.148	1.015
			SD	4.297	0.026	0.094
			Min	<0.015	1.120	0.880
			Max	18.20	1.170	1.080
			n	16	4	4
		Winter		1.470		
Jericho Lake (North Basin)	JER08	Summer	Mean	1.157	1.223	1.114
			SD	0.243	0.258	0.342
			Min	0.993	1.050	0.870
			Max	1.890	1.520	1.700
			n	15	3	5
		Winter		1.350	2.510	1.690
Jericho River	JER09	Summer	Mean		1.103	0.980
			SD		0.086	0.151
			Min		0.990	0.850
			Max		1.200	1.160
			n		4	4
		Winter			2.510	2.040

Table B86 Total calcium concentrations (mg/L) at monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		1.070	0.972
			SD		0.156	0.194
			Min		0.980	0.770
			Max		1.250	1.290
			n		3	5
		Winter			1.460	1.410
Cigar Lake	JER11	Summer	Mean	1.208	1.327	1.252
			SD	0.346	0.229	0.232
			Min	0.940	1.180	1.100
			Max	1.890	1.590	1.660
			n	8	3	5
		Winter		1.810	1.900	1.870
Stream C1	JER12	Summer	Mean		3.364	5.115
			SD		0.811	2.963
			Min		2.580	1.120
			Max		4.690	7.630
			n		5	4
Lake C1	JER13	Summer	Mean	2.330	1.972	2.850
			SD	0.212	0.373	0.791
			Min	2.180	1.500	1.900
			Max	2.480	2.360	3.990
			n	2	5	5
		Winter			2.890	6.400
Lake C4	JER14	Summer	Mean	2.475	1.720	1.758
			SD	0.177	0.347	0.544
			Min	2.350	1.340	1.220
			Max	2.600	2.140	2.480
			n	2	4	4
Stream C4	JER15	Summer	Mean		1.750	1.475
			SD		0.341	0.276
			Min		1.360	1.280
			Max		1.990	1.670
			n		3	2

Table B87 Total calcium concentrations (mg/L) at monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	1.413	1.470	1.350
			SD	0.045		
			Min	1.370		
			Max	1.460		
			n	3	1	1
		Winter		1.790		
Key Lake	JER17	Summer	Mean	1.510	1.590	1.420
			SD	0.078		
			Min	1.460		
			Max	1.600		
			n	3	1	1
		Winter		2.470		
Ash Lake	JER18	Summer	Mean	1.600	1.680	1.410
			SD	0.095		
			Min	1.510		
			Max	1.700		
			n	3	1	1
		Winter		1.990		
Stream C1 (Outlet)	JER19	Summer	Mean			3.140
			SD			2.857
			Min			1.120
			Max			5.160
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			1.560
			SD			0.622
			Min			1.120
			Max			2.000
			n			2

Table B88 Total barium concentrations (mg/L) at monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean			0.0065
			SD			0.0047
			Min		<0.0050	0.0020
			Max		<0.0050	0.0121
			n		4	4
		Winter				0.0030
Lake C3 (South Basin)	JER04	Summer	Mean		0.0024	0.0019
			SD		0.0001	0.0004
			Min		0.0023	0.0016
			Max		<0.0050	0.0025
			n		4	5
		Winter			<0.0050	
Lake C3 (Outlet)	JER05	Summer	Mean	0.0035		0.0016
			SD	0.0016		0.0001
			Min	0.0014	<0.0050	0.0016
			Max	0.0050	<0.0050	0.0017
			n	10	4	4
		Winter		0.0030		
Carat Lake (Center Basin)	JER06	Summer	Mean	0.0035	0.0023	0.0019
			SD	0.0016	0.0004	0.0004
			Min	0.0014	0.0018	0.0016
			Max	<0.010	<0.0050	<0.0050
			n	10	3	5
		Winter		0.0028	<0.0050	0.0025
Carat Lake (Outlet)	JER07	Summer	Mean	0.0050		0.0018
			SD	0.0089		0.0002
			Min	0.0018	<0.0050	0.0016
			Max	0.0379	<0.0050	0.0020
			n	16	4	4
		Winter		0.0028		
Jericho Lake (North Basin)	JER08	Summer	Mean	0.0029	0.0025	0.0017
			SD	0.0015	0.0000	0.0004
			Min	0.0015	0.0025	0.0015
			Max	0.0050	<0.0050	0.0025
			n	15	3	5
		Winter		0.0027	<0.0050	0.0025
Jericho River	JER09	Summer	Mean			0.0017
			SD			0.0002
			Min		<0.0050	0.0015
			Max		<0.0050	0.0020
			n		4	4
		Winter			0.0025	0.0034

Table B89 Total barium concentrations (mg/L) at monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		0.0023	0.0019
			SD		0.0004	0.0004
			Min		0.0018	0.0016
			Max		<0.0050	0.0025
			n		3	5
		Winter			0.0025	0.0023
Cigar Lake	JER11	Summer	Mean	0.0037	0.0084	0.0036
			SD	0.0018	0.0109	0.0044
			Min	0.0014	0.0016	0.0012
			Max	<0.010	0.0210	0.0115
			n	8	3	5
		Winter		0.0022	0.0025	0.0019
Stream C1	JER12	Summer	Mean		0.0063	0.0085
			SD		0.0030	0.0045
			Min		<0.0050	0.0021
			Max		0.0110	0.0126
			n		5	4
Lake C1	JER13	Summer	Mean	0.0020	0.0025	0.0036
			SD	0.0001	0.0000	0.0006
			Min	0.0019	0.0025	<0.0050
			Max	0.0021	<0.0050	0.0040
			n	2	5	5
		Winter			0.0025	0.0056
Lake C4	JER14	Summer	Mean	0.0022		0.0020
			SD	0.0001		0.0002
			Min	0.0021	<0.0050	0.0018
			Max	0.0023	<0.0050	0.0021
			n	2	4	4
Stream C4	JER15	Summer	Mean			0.0025
			SD			0.0006
			Min		<0.0050	0.0021
			Max		<0.0050	0.0030
			n		3	2

Table B90 Total barium concentrations (mg/L) at monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	0.0017	0.0030	0.0020
			SD	0.0001		
			Min	0.0017		
			Max	0.0018		
			n	3	1	1
		Winter		0.0021		
Key Lake	JER17	Summer	Mean	0.0018	0.0025	0.0015
			SD	0.0002		
			Min	0.0016		
			Max	0.0019		
			n	3	1	1
		Winter		0.0019		
Ash Lake	JER18	Summer	Mean	0.0013	0.0025	0.0020
			SD	0.0001		
			Min	0.0012		
			Max	0.0015		
			n	3	1	1
		Winter		0.0017		
Stream C1 (Outlet)	JER19	Summer	Mean			0.0062
			SD			0.0063
			Min			0.0017
			Max			0.0107
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			0.0026
			SD			0.0011
			Min			0.0019
			Max			0.0034
			n			2

Table B91 Total boron concentrations (mg/L) at monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean			0.031
			SD			0.055
			Min		<0.010	0.001
			Max		<0.010	0.113
			n		4	4
		Winter				<0.010
Lake C3 (South Basin)	JER04	Summer	Mean			0.014
			SD			0.025
			Min		<0.001	<0.001
			Max		<0.010	0.058
			n		4	5
		Winter			0.005	
Lake C3 (Outlet)	JER05	Summer	Mean	0.002	0.005	0.004
			SD	0.002	0.000	0.005
			Min	<0.001	0.005	0.001
			Max	<0.100	0.005	0.012
			n	10	4	4
		Winter		0.001		
Carat Lake (Center Basin)	JER06	Summer	Mean	0.005	0.004	0.006
			SD	0.009	0.002	0.008
			Min	<0.001	0.001	<0.001
			Max	<0.100	<0.010	0.020
			n	5	3	5
		Winter		0.001	<0.010	<0.010
Carat Lake (Outlet)	JER07	Summer	Mean	0.001		0.008
			SD	0.002		0.014
			Min	<0.001	<0.010	<0.001
			Max	0.006	<0.010	0.029
			n	14	4	4
		Winter		0.001		
Jericho Lake (North Basin)	JER08	Summer	Mean	0.001		0.009
			SD	0.001		0.014
			Min	<0.001	<0.001	<0.001
			Max	0.003	<0.010	0.034
			n	10	3	5
		Winter		0.001	<0.010	<0.010
Jericho River	JER09	Summer	Mean			0.011
			SD			0.018
			Min		<0.010	0.001
			Max		<0.010	0.038
			n		4	4
		Winter			<0.010	<0.010

Table B92 Total boron concentrations (mg/L) at monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		0.004	0.010
			SD		0.002	0.019
			Min		0.001	<0.001
			Max		0.005	0.044
			n		3	5
		Winter			0.005	<0.010
Cigar Lake	JER11	Summer	Mean	0.002	0.004	0.011
			SD	0.002	0.002	0.019
			Min	<0.001	0.001	<0.001
			Max	0.004	<0.010	0.045
			n	3	3	5
		Winter		0.002	<0.010	<0.010
Stream C1	JER12	Summer	Mean			0.018
			SD			0.033
			Min		<0.010	<0.001
			Max		<0.010	0.067
			n		5	4
Lake C1	JER13	Summer	Mean			0.025
			SD			0.047
			Min	<0.001	<0.001	<0.001
			Max	<0.001	<0.010	0.109
			n	2	5	5
		Winter			<0.010	<0.010
Lake C4	JER14	Summer	Mean			0.029
			SD			0.056
			Min	<0.001	<0.010	<0.001
			Max	<0.001	<0.010	0.112
			n	2	4	4
Stream C4	JER15	Summer	Mean			0.001
			SD			0.001
			Min		<0.010	<0.001
			Max		<0.010	0.002
			n		3	2

Table B93 Total boron concentrations (mg/L) at monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	0.002	0.005	0.001
			SD	0.002		
			Min	<0.001		
			Max	0.004		
			n	3	1	1
		Winter		0.001		
Key Lake	JER17	Summer	Mean	0.003	0.005	0.001
			SD	0.002		
			Min	<0.001		
			Max	0.004		
			n	3	1	1
		Winter		0.001		
Ash Lake	JER18	Summer	Mean	0.004	0.005	0.001
			SD	0.003		
			Min	0.002		
			Max	0.007		
			n	3	1	1
		Winter		0.001		
Stream C1 (Outlet)	JER19	Summer	Mean			0.012
			SD			0.012
			Min			0.003
			Max			0.020
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			0.010
			SD			0.011
			Min			0.002
			Max			0.017
			n			2

Table B94 Total iron concentrations (mg/L) at monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean			
			SD			
			Min		<0.100	0.018
			Max		<0.100	<0.100
			n		1	4
		Winter				<0.030
Lake C3 (South Basin)	JER04	Summer	Mean			0.045
			SD			0.012
			Min		0.020	0.024
			Max		0.020	<0.100
			n		1	5
		Winter			<0.100	
Lake C3 (Outlet)	JER05	Summer	Mean	0.022	0.030	0.043
			SD	0.009	0.028	0.013
			Min	<0.030	0.010	0.023
			Max	0.040	<0.100	<0.100
			n	10	2	4
		Winter		0.030		
Carat Lake (Center Basin)	JER06	Summer	Mean	0.021		
			SD	0.009		
			Min	<0.030	0.020	0.006
			Max	0.040	0.020	<0.100
			n	10	1	5
		Winter		0.020	0.050	<0.030
Carat Lake (Outlet)	JER07	Summer	Mean	0.023		0.039
			SD	0.025		0.022
			Min	<0.001	<0.100	0.006
			Max	0.110	<0.100	<0.100
			n	16	2	4
		Winter		0.005		
Jericho Lake (North Basin)	JER08	Summer	Mean	0.023		
			SD	0.016		
			Min	0.015	0.120	0.016
			Max	<0.130	0.120	<0.100
			n	15	1	5
		Winter		0.005	0.050	<0.030
Jericho River	JER09	Summer	Mean			
			SD			
			Min		0.020	0.022
			Max		<0.100	<0.100
			n		2	4
		Winter			0.050	0.046

Table B95 Total iron concentrations (mg/L) at monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean			
			SD			
			Min		0.030	0.019
			Max		0.030	<0.100
			n		1	5
		Winter			<0.100	<0.030
Cigar Lake	JER11	Summer	Mean	0.023		
			SD	0.008		
			Min	<0.030	0.020	0.010
			Max	0.031	0.020	<0.100
			n	8	1	5
		Winter		<0.010	<0.100	<0.030
Stream C1	JER12	Summer	Mean			0.061
			SD			0.041
			Min		<0.100	0.025
			Max		<0.100	0.120
			n		2	4
Lake C1	JER13	Summer	Mean	0.135		
			SD	0.021		
			Min	0.120	<0.100	0.032
			Max	0.150	<0.100	<0.100
			n	2	1	5
		Winter			0.130	<0.030
Lake C4	JER14	Summer	Mean	0.260		0.139
			SD	0.113		0.028
			Min	0.180	0.210	0.110
			Max	0.340	0.210	0.170
			n	2	1	4
Stream C4	JER15	Summer	Mean			
			SD			
			Min			<0.100
			Max			<0.100
			n			2

Table B96 Total iron concentrations (mg/L) at monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	0.037		<0.100
			SD	0.006		
			Min	0.030		
			Max	0.040		
			n	3		1
		Winter		0.020		
Key Lake	JER17	Summer	Mean	0.053		<0.100
			SD	0.015		
			Min	0.040		
			Max	0.070		
			n	3		1
		Winter		0.010		
Ash Lake	JER18	Summer	Mean	0.067		<0.100
			SD	0.006		
			Min	0.060		
			Max	0.070		
			n	3		1
		Winter		0.040		
Stream C1 (Outlet)	JER19	Summer	Mean			0.093
			SD			0.108
			Min			0.017
			Max			0.170
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			0.041
			SD			0.012
			Min			0.033
			Max			<0.100
			n			2

Table B97 Total magnesium concentrations (mg/L) at monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		0.918	2.055
			SD		0.159	1.747
			Min		0.680	0.500
			Max		1.020	4.240
			n		4	4
		Winter				0.927
Lake C3 (South Basin)	JER04	Summer	Mean		0.520	0.564
			SD		0.225	0.256
			Min		<0.500	0.170
			Max		0.799	0.840
			n		4	5
		Winter			0.900	
Lake C3 (Outlet)	JER05	Summer	Mean	0.507	0.525	0.384
			SD	0.091	0.024	0.220
			Min	0.431	0.500	0.170
			Max	0.670	0.550	0.660
			n	10	4	4
		Winter		0.630		
Carat Lake (Center Basin)	JER06	Summer	Mean	0.505	0.596	0.421
			SD	0.094	0.090	0.189
			Min	0.425	0.530	0.200
			Max	0.700	0.698	0.640
			n	10	3	5
		Winter		0.740	0.890	0.906
Carat Lake (Outlet)	JER07	Summer	Mean	0.772	0.483	0.366
			SD	1.072	0.155	0.173
			Min	<0.005	<0.500	0.190
			Max	4.700	0.560	0.550
			n	16	4	4
		Winter		0.690		
Jericho Lake (North Basin)	JER08	Summer	Mean	0.557	0.613	0.464
			SD	0.093	0.117	0.255
			Min	0.442	0.540	0.200
			Max	0.780	0.748	0.830
			n	15	3	5
		Winter		0.640	1.020	0.831
Jericho River	JER09	Summer	Mean		0.540	0.380
			SD		0.029	0.193
			Min		0.510	0.190
			Max		0.570	0.600
			n		4	4
		Winter			1.020	1.010

Table B98 Total magnesium concentrations (mg/L) at monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		0.477	0.405
			SD		0.212	0.205
			Min		<0.500	0.160
			Max		0.671	0.670
			n		3	5
		Winter			0.770	0.718
Cigar Lake	JER11	Summer	Mean	0.632	0.504	0.472
			SD	0.109	0.238	0.181
			Min	0.535	<0.500	<0.500
			Max	0.810	0.722	0.740
			n	8	3	5
		Winter		1.060	0.870	0.814
Stream C1	JER12	Summer	Mean		1.240	1.725
			SD		0.150	1.165
			Min		1.020	<0.500
			Max		1.400	2.980
			n		5	4
Lake C1	JER13	Summer	Mean	1.250	0.968	1.374
			SD	0.212	0.194	0.472
			Min	1.100	0.730	0.960
			Max	1.400	1.210	2.110
			n	2	5	5
		Winter			1.480	3.230
Lake C4	JER14	Summer	Mean	1.000	0.658	0.562
			SD	0.141	0.110	0.347
			Min	0.900	0.520	<0.500
			Max	1.100	0.780	1.010
			n	2	4	4
Stream C4	JER15	Summer	Mean		0.657	0.310
			SD		0.118	0.085
			Min		0.520	<0.500
			Max		0.730	0.370
			n		3	2

Table B99 Total magnesium concentrations (mg/L) at monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	0.633	0.670	0.350
			SD	0.063		
			Min	0.560		
			Max	0.670		
			n	3	1	1
		Winter		0.790		
Key Lake	JER17	Summer	Mean	0.691	0.750	0.390
			SD	0.086		
			Min	0.592		
			Max	0.743		
			n	3	1	1
		Winter		1.100		
Ash Lake	JER18	Summer	Mean	0.714	0.730	0.340
			SD	0.080		
			Min	0.629		
			Max	0.789		
			n	3	1	1
		Winter		0.910		
Stream C1 (Outlet)	JER19	Summer	Mean			1.049
			SD			0.836
			Min			0.458
			Max			1.640
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			0.626
			SD			0.218
			Min			0.471
			Max			0.780
			n			2

Table B100 Total manganese concentrations (mg/L) at monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean			
			SD			
			Min		<0.0100	0.0017
			Max		<0.0100	<0.0100
			n		1	4
		Winter				0.0031
Lake C3 (South Basin)	JER04	Summer	Mean			
			SD			
			Min		0.0025	0.0026
			Max		0.0025	<0.0100
			n		1	5
		Winter			0.0050	
Lake C3 (Outlet)	JER05	Summer	Mean	0.0029		
			SD	0.0009		
			Min	0.0023	<0.0020	0.0029
			Max	0.0055	<0.0100	<0.0100
			n	10	2	4
		Winter		0.0034		
Carat Lake (Center Basin)	JER06	Summer	Mean	0.0035		
			SD	0.0018		
			Min	<0.0050	0.0011	0.0019
			Max	0.0072	0.0011	<0.0100
			n	10	1	5
		Winter		0.0021	<0.0100	0.0022
Carat Lake (Outlet)	JER07	Summer	Mean	0.0056		
			SD	0.0113		
			Min	<0.00005	<0.0100	0.0019
			Max	0.0477	<0.0100	<0.0100
			n	16	2	4
		Winter		0.0015		
Jericho Lake (North Basin)	JER08	Summer	Mean	0.0032		
			SD	0.0015		
			Min	0.0020	0.0039	0.0028
			Max	0.0078	0.0039	<0.0100
			n	15	1	5
		Winter		0.0011	<0.0100	0.0018
Jericho River	JER09	Summer	Mean			
			SD			
			Min		<0.0100	0.0064
			Max		<0.0100	<0.0100
			n		1	4
		Winter			<0.0100	0.0150

Table B101 Total manganese concentrations (mg/L) at monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean			
			SD			
			Min		0.0009	0.0021
			Max		0.0009	<0.0100
			n		1	5
		Winter			<0.0100	0.0016
Cigar Lake	JER11	Summer	Mean	0.0028		
			SD	0.0005		
			Min	<0.0050	0.0006	0.0019
			Max	0.0038	0.0006	<0.0100
			n	8	1	5
		Winter		0.0016	<0.0100	0.0011
Stream C1	JER12	Summer	Mean			0.0093
			SD			0.0072
			Min		<0.0100	0.0050
			Max		<0.0100	0.0200
			n		2	4
Lake C1	JER13	Summer	Mean	0.0070		
			SD	0.0018		
			Min	0.0057	0.0015	0.0036
			Max	0.0083	<0.0100	<0.0100
			n	2	2	5
		Winter			<0.0100	0.0029
Lake C4	JER14	Summer	Mean	0.0035		
			SD	0.0017		
			Min	0.0022	<0.0100	0.0100
			Max	0.0047	<0.0100	<0.0100
			n	2	1	4
Stream C4	JER15	Summer	Mean			
			SD			
			Min			<0.0100
			Max			<0.0100
			n			2

Table B102 Total manganese concentrations (mg/L) at monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	0.0034		<0.0100
			SD	0.0003		
			Min	0.0030		
			Max	0.0037		
			n	3		1
		Winter		0.0018		
Key Lake	JER17	Summer	Mean	0.0030		<0.0100
			SD	0.0003		
			Min	0.0026		
			Max	0.0033		
			n	3		1
		Winter		0.0017		
Ash Lake	JER18	Summer	Mean	0.0028		<0.0100
			SD	0.0001		
			Min	0.0027		
			Max	0.0029		
			n	3		1
		Winter		0.0027		
Stream C1 (Outlet)	JER19	Summer	Mean			
			SD			
			Min			0.0023
			Max			<0.0100
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			
			SD			
			Min			0.0031
			Max			<0.0100
			n			2

Table B103 Total potassium concentrations (mg/L) at monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		0.250	1.060
			SD		0.000	0.961
			Min		0.250	0.250
			Max		0.250	2.140
			n		4	4
		Winter				0.550
Lake C3 (South Basin)	JER04	Summer	Mean		0.288	0.263
			SD		0.075	0.029
			Min		0.250	0.250
			Max		0.400	0.314
			n		4	5
		Winter			0.250	
Lake C3 (Outlet)	JER05	Summer	Mean	1.000	0.250	0.273
			SD	0.000	0.000	0.047
			Min	1.000	0.250	0.250
			Max	1.000	0.250	0.343
			n	10	4	4
		Winter		1.000		
Carat Lake (Center Basin)	JER06	Summer	Mean	1.000	0.287	0.260
			SD	0.000	0.064	0.023
			Min	1.000	0.250	0.250
			Max	1.000	0.360	0.302
			n	10	3	5
		Winter		1.000	0.250	0.550
Carat Lake (Outlet)	JER07	Summer	Mean	0.875	0.250	0.262
			SD	0.341	0.000	0.024
			Min	0.000	0.250	0.250
			Max	1.000	0.250	0.298
			n	16	4	4
		Winter		1.000		
Jericho Lake (North Basin)	JER08	Summer	Mean	1.000	0.293	0.261
			SD	0.000	0.075	0.024
			Min	1.000	0.250	0.250
			Max	1.000	0.380	0.303
			n	15	3	5
		Winter		1.000	0.250	0.520
Jericho River	JER09	Summer	Mean		0.250	0.266
			SD		0.000	0.031
			Min		0.250	0.250
			Max		0.250	0.312
			n		4	4
		Winter			0.250	0.580

Table B104 Total potassium concentrations (mg/L) at monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Winter				<0.500
Cigar Lake	JER11	Summer	Mean	1.000	0.307	0.263
			SD	0.000	0.098	0.030
			Min	1.000	0.250	0.250
			Max	1.000	0.420	0.317
			n	8	3	5
		Winter		1.000	0.600	0.610
Stream C1	JER12	Summer	Mean		0.250	0.535
			SD		0.000	0.375
			Min		0.250	0.250
			Max		0.250	1.040
			n		5	4
Lake C1	JER13	Summer	Mean	1.000	0.250	0.285
			SD	0.000	0.000	0.078
			Min	1.000	0.250	0.250
			Max	1.000	0.250	0.424
			n	2	5	5
		Winter			0.250	0.700
Lake C4	JER14	Summer	Mean	1.000	0.250	0.259
			SD	0.000	0.000	0.018
			Min	1.000	0.250	0.250
			Max	1.000	0.250	0.285
			n	2	4	4
Stream C4	JER15	Summer	Mean		0.250	0.250
			SD		0.000	0.000
			Min		0.250	0.250
			Max		0.250	0.250
			n		3	2

Table B105 Total potassium concentrations (mg/L) at monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	1.000	0.250	0.250
			SD	0.000		
			Min	1.000		
			Max	1.000		
			n	3	1	1
		Winter		1.000		
Key Lake	JER17	Summer	Mean	1.000	0.250	0.250
			SD	0.000		
			Min	1.000		
			Max	1.000		
			n	3	1	1
		Winter		1.000		
Ash Lake	JER18	Summer	Mean	1.000	0.250	0.250
			SD	0.000		
			Min	1.000		
			Max	1.000		
			n	3	1	1
		Winter		<2.000		
Stream C1 (Outlet)	JER19	Summer	Mean			0.396
			SD			0.147
			Min			0.292
			Max			0.500
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			0.290
			SD			0.056
			Min			0.250
			Max			0.329
			n			2

Table B106 Total sodium concentrations (mg/L) at monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		1.225	2.865
			SD		0.222	2.331
			Min		1.000	<0.500
			Max		1.500	5.210
			n		4	4
		Winter				0.830
Lake C3 (South Basin)	JER04	Summer	Mean		0.693	0.303
			SD		0.083	0.119
			Min		0.600	<0.500
			Max		0.800	0.516
			n		4	5
		Winter			0.700	
Lake C3 (Outlet)	JER05	Summer	Mean		0.613	0.315
			SD		0.295	0.131
			Min	<2.000	<0.500	<0.500
			Max	<2.000	0.900	0.511
			n	10	4	4
		Winter		1.000		
Carat Lake (Center Basin)	JER06	Summer	Mean		0.661	0.384
			SD		0.120	0.200
			Min	<2.000	0.584	<0.500
			Max	<2.000	0.800	0.700
			n	10	3	5
		Winter		1.000	0.700	0.870
Carat Lake (Outlet)	JER07	Summer	Mean	1.001	0.388	0.302
			SD	0.630	0.275	0.104
			Min	0.011	<0.500	<0.500
			Max	3.000	0.800	0.457
			n	16	4	4
		Winter		1.000		
Jericho Lake (North Basin)	JER08	Summer	Mean		0.629	0.290
			SD		0.154	0.089
			Min	<2.000	0.500	<0.500
			Max	<2.000	0.800	0.449
			n	15	3	5
		Winter		1.000	0.800	0.750
Jericho River	JER09	Summer	Mean		0.588	0.305
			SD		0.225	0.110
			Min		<0.500	0.250
			Max		0.700	0.470
			n		4	4
		Winter			0.800	0.860

Table B107 Total sodium concentrations (mg/L) at monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		0.582	0.287
			SD		0.325	0.082
			Min		<0.500	<0.500
			Max		0.900	0.434
			n		3	5
		Winter			0.700	0.680
Cigar Lake	JER11	Summer	Mean		0.530	0.291
			SD		0.244	0.092
			Min	<2.000	<0.500	<0.500
			Max	<2.000	0.700	0.455
			n	8	3	5
		Winter		1.000	0.900	0.810
Stream C1	JER12	Summer	Mean		0.730	1.413
			SD		0.273	0.841
			Min		<0.500	<0.500
			Max		0.900	2.200
			n		5	4
Lake C1	JER13	Summer	Mean		0.624	0.924
			SD		0.257	0.537
			Min	<2.000	<0.500	<0.500
			Max	<2.000	0.900	1.670
			n	2	5	5
		Winter			0.800	2.75
Lake C4	JER14	Summer	Mean		0.425	0.317
			SD		0.218	0.134
			Min	<2.000	<0.500	<0.500
			Max	<2.000	0.700	0.518
			n	2	4	4
Stream C4	JER15	Summer	Mean		0.400	
			SD		0.260	
			Min		<0.500	<0.500
			Max		0.700	<0.500
			n		3	2

Table B108 Total sodium concentrations (mg/L) at monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean		<0.500	<0.500
			SD			
			Min	<2.000		
			Max	<2.000		
			n	3	1	1
		Winter		1.000		
Key Lake	JER17	Summer	Mean		0.600	<0.500
			SD			
			Min	<2.000		
			Max	<2.000		
			n	3	1	1
		Winter		1.000		
Ash Lake	JER18	Summer	Mean		0.600	<0.500
			SD			
			Min	<2.000		
			Max	<2.000		
			n	3	1	1
		Winter		<2.000		
Stream C1 (Outlet)	JER19	Summer	Mean			0.921
			SD			0.677
			Min			0.442
			Max			1.400
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			1.063
			SD			0.759
			Min			0.526
			Max			1.600
			n			2

Table B109 Total selenium concentrations at (mg/L) monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean			
			SD			
			Min		<0.0008	<0.0001
			Max		<0.0008	<0.0010
			n		4	4
		Winter				<0.0010
Lake C3 (South Basin)	JER04	Summer	Mean			
			SD			
			Min		<0.0001	<0.0001
			Max		<0.0008	<0.0010
			n		4	5
		Winter			<0.0008	
Lake C3 (Outlet)	JER05	Summer	Mean			
			SD			
			Min	<0.0005	<0.0008	<0.0001
			Max	<0.001	<0.0008	<0.0010
			n	10	4	4
		Winter		<0.0005		
Carat Lake (Center Basin)	JER06	Summer	Mean			
			SD			
			Min	<0.0005	<0.0001	<0.0001
			Max	<0.0010	<0.0008	<0.0010
			n	10	3	5
		Winter		<0.0010	<0.0008	<0.0010
Carat Lake (Outlet)	JER07	Summer	Mean	0.0341		0.0006
			SD	0.0921		0.0005
			Min	<0.0005	<0.0008	0.0001
			Max	0.2750	<0.0008	0.0012
			n	16	4	4
		Winter		<0.0010		
Jericho Lake (North Basin)	JER08	Summer	Mean			
			SD			
			Min	<0.0005	<0.0001	<0.0001
			Max	<0.0010	<0.0008	<0.0010
			n	15	3	5
		Winter		<0.0010	<0.0008	<0.0010
Jericho River	JER09	Summer	Mean			
			SD			
			Min		<0.0008	<0.0001
			Max		<0.0008	<0.0010
			n		4	4
		Winter			<0.0008	<0.0010

Table B110 Total selenium concentrations (mg/L) at monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean			0.0005
			SD			0.0004
			Min		<0.0001	<0.0008
			Max		<0.0008	0.0011
			n		3	5
		Winter			<0.0008	<0.0010
Cigar Lake	JER11	Summer	Mean			
			SD			
			Min	<0.0005	<0.0001	<0.0001
			Max	<0.0010	<0.0008	<0.0010
			n	8	3	5
		Winter		<0.0010	<0.0008	<0.0010
Stream C1	JER12	Summer	Mean			0.0004
			SD			0.0002
			Min		<0.0008	0.0002
			Max		<0.0008	<0.0010
			n		5	4
Lake C1	JER13	Summer	Mean			
			SD			
			Min	<0.0010	<0.0001	<0.0001
			Max	<0.0010	<0.0008	<0.0010
			n	2	5	5
		Winter			<0.0008	<0.0010
Lake C4	JER14	Summer	Mean			
			SD			
			Min	<0.0010	<0.0008	<0.0001
			Max	<0.0010	<0.0008	<0.0010
			n	2	4	4
Stream C4	JER15	Summer	Mean			
			SD			
			Min		<0.0008	<0.0010
			Max		<0.0008	<0.0010
			n		3	2

Table B111 Total selenium concentrations (mg/L) at monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean		<0.0008	<0.0010
			SD			
			Min	<0.0010		
			Max	<0.0010		
			n	3	1	1
		Winter		<0.0010		
Key Lake	JER17	Summer	Mean		<0.0008	<0.0010
			SD			
			Min	<0.0010		
			Max	<0.0010		
			n	3	1	1
		Winter		<0.0010		
Ash Lake	JER18	Summer	Mean		<0.0008	<0.0010
			SD			
			Min	<0.0010		
			Max	<0.0010		
			n	3	1	1
		Winter		<0.0010		
Stream C1 (Outlet)	JER19	Summer	Mean			
			SD			
			Min			<0.0001
			Max			<0.0010
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			
			SD			
			Min			<0.0001
			Max			<0.0010
			n			2

Table B112 Total strontium concentrations (mg/L) at monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		0.0060	0.0168
			SD		0.0008	0.0127
			Min		0.0054	0.0042
			Max		0.0066	0.0303
			n		2	4
		Winter				0.0087
Lake C3 (South Basin)	JER04	Summer	Mean		0.0059	0.0053
			SD		0.0013	0.0015
			Min		0.0049	0.0040
			Max		0.0068	0.0077
			n		2	5
		Winter			0.0095	
Lake C3 (Outlet)	JER05	Summer	Mean	0.0084	0.0047	0.0046
			SD	0.0030	0.0011	0.0007
			Min	0.0049	0.0039	0.0038
			Max	0.0130	0.0054	0.0054
			n	10	2	4
		Winter		0.0064		
Carat Lake (Center Basin)	JER06	Summer	Mean	0.0088	0.0056	0.0049
			SD	0.0029	0.0005	0.0005
			Min	0.0048	0.0052	0.0044
			Max	0.0130	0.0059	0.0056
			n	10	2	5
		Winter		0.0074	0.0085	0.0081
Carat Lake (Outlet)	JER07	Summer	Mean	0.0169	0.0045	0.0047
			SD	0.0350	0.0005	0.0004
			Min	0.0051	0.0040	0.0044
			Max	0.1380	0.0048	0.0052
			n	14	3	4
		Winter		0.0084		
Jericho Lake (North Basin)	JER08	Summer	Mean	0.0073	0.0059	0.0050
			SD	0.0028	0.0008	0.0014
			Min	0.0050	0.0053	0.0040
			Max	0.0130	0.0065	0.0074
			n	15	2	5
		Winter		0.0080	0.0110	0.0074
Jericho River	JER09	Summer	Mean		0.0048	0.0046
			SD		0.0006	0.0003
			Min		0.0043	0.0043
			Max		0.0052	0.0050
			n		2	4
		Winter			0.0110	0.0087

Table B113 Total strontium concentrations (mg/L) at monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		0.0055	0.0047
			SD		0.0005	0.0009
			Min		0.0051	0.0041
			Max		0.0058	0.0063
			n		2	5
		Winter			0.0073	0.0067
Cigar Lake	JER11	Summer	Mean	0.0065	0.0056	0.0054
			SD	0.0038	0.0008	0.0012
			Min	<0.001	0.0050	0.0044
			Max	0.0110	0.0061	0.0069
			n	8	2	5
		Winter		0.0064	0.0076	0.0069
Stream C1	JER12	Summer	Mean		0.0143	0.0201
			SD		0.0027	0.0109
			Min		0.0127	0.0047
			Max		0.0174	0.0302
			n		3	4
Lake C1	JER13	Summer	Mean	0.0076	0.0065	0.0100
			SD	0.0004	0.0008	0.0014
			Min	0.0073	0.0060	0.0080
			Max	0.0078	0.0074	0.0120
			n	2	3	5
		Winter			0.0109	0.0196
Lake C4	JER14	Summer	Mean	0.0060	0.0047	0.0047
			SD	0.0001	0.0000	0.0010
			Min	0.0059	0.0047	0.0033
			Max	0.0060	0.0047	0.0058
			n	2	2	4
Stream C4	JER15	Summer	Mean			0.0045
			SD			0.0011
			Min		0.0051	0.0037
			Max		0.0051	0.0052
			n		1	2

Table B114 Total strontium concentrations (mg/L) at monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	0.0046		0.0043
			SD	0.0003		
			Min	0.0044		
			Max	0.0049		
			n	3		1
		Winter		0.0057		
Key Lake	JER17	Summer	Mean	0.0057		0.0046
			SD	0.0006		
			Min	0.0051		
			Max	0.0061		
			n	3		1
		Winter		0.0055		
Ash Lake	JER18	Summer	Mean	0.0037		0.0036
			SD	0.0003		
			Min	0.0035		
			Max	0.0040		
			n	3		1
		Winter		0.0048		
Stream C1 (Outlet)	JER19	Summer	Mean			0.0140
			SD			0.0133
			Min			0.0046
			Max			0.0234
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			0.0065
			SD			0.0024
			Min			0.0049
			Max			0.0082
			n			2

Table B115 Total vanadium concentrations (mg/L) at monitoring sites JER03 to JER09 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Stream C3	JER03	Summer	Mean		0.0002	0.0006
			SD		0.0002	0.0008
			Min		<0.0001	0.0002
			Max		0.0005	0.0018
			n		4	4
		Winter				<0.0010
Lake C3 (South Basin)	JER04	Summer	Mean		0.0001	0.0005
			SD		0.0001	0.0006
			Min		<0.00005	0.0001
			Max		0.0002	0.0015
			n		4	5
		Winter			0.0003	
Lake C3 (Outlet)	JER05	Summer	Mean	0.0002	0.0002	0.0005
			SD	0.0002	0.0001	0.0006
			Min	0.0001	0.0001	0.0001
			Max	<0.0010	0.0004	0.0014
			n	5	4	4
		Winter		<0.0010		
Carat Lake (Center Basin)	JER06	Summer	Mean	0.0003	0.0001	0.0008
			SD	0.0002	0.0001	0.0012
			Min	0.0001	<0.00005	0.0001
			Max	<0.0010	0.0003	0.0029
			n	5	3	5
		Winter		<0.0010	0.0003	<0.0010
Carat Lake (Outlet)	JER07	Summer	Mean		0.0003	0.0009
			SD		0.0002	0.0013
			Min	<0.0001	<0.0001	0.0001
			Max	<0.0010	0.0006	0.0029
			n	11	4	4
		Winter		<0.0010		
Jericho Lake (North Basin)	JER08	Summer	Mean		0.0001	0.0005
			SD		0.0001	0.0006
			Min	<0.0001	<0.00005	0.0001
			Max	<0.0010	0.0002	0.0015
			n	15	3	5
		Winter		<0.0010	0.0005	<0.0010
Jericho River	JER09	Summer	Mean		0.0002	0.0006
			SD		0.0002	0.0008
			Min		<0.0001	0.0001
			Max		0.0005	0.0018
			n		4	4
		Winter			0.0005	<0.0010

Table B116 Total vanadium concentrations (mg/L) at monitoring sites JER10 to JER15 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Control Lake	JER10	Summer	Mean		0.0001	0.0005
			SD		0.0001	0.0007
			Min		<0.00005	0.0001
			Max		0.0002	0.0017
			n		3	5
		Winter			0.0003	<0.0010
Cigar Lake	JER11	Summer	Mean	0.0001	0.0001	0.0005
			SD	0.00003	0.0001	0.0006
			Min	<0.0001	<0.00005	0.0001
			Max	0.0001	0.0002	0.0016
			n	8	3	5
		Winter		<0.0001	0.0004	<0.0010
Stream C1	JER12	Summer	Mean		0.0002	0.0003
			SD		0.0002	0.0000
			Min		<0.0001	0.0003
			Max		0.0004	<0.0005
			n		5	4
Lake C1	JER13	Summer	Mean		0.0002	0.0005
			SD		0.0002	0.0006
			Min	<0.0010	<0.0001	0.0002
			Max	<0.0010	0.0005	0.0016
			n	2	5	5
		Winter			0.0003	<0.0010
Lake C4	JER14	Summer	Mean		0.0004	0.0006
			SD		0.0002	0.0007
			Min	<0.0010	0.0002	0.0002
			Max	<0.0010	0.0007	0.0017
			n	2	4	4
Stream C4	JER15	Summer	Mean		0.0002	
			SD		0.0001	
			Min		0.0001	<0.0005
			Max		0.0003	<0.0005
			n		3	2

Table B117 Total vanadium concentrations (mg/L) at monitoring sites JER16 to JER20 from 1995 to 2006.

Location	Site	Time Period	Parameter	1995-2000	2005	2006
Lynne Lake	JER16	Summer	Mean	0.00004	<0.0001	<0.0005
			SD	0.0001		
			Min	<0.00001		
			Max	0.0001		
			n	3	1	1
		Winter		<0.001		
Key Lake	JER17	Summer	Mean	0.0001	0.0002	<0.0005
			SD	0.0001		
			Min	<0.0001		
			Max	0.0002		
			n	3	1	1
		Winter		<0.001		
Ash Lake	JER18	Summer	Mean	0.0001	0.0002	<0.0005
			SD	0.0000		
			Min	0.0001		
			Max	0.0001		
			n	3	1	1
		Winter		0.0002		
Stream C1 (Outlet)	JER19	Summer	Mean			0.0003
			SD			0.0003
			Min			0.0001
			Max			0.0005
			n			2
Stream C3 (Outlet)	JER20	Summer	Mean			0.0002
			SD			0.0001
			Min			0.0001
			Max			<0.0005
			n			2

Appendix B2-1 Water chemistry data, 2006 Jericho AEM Program.

Site	Site Name	Collection Date	Air Temp (°C)	Wind Speed (km/h)	Wind Direction	Water Temp (°C)	Field pH	Lab pH @ 25 °C	Field Conductivity (µs/cm)	Lab Conductivity @ 25 °C (µs/cm)	Oxidation Reduction Potential (mV)	Biochemical Oxygen Demand (mg/L)	MF - Fecal Coliforms (CFU/100mL)	Turbidity (NTU)	Total Suspended Solids @105 °C (mg/L)	Hardness as CaCO3 (mg/L)	Dissolved Solids 180 °C (mg/L)	Alkalinity as CaCO3 (mg/L)
JER01	Freshwater Intake	27/06/2006				5.17	6.45		12		256.30		<1	2	<2			
JER01	Freshwater Intake	12/07/2006				12.39	5.86		11.3		280.20		<1	2	<2			
JER01	Freshwater Intake	07/08/2006				15.40	7.90		8									
JER01	Freshwater Intake	09/08/2006				15.22	5.30		13		495.70		2	1	<2			
JER01	Freshwater Intake	13/08/2006				14.33	5.63	6.78	12	17	361.20	<2	<1	1		<6	15	6
JER01	Freshwater Intake	11/09/2006											<1	1	<2			
JER02	PKCA	19/06/2006				13.84	7.24	7.64	119	116	175.40	<2	<1	6	4	30	72	32
JER02	PKCA	12/07/2006				14.17	6.63	7.63	121	122	265.40	3	<1	4	4	37	76	33
JER02	PKCA	19/07/2006				14.10	6.17	7.53	121.3	136	457.00			3	<2	40	100	32
JER02	PKCA	26/07/2006				12.98	7.09	7.59	117	123	181.70			2	2	36	104	31
JER02	PKCA	04/08/2006				16.30	7.34	7.66	141	147	284.00	<2	<1	2	2	46	60	35
JER02	PKCA	17/08/2006				13.24	6.90	7.16	159	161	215.00			2	<2	58	92	36
JER02	PKCA	28/08/2006				11.02	6.04	7.71	167	164	519.00			2	<2	59	116	39
JER02	PKCA	01/09/2006						7.46		161				2	<2	58	108	41
JER02	PKCA	08/09/2006																
JER02	PKCA	11/09/2006						7.73		176				2	2	59	120	41
JER03	Stream C3	20/06/2006				12.43	6.52	6.75	13	16	192.50			1	<2	12	11	9
JER03	Stream C3	11/07/2006				14.36	6.60	7.08	32	34	333.60			2	<2	10	20	10
JER03	Stream C3	06/08/2006				12.50	7.80	7.07	89	84	404.10	<2	<1			19	60	12
JER03	Stream C3	05/09/2006						7.21		106				<1	<2	32	30	15
JER04	Lake C3	08/04/2006				1.54	5.19	6.87	22	23	446.90			2	3	<6.0	<10	11
JER04	Lake C3	21/06/2006				11.72	7.08	6.66	11	13	169.70			1	<2	<6	11	7
JER04	Lake C3	11/07/2006				14.01	5.71	6.80	10	14	445.50			2	<2	<6	12	8
JER04	Lake C3	06/08/2006				16.60	7.70		6									
JER04	Lake C3	05/09/2006						6.91		14				1	<2	<6	12	7
JER05	Lake C3	21/06/2006				10.13	5.65	6.65	11	14	201.00			1	<2	<6	13	7
JER05	Lake C3	11/07/2006				14.21	6.02	6.77	11	12	361.80			2	<2	<6	<4	8
JER05	Lake C3	06/08/2006				16.50	7.70		6									
JER05	Lake C3	05/09/2006						6.89		15				1	<2	<6	17	8
JER06	Carat Lake	08/04/2006	-11	5	NNW	0.39	6.17	6.82	14	17	390.80			<1	<2	<6.0	13	9
JER06	Carat Lake	27/06/2006				6.93	6.09	6.75	12	15	264.60			2	<2	<6	13	7
JER06	Carat Lake	11/07/2006				12.23	5.72	6.81	11	14	423.70			2	<2	<6	4	7
JER06	Carat Lake	07/08/2006				15.90	7.80		6									
JER06	Carat Lake	10/09/2006						6.73		14				1	<2	<6	8	9
JER07	Carat Lake	18/06/2006				5.84	7.00	6.76	12	14	221.50			1	2	<6	32	6
JER07	Carat Lake	11/07/2006				14.51	6.12	6.81	12	14	407.20			2	<2	<6	12	8
JER07	Carat Lake	07/08/2006				15.80	7.70		6									
JER07	Carat Lake	10/09/2006						6.75		14				1	<2	<6	8	9
JER08	Jericho Lake	10/04/2006	-12	15	N	3.13	6.25	6.93	18	20	410.90			<1	<2	<6.0	16	11
JER08	Jericho Lake	18/06/2006				10.74	6.85	6.83	12	14	237.20			1	<2	<6	16	7
JER08	Jericho Lake	11/07/2006				14.20	6.31	6.82	12	14	375.20			1	<2	<6	8	9

Appendix B2-1 Water chemistry data, 2006 Jericho AEM Program.

Site	Site Name	Collection Date	Air Temp (°C)	Wind Speed (km/h)	Wind Direction	Water Temp (°C)	Field pH	Lab pH @ 25 °C	Field Conductivity (µs/cm)	Lab Conductivity @ 25 °C (µs/cm)	Oxidation Reduction Potential (mV)	Biochemical Oxygen Demand (mg/L)	MF - Fecal Coliforms (CFU/100mL)	Turbidity (NTU)	Total Suspended Solids @105 °C (mg/L)	Hardness as CaCO3 (mg/L)	Dissolved Solids 180 °C (mg/L)	Alkalinity as CaCO3 (mg/L)
JER08	Jericho Lake	05/08/2006				15.30	7.90		5									
JER08	Jericho Lake	05/09/2006						6.83		12				1	<2	<6	14	6
JER09	Jericho River	18/06/2006				11.78	7.84	6.78	13	14	210.60			1	<2	<6	28	7
JER09	Jericho River	11/07/2006				14.36	5.84	6.78	12	14	381.00			1	<2	<6	12	8
JER09	Jericho River	05/08/2006				16.30	7.60		5									
JER09	Jericho River	05/09/2006						6.79		12				1	<2	<6	14	7
JER10	Control Lake	08/04/2006				0.71	6.06	6.79	17	17	414.20			1	3	<6.0	14	9
JER10	Control Lake	27/06/2006						6.69		14				1	<2	<6	12	7
JER10	Control Lake	11/07/2006				12.87	5.75	6.73	10	13	473.50			2	<2	<6	12	7
JER10	Control Lake	03/08/2006				16.20	7.50		3									
JER10	Control Lake	05/09/2006						6.76		11				1	<2	<6	14	6
JER11	Cigar Lake	10/04/2006				1.51	6.06	6.99	17	19	408.70			1	<2	<6.0	16	11
JER11	Cigar Lake	27/06/2006				N/A	N/A	6.80	N/A	15	N/A			1	<2	<6	8	8
JER11	Cigar Lake	11/07/2006				10.92	12.00	<0.20	12.8	0.03	5.55		412.3	0	2	<2	<6	<4
JER11	Cigar Lake	04/08/2006				14.00	7.70		7									
JER11	Cigar Lake	05/09/2006						6.82		12				1	<2	<6	13	7
JER12	Sream C1	27/06/2006				8.57	6.43	6.75	12	15	250.00			2	<2	<6	13	8
JER12	Sream C1	11/07/2006				13.74	6.77	7.35	53	57	334.00			3	<2	20	48	18
JER12	Sream C1	06/08/2006				10.10	8.00		107									
JER12	Sream C1	12/09/2006						7.40		80				1	<2	30	28	20
JER13	Lake C1	10/04/2006				1.57	6.30	7.03	32	33	427.40			<1	<2	9		14
JER13	Lake C1	21/06/2006				15.15	6.26	6.92	24	26	193.10			2	2	<6	16	11
JER13	Lake C1	11/07/2006				15.84	7.05	7.03	33	37	334.20			2	<2	12	31	10
JER13	Lake C1	06/08/2006				16.30	7.80		34									
JER13	Lake C1	05/09/2006						7.14		48				1	<2	17	38	13
JER14	Lake C4	21/06/2006				16.45	7.33	6.85	14	16	154.30			1	<2	<6	13	9
JER14	Lake C4	11/07/2006				16.37	6.85	7.18	15	20	358.20			1	<2	7	12	10
JER14	Lake C4	06/08/2006				17.00	8.00		11									
JER14	Lake C4	05/09/2006						7.14		21				1	<2	10	22	12
JER15	Stream C4	21/06/2006				14.92	5.72	6.85	13	16	194.60			1	<2	<6	12	10
JER15	Stream C4	11/07/2006				14.84	6.01	7.05	15	19	337.30			2	<2	7	16	12
JER16	Lynne Lake	11/07/2006				13.26	6.29	6.95	15	17	368.60			1	<2	6	12	9
JER16	Lynne Lake	13/08/2006				14.27	5.91	6.89	16	19	368.60			1		<6	16	8
JER17	Key Lake	11/07/2006				15.14	6.84	7.03	15	17	340.00			2	<2	7	15	9
JER18	Ash Lake	11/07/2006				15.72	7.05	7.03	15	18	327.50			2	<2	7	8	11
JER19	Carat Lake	11/07/2006				14.26	6.49	7.31	52	58	291.30			2	<2	20	40	18
JER19	Carat Lake	07/08/2006				15.20	7.80		6									
JER20	Lake C3	11/07/2006				14.40	6.49	7.08	31	37	336.20			1	<2	10	31	12
JER20	Lake C3	06/08/2006				16.30	7.70		4									

Appendix B2-2 Water chemistry data, 2006 Jericho AEM Program.

Parameter	JER01	JER01	JER01	JER01	JER01	JER01	JER02
Date	**27/06/2006**	**12/07/2006**	**07/08/2006**	**09/08/2006**	**13/08/2006**	**11/09/2006**	**19/06/2006**
Sulphate (mg/L)					1.6		3.6
Phosphate-Ortho - Phosphorus (mg/L)					<0.20		<0.20
Nitrite - Nitrogen (mg/L)					<0.05		<0.05
Nitrate - Nitrogen (mg/L)					0.08		1.62
Total Kjeldahl Nitrogen (mg/L)							
Hydroxide as CaCO3 (mg/L)					<1		<1
Fluoride (mg/L)					0.06		0.08
Chloride (mg/L)					0.4		3.2
Carbonate (mg/L)					<1		<1
Bicarbonate (mg/L)					7		39
Balance (+ions/-ions)					0.50		1.00
Acidity as CaCO3 (mg/L)					2		3
Carbon (Total Organic) (mg/L)					3.0		3.6
Ammonia - Nitrogen (mg/L)			0.02		0.02		1.46
Carbon (Total Inorganic) (mg/L)					1.1		5.2
Total Iron (mg/L)	0.13	<0.10	0.01	<0.10	<0.10	<0.10	<0.10
Total Manganese (mg/L)	<0.010	<0.010	0.002	<0.010	<0.01	<0.010	0.020
Total Zinc (mg/L)	0.002	0.004	0.005	0.002	0.002	0.002	0.002
Total Vanadium (mg/L)	<0.0005	<0.0005	0.0001	0.0015	<0.0005	0.0028	0.0007
Total Uranium (mg/L)	0.00015	0.00012	0.00015	0.00019	0.00014	0.00014	0.00121
Total Thallium (mg/L)	<0.00005	<0.00005	0.00000	<0.00005	<0.00005	<0.00005	<0.00005
Total Strontium (mg/L)	0.0044	0.0050	0.0046	0.0046	0.0044	0.0052	0.0522
Total Sodium (mg/L)	<0.5	<0.5	0.4	<0.5	<0.5	<0.5	4.7
Total Silver (mg/L)	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	<0.0001	<0.0001
Total Silicon (mg/L)	0.15	0.12	0.22	0.26	0.20	0.16	1.24
Total Selenium (mg/L)	<0.0010	<0.0010	<0.0001	<0.0010	<0.0010	<0.0010	<0.0010
Total Potassium (mg/L)	<0.5	<0.5	0.3	<0.5	<0.5	<0.5	2.5
Total Phosphorus (mg/L)		<0.020	0.003	<0.020	<0.020	<0.020	0.030
Total Nickel (mg/L)	0.0002	0.0003	0.0003	0.0002	0.0007	0.0003	0.0021
Total Molybdenum (mg/L)	0.00005	<0.00005	0.00002	<0.00005	<0.00005	<0.00005	0.00155
Total Mercury (mg/L)	<0.00005	<0.00005	<0.00001	<0.00005	<0.00005	<0.00005	<0.00005
Total Magnesium (mg/L)	<0.50	0.21	0.46	0.61	0.56	0.54	3.32
Total Lead (mg/L)	<0.00005	<0.00005	0.00001	<0.00005	<0.00005	<0.00005	0.00016
Total Copper (mg/L)	<0.0010	<0.0010	0.0015	0.0021	<0.0010	<0.0010	<0.0010
Total Cobalt (mg/L)	<0.00005	<0.00005	0.00002	<0.00005	<0.00005	<0.00005	0.00016
Total Chromium (mg/L)	<0.0005	0.0016	0.0001	0.0019	0.0015	0.0043	0.0010
Total Calcium (mg/L)	1.11	0.86	1.03	1.42	1.14	1.04	5.91
Total Cadmium (mg/L)	<0.00005	<0.00005	0.00000	<0.00002	<0.00002	0.00004	<0.00005
Total Boron (mg/L)	<0.001	<0.001	0.081	<0.001	<0.001	0.002	0.009
Total Beryllium (mg/L)	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	0.0002	<0.0001
Total Barium (mg/L)	0.00201	0.00167	0.00163	0.00152	0.00188	0.00187	0.01260
Total Arsenic (mg/L)	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	0.0005
Total Antimony (mg/L)	<0.00005	<0.00005	0.00001	<0.00005	<0.00005	<0.00005	0.00033
Total Aluminum (mg/L)	0.0342	0.0301	0.0203	0.0262	0.0208	0.0210	0.0889
Dissolved Calcium (mg/L)	1.1	1.0	1.0	1.4	0.7	0.5	6.1
Dissolved Magnesium (mg/L)	0.6	0.4	0.4	0.5	0.3	0.4	3.6
Dissolved Potassium (mg/L)	<0.5	<0.5	0.3	<0.5	<0.5	<0.5	3.1
Dissolved Sodium (mg/L)	<0.5	<0.5	0.4	<0.5	<0.5	<0.5	5.4
Dissolved Zinc (mg/L)	<0.001	0.007	0.004	0.002		0.002	<0.001
Dissolved Vanadium (mg/L)	<0.0001	0.0002	0.0001	0.0005		0.0005	0.0013
Dissolved Uranium (mg/L)	0.00013	0.00018	0.00015	0.00019		0.00011	0.00102
Dissolved Thallium (mg/L)	<0.00005	<0.00005	0.00000	<0.00005		<0.00005	<0.00005
Dissolved Strontium (mg/L)	0.0043	0.0060	0.0045	0.0048		0.0051	0.0572
Dissolved Silver (mg/L)	<0.00005	<0.00005	0.00000	<0.00005		<0.00005	<0.00005
Dissolved Silicon (mg/L)	0.14	0.12	0.21	0.26		0.14	1.44
Dissolved Selenium (mg/L)	<0.0006	<0.0006	<0.0001	<0.0006		<0.0006	<0.0006
Dissolved Phosphorus (mg/L)		<0.005	0.002	<0.010		<0.01	
Dissolved Nickel (mg/L)	<0.00005	0.00034	0.00028	0.00025		0.00026	0.00204
Dissolved Molybdenum (mg/L)	<0.00005	0.00012	0.00002	<0.00005		0.00008	0.00149
Dissolved Mercury (mg/L)	<0.00005	<0.00005	<0.00001	<0.00005		<0.00005	<0.00005
Dissolved Manganese (mg/L)	<0.010	<0.010	0.002	<0.010		<0.010	<0.010
Dissolved Lead (mg/L)	<0.00005	0.00009	0.00001	<0.00005		0.00008	0.00008
Dissolved Iron (mg/L)	<0.10	<0.10	0.01	<0.10		<0.10	<0.10
Dissolved Copper (mg/L)	<0.0001	0.0053	0.0014	0.0022		<0.0001	0.0012
Dissolved Cobalt (mg/L)	<0.00002	<0.00002	0.00002	0.00004		<0.00002	0.00011
Dissolved Chromium (mg/L)	<0.0003	<0.0003	0.0001	0.0008		0.0011	0.0006
Dissolved Cadmium (mg/L)	<0.00005	<0.00005	0.00000	<0.00002		0.00002	<0.00005
Dissolved Boron (mg/L)	<0.001	0.001	0.068	0.001		0.002	0.009
Dissolved Beryllium (mg/L)	<0.0001	<0.0001	0.0000	<0.0001		<0.0001	<0.0001
Dissolved Barium (mg/L)	<0.00005	0.002190	0.001630	0.001640		0.002150	0.014400
Dissolved Arsenic (mg/L)	<0.0001	0.0002	0.0002	0.0002		<0.0001	0.0007
Dissolved Antimony (mg/L)	<0.00005	<0.00005	0.00001	<0.00005		<0.00005	0.00030
Dissolved Aluminum (mg/L)	0.0160	0.0190	0.0193	0.0190		0.0130	0.0710

Appendix B2-2 Water chemistry data, 2006 Jericho AEM Program.

Parameter	JER02	JER02	JER02	JER02	JER02	JER02	JER02
Date	**12/07/2006**	**19/07/2006**	**26/07/2006**	**04/08/2006**	**17/08/2006**	**28/08/2006**	**01/09/2006**
Sulphate (mg/L)	5.1	6.2	5.4	7.1	8.4	8.0	8.3
Phosphate-Ortho - Phosphorus (mg/L)	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nitrite - Nitrogen (mg/L)	0.19	0.11	<0.05	0.09	<0.05	<0.05	<0.05
Nitrate - Nitrogen (mg/L)	3.53	4.20	3.90	5.13	5.83	5.95	6.02
Total Kjeldahl Nitrogen (mg/L)				0.60	0.60	0.70	0.60
Hydroxide as CaCO3 (mg/L)	<1	<1	<1	<1	<1	<1	<1
Fluoride (mg/L)	0.09	0.09	0.08	0.10	0.12	0.10	0.10
Chloride (mg/L)	4.8	5.3	5.5	5.8	6.2	6.9	7.2
Carbonate (mg/L)	<1	<1	<1	<1	<1	<1	<1
Bicarbonate (mg/L)	40	40	38	43	44	47	50
Balance (+ions/-ions)	0.87	0.85	0.90	0.90	0.99	0.96	0.92
Acidity as CaCO3 (mg/L)	7	2	2	2	4	3	3
Carbon (Total Organic) (mg/L)	3.9	3.6	3.8	3.8	4.2	3.9	4.0
Ammonia - Nitrogen (mg/L)	0.82	0.35	0.26	0.08	0.18	0.03	0.03
Carbon (Total Inorganic) (mg/L)	5.3	4.2	3.9	4.6	8.9	8.8	9.5
Total Iron (mg/L)	<0.10	<0.10	<0.10	<0.10	<0.10	0.12	<0.10
Total Manganese (mg/L)	<0.01	0.020	<0.01	0.010	0.020	0.030	0.020
Total Zinc (mg/L)	0.004	0.007	0.002	0.002	0.003	0.017	0.004
Total Vanadium (mg/L)	<0.0005	<0.0005	0.0011	0.0008	0.0016	0.0019	0.0019
Total Uranium (mg/L)	0.00136	<0.00005	0.00087	0.00146	0.00133	0.00122	0.00134
Total Thallium (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Total Strontium (mg/L)	0.0638	<0.0005	0.0504	0.0809	0.0936	0.1050	0.1110
Total Sodium (mg/L)	4.7	5.6	9.1	5.4	5.0	5.0	5.3
Total Silver (mg/L)	<0.0001	0.0019	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Silicon (mg/L)	1.14	1.29	1.02	1.14	1.17	1.25	1.06
Total Selenium (mg/L)	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0015	0.0020
Total Potassium (mg/L)	2.5	3.0	2.7	3.2	3.5	3.8	3.9
Total Phosphorus (mg/L)	<0.020	0.071	0.062	<0.020	<0.020	<0.020	<0.020
Total Nickel (mg/L)	0.0019	<0.0001	0.0020	0.0019	0.0024	0.0025	0.0023
Total Molybdenum (mg/L)	0.00145	<0.00005	0.00144	0.00185	0.00225	0.00263	0.00273
Total Mercury (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Total Magnesium (mg/L)	3.55	4.56	4.28	5.11	5.90	6.43	6.62
Total Lead (mg/L)	0.00012	<0.00005	0.00010	0.00006	0.00009	0.00040	0.00025
Total Copper (mg/L)	0.0024	<0.0010	<0.0010	<0.0010	0.0025	0.0057	0.0039
Total Cobalt (mg/L)	0.00010	<0.00005	0.00011	0.00005	0.00016	0.00014	0.00015
Total Chromium (mg/L)	0.0016	0.0008	0.0017	0.0023	0.0042	0.0066	0.0047
Total Calcium (mg/L)	7.23	9.14	8.55	10.40	12.80	12.60	12.90
Total Cadmium (mg/L)	<0.00005	<0.00005	<0.00005	<0.00002	<0.00002	0.00006	<0.00002
Total Boron (mg/L)	0.012	0.005	0.009	0.014	0.020	0.017	0.018
Total Beryllium (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Barium (mg/L)	0.01580	0.00010	0.00943	0.02170	0.02590	0.02800	0.02730
Total Arsenic (mg/L)	0.0006	<0.0002	<0.0002	0.0006	0.0005	0.0004	0.0009
Total Antimony (mg/L)	0.00024	<0.00005	0.00025	0.00008	0.00064	0.00105	0.00124
Total Aluminum (mg/L)	0.0577	0.0200	0.0246	0.0229	0.0113	0.0376	0.0105
Dissolved Calcium (mg/L)	8.0	8.7	7.4	10.2	12.8	13.0	12.7
Dissolved Magnesium (mg/L)	4.1	4.3	4.2	5.1	6.3	6.6	6.4
Dissolved Potassium (mg/L)	2.7	2.7	3.0	3.5	3.7	3.8	4.1
Dissolved Sodium (mg/L)	4.9	4.5	5.8	5.4	5.4	5.1	5.3
Dissolved Zinc (mg/L)	0.008	<0.001	<0.001	<0.001	0.001	0.001	0.001
Dissolved Vanadium (mg/L)	0.0006	<0.0001	0.0013	0.0020	0.0014	0.0012	0.0011
Dissolved Uranium (mg/L)	0.00123	<0.00005	0.00068	0.00076	0.00139	0.00132	0.00108
Dissolved Thallium (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	0.00005
Dissolved Strontium (mg/L)	0.0744	<0.0001	0.0457	0.0844	0.0959	0.1100	0.0895
Dissolved Silver (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Silicon (mg/L)	1.13	1.19	1.04	0.98	1.20	1.16	1.03
Dissolved Selenium (mg/L)	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006	<0.0006
Dissolved Phosphorus (mg/L)	0.005	<0.005	0.014	0.020	<0.010	<0.010	0.010
Dissolved Nickel (mg/L)	0.00182	<0.00005	0.00146	0.00142	0.00180	0.00191	0.00172
Dissolved Molybdenum (mg/L)	0.00165	<0.00005	0.00150	0.00207	0.00243	0.00208	<0.00005
Dissolved Mercury (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Manganese (mg/L)	<0.010	<0.010	<0.010	0.011	0.019	0.019	0.015
Dissolved Lead (mg/L)	0.00007	<0.00005	<0.00005	<0.00005	<0.00005	0.00012	0.00014
Dissolved Iron (mg/L)	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dissolved Copper (mg/L)	0.0049	<0.0001	0.0017	<0.0001	0.0026	0.0064	0.0018
Dissolved Cobalt (mg/L)	0.00009	<0.00002	0.00015	0.00003	0.00012	0.00017	0.00010
Dissolved Chromium (mg/L)	<0.0003	<0.0003	0.0019	0.0010	0.0041	0.0062	0.0041
Dissolved Cadmium (mg/L)	<0.00005	<0.00005	<0.00005	<0.00002	<0.00002	<0.00002	<0.00002
Dissolved Boron (mg/L)	0.012	<0.001	0.010	0.015	0.022	0.016	0.012
Dissolved Beryllium (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Barium (mg/L)	0.026100	<0.00005	0.008230	0.018600	0.027700	0.028300	0.024100
Dissolved Arsenic (mg/L)	0.0006	<0.0001	0.0004	0.0002	0.0002	0.0005	0.0008
Dissolved Antimony (mg/L)	0.00025	<0.00005	0.00027	<0.00005	0.00024	0.00033	0.00048
Dissolved Aluminum (mg/L)	0.0130	<0.002	0.0160	0.0060	0.0090	0.0080	0.0030

Appendix B2-2 Water chemistry data, 2006 Jericho AEM Program.

Parameter	JER02	JER02	JER03	JER03	JER03	JER03	JER04	JER04	JER04
Date	**08/09/2006**	**11/09/2006**	**20/06/2006**	**11/07/2006**	**06/08/2006**	**05/09/2006**	**08/04/2006**	**21/06/2006**	**11/07/2006**
Sulphate (mg/L)		8.5	1.2	0.6	6.0	8.4	1.0	1.3	<0.5
Phosphate-Ortho - Phosphorus (mg/L)		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
Nitrite - Nitrogen (mg/L)		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate - Nitrogen (mg/L)		7.40	<0.05	0.32	2.53	4.52	<0.05	<0.05	<0.05
Total Kjeldahl Nitrogen (mg/L)				<0.2		0.30			<0.2
Hydroxide as CaCO3 (mg/L)		<1	<1	<1	<1	<1	<1	<1	<1
Fluoride (mg/L)		0.11	0.03	0.04	0.06	0.04	0.05	0.03	0.03
Chloride (mg/L)		7.2	0.7	2.6	5.5	6.7	0.5	0.4	0.2
Carbonate (mg/L)		<1	<1	<1	<1	<1	<1	<1	<1
Bicarbonate (mg/L)		50	11	12	15	18	13	9	9
Balance (+ions/-ions)		0.87	1.02	0.89	0.86	0.93	0.43	0.36	0.63
Acidity as CaCO3 (mg/L)		4	4	<1	1	2	3	14	2
Carbon (Total Organic) (mg/L)		3.5	3.6	3.5		2.5	3.0	2.9	2.7
Ammonia - Nitrogen (mg/L)	0.03	0.02	0.01	0.02	<0.005	<0.01	<0.1	<0.01	0.02
Carbon (Total Inorganic) (mg/L)		8.8	0.1	0.7		3.5	<1	<0.1	<0.1
Total Iron (mg/L)	<0.10	<0.10	<0.10	<0.10	0.02	<0.10	<0.10	<0.10	<0.10
Total Manganese (mg/L)	0.014	0.010	<0.01	<0.01	0.002	<0.01	<0.01	<0.01	<0.01
Total Zinc (mg/L)	0.003	0.006	0.003	0.004	0.003	0.005	0.003	0.005	0.005
Total Vanadium (mg/L)	0.0042	0.0044	<0.0005	<0.0005	0.0002	0.0018	0.0003	<0.0005	<0.0005
Total Uranium (mg/L)	0.00148	0.00127	0.00022	0.00006	0.00008	<0.00005	0.00020	0.00015	0.00011
Total Thallium (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	0.00001	<0.00005	<0.00005	<0.00005	<0.00005
Total Strontium (mg/L)	0.1290	0.1190	0.0042	0.0080	0.0303	0.0247	0.0077	0.0040	0.0047
Total Sodium (mg/L)	5.6	5.8	<0.5	1.6	5.2	4.4	<0.5	<0.5	<0.5
Total Silver (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	0.0000	<0.0001	<0.0002	<0.0001	<0.0001
Total Silicon (mg/L)	1.11	1.12	0.21	0.48	1.06	0.92	0.39	0.17	0.14
Total Selenium (mg/L)	0.0022	0.0010	<0.0010	<0.0010	0.0002	<0.0010	<0.0008	<0.0010	<0.0010
Total Potassium (mg/L)	4.1	4.2	<0.5	<0.5	2.1	1.6	<0.5	<0.5	<0.5
Total Phosphorus (mg/L)	<0.020	<0.020	0.020	<0.020	0.003	<0.020	0.020	0.040	<0.020
Total Nickel (mg/L)	0.0024	0.0021	0.0007	0.0006	0.0006	0.0008	0.0007	0.0004	0.0004
Total Molybdenum (mg/L)	0.00352	0.00285	0.00008	<0.00005	0.00043	0.00020	<0.0005	<0.00005	<0.00005
Total Mercury (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.00005	<0.00005	<0.00005
Total Magnesium (mg/L)	7.16	7.40	0.50	0.80	2.68	4.24	0.84	0.68	0.17
Total Lead (mg/L)	0.00008	0.00011	0.00006	<0.00005	0.00029	<0.00005	0.00010	0.00008	<0.00005
Total Copper (mg/L)	<0.0010	<0.0010	0.0011	0.0010	0.0019	<0.0010	<0.0010	0.0012	<0.0010
Total Cobalt (mg/L)	0.00008	0.00009	<0.00005	<0.00005	0.00011	0.00006	<0.0001	<0.00005	<0.00005
Total Chromium (mg/L)	0.0102	0.0091	0.0006	0.0016	0.0006	0.0063	<0.0009	<0.0005	0.0012
Total Calcium (mg/L)	13.20	13.40	1.02	1.98	6.19	6.89	1.61	0.79	0.80
Total Cadmium (mg/L)	<0.00002	0.00002	<0.00005	<0.00005	0.00004	<0.00002	<0.0001	<0.00005	<0.00005
Total Boron (mg/L)	0.016	0.020	0.003	0.001	0.113	0.006	<0.010	0.003	<0.001
Total Beryllium (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.000003	<0.0001	<0.0005	<0.0001	<0.0001
Total Barium (mg/L)	0.03720	0.03620	0.00204	0.00319	0.00869	0.01210	<0.005	0.00167	0.00175
Total Arsenic (mg/L)	<0.0002	<0.0002	<0.0002	0.0003	0.0003	0.0006	<0.0004	0.0002	<0.0002
Total Antimony (mg/L)	0.00130	0.00021	<0.00005	<0.00005	0.00013	<0.00005	<0.0001	<0.00005	<0.00005
Total Aluminum (mg/L)	0.0143	0.0160	0.0543	0.0359	0.0251	0.0192	0.0270	0.0494	0.0340
Dissolved Calcium (mg/L)	11.4	12.6	0.6	2.3	6.1	6.3	0.7	<0.5	1.0
Dissolved Magnesium (mg/L)	6.6	6.6	2.5	1.1	2.6	4.0	<0.5	<0.5	0.4
Dissolved Potassium (mg/L)	3.0	3.9	<0.5	<0.5	2.1	1.7	<0.5	<0.5	<0.5
Dissolved Sodium (mg/L)	5.2	5.5	<0.5	1.6	5.1	5.4	0.6	<0.5	<0.5
Dissolved Zinc (mg/L)	0.003	0.005	<0.001	0.003	0.002	0.006	0.002	<0.001	0.003
Dissolved Vanadium (mg/L)	0.0027	0.0026	<0.0001	0.0006	0.0002	0.0014	<0.0005	<0.0001	0.0002
Dissolved Uranium (mg/L)	0.00112	0.00115	0.00013	0.00011	0.00008	<0.00005	0.00017	0.00013	0.00014
Dissolved Thallium (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	0.00001	<0.00005	<0.00002	<0.00005	<0.00005
Dissolved Strontium (mg/L)	0.1130	0.1050	0.0046	0.0099	0.0299	0.0229	0.0079	0.0036	0.0062
Dissolved Silver (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	0.00001	<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Silicon (mg/L)	1.09	1.05	0.27	0.54	1.01	0.90	0.42	0.25	0.14
Dissolved Selenium (mg/L)	<0.0006	<0.0006	<0.0006	<0.0006	0.0002	<0.0006	<0.0004	<0.0006	<0.0006
Dissolved Phosphorus (mg/L)	<0.010	<0.010		<0.005	0.002	<0.010			<0.005
Dissolved Nickel (mg/L)	0.00196	0.00194	0.00021	0.00048	0.00053	0.00070	<0.0001	<0.00005	0.00036
Dissolved Molybdenum (mg/L)	0.00249	0.00231	0.00010	0.00008	0.00043	<0.00005	<0.0003	<0.00005	<0.00005
Dissolved Mercury (mg/L)	<0.00005	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Manganese (mg/L)	<0.010	<0.010	<0.010	<0.010	0.002	<0.010	<0.010	<0.010	<0.010
Dissolved Lead (mg/L)	0.00013	0.00010	0.00016	<0.00005	0.00028	<0.00005	0.00006	<0.00005	<0.00005
Dissolved Iron (mg/L)	<0.10	<0.10	<0.10	<0.10	0.02	<0.10	<0.10	<0.10	<0.10
Dissolved Copper (mg/L)	<0.0001	0.0002	<0.0001	0.0064	0.0018	0.0005	<0.0010	<0.0001	0.0031
Dissolved Cobalt (mg/L)	0.00010	0.00009	<0.00002	0.00005	0.00011	0.00005	<0.00005	<0.00002	<0.00002
Dissolved Chromium (mg/L)	0.0073	0.0059	<0.0003	0.0003	0.0004	0.0040	<0.0004	<0.0003	<0.0003
Dissolved Cadmium (mg/L)	<0.00002	0.00003	<0.00005	<0.00005	0.00004	<0.00002	<0.00005	<0.00005	<0.00005
Dissolved Boron (mg/L)	0.017	0.015	<0.001	0.001	0.094	0.002	<0.004	<0.001	<0.001
Dissolved Beryllium (mg/L)	<0.0001	<0.0001	<0.0001	<0.0001	<0.000003	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Barium (mg/L)	0.035800	0.031800	0.002860	0.003470	0.008640	0.012500	<0.003	0.002840	0.002020
Dissolved Arsenic (mg/L)	<0.0001	<0.0001	0.0002	0.0003	0.0003	0.0003	0.0003	0.0002	0.0002
Dissolved Antimony (mg/L)	0.00045	0.00040	<0.0001	<0.00005	0.00013	<0.00005	<0.0001	<0.0001	<0.00005
Dissolved Aluminum (mg/L)		0.0180	0.0350	0.0260	0.0210	0.0140	0.0220	0.0250	0.0240

Appendix B2-2 Water chemistry data, 2006 Jericho AEM Program.

Parameter	JER04	JER04	JER05	JER05	JER05	JER05	JER06	JER06	JER06
Date	**06/08/2006**	**05/09/2006**	**21/06/2006**	**11/07/2006**	**06/08/2006**	**05/09/2006**	**08/04/2006**	**27/06/2006**	**11/07/2006**
Sulphate (mg/L)		1.7	1.8	<0.5		2.0	0.6	1.2	<0.5
Phosphate-Ortho - Phosphorus (mg/L)		<0.20	<0.20	<0.20		<0.20	<0.20	<0.20	<0.20
Nitrite - Nitrogen (mg/L)		<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05
Nitrate - Nitrogen (mg/L)		<0.05	<0.05	<0.05		0.06	<0.05	<0.05	<0.05
Total Kjeldahl Nitrogen (mg/L)		0.30		<0.2		<0.2			<0.2
Hydroxide as CaCO3 (mg/L)		<1	<1	<1		<1	<1	<1	<1
Fluoride (mg/L)		0.04	0.03	0.03		0.04	0.04	0.04	0.03
Chloride (mg/L)		0.5	0.6	0.2		0.5	0.4	0.2	0.2
Carbonate (mg/L)		<1	<1	<1		<1	<1	<1	<1
Bicarbonate (mg/L)		8	8	9		10	11	9	9
Balance (+ions/-ions)		0.75	0.33	0.67		0.67	0.39	0.68	0.73
Acidity as CaCO3 (mg/L)		2	10	2		2	<1	2	4
Carbon (Total Organic) (mg/L)		2.6	2.7	2.7		2.4	3.0	4.4	2.7
Ammonia - Nitrogen (mg/L)	<0.005	<0.01	0.01	0.01	<0.005	<0.01	<0.1	0.03	0.01
Carbon (Total Inorganic) (mg/L)		1.2	<0.1	<0.1		1.3	<1	0.2	<0.1
Total Iron (mg/L)	0.02	<0.10	<0.10	<0.10	0.02	<0.10	<0.10	<0.10	<0.10
Total Manganese (mg/L)	0.003	<0.01	<0.01	<0.01	0.003	<0.01	<0.01	<0.01	<0.01
Total Zinc (mg/L)	0.004	0.002	0.002	0.007	0.008	0.002	<0.002	0.006	0.002
Total Vanadium (mg/L)	0.0001	0.0015	<0.0005	<0.0005	0.0001	0.0014	0.0003	<0.0005	<0.0005
Total Uranium (mg/L)	0.00014	0.00014	0.00015	0.00011	0.00014	0.00014	0.00014	0.00014	0.00009
Total Thallium (mg/L)	0.00000	<0.00005	<0.00005	<0.00005	0.00000	<0.00005	<0.00005	<0.00005	<0.00005
Total Strontium (mg/L)	0.0045	0.0054	0.0038	0.0046	0.0045	0.0054	0.0056	0.0045	0.0048
Total Sodium (mg/L)	0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	0.7	<0.5
Total Silver (mg/L)	0.0000	<0.0001	<0.0001	<0.0001	0.0000	<0.0001	<0.0002	<0.0001	<0.0001
Total Silicon (mg/L)	0.26	0.23	0.18	0.14	0.25	0.28	0.21	0.12	0.13
Total Selenium (mg/L)	<0.0001	<0.0010	<0.0010	<0.0010	<0.0001	<0.0010	<0.0008	<0.0010	<0.0010
Total Potassium (mg/L)	0.3	<0.5	<0.5	<0.5	0.3	<0.5	<0.5	<0.5	<0.5
Total Phosphorus (mg/L)	0.003	0.020	0.040	<0.020	0.004	<0.020	<0.020	0.030	<0.020
Total Nickel (mg/L)	0.0003	0.0003	0.0004	0.0003	0.0003	0.0003	0.0008	0.0003	0.0003
Total Molybdenum (mg/L)	0.00003	0.00011	<0.00005	<0.00005	0.00004	<0.00005	<0.0005	0.00006	<0.00005
Total Mercury (mg/L)	<0.00001	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.00005	<0.00005	<0.00005
Total Magnesium (mg/L)	0.47	0.66	<0.50	0.17	0.45	0.66	0.64	<0.50	0.20
Total Lead (mg/L)	0.00007	<0.00005	<0.00005	<0.00005	0.00009	<0.00005	<0.0001	0.00049	<0.00005
Total Copper (mg/L)	0.0016	<0.0010	<0.0010	<0.0010	0.0015	<0.0010	<0.0010	0.0011	<0.0010
Total Cobalt (mg/L)	0.00003	<0.00005	<0.00005	<0.00005	0.00003	<0.00005	<0.0001	<0.00005	<0.00005
Total Chromium (mg/L)	0.0002	0.0017	<0.0005	0.0012	0.0001	0.0020	<0.0009	<0.0005	0.0011
Total Calcium (mg/L)	1.01	1.25	0.78	0.80	0.99	1.29	1.28	1.07	0.88
Total Cadmium (mg/L)	0.00001	<0.00002	<0.00005	<0.00005	0.00001	<0.00002	<0.0001	<0.00005	<0.00005
Total Boron (mg/L)	0.058	0.002	0.003	<0.001	0.012	0.001	<0.010	0.001	<0.001
Total Beryllium (mg/L)	0.0000	<0.0001	<0.0001	<0.0001	<0.000003	<0.0001	<0.0005	<0.0001	<0.0001
Total Barium (mg/L)	0.00163	0.00171	0.00156	0.00168	0.00160	0.00155	<0.005	0.00212	0.00167
Total Arsenic (mg/L)	0.0002	0.0003	<0.0002	<0.0002	0.0002	0.0002	<0.0004	<0.0002	<0.0002
Total Antimony (mg/L)	0.00001	<0.00005	<0.00005	<0.00005	0.00001	<0.00005	<0.0001	<0.00005	<0.00005
Total Aluminum (mg/L)	0.0255	0.0177	0.0483	0.0566	0.0253	0.0177	0.0130	0.0332	0.0276
Dissolved Calcium (mg/L)	1.0	1.3	<0.5	1.0	1.0	1.3	0.6	1.1	1.0
Dissolved Magnesium (mg/L)	0.5	0.6	<0.5	0.4	0.4	0.6	<0.5	<0.5	0.4
Dissolved Potassium (mg/L)	0.3	<0.5	<0.5	<0.5	0.3	<0.5	<0.5	<0.5	<0.5
Dissolved Sodium (mg/L)	0.5	0.6	<0.5	<0.5	0.5	0.7	<0.5	<0.5	<0.5
Dissolved Zinc (mg/L)	0.003	0.002	<0.001	0.002	0.004	0.005	<0.002	<0.001	0.002
Dissolved Vanadium (mg/L)	0.0001	0.0009	<0.0001	0.0002	0.0001	0.0007	<0.0005	<0.0001	0.0002
Dissolved Uranium (mg/L)	0.00014	0.00011	0.00013	0.00014	0.00013	0.00011	0.00011	0.00014	0.00014
Dissolved Thallium (mg/L)	0.00000	<0.00005	<0.00005	<0.00005	0.00000	<0.00005	<0.00002	<0.00005	<0.00005
Dissolved Strontium (mg/L)	0.0044	0.0042	0.0037	0.0060	0.0045	0.0053	0.0055	0.0038	0.0064
Dissolved Silver (mg/L)	0.00000	<0.00005	<0.00005	<0.00005	0.00000	<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Silicon (mg/L)	0.26	0.23	0.23	0.14	0.25	0.29	0.19	0.14	0.13
Dissolved Selenium (mg/L)	<0.0001	<0.0006	<0.0006	<0.0006	<0.0001	<0.0006	<0.0004	<0.0006	<0.0006
Dissolved Phosphorus (mg/L)	0.002	<0.010		<0.005	0.002	<0.010			<0.005
Dissolved Nickel (mg/L)	0.00028	0.00028	0.00005	0.00025	0.00031	0.00024	<0.0001	<0.00005	0.00035
Dissolved Molybdenum (mg/L)	0.00002	<0.00005	<0.00005	0.00020	0.00004	<0.00005	<0.0003	<0.00005	<0.00005
Dissolved Mercury (mg/L)	<0.00001	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Manganese (mg/L)	0.003	<0.010	<0.010	<0.010	0.003	<0.010	<0.010	<0.010	<0.010
Dissolved Lead (mg/L)	0.00007	<0.00005	0.00022	<0.00005	0.00009	<0.00005	<0.00005	<0.00005	<0.00005
Dissolved Iron (mg/L)	0.02	<0.10	<0.10	<0.10	0.02	<0.10	<0.10	<0.10	<0.10
Dissolved Copper (mg/L)	0.0016	0.0002	0.0015	0.0027	0.0015	0.0010	<0.0010	<0.0001	0.0036
Dissolved Cobalt (mg/L)	0.00003	<0.00002	<0.00002	<0.00002	0.00003	<0.00002	<0.00005	<0.00002	<0.00002
Dissolved Chromium (mg/L)	0.0002	0.0004	<0.0003	<0.0003	0.0001	0.0011	<0.0004	<0.0003	<0.0003
Dissolved Cadmium (mg/L)	0.00001	<0.00002	<0.00005	<0.00005	0.00001	0.00002	<0.00005	<0.00005	<0.00005
Dissolved Boron (mg/L)	0.050	<0.001	<0.001	<0.001	0.011	<0.001	<0.004	<0.001	<0.001
Dissolved Beryllium (mg/L)	<0.000003	<0.0001	<0.0001	<0.0001	<0.000003	<0.0001	<0.0001	<0.0001	<0.0001
Dissolved Barium (mg/L)	0.001610	0.000840	0.002560	0.007010	0.001570	0.001320	<0.003	<0.00005	0.011500
Dissolved Arsenic (mg/L)	0.0002	0.0003	0.0001	0.0002	0.0002	0.0003	0.0002	<0.0001	0.0002
Dissolved Antimony (mg/L)	0.00001	<0.00005	<0.0001	<0.00005	0.00001	<0.00005	<0.0001	<0.00005	<0.00005
Dissolved Aluminum (mg/L)	0.0242	0.0120	0.0220	0.0180	0.0196	0.0140	0.0130	0.0200	0.0160

Appendix B2-2 Water chemistry data, 2006 Jericho AEM Program.

Parameter	JER06	JER06	JER07	JER07	JER07	JER07	JER08	JER08
Date	**07/08/2006**	**10/09/2006**	**18/06/2006**	**11/07/2006**	**07/08/2006**	**10/09/2006**	**10/04/2006**	**18/06/2006**
Sulphate (mg/L)		<0.5	0.8	<0.5		0.6	0.7	0.8
Phosphate-Ortho - Phosphorus (mg/L)		<0.20	<0.20	<0.20		<0.20	<0.20	<0.20
Nitrite - Nitrogen (mg/L)		<0.05	<0.05	<0.05		<0.05	<0.05	<0.05
Nitrate - Nitrogen (mg/L)		<0.05	<0.05	<0.05		<0.05	<0.05	<0.05
Total Kjeldahl Nitrogen (mg/L)				<0.2				
Hydroxide as CaCO3 (mg/L)		<1	<1	<1		<1	<1	<1
Fluoride (mg/L)		0.03	0.03	0.03		0.03	0.05	0.03
Chloride (mg/L)		0.2	0.4	0.2		0.3	0.5	0.4
Carbonate (mg/L)		<1	<1	<1		<1	<1	<1
Bicarbonate (mg/L)		11	8	10		11	13	8
Balance (+ions/-ions)		0.30	0.60	0.67		0.28	0.42	0.60
Acidity as CaCO3 (mg/L)		1	3	2		1	3	2
Carbon (Total Organic) (mg/L)		2.5	2.7	2.7		2.6	3.0	2.6
Ammonia - Nitrogen (mg/L)	<0.005	0.01	0.02	0.01	<0.005	0.01	N/A	N/A
Carbon (Total Inorganic) (mg/L)		1.0	0.1	<0.1		1.0	<1	<0.1
Total Iron (mg/L)	0.01	<0.10	<0.10	<0.10	0.01	<0.10	<0.10	<0.10
Total Manganese (mg/L)	0.002	<0.01	<0.01	<0.01	0.002	<0.01	<0.01	<0.01
Total Zinc (mg/L)	0.003	0.002	0.007	0.003	0.004	0.003	<0.002	<0.001
Total Vanadium (mg/L)	0.0001	0.0029	<0.0005	<0.0005	0.0001	0.0029	0.0002	<0.0005
Total Uranium (mg/L)	0.00014	0.00015	0.00012	0.00010	0.00014	0.00014	0.00015	0.00012
Total Thallium (mg/L)	0.00001	<0.00005	<0.00005	<0.00005	0.00001	<0.00005	<0.00005	<0.00005
Total Strontium (mg/L)	0.0044	0.0050	0.0044	0.0046	0.0045	0.0052	0.0074	0.0040
Total Sodium (mg/L)	0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5
Total Silver (mg/L)	0.0000	<0.0001	<0.0001	<0.0001	0.0000	<0.0001	<0.0002	<0.0001
Total Silicon (mg/L)	0.24	0.16	0.15	0.12	0.27	0.18	0.24	0.13
Total Selenium (mg/L)	<0.0001	<0.0010	<0.0010	<0.0010	<0.0001	0.0012	<0.0008	<0.0010
Total Potassium (mg/L)	0.3	<0.5	<0.5	<0.5	0.3	<0.5	<0.5	<0.5
Total Phosphorus (mg/L)	0.002	<0.020	0.020	<0.020	0.003	<0.020	0.020	0.040
Total Nickel (mg/L)	0.0003	<0.0001	0.0005	0.0004	0.0003	0.0002	<0.0006	0.0003
Total Molybdenum (mg/L)	0.00002	<0.00005	<0.00005	<0.00005	0.00002	<0.00005	<0.0005	<0.00005
Total Mercury (mg/L)	<0.00001	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.00005	<0.00005
Total Magnesium (mg/L)	0.47	0.54	<0.50	0.19	0.47	0.55	0.83	<0.50
Total Lead (mg/L)	0.00003	<0.00005	<0.00005	<0.00005	0.00002	<0.00005	<0.0001	<0.00005
Total Copper (mg/L)	0.0015	<0.0010	0.0076	<0.0010	0.0016	<0.0010	<0.0010	<0.0010
Total Cobalt (mg/L)	0.00001	<0.00005	0.00006	<0.00005	0.00002	<0.00005	<0.0001	<0.00005
Total Chromium (mg/L)	0.0004	0.0033	0.0014	0.0013	0.0003	0.0034	<0.0009	<0.0005
Total Calcium (mg/L)	1.00	1.04	1.08	0.88	1.02	1.08	1.70	0.87
Total Cadmium (mg/L)	0.00000	0.00003	<0.00005	<0.00005	<0.000002	0.00005	<0.0001	<0.00005
Total Boron (mg/L)	0.020	0.002	<0.001	<0.001	0.029	0.001	<0.010	0.001
Total Beryllium (mg/L)	0.0000	<0.0001	<0.0001	<0.0001	<0.000003	0.0002	<0.0005	<0.0001
Total Barium (mg/L)	0.00161	0.00182	0.00177	0.00163	0.00164	0.00202	<0.005	0.00148
Total Arsenic (mg/L)	0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0004	<0.0002
Total Antimony (mg/L)	0.00001	<0.00005	<0.00005	<0.00005	0.00001	<0.00005	<0.0001	<0.00005
Total Aluminum (mg/L)	0.0217	0.0185	0.0211	0.0283	0.0219	0.0239	0.0120	0.0202
Dissolved Calcium (mg/L)	1.0	0.5	0.7	1.1	1.0	0.5	0.8	0.7
Dissolved Magnesium (mg/L)	0.5	0.4	<0.5	0.4	0.5	0.4	<0.5	<0.5
Dissolved Potassium (mg/L)	0.3	<0.5	<0.5	<0.5	0.3	<0.5	<0.5	<0.5
Dissolved Sodium (mg/L)	0.5	<0.5	<0.5	<0.5	0.4	<0.5	<0.5	<0.5
Dissolved Zinc (mg/L)	0.002	0.003	<0.001	0.004	0.001	0.002	<0.002	<0.001
Dissolved Vanadium (mg/L)	0.0001	0.0003	0.0002	0.0003	0.0001	0.0005	<0.0005	0.0001
Dissolved Uranium (mg/L)	0.00014	0.00012	0.00011	0.00014	0.00014	0.00011	0.00012	0.00011
Dissolved Thallium (mg/L)	0.00001	<0.00005	<0.00005	<0.00005	0.00001	<0.00005	<0.00002	<0.00005
Dissolved Strontium (mg/L)	0.0044	0.0052	0.0044	0.0061	0.0045	0.0052	0.0080	0.0042
Dissolved Silver (mg/L)	0.00000	<0.00005	0.00006	<0.00005	0.00000	<0.00005	<0.00005	<0.00005
Dissolved Silicon (mg/L)	0.23	0.14	0.26	0.14	0.26	0.15	0.23	0.24
Dissolved Selenium (mg/L)	<0.0001	<0.0006	<0.0006	<0.0006	<0.0001	<0.0006	<0.0004	<0.0006
Dissolved Phosphorus (mg/L)	0.002	<0.010		<0.005	0.002	<0.010		
Dissolved Nickel (mg/L)	0.00029	0.00025	0.00025	0.00042	0.00027	0.00025	<0.0001	0.00025
Dissolved Molybdenum (mg/L)	0.00002	<0.00005	<0.00005	0.00006	0.00002	<0.00005	<0.0003	<0.00005
Dissolved Mercury (mg/L)	<0.00001	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.00005	<0.00005
Dissolved Manganese (mg/L)	0.002	<0.010	<0.010	<0.010	0.002	<0.010	<0.010	<0.010
Dissolved Lead (mg/L)	0.00003	<0.00005	<0.00005	0.00006	0.00001	<0.00005	<0.00005	<0.00005
Dissolved Iron (mg/L)	0.01	<0.10	<0.10	<0.10	0.01	<0.10	<0.10	<0.10
Dissolved Copper (mg/L)	0.0015	<0.0001	<0.0001	0.0029	0.0015	<0.0001	<0.0010	<0.0001
Dissolved Cobalt (mg/L)	0.00001	<0.00002	0.00002	<0.00002	0.00002	<0.00002	<0.00005	0.00002
Dissolved Chromium (mg/L)	0.0004	0.0008	<0.0003	<0.0003	0.0003	0.0005	<0.0004	<0.0003
Dissolved Cadmium (mg/L)	0.00000	<0.00002	<0.00005	<0.00005	<0.000002	<0.00002	<0.00005	<0.00005
Dissolved Boron (mg/L)	0.017	0.001	<0.001	<0.001	0.025	<0.001	<0.004	<0.001
Dissolved Beryllium (mg/L)	<0.000003	<0.0001	<0.0001	<0.0001	<0.000003	<0.0001	<0.0001	<0.0001
Dissolved Barium (mg/L)	0.001600	0.002080	0.001560	0.002840	0.001590	0.002060	<0.003	0.001470
Dissolved Arsenic (mg/L)	0.0002	<0.0001	0.0002	0.0001	0.0002	<0.0001	0.0003	0.0002
Dissolved Antimony (mg/L)	0.00001	<0.00005	<0.0001	<0.00005	0.00001	<0.00005	<0.0001	<0.0001
Dissolved Aluminum (mg/L)	0.0198	0.0140	0.0150	0.0190	0.0186	0.0130	0.0140	0.0140

Appendix B2-2 Water chemistry data, 2006 Jericho AEM Program.

Parameter	JER08	JER08	JER08	JER09	JER09	JER09	JER09	JER10
Date	**11/07/2006**	**05/08/2006**	**05/09/2006**	**18/06/2006**	**11/07/2006**	**05/08/2006**	**05/09/2006**	**08/04/2006**
Sulphate (mg/L)	<0.5		1.7	0.9	<0.5		1.6	0.6
Phosphate-Ortho - Phosphorus (mg/L)	<0.20		<0.20	<0.20	<0.20		<0.20	<0.20
Nitrite - Nitrogen (mg/L)	<0.05		<0.05	<0.05	<0.05		<0.05	<0.05
Nitrate - Nitrogen (mg/L)	<0.05		<0.05	<0.05	<0.05		<0.05	<0.05
Total Kjeldahl Nitrogen (mg/L)	0.20		0.20		<0.2		0.20	
Hydroxide as CaCO3 (mg/L)	<1		<1	<1	<1		<1	<1
Fluoride (mg/L)	0.03		0.04	0.03	0.03		0.04	0.05
Chloride (mg/L)	0.3		0.4	0.4	0.3		0.4	0.4
Carbonate (mg/L)	<1		<1	<1	<1		<1	<1
Bicarbonate (mg/L)	11		8	8	9		8	10
Balance (+ions/-ions)	0.59		0.67	0.50	0.64		0.66	0.53
Acidity as CaCO3 (mg/L)	2		<1	3	2		2	2
Carbon (Total Organic) (mg/L)	2.7		2.6	2.6	2.5		2.5	3.0
Ammonia - Nitrogen (mg/L)	N/A	N/A	N/A	0.02	0.01	<0.005	<0.01	<0.1
Carbon (Total Inorganic) (mg/L)	<0.1		1.1	<0.1	<0.1		1.2	<1
Total Iron (mg/L)	<0.10	0.02	<0.10	<0.10	<0.10	0.02	<0.10	<0.10
Total Manganese (mg/L)	<0.01	0.003	<0.01	<0.01	<0.01	0.006	<0.01	<0.01
Total Zinc (mg/L)	0.003	0.004	0.003	<0.001	0.002	0.011	0.003	0.002
Total Vanadium (mg/L)	<0.0005	0.0001	0.0015	<0.0005	<0.0005	0.0001	0.0018	0.0004
Total Uranium (mg/L)	0.00007	0.00013	0.00013	0.00012	0.00008	0.00013	0.00013	0.00018
Total Thallium (mg/L)	<0.00005	0.00001	<0.00005	<0.00005	<0.00005	0.00000	<0.00005	<0.00005
Total Strontium (mg/L)	0.0044	0.0045	0.0048	0.0043	0.0044	0.0047	0.0050	0.0063
Total Sodium (mg/L)	<0.5	0.4	<0.5	<0.5	<0.5	0.5	<0.5	<0.5
Total Silver (mg/L)	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0002
Total Silicon (mg/L)	0.11	0.26	0.19	0.14	0.10	0.27	0.25	0.33
Total Selenium (mg/L)	<0.0010	<0.0001	<0.0010	<0.0010	<0.0010	<0.0001	<0.0010	<0.0008
Total Potassium (mg/L)	<0.5	0.3	<0.5	<0.5	<0.5	0.3	<0.5	<0.5
Total Phosphorus (mg/L)	<0.020	0.004	<0.020	<0.020	<0.020	0.004	<0.020	<0.020
Total Nickel (mg/L)	0.0003	0.0004	0.0004	0.0005	0.0003	0.0003	0.0004	<0.0006
Total Molybdenum (mg/L)	<0.00005	0.00004	<0.00005	<0.00005	<0.00005	0.00003	<0.00005	<0.0005
Total Mercury (mg/L)	<0.00005	<0.00001	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.00005
Total Magnesium (mg/L)	0.20	0.47	0.57	<0.50	0.19	0.48	0.60	0.67
Total Lead (mg/L)	<0.00005	0.00006	<0.00005	<0.00005	<0.00005	0.00019	<0.00005	<0.0001
Total Copper (mg/L)	<0.0010	0.0018	<0.0010	<0.0010	<0.0010	0.0017	<0.0010	<0.0010
Total Cobalt (mg/L)	<0.00005	0.00003	<0.00005	0.00005	<0.00005	0.00004	<0.00005	<0.0001
Total Chromium (mg/L)	0.0008	0.0003	0.0020	0.0012	0.0010	0.0002	0.0022	<0.0009
Total Calcium (mg/L)	0.89	0.99	1.12	0.85	0.86	1.05	1.16	1.29
Total Cadmium (mg/L)	<0.00005	0.00001	<0.00002	<0.00005	<0.00005	0.00003	<0.00002	<0.0001
Total Boron (mg/L)	<0.001	0.034	0.002	0.003	<0.001	0.038	0.002	<0.010
Total Beryllium (mg/L)	<0.0001	0.0000	<0.0001	<0.0001	<0.0001	0.0000	<0.0001	<0.0005
Total Barium (mg/L)	0.00151	0.00159	0.00153	0.00154	0.00145	0.00201	0.00166	<0.005
Total Arsenic (mg/L)	<0.0002	0.0002	0.0003	<0.0002	<0.0002	0.0002	<0.0002	<0.0004
Total Antimony (mg/L)	<0.00005	0.00001	<0.00005	<0.00005	<0.00005	0.00001	<0.00005	<0.0001
Total Aluminum (mg/L)	0.0245	0.0237	0.0164	0.0271	0.0217	0.0205	0.0167	0.0180
Dissolved Calcium (mg/L)	1.0	1.0	1.0	0.6	1.0	1.0	1.1	0.6
Dissolved Magnesium (mg/L)	0.5	0.5	0.5	<0.5	0.4	0.5	0.5	<0.5
Dissolved Potassium (mg/L)	<0.5	0.3	<0.5	<0.5	<0.5	0.3	<0.5	<0.5
Dissolved Sodium (mg/L)	<0.5	0.4	<0.5	<0.5	<0.5	0.5	<0.5	<0.5
Dissolved Zinc (mg/L)	0.002	0.003	0.004	<0.001	0.002	0.010	0.001	<0.002
Dissolved Vanadium (mg/L)	0.0002	0.0001	0.0009	0.0001	0.0002	0.0001	0.0010	<0.0005
Dissolved Uranium (mg/L)	0.00013	0.00012	0.00011	0.00011	0.00012	0.00013	0.00009	0.00013
Dissolved Thallium (mg/L)	<0.00005	0.00001	<0.00005	<0.00005	<0.00005	0.00000	<0.00005	<0.00002
Dissolved Strontium (mg/L)	0.0059	0.0044	0.0050	0.0043	0.0058	0.0047	0.0036	0.0061
Dissolved Silver (mg/L)	<0.00005	0.00005	<0.00005	<0.00005	<0.00005	0.00009	<0.00005	<0.00005
Dissolved Silicon (mg/L)	0.11	0.24	0.19	0.08	0.11	0.27	0.24	0.30
Dissolved Selenium (mg/L)	<0.0006	<0.0001	<0.0006	<0.0006	<0.0006	<0.0001	<0.0006	<0.0004
Dissolved Phosphorus (mg/L)	<0.005	0.002	<0.010		<0.005	0.002	<0.010	
Dissolved Nickel (mg/L)	0.00030	0.00036	0.00031	0.00019	0.00093	0.00026	0.00023	<0.0001
Dissolved Molybdenum (mg/L)	<0.00005	0.00003	<0.00005	<0.00005	<0.00005	0.00003	<0.00005	<0.0003
Dissolved Mercury (mg/L)	<0.00005	<0.00001	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.00005
Dissolved Manganese (mg/L)	<0.010	0.003	<0.010	<0.010	<0.010	0.006	<0.010	<0.010
Dissolved Lead (mg/L)	<0.00005	0.00006	<0.00005	<0.00005	0.00079	0.00019	<0.00005	<0.00005
Dissolved Iron (mg/L)	<0.10	0.01	<0.10	<0.10	<0.10	0.02	<0.10	<0.10
Dissolved Copper (mg/L)	0.0020	0.0018	0.0003	<0.0001	0.0028	0.0017	0.0016	<0.0010
Dissolved Cobalt (mg/L)	<0.00002	0.00002	<0.00002	0.00002	<0.00002	0.00004	<0.00002	<0.00005
Dissolved Chromium (mg/L)	<0.0003	0.0002	0.0009	<0.0003	<0.0003	0.0002	0.0009	<0.0004
Dissolved Cadmium (mg/L)	<0.00005	0.00001	<0.00002	<0.00005	<0.00005	0.00003	<0.00002	<0.00005
Dissolved Boron (mg/L)	<0.001	0.030	<0.001	<0.001	<0.001	0.037	<0.001	<0.004
Dissolved Beryllium (mg/L)	<0.0001	0.0000	<0.0001	<0.0001	<0.0001	<0.000003	<0.0001	<0.0001
Dissolved Barium (mg/L)	0.001820	0.001580	0.001620	0.001520	0.002360	0.002000	0.001410	<0.003
Dissolved Arsenic (mg/L)	0.0002	0.0002	0.0001	0.0003	0.0002	0.0002	0.0002	0.0002
Dissolved Antimony (mg/L)	<0.00005	0.00001	<0.00005	<0.0001	<0.00005	0.00001	<0.00005	<0.0001
Dissolved Aluminum (mg/L)	0.0150	0.0214	0.0140	0.0130	0.0140	0.0183	0.0100	0.0160

Appendix B2-2 Water chemistry data, 2006 Jericho AEM Program.

Parameter	JER10	JER10	JER10	JER10	JER11	JER11	JER11	JER11
Date	**27/06/2006**	**11/07/2006**	**03/08/2006**	**05/09/2006**	**10/04/2006**	**27/06/2006**	**11/07/2006**	**04/08/2006**
Sulphate (mg/L)	1.3	<0.5		1.5	<0.5	0.9	9.0	
Phosphate-Ortho - Phosphorus (mg/L)	<0.20	<0.20		<0.20	<0.20	<0.20	<0.5	
Nitrite - Nitrogen (mg/L)	<0.05	<0.05		<0.05	<0.05	<0.05	6.86	
Nitrate - Nitrogen (mg/L)	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	
Total Kjeldahl Nitrogen (mg/L)		<0.2		0.20				
Hydroxide as CaCO3 (mg/L)	<1	<1		<1	<1	<1	<0.05	
Fluoride (mg/L)	0.05	0.03		0.03	0.05	0.04	<1	
Chloride (mg/L)	0.2	0.2		0.3	0.4	0.4	14.0	
Carbonate (mg/L)	<1	<1		<1	<1	<1	0	
Bicarbonate (mg/L)	8	9		7	13	9	<1	
Balance (+ions/-ions)	0.64	0.66		0.63	0.35	0.63	11.00	
Acidity as CaCO3 (mg/L)	3	1		1	3	2	1	
Carbon (Total Organic) (mg/L)	2.9	2.6		2.4	3.0	2.6	<0.2	
Ammonia - Nitrogen (mg/L)	0.02	0.01	<0.005	0.01	<0.1	0.01	2.50	<0.005
Carbon (Total Inorganic) (mg/L)	<0.1	<0.1		1.0	<1	0.3	0.0	
Total Iron (mg/L)	<0.10	<0.10	0.02	<0.10	<0.10	<0.10	<0.10	0.01
Total Manganese (mg/L)	<0.01	<0.01	0.002	<0.01	<0.01	<0.01	<0.010	0.002
Total Zinc (mg/L)	0.003	0.003	0.008	0.013	0.021	0.002	0.003	0.004
Total Vanadium (mg/L)	<0.0005	<0.0005	0.0001	0.0017	0.0004	<0.0005	0.0002	0.0001
Total Uranium (mg/L)	0.00014	0.00008	0.00014	0.00016	0.00015	0.00012	0.00011	0.00012
Total Thallium (mg/L)	<0.00005	<0.00005	0.00000	<0.00005	<0.00005	<0.00005	<0.00005	0.00000
Total Strontium (mg/L)	0.0041	0.0044	0.0044	0.0045	0.0069	0.0044	0.0064	0.0045
Total Sodium (mg/L)	<0.5	<0.5	0.4	<0.5	<0.5	<0.5	<0.5	0.5
Total Silver (mg/L)	<0.0001	<0.0001	0.0003	<0.0001	<0.0002	<0.0001	<0.00005	0.0000
Total Silicon (mg/L)	0.13	0.14	0.27	0.22	0.32	0.13	0.16	0.29
Total Selenium (mg/L)	<0.0010	<0.0010	<0.0001	0.0011	<0.0008	<0.0010	<0.0006	<0.0001
Total Potassium (mg/L)	<0.5	<0.5	0.3	<0.5	<0.5	<0.5	<0.5	0.3
Total Phosphorus (mg/L)	<0.020	<0.020	0.002	<0.020	0.060	<0.020	<0.005	0.003
Total Nickel (mg/L)	0.0002	0.0003	0.0003	0.0004	<0.0006	0.0001	0.0005	0.0002
Total Molybdenum (mg/L)	<0.00005	<0.00005	0.00003	0.00006	<0.0005	<0.00005	<0.00005	0.00003
Total Mercury (mg/L)	<0.00005	<0.00005	<0.00001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00001
Total Magnesium (mg/L)	<0.50	0.16	0.43	0.52	0.74	<0.50	0.40	0.44
Total Lead (mg/L)	<0.00005	<0.00005	0.00025	0.00024	<0.0001	0.00005	0.00006	0.00003
Total Copper (mg/L)	<0.0010	<0.0010	0.0020	<0.0010	<0.0010	<0.0010	0.0034	0.0017
Total Cobalt (mg/L)	<0.00005	<0.00005	0.00003	<0.00005	<0.0001	<0.00005	<0.00002	0.00002
Total Chromium (mg/L)	<0.0005	0.0011	0.0002	0.0015	<0.0009	<0.0005	<0.0003	0.0002
Total Calcium (mg/L)	0.91	0.77	0.90	0.99	1.66	1.17	1.10	1.12
Total Cadmium (mg/L)	<0.00005	<0.00005	0.00002	<0.00002	<0.0001	<0.00005	<0.00005	0.00001
Total Boron (mg/L)	<0.001	<0.001	0.044	0.001	<0.010	<0.001	<0.001	0.045
Total Beryllium (mg/L)	<0.0001	<0.0001	0.0000	<0.0001	<0.0005	<0.0001	<0.0001	0.0000
Total Barium (mg/L)	0.00190	0.00156	0.00184	0.00162	<0.005	0.00164	0.01150	0.00135
Total Arsenic (mg/L)	0.0002	<0.0002	0.0002	0.0003	<0.0004	<0.0002	0.0002	0.0001
Total Antimony (mg/L)	<0.00005	<0.00005	0.00001	0.00007	<0.0001	<0.00005	<0.00005	0.00001
Total Aluminum (mg/L)	0.0331	0.0284	0.0259	0.0198	0.0100	0.0231	0.0110	0.0199
Dissolved Calcium (mg/L)	1.0	0.9	0.9	0.9	0.6	1.2	<0.001	1.1
Dissolved Magnesium (mg/L)	<0.5	0.4	0.4	0.4	<0.5	<0.5	<0.005	0.4
Dissolved Potassium (mg/L)	<0.5	<0.5	0.3	<0.5	<0.5	<0.5	<0.00005	0.3
Dissolved Sodium (mg/L)	<0.5	<0.5	0.4	<0.5	<0.5	<0.5	<0.00005	0.5
Dissolved Zinc (mg/L)	<0.001	0.002	0.006	0.004	<0.002	<0.001	<0.0005	0.004
Dissolved Vanadium (mg/L)	<0.0001	0.0002	0.0001	0.0009	<0.0005	<0.0001	0.0001	0.0001
Dissolved Uranium (mg/L)	0.00011	0.00012	0.00014	0.00015	0.00010	0.00011	<0.00005	0.00013
Dissolved Thallium (mg/L)	<0.00005	<0.00005	0.00000	<0.00005	<0.00002	<0.00005	<0.0005	0.00000
Dissolved Strontium (mg/L)	0.0037	0.0062	0.0043	0.0033	0.0064	0.0041	<0.0001	0.0044
Dissolved Silver (mg/L)	<0.00005	<0.00005	0.00033	<0.00005	<0.00005	<0.00005	3.00000	0.00001
Dissolved Silicon (mg/L)	0.15	0.14	0.26	0.21	0.30	0.18	<0.0010	0.28
Dissolved Selenium (mg/L)	<0.0006	<0.0006	<0.0001	<0.0006	<0.0004	<0.0006	<0.00005	<0.0001
Dissolved Phosphorus (mg/L)		<0.005	0.001	<0.010			<0.00005	0.001
Dissolved Nickel (mg/L)	0.00016	0.00103	0.00028	0.00033	<0.0001	<0.00005	<0.5	0.00019
Dissolved Molybdenum (mg/L)	<0.00005	<0.00005	0.00003	<0.00005	<0.0003	<0.00005	<0.01	0.00002
Dissolved Mercury (mg/L)	<0.00005	<0.00005	<0.00001	<0.00005	<0.00005	<0.00005	<0.10	<0.00001
Dissolved Manganese (mg/L)	<0.010	<0.010	0.002	<0.010	<0.010	<0.010	0.190	0.002
Dissolved Lead (mg/L)	<0.00005	<0.00005	0.00023	<0.00005	<0.00005	<0.00005	0.00020	0.00003
Dissolved Iron (mg/L)	<0.10	<0.10	0.02	<0.10	<0.10	<0.10	<0.0010	0.01
Dissolved Copper (mg/L)	0.0003	0.0023	0.0020	0.0007	<0.0010	<0.0001	0.0008	0.0016
Dissolved Cobalt (mg/L)	<0.00002	<0.00002	0.00002	<0.00002	<0.00005	<0.00002	<0.00005	0.00002
Dissolved Chromium (mg/L)	<0.0003	<0.0003	0.0002	0.0006	<0.0004	<0.0003	<0.00005	0.0002
Dissolved Cadmium (mg/L)	<0.00005	<0.00005	0.00002	<0.00002	<0.00005	<0.00005	1.00000	0.00000
Dissolved Boron (mg/L)	<0.001	<0.001	0.038	<0.001	<0.004	<0.001		0.045
Dissolved Beryllium (mg/L)	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	<0.0001	0.0014	<0.000003
Dissolved Barium (mg/L)	<0.00005	0.001870	0.001750	0.001780	<0.003	0.000760	<0.0002	0.001350
Dissolved Arsenic (mg/L)	<0.0001	0.0002	0.0002	0.0002	0.0002	<0.0001	0.0185	0.0001
Dissolved Antimony (mg/L)	<0.00005	<0.00005	0.00001	<0.00005	<0.0001	<0.00005	<0.020	0.00000
Dissolved Aluminum (mg/L)	0.0200	0.0280	0.0232	0.0160	0.0090	0.0100	<0.0001	0.0146

Appendix B2-2 Water chemistry data, 2006 Jericho AEM Program.

Parameter	JER11	JER12	JER12	JER12	JER12	JER13	JER13	JER13	JER13
Date	**05/09/2006**	**27/06/2006**	**11/07/2006**	**06/08/2006**	**12/09/2006**	**10/04/2006**	**21/06/2006**	**11/07/2006**	**06/08/2006**
Sulphate (mg/L)	1.3	1.1	1.2		3.6	0.6	1.6	0.7	
Phosphate-Ortho - Phosphorus (mg/L)	<0.20	<0.20	<0.20		<0.20	<0.20	<0.20	<0.20	
Nitrite - Nitrogen (mg/L)	<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	
Nitrate - Nitrogen (mg/L)	<0.05	<0.05	0.91		1.22	0.30	0.30	0.61	
Total Kjeldahl Nitrogen (mg/L)	<0.2		0.20					0.20	
Hydroxide as CaCO3 (mg/L)	<1	<1	<1		<1	<1	<1	<1	
Fluoride (mg/L)	0.04	0.04	0.04		0.04	0.04	0.03	0.03	
Chloride (mg/L)	0.4	0.2	3.0		4.0	1.6	1.6	2.6	
Carbonate (mg/L)	<1	<1	<1		<1	<1	<1	<1	
Bicarbonate (mg/L)	9	10	22		25	17	13	12	
Balance (+ions/-ions)	0.62	0.65	0.90		0.99	0.61	0.45	0.85	
Acidity as CaCO3 (mg/L)	<1	2	2		2	3	4	3	
Carbon (Total Organic) (mg/L)	2.3	2.8	3.5		4.2	4.0	3.5	3.7	
Ammonia - Nitrogen (mg/L)	0.01	0.02	0.01	0.01	0.02	<0.1	0.01	0.02	0.01
Carbon (Total Inorganic) (mg/L)	1.2	0.2	2.1		4.3	1.0	0.4	0.4	
Total Iron (mg/L)	<0.10	<0.10	<0.10	0.02	0.12	<0.10	<0.10	<0.10	0.03
Total Manganese (mg/L)	<0.01	<0.01	<0.01	0.007	0.020	<0.01	<0.01	<0.01	0.004
Total Zinc (mg/L)	0.004	0.003	0.005	0.005	0.007	<0.002	0.006	0.003	0.006
Total Vanadium (mg/L)	0.0016	<0.0005	<0.0005	0.0003	<0.0005	0.0003	<0.0005	<0.0005	0.0002
Total Uranium (mg/L)	0.00018	0.00016	0.00139	0.00144	0.00165	0.00072	0.00058	0.00046	0.00049
Total Thallium (mg/L)	<0.00005	<0.00005	<0.00005	0.00002	<0.00005	<0.00005	<0.00005	<0.00005	0.00001
Total Strontium (mg/L)	0.0046	0.0047	0.0216	0.0302	0.0239	0.0100	0.0080	0.0097	0.0103
Total Sodium (mg/L)	<0.5	<0.5	1.4	2.2	1.8	0.6	<0.5	1.0	1.7
Total Silver (mg/L)	<0.0001	<0.0001	<0.0001	0.0000	<0.0001	<0.0002	<0.0001	<0.0001	0.0000
Total Silicon (mg/L)	0.25	0.13	0.61	1.43	1.43	0.90	0.48	0.47	0.73
Total Selenium (mg/L)	<0.0010	<0.0010	<0.0010	0.0002	<0.0010	<0.0008	<0.0010	<0.0010	0.0001
Total Potassium (mg/L)	<0.5	<0.5	<0.5	1.0	0.6	<0.5	<0.5	<0.5	0.4
Total Phosphorus (mg/L)	<0.020	<0.020	<0.020	0.003	<0.020	0.020	0.030	<0.020	0.003
Total Nickel (mg/L)	0.0003	0.0004	0.0012	0.0009	0.0014	<0.0006	0.0011	0.0007	0.0004
Total Molybdenum (mg/L)	0.00038	<0.00005	0.00011	0.00041	0.00017	<0.0005	0.00006	<0.00005	0.00006
Total Mercury (mg/L)	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00001
Total Magnesium (mg/L)	0.53	<0.50	1.45	2.22	2.98	1.46	0.96	0.96	1.38
Total Lead (mg/L)	0.00010	0.00008	0.00009	0.00010	0.00014	<0.0001	0.00015	<0.00005	0.00006
Total Copper (mg/L)	<0.0010	0.0012	0.0016	0.0027	0.0031	<0.0010	0.0020	0.0012	0.0022
Total Cobalt (mg/L)	<0.00005	<0.00005	<0.00005	0.00008	0.00013	<0.0001	<0.00005	<0.00005	0.00004
Total Chromium (mg/L)	0.0019	<0.0005	0.0014	0.0005	<0.0005	<0.0009	0.0015	0.0013	0.0004
Total Calcium (mg/L)	1.21	1.12	4.64	7.63	7.07	2.97	1.90	2.35	3.04
Total Cadmium (mg/L)	<0.00002	<0.00005	<0.00005	0.00000	<0.00002	<0.0001	<0.00005	<0.00005	0.00000
Total Boron (mg/L)	0.002	<0.001	0.003	0.067	0.002	<0.010	0.004	0.002	0.109
Total Beryllium (mg/L)	<0.0001	<0.0001	<0.0001	0.0000	<0.0001	<0.0005	<0.0001	<0.0001	0.0000
Total Barium (mg/L)	0.00118	0.00210	0.00890	0.01260	0.01050	<0.005	0.00399	0.00365	0.00376
Total Arsenic (mg/L)	0.0003	<0.0002	0.0003	0.0003	0.0003	<0.0004	<0.0002	<0.0002	0.0002
Total Antimony (mg/L)	0.00094	<0.00005	<0.00005	0.00008	<0.00005	<0.0001	<0.00005	<0.00005	0.00003
Total Aluminum (mg/L)	0.0136	0.0372	0.0770	0.0428	0.0429	0.0250	0.0949	0.0414	0.0293
Dissolved Calcium (mg/L)	1.1	1.1	5.1	7.6	7.2	1.7	1.2	2.6	3.0
Dissolved Magnesium (mg/L)	0.5	0.5	1.8	2.2	2.9	1.1	0.7	1.3	1.3
Dissolved Potassium (mg/L)	<0.5	<0.5	0.5	1.0	0.5	<0.5	<0.5	<0.5	0.4
Dissolved Sodium (mg/L)	<0.5	<0.5	1.4	2.2	1.6	0.8	0.7	1.0	1.6
Dissolved Zinc (mg/L)	0.002	<0.001	0.004	0.003	0.003	<0.002	<0.001	0.003	0.005
Dissolved Vanadium (mg/L)	0.0009	0.0001	0.0003	0.0003	0.0004	<0.0005	<0.0001	0.0003	0.0002
Dissolved Uranium (mg/L)	0.00023	<0.00005	0.00118	0.00144	0.00130	0.00061	0.00052	0.00044	0.00048
Dissolved Thallium (mg/L)	<0.00005	<0.00005	<0.00005	0.00001	<0.00005	<0.00002	<0.00005	<0.00005	0.00001
Dissolved Strontium (mg/L)	0.0040	0.0046	0.0243	0.0300	0.0218	0.0095	0.0074	0.0121	0.0103
Dissolved Silver (mg/L)	<0.00005	<0.00005	<0.00005	0.00001	<0.00005	<0.00005	<0.00005	<0.00005	0.00001
Dissolved Silicon (mg/L)	0.25	0.15	0.56	1.40	1.38	0.97	0.47	0.51	0.73
Dissolved Selenium (mg/L)	<0.0006	<0.0006	<0.0006	<0.0001	<0.0006	<0.0004	<0.0006	<0.0006	0.0001
Dissolved Phosphorus (mg/L)	<0.010		<0.005	0.002	0.020			<0.005	0.002
Dissolved Nickel (mg/L)	0.00020	0.00006	0.00129	0.00092	0.00100	<0.0001	0.00062	0.00430	0.00038
Dissolved Molybdenum (mg/L)	<0.00005	<0.00005	0.00031	0.00041	<0.00005	<0.0003	0.00007	0.00021	0.00006
Dissolved Mercury (mg/L)	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00001
Dissolved Manganese (mg/L)	<0.010	<0.010	<0.010	0.007	0.016	<0.010	<0.010	<0.010	0.004
Dissolved Lead (mg/L)	<0.00005	0.00010	0.00006	0.00007	<0.00005	<0.00005	<0.00005	0.00009	0.00006
Dissolved Iron (mg/L)	<0.10	<0.10	<0.10	0.02	<0.10	<0.10	<0.10	<0.10	0.03
Dissolved Copper (mg/L)	0.0001	0.0002	0.0043	0.0025	0.0031	<0.0010	0.0003	0.0034	0.0022
Dissolved Cobalt (mg/L)	<0.00002	<0.00002	0.00005	0.00008	0.00005	<0.00005	<0.00002	0.00008	0.00004
Dissolved Chromium (mg/L)	<0.0003	0.0005	<0.0003	0.0005	0.0005	<0.0004	<0.0003	0.0031	0.0004
Dissolved Cadmium (mg/L)	<0.00002	<0.00005	<0.00005	0.00000	<0.00002	<0.00005	<0.00005	<0.00005	0.00000
Dissolved Boron (mg/L)	<0.001	<0.001	0.003	0.051	0.002	<0.004	<0.001	0.002	0.090
Dissolved Beryllium (mg/L)	<0.0001	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	<0.0001	<0.0001	0.0000
Dissolved Barium (mg/L)	0.001210	0.001750	0.008920	0.012500	0.009410	<0.003	0.004870	0.003720	0.003750
Dissolved Arsenic (mg/L)	0.0002	0.0001	0.0004	0.0003	0.0003	0.0002	0.0002	0.0002	0.0002
Dissolved Antimony (mg/L)	<0.00005	<0.00005	<0.00005	0.00008	<0.00005	<0.0001	<0.0001	<0.00005	0.00003
Dissolved Aluminum (mg/L)	0.0090	0.0240	0.0210	0.0372	0.0080	0.0250	0.0600	0.0260	0.0250

Appendix B2-2 Water chemistry data, 2006 Jericho AEM Program.

Parameter	JER13	JER14	JER14	JER14	JER14	JER15	JER15	JER16	JER16
Date	**05/09/2006**	**21/06/2006**	**11/07/2006**	**06/08/2006**	**05/09/2006**	**21/06/2006**	**11/07/2006**	**11/07/2006**	**13/08/2006**
Sulphate (mg/L)	2.6	1.1	<0.5		1.0	0.9	<0.5	<0.5	1.1
Phosphate-Ortho - Phosphorus (mg/L)	<0.20	<0.20	<0.20		<0.20	<0.20	<0.20	<0.20	<0.20
Nitrite - Nitrogen (mg/L)	<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05
Nitrate - Nitrogen (mg/L)	0.78	<0.05	<0.05		<0.05	<0.05	<0.05	0.10	0.10
Total Kjeldahl Nitrogen (mg/L)	0.30		0.40		0.40		0.20	0.20	
Hydroxide as CaCO3 (mg/L)	<1	<1	<1		<1	<1	<1	<1	<1
Fluoride (mg/L)	0.03	0.02	0.03		0.03	0.02	0.03	0.02	0.05
Chloride (mg/L)	3.3	0.5	0.3		0.4	0.5	0.3	0.4	0.5
Carbonate (mg/L)	<1	<1	<1		<1	<1	<1	<1	<1
Bicarbonate (mg/L)	16	11	13		14	12	14	12	9
Balance (+ions/-ions)	0.88	0.38	0.73		0.80	0.33	0.72	0.73	0.51
Acidity as CaCO3 (mg/L)	2	6	2		2	5	3	2	2
Carbon (Total Organic) (mg/L)	3.6	4.3	4.9		4.7	3.7	3.9	3.1	3.4
Ammonia - Nitrogen (mg/L)	0.01	0.01	0.01	0.01	0.01	0.03	0.01	0.03	0.01
Carbon (Total Inorganic) (mg/L)	2.4	0.2	0.5		2.2	0.4	0.7	0.3	1.4
Total Iron (mg/L)	<0.10	0.11	0.12	0.16	0.17	<0.10	<0.10	<0.10	<0.10
Total Manganese (mg/L)	<0.01	0.010	<0.01	0.005	<0.01	<0.01	<0.01	<0.01	<0.01
Total Zinc (mg/L)	0.003	0.002	0.008	0.004	0.002	0.002	0.005	0.010	0.002
Total Vanadium (mg/L)	0.0016	<0.0005	<0.0005	0.0002	0.0017	<0.0005	<0.0005	<0.0005	<0.0005
Total Uranium (mg/L)	0.00078	0.00014	0.00019	0.00021	0.00023	0.00019	0.00016	<0.00005	0.00007
Total Thallium (mg/L)	<0.00005	<0.00005	<0.00005	0.00000	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Total Strontium (mg/L)	0.0120	0.0033	0.0048	0.0048	0.0058	0.0037	0.0052	0.0043	0.0038
Total Sodium (mg/L)	1.1	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Silver (mg/L)	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Silicon (mg/L)	0.89	0.18	0.25	0.47	0.66	0.20	0.27	0.20	0.23
Total Selenium (mg/L)	<0.0010	<0.0010	<0.0010	<0.0001	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Total Potassium (mg/L)	<0.5	<0.5	<0.5	0.3	<0.5	<0.5	<0.5	<0.5	<0.5
Total Phosphorus (mg/L)	<0.020	0.030	<0.020	0.005	<0.020	0.040	0.027	<0.020	<0.020
Total Nickel (mg/L)	0.0007	0.0008	0.0005	0.0004	0.0008	0.0003	0.0004	0.0004	0.0003
Total Molybdenum (mg/L)	0.00006	<0.00005	<0.00005	0.00004	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Total Mercury (mg/L)	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Total Magnesium (mg/L)	2.11	<0.50	0.33	0.66	1.01	<0.50	0.37	0.35	0.69
Total Lead (mg/L)	0.00010	<0.00005	<0.00005	0.00008	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Total Copper (mg/L)	0.0011	<0.0010	0.0053	0.0020	0.0015	0.0013	<0.0010	<0.0010	0.0012
Total Cobalt (mg/L)	<0.00005	<0.00005	<0.00005	0.00004	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Total Chromium (mg/L)	0.0045	<0.0005	0.0012	0.0002	0.0024	<0.0005	0.0008	0.0010	0.0013
Total Calcium (mg/L)	3.99	1.22	1.49	1.84	2.48	1.28	1.67	1.35	1.51
Total Cadmium (mg/L)	<0.00002	<0.00005	<0.00005	0.00001	<0.00002	<0.00005	<0.00005	<0.00005	<0.00002
Total Boron (mg/L)	0.003	<0.001	<0.001	0.112	0.001	0.002	<0.001	<0.001	<0.001
Total Beryllium (mg/L)	<0.0001	<0.0001	<0.0001	0.0000	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Total Barium (mg/L)	0.00399	0.00176	0.00206	0.00203	0.00212	0.00209	0.00296	0.00168	0.00152
Total Arsenic (mg/L)	0.0004	<0.0002	<0.0002	0.0002	0.0004	<0.0002	<0.0002	<0.0002	<0.0002
Total Antimony (mg/L)	<0.00005	<0.00005	<0.00005	0.00001	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
Total Aluminum (mg/L)	0.0240	0.0417	0.0472	0.0324	0.0252	0.0491	0.0363	0.0355	0.0295
Dissolved Calcium (mg/L)	3.6	0.7	1.7	1.8	2.3	0.8	1.9	1.5	0.9
Dissolved Magnesium (mg/L)	1.9	<0.5	0.6	0.6	0.9	<0.5	0.6	0.6	0.4
Dissolved Potassium (mg/L)	<0.5	<0.5	<0.5	0.3	<0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Sodium (mg/L)	1.5	<0.5	<0.5	0.5	0.5	<0.5	<0.5	<0.5	<0.5
Dissolved Zinc (mg/L)	0.003	<0.001	0.006	0.003	0.002	<0.001	0.007	0.008	
Dissolved Vanadium (mg/L)	0.0013	0.0001	0.0004	0.0002	0.0014	0.0001	0.0003	0.0003	
Dissolved Uranium (mg/L)	0.00062	0.00016	0.00022	0.00021	0.00019	0.00022	0.00020	0.00008	
Dissolved Thallium (mg/L)	<0.00005	<0.00005	<0.00005	0.00000	<0.00005	<0.00005	<0.00005	<0.00005	
Dissolved Strontium (mg/L)	0.0119	0.0041	0.0078	0.0047	0.0051	0.0041	0.0075	0.0063	
Dissolved Silver (mg/L)	<0.00005	<0.00005	<0.00005	0.00007	<0.00005	<0.00005	<0.00005	<0.00005	
Dissolved Silicon (mg/L)	0.86	0.24	0.27	0.42	0.63	0.26	0.30	0.22	
Dissolved Selenium (mg/L)	<0.0006	<0.0006	<0.0006	<0.0001	<0.0006	<0.0006	<0.0006	<0.0006	
Dissolved Phosphorus (mg/L)	<0.010		<0.005	0.002	<0.010		<0.005	<0.005	
Dissolved Nickel (mg/L)	0.00064	0.00020	0.00087	0.00035	0.00029	0.00013	0.00063	0.00080	
Dissolved Molybdenum (mg/L)	<0.00005	0.00005	0.00008	0.00004	<0.00005	<0.00005	0.00006	0.00005	
Dissolved Mercury (mg/L)	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.00005	<0.00005	<0.00005	
Dissolved Manganese (mg/L)	<0.010	<0.010	<0.010	0.005	<0.010	<0.010	<0.010	<0.010	
Dissolved Lead (mg/L)	0.00006	<0.00005	0.00007	0.00007	<0.00005	<0.00005	<0.00005	0.00006	
Dissolved Iron (mg/L)	<0.10	<0.10	<0.10	0.15	0.14	<0.10	<0.10	<0.10	
Dissolved Copper (mg/L)	0.0014	0.0011	0.0050	0.0019	0.0007	0.0001	0.0048	0.0031	
Dissolved Cobalt (mg/L)	<0.00002	<0.00002	0.00002	0.00004	<0.00002	<0.00002	<0.00002	<0.00002	
Dissolved Chromium (mg/L)	0.0034	<0.0003	<0.0003	0.0002	0.0008	<0.0003	<0.0003	<0.0003	
Dissolved Cadmium (mg/L)	<0.00002	<0.00005	<0.00005	0.00001	<0.00002	<0.00005	<0.00005	<0.00005	
Dissolved Boron (mg/L)	<0.001	<0.001	<0.001	0.111	<0.001	<0.001	<0.001	<0.001	
Dissolved Beryllium (mg/L)	<0.0001	<0.0001	<0.0001	<0.000003	<0.0001	<0.0001	<0.0001	<0.0001	
Dissolved Barium (mg/L)	0.001990	0.001920	0.002740	0.001920	0.001460	0.004010	0.003510	0.002170	
Dissolved Arsenic (mg/L)	<0.0001	0.0001	0.0002	0.0002	0.0002	<0.0001	0.0002	0.0002	
Dissolved Antimony (mg/L)	<0.00005	<0.0001	<0.00005	0.00001	<0.00005	<0.0001	<0.00005	<0.00005	
Dissolved Aluminum (mg/L)	0.0180	0.0260	0.0320	0.0273	0.0220	0.0320	0.0310	0.0260	

Appendix B2-2 Water chemistry data, 2006 Jericho AEM Program.

Parameter	JER17	JER18	JER19	JER19	JER20	JER20
Date	**11/07/2006**	**11/07/2006**	**11/07/2006**	**07/08/2006**	**11/07/2006**	**06/08/2006**
Sulphate (mg/L)	<0.5	<0.5	3.7		1.0	
Phosphate-Ortho - Phosphorus (mg/L)	<0.20	<0.20	<0.20		<0.20	
Nitrite - Nitrogen (mg/L)	<0.05	<0.05	<0.05		<0.05	
Nitrate - Nitrogen (mg/L)	0.08	<0.05	0.86		0.31	
Total Kjeldahl Nitrogen (mg/L)	<0.2	0.20				
Hydroxide as CaCO3 (mg/L)	<1	<1	<1		<1	
Fluoride (mg/L)	0.02	0.02	0.04		0.04	
Chloride (mg/L)	0.3	0.4	3.3		3.0	
Carbonate (mg/L)	<1	<1	<1		<1	
Bicarbonate (mg/L)	12	14	22		14	
Balance (+ions/-ions)	0.75	0.69	0.80		0.77	
Acidity as CaCO3 (mg/L)	1	3	1		2	
Carbon (Total Organic) (mg/L)	3.3	3.0	3.5		3.5	
Ammonia - Nitrogen (mg/L)	0.02	0.02	0.02	<0.005	0.01	0.01
Carbon (Total Inorganic) (mg/L)	0.4	0.5	2.1		0.7	
Total Iron (mg/L)	<0.10	<0.10	0.17	0.02	<0.10	0.03
Total Manganese (mg/L)	<0.01	<0.01	<0.01	0.002	<0.01	0.003
Total Zinc (mg/L)	0.003	0.005	0.005	0.005	0.002	0.004
Total Vanadium (mg/L)	<0.0005	<0.0005	0.0005	0.0001	<0.0005	0.0001
Total Uranium (mg/L)	<0.00005	0.00005	0.00113	0.00014	0.00007	0.00014
Total Thallium (mg/L)	<0.00005	<0.00005	<0.00005	<0.0000003	<0.00005	<0.0000003
Total Strontium (mg/L)	0.0046	0.0036	0.0234	0.0046	0.0082	0.0049
Total Sodium (mg/L)	<0.5	<0.5	1.4	0.4	1.6	0.5
Total Silver (mg/L)	<0.0001	<0.0001	<0.0001	0.0000	<0.0001	0.0000
Total Silicon (mg/L)	0.19	0.20	0.67	0.14	0.48	0.20
Total Selenium (mg/L)	<0.0010	<0.0010	<0.0010	<0.0001	<0.0010	0.0001
Total Potassium (mg/L)	<0.5	<0.5	0.5	0.3	<0.5	0.3
Total Phosphorus (mg/L)	<0.020	<0.020	<0.020	0.003	<0.020	0.003
Total Nickel (mg/L)	0.0004	0.0003	0.0013	0.0003	0.0005	0.0003
Total Molybdenum (mg/L)	<0.00005	<0.00005	0.00011	0.00002	<0.00005	0.00003
Total Mercury (mg/L)	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.00001
Total Magnesium (mg/L)	0.39	0.34	1.64	0.46	0.78	0.47
Total Lead (mg/L)	<0.00005	<0.00005	0.00014	0.00002	<0.00005	0.00005
Total Copper (mg/L)	0.0016	<0.0010	0.0018	0.0018	0.0012	0.0015
Total Cobalt (mg/L)	<0.00005	<0.00005	0.00010	0.00002	<0.00005	0.00003
Total Chromium (mg/L)	0.0010	0.0011	0.0013	0.0001	0.0015	0.0002
Total Calcium (mg/L)	1.42	1.41	5.16	1.12	2.00	1.12
Total Cadmium (mg/L)	<0.00005	<0.00005	<0.00005	0.00000	<0.00005	0.00001
Total Boron (mg/L)	0.001	<0.001	0.003	0.020	0.002	0.017
Total Beryllium (mg/L)	<0.0001	<0.0001	<0.0001	<0.000003	<0.0001	0.0000
Total Barium (mg/L)	0.00149	0.00199	0.01070	0.00172	0.00343	0.00185
Total Arsenic (mg/L)	<0.0002	<0.0002	0.0003	0.0002	0.0002	0.0002
Total Antimony (mg/L)	<0.00005	<0.00005	<0.00005	0.00001	<0.00005	0.00001
Total Aluminum (mg/L)	0.0433	0.0373	0.1670	0.0213	0.0411	0.0397
Dissolved Calcium (mg/L)	1.5	1.6	5.0	1.1	2.3	1.1
Dissolved Magnesium (mg/L)	0.7	0.6	1.8	0.4	1.1	0.5
Dissolved Potassium (mg/L)	<0.5	<0.5	<0.5	0.3	<0.5	0.3
Dissolved Sodium (mg/L)	<0.5	<0.5	1.4	0.4	1.6	0.5
Dissolved Zinc (mg/L)	0.003	0.002	0.005	0.003	0.007	0.004
Dissolved Vanadium (mg/L)	0.0003	0.0003	0.0003	0.0001	0.0003	0.0001
Dissolved Uranium (mg/L)	0.00006	0.00010	0.00105	0.00014	0.00011	0.00013
Dissolved Thallium (mg/L)	<0.00005	<0.00005	<0.00005	<0.0000006	<0.00005	<0.00005
Dissolved Strontium (mg/L)	0.0060	0.0054	0.0243	0.0046	0.0099	0.0048
Dissolved Silver (mg/L)	<0.00005	<0.00005	<0.00005	0.00000	<0.00005	0.00000
Dissolved Silicon (mg/L)	0.21	0.22	0.49	0.12	0.53	0.14
Dissolved Selenium (mg/L)	<0.0006	<0.0006	<0.0006	<0.0001	<0.0006	0.0001
Dissolved Phosphorus (mg/L)	<0.005	<0.005	<0.005	0.002	<0.005	0.001
Dissolved Nickel (mg/L)	0.00047	0.00046	0.00110	0.00029	0.00074	0.00029
Dissolved Molybdenum (mg/L)	<0.00005	0.00005	0.00029	0.00002	0.00007	0.00003
Dissolved Mercury (mg/L)	<0.00005	<0.00005	<0.00005	<0.00001	<0.00005	<0.00001
Dissolved Manganese (mg/L)	<0.010	<0.010	<0.010	0.002	<0.010	0.003
Dissolved Lead (mg/L)	<0.00005	<0.00005	0.00008	0.00001	<0.00005	0.00004
Dissolved Iron (mg/L)	<0.10	<0.10	<0.10	0.01	<0.10	0.03
Dissolved Copper (mg/L)	0.0032	0.0033	0.0053	0.0017	0.0040	0.0014
Dissolved Cobalt (mg/L)	<0.00002	<0.00002	0.00006	0.00002	0.00006	0.00003
Dissolved Chromium (mg/L)	<0.0003	<0.0003	<0.0003	0.0001	<0.0003	0.0002
Dissolved Cadmium (mg/L)	<0.00005	<0.00005	<0.00005	0.00000	<0.00005	0.00001
Dissolved Boron (mg/L)	<0.001	<0.001	0.003	0.020	0.001	0.016
Dissolved Beryllium (mg/L)	<0.0001	<0.0001	<0.0001	<0.000003	<0.0001	<0.000003
Dissolved Barium (mg/L)	0.002270	0.010400	0.008910	0.001630	0.003580	0.001680
Dissolved Arsenic (mg/L)	0.0002	0.0002	0.0003	0.0001	0.0003	0.0002
Dissolved Antimony (mg/L)	<0.00005	<0.00005	<0.00005	0.00001	<0.00005	0.00001
Dissolved Aluminum (mg/L)	0.0280	0.0230	0.0220	0.0177	0.0560	0.0197

Appendix B3. Water chemistry replicate - split laboratory analytical precision, 2006 Jericho AEM Program.

Station Label	**JER12**		
Station Name	**Stream C1 Upstream of Carat Lk**		
Collect Date	**12/09/2006**		
Sample No.	**06-11362**		
Sample Comments	**Replicate**	**Split**	**% Error**
Carbon (Total Organic)	4.2	4.2	0.0
Ammonia - Nitrogen	0.02	0.04	100.0
Carbon (Total Inorganic)	4.3	4.3	0.0
Turbidity	1	6	500.0
Total Suspended Solids @105°C	<2	8	
T-Hardness as CaCO3	29.8	30.4	2.0
T-Dissolved Solids180°C	28	40	42.9
T-Alkalinity as CaCO3	20	25	25.0
Sulphate	3.6	3.3	8.3
Phosphate - Ortho - Phosphoru	<0.20	<0.20	
pH @ 25°C	7.40	7.38	0.3
Nitrite - Nitrogen	<0.05	<0.05	
Nitrate - Nitrogen	1.22	1.17	4.1
Hydroxide (as CaCO3)	<1	<1	
Fluoride	0.04	0.04	0.0
Conductivity @ 25°C	80	79	1.3
Chloride	4.0	3.9	2.5
Carbonate	<1	<1	
Bicarbonate	25	31	24.0
Balance (+ions/-ions)	0.99	0.90	9.1
Acidity as CaCO3	2	3	50.0
Dissolved Silver	<0.00005	<0.00005	
Total Silver	<0.0001	<0.0001	
Dissolved Aluminum	0.008	0.011	37.5
Total Aluminum	0.0429	0.0396	7.7
Dissolved Arsenic	0.0003	0.0003	0.0
Total Arsenic	0.0003	0.0002	33.3
Dissolved Barium	0.00941	0.00987	4.9
Total Barium	0.0105	0.0103	1.9
Dissolved Beryllium	<0.0001	<0.0001	
Total Beryllium	<0.0001	<0.0001	
Dissolved Boron	0.002	0.003	50.0
Total Boron	0.002	0.002	0.0
Dissolved Calcium	7.2	7.3	1.4
Total Calcium	7.07	7.03	0.6
Dissolved Cadmium	<0.00002	<0.00002	
Total Cadmium	<0.00002	<0.00002	
Dissolved Cobalt	0.00005	0.00004	20.0
Total Cobalt	0.00013	0.00013	0.0
Dissolved Chromium	0.0005	0.0005	0.0
Total Chromium	<0.0005	<0.0005	
Dissolved Copper	0.0031	0.0025	19.4
Total Copper	0.0031	0.0028	9.7
Dissolved Iron	<0.10	<0.10	
Total Iron	0.12	<0.10	
Dissolved Mercury	<0.00005	<0.00005	
Total Mercury	<0.00005	<0.00005	
Dissolved Potassium	0.5	0.5	0.0
Total Potassium	0.6	0.6	0.0
Dissolved Lithium	<0.0010	<0.0010	
Total Lithium	<0.005	<0.005	
Dissolved Magnesium	2.9	2.9	0.0
Total Magnesium	2.98	2.96	0.7
Dissolved Manganese	0.016	0.015	6.3

Appendix B3. Water chemistry replicate - split laboratory analytical precision, 2006 Jericho AEM Program.

Station Label	**JER12**		
Station Name	**Stream C1 Upstream of Carat Lk**		
Collect Date	**12/09/2006**		
Sample No.	**06-11362**		
Sample Comments	**Replicate**	**Split**	**% Error**
Total Manganese	0.02	0.02	0.0
Dissolved Molybdenum	<0.00005	<0.00005	
Total Molybdenum	0.00017	0.00012	29.4
Dissolved Sodium	1.6	1.6	0.0
Total Sodium	1.8	1.8	0.0
Dissolved Nickel	0.00100	0.00109	9.0
Total Nickel	0.0014	0.0012	14.3
Dissolved Lead	<0.00005	<0.00005	
Total Lead	0.00014	0.00006	57.1
Dissolved Phosphorus	0.02	0.02	0.0
Total Phosphorus	<0.02	<0.02	
Dissolved Antimony	<0.00005	<0.00005	
Total Antimony	<0.00005	<0.00005	
Dissolved Selenium	<0.0006	<0.0006	
Total Selenium	<0.0010	<0.0010	
Dissolved Silicon	1.38	1.37	0.7
Total Silicon	1.43	1.41	1.4
Dissolved Tin	0.0001	0.0061	6000.0
Total Tin	0.0002	<0.0001	
Dissolved Strontium	0.0218	0.0229	5.0
Total Strontium	0.0239	0.0238	0.4
Dissolved Titanium	<0.0005	<0.0005	
Total Titanium	0.0013	0.0010	23.1
Dissolved Thallium	<0.00005	<0.00005	
Total Thallium	<0.00005	<0.00005	
Dissolved Uranium	0.00130	0.00139	6.9
Total Uranium	0.00165	0.00164	0.6
Dissolved Vanadium	0.0004	0.0004	0.0
Total Vanadium	<0.0005	<0.0005	
Dissolved Zinc	0.003	0.003	0.0
Total Zinc	0.007	0.005	28.6
		Median	**2.5**
		Maximum	**6000.0**

Appendix B3. Water chemistry replicate - split laboratory analytical precision, 2006 Jericho AEM Program.

Station Label	**JER19**		
Station Name	**Carat Lake**		
Collect Date	**10/08/2006**		
Sample No.	**603963**		
Sample Comments	**Replicate**	**Split**	**% Error**
Ammonia-N	<0.005	<0.005	
Dissolved Silver	0.0042	0.0051	21.4
Total Silver	0.005	0.0051	2.0
Dissolved Aluminum	17.7	17.6	0.6
Total Aluminum	21.3	41.4	94.4
Dissolved Arsenic	0.146	0.146	0.0
Total Arsenic	0.162	0.155	4.3
Dissolved Barium	1.63	1.69	3.7
Total Barium	1.72	1.82	5.8
Dissolved Beryllium	<.0030	<.0030	
Total Beryllium	<.0030	<.0030	
Dissolved Boron	19.5	25.6	31.3
Total Boron	20.4	26.4	29.4
Dissolved Calcium	1.1	1.08	1.8
Total Calcium	1.12	1.08	3.6
Dissolved Cadmium	0.0031	0.0033	6.5
Total Cadmium	0.0034	0.0044	29.4
Dissolved Cobalt	0.0151	0.0166	9.9
Total Cobalt	0.0202	0.0204	1.0
Dissolved Chromium	0.112	0.13	16.1
Total Chromium	0.141	0.149	5.7
Dissolved Copper	1.7	1.46	14.1
Total Copper	1.84	1.73	6.0
Dissolved Iron	14	14.4	2.9
Total Iron	16.9	19.1	13.0
Dissolved Mercury	<.0100	<.0100	
Total Mercury	<.0100	<.0100	
Dissolved Potassium	285	285	0.0
Total Potassium	292	287	1.7
Dissolved Lithium	0.84	0.66	21.4
Total Lithium	0.84	0.62	26.2
Dissolved Magnesium	0.441	0.436	1.1
Total Magnesium	0.458	0.439	4.1
Dissolved Manganese	2.23	2.23	0.0
Total Manganese	2.3	2.27	1.3
Dissolved Molybdenum	0.0229	0.023	0.4
Total Molybdenum	0.0246	0.0282	14.6
Dissolved Sodium	424	413	2.6
Total Sodium	442	422	4.5
Dissolved Nickel	0.286	0.406	42.0
Total Nickel	0.345	0.42	21.7
Dissolved Lead	0.013	0.0173	33.1
Total Lead	0.02	0.021	5.0
Dissolved Phosphorus	13.7	13.6	0.7
Total Phosphorus	14.5	13.6	6.2
Dissolved Antimony	0.0056	0.0061	8.9
Total Antimony	0.0056	0.0066	17.9
Dissolved Selenium	<.100	<.100	
Total Selenium	<.100	<.100	
Dissolved Silicon	0.115	0.125	8.7
Total Silicon	0.137	0.159	16.1
Dissolved Tin	<.0300	<.0300	
Total Tin	<.0300	<.0300	
Dissolved Strontium	4.55	4.59	0.9

Appendix B3. Water chemistry replicate - split laboratory analytical precision, 2006 Jericho AEM Program.

Station Label	**JER19**		
Station Name	**Carat Lake**		
Collect Date	**10/08/2006**		
Sample No.	**603963**		
Sample Comments	**Replicate**	**Split**	**% Error**
Total Strontium	4.6	4.59	0.2
Dissolved Titanium	0.463	0.444	4.1
Total Titanium	0.539	0.669	24.1
Dissolved Thallium	<.0006	<.0006	
Total Thallium	<.0003	<.0003	
Dissolved Uranium	0.137	0.134	2.2
Total Uranium	0.137	0.129	5.8
Dissolved Vanadium	0.0702	0.151	115.1
Total Vanadium	0.0817	0.0773	5.4
Dissolved Zinc	3.31	2.71	18.1
Total Zinc	4.74	4.19	11.6
Dissolved Bismuth	0.0036	0.0054	50.0
Total Bismuth	0.0037	0.0054	45.9
Dissolved Phosphorus, Total Dissolved	0.002	0.002	0.0
Phosphorus, Total	0.003	0.003	0.0
Trace Mercury	<.6	<.6	
		Median	**5.8**
		Maximum	**115.1**

Appendix B3. Water chemistry replicate - split laboratory analytical precision, 2006 Jericho AEM Program.

Station Label	JER06		
Station Name	Carat Lake Centre Basin		
Collect Date	10/08/2006		
Sample No.	603962		
Sample Comments	Replicate	Split	% Error
Ammonia-N	<0.005	0.017	
Dissolved Silver	0.0045	0.006	33.3
Total Silver	0.0063	0.0079	25.4
Dissolved Aluminum	19.8	17.8	10.1
Total Aluminum	21.7	30.7	41.5
Dissolved Arsenic	0.167	0.158	5.4
Total Arsenic	0.171	0.167	2.3
Dissolved Barium	1.6	1.67	4.4
Total Barium	1.61	1.77	9.9
Dissolved Beryllium	<.0030	0.0059	
Total Beryllium	0.0052	<.0030	
Dissolved Boron	16.5	38.8	135.2
Total Boron	19.5	39.1	100.5
Dissolved Calcium	0.993	1.09	9.8
Total Calcium	0.998	1.1	10.2
Dissolved Cadmium	0.0047	0.0041	12.8
Total Cadmium	0.0048	0.0046	4.2
Dissolved Cobalt	0.0144	0.0154	6.9
Total Cobalt	0.0149	0.0166	11.4
Dissolved Chromium	0.366	0.134	63.4
Total Chromium	0.372	0.134	64.0
Dissolved Copper	1.52	1.41	7.2
Total Copper	1.52	1.48	2.6
Dissolved Iron	5.83	13.4	129.8
Total Iron	5.83	15.9	172.7
Dissolved Mercury	<.0100	<.0100	
Total Mercury	<.0100	<.0100	
Dissolved Potassium	302	287	5.0
Total Potassium	302	294	2.6
Dissolved Lithium	<.0200	0.68	
Total Lithium	<.020	0.67	
Dissolved Magnesium	0.467	0.439	6.0
Total Magnesium	0.473	0.447	5.5
Dissolved Manganese	1.83	1.92	4.9
Total Manganese	1.85	1.92	3.8
Dissolved Molybdenum	0.0198	0.0243	22.7
Total Molybdenum	0.0203	0.0523	157.6
Dissolved Sodium	467	430	7.9
Total Sodium	468	432	7.7
Dissolved Nickel	0.293	0.295	0.7
Total Nickel	0.298	0.312	4.7
Dissolved Lead	0.0279	0.0111	60.2
Total Lead	0.0279	0.015	46.2
Dissolved Phosphorus	16.2	15.6	3.7
Total Phosphorus	16.9	15.9	5.9
Dissolved Antimony	0.0058	0.0056	3.4
Total Antimony	0.0059	0.0057	3.4
Dissolved Selenium	<.100	<.100	
Total Selenium	<.100	<.100	
Dissolved Silicon	0.234	0.154	34.2
Total Silicon	0.243	0.164	32.5
Dissolved Tin	0.0468	<.0300	
Total Tin	0.063	<.0300	
Dissolved Strontium	4.37	4.45	1.8

Appendix B3. Water chemistry replicate - split laboratory analytical precision, 2006 Jericho AEM Program.

Station Label	**JER06**		
Station Name	**Carat Lake Centre Basin**		
Collect Date	**10/08/2006**		
Sample No.	**603962**		
Sample Comments	**Replicate**	**Split**	**% Error**
Total Strontium	4.43	4.51	1.8
Dissolved Titanium	<.040	0.379	
Total Titanium	<.040	0.593	
Dissolved Thallium	0.0106	0.0036	66.0
Total Thallium	0.0114	0.0036	68.4
Dissolved Uranium	0.135	0.139	3.0
Total Uranium	0.144	0.139	3.5
Dissolved Vanadium	0.144	0.109	24.3
Total Vanadium	0.147	0.0748	49.1
Dissolved Zinc	2.28	4.89	114.5
Total Zinc	2.97	8.48	185.5
Dissolved Bismuth	0.0073	0.0141	93.2
Total Bismuth	0.0074	0.0138	86.5
Dissolved Phosphorus, Total Dissolved	0.002	0.001	50.0
Phosphorus, Total	0.002	0.003	50.0
Trace Mercury	<.6	<.6	
		Median	**10.2**
		Maximum	**185.5**

Appendix B3. Water chemistry replicate - split laboratory analytical precision, 2006 Jericho AEM Program.

Station Label	**JER02**		
Station Name	**PKCA Discharge**		
Collect Date	**04/08/2006**		
Sample No.	**06-9724**		
Sample Comments	**Replicate**	**Split**	**% Error**
Carbon (Total Organic)	3.8	3.6	5.6
Ammonia - Nitrogen	0.08	0.05	60.0
Carbon (Total Inorganic)	4.6	4.6	0.0
Turbidity	2	2	0.0
Total Suspended Solids @105°C	2	3	33.3
T-Hardness as CaCO3	46.4	46.5	0.2
T-Dissolved Solids180°C	60	96	37.5
T-Alkalinity as CaCO3	35	34	2.9
Sulphate	7.1	7.2	1.4
Phosphate - Ortho - Phosphoru	<0.20	<0.20	
pH @ 25°C	7.66	7.65	0.1
Nitrite - Nitrogen	0.09	0.09	0.0
Nitrate - Nitrogen	5.13	5.13	0.0
Hydroxide (as CaCO3)	<1	<1	
Fluoride	0.10	0.10	0.0
Conductivity @ 25°C	147	146	0.7
Chloride	5.8	5.8	0.0
Carbonate	<1	<1	
Bicarbonate	43	41	4.9
Balance (+ions/-ions)	0.90	0.92	2.2
Acidity as CaCO3	2	3	33.3
Dissolved Silver	<0.00005	<0.00005	
Total Silver	<0.0001	<0.0001	
Dissolved Aluminum	0.006	0.005	20.0
Total Aluminum	0.0229	0.0224	2.2
Dissolved Arsenic	0.0002	0.0002	0.0
Total Arsenic	0.0006	0.0050	88.0
Dissolved Barium	0.0186	0.0198	6.1
Total Barium	0.0217	0.0215	0.9
Dissolved Beryllium	<0.0001	<0.0001	
Total Beryllium	<0.0001	<0.0001	
Dissolved Boron	0.015	0.016	6.3
Total Boron	0.014	0.015	6.7
Dissolved Calcium	10.2	10.2	0.0
Total Calcium	10.4	10.9	4.6
Dissolved Cadmium	<0.00002	<0.00002	
Total Cadmium	<0.00002	<0.00002	
Dissolved Cobalt	0.00003	0.00003	0.0
Total Cobalt	0.00005	0.00005	0.0
Dissolved Chromium	0.0010	0.0013	23.1
Total Chromium	0.0023	0.0033	30.3
Dissolved Copper	<0.0001	<0.0001	
Total Copper	<0.0010	<0.0010	
Dissolved Iron	<0.10	<0.10	
Total Iron	<0.10	<0.10	
Dissolved Mercury	<0.00005	<0.00005	
Total Mercury	<0.00005	<0.00005	
Dissolved Potassium	3.5	3.5	0.0
Total Potassium	3.2	3.6	11.1
Dissolved Lithium	0.0013	0.0013	0.0
Total Lithium	<0.005	<0.005	
Dissolved Magnesium	5.1	5.1	0.0
Total Magnesium	5.11	5.56	8.1
Dissolved Manganese	0.011	<0.010	

Appendix B3. Water chemistry replicate - split laboratory analytical precision, 2006 Jericho AEM Program.

Station Label	**JER02**		
Station Name	**PKCA Discharge**		
Collect Date	**04/08/2006**		
Sample No.	**06-9724**		
Sample Comments	**Replicate**	**Split**	**% Error**
Total Manganese	0.01	0.02	50.0
Dissolved Molybdenum	0.00207	0.00196	5.6
Total Molybdenum	0.00185	0.00199	7.0
Dissolved Sodium	5.4	5.5	1.8
Total Sodium	5.4	6.2	12.9
Dissolved Nickel	0.00142	0.00156	9.0
Total Nickel	0.0019	0.0022	13.6
Dissolved Lead	<0.00005	<0.00005	
Total Lead	0.00006	0.00005	20.0
Dissolved Phosphorus	0.02	<0.01	
Total Phosphorus	<0.02	<0.02	
Dissolved Antimony	<0.00005	<0.00005	
Total Antimony	0.00008	0.00010	20.0
Dissolved Selenium	<0.0006	<0.0006	
Total Selenium	<0.0010	<0.0010	
Dissolved Silicon	0.98	0.99	1.0
Total Silicon	1.14	1.23	7.3
Dissolved Tin	<0.0001	<0.0001	
Total Tin	<0.0001	<0.0001	
Dissolved Strontium	0.0844	0.0853	1.1
Total Strontium	0.0809	0.0826	2.1
Dissolved Titanium	<0.0005	<0.0005	
Total Titanium	<0.0005	<0.0005	
Dissolved Thallium	<0.00005	<0.00005	
Total Thallium	<0.00005	<0.00005	
Dissolved Uranium	0.00076	0.00095	20.0
Total Uranium	0.00146	0.00146	0.0
Dissolved Vanadium	0.0020	0.0020	0.0
Total Vanadium	0.0008	0.0012	33.3
Dissolved Zinc	<0.001	<0.001	
Total Zinc	0.002	0.003	33.3
MF - Fecal Coliforms	<1	<1	
Biochemical Oxygen Demand	<2	<2	
Total Kjeldahl Nitrogen	0.6	0.7	14.3
Oil & Grease (Infrared)	<0.1	<0.1	
		Median	**4.7**
		Maximum	**88.0**

Appendix B3. Water chemistry replicate - split laboratory analytical precision, 2006 Jericho AEM Program.

Station Label	**JER02**		
Station Name	**PKCA Discharge**		
Collect Date/Time	**01/09/2006**		
Sample No.	**06-10791**		
Sample Comments	**Replicate**	**Split**	**% Error**
Carbon (Total Organic)	4.0	3.9	2.6
Ammonia - Nitrogen	0.03	0.03	0.0
Carbon (Total Inorganic)	9.5	8.9	6.7
Turbidity	2	2	0.0
Total Suspended Solids @105°C	<2	<2	
T-Hardness as CaCO3	57.9	56.4	2.7
T-Dissolved Solids180°C	108	96	12.5
T-Alkalinity as CaCO3	41	38	7.9
Sulphate	8.3	8.4	1.2
Phosphate - Ortho - Phosphoru	<0.20	<0.20	
pH @ 25°C	7.46	7.18	3.9
Nitrite - Nitrogen	<0.05	<0.05	
Nitrate - Nitrogen	6.02	5.90	2.0
Hydroxide (as CaCO3)	<1	<1	
Fluoride	0.10	0.10	0.0
Conductivity @ 25°C	161	158	1.9
Chloride	7.2	7.2	0.0
Carbonate	<1	<1	
Bicarbonate	50	47	6.4
Balance (+ions/-ions)	0.92	0.93	1.1
Acidity as CaCO3	3	5	40.0
Dissolved Silver	<0.00005	<0.00005	
Total Silver	<0.0001	<0.0001	
Dissolved Aluminum	0.003	0.005	40.0
Total Aluminum	0.0105	0.0130	19.2
Dissolved Arsenic	0.0008	0.0006	33.3
Total Arsenic	0.0009	0.0007	28.6
Dissolved Barium	0.0241	0.0292	17.5
Total Barium	0.0273	0.0279	2.2
Dissolved Beryllium	<0.0001	<0.0001	
Total Beryllium	<0.0001	<0.0001	
Dissolved Boron	0.012	0.013	7.7
Total Boron	0.018	0.017	5.9
Dissolved Calcium	12.7	12.3	3.3
Total Calcium	12.9	12.9	0.0
Dissolved Cadmium	<0.00002	<0.00002	
Total Cadmium	<0.00002	<0.00002	
Dissolved Cobalt	0.00010	0.00011	9.1
Total Cobalt	0.00015	0.00015	0.0
Dissolved Chromium	0.0041	0.0042	2.4
Total Chromium	0.0047	0.0054	13.0
Dissolved Copper	0.0018	0.0024	25.0
Total Copper	0.0039	0.0029	34.5
Dissolved Iron	<0.10	<0.10	
Total Iron	<0.10	<0.10	
Dissolved Mercury	<0.00005	<0.00005	
Total Mercury	<0.00005	<0.00005	
Dissolved Potassium	4.1	3.8	7.9
Total Potassium	3.9	3.9	0.0
Dissolved Lithium	0.0019	0.0020	5.0
Total Lithium	<0.005	<0.005	
Dissolved Magnesium	6.4	6.2	3.2
Total Magnesium	6.62	6.62	0.0
Dissolved Manganese	0.015	0.016	6.3

Appendix B3. Water chemistry replicate - split laboratory analytical precision, 2006 Jericho AEM Program.

Station Label	**JER02**		
Station Name	**PKCA Discharge**		
Collect Date/Time	**01/09/2006**		
Sample No.	**06-10791**		
Sample Comments	**Replicate**	**Split**	**% Error**
Total Manganese	0.02	0.02	0.0
Dissolved Molybdenum	<0.00005	<0.00005	
Total Molybdenum	0.00273	0.00265	3.0
Dissolved Sodium	5.3	5.4	1.9
Total Sodium	5.3	5.2	1.9
Dissolved Nickel	0.00172	0.00182	5.5
Total Nickel	0.0023	0.0022	4.5
Dissolved Lead	0.00014	0.00008	75.0
Total Lead	0.00025	0.00011	127.3
Dissolved Phosphorus	0.01	0.01	0.0
Total Phosphorus	<0.02	<0.02	
Dissolved Antimony	0.00048	0.00036	33.3
Total Antimony	0.00124	0.00034	264.7
Dissolved Selenium	<0.0006	0.0008	
Total Selenium	0.0020	0.0017	17.6
Dissolved Silicon	1.03	1.05	1.9
Total Silicon	1.06	1.08	1.9
Dissolved Tin	0.0002	<0.0001	
Total Tin	0.0003	<0.0001	
Dissolved Strontium	0.0895	0.109	17.9
Total Strontium	0.111	0.110	0.9
Dissolved Titanium	<0.0005	<0.0005	
Total Titanium	<0.0005	<0.0005	
Dissolved Thallium	0.00005	<0.00005	
Total Thallium	<0.00005	<0.00005	
Dissolved Uranium	0.00108	0.00114	5.3
Total Uranium	0.00134	0.00134	0.0
Dissolved Vanadium	0.0011	0.0020	45.0
Total Vanadium	0.0019	0.0020	5.0
Dissolved Zinc	0.001	0.003	66.7
Total Zinc	0.004	0.003	33.3
Total Kjeldahl Nitrogen	0.6	0.5	20.0
		Median	**5.0**
		Maximum	**264.7**

Appendix B3. Water chemistry replicate - split laboratory analytical precision, 2006 Jericho AEM Program.

Station Label	**JER05**		
Station Name	**Lake C3 Outlet**		
Collect Date	**21/06/2006**		
Sample No.	**06-7828**		
Sample Comments	**Replicate**	**Split**	**% Error**
Carbon (Total Organic)	2.7	2.6	3.8
Ammonia - Nitrogen	0.01	0.01	0.0
Carbon (Total Inorganic)	<0.1	<0.1	
Turbidity	1	1	0.0
Total Suspended Solids @105°C	<2	<2	
T-Hardness as CaCO3	<6	<6	
T-Dissolved Solids180°C	13	12	8.3
T-Alkalinity as CaCO3	7	8	12.5
Sulphate	1.8	1.6	12.5
Phosphate - Ortho - Phosphoru	<0.20	<0.20	
pH @ 25°C	6.65	6.69	0.6
Nitrite - Nitrogen	<0.05	<0.05	
Nitrate - Nitrogen	<0.05	<0.05	
Hydroxide (as CaCO3)	<1	<1	
Fluoride	0.03	0.03	0.0
Conductivity @ 25°C	14	14	0.0
Chloride	0.6	0.5	20.0
Carbonate	<1	<1	
Bicarbonate	8	9	11.1
Balance (+ions/-ions)	0.33	0.32	3.1
Acidity as CaCO3	10	4	150.0
Dissolved Silver	<0.00005	<0.00005	
Total Silver	<0.0001	<0.0001	
Dissolved Aluminum	0.022	0.021	4.8
Total Aluminum	0.0483	0.0448	7.8
Dissolved Arsenic	0.0001	0.0001	0.0
Total Arsenic	<0.0002	<0.0002	
Dissolved Barium	0.00256	0.00340	24.7
Total Barium	0.00156	0.00160	2.5
Dissolved Beryllium	<0.0001	<0.0001	
Total Beryllium	<0.0001	<0.0001	
Dissolved Boron	<0.001	<0.001	
Total Boron	0.003	0.002	50.0
Dissolved Calcium	<0.5	<0.5	
Total Calcium	0.78	0.77	1.3
Dissolved Cadmium	<0.00005	<0.00005	
Total Cadmium	<0.00005	<0.00005	
Dissolved Cobalt	<0.00002	<0.00002	
Total Cobalt	<0.00005	<0.00005	
Dissolved Chromium	<0.0003	<0.0003	
Total Chromium	<0.0005	<0.0005	
Dissolved Copper	0.0015	0.0051	70.6
Total Copper	<0.0010	<0.0010	
Dissolved Iron	<0.10	<0.10	
Total Iron	<0.10	<0.10	
Dissolved Mercury	<0.00005	<0.00005	
Total Mercury	<0.00005	<0.00005	
Dissolved Potassium	<0.5	<0.5	
Total Potassium	<0.5	<0.5	
Dissolved Magnesium	<0.5	<0.5	
Total Magnesium	<0.50	<0.50	
Dissolved Manganese	<0.010	<0.010	
Total Manganese	<0.01	<0.01	
Dissolved Molybdenum	<0.00005	<0.00005	

Appendix B3. Water chemistry replicate - split laboratory analytical precision, 2006 Jericho AEM Program.

Station Label	**JER05**		
Station Name	**Lake C3 Outlet**		
Collect Date	**21/06/2006**		
Sample No.	**06-7828**		
Sample Comments	**Replicate**	**Split**	**% Error**
Total Molybdenum	<0.00005	<0.00005	
Dissolved Sodium	<0.5	<0.5	
Total Sodium	<0.5	<0.5	
Dissolved Nickel	0.00005	0.00006	16.7
Total Nickel	0.0004	0.0003	33.3
Dissolved Lead	0.00022	0.00007	214.3
Total Lead	<0.00005	<0.00005	
Total Phosphorus	0.04	<0.02	
Dissolved Antimony	<0.0001	<0.0001	
Total Antimony	<0.00005	<0.00005	
Dissolved Selenium	<0.0006	<0.0006	
Total Selenium	<0.0010	<0.0010	
Dissolved Silicon	0.23	0.22	4.5
Total Silicon	0.18	0.18	0.0
Dissolved Strontium	0.0037	0.0036	2.8
Total Strontium	0.0038	0.0037	2.7
Dissolved Thallium	<0.00005	<0.00005	
Total Thallium	<0.00005	<0.00005	
Dissolved Uranium	0.00013	0.00013	0.0
Total Uranium	0.00015	0.00014	7.1
Dissolved Vanadium	<0.0001	<0.0001	
Total Vanadium	<0.0005	<0.0005	
Dissolved Zinc	<0.001	<0.001	
Total Zinc	0.002	0.002	0.0
Field Dissolved Oxygen	13.75	11.69	17.6
Water Temperature	10.13	10.14	0.1
Field Conductivity	11	11	0.0
Field pH	5.65	5.75	1.7
Oxidation Reduction Potential	201.00	197.80	1.6
		Median	**3.5**
		Maximum	**214.3**

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APPENDIX C
SEDIMENT CHEMISTRY

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Appendix C1. Sediment Chemistry Data, 2006 Jericho AEM Program.

Parameter Name	Unit	Detection Limit	Lake C1					Lake C3				
			Replicate					Replicate				
			1	2	3	4	5	1	2	3	4	5
Phosphorus	mg/kg	5	<5	<5	<5	<5	<5	<5	<5	<5	6	7
Total Nitrogen	%	0.01	0.43	0.44	0.42	0.45	0.45	0.45	0.39	0.39	0.43	0.42
Carbon	%	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon	%	0.05	5.02	5.10	4.93	5.38	5.16	5.50	4.65	4.78	4.93	4.98
Boron	ug/g	0.1	0.9	0.8	0.8	0.9	0.8	2.0	1.0	1.0	1.0	1.0
Aluminum	ug/g	20	15800	15900	16400	14300	15400	17000	17400	18500	18300	19300
Antimony	ug/g	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arsenic	ug/g	0.2	17.0	21.1	20.7	25.2	20.9	107.0	93.7	131.0	69.1	78.9
Barium	ug/g	1	97	100	92	116	94	76	74	76	79	82
Beryllium	ug/g	0.1	0.9	1.0	0.9	1.0	0.8	0.8	0.8	0.9	0.8	0.9
Bismuth	ug/g	0.5	1.1	1.1	1.1	1.0	1.0	1.1	1.9	1.4	1.3	1.2
Cadmium	ug/g	0.01	0.29	0.30	0.28	0.29	0.24	0.31	0.27	0.23	0.31	0.38
Calcium	ug/g	200	2400	2500	2300	2300	2300	2000	2000	2000	2100	2100
Chromium	ug/g	0.5	33.1	34.9	34.7	33.6	30.5	41.0	41.0	45.7	43.6	43.3
Cobalt	ug/g	0.1	29.7	27.3	28.0	39.0	32.7	14.6	14.6	17.8	13.4	12.0
Copper	ug/g	1	78	86	84	82	75	71	71	79	74	76
Iron	ug/g	100	105000	105000	108000	128000	126000	87800	79600	115000	66500	69800
Lead	ug/g	0.1	8.2	8.4	8.1	8.6	7.7	9.6	8.9	9.1	8.8	9.2
Lithium	ug/g	1	20	20	21	20	19	25	25	28	27	28
Magnesium	ug/g	100	4400	4500	4500	4000	4300	4800	5000	5200	5300	5400
Manganese	ug/g	10	5640	5420	4420	7770	7030	700	763	998	684	427
Molybdenum	ug/g	1	3	3	3	3	3	4	3	4	3	3
Nickel	ug/g	0.5	25.9	27.5	26.8	28.5	25.4	27.9	27.4	29.5	28.6	29.4
Phosphorus	ug/g	30	950	1010	1030	920	950	1190	1200	1430	1270	1400
Potassium	ug/g	400	1400	1400	1400	1300	1300	2000	2100	2100	2200	2300
Selenium	ug/g	0.3	1.0	1.2	1.0	1.0	1.0	1.0	0.9	1.0	0.7	0.8
Silicon	ug/g	50	570	490	430	520	520	730	600	620	640	680
Silver	ug/g	0.1	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.3	0.3	0.3
Sodium	ug/g	400	400	<400	<400	<400	<400	<300	<300	<300	400	<400
Strontium	ug/g	1	13	14	13	14	13	13	13	13	13	13
Thallium	ug/g	0.05	0.14	0.15	0.14	0.14	0.11	0.15	0.16	0.15	0.16	0.17
Tin	ug/g	1	4	4	4	4	4	4	3	4	3	3
Titanium	ug/g	1	620	647	588	531	580	740	771	756	764	821
Vanadium	ug/g	0.1	46.0	46.4	46.7	44.5	41.8	49.3	48.3	53.0	49.9	52.1
Zinc	ug/g	1	65	70	70	74	66	66	92	107	97	106
Moisture	%	0.1	85.3	85.2	83.6	86.5	86.5	86.5	84.2	83.8	83.5	83.5
Texture							Silt Loam					Silty Clay Loam
Sand	% by weight						15.2					16.0
Silt	% by weight						64.8					53.0
Clay	% by weight						20.0					31.0

Appendix C1. Sediment Chemistry Data, 2006 Jericho AEM Program.

Parameter Name	Unit	Detection Limit	Control Lake					Cigar Lake				
			Replicate					Replicate				
			1	2	3	4	5	1	2	3	4	5
Phosphorus	mg/kg	5	<5	5	<5	<5	8	<5	<5	<5	<5	5
Total Nitrogen	%	0.01	0.57	0.55	0.57	0.56	0.58	0.47	0.47	0.49	0.46	0.45
Carbon	%	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon	%	0.05	6.92	6.83	6.93	6.90	6.84	5.65	5.32	5.18	5.11	5.06
Boron	ug/g	0.1	0.7	0.6	0.7	0.7	0.7	2.0	1.0	1.0	0.9	0.8
Aluminum	ug/g	20	21200	20500	20400	21000	22600	20400	20400	21200	18600	21000
Antimony	ug/g	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arsenic	ug/g	0.2	82.8	78.6	88.8	84.5	54.7	35.8	20.7	26.5	25.6	16.0
Barium	ug/g	1	103	100	107	112	106	105	112	105	138	99
Beryllium	ug/g	0.1	0.8	0.8	0.8	0.9	0.9	0.8	0.8	0.9	0.7	0.8
Bismuth	ug/g	0.5	1.3	1.3	2.4	1.6	1.5	1.2	1.2	1.3	1.2	2.2
Cadmium	ug/g	0.01	0.40	0.40	0.45	0.50	0.42	0.57	0.52	0.55	0.43	0.53
Calcium	ug/g	200	2500	2400	2500	2400	2600	2000	1900	2000	1800	1900
Chromium	ug/g	0.5	49.0	50.5	52.6	52.5	54.1	45.8	46.0	47.6	42.0	49.6
Cobalt	ug/g	0.1	38.6	32.9	41.3	39.8	33.8	33.1	38.2	33.1	56.6	32.0
Copper	ug/g	1	86	84	94	91	94	95	93	104	89	99
Iron	ug/g	100	140000	130000	140000	133000	132000	89600	82800	94100	105000	54800
Lead	ug/g	0.1	13.9	13.5	13.9	14.6	14.5	11.3	11.1	12.0	11.0	11.5
Lithium	ug/g	1	31	31	31	31	32	29	29	30	27	30
Magnesium	ug/g	100	6000	5900	5800	6000	6300	5400	5300	5600	4900	5400
Manganese	ug/g	10	4980	3810	5510	4540	3740	6170	8400	4850	19400	10900
Molybdenum	ug/g	1	3	3	3	3	3	4	4	4	5	3
Nickel	ug/g	0.5	32.3	32.0	36.8	35.6	33.4	38.0	36.0	35.6	36.8	36.0
Phosphorus	ug/g	30	2040	1960	2000	2060	2370	1270	1250	1330	1170	1280
Potassium	ug/g	400	2400	2400	2400	2500	2600	2600	2600	2600	2400	2700
Selenium	ug/g	0.3	1.4	1.2	1.3	1.5	1.4	1.2	1.3	1.4	1.0	1.2
Silicon	ug/g	50	490	460	460	480	470	760	570	620	500	620
Silver	ug/g	0.1	0.4	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.4	0.4
Sodium	ug/g	400	<300	<400	<400	<400	<400	<400	<400	<400	<400	<400
Strontium	ug/g	1	16	16	18	17	17	13	13	13	13	14
Thallium	ug/g	0.05	0.22	0.22	0.24	0.24	0.22	0.33	0.35	0.35	0.33	0.37
Tin	ug/g	1	4	4	4	4	4	4	3	4	4	2
Titanium	ug/g	1	676	867	848	751	772	782	838	854	714	830
Vanadium	ug/g	0.1	53.2	54.0	53.4	56.6	58.4	44.9	44.9	47.3	43.0	47.9
Zinc	ug/g	1	91	89	101	99	97	96	90	97	85	93
Moisture	%	0.1	84.4	85.2	84.7	84.7	82.8	86.8	86.4	84.7	84.1	84.1
Texture							Loam					Silt Loam
Sand	% by weight						31.2					18.0
Silt	% by weight						48.0					58.4
Clay	% by weight						20.8					23.6

Appendix C1. Sediment Chemistry Data, 2006 Jericho AEM Program.

Parameter Name	Unit	Detection Limit	Jericho River					Jericho Lake				
			Replicate					Replicate				
			1	2	3	4	5	1	2	3	4	5
Phosphorus	mg/kg	5	10	8	<5	8	<5	28	36	12	24	22
Total Nitrogen	%	0.01	0.06	0.05	0.05	0.04	0.02	0.57	0.56	0.64	0.58	0.58
Carbon	%	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon	%	0.05	0.58	0.66	0.37	0.56	0.54	6.87	6.84	7.47	6.96	7.01
Boron	ug/g	0.1	0.1	0.2	0.2	0.3	0.2	2.9	3.1	2.7	2.9	3.1
Aluminum	ug/g	20	6490	6100	5920	6030	6090	15200	14600	15900	15600	14500
Antimony	ug/g	0.2	<0.1	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arsenic	ug/g	0.2	2.0	2.1	2.2	1.9	2.5	13.3	9.5	20.6	12.1	11.3
Barium	ug/g	1	24	21	18	21	23	64	66	66	65	62
Beryllium	ug/g	0.1	0.2	0.2	0.2	0.2	0.2	0.8	0.7	0.8	0.8	0.7
Bismuth	ug/g	0.5	0.6	0.8	0.9	0.6	0.6	1.3	1.2	1.2	1.3	1.3
Cadmium	ug/g	0.01	0.09	0.06	0.03	0.05	0.05	0.37	0.39	0.35	0.36	0.35
Calcium	ug/g	200	1200	1300	1300	1300	1300	2300	2500	2600	2600	2100
Chromium	ug/g	0.5	14.3	13.4	13.3	13.7	14.7	36.3	35.4	36.8	35.9	33.6
Cobalt	ug/g	0.1	4.9	4.8	5.0	4.6	5.0	8.6	7.9	11.4	8.7	8.1
Copper	ug/g	1	6	7	7	6	27	82	82	84	80	78
Iron	ug/g	100	10100	9790	9480	8780	10500	28000	23100	36400	28300	26800
Lead	ug/g	0.1	2.1	2.2	2.0	2.3	3.2	6.4	6.1	7.3	6.6	5.9
Lithium	ug/g	1	20	17	18	17	20	24	22	23	22	21
Magnesium	ug/g	100	3400	3100	3300	3100	3200	3900	3900	4000	4000	3600
Manganese	ug/g	10	159	211	159	134	214	246	222	296	272	244
Molybdenum	ug/g	1	<1	<1	<1	<1	<1	3	2	3	3	3
Nickel	ug/g	0.5	12.0	11.0	12.6	11.3	12.7	23.9	25.0	24.6	22.6	22.0
Phosphorus	ug/g	30	340	370	280	340	320	1390	1470	1550	1460	1360
Potassium	ug/g	400	970	800	700	760	980	1500	1500	1600	1500	1400
Selenium	ug/g	0.3	<0.2	<0.3	<0.3	<0.2	<0.2	1.0	0.9	0.9	1.0	0.9
Silicon	ug/g	50	330	400	240	260	330	640	620	730	730	800
Silver	ug/g	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	0.3	0.3	0.3	0.3
Sodium	ug/g	400	<300	<400	<400	<300	<300	<400	<400	<300	<400	<400
Strontium	ug/g	1	5	5	6	7	6	13	14	14	13	12
Thallium	ug/g	0.05	0.04	<0.05	<0.04	<0.04	0.04	0.12	0.12	0.13	0.12	0.10
Tin	ug/g	1	3	4	4	3	4	2	2	2	2	2
Titanium	ug/g	1	335	339	344	351	416	576	572	632	565	584
Vanadium	ug/g	0.1	18.7	16.9	17.0	16.5	19.2	47.7	45.8	50.1	47.6	44.8
Zinc	ug/g	1	30	26	26	24	41	85	82	87	82	77
Moisture	%	0.1	29.2	27.4	23.4	25.1	28.8	82.3	85.4	88	86.3	85.5
Texture							Sand					Silt Loam
Sand	% by weight						90.2					36.4
Silt	% by weight						7.8					51.6
Clay	% by weight						2.0					12.0

Appendix C1. Sediment Chemistry Data, 2006 Jericho AEM Program.

Parameter Name	Unit	Detection Limit	Carat Lake				
			Replicate				
			1	2	3	4	5
Phosphorus	mg/kg	5	7	11	10	7	5
Total Nitrogen	%	0.01	0.34	0.34	0.37	0.31	0.32
Carbon	%	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Carbon	%	0.05	4.11	3.96	4.32	3.65	3.77
Boron	ug/g	0.1	0.9	0.9	1.0	0.7	0.7
Aluminum	ug/g	20	18600	20100	19500	18500	18000
Antimony	ug/g	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arsenic	ug/g	0.2	72.9	54.8	89.1	71.3	80.5
Barium	ug/g	1	72	82	75	77	73
Beryllium	ug/g	0.1	0.7	0.8	0.7	0.7	0.7
Bismuth	ug/g	0.5	1.0	1.1	1.2	1.1	1.0
Cadmium	ug/g	0.01	0.48	0.45	0.44	0.53	0.41
Calcium	ug/g	200	1900	2000	2100	1800	1700
Chromium	ug/g	0.5	42.2	44.7	43.3	43.8	41.2
Cobalt	ug/g	0.1	30.9	35.1	27.4	42.8	42.5
Copper	ug/g	1	75	76	77	78	76
Iron	ug/g	100	78600	64400	74200	81600	91800
Lead	ug/g	0.1	8.0	7.3	8.1	7.5	7.9
Lithium	ug/g	1	28	30	28	28	26
Magnesium	ug/g	100	5500	6100	5600	5700	5300
Manganese	ug/g	10	2090	3760	1650	2020	2250
Molybdenum	ug/g	1	3	3	3	3	3
Nickel	ug/g	0.5	31.1	32.8	32.4	32.5	31.1
Phosphorus	ug/g	30	1520	1560	1650	1310	1350
Potassium	ug/g	400	2000	2300	2100	2200	2000
Selenium	ug/g	0.3	0.9	0.9	0.9	1.0	1.0
Silicon	ug/g	50	570	750	750	540	520
Silver	ug/g	0.1	0.4	0.4	0.4	0.4	0.4
Sodium	ug/g	400	<300	<400	<400	400	<400
Strontium	ug/g	1	12	12	12	12	11
Thallium	ug/g	0.05	0.32	0.31	0.33	0.34	0.33
Tin	ug/g	1	3	4	4	4	4
Titanium	ug/g	1	731	843	833	810	735
Vanadium	ug/g	0.1	51.3	52.4	54.0	49.5	50.3
Zinc	ug/g	1	89	88	95	90	89
Moisture	%	0.1	78.8	78.4	80.4	77	75.2
Texture							Silt Loam
Sand	% by weight						18.3
Silt	% by weight						63.0
Clay	% by weight						18.7

Appendix C2. Sediment chemistry replicate - split laboratory analytical precision, 2006 Jericho AEM Program.

Station Label	JER11			JER06		
Station Name	Cigar Lake			Carat Lake Center Basin		
Parameter Name	Replicate	Split	Precision	Replicate	Split	Precision
Phosphorus	<5	<5		7	<5	
Total Nitrogen	0.47	0.50	6.4	0.31	0.29	6.5
Carbon	<0.05	<0.05		<0.05	<0.05	
Carbon	5.65	5.71	1.1	3.65	3.60	1.4
Boron	2.0	1.0	50.0	0.7	0.8	14.3
Aluminum	20400	19800	2.9	18500	17800	3.8
Antimony	<0.2	<0.2		<0.2	<0.2	
Arsenic	35.8	40.2	12.3	71.3	71.3	0.0
Barium	105	105	0.0	77	73	5.2
Beryllium	0.8	0.8	0.0	0.7	0.6	14.3
Bismuth	1.2	1.6	33.3	1.1	1.1	0.0
Cadmium	0.57	0.50	12.3	0.53	0.40	24.5
Calcium	2000	2000	0.0	1800	1600	11.1
Chromium	45.8	46.0	0.4	43.8	42.0	4.1
Cobalt	33.1	34.0	2.7	42.8	50.7	18.5
Copper	95	95	0.0	78	74	5.1
Iron	89600	104000	16.1	81600	87800	7.6
Lead	11.3	11.0	2.7	7.5	7.6	1.3
Lithium	29	27	6.9	28	28	0.0
Magnesium	5400	5300	1.9	5700	5200	8.8
Manganese	6170	6220	0.8	2020	2080	3.0
Molybdenum	4	4	0.0	3	3	0.0
Nickel	38.0	34.9	8.2	32.5	31.1	4.3
Phosphorus	1270	1260	0.8	1310	1330	1.5
Potassium	2600	2500	3.8	2200	2000	9.1
Selenium	1.2	1.3	8.3	1.0	0.9	10.0
Silicon	760	610	19.7	540	600	11.1
Silver	0.4	0.4	0.0	0.4	0.3	25.0
Sodium	<400	<400		400	<400	
Strontium	13	13	0.0	12	11	8.3
Thallium	0.33	0.30	9.1	0.34	0.31	8.8
Tin	4	4	0.0	4	4	0.0
Titanium	782	830	6.1	810	759	6.3
Vanadium	44.9	45.8	2.0	49.5	50.3	1.6
Zinc	96	96	0.0	90	88	2.2
Moisture	86.8	86.8	0.0	77	77	0.0
		Median	**2.3**		**Median**	**5.2**
		Maximum	**50.0**		**Maximum**	**25.0**

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APPENDIX D
LAKE PROFILE PARAMETERS

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Appendix D1-1. Lake C3 profile sample data (UTM locations in NAD 27, Zone 12), 2006 Jericho AEM Program.

Site	Sample				Water		Dissolved	Dissolved Oxygen	Total	Secchi
	Date	Time	Easting	Northing	Depth (m)	Temp (C)	Oxygen (mg/L)	% Saturation	Depth (m)	Depth (m)
JER-DO04	27/07/2006	9:15	474614	7319831	0.0	13.80	9.60	90	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	0.5	14.10	9.40	90	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	1.0	14.40	9.40	89	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	1.5	14.30	9.40	90	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	2.0	14.30	9.40	90	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	2.5	14.40	10.00	96	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	3.0	14.30	10.00	96	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	3.5	14.30	9.90	95	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	4.0	14.30	9.90	95	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	4.5	14.20	10.00	96	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	5.0	14.20	10.20	97	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	5.5	14.20	10.20	97	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	6.0	14.10	10.20	98	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	6.5	14.10	10.30	98	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	7.0	14.10	10.40	998	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	7.5	14.00	10.40	99	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	8.0	14.00	10.40	100	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	8.5	14.00	10.50	100	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	9.0	14.00	10.50	101	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	9.5	13.80	10.50	100	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	10.0	13.70	10.50	100	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	10.5	13.70	10.50	100	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	11.0	13.60	10.50	100	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	11.5	12.30	9.90	91	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	12.0	11.90	9.60	88	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	12.5	11.70	9.50	87	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	13.0	11.60	9.30	84	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	13.5	11.50	9.20	83	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	14.0	11.50	8.70	78	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	14.5	11.20	1.30	11	15	5.5
JER-DO04	27/07/2006	9:15	474614	7319831	15.0	11.10	0.90	7	15	5.5

Appendix D1-2. Carat Lake profile sample data (UTM locations in NAD 27, Zone 12), 2006 Jericho AEM Program.

Site	Sample				Water		Dissolved	Dissolved Oxygen	Total	Secchi
	Date	Time	Easting	Northing	Depth (m)	Temp (C)	Oxygen (mg/L)	% Saturation	Depth (m)	Depth (m)
JER-DO06	20/07/2006	12:10	477504	7320747	0.0	15.70	9.50	96	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	1.0	15.20	9.60	95	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	2.0	15.00	9.60	95	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	3.0	14.80	9.70	95	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	4.0	14.30	9.70	94	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	5.0	14.10	9.80	94	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	6.0	13.70	9.90	94	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	7.0	13.20	10.10	95	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	8.0	12.60	10.10	94	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	9.0	11.90	10.20	94	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	10.0	11.70	10.30	94	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	11.0	11.50	10.30	93	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	12.0	11.10	10.20	93	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	13.0	10.60	10.40	92	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	14.0	10.40	10.20	91	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	15.0	9.50	10.40	90	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	16.0	9.10	10.50	90	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	17.0	8.90	10.50	90	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	18.0	8.30	10.60	89	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	19.0	8.00	10.70	89	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	20.0	7.90	10.70	89	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	21.0	7.60	10.70	89	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	22.0	7.50	10.80	89	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	23.0	7.40	10.80	89	30.3	6.3
JER-DO06	20/07/2006	12:10	477504	7320747	24.0	7.30	10.80	88	30.3	6.3

Appendix D1-3. Control Lake profile sample data (UTM locations in NAD 27, Zone 12), 2006 Jericho AEM Program.

Site	Sample				Water		Dissolved	Dissolved Oxygen	Total	Secchi
	Date	Time	Easting	Northing	Depth (m)	Temp (C)	Oxygen (mg/L)	% Saturation	Depth (m)	Depth (m)
JER-DO10	03/08/2006	9:00	473730	7318699	0.0	18.20	9.70	99	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	0.5	16.20	9.70	100	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	1.0	15.60	9.80	100	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	1.5	15.20	10.00	99	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	2.0	15.10	10.10	99	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	2.5	14.70	10.10	100	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	3.0	14.40	10.10	98	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	3.5	14.20	10.20	98	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	4.0	14.00	10.20	98	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	4.5	13.80	10.30	99	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	5.0	13.70	10.40	99	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	5.5	13.60	10.50	99	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	6.0	13.60	10.50	100	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	6.5	13.50	10.50	100	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	7.0	13.50	10.60	99	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	7.5	13.40	10.60	100	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	8.0	13.40	10.70	101	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	8.5	13.30	10.40	97	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	9.0	13.10	10.70	100	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	9.5	12.90	10.70	101	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	10.0	12.80	10.70	100	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	10.5	11.80	10.90	99	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	11.0	11.30	10.90	100	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	11.5	10.50	11.20	100	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	12.0	9.90	11.30	99	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	12.5	9.30	11.30	98	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	13.0	8.70	11.40	98	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	13.5	8.20	11.70	98	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	14.0	7.90	11.80	98	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	14.5	7.90	11.80	96	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	15.0	7.50	11.80	97	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	15.5	7.30	11.80	97	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	16.0	7.10	11.80	97	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	16.5	6.90	11.90	96	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	17.0	6.70	11.90	97	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	17.5	6.60	11.80	96	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	18.0	6.50	12.00	96	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	18.5	6.40	12.00	95	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	19.0	6.30	12.00	96	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	19.5	6.20	12.00	96	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	20.0	6.10	12.00	96	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	20.5	6.10	12.00	95	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	21.0	6.00	12.00	95	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	21.5	6.00	12.00	94	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	22.0	5.90	11.90	94	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	22.5	5.90	12.00	94	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	23.0	5.90	12.00	94	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	23.5	5.90	11.90	94	22	6.4
JER-DO10	03/08/2006	9:00	473730	7318699	24.0	5.80	12.10	95	22	6.4

Appendix D1-4. Jericho Lake profile sample data (UTM locations in NAD 27, Zone 12), 2006 Jericho AEM Program.

Site	Sample				Water		Dissolved	Dissolved Oxygen	Total	Secchi
	Date	Time	Easting	Northing	Depth (m)	Temp (C)	Oxygen (mg/L)	% Saturation	Depth (m)	Depth (m)
JER-DO08	05/08/2006	8:30	478526	7323653	0.0	14.40	10.10	94	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	0.5	16.70	9.80	100	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	1.0	16.70	9.80	99	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	1.5	16.60	9.60	98	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	2.0	16.60	9.80	100	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	2.5	16.30	9.80	100	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	3.0	15.80	9.80	100	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	3.5	15.50	10.10	101	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	4.0	15.20	10.10	101	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	4.5	14.90	10.10	101	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	5.0	14.70	10.20	101	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	5.5	14.50	10.30	101	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	6.0	14.30	10.30	100	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	6.5	14.20	10.50	101	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	7.0	14.10	10.40	101	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	7.5	14.00	10.50	102	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	8.0	13.90	10.50	101	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	8.5	13.80	10.70	102	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	9.0	13.70	10.60	102	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	9.5	13.60	10.70	102	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	10.0	13.60	10.70	102	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	10.5	13.50	10.80	102	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	11.0	13.40	10.70	102	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	11.5	13.30	10.70	101	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	12.0	13.30	10.60	101	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	12.5	13.20	10.70	101	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	13.0	12.70	10.50	97	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	13.5	10.80	10.10	92	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	14.0	9.40	9.00	80	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	14.5	8.40	8.90	78	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	15.0	7.80	8.90	76	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	15.5	7.40	8.70	73	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	16.0	7.00	8.50	71	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	16.5	6.80	8.30	68	17.3	5.4
JER-DO08	05/08/2006	8:30	473526	7323653	17.0	6.60	8.10	66	17.3	5.4

Appendix D1-5. Cigar Lake profile sample data (UTM locations in NAD 27, Zone 12), 2006 Jericho AEM Program.

Site	Sample				Water		Dissolved	Dissolved Oxygen	Total	Secchi
	Date	Time	Easting	Northing	Depth (m)	Temp (C)	Oxygen (mg/L)	% Saturation	Depth (m)	Depth (m)
JER-DO11	04/08/2006	10:00	469709	7320262	0.0	15.70	9.60	90	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	0.5	15.70	9.60	95	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	1.0	15.60	9.90	98	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	1.5	15.60	9.80	97	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	2.0	15.40	9.70	96	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	2.5	15.30	9.80	97	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	3.0	14.60	10.10	95	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	3.5	14.50	10.00	98	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	4.0	14.40	10.00	98	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	4.5	14.20	10.10	99	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	5.0	14.10	10.30	99	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	5.5	14.00	10.30	100	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	6.0	14.00	10.40	100	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	6.5	13.90	10.40	99	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	7.0	13.80	10.50	101	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	7.5	13.70	10.70	101	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	8.0	13.60	10.60	101	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	8.5	13.60	10.70	101	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	9.0	13.50	10.70	101	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	9.5	13.50	10.80	102	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	10.0	13.40	10.80	102	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	10.5	13.40	10.80	102	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	11.0	13.40	10.80	102	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	11.5	13.30	10.80	102	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	12.0	12.90	10.80	101	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	12.5	12.50	10.80	100	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	13.0	11.30	11.20	102	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	13.5	9.80	11.30	100	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	14.0	9.10	11.60	101	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	14.5	8.60	11.50	99	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	15.0	8.20	11.50	97	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	15.5	8.20	5.30	45	15.8	8.9
JER-DO11	04/08/2006	10:00	469709	7320262	16.0	8.10	5.50	46	15.8	8.9

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APPENDIX E
SEDIMENTATION

Appendix E1. Sedimentation data, 2006 Jericho AEM Program.

Waterbody	Station	Filter Number	Filter Weight	Dry Weight	Ashed Weight	Ash Free Dry Weight
Carat Lake	JER-SD22	1A	0.130603	0.155333	0.134622	0.020711
	JER-SD22	1B	0.133094	0.313985	0.270173	0.043812
	JER-SD22	1C	0.133094	0.235469	0.200588	0.034881
	JER-SD22	1D	0.133094	0.415440	0.359221	0.056219
Total Weight				**1.120228**	**0.964604**	**0.155624**
Carat Lake	JER-SD21	7A	0.132781	0.084366	0.071988	0.012378
	JER-SD21	7B	0.133094	0.092591	0.079637	0.012954
	JER-SD21	7C	0.133094	0.119598	0.103798	0.015800
	JER-SD21	7D	0.133094	0.128573	0.111619	0.016954
	JER-SD21	7E	0.133094	0.120820	0.089679	0.031141
Total Weight				**0.545948**	**0.456721**	**0.089227**
Carat Lake	JER-SD19	4A	0.133632	0.123417	0.102547	0.020869
	JER-SD19	4B	0.133094	0.104913	0.088205	0.016707
	JER-SD19	4C	0.133094	0.093568	0.078311	0.015256
	JER-SD19	4D	0.133094	0.074484	0.061275	0.013208
	JER-SD19	4E	0.133094	0.112777	0.096347	0.016431
	JER-SD19	4F	0.133094	0.144949	0.121563	0.023386
Total Weight				**0.654107**	**0.548249**	**0.105858**
Carat Lake	JER-SD07	5A	0.133663	0.089996	0.069188	0.020808
	JER-SD07	5B	0.133094	0.167373	0.129800	0.037573
	JER-SD07	5C	0.133094	0.099083	0.077113	0.021971
	JER-SD07	5D	0.133094	0.118462	0.092494	0.025969
Total Weight				**0.474915**	**0.368595**	**0.106320**
Lake C3	JER-SD05	3A	0.133074	0.082902	0.061403	0.021499
	JER-SD05	3B	0.133094	0.171788	0.128179	0.043608
Total Weight				**0.254690**	**0.189582**	**0.065108**
Jericho Lake	JER-SD26	2A	0.131615	0.070490	0.041651	0.028839
	JER-SD26	2B	0.133094	0.075870	0.044445	0.031426
	JER-SD26	2C	0.133094	0.124361	0.077930	0.046431
Total Weight				**0.270721**	**0.164025**	**0.106696**
Cigar Lake	JER-SD11	6A	0.133543	0.039048	0.024925	0.014123
	JER-SD11	6B	0.133094	0.025035	0.015617	0.009418
	JER-SD11	6C	0.133094	0.041251	0.021510	0.019741
	JER-SD11	6D	0.133094	0.020242	0.012247	0.007995
	JER-SD11	6E	0.133094	0.026840	0.016669	0.010171
Total Weight				**0.152416**	**0.090968**	**0.061448**
Control Lake	JER-SD23	8A	0.134527	0.084736	0.063533	0.021203
	JER-SD23	8B	0.133094	0.098658	0.070480	0.028178
	JER-SD23	8C	0.133094	0.085565	0.062228	0.023337
	JER-SD23	8D	0.133094	0.061912	0.046437	0.015476
Total Weight				**0.3308714**	**0.24267732**	**0.08819408**

APPENDIX F
PHYTOPLANKTON

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Appendix F1-1 Phytoplankton density (cells/mL) and biovolume (μm^3/mL) data, 2006 Jericho AEM Program.

Cigar Lake JER-AB11

Taxonomic Group	Replicate 1				Replicate 2				Replicate 3				Replicate 4				Replicate 5				Replicate 6				Replicate 7			
	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P
BACILLARIOPHYTA																												
Achnanthes minutissima								P								P				P								
Anomoeoneis sp.				P																								P
Cocconeis sp.												P																
Cocconeis pediculus																				P								
Cocconeis placentula																								P				
Cyclotella ocellata	5	203	974		11	203	2305		25	203	4987		10	203	2044		20	203	3994		11	203	2191		28	203	5751	
Cymbella minuta								P												P				P				P
Cymbella tumida																								P				
Cymbella sp.								P				P																
Diatoma elongatum								P																				
Eunotia arcus				P				P																				
Eunotia arcus v. bidens																				P								
Eunotia sp.												P				P				P				P				P
Fragilaria construens								P																				
Frustulia vulgaris								P												P								P
Gomphonema sp.				P																								
Gomphonema acuminatum v. coronata								P																				
Gomphonema angustatum																P												
Melosira distans	3	1066	3405									P				P				P				P				P
Navicula cryptocephala								P																				P
Navicula lanceolata																P												
Navicula pupula v. rectangularis																P												
Navicula tripunctata								P				P												P				P
Neidium sp.				P																								
Nitzschia sp.1												P																
Nitzschia sigmoidea																												P
Pinnularia sp.																P				P								
Pinnularia abaujensis v. rostrata																												P
Rhizosolenia longiseta	8	1648	12503		4	1648	5835					P	5	1648	8285		5	1648	7472		6	1648	9907		5	1648	8227	
Stauroneis smithii																												P
Stauroneis sp.																												P
Stephanodiscus astraea	6	5270	29453		4	5270	23335					P	3	5270	17659					P	8	5270	40800		3	5270	17533	P
Surirella sp.																								P				P
Synedra sp.	0	144	58					P				P	2	144	242		2	144	218					P	2	144	240	
Tabellaria flocculosa				P	4	803	3413					P				P				P				P				P
Unidentified diatom				P																				P				P
Total Bacillariophyta	**22**		**46393**		**24**		**34889**		**25**		**4987**		**20**		**28230**		**26**		**11684**		**25**		**52898**		**38**		**31751**	
CRYPTOPHYTA																												
Cryptomonas ovata	2	3111	4968		1	3111	4408		2	3111	5086					P				P				P				P
Cryptomonas reflexa	6	1360	8688		1	1360	1927					P				P					3	1360	4510		3	1360	4525	
Katablepharis ovalis	3	141	450		1	141	199		3	141	460						5	141	638		2	141	233		3	141	468	
Rhodomonas minuta	48	289	13848		34	289	9830		33	289	9453		22	289	6296	P	38	289	10919		21	289	5990		32	289	9137	
Total Cryptophyta	**59**		**27954**		**38**		**16364**		**38**		**15000**		**22**		**6296**		**42**		**11557**		**26**		**10734**		**38**		**14130**	
CHRYSOPHYTA																												
Bitrichia longispina	5	94	449		1	94	133		3	94	307		5	94	471		2	94	142		2	94	155		2	94	156	
Chromulina sp.												P	2	583	976					P				P				

Note: **P** present but not encountered in routine cell counts

Appendix F1-1 Phytoplankton density (cells/mL) and biovolume (μm^3/mL) data, 2006 Jericho AEM Program.

Cigar Lake JER-AB11

Taxonomic Group	Replicate 1				Replicate 2				Replicate 3				Replicate 4				Replicate 5				Replicate 6				Replicate 7			
	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P
Chrysidastrum catenatum				P	3	595	1687						3	595	1995					P								
Chrysochromulina parva													7	61	407										25	61	1514	
Chrysosphaerella rodhei	81	439	35742		80	367	29383		111	770	85637		75	439	33086		131	439	57360		148	354	52363		124	378	46825	
Chrysostephanosphaera globulifera	2	410	654		1	410	581		3	410	1340		5	410	2059		2	410	619		3	410	1359		3	410	1363	
Dinobryon cylindricum	22	1502	32974		23	2380	54101		22	1323	29571		25	975	24504		31	1271	39070		25	966	23821		10	1187	11847	
Dinobryon sertularia	45	948	42746		49	1098	53685		22	1091	24551		36	985	35492		13	1041	13371		20	850	870		20	801	15990	
Dinobryon sociale	3	831	2655		6	831	4710									P								P				
Dinobryon tabellariae												P																P
Kephyrion boreale	5	644	3085					P				P	5	644	3236		2	644	973		3	644	2135		2	644	1071	
Mallomonas spa	2	2226	3555	P	3	2226	6308	P	2	2226	3639		3	2226	7461					P				P	2	2226	3704	P
Ochromonas stellaris	2	2241	3580		3	2241	6343		2	2241	3676					P	3	2241	6769		3	2241	7442					P
Ophiocytium sp.																									2	1191	1983	
Stichogloea doederleinii	26	325	8307		38	357	13638		59	358	21052		35	333	368		54	325	17686		43	224	9664		75	325	24341	
Synura sp.																												
Unidentified statospore								P																				
Total Chrysophyta	**192**		**133747**		**207**		**170569**		**225**		**169773**		**202**		**110056**		**236**		**135990**		**247**		**97809**		**264**		**108793**	
PYRROPHYTA																												
Glenodinium sp.	3	403	1288		1	403	571		10	403	3955					P								P	2	403	671	
Gymnodinium spa	10	2384	22841		1	2384	3385					P				P				P					1	2384	3154	
Gymnodinium helveticum																P												
Gymnodinium uberrimum	2	27682	44208		2	27682	68623					P				P				P				P	1	27682	36623	
Peridinium sp.				P																								
unidentified cyst												P																
Total Pyrrophyta	**14**		**68337**		**5**		**72580**		**10**		**3955**		**0**		**0**		**0**		**0**		**0**		**0**		**4**		**40448**	
EUGLENOPHYTA																												
Trachelomonas sp.				P																								
Total Euglenophyta	**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**	
CHLOROPHYTA																												
Ankistrodesmus convolutus	26	14	347		40	12	481		41	16	649		40	15	606		39	14	561		35	14	478		27	14	41	
Ankistrodesmus falcatus	36	19	673		63	20	1239		71	40	2838		39	21	825		63	16	996		63	20	1286		62	19	82	
Arthrodesmus triangularis				P				P				P				P				P					2	1575	2621	
Botryococcus sp.									28	333	9267														25	333	8319	
Bulbochaete sp..				P																								
Chodatella subsalsa					1	262	371																					
Cosmarium sp																P												
Crucigenia quadrata												P																
Dictyosphaerium ehrenbergianum	5	229	1096					P					5	229	1150		12	229	2766		8	229	1897		3	229	761	
Elakatothrix gelatinosa	24	11	256		19	14	264		28	19	536		33	10	338		31	8	235		18	10	188		12	15	170	
Elakatothrix viridis				P				P								P												P
Euastrum binale								P																				
Euastrum elegans																								P				P
Nephrocytium sp.				P				P												P					2	108	179	
Oocystis lacustris									3	192	628						2	723	1093									
Oocystis sp.	11	117	1313		6	117	666		8	117	961		8	117	886		11	117	1243					P	7	117	782	
Oocystis solitaria v. major																P												
Quadrigula closterioides	26	29	739					P	3	29	95		13	29	388		6	29	175		20	29	576		13	29	385	P
Scenedesmus sp.																												

Note: **P** present but not encountered in routine cell counts

Appendix F1-1 Phytoplankton density (cells/mL) and biovolume (μm^3/mL) data, 2006 Jericho AEM Program.

Cigar Lake JER-AB11

Taxonomic Group	Replicate 1				Replicate 2				Replicate 3				Replicate 4				Replicate 5				Replicate 6				Replicate 7			
	Density	**Vol.**	**Bio-Vol**	**P**	**Density**	**Vol.**	**Bio-Vol**	**P**	**Density**	**Vol.**	**Bio-Vol**	**P**	**Density**	**Vol.**	**Bio-Vol**	**P**	**Density**	**Vol.**	**Bio-Vol**	**P**	**Density**	**Vol.**	**Bio-Vol**	**P**	**Density**	**Vol.**	**Bio-Vol**	**P**
Sphaerocystis schroeteri	9	181	1593		1	181	257		3	181	593		20	181	3646		9	181	1644		25	181	4510		4	181	754	
Sphaerozosma granulatum				P	1	531	753		2	531	869					P	3	531	1606		2	531	881		3	531	1768	P
Staurastrum sp.1				P												P												P
Staurastrum sp. 2								P																				
Staurastrum sp. 3																												P
Tetraedron arthrodesmiforme	3	12	38		3	12	34		7	12	79		2	12	20		2	12	18		5	12	60		2	12	20	
Unidentified filament #1				P	1	497	704		1	497	407					P				P				P	2	497	827	
Unidentified filament #2				P								P								P								
Total Chlorophyta	**139**		**6057**		**136**		**4769**		**195**		**16920**		**160**		**7859**		**177**		**10336**		**176**		**9875**		**164**		**16711**	
CYANOPHYTA																												
Agmenellum quadruplicatum	6685	6	37219		34	6	189		186	6	1034		351	6	1954		298	6	1658		294	6	1635		192	6	1071	
Anabaena sp.				P				P								P	21	53	1114									
Anacystis montana				P																								
Anacystis dimidiata									7	24	155		8	24	199					P								
Aphanocapsa elachista	1177	24	27943		472	24	11202		332	24	7873		526	24	12499		171	24	4054	P	257	24	6101		650	24	15430	
Aphanocapsa elachista v. planctonica																												
Aphanothece clathrata	311	2	773		5143	2	12760		9198	2	22820		6056	2	15025		3602	2	8938		4547	2	11282		5236	2	12989	
Dactylococcopsis linearis	50	15	720		33	15	473		52	15	761		10	15	152		15	15	220					P	7	15	97	
Gomphosphaeria naegelianum				P																								
Lyngbya limnetica	1948	9	16567		2760	9	23467		1743	9	14823		2675	9	22752		2371	9	20162		2002	9	17026		1095	9	9309	
Oscillatoria limosa																								P				
Pseudanabaena sp.																P												
Total Cyanophyta	**10171**		**83223**		**8441**		**48092**		**11517**		**47466**		**9628**		**52582**		**6478**		**36145**		**7100**		**36044**		**7179**		**38896**	
Total density (cells/mL)	**10596**				**8851**				**12009**				**10031**				**6960**				**7573**				**7687**			
Total biovolume (μm^3 /mL)			**365711**				**347263**				**258102**				**205022**				**205713**				**207359**				**250730**	
Total # of Taxa per Sample	**56**				**57**				**49**				**54**				**51**				**57**				**64**			

Note: **P** present but not encountered in routine cell counts

Appendix F1-2 Phytoplankton density (cells/mL) and biovolume (µm3/mL) data, 2006 Jericho AEM Program.

Lake C3 JER-AB04

Taxonomic Group	Replicate 1				Replicate 2				Replicate 3				Replicate 4				Replicate 5				Replicate 6				Replicate 7			
	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P
BACILLARIOPHYTA																												
Achnanthes flexella																								P				
Achnanthes minutissima	4	66	241					P	2	66	141		2	66	145					P				P				P
Achnanthes minutissima v. cryptocephala								P				P																
Amphora sp.								P																				
Anomoeoneis sp.																				P								
Asterionalla formosa								P																				
Cocconeis pediculus																				P								
Cocconeis placentula v. euglypta								P								P												
Cyclotella glomerata								P																				
Cyclotella ocellata	26	211	5378		25	211	5258		30	211	6291					P	35	211	7276		27	211	5733		22	211	4672	
Cymbella sp.				P				P				P				P				P				P				
Epithemia sp.				P																								
Eunotia arcus				P				P				P				P				P								
Eunotia sp.				P				P								P				P								
Fragilaria sp.												P																
Frustulia vulgaris				P				P				P				P				P				P				P
Gomphonema sp.																												P
Hannaea arcus				P																								
Melosira distans				P				P				P				P	10	3330	33546					P				P
Meridion circulare								P																				
Navicula cryptocephala				P								P				P				P				P				P
Navicula lanceolata																												P
Navicula radiosa																				P								
Navicula tripunctata																P												
Neidium sp.												P																
Nitzschia sp.1				P				P				P								P				P				
Nitzschia sigmoidea																												P
Pinnularia sp.				P								P				P												
Pinnularia spb.				P				P				P								P								
Pinnularia spc								P																				
Rhizosolenia longiseta	4	938	3500		2	938	1672		4	938	4000		9	938	8220		10	938	8978					P	8	938	7088	
Stauroneis anceps																P				P								
Stephanodiscus astraea	2	6486	11817		10	6486	63714		4	6486	24191					P				P	6	6486	39198					P
Synedra sp.	5	152	764		9	182	1552		7	152	1056		4	152	668		12	152	1754		1	165	244		2	152	307	
Synedra sp. Smaller	4	33	123		4	33	131		3	33	106			33		P	4	33	133		12	33	380		5	33	178	
Tabellaria fenestrata				P				P				P																
Tabellaria flocculosa				P				P				P	28	1172	33372		12	1172	14168		3	1172	3542					P
Unidentified diatom												P				P				P								P
Total Bacillariophyta	**43**		**21822**		**49**		**72326**		**50**		**35784**		**44**		**42405**		**82**		**65855**		**49**		**49097**		**37**		**12245**	
CRYPTOPHYTA																												
Cryptomonas sp.																								P				P
Cryptomonas curvata								P					2	8398	18391									P				
Cryptomonas erosa				P				P				P				P	6	2186	12574					P				
Cryptomonas ovata	4	2764	10310					P	4	2764	11783		8	2764	21189		2	2764	5570		1	2764	4074		2	2764	5570	

Note: **P** present but not encountered in routine cell counts

Appendix F1-2 Phytoplankton density (cells/mL) and biovolume (µm3/mL) data, 2006 Jericho AEM Program.

Lake C3 JER-AB04

Taxonomic Group	Replicate 1				Replicate 2				Replicate 3				Replicate 4				Replicate 5				Replicate 6				Replicate 7			
	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P
Cryptomonas reflexa	5	833	4552		11	613	6624		15	833	12425		12	1110	13366		16	833	13421		3	833	2454		6	833	5033	
Katablepharis ovalis	7	173	1293		36	173	6175					P	26	173	4555		40	134	5386		30	173	5237		12	173	2095	
Rhodomonas minuta	9	270	2462		135	184	24874		70	314	22091		136	325	44105		75	242	18132		91	263	23845		62	295		
Total Cryptophyta	**26**		**18617**		**182**		**37673**		**90**		**46299**		**184**		**101606**		**139**		**55083**		**125**		**35610**		**83**		**12697**	
CHRYSOPHYTA																												
Bitrichia longispina	7	121	899		4	121	430		6	121	771		37	121	4489		18	107	1932		3	121	364		18	121	2186	
Chromulina sp.																								P				
Chrysidastrum catenatum					8	985	7741		4	985	4198					P	2	985	1984									P
Chrysochromulina parva									94	52	4873		74	52	3851		173	52	8925		175	52	9064					
Chrysosphaerella rodhei					53	225	12007						44	225	9840		89	225	19913		88	225	19864					P
Chrysostephanosphaera globulifera					4	350	1249		2	350	746						4	350	1411		3	350	1032		4	350	1411	
Dinobryon cylindricum				P								P								P								
Dinobryon sertularia	93	994	92419		49	1464	72410		49	1165	57091		41	1464	59331		27	3175	86356		48	1163	56232					P
Dinobryon sociale													7	566	3729					P								P
Dinobryon tabellariae				P				P	2	1986	4235					P								P				
Ishtmochloron trispinatum								P				P					2	194	392					P				
Kephyrion boreale									9	707	6028		24	707	17032		23	707	16268		18	707	12819					P
Mallomonas spa	4	1579	5757		20	1386	27241		17	1882	32086		7	1244	8852		10	1532	14662		1	1574	2321		14	1579	22272	P
Ochromonas spa				P				P								P				P								
Ochromonas spb.	45	535	23941					P	9	535	4560		9	535	4686		29	535	15382		15	535	8076					
Ochromonas stellaris					7	2284	16273						18	2284	40015					P				P				P
Pseudokephyrion sp.	4	247	923									P	7	247	1626		6	247	1423					P	2	247	507	P
Pseudokephyrion angulosum																												P
Stichogloea doederleinii				P	75	331	24792		36	331	12006		24	331	7982					P	28	331	9277					P
Unidentified statospore					7	784	5586					P	18	784	13736					P								
Total Chrysophyta	**153**		**123939**		**227**		**167728**		**229**		**126596**		**308**		**175169**		**382**		**168648**		**381**		**119049**		**38**		**26376**	
PYRROPHYTA																												
Glenodinium sp.	7	663	4943	P	18	443	7890		66	737	48282		51	729	37521		17	817	14095		104	462	47776		54	784	42633	
Gymnodinium spa	4	2748	10016		7	2748	19581														5	2748	12502					P
Gymnodinium uberrimum				P	4	15344	53749					P				P	1	15344	7733		6	15344	90452		5	15344	77287	
Peridinium sp.								P				P				P												
unidentified cyst								P				P	4	10522	46085													
Total Pyrrophyta	**11**		**14959**		**28**		**81220**		**66**		**48282**		**56**		**83606**		**18**		**21828**		**114**		**150730**		**59**		**119920**	
EUGLENOPHYTA																												
Trachelomonas sp.																P												
Total Euglenophyta	**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**	
CHLOROPHYTA																												
Actinotaenium sp.																				P								
Ankistrodesmus convolutus	17	15	253		18	15	269		12	15	174		18	15	264		23	15	347		18	15	274		15	15	228	
Ankistrodesmus falcatus	80	20	1615		37	24	888		61	38	2315		90	50	4544		49	52	2528		52	24	1221		48	31	1519	
Arthrodesmus triangularis								P								P					5	500	2703					
Botryococcus sp.									32	180	5763					P				P				P	52	180	9441	
Chlamydomonas sp. a									21	193	4117						6	193	1103		3	193	584	P	2	193	396	P
Cosmarium holmiense								P																				
Cylindrocystis sp.																	2	2132	3221									
Dictyosphaerium ehrenbergianum				P				P	9	87	745					P								P				

Note: **P** present but not encountered in routine cell counts

Appendix F1-2 Phytoplankton density (cells/mL) and biovolume (µm3/mL) data, 2006 Jericho AEM Program.

Lake C3 JER-AB04

Taxonomic Group	Replicate 1				Replicate 2				Replicate 3				Replicate 4				Replicate 5				Replicate 6				Replicate 7			
	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P
Elakatothrix gelatinosa	26	13	336		28	13	356		31	13	398		34	13	442		23	14	323		42	13	546		23	13	297	
Elakatothrix viridis								P									2	200	302						6		0	
Euastrum binale												P																
Euastrum elegans												P				P												
Gonatozygon sp																				P				P				
Hyalotheca sp																												
Kirchneriella sp.	4	27	101																									
Mougeotia sp. a								P				P					6	5652	32515									
Oocystis elliptica																					53	449	23811					
Oocystis lacustris	34	417	14006																									
Oocystis sp.					20	140	2754		19	140	2689		31	140	4298					P	39	140	5507		2	140	282	
Quadrigula closterioides																P	10	119	1197		6	119	701					P
Sphaerocystis schroeteri				P				P				P	7	291	1912		4	291	1173						4	291	1173	
Sphaerozosma granulatum	7	422	3075					P	2	422	899		6	422	2541		4	422	1699		13	422	5594		4	422	1699	
Staurastrum tetrastrum				P																								
Staurastrum sp.1				P				P																				
Staurastrum sp. 2																				P								
Staurastrum sp. 3																						P						
Staurastrum sp 4								P								P												
Tetraedron arthrodesmiforme	7	18	138		9	18	174		6	18	118		15	18	283		52	18	955		12	18	223		12	18	223	
Tetraedron minimum																				P								
Unidentified filament #1													1	435	477		2	435	877									P
Unidentified filament #2																P				P								P
Total Chlorophyta	**175**		**19524**		**111**		**4441**		**193**		**17217**		**202**		**14761**		**181**		**46242**		**244**		**41163**		**169**		**15259**	
CYANOPHYTA																												
Agmenellum quadruplicatum	1955	6	11245		652	6	3751		270	6	1554		136	6	781		2474	6	14231		169	6	974		454	6	2611	
Anabaena sp.	24	69	1625		51	69	3504		17	69	1170					P				P				P				P
Anacystis montana	35	13	468		31	13	420		6	13	86					P												
Aphanocapsa elachista					403	17	6795		653	17	11026		826	17	13938		1864	17	31454		1254	17	21164		1261	17	21288	
Aphanothece clathrata	5136	2	7797		6194	2	9402		9505	2	14429		19395	2	29442		10717	2	16269		3140	2	4766		7085	2	10756	
Dactylococcopsis linearis	7	49	355					P	66	49	3187		4	49	213		29	49	1399					P	18	49	882	
Gomphosphaeria naegelianum								P	590	22	13048									P				P				
Nostoc sp.				P																								
Pseudanabaena sp.								P				P								P	22	11	254		22	11	254	
Unidentified trichome																								P				
Total Cyanophyta	**7157**		**21489**		**7331**		**23873**		**11108**		**44499**		**20362**		**44374**		**15083**		**63353**		**4585**		**27158**		**8841**		**35791**	
Total density (cells/mL)	**7565**				**7928**				**11735**				**21155**				**15885**				**5499**				**9228**			
Total biovolume (µm³ /mL)			**220349**				**387261**				**318678**				**461921**				**421010**				**422806**				**222288**	
Total # of Taxa per Sample	**53**				**67**				**64**				**66**				**60**				**59**				**55**			

Note: **P** present but not encountered in routine cell counts

Appendix F1-3 Phytoplankton density (cells/mL) and biovolume (μm^3/mL) data, 2006 Jericho AEM Program.

Jericho Lake JER-AB08

Taxonomic Group	Replicate 1				Replicate 2				Replicate 3				Replicate 4				Replicate 5				Replicate 6				Replicate 7			
	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P
BACILLARIOPHYTA																												
Achnanthes flexella				P								P				P												
Achnanthes minutissima				P								P				P												P
Achnanthes minutissima v. cryptocephala																P												
Asterionalla formosa												P	2	194	418									P				
Cocconeis sp.				P				P												P								
Cocconeis pediculus				P				P				P																
Cocconeis placentula v. euglypta				P																								P
Cyclotella glomerata				P								P												P				P
Cyclotella ocellata	17	135	2232		37	194	7245		27	194	5182		30	194	5832		41	188	7649		40	283	11197		65	194	12509	
Cymbella affinis				P																				P				
Cymbella minuta				P				P																P				P
Cymbella turgida				P																								
Cymbella sp.				P																								
Diatoma elongatum				P																								
Eunotia arcus				P				P																				
Eunotia arcus v. bidens				P												P								P				
Eunotia elegans								P																				
Eunotia flexuosa								P				P				P				P				P				P
Eunotia triodon												P																
Eunotia sp.				P								P																
Fragilaria construens												P																
Frustulia vulgaris								P				P				P												
Gomphonema sp.				P																P								
Hannaea arcus																								P				P
Melosira distans	4	1127	4740		9	1288	11332		22	1751	38750					P				P	20	1153	22842		14	1288	17820	
Navicula cryptocephala				P				P				P				P				P				P				
Navicula lanceolata				P																								
Navicula tripunctata																				P								P
Navicula viridula												P																
Nitzschia sp.1				P				P				P				P												
Nitzschia sp 2																												P
Pinnularia sp.				P																								
Pinnularia alpina				P																								
Pinnularia divergens				P				P																P				
Pinnularia substomatophora								P				P				P												
Rhizosolenia longiseta	63	1257	79639		16	877	13994		62	832	51926		19	887	17175		32	306	9821		48	1104	52956		46	890	40794	
Stauroneis anceps				P												P												
Stauroneis smithii				P																								
Stephanodiscus astraea	6	2750	17352		4	2750	12102		5	2750	14148		2	2750	5915		3	2750	8932		4	2750	11467		10	2750	28544	
Synedra sp.	4	115	424		16	115	1801		7	115	830		10	103	1019		4	112	424		6	106	663		4	115	444	
Synedra sp. Smaller	2	76	160					P					4	76	326					P				P				P
Synedra ulna				P				P																P				
Tabellaria fenestrata				P																								
Tabellaria flocculosa				P				P				P				P	18	1130	20186					P				P

Note: **P** Present but not encountered in routine sampling

Appendix F1-3 Phytoplankton density (cells/mL) and biovolume (µm^3/mL) data, 2006 Jericho AEM Program.

Jericho Lake JER-AB08

Taxonomic Group	Replicate 1				Replicate 2				Replicate 3				Replicate 4				Replicate 5				Replicate 6				Replicate 7			
	Density	**Vol.**	**Bio-Vol**	**P**	**Density**	**Vol.**	**Bio-Vol**	**P**	**Density**	**Vol.**	**Bio-Vol**	**P**	**Density**	**Vol.**	**Bio-Vol**	**P**	**Density**	**Vol.**	**Bio-Vol**	**P**	**Density**	**Vol.**	**Bio-Vol**	**P**	**Density**	**Vol.**	**Bio-Vol**	**P**
Unidentified diatom				P																								P
Unidentified diatom				P																								P
Total Bacillariophyta	**96**		**104546**		**82**		**46474**		**124**		**110836**		**68**		**30686**		**98**		**47012**		**118**		**99124**		**139**		**100111**	
CRYPTOPHYTA																												
Cryptomonas curvata								P								P											P
Cryptomonas erosa																												P
Cryptomonas ovata				P				P	2	3007	6188					P					2	3007	6270		9	3007	27743	
Cryptomonas reflexa	2	1148	2415		9	1148	10105									P	2	1148	1865		6	1148	7182		2	1148	2649	
Katablepharis ovalis	4	207	872		9	207	1825		12	207	2561		14	207	2899		3	207	674		27	207	5621		18	207	3827	
Rhodomonas minuta	46	299	13845		57	281	16058		29	286	8235		37	299	10945		29	306	8951		63	252	15741		42	241	9995	
Total Cryptophyta	**53**		**17132**		**75**		**27989**		**43**		**16984**		**51**		**13844**		**34**		**11489**		**98**		**34813**		**72**		**44213**	
CHRYSOPHYTA																												
Bitrichia longispina	8	88	744		4	88	389		12	79	976		2	79	170	P	6	88	574		6	88	553	P	16	88	1427	
Chromulina sp.																	2	583	946									
Chrysidastrum catenatum												P				P				P				P				
Chrysochromulina parva	8	52	435		15	52	796		4	52	213		13	52	667					P	101	52	5198		2	52	119	
Chrysosphaerella rodhei	42	194	8165		128	194	24769		27	194	5193		20	194	3966		54	194	10403		188	194	36583		21	194	4029	
Chrysostephanosphaera globulifera	2	704	1480		2	704	1548						2	704	1514		3	704	2286		2	704	1468		2	704	1624	
Dinobryon cylindricum	17	1911	32155					P	5	1911	8809		4	1911	8221		2	1911	3103		11	1911	21914		5	1911	8815	
Dinobryon sertularia	80	846	67734		57	634	35927		71	851	60592		44	947	41927		45	960	43146		90	1065	95504		101	982	98916	
Dinobryon sociale	2	362	761					P	2	362	747	P												P	5	362	1671	
Dinobryon tabellariae				P												P	2	1936	4716		2	1936	4036		4	1937	7819	
Ishtmochloron trispinatum				P	2	250	550					P					3	250	812					P				P
Kephyrion boreale	8	642	5401		2	642	1412		4	642	2642		4	642	2762		2	642	1043		4	642	2677		18	642	11846	
Mallomonas spa	14	2791	39157		12	2707	32755		11	2939	33268	P	13	2359	30449		19	2766	51657		27	2172	57729		14	2254	32492	
Mallomonas spb	2	1277	2686		2	1277	2810													P								
Ochromonas spa				P																								
Ochromonas spb.	4	44	194																									P
Ochromonas stellaris	2	2208	4643		2	2208	4857					P				P	4	2208	8964		9	2208	20716		2	2208	5093	
Ophiocytium sp.												P																
Pseudokephyrion sp.	2	255	536						2	255	524									P	2	255	531		9	255	2349	
Stichogloea doederleinii	13	296	3731		85	373	31616		41	383	15768		6	475	3065		19	440	8219		44	383	16774		28	382	10568	
Synura sp.				P																								
Total Chrysophyta	**206**		**167823**		**312**		**137431**		**180**		**128732**		**110**		**92741**		**160**		**135868**		**487**		**263683**		**228**		**186768**	
PYRROPHYTA																												
Glenodinium sp.	26	676	17778		22	676	15167		16	676	11133		13	676	8726		25	676	17021		8	676	5639		12	580	6685	
Gymnodinium spa	2	1679	3531		22	2597	57141		16	2481	40851		11	2278	24494		6	2514	16330		20	2675	54382		7	1749	12101	
Gymnodinium uberrimum	8	16258	136799	P	4	16258	71554					P				P	2	16258	26404		2	16258	33899					P
unidentified cyst												P																
Total Pyrrophyta	**37**		**158108**		**49**		**143861**		**33**		**51983**		**24**		**33220**		**33**		**59755**		**31**		**93920**		**18**		**18786**	
EUGLENOPHYTA																												
Trachelomonas sp.																P												
Total Euglenophyta	**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**		**0**	
CHLOROPHYTA																												
Ankistrodesmus convolutus	13	13	170		7	13	89		18	13	240		6	13	87		3	13	44		15	13	196		2	13	31	
Ankistrodesmus falcatus	130	29	3768		196	32	6335		144	28	4009		115	21	2436		89	19	1654		177	19	3323		197	17	3435	

Note: **P** Present but not encountered in routine sampling

Appendix F1-3 Phytoplankton density (cells/mL) and biovolume (μm^3/mL) data, 2006 Jericho AEM Program.

Jericho Lake JER-AB08

Taxonomic Group	Replicate 1				Replicate 2				Replicate 3				Replicate 4				Replicate 5				Replicate 6				Replicate 7			
	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P
Arthrodesmus triangularis				P				P				P				P				P				P				P
Botryococcus sp.				P				P																				
Bulbochaete sp..												P																
Chlamydomonas sp. a				P																								P
Cosmarium sp				P																								
Crucigenia fenestrata	42	70	2944									P																
Dictyosphaerium ehrenbergianum					9	47	415					P				P	11	47	536									P
Elakatothrix gelatinosa	56	12	697		32	15	469		21	14	286		19	10	194		19	15	293		26	16	417		38	13	506	
Elakatothrix viridis												P																
Hyalotheca sp																P												
Mougeotia sp. a																				P								
Nephrocytium sp.				P																								
Oocystis elliptica	8	869	7312					P								P				P	4	869	3572					P
Oocystis lacustris	13	220	2778					P								P												
Oocystis sp.	15	140	2065		1	140	112		6	140	866		9	140	1206		11	140	1593		8	140	1169					P
Oocystis solitaria v. major																												
Quadrigula closterioides				P				P					26	45	1161		15	45	657									
Scenedesmus sp.				P																								P
Schroederia setigera								P																				
Sphaerocystis schroeteri	11	202	2123		2	202	444		19	202	3738		4	202	872		3	202	656		10	202	2104		2	202	466	
Sphaerozosma granulatum	4	568	2388		7	568	3747		4	568	2336		2	742	1597		3	428	1389		4	568	2367		7	568	3928	P
Staurastrum sp.1				P	2	6798	14955																					
Tetraedron arthrodesmiforme	13	15	191		9	15	133		4	15	62		9	15	130		3	15	47		10	15	158		9	15	140	
Unidentified filament #1				P	2	435	958		2	435	896		2	435	936									P				P
Unidentified filament #2																				P								
Total Chlorophyta	**303**		**24435**		**266**		**27657**		**217**		**12434**		**192**		**8619**		**159**		**6869**		**255**		**13306**		**256**		**8505**	
CYANOPHYTA																												
Agmenellum quadruplicatum	937	4	3728		176	5	880		515	5	2576		542	5	2710		239	5	1194		817	5	4084		834	5	4170	
Anabaena sp.				P				P				P	9	45	387		39	45	1751		15	45	656					P
Anacystis montana																				P								
Anacystis dimidiata								P									3	69	225									
Aphanocapsa elachista	135	11	1461		849	12	10375		151	12	1842		295	19	5456		484	6	3003		245	12	2993		438	14	5932	
Aphanothece clathrata	10902	2	17073		1142	2	1788		7859	2	12308		2774	2	4345		5912	2	9258		5459	2	8550		5575	2	8730	
Dactylococcopsis linearis								P												P	17	66	1108		9	66	613	
Dichothrix gypsophila																				P								P
Gomphosphaeria naegelianum	59	20	1199														403	20	8200					P				
Lyngbya limnetica	149	6	918					P					125	6	767						515	6	3167		614	6	3777	
Pseudanabaena sp.				P												P	182	14	2513					P				P
Total Cyanophyta	**12182**		**24380**		**2167**		**13044**		**8525**		**16726**		**3744**		**13665**		**7261**		**26145**		**7067**		**20558**		**7471**		**23223**	
Total density (cells/mL)	12876				2951				9122				4189				7746				8055				8183			
Total biovolume (μm^3 /mL)			496423				396456				337696				192775				287138				525403				381607	
Total # of Taxa per Sample	86				63				60				59				56				57				63			

Note: **P** Present but not encountered in routine sampling

Appendix F1-4 Phytoplankton density (cells/mL) and biovolume (µm^3/mL) data, 2006 Jericho AEM Program.

Control Lake JER-AB10

Taxonomic Group	Replicate 1				Replicate 2				Replicate 3				Replicate 4				Replicate 5				Replicate 6				Replicate 7			
	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P
BACILLARIOPHYTA																												
Achnanthes minutissima				P				P	3	81	253		6	81	512					P				P				P
Achnanthes minutissima v. cryptocephala								P												P				P				
Achnanthes sp.				P				P																				
Anomoeoneis sp.				P																								
Asterionalla formosa																												P
Cocconeis sp.																				P				P				
Cocconeis pediculus								P																				
Cocconeis placentula v. euglypta								P												P				P				
Cyclotella sp																												P
Cyclotella glomerata	24	79	1870		15	79	1153		9	79	736		19	79	1486		31	79	2445		28	79	2215		25	79	1995	
Cyclotella ocellata	19	244	4656		18	244	4411		11	244	2654		16	203	3187		12	229	2836		16	244	3804		6	184	1167	
Cymbella affinis								P								P				P				P				
Cymbella sp.				P				P				P				P				P								P
Diatoma elongatum												P												P				
Epithemia sorex																								P				
Eunotia sp.				P				P				P				P								P				
Fragilaria pinnata																P												
Frustulia vulgaris								P				P				P				P				P				P
Gomphonema sp.												P				P												
Melosira distans				P	1	1269	1767					P	8	1269	9871		3	1269	3899					P				P
Navicula cryptocephala				P				P				P				P								P				
Navicula lanceolata				P								P																
Navicula pupula v. rectangularis				P				P																P				
Navicula tripunctata								P												P								
Navicula viridula																												P
Neidium sp.																												P
Nitzschia sp.1				P								P				P				P								P
Pinnularia sp.				P																								
Rhizosolenia longiseta	2	824	1955		5	824	4303		8	824	6308		2	824	1282		3	824	2215		4	824	3560		7	824	5537	
Stephanodiscus astraea	2	3661	5789		6	3661	20387		6	3661	21353		5	3661	17084		6	3661	22704		3	3661	11500		2	3661	5620	
Surirella sp.																								P				P
Synedra sp.	3	106	280		1	106	74		7	106	770		5	106	583		1	106	82					P	3	113	347	
Synedra sp. Smaller								P				P	9	70	655		17	70	1189		3	70	219		9	70	661	
Tabellaria flocculosa				P	4	1018	4252					P				P				P				P				P
Unidentified diatom				P																				P				P
Total Bacillariophyta	**49**		**14550**		**50**		**36347**		**44**		**32075**		**70**		**34659**		**73**		**35370**		**54**		**21298**		**52**		**15327**	
CRYPTOPHYTA																												
Cyanomonas sp.	2	188	297														2	188	288	P	3	188	590					
Cryptomonas sp.												P				P	2	2676	4108		2	2676	4204					P
Cryptomonas curvata				P								P								P								
Cryptomonas ovata	2	3633	5744					P	2	3633	8476		3	3633	11302		3	3633	11157		5	3633	17119		3	3633	11487	
Cryptomonas reflexa	2	1251	1977		1	1251	1741		2	1251	1945		3	1251	3891		6	1251	7680					P				
Katablepharis ovalis	6	180	1141		3	180	502		14	180	2525		19	180	3398		22	180	3915		20	180	3683		3	180	570	
Rhodomonas minuta	63	310	19588		49	325	15815		109	300	32608		91	246	22454		65	279	18165		70	359	25163		32	258	8163	

Note: **P** Present but not encountered in routine sampling

Appendix F1-4 Phytoplankton density (cells/mL) and biovolume (μm^3/mL) data, 2006 Jericho AEM Program.

Control Lake JER-AB10

Taxonomic Group	Replicate 1				Replicate 2				Replicate 3				Replicate 4				Replicate 5				Replicate 6				Replicate 7			
	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P
Total Cryptophyta	**74**		**28746**		**53**		**18058**		**126**		**45553**		**116**		**41045**		**99**		**45313**		**100**		**50759**		**38**		**20221**	
CHRYSOPHYTA																												
Bitrichia longispina	13	121	1537		4	121	507						3	121	378					P	6	121	758					P
Chromulina sp.								P												P	3	360	1123					
Chrysidastrum catenatum				P				P								P				P								P
Chrysochromulina parva									22	75	1621																	
Chrysococcus sp.																	19	156	2894									
Chrysoikos skujai																P								P				
Chrysosphaerella rodhei	25	337	8258		43	337	14539		78	337	26116		40	337	13625		51	337	17238	P	59	337	19977		19	337	6392	
Chrysostephanosphaera globulifera	2	701	1109		1	701	976		2	701	1091		2	701	1091						2	701	1101		6	701	4436	
Dinobryon cylindricum	15	1296	19142		10	1296	13307		23	1518	34238		6	1342	7825		19	1031	20051		19	1128	21259		31	1105	34692	
Dinobryon sociale	18	1006	18292		11	1006	11028		13	952	12327		13	905	11967		14	847	11697		21	915	19043		27	1279	34388	
Dinobryon tabellariae				P	1	2083	2029		2	2083	3240						5	2083	9596		2	2083	3273		2	2083	3998	
Ishtmochloron trispinatum	2	2748	4344														3	2748	8518						3	2748	8689	
Kephyrion boreale				P	3	734	2044		2	734	1142		2	734	1142		6	734	4552		3	734	2306		9	734	6964	
Mallomonas spa	5	1798	8527		6	1887	10508		3	1798	5593		6	1798	11182		3	1798	5573		5	1899	8949		9	1798	16561	
Ochromonas spa				P	3	381	1326		2	381	592						16	687	10657					P				P
Ochromonas stellaris	3	1994	6306		3	1994	5552					P					3	1994	6182					P	3	1994	6125	
Pseudokephyrion sp.					1	255	354					P	2	255	396		3	255	789		3	255	795		3	255	805	
Pseudokephyrion angulosum																									3	602	1903	
Stichogloea doederleinii	41	247	10139					P	14	247	3452		3	247	767		23	247	5680		19	247	4618		20	247	4923	
Synura sp.					1	993	1383		2	993	1545						2	993	1525		8	993	7802		13	993	12565	
Synura sphagnicola																								P				
Total Chrysophyta	**122**		**77653**		**88**		**63554**		**160**		**90957**		**77**		**48372**		**166**		**104953**		**149**		**91005**		**149**		**142439**	
PYRROPHYTA																												
Glenodinium sp.	8	501	3962		1	501	697		5	501	2316		2	501	782		6	501	3108		16	501	7874		6	501	3168	
Gymnodinium spa	4	3164	12497		5	3164	14766		5	3164	14775					P	3	3164	9808		15	3164	47204		6	3164	20008	
Gymnodinium uberrimum				P					2	10699	16637		2	10699	16637					P				P	2	10699	16915	
Peridinium aciculiferum								P																				
Peridinium sp.													2	2826	4394					P								
Total Pyrrophyta	**12**		**16459**		**6**		**15462**		**11**		**33727**		**5**		**21812**		**9**		**12916**		**31**		**55079**		**14**		**40091**	
CHLOROPHYTA																												
Ankistrodesmus convolutus	8	11	87		6	11	72		14	10	144		25	10	246		6	9	55		19	10	184		28	11	326	
Ankistrodesmus falcatus	79	24	1919		70	20	1408		113	21	2364		69	17	1192		99	18	1747		97	18	1747		114	19	2218	
Arthrodesmus triangularis				P	1	520	723					P				P				P				P				P
Botryococcus sp.	32	182	5753														90	182	16360					P				P
Characium sp.																				P								
Chlamydomonas sp. a								P				P									2	76	119					
Dictyosphaerium ehrenbergianum					11	48	529		3	48	148		31	48	1492		12	48	589		38	48	1791		21	48	1021	
Elakatothrix gelatinosa	16	17	268		14	20	282		9	17	159		14	14	196		12	13	148		27	28	735		13	60	764	
Kirchneriella sp.				P									2	27	42													
Mougeotia sp. a																								P				
Oocystis lacustris				P								P								P	3	212	660					
Oocystis sp.	28	110	3137		4	110	460		17	110	1886		9	110	1039		2	110	243		16	110	1731		3	110	349	
Sphaerocystis schroeteri	8	276	2179		6	276	1535		5	276	1286		19	276	5196		9	276	2540		37	276	10324		139	276	38356	
Sphaerozosma granulatum				P	3	471	1312		9	471	4398		2	471	733		5	550	2533		10	471	4812		6	471	2981	

Note: **P** Present but not encountered in routine sampling

Appendix F1-4 Phytoplankton density (cells/mL) and biovolume (μm^3/mL) data, 2006 Jericho AEM Program.

Control Lake JER-AB10

Taxonomic Group	Replicate 1				Replicate 2				Replicate 3				Replicate 4				Replicate 5				Replicate 6				Replicate 7			
	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P
Tetraedron arthrodesmiforme	5	15	70		1	15	20		12	15	182		16	15	230		19	12	217		6	11	69		6	15	93	
Unidentified quadriflagellate																								P				
Unidentified filament #1								P								P				P	2	299	470					P
Unidentified filament #2																								P				
Total Chlorophyta	**175**		**13412**		**117**		**6342**		**183**		**10567**		**187**		**10366**		**253**		**24431**		**256**		**22641**		**331**		**46108**	
CYANOPHYTA																												
Agmenellum quadruplicatum	583	3	1589		230	3	628		267	3	727		493	3	1345		310	3	846		278	3	758		1211	3	3304	
Anabaena sp.									5	55	256		9	55	513		28	55	1518					P				
Anacystis montana				P																				P				
Aphanocapsa elachista	1426	14	19602		232	9	2110		369	9	3349		311	9	2822		481	9	4362		162	8	1312		196	7	1349	
Aphanothece clathrata	4982	2	9101		4833	2	8830		6002	2	10966		3295	2	6020		6719	2	12275		5180	2	9465		4987	2	9110	
Dactylococcopsis linearis	22	29	638		11	29	321		6	29	179		6	29	179		16	29	447		3	29	91		51	29	1457	
Gomphosphaeria naegelianum					200	17	3416		339	17	5803		131	17	2236		415	17	7095		317	17	5430		329	17	5624	
Lyngbya sp.				P												P												
Lyngbya limnetica	149	14	2123		191	14	2724		103	14	1466		210	14	3000		212	14	3027		333	14	4757		152	14	2171	
Microcystis sp.																	290	33	9629									
Oscillatoria sp.				P																								
Trichodesmium sp.																				P								
Total Cyanophyta	**7161**		**33054**		**5697**		**18030**		**7091**		**22748**		**4455**		**16116**		**8469**		**39199**		**6274**		**21812**		**6925**		**23015**	
Total density (cells/mL)	**7594**				**6011**				**7615**				**4910**				**9070**				**6864**				**7510**			
Total biovolume (μm^3 /mL)			**183875**				**157793**				**235628**				**172371**				**262182**				**262595**				**287200**	
Total # of Taxa per Sample	**58**				**55**				**57**				**56**				**68**				**74**				**58**			

Note: **P** Present but not encountered in routine sampling

Appendix F1-5 Phytoplankton density (cells/mL) and biovolume (μm^3/mL) data, 2006 Jericho AEM Program.

Carat Lake JER-AB06

Taxonomic Group	Replicate 1				Replicate 2				Replicate 3				Replicate 4				Replicate 5				Replicate 6				Replicate 7				Replicate 8			
	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P
BACILLARIOPHYTA																																
Achnanthes minutissima								P				P	4	78	272		1	78	57					P				P	4	78	277	
Achnanthes sp.																								P								
Asterionalla formosa								P																								
Cocconeis sp.				P																P				P				P				P
Cocconeis pediculus								P																								
Cyclotella glomerata												P																				
Cyclotella ocellata	72	204	14601		39	237	9226		55	94	5132		44	218	9513		24	218	5158		37	311	11407		68	218	14780		29	217	6354	
Cymbella affinis																																P
Cymbella sp.								P				P				P				P												
Diatoma elongatum																P																
Eunotia arcus				P								P								P												
Eunotia sp.																P																
Frustulia vulgaris																P								P								
Gomphonema angustatum																																P
Hannaea arcus												P																				
Melosira distans				P	3	1294	4106					P	7	1294	9053		7	1294	8465		7	1294	8672		4	1294	4924		5	1294	7102	
Melosira varians												P																				
Navicula sp.																P																
Navicula cryptocephala								P				P								P				P								P
Navicula lanceolata																								P								
Navicula tripunctata				P				P				P								P												P
Navicula viridula																								P								
Nedium iridis v. amphigomphus																																P
Nitzschia sp.1				P																												P
Nitzschia sp 2								P																								
Pinnularia sp.																P				P												
Rhizosolenia longiseta	3	421	1352		3	421	1418		3	421	1395		4	421	1839		5	421	2006		10	421	4214		4	421	1633		6	421	2623	
Stauroneis anceps																																
Stephanodiscus astraea	5	3255	15698		6	3255	20651		3	3255	10793		9	3255	28463		5	3255	17742		7	3255	21810		10	3255	30956					P
Synedra sp.				P				P	3	133	439					P				P				P	11	133	1415		3	133	424	
Synedra sp. Smaller	2	76	122		2	76	161									P																
Tabellaria fenestrata																P																P
Tabellaria flocculosa				P	5	1150	5474					P				P	2	1150	2507		7	1150	7707					P				P
Unidentified diatom																				P												
Unidentified diatom																								P								
Total Bacillariophyta	**81**		**31773**		**59**		**41037**		**65**		**17759**		**67**		**49140**		**43**		**35935**		**67**		**53809**		**96**		**53707**		**48**		**16780**	
CRYPTOPHYTA																																
Cyanomonas sp.																P									2	188	357					
Cryptomonas sp.					5	3061	14567					P				P	2	3061	6673		3	3061	10257					P				P
Cryptomonas curvata								P				P								P	2	4894	8197					P				P
Cryptomonas erosa	2	4842	7786					P				P													2	4842	9209					
Cryptomonas ovata	2	1656	2664		2	1656	2627					P	2	1656	2897					P					2	1656	3151					P
Cryptomonas reflexa	4	982	4351		8	788	6253		7	1325	8757		9	1092	9554		3	1092	3572		7	1092	7295		16	1092	16963		7	1092	7994	
Katablepharis ovalis	19	164	3165		26	164	4263		30	95	2854		17	164	2739						3	164	548		4	164	637		7	164	1169	
Rhodomonas minuta	84	243	20312		71	243	17344		94	243	22881		40	243	9774		37	243	9006		80	243	19470		55	243	13404		77	243	18680	
Total Cryptophyta	**111**		**38277**		**112**		**45054**		**131**		**34492**		**67**		**24964**		**43**		**19251**		**95**		**45768**		**80**		**43720**		**91**		**27843**	
CHRYSOPHYTA																																
Bitrichia longispina				P	2	80	127		3	80	266		5	80	421		1	80	87		3	80	235		6	80	458		7	80	572	

Note: **P** Present but not encountered in routing cell counts

Appendix F1-5 Phytoplankton density (cells/mL) and biovolume (μm^3/mL) data, 2006 Jericho AEM Program.

Carat Lake JER-AB06

Taxonomic Group	Replicate 1				Replicate 2				Replicate 3				Replicate 4				Replicate 5				Replicate 6				Replicate 7				Replicate 8			
	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P
Chromulina sp.					10	441	4295						3	441	1472																	
Chrysochromulina parva	34	51	1705		32	51	1640		13	51	668		10	51	506						20	51	1012						18	51	900	
Chrysoikos skujai	2	475	765														7	475	3110		2	475	796									P
Chrysosphaerella rodhei	74	244	18010		21	295	6092		60	295	17632		47	295	13810		36	295	10628		31	295	9011		27	295	8028		7	295	2105	
Chrysostephanosphaera globulifera								P				P				P	3	1028	3361						1	1028	977					
Dinobryon cylindricum	20	1331	26375		27	1607	43961		17	1088	17979		13	1665	21835		18	1626	29907		12	1364	16773		28	1443	40276		19	1366	26233	
Dinobryon sertularia	25	867	21245		39	885	34740		25	905	23059		49	832	40763		27	751	20020		34	818	27457		28	700	19796		44	728	31774	
Dinobryon tabellariae								P	2	2110	3485		5	2110	10607									P				P	4	2110	7517	
Ishtmochloron trispinatum																																P
Kephyrion sp.																												P				
Kephyrion boreale	2	644	1036	P	3	644	2092		3	644	2136		3	644	2151													P				P
Mallomonas spa	6	2088	13430		2	2088	3312		3	2088	6900		10	2088	21915		3	2088	6829					P	6	2088	11918		6	2088	12428	
Ochromonas spa																P																
Ochromonas spb.								P																								
Ochromonas stellaris				P				P	7	1993	13219													P								P
Pseudokephyrion sp.				P					3	230	764						3	230	753		2	230	387					P				
Stichogloea doederleinii	160	438	70092		53	440	23098		111	386	42724		77	443	34104		48	474	22731		35	385	13557		93	363	33875		95	345	32788	
Synura sp.	13	788	10132		10	788	7499		13	788	10449		3	788	2631					P	10	788	7892		12	788	9175		11	788	8422	
Unidentified statospore																																
Total Chrysophyta	**335**		**162791**		**198**		**126857**		**260**		**139281**		**227**		**150215**		**146**		**97426**		**148**		**77120**		**201**		**124503**		**210**		**122739**	
PYRROPHYTA																																
Glenodinium sp.	6	641	4122		3	641	2034		2	641	1059	P	3	641	2242					P				P	4	641	2439					P
Gymnodinium spa	2	2289	3681		6	2289	14640		3	2289	7564					P				P				P	1	2289	2919		4	2289	8157	
Gymnodinium spb																P																
Gymnodinium uberrimum	0	13713	2756		3	13713	44539					P					2	13713	29894		2	13713	22969		4	13713	52177		2	42138	96370	
Peridinium sp.												P				P																
unidentified cyst																					2	10522	17676									
Total Pyrrophyta	**8**		**10559**		**13**		**61213**		**5**		**8623**		**3**		**2242**		**2**		**29894**		**3**		**40645**		**9**		**57535**		**6**		**104527**	
CHLOROPHYTA																																
Actinastrum hantzschii																																
Ankistrodesmus convolutus	13	10	135		10	11	105		7	11	72		17	10	175		16	11	180		7	11	71		10	10			14	10	137	
Ankistrodesmus falcatus	75	20	1475		64	17	1110		55	16	874		105	25	2664		64	20	1292		94	18	1661		103	16			120	16	1918	
Arthrodesmus triangularis	3	419	1347		2	419	664		3	419	1383		3	419	1465		2	419	913		3	419	1403		4	419	1593					P
Botryococcus sp.				P									117	60	7086		47		0						23	60	1408					
Cosmarium sp																												P				
Cosmarium tetraopthalmum												P																				
Crucigenia quadrata				P																	34	6	218									
Dictyosphaerium ehrenbergianum				P				P				P	10	101	1008						10	101	1008		16	101	1563					
Elakatothrix gelatinosa	22	19	415		42	18	759		20	18	356		5	21	105		25	15	388		31	18	572		31	16	487		24	14	332	
Euastrum elegans									1		0																					
Euastrum elegans				P																												
Hyalotheca sp																																
Kirchneriella sp.																					27	27	723									
Nephrocytium sp.				P								P				P					2	89	149									
Oocystis lacustris				P	6	545	3540		3	545	1807						3	545	1782		7	545	3640		4	545	2074		13	545	6980	
Oocystis sp.	10	175	1689					P	10	175	1741		5	175	919					P	33	175	5845		8	175	1332		5	175	961	
Quadrigula closterioides				P																												
Sphaerocystis schroeteri	8	229	1837		17	229	3786		43	229	9853		37	229	8395		11	229	2492		5	229	1149					P	11	229	2443	
Sphaerozosma granulatum	8	560	4502		3	560	1777		5	560	2776		7	560	3740	P	9	560	4884		7	560	3753		4	560	2174					P

Note: **P** Present but not encountered in routing cell counts

Appendix F1-5 Phytoplankton density (cells/mL) and biovolume (μm^3/mL) data, 2006 Jericho AEM Program.

Carat Lake JER-AB06

Taxonomic Group	Replicate 1				Replicate 2				Replicate 3				Replicate 4				Replicate 5				Replicate 6				Replicate 7				Replicate 8			
	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P	Density	Vol.	Bio-Vol	P
Staurastrum sp.1				P													1	9910	10802									P				P
Staurastrum sp. 2				P																												
Staurastrum sp. 3								P																								
Staurastrum sp 4																												P				
Tetraedron arthrodesmiforme	19	13	242		6	13	87		7	13	83		10	13	132		3	13	41		7	13	84		8	13	97		7	13	89	
Tetrastrum glabrum				P																												
Unidentified filament #1					3	413	1309					P				P				P	2	413	691					P	2	413	754	
Unidentified filament #2				P				P								P																
Total Chlorophyta	**158**		**11641**		**154**		**13139**		**153**		**18945**		**317**		**25687**		**182**		**22774**		**268**		**20967**		**210**		**10729**		**196**		**13614**	
CYANOPHYTA																																
Agmenellum quadruplicatum	794	5	4241		1553	2	3574		1220	8	9248		2564	5	13696		1040	6	5926		798	5	4262		543	5	2903		599	5	3200	
Anabaena sp.								P				P																				
Anacystis montana	90	75	6733													P				P									39	75	2920	
Aphanocapsa elachista				P	182	10	1763		182	10	1768		197	10	1909		268	10	2599		190	10	1845		252	10	2446		335	10	3247	
Aphanothece clathrata	2918	2	5383		6373	2	11758		5295	2	9092		4882	2	8333		3993	2	7367		5392	2	13438		6316	2	11653		4668	2	8612	
Dactylococcopsis linearis	5	23	111					P				P				P				P				P				P				P
Gomphosphaeria naegelianum				P	650	16	10297		430	16	6801		245	16	3877		166	16	2623		469	16	7426		1941	16	30730		399	16	6319	
Lyngbya sp.																																
Lyngbya limnetica	140	3	449		132	3	422		872	3	2799		307	3	986		249	3	798		216	3	694		74	3	238		27	3	88	
Total Cyanophyta	**3947**		**16916**		**8889**		**27815**		**8000**		**29708**		**8195**		**28801**		**5715**		**19313**		**7066**		**27664**		**9127**		**47969**		**6067**		**24385**	
Total density (cells/mL)	**4639**				**9424**				**8614**				**8877**				**6132**				**7647**				**9723**				**6618**			
Total biovolume (μm^3 /mL)			**271958**				**315115**				**248808**				**281048**				**224593**				**265973**				**338164**				**309889**	
Total # of Taxa per Sample	**57**				**59**				**50**				**59**				**52**				**55**				**52**				**56**			

Note: **P** Present but not encountered in routing cell counts

Appendix F2. Phytoplankton QA/QC for Replicate 7 taken on Carat Lake, 2006 Jericho AEM Program.

Taxonomic Group	Density			Biovolume		
	Rep	Split	% Difference	Rep	Split	% Difference
Bacillariophyta						
Achnanthes minutissima		3.6	100.0	P	276.6	
Cocconeis sp.				P	P	
Cyclotella ocellata	67.9	29.3	56.9	14779.6	6354.0	57.0
Cymbella affinis					P	
Gomphonema angustatum					P	
Melosira distans	3.8	5.5	44.2	4924.0	7101.9	44.2
Navicula cryptocephala					P	
Navicula tripunctata					P	
Nedium iridis v. amphigomphus					P	
Nitzschia sp.1					P	
Rhizosolenia longiseta	3.9	6.2	60.6	1633.0	2623.2	60.6
Stephanodiscus astraea	9.5		100.0	30955.9	P	
Synedra sp.	10.7	3.2	70.0	1414.8	424.2	70.0
Tabellaria fenestrata					P	
Tabellaria flocculosa				P	P	
Total Bacillariophyta	95.8	47.8	**50.2**	53707.2	16779.9	**68.8**
Cryptophyta						
Cyanomonas sp.	1.9		100.0	357.3		100.0
Cryptomonas sp.				P	P	
Cryptomonas curvata				P	P	
Cryptomonas erosa	1.9		100.0	9209.1		100.0
Cryptomonas ovata	1.9		100.0	3150.5	P	
Cryptomonas reflexa	15.5	7.3	52.9	16962.7	7993.6	52.9
Katablepharis ovalis	3.9	7.1	83.6	636.9	1169.1	83.6
Rhodomonas minuta	55.2	76.9	39.4	13403.6	18680.0	39.4
Total Cryptophyta	80.3	91.3	**13.8**	43720.1	27842.7	**36.3**
Chrysophyta						
Bitrichia longispina	5.7	7.1	24.9	458.0	571.9	24.9
Chrysochromulina parva		17.8	100.0		899.8	
Chrysoikos skujai					P	
Chrysosphaerella rodhei	27.2	7.1	73.8	8027.8	2105.3	73.8
Chrysostephanosphaera globulifera	1.0		100.0	977.4		100.0
Dinobryon cylindricum	27.9	19.2	31.2	40276.0	26233.2	34.9
Dinobryon sertularia	28.3	43.6	54.3	19795.5	31774.4	60.5
Dinobryon tabellariae		3.6	100.0	P	7516.8	
Ishtmochloron trispinatum					P	
Kephyrion sp.				P		
Kephyrion boreale				P	P	
Mallomonas spa	5.7	6.0	4.3	11918.4	12428.0	4.3
Ochromonas stellaris					P	
Pseudokephyrion sp.				P		
Stichogloea doederleinii	93.2	95.1	2.1	33874.8	32787.8	3.2
Synura sp.	11.6	10.7	8.2	9175.2	8422.1	8.2
Total Chrysophyta	200.6	210.3	**4.8**	124503.2	122739.2	**1.4**

Appendix F2. Phytoplankton QA/QC for Replicate 7 taken on Carat Lake, 2006 Jericho AEM Program.

Taxonomic Group	Density			Biovolume		
	Rep	Split	% Difference	Rep	Split	% Difference
Pyrrophyta						
Glenodinium sp.	3.8		100.0	2438.8		100.0
Gymnodinium spa	1.3	3.6	179.5	2918.9	8156.9	179.5
Gymnodinium uberrimum	3.8	2.3	39.9	52177.1	96370.2	84.7
Total Pyrrophyta	8.9	5.9	**34.2**	57534.8	104527.1	**81.7**
Chlorophyta						
Actinastrum hantzschii						
Ankistrodesmus convolutus	10.5	14.3	36.2	100.9	137.4	36.2
Ankistrodesmus falcatus	102.9	119.6	16.3	1649.7	1918.2	16.3
Arthrodesmus triangularis	3.8		100.0	1593.2		100.0
Botryococcus sp.	23.3		100.0	1408.3		100.0
Cosmarium sp				P		
Dictyosphaerium ehrenbergianum	15.5		100.0	1562.7		100.0
Elakatothrix gelatinosa	31.4	23.8	24.2	487.4	331.7	31.9
Oocystis lacustris	3.8	12.8	236.6	2073.8	6979.6	236.6
Oocystis sp.	7.6	5.5	27.9	1332.0	960.7	27.9
Sphaerocystis schroeteri		10.7	100.0	P	2443.4	
Sphaerozosma granulatum	3.9		100.0	2174.0		100.0
Staurastrum sp.1				P		
Staurastrum sp 4				P		
Tetraedron arthrodesmiforme	7.8	7.1	8.2	97.4	89.4	8.2
Unidentified filament #1		1.8	100.0	P	754.0	
Total Chlorophyta	210.4	195.6	**7.0**	10728.9	13614.4	**26.9**
Cyanophyta						
Agmenellum quadruplicatum	543.5	598.6	10.1	2902.6	3199.6	10.2
Anacystis montana		39.2	100.0		2920.3	100.0
Aphanocapsa elachista	252.3	334.9	32.7	2445.7	3246.6	32.7
Aphanothece clathrata	6315.8	4667.8	26.1	11652.6	8612.0	26.1
Dactylococcopsis linearis						
Gomphosphaeria naegelianum	1940.9	399.1	79.4	30730.5	6318.6	79.4
Lyngbya limnetica	74.2	27.4	63.0	238.1	88.1	63.0
Total Cyanophyta	9126.6	6067.0	**33.5**	47969.5	24385.2	**49.2**
Total density (cells/mL)	9722.6	6617.8	**31.9**			
Total biovolume (µm³ /mL)	338163.8	309888.5	**8.4**			
Number of Taxa per Sample	52.0	56.0	**7.7**			

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APPENDIX G
ZOOPLANKTON

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Appendix G1-1. Zooplankton species, density (no./m^3) and dominance (%) data, 2006 Jericho AEM Program.

Lake C3 JER-AB04

Major taxon	Genus/ species	Replicate 1		Replicate 2		Replicate 3		Replicate 4		Replicate 5		Replicate 6		Replicate 7	
		Density	%	Density	%	Density	%	Density	%	Density	%	Density	%	Density	%
ROTIFERA	*Ascomorpha* sp.	175.8	0.4	552.5	1.6	426.9	1.0	376.7	1.4	502.3	1.4	502.3	1.6	586.0	1.9
	Conochilus unicornis	1657.5	4.1	1280.8	3.7	2586.7	6.3	2218.3	8.0	1799.8	5.0	920.8	2.9	2343.9	7.7
	Kellicottia longispina	6077.4	14.9	6604.8	18.9	6052.3	14.6	4311.1	15.6	4939.0	13.7	5441.2	17.4	5106.4	16.7
	Keratella cochlearis	1783.0	4.4	1632.4	4.7	2260.2	5.5	1799.8	6.5	1757.9	4.9	2176.5	7.0	1925.4	6.3
	Keratella hiemalis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Lecane luna	0.0	0.0	50.2	0.1	25.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	41.9	0.1
	Lepadella sp.	0.0	0.0	0.0	0.0	0.0	0.0	41.9	0.2	0.0	0.0	41.9	0.1	0.0	0.0
	Monostyla bulla	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	41.9	0.1	0.0	0.0
	Polyarthra dolichoptera	25.1	0.1	75.3	0.2	75.3	0.2	0.0	0.0	41.9	0.1	0.0	0.0	41.9	0.1
	Polyarthra vulgaris	3114.1	7.6	3641.4	10.4	3691.7	8.9	1716.1	6.2	2385.8	6.6	2176.5	7.0	1925.4	6.3
	Pompholyx sulcata	0.0	0.0	25.1	0.1	25.1	0.1	41.9	0.2	41.9	0.1	41.9	0.1	41.9	0.1
	Trichocerca cylindrica	0.0	0.0	0.0	0.0	25.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Trichocerca sp.	25.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CLADOCERA	*Eubosmina longispina*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Daphnia galeata mendotae	0.0	0.0	50.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Daphnia middendorffiana	25.1	0.1	0.0	0.0	25.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Holopedium gibberum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
COPEPODA-Calanoida	Calanoid copepodid	904.1	2.2	678.1	1.9	452.0	1.1	41.9	0.2	125.6	0.3	83.7	0.3	41.9	0.1
	Calanoid nauplii	10572.7	25.9	7634.5	21.9	8639.0	20.9	7031.7	25.4	10254.6	28.5	6236.5	19.9	5859.8	19.2
	Heterocope septentrionalis	25.1	0.1	25.1	0.1	0.0	0.0	41.9	0.2	41.9	0.1	0.0	0.0	0.0	0.0
	Leptodiaptomus sicilis	150.7	0.4	276.2	0.8	426.9	1.0	167.4	0.6	460.4	1.3	293.0	0.9	251.1	0.8
COPEPODA-Cyclopoida	Cyclopoid copepodid	2335.5	5.7	1958.8	5.6	2385.8	5.8	753.4	2.7	1590.5	4.4	1255.7	4.0	1297.5	4.2
	Cyclopoid nauplii	13561.2	33.2	9894.7	28.4	13259.9	32.1	8747.8	31.6	11301.0	31.4	11342.9	36.2	10463.9	34.2
	Cyclops scutifer	0.0	0.0	0.0	0.0	25.1	0.1	41.9	0.2	41.9	0.1	41.9	0.1	0.0	0.0
	Diacyclops bicuspidatus	401.8	1.0	502.3	1.4	954.3	2.3	376.7	1.4	669.7	1.9	711.5	2.3	627.8	2.1
Total individuals		40834.3	100.0	34882.5	100.0	41336.6	100.0	27708.4	100.0	35954.0	100.0	31308.0	100.0	30554.6	100.0
Total taxa		15		16		17		15		15		15		14	

Appendix G1-2. Zooplankton species, density (no./m^3) and dominance (%) data, 2006 Jericho AEM Program.

Carat Lake JER-AB06

Major taxon	Genus/ species	Replicate 1		Replicate 2		Replicate 3		Replicate 4		Replicate 5		Replicate 6		Replicate 7		Replicate 8	
		Density	%	Density	%	Density	%	Density	%	Density	%	Density	%	Density	%	Density	%
ROTIFERA	*Ascomorpha* sp.	493.5	2.4	616.8	2.1	524.3	2.0	431.8	1.6	431.8	1.5	215.9	0.9	215.9	1.5	400.9	2.1
	Conochilus unicornis	1110.3	5.3	1696.3	5.7	1973.8	7.7	2066.3	7.8	1757.9	6.1	1480.4	6.5	1172.0	8.1	1511.2	7.8
	Kellicottia longispina	2590.6	12.4	5828.9	19.6	5520.5	21.4	5859.8	22.1	6075.7	21.2	5027.1	22.1	2868.2	19.7	3978.5	20.6
	Keratella cochlearis	1233.6	5.9	1696.3	5.7	1572.9	6.1	1850.5	7.0	1387.8	4.8	1326.2	5.8	894.4	6.1	986.9	5.1
	Keratella hiemalis	0.0	0.0	30.8	0.1	30.8	0.1	61.7	0.2	154.2	0.5	0.0	0.0	30.8	0.2	30.8	0.2
	Lecane luna	0.0	0.0	0.0	0.0	0.0	0.0	30.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Lepadella sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Monostyla bulla	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Polyarthra dolichoptera	0.0	0.0	0.0	0.0	30.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Polyarthra vulgaris	1418.7	6.8	2282.2	7.7	1542.0	6.0	986.9	3.7	2374.8	8.3	1326.2	5.8	986.9	6.8	1172.0	6.1
	Pompholyx sulcata	92.5	0.4	61.7	0.2	30.8	0.1	30.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Trichocerca cylindrica	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.8	0.1	0.0	0.0	30.8	0.2	61.7	0.3
	Trichocerca sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CLADOCERA	*Eubosmina longispina*	0.0	0.0	0.0	0.0	0.0	0.0	30.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	30.8	0.2
	Daphnia galeata mendotae	30.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.8	0.2
	Daphnia middendorffiana	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Holopedium gibberum	30.8	0.1	123.4	0.4	246.7	1.0	92.5	0.3	123.4	0.4	154.2	0.7	30.8	0.2	61.7	0.3
COPEPODA-Calanoida	Calanoid copepodid	586.0	2.8	493.5	1.7	431.8	1.7	709.3	2.7	647.7	2.3	462.6	2.0	400.9	2.8	493.5	2.6
	Calanoid nauplii	2929.9	14.0	3269.1	11.0	3269.1	12.7	2405.6	9.1	2714.0	9.5	2405.6	10.6	956.1	6.6	1603.7	8.3
	Heterocope septentrionalis	0.0	0.0	0.0	0.0	61.7	0.2	30.8	0.1	61.7	0.2	0.0	0.0	0.0	0.0	61.7	0.3
	Leptodiaptomus sicilis	0.0	0.0	30.8	0.1	0.0	0.0	0.0	0.0	0.0	0.0	30.8	0.1	30.8	0.2	30.8	0.2
COPEPODA-Cyclopoida	Cyclopoid copepodid	3361.7	16.1	3361.7	11.3	2313.1	9.0	3639.2	13.7	3330.8	11.6	2405.6	10.6	1973.8	13.6	2775.7	14.4
	Cyclopoid nauplii	5705.6	27.2	8234.5	27.7	6815.8	26.5	7031.7	26.5	8111.2	28.3	6414.9	28.2	4410.3	30.3	5304.6	27.4
	Cyclops scutifer	185.0	0.9	185.0	0.6	215.9	0.8	61.7	0.2	185.0	0.6	61.7	0.3	123.4	0.8	61.7	0.3
	Diacyclops bicuspidatus	1172.0	5.6	1819.6	6.1	1172.0	4.6	1172.0	4.4	1295.3	4.5	1449.5	6.4	431.8	3.0	740.2	3.8
Total individuals		20941.0	100.0	29730.7	100.0	25752.2	100.0	26492.4	100.0	28682.1	100.0	22760.6	100.0	14556.9	100.0	19337.3	100.0
Total taxa		14		15		16		17		15		13		15		18	

Appendix G1-3. Zooplankton species, density (no./m^3) and dominance (%) data, 2006 Jericho AEM Program.

Control Lake JER-AB10

Major taxon	Genus/ species	Replicate 1		Replicate 2		Replicate 3		Replicate 4		Replicate 5		Replicate 6		Replicate 7	
		Density	%	Density	%	Density	%	Density	%	Density	%	Density	%	Density	%
ROTIFERA	*Ascomorpha* sp.	763.0	3.4	640.9	2.8	701.9	3.9	701.9	3.4	671.4	3.0	915.6	4.0	1037.7	4.5
	Conochilus unicornis	3662.3	16.3	3906.5	17.4	3998.1	22.5	3448.7	16.8	2868.8	12.8	3753.9	16.4	4913.6	21.1
	Kellicottia longispina	7538.3	33.5	6958.5	30.9	3601.3	20.2	5188.3	25.3	7782.5	34.7	6378.6	27.9	6164.9	26.4
	Keratella cochlearis	2258.4	10.0	2441.6	10.9	1739.6	9.8	2716.2	13.2	2472.1	11.0	2655.2	11.6	2502.6	10.7
	Keratella hiemalis	0.0	0.0	0.0	0.0	0.0	0.0	30.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0
	Lecane luna	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Lepadella sp.	30.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	30.5	0.1	0.0	0.0	0.0	0.0
	Monostyla bulla	0.0	0.0	0.0	0.0	0.0	0.0	30.5	0.1	0.0	0.0	30.5	0.1	0.0	0.0
	Polyarthra dolichoptera	30.5	0.1	91.6	0.4	0.0	0.0	0.0	0.0	0.0	0.0	30.5	0.1	61.0	0.3
	Polyarthra vulgaris	2441.6	10.8	1800.7	8.0	1770.1	9.9	2166.9	10.6	2655.2	11.9	2044.8	9.0	2014.3	8.6
	Pompholyx sulcata	122.1	0.5	91.6	0.4	61.0	0.3	122.1	0.6	183.1	0.8	30.5	0.1	183.1	0.8
	Trichocerca cylindrica	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Trichocerca sp.	0.0	0.0	0.0	0.0	30.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CLADOCERA	*Eubosmina longispina*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Daphnia galeata mendotae	0.0	0.0	0.0	0.0	0.0	0.0	30.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0
	Daphnia middendorffiana	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	61.0	0.3	0.0	0.0	0.0	0.0
	Holopedium gibberum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
COPEPODA-Calanoida	Calanoid copepodid	30.5	0.1	183.1	0.8	61.0	0.3	30.5	0.1	30.5	0.1	30.5	0.1	30.5	0.1
	Calanoid nauplii	1648.1	7.3	1739.6	7.7	2136.4	12.0	1464.9	7.1	1831.2	8.2	2197.4	9.6	1648.1	7.1
	Heterocope septentrionalis	0.0	0.0	0.0	0.0	30.5	0.2	0.0	0.0	0.0	0.0	30.5	0.1	0.0	0.0
	Leptodiaptomus sicilis	61.0	0.3	122.1	0.5	30.5	0.2	30.5	0.1	152.6	0.7	30.5	0.1	152.6	0.7
COPEPODA-Cyclopoida	Cyclopoid copepodid	122.1	0.5	152.6	0.7	61.0	0.3	213.6	1.0	274.7	1.2	122.1	0.5	61.0	0.3
	Cyclopoid nauplii	3540.3	15.7	4120.1	18.3	3418.2	19.2	4059.1	19.8	3143.5	14.0	4303.3	18.9	4089.6	17.5
	Cyclops scutifer	0.0	0.0	0.0	0.0	0.0	0.0	30.5	0.1	30.5	0.1	0.0	0.0	30.5	0.1
	Diacyclops bicuspidatus	274.7	1.2	244.2	1.1	152.6	0.9	244.2	1.2	213.6	1.0	274.7	1.2	427.3	1.8
Total individuals		22523.4	100.0	22492.9	100.0	17792.9	100.0	20509.1	100.0	22401.3	100.0	22828.6	100.0	23316.9	100.0
Total taxa		14		13		14		16		15		15		14	

Appendix G1-4. Zooplankton species, density (no./m^3) and dominance (%) data, 2006 Jericho AEM Program.

Jericho Lake JER-AB08

Major taxon	Genus/ species	Replicate 1		Replicate 2		Replicate 3		Replicate 4		Replicate 5		Replicate 6		Replicate 7	
		Density	%	Density	%	Density	%	Density	%	Density	%	Density	%	Density	%
ROTIFERA	*Ascomorpha* sp.	1157.5	5.0	940.5	4.2	1049.0	4.9	940.5	4.0	868.1	4.7	578.7	2.7	904.3	4.6
	Conochilus unicornis	2929.9	12.6	2640.5	11.7	2785.2	12.9	2749.0	11.8	2423.5	13.2	2061.8	9.8	1917.1	9.7
	Kellicottia longispina	9259.9	39.9	8681.1	38.3	8283.2	38.4	9693.9	41.7	6908.7	37.7	7523.6	35.7	7921.5	40.2
	Keratella cochlearis	3146.9	13.6	3363.9	14.9	3291.6	15.2	3327.8	14.3	1917.1	10.5	3870.3	18.4	3291.6	16.7
	Keratella hiemalis	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Lecane luna	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.2	0.2
	Lepadella sp.	0.0	0.0	0.0	0.0	0.0	0.0	36.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0
	Monostyla bulla	0.0	0.0	36.2	0.2	36.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Polyarthra dolichoptera	0.0	0.0	289.4	1.3	108.5	0.5	108.5	0.5	108.5	0.6	0.0	0.0	144.7	0.7
	Polyarthra vulgaris	1338.3	5.8	2242.6	9.9	2170.3	10.1	1663.9	7.2	1663.9	9.1	1555.4	7.4	1555.4	7.9
	Pompholyx sulcata	361.7	1.6	253.2	1.1	180.9	0.8	325.5	1.4	217.0	1.2	397.9	1.9	397.9	2.0
	Trichocerca cylindrica	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Trichocerca sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CLADOCERA	*Eubosmina longispina*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Daphnia galeata mendotae	36.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Daphnia middendorffiana	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Holopedium gibberum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
COPEPODA-Calanoida	Calanoid copepodid	144.7	0.6	36.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	36.2	0.2	0.0	0.0
	Calanoid nauplii	651.1	2.8	759.6	3.4	361.7	1.7	361.7	1.6	687.3	3.7	434.1	2.1	434.1	2.2
	Heterocope septentrionalis	0.0	0.0	36.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Leptodiaptomus sicilis	108.5	0.5	36.2	0.2	108.5	0.5	144.7	0.6	72.3	0.4	217.0	1.0	108.5	0.6
COPEPODA-Cyclopoida	Cyclopoid copepodid	1049.0	4.5	831.9	3.7	795.8	3.7	1302.2	5.6	976.6	5.3	1338.3	6.3	651.1	3.3
	Cyclopoid nauplii	2206.5	9.5	2025.6	8.9	2097.9	9.7	2206.5	9.5	2387.3	13.0	2568.2	12.2	2025.6	10.3
	Cyclops scutifer	0.0	0.0	36.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	36.2	0.2	0.0	0.0
	Diacyclops bicuspidatus	831.9	3.6	434.1	1.9	325.5	1.5	397.9	1.7	108.5	0.6	470.2	2.2	325.5	1.7
Total individuals		23222.0	100.0	22643.3	100.0	21594.3	100.0	23258.2	100.0	18338.9	100.0	21087.9	100.0	19713.4	100.0
Total taxa		13		16		13		13		12		13		13	

Appendix G1-5. Zooplankton species, density (no./m^3) and dominance (%) data, 2006 Jericho AEM Program.

Cigar Lake JER-AB11

Major taxon	Genus/ species	Replicate 1		Replicate 2		Replicate 3		Replicate 4		Replicate 5		Replicate 6		Replicate 7	
		Density	%	Density	%	Density	%	Density	%	Density	%	Density	%	Density	%
ROTIFERA	*Ascomorpha* sp.	703.2	1.9	742.2	2.6	859.4	2.5	898.5	2.8	1093.8	3.3	625.0	1.8	976.6	3.1
	Conochilus unicornis	1289.1	3.6	1406.3	4.9	1054.8	3.0	742.2	2.3	781.3	2.3	859.4	2.5	586.0	1.9
	Kellicottia longispina	8281.8	22.9	4805.0	16.8	6406.7	18.4	5547.2	17.3	6133.2	18.2	6289.5	17.9	7188.0	22.7
	Keratella cochlearis	7070.8	19.6	6055.1	21.1	8008.3	23.1	7422.4	23.2	8516.2	25.3	7969.3	22.7	6797.3	21.5
	Keratella hiemalis	0.0	0.0	39.1	0.1	78.1	0.2	0.0	0.0	0.0	0.0	78.1	0.2	78.1	0.2
	Lecane luna	0.0	0.0	0.0	0.0	39.1	0.1	0.0	0.0	0.0	0.0	78.1	0.2	78.1	0.2
	Lepadella sp.	0.0	0.0	0.0	0.0	0.0	0.0	39.1	0.1	0.0	0.0	0.0	0.0	39.1	0.1
	Monostyla bulla	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39.1	0.1	0.0	0.0	0.0	0.0
	Polyarthra dolichoptera	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Polyarthra vulgaris	1328.2	3.7	1211.0	4.2	1289.1	3.7	976.6	3.1	1093.8	3.3	1054.8	3.0	976.6	3.1
	Pompholyx sulcata	507.8	1.4	507.8	1.8	507.8	1.5	703.2	2.2	390.7	1.2	117.2	0.3	351.6	1.1
	Trichocerca cylindrica	0.0	0.0	0.0	0.0	39.1	0.1	0.0	0.0	39.1	0.1	312.5	0.9	39.1	0.1
	Trichocerca sp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CLADOCERA	*Eubosmina longispina*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Daphnia galeata mendotae	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Daphnia middendorffiana	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Holopedium gibberum	39.1	0.1	78.1	0.3	78.1	0.2	0.0	0.0	78.1	0.2	156.3	0.4	117.2	0.4
COPEPODA-Calanoida	Calanoid copepodid	468.8	1.3	234.4	0.8	429.7	1.2	273.5	0.9	625.0	1.9	468.8	1.3	468.8	1.5
	Calanoid nauplii	5195.7	14.4	4219.0	14.7	4414.4	12.7	4883.1	15.3	3984.6	11.8	4765.9	13.6	3789.3	12.0
	Heterocope septentrionalis	39.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Leptodiaptomus sicilis	0.0	0.0	39.1	0.1	78.1	0.2	0.0	0.0	39.1	0.1	39.1	0.1	39.1	0.1
COPEPODA-Cyclopoida	Cyclopoid copepodid	781.3	2.2	586.0	2.0	859.4	2.5	312.5	1.0	625.0	1.9	1015.7	2.9	625.0	2.0
	Cyclopoid nauplii	10196.0	28.2	8555.3	29.9	10391.3	29.9	10078.8	31.5	9727.2	28.9	10860.1	31.0	9375.6	29.7
	Cyclops scutifer	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Diacyclops bicuspidatus	195.3	0.5	156.3	0.5	195.3	0.6	117.2	0.4	468.8	1.4	351.6	1.0	78.1	0.2
Total individuals		36096.1	100.0	28634.7	100.0	34728.8	100.0	31994.3	100.0	33635.0	100.0	35041.4	100.0	31603.6	100.0
Total taxa		13		14		16		12		15		16		17	

Appendix G2-1. Zooplankton taxa identification QAQC, 2006 Jericho AEM Program.

Major taxon	*Genus/ species*	Initial identification	QA/QC identification
ROTIFERA	*Ascomorpha* sp.	x	x
	Conochilus unicornis	x	x
	Kellicottia longispina	x	x
	Keratella cochlearis	x	x
	Keratella hiemalis	x	x
	Lecane luna	x	x
	Lepadella sp.	x	x
	Monostyla bulla	x	x
	Polyarthra dolichoptera	x	x
	Polyarthra vulgaris	x	x
	Pompholyx sulcata	x	x
	Trichocerca cylindrica	x	x
	Trichocerca sp.	x	
CLADOCERA	*Eubosmina longispina*	x	x
	Daphnia galeata mendotae	x	x
	Daphnia middendorffiana	x	x
	Holopedium gibberum	x	x
COPEPODA-Calanoida	Calanoid copepodid	x	x
	Calanoid nauplii	x	x
	Heterocope septentrionalis	x	x
	Leptodiaptomus sicilis	x	x
COPEPODA-Cyclopoida	Cyclopoid copepodid	x	x
	Cyclopoid nauplii	x	x
	Cyclops scutifer	x	x
	Diacyclops bicuspidatus	x	x

Appendix G2-2. Zooplankton subsampling precision (% S.E. as % of mean; precision ≥ 10 % highlighted), 2006 Jericho AEM Program.

Lake C3 JER-AB04

Genus/species	Replicate 1				Replicate 2				Replicate 3				Replicate 4				Replicate 5				Replicate 6				Replicate 7			
	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*
Ascomorpha sp.	2.3	0.4	1.2		7.3	1.6	0.7	9.1	5.7	1.0	1.7	29.4	3.0	1.4	1.7	57.7	4.0	1.4	1.2		4.0	1.6	1.0	25.0	4.7	1.9	0.3	7.1
Conochilus unicornis	22.0	4.1	2.1	9.5	17.0	3.7	0.6	3.4	34.3	6.3	3.4	9.9	17.7	8.0	2.7	15.4	14.3	5.0	2.2	15.2	7.3	2.9	1.9	25.3	18.7	7.7	1.8	9.4
Kellicottia longispina	80.7	14.9	4.9	6.1	87.7	18.9	5.5	6.2	80.3	14.6	1.5	1.8	34.3	15.6	1.5	4.2	39.3	13.7	2.3	5.9	43.3	17.4	5.8	13.4	40.7	16.7	7.9	19.4
Keratella cochlearis	23.7	4.4	0.9	3.7	21.7	4.7	2.9	13.4	30.0	5.5	4.2	13.9	14.3	6.5	0.9	6.2	14.0	4.9	0.6	4.1	17.3	7.0	1.3	7.7	15.3	6.3	2.3	15.2
Keratella hiemalis	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Lecane luna	0.0	0.0	0.0		0.7	0.1	0.3		0.3	0.1	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.1	0.3	
Lepadella sp.	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.2	0.3		0.0	0.0	0.0		0.3	0.1	0.3		0.0	0.0	0.0	
Monostyla bulla	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.1	0.3		0.0	0.0	0.0	
Polyarthra dolichoptera	0.3	0.1	0.3		1.0	0.2	0.0		1.0	0.2	1.0		0.0	0.0	0.0		0.3	0.1	0.3		0.0	0.0	0.0		0.3	0.1	0.3	
Polyarthra vulgaris	41.3	7.6	6.2	14.9	48.3	10.4	6.2	12.8	49.0	8.9	3.8	7.7	13.7	6.2	1.5	10.6	19.0	6.6	2.6	13.9	17.3	7.0	1.8	10.2	15.3	6.3	1.2	7.8
Pompholyx sulcata	0.0	0.0	0.0		0.3	0.1	0.3		0.3	0.1	0.3		0.3	0.2	0.3		0.3	0.1	0.3		0.3	0.1	0.3		0.3	0.1	0.3	
Trichocerca cylindrica	0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.1	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Trichocerca sp.	0.3	0.1	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Eubosmina longispina	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Daphnia galeata mendotae	0.0	0.0	0.0		0.7	0.1	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Daphnia middendorffiana	0.3	0.1	0.3		0.0	0.0	0.0		0.3	0.1	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Holopedium gibberum	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Calanoid copepodid	12.0	2.2	1.2	9.6	9.0	1.9	1.5	17.0	6.0	1.1	1.2	19.2	0.3	0.2	0.3		1.0	0.3	0.6	57.7	0.7	0.3	0.3		0.3	0.1	0.3	
Calanoid nauplii	140.3	25.9	5.8	4.1	101.3	21.9	1.2	1.2	114.7	20.9	9.0	7.8	56.0	25.4	1.7	3.1	81.7	28.5	8.1	9.9	49.7	19.9	5.2	10.4	46.7	19.2	3.4	7.2
Heterocope septentrionalis	0.3	0.1	0.3		0.3	0.1	0.3		0.0	0.0	0.0		0.3	0.2	0.3		0.3	0.1	0.3		0.0	0.0	0.0		0.0	0.0	0.0	
Leptodiaptomus sicilis	2.0	0.4	0.6		3.7	0.8	0.3		5.7	1.0	0.9	15.6	1.3	0.6	0.3		3.7	1.3	0.3	9.1	2.3	0.9	0.7		2.0	0.8	1.0	
Cyclopoid copepodid	31.0	5.7	3.5	11.3	26.0	5.6	2.6	10.2	31.7	5.8	3.3	10.5	6.0	2.7	0.6	9.6	12.7	4.4	1.5	11.5	10.0	4.0	1.5	15.3	10.3	4.2	1.5	14.1
Cyclopoid nauplii	180.0	33.2	2.9	1.6	131.3	28.4	1.2	0.9	176.0	32.1	2.1	1.2	69.7	31.6	5.5	7.9	90.0	31.4	4.0	4.4	90.3	36.2	5.2	5.7	83.3	34.2	1.2	1.4
Cyclops scutifer	0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.1	0.3		0.3	0.2	0.3		0.3	0.1	0.3		0.3	0.1	0.3		0.0	0.0	0.0	
Diacyclops bicuspidatus	5.3	1.0	2.0		6.7	1.4	0.7	10.0	12.7	2.3	2.0	16.0	3.0	1.4	0.6	19.2	5.3	1.9	1.5	27.2	5.7	2.3	0.3	5.9	5.0	2.1	0.6	11.5
Total	542.0	100	15.9	2.9	463.0	100	5.3	1.1	548.7	100	12.9	2.3	220.7	100	6.5	2.9	286.3	100	16.0	5.6	249.3	100	2.0	0.8	243.3	100	8.4	3.4

Appendix G2-2. Zooplankton subsampling precision (% S.E. as % of mean; precision ≥ 10 % highlighted), 2006 Jericho AEM Program.

Control Lake JER-AB10

Genus/species	Replicate 1				Replicate 2				Replicate 3				Replicate 4				Replicate 5				Replicate 6				Replicate 7			
	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*
Ascomorpha sp.	8.3	3.4	1.3	16.0	7.0	2.8	0.6	8.2	7.7	3.9	1.2	15.7	7.7	3.4	1.2	15.7	7.3	3.0	1.3	18.2	10.0	4.0	1.2	11.5	11.3	4.5	0.3	2.9
Conochilus unicornis	40.0	16.3	3.2	8.0	42.7	17.4	0.3	0.8	43.7	22.5	2.4	5.5	37.7	16.8	4.7	12.4	31.3	12.8	3.4	10.8	41.0	16.4	6.5	15.9	53.7	21.1	9.6	17.9
Kellicottia longispina	82.3	33.5	2.7	3.2	76.0	30.9	5.1	6.8	39.3	20.2	4.9	12.5	56.7	25.3	1.9	3.3	85.0	34.7	3.8	4.5	69.7	27.9	2.7	3.9	67.3	26.4	7.9	11.7
Keratella cochlearis	24.7	10.0	4.8	19.5	26.7	10.9	2.4	9.0	19.0	9.8	0.6	3.0	29.7	13.2	0.7	2.2	27.0	11.0	2.1	7.7	29.0	11.6	1.7	6.0	27.3	10.7	2.8	10.4
Keratella hiemalis	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.1	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Lecane luna	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Lepadella sp.	0.3	0.1	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.1	0.3		0.0	0.0	0.0		0.0	0.0	0.0	
Monostyla bulla	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.1	0.3		0.0	0.0	0.0		0.3	0.1	0.3		0.0	0.0	0.0	
Polyarthra dolichoptera	0.3	0.1	0.3		1.0	0.4	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.1	0.3		0.7	0.3	0.3	
Polyarthra vulgaris	26.7	10.8	3.3	12.5	19.7	8.0	1.2	6.1	19.3	9.9	1.5	7.5	23.7	10.6	2.4	10.2	29.0	11.9	4.2	14.4	22.3	9.0	1.5	6.5	22.0	8.6	4.0	18.4
Pompholyx sulcata	1.3	0.5	0.7		1.0	0.4	0.0		0.7	0.3	0.7		1.3	0.6	0.3		2.0	0.8	0.6		0.3	0.1	0.3		2.0	0.8	0.0	
Trichocerca cylindrica	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Trichocerca sp.	0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.2	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Eubosmina longispina	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Daphnia galeata mendotae	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.1	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Daphnia middendorffiana	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.7	0.3	0.7		0.0	0.0	0.0		0.0	0.0	0.0	
Holopedium gibberum	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Calanoid copepodid	0.3	0.1	0.3		2.0	0.8	1.2		0.7	0.3	0.7		0.3	0.1	0.3		0.3	0.1	0.3		0.3	0.1	0.3		0.3	0.1	0.3	
Calanoid nauplii	18.0	7.3	0.6	3.2	19.0	7.7	0.6	3.0	23.3	12.0	3.5	15.1	16.0	7.1	0.6	3.6	20.0	8.2	0.6	2.9	24.0	9.6	4.0	16.8	18.0	7.1	0.6	3.2
Heterocope septentrionalis	0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.2	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.1	0.3		0.0	0.0	0.0	
Leptodiaptomus sicilis	0.7	0.3	0.7		1.3	0.5	0.9		0.3	0.2	0.3		0.3	0.1	0.3		1.7	0.7	0.9		0.3	0.1	0.3		1.7	0.7	0.3	
Cyclopoid copepodid	1.3	0.5	0.3		1.7	0.7	0.9	52.9	0.7	0.3	0.7		2.3	1.0	0.9	37.8	3.0	1.2	0.6	19.2	1.3	0.5	0.3		0.7	0.3	0.3	50.0
Cyclopoid nauplii	38.7	15.7	1.2	3.1	45.0	18.3	4.0	9.0	37.3	19.2	4.4	11.7	44.3	19.8	3.5	8.0	34.3	14.0	3.2	9.3	47.0	18.9	3.5	7.4	44.7	17.5	4.3	9.5
Cyclops scutifer	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.1	0.3		0.3	0.1	0.3		0.0	0.0	0.0		0.3	0.1	0.3	
Diacyclops bicuspidatus	3.0	1.2	0.0	0.0	2.7	1.1	0.9	33.1	1.7	0.9	0.7		2.7	1.2	1.5	54.5	2.3	1.0	0.9	37.8	3.0	1.2	0.6	19.2	4.7	1.8	0.3	7.1
Total	246.0	100	4.9	2.0	245.7	100	7.7	3.1	194.3	100	7.1	3.6	224.0	100	7.0	3.1	244.7	100	5.6	2.3	249.3	100	13.4	5.4	254.7	100	28.5	11.2

Appendix G2-2. Zooplankton subsampling precision (% S.E. as % of mean; precision ≥ 10 % highlighted), 2006 Jericho AEM Program.

Jericho Lake JER-AB08

Genus/species	Replicate 1				Replicate 2				Replicate 3				Replicate 4				Replicate 5				Replicate 6				Replicate 7			
	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*
Ascomorpha sp.	10.7	5.0	1.8	16.5	8.7	4.2	0.7	7.7	9.7	4.9	0.9	9.1	8.7	4.0	2.9	33.5	8.0	4.7	0.6	7.2	5.3	2.7	0.9	16.5	8.3	4.6	1.2	14.4
Conochilus unicornis	27.0	12.6	1.2	4.3	24.3	11.7	4.7	19.2	25.7	12.9	3.7	14.3	25.3	11.8	0.9	3.5	22.3	13.2	5.2	23.5	19.0	9.8	2.6	13.9	17.7	9.7	1.2	6.8
Kellicottia longispina	85.3	39.9	6.6	7.8	80.0	38.3	4.5	5.6	76.3	38.4	5.4	7.0	89.3	41.7	3.8	4.2	63.7	37.7	0.9	1.4	69.3	35.7	2.6	3.8	73.0	40.2	6.4	8.8
Keratella cochlearis	29.0	13.6	5.0	17.2	31.0	14.9	3.5	11.3	30.3	15.2	4.3	14.3	30.7	14.3	2.3	7.6	17.7	10.5	1.2	6.8	35.7	18.4	3.7	10.3	30.3	16.7	2.7	8.8
Keratella hiemalis	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Lecane luna	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.2	0.3	
Lepadella sp.	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.2	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Monostyla bulla	0.0	0.0	0.0		0.3	0.2	0.3		0.3	0.2	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Polyarthra dolichoptera	0.0	0.0	0.0		2.7	1.3	0.3		1.0	0.5	0.6		1.0	0.5	0.0		1.0	0.6	0.6		0.0	0.0	0.0		1.3	0.7	0.3	
Polyarthra vulgaris	12.3	5.8	2.3	18.9	20.7	9.9	5.7	27.6	20.0	10.1	2.1	10.4	15.3	7.2	2.3	15.2	15.3	9.1	1.3	8.7	14.3	7.4	0.9	6.2	14.3	7.9	2.4	16.8
Pompholyx sulcata	3.3	1.6	0.9		2.3	1.1	0.7		1.7	0.8	0.3		3.0	1.4	0.6	19.2	2.0	1.2	0.0		3.7	1.9	0.3		3.7	2.0	1.8	48.1
Trichocerca cylindrica	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Trichocerca sp.	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Eubosmina longispina	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Daphnia galeata mendotae	0.3	0.2	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Daphnia middendorffiana	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Holopedium gibberum	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Calanoid copepodid	1.3	0.6	0.9		0.3	0.2	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.2	0.3		0.0	0.0	0.0	
Calanoid nauplii	6.0	2.8	1.0	16.7	7.0	3.4	1.2	16.5	3.3	1.7	0.9	26.5	3.3	1.6	0.9	26.5	6.3	3.7	1.3	21.1	4.0	2.1	0.6	14.4	4.0	2.2	0.6	14.4
Heterocope septentrionalis	0.0	0.0	0.0		0.3	0.2	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Leptodiaptomus sicilis	1.0	0.5	0.0		0.3	0.2	0.3		1.0	0.5	0.6		1.3	0.6	0.9		0.7	0.4	0.3		2.0	1.0	1.0	50.0	1.0	0.6	0.6	
Cyclopoid copepodid	9.7	4.5	1.5	15.0	7.7	3.7	2.3	30.4	7.3	3.7	1.8	24.1	12.0	5.6	4.4	36.3	9.0	5.3	1.5	17.0	12.3	6.3	2.0	16.4	6.0	3.3	0.6	9.6
Cyclopoid nauplii	20.3	9.5	0.7	3.3	18.7	8.9	0.9	4.7	19.3	9.7	0.3	1.7	20.3	9.5	2.4	11.8	22.0	13.0	2.1	9.5	23.7	12.2	0.3	1.4	18.7	10.3	2.8	15.3
Cyclops scutifer	0.0	0.0	0.0		0.3	0.2	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.2	0.3		0.0	0.0	0.0	
Diacyclops bicuspidatus	7.7	3.6	1.5	19.0	4.0	1.9	1.0	25.0	3.0	1.5	1.2	38.5	3.7	1.7	0.3	9.1	1.0	0.6	0.6		4.3	2.2	0.3	7.7	3.0	1.7	1.0	33.3
Total	214.0	100	14.0	6.5	208.7	100	10.7	5.1	199.0	100	5.8	2.9	214.3	100	9.5	4.4	169.0	100	6.7	3.9	194.3	100	6.3	3.3	181.7	100	9.0	4.9

Appendix G2-2. Zooplankton subsampling precision (% S.E. as % of mean; precision ≥ 10 % highlighted), 2006 Jericho AEM Program.

Cigar Lake JER-AB11

Genus/species	Replicate 1				Replicate 2				Replicate 3				Replicate 4				Replicate 5				Replicate 6				Replicate 7			
	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*
Ascomorpha sp.	6.0	1.9	0.6	9.6	6.3	2.6	0.7	10.5	7.3	2.5	1.2	16.4	7.7	2.8	1.5	19.0	9.3	3.3	2.0	21.7	5.3	1.8	0.7	12.5	8.3	3.1	0.9	10.6
Conochilus unicornis	11.0	3.6	0.6	5.2	12.0	4.9	1.2	9.6	9.0	3.0	1.2	12.8	6.3	2.3	1.3	21.1	6.7	2.3	1.5	21.8	7.3	2.5	0.3	4.5	5.0	1.9	0.6	11.5
Kellicottia longispina	70.7	22.9	8.8	12.5	41.0	16.8	2.5	6.1	54.7	18.4	7.1	13.0	47.3	17.3	3.7	7.7	52.3	18.2	3.2	6.1	53.7	17.9	4.9	9.1	61.3	22.7	7.6	12.4
Keratella cochlearis	60.3	19.6	6.4	10.6	51.7	21.1	4.3	8.4	68.3	23.1	4.1	6.0	63.3	23.2	6.4	10.0	72.7	25.3	5.2	7.2	68.0	22.7	2.6	3.9	58.0	21.5	3.1	5.3
Keratella hiemalis	0.0	0.0	0.0		0.3	0.1	0.3		0.7	0.2	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.7	0.2	0.3		0.7	0.2	0.3	
Lecane luna	0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.1	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.7	0.2	0.7		0.7	0.2	0.3	
Lepadella sp.	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.1	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.1	0.3	
Monostyla bulla	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.1	0.3		0.0	0.0	0.0		0.0	0.0	0.0	
Polyarthra dolichoptera	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Polyarthra vulgaris	11.3	3.7	1.2	10.6	10.3	4.2	0.9	8.5	11.0	3.7	2.6	24.1	8.3	3.1	0.9	10.6	9.3	3.3	3.0	31.7	9.0	3.0	1.5	17.0	8.3	3.1	1.8	21.2
Pompholyx sulcata	4.3	1.4	0.3	7.7	4.3	1.8	0.3	7.7	4.3	1.5	0.3	7.7	6.0	2.2	0.6	9.6	3.3	1.2	1.8	52.9	1.0	0.3	1.0		3.0	1.1	1.5	50.9
Trichocerca cylindrica	0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.1	0.3		0.0	0.0	0.0		0.3	0.1	0.3		2.7	0.9	1.3		0.3	0.1	0.3	
Trichocerca sp.	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Eubosmina longispina	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Daphnia galeata mendotae	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Daphnia middendorffiana	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Holopedium gibberum	0.3	0.1	0.3		0.7	0.3	0.3		0.7	0.2	0.3		0.0	0.0	0.0		0.7	0.2	0.7		1.3	0.4	0.3		1.0	0.4	0.0	
Calanoid copepodid	4.0	1.3	0.6	14.4	2.0	0.8	0.6		3.7	1.2	0.7	18.2	2.3	0.9	0.3		5.3	1.9	1.8	33.1	4.0	1.3	1.0	25.0	4.0	1.5	1.5	38.2
Calanoid nauplii	44.3	14.4	4.7	10.5	36.0	14.7	2.5	7.0	37.7	12.7	2.4	6.4	41.7	15.3	3.3	8.0	34.0	11.8	2.3	6.8	40.7	13.6	4.4	10.8	32.3	12.0	0.9	2.7
Heterocope septentrionalis	0.3	0.1	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Leptodiaptomus sicilis	0.0	0.0	0.0		0.3	0.1	0.3		0.7	0.2	0.7		0.0	0.0	0.0		0.3	0.1	0.3		0.3	0.1	0.3		0.3	0.1	0.3	
Cyclopoid copepodid	6.7	2.2	1.5	21.8	5.0	2.0	0.6	11.5	7.3	2.5	1.2	16.4	2.7	1.0	0.7		5.3	1.9	0.7	12.5	8.7	2.9	0.9	10.2	5.3	2.0	0.9	16.5
Cyclopoid nauplii	87.0	28.2	10.6	12.2	73.0	29.9	1.5	2.1	88.7	29.9	8.4	9.5	86.0	31.5	4.6	5.3	83.0	28.9	3.1	3.7	92.7	31.0	3.8	4.1	80.0	29.7	1.5	1.9
Cyclops scutifer	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Diacyclops bicuspidatus	1.7	0.5	0.3		1.3	0.5	0.3		1.7	0.6	0.7		1.0	0.4	0.0		4.0	1.4	1.0	25.0	3.0	1.0	0.6	19.2	0.7	0.2	0.3	
Total	308.0	100	2.3	0.7	244.3	100	8.1	3.3	296.3	100	13.5	4.5	273.0	100	14.0	5.1	287.0	100	11.1	3.9	299.0	100	16.4	5.5	269.7	100	7.7	2.8

Appendix G2-2. Zooplankton subsampling precision (% S.E. as % of mean; precision ≥ 10 % highlighted), 2006 Jericho AEM Program.

Carat Lake JER-AB06

Genus/species	Replicate 1				Replicate 2				Replicate 3				Replicate 4				Replicate 5				Replicate 6				Replicate 7				Replicate 8			
	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*	Mean of n=3	%	S.E.	% S.E.*
Ascomorpha sp.	5.3	2.4	0.7	12.5	6.7	2.1	0.7	10.0	5.7	2.0	0.3	5.9	4.7	1.6	0.3	7.1	4.7	1.5	0.9	18.9	2.3	0.9	1.2		2.3	1.5	0.3	14.3	4.3	2.1	1.2	27.7
Conochilus unicornis	12.0	5.3	1.7	14.4	18.3	5.7	2.3	12.7	21.3	7.7	0.9	4.1	22.3	7.8	3.5	15.8	19.0	6.1	4.0	21.3	16.0	6.5	0.6	3.6	12.7	8.1	0.7	5.3	16.3	7.8	4.1	24.8
Kellicottia longispina	28.0	12.4	3.1	10.9	63.0	19.6	1.2	1.8	59.7	21.4	2.0	3.4	63.3	22.1	5.2	8.3	65.7	21.2	5.3	8.1	54.3	22.1	4.8	8.8	31.0	19.7	2.6	8.5	43.0	20.6	1.5	3.6
Keratella cochlearis	13.3	5.9	0.3	2.5	18.3	5.7	3.4	18.5	17.0	6.1	2.6	15.6	20.0	7.0	1.2	5.8	15.0	4.8	3.6	24.0	14.3	5.8	2.3	16.3	9.7	6.1	1.7	17.2	10.7	5.1	1.3	12.5
Keratella hiemalis	0.0	0.0	0.0		0.3	0.1	0.3		0.3	0.1	0.3		0.7	0.2	0.3		1.7	0.5	0.9		0.0	0.0	0.0		0.3	0.2	0.3		0.3	0.2	0.3	
Lecane luna	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.1	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Lepadella sp.	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Monostyla bulla	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Polyarthra dolichoptera	0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.1	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Polyarthra vulgaris	15.3	6.8	1.7	10.9	24.7	7.7	1.9	7.5	16.7	6.0	1.5	8.7	10.7	3.7	1.2	11.3	25.7	8.3	1.7	6.5	14.3	5.8	2.8	19.9	10.7	6.8	2.7	25.6	12.7	6.1	1.7	13.2
Pompholyx sulcata	1.0	0.4	0.6		0.7	0.2	0.7		0.3	0.1	0.3		0.3	0.1	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Trichocerca cylindrica	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.1	0.3		0.0	0.0	0.0		0.3	0.2	0.3		0.7	0.3	0.3	
Trichocerca sp.	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Eubosmina longispina	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.1	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.2	0.3	
Daphnia galeata mendotae	0.3	0.1	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.2	0.3	
Daphnia middendorffiana	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	
Holopedium gibberum	0.3	0.1	0.3		1.3	0.4	0.3		2.7	1.0	0.7		1.0	0.3	1.0		1.3	0.4	0.9		1.7	0.7	0.3		0.3	0.2	0.3		0.7	0.3	0.3	
Calanoid copepodid	6.3	2.8	1.9	29.3	5.3	1.7	0.7	12.5	4.7	1.7	0.9	18.9	7.7	2.7	1.3	17.4	7.0	2.3	1.7	24.7	5.0	2.0	0.6	11.5	4.3	2.8	1.9	42.8	5.3	2.6	0.9	
Calanoid nauplii	31.7	14.0	1.9	5.9	35.3	11.0	5.0	14.3	35.3	12.7	2.0	5.7	26.0	9.1	1.7	6.7	29.3	9.5	2.4	8.2	26.0	10.6	1.5	5.9	10.3	6.6	1.3	12.9	17.3	8.3	2.0	11.7
Heterocope septentrionalis	0.0	0.0	0.0		0.0	0.0	0.0		0.7	0.2	0.7		0.3	0.1	0.3		0.7	0.2	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.7	0.3	0.3	
Leptodiaptomus sicilis	0.0	0.0	0.0		0.3	0.1	0.3		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.3	0.1	0.3		0.3	0.2	0.3		0.3	0.2	0.3	
Cyclopoid copepodid	36.3	16.1	7.1	19.6	36.3	11.3	4.9	13.5	25.0	9.0	1.2	4.6	39.3	13.7	3.9	10.0	36.0	11.6	3.0	8.3	26.0	10.6	3.6	13.9	21.3	13.6	3.8	18.0	30.0	14.4	1.5	5.1
Cyclopoid nauplii	61.7	27.2	6.4	10.3	89.0	27.7	2.1	2.3	73.7	26.5	5.3	7.2	76.0	26.5	3.8	5.0	87.7	28.3	3.3	3.8	69.3	28.2	4.3	6.2	47.7	30.3	4.2	8.8	57.3	27.4	1.8	3.1
Cyclops scutifer	2.0	0.9	0.6		2.0	0.6	1.0		2.3	0.8	1.2		0.7	0.2	0.7		2.0	0.6	0.6		0.7	0.3	0.7		1.3	0.8	0.9		0.7	0.3	0.3	
Diacyclops bicuspidatus	12.7	5.6	2.2	17.3	19.7	6.1	3.2	16.2	12.7	4.6	1.2	9.5	12.7	4.4	2.3	18.4	14.0	4.5	0.6	4.1	15.7	6.4	2.0	12.9	4.7	3.0	0.9	18.9	8.0	3.8	2.1	26.0
Total	226.3	100	3.9	1.7	321.3	100	16.2	5.0	278.3	100	9.2	3.3	286.3	100	8.1	2.8	310.0	100	11.0	3.5	246.0	100	15.5	6.3	157.3	100	4.7	3.0	209.0	100	1.7	0.8

Appendix G2-3. Zooplankton enumeration accuracy, 2006 Jericho AEM Program.
[= (A-B) / A*100; dominant taxa (≥ 10%) marked by grey]

Lake C3 JER-AB04 (Replicate 5)

Taxa	A		B	C	D
	Initial number	Initial dominance	QA/QC number	QA/QC dominance	% error
Ascomorpha sp.	4.0	1.4	7.7	2.6	-91.7
Conochilus unicornis	14.3	5.0	8.3	2.9	41.9
Kellicottia longispina	39.3	13.7	47.0	16.1	-19.5
Keratella cochlearis	14.0	4.9	12.7	4.3	9.5
Keratella hiemalis	0.0	0.0	0.0	0.0	
Lecane luna	0.0	0.0	0.0	0.0	
Lepadella sp.	0.0	0.0	0.0	0.0	
Monostyla bulla	0.0	0.0	0.0	0.0	
Polyarthra dolichoptera	0.3	0.1	0.0	0.0	
Polyarthra vulgaris	19.0	6.6	22.3	7.6	-17.5
Pompholyx sulcata	0.3	0.1	0.0	0.0	
Trichocerca cylindrica	0.0	0.0	0.0	0.0	
Trichocerca sp.	0.0	0.0	0.0	0.0	
Eubosmina longispina	0.0	0.0	0.0	0.0	
Daphnia galeata mendotae	0.0	0.0	0.0	0.0	
Daphnia middendorffiana	0.0	0.0	0.0	0.0	
Holopedium gibberum	0.0	0.0	0.0	0.0	
Calanoid copepodid	1.0	0.3	1.3	0.5	
Calanoid nauplii	81.7	28.5	74.3	25.5	9.0
Heterocope septentrionalis	0.3	0.1	0.0	0.0	
Leptodiaptomus sicilis	3.7	1.3	2.0	0.7	45.5
Cyclopoid copepodid	12.7	4.4	17.7	6.1	-39.5
Cyclopoid nauplii	90.0	31.4	93.7	32.1	-4.1
Cyclops scutifer	0.3	0.1	0.0	0.0	
Diacyclops bicuspidatus	5.3	1.9	5.0	1.7	6.2
Total	**286.3**	**100.0**	**292.0**	**100.0**	**-2.0**

A = Mean number of individuals in subsamples from initial enumeration
B = Mean number of individuals in subsamples from QA/QC enumeration
C = Dominance (percent of individuals of a particular taxon in the entire QA/QC subsample)
D = Percent error (A - B) / A*100

Appendix G2-3. Zooplankton enumeration accuracy, 2006 Jericho AEM Program.
[= (A-B) / A*100; dominant taxa (≥ 10%) marked by grey]

Carat Lake JER-AB06 (Replicate 1)

Taxa	A		B	C	D
	Initial number	Initial dominance	QA/QC number	QA/QC dominance	% error
Ascomorpha sp.	5.3	2.4	2.3	1.0	56.3
Conochilus unicornis	12.0	5.3	17.0	7.4	-41.7
Kellicottia longispina	28.0	12.4	33.0	14.3	-17.9
Keratella cochlearis	13.3	5.9	19.0	8.2	-42.5
Keratella hiemalis	0.0	0.0	0.3	0.1	
Lecane luna	0.0	0.0	0.0	0.0	
Lepadella sp.	0.0	0.0	0.0	0.0	
Monostyla bulla	0.0	0.0	0.0	0.0	
Polyarthra dolichoptera	0.0	0.0	0.0	0.0	
Polyarthra vulgaris	15.3	6.8	14.0	6.1	8.7
Pompholyx sulcata	1.0	0.4	2.0	0.9	
Trichocerca cylindrica	0.0	0.0	0.0	0.0	
Trichocerca sp.	0.0	0.0	0.0	0.0	
Eubosmina longispina	0.0	0.0	0.0	0.0	
Daphnia galeata mendotae	0.3	0.1	0.0	0.0	
Daphnia middendorffiana	0.0	0.0	0.0	0.0	
Holopedium gibberum	0.3	0.1	0.7	0.3	
Calanoid copepodid	6.3	2.8	3.0	1.3	52.6
Calanoid nauplii	31.7	14.0	37.3	16.1	-17.8
Heterocope septentrionalis	0.0	0.0	0.3	0.1	
Leptodiaptomus sicilis	0.0	0.0	2.7	1.2	
Cyclopoid copepodid	36.3	16.1	31.3	13.6	13.8
Cyclopoid nauplii	61.7	27.2	53.3	23.1	13.5
Cyclops scutifer	2.0	0.9	1.7	0.7	16.7
Diacyclops bicuspidatus	12.7	5.6	13.0	5.6	-2.6
Total	**226.3**	**100.0**	**231.0**	**100.0**	**-2.0**

A = Mean number of individuals in subsamples from initial enumeration
B = Mean number of individuals in subsamples from QA/QC enumeration
C = Dominance (percent of individuals of a particular taxon in the entire QA/QC subsample)
D = Percent error (A - B) / A*100

Appendix G2-3. Zooplankton enumeration accuracy, 2006 Jericho AEM Program.
[= (A-B) / A*100; dominant taxa (≥ 10%) marked by grey]

Control Lake JER-AB10 (Replicate 6)

Taxa	A		B	C	D
	Initial number	Initial dominance	QA/QC number	QA/QC dominance	% error
Ascomorpha sp.	10.0	4.0	9.3	4.1	6.7
Conochilus unicornis	41.0	16.4	36.0	15.7	12.2
Kellicottia longispina	69.7	27.9	59.7	25.9	14.4
Keratella cochlearis	29.0	11.6	30.7	13.3	-5.7
Keratella hiemalis	0.0	0.0	0.0	0.0	
Lecane luna	0.0	0.0	0.0	0.0	
Lepadella sp.	0.0	0.0	0.0	0.0	
Monostyla bulla	0.3	0.1	0.0	0.0	
Polyarthra dolichoptera	0.3	0.1	0.3	0.1	
Polyarthra vulgaris	22.3	9.0	19.7	8.6	11.9
Pompholyx sulcata	0.3	0.1	0.7	0.3	
Trichocerca cylindrica	0.0	0.0	0.0	0.0	
Trichocerca sp.	0.0	0.0	0.0	0.0	
Eubosmina longispina	0.0	0.0	0.0	0.0	
Daphnia galeata mendotae	0.0	0.0	0.0	0.0	
Daphnia middendorffiana	0.0	0.0	0.0	0.0	
Holopedium gibberum	0.0	0.0	0.0	0.0	
Calanoid copepodid	0.3	0.1	0.3	0.1	
Calanoid nauplii	24.0	9.6	15.3	6.7	36.1
Heterocope septentrionalis	0.3	0.1	0.0	0.0	
Leptodiaptomus sicilis	0.3	0.1	1.7	0.7	
Cyclopoid copepodid	1.3	0.5	1.7	0.7	-25.0
Cyclopoid nauplii	47.0	18.9	51.3	22.3	-9.2
Cyclops scutifer	0.0	0.0	0.3	0.1	
Diacyclops bicuspidatus	3.0	1.2	3.0	1.3	0.0
Total	**249.3**	**100.0**	**230.0**	**100.0**	**7.8**

A = Mean number of individuals in subsamples from initial enumeration
B = Mean number of individuals in subsamples from QA/QC enumeration
C = Dominance (percent of individuals of a particular taxon in the entire QA/QC subsample)
D = Percent error (A - B) / A*100

Appendix G2-3. Zooplankton enumeration accuracy, 2006 Jericho AEM Program.
[= (A-B) / A*100; dominant taxa (≥ 10%) marked by grey]

Cigar Lake JER-AB11 (Replicate 7)

Taxa	A		B	C	D
	Initial number	Initial dominance	QA/QC number	QA/QC dominance	% error
Ascomorpha sp.	8.3	3.1	9.3	3.2	-12.0
Conochilus unicornis	5.0	1.9	5.0	1.7	0.0
Kellicottia longispina	61.3	22.7	56.7	19.7	7.6
Keratella cochlearis	58.0	21.5	65.7	22.8	-13.2
Keratella hiemalis	0.7	0.2	0.0	0.0	
Lecane luna	0.7	0.2	0.3	0.1	
Lepadella sp.	0.3	0.1	0.3	0.1	
Monostyla bulla	0.0	0.0	0.0	0.0	
Polyarthra dolichoptera	0.0	0.0	0.0	0.0	
Polyarthra vulgaris	8.3	3.1	6.7	2.3	20.0
Pompholyx sulcata	3.0	1.1	5.7	2.0	-88.9
Trichocerca cylindrica	0.3	0.1	0.3	0.1	
Trichocerca sp.	0.0	0.0	0.0	0.0	
Eubosmina longispina	0.0	0.0	0.0	0.0	
Daphnia galeata mendotae	0.0	0.0	0.0	0.0	
Daphnia middendorffiana	0.0	0.0	0.0	0.0	
Holopedium gibberum	1.0	0.4	0.7	0.2	
Calanoid copepodid	4.0	1.5	3.3	1.2	16.7
Calanoid nauplii	32.3	12.0	38.7	13.4	-19.6
Heterocope septentrionalis	0.0	0.0	0.0	0.0	
Leptodiaptomus sicilis	0.3	0.1	0.7	0.2	
Cyclopoid copepodid	5.3	2.0	3.0	1.0	43.8
Cyclopoid nauplii	80.0	29.7	87.3	30.4	-9.2
Cyclops scutifer	0.0	0.0	0.0	0.0	
Diacyclops bicuspidatus	0.7	0.2	4.0	1.4	
Total	**269.7**	**100.0**	**287.7**	**100.0**	**-6.7**

A = Mean number of individuals in subsamples from initial enumeration
B = Mean number of individuals in subsamples from QA/QC enumeration
C = Dominance (percent of individuals of a particular taxon in the entire QA/QC subsample)
D = Percent error (A - B) / A*100

Appendix G2-4. Zooplankton QA/QC for split samples taken on Carat Lake, 2006 Jericho AEM Program.

Major taxon	Genus/ species	Rep 7 Density (#/m^3)	Rep 7 Split Density (#/m^3)	Density % Difference
ROTIFERA	*Ascomorpha* sp.	215.9	400.9	**46.2**
	Conochilus unicornis	1172.0	1511.2	**22.4**
	Kellicottia longispina	2868.2	3978.5	**27.9**
	Keratella cochlearis	894.4	986.9	**9.4**
	Keratella hiemalis	30.8	30.8	**0.0**
	Polyarthra vulgaris	986.9	1172.0	**15.8**
	Trichocerca cylindrica	30.8	61.7	**50.0**
Total Rotifer		6199.0	8142.0	**23.9**
CLADOCERA	*Daphnia galeata mendotae*	0.0	30.8	**100.0**
	Daphnia middendorffiana	0.0	30.8	**100.0**
Total Cladocera		0.0	61.7	**100.0**
COPEPODA-Calanoida	Calanoid copepodid	30.8	61.7	**50.0**
	Calanoid nauplii	400.9	493.5	**18.8**
	Heterocope septentrionalis	956.1	1603.7	**40.4**
	Leptodiaptomus sicilis	0.0	61.7	**100.0**
COPEPODA-Cyclopoida	Cyclopoid copepodid	30.8	30.8	**0.0**
	Cyclopoid nauplii	1973.8	2775.7	**28.9**
	Cyclops scutifer	4410.3	5304.6	**16.9**
	Diacyclops bicuspidatus	123.4	61.7	**100.0**
Total Copepoda		7926.1	10393.4	**23.7**
Total Density		14125.2	18597.1	**24.0**
Total Taxa		14.0	17.0	**17.6**

APPENDIX H
BENTHIC MACROINVERTEBRATES

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Appendix H1-1. Benthic macroinvertebrate species and number data, 2006 Jericho AEM Program.

Carat Lake - JER-AB07

Major taxon	Family, subfamily or tribe	Genus/ species	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Mean	S.D.	%
			No.	No.	No.	No.	No.			
Microturbellaria			0	0	0	0	0	0.0	0.0	0.0
Nematoda			64	80	49	120	45	71.6	30.4	13.2
Oligochaeta	Enchytraeidae		24	16	8	0	0	9.6	10.4	4.5
	Lumbriculidae		8	5	1	3	1	3.6	3.0	1.3
	Naididae		0	0	0	0	0	0.0	0.0	0.0
	Tubificidae		19	0	0	0	1	4.0	8.4	3.6
Pelecypoda	Sphaeriidae		93	186	61	109	74	104.6	49.0	21.3
Acari			1	14	5	12	4	7.2	5.5	2.4
Cladocera			8	40	12	10	0	14.0	15.2	6.6
Copepoda-Cyclopoida			44	64	140	155	40	88.6	54.8	23.8
Copepoda-Harpacticoida			0	0	0	0	0	0.0	0.0	0.0
Ostracoda	Candonidae		0	0	0	0	0	0.0	0.0	0.0
	Cyclocypridae		0	0	0	0	0	0.0	0.0	0.0
Collembola	Isotomidae		0	0	0	0	0	0.0	0.0	0.0
Trichoptera	Limnephilidae	*Grensia* sp.	0	0	2	0	0	0.4	0.9	0.4
		early larvae	0	0	0	0	0	0.0	0.0	0.0
Diptera	Chironomidae		0	0	0	0	0	0.0	0.0	0.0
	Tanypodinae		43	49	0	24	10	25.2	20.9	9.1
	Damesinae		5	4	16	2	3	6.0	5.7	2.5
	Prodiamesinae		10	1	3	4	10	5.6	4.2	1.8
	Orthocladiinae		143	239	133	159	123	159.4	46.4	20.2
	Chironomini		144	187	81	13	38	92.6	72.5	31.5
	Tanytarsini		115	222	112	198	148	159.0	49.4	21.5
	Empididae	*Chelifera* sp.	0	0	0	0	0	0.0	0.0	0.0
Total individuals			**721**	**1107**	**623**	**809**	**497**	**751.4**	**230.2**	**100.0**
Total taxa			**14**	**13**	**13**	**12**	**12**	**15**		

Carat Lake - JER-AB19

Major taxon	Family, subfamily or tribe	Genus/ species	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Mean	S.D.	%
			No.	No.	No.	No.	No.			
Microturbellaria			0	0	0	0	0	0.0	0.0	0.0
Nematoda			17	45	34	12	33	28.2	13.5	13.2
Oligochaeta	Enchytraeidae		12	4	0	0	0	3.2	5.2	5.1
	Lumbriculidae		0	0	0	5	2	1.4	2.2	2.1
	Naididae		0	0	0	0	0	0.0	0.0	0.0
	Tubificidae		3	11	25	20	28	17.4	10.3	10.1
Pelecypoda	Sphaeriidae		96	58	92	86	94	85.2	15.7	15.3
Acari			24	26	40	31	17	27.6	8.6	8.4
Cladocera			8	8	20	0	4	8.0	7.5	7.3
Copepoda-Cyclopoida			60	124	45	24	68	64.2	37.4	36.6
Copepoda-Harpacticoida			0	0	0	0	0	0.0	0.0	0.0
Ostracoda	Candonidae		0	0	0	4	0	0.8	1.8	1.8
	Cyclocypridae		8	4	0	4	4	4.0	2.8	2.8
Collembola	Isotomidae		0	0	0	0	5	1.0	2.2	2.2
Trichoptera	Limnephilidae	*Grensia* sp.	2	0	1	1	1	1.0	0.7	0.7
		early larvae	0	0	0	4	0	0.8	1.8	1.8
Diptera	Chironomidae		0	0	0	0	0	0.0	0.0	0.0
	Tanypodinae		26	21	21	15	20	20.6	3.9	3.8
	Damesinae		3	7	4	3	1	3.6	2.2	2.1
	Prodiamesinae		15	3	14	14	15	12.2	5.2	5.1
	Orthocladiinae		281	156	331	138	229	227.0	81.7	80.0
	Chironomini		11	53	39	44	34	36.2	15.7	15.4
	Tanytarsini		241	135	122	152	138	157.6	47.8	46.8
	Empididae	*Chelifera* sp.	0	0	0	0	0	0.0	0.0	0.0
Total individuals			**807**	**655**	**788**	**557**	**693**	**700.0**	**102.1**	**100.0**
Total taxa			**15**	**14**	**13**	**16**	**16**	**19**		

Appendix H1-2. Benthic macroinvertebrate species and number data, 2006 Jericho AEM Program.

Cigar Lake - JER-AB25

Major taxon	Family, subfamily or tribe	Genus/ species	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Mean	S.D.	%
			No.	No.	No.	No.	No.			
Microturbellaria			0	0	0	0	0	0.0	0.0	0.0
Nematoda			29	4	24	16	25	19.6	9.9	6.2
Oligochaeta	Enchytraeidae		12	0	28	16	12	13.6	10.0	6.3
	Lumbriculidae		0	2	1	1	0	0.8	0.8	0.5
	Naididae		0	0	20	1	0	4.2	8.8	5.5
	Tubificidae		2	5	0	2	2	2.2	1.8	1.1
Pelecypoda	Sphaeriidae		106	76	73	109	97	92.2	16.8	10.5
Acari			20	9	8	13	18	13.6	5.3	3.3
Cladocera			8	2	0	16	8	6.8	6.3	3.9
Copepoda-Cyclopoida			40	4	28	0	60	26.4	25.1	15.7
Copepoda-Harpacticoida			0	0	0	0	0	0.0	0.0	0.0
Ostracoda	Candonidae		4	0	0	4	0	1.6	2.2	1.4
	Cyclocypridae		8	0	0	0	8	3.2	4.4	2.7
Collembola	Isotomidae		0	0	0	0	0	0.0	0.0	0.0
Trichoptera	Limnephilidae	*Grensia* sp.	0	1	0	0	0	0.2	0.4	0.3
		early larvae	0	0	0	0	0	0.0	0.0	0.0
Diptera	Chironomidae		0	0	0	0	0	0.0	0.0	0.0
	Tanypodinae		27	12	5	28	30	20.4	11.2	7.0
	Damesinae		6	0	1	8	2	3.4	3.4	2.2
	Prodiamesinae		0	17	14	9	17	11.4	7.2	4.5
	Orthocladiinae		169	85	118	171	144	137.4	36.4	22.8
	Chironomini		52	6	14	53	50	35.0	23.0	14.4
	Tanytarsini		253	183	153	256	282	225.4	54.6	34.2
	Empididae	*Chelifera* sp.	0	0	0	0	0	0.0	0.0	0.0
Total individuals			**736**	**406**	**487**	**703**	**755**	**617.4**	**159.7**	**100.0**
Total taxa			**14**	**13**	**13**	**15**	**14**	**18**		

Appendix H1-3. Benthic macroinvertebrate species and number data, 2006 Jericho AEM Program.

Lake C3 - JER-AB05

Major taxon	Family, subfamily or tribe	Genus/ species	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Mean	S.D.	%
			No.	No.	No.	No.	No.			
Microturbellaria			15	4	0	8	4	6.2	5.7	2.6
Nematoda			185	77	147	60	130	119.8	51.2	23.0
Oligochaeta	Enchytraeidae		0	0	4	0	0	0.8	1.8	0.8
	Lumbriculidae		1	0	1	0	1	0.6	0.5	0.2
	Naididae		0	0	0	0	0	0.0	0.0	0.0
	Tubificidae		1	0	5	1	4	2.2	2.2	1.0
Pelecypoda	Sphaeriidae		275	166	246	131	135	190.6	66.0	29.7
Acari			5	8	5	0	4	4.4	2.9	1.3
Cladocera			15	8	0	0	0	4.6	6.8	3.0
Copepoda-Cyclopoida			60	4	20	12	8	20.8	22.7	10.2
Copepoda-Harpacticoida			0	0	0	0	0	0.0	0.0	0.0
Ostracoda	Candonidae		0	0	0	0	0	0.0	0.0	0.0
	Cyclocypridae		5	0	0	4	0	1.8	2.5	1.1
Collembola	Isotomidae		0	0	0	0	0	0.0	0.0	0.0
Trichoptera	Limnephilidae	*Grensia* sp.	1	1	0	1	0	0.6	0.5	0.2
		early larvae	0	0	0	0	0	0.0	0.0	0.0
Diptera	Chironomidae		0	0	0	0	0	0.0	0.0	0.0
	Tanypodinae		40	15	33	28	38	30.8	10.0	4.5
	Damesinae		0	0	0	0	1	0.2	0.4	0.2
	Prodiamesinae		11	11	13	13	8	11.2	2.0	0.9
	Orthocladiinae		116	52	60	67	32	65.4	31.2	14.0
	Chironomini		47	20	66	53	31	43.4	18.1	8.2
	Tanytarsini		180	96	107	59	87	105.8	45.1	20.3
	Empididae	*Chelifera* sp.	0	0	0	0	0	0.0	0.0	0.0
Total individuals			**957**	**462**	**707**	**437**	**483**	**609.2**	**222.4**	**100.0**
Total taxa			**15**	**12**	**12**	**12**	**13**	**16**		

Lake C3 - JER-AB20

Major taxon	Family, subfamily or tribe	Genus/ species	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Mean	S.D.	%
			No.	No.	No.	No.	No.			
Microturbellaria			0	0	6	0	8	2.8	3.9	4.0
Nematoda			12	16	19	61	36	28.8	20.2	20.6
Oligochaeta	Enchytraeidae		4	0	0	0	0	0.8	1.8	1.8
	Lumbriculidae		0	2	1	0	0	0.6	0.9	0.9
	Naididae		0	0	0	0	0	0.0	0.0	0.0
	Tubificidae		76	33	75	76	78	67.6	19.4	19.7
Pelecypoda	Sphaeriidae		108	84	75	99	82	89.6	13.5	13.8
Acari			5	10	1	1	4	4.2	3.7	3.8
Cladocera			4	10	2	16	16	9.6	6.5	6.7
Copepoda-Cyclopoida			72	36	34	24	32	39.6	18.7	19.0
Copepoda-Harpacticoida			4	0	0	0	0	0.8	1.8	1.8
Ostracoda	Candonidae		0	0	0	0	0	0.0	0.0	0.0
	Cyclocypridae		0	4	2	24	4	6.8	9.8	9.9
Collembola	Isotomidae		0	0	0	0	0	0.0	0.0	0.0
Trichoptera	Limnephilidae	*Grensia* sp.	0	2	0	1	0	0.6	0.9	0.9
		early larvae	0	0	0	0	0	0.0	0.0	0.0
Diptera	Chironomidae		0	0	0	0	0	0.0	0.0	0.0
	Tanypodinae		23	19	20	34	34	26.0	7.4	7.6
	Damesinae		7	3	4	3	3	4.0	1.7	1.8
	Prodiamesinae		14	13	7	12	13	11.8	2.8	2.8
	Orthocladiinae		101	86	37	116	73	82.6	30.2	30.7
	Chironomini		66	31	46	60	33	47.2	15.7	16.0
	Tanytarsini		40	23	9	35	32	27.8	12.2	12.4
	Empididae	*Chelifera* sp.	0	0	0	0	0	0.0	0.0	0.0
Total individuals			**536**	**372**	**338**	**562**	**448**	**451.2**	**98.2**	**100.0**
Total taxa			**14**	**15**	**15**	**14**	**14**	**17**		

Appendix H1-4. Benthic macroinvertebrate species and number data, 2006 Jericho AEM Program.

Control Lake - JER-AB23

Major taxon	Family, subfamily or tribe	Genus/ species	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Mean	S.D.	%
			No.	No.	No.	No.	No.			
Microturbellaria			0	0	0	0	0	0.0	0.0	0.0
Nematoda			23	115	41	53	36	53.6	36.0	37.5
Oligochaeta	Enchytraeidae		12	0	20	4	0	7.2	8.7	9.0
	Lumbriculidae		0	0	0	0	0	0.0	0.0	0.0
	Naididae		0	0	0	0	0	0.0	0.0	0.0
	Tubificidae		29	8	38	20	31	25.2	11.6	12.1
Pelecypoda	Sphaeriidae		93	149	87	142	138	121.8	29.4	30.6
Acari			16	85	40	33	15	37.8	28.5	29.7
Cladocera			6	5	4	0	8	4.6	3.0	3.1
Copepoda-Cyclopoida			20	15	76	52	28	38.2	25.5	26.5
Copepoda-Harpacticoida			0	0	0	0	0	0.0	0.0	0.0
Ostracoda	Candonidae		16	35	8	12	32	20.6	12.2	12.7
	Cyclocypridae		2	0	0	8	4	2.8	3.3	3.5
Collembola	Isotomidae		0	0	0	0	0	0.0	0.0	0.0
Trichoptera	Limnephilidae	*Grensia* sp.	0	0	0	0	1	0.2	0.4	0.5
		early larvae	0	0	0	0	0	0.0	0.0	0.0
Diptera	Chironomidae		0	0	0	0	0	0.0	0.0	0.0
	Tanypodinae		6	12	21	17	21	15.4	6.4	6.7
	Damesinae		1	2	8	0	7	3.6	3.6	3.8
	Prodiamesinae		11	13	20	21	12	15.4	4.7	4.9
	Orthocladiinae		51	165	132	71	66	97.0	49.0	51.1
	Chironomini		95	20	29	39	35	43.6	29.6	30.9
	Tanytarsini		6	11	29	17	11	14.8	8.8	9.2
	Empididae	*Chelifera* sp.	1	0	1	0	0	0.4	0.5	0.6
Total individuals			**388**	**635**	**554**	**489**	**445**	**502.2**	**95.9**	**100.0**
Total taxa			**16**	**13**	**15**	**13**	**15**	**17**		

Appendix H1-5. Benthic macroinvertebrate species and number data, 2006 Jericho AEM Program.

Jericho Lake - JER-AB26

Major taxon	Family, subfamily or tribe	Genus/ species	Rep 1	Rep 2	Rep 3	Rep 4	Rep 5	Mean	S.D.	%
			No.	No.	No.	No.	No.			
Microturbellaria			2	0	0	0	5	1.4	2.2	1.2
Nematoda			36	36	26	54	80	46.4	21.3	11.7
Oligochaeta	Enchytraeidae		0	0	0	0	0	0.0	0.0	0.0
	Lumbriculidae		1	0	0	0	2	0.6	0.9	0.5
	Naididae		0	0	0	0	0	0.0	0.0	0.0
	Tubificidae		0	0	0	0	0	0.0	0.0	0.0
Pelecypoda	Sphaeriidae		33	55	39	41	37	41.0	8.4	4.6
Acari			3	1	2	2	0	1.6	1.1	0.6
Cladocera			5	6	1	4	25	8.2	9.6	5.2
Copepoda-Cyclopoida			20	30	4	8	15	15.4	10.2	5.6
Copepoda-Harpacticoida			24	26	21	96	195	72.4	75.4	41.2
Ostracoda	Candonidae		0	0	0	0	0	0.0	0.0	0.0
	Cyclocypridae		0	2	0	0	0	0.4	0.9	0.5
Collembola	Isotomidae		0	0	0	0	0	0.0	0.0	0.0
Trichoptera	Limnephilidae	*Grensia* sp.	0	2	2	0	3	1.4	1.3	0.7
		early larvae	0	0	0	0	0	0.0	0.0	0.0
Diptera	Chironomidae		0	0	0	0	0	0.0	0.0	0.0
	Tanypodinae		7	9	14	20	24	14.8	7.2	3.9
	Damesinae		1	0	0	0	0	0.2	0.4	0.2
	Prodiamesinae		5	2	2	2	1	2.4	1.5	0.8
	Orthocladiinae		39	38	32	48	104	52.2	29.5	16.1
	Chironomini		30	92	65	110	81	75.6	30.3	16.6
	Tanytarsini		5	12	15	6	87	25.0	34.9	19.1
	Empididae	*Chelifera* sp.	0	0	0	0	0	0.0	0.0	0.0
Total individuals			**211**	**311**	**223**	**391**	**659**	**359.0**	**182.8**	**100.0**
Total taxa			**14**	**13**	**12**	**11**	**13**	**15**		

Appendix H2-1 Number of benthic macroinvertebrates recovered from QAQC second sorting and sorting efficiency, 2006 Jericho AEM Program.

	Taxa	Jericho Lake JER-AB26 Relicate 3	Lake C3 JER-AB20 Relicate 2	Carat Lake JER-AB19 Relicate 3	Cigar Lake JER-AB25 Relicate 4
Number	Acari				4
	Copepoda-Harpacticoida	1			
	Copepoda-Cyclopoida	1			
	Cyclocypridae		2		
	Nematoda	1		5	
	Total organisms	3	2	5	4
Efficiency	Initial sort number	223	372	788	703
	Percent error	1.35	0.54	0.63	0.57
	Percent sorting	98.67	99.47	99.37	99.43

Appendix H2-2. Sampling precision for benthic macroinvertebrates data, 2006 Jericho AEM Program.

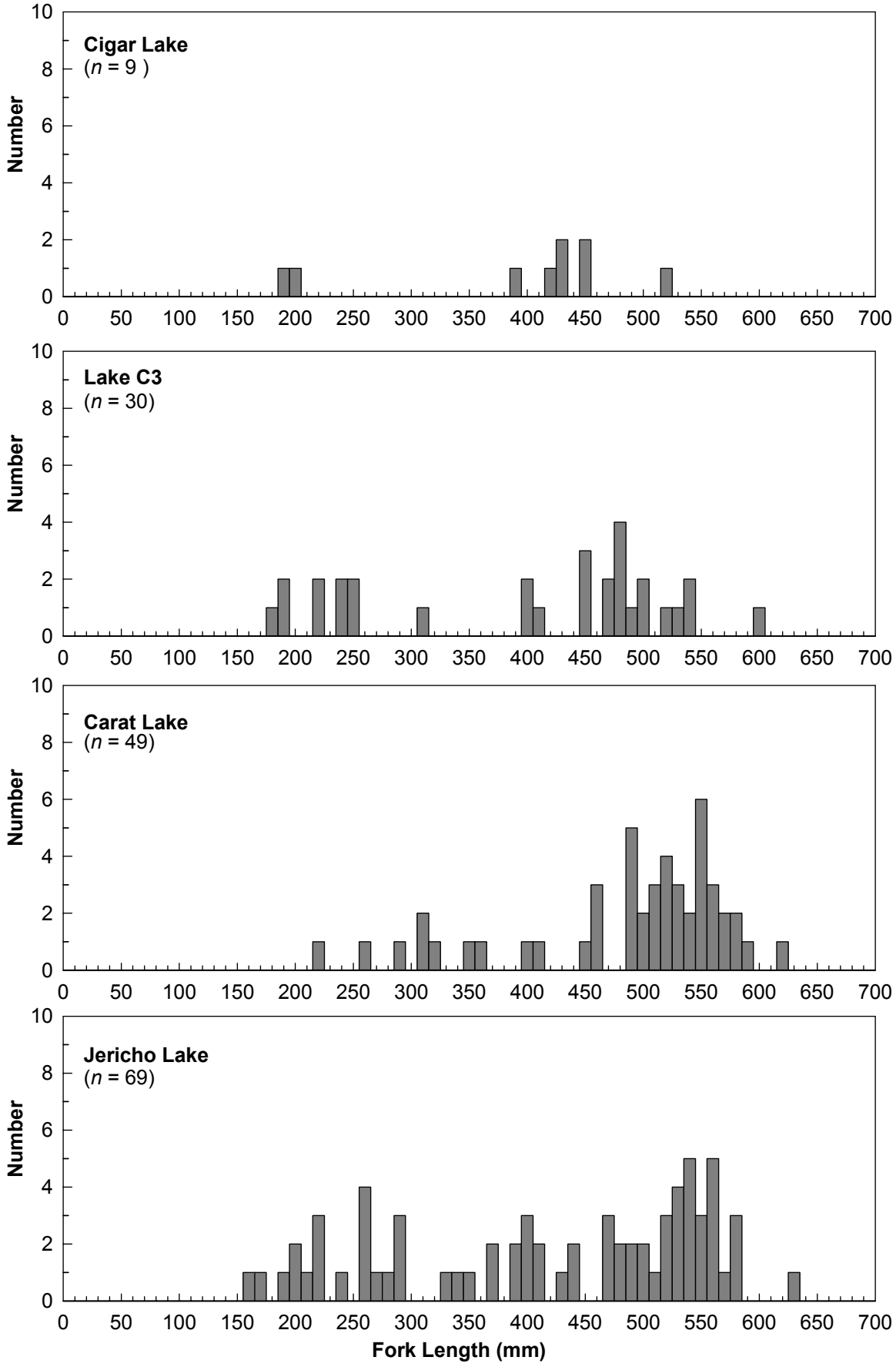
Waterbody	Station		Replicate sample					Mean	SD	95% CI of mean	Sample Precision
			1	2	3	4	5				
Carat Lake	JER-AB07	Total Individuals	721	1107	623	809	497	751.4	230.2	69.4	0.14
		Total Taxa	14	13	13	12	12	12.8	0.8	0.3	
Carat Lake	JER-AB19	Total Individuals	807	655	788	557	693	700.0	102.1	30.8	0.07
		Total Taxa	15	14	13	16	16	14.8	1.3	0.4	
Cigar Lake	JER-AB25	Total Individuals	736	406	487	703	755	617.4	159.7	48.2	0.12
		Total Taxa	14	13	13	15	14	13.8	0.8	0.3	
Control Lake	JER-AB23	Total Individuals	388	635	554	489	445	502.2	95.9	28.9	0.09
		Total Taxa	16	13	15	13	15	14.4	1.3	0.4	
Lake C3	JER-AB05	Total Individuals	957	462	707	437	483	609.2	222.4	67.1	0.16
		Total Taxa	15	12	12	12	13	12.8	1.3	0.4	
Lake C3	JER-AB20	Total Individuals	536	372	338	562	448	451.2	98.2	29.6	0.10
		Total Taxa	14	15	15	14	14	14.4	0.5	0.2	
Jericho Lake	JER-AB26	Total Individuals	211	311	223	391	659	359.0	182.8	55.2	0.23
		Total Taxa	14	13	12	11	13	12.6	1.1	0.3	

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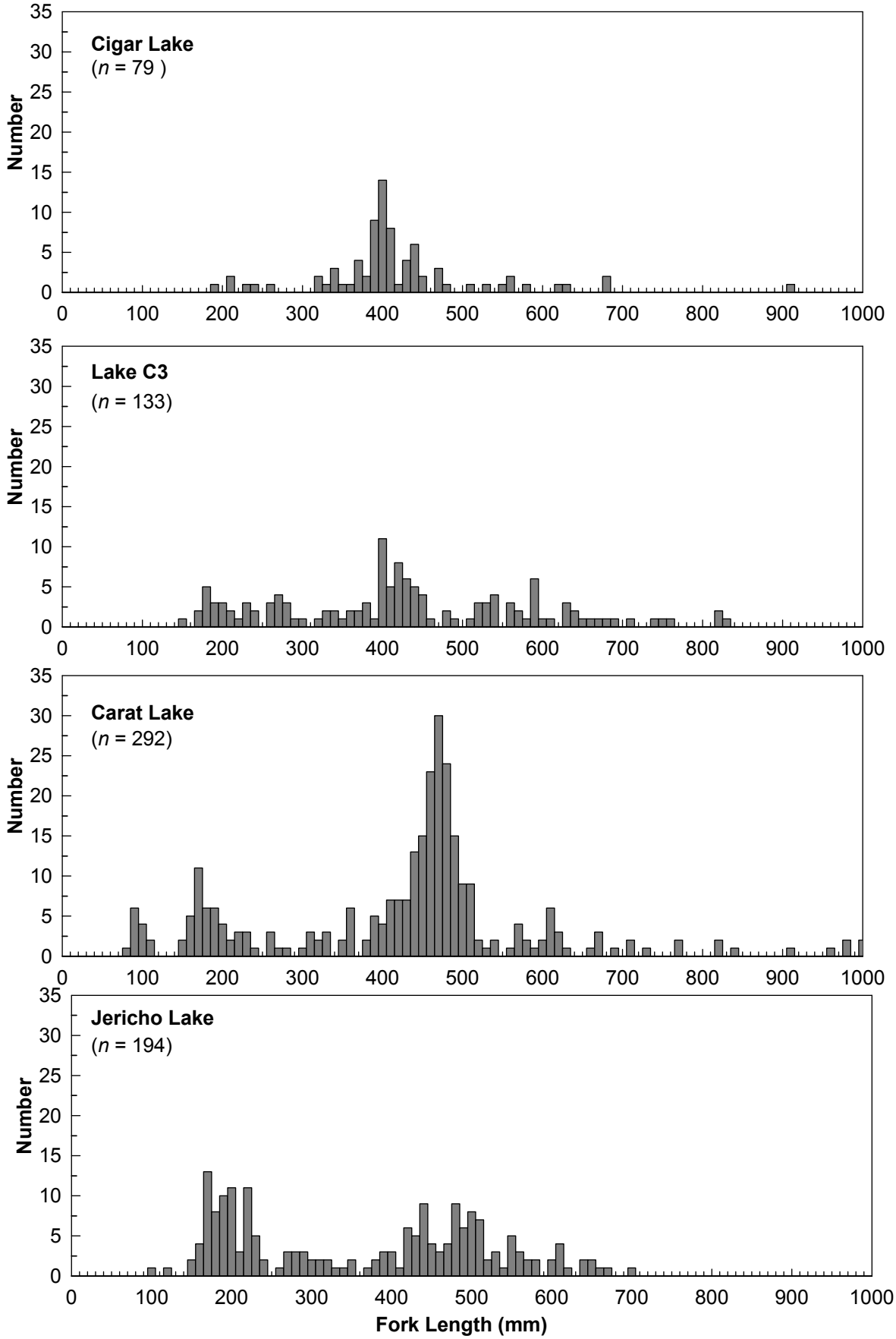
APPENDIX I

FISH

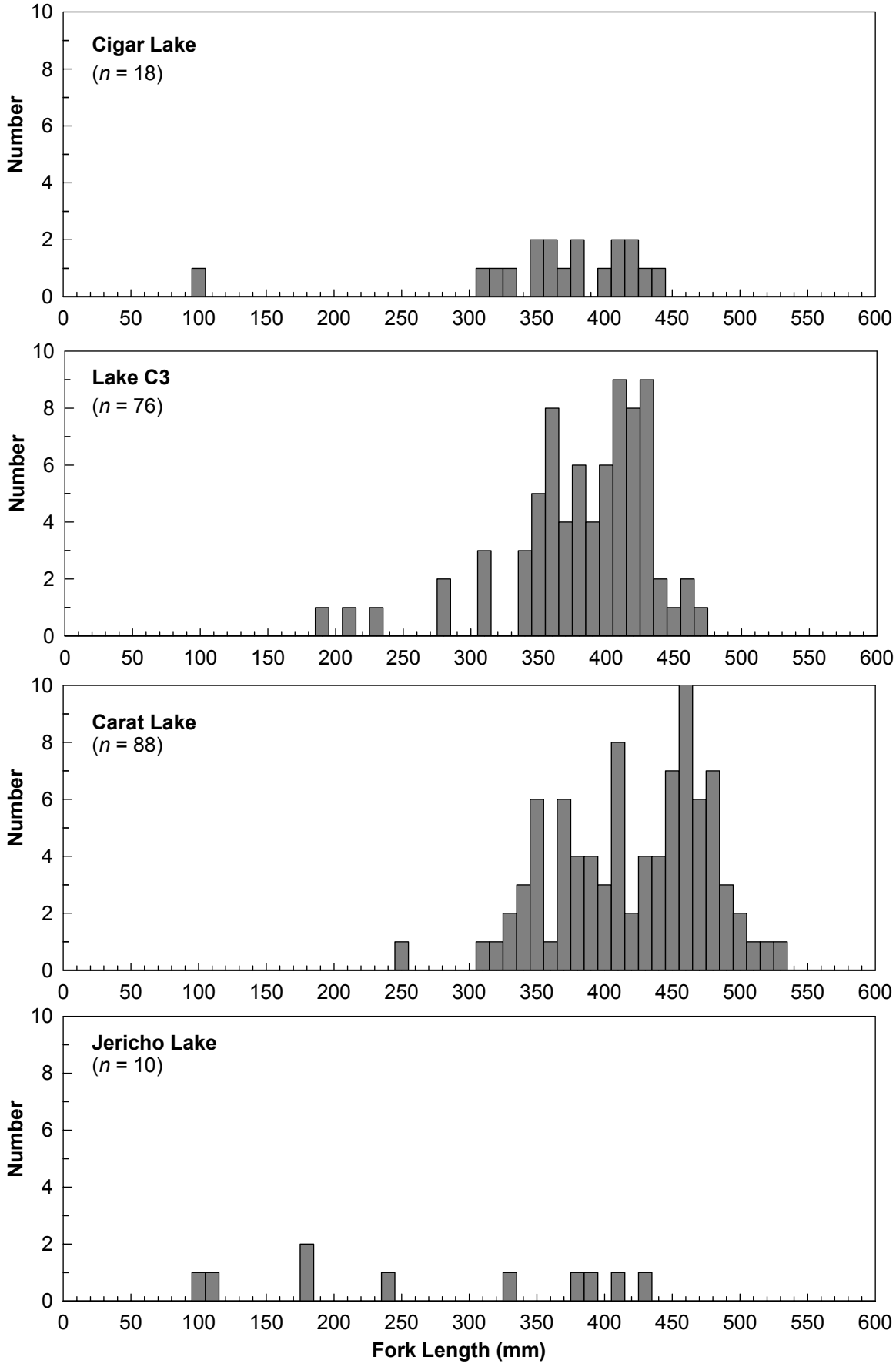
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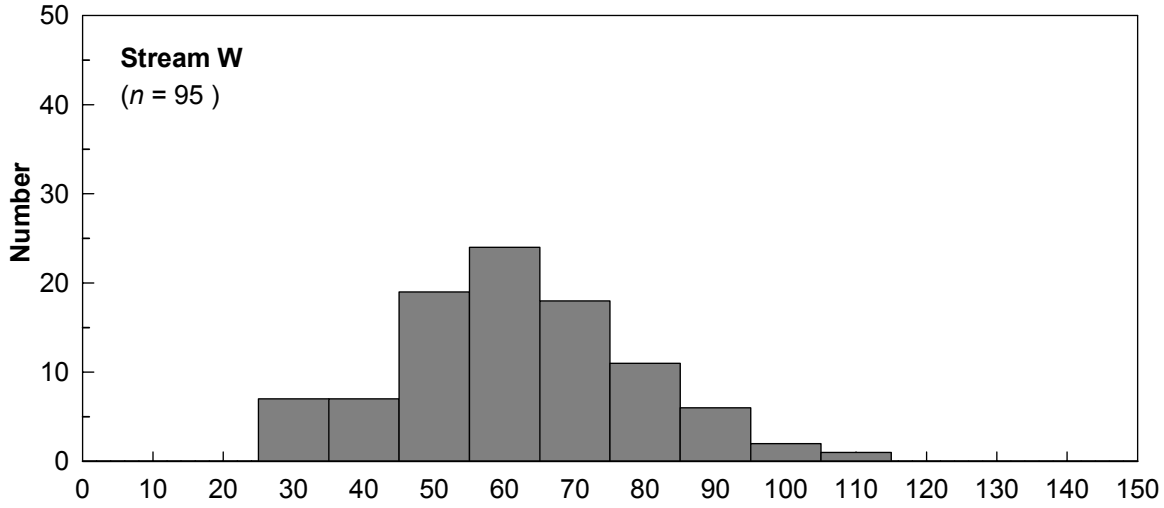
Appendix I1-1 Length frequency distributions of Arctic char in lakes during Jericho pre-development baseline studies (all years combined).

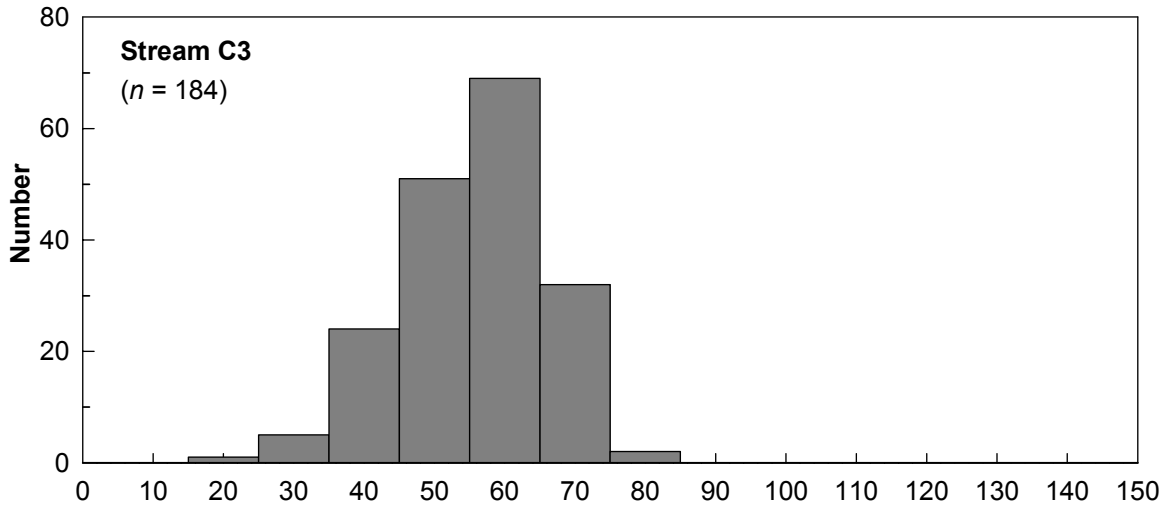


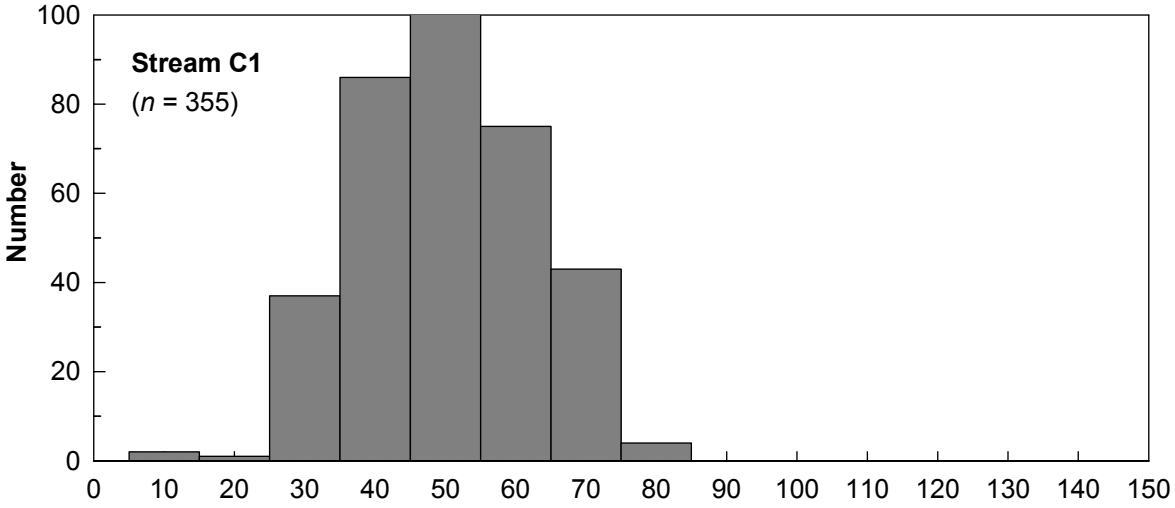
Appendix I1-2 Length frequency distributions of lake trout in lakes during Jericho pre-development baseline studies (all years combined).



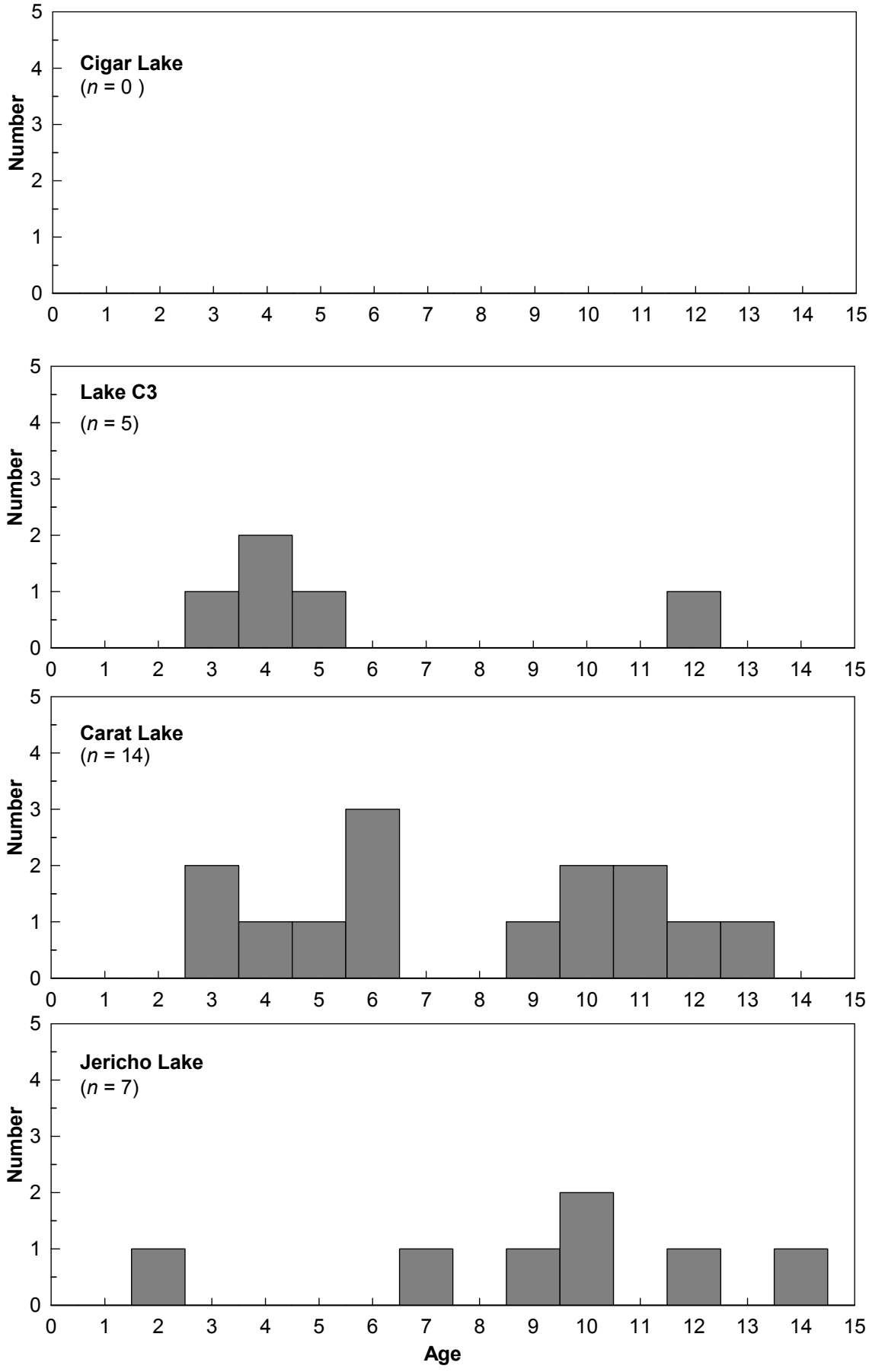
Appendix I1-3 Length frequency distributions of round whitefish in lakes during Jericho pre-development baseline studies (all years combined).



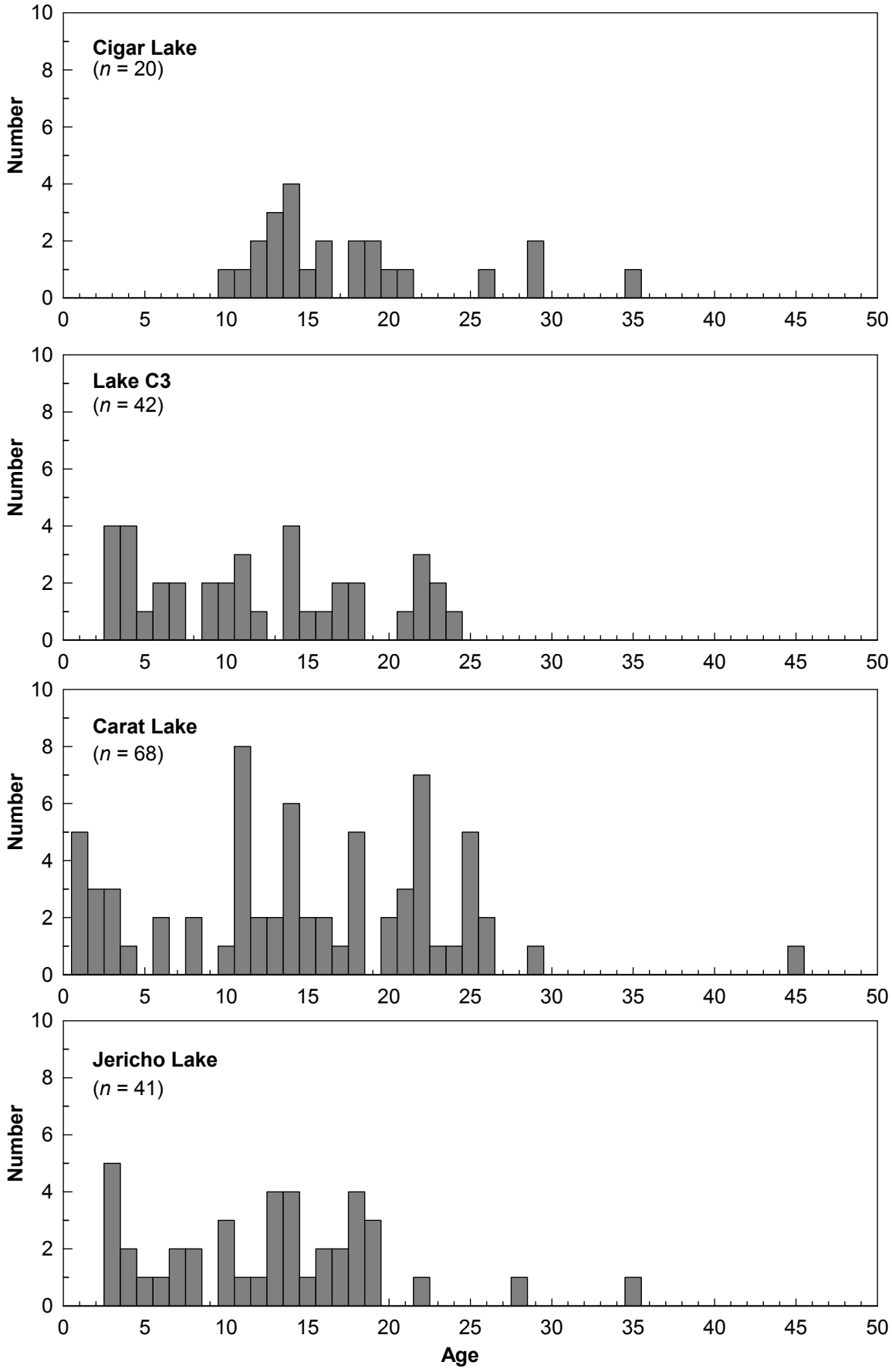




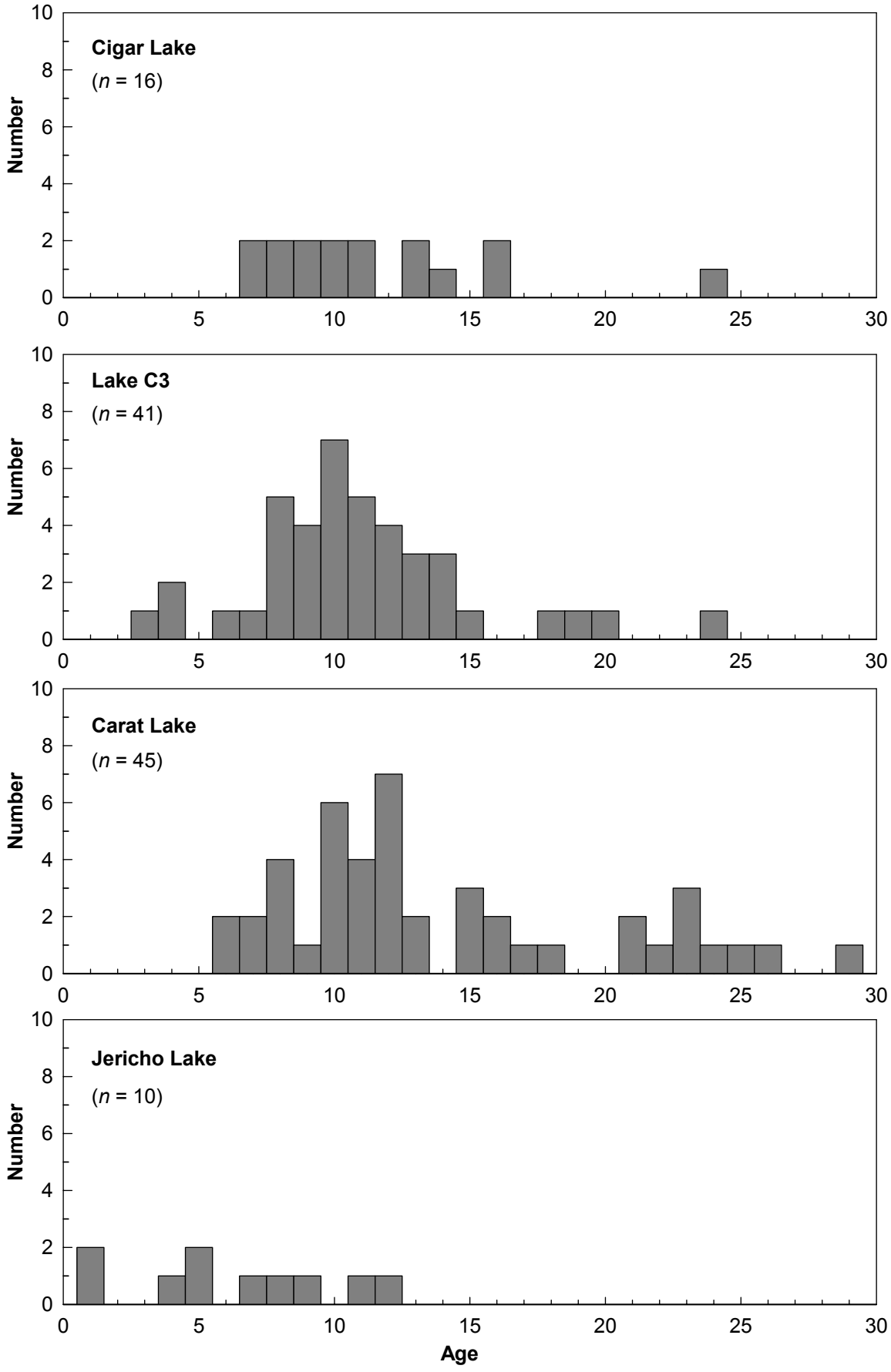
Appendix I2 Length frequency distributions of slimy sculpin in streams during Jericho pre-development baseline studies (all years combined).



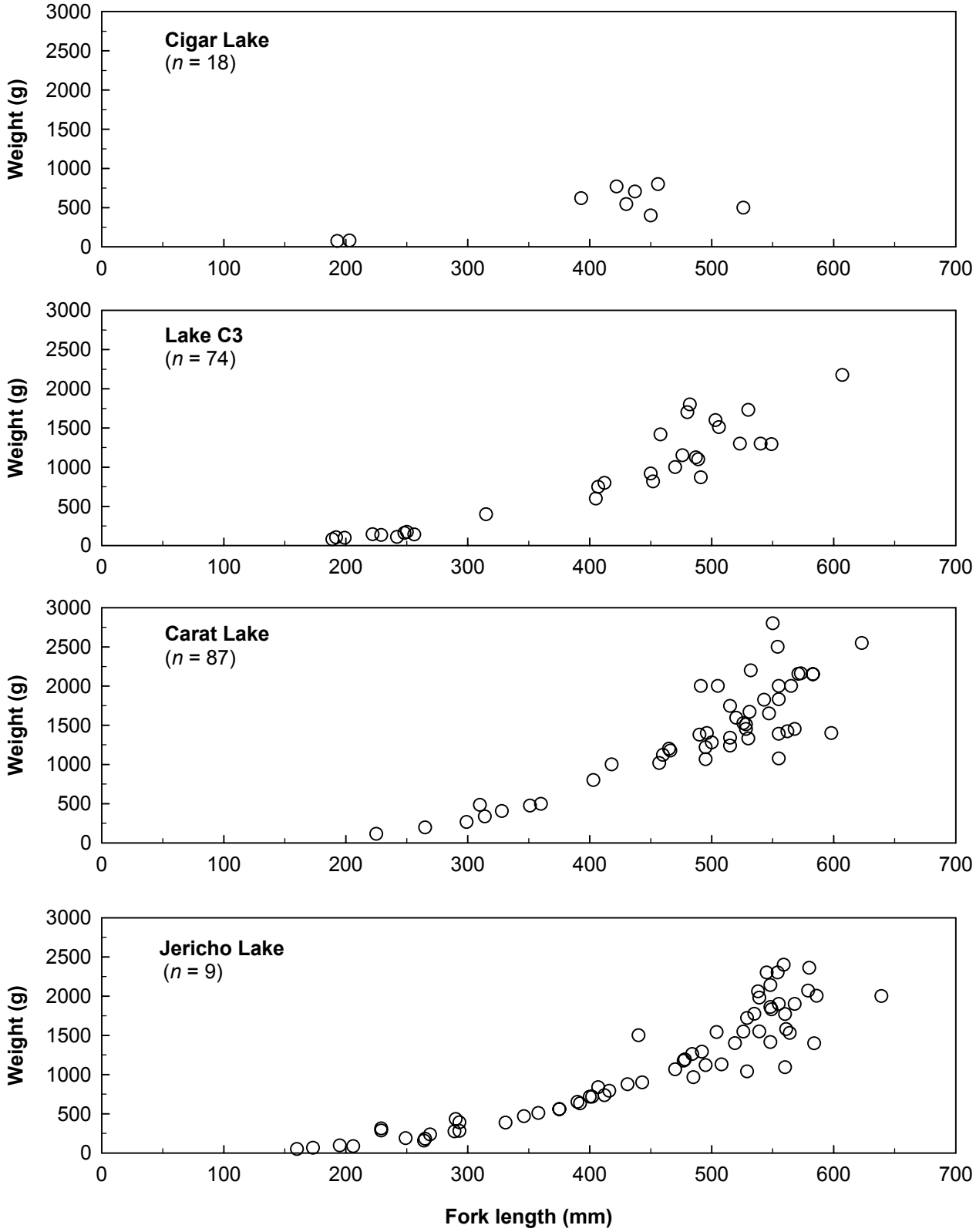
Appendix I3-1 Age distributions of Arctic char in lakes during Jericho pre-development baseline studies (all years combined).



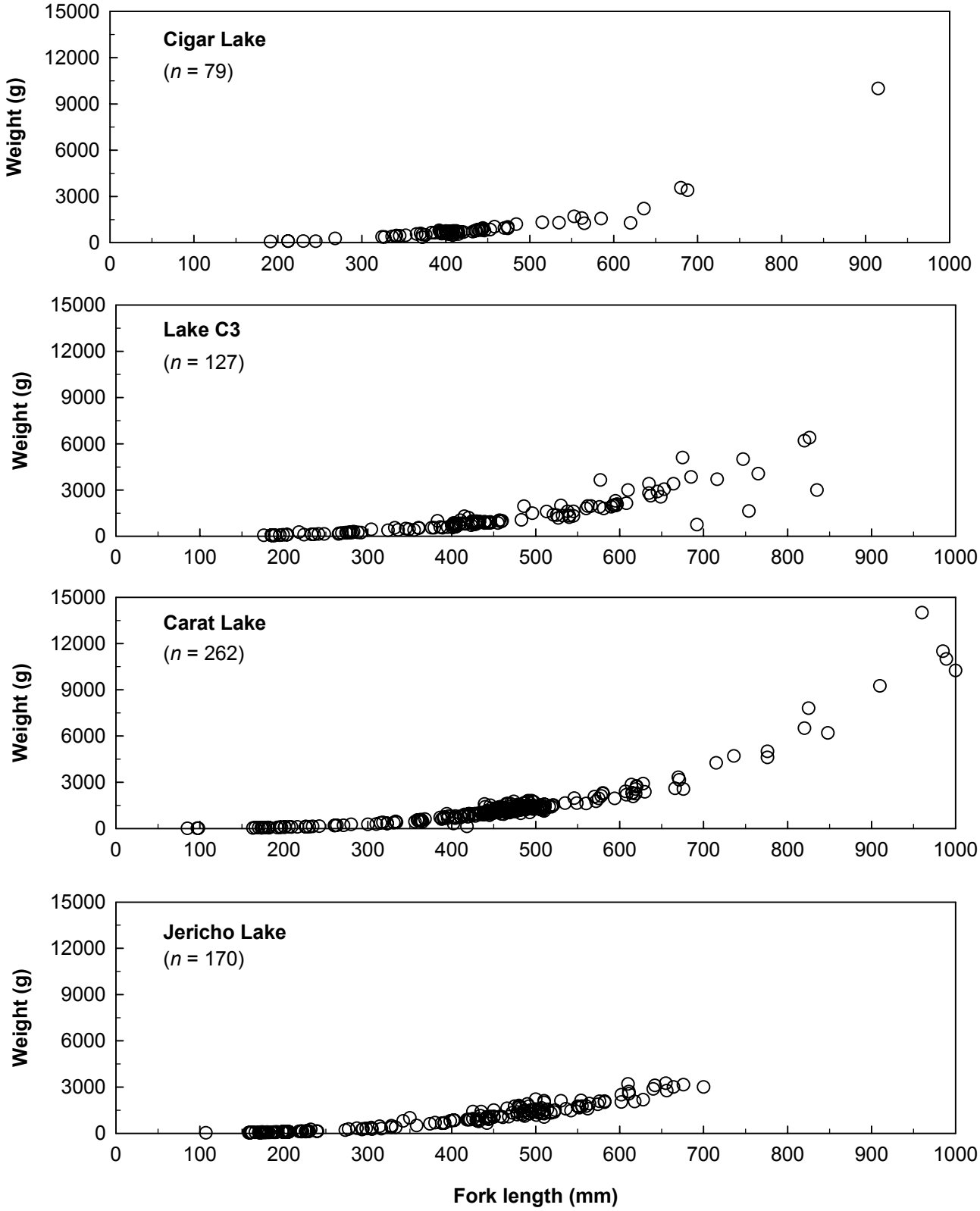
Appendix I3-2 Age distributions of lake trout in lakes during Jericho pre-development baseline studies (all years combined).



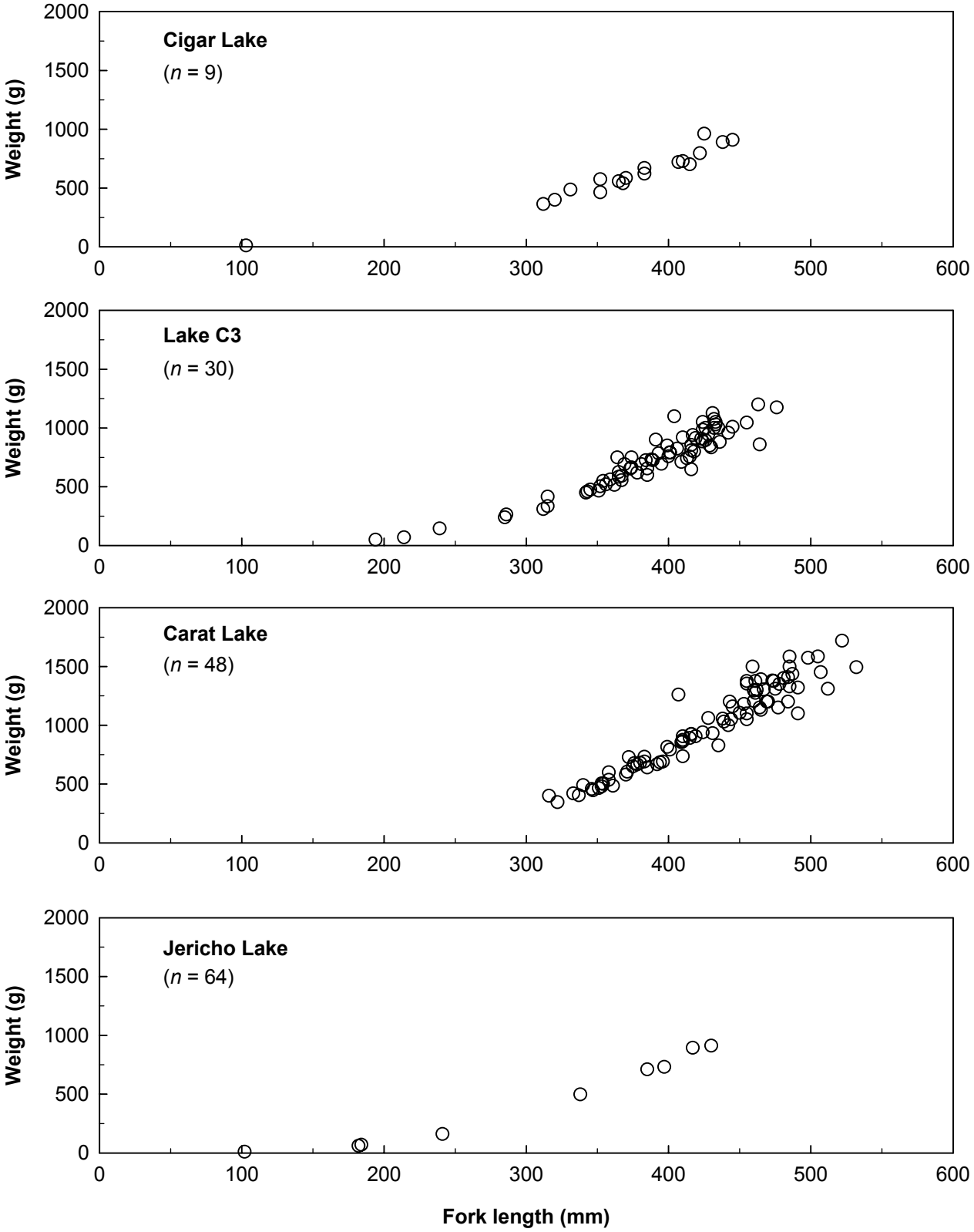
Appendix I3-3 Age distributions of round whitefish in lakes during Jericho pre-development baseline studies (all years combined).



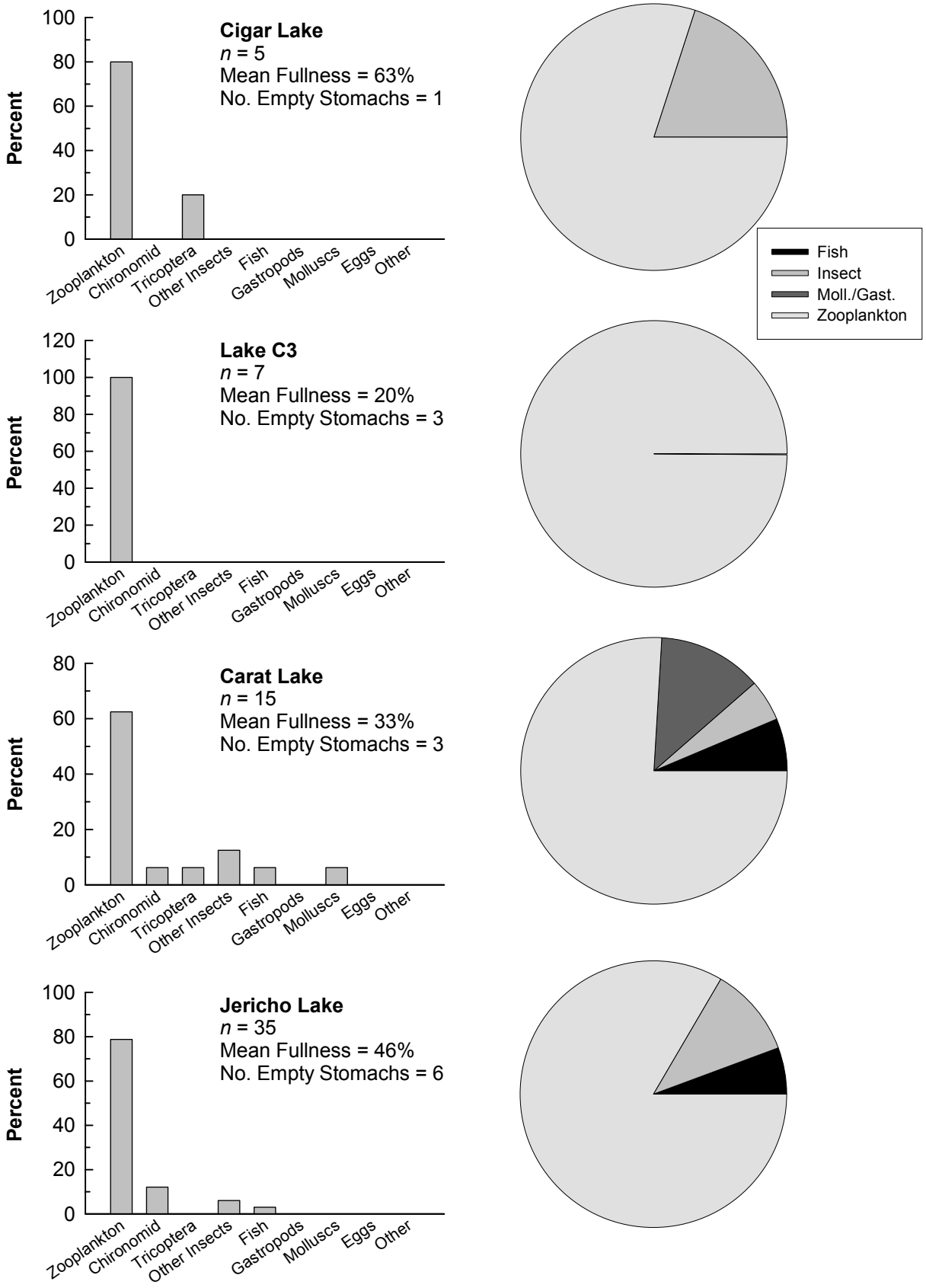
Appendix I4-1 Length weight relationships for Arctic char in lakes during Jericho pre-development baseline studies (all years combined).



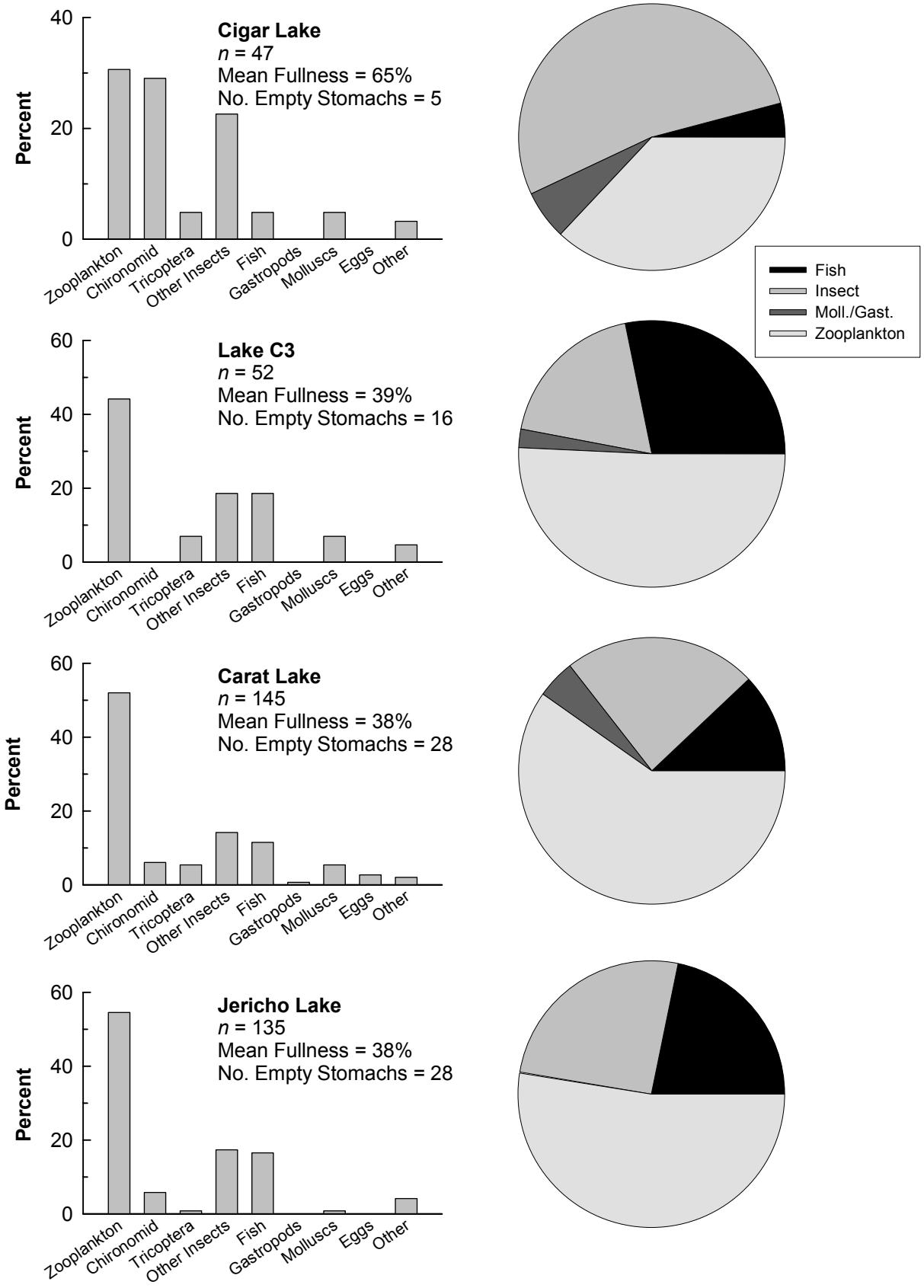
Appendix I4-2 Length weight relationships for lake trout in lakes during Jericho pre-development baseline studies (all years combined).



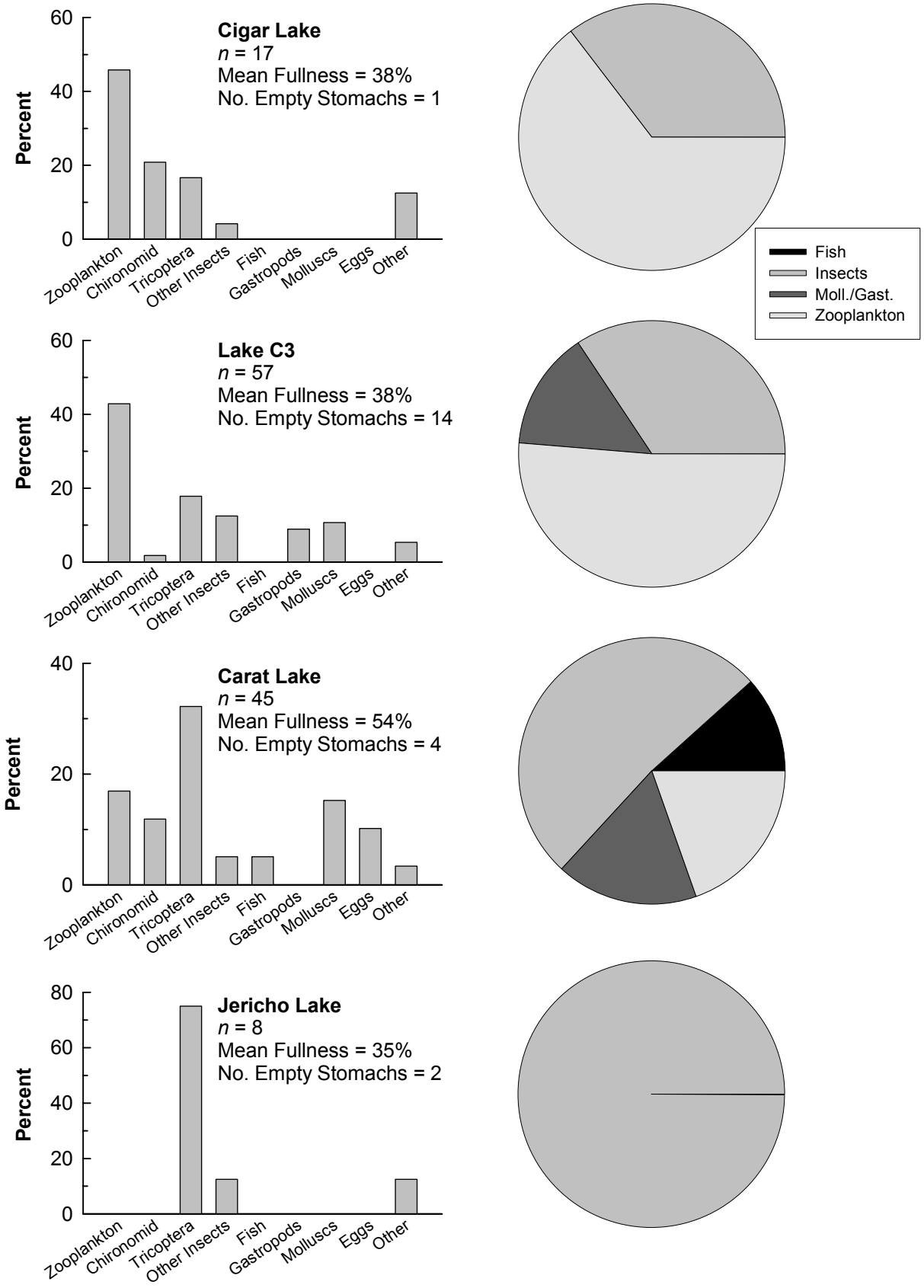
Appendix I4-3 Length weight relationships for round whitefish in lakes during Jericho pre-development baseline studies (all years combined).



Appendix I5-1 Percent occurrence (histogram) and percent composition (pie chart) of major food items recorded in Arctic char stomachs in lakes during Jericho pre-development baseline studies (all years combined).



Appendix I5-2 Percent occurrence (histogram) and percent composition (pie chart) of major food items recorded in lake trout stomachs in lakes during Jericho pre-development baseline studies (all years combined).



Appendix I5-3 Percent occurrence (histogram) and percent composition (pie chart) of major food items recorded in round whitefish stomachs in lakes during Jericho pre-development baseline studies (all years combined).

Appendix I6. Length at age data for dominant large size fish in Jericho study area lakes.

Species	Age	Mean Length (mm)	Standard Deviation	Sample Size
ARCH	2	160.0		1
ARCH	3	246.7	20.2	3
ARCH	4	285.3	38.4	3
ARCH	5	283.0	38.2	2
ARCH	6	334.0	23.6	3
ARCH	7	548.0		1
ARCH	9	553.5	9.2	2
ARCH	10	514.5	34.2	4
ARCH	11	594.0	41.0	2
ARCH	12	497.3	34.8	3
ARCH	13	568.0		1
ARCH	14	561.0		1
LKTR	1	97.2	8.5	5
LKTR	2	162.7	7.2	3
LKTR	3	188.2	21.9	12
LKTR	4	214.6	34.9	7
LKTR	5	250.5	37.5	2
LKTR	6	246.4	23.6	5
LKTR	7	291.3	16.9	4
LKTR	8	298.3	27.7	4
LKTR	9	261.0	60.8	2
LKTR	10	377.0	49.0	7
LKTR	11	394.6	43.5	13
LKTR	12	418.8	50.7	6
LKTR	13	457.1	55.8	9
LKTR	14	437.1	36.3	18
LKTR	15	478.0	59.7	5
LKTR	16	473.1	60.5	7
LKTR	17	465.6	28.3	5
LKTR	18	507.4	52.9	13
LKTR	19	541.4	97.5	5
LKTR	20	457.7	11.8	3
LKTR	21	537.8	85.4	5
LKTR	22	541.6	79.3	11
LKTR	23	526.0	43.3	3
LKTR	24	650.0	147.1	2
LKTR	25	594.6	122.1	5
LKTR	26	599.3	25.3	3
LKTR	28	611.0		1
LKTR	29	618.3	113.2	3
LKTR	35	745.5	126.6	2
LKTR	45	1,009.0		1

Appendix I6. Length at age data for dominant large size fish in Jericho study area lakes.

Species	Age	Mean Length (mm)	Standard Deviation	Sample Size
RNWH	1	109.5	10.6	2
RNWH	3	214.0		1
RNWH	4	236.0	50.6	3
RNWH	5	211.5	41.7	2
RNWH	6	317.0	52.4	3
RNWH	7	332.5	19.8	6
RNWH	8	363.2	28.5	12
RNWH	9	385.0	22.1	8
RNWH	10	381.1	21.9	15
RNWH	11	396.8	25.8	12
RNWH	12	443.4	30.5	12
RNWH	13	426.0	41.7	7
RNWH	14	421.0	10.9	4
RNWH	15	446.8	10.9	4
RNWH	16	442.5	20.9	4
RNWH	17	461.0		1
RNWH	18	458.5	37.5	2
RNWH	19	445.0		1
RNWH	21	474.0	10.5	3
RNWH	22	485.0		1
RNWH	23	465.7	11.0	3
RNWH	24	449.0	22.3	3
RNWH	25	469.0		1
RNWH	26	532.0		1
RNWH	29	407.0		1

APPENDIX C

Acute Toxicity Data

HydroQual Laboratories Ltd.

Trout (single concentration) Test Report

Result Summary

Client: TAH102
Reference: 06-1338-01-TRS

Client: Tahera Diamond Corporation; operation Yellowknife

Sample: PKCA Raw water

Collection: collected on 2006/07/06 at 1000 by B Ott
Receipt: received on 2006/07/10 at 1450 by B. Denny
Containers: received 1 x 20 L pail at 8 °C, in good condition with no seals and no initials
Description: type: raw water, collection method: not given

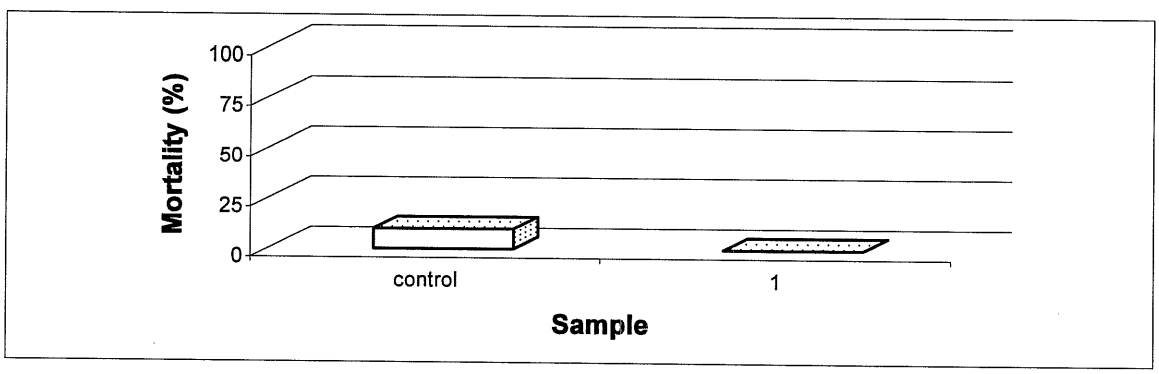
Test: started on 2006/07/11 ; ended on 2006/07/15

Contents

Result Summary.....1
Test Conditions.....2
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Result:

Sample	Client Code	Mortality (%)	Comment
control	lab control	10	
1	PKCA Raw water	0	not toxic as tested



Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

Our liability is limited to the cost of the test requested on the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results in part or in whole.

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tel (403) 253-7121 fax (403) 252-9363 www.hydroqual.ca

Test Conditions

Client: TAH102
Reference: 06-1338-01-TRS

Method: Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout, 1990. Environment Canada, EPS 1/RM/13. (amended 1996 and 2000)

Test type: Trout 96-h Static Acute Test (HQ 4.4.4.1)
Species: *Oncorhynchus mykiss*
Organism source: Ackenberry Trout Farms (Batch 20060705TR)
Acclimation: 6 days
Stock mortality: 0.07% (seven days preceeding testing)

Sample initial chemistry: pH: 7.5; EC: 160 (µS/cm); DO: 7.9 (mg/L); temperature: 12 °C
hardness (mg CaC03/L): 35; colour: colourless; odour: odourless
Sample holding time: 5 days (must be ≤ 5 days)
Sample storage: 4 ± 2°C in darkness

Test vessel: The test was conducted in 22 L plastic pails with polyethylene liners
Test volume: 18 Litres
Sample pre-treatment: All test solutions and controls were pre-aerated for 30 minutes
Dissolved oxygen in full strength sample was 8.5 mg/L after pre-aeration
The sample was not filtered or pH adjusted prior to or during testing
Loading density: 0.14 g/Litre (must be ≤ 0.5 g/Litre)
Control water: Dechlorinated City of Calgary water acclimated to test conditions
Test concentrations: Undiluted sample plus a negative control
Test replicates: One replicate per treatment; 10 fish per replicate
Feeding: Fish are not fed 24 hours before test initiation and no feeding during test
Measurements: pH, conductivity, dissolved oxygen and temperature measured daily
Aeration: All treatments aerated at 6.5 (±1 mL/min/L)
Lighting: Overhead full spectrum fluorescent lights; 100-500 lux at surface
Photoperiod: 16h light:8h dark
Test temperature: 15 ± 1°C

Endpoint: Mortality, % mortality at 96-h
Test validity: The control had 90% survival (must ≥ 90%)

Reference toxicant: 96-h test with Phenol (C_6H_5OH) initiated July 7, 2006; current results (96-h LC50 and 95% confidence limits) = 8.6 (6.4-10.8) mg/L Phenol

Note: Outlined sections are protocol deviations explained on the comment page; v/v, volume per volume

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Test Data

Client: TAH102
Reference: 06-1338-01-TRS

Test Log:

Date	Day	Time	Technician	Comment/Observation
2006/07/11	0	1130	M.Luong/A.Vogstad/B.Denny	test fish loaded at 1130 h
2006/07/12	1	1215	S.Krishnappa/M.Luong	all test fish appear normal
2006/07/13	2	1630	A.Vogstad/M.Luong/S.Krishnappa	all test fish appear normal
2006/07/14	3	1100	S.Krishnappa/A.Vogstad	all test fish appear normal
2006/07/15	4	1100	S.Krishnappa/A.Vogstad	all test fish appear normal

Chemistry:

Sample	control	1						

pH (units)

Day								
0	7.4	7.4						
1	7.9	7.7						
2	7.9	7.5						
3	7.9	7.5						
4	7.9	7.5						

Conductivity (µS/cm)

0	368	141						
1	370	141						
2	367	139						
3	371	140						
4	373	142						

Dissolved Oxygen (mg/L)

0	8.0	8.5						
1	8.2	8.3						
2	8.1	8.4						
3	8.5	8.6						
4	8.0	8.1						

Temperature (°C)

0	16	16						
1	16	16						
2	16	15						
3	15	15						
4	15	15						

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Test Data

Client: TAH102
Reference: 06-1338-01-TRS

Number Alive:

Sample	control	1						
Day								
0	10	10						
1	10	10						
2	10	10						
3	9	10						
4	9	10						
				Mortality (%)				
4	10	0						

Biology Summary Tables:

Control Fish	Length (cm)	Weight (g)
1	2.6	0.2
2	2.6	0.3
3	2.8	0.3
4	2.8	0.2
5	2.7	0.3
6	2.5	0.2
7	3.0	0.2
8	2.6	0.3
9	3.0	0.3
10	2.8	0.3
average	2.7	0.2
sd	0.2	0.0
cv(%)	6.3	16.6

Notes: nd, not done; na, not applicable; sd, standard deviation; cv(%), coefficient of variation

Sample	Group Weight (g)
control	2.5
1	2.9

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tel (403) 253-7121 fax (403) 252-9363 www.hydroqual.ca

Comments/Statistics

Client: TAH102
Reference: 06-1338-01-TRS

Test Result Comments:
None

Data Analysis:
None

Protocol Deviations:
The test fish were held for less than 14 days prior to test initiation.

Our liability is limited to the cost of the test requested on the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results in part or in whole.

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tel (403) 253-7121 fax (403) 252-9363 www.hydroqual.ca

Quality Assurance Information

Test Method: Trout 96h Static Acute Test. (LC50, five or more treatments plus a control)
HydroQual Test Method Manual, section: 4.4.4.1
Reference: Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout, 1990. Environment Canada, EPS 1/RM/13. including May 1996 and December 2000 amendments.

Test Organism:

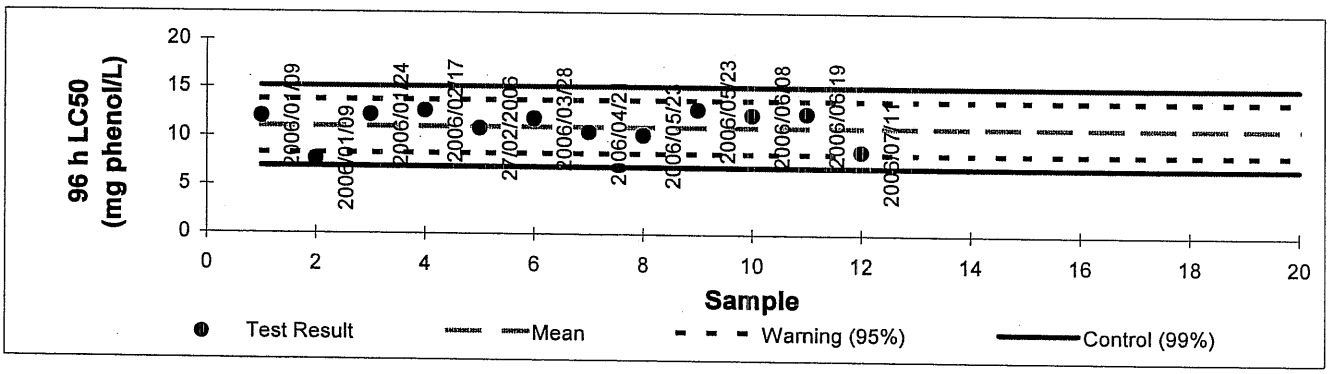
test species:	*Oncorhyncus mykiss*
culture source:	Ackenberry Trout Farms
temperature (°C):	15 ± 1
dissolved oxygen:	saturated
stock mortality (last 7d):	0.0%
batch number:	20060705TR

Test Design:

vol. of test vessel (L):	22
test volume depth:	>15 cm
replicates per treatment:	1
fingerlings per replicate:	10
loading (g fish/L):	<0.5
temperature (°C):	15 ± 1
photoperiod:	16h light: 8h dark
light level (water surface):	100-500 lux
control/dilution water:	dechlorinated tap water

Warning Chart: mortality LC50 at 96 hours
toxicant: Phenol (C_6H_5OH)

Current Test:	started on 2006/07/07	ended on 2006/07/11	
result (96 h LC50):	8.6	(6.4-10.8)	mg phenol/L (95% confidence limits are in brackets)
Historical:	mean:	11.0	std.dev: 1.4 cv(%): 12
warning limits:	8.3	13.8	(lower and upper 95% confidence limit, two standard deviations)
control limits:	6.9	15.1	(lower and upper 99% confidence limit, three standard deviations)



Qualty Assurance Unit:

Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

Our liability is limited to the cost of the test requested on the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results in part or in whole.

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HydroQual Laboratories Ltd.

Daphnia (single concentration) Test Report

Result Summary

Client: TAH102
Reference: 06-1338-01-DAS

Client: Tahera Diamond Corporation; operation Yellowknife

Sample: PKCA Raw water

Collection: collected on 2006/07/06 at 1000 by B Ott
Receipt: received on 2006/07/10 at 1450 by B. Denny
Containers: received 1 x 20 L pail at 8 °C, in good condition with no seals and no initials
Description: type: raw water, collection method: not given

Test: started on 2006/07/11 ; ended on 2006/07/13

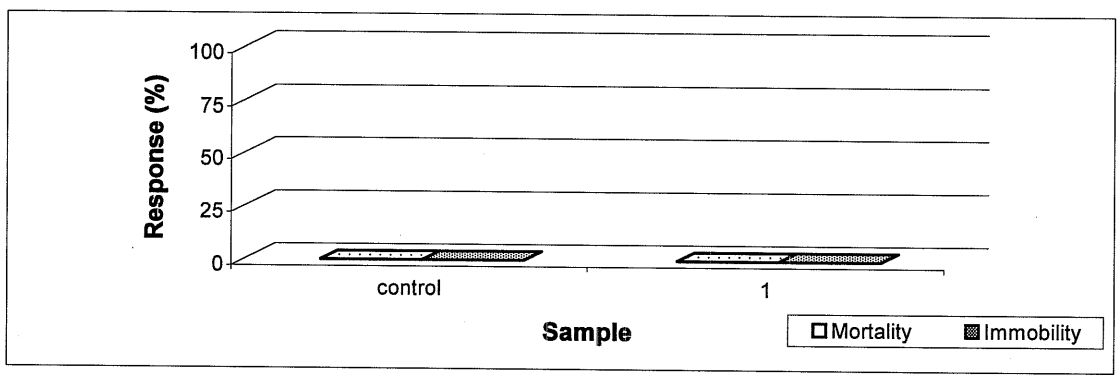
Contents

Result Summary.....1
Test Conditions.....2
Test Data.....4
Comments/Statistics..5
QA/QC.....6

Result:

Sample	Client Code	Average Mortality (%)	Average Immobility (%)	Comment
control	lab control	0	0	
1	PKCA Raw water	0	0	not toxic as tested

Notes: sd, sample standard deviation; cv, coefficient of variation; nd, not done; na, not applicable



Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

Our liability is limited to the cost of the test requested on the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results in part or in whole.

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Test Conditions

Client: TAH102
Reference: 06-1338-01-DAS

Method: Biological Test method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna*, 1990. Environ. Can., EPS 1/RM/14. (amended 1996 and 2000)

Test type: *Daphnia* 48-h Static Acute Test (HQ 4.4.3.1)
Species: *Daphnia magna*
Age: < 24 hours old
Organism source: in-house culture
Stock mortality: 0%
Culture brood data: 9 days to first brood
19 neonates per average brood

Sample initial chemistry: pH: 7.5; EC: 160 (µS/cm); DO: 7.9 (mg/L); temperature: 12 °C
hardness (mg CaC03/L): 35; colour: colourless; odour: odourless
Sample holding time: 5 days (must be ≤ 5 days)
Sample storage: 4 ± 2°C in darkness

Test vessel: 385 mL plastic vessels
Test volume: 150 mL
Sample pre-treatment: The sample was not filtered or pH adjusted prior to or during testing
The sample was pre-aerated for 0 minutes (rate of 37.5 ± 12.5 mL/min.L^{-1})
The hardness of the sample was not adjusted (mg $CaCO_3$/L) prior to or during testing
Loading density: One daphnid/15 mL (must ≤ 1 organism/15 mL)
Control water: Dechlorinated City of Calgary water acclimated to test conditions
The hardness of the control/dilution water was 162 mg $CaCO_3$/L
Test concentrations: Undiluted sample plus a negative control
Test replicates: Three replicates per treatment, 10 daphnids per replicate
Feeding: None
Aeration: None
Measurements: pH, conductivity, dissolved oxygen and temperature at test initiation and termination
Lighting: Overhead full spectrum fluorescent lights; 400-800 lux at surface
Photoperiod: 16h light:8h dark
Test temperature: 20 ± 2°C

Note: Outlined sections are protocol deviations explained on the comment page

Our liability is limited to the cost of the test requested on the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results in part or in whole.

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tel (403) 253-7121 fax (403) 252-9363 www.hydroqual.ca

Test Conditions

Client: TAH102
Reference: 06-1338-01-DAS

Endpoint: Mortality, % mortality at 48-h
Immobility, % immobility at 48-h

Test validity: The control had 100% survival (must ≥ 90%)
Control had 0% abnormal behaviour (must < 10%), e.g. immobility

Reference toxicant: 48-h test with NaCl initiated July 12, 2006; current results
(48-h LC50 and 95% confidence limits) = 5.0 (4.4-5.7) g/L NaCl

Note: Outlined sections are protocol deviations explained on the comment page

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tel (403) 253-7121 fax (403) 252-9363 www.hydroqual.ca

Test Data

Client: TAH102
Reference: 06-1338-01-DAS

Test Log:

Date	Day	Time	Technician	Comment/Observation
2006/07/11	0	1000	B.Denny	test *Daphnia* appear normal
2006/07/12	1	1435	A.Vogstad	test *Daphnia* appear normal
2006/07/13	2	1330	M.Luong	test *Daphnia* appear normal

Chemistry:

Sample	control			1		
replicate	a	b	c	a	b	c
pH (units)						
Day 0	7.9	7.9	7.9	7.7	7.7	7.7
Day 2	8.0	8.0	8.0	8.0	7.7	7.6
Conductivity (µS/cm)						
Day 0	415	415	415	190	190	190
Day 2	422	408	391	162	148	146
Dissolved Oxygen (mg/L)						
Day 0	8.0	8.0	8.0	8.2	8.2	8.2
Day 2	7.5	7.5	7.5	7.7	7.7	7.7
Temperature (°C)						
Day 0	19	19	19	19	19	19
Day 2	20	20	20	20	20	21

Biology:

Sample	control			1		
replicate	a	b	c	a	b	c
Number Alive and Behavior (behavior is in brackets)						
Day 1	10	10	10	10	10	10
Day 2	10	10	10	10	10	10

Notes: F, floating; I, immobile; B, stuck on bubble; D, caught in debris

Mortality (%)						
Day 2	0	0	0	0	0	0
Immobility (%)						
Day 2	0	0	0	0	0	0

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Comments/Statistics

Client: TAH102
Reference: 06-1338-01-DAS

Test Result Comments:
None

Data Analysis:
None

Protocol Deviations:
None

Our liability is limited to the cost of the test requested on the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results in part or in whole.

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tel (403) 253-7121 fax (403) 252-9363 www.hydroqual.ca

Quality Assurance Information

Test Method: *Daphnia* Static Acute Test (LC50, five or more treatments plus a control)
HydroQual Test Method Manual, section: 4.4.3.1

Reference: Biological Test Method: Reference Method for Determining the Acute Lethality of Effluents to *Daphnia magna,* 1990. Environment Canada, EPS 1/RM/14. including May 1996 and December 2000 ammendments.

Test Organism:

test species:	*Daphnia magna*
culture source:	in-house
original culture source:	Environment Canada
days to first brood:	10
mean brood size:	18
ephippia in stock culture:	no
age of test organisms:	<24 hours old
culture mortality (%):	7

Test Design:

vol. of test vessel (mL):	500
toxicant:	sodium chloride
test volume (mL):	150
replicates per treatment:	1
neonates per replicate:	10
volume per neonate (mL):	15
samples preaerated:	no
hardness adjustment:	no
temperature (°C):	20
photoperiod:	16h light:8h dark
light level (water surface):	400-800 lux
control/dilution water:	dechlorinated tap water

Warning Chart: mortality LC50 at 48 hours
toxicant: Sodium Chloride (NaCl)

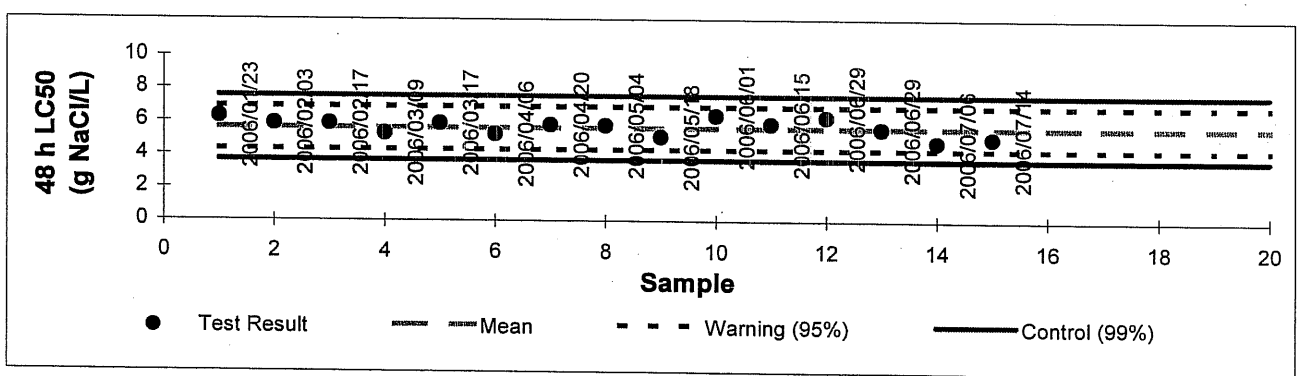
Current Test: started on 2006/07/12 ended on 2006/07/14

result (48 h LC50): 5.0 (4.4-5.7) g NaCl/L (95% confidence limits are in brackets)

Historical: mean: 5.6 std. dev: 0.6 cv (%): 12

warning limits: 4.3 6.9 (lower and upper 95% confidence limit, two standard deviations)

control limits: 3.7 7.6 (lower and upper 99% confidence limit, three standard deviations)



Quality Assurance Unit:

Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

Our liability is limited to the cost of the test requested on the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results in part or in whole.

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HydroQual Laboratories Ltd.

Trout (single concentration) Test Report

Result Summary

Client: TAH102
Reference: 06-1717-01-TRS

Contents

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Client: Tahera Diamond Corporation; operation Yellowknife

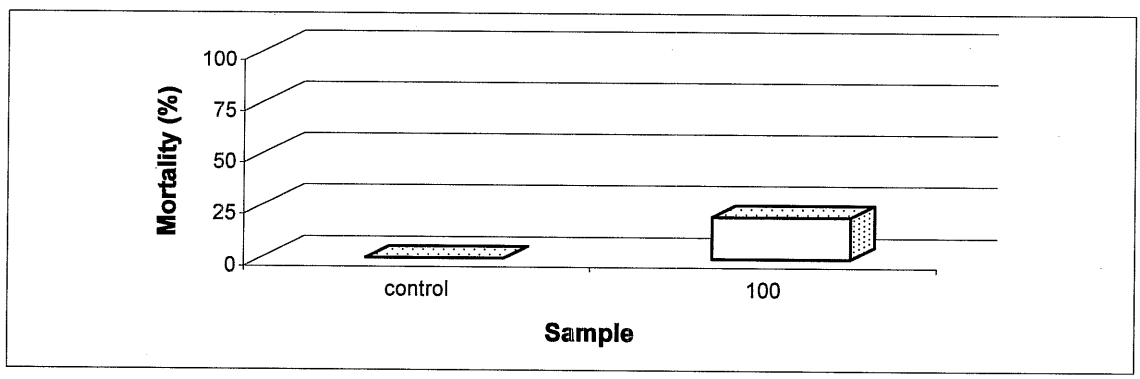
Sample: PKCA Raw Water

Collection: collected on 2006/08/20 at 1730 by C. Wray
Receipt: received on 2006/08/23 at 1420 by J.Ernst
Containers: received 2 x 20L pails at 20 °C, in good condition with no seals and no initials
Description: type: effluent, collection method: grab

Test: started on 2006/08/24 ; ended on 2006/08/28

Result:

Sample	Client Code	Mortality (%)	Comment
control	lab control	0	
1	PKCA Raw Water	20	none



Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

Our liability is limited to the cost of the test requested. The test results only relate to the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results.

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Tel (403) 253-7121 fax (403) 252-9363 www.hydroqual.ca

Test Conditions

Client: TAH102
Reference: 06-1717-01-TRS

Method: Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout, 1990. Environment Canada, EPS 1/RM/13. (amended 1996 and 2000)

Test type: Trout 96-h Static Acute Test (HQ 4.4.4.1)
Species: *Oncorhynchus mykiss*
Organism source: Ackenberry Trout Farms (Batch 20060815TR)
Acclimation: 9 days
Stock mortality: 0.24% (seven days preceeding testing)

Sample initial chemistry: pH: 7.4; EC: 242 (µS/cm); DO: 8.9 (mg/L); temperature: 21 °C
hardness (mg CaC03/L): 54; colour: colourless; odour: odourless
Sample holding time: 4 days (must be ≤ 5 days)
Sample storage: 4 ± 2°C in darkness

Test vessel: The test was conducted in 22 L plastic pails with polyethylene liners
Test volume: 18 Litres
Sample pre-treatment: All test solutions and controls were pre-aerated for 30 minutes
Dissolved oxygen in full strength sample was 8.4 mg/L after pre-aeration
The sample was not filtered or pH adjusted prior to or during testing
Loading density: 0.2g/Litre (must be ≤ 0.5 g/Litre)
Control water: Dechlorinated City of Calgary water acclimated to test conditions
Test concentrations: Undiluted sample plus a negative control
Test replicates: One replicate per treatment; 10 fish per replicate
Feeding: Fish are not fed 24 hours before test initiation and no feeding during test
Measurements: pH, conductivity, dissolved oxygen and temperature measured daily
Aeration: All treatments aerated at 6.5 (±1 mL/min/L)
Lighting: Overhead full spectrum fluorescent lights; 100-500 lux at surface
Photoperiod: 16h light:8h dark
Test temperature: 15 ± 1°C

Endpoint: Mortality, % mortality at 96-h
Test validity: The control had 100% survival (must ≥ 90%)

Reference toxicant: 96-h test with Phenol (C_6H_6O) initiated August 21, 2006; current results (96-h LC50 and 95% confidence limits) = 10.1 (9.5-10.8) mg/L Phenol

Note: Outlined sections are protocol deviations explained on the comment page; v/v, volume per volume

Our liability is limited to the cost of the test requested. The test results only relate to the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results.

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Tel (403) 253-7121 fax (403) 252-9363 www.hydroqual.ca

Test Data

Client: TAH102
Reference: 06-1717-01-TRS

Test Log:

Date	Day	Time	Technician	Comment/Observation
2006/08/24	0	1030	S. Krishnappa/A. Vogstad	test fish loaded at 1030 h
2006/08/25	1	0945	A. Vogstad/S. Ford	all test fish appear normal
2006/08/26	2	1030	B. Denny/M. Luong	all test fish appear normal
2006/08/27	3	0930	B. Denny/M. Luong	all test fish appear normal
2006/08/28	4	1000	M. Luong/S. Krishnappa	all test fish appear normal

Chemistry:

Sample	control	100						

pH (units)

Day								
0	7.6	7.6						
1	7.9	7.9						
2	7.9	7.9						
3	8.0	7.9						
4	7.9	7.7						

Conductivity (µS/cm)

0	446	246						
1	454	251						
2	456	252						
3	462	250						
4	459	246						

Dissolved Oxygen (mg/L)

0	8.7	8.4						
1	8.6	8.7						
2	8.4	8.5						
3	8.4	8.5						
4	8.8	8.8						

Temperature (°C)

0	15	16						
1	15	15						
2	15	15						
3	15	15						
4	15	15						

Our liability is limited to the cost of the test requested. The test results only relate to the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results.

HydroQual Laboratories Ltd., #4, 6125 12th Street SE, Calgary, Alberta, Canada T2H 2K1
Tel (403) 253-7121 fax (403) 252-9363 www.hydroqual.ca

Test Data

Client: TAH102
Reference: 06-1717-01-TRS

Number Alive:

Sample	control	100						
Day								
0	10	10						
1	10	9						
2	10	9						
3	10	8						
4	10	8						
				Mortality (%)				
4	0	20						

Biology Summary Tables:

Control Fish	Length (cm)	Weight (g)
1	3.5	0.4
2	2.9	0.2
3	3.3	0.3
4	3.5	0.4
5	3.5	0.4
6	3.4	0.3
7	3.7	0.5
8	3.5	0.4
9	3.5	0.4
10	3.5	0.4
average	3.4	0.4
sd	0.2	0.1
cv(%)	6.2	19.3

Sample	Group Weight (g)
control	3.6
100.0	4.5

Notes: nd, not done; na, not applicable; sd, standard deviation; cv(%), coefficient of variation

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Comments/Statistics

Client: TAH102
Reference: 06-1717-01-TRS

Test Result Comments:
None

Data Analysis:
None

Protocol Deviations:
The fish were held less than 14 days prior to test initiation.

Our liability is limited to the cost of the test requested. The test results only relate to the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results.

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Quality Assurance Information

Test Method: Trout 96h Static Acute Test. (LC50, five or more treatments plus a control)
HydroQual Test Method Manual, section: 4.4.4.1
Reference: Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout, 1990. Environment Canada, EPS 1/RM/13. including May 1996 and December 2000 amendments.

Test Organism:

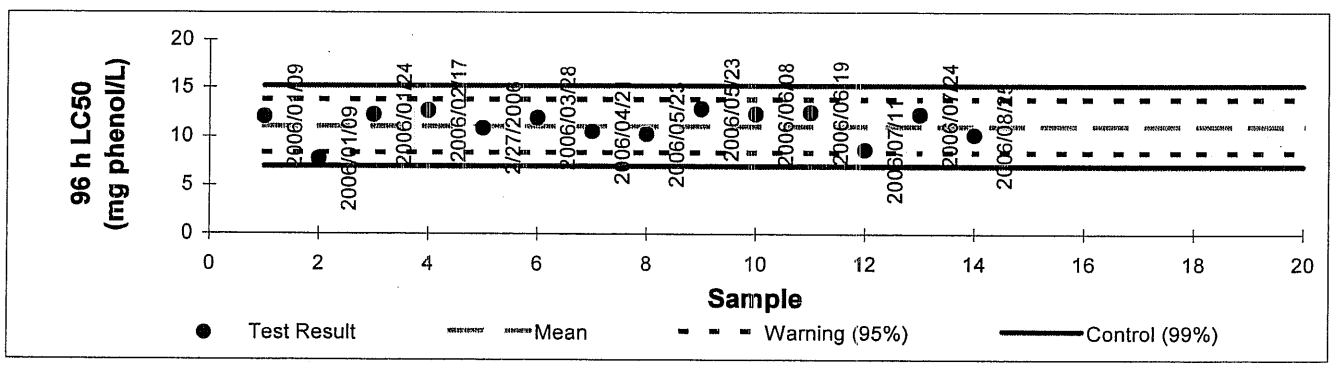
test species:	*Oncorhyncus mykiss*
culture source:	Ackenberry Trout Farms
temperature (°C):	15 ± 1
dissolved oxygen:	saturated
stock mortality (last 7d):	0.3%
batch number:	20060815TR

Test Design:

vol. of test vessel (L):	20
test volume depth:	>15 cm
replicates per treatment:	1
fingerlings per replicate:	10
loading (g fish/L):	<0.5
temperature (°C):	15 ± 1
photoperiod:	16h light: 8h dark
light level (water surface):	100-500 lux
control/dilution water:	dechlorinated tap water

Warning Chart: mortality LC50 at 96 hours
toxicant: Phenol (C_6H_5OH)

Current Test:	started on	2006/08/21	ended on	2006/08/25		
result (96 h LC50):	10.1	(9.5-10.8)	mg phenol/L	(95% confidence limits are in brackets)		
Historical:	mean:	11.0	std.dev:	1.4	cv(%):	12
warning limits:	8.3	13.8	(lower and upper 95% confidence limit, two standard deviations)			
control limits:	6.9	15.1	(lower and upper 99% confidence limit, three standard deviations)			



Qualty Assurance Unit:

Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

Our liability is limited to the cost of the test requested on the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results in part or in whole.

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HydroQual Laboratories Ltd.

Daphnia (single concentration) Test Report

Result Summary

Client: TAH102
Reference: 06-1717-01-DAS

Client: Tahera Diamond Corporation; operation Yellowknife

Sample: PKCA Raw Water

Collection: collected on 2006/08/20 at 1730 by C. Wray
Receipt: received on 2006/08/23 at 1420 by J.Ernst
Containers: received 2 x 20L pails at 20 °C, in good condition with no seals and no initials
Description: type: effluent, collection method: grab

Test: started on 2006/08/24 ; ended on 2006/08/26

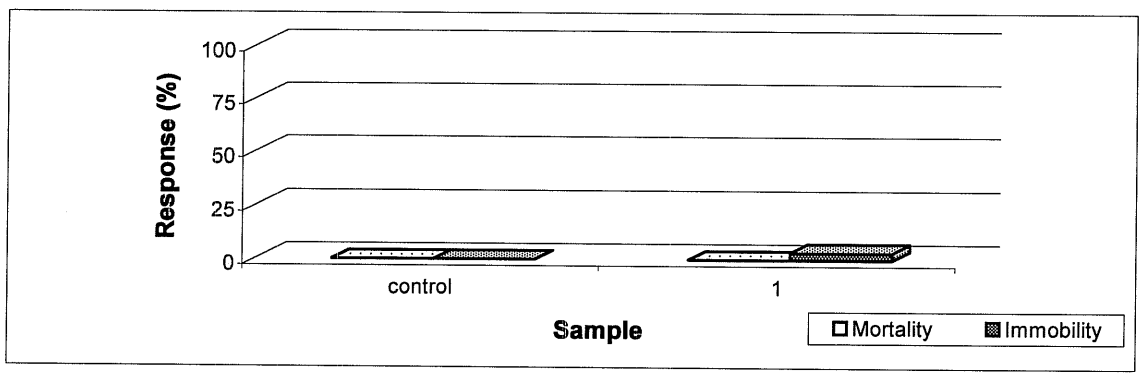
Contents

Result Summary.....1
Test Conditions.....2
Test Data.....4
Comments/Statistics..5
QA/QC.....6

Result:

Sample	Client Code	Average Mortality (%)	Average Immobility (%)	Comment
control	lab control	0	0	
1	PKCA Raw Water	0	3	not toxic as tested

Notes: sd, sample standard deviation; cv, coefficient of variation; nd, not done; na, not applicable;



Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

Test Conditions

Client: TAH102
Reference: 06-1717-01-DAS

Method: Biological Test method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna*, 1990. Environ. Can., EPS 1/RM/14. (amended 1996 and 2000)

Test type: *Daphnia* 48-h Static Acute Test (HQ 4.4.3.1)
Species: *Daphnia magna*
Age: < 24 hours old
Organism source: in-house culture
Stock mortality: 0%
Culture brood data: 9 days to first brood
16 neonates per average brood

Sample initial chemistry: pH: 7.4; EC: 242 (µS/cm); DO: 8.9 (mg/L); temperature: 21 °C
hardness (mg CaC03/L): 54; colour: colourless; odour: odourless
Sample holding time: 4 days (must be ≤ 5 days)
Sample storage: 4 ± 2°C in darkness

Test vessel: 385 mL plastic vessels
Test volume: 150 mL
Sample pre-treatment: The sample was not filtered or pH adjusted prior to or during testing
The sample was pre-aerated for 0 minutes (rate of 37.5 ± 12.5 mL/min.L^{-1})
The hardness of the sample was not adjusted (mg $CaCO_3$/L) prior to or during testing
Loading density: One daphnid/15 mL (must ≤ 1 organism/15 mL)
Control water: Dechlorinated City of Calgary water acclimated to test conditions
The hardness of the control/dilution water was 154 mg $CaCO_3$/L
Test concentrations: Undiluted sample plus a negative control
Test replicates: Three replicates per treatment, 10 daphnids per replicate
Feeding: None
Aeration: None
Measurements: pH, conductivity, dissolved oxygen and temperature at test initiation and termination
Lighting: Overhead full spectrum fluorescent lights; 400-800 lux at surface
Photoperiod: 16h light:8h dark
Test temperature: 20 ± 2°C

Note: Outlined sections are protocol deviations explained on the comment page

Test Conditions

Client: TAH102
Reference: 06-1717-01-DAS

Endpoint: Mortality, % mortality at 48-h
Immobility, % immobility at 48-h

Test validity: The control had 100% survival (must ≥ 90%)
Control had 0% abnormal behaviour (must < 10%), e.g. immobility

Reference toxicant: 48-h test with NaCl initiated August 22, 2006; current results (48-h LC50 and 95% confidence limits) = 5.4 (4.9-5.8) g/L NaCl

Note: Outlined sections are protocol deviations explained on the comment page

Test Data

Client: TAH102
Reference: 06-1717-01-DAS

Test Log:

Date	Day	Time	Technician	Comment/Observation
2006/08/24	0	1415	S. Ford	test *Daphnia* appear normal
2006/08/25	1	1200	S. Ford	test *Daphnia* appear normal
2006/08/26	2	1315	B.Denny	test *Daphnia* appear normal

Chemistry:

Sample	control			1		
replicate	a	b	c	a	b	c
Day	pH (units)					
0	7.8	7.8	7.8	7.4	7.4	7.4
2	7.8	7.9	7.9	7.6	7.7	7.6
	Conductivity (µS/cm)					
0	475	475	475	242	242	242
2	480	462	461	250	239	238
	Dissolved Oxygen (mg/L)					
0	9.2	9.2	9.2	8.9	8.9	8.9
2	8.1	8.1	8.2	8.1	8.2	8.2
	Temperature (°C)					
0	21	21	21	21	21	21
2	19	20	19	20	20	20

Biology:

Sample	control			1		
replicate	a	b	c	a	b	c
Day	Number Alive and Behavior (behavior is in brackets)					
1	10 (1F, 1I)	10	10	10	10	10 (1I)
2	10	10	10	10	10	10 (1I)

Notes: F, floating; I, immobile; B, stuck on bubble; D, caught in debris

	Mortality (%)					
2	0	0	0	0	0	0
	Immobility (%)					
2	0	0	0	0	0	10

Comments/Statistics

Client: TAH102
Reference: 06-1717-01-DAS

Test Result Comments:
None

Data Analysis:
None

Protocol Deviations:
None

HydroQual Laboratories Ltd.

Daphnia Test Report

Quality Assurance Information

Test Method: *Daphnia* Static Acute Test (LC50, five or more treatments plus a control)
HydroQual Test Method Manual, section: 4.4.3.1

Reference: Biological Test Method: Reference Method for Determining the Acute Lethality of Effluents to *Daphnia magna,* 1990. Environment Canada, EPS 1/RM/14. including May 1996 and December 2000 ammendments.

Test Organism:

test species:	*Daphnia magna*
culture source:	in-house
original culture source:	Environment Canada
days to first brood:	9
mean brood size:	16
ephippia in stock culture:	no
age of test organisms:	<24 hours old
culture mortality (%):	0

Test Design:

vol. of test vessel (mL):	500
toxicant:	sodium chloride
test volume (mL):	150
replicates per treatment:	1
neonates per replicate:	10
volume per neonate (mL):	15
samples preaerated:	no
hardness adjustment:	no
temperature (°C):	20
photoperiod:	16h light:8h dark
light level (water surface):	400-800 lux
control/dilution water:	dechlorinated tap water

Warning Chart: mortality LC50 at 48 hours
toxicant: Sodium Chloride (NaCl)

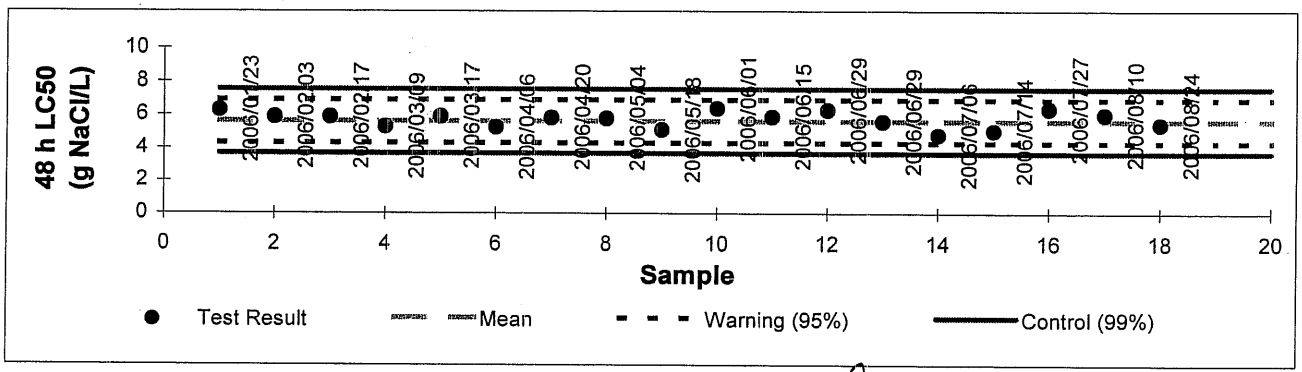
Current Test: started on 2006/08/22 ended on 2006/08/24

result (48 h LC50): 5.4 (4.9-5.8) g NaCl/L (95% confidence limits are in brackets)

Historical: mean: 5.6 std. dev: 0.6 cv (%): 12

warning limits: 4.3 6.9 (lower and upper 95% confidence limit, two standard deviations)

control limits: 3.7 7.6 (lower and upper 99% confidence limit, three standard deviations)



Quality Assurance Unit:

Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

Our liability is limited to the cost of the test requested on the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results in part or in whole.

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HydroQual Laboratories Ltd.

Trout (single concentration) Test Report

Result Summary

Client: TAH102
Reference: 06-1853-01-TRS

Client: Tahera Diamond Corporation; operation Yellowknife

Sample: PKCA Raw Water

Collection: collected on 2006/09/11 at 0830 by CW
Receipt: received on 2006/09/12 at 1335 by Luc Lamontagne
Containers: received 1 x 20L pail at 8 °C, in good condition with no seals and no initials
Description: type: water, collection method: grab

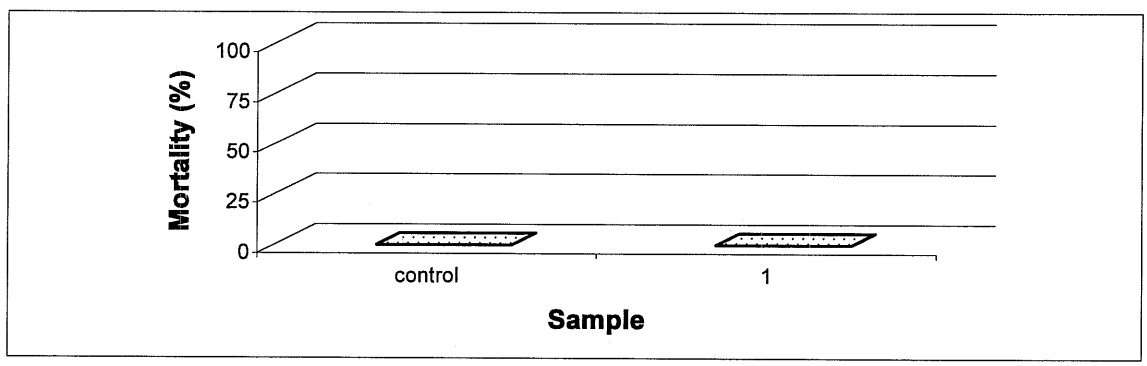
Test: started on 2006/09/14 ; ended on 2006/09/18

Contents

Result Summary.....1
Test Conditions.....2
Test Data.....3
Comments/Statistics..5
QA/QC.....6

Result:

Sample	Client Code	Mortality (%)	Comment
control	lab control	0	
1	PKCA Raw Water	0	not toxic as tested



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The test data and results are verified correct.

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HydroQual Laboratories Ltd.

Trout (single concentration) Test Report

Result Summary

Client: TAH102
Reference: 06-2164-01-TRS

Client: Tahera Diamond Corporation; operation Yellowknife

Sample: JER-WQ2

Collection: collected on 2006/10/23 at 0919 by MT
Receipt: received on 2006/10/25 at 1420 by J.M.
Containers: received 1 x 20L pail at 9 °C, in good condition with no seals and no initials
Description: type: water, collection method: grab

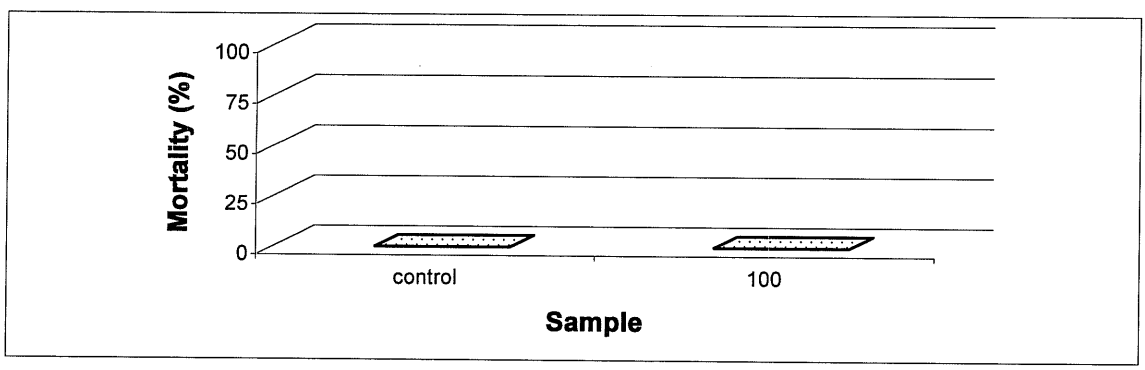
Test: started on 2006/10/26 ; ended on 2006/10/30

Contents

Result Summary.....1
Test Conditions.....2
Test Data.....3
Comments/Statistics..5
QA/QC.....6

Result:

Sample	Client Code	Mortality (%)	Comment
control	lab control	0	
1	JER-WQ2	0	not toxic as tested



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The test data and results are verified correct.

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HydroQual Laboratories Ltd.

Trout (single concentration) Test Report

Result Summary

Client: TAH102
Reference: 06-2265-01-TRS

Contents

Result Summary.....1
Test Conditions.....2
Test Data.....3
Comments/Statistics..5
QA/QC.....6

Client: Tahera Diamond Corporation; operation Yellowknife

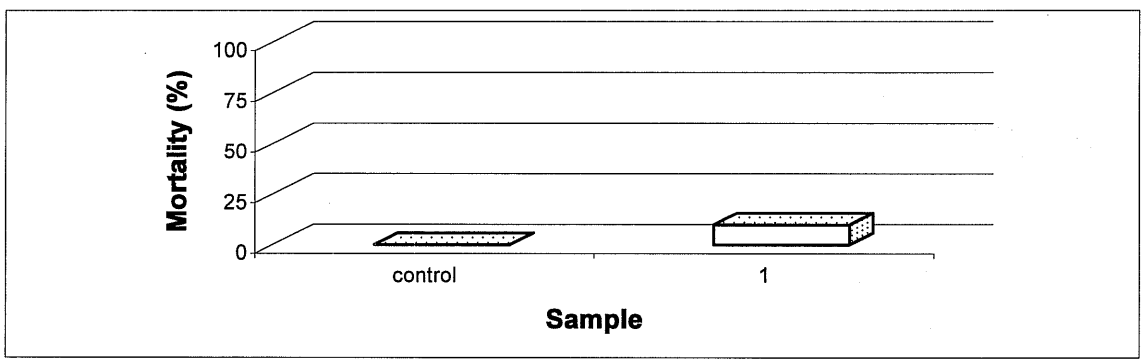
Sample: JER-WQ2

Collection: collected on 2006/11/08 at not given by CW
Receipt: received on 2006/11/11 at 730 by B. Denny
Containers: received 1 x 20L pail at 20 °C, in good condition with no seals and no initials
Description: type: effluent water, collection method: grab

Test: started on 2006/11/13 ; ended on 2006/11/17

Result:

Sample	Client Code	Mortality (%)	Comment
control	lab control	0	
1	JER-WQ2	10	not toxic as tested



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Test Conditions

Client: TAH102
Reference: 06-2265-01-TRS

Method: Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout, 1990. Environment Canada, EPS 1/RM/13. (amended 1996 and 2000)

Test type: Trout 96-h Static Acute Test (HQ 4.4.4.1)
Species: *Oncorhynchus mykiss*
Organism source: Ackenberry Trout Farms (Batch 20061020TR)
Acclimation: 25 days
Stock mortality: 1.3% (seven days preceeding testing)

Sample initial chemistry: pH: 8.1; EC: 237 (µS/cm); DO: 8.8 (mg/L); temperature: 17 °C
hardness (mg CaC03/L): 126; colour: colourless; odour: odourless
Sample holding time: 5 days (must be ≤ 5 days)
Sample storage: 4 ± 2°C in darkness

Test vessel: The test was conducted in 22 L plastic pails with polyethylene liners
Test volume: 20 Litres
Sample pre-treatment: All test solutions and controls were pre-aerated for 30 minutes
Dissolved oxygen in full strength sample was 8.7 mg/L after pre-aeration
The sample was not filtered or pH adjusted prior to or during testing
Loading density: 0.335 g/Litre (must be ≤ 0.5 g/Litre)
Control water: Dechlorinated City of Calgary water acclimated to test conditions
Test concentrations: Undiluted sample plus a negative control
Test replicates: One replicate per treatment; 10 fish per replicate
Feeding: Fish are not fed 24 hours before test initiation and no feeding during test
Measurements: pH, conductivity, dissolved oxygen and temperature measured daily
Aeration: All treatments aerated at 6.5 (±1 mL/min/L)
Lighting: Overhead full spectrum fluorescent lights; 100-500 lux at surface
Photoperiod: 16h light:8h dark
Test temperature: 15 ± 1°C

Endpoint: Mortality, % mortality at 96-h
Test validity: The control had 100% survival (must ≥ 90%)

Reference toxicant: 96-h test with Phenol (C_6H_5OH) initiated October 31, 2006; current results (96-h LC50 and 95% confidence limits) = 11.4 (10.3-12.7) mg/L Phenol

Note: Outlined sections are protocol deviations explained on the comment page; v/v, volume per volume

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Test Data

Client: TAH102
Reference: 06-2265-01-TRS

Test Log:

Date	Day	Time	Technician	Comment/Observation
2006/11/13	0	1800	S.Krishnappa	test fish loaded at 1800 h
2006/11/14	1	1500	S.Krishnappa	all test fish appear normal
2006/11/15	2	1345	S.Krishnappa	all test fish appear normal
2006/11/16	3	1220	S.Krishnappa	all test fish appear normal
2006/11/17	4	1600	S.Ford	all test fish appear normal

Chemistry:

Sample	control	1						

Day	pH (units)							
0	7.8	7.7						
1	7.9	7.8						
2	7.8	7.9						
3	7.9	7.9						
4	7.9	7.8						
	Conductivity (µS/cm)							
0	351	206						
1	378	208						
2	383	231						
3	384	231						
4	382	210						
	Dissolved Oxygen (mg/L)							
0	8.9	8.7						
1	8.4	8.4						
2	8.2	8.2						
3	8.4	8.4						
4	8.3	8.3						
	Temperature (°C)							
0	15	16						
1	15	15						
2	16	16						
3	15	15						
4	15	16						

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Test Data

Client: TAH102
Reference: 06-2265-01-TRS

Number Alive:

Sample	control	1						
Day								
0	10	10						
1	10	10						
2	10	10						
3	10	10						
4	10	9						
				Mortality (%)				
4	0	10						

Biology Summary Tables:

Control Fish	Length (cm)	Weight (g)
1	4.6	0.8
2	4.3	0.9
3	4.3	0.7
4	4.5	0.7
5	4.1	0.5
6	3.9	0.5
7	4.6	0.6
8	4.6	0.5
9	4.3	0.7
10	4.5	0.8
average	4.4	0.7
sd	0.2	0.1
cv(%)	5.4	21.2

Sample	Group Weight (g)
control	6.7
1	6.9

Notes: nd, not done; na, not applicable; sd, standard deviation; cv(%), coefficient of variation

Our liability is limited to the cost of the test requested. The test results only relate to the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results.

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Comments/Statistics

Client: TAH102
Reference: 06-2265-01-TRS

Test Result Comments:
None

Data Analysis:
None

Protocol Deviations:
None

Our liability is limited to the cost of the test requested. The test results only relate to the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results.

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Quality Assurance Information

Test Method: Trout 96h Static Acute Test. (LC50, five or more treatments plus a control)
HydroQual Test Method Manual, section: 4.4.4.1
Reference: Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout, 1990. Environment Canada, EPS 1/RM/13. including May 1996 and December 2000 amendments.

Test Organism:

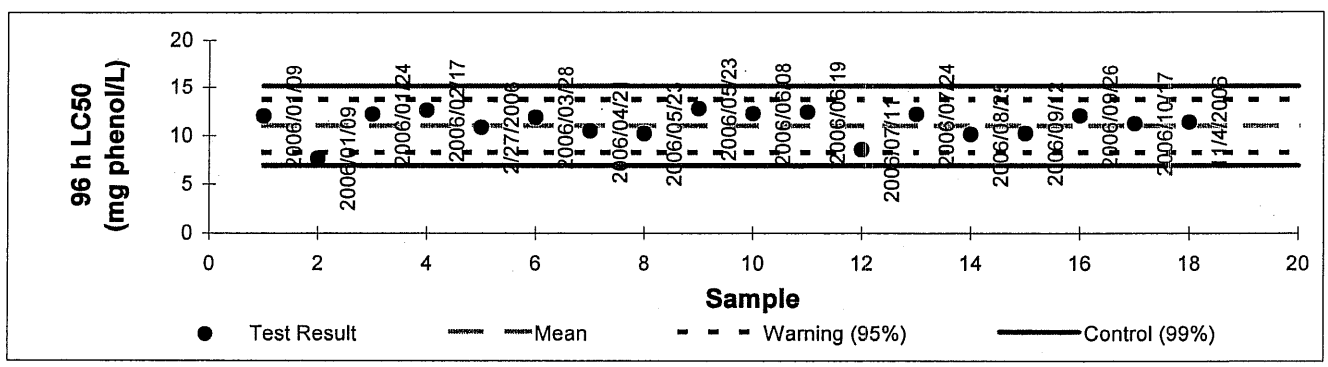
test species:	*Oncorhyncus mykiss*
culture source:	Ackenberry Trout Farms
temperature (°C):	15 ± 1
dissolved oxygen:	saturated
stock mortality (last 7d):	<0.01%
batch number:	20061020TR

Test Design:

vol. of test vessel (L):	20
test volume depth:	>15 cm
replicates per treatment:	1
fingerlings per replicate:	10
loading (g fish/L):	<0.5
temperature (°C):	15 ± 1
photoperiod:	16h light: 8h dark
light level (water surface):	100-500 lux
control/dilution water:	dechlorinated tap water

Warning Chart: mortality LC50 at 96 hours
toxicant: Phenol (C_6H_5OH)

Current Test:	started on	2006/10/31	ended on	2006/11/04		
result (96 h LC50):	11.4	(10.3-12.7)	mg phenol/L	(95% confidence limits are in brackets)		
Historical:	mean:	11.0	std.dev:	1.4	cv(%):	12
warning limits:	8.3	13.8	(lower and upper 95% confidence limit, two standard deviations)			
control limits:	6.9	15.1	(lower and upper 99% confidence limit, three standard deviations)			



Qualty Assurance Unit:

Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

Our liability is limited to the cost of the test requested on the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results in part or in whole.

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HydroQual Laboratories Ltd.

Daphnia (single concentration) Test Report

Result Summary

Client: TAH102
Reference: 06-2265-01-DAS

Contents

Result Summary.....1
Test Conditions.....2
Test Data.....4
Comments/Statistics..5
QA/QC.....6

Client: Tahera Diamond Corporation; operation Yellowknife

Sample: JER-WQ2

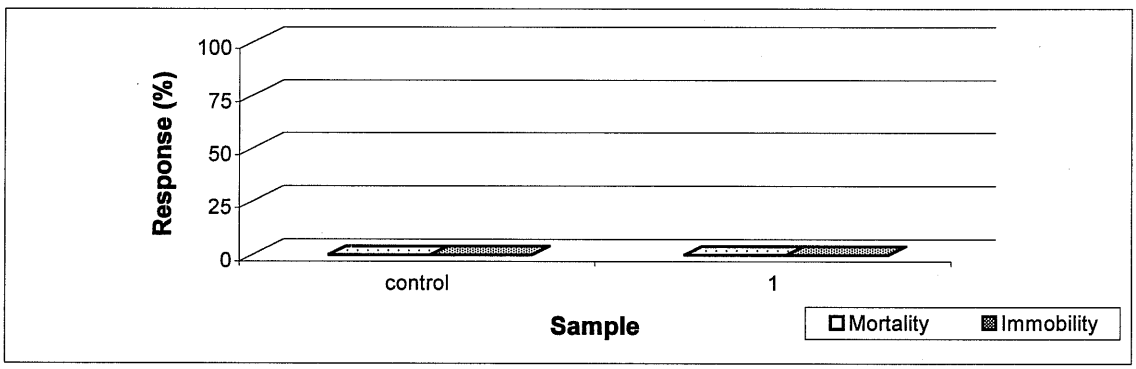
Collection: collected on 2006/11/08 at not given by CW
Receipt: received on 2006/11/11 at 730 by B. Denny
Containers: received 1 x 20L pail at 20 °C, in good condition with no seals and no initials
Description: type: effluent water, collection method: grab

Test: started on 2006/11/13 ; ended on 2006/11/15

Result:

Sample	Client Code	Average Mortality (%)	Average Immobility (%)	Comment
control	lab control	0	0	
1	JER-WQ2	0	0	not toxic as tested

Notes: sd, sample standard deviation; cv, coefficient of variation; nd, not done; na, not applicable;



Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

Our liability is limited to the cost of the test requested. The test results only relate to the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results.

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Test Conditions

Client: TAH102
Reference: 06-2265-01-DAS

Method: Biological Test method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna*, 1990. Environ. Can., EPS 1/RM/14. (amended 1996 and 2000)

Test type: *Daphnia* 48-h Static Acute Test (HQ 4.4.3.1)
Species: *Daphnia magna*
Age: < 24 hours old
Organism source: in-house culture
Stock mortality: 14%
Culture brood data: 12 days to first brood
20 neonates per average brood

Sample initial chemistry: pH: 8.1; EC: 237 (µS/cm); DO: 8.8 (mg/L); temperature: 17 °C
hardness (mg CaC03/L): 126; colour: colourless; odour: odourless
Sample holding time: 5 days (must be ≤ 5 days)
Sample storage: 4 ± 2°C in darkness

Test vessel: 385 mL plastic vessels
Test volume: 150 mL
Sample pre-treatment: The sample was not filtered or pH adjusted prior to or during testing
The sample was pre-aerated for 0 minutes (rate of 37.5 ± 12.5 mL/min.L^{-1})
The hardness of the sample was not adjusted (mg $CaCO_3$/L) prior to or during testing
Loading density: One daphnid/15 mL (must ≤ 1 organism/15 mL)
Control water: Dechlorinated City of Calgary water acclimated to test conditions
The hardness of the control/dilution water was 102 mg $CaCO_3$/L
Test concentrations: Undiluted sample plus a negative control
Test replicates: Three replicates per treatment, 10 daphnids per replicate
Feeding: None
Aeration: None
Measurements: pH, conductivity, dissolved oxygen and temperature at test initiation and termination
Lighting: Overhead full spectrum fluorescent lights; 400-800 lux at surface
Photoperiod: 16h light:8h dark
Test temperature: 20 ± 2°C

Note: Outlined sections are protocol deviations explained on the comment page

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Test Conditions

Client: TAH102
Reference: 06-2265-01-DAS

Endpoint: Mortality, % mortality at 48-h
Immobility, % immobility at 48-h

Test validity: The control had 100% survival (must ≥ 90%)
Control had 0% abnormal behaviour (must < 10%), e.g. immobility

Reference toxicant: 48-h test with NaCl initiated November 14, 2006; current results (48-h LC50 and 95% confidence limits) = 6.1 (5.7-6.6) g/L NaCl

Note: Outlined sections are protocol deviations explained on the comment page

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Test Data

Client: TAH102
Reference: 06-2265-01-DAS

Test Log:

Date	Day	Time	Technician	Comment/Observation
2006/11/13	0	1220	S.Krishnappa	test *Daphnia* appear normal
2006/11/14	1	1550	S.Krishnappa	test *Daphnia* appear normal
2006/11/15	2	1140	S.Ford	test *Daphnia* appear normal

Chemistry:

Sample	control			1		
replicate	a	b	c	a	b	c
Day	pH (units)					
0	7.9	7.9	7.9	7.9	7.9	7.9
2	7.9	7.9	7.9	7.8	7.8	7.7
	Conductivity (µS/cm)					
0	379	379	379	251	251	251
2	427	399	410	256	245	243
	Dissolved Oxygen (mg/L)					
0	8.3	8.3	8.3	7.9	7.9	7.9
2	7.7	8.4	8.3	8.3	8.1	8.2
	Temperature (°C)					
0	19	19	19	22	22	22
2	22	22	22	22	22	22

Biology:

Sample	control			1		
replicate	a	b	c	a	b	c
Day	Number Alive and Behavior (behavior is in brackets)					
1	10	10	10	10	10	10
2	10	10	10	10	10	10

Notes: F, floating; I, immobile; B, stuck on bubble; D, caught in debris

	Mortality (%)					
2	0	0	0	0	0	0
	Immobility (%)					
2	0	0	0	0	0	0

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Comments/Statistics

Client: TAH102
Reference: 06-2265-01-DAS

Test Result Comments:
None

Data Analysis:
None

Protocol Deviations:
None

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Quality Assurance Information

Test Method: *Daphnia* Static Acute Test (LC50, five or more treatments plus a control)
HydroQual Test Method Manual, section: 4.4.3.1

Reference: Biological Test Method: Reference Method for Determining the Acute Lethality of Effluents to *Daphnia magna,* 1990. Environment Canada, EPS 1/RM/14. including May 1996 and December 2000 ammendments.

Test Organism:

test species:	*Daphnia magna*
culture source:	in-house
original culture source:	Environment Canada
days to first brood:	12
mean brood size:	20
ephippia in stock culture:	no
age of test organisms:	<24 hours old
culture mortality (%):	7%

Test Design:

vol. of test vessel (mL):	500
toxicant:	sodium chloride
test volume (mL):	150
replicates per treatment:	1
neonates per replicate:	10
volume per neonate (mL):	15
samples preaerated:	no
hardness adjustment:	no
temperature (°C):	20
photoperiod:	16h light:8h dark
light level (water surface):	400-800 lux
control/dilution water:	dechlorinated tap water

Warning Chart: mortality LC50 at 48 hours
toxicant: Sodium Chloride (NaCl)

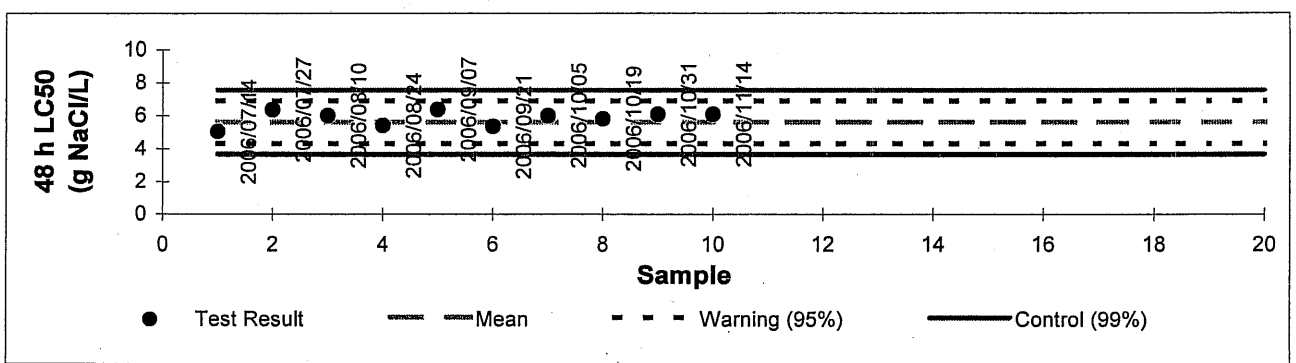
Current Test: started on 2006/11/14 ended on 2006/11/16

result (48 h LC50): 6.1 (5.7-6.6) g NaCl/L (95% confidence limits are in brackets)

Historical: mean: 5.6 std. dev: 0.6 cv (%): 12

warning limits: 4.3 6.9 (lower and upper 95% confidence limit, two standard deviations)

control limits: 3.7 7.6 (lower and upper 99% confidence limit, three standard deviations)



Quality Assurance Unit:

Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

Our liability is limited to the cost of the test requested on the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results in part or in whole.

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Test Conditions

Client: TAH102
Reference: 06-2164-01-TRS

Method: Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout, 1990. Environment Canada, EPS 1/RM/13. (amended 1996 and 2000)

Test type: Trout 96-h Static Acute Test (HQ 4.4.4.1)
Species: *Oncorhynchus mykiss*
Organism source: Ackenberry Trout Farms (Batch 20061020TR)
Acclimation: 6 days
Stock mortality: <0.1% (seven days preceeding testing)

Sample initial chemistry: pH: 6.9; EC: 250 (µS/cm); DO: 9.0 (mg/L); temperature: 17 °C
hardness (mg CaC03/L): 79; colour: colourless; odour: odourless
Sample holding time: 3 days (must be ≤ 5 days)
Sample storage: 4 ± 2°C in darkness

Test vessel: The test was conducted in 22 L plastic pails with polyethylene liners
Test volume: 20 Litres
Sample pre-treatment: All test solutions and controls were pre-aerated for 30 minutes
Dissolved oxygen in full strength sample was 8.8 mg/L after pre-aeration
The sample was not filtered or pH adjusted prior to or during testing
Loading density: 0.305 g/Litre (must be ≤ 0.5 g/Litre)
Control water: Dechlorinated City of Calgary water acclimated to test conditions
Test concentrations: Undiluted sample plus a negative control
Test replicates: One replicate per treatment; 10 fish per replicate
Feeding: Fish are not fed 24 hours before test initiation and no feeding during test
Measurements: pH, conductivity, dissolved oxygen and temperature measured daily
Aeration: All treatments aerated at 6.5 (±1 mL/min/L)
Lighting: Overhead full spectrum fluorescent lights; 100-500 lux at surface
Photoperiod: 16h light:8h dark
Test temperature: 15 ± 1°C

Endpoint: Mortality, % mortality at 96-h
Test validity: The control had 100% survival (must ≥ 90%)

Reference toxicant: 96-h test with Phenol (C_6H_5OH) initiated October 31, 2006; current results (96-h LC50 and 95% confidence limits) = 11.4 (10.3-12.7) mg/L Phenol

Note: Outlined sections are protocol deviations explained on the comment page; v/v, volume per volume

Our liability is limited to the cost of the test requested. The test results only relate to the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results.

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Test Data

Client: TAH102
Reference: 06-2164-01-TRS

Test Log:

Date	Day	Time	Technician	Comment/Observation
2006/10/26	0	1045	S.Ford	test fish loaded at 1045h
2006/10/27	1	1200	B.Denny/S.Ford	all test fish appear normal
2006/10/28	2	1130	B.Denny/C.Martens	all test fish appear normal
2006/10/29	3	1030	B.Denny/C.Martens	all test fish appear normal
2006/10/30	4	1000	B.Denny/C.Martens	all test fish appear normal

Chemistry:

Sample	control	100						

Day	pH (units)							
0	7.5	7.6						
1	7.6	7.7						
2	7.7	7.8						
3	7.8	7.8						
4	7.9	7.8						

	Conductivity (µS/cm)							
0	451	251						
1	452	256						
2	454	256						
3	454	259						
4	462	244						

	Dissolved Oxygen (mg/L)							
0	9.0	8.8						
1	8.4	8.6						
2	8.3	8.3						
3	8.4	8.5						
4	8.8	8.8						

	Temperature (°C)							
0	14	16						
1	15	15						
2	15	15						
3	15	15						
4	15	15						

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Test Data

Client: TAH102
Reference: 06-2164-01-TRS

Number Alive:

Sample	control	100						
Day								
0	10	10						
1	10	10						
2	10	10						
3	10	10						
4	10	10						
				Mortality (%)				
4	0	0						

Biology Summary Tables:

Control Fish	Length (cm)	Weight (g)
1	4.3	0.7
2	4.2	0.6
3	3.8	0.5
4	4.4	0.7
5	4.3	0.7
6	3.8	0.6
7	4.1	0.6
8	4.1	0.6
9	4.1	0.6
10	4.0	0.5
average	4.1	0.6
sd	0.2	0.1
cv(%)	4.9	12.1

Sample	Group Weight (g)
control	6.1
100	5.7

Notes: nd, not done; na, not applicable; sd, standard deviation; cv(%), coefficient of variation

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Comments/Statistics

Client: TAH102
Reference: 06-2164-01-TRS

Test Result Comments:
None

Data Analysis:
None

Protocol Deviations:
The test fish were held for less than 14 days prior to test initiation.

Our liability is limited to the cost of the test requested. The test results only relate to the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results.

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HydroQual Laboratories Ltd.

Trout Test Report

Quality Assurance Information

Test Method: Trout 96h Static Acute Test. (LC50, five or more treatments plus a control)
HydroQual Test Method Manual, section: 4.4.4.1
Reference: Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout, 1990. Environment Canada, EPS 1/RM/13. including May 1996 and December 2000 amendments.

Test Organism:

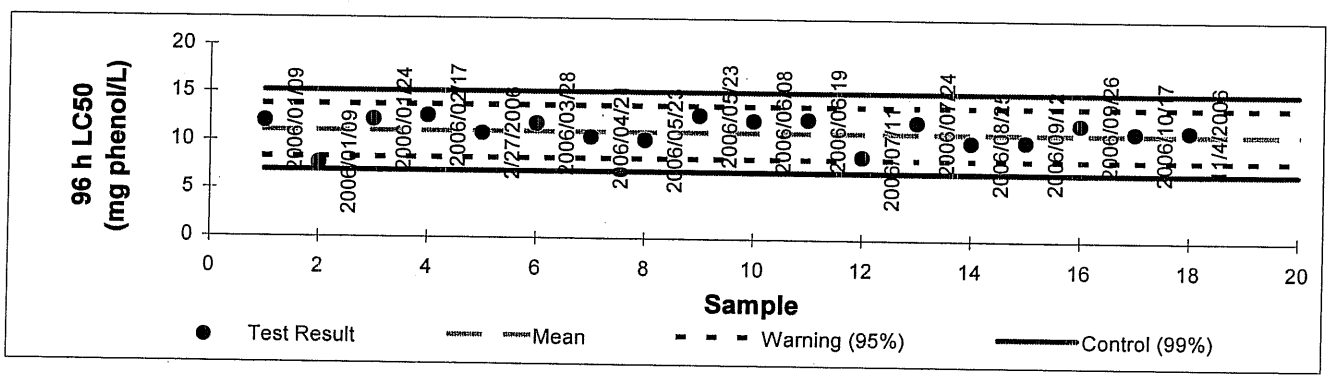
test species:	*Oncorhyncus mykiss*
culture source:	Ackenberry Trout Farms
temperature (°C):	15 ± 1
dissolved oxygen:	saturated
stock mortality (last 7d):	<0.01%
batch number:	20061020TR

Test Design:

vol. of test vessel (L):	20
test volume depth:	>15 cm
replicates per treatment:	1
fingerlings per replicate:	10
loading (g fish/L):	<0.5
temperature (°C):	15 ± 1
photoperiod:	16h light: 8h dark
light level (water surface):	100-500 lux
control/dilution water:	dechlorinated tap water

Warning Chart: mortality LC50 at 96 hours
toxicant: Phenol (C_6H_5OH)

Current Test:	started on	2006/10/31	ended on	2006/11/04		
result (96 h LC50):	11.4	(10.3-12.7)	mg phenol/L	(95% confidence limits are in brackets)		
Historical:	mean:	11.0	std.dev:	1.4	cv(%):	12
warning limits:	8.3	13.8	(lower and upper 95% confidence limit, two standard deviations)			
control limits:	6.9	15.1	(lower and upper 99% confidence limit, three standard deviations)			



Qualty Assurance Unit:

Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

Our liability is limited to the cost of the test requested on the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results in part or in whole.

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HydroQual Laboratories Ltd.

Daphnia (single concentration) Test Report

Result Summary

Client: TAH102
Reference: 06-2164-01-DAD

Contents

Result Summary.....1
Test Conditions.....2
Test Data.....4
Comments/Statistics..5
QA/QC.....6

Client: Tahera Diamond Corporation; operation Yellowknife

Sample: JER-WQ2

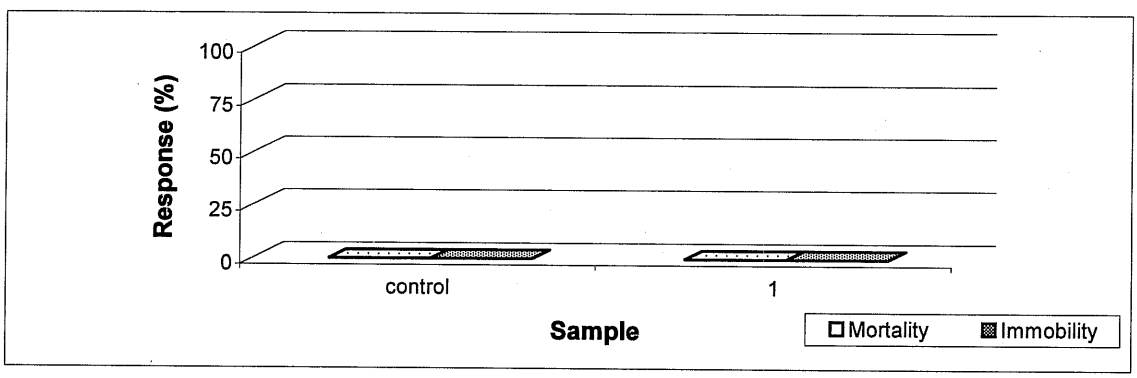
Collection: collected on 2006/10/23 at 0919 by MT
Receipt: received on 2006/10/25 at 1420 by J.M.
Containers: received 1 x 20L pail at 9 °C, in good condition with no seals and no initials
Description: type: water, collection method: grab

Test: started on 2006/10/26 ; ended on 2006/10/28

Result:

Sample	Client Code	Average Mortality (%)	Average Immobility (%)	Comment
control	lab control	0	0	
1	JER-WQ2	0	0	not toxic as tested

Notes: sd, sample standard deviation; cv, coefficient of variation; nd, not done; na, not applicable;



Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

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Test Conditions

Client: TAH102
Reference: 06-2164-01-DAD

Method: Biological Test method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna*, 1990. Environ. Can., EPS 1/RM/14. (amended 1996 and 2000)

Test type: *Daphnia* 48-h Static Acute Test (HQ 4.4.3.1)
Species: *Daphnia magna*
Age: < 24 hours old
Organism source: in-house culture
Stock mortality: 0%
Culture brood data: 12 days to first brood
20 neonates per average brood

Sample initial chemistry: pH: 6.9; EC: 250 (µS/cm); DO: 9.0 (mg/L); temperature: 17 °C
hardness (mg CaC03/L): 79; colour: colourless; odour: odourless
Sample holding time: 3 days (must be ≤ 5 days)
Sample storage: 4 ± 2°C in darkness

Test vessel: 385 mL plastic vessels
Test volume: 150 mL
Sample pre-treatment: The sample was not filtered or pH adjusted prior to or during testing
The sample was pre-aerated for 0 minutes (rate of 37.5 ± 12.5 mL/min.L^{-1})
The hardness of the sample was not adjusted (mg $CaCO_3$/L) prior to or during testing
Loading density: One daphnid/15 mL (must ≤ 1 organism/15 mL)
Control water: Dechlorinated City of Calgary water acclimated to test conditions
The hardness of the control/dilution water was 210 mg $CaCO_3$/L
Test concentrations: Undiluted sample plus a negative control
Test replicates: Three replicates per treatment, 10 daphnids per replicate
Feeding: None
Aeration: None
Measurements: pH, conductivity, dissolved oxygen and temperature at test initiation and termination
Lighting: Overhead full spectrum fluorescent lights; 400-800 lux at surface
Photoperiod: 16h light:8h dark
Test temperature: 20 ± 2°C

Note: Outlined sections are protocol deviations explained on the comment page

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Test Conditions

Client: TAH102
Reference: 06-2164-01-DAD

Endpoint: Mortality, % mortality at 48-h
Immobility, % immobility at 48-h

Test validity: The control had 100% survival (must ≥ 90%)
Control had 0% abnormal behaviour (must < 10%), e.g. immobility

Reference toxicant: 48-h test with NaCl initiated October 17, 2006; current results
(48-h LC50 and 95% confidence limits) = 5.8 (5.6-6.4) g/L NaCl

Note: Outlined sections are protocol deviations explained on the comment page

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Test Data

Client: TAH102
Reference: 06-2164-01-DAD

Test Log:

Date	Day	Time	Technician	Comment/Observation
2006/10/26	0	1210	S.Krishnappa	test *Daphnia* appear normal
2006/10/27	1	0845	S.Krishnappa	test *Daphnia* appear normal
2006/10/28	2	1120	B.Denny	test *Daphnia* appear normal

Chemistry:

Sample	control			1		
replicate	a	b	c	a	b	c
Day	pH (units)					
0	7.7	7.7	7.7	7.8	7.8	7.8
2	7.8	7.8	7.8	7.9	8.0	7.9
	Conductivity (µS/cm)					
0	446	446	446	264	264	264
2	452	456	451	268	272	276
	Dissolved Oxygen (mg/L)					
0	7.9	7.9	7.9	8.1	8.1	8.1
2	8.1	8.0	7.9	8.0	8.0	8.0
	Temperature (°C)					
0	20	20	20	21	21	21
2	20	20	20	20	20	20

Biology:

Sample	control			1		
replicate	a	b	c	a	b	c
Day	Number Alive and Behavior (behavior is in brackets)					
1	10	10(6F)	10(2F)	10	10	10(1F)
2	10	10(1F)	10	10	10	10
	Mortality (%)					
2	0	0	0	0	0	0
	Immobility (%)					
2	0	0	0	0	0	0

Notes: F, floating; I, immobile; B, stuck on bubble; D, caught in debris

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Comments/Statistics

Client: TAH102
Reference: 06-2164-01-DAD

Test Result Comments:
None

Data Analysis:
None

Protocol Deviations:
None

Our liability is limited to the cost of the test requested. The test results only relate to the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results.

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HydroQual Laboratories Ltd.

Daphnia Test Report

Quality Assurance Information

Test Method: *Daphnia* Static Acute Test (LC50, five or more treatments plus a control)
HydroQual Test Method Manual, section: 4.4.3.1

Reference: Biological Test Method: Reference Method for Determining the Acute Lethality of Effluents to *Daphnia magna,* 1990. Environment Canada, EPS 1/RM/14. including May 1996 and December 2000 ammendments.

Test Organism:

test species:	*Daphnia magna*
culture source:	in-house
original culture source:	Environment Canada
days to first brood:	12
mean brood size:	20
ephippia in stock culture:	no
age of test organisms:	<24 hours old
culture mortality (%):	3.5

Test Design:

vol. of test vessel (mL):	500
toxicant:	sodium chloride
test volume (mL):	150
replicates per treatment:	1
neonates per replicate:	10
volume per neonate (mL):	15
samples preaerated:	no
hardness adjustment:	no
temperature (°C):	20
photoperiod:	16h light:8h dark
light level (water surface):	400-800 lux
control/dilution water:	dechlorinated tap water

Warning Chart: mortality LC50 at 48 hours
toxicant: Sodium Chloride (NaCl)

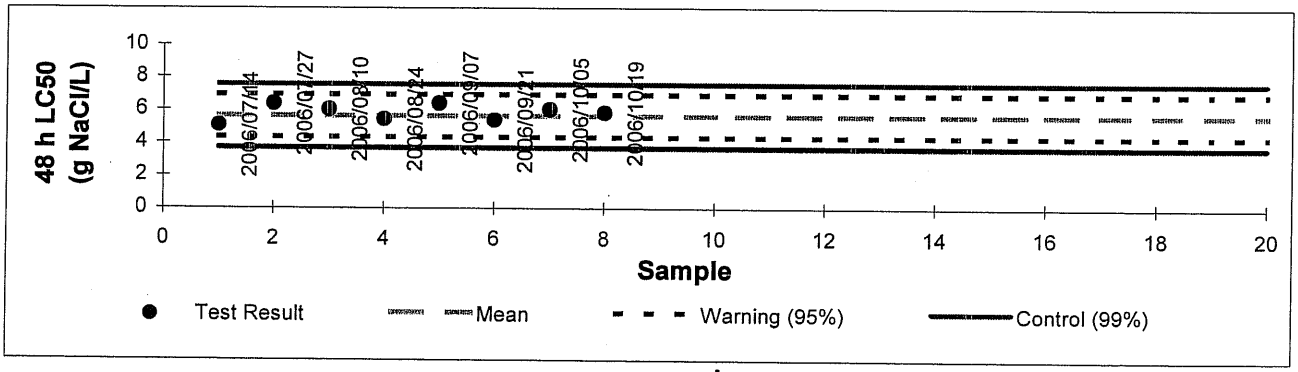
Current Test: started on 2006/10/17 ended on 2006/10/19

result (48 h LC50): 5.8 (5.6-6.4) g NaCl/L (95% confidence limits are in brackets)

Historical: mean: 5.6 std. dev: 0.6 cv (%): 12

warning limits: 4.3 6.9 (lower and upper 95% confidence limit, two standard deviations)

control limits: 3.7 7.6 (lower and upper 99% confidence limit, three standard deviations)



Quality Assurance Unit:

Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

Our liability is limited to the cost of the test requested on the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results in part or in whole.

HydroQual Laboratories Ltd., #4, 6125 12th Street SE, Calgary, Alberta, Canada T2H 2K1
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Test Conditions

Client: TAH102
Reference: 06-1853-01-TRS

Method: Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout, 1990. Environment Canada, EPS 1/RM/13. (amended 1996 and 2000)

Test type: Trout 96-h Static Acute Test (HQ 4.4.4.1)
Species: *Oncorhynchus mykiss*
Organism source: Ackenberry Trout Farms (Batch 20060907TR)
Acclimation: 7 days
Stock mortality: 0.05% (seven days preceeding testing)

Sample initial chemistry: pH: 7.7; EC: 225 (µS/cm); DO: 9.2 (mg/L); temperature: 17 °C
hardness (mg CaC03/L): 65; colour: none; odour: none
Sample holding time: 3 days (must be ≤ 5 days)
Sample storage: 4 ± 2°C in darkness

Test vessel: The test was conducted in 22 L plastic pails with polyethylene liners
Test volume: 15 Litres
Sample pre-treatment: All test solutions and controls were pre-aerated for 30 minutes
Dissolved oxygen in full strength sample was 8.4 mg/L after pre-aeration
The sample was not filtered or pH adjusted prior to or during testing
Loading density: 0.392 g/Litre (must be ≤ 0.5 g/Litre)
Control water: Dechlorinated City of Calgary water acclimated to test conditions
Test concentrations: Undiluted sample plus a negative control
Test replicates: One replicate per treatment; 10 fish per replicate
Feeding: Fish are not fed 24 hours before test initiation and no feeding during test
Measurements: pH, conductivity, dissolved oxygen and temperature measured daily
Aeration: All treatments aerated at 6.5 (±1 mL/min/L)
Lighting: Overhead full spectrum fluorescent lights; 100-500 lux at surface
Photoperiod: 16h light:8h dark
Test temperature: 15 ± 1°C

Endpoint: Mortality, % mortality at 96-h
Test validity: The control had 100% survival (must ≥ 90%)

Reference toxicant: 96-h test with Phenol (C_6H_5OH) initiated September 08, 2006; current results (96-h LC50 and 95% confidence limits) = 10.2 (8.0-12.0) mg/L Phenol

Note: Outlined sections are protocol deviations explained on the comment page; v/v, volume per volume

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Test Data

Client: TAH102
Reference: 06-1853-01-TRS

Test Log:

Date	Day	Time	Technician	Comment/Observation
2006/09/14	0	1230	B.Denny	test fish loaded at 1230 h
2006/09/15	1	1530	B.Denny/S.Ford	all test fish appear normal
2006/09/16	2	1300	S.Ford/M.Luong	all test fish appear normal
2006/09/17	3	1340	S.Ford/M.Luong	all test fish appear normal
2006/09/18	4	1200	B.Denny/S.Krishnappa	all test fish appear normal

Chemistry:

Sample	control	1						

Day	pH (units)							
0	7.6	7.5						
1	7.7	7.7						
2	7.8	7.5						
3	7.8	7.6						
4	7.8	7.6						

	Conductivity (µS/cm)							
0	379	234						
1	355	223						
2	355	221						
3	373	222						
4	370	223						

	Dissolved Oxygen (mg/L)							
0	8.4	8.4						
1	8.8	8.7						
2	8.8	8.8						
3	8.7	8.7						
4	8.6	8.6						

	Temperature (°C)							
0	15	16						
1	14	14						
2	15	15						
3	15	15						
4	15	15						

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Test Data

Client: TAH102
Reference: 06-1853-01-TRS

Number Alive:

Sample	control	1						
Day								
0	10	10						
1	10	10						
2	10	10						
3	10	10						
4	10	10						
				Mortality (%)				
4	0	0						

Biology Summary Tables:

Control Fish	Length (cm)	Weight (g)
1	3.9	0.6
2	3.9	0.6
3	4.1	0.7
4	3.9	0.6
5	4.1	0.7
6	3.6	0.5
7	3.7	0.5
8	3.9	0.6
9	3.9	0.6
10	3.9	0.5
average	3.9	0.6
sd	0.2	0.1
cv(%)	3.9	12.5

Notes: nd, not done; na, not applicable; sd, standard deviation; cv(%), coefficient of variation

Sample	Group Weight (g)
control	5.9
1	5.5

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Comments/Statistics

Client: TAH102
Reference: 06-1853-01-TRS

Test Result Comments:
None

Data Analysis:
None

Protocol Deviations:
The test fish were held for less than 14 days prior to test initiation.

Our liability is limited to the cost of the test requested. The test results only relate to the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results.

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Quality Assurance Information

Test Method: Trout 96h Static Acute Test. (LC50, five or more treatments plus a control)
HydroQual Test Method Manual, section: 4.4.4.1
Reference: Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout, 1990. Environment Canada, EPS 1/RM/13. including May 1996 and December 2000 amendments.

Test Organism:

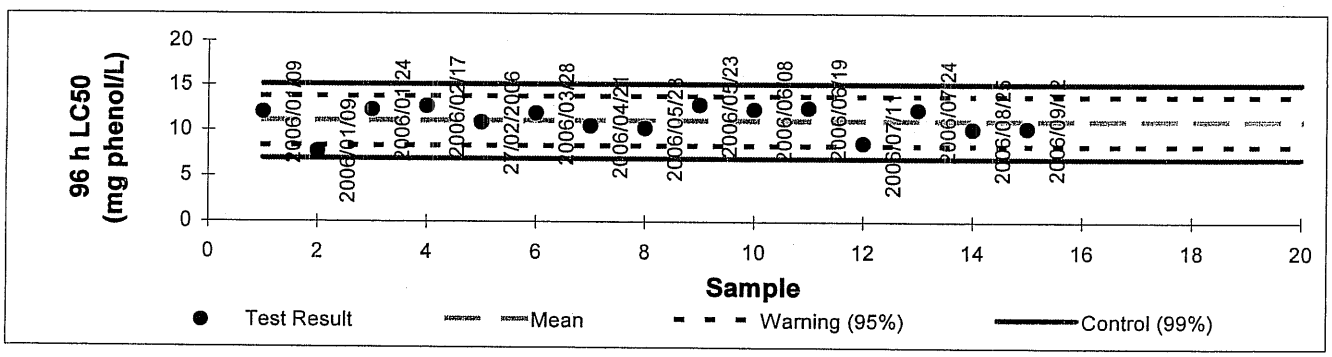
test species:	*Oncorhyncus mykiss*
culture source:	Ackenberry Trout Farms
temperature (°C):	15 ± 1
dissolved oxygen:	saturated
stock mortality (last 7d):	0%
batch number:	20060907TR

Test Design:

vol. of test vessel (L):	20
test volume depth:	>15 cm
replicates per treatment:	1
fingerlings per replicate:	10
loading (g fish/L):	<0.5
temperature (°C):	15 ± 1
photoperiod:	16h light: 8h dark
light level (water surface):	100-500 lux
control/dilution water:	dechlorinated tap water

Warning Chart: mortality LC50 at 96 hours
toxicant: Phenol (C_6H_5OH)

Current Test:	started on	2006/09/08	ended on	2006/09/12		
result (96 h LC50):	10.2	(8.0-12.0)	mg phenol/L	(95% confidence limits are in brackets)		
Historical:	mean:	11.0	std.dev:	1.4	cv(%):	12
warning limits:	8.3	13.8	(lower and upper 95% confidence limit, two standard deviations)			
control limits:	6.9	15.1	(lower and upper 99% confidence limit, three standard deviations)			



Qualty Assurance Unit:

Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

Our liability is limited to the cost of the test requested on the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results in part or in whole.

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HydroQual Laboratories Ltd.

Daphnia (single concentration) Test Report

Result Summary

Client: TAH102
Reference: 06-1853-01-DAS

Client: Tahera Diamond Corporation; operation Yellowknife

Sample: PKCA Raw Water

Collection: collected on 2006/09/11 at 0830 by CW
Receipt: received on 2006/09/12 at 1335 by Luc Lamontagne
Containers: received 1 x 20L pail at 8 °C, in good condition with no seals and no initials
Description: type: water, collection method: grab

Test: started on 2006/09/14 ; ended on 2006/09/16

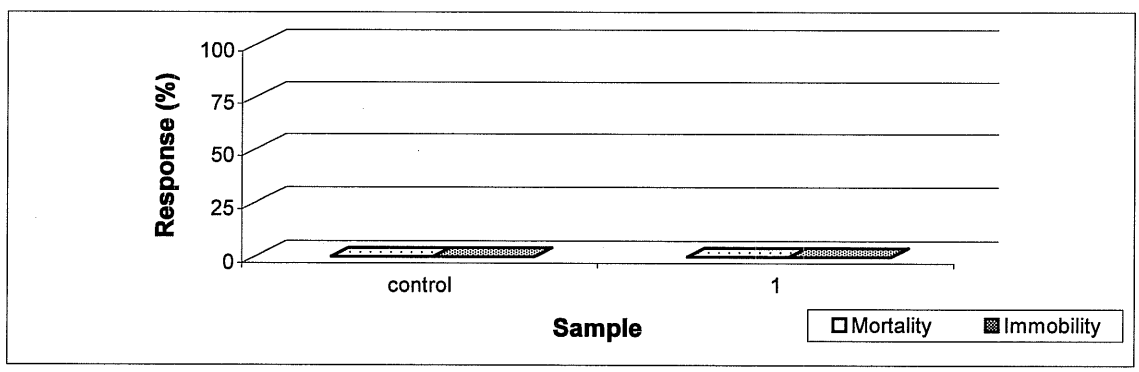
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Result:

Sample	Client Code	Average Mortality (%)	Average Immobility (%)	Comment
control	lab control	0	0	
1	PKCA Raw Water	0	0	not toxic as tested

Notes: sd, sample standard deviation; cv, coefficient of variation; nd, not done; na, not applicable;



Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

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Test Conditions

Client: TAH102
Reference: 06-1853-01-DAS

Method: Biological Test method: Reference Method for Determining Acute Lethality of Effluents to *Daphnia magna*, 1990. Environ. Can., EPS 1/RM/14. (amended 1996 and 2000)

Test type: *Daphnia* 48-h Static Acute Test (HQ 4.4.3.1)
Species: *Daphnia magna*
Age: < 24 hours old
Organism source: in-house culture
Stock mortality: 7%
Culture brood data: 12 days to first brood
20 neonates per average brood

Sample initial chemistry: pH: 7.7; EC: 225 (µS/cm); DO: 9.2 (mg/L); temperature: 17 °C
hardness (mg CaC03/L): 65; colour: none; odour: none
Sample holding time: 3 days (must be ≤ 5 days)
Sample storage: 4 ± 2°C in darkness

Test vessel: 385 mL plastic vessels
Test volume: 150 mL
Sample pre-treatment: The sample was not filtered or pH adjusted prior to or during testing
The sample was pre-aerated for 0 minutes (rate of 37.5 ± 12.5 mL/min.L^{-1})
The hardness of the sample was not adjusted (mg $CaCO_3$/L) prior to or during testing
Loading density: One daphnid/15 mL (must ≤ 1 organism/15 mL)
Control water: Dechlorinated City of Calgary water acclimated to test conditions
The hardness of the control/dilution water was 155 mg $CaCO_3$/L
Test concentrations: Undiluted sample plus a negative control
Test replicates: Three replicates per treatment, 10 daphnids per replicate
Feeding: None
Aeration: None
Measurements: pH, conductivity, dissolved oxygen and temperature at test initiation and termination
Lighting: Overhead full spectrum fluorescent lights; 400-800 lux at surface
Photoperiod: 16h light:8h dark
Test temperature: 20 ± 2°C

Note: Outlined sections are protocol deviations explained on the comment page

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Test Conditions

Client: TAH102
Reference: 06-1853-01-DAS

Endpoint: Mortality, % mortality at 48-h
Immobility, % immobility at 48-h

Test validity: The control had 100% survival (must ≥ 90%)
Control had 0% abnormal behaviour (must < 10%), e.g. immobility

Reference toxicant: 48-h test with NaCl initiated September 05, 2006; current results (48-h LC50 and 95% confidence limits) = 6.4 (6.2-6.6) g/L NaCl

Note: Outlined sections are protocol deviations explained on the comment page

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Test Data

Client: TAH102
Reference: 06-1853-01-DAS

Test Log:

Date	Day	Time	Technician	Comment/Observation
2006/09/14	0	1500	S.Ford	test *Daphnia* appear normal
2006/09/15	1	0745	S.Krishnappa	test *Daphnia* appear normal
2006/09/16	2	1400	S.Ford	test *Daphnia* appear normal

Chemistry:

Sample	control			1		
replicate	a	b	c	a	b	c
Day	**pH (units)**					
0	7.9	7.9	7.9	7.6	7.6	7.6
2	7.8	7.8	7.8	7.7	7.6	7.5
	Conductivity (µS/cm)					
0	366	366	366	222	222	222
2	382	374	378	230	222	224
	Dissolved Oxygen (mg/L)					
0	8.1	8.1	8.1	8.5	8.5	8.5
2	8.1	8.1	8.1	8.2	8.5	7.9
	Temperature (°C)					
0	20	20	20	22	22	22
2	19	19	19	20	19	20

Biology:

Sample	control			1		
replicate	a	b	c	a	b	c
Day	**Number Alive and Behavior (behavior is in brackets)**					
1	10	10	10	10	10	10
2	10	10	10	10 (1F)	10	10

Notes: F, floating; I, immobile; B, stuck on bubble; D, caught in debris

	Mortality (%)					
2	0	0	0	0	0	0
	Immobility (%)					
2	0	0	0	0	0	0

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Comments/Statistics

Client: TAH102
Reference: 06-1853-01-DAS

Test Result Comments:
None

Data Analysis:
None

Protocol Deviations:
None

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Quality Assurance Information

Test Method: *Daphnia* Static Acute Test (LC50, five or more treatments plus a control)
HydroQual Test Method Manual, section: 4.4.3.1

Reference: Biological Test Method: Reference Method for Determining the Acute Lethality of Effluents to *Daphnia magna,* 1990. Environment Canada, EPS 1/RM/14. including May 1996 and December 2000 ammendments.

Test Organism:

test species:	*Daphnia magna*
culture source:	in-house
original culture source:	Environment Canada
days to first brood:	12
mean brood size:	20
ephippia in stock culture:	no
age of test organisms:	<24 hours old
culture mortality (%):	0

Test Design:

vol. of test vessel (mL):	500
toxicant:	sodium chloride
test volume (mL):	150
replicates per treatment:	1
neonates per replicate:	10
volume per neonate (mL):	15
samples preaerated:	no
hardness adjustment:	no
temperature (°C):	20
photoperiod:	16h light:8h dark
light level (water surface):	400-800 lux
control/dilution water:	dechlorinated tap water

Warning Chart: mortality LC50 at 48 hours
toxicant: Sodium Chloride (NaCl)

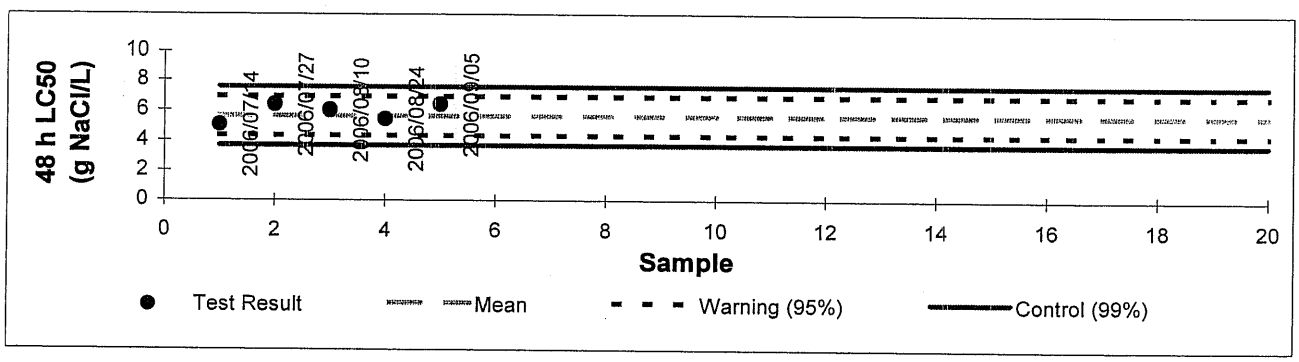
Current Test: started on 2006/09/05 ended on 2006/09/07

result (48 h LC50): 6.4 (6.2-6.6) g NaCl/L (95% confidence limits are in brackets)

Historical: mean: 5.6 std. dev: 0.6 cv (%): 12

warning limits: 4.3 6.9 (lower and upper 95% confidence limit, two standard deviations)

control limits: 3.7 7.6 (lower and upper 99% confidence limit, three standard deviations)



Quality Assurance Unit:

Authorized by K.Steele, B.Sc., Quality Assurance Officer as per
The test data and results are verified correct.

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Chronic Toxicity Data

Please note:

Due to ice conditions on Lake C3, it was not possible to obtain raw water samples for *Ceriodaphnia* chronic toxicity tests for the months of September, October and November 2006.

HydroQual Laboratories Ltd.

Ceriodaphnia (6-8d LC50/IC25) Test Report

Result Summary

Client: TAH102
Reference: 06-1368-01-CDD

Client: Tahera Diamond Corporation; operation Yellowknife

Sample: Lake C3 Mixing Zone Edge

Collection: collected on 2006/07/11 at 1100 by B. Ott
Receipt: received on 2006/07/13 at 1407 by C. Steele
Containers: received 1 x 20 L carboys at 11 °C, in good condition with no seals and no initials
Description: type: raw water, collection method: not given

Test: started on 2006/07/14 ; ended on 2006/07/21

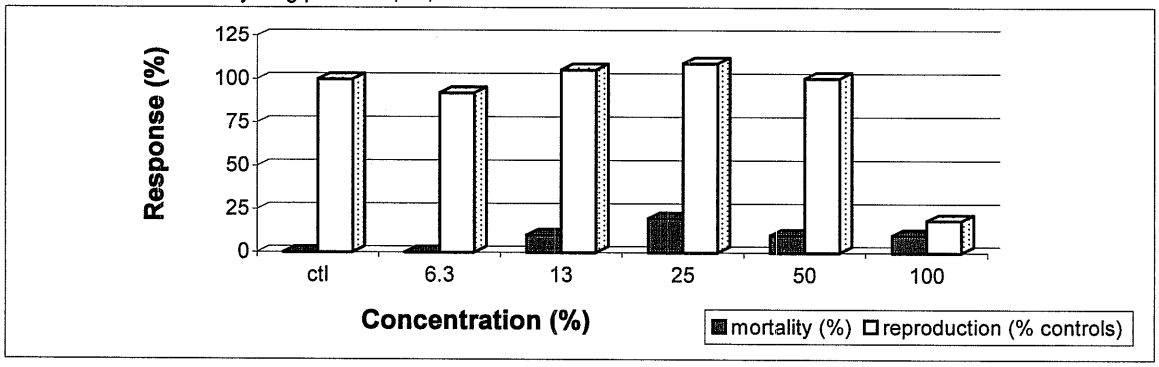
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Result:

	Endpoint (7-day)	Value	Confidence Limits (95%) lower	upper	Units	Method Calculated
Acute:	LC25	>100			%	could not be calculated
(survival)	LC50	>100			%	could not be calculated
Chronic:	IC25	75	could not be calculated		%	Log-Logistic
(fecundity)	IC50	85	could not be calculated		%	Log-Logistic

Notes: LCx & ICx, concentrations lethal or inhibitory to 'x' percent of the test population; fecundity, reproduction as the number of young produced; ctl, control



Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

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Test Conditions

Client: TAH102
Reference: 06-1368-01-CDD

Method: Biological Test method: Test of Reproduction and Survival Using the Cladoceran *Ceriodaphnia dubia*, 1992. Environ.Can., EPS 1/RM/21. (amended November, 1997)

Test type: *Ceriodaphnia* 7-day Survival and Reproduction Static Renewal Test (HQ 4.4.3.2)
Species: *Ceriodaphnia dubia*
Age: <24 hours old; all from same brood source within 12 h of the same age
Organism source: in-house cultures; cultures from a single brood organism to provide test organisms
Culture health: Culture mortality was 0% (must be ≤ 20%)
7-d prior to test initiation: No ephippia were noted in the cultures
Average young produced per adult was 19 (must be ≥ 15)
Number of young produced by each brood organism in the last complete brood before use was 9 (must be ≥ 6)
Organism observations: No unusual behavior, appearance or treatment of test organisms was noted prior to or during the test

Sample initial chemistry: pH: 8.0; EC: 53 (µS/cm); DO: 9.1 (mg/L); temperature: 16 °C
hardness (mg CaC03/L): 6; colour: colorless; odour: odourless
Sample holding time: 3 days (must be ≤ 3 days); The test was conducted with three subsamples, samples a, b, and c were for days 0 to 2, 3 to 4, and 5 to 7.
Sample storage: 4 ± 2°C in darkness

Test vessel: The tests were conducted in 30 mL plastic vessels (2 cm depth)
Test volume: 15 mL of solution (2 cm depth); replenished daily
Control/dilution water: The control and dilution water was a mixture of moderately hard reconstituted water and Bow River Water (50:50). Chemicals added to dilution water: 0.96 g NaHCO3, 0.60 g CaSO4, 0.60 g MgSO4, 0.04 g KCl per 20L
Test concentrations: 5 effluent concentrations (6.3, 12.5, 25, 50, 100% (v/v) plus a negative control)
Test replicates: One neonate <24 hours old was loaded per test vessel;
10 replicates/concentration
Feeding: The test organisms were fed daily a mixture of fermented trout chow, yeast, alfalfa powder, and the green alga *Pseudokirchneriella subcapitata* (formerly *Selenastrum capricornutum* and *Raphidocelis subcapitata*).
Food expiration date: 2006/07/22
Measurements: pH, conductivity, dissolved oxygen and temperature were measured daily
Sample pre-treatment: The sample was not aerated, filtered or pH adjusted prior or during testing
The dissolved oxygen concentration (mg/L) was: 6.5
The sample pH was: 7.2
Lighting: Overhead full spectrum fluorescent lights; 100-600 lux at surface
Photoperiod: 16h light:8h dark
Test temperature: 25 ± 1°C

Note: Outlined sections are protocol deviations explained on the comment page

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Test Conditions

Client: TAH102
Reference: 06-1368-01-CDD

Endpoints: Survival, 7-d LC50 (with 95% confidence limits)
Reproduction, 7-d IC25 (with 95% confidence limits)
Test endpoints were bracketed by at least 1 test concentration (except for <0.1% or >100 %)

Test completion: 100% of the control organisms had ≥ 3 broods on day 7 (must be ≥ 60% within 8 days)

Test validity: The control had 100% survival (must ≥ 80%)
Number of young produced by each surviving control adult was 22 (must be ≥ 15)

Reference toxicant: 7-d test with NaCl initiated July 6, 2006;
current results: (7-d LC50 and 95% confidence limits) = 2.5 (2.1-2.9) g/L NaCl
current results: (7-d IC50 and 95% confidence limits) = 0.5 (0.1-0.8) g/L NaCl

Note: Outlined sections are protocol deviations explained on the comment page

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HydroQual Laboratories Ltd., #4, 6125 12th Street SE, Calgary, Alberta, Canada T2H 2K1
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Test Data

Client: TAH102
Reference: 06-1368-01-CDD

Test Log:

Date	Day	Time	Technicians	Temperature Before Use (°C) Control	Sample
2006/07/14	0	1400	K.deWindt	25	24
2006/07/15	1	1000	C.Ehman	25	24
2006/07/16	2	1110	C.Ehman	25	25
2006/07/17	3	1100	S.Krishnappa	25	25
2006/07/18	4	1200	S.Ford	25	26
2006/07/19	5	0945	M.Luong	24	24
2006/07/20	6	1045	S.Ford	25	24
2006/07/21	7	1500	S.Ford	na	na

Chemistry Summary Tables:

New Solutions

Conc. (%)	ctl	6.3	13	25	50	100	

Old Solutions

ctl	6.3	13	25	50	100	

Average Values

pH	7.8	7.9	7.8	7.8	7.7	7.6	
cond.	372	336	316	277	203	40	
DO	6.8	6.8	6.8	6.9	6.9	7.2	
temp.	25	25	25	25	25	25	

7.8	7.8	7.8	7.8	7.7	7.7	
371	345	323	289	212	44	
7.0	6.9	6.9	6.9	6.9	6.9	
25	25	25	25	25	25	

Coefficients of Variation (%)

pH	1	1	1	2	1	3	
cond.	4	2	2	2	3	16	
DO	7	4	5	4	5	7	
temp.	0	0	0	0	0	0	

1	0	0	1	1	2	
5	1	3	2	3	25	
4	3	4	4	4	5	
2	2	2	2	2	2	

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Test Data

Client: TAH102
Reference: 06-1368-01-CDD

Biology (number of young produced):

Conc. (%)	ctl	6.3	13	25	50	100		ctl	6.3	13	25	50	100	
Replicate	Day1							Day 4						
1	0	0	0	0	0	0		0	0	na	na	3	1	
2	0	0	0	0	0	0		0	2	6	6	2	0	
3	0	0	0	0	0	0		0	0	7	4	2	0	
4	0	0	0	0	0	0		3	6	4	8	1	0	
5	0	0	0	0	0	0		0	2	0	2	4	0	
6	0	0	0	0	0	0		3	na	na	6	na	na	
7	0	0	0	0	0	0		5	5	4	3	1	0	
8	0	0	0	0	0	0		7	0	6	3	0	2	
9	0	0	0	0	0	0		5	6	4	3	3	0	
10	0	0	0	0	0	0		2	1	2	3	5	0	
	Day 2							Day 5						
1	0	0	0	na	0	0		4	4	na	na	6	6	
2	0	0	0	0	0	0		5	3	8	0	5	0	
3	0	0	0	0	0	0		6	6	0	0	6	0	
4	0	0	0	0	0	0		0	0	0	0	7	0	
5	0	0	0	0	0	0		3	0	5	4	0	4	
6	0	na	0	0	0	0		4	na	na	8	na	na	
7	0	0	0	0	0	0		5	0	0	7	5	0	
8	0	0	0	0	0	0		0	5	3	4	6	0	
9	0	0	0	0	0	0		0	0	0	7	7	0	
10	0	0	0	0	0	0		7	0	6	6	0	0	
	Day 3							Day 6						
1	0	0	na	na	0	0		8	8	na	na	5	0	
2	0	0	0	2	0	0		10	11	7	11	2	0	
3	0	0	0	4	0	0		7	6	10	9	9	0	
4	0	2	0	2	0	0		10	8	9	10	6	0	
5	0	0	0	0	0	0		7	2	9		7	2	
6	0	na	na	0	na	na		7	na	na	9	na	na	
7	2	0	2	0	0	0		10	7	**9**	7	8	0	
8	0	0	0	0	0	2		7	7	11	**8**	7	3	
9	2	0	0	0	0	0		9	9	9	8	9	0	
10	0	0	0	0	0	0		9	5	6	7	3	1	

Notes: #, young produced; 0, no young; blank, dead; bold print #, number of young the test organism had the day it died.
na, organism lost due to technician (see "test result comment" section)

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HydroQual Laboratories Ltd.

Ceriodaphnia (6-8d LC50/IC25) Test Report

Test Data

Client: TAH102
Reference: 06-1368-01-CDD

Biology (number of young produced):

Conc. (%)	ctl	6.3	13	25	50	100	
Replicate	Day 7						
1	7	8	na	na	8	3	
2	9	12	5	13	9	0	
3	10	8	10	7	10	0	
4	12	11	9	12	9	0	
5	8	9	11		12	3	
6	0	na	na	10	na	na	
7	10	12		10	8	1	
8	8	6	10		9	6	
9	9	7	8	9	10	0	
10	3	7	8	7	8	4	

ctl	6.3	13	25	50	100	
Day 8						

Notes: #, young produced; 0, no young; blank, dead; bold print #, number of young the test organism had the day it died.

Biology Summary Tables:

Conc. (%)	ctl	6.3	13	25	50	100	
Day	Mortality (%)						
0	0	0	0	0	0	0	
1	0	0	0	0	0	0	
2	0	0	0	10	0	0	
3	0	0	0	10	10	10	
4	0	0	0	10	10	10	
5	0	0	0	10	10	10	
6	0	0	10	20	10	10	
7	0	0	10	20	10	10	
8							
totals	0	0	10	20	10	10	

ctl	6.3	13	25	50	100	
Daily Young Production						
0	0	0	0	0	0	
0	0	0	0	0	0	
0	0	0	0	0	0	
4	2	2	8	0	2	
25	22	33	38	21	3	
34	18	22	36	42	10	
84	63	70	69	56	6	
76	80	61	68	83	17	
223	185	188	219	202	38	

Replicate	Total Young Produced by Each Adult						
1	19	20	0	0	22	10	
2	24	28	26	32	18	0	
3	23	20	27	24	27	0	
4	25	27	22	32	23	0	
5	18	13	25	6	23	9	
6	14	0	0	33	0	0	
7	32	24	15	27	22	1	
8	22	18	30	15	22	13	
9	25	22	21	27	29	0	
10	21	13	22	23	16	5	

ctl	6.3	13	25	50	100	
Average Young Per Adult						
22	21	24	24	22	4	
Young Production as a Percent of Controls						
100	92	105	109	101	19	

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Test Data

Client: TAH102
Reference: 06-1368-01-CDD

Chemistry:

Day	New Solutions							Old Solutions						
Conc. (%)	ctl	6.3	13	25	50	100		ctl	6.3	13	25	50	100	
	pH (units)							pH (units)						
0	7.7	7.7	7.7	7.6	7.5	7.2								
1	7.9	7.9	7.9	7.9	7.6	7.5		7.7	7.8	7.8	7.8	7.8	7.6	
2	7.9	8.0	8.0	8.0	7.8	7.4		7.9	7.9	7.9	7.9	7.8	7.5	
3	7.9	7.9	7.8	7.8	7.7	7.8		7.8	7.8	7.8	7.7	7.6	7.7	
4	7.8	7.9	7.8	7.8	7.7	7.7		7.8	7.8	7.8	7.8	7.7	7.6	
5	7.7	7.8	7.8	7.8	7.7	7.9		7.7	7.8	7.8	7.8	7.7	7.9	
6	7.8	7.8	7.8	7.5	7.7	7.6		7.8	7.8	7.8	7.8	7.7	7.8	
7								7.8	7.8	7.8	7.7	7.6	7.7	
8														
	Conductivity (µS/cm)							Conductivity (µS/cm)						
0	342	333	312	278	205	46								
1	391	340	314	277	202	36		363	348	331	294	221	57	
2	382	335	312	271	197	41		362	343	332	285	206	37	
3	383	348	322	285	213	34		362	339	326	281	211	51	
4	376	338	316	279	208	50		374	348	327	290	217	33	
5	360	324	328	273	196	33		352	341	304	291	217	53	
6	368	334	311	273	197	40		373	342	319	292	204	29	
7								409	353	323	289	210	46	
8														
	Dissolved Oxygen (mg/L)							Dissolved Oxygen (mg/L)						
0	6.0	6.2	6.2	6.3	6.2	6.5								
1	7.2	7.0	7.1	7.1	7.1	7.1		7.2	7.0	6.8	6.8	6.8	6.8	
2	7.1	6.9	6.8	7.0	7.0	7.1		7.0	6.9	6.9	7.0	6.8	6.9	
3	6.9	6.8	6.9	6.9	7.1	7.9		7.1	6.8	6.7	6.7	6.7	6.7	
4	7.0	7.0	7.0	7.0	7.0	7.2		7.0	7.1	7.1	7.2	7.2	7.2	
5	6.4	6.6	6.5	6.6	6.7	6.9		6.4	6.5	6.5	6.5	6.4	6.3	
6	7.3	7.0	7.0	7.1	7.3	7.8		7.4	7.2	7.2	7.1	7.1	7.2	
7								7.2	7.1	7.0	7.0	7.0	6.9	
8														
	Temperature (°C)							Temperature (°C)						
0	25	25	25	25	25	25								
1	25	25	25	25	25	25		25	25	25	25	25	25	
2	25	25	25	25	25	25		25	25	25	25	25	25	
3	25	25	25	25	25	25		25	25	25	25	25	25	
4	25	25	25	25	25	25		25	25	25	25	25	25	
5	25	25	25	25	25	25		24	24	24	24	24	24	
6	25	25	25	25	25	25		24	24	24	24	24	24	
7								24	24	24	24	24	24	
8														

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Comments/Statistics

Client: TAH102
Reference: 06-1368-01-CDD

Test Result Comments:
None

Data Analysis:
Endpoints for mortality could not be calculated. No effect occurred.

Endpoints for reproduction were calculated using a non-linear regression model (3P Log-Logistic) with CETIS v1.1.2 rev F.

Protocol Deviations:
On day 2 the test organism cups from 6.3 % replicate 6 and the 25% replicate 1 were spilt by technician. On day 3 the test organism cups from 12% replicate 1 and 6, 50% replicate 6 and 100% replicate 6 were spilt by technician. These replicates were not included in the final survival or fecundity calculations.

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Quality Assurance Information

Test Method: *Ceriodaphnia* Survival and Reproduction Test (6 treatments plus a control)
HydroQual Test Method Manual, section: 4.4.3.2
Reference: Biological Test Method: Test of Reproduction and Survival Using the Cladoceran *Ceriodaphnia dubia*, 1992. Environment Canada, EPS 1/RM/21 including November, 1997 amendments.

Test Organism:

test species:	*Ceriodaphnia dubia*
culture source:	in-house
original culture source:	Environment Canada
ephippia in stock culture:	none
food type:	YAT:Algae
frequency of feeding:	daily
age of test organisms:	<24 hours
culture mortality 7 days prior:	0
culture fecundity 7 days prior:	18
young produced in previous brood:	10
culture condition prior to test initiation:	normal
culture water:	50:50 water

Test Design:

test type:	static renewal
toxicant:	sodium chloride (NaCl)
test vessel:	30 mL plastic cup
test volume (mL):	15
replicates per treatment:	10
organisms per replicate:	1
feeding:	daily
temperature (°C):	24-26
photoperiod:	16 hours light: 8 hours dark
light level (surface):	100-600 lux
hardness adjustment:	no

*Note: there are 2 subcultures within this culture source, separated by one week in age. The test is set with organisms from one subculture.
The number of young a culture has is monitored daily. If young are not used that day, they are discarded, therefore organisms in tests are <24h.

Control/Dilution Water:

source:	equal volumes of Bow River water and moderately hard reconstituted water (50:50 water)
pH (units):	8.0
conductance (uS/cm):	382
dissolved oxygen (mg/L):	7.4
NH_4^+ (mg/L):	<0.1
hardness (mg $CaCO_3$/L):	114
alkalinity (mg $CaCO_3$/L):	99
total residual chlorine (mg/L):	<0.01

Note: moderately hard reconstituted water prepared as per EPS 1/RM/21

Comments: There were no protocol deviations during the conduct of this test

Quality Assurance Unit: _____

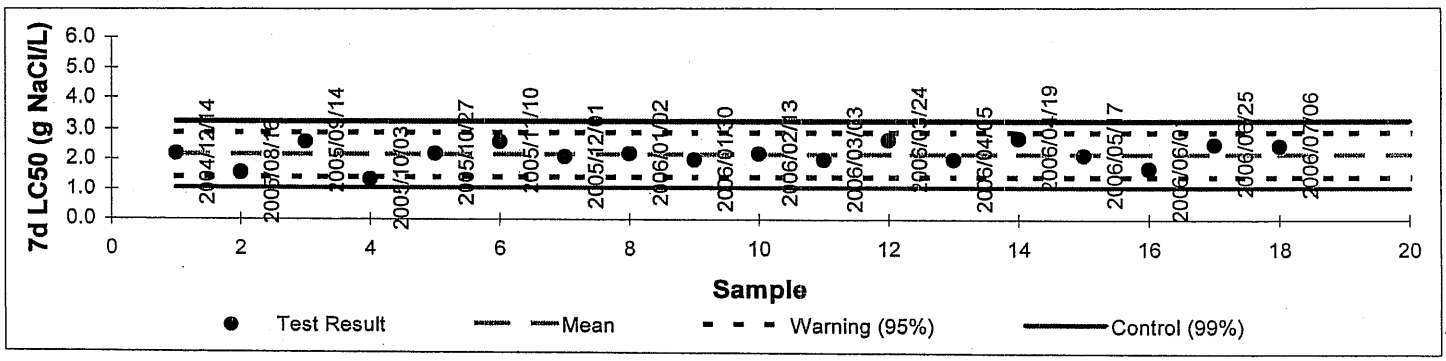
Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

Our liability is limited to the cost of the test requested on the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results in part or in whole.

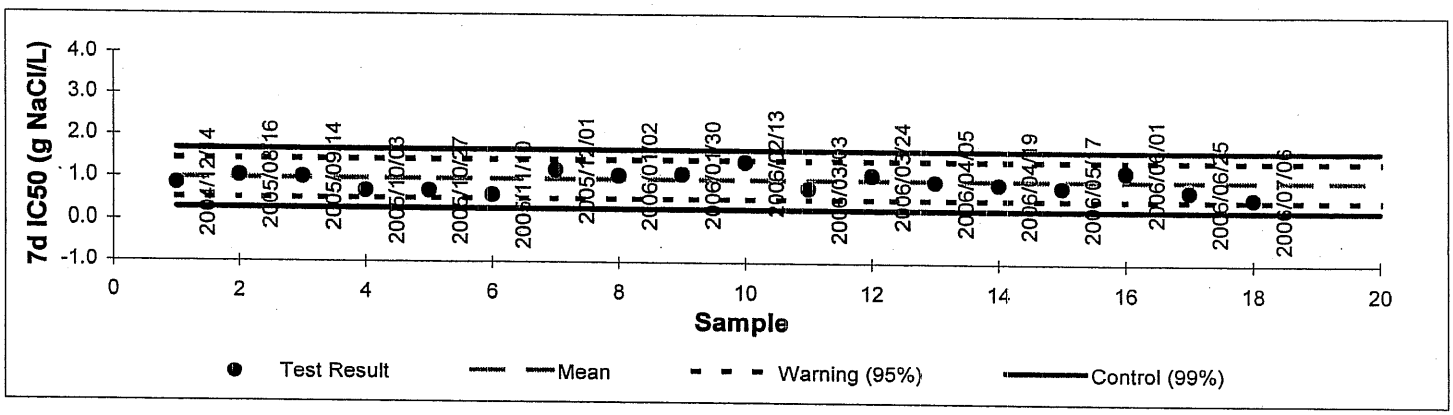
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Quality Assurance Information

Warning Chart: mortality: LC50 at 7 days
toxicant: Sodium Chloride (NaCl)
Current Test: started on 2006/07/06 ended on 2006/07/13
result (7d LC50): 2.5 (2.1-2.9) g NaCl/L (95% confidence limits are in brackets)
Historical: mean: 2.2 std dev: 0.4 cv (%): 17
warning limits: 1.4 2.9 (lower and upper 95% confidence limit, two standard deviations)
control limits: 1.1 3.3 (lower and upper 99% confidence limit, three standard deviations)



Warning Chart: reproduction: IC50 at 7 days
toxicant: Sodium Chloride (NaCl)
Current Test: started on 2006/07/06 ended on 2006/07/13
result (7d IC50): 0.5 (0.1-0.8) g NaCl/L (95% confidence limits are in brackets)
Historical: mean: 1.0 std dev: 0.2 cv (%): 24
warning limits: 0.5 1.4 (lower and upper 95% confidence limit, two standard deviations)
control limits: 0.3 1.7 (lower and upper 99% confidence limit, three standard deviations)



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Quality Assurance Information

Culture history for adults used in reference toxicant test started on 2006/07/06:

Number of young produced per brood adult:

Day Prior to Use	row/replicate	A1	A2	A6	B2	B5	B6	C3	C4	C6		
7	number of young											
	number of adults											
		A1	A2	A6	B2	B5	B6	C3	C4	C6		
6	number of young											
	number of adults											
		A1	A2	A6	B2	B5	B6	C3	C4	C6		
5	number of young											
	number of adults											
		A1	A2	A6	B2	B5	B6	C3	C4	C6		
4	number of young											
	number of adults	1	1	1	1	1	1	1	1	1		
		A1	A2	A6	B2	B5	B6	C3	C4	C6		
3	number of young	9	0	4	0	0	5	0	0	0		
	number of adults	1	1	1	1	1	1	1	1	1		
		A1	A2	A6	B2	B5	B6	C3	C4	C6		
2	number of young	0	10	8	6	7	12	0	11	10		
	number of adults	1	1	1	1	1	1	1	1	1		
		A1	A2	A6	B2	B5	B6	C3	C4	C6		
Day Used 2006/07/06	number of young	12	9	9	9	10	9	7	12	14		
	number of adults	1	1	1	1	1	1	1	1	1		
		A1	A2	A6	B2	B5	B6	C3	C4	C6		
Totals	number of young	21	19	21	15	17	17	7	23	24		

Number of young produced per organism in the last brood before use	10
Mean number of surviving young per adult over the last seven days	18
Culture mortality over the last seven days	0

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HydroQual Laboratories Ltd.

Ceriodaphnia Test Report

Quality Assurance Information

Culture history for adults used in the test for sample 01 reference 06-1368-01:

Number of young produced per brood adult:

Day Prior to Use	row/replicate	D4	D5	E2	F1	F2	F4	F6				
7	number of young											
	number of adults											
		D4	D5	E2	F1	F2	F4	F6				
6	number of young											
	number of adults											
		D4	D5	E2	F1	F2	F4	F6				
5	number of young											
	number of adults											
		D4	D5	E2	F1	F2	F4	F6				
4	number of young											
	number of adults											
		D4	D5	E2	F1	F2	F4	F6				
3	number of young	0	4	4	8	7	5	7				
	number of adults	1	1	1	1	1	1	1				
		D4	D5	E2	F1	F2	F4	F6				
2	number of young	6	6	10	0	0	7	1				
	number of adults	1	1	1	1	1	1	1				
		D4	D5	E2	F1	F2	F4	F6				
DAY USED 2006/07/14	number of young	8	8	9	12	10	11	7				
	number of adults	1	1	1	1	1	1	1				
		D4	D5	E2	F1	F2	F4	F6				
totals	number of young	14	18	23	20	17	23	15				

Number of young produced per organism in the last brood before use	9
Mean number of surviving young per adult over the last seven days	19
Culture mortality over the last seven days	0

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HydroQual Laboratories Ltd.

Ceriodaphnia (6-8d LC50/IC25) Test Report

Result Summary

Client: TAH102
Reference: 06-1368-02-CDD

Client: Tahera Diamond Corporation; operation Yellowknife

Sample: Lake C3 West Arm (Upstream)

Collection: collected on 2006/07/11 at 1045 by B. Ott
Receipt: received on 2006/07/13 at 1407 by C. Steele
Containers: received 1 x 20 L carboys at 11 °C, in good condition with no seals and no initials
Description: type: raw water, collection method: not given

Test: started on 2006/07/14 ; ended on 2006/07/20

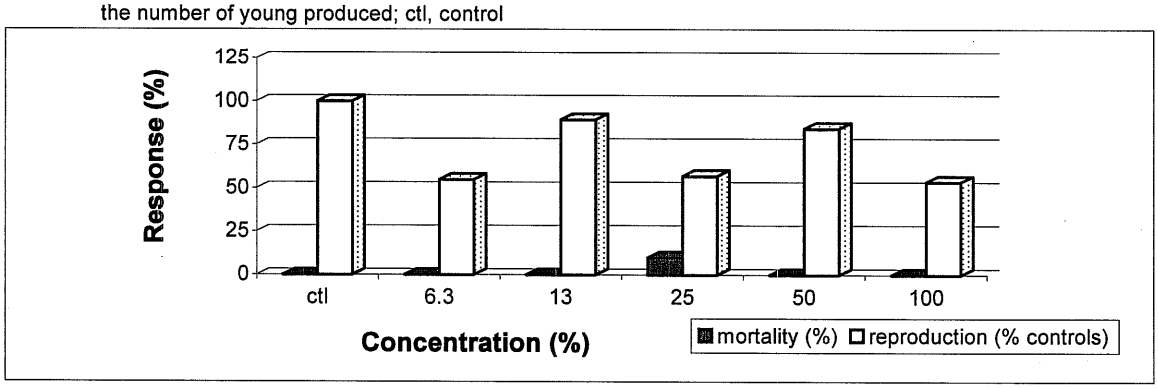
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Result Summary.....1
Test Conditions.....2
Test Data.....4
Comments/Statistics..8
QA/QC.....9

Result:

	Endpoint (6-day)	Value	Confidence Limits (95%) lower	upper	Units	Method Calculated
Acute:	LC25	>100			%	could not be calculated
(survival)	LC50	>100			%	could not be calculated
Chronic:	IC25	<6.3	2.5	67	%	Linear Interpolation
(fecundity)	IC50	>100			%	Linear Interpolation

Notes: LCx & ICx, concentrations lethal or inhibitory to 'x' percent of the test population; fecundity, reproduction as the number of young produced; ctl, control



Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

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Test Conditions

Client: TAH102
Reference: 06-1368-02-CDD

Method: Biological Test method: Test of Reproduction and Survival Using the Cladoceran *Ceriodaphnia dubia*, 1992. Environ.Can., EPS 1/RM/21. (amended November, 1997)

Test type: *Ceriodaphnia* 6-day Survival and Reproduction Static Renewal Test (HQ 4.4.3.2)
Species: *Ceriodaphnia dubia*
Age: <24 hours old; all from same brood source within 12 h of the same age
Organism source: in-house cultures; cultures from a single brood organism to provide test organisms
Culture health: Culture mortality was 14% (must be ≤ 20%)
7-d prior to test initiation: No ephippia were noted in the cultures
Average young produced per adult was 15 (must be ≥ 15)
Number of young produced by each brood organism in the last complete brood before use was 8 (must be ≥ 6)
Organism observations: No unusual behavior, appearance or treatment of test organisms was noted prior to or during the test

Sample initial chemistry: pH: 7.7; EC: 23 (µS/cm); DO: 9.0 (mg/L); temperature: 15 °C
hardness (mg CaC03/L): 5; colour: colourless; odour: odourless
Sample holding time: 3 days (must be ≤ 3 days); The test was conducted with three subsamples, samples a, b, and c were for days 0 to 2, 3 to 4, and 5 to 7.
Sample storage: 4 ± 2°C in darkness

Test vessel: The tests were conducted in 30 mL plastic vessels (2 cm depth)
Test volume: 15 mL of solution (2 cm depth); replenished daily
Control/dilution water: The control and dilution water was a mixture of moderately hard reconstituted water and Bow River Water (50:50). Chemicals added to dilution water: 0.96 g NaHCO3, 0.60 g CaSO4, 0.60 g MgSO4, 0.04 g KCl per 20L
Test concentrations: 5 effluent concentrations (6.3, 12.5, 25, 50, 100% (v/v) plus a negative control)
Test replicates: One neonate <24 hours old was loaded per test vessel;
10 replicates/concentration
Feeding: The test organisms were fed daily a mixture of fermented trout chow, yeast, alfalfa powder, and the green alga *Pseudokirchneriella subcapitata* (formerly *Selenastrum capricornutum* and *Raphidocelis subcapitata*).
Food expiration date: 2006/07/22
Measurements: pH, conductivity, dissolved oxygen and temperature were measured daily
Sample pre-treatment: The sample was not aerated, filtered or pH adjusted prior or during testing
The dissolved oxygen concentration (mg/L) was: 6.7
The sample pH was: 7.2
Lighting: Overhead full spectrum fluorescent lights; 100-600 lux at surface
Photoperiod: 16h light:8h dark
Test temperature: 25 ± 1°C

Note: Outlined sections are protocol deviations explained on the comment page

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Test Conditions

Client: TAH102
Reference: 06-1368-02-CDD

Endpoints: Survival, 6-d LC50 (with 95% confidence limits)
Reproduction, 6-d IC25 (with 95% confidence limits)
Test endpoints were bracketed by at least 1 test concentration (except for <0.1% or >100 %)

Test completion: 80% of the control organisms had ≥ 3 broods on day 6 (must be ≥ 60% within 8 days)

Test validity: The control had 100% survival (must ≥ 80%)
Number of young produced by each surviving control adult was 15 (must be ≥ 15)

Reference toxicant: 7-d test with NaCl initiated July 6, 2006;
current results: (7-d LC50 and 95% confidence limits) = 2.5 (2.1-2.9) g/L NaCl
current results: (7-d IC50 and 95% confidence limits) = 0.5 (0.1-0.8) g/L NaCl

Note: Outlined sections are protocol deviations explained on the comment page

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Test Data

Client: TAH102
Reference: 06-1368-02-CDD

Test Log:

Date	Day	Time	Technicians	Temperature Before Use (°C) Control	Sample
2006/07/14	0	1430	K.deWindt	25	26
2006/07/15	1	1430	C.Ehman	25	24
2006/07/16	2	1130	C.Ehman	25	25
2006/07/17	3	1145	I.Carleton-Dodds	25	25
2006/07/18	4	1215	I.Carleton-Dodds	25	25
2006/07/19	5	1100	M.Luong	24	25
2006/07/20	6	1035	M.Luong	na	na

Chemistry Summary Tables:

New Solutions

Conc. (%)	ctl	6.3	13	25	50	100	

Old Solutions

ctl	6.3	13	25	50	100	

Average Values

pH	7.9	7.9	7.9	7.8	7.8	7.6		7.8	7.8	7.8	7.8	7.8	7.8	
cond.	389	341	317	280	205	42		351	345	327	291	214	49	
DO	6.9	6.8	6.9	6.9	6.9	7.0		7.1	7.0	7.0	7.0	6.9	6.9	
temp.	25	25	25	25	25	25		25	25	25	25	25	25	

Coefficients of Variation (%)

pH	1	1	1	1	2	4		1	1	1	1	0	2	
cond.	8	2	2	2	1	11		3	1	2	1	1	7	
DO	6	4	5	4	5	4		4	4	4	4	4	4	
temp.	0	0	0	0	0	0		2	2	2	2	2	2	

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HydroQual Laboratories Ltd.

Ceriodaphnia (6-8d LC50/IC25) Test Report

Test Data

Client: TAH102
Reference: 06-1368-02-CDD

Biology (number of young produced):

Conc. (%)	ctl	6.3	13	25	50	100	

ctl	6.3	13	25	50	100	

Day1

Replicate							
1	0	0	0	0	0	0	
2	0	0	0	0	0	0	
3	0	0	0	0	0	0	
4	0	0	0	0	0	0	
5	0	0	0	0	0	0	
6	0	0	0	0	0	0	
7	0	0	0	0	0	0	
8	0	0	0	0	0	0	
9	0	0	0	0	0	0	
10	0	0	0	0	0	0	

Day 4

	3	2	2	2	2	0	
	3	0	3	0	0	0	
	2	2	3	2	2	0	
	5	4	2	0	4	0	
	2	2	0	0	2	2	
	2	2	2	0	3	0	
	2	3	2	2	2	2	
	0	0	2	0	0	4	
	0	2	2	8	0	2	
	2	3	0	0	0	0	

Day 2

1	0	0	0	0	0	0	
2	0	0	0	0	0	0	
3	0	0	0	0	0	0	
4	0	0	0	0	0	0	
5	0	0	0	0	0	0	
6	0	0	0	0	0	0	
7	0	0	0	0	0	0	
8	0	0	0	0	0	0	
9	0	0	0	0	0	0	
10	0	0	0	0	0	0	

Day 5

	6	3	6	5	4	0	
	6	2	6	4	4	0	
	7	0	0	3	4	0	
	0	0	3	0	0	3	
	6	2	0	0	6	3	
	0	3	5	0	6	6	
	5	6	6	0	4	7	
	4	0	5	0	4	6	
	3	2	2	0	6	0	
	4	5	6	2	5	6	

Day 3

1	0	0	0	0	0	0	
2	0	0	0	0	0	0	
3	0	0	0	0	2	0	
4	3	2	0	0	0	0	
5	0	0	0	0	0	0	
6	0	0	0	0	0	0	
7	0	0	0	0	0	0	
8	2	0	0	0	0	2	
9	0	0	2	0	0	0	
10	0	0	0	0	0	0	

Day 6

	5	5	6	6	8	4	
	9	0	9	10	6	0	
	7	0	11	7	7	4	
	8	7	9	12	9	7	
	7	0	7	6	10	6	
	10	0	0	0	6	4	
	14	9	10	**8**	7	0	
	10	0	6	0	0	0	
	10	8	9	10	8	6	
	6	10	11	0	8	8	

Notes: #, young produced; 0, no young; blank, dead; bold print #, number of young the test organism had the day it died.

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HydroQual Laboratories Ltd.

Ceriodaphnia (6-8d LC50/IC25) Test Report

Test Data

Client: TAH102
Reference: 06-1368-02-CDD

Biology (number of young produced):

Conc. (%)	ctl	6.3	13	25	50	100	

ctl	6.3	13	25	50	100	

Replicate	Day 7							Day 8						
1														
2														
3														
4														
5														
6														
7														
8														
9														
10														

Notes: #, young produced; 0, no young; blank, dead; bold print #, number of young the test organism had the day it died.

Biology Summary Tables:

Conc. (%)	ctl	6.3	13	25	50	100	

ctl	6.3	13	25	50	100	

Day	Mortality (%)							Daily Young Production						
0	0	0	0	0	0	0		0	0	0	0	0	0	
1	0	0	0	0	0	0		0	0	0	0	0	0	
2	0	0	0	0	0	0		0	0	0	0	0	0	
3	0	0	0	0	0	0		5	2	2	0	2	2	
4	0	0	0	0	0	0		21	20	18	14	15	10	
5	0	0	0	0	0	0		41	23	39	14	43	31	
6	0	0	0	10	0	0		86	39	78	59	69	39	
7														
8														
totals	0	0	0	10	0	0		153	84	137	87	129	82	

Replicate	Total Young Produced by Each Adult						
1	14	10	14	13	14	4	
2	18	2	18	14	10	0	
3	16	2	14	12	15	4	
4	16	13	14	12	13	10	
5	15	4	7	6	18	11	
6	12	5	7	0	15	10	
7	21	18	18	10	13	9	
8	16	0	13	0	4	12	
9	13	12	15	18	14	8	
10	12	18	17	2	13	14	

Average Young Per Adult

15	8	14	9	13	8	

Young Production as a Percent of Controls

100	55	90	57	84	54	

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HydroQual Laboratories Ltd.

Ceriodaphnia (6-8d LC50/IC25) Test Report

Test Data

Client: TAH102
Reference: 06-1368-02-CDD

Chemistry:

	New Solutions							Old Solutions						
Conc. (%)	ctl	6.3	13	25	50	100		ctl	6.3	13	25	50	100	
Day	pH (units)							pH (units)						
0	7.8	7.8	7.9	7.7	7.6	7.2								
1	8.0	8.0	7.8	7.9	7.9	7.9		7.6	7.8	7.8	7.8	7.8	7.8	
2	8.0	8.0	8.0	7.9	7.9	7.9		7.9	7.9	7.9	7.9	7.8	7.8	
3	7.8	7.8	7.8	7.8	7.7	7.4		7.8	7.8	7.8	7.7	7.8	7.8	
4	7.9	7.9	7.9	7.9	7.8	7.3		7.8	7.8	7.8	7.8	7.8	7.5	
5	7.8	7.8	7.8	7.8	7.7	7.8		7.8	7.8	7.8	7.8	7.8	7.8	
6								7.8	7.8	7.9	7.9	7.8	7.9	
7														
8														
	Conductivity (µS/cm)							Conductivity (µS/cm)						
0	375	343	321	283	207	40								
1	430	344	318	276	205	48		359	353	337	298	218	53	
2	415	347	312	275	202	43		363	345	329	289	210	46	
3	359	336	318	281	206	35		345	341	325	287	211	45	
4	394	342	322	289	205	41		344	341	327	290	217	50	
5	360	331	310	276	204	45		355	343	327	292	214	46	
6								342	344	318	288	213	52	
7														
8														
	Dissolved Oxygen (mg/L)							Dissolved Oxygen (mg/L)						
0	6.2	6.3	7.2	6.4	6.4	6.7								
1	7.4	7.1	6.3	7.2	7.3	7.4		7.3	7.2	7.1	7.2	7.2	7.2	
2	7.2	7.0	7.2	7.0	7.1	7.3		7.1	7.0	7.0	7.0	7.0	7.0	
3	6.9	6.9	7.0	7.0	6.9	6.9		6.8	6.8	6.8	6.8	6.8	6.8	
4	7.0	7.0	7.0	7.0	7.0	6.9		6.6	6.5	6.5	6.4	6.4	6.3	
5	6.8	6.6	6.6	6.6	6.6	6.7		7.2	7.0	7.1	7.1	7.0	6.9	
6								7.3	7.2	7.2	7.2	7.1	7.0	
7														
8														
	Temperature (°C)							Temperature (°C)						
0	25	25	25	25	25	25								
1	25	25	25	25	25	25		25	25	25	25	25	25	
2	25	25	25	25	25	25		25	25	25	25	25	25	
3	25	25	25	25	25	25		25	25	25	25	25	25	
4	25	25	25	25	25	25		25	25	25	25	25	25	
5	25	25	25	25	25	25		24	24	24	24	24	24	
6								24	24	24	24	24	24	
7														
8														

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Comments/Statistics

Client: TAH102
Reference: 06-1368-02-CDD

Test Result Comments:
None

Data Analysis:
Endpoints for mortality could not be calculated. No effect occurred.

Endpoints for reproduction were calculated using Linear Interpolation with CETIS v1.1.2 rev F.

Protocol Deviations:
The fecundity endpoint (IC25) was not bracketed.

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Quality Assurance Information

Test Method: *Ceriodaphnia* Survival and Reproduction Test (6 treatments plus a control)
HydroQual Test Method Manual, section: 4.4.3.2
Reference: Biological Test Method: Test of Reproduction and Survival Using the Cladoceran *Ceriodaphnia dubia*, 1992. Environment Canada, EPS 1/RM/21 including November, 1997 amendments.

Test Organism:

test species:	*Ceriodaphnia dubia*
culture source:	in-house
original culture source:	Environment Canada
ephippia in stock culture:	none
food type:	YAT:Algae
frequency of feeding:	daily
age of test organisms:	<24 hours
culture mortality 7 days prior:	0
culture fecundity 7 days prior:	18
young produced in previous brood:	10
culture condition prior to test initiation:	normal
culture water:	50:50 water

Test Design:

test type:	static renewal
toxicant:	sodium chloride (NaCl)
test vessel:	30 mL plastic cup
test volume (mL):	15
replicates per treatment:	10
organisms per replicate:	1
feeding:	daily
temperature (°C):	24-26
photoperiod:	16 hours light: 8 hours dark
light level (surface):	100-600 lux
hardness adjustment:	no

*Note: there are 2 subcultures within this culture source, separated by one week in age. The test is set with organisms from one subculture.
The number of young a culture has is monitored daily. If young are not used that day, they are discarded, therefore organisms in tests are <24h.

Control/Dilution Water:

source:	equal volumes of Bow River water and moderately hard reconstituted water (50:50 water)
pH (units):	8.0
conductance (uS/cm):	382
dissolved oxygen (mg/L):	7.4
NH_4^+ (mg/L):	<0.1
hardness (mg $CaCO_3$/L):	114
alkalinity (mg $CaCO_3$/L):	99
total residual chlorine (mg/L):	<0.01

Note: moderately hard reconstituted water prepared as per EPS 1/RM/21

Comments: There were no protocol deviations during the conduct of this test

Quality Assurance Unit: _____

Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

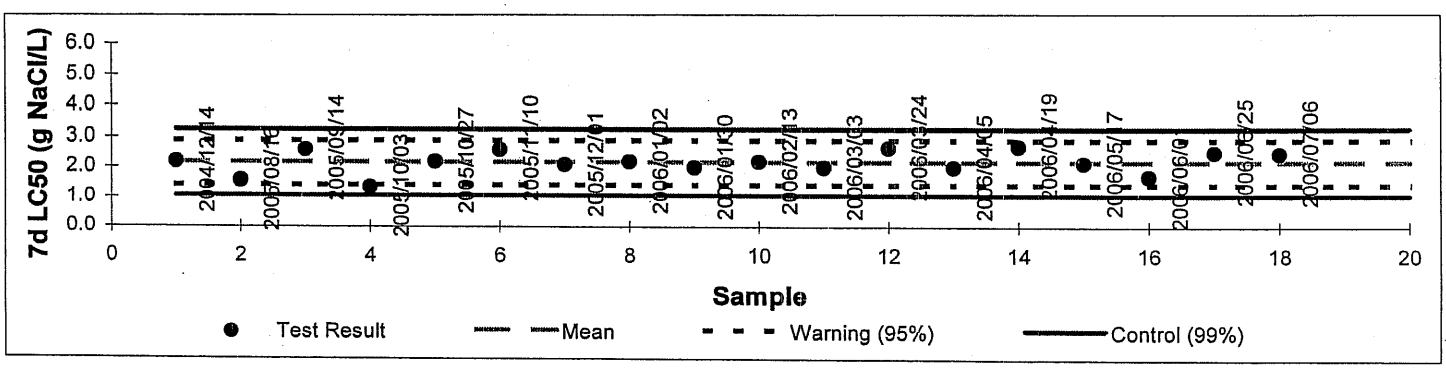
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HydroQual Laboratories Ltd., #4, 6125 12th Street SE, Calgary, Alberta, Canada T2H 2K1 Cerio. Ref. Tox. v 2.4
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Quality Assurance Information

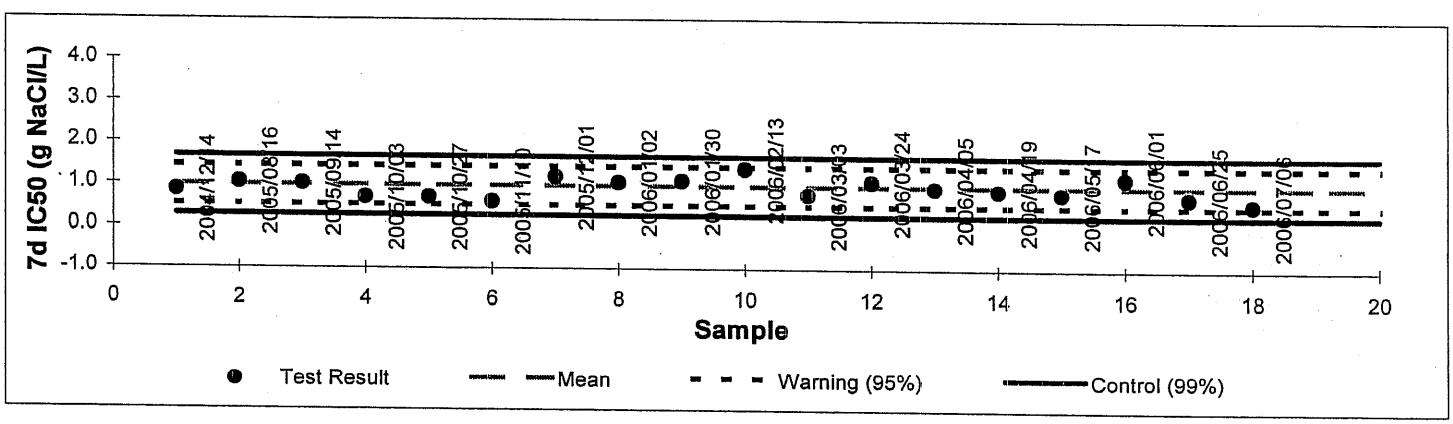
Warning Chart: mortality: LC50 at 7 days
toxicant: Sodium Chloride (NaCl)
Current Test: started on 2006/07/06 ended on 2006/07/13

result (7d LC50):	2.5	(2.1-2.9)	g NaCl/L	(95% confidence limits are in brackets)	
Historical:	mean:	2.2	std dev:	0.4	cv (%): 17
warning limits:	1.4	2.9	(lower and upper 95% confidence limit, two standard deviations)		
control limits:	1.1	3.3	(lower and upper 99% confidence limit, three standard deviations)		



Warning Chart: reproduction: IC50 at 7 days
toxicant: Sodium Chloride (NaCl)
Current Test: started on 2006/07/06 ended on 2006/07/13

result (7d IC50):	0.5	(0.1-0.8)	g NaCl/L	(95% confidence limits are in brackets)	
Historical:	mean:	1.0	std dev:	0.2	cv (%): 24
warning limits:	0.5	1.4	(lower and upper 95% confidence limit, two standard deviations)		
control limits:	0.3	1.7	(lower and upper 99% confidence limit, three standard deviations)		



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Quality Assurance Information

Culture history for adults used in reference toxicant test started on 2006/07/06:

Number of young produced per brood adult:

Day Prior to Use	row/replicate	A1	A2	A6	B2	B5	B6	C3	C4	C6		
7	number of young											
	number of adults											
		A1	A2	A6	B2	B5	B6	C3	C4	C6		
6	number of young											
	number of adults											
		A1	A2	A6	B2	B5	B6	C3	C4	C6		
5	number of young											
	number of adults											
		A1	A2	A6	B2	B5	B6	C3	C4	C6		
4	number of young											
	number of adults	1	1	1	1	1	1	1	1	1		
		A1	A2	A6	B2	B5	B6	C3	C4	C6		
3	number of young	9	0	4	0	0	5	0	0	0		
	number of adults	1	1	1	1	1	1	1	1	1		
		A1	A2	A6	B2	B5	B6	C3	C4	C6		
2	number of young	0	10	8	6	7	12	0	11	10		
	number of adults	1	1	1	1	1	1	1	1	1		
		A1	A2	A6	B2	B5	B6	C3	C4	C6		
Day Used 2006/07/06	number of young	12	9	9	9	10	9	7	12	14		
	number of adults	1	1	1	1	1	1	1	1	1		
		A1	A2	A6	B2	B5	B6	C3	C4	C6		
Totals	number of young	21	19	21	15	17	17	7	23	24		

Number of young produced per organism in the last brood before use	10
Mean number of surviving young per adult over the last seven days	18
Culture mortality over the last seven days	0

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HydroQual Laboratories Ltd.

Ceriodaphnia Test Report

Quality Assurance Information

Culture history for adults used in the test for sample 02 reference 06-1368:

Number of young produced per brood adult:

Day Prior to Use	row/replicate	A1	A3	A5	B4	C3	C7	D5	D6	E5	E6	
7	number of young											
	number of adults											
		A1	A3	A5	B4	C3	C7	D5	D6	E5	E6	
6	number of young											
	number of adults											
		A1	A3	A5	B4	C3	C7	D5	D6	E5	E6	
5	number of young											
	number of adults											
		A1	A3	A5	B4	C3	C7	D5	D6	E5	E6	
4	number of young											
	number of adults											
		A1	A3	A5	B4	C3	C7	D5	D6	E5	E6	
3	number of young	12	9	10	0	3	8	0	0	0	0	
	number of adults	2	2	2	2	2	2	2	2	2	2	
		A1	A3	A5	B4	C3	C7	D5	D6	E5	E6	
2	number of young	8	7	0	12	9	9	12	9	14	15	
	number of adults	2	2	2	2	2	2	2	2	2	2	
		A1	A3	A5	B4	C3	C7	D5	D6	E5	E6	
DAY USED 2006/07/14	number of young	6	6	8	7	10	10	7	7	10	7	
	number of adults	1	1	1	1	1	1	1	1	1	1	
		A1	A3	A5	B4	C3	C7	D5	D6	E5	E6	D5
totals	number of young	16	14	13	13	16	19	13	12	17	15	

Number of young produced per organism in the last brood before use	8
Mean number of surviving young per adult over the last seven days	15
Culture mortality over the last seven days	14

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HydroQual Laboratories Ltd.

Ceriodaphnia (6-8d LC50/IC25) Test Report

Result Summary

Client: TAH102
Reference: 06-1726-01-CDD

Client: Tahera Diamond Corporation; operation Yellowknife

Sample: Lake C3; mixing zone edge

Collection: collected on 2006/08/21 at 0807 by C. Wray
Receipt: received on 2006/08/23 at 1420 by J. Ernst
Containers: received 1 x 20 L pail at 0 °C, in good condition with no seals and no initials
Description: type: water, collection method: grab

Test: started on 2006/08/24 ; ended on 2006/08/30

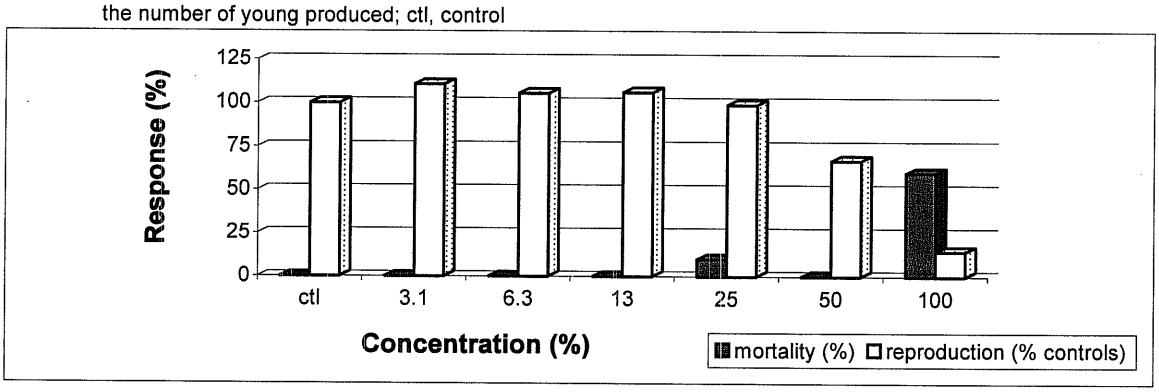
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QA/QC.....9

Result:

	Endpoint (6-day)	Value	Confidence Limits (95%) lower	upper	Units	Method Calculated
Acute:	LC25	could not be calculated			%	Trimmed Spearman-Karber
(survival)	LC50	88	64	122	%	Trimmed Spearman-Karber
Chronic:	IC25	42	33	49	%	Log-Logistic
(fecundity)	IC50	58	50	67	%	Log-Logistic

Notes: LCx & ICx, concentrations lethal or inhibitory to 'x' percent of the test population; fecundity, reproduction as the number of young produced; ctl, control



Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

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HydroQual Laboratories Ltd., #4, 6125 12th Street SE, Calgary, Alberta, Canada T2H 2K1
Tel (403) 253-7121 fax (403) 252-9363 www.hydroqual.ca

Test Conditions

Client: TAH102
Reference: 06-1726-01-CDD

Method: Biological Test method: Test of Reproduction and Survival Using the Cladoceran *Ceriodaphnia dubia*, 1992. Environ.Can., EPS 1/RM/21. (amended November, 1997)

Test type: *Ceriodaphnia* 6-day Survival and Reproduction Static Renewal Test (HQ 4.4.3.2)
Species: *Ceriodaphnia dubia*
Age: <24 hours old; all from same brood source within 12 h of the same age
Organism source: in-house cultures; cultures from a single brood organism to provide test organisms
Culture health: Culture mortality was 9% (must be ≤ 20%)
7-d prior to test initiation: No ephippia were noted in the cultures
Average young produced per adult was 33 (must be ≥ 15)
Number of young produced by each brood organism in the last complete brood before use was 7 (must be ≥ 6)
Organism observations: No unusual behavior, appearance or treatment of test organisms was noted prior to or during the test

Sample initial chemistry: pH: 7.6; EC: 128 (µS/cm); DO: 8.7 (mg/L); temperature: 20 °C
hardness (mg CaC03/L): 8; colour: colourless; odour: odourless
Sample holding time: 3 days (must be ≤ 3 days); The test was conducted with three subsamples, samples a, b, and c were for days 0 to 2, 3 to 4, and 5 to 7.
Sample storage: 4 ± 2°C in darkness

Test vessel: The tests were conducted in 30 mL plastic vessels (2 cm depth)
Test volume: 15 mL of solution (2 cm depth); replenished daily
Control/dilution water: The control and dilution water was a mixture of moderately hard reconstituted water and Bow River Water (50:50). Chemicals added to dilution water: 0.96 g NaHCO3, 0.60 g CaSO4, 0.60 g MgSO4, 0.04 g KCl per 20L
Test concentrations: 6 effluent concentrations (3.1, 6.3, 12.5, 25, 50, 100% (v/v) plus a negative control)
Test replicates: One neonate <24 hours old was loaded per test vessel;
10 replicates/concentration
Feeding: The test organisms were fed daily a mixture of fermented trout chow, yeast, alfalfa powder, and the green alga *Pseudokirchneriella subcapitata* (formerly *Selenastrum capricornutum* and *Raphidocelis subcapitata*).
Food expiration date: 2006/08/27,2006/09/03
Measurements: pH, conductivity, dissolved oxygen and temperature were measured daily
Sample pre-treatment: The sample was not aerated, filtered or pH adjusted prior or during testing
The dissolved oxygen concentration (mg/L) was: 6.9
The sample pH was: 7.8
Lighting: Overhead full spectrum fluorescent lights; 100-600 lux at surface
Photoperiod: 16h light:8h dark
Test temperature: 25 ± 1°C

Note: Outlined sections are protocol deviations explained on the comment page

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Test Conditions

Client: TAH102
Reference: 06-1726-01-CDD

Endpoints: Survival, 6-d LC50 (with 95% confidence limits)
Reproduction, 6-d IC25 (with 95% confidence limits)
Test endpoints were bracketed by at least 1 test concentration (except for <0.1% or >100 %)

Test completion: 60% of the control organisms had ≥ 3 broods on day 6 (must be ≥ 60% within 8 days)

Test validity: The control had 100% survival (must ≥ 80%)
Number of young produced by each surviving control adult was 18 (must be ≥ 15)

Reference toxicant: 7-d test with NaCl initiated August 18, 2006;
current results: (7-d LC50 and 95% confidence limits) = 2.1 (1.7-2.7) g/L NaCl
current results: (7-d IC50 and 95% confidence limits) = 0.5 (0.3-0.7) g/L NaCl

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Test Data

Client: TAH102
Reference: 06-1726-01-CDD

Test Log:

Date	Day	Time	Technicians	Temperature Before Use (°C) Control	Sample
2006/08/24	0	1030	B. Denny	25	25
2006/08/25	1	0915	B. Denny	25	25
2006/08/26	2	0945	B. Denny	25	25
2006/08/27	3	0845	B. Denny	25	25
2006/08/28	4	0930	B. Denny	25	25
2006/08/29	5	1000	B. Denny	25	25
2006/08/30	6	0930	B. Denny	na	na

Chemistry Summary Tables:

New Solutions

Conc. (%)	ctl	3.1	6.3	13	25	50	100

Old Solutions

ctl	3.1	6.3	13	25	50	100

Average Values

pH	7.8	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	7.9	8.0
cond.	402	411	390	367	330	250	66	400	401	396	385	343	264	66
DO	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.0	7.0	7.0	7.0	7.0	7.1	7.0
temp.	25	25	25	25	25	25	25	25	25	25	25	25	25	25

Coefficients of Variation (%)

pH	1	1	0	0	0	1	1	1	1	1	1	1	1	1
cond.	2	4	5	5	6	7	7	5	6	6	7	8	10	12
DO	2	2	2	2	2	2	2	1	1	1	1	1	1	2
temp.	0	0	0	0	0	0	0	2	2	2	2	2	2	2

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Test Data

Client: TAH102
Reference: 06-1726-01-CDD

Biology (number of young produced):

Conc. (%)	ctl	3.1	6.3	13	25	50	100

Day1

Replicate							
1	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	
6	0	0	0	0	0	0	
7	0	0	0	0	0	0	
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	

Day 2

1	0	0	0	0	0	0	
2	0	0	0	0	0	0	
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
5	0	0	0	0	0	0	
6	0	0	0	0	0	0	
7	0	0	0	0	0	0	
8	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0
10	0	0	0	0	0	0	

Day 3

1	4	0	0	0	0	0	
2	0	3	4	0	3	0	
3	4	0	0	0	0	0	0
4	0	4	4	4	4	3	3
5	0	3	3	3	0	0	
6	0	0	0	0	0	0	
7	0	0	3	3	0	0	
8	4	0	0	4	4	0	0
9	3	4	4	3	0	0	0
10	0	0	3	0	0	4	

ctl	3.1	6.3	13	25	50	100

Day 4

0	4	4	3	3	0	
4	7	7	4	0	3	
7	4	4	4	3	0	0
4	0	0	0	7	0	5
3	0	0	0	3	4	
3	3	3	4	2	3	
4	4	0	0		0	
7	3	5	0	0	4	3
0	0	0	0	4	3	4
3	3	7	4	3	0	

Day 5

10	0	0	0	9	0	
9	8	0	9	8	0	
10	9	9	10	10	7	0
8	9	10	11	9	6	3
9	8	8	8	9	7	
8	9	7	8	6	8	
8	9	0	10		7	
9	7	10	9	10	8	5
8	9	10	8	7	6	3
0	0	0	0	9	0	

Day 6

0	9	8	8	0	0	
10	10	9	10	7	7	
0	10	9	9	10	0	0
11	10	11	11	0	0	0
0	11	9	10	9	8	
0	0	0	0	9	5	
12	10	8	11		7	
0	10	10	12	9	8	0
9	11	10	10	10	6	0
8	7	10	0	10	6	

Notes: #, young produced; 0, no young; blank, dead; bold print #, number of young the test organism had the day it died.

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HydroQual Laboratories Ltd.

Ceriodaphnia (6-8d LC50/IC25) Test Report

Test Data

Client: TAH102
Reference: 06-1726-01-CDD

Biology (number of young produced):

Conc. (%)	ctl	3.1	6.3	13	25	50	100

ctl	3.1	6.3	13	25	50	100

Replicate	Day 7						
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

Day 8						

Notes: #, young produced; 0, no young; blank, dead; bold print #, number of young the test organism had the day it died.

Biology Summary Tables:

Conc. (%)	ctl	3.1	6.3	13	25	50	100

ctl	3.1	6.3	13	25	50	100

Day	Mortality (%)						
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	40
2	0	0	0	0	0	0	60
3	0	0	0	0	0	0	60
4	0	0	0	0	10	0	60
5	0	0	0	0	10	0	60
6	0	0	0	0	10	0	60
7							
8							
totals	0	0	0	0	10	0	60

Daily Young Production						
0	0	0	0	0	0	0
0	0	0	0	0	0	0
0	0	0	0	0	0	0
15	14	21	17	11	7	3
35	28	30	19	25	17	12
79	68	54	73	77	49	11
50	88	84	81	64	47	0
179	198	189	190	177	120	26

Replicate	Total Young Produced by Each Adult						
1	14	13	12	11	12	0	0
2	23	28	20	23	18	10	0
3	21	23	22	23	23	7	0
4	23	23	25	26	20	9	11
5	12	22	20	21	21	19	0
6	11	12	10	12	17	16	0
7	24	23	11	24	0	14	0
8	20	20	25	25	23	20	8
9	20	24	24	21	21	15	7
10	11	10	20	4	22	10	0

Average Young Per Adult

18	20	19	19	18	12	3

Young Production as a Percent of Controls

100	111	106	106	99	67	15

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HydroQual Laboratories Ltd.

Ceriodaphnia (6-8d LC50/IC25) Test Report

Test Data

Client: TAH102
Reference: 06-1726-01-CDD

Chemistry:

	New Solutions							Old Solutions						
Conc. (%)	ctl	3.1	6.3	13	25	50	100	ctl	3.1	6.3	13	25	50	100
Day	pH (units)							pH (units)						
0	7.8	7.8	7.9	7.9	7.9	7.9	7.8							
1	7.8	7.9	7.9	7.9	7.9	8.0	8.0	7.9	7.9	7.9	7.9	7.9	7.9	8.0
2	7.8	7.9	7.9	7.9	7.9	7.9	7.9	7.9	8.0	8.0	8.0	7.9	7.9	8.1
3	7.8	7.9	7.9	7.9	7.9	7.9	7.9	7.9	8.0	8.0	8.0	8.0	8.0	8.1
4	7.9	7.9	7.9	7.9	7.9	7.9	8.0	7.9	7.9	7.9	7.9	7.8	7.8	8.0
5	7.8	7.9	7.9	7.9	7.9	7.9	7.9	7.8	7.8	7.9	7.9	7.9	7.8	8.0
6								7.8	7.9	7.9	7.9	7.9	7.8	7.9
7														
8														
	Conductivity (µS/cm)							Conductivity (µS/cm)						
0	396	408	394	371	335	255	67							
1	412	417	397	374	335	258	69	420	411	401	387	346	274	72
2	410	423	404	379	343	261	70	408	420	410	410	365	258	73
3	398	410	396	370	338	256	70	406	410	404	398	352	264	70
4	396	428	402	379	337	258	64	412	414	420	410	370	306	66
5	399	378	348	327	291	213	58	385	388	382	371	325	253	59
6								370	360	358	336	300	230	54
7														
8														
	Dissolved Oxygen (mg/L)							Dissolved Oxygen (mg/L)						
0	7.0	7.0	7.0	7.0	7.0	6.9	6.9							
1	7.3	7.3	7.3	7.3	7.2	7.2	7.2	7.0	7.0	7.0	6.9	6.9	6.9	6.8
2	7.3	7.3	7.2	7.3	7.3	7.3	7.3	7.0	7.0	7.0	7.1	7.1	7.1	7.2
3	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.0	7.1	7.1	7.1	7.1	7.1	7.0
4	7.4	7.4	7.4	7.4	7.4	7.4	7.4	6.9	6.9	6.9	7.0	6.9	7.0	7.0
5	7.2	7.2	7.3	7.3	7.3	7.3	7.3	6.9	7.1	7.1	7.1	7.1	7.1	7.1
6								7.0	7.0	7.1	7.1	7.1	7.1	7.1
7														
8														
	Temperature (°C)							Temperature (°C)						
0	25	25	25	25	25	25	25							
1	25	25	25	25	25	25	25	25	25	25	25	25	25	25
2	25	25	25	25	25	25	25	25	25	25	25	25	25	25
3	25	25	25	25	25	25	25	26	26	26	26	26	26	26
4	25	25	25	25	25	25	25	25	25	25	25	25	25	25
5	25	25	25	25	25	25	25	25	25	25	25	25	25	25
6								25	25	25	25	25	25	25
7														
8														

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Comments/Statistics

Client: TAH102
Reference: 06-1726-01-CDD

Test Result Comments:
None

Data Analysis:
Endpoints for mortality were calculated using a Trimmed Spearman-Karber model with CETIS v1.1.2 rev P.

Endpoints for reproduction were calculated using a non-linear regression model (3P Log-Logistic) with CETIS v1.1.2 rev P.

Protocol Deviations:
None

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Quality Assurance Information

Test Method: *Ceriodaphnia* Survival and Reproduction Test (6 treatments plus a control)
HydroQual Test Method Manual, section: 4.4.3.2
Reference: Biological Test Method: Test of Reproduction and Survival Using the Cladoceran *Ceriodaphnia dubia*, 1992. Environment Canada, EPS 1/RM/21 including November, 1997 amendments.

Test Organism:

test species:	*Ceriodaphnia dubia*
culture source:	in-house
original culture source:	Environment Canada
ephippia in stock culture:	none
food type:	YAT:Algae
frequency of feeding:	daily
age of test organisms:	<24 hours
culture mortality 7 days prior:	2
culture fecundity 7 days prior:	16
young produced in previous brood:	7
culture condition prior to test initiation:	normal
culture water:	50:50 water

Test Design:

test type:	static renewal
toxicant:	sodium chloride (NaCl)
test vessel:	30 mL plastic cup
test volume (mL):	15
replicates per treatment:	10
organisms per replicate:	1
feeding:	daily
temperature (°C):	24-26
photoperiod:	16 hours light: 8 hours dark
light level (surface):	100-600 lux
hardness adjustment:	no

*Note: there are 2 subcultures within this culture source, separated by one week in age. The test is set with organisms from one subculture.
The number of young a culture has is monitored daily. If young are not used that day, they are discarded, therefore organisms in tests are <24h.

Control/Dilution Water:

source:	equal volumes of Bow River water and moderately hard reconstituted water (50:50 water)
pH (units):	8.0
conductance (uS/cm):	346
dissolved oxygen (mg/L):	6.4
NH_4^+ (mg/L):	<0.1
hardness (mg $CaCO_3$/L):	126
alkalinity (mg $CaCO_3$/L):	106
total residual chlorine (mg/L):	<0.01

Note: moderately hard reconstituted water prepared as per EPS 1/RM/21

Comments: There were no protocol deviations during the conduct of this test

Quality Assurance Unit: K. Steele

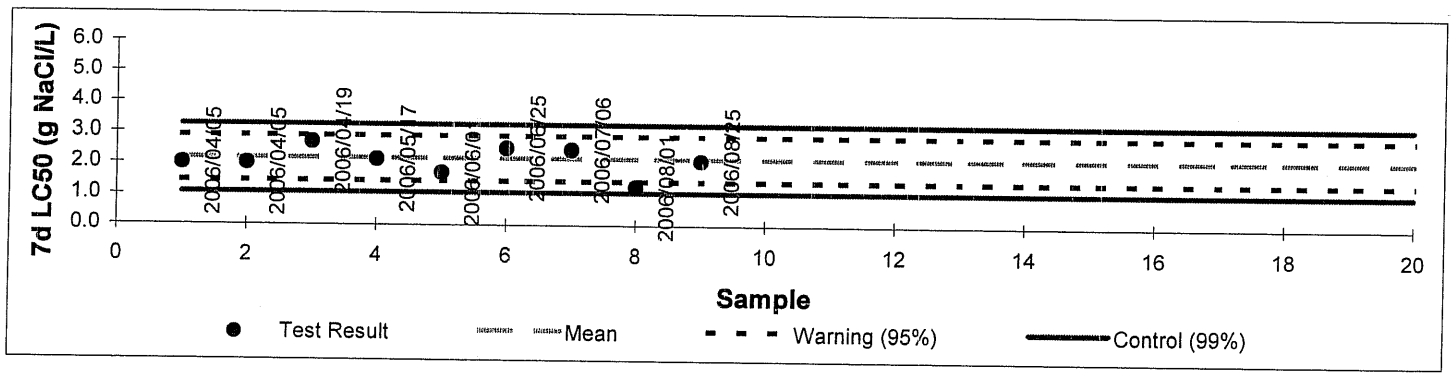
Authorized by K.Steele, B.Sc., Quality Assurance Officer
The test data and results are verified correct.

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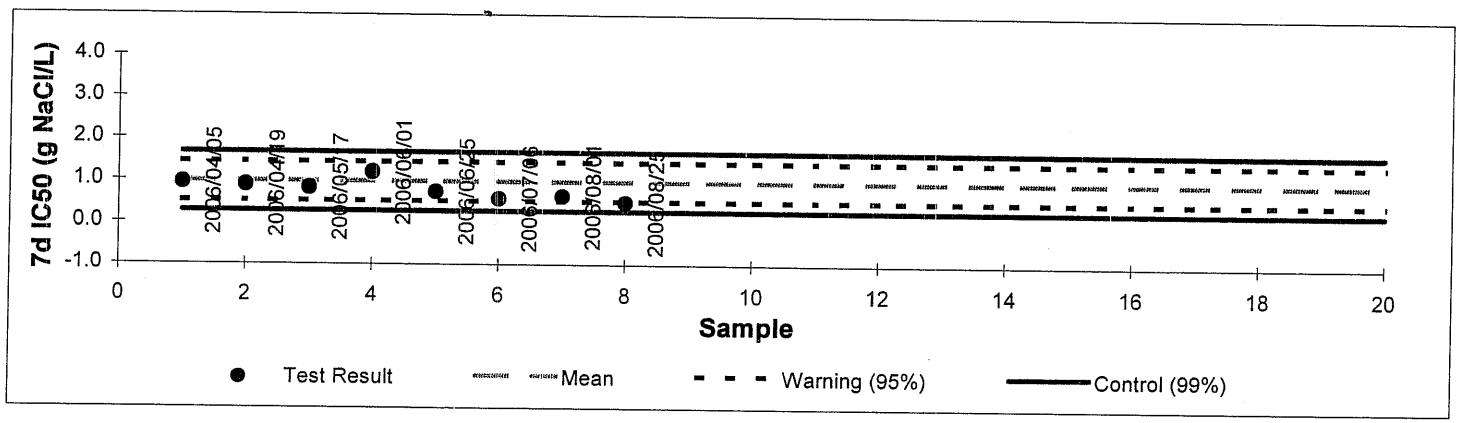
HydroQual Laboratories Ltd., #4, 6125 12th Street SE, Calgary, Alberta, Canada T2H 2K1 Cerio. Ref. Tox. v 2.4
tel (403) 253-7121 fax (403) 252-9363 www.hydroqual.ca

Quality Assurance Information

Warning Chart: mortality: LC50 at 7 days
toxicant: Sodium Chloride (NaCl)
Current Test: started on 2006/08/18 ended on 2006/08/25
result (7d LC50): 2.1 (1.7-2.7) g NaCl/L (95% confidence limits are in brackets)
Historical: mean: 2.2 std dev: 0.4 cv (%): 17
warning limits: 1.4 2.9 (lower and upper 95% confidence limit, two standard deviations)
control limits: 1.1 3.3 (lower and upper 99% confidence limit, three standard deviations)



Warning Chart: reproduction: IC50 at 7 days
toxicant: Sodium Chloride (NaCl)
Current Test: started on 2006/08/18 ended on 2006/08/25
result (7d IC50): 0.5 (0.3-0.7) g NaCl/L (95% confidence limits are in brackets)
Historical: mean: 1.0 std dev: 0.2 cv (%): 24
warning limits: 0.5 1.4 (lower and upper 95% confidence limit, two standard deviations)
control limits: 0.3 1.7 (lower and upper 99% confidence limit, three standard deviations)



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Quality Assurance Information

Culture history for adults used in reference toxicant test started on 2006/08/18:

Number of young produced per brood adult:

Day Prior to Use	row/replicate	A7	B6	B7	A1	B1	C1	A2	A3	B4		
7	number of young											
	number of adults											
		A7	B6	B7	A1	B1	C1	A2	A3	B4		
6	number of young											
	number of adults											
		A7	B6	B7	A1	B1	C1	A2	A3	B4		
5	number of young											
	number of adults											
		A7	B6	B7	A1	B1	C1	A2	A3	B4		
4	number of young	2	4	4	9	4	2	2	5	10		
	number of adults	1	1	1	2	2	2	2	2	2		
		A7	B6	B7	A1	B1	C1	A2	A3	B4		
3	number of young	0	6	2	4	5	0	11	4	2		
	number of adults	1	1	1	2	2	2	2	2	2		
		A7	B6	B7	A1	B1	C1	A2	A3	B4		
2	number of young	4	6	0	6	12	8	4	0	7		
	number of adults	1	1	1	2	2	2	2	2	2		
		A7	B6	B7	A1	B1	C1	A2	A3	B4		
Day Used 2006/08/18	number of young	6	6	6	9	7	8	11	8	6		
	number of adults	1	1	1	1	1	1	1	1	1		
		A7	B6	B7	A1	B1	C1	A2	A3	B4		
Totals	number of young	12	22	12	19	18	18	19.5	12.5	15.5		

Number of young produced per organism in the last brood before use	7
Mean number of surviving young per adult over the last seven days	16
Culture mortality over the last seven days	2

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HydroQual Laboratories Ltd.

Ceriodaphnia Test Report

Quality Assurance Information

Culture history for adults used in the test for sample 01 reference 06-1726:

Number of young produced per brood adult:

Day Prior to Use	row/replicate	A6	B3	B4	C3	C4	C6	D1	F1	F2		
7	number of young	9	0	9	5	0	0	0	4	4		
	number of adults	1	1	1	1	1	1	1	1	1		
		A6	B3	B4	C3	C4	C6	D1	F1	F2		
6	number of young	0	12	8	6	5	5	2	4	0		
	number of adults	1	1	1	1	1	1	1	1	1		
		A6	B3	B4	C3	C4	C6	D1	F1	F2		
5	number of young	5	5	5	2	0	4	6	0	2		
	number of adults	1	1	1	1	1	1	1	1	1		
		A6	B3	B4	C3	C4	C6	D1	F1	F2		
4	number of young	14	4	8	4	4	7	4	7	4		
	number of adults	1	1	1	1	1	1	1	1	1		
		A6	B3	B4	C3	C4	C6	D1	F1	F2		
3	number of young	6	2	0	4	0	4	2	4	2		
	number of adults	1	1	1	1	1	1	1	1	1		
		A6	B3	B4	C3	C4	C6	D1	F1	F2		
2	number of young	2	8	8	2	7	0	12	0	12		
	number of adults	1	1	1	1	1	1	1	1	1		
		A6	B3	B4	C3	C4	C6	D1	F1	F2		
DAY USED 2006/08/24	number of young	7	9	7	9	6	6	6	7	6		
	number of adults	1	1	1	1	1	1	1	1	1		
		A6	B3	B4	C3	C4	C6	D1	F1	F2		
totals	number of young	43	40	45	32	22	26	32	26	30		

Number of young produced per organism in the last brood before use	7
Mean number of surviving young per adult over the last seven days	33
Culture mortality over the last seven days	9

Our liability is limited to the cost of the test requested on the sample as received. No liability in whole or in part is assumed for the collection, handling or transport of the sample, application or interpretation of the test data or results in part or in whole.

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APPENDIX D

Site Geochemistry Data

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March 28, 2007

1CT004.010

Health, Safety and Environment Manager
Tahera Diamond Corporation
Jericho Project
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Attention: Cheryl Wray

Dear Cheryl:

Jericho Project – 2006 Waste Rock Survey Report

1 Introduction

As a condition of Water Licence NWB1JER0410, Tahera Corporation (Tahera) is required to monitor the geochemical properties of waste rock, overburden, kimberlite ore and processed kimberlite materials. The results of the monitoring program are reported annually.

The 2006 Waste Rock Survey Report was prepared for Tahera Diamond Corporation by SRK Consulting (Canada) Inc. Tahera was responsible for sampling, contracting of sample analyses, and data management. SRK's contributions consisted of review of the available data and report preparation.

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Africa
Asia
Australia
Europe
North America
South America

North American Offices:

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Elko	775.753.4151
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Saskatoon	306.955.4778
Sudbury	705.682.3270
Toronto	416.601.1445
Tucson	520.544.3668
Yellowknife	867.445.8670

2 Methods

2.1 Waste Rock and Overburden Sampling

As part of their routine monitoring programs, Tahera has collected waste rock samples from the Jericho Pit since June 2005.

Samples were collected primarily from blast cuttings. For the first several months in 2005, blast cuttings from multiple holes within a given blast pattern were sampled and tested separately. Since October 2005, composite samples from multiple holes within a blast pattern were prepared to represent the entire blast pattern.

Test results to November 2006 are available. A total of 38 granite samples, 28 diabase samples, 7 till samples, 9 samples of mixed granite and diabase and 12 samples of mixed till and granite were collected since the start of operations. Results of analyses for these materials are provided in Attachment A. Results from the samples of mixed rock types will not be discussed in detail in this report as the data can not be used to characterize a particular rock type.

The distribution of waste rock samples collected in 2005 was somewhat clustered, particularly in the 480 bench. Additional sampling of the 480 and 472.5 benches in 2006 has increased the spatial variability, and currently provides good representation of these benches. The distribution of samples collected from the 465, 460, 457.5, and the 450 benches is somewhat clustered on the east and south sides of the pipe contact.

Diabase is well represented by the samples collected to date.

2.2 Kimberlite and Processed Kimberlite Sampling

Five samples of kimberlite ore were collected from the Jericho Pit in 2006. The samples were collected as composites of drill cutting or blast rock from the 457.5 and the 450 benches.

Processing of kimberlite commenced in February 2006. Since this time, samples of Coarse Processed Kimberlite (CPK), Fine Processed Kimberlite (FPK), and Recovery Rejects (RR) have been collected on a regular basis (approximately every two weeks). Twenty samples of CPK, 20 samples of FPK, and 18 samples of RR were collected in 2006.

Results of analyses for all types of kimberlite samples are provided in Attachment B.

2.3 Field Inspection

In July 2006, SRK completed a seep survey at the site, as reported in “Jericho Diamond Mine 2006 Waste Rock Seepage Monitoring Report” (SRK, 2006). During this site visit, SRK’s senior geochemist had an opportunity to examine exposed rock in the pit walls. Observations from the site visit indicated only one area with minor amounts of sulphide minerals (primarily as chalcopyrite). The sulphide minerals occurred as small discontinuous veinlets along the contact of a small mafic volcanic dike with the granitic rocks. This

dike was approximately 1.5 metres wide, and generally more fractured and altered compared to the more prominent diabase dikes. The total amount of rock from this zone was minor.

2.4 Analytical Methods

Testing of waste rock and processed kimberlite samples was completed at ALS-Chemex laboratories in Vancouver. Samples were analyzed using the standard Sobek et al. (1978) procedure for acid-base accounting (ABA), including total sulphur, neutralization potential, and paste pH.

Samples analyzed for metal composition were scanned for a suite of 47 parameters by ICP-MS following an aqua regia digestion. In addition, uranium analysis by X-Ray Flouresence (XRF) and copper analysis by Atomic Absorption (AA) spectrometry was performed on select samples. Table 1 shows the number of samples collected and the number and type of analyses perfomed for each type of material.

3 Results

3.1 Waste Rock and Overburden

Analytical results for all waste rock samples collected in 2005 and 2006 are presented in Attachment A. A statistical summary of each waste rock type (granite, diabase, overburden) is provided in Table 2. A summary of the pre-mine characterization for waste rock is also provided for comparison.

3.1.1 Granitic Samples

The granitic samples had paste pH in the range of 7.6 to 10.0, with a median of 8.4. Total sulphur concentrations were low with a median concentration below the detection limit of 0.01% and maximum concentrations of less than 0.07%. NP's ranged from 3 to 16 kg $CaCO_3$ eq/tonne, with a median NP value of 5 kg $CaCO_3$ eq/tonne. The NP/MPA ratio ranged from 8 to 51 (Figure 1). These results indicate that granitic rocks have a negligible potential for acid rock drainage (ARD).

Relative to pre-mine characterization, the granite samples collected through monitoring generally had comparable ABA characteristics to the pre-mine samples. NP's and NP/MPA ratios were slightly higher than indicated by the pre-mine characterization. This is likely due to differences in methods used to measure the neutralization potential. The specific neutralization potential (NP) method used in the 2005/06 program was the Standard Sobek method (1978), which is not directly comparable to the Modified Sobek method used in the pre-mine characterization programs. The Standard method tends to give higher NP values because it is a more aggressive method that measures neutralization of strong acids by silicate minerals. This difference should be recognized in any comparative work.

Metal concentrations in the granite samples were generally low and typical of average crustal abundances. One of the 2006 samples from the 480 bench had considerably higher Ca, Co, Fe, Mg, Mn, Sr, Ti, V, and Zr, and less K than the other granite samples, suggesting the possible inclusion of more mafic materials in the sample (i.e. diabase). Compared to pre-mine characterization of granite, the samples had considerably higher Al, Ba, K, Na, and Sr, and slightly higher Ca, Pb, and Zr. The samples also had considerably lower Cr, and

slightly lower Cu, Mo, and Zn concentrations compared to pre-mine granitic samples. These differences may have been due to differences in the digestion methods used. Use of lower detection limits showed lower concentrations of Ag, As, Bi, Cd, Sb, Sn, and W than the pre-mine characterization values calculated based on detection limit values.

Uranium analyses indicate moderately elevated concentrations (range of 2.0 to 12.1 ppm; median of 4.3 ppm), consistent with the range observed in the pre-mine data (SRK, 2005). Granite samples showed good correlation between the two test methods used.

3.1.2 Diabase

The diabase samples had paste pH values ranging from 7.4 to 8.7 with a median of 8.2. The average total sulphur content of diabase was 0.02%, with all samples having less than 0.03%. NP's ranged from 10 to 18 kg $CaCO_3$ eq/tonne with a median value of 12 kg $CaCO_3$ eq/tonne. NP/MPA ratios were between 13 and 51 (Figure 1). The results indicate that diabase is not expected to generate ARD.

Diabase samples had considerably higher Ca, Co, Cu, Fe, Mg, Mn, Ni, P, Sr, Ti, V, Zn, and Zr, and slightly higher Ag, Cr, Mo, and Y concentrations compared to the granite samples. Concentrations of As, Ba, K, and Pb were lower in the diabase samples than the granites.

Diabase samples had median uranium concentrations of 1 ppm by ICP. Most samples were below the analytical detection limits of XRF (<4 ppm).

Samples indicated to be composed of a mixture of granite and diabase had ABA and metal results within the range of the granite and diabase samples discussed above. The only exception was arsenic, in which several samples had higher concentrations (up to 6.2 ppm) than either the granites or the diabase. These concentrations are with the range of values observed in the till samples, and may therefore be composites containing small amounts of till.

3.1.3 Overburden

Till samples had paste pH ranging from 8.1 to 9.0, with a median of 8.2. Total sulphur concentrations were slightly higher than the granite samples (average 0.02%), though all were less than 0.03%. NP's ranged from 4 to 27 kg $CaCO_3$ eq/tonne, with a median value of 8 kg $CaCO_3$ eq/tonne. Figure 1 shows NP as a function of acid potential for the till samples, as well as the granite and diabase waste rock samples for comparison. NP/MPA ratios were between 6 and 43, indicating that this material is not expected to generate ARD.

The till samples had higher concentrations of As, Ba, and Sb, compared to either the granite or diabase samples.

Uranium analyses on till samples were not in good agreement between the two test methods. Uranium analysis of three samples by ICP-MS showed concentrations in the range of 2.3 to 2.7 ppm, with a median of

2.6 ppm. XRF analysis of all seven samples indicated only one sample below the analytical detection limit of 4 ppm and the highest concentration was 8 ppm. The median concentration by XRF was 6 ppm. These concentrations are within three times the method detection limit for XRF, and are therefore considered to be within analytical error. The difference may be attributed to incomplete digestions in the ICP method. XRF is a direct measurement on the solids and is not affected by digestion. The apparent difference may be indicative of more resistant (less soluble) forms of uranium in the overburden.

Samples composed of mixtures of till and granite generally had ABA characteristics within the range of values observed for each individual rock type. One sample contained anomalously high NP and metal concentrations resembling compositions within the range of kimberlite. A large portion of the blast pattern from which the sample was collected was within the perimeter of the underlying kimberlite pipe, and it is therefore likely that the sample contained kimberlite in addition to till and granite.

3.2 Kimberlite and Processed Kimberlite

Analytical results for all kimberlite and processed kimberlite samples collected in 2006 are presented in Attachment B. A statistical summary is provided in Table 3. A summary of the pre-mine characterization of kimberlite and processed kimberlite is provided for comparison.

3.2.1 Kimberlite Ore

The ABA results for the five ore samples collected in 2006 had paste pH values between 8.5 and 9.0 (median 8.7) and low total sulphur concentrations (median of 0.02%, maximum less than 0.05%). NP's were between 339 and 375 kg $CaCO_3$ eq/tonne, with corresponding NP/MPA ratios ranging from 240 to 586 (Figure 2). Results are consistent with pre-mine characterization and indicate that kimberlite has no potential to generate ARD.

The two kimberlite ore samples analyzed for metals by ICP-MS generally had metal concentrations typical of kimberlite materials, and within the range of those determined during pre-mine characterization. Use of lower detection limits showed lower concentrations of Ag, As, Bi, Cd, Mo, Sb, Sn, and W than the pre-mine characterization values calculated based on higher detection limit values.

Uranium concentrations from the two samples analyzed by ICP-MS were 2.9 and 18.3 ppm, resulting in an average of 10.6 ppm. All five kimberlite ore samples were analyzed for uranium by XRF, and data for the same two samples analyzed by ICP-MS showed good correlation between the test methods. Results from XRF ranged from <4 ppm to 32 ppm, with an average of 15 ppm.

3.2.2 Processed Kimberlite

Total sulphur in CPK samples was less than 0.08%, with a median of 0.03%. Paste pH values were between 8.4 and 9.3. NP's ranged from 85 to 385 kg $CaCO_3$/tonne, with a median of 343 kg $CaCO_3$/tonne. Resulting

NP/MPA ratios ranged from 45 to 1168, with a median of 345. The results indicate that, like kimberlite ore, CPK has very high neutralization potential and is not expected to generate ARD.

FPK samples had paste pH ranging from 8.2 to 9.0 with a median of 8.8. Total sulphur concentrations were low, ranging from 0.02% to 0.06% (median 0.04%). NP's ranged from 295 to 385 kg $CaCO_3$/tonne, with a median of 347 kg $CaCO_3$/tonne. Resulting NP/MPA ratios were between 171 and 582 (Figure 2), indicating that FPK is also not expected to generate ARD.

The ABA results for CPK and FPK are consistent with pre-mine characterization which indicated that the material has no potential to generate acidic drainage. Slight differences in MPA, NP, and NP/MPA values between pre-mine and monitoring samples (Table 3) are largely the result of differences in the calculation of acid potential and slight differences in the laboratory procedures for determination of NP (Standard Sobek procedure compared to Modified Sobek procedure).

Metal analyses for CPK and FPK were similar to that of the kimberlite ore samples collected in the same year, indicating little change in composition due to the processing method. Only Ba, Mo, Ni, Pb, W, and Zr showed higher concentrations in the FPK than the CPK and kimberlite ore, and only Na showed lower concentrations in the FPK than the CPK and kimberlite ore. However, due to the small differences and limited number of metal analyses, it can not be confidently determined whether the differences are the result of elemental concentration due to the processing method or the result of natural sample variability.

Uranium analyses for CPK and FPK were similar and there was good correlation between the test methods. XRF analyses indicated that both CPK and FPK have average uranium concentrations of 16 ppm. Average ICP-MS results for uranium were 12.6 ppm and 13.4 ppm for CPK and FPK, respectively.

Compared to pre-mine characterization, metal analyses showed that the CPK samples had considerably higher Al and Zr, and slightly higher Ba, Ca, Co, Cr, K, Mn, Na, P, Sr, Ti, V, Y, Zn, and Zr compared to pre-mine CPK samples. Concentrations of As, Pb, and Sb were considerably lower than concentrations from pre-mine samples. Metal results for the FPK samples were only slightly different than results from pre-mine characterization. Compared to pre-mine samples, FPK had higher average P concentrations and lower average As, Ba, Cr, Cu, Ni, and Zn. Use of lower detection limits for both CPK and FPK showed lower concentrations of Bi, Cd, Mo, Sn, and W than the pre-mine characterization values calculated based on higher detection limit values.

3.2.3 Recovery Rejects

Recovery rejects (RR) were not previously characterized for ARD potential due to unavailability of samples. It was however recognized that RR could be a source of acid generation and/or metal leaching due to the possibility that heavy minerals, including small amounts of sulphides in the original ore, could accumulate in the material and light minerals such as carbonates could become depleted (SRK 2003). As such, RR are placed such that any seepage would be contained in the PKCA.

Acid-base accounting results here show that RR samples had paste pH ranging from 9.1 to 9.9. Total sulphur concentrations ranged between <0.01% to 0.17%, and had a median concentration of 0.02%. NP's ranged from 59 to 428 kg $CaCO_3$/tonne and corresponding NP/MPA ratios ranged from 17 to 1370 indicating that the RR is not expected to generate ARD.

As would be expected from the DMS concentration processes, the RR samples showed that several heavy metals are concentrated in RR. The RR samples had higher Ag, Cd, Co, Cr, Fe, Mn, Ti, and V compared to the corresponding kimberlite ore and processed kimberlite samples. Cr and Mn were significantly higher. The solubility of Cr and Mn are however expected to be very low under neutral pH conditions. Parameters that showed lower concentrations in RR than the other kimberlite samples included Ba, Be, B, Ce, Cs, K, Li, P, Pb, Rb, Sr, Th, Tl, U, and Zr.

Uranium analyses by XRF were generally below the detection limit of <4 ppm. ICP-MS analyses of three RR samples returned uranium concentrations ranging from 2.3 to 3.3 ppm, with an average of 2.7. These concentrations are considerably lower than average uranium concentrations determined for the corresponding kimberlite ore, CPK, and FPK samples (10.6 ppm, 12.6 ppm, and 13.4 ppm, respectively).

4 Conclusions and Recommendations

Results from geochemical monitoring of waste rock and overburden in 2005 and 2006 indicated these materials contain low concentrations of sulphur and trace metals consistent with levels determined in pre-mine characterization. These materials are not expected to generate ARD.

Metal concentrations were generally low and typical of average crustal abundances. Concentrations of several metals, including Ag, Ca, Co, Cu, Cr, Fe, Mg, Mn, Mo, Ni, and Zn were higher in diabase than the granites. Concentrations of As, Ba, and Sb were higher in the till samples than either the granite or diabase samples.

Geochemical monitoring of kimberlite ore and processed kimberlite (CPK and FPK) samples indicate that kimberlite has a neglibible potential to generate ARD.

Recovery rejects (RR) had not been previously characterized for ARD potential. Geochemical monitoring results indicate slightly higher concentrations of sulphides compared to the other processed kimberlite, but that this is still less than 0.17% total sulphur (median 0.02%). NP/MPA ratios were all greater than 17, indicating that they have a negligible potential for ARD. As expected, the dense media separation process has resulted in higher metal concentrations in the recovery rejects as compared to kimberlite ore and the other processed kimberlite materials. In particular, Cr and Mn were significantly higher. The solubility of these metals is expected to be very low under neutral pH conditions.

In general, the results have indicated that waste materials from the Jericho pit have a negligible potential for ARD. The routine acid base accounting tests should be reviewed in one year, and if no additional concerns are identified at that time, consideration should be given to reducing the sampling frequency. Regular

inspections of the pit walls by a geologist or geological engineer should be completed to ensure that small quantities of sulphidic rock such as those identified during the seep survey are identified and managed appropriately.

Although the results indicate kimberlite ore and processed kimberlite are non-acid generating, these materials should still be isolated from tundra sediments by placing them on a granitic rock pad to prevent reductive dissolution of iron silicate minerals.

Yours truly,

SRK Consulting (Canada) Inc.

Original signed by:

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References

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Tables

Table 1: Summary of Samples Collected and Number of Analyses

Year	Rock Type	# of Samples	Number of Anlyses					
			Paste pH	T(S)	NP	Metals (ICP-MS)	U by XRF	Cu by AA
2005	Granite	29	29	29	26	23	12	6
	Diabase	26	26	26	24	25	25	23
	Mixed Granite/Diabase	7	7	7	7	7	2	2
	Mixed Till/Granite	6	6	6	6	6	6	6
2006	Granite	9	9	9	9	2	9	2
	Diabase	2	2	2	2	0	2	0
	Mixed Granite/Diabase	2	2	2	2	1	2	1
	Till	7	7	7	7	3	7	2
	Mixed Till/Granite	6	6	6	6	2	6	2
	Kimberlite Ore	5	5	5	5	2	5	1
	CPK	20	20	20	20	4	6	0
	FPK	20	20	20	20	4	6	0
	Recovery Rejects	18	18	18	18	3	5	0

Notes: S(T) - Total sulphur by Leco Furnace
NP - Neutralization Potential
XRF - X-Ray Flourescence
AA - Atomic Absorption Spectrometry

Table 2: Summary of ABA and Metal Analyses for Waste Rock and Overburden

	Material Type	Statistic	pH	S(T) %	MPA kg $CaCO_3$/tonne	NP kg $CaCO_3$/tonne	NNP kg $CaCO_3$/tonne	NP/MPA	Ag ppm	Al %	As ppm	Ba ppm	Ca %	Co ppm	Cr ppm	Cu ppm	Cu[(1)] %	Fe %	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Se ppm	Sr ppm	U ppm	U[(2)] ppm	Zn ppm
Pre-Mine Characterization	Granite	Average	8.8	<0.01	0.4	5	5	11	<0.2	0.68	<5	36	0.29	5	207	32		1.84	0.20	0.46	236	4	0.06	10	420	9	5	2	10	5.9†		42
		Median	8.8	<0.01	<0.3	3	2	8	<0.2	0.46	<5	30	0.14	3	196	2		1.36	0.13	0.2	195	4	0.05	6	160	6	5	1	6	5.5†		36
		Minimum	8.4	<0.01	<0.3	2	1	5	<0.2	0.15	<5	<10	0.05	1	74	<1		0.36	0.03	0.05	35	<2	0.02	3	30	<2	<5	<1	2	1.4†		1
		Maximum	9.2	0.07	2.2	21	21	10	<0.2	3.05	<5	140	1.23	25	341	352		5.99	0.5	3.42	795	6	0.2	39	4260	46	5	4	48	13.8†		115
		Count	16	29	16	16	16	7	29	29	29	29	29	29	29	29		29	29	29	29	29	29	29	29	29	29	29	29	30		29
Operational Monitoring 2005-2006	Granite	Average	8.5	<0.01	0.4	6	6	15	0.04	7.09	1.6	334	0.67	4.4	47	15.8	<0.01	1.40	3.32	0.40	177	0.98	2.77	8.9	326	18.0	0.15	2	102	5.6	5	17
		Median	8.4	<0.01	<0.3	5	5	16	0.03	7.09	1.4	350	0.52	3.0	23	11.2	<0.01	1.26	3.43	0.32	142	0.80	2.77	7.6	300	16.6	0.13	2	98	4.3	4	16
		Minimum	7.6	<0.01	<0.3	3	3	8	<0.01	5.25	<0.2	110	0.18	1.1	2	2.7	<0.01	0.62	1.30	0.14	60	0.38	1.99	1.4	120	9.2	<0.05	1	47	2.0	<4	4
		Maximum	10.0	0.04	1.3	16	16	51	0.11	8.21	3.7	550	2.33	14.8	172	77.2	0.01	3.40	5.94	0.99	465	2.54	3.47	24.9	1490	42.7	0.43	3	223	12.1	9	35
		Count	38	38	38	35	35	35	25	25	25	25	25	25	25	25	8	25	25	25	25	25	25	25	25	25	25	25	25	25	21	25
	Diabase	Average	8.1	0.02	0.5	13	12	22	0.17	7.19	0.6	150	6.13	44.4	52	335.8	0.03	10.27	0.72	2.88	1468	1.45	1.93	56.4	1186	3.1	0.33	3	284	1.2	<4	104
		Median	8.2	0.02	0.6	12	12	26	0.15	7.26	0.6	155	5.99	43.4	49	320.5	0.03	10.38	0.73	2.80	1468	1.53	1.91	57.7	990	2.8	0.07	3	281	1.0	<4	102
		Minimum	7.4	0.01	0.3	10	10	13	0.12	6.49	<0.2	110	5.06	35.4	24	189.5	0.02	8.05	0.39	2.16	1170	0.97	1.68	35.3	780	1.6	<0.05	2	241	0.4	<4	79
		Maximum	8.7	0.03	0.9	18	17	51	0.28	8.06	1.3	210	7.43	53.2	122	511.0	0.05	11.70	1.62	3.92	1640	2.21	2.20	77.7	2060	7.1	2.44	4	339	6.2	10	123
		Count	28	28	28	26	26	26	24	24	24	24	24	24	24	24	23	24	24	24	24	24	24	24	24	24	24	24	24	24	27	24
	Till	Average	8.5	0.02	0.6	11	11	19	0.06	7.17	7.8	487	1.52	14.2	44	33.0	0.01	3.31	2.56	1.34	422	1.02	1.90	33.9	533	15.8	0.61	2	163	2.5	6	58
		Median	8.2	0.02	0.6	8	8	19	0.05	7.09	5.1	490	1.57	13.8	45	31.0	0.01	3.17	2.62	1.28	415	1.03	1.89	34.3	520	15.4	0.56	2	167	2.6	6	57
		Minimum	8.1	0.01	0.3	4	4	6	0.04	7.01	2.9	460	1.10	11.6	35	23.8	0.01	2.97	2.39	1.16	342	0.80	1.67	26.1	480	8.0	0.42	2	148	2.3	<4	37
		Maximum	9.0	0.03	0.9	27	26	43	0.08	7.40	15.3	510	1.89	17.1	52	44.3	0.01	3.79	2.68	1.59	509	1.24	2.13	41.4	600	23.9	0.85	2	175	2.7	8	80
		Count	7	7	7	7	7	7	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	7	3

Note: Pre-mine characterization values from EIS (Tahera, 2003)

S(T) - Total sulphur by Leco Furnace

MPA - Maximum Potential Acidity, in kg $CaCO_3$ eq/tonne, calculated from total sulphur.

NP - Neutralization Potential in kg $CaCO_3$ eq/tonne.

NNP - Net Neutralization Potential in kg $CaCO_3$ eq/tonne (NP-MPA).

(1) Copper determined by AA Spectrometry

(2) Uranium determined by X-Ray Flourescence

† Pre-mine uranium values from *"2004 Characterization of Uranium in Jericho Waste Rock"* (SRK, 2005). Analysis was by delayed neutron counting (DNC) method.

Table 3: Summary of ABA and Metal Analyses for Kimberlite Ore and Processed Kimberlite

	Material Type	Statistic	pH	S(T) %	MPA kg $CaCO_3$/tonne	NP kg $CaCO_3$/tonne	NNP kg $CaCO_3$/tonne	NP/MPA	Ag ppm	Al %	As ppm	Ba ppm	Ca %	Cd ppm	Co ppm	Cr ppm	Cu ppm	Cu[(1)] %	Fe %	K %	Mg %	Mn ppm	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Se ppm	Sr ppm	U ppm	U[(2)] ppm	Zn ppm
Pre-Mine Characterization	**Kimberlite Ore**	Average	8.8	0.05	0.7*	306	305	385*	<0.2	1.98	2	683	3.72	<0.5	63	815	52		4.30	0.77	13.1	727	<1	0.38	1068	672	5	2.2		307	15.7†		44
		Median	8.9	0.05	0.3*	341	339	259*	<0.2	1.44	1	615	3.69	<0.3	72	928	54		4.37	0.58	>15	753	<1	0.22	1263	620	4	0.2		312	3.0†		46
		Minimum	8.0	0.01	0.3*	29	28	29*	<0.2	0.44	1	270	1.66	<0.3	26	155	22		3.25	0.12	3.13	420	<1	0.03	147	380	<2	<0.2		128	1.4†		29
		Maximum	9.4	0.10	2.5*	456	455	1132*	<0.2	7.21	<5	1500	7.1	<1	95	1490	77		5.40	2.64	>15	950	2	1.49	1670	1390	20	10		728	76.8†		54
		Count	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30		30	30	30	30	30	30	30	30	30	30		30	12		30
	CPK	Average	9.2	0.05	0.2*	220	220	>1000*	<0.2	0.87	9	508	3.02	<1	50	474	33		4.03	0.36	3.7	541	<2	0.05	932	578	17	6		204			37
		Median	9.3	0.05	0.0*	251	250	>1000*	<0.2	0.66	5	555	2.99	<1	56	533	32		4.05	0.36	3.7	585	<2	0.04	1082	525	9	5		210			34
		Minimum	9.0	0.01	0.0*	59	58	62.8*	<0.2	0.58	<5	240	1.29	<1	20	215	22		3.43	0.18	3.7	260	<2	0.03	208	420	2	<5		96			31
		Maximum	9.4	0.10	0.9*	275	275	>1000*	<0.2	1.53	30	700	4.30	<1	59	629	45		4.46	0.65	3.7	655	2	0.09	1147	780	62	10		288			54
		Count	7	7	7	7	7	7	6	6	6	6	6	6	6	6	6		6	6	6	6	6	6	6	6	6	6		6			6
	FPK	Average							0.23	1.93	8	815	4.87	<0.5	75	995	80		5.05	0.70	>15	859	2	0.33	1429	630	13	0.4		346			61
		Median							<0.2	1.55	3	840	4.94	<0.5	78	1088	73		4.85	0.62	>15	893	1	0.22	1558	635	15	0.3		334			61
		Minimum							<0.2	1.09	1	610	3.79	<0.5	46	520	61		4.47	0.23	8.64	690	<1	0.12	630	390	6	0.2		214			54
		Maximum							0.4	4.2	24	1000	5.83	<0.5	93	1400	115		5.73	1.42	>15	1040	3	0.80	1815	860	20	1.0		499			72
									6	6	6	6	6	6	6	6	6		6	6	6	6	6	6.00	6	6	6	6		6			6
Operational Monitoring 2006	**Kimberlite Ore**	Average	8.7	0.03	0.9	355	354	378	0.08	2.31	0.7	525	3.82	0.03	71.3	672	33.3	<0.01	4.54	0.84	16.7	837	0.62	0.43	1178	585	5.9	0.33	2	252	10.6	15	44
		Median	8.7	0.02	0.6	353	352	550	0.08	2.31	0.7	525	3.82	0.03	71.3	672	33.3		4.54	0.84	16.7	837	0.62	0.43	1178	585	5.85	0.33	1.5	252	10.6	11	44
		Minimum	8.5	0.02	0.6	339	338	240	0.05	2.10	0.7	500	3.57	0.02	69.2	631	29.0		4.39	0.65	16.5	728	0.60	0.25	1160	580	5.4	0.16	<1	181	2.9	<4	43
		Maximum	9.0	0.05	1.6	375	373	586	0.10	2.51	0.7	550	4.07	0.03	73.4	713	37.6		4.69	1.03	16.9	946	0.64	0.61	1195	590	6.3	0.49	2	322	18.3	32	45
		Count	5	5	5	5	5	5	2	2	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	5	2
	CPK	Average	8.9	0.04	1.2	326	325	282	0.21	2.36	0.5	655	3.79	0.03	68.1	668	39.5		4.54	0.94	16.4	800	0.51	0.45	1123	703	6.8	0.16	1	272	12.6	16	41
		Median	8.8	0.03	0.9	343	343	345	0.23	2.32	0.5	655	4.06	0.03	68.0	624	39.0		4.57	0.94	16.3	785	0.52	0.46	1118	725	6.8	0.15	1	285	9.4	11	42
		Minimum	8.4	0.01	0.3	85	83	45	<0.01	1.82	<0.2	600	2.61	0.03	65.9	522	33.0		4.29	0.85	15.7	738	0.37	0.20	1010	580	6.2	0.09	1	118	2.9	4	37
		Maximum	9.3	0.08	2.5	385	384	1168	0.35	2.99	0.9	710	4.43	0.04	70.5	900	47.1		4.73	1.03	17.2	891	0.62	0.67	1245	780	7.5	0.24	2	400	28.9	35	44
		Count	20	20	20	20	20	20	4	4	4	4	4	4	4	4	4	0	4	4	4	4	4	4	4	4	4	4	4	4	4	6	4
	FPK	Average	8.6	0.04	1.2	345	344	296	0.27	2.24	0.8	730	4.01	0.04	77.0	661	44.5		5.08	0.85	16.3	928	0.96	0.31	1298	765	8.6	0.25	1	282	13.4	16	47
		Median	8.65	0.04	1.3	347	346	297	0.33	2.16	0.8	750	4.00	0.04	74.7	642	38.1		4.99	0.85	16.4	848	0.95	0.28	1280	730	8.6	0.18	1	272	10.9	11	47
		Minimum	8.2	0.02	0.6	295	294	171	<0.01	1.68	0.3	590	3.43	0.03	69.2	469	31.2		4.47	0.65	15.3	735	0.65	0.18	1110	520	5.8	0.15	1	165	4.1	6	40
		Maximum	9	0.06	1.9	385	383	582	0.43	2.94	1.2	830	4.62	0.04	89.4	889	70.5		5.89	1.05	17.4	1280	1.29	0.49	1520	1080	11.4	0.48	2	421	27.5	32	53
		Count	20	20	20	20	20	20	4	4	4	4	4	4	4	4	4	0	4	4	4	4	4	4	4	4	4	4	4	4	4	6	4
	RR	Average	9.5	0.05	1.5	197	195	133	0.46	2.62	0.5	260	3.46	0.05	92.4	4907	29.7		7.74	0.17	18.9	1342	0.52	0.25	1287	240	2.6	0.37	3	115	2.7	4	49
		Median	9.55	0.02	0.6	202	201	264	0.48	2.69	0.3	300	4.01	0.05	86.9	4630	33.7		7.69	0.14	17.6	1325	0.53	0.33	1120	290	2.7	0.09	3	139	2.4	4	49
		Minimum	9.1	<0.01	<0.3	59	56	17	0.08	2.13	<0.2	90	1.97	0.05	80.8	3980	7.8		7.53	0.08	16.4	1290	0.37	0.10	1010	120	1.9	0.08	2	54	2.3	4	44
		Maximum	9.9	0.17	5.3	428	428	1370	0.83	3.03	0.9	390	4.41	0.06	110	6110	47.5		8.00	0.28	22.6	1410	0.67	0.33	1730	310	3.2	0.93	3	154	3.3	5	53
		Count	18	18	18	18	18	18	3	3	3	3	3	3	3	3	3	0	3	3	3	3	3	3	3	3	3	3	3	3	3	5	3

Note: Pre-mine characterization values from EIS (Tahera, 2003)

S(T) - Total sulphur by Leco Furnace

MPA - Maximum Potential Acidity, in kg $CaCO_3$ eq/tonne, calculated from total sulphur.

NP - Neutralization Potential in kg $CaCO_3$ eq/tonne.

NNP - Net Neutralization Potential in kg $CaCO_3$ eq/tonne (NP-MPA).

CPK - Coarse Processed Kimberlite; FPK - Fine Processed Kimberlite; RR - Recovery Rejects

(1) Copper determined by AA Spectrometry

(2) Uranium determined by X-Ray Flourescence

* MPA values shown here for Pre-Mine characterization are actually Acid Potential (AP) determined from Sulphide Sulphur. The pre-mine NP/MPA values shown are therefore NP/AP.

† Pre-mine uranium values from *"2004 Characterization of Uranium in Jericho Waste Rock"* (SRK, 2005). Analysis was by delayed neutron counting (DNC) method.

Figures

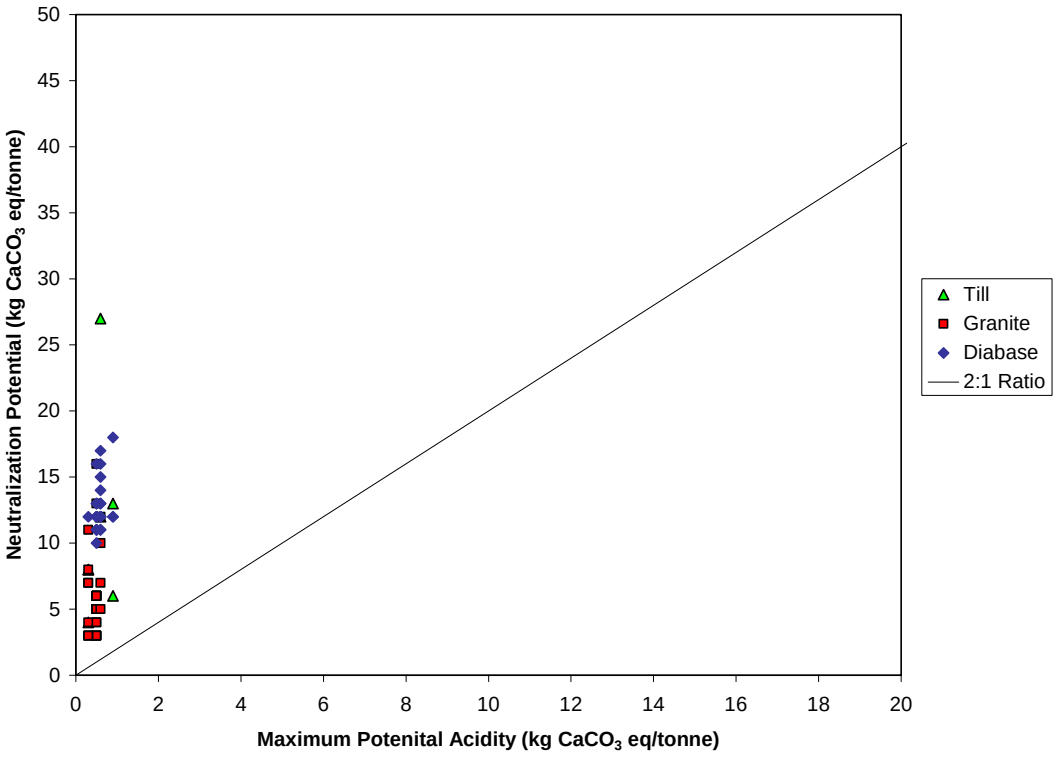


Figure 1: NP vs MPA for Till and Waste Rock Materials

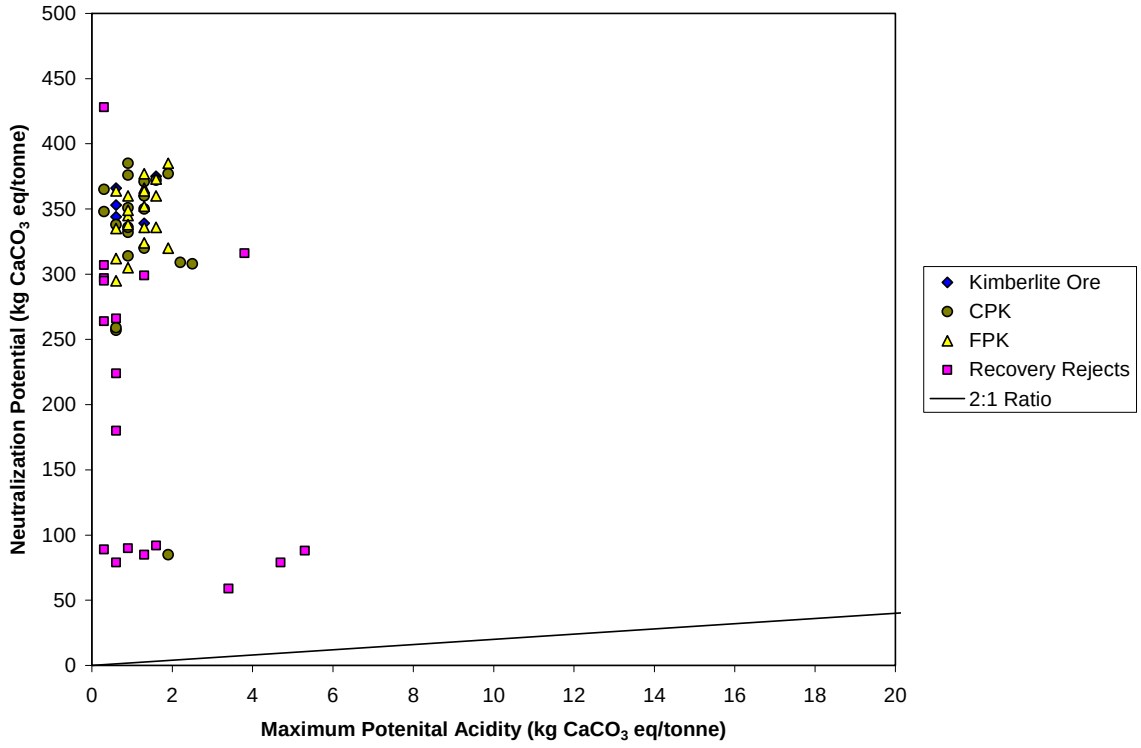


Figure 2: NP vs MPA for Recovery Rejects and Other Kimberlite Materials

Attachments

Attachment A
Analytical Results for Waste Rock and Overburden Samples

Attachment A - Analytical Results for Waste Rock and Overburden Samples

Rock Type	Sample Date	Bench	Pattern	Hole	Sample Matrix	Sampling Method	Fizz Rating	pH	S (T)	MPA	NP	NNP	NP/MPA	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Cu by AA	Fe	Ga	Ge	Hf	In	K
									%	kg $CaCO_3$/t				ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	%
G	25-Jun-05	480	15	H15	DC	G	1	8.5	0.02	0.6	10	9	16.0	0.05	7.53	2.6	430	1.96	0.16	1.01	0.02	46.6	10.3	106	4.18	25.1		2.64	19	0.09	3.1	0.034	2.89
G	25-Jun-05	480	15	G16	DC	G	1	8.6	0.01	0.3	5	5	16.0	<0.01	6.95	0.8	310	1.24	0.04	0.18	0.02	10.45	1.6	106	2.28	3.8		0.8	17.15	0.06	0.5	0.015	4.19
G	25-Jun-05	480	15	F19	DC	G	1	8.1	<0.01	0.3	5	5	16.0	0.02	6.2	1.7	240	0.95	0.04	0.35	0.02	11.75	3	102	1.35	8.2		1.14	15.8	0.06	0.8	0.009	2.6
G	25-Jun-05	480	15	F18	DC	G	1	9	<0.01	0.3	6	6	19.2	0.03	7.4	1.6	230	0.91	0.05	0.25	<0.02	10.6	2.6	138	5.34	11.2		0.99	21.6	0.06	1	0.019	5.94
G	25-Jun-05	480	15	E17	DC	G	1	8.3	<0.01	0.3	5	5	16.0	0.05	5.25	2	140	1.36	0.07	0.52	0.03	28.6	4.4	172	2.4	20.8		1.56	17.25	0.06	2.5	0.022	1.3
G	25-Jun-05	480	15	D17	DC	G	1	8.5	0.01	0.3	6	6	19.2	0.06	6.73	2.6	110	1.51	0.06	0.62	0.03	13.3	2.8	139	2.57	16.5		1.36	19.55	0.05	1	0.024	1.8
G	30-Jun-05	480	20	R31	DC	G	1	7.9	<0.01	0.3	6	6	19.2	0.05	7.01	1.4	410	1.57	0.13	0.99	0.04	25.4	4.6	31	2.99	6.5		1.57	18.75	0.17	1.9	0.019	3.24
G	30-Jun-05	480	20	R28	DC	G	1	7.6	0.01	0.3	5	5	16.0	0.06	6.79	2.7	460	1.54	0.24	0.74	0.05	24.3	4.8	15	3.38	11.8		1.47	17.55	0.16	1.7	0.028	3.69
G	30-Jun-05	480	20	Q29	DC	G	1	8.4	<0.01	0.3	5	5	16.0	0.05	7.46	1.3	380	1.52	0.17	0.8	0.05	21.4	2.4	23	2.61	5.8		1.11	20.1	0.14	1.6	0.024	3.51
G	30-Jun-05	480	20	Q28	DC	G	1	8.3	<0.01	0.3	4	4	12.8	0.11	7.62	2.3	350	1.88	0.25	0.82	0.07	15.15	2.8	7	3.15	11.2		1.12	20.2	0.13	1	0.034	3.19
G	30-Jun-05	480	20	O26	DC	G	1	7.8	0.01	0.3	5	5	16.0	0.06	6.87	3.7	440	1.8	0.39	1.08	0.05	41.1	9.3	49	3.93	16.9		2.06	17.95	0.2	3.4	0.03	2.8
G	4-Jul-05	480	23	E22	DC	G	1	9	<0.01	0.3	13	13	41.6	0.04	8.21	1.2	540	1.84	0.1	0.87	0.04	16.95	1.3	2	2.1	2.7		0.73	21.9	0.14	0.6	0.007	5.05
G	4-Jul-05	480	23	F23	DC	G	1	8.5	<0.01	0.3	6	6	19.2	<0.01	7.24	0.6	550	1.17	0.07	0.41	0.02	65.7	2.8	21	1.52	3.2		1.34	20.3	0.22	4.1	0.021	4.73
G	4-Jul-05	480	23	G22	DC	G	1	8.4	<0.01	0.3	5	5	16.0	<0.01	7.06	2.1	470	1.54	0.1	0.38	0.02	31.9	5.5	8	1.84	17.8		1.18	18.85	0.18	3.4	0.013	3.43
G	4-Jul-05	480	23	I23	DC	G	1	8.2	<0.01	0.3	5	5	16.0	0.02	6.71	1.7	360	1.66	0.17	0.56	0.04	39.7	5.1	33	3.29	9.2		1.56	19.1	0.21	2.7	0.022	3.6
G	4-Jul-05	480	23	J26	DC	G	1	8.1	<0.01	0.3	6	6	19.2	0.03	7.32	3	340	1.72	0.22	0.87	0.04	34.6	7.4	20	3.48	12.5		1.92	18.1	0.19	2.2	0.021	2.88
G	4-Jul-05	480	23	K28	DC	G	1	9.1	<0.01	0.3	5	5	16.0	0.03	6.51	1.2	170	1.03	0.13	0.46	0.03	10.85	1.6	5	2.27	4.8		0.72	17.1	0.15	0.6	0.012	3.74
G	2-Aug-05	472.5	6	I6	DC	G	1	8.2	0.01	0.3	6	6	19.2	0.03	7.75	0.9	470	2.25	0.05	1.4	0.03	34	8.1	11	1.36	20	<0.01	2.58	21.7	0.14	2.6	0.021	1.88
G	12-Aug-05	472.5	9	I14	DC	G	1	8.4	<0.01	0.3	3	3	9.6	<0.01	7.43	0.5	130	1.48	0.04	0.26	<0.02	10.2	1.2	49	2.94	4.4	<0.01	0.66	20.9	0.1	0.6	0.01	2.85
G	12-Aug-05	472.5	9	H21	DC	G	1	8.1	<0.01	0.3	4	4	12.8	0.02	7.55	1.1	540	1.37	0.12	0.32	0.02	19.45	5	7	2.39	25.9	<0.01	1.59	19.85	0.12	1.5	0.01	3.94
G	12-Aug-05	472.5	9	H19	DC	G	1	8.5	<0.01	0.3	3	3	9.6	0.02	7.29	1	260	1.24	0.09	0.27	<0.02	12.45	2	50	3.56	6.3	<0.01	0.81	19.8	0.1	1.7	0.007	3.93
G	12-Aug-05	472.5	9	H16	DC	G	1	8.4	<0.01	0.3	3	3	9.6	0.02	7.07	0.7	250	1.2	0.08	0.25	<0.02	10.05	1.4	3	3.71	4.9	<0.01	0.75	19.3	0.1	0.9	0.013	3.61
G	12-Aug-05	472.5	9	F16	DC	G	1	8.5	<0.01	0.3	3	3	9.6	0.03	7.09	0.4	130	1.07	0.12	0.48	0.02	7.39	1.1	42	3.43	8	<0.01	0.62	18.65	0.09	0.4	0.009	3.77
G	13-Sep-05	472.5	19	E21	DC	G		7.9	0.03	0.9																							
G	13-Sep-05	472.5	19	E17	DC	G		7.7	0.04	1.3																							
G	13-Sep-05	472.5	19	B22	DC	G		8.5	0.04	1.3																							
G	24-Oct-05	472.5	31		DC	C	1	8.6	0.02	0.6	12	11	19.2																				
G	13-Nov-05	465	8		DC	C	1	9	0.01	0.3	16	16	51.2																				
G	20-Nov-05	465	10		DC	C	1	8.4	0.01	0.3	11	11	35.2																				
G	10-Mar-06	457.5	1		DC	C	1	8.4	0.02	0.6	7	6	11.2	0.07	7.29	1.6	390	1.88	0.15	0.5	0.04	32.6	3.7	5	2.17	61.3	0.01	1.26	23.6	0.11	2.3	0.02	3.04
G	23-Jun-06	480	37		DC	C	1	8.3	0.02	0.6	5	4	8.0	0.04	6.9	<0.2	260	1.81	<0.01	2.33	0.05	40	14.8	19	1.12	77.2	0.01	3.4	20.2	0.09	3.3	0.036	1.46
G	13-Jul-06	450	5		DC	C	1	10	0.01	0.3	3	3	9.6																				
G	13-Jul-06	450	5		DC	C	1	9.4	0.01	0.3	3	3	9.6																				
G	18-Jul-06	457.5	8		DC	C	1	9.3	0.01	0.3	3	3	9.6																				
G	2-Sep-06	480	42		DC	C	1	8.8	<0.01	0.3	4	4	12.8																				
G	10-Oct-06	480	6		DC	C	1	8.3	<0.01	0.3	8	8	25.6																				
G	5-Mar-06	465	15		DC	C	1	8.2	0.01	0.3	7	7	22.4																				
G	31-Mar-06	457.2	2		DC	C	1	8.4	0.01	0.3	7	7	22.4																				
D	25-Jun-05	480	15	G23	DC	G	1	8.7	0.01	0.3	16	16	51.2	0.15	7.74	1	110	0.96	0.05	6.8	0.11	35.4	48.4	122	1.36	299		10.75	24.4	0.16	4.8	0.09	0.45
D	22-Jul-05	472.5	3	G19	DC	G	1	8.2	0.01	0.3	11	11	35.2	0.14	7.04	<0.2	110	0.79	0.02	6.49	0.1	29.8	43.7	55	1.22	257	0.02	9.67	21	0.2	4.2	0.085	0.49
D	22-Jul-05	472.5	3	F17	DC	G	1	8	0.01	0.3	12	12	38.4	0.15	7.25	0.2	140	0.89	0.02	6.2	0.12	31	44.7	49	1.55	272	0.03	10.1	22.6	0.19	4.2	0.087	0.79
D	22-Jul-05	472.5	3	E18	DC	G	1	7.9	0.02	0.6	16	15	25.6	0.16	6.98	0.8	150	1.17	0.05	5.71	0.09	48.3	39.7	46	1.46	319	0.03	9.77	23.2	0.2	6.2	0.092	0.81
D	22-Jul-05	472.5	3	C16	DC	G	1	7.7	0.02	0.6	11	10	17.6	0.22	6.49	1	130	1.57	0.07	5.73	0.08	76.9	42.8	28	1.1	422	0.04	11.45	25.8	0.27	9.3	0.126	0.65
D	22-Jul-05	472.5	3	A14	DC	G	1	7.9	0.03	0.9	12	11	12.8	0.19	7.83	1	180	1.41	0.06	6.04	0.1	56.8	41.4	27	1.38	427	0.04	10.4	26	0.23	7.3	0.104	0.75
D	25-Jul-05	472.5	4	G23	DC	G	1	8.2	0.02	0.6	12	11	19.2	0.15	7.62	0.2	170	0.97	0.04	6.16	0.09	36.9	42.3	55	1.74	274	0.03	9.53	22.2	0.19	4.7	0.087	0.96
D	25-Jul-05	472.5	4	F21	DC	G	1	8	0.01	0.3	11	11	35.2	0.13	7.44	1	160	0.9	0.03	6.15	0.1	33.8	42.2	50	1.79	230	0.03	9.26	22	0.18	4.3	0.081	0.79
D	25-Jul-05	472.5	4	E22	DC	G	1	8.1	0.01	0.3	12	12	38.4	0.17	6.92	0.3	160	1.09	0.03	5.9	0.09	39.9	44.7	54	1.74	290	0.03	10.45	21.9	0.22	5.3	0.093	0.78
D	25-Jul-05	472.5	4	B19	DC	G	1	7.9	0.02	0.6	11	10	17.6	0.18	7.34	0.5	160	1.4	0.05	5.96	0.07	59.7	39.3	27	1.2	381	0.04	10.1	25.9	0.23	7.5	0.104	0.73
D	25-Jul-05	472.5	4	A22	DC	G	1	8.1	0.02	0.6	12	11	19.2	0.19	6.98	0.5	160	1.16	0.03	6.01	0.08	45.4	42.9	44	1.4	380	0.04	10.9	23.1	0.22	6	0.101	0.63
D	30-Jul-05	472.5	5	I15	DC	G	1	8.1	0.01	0.3	12	12	38.4	0.13	6.53	0.2	160	0.93	0.03	5.52	0.09	33.4	39.8	60	1.54	231	0.02	8.51	19.95	0.18	4.2	0.077	0.84
D	30-Jul-05	472.5	5	F17	DC	G	1	7.9	0.02	0.6	12	11	19.2	0.26	6.62	0.3	200	1.45	0.04	5.06	0.08	59.7	38.1	24	2.05	425	0.04	10.15	24	0.23	7.2	0.099	0.96
D	30-Jul-05	472.5	5	D13	DC	G	1	7.9	0.02	0.6	13	12	20.8	0.21	6.81	0.5	180	1.43	0.05	5.47	0.07	57.3	40.4	29	1.44	379	0.04	10.85	24.6	0.25	7.4	0.107	0.94
D	30-Jul-05	472.5	5	C12	DC	G	1	8	0.02	0.6	13	12	20.8	0.28	6.73	0.7	180	1.42	0.06	5.7	0.09	61.2	43.4	24	1.51	511	0.05	11.7	25.9	0.25	8.3	0.118	0.77
D	30-Jul-05	472.5	5	A19	DC	G	1	8.1	0.01	0.3	12	12	38.4	0.12	7.63	0.3	210	1.2	0.04	5.38	0.08	36.2	35.4	49	2.33	189.5	0.02	8.05	22.2	0.18	4.2	0.073	1.62

Notes: Rock Type: G - Granite; D - Diabase; T - Till
Sample Matrix: DC - Drill Cuutings; BR - Blast Rock
Sampling Method: G - Grab; C - Composite
S(T) - Total sulphur by Leco Furnace
MPA - Maximum Potential Acidity, in kg CaCO3 eq/tonne, calculated from total sulphur.
NP - Neutralization Potential in kg CaCO3 eq/tonne.
NNP - Net Neutralization Potential in kg CaCO3 eq/tonne (NP-MPA).
All metal results are by ICP-MS analysis unless indicated otherwise.

Attachment A - Analytical Results for Waste Rock and Overburden Samples

Rock Type	Sample Date	Bench	Pattern	La	Li	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	U by XRF	V	W	Y	Zn	Zr
				ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
G	25-Jun-05	480	15	22.3	28.1	0.99	314	1.2	2.35	6.9	24.9	440	10.3	116	<0.002	0.01	0.43	1	1.9	139.5	0.63	<0.05	8.6	0.251	0.48	3.7		59	1.3	15	31	102
G	25-Jun-05	480	15	5	6.6	0.22	60	1.05	2.92	4	4.4	270	12.9	161.5	<0.002	<0.01	0.12	<1	2.6	57.1	0.51	<0.05	4.9	0.032	0.68	3.5		5	0.6	9.3	4	15
G	25-Jun-05	480	15	5.7	11.4	0.32	124	1.22	2.68	4.9	7.8	140	9.2	89.7	<0.002	<0.01	0.13	<1	2	99.9	0.62	<0.05	3.2	0.083	0.37	2.3		15	1	5.6	11	26.2
G	25-Jun-05	480	15	5.3	6.1	0.2	116	1.6	1.99	6.2	8.8	210	24.3	250	<0.002	<0.01	0.18	1	3.8	46.9	0.74	<0.05	5.4	0.056	1.3	2		12	1	7.1	8	28.1
G	25-Jun-05	480	15	13.1	15.8	0.41	274	1.68	2.37	9.7	11.4	190	42.7	61.6	<0.002	<0.01	0.25	1	4.1	56.2	1.23	<0.05	10.5	0.122	0.24	4		27	1.7	14	16	54.1
G	25-Jun-05	480	15	6.3	12.2	0.32	179	1.38	3.43	8	7.6	160	11.8	75.1	<0.002	<0.01	0.17	1	3.8	63.8	0.92	<0.05	4.9	0.106	0.32	4.8		16	1.2	9.8	16	25.9
G	30-Jun-05	480	20	12.6	26.1	0.38	251	1.84	2.67	5.6	9.9	400	16.3	123	<0.002	<0.01	0.09	2	2.1	133	0.68	<0.05	7.8	0.125	0.57	8.9		23	1.2	10.9	33	55.7
G	30-Jun-05	480	20	12	17.7	0.43	205	0.71	2.33	5.6	10.8	300	17.2	138.5	<0.002	0.01	0.14	2	1.9	136.5	0.55	<0.05	6.8	0.131	0.64	4.2		25	1.4	8.8	24	55.1
G	30-Jun-05	480	20	10.8	21.6	0.22	190	1.11	2.97	5.7	4.8	240	21.1	128.5	<0.002	<0.01	0.08	3	2.2	109.5	0.53	<0.05	15	0.075	0.58	12.1		10	1.7	12.6	25	47.6
G	30-Jun-05	480	20	7.8	15.9	0.26	176	0.77	3.11	5.8	5.5	180	20.2	123.5	<0.002	0.01	0.17	3	2.1	108	0.62	<0.05	7.3	0.079	0.57	5.9		12	1.5	8.9	25	28.8
G	30-Jun-05	480	20	19.4	26.9	0.75	293	1.17	2.32	6.1	23	430	15.4	117	<0.002	0.01	0.24	2	2	169	0.66	<0.05	10.9	0.183	0.53	5.1		44	1.8	11.3	34	110.5
G	4-Jul-05	480	23	6.9	6.5	0.14	124	0.45	3.36	5.1	1.4	1490	18.2	167	<0.002	<0.01	<0.05	3	1.8	113.5	0.75	<0.05	5.8	0.04	0.71	12.1		4	0.6	31.8	10	15.9
G	4-Jul-05	480	23	28.1	8.7	0.32	142	0.77	2.43	7.4	4.3	390	21.8	152	<0.002	<0.01	0.05	3	2.3	97.7	0.84	<0.05	23.3	0.125	0.65	12		9	1.2	10	16	136
G	4-Jul-05	480	23	15.4	10.4	0.34	107	0.44	2.9	5.3	6.5	400	26.3	120.5	<0.002	<0.01	0.13	3	1.8	97.8	0.46	<0.05	14.4	0.095	0.51	9.6		15	0.8	12.5	12	102
G	4-Jul-05	480	23	19	19.6	0.48	178	1.03	2.44	6.7	12.2	300	18.2	141	<0.002	<0.01	0.24	2	2.2	93.2	0.74	<0.05	15.2	0.133	0.62	7.8		24	1.4	11.8	23	89.3
G	4-Jul-05	480	23	16.4	20.6	0.64	243	0.53	2.76	6.1	17.9	360	14	117.5	<0.002	<0.01	0.22	2	2.2	142	1.06	<0.05	7.7	0.172	0.52	4.3		39	1	12.3	26	75.2
G	4-Jul-05	480	23	5.2	6.5	0.14	82	0.82	2.56	3.9	3.8	120	23.6	140	<0.002	<0.01	0.07	2	1.7	66.4	0.5	<0.05	4.4	0.045	0.66	3.4		6	1.8	6	9	16.4
G	2-Aug-05	472.5	6	17.6	33.3	0.7	314	2.54	3.14	7	14.4	400	11	57.8	<0.002	0.01	0.32	1	2.8	223	0.85	<0.05	5.5	0.196	0.22	3.5	5	41	2	13.2	28	58.9
G	12-Aug-05	472.5	9	5.2	12.4	0.25	71	0.56	3.47	4.3	2.3	130	12.6	105.5	<0.002	<0.01	0.08	1	1.9	60.6	0.7	<0.05	4.6	0.033	0.44	3	<4	4	0.8	9.5	5	10.5
G	12-Aug-05	472.5	9	9.9	14.4	0.48	127	0.38	2.77	6.9	4.5	420	27.4	133.5	<0.002	<0.01	0.16	1	2	73.2	1.13	<0.05	5.3	0.085	0.52	5.7	7	15	0.5	12.3	9	33.2
G	12-Aug-05	472.5	9	6	9.9	0.25	84	0.41	2.79	4.6	2.9	170	13.2	146	<0.002	<0.01	0.08	1	2.2	64	0.54	<0.05	5.4	0.051	0.62	4.1	5	9	0.5	10.6	7	32.9
G	12-Aug-05	472.5	9	5	10.2	0.26	73	0.49	2.67	5.3	1.8	150	14.3	142	<0.002	<0.01	0.09	1	2.6	52.3	0.74	<0.05	5.3	0.046	0.62	5.8	6	6	1	11.4	6	17
G	12-Aug-05	472.5	9	3.8	6.4	0.15	99	0.7	2.77	3.5	2.5	130	19.5	140	<0.002	0.01	0.08	1	1.8	53.4	0.53	<0.05	3.2	0.04	0.65	2.1	<4	7	0.9	7.6	8	8.1
G	13-Sep-05	472.5	19																								<4					
G	13-Sep-05	472.5	19																								<4					
G	13-Sep-05	472.5	19																								<4					
G	24-Oct-05	472.5	31																								4					
G	13-Nov-05	465	8																								7					
G	20-Nov-05	465	10																								7					
G	10-Mar-06	457.5	1	18.2	15.4	0.38	141	0.75	3.28	6.9	10.4	400	16.6	114	<0.002	0.03	0.18	3	2.6	108	0.73	0.06	9.3	0.089	0.49	6.7	7	12	0.9	17	12	66.1
G	23-Jun-06	480	37	20.8	9.9	0.95	465	0.8	2.89	8.3	17.5	330	12.9	51.8	<0.002	0.01	0.05	2	2.1	176.5	0.73	<0.05	5.6	0.402	0.23	3.4	<4	105	4.6	13.7	35	100
G	13-Jul-06	450	5																								<4					
G	13-Jul-06	450	5																								<4					
G	18-Jul-06	457.5	8																								<4					
G	2-Sep-06	480	42																								9					
G	10-Oct-06	480	6																								4					
G	5-Mar-06	465	15																								6					
G	31-Mar-06	457.2	2																								4					
D	25-Jun-05	480	15	14.3	18.2	3.63	1585	1.24	1.96	12.6	73.7	890	2.5	17	0.002	0.01	0.14	2	1.5	307	0.82	<0.05	1.4	1.505	0.07	0.6		448	0.4	28.2	114	164.5
D	22-Jul-05	472.5	3	12.6	16.8	3.2	1435	1.12	1.75	10.4	66.4	810	2.3	19.1	<0.002	0.01	<0.05	2	1.1	278	0.74	<0.05	1.5	1.3	0.08	0.5	<4	395	0.6	25.4	98	142
D	22-Jul-05	472.5	3	13.2	16.1	2.99	1435	1	1.89	11	63.9	780	3.9	28.5	<0.002	0.01	<0.05	3	1.4	281	0.88	<0.05	1.9	1.495	0.13	1.3	4	438	0.5	24.9	112	140
D	22-Jul-05	472.5	3	20.1	18.6	2.55	1365	1.56	2	15.6	50	1290	2.9	29.9	0.002	0.02	0.06	3	1.8	270	1.13	<0.05	2.6	1.525	0.13	1.3	4	367	0.8	33.2	95	207
D	22-Jul-05	472.5	3	32.1	22.1	2.46	1580	1.84	2.07	23.3	41.9	2060	2.1	24.7	0.002	0.02	0.12	4	2.5	251	1.64	<0.05	3.8	1.85	0.1	1.3	<4	365	0.9	48.2	91	310
D	22-Jul-05	472.5	3	24	22.8	2.42	1490	1.81	2.2	18.4	44.3	1470	3.1	28.6	0.002	0.02	0.12	3	2	339	1.3	<0.05	2.8	1.555	0.12	1.2	<4	309	0.8	38.1	109	248
D	25-Jul-05	472.5	4	15.8	22	3.03	1425	1.62	1.88	10.9	63.2	880	6.5	37.2	0.002	0.01	<0.05	3	1.4	274	0.8	<0.05	2.8	1.26	0.16	1.1	<4	362	0.7	26.4	100	153.5
D	25-Jul-05	472.5	4	14.5	18.3	2.98	1315	1.01	1.77	10	65.6	810	3.2	30.6	<0.002	0.01	<0.05	2	1.2	281	0.75	<0.05	2.4	1.285	0.14	0.8	<4	390	0.5	24.4	94	141
D	25-Jul-05	472.5	4	17.3	19.9	3.03	1485	1.62	1.68	13.2	62.9	980	2.7	32.1	0.002	0.01	<0.05	3	1.4	254	0.97	<0.05	2.6	1.55	0.14	0.9	<4	424	0.6	28.7	103	174
D	25-Jul-05	472.5	4	25	22.1	2.33	1390	1.63	2.14	19.7	40.1	1650	1.8	28.9	0.002	0.02	<0.05	3	2	302	1.38	<0.05	2.7	1.61	0.11	0.9	<4	331	0.4	40.1	94	257
D	25-Jul-05	472.5	4	18.9	21.4	2.8	1545	1.17	1.82	15.7	53	1290	2	24.7	0.002	0.01	<0.05	3	1.7	298	1.09	<0.05	2.1	1.675	0.1	6.2	10	403	0.4	33.1	117	205
D	30-Jul-05	472.5	5	14.5	18.2	2.79	1250	0.97	1.71	10.1	61.7	780	3.5	29.7	<0.002	0.01	<0.05	2	1.3	241	0.74	<0.05	2.6	1.19	0.13	1	<4	352	16.8	23.9	89	141.5
D	30-Jul-05	472.5	5	25.8	34.4	2.16	1440	1.5	2	18.2	35.3	1450	3.8	40.2	0.002	0.01	<0.05	3	2	257	1.36	<0.05	3.7	1.59	0.19	1.6	<4	310	0.6	35.9	98	236
D	30-Jul-05	472.5	5	23.9	24.4	2.49	1570	1.79	2.13	19.3	41.7	1580	3.1	37.9	0.002	0.02	0.07	3	2.1	254	1.39	<0.05	3.1	1.755	0.14	1.1	4	351	1	39.1	95	254
D	30-Jul-05	472.5	5	25.6	27.2	2.53	1640	1.56	2	21.1	40.6	1580	2.8	31.4	0.002	0.02	<0.05	4	2.2	286	1.55	<0.05	3.1	1.905	0.13	1.1	4	372	0.9	42.2	120	267
D	30-Jul-05	472.5	5	15.8	18.7	2.51	1170	2.21	2.1	10.4	55.2	780	6.9	61.1	<0.002	0.01	<0.05	3	1.4	246	0.83	<0.05	3.8	1.12	0.29	2.3	5	325	0.8	24	79	136.5

Attachment A - Analytical Results for Waste Rock and Overburden Samples

Rock Type	Sample Date	Bench	Pattern	Hole	Sample Matrix	Sampling Method	Fizz Rating	pH	S (T) %	MPA kg $CaCO_3$/t	NP kg $CaCO_3$/t	NNP kg $CaCO_3$/t	NP/MPA	Ag ppm	Al %	As ppm	Ba ppm	Be ppm	Bi ppm	Ca %	Cd ppm	Ce ppm	Co ppm	Cr ppm	Cs ppm	Cu ppm	Cu by AA %	Fe %	Ga ppm	Ge ppm	Hf ppm	In ppm	K %
D	2-Aug-05	472.5	6	I12	DC	G	1	8.3	0.01	0.3	11	11	35.2	0.14	7.37	0.6	120	0.89	0.07	7.43	0.1	31.1	53.2	81	1.25	318	0.03	10.85	23.2	0.21	4.4	0.089	0.48
D	2-Aug-05	472.5	6	H11	DC	G	1	8.6	0.01	0.3	10	10	32.0	0.14	8.06	0.8	130	0.91	0.05	7.08	0.12	30.8	45.9	77	1.27	312	0.03	9.83	23.5	0.21	4.3	0.076	0.57
D	12-Aug-05	472.5	9	M19	DC	G	1	8.4	0.01	0.3	13	13	41.6	0.17	7.66	0.8	120	0.85	0.05	7.02	0.11	31.6	52.5	67	1.32	322	0.03	11	24.4	0.22	4.9	0.086	0.51
D	12-Aug-05	472.5	9	M14	DC	G	1	8.4	0.01	0.3	13	13	41.6	0.17	7.75	0.6	110	0.89	0.05	7.18	0.1	32.4	51.7	72	1.23	330	0.03	10.65	24	0.22	4.8	0.088	0.44
D	4-Sep-05	472.5	15	D14	DC	G	1	8.3	0.03	0.9	18	17	19.2	0.14	6.61	1.3	150	2.1	0.08	5.52	0.06	67.5	44	35	1.03	401	0.04	10.55	26	0.18	7.9	0.115	0.64
D	4-Sep-05	472.5	15	C17	DC	G	1	8.3	0.02	0.6	15	14	24.0	0.13	7.26	1.1	170	1.54	0.12	5.73	0.12	51.7	43.3	42	1.27	341	0.03	10.1	24.9	0.21	5.9	0.097	0.72
D	4-Sep-05	472.5	15	C12	DC	G	1	8.2	0.02	0.6	17	16	27.2	0.15	6.53	0.9	140	1.74	0.08	5.9	0.09	59.4	52.4	41	1.28	441	0.04	11.5	25.5	0.2	7.1	0.115	0.52
D	4-Sep-05	472.5	15	A16	DC	G	1	8.5	0.02	0.6	14	14	22.4	0.14	7.43	0.6	110	1.02	0.04	7.03	0.11	32.7	52.4	90	1.41	307	0.03	10.35	23.6	0.16	4.2	0.092	0.39
D	13-Sep-05	472.5	19	K18	DC	G		8.3	0.02	0.6																							
D	13-Sep-05	472.5	19	J16	DC	G		7.4	0.01	0.3																							
D	6-Jul-06	480	37		BR	C	1	8.5	0.03	0.9	12	11	12.8																				
D	6-Oct-06	480	6		DC	C	1	8.2	0.01	0.3	12	12	38.4																				
T	20-Mar-06	480	34		DC	C	1	8.2	0.01	0.3	4	4	12.8																				
T	22-May-06	480	36		DC	C	1	8.2	0.01	0.3	8	8	25.6																				
T	17-Jun-06	472.5	36		DC	C	2	8.8	0.02	0.6	27	26	43.2																				
T	29-Jul-06	472.5	43		DC	C	1	8.8	0.03	0.9	13	12	13.9	0.08	7.09	15.3	510	2.18	0.27	1.89	0.16	57.1	17.1	52	4.78	44.3	0.01	3.79	18.2	0.07	3.6	0.048	2.62
T	7-Aug-06	472.5	43		DC	C	1	9	0.02	0.6	12	11	19.2	0.05	7.01	5.1	490	1.98	0.23	1.57	0.08	54	13.8	45	4.26	31	0.01	3.17	17.45	0.05	3.6	0.039	2.68
T	19-Aug-06	472.5	41		DC	C	1	8.1	0.01	0.3	8	8	25.6	0.04	7.4	2.9	460	1.98	0.14	1.1	0.04	48.1	11.6	35	4.46	23.8		2.97	18.55	0.14	3.4	0.034	2.39
T	23-Sep-06	472.5	57		DC	C	1	8.1	0.03	0.9	6	5	6.4																				
TG	4-Sep-05	472.5	13	Q19	DC	G	1	7.6	0.02	0.6	7	6	11.2	0.04	6.4	1.8	390	1.58	0.04	0.2	0.04	60.1	4.2	36	0.84	35.5	0.01	1.78	16.9	0.09	3.1	0.011	1.7
TG	4-Sep-05	472.5	13	O18	DC	G	2	7.6	0.01	0.3	16	16	51.2	0.03	8.91	0.8	540	2.03	0.03	0.52	0.02	50.8	5.5	36	1.17	9.4	0.01	2.23	19.95	0.1	5	0.013	2.01
TG	4-Sep-05	472.5	13	N19	DC	G	1	7.1	0.06	1.9	7	5	3.7	0.06	8.74	1.3	520	1.18	0.03	0.29	0.08	13.15	2.4	30	3.13	53.7	0.01	0.88	16.75	0.11	0.7	0.01	5.29
TG	4-Sep-05	472.5	13	N18	DC	G	1	7.3	0.01	0.3	7	7	22.4	0.02	8.65	0.8	870	1.22	0.04	0.2	0.02	65.7	3.1	18	1.9	11.5	0.01	1.31	16.15	0.14	4	0.015	4.93
TG	4-Sep-05	472.5	13	L19	DC	G	1	8.4	0.02	0.6	31	30	49.6	0.04	6.28	2.6	520	1.64	0.26	1.1	0.05	71.7	24.1	343	3.28	36	0.01	3.16	15	0.15	3.3	0.034	2.73
TG	4-Sep-05	472.5	13	J17	DC	G	3	8.7	0.04	1.3	282	281	225.6	0.11	2.9	2.1	740	0.84	0.07	3.54	0.04	67.9	59.8	760	2.19	57.4	0.01	4.46	7.23	0.15	1.9	0.024	1.25
TG	2-Sep-06	472.5	54		DC	C	1	8.7	0.01	0.3	8	8	25.6																				
TG	23-Sep-06	460	1		DC	C	1	8.7	0.01	0.3	2	2	6.4	0.04	7.37	3.5	370	1.91	0.1	0.79	<0.02	37.4	7.3	19	2.7	21.7	0.01	2.14	19.2	0.08	3.5	0.026	2.2
TG	23-Sep-06	460	1		DC	C	1	8.7	0.02	0.6	9	8	14.4	0.03	7.14	3.4	360	1.72	0.12	0.95	0.02	35.3	7.6	18	2.83	17.4	<0.01	2.19	18.5	0.07	2.9	0.029	2.21
TG	22-Oct-06	460	8		DC	C	1	8	<0.01	0.3	6	6	19.2																				
TG	10-Nov-06	472.5	64		DC	C	1	8.3	0.01	0.3	4	4	12.8																				
TG	21-Nov-06	472.5	67		DC	C	1	8.5	0.01	0.3	9	9	28.8																				
DG	12-Aug-05	472.5	9	K16	DC	G	1	8.4	0.01	0.3	11	11	35.2	0.14	7.45	0.7	150	0.97	0.08	6.31	0.1	34.8	47.7	63	1.48	276	0.02	9.91	22.9	0.25	4.6	0.086	0.86
DG	28-Jun-05	480	15	I21	DC	G	1	8.3	0.01	0.3	13	13	41.6	0.11	7.31	0.8	150	1.12	0.05	5.62	0.07	33	39.1	106	1.26	206		8.57	21.7	0.13	4.2	0.074	0.76
DG?	28-Jun-05	480	15	K19	DC	G	1	7.9	0.01	0.3	11	11	35.2	0.04	7.11	2.8	500	1.87	0.13	1.92	0.04	67.5	17.3	164	3.75	42.5		3.91	16.8	0.12	4.6	0.045	2.66
DG?	28-Jun-05	480	15	K14	DC	G	1	8.3	0.02	0.6	12	11	19.2	0.05	7.21	3.4	490	1.62	0.18	2.52	0.04	53.1	21.6	157	3.78	43.4		4.53	16.2	0.11	3.6	0.047	2.34
DG?	28-Jun-05	480	15	J15	DC	G	1	8.4	0.02	0.6	10	9	16.0	0.06	7.06	3.9	440	1.66	1.22	1.54	0.04	51.1	15.3	251	4.16	31.5		3.42	16.3	0.1	3.8	0.039	2.59
DG?	28-Jun-05	480	15	J13	DC	G	1	7.4	0.01	0.3	7	7	22.4	0.05	7.47	6.2	500	2.12	0.18	1.15	0.04	58.3	13.1	182	5.44	27.3		3.54	17.55	0.12	4.1	0.044	2.69
DG?	12-Aug-05	472.5	9	L10	DC	G	1	8.7	0.01	0.3	11	11	35.2	0.17	7.84	0.6	130	0.91	0.05	7.26	0.12	32.7	53	79	1.19	335	0.03	10.95	24.5	0.23	4.7	0.087	0.55
DG	10-Nov-06	472.5	65		DC	C	1	8.2	0.01	0.3	12	12	38.4	0.06	7.5	0.3	300	1.36	0.07	3.36	0.05	44	26.5	29	1.64	155	0.01	6.29	22.2	0.15	4.2	0.059	1.54
DG	21-Nov-06	460	21		DC	C	1	8.5	0.01	0.3	14	14	44.8																				

Attachment A - Analytical Results for Waste Rock and Overburden Samples

Rock Type	Sample Date	Bench	Pattern	La	Li	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	U by XRF	V	W	Y	Zn	Zr
				ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
D	2-Aug-05	472.5	6	13	19.8	3.92	1590	1.03	1.8	11.8	77.7	950	2.1	17.6	<0.002	0.02	0.17	2	1.7	296	0.74	<0.05	1.5	1.485	0.07	0.7	<4	470	0.4	27.3	116	135
D	2-Aug-05	472.5	6	13.1	22.2	3.27	1450	1.08	1.9	11.5	60.2	950	3.1	19.7	0.002	0.02	0.15	2	1.7	329	0.74	<0.05	1.7	1.32	0.09	0.6	<4	377	0.4	26	117	129.5
D	12-Aug-05	472.5	9	13.2	17	3.49	1550	1.34	1.81	13	68.1	940	1.9	18.7	0.002	0.01	0.11	3	1.7	317	0.84	<0.05	1.5	1.635	0.07	0.5	<4	468	0.8	27.9	123	142
D	12-Aug-05	472.5	9	13.4	16.6	3.64	1530	1.08	1.83	12.3	71.2	1000	1.6	15.2	0.002	0.01	0.11	2	1.8	320	0.79	<0.05	1.4	1.48	0.06	0.4	<4	427	0.6	28	116	139
D	4-Sep-05	472.5	15	28.6	24.6	2.37	1445	1.86	2.09	24.1	42.4	1660	2.5	29.8	0.002	0.02	1.08	3	2.5	266	1.56	0.05	3.1	1.7	0.1	1.3	4	302	1.3	43.6	89	275
D	4-Sep-05	472.5	15	21.3	24.8	2.42	1440	2.14	1.98	18.4	45.8	1340	7.1	29.7	0.002	0.02	1.94	3	2	302	1.23	0.05	2.5	1.615	0.12	0.8	4	361	1.5	33.9	99	213
D	4-Sep-05	472.5	15	24.6	25.3	2.75	1595	1.64	1.91	22.4	50	1650	1.8	23.5	0.002	0.02	0.89	3	2.3	262	1.42	0.05	2.7	1.92	0.09	1	4	405	16.9	42	108	255
D	4-Sep-05	472.5	15	13	19	3.47	1515	1.02	1.79	12.2	77.5	890	2.2	16.4	0.002	0.01	2.44	3	1.5	307	0.79	0.05	1.3	1.405	0.07	0.4	4	425	1.8	27.4	120	149
D	13-Sep-05	472.5	19																								<4					
D	13-Sep-05	472.5	19																								8					
D	6-Jul-06	480	37																								<4					
D	6-Oct-06	480	6																								<4					
T	20-Mar-06	480	34																								7					
T	22-May-06	480	36																								8					
T	17-Jun-06	472.5	36																								6					
T	29-Jul-06	472.5	43	27.2	36.4	1.59	509	1.24	1.67	9.5	41.4	600	23.9	106.5	0.002	0.02	0.85	2	2.3	174.5	0.8	<0.05	8.7	0.405	0.47	2.3	5	98	2	15.9	80	135
T	7-Aug-06	472.5	43	26.3	36.4	1.28	415	1.03	1.89	8.4	34.3	520	15.4	101	<0.002	0.02	0.56	2	2.2	166.5	1.05	<0.05	9	0.325	0.46	2.6	6	76	5.1	13.3	57	128
T	19-Aug-06	472.5	41	25.4	29.2	1.16	342	0.8	2.13	8.6	26.1	480	8	94.6	<0.002	0.01	0.42	2	2.1	148	0.67	<0.05	8.5	0.275	0.46	2.7	<4	63	1.7	13.5	37	106.5
T	23-Sep-06	472.5	57																								4					
TG	4-Sep-05	472.5	13	31.6	13.7	0.69	159	0.98	2.9	6.3	4.6	270	5.1	60.6	0.002	0.02	4.45	2	2	59.7	0.48	0.05	9.8	0.084	0.26	4	5	11	0.7	12.2	17	99.7
TG	4-Sep-05	472.5	13	24	23.9	1.15	239	0.53	4.74	21.3	7.1	1680	2.7	69.7	0.002	0.01	6.54	2	8	57.2	1.38	0.05	5.2	0.821	0.27	11.7	13	67	1.1	26	26	185
TG	4-Sep-05	472.5	13	6.5	6.8	0.3	169	0.64	3.37	4.5	3	180	23.7	153	0.002	0.08	4.11	2	1.1	118.5	0.62	0.05	5.1	0.043	0.94	3.4	4	11	0.4	4.9	14	23.1
TG	4-Sep-05	472.5	13	30.9	9.4	0.5	121	0.59	3.16	6.6	4.3	410	16.7	127.5	0.002	0.01	2.6	2	2.8	87.2	0.55	0.05	19.4	0.097	0.73	8	8	13	0.3	14.1	12	133
TG	4-Sep-05	472.5	13	39.5	23.6	3.39	565	0.83	1.42	33.6	258	600	11.2	96.4	0.002	0.01	1.47	2	2	135	2.09	0.05	9.6	0.366	0.45	6.5	7	69	1.2	11.1	30	132
TG	4-Sep-05	472.5	13	40.4	12.1	13.4	764	0.73	0.49	53.3	947	730	6.8	58.2	0.002	0.02	2.31	2	0.8	165.5	3.4	0.05	7.4	0.428	0.18	30.5	32	73	0.8	6.9	42	71.5
TG	2-Sep-06	472.5	54																								<4					
TG	23-Sep-06	460	1	21	17	0.75	251	0.68	2.84	6.9	15	310	6	95.4	<0.002	0.01	0.18	1	1.7	116	0.64	<0.05	6.5	0.197	0.39	3	5	37	1.2	10.7	20	115.5
TG	23-Sep-06	460	1	19.4	16.1	0.81	272	0.68	2.71	6.6	17	290	6.3	95.8	<0.002	0.01	0.22	1	1.6	114.5	0.62	<0.05	7.2	0.178	0.41	3	4	36	1.1	10.4	20	95.1
TG	22-Oct-06	460	8																								5					
TG	10-Nov-06	472.5	64																								8					
TG	21-Nov-06	472.5	67																								7					
DG	12-Aug-05	472.5	9	14.7	21.3	3.43	1465	0.93	1.89	11.8	63	990	3	30.7	<0.002	0.01	0.16	2	2	278	0.78	<0.05	2.1	1.33	0.12	0.8	<4	391	0.5	26.6	102	133
DG	28-Jun-05	480	15	13.8	20.5	3.05	1290	1.48	2.1	10.2	62.3	750	3.1	30	<0.002	0.01	0.12	1	1.5	247	0.71	<0.05	2	1.195	0.11	1.2		369	0.7	24	88	141
DG?	28-Jun-05	480	15	31.7	32.5	1.65	554	1.42	1.5	7.9	46.4	450	7.3	95.4	<0.002	0.01	0.53	1	2	144.5	0.69	<0.05	8.4	0.366	0.38	2.4		96	1.3	17.6	44	150.5
DG?	28-Jun-05	480	15	25.4	29.4	2.03	657	1.43	1.55	7.3	61.9	490	7.8	89.9	<0.002	0.01	0.57	1	1.9	159.5	0.58	<0.05	7.4	0.37	0.35	1.9		118	1.8	15.1	53	124
DG?	28-Jun-05	480	15	24.5	35.7	1.81	458	1.08	1.71	7.3	68.8	530	10	91.7	<0.002	0.02	0.47	1	1.8	158	0.61	<0.05	7.2	0.304	0.4	3.1		78	1.4	13.1	45	124
DG?	28-Jun-05	480	15	28.6	36.1	1.35	414	1.24	1.59	8.4	34	510	7.8	117	<0.002	0.01	0.68	1	2.3	149	0.73	<0.05	9.1	0.344	0.46	2.1		82	1.7	14.8	43	138.5
DG?	12-Aug-05	472.5	9	13.6	17.5	3.71	1615	1.03	1.85	12.2	70.9	940	2.4	19.1	<0.002	0.01	0.11	3	1.8	319	0.79	<0.05	1.6	1.48	0.08	0.5	<4	438	0.7	28	132	139.5
DG	10-Nov-06	472.5	65	20.5	18	1.86	843	1.03	2.68	11	34.1	680	5.8	58.5	<0.002	0.01	0.13	1	2	186.5	0.81	<0.05	4.9	0.835	0.21	1.7	4	191	0.9	20.9	58	139.5
DG	21-Nov-06	460	21																								5					

Attachment B
Analytical Results for Kimberlite Samples

Attachment B - Analytical Results for Kimberlite Samples

Sample Location/Type	Sample Date	Bench	Pattern	Hole	Sample Matrix	Sampling Method	Fizz Rating	pH	S(T)	MPA	NP	NNP	NP/MPA	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Cu by AA	Fe	Ga	Ge	Hf	In	K
									%	kg $CaCO_3$/tonne				ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	%
Jericho Pit	7-Apr-06	457.5	1		DC	C	3	8.7	0.02	0.6	353	352	564.8	0.05	2.51	0.7	500	0.74	0.05	4.07	0.02	47.9	73.4	713	2.11	29		4.69	6.71	0.17	0.9	0.015	0.65
Jericho Pit	22-Apr-06	457.5	4		DC	C	3	8.5	0.02	0.6	344	343	550.4	0.1	2.1	0.7	550	0.67	0.04	3.57	0.03	50.8	69.2	631	1.69	37.6	<0.01	4.39	5.15	0.13	1	0.015	1.03
Jericho Pit	24-May-06	457.5	8		BR	C	3	8.5	0.02	0.6	366	365	585.6																				
Jericho Pit	29-Jul-06	450	7		DC	C	3	9	0.05	1.6	375	373	240																				
Jericho Pit	29-Jul-06	450	6		DC	C	3	8.7	0.04	1.3	339	338	271.2																				
CPK	23-May-06	-	-	-	PK	G	3	8.4	0.03	0.9	376	375	401.1																				
CPK	21-Feb-06	-	-	-	PK	G	3	8.7	0.02	0.6	257	256	411.2	0.21	2.41	0.9	610	0.84	0.06	2.61	0.03	66.5	70.5	900	2.56	47.1		4.73	6.6	0.16	1.1	0.014	0.87
CPK	3-Mar-06	-	-	-	PK	G	3	8.8	0.04	1.3	320	319	256																				
CPK	14-Mar-06	-	-	-	PK	G	3	8.7	0.01	0.3	365	365	1168																				
CPK	28-Mar-06	-	-	-	PK	G	3	8.7	0.03	0.9	385	384	410.7																				
CPK	11-Apr-06	-	-	-	PK	G	3	8.7	0.02	0.6	259	258	414.4																				
CPK	25-Apr-06	-	-	-	PK	G	3	9.1	0.02	0.6	338	337	540.8	<0.01	2.99	0.5	700	0.74	0.03	4.43	0.03	58.9	66.2	611	2.36	33		4.68	6.55	0.14	1.3	0.01	1.03
CPK	9-May-06	-	-	-	PK	G	3	8.7	0.04	1.3	360	359	288																				
CPK	6-Jun-06	-	-	-	PK	G	3	8.8	0.01	0.3	348	348	1113.5																				
CPK	20-Jun-06	-	-	-	PK	G	3	8.9	0.03	0.9	351	350	374.4																				
CPK	4-Jul-06	-	-	-	PK	G	3	9	0.04	1.3	371	370	296.8	0.25	1.82	0.4	600	0.54	0.08	3.84	0.03	52.8	69.7	637	1.75	35.3		4.29	5.13	0.18	0.8	0.016	1
CPK	18-Jul-06	-	-	-	PK	G	3	8.8	0.03	0.9	314	313	334.9																				
CPK	14-Aug-06	-	-	-	PK	G	3	9	0.03	0.9	332	331	354.1																				
CPK	28-Aug-06	-	-	-	PK	G	3	9.2	0.03	0.9	336	335	358.4																				
CPK	12-Sep-06	-	-	-	PK	G	3	9.2	0.07	2.2	309	307	141.25																				
CPK	26-Sep-06	-	-	-	PK	G	3	8.5	0.06	1.9	377	375	201.1	0.35	2.22	<0.2	710	0.67	0.04	4.28	0.04	67.4	65.9	522	1.97	42.7		4.45	6.93	0.16	1.5	0.021	0.85
CPK	10-Oct-06	-	-	-	PK	G	3	9.2	0.04	1.3	350	349	280																				
CPK	24-Oct-06	-	-	-	PK	G	3	9.2	0.08	2.5	308	306	123.2																				
CPK	8-Nov-06	-	-	-	PK	G	2	9.3	0.06	1.9	85	83	45.33																				
CPK	21-Nov-06	-	-	-	PK	G	3	8.7	0.05	1.6	372	370	238.1																				
FPK	23-May-06	-	-	-	PK	G	3	8.2	0.04	1.3	366	365	292.8																				
FPK	21-Feb-06	-	-	-	PK	G	3	8.2	0.03	0.9	305	304	325.3	0.42	1.79	1.2	830	0.97	0.12	3.43	0.04	111.5	89.4	889	2.9	70.5		5.89	5.94	0.21	1.4	0.019	0.65
FPK	2-Mar-06	-	-	-	PK	G	3	8.2	0.02	0.6	295	294	472																				
FPK	13-Mar-06	-	-	-	PK	G	3	8.5	0.03	0.9	345	344	368																				
FPK	28-Mar-06	-	-	-	PK	G	3	8.8	0.02	0.6	364	363	582.4																				
FPK	11-Apr-06	-	-	-	PK	G	3	8.3	0.02	0.6	312	311	499.2																				
FPK	25-Apr-06	-	-	-	PK	G	3	8.8	0.05	1.6	336	334	215	<0.01	2.94	0.8	720	0.79	0.05	3.89	0.04	60.2	73.2	649	3.04	37.5		5.08	7.31	0.17	1.6	0.016	1.05
FPK	9-May-06	-	-	-	PK	G	3	8.7	0.06	1.9	385	383	205.3																				
FPK	6-Jun-06	-	-	-	PK	G	3	8.9	0.05	1.6	360	358	230.4																				
FPK	20-Jun-06	-	-	-	PK	G	3	8.5	0.02	0.6	335	334	536																				
FPK	4-Jul-06	-	-	-	PK	G	3	8.9	0.04	1.3	377	376	301.6	0.23	1.68	0.8	590	0.54	0.04	4.11	0.03	46.8	76.1	635	1.66	31.2		4.47	5.1	0.21	0.8	0.013	0.86
FPK	18-Jul-06	-	-	-	PK	G	3	8.6	0.03	0.9	349	348	372.3																				
FPK	14-Aug-06	-	-	-	PK	G	3	8.9	0.03	0.9	360	359	384																				
FPK	28-Aug-06	-	-	-	PK	G	3	9	0.03	0.9	338	337	360.5																				
FPK	12-Sep-06	-	-	-	PK	G	3	8.7	0.06	1.9	320	318	170.65																				
FPK	26-Sep-06	-	-	-	PK	G	3	8.4	0.04	1.3	364	363	291.2	0.43	2.53	0.3	780	0.72	0.06	4.62	0.03	68	69.2	469	2.15	38.7		4.89	8.73	0.15	1.8	0.024	0.83
FPK	10-Oct-06	-	-	-	PK	G	3	9	0.04	1.3	336	335	268.8																				
FPK	24-Oct-06	-	-	-	PK	G	3	9	0.04	1.3	324	323	259.2																				
FPK	8-Nov-06	-	-	-	PK	G	3	8.5	0.04	1.3	352	351	281.6																				
FPK	21-Nov-06	-	-	-	PK	G	3	8.4	0.05	1.6	373	371	238.7																				

Notes: CPK - Coarse Processed Kimberlite; FPK - Fine Processed Kimberlite; RR - Recovery Rejects
Sample Matrix: DC - Drill Cuutings; BR - Blast Rock; PK - Processed Kimberlite
Sampling Method: G - Grab; C - Composite
S(T) - Total sulphur by Leco Furnace
MPA - Maximum Potential Acidity, in kg CaCO3 eq/tonne, calculated from total sulphur.
NP - Neutralization Potential in kg CaCO3 eq/tonne.
NNP - Net Neutralization Potential in kg CaCO3 eq/tonne (NP-MPA).
All metal results are by ICP-MS analysis unless indicated otherwise.

Attachment B - Analytical Results for Kimberlite Samples

Sample Location/Type	Sample Date	Bench	Pattern	La	Li	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	U by XRF	V	W	Y	Zn	Zr
				ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
Jericho Pit	7-Apr-06	457.5	1	30.7	17.5	16.5	946	0.64	0.61	42.4	1195	580	5.4	34.9	<0.002	0.01	0.16	<1	0.8	181	2.9	<0.05	5.7	0.393	0.12	18.3	21	62	0.6	5.1	45	34.9
Jericho Pit	22-Apr-06	457.5	4	31.2	9.6	16.9	728	0.6	0.25	39.9	1160	590	6.3	60.4	<0.002	0.03	0.49	2	0.6	322	2.87	0.05	6.1	0.35	0.15	2.9	<4	61	0.5	4.7	43	31.7
Jericho Pit	24-May-06	457.5	8																								7					
Jericho Pit	29-Jul-06	450	7																								11					
Jericho Pit	29-Jul-06	450	6																								32					
CPK	23-May-06	-	-																													
CPK	21-Feb-06	-	-	41.9	18.6	16.15	891	0.37	0.6	64	1245	780	7.5	47.7	<0.002	0.01	0.24	1	0.8	118	4.32	<0.05	7.3	0.473	0.15	28.9	35	66	0.4	5.8	43	41.1
CPK	3-Mar-06	-	-																													
CPK	14-Mar-06	-	-																													
CPK	28-Mar-06	-	-																													
CPK	11-Apr-06	-	-																													
CPK	25-Apr-06	-	-	38.3	15.4	16.45	827	0.46	0.67	42.2	1075	690	6.8	55.2	<0.002	0.02	0.09	2	0.8	272	3.07	<0.05	6.9	0.38	0.14	11.1	6	63	0.4	5.8	44	45.5
CPK	9-May-06	-	-																													
CPK	6-Jun-06	-	-																								29					
CPK	20-Jun-06	-	-																								13					
CPK	4-Jul-06	-	-	32.4	8.9	17.15	738	0.57	0.2	43.5	1160	580	6.2	63.7	<0.002	0.03	0.16	1	0.6	297	2.61	<0.05	5.9	0.307	0.15	2.9	4	53	0.5	4	37	26.6
CPK	18-Jul-06	-	-																													
CPK	14-Aug-06	-	-																													
CPK	28-Aug-06	-	-																													
CPK	12-Sep-06	-	-																													
CPK	26-Sep-06	-	-	40.3	18.2	15.65	743	0.62	0.31	54.2	1010	760	6.8	47.5	<0.002	0.04	0.14	1	1	400	2.91	<0.05	6.7	0.387	0.15	7.6	8	62	0.5	5.6	41	51.6
CPK	10-Oct-06	-	-																													
CPK	24-Oct-06	-	-																													
CPK	8-Nov-06	-	-																													
CPK	21-Nov-06	-	-																													
FPK	23-May-06	-	-																													
FPK	21-Feb-06	-	-	68.5	22.6	16.95	1280	0.65	0.21	83	1520	1080	11.4	44.8	<0.002	0.03	0.48	1	0.9	165	4.96	<0.05	10.6	0.485	0.12	27.5	32	76	1.4	8.4	53	72.7
FPK	2-Mar-06	-	-																													
FPK	13-Mar-06	-	-																													
FPK	28-Mar-06	-	-																													
FPK	11-Apr-06	-	-																													
FPK	25-Apr-06	-	-	37.5	20.5	15.75	887	0.65	0.49	38.6	1210	680	7.8	57.3	<0.002	0.03	0.15	1	1	242	2.98	<0.05	7.2	0.406	0.17	10.8	6	68	2.1	7.5	51	55.7
FPK	9-May-06	-	-																													
FPK	6-Jun-06	-	-																								9					
FPK	20-Jun-06	-	-																								29					
FPK	4-Jul-06	-	-	28.9	10	17.35	735	1.29	0.18	42	1350	520	5.8	54.3	<0.002	0.04	0.15	1	0.7	301	2.84	<0.05	5.1	0.351	0.14	4.1	6	53	1.3	4.1	40	27.6
FPK	18-Jul-06	-	-																													
FPK	14-Aug-06	-	-																													
FPK	28-Aug-06	-	-																													
FPK	12-Sep-06	-	-																													
FPK	26-Sep-06	-	-	39.8	24.2	15.3	808	1.24	0.34	43.1	1110	780	9.4	42.6	<0.002	0.05	0.21	2	1.2	421	2.49	0.05	7	0.358	0.16	11	12	61	4.1	7.2	43	66.5
FPK	10-Oct-06	-	-																													
FPK	24-Oct-06	-	-																													
FPK	8-Nov-06	-	-																													
FPK	21-Nov-06	-	-																													

Sample Location/Type	Sample Date	Bench	Pattern	Hole	Sample Matrix	Sampling Method	Fizz Rating	pH	S(T)	MPA	NP	NNP	NP/MPA	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cs	Cu	Cu by AA	Fe	Ga	Ge	Hf	In	K
									%	kg $CaCO_3$/tonne				ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm	ppm	%
RR	23-May-06	-	-	-	PK	G	2	9.3	0.15	4.7	79	74	16.85																				
RR	21-Feb-06	-	-	-	PK	G	3	9.4	0.02	0.6	224	223	358.4	0.48	2.69	0.3	390	0.24	0.02	4.41	0.05	41	86.9	6110	0.47	33.7		7.69	5.45	0.16	1.2	0.028	0.14
RR	3-Mar-06	-	-	-	PK	G	3	9.5	0.02	0.6	180	179	288																				
RR	13-Mar-06	-	-	-	PK	G	3	9.4	0.12	3.8	316	312	84.27																				
RR	28-Mar-06	-	-	-	PK	G	3	9.5	0.01	0.3	428	428	1369.5																				
RR	11-Apr-06	-	-	-	PK	G	2	9.4	0.02	0.6	79	78	126.4																				
RR	25-Apr-06	-	-	-	PK	G	2	9.9	<0.01	<0.3	89	89	296.7	0.08	2.13	0.9	90	0.08	0.01	1.97	0.06	12.15	109.5	3980	0.21	7.8		8	3.48	0.19	1	0.02	0.08
RR	9-May-06	-	-	-	PK	G	2	9.7	0.04	1.3	85	84	68																				
RR	6-Jun-06	-	-	-	PK	G	3	9.6	<0.01	<0.3	264	264	880.0																				
RR	20-Jun-06	-	-	-	PK	G	3	9.6	0.01	0.3	297	297	950.4																				
RR	18-Jul-06	-	-	-	PK	G	2	9.7	0.17	5.3	88	83	16.56																				
RR	14-Aug-06	-	-	-	PK	G	3	9.8	<0.01	<0.3	295	295	983.3																				
RR	28-Aug-06	-	-	-	PK	G	3	9.8	0.01	0.3	307	307	982.4																				
RR	12-Sep-06	-	-	-	PK	G	2	9.5	0.03	0.9	90	89	96																				
RR	26-Sep-06	-	-	-	PK	G	3	9.1	0.02	0.6	266	265	425.6	0.83	3.03	<0.2	300	0.3	0.03	4.01	0.05	24.4	80.8	4630	0.75	47.5		7.53	7.04	0.16	1.6	0.034	0.28
RR	10-Oct-06	-	-	-	PK	G	3	9.6	0.04	1.3	299	298	239.2																				
RR	24-Oct-06	-	-	-	PK	G	2	9.6	0.11	3.4	59	56	17.16																				
RR	21-Nov-06	-	-	-	PK	G	2	9.2	0.05	1.6	92	90	58.88																				

Attachment B - Analytical Results for Kimberlite Samples

Sample Location/Type	Sample Date	Bench	Pattern	La	Li	Mg	Mn	Mo	Na	Nb	Ni	P	Pb	Rb	Re	S	Sb	Se	Sn	Sr	Ta	Te	Th	Ti	Tl	U	U by XRF	V	W	Y	Zn	Zr
				ppm	ppm	%	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm
RR	23-May-06	-	-																													
RR	21-Feb-06	-	-	27.8	3.8	17.55	1410	0.37	0.33	156.5	1120	290	1.9	9.3	<0.002	0.02	0.93	3	0.8	138.5	19.45	<0.05	6	3.5	<0.02	3.3	5	313	0.2	5.7	49	35.8
RR	3-Mar-06	-	-																													
RR	13-Mar-06	-	-																													
RR	28-Mar-06	-	-																													
RR	11-Apr-06	-	-																													
RR	25-Apr-06	-	-	7	2.6	22.6	1290	0.67	0.1	109.5	1730	120	3.2	4.7	<0.002	0.01	0.08	2	0.8	53.8	17	<0.05	2.1	2.78	<0.02	2.3	4	215	0.3	4.1	53	28.6
RR	9-May-06	-	-																													
RR	6-Jun-06	-	-																								<4					
RR	20-Jun-06	-	-																								<4					
RR	18-Jul-06	-	-																													
RR	14-Aug-06	-	-																													
RR	28-Aug-06	-	-																													
RR	12-Sep-06	-	-																													
RR	26-Sep-06	-	-	14.1	7.6	16.4	1325	0.53	0.33	157.5	1010	310	2.7	18	<0.002	0.03	0.09	3	1.2	154	16.95	0.05	2.1	3.18	0.21	2.4	4	284	0.4	7.1	44	45.2
RR	10-Oct-06	-	-																													
RR	24-Oct-06	-	-																													
RR	21-Nov-06	-	-																													

Site Seepage Survey

TAHERA
DIAMOND CORPORATION

October 5, 2006

Chief Administrative Officer
Nunavut Water Board
P.O. Box 119
Gjoa Haven, Nunavut
X0B 1J0
Delivered by Email: licensing@nunavutwaterboard.org; dirts@nunavutwaterboard.org

RE: Annual Seepage Report - Part L, Item 9 and Schedule L, Item 3 - Water License NWB1JER0410

Please find attached Tahera Diamond Corporation's Annual Seepage Report prepared by SRK Consulting. This submission satisfies conditions set forth in Part L, 9 and Schedule L, Item 3 of water licence NWB1JER0410.

Should you have any questions regarding the seepage report, please contact the on-site Environmental Staff.

Sincerely,

Cheryl Wray
Environmental Supervisor
Jericho Mine Site

Harold Gates
Operations Manager
Jericho Mine Site

Jericho Diamond Mine
2006 Waste Rock Seepage Monitoring Report





Prepared for:

Tahera Diamond Corporation
Suite 803 – 121 Richmond Street West
Toronto, Ontario
M5H 2K1

Prepared by:

SRK Consulting
Engineers and Scientists

Project Reference Number
SRK 1CT004.010

October 2006

Jericho Diamond Mine
2006 Waste Rock Seepage Monitoring Report

Report prepared for

Tahera Corporation

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Report prepared by

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SRK Project Number 1CT004.010

October 2006

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Appendix A: 2006 Waste Rock Seepage Monitoring Results

1 Introduction

The Jericho Diamond Mine commenced mining operations in early 2006. Environmental monitoring requirements for the Jericho Diamond Mine are set out in Water Licence NWB1JER0410 Type "A", issued to Tahera Diamond Corporation on December 22, 2004 by the Nunavut Water Board (NWB).

To fulfill the condition set out in Part L, Item 9 of Water Licence NWB1JER0410, a waste rock storage area seepage survey was carried out on July 25 and July 29, 2006. This document provides a summary and results of the 2006 waste rock storage area seepage survey.

Seepage from the waste rock dumps is collected and pumped to the PKCA, where it is allowed to mix with other inflows from the mine prior to discharge. The discharges from the PKCA must meet the effluent discharge criteria outlined in the Water Licence. The seepage surveys are not intended to determine regulatory compliance, rather, they are used to monitor changes in the chemistry of seeps that are in close proximity to the waste rock, ore storage, and coarse processed kimberlite stockpiles. The seepage data are used to improve long-term estimates of water quality from the facility for use in ongoing water management and closure planning, and are an important input to the adaptive management plans. By monitoring close to the source, the operator can anticipate potential changes to the PKCA water quality and implement additional management measures as required to ensure that the PKCA discharges meet the effluent discharge criteria.

2 Scope

SRK Consulting (Canada) Inc. was contracted by Tahera to assist with the design and reporting of the 2006 waste rock storage area seepage survey. SRK's responsibilities consisted of:

- a site visit to identify and map potential waste rock seepage locations;
- selection of sites for establishment of seepage monitoring stations;
- providing guidance on sampling methods;
- interpretation of monitoring results; and
- preparation of the 2006 waste rock seepage monitoring report.

Sampling of recommended seepage stations and submission of samples to the analytical laboratory was carried out by Tahera's environmental staff.

In preparing this report, SRK also reviewed the routine monitoring data for the Pit Sump and the East Sump, which represent seepage from the waste rock dumps and coarse processed kimberlite (PK) stockpile.

3 Sampling Methods

Kelly Sexsmith of SRK and George Aitok of Tahera inspected the site on July 19 and 20, 2006 to identify and map potential stations for waste rock seepage monitoring. Stations were identified by walking the toes of all waste rock dumps where waste rock rests on original ground and looking for any flowing seeps that emerged from the waste rock or ponded water that could have been associated with the waste rock. In general, flowing seeps are preferred for seep surveys because the source of the water is more clearly defined and if necessary a chemical load can be calculated. Stagnant pools may also be subject to evaporation which may affect water chemistry. The toe of the waste rock pad housing the temporary crushed ore stockpile was also inspected for potential seep sampling locations.

Sites selected for follow-up sampling were either actively flowing, or were inferred to have been recently flowing based on observations of moisture along flow paths or of ponded water surfaces at or near the spill elevation. Sites where surface runoff appeared to be the only source of water were eliminated from further consideration. A total of three priority sites were selected by SRK and Tahera for sampling. Of these, only two were still flowing when the actual sampling was completed 5 and 10 days after the initial site visit. The third site (Seep-09) could not be sampled because it was flowing through a boulder field and the water was inaccessible from surface.

Samples were collected for analyses of routine parameters, nutrients, and dissolved metals (dissolved metals by ICP-OES), as shown in Table 1. The samples were collected at each sample station and then were shipped to the analytical laboratory for filtration, preservation, and analysis. Total metals samples were not collected at waste rock seepage stations due to the potential for entrainment of bottom sediments in these small flows during sampling.

Field pH, conductivity, oxidation-reduction potential, dissolved oxygen, and temperature measurements were taken at each station using a YSI 556 MPS meter. Flow volumes were estimated visually, as flows were very low and there were no opportunities for quantitative measurements.

The sampling locations were marked for later reference with flagging tape and were surveyed using a hand-held GPS. Sample locations are shown in Figure 1. Photographs were taken to document the general appearance of the station, and any precipitates along the flow paths.

Table 1: Water Quality Parameters

Test Group	Analytical Parameters	Measurement Units
Routine - R	Alkalinity, acidity, hydroxide, carbonate, bicarbonate	mg $CaCO_3$/L
	Chloride, fluoride, sulphate, total hardness Total suspended solids (TSS), Total dissolved solids (TDS), Total organic carbon (TOC), Total inorganic (TIC)	mg/L
	pH (field and lab)	pH units
	ORP (field)	mV
	Conductivity (field and lab)	uS/cm
	Temperature (field)	$^{\circ}C$
	Turbidity	NTU
	Dissolved Oxygen (field)	mg/L
ICP-D (ICP Dissolved Metals Scan)	Ca, Mg, Na, K, Ag, Al, As, Ba, B, Be, Cd, Cr, Co, Cu, Fe, Hg, Li, Mn, Mo, Ni, P, Pb, Sb, Se, Si, Sn, Sr, Ti, Tl, U, V, Zn	mg/L
Nutrients – N	Ammonia-N, Nitrate-N,	mg N/L
	Nitrite-N	
	Orthophosphate-P	mg P/L

4 Monitoring Results and Discussion

4.1 July 2006 Waste Rock Seepage Survey

4.1.1 Results

Two waste rock seepage monitoring stations were identified and sampled at the locations shown in Figure 1. Seep-05 represents a flowing seep located in the middle of the waste rock pile, while Seep -13 was located in the area downgradient of the ore storage and crusher pad area. No seeps were found in the vicinity of the coarse processed kimberlite stockpile. A summary of key results is shown in Table 2, and complete field and laboratory results are included in Appendix A.

4.1.2 Discussion

Water quality from various site components was estimated as part of the Environmental Impact Assessment (SRK 2003). Data from the seep survey were compared to the original predictions to assess the validity of the original predictions and to determine whether any modifications to the current waste management plan are required to ensure that concentrations in the PKCA discharge will be able to meet the effluent quality criteria specified in the water licence. Comparisons to the PKCA discharge criteria are also provided to demonstrate that waste rock seepage inputs will not compromise Tahera's ability to achieve acceptable discharge water quality from the PKCA.

The comparisons of the results from the 2006 waste rock seepage survey to the original water quality estimates and discharge criteria are provided in Table 2.

In general, waste rock seepage quality was consistent with expectations. pHs were in the neutral pH range (>6), and sulphate concentrations were very low (<41 mg/L). Ammonia concentrations approached the predicted concentrations at one station (Seep-05), but were well below the allowable criteria for discharges from the PKCA. Nitrate and nitrite concentrations also exceeded the original predictions. Concentrations of these parameters are expected to decrease due to biochemical reactions and uptake by plants or microbial activity occurring within the mine water management system.

Metal concentrations were generally less than the predicted concentrations. The exception was chromium, which exceeded the predicted concentration by a factor of two at both stations. However, chromium concentrations in both seeps were still an order of magnitude below the allowable chromium concentration for discharges from the PKCA.

Seep-13 was located upgradient of Lake C1 and was not contained within the current water collection system. However, flow volume at Seep-13 was very low- the seep was observed to be barely trickling over the spill point.

4.2 Results from Related Routine Monitoring Stations

4.2.1 Results

Two of the routine monitoring stations provide additional insight into the seepage chemistry of the waste rock and coarse processed kimberlite (coarse PK):

- Routine monitoring station JER-SW2 monitors water quality at the pit sump, which currently collects all of the seepage from the waste rock dumps.
- Routine monitoring station JER-SW8 monitors water quality at the East Sump, which receives drainage from the coarse PK stockpile. The East Sump also acts as an intermediate repository and settling pond for pit sump waters.

Results for these two stations are provided in Table 3.

4.2.2 Discussion

JER-SW2 (Pit Sump)

Monitoring results for samples collected in June and July 2006 indicate that, in comparison to the original predictions, ammonia-N and nitrate-N concentrations are higher than expected. Copper, nickel, uranium and zinc were also elevated compared to the original predictions, possibly due to a relatively greater amount of contact with kimberlite in this early stage of pit development. Although the concentrations were higher than expected, all parameters except ammonia were less than the PKCA discharge criteria.

Pit sump water is pumped to the East Sump and does not report directly to the receiving environment. East Sump discharge reports directly to the PKCA. Mixing and degradation of ammonia in the East Sump and the PKCA is expected to reduce the ammonia contributed by the pit sump. The elevated ammonia concentrations indicate that blasting practices need to be monitored closely. However, it is common in the early stages of any pit development to have initially higher concentrations due to generally wetter conditions in the upper portions of the pit.

JER-SW8 (East Sump)

Comparison of JER-SW8 results with predicted coarse PK runoff (Table 3) shows that JER-SW8 has slightly higher nitrate, copper, and aluminum concentrations compared to the original coarse PK predictions. This may be due in part to use of this collection pond as a transfer point for water from the pit sump, which in turn receives water from the waste rock dumps. Concentrations of all parameters were well below the allowable criteria for discharges from the PKCA.

Station JER-SW8 also receives pit sump discharge and natural runoff from adjacent areas. Water quality at this station reflects mixing of natural surface runoff and pit water with runoff and seepage from coarse PK. This water is pumped to the PKCA, and does not discharge directly to the receiving environment.

Table 2: Selected Water Quality from 2006 Waste Rock Seepage Monitoring

Station Name	Date	Field pH	Sulphate	Chloride	Diss. P	TDS	TSS	Ammonia - N	Nitrate - N	Nitrite - N	Diss. Al	Diss. As	Diss. Cd	Diss. Cr	Diss. Cu	Diss. Fe	Diss. Pb	Diss. Mo	Diss. Ni	Diss. U	Diss. Zn
		s.u.	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Seep-05	**7/25/2006**	7.13	41	57	0.022	616	4	2.23	65.9	1.89	0.015	0.0018	<0.00005	0.0099	0.0032	<0.10	<0.00005	0.0329	0.00494	0.101	0.001
Seep-13	**7/25/2006**	6.42	4.9	19	0.107	212	21	1.04	<0.05	1.91	0.226	0.0015	0.00008	0.0087	0.0147	<0.10	0.00035	0.00740	0.00718	0.00674	0.007
Pre-mining Estimates	**average**	na	29	77	0.01	667	na	2.9	7.3	0.21	0.23	0.0016	0.0006	0.0038	0.06	0.32	0.0005	0.03800	0.019	0.27	0.024
for WR & Overburden	**max**	na	47	261	0.01	1394	na	5.8	14.6	0.42	0.5	0.0031	0.0006	0.0038	0.06	1.54	0.0006	0.07800	0.04	2.3	0.085
PKCA Discharge	**Max avg.**	6-8.8	na	500	0.2	2000	15	6	28	2.5	1	0.05	0.0012	0.087	0.02	na	0.01	0.73000	0.05	0.5	0.25
Criteria	**Max grab.**	6-8.8	na	1000	0.4	4000	25	12	56	5	2	0.1	0.0024	0.17	0.04	na	0.02	1.50000	0.1	1	0.5

Notes: - Grey shading presents estimated dissolved concentrations from pre-mine characterization or allowable discharge criteria for discharges from the PKCA for comparison purposes only.
- 'na' = not applicable

Table 3: Selected Predicted and Observed Water Quality at Routine Monitoring Stations JER-SW2 and JER-SW8

Station Name	Date	Field pH	Sulphate	Chloride	Diss. P	TDS	TSS	Ammonia - N	Nitrate - N	Nitrite - N	Diss. Al	Diss. As	Diss. Cd	Diss. Cr	Diss. Cu	Diss. Fe	Diss. Pb	Diss. Mo	Diss. Ni	Diss. U	Diss. Zn
		s.u.	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
JER-SW2	**6/21/2006**	7.73	13.1	25	-	340	15	20.3	45.9	0.77	0.123	0.0007	<0.00005	0.0003	0.0142	<0.10	0.00196	0.00648	0.0144	0.115	<0.001
JER-SW2	**7/11/2006**	7.15	19.6	30	<0.005	552	14	8.1	57.6	1.8	0.013	0.001	<0.00005	0.0011	0.0160	<0.10	0.00029	0.0103	0.0342	0.122	0.026
JER-SW8	**6/21/2006**	7.68	9.3	13	-	210	12	3.42	14.3	0.24	0.344	0.0006	<0.00005	0.0009	0.0051	0.26	0.00108	0.00216	0.00983	0.0107	<0.001
JER-SW8	**7/11/2006**	7.7	12.1	14.7	<0.005	240	<2	2.67	20.8	0.48	0.035	0.0006	<0.00005	0.0011	0.0047	<0.10	0.00007	0.00386	0.00632	0.0158	0.009
Pre-mining Estimates	**average**	na	29	77	0.01	667	na	2.9	7.3	0.21	0.23	0.0016	0.0006	0.0038	0.06	0.32	0.0005	0.03800	0.019	0.27	0.024
for WR & Overburden	**max**	na	47	261	0.01	1394	na	5.8	14.6	0.42	0.5	0.0031	0.0006	0.0038	0.06	1.54	0.0006	0.07800	0.04	2.3	0.085
PKCA Discharge	**Max avg.**	6-8.8	na	500	0.2	2000	15	6	28	2.5	1	0.05	0.0012	0.087	0.02	na	0.01	0.73000	0.05	0.5	0.25
Criteria	**Max grab.**	6-8.8	na	1000	0.4	4000	25	12	56	5	2	0.1	0.0024	0.17	0.04	na	0.02	1.50000	0.1	1	0.5

Notes: - Grey shading presents estimated dissolved concentrations from pre-mine characterization or allowable discharge criteria for discharges from the PKCA for comparison purposes only.
- '-' indicates parameter not measured
- 'na' = not applicable

5 Conclusions and Recommendations

In general, waste rock seepage at Jericho is within the range expected from the pre-mining predictions. Field reconnaissance identified seepage at only three locations from waste rock and ore stockpiles, and no seepage was identified during the survey of the coarse processed kimberlite facility. In addition, no evidence of previously-flowing seepage paths was observed, which supports the overall conclusion that there is very little seepage occurring from these facilities.

Slightly higher than expected nutrient release rates, as recorded at the pit sump and East Sump, are typical of conditions found in the early stages of open pit mining when wet ground conditions are more likely to occur. With close management of the blasting and drier conditions as the pit advances, nutrient concentrations in the pit sump are expected to decline over time. Metals are generally present at lower concentrations than predicted, and are all well below the allowable discharge criteria for the PKCA.

The primary reason for conducting seepage surveys is to provide an indication of how water quality from the waste rock changes over time from a variety of locations downgradient of the waste rock pile. The current water licence indicates that the seep surveys should be completed in July or August. Given the relatively dry conditions observed during our site visit on July 19th and 20th, and when samples were collected, consideration should be given to completing the seep surveys in early July when wetter conditions and more seeps are likely to be present.

Consideration should be given to developing a sampling station at the location of Seep-09 to enable collection of high quality seepage samples from this site. This location is ideally suited for long term monitoring because the final footprint of the dump has been established and it is one of the larger flows observed during our survey.

In this early stage of mine development, the configuration of the waste rock dumps is likely to change substantially prior to next year's seep survey. Therefore, the stations established during this survey will need to be reassessed, and new stations are likely to be added during the next survey. In addition, until the final footprint of the waste rock piles has been established, the program should include a detailed survey on foot to locate suitable sampling sites.

This report, **1CT004.010 Jericho Diamond Mine- 2006 Waste Rock Seepage Monitoring Report** has been prepared by SRK Consulting (Canada) Inc.

Prepared by

Dylan MacGregor, GIT (BC)
Environmental Geochemist

Kelly Sexsmith, P.Geo. (BC)
Senior Environmental Geochemist

Reviewed by

REGISTERED PROFESSIONAL GEOLOGIST LICENSEE NWT/NU

Oct 4/06

Stephen Day, P.Geol.
Principal Geochemist

6 References

Nunavut Water Board. 2004. Water Licence NWB1JER0410 Type "A", issued to Tahera Diamond Corporation on December 22, 2004.

SRK Consulting, 2003. Technical Memorandum I - Estimates of Source Concentrations, Jericho Project, Nunavut. Report prepared for Tahera Corporation as Supplemental Information to the Jericho FEIS. October 2003.

Figures

CAUSEWAY FOR FRESHWATER INTAKE

STREAM C1

OUTLINE OF ULTIMATE PIT

C1 DIVERSION

C4

Security Gate

AMMONIUM NITRATE STORAGE PAD

ACCESS ROAD

EXPLOSIVE MAGAZINES

EMULSION PLANT

C1

C2

PIPELINE ACCESS ROAD

DUMP

SEEP-05

DUMP

SEEP-13

MAIN HAUL ROAD

Lynne Lake

Winter Road

NORTH DAM

WEST DAM ACCESS ROAD

WEST DAM

TANK FARM

DIVIDER DYKE

PKCA

EAST SUMP

PK PAD

Key Lake

FINE PK

EAST DAM

Ash Lake

DYKE

SOUTHEAST DAM

0 100 200 300 400 500 Metres

1:10,000

Legend

Seep Sample Location

SRK Consulting
Engineers and Scientists
Vancouver B.C.

SRK JOB NO.: 1CT004.010

FILE NAME: SitePlan_Seep_2006.dwg

Tahera Diamond Corporation

JERICHO DIAMOND MINE

2006 Waste Rock Seepage Monitoring

2006 Seep Locations

DATE:	APPROVED:	FIGURE:
Oct. 06		1

Appendix A

2006 Waste Rock Seepage Monitoring Results

Station Name		Seep-05	Seep-13
Collect Date/Time		7/25/2006	7/25/2006
Sample No.		06-9507	06-9508
Parameter	**Units**		
Field Dissolved Oxygen	mg/L	14.98	1.37
Water Temperature	Deg C	5.56	8.34
Field Conductivity	us/cm	810	240
Field pH	pH	7.13	6.42
Oxidation Reduction Potential	mV	345.00	270.10
Dissolved Silver	mg/L	<0.00005	<0.00005
Dissolved Aluminum	mg/L	0.015	0.226
Dissolved Arsenic	mg/L	0.0018	0.0015
Dissolved Barium	mg/L	0.194	0.0624
Dissolved Beryllium	mg/L	<0.0001	<0.0001
Dissolved Boron	mg/L	0.029	0.017
Dissolved Calcium	mg/L	80.3	22.9
Dissolved Cadmium	mg/L	<0.00005	0.00008
Dissolved Cobalt	mg/L	0.00113	0.0193
Dissolved Chromium	mg/L	0.0099	0.0087
Dissolved Copper	mg/L	0.0032	0.0147
Dissolved Iron	mg/L	<0.10	<0.10
Dissolved Mercury	mg/L	<0.00005	<0.00005
Dissolved Potassium	mg/L	8.1	1.4
Dissolved Lithium	mg/L	0.0094	<0.0010
Dissolved Magnesium	mg/L	35.7	8.8
Dissolved Manganese	mg/L	0.187	0.049
Dissolved Molybdenum	mg/L	0.0329	0.00740
Dissolved Sodium	mg/L	27	13.4
Dissolved Nickel	mg/L	0.00494	0.00718
Dissolved Lead	mg/L	<0.00005	0.00035
Dissolved Phosphorus	mg/L	0.022	0.107
Dissolved Antimony	mg/L	0.00072	0.00023
Dissolved Selenium	mg/L	0.0017	0.0006
Dissolved Silicon	mg/L	4.20	14.6
Dissolved Tin	mg/L	0.0028	<0.0001
Dissolved Strontium	mg/L	0.206	0.0807
Dissolved Titanium	mg/L	0.0020	0.0024
Dissolved Thallium	mg/L	<0.00005	<0.00005
Dissolved Uranium	mg/L	0.101	0.00674
Dissolved Vanadium	mg/L	0.0047	0.0052
Dissolved Zinc	mg/L	0.001	0.007
Acidity as CaCO3	mg/L	4	19
T-Alkalinity as CaCO3	mg/L	86	77
Balance (+ions/-ions)	Ratio	0.92	1.08
Chloride	mg/L	56.6	18.6
Carbonate	mg/L	<1	<1
Conductivity @ 25°C	us/cm	921	236
Fluoride	mg/L	0.22	0.05
T-Hardness as CaCO3	mg/L	348	93.4
Bicarbonate	mg/L	105	94
Nitrite - Nitrogen	mg/L	1.89	1.91
Nitrate - Nitrogen	mg/L	65.9	<0.05
Hydroxide (as CaCO3)	mg/L	<1	<1
pH @ 25°C	pH	7.90	7.31
Phosphate - Ortho - Phosphoru	mg/L	<0.20	<0.20
Sulphate	mg/L	41	4.9
T-Dissolved Solids180°C	mg/L	616	212
Total Suspended Solids @105°C	mg/L	4	21
Turbidity	NTU	8	11
Ammonia - Nitrogen	mg/L	2.23	1.04
Carbon (Total Organic)	mg/L	9.0	35.1
Carbon (Total Inorganic)	mg/L	12.3	23.8

APPENDIX E

East Dam Thermistors

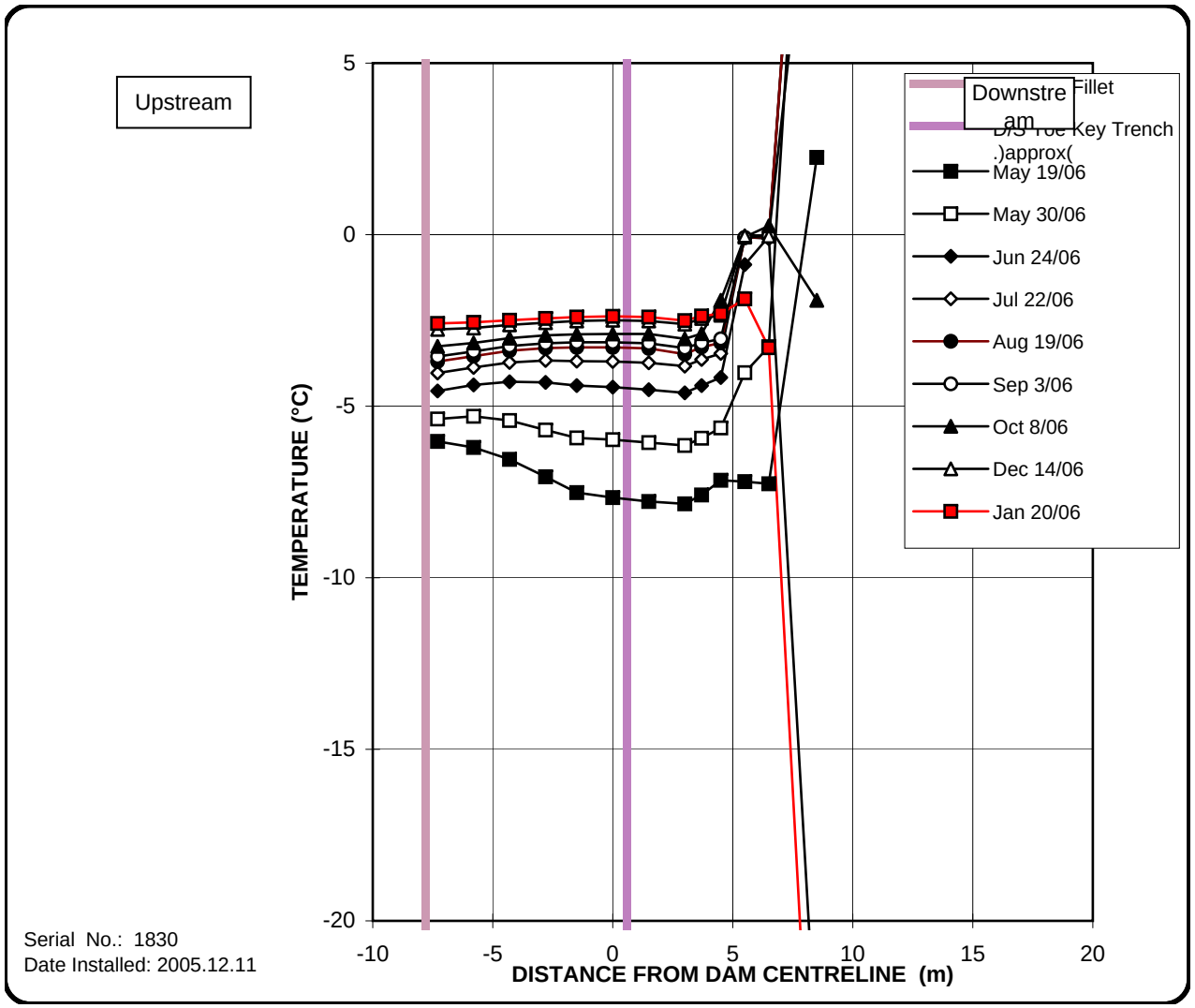
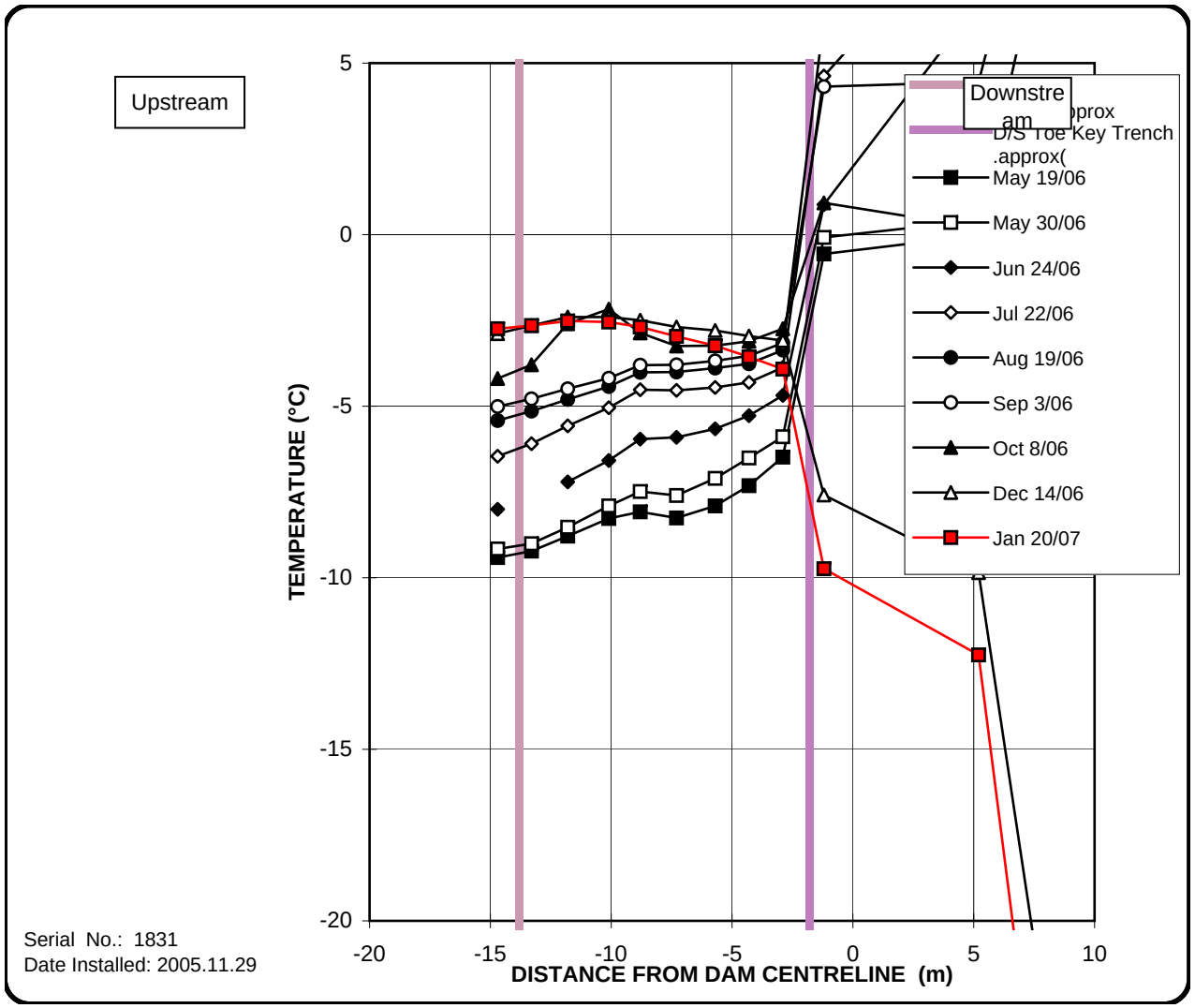


Figure
Horizontal Ground Temperature Distribu
East I
Station 0+150, El. 51



Figu
Horizontal Ground Temperature Distrib
East
Station 0+100, El. !

West Dam Thermistors

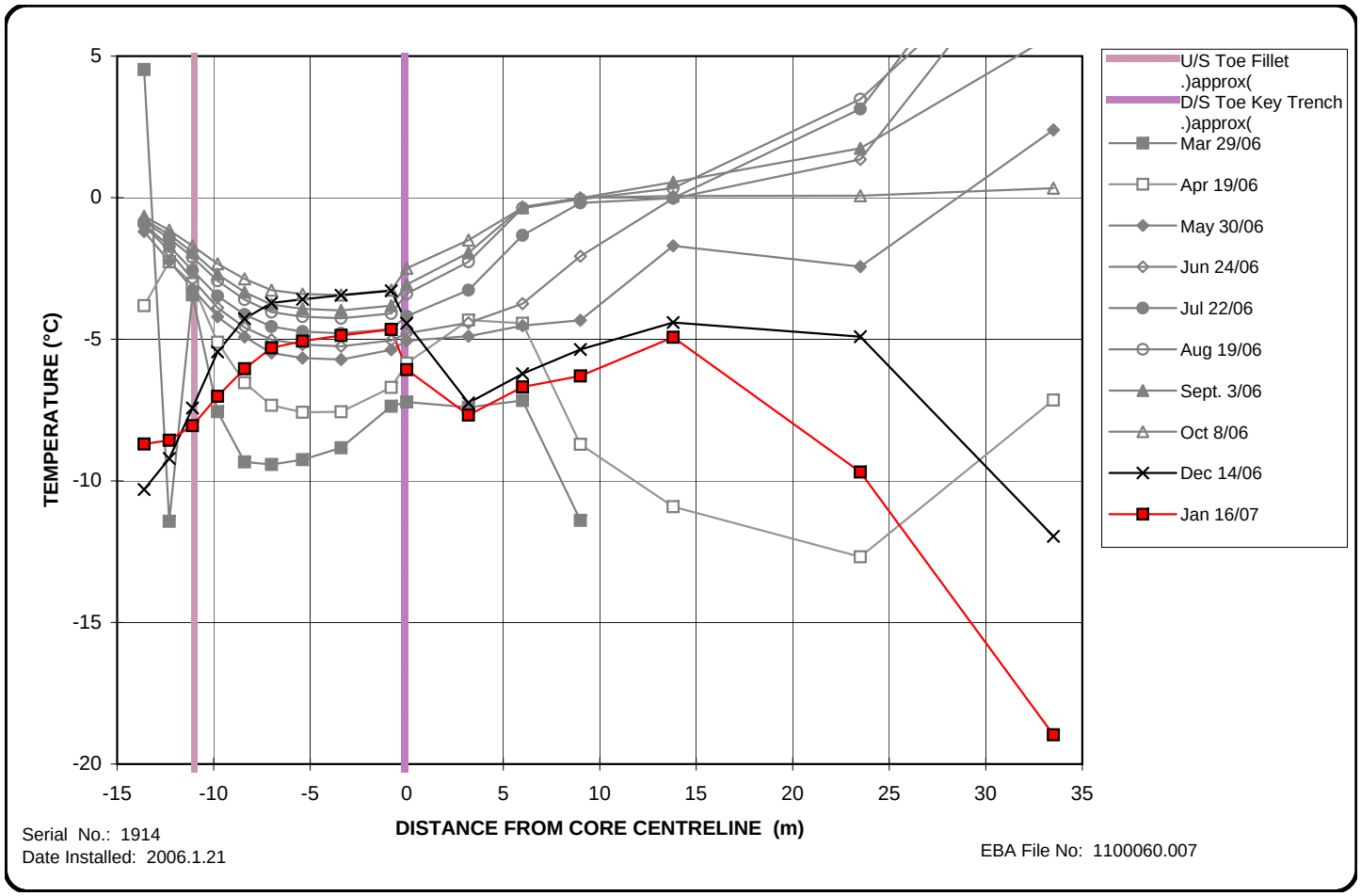


Figure A.1
Horizontal Ground Temperature Distribution
West Dam
Station 0+035, El. 513 m

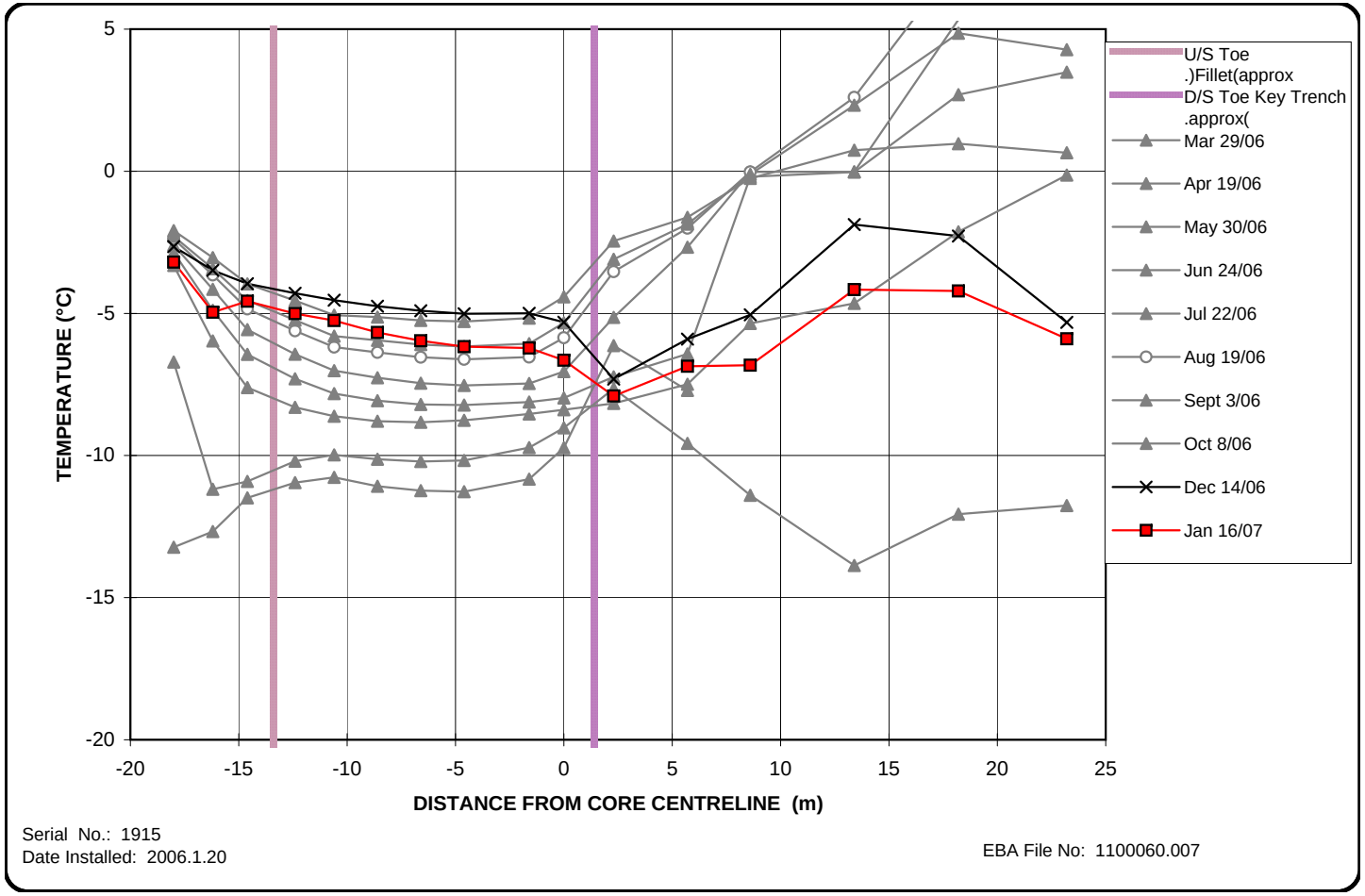


Figure A.2
Horizontal Ground Temperature Distribution
West Dam
Station 0+080, El. 514 m

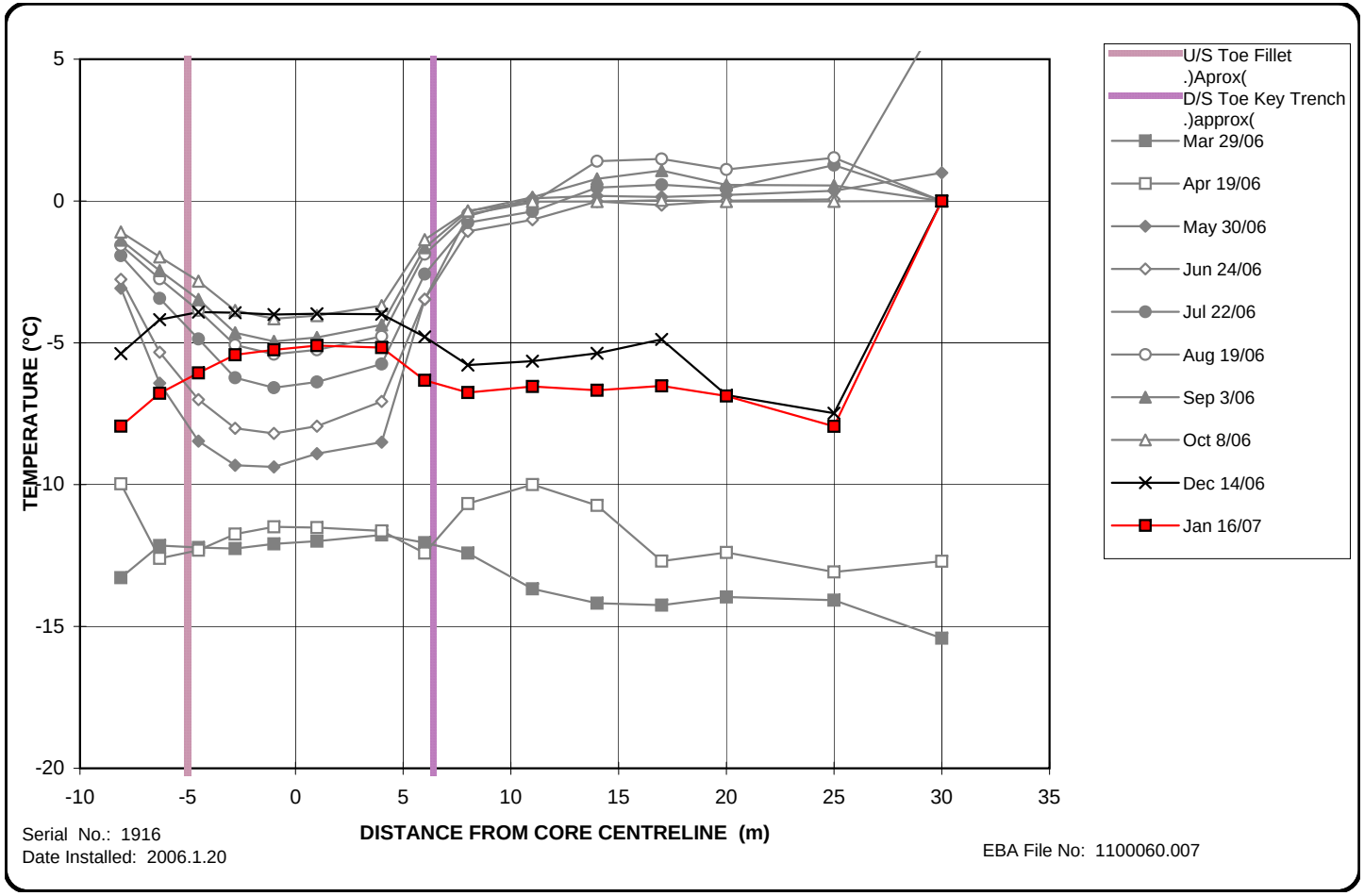


Figure A.3
Horizontal Ground Temperature Distribution
West Dam
Station 0+120, El. 518 m

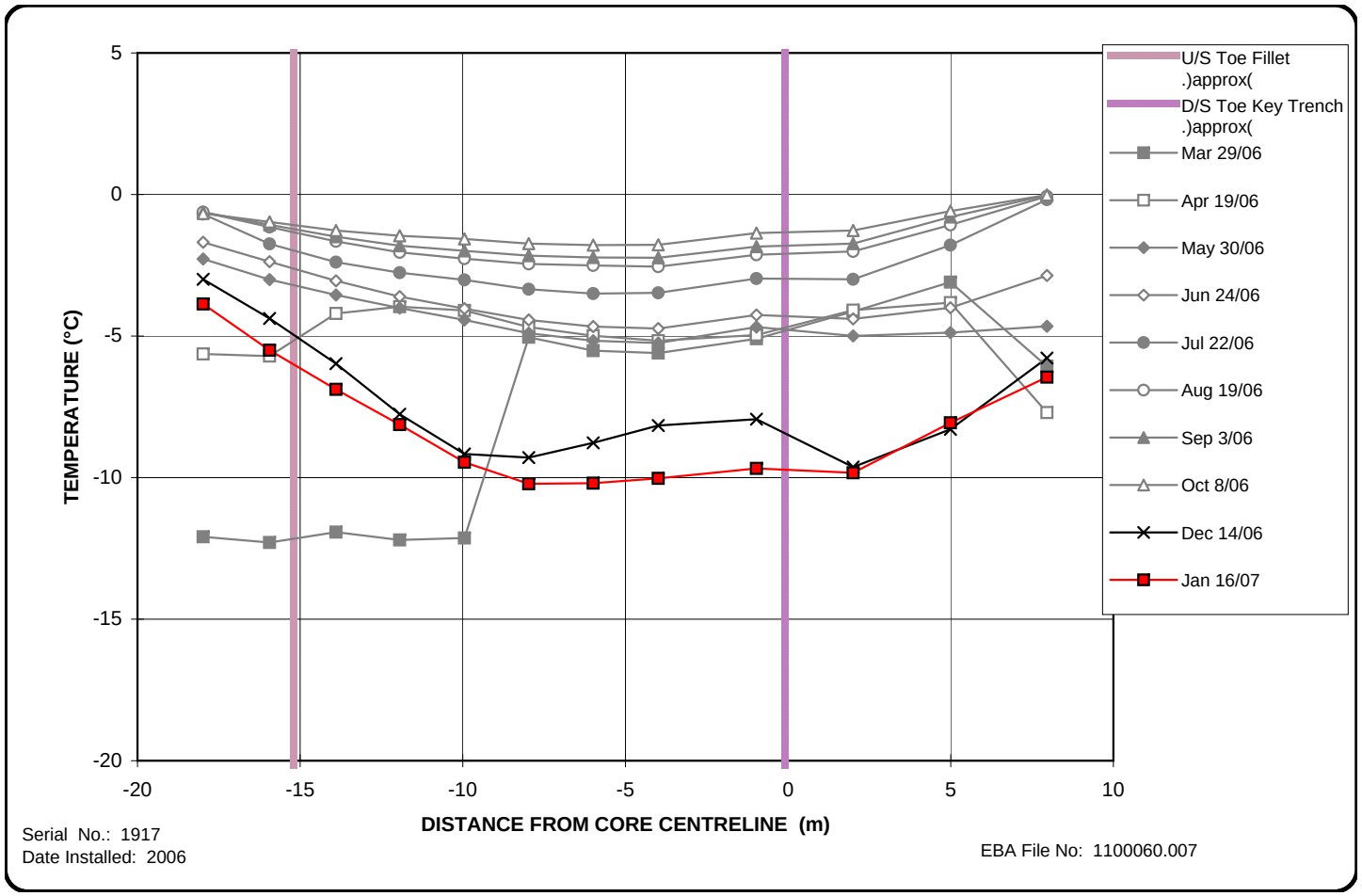


Figure B.1
Horizontal Ground Temperature Distribution
West Dam
Station 0+035, El. 516 m

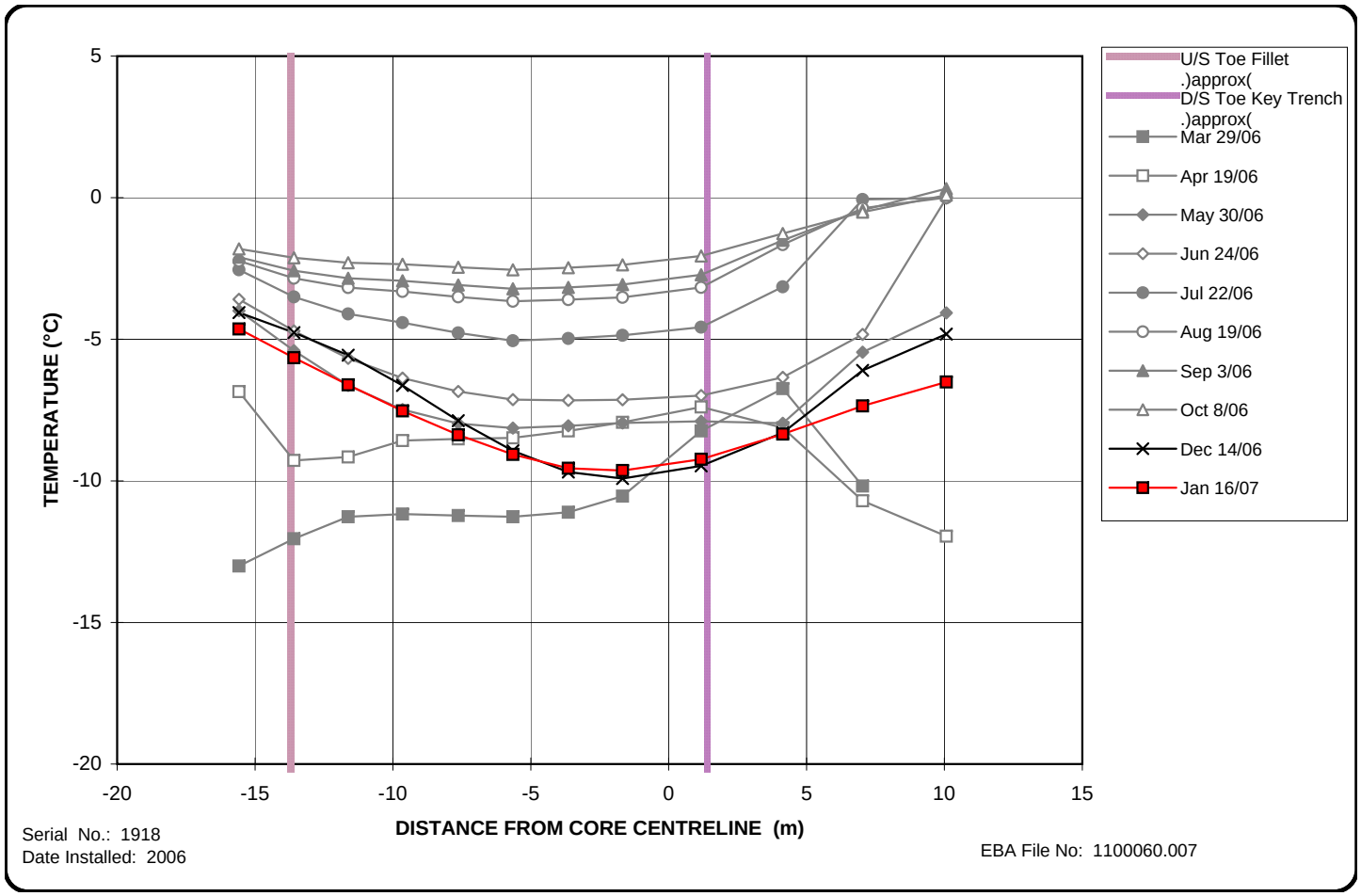


Figure B.2
Horizontal Ground Temperature Distribution
West Dam
Station 0+080, El. 518 m

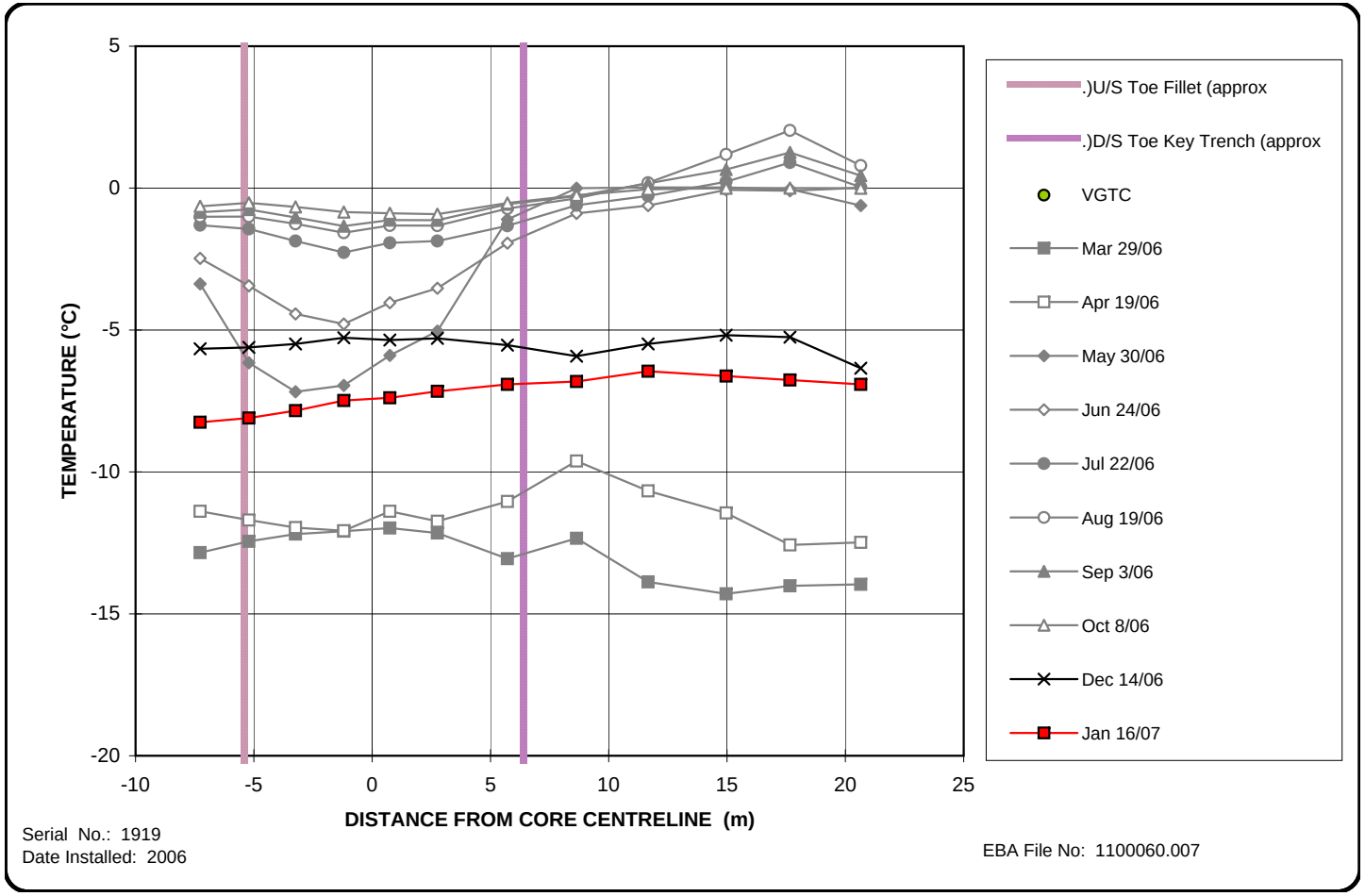


Figure B.3
Horizontal Ground Temperature Distribution
West Dam
Station 0+120, El. 520 m

APPENDIX F

TAHERA
DIAMOND CORPORATION

October 5th, 2006

Chief Administrative Officer
Nunavut Water Board
P.O. Box 119
Gjoa Haven, Nunavut
X0B 1J0

RE: Annual Geotechnical Inspection-Part F, 4e, Part G, Section 4 and Part K, Item 11 of Water Licence - NWB1JER0410

Please find attached the geotechnical report prepared on behalf of Tahera Diamond Corporation by EBA Engineering. This report satisfies requirements set out in Tahera's water license NWB1JER0410 under sections Part F, 4e, Part G, 4 and Part K, Item 11.

Inspections were conducted of the west dam, east dam, divider dyke A, main tank farm, landfill, airstrip tank containment, generator tank containment, east sump and C1 diversion structures at the Jericho site. In addition to serving as a cover letter to the geotechnical report, this letter will detail Tahera's intended implementation plan to address the recommendations set forth by the geotechnical engineer.

West Dam

The geotechnical inspection indicated that the west dam performance was satisfactory. The engineer did however recommend that when construction commences in 2006, the top layer of frozen core material be inspected and possibly stripped and replaced based on the findings at this time. Tahera agrees with this recommendation. EBA engineering will have a geotechnical engineer on site monitoring QA/QC during the completion of the West Dam. The decision to strip and replace this material will be made once an inspection is conducted by the EBA representative.

Divider Dyke A

Cracking parallel to the long axis of the dyke was identified during the geotechnical inspection. Recommendations are to excavate and compact the top layer of filter zone prior to the continuation of raising the dyke to its final elevation. Tahera agrees with this recommendation and will excavate, replace and compact the filter zone material before completing construction of the divider dyke.

East Dam

Inspections of the east dam indicated that performance is satisfactory. Recommendations are to initiate settlement monitoring. Settlement plates have been installed and baseline measurements will be taken in October 2006. The dam will be capped with run of mine during the winter of 2006 and settlement monitoring will recommence during summer 2007. Settlement monitoring will occur monthly during periods of thaw when there is a potential for settling to occur.

Tank farm

Inspections of the tank farm were conducted on both Phase 1 and Phase 2 portions of this facility. Phase 2 performance is satisfactory. Vertical settlement of tanks in Phase 1 ranged from 100mm to 350mm. Recommendations by the geotechnical engineer for phase 1 included continued monitoring for settling,

consultation with the tank manufacturer regarding safety of filling the tanks as well as integrity testing of the HDPE liner.

During the summer of 2006, Tahera contacted the manufacturer of the tanks and it was suggested that the flex connectors be changed to incorporate flex connectors with a longer extension. This work has been completed to date. Tahera will continue to monitor to ensure any differential settlement found remains within the manufacturer's and industry standard tolerances. Any tanks found to exceed tolerances will be removed from service.

Water within Phase 1 of the tank farm was present through out summer months due to precipitation and continuous pumping was required to keep tank farm empty thus confirming liner integrity. No seepage was evident at this time. To re-confirm the integrity of the HDPE liner, the tank farm will be filled with water and elevations of the water level monitored to determine if leakage is occurring.

Landfill

The geotechnical inspection of the landfill indicated that overall the landfill is in satisfactory condition. Surface cracks were identified adjacent to the landfill and could be a result of settlement of landfilled debris. Recommendations were to compact the landfill debris prior to coverage. Prior to covering landfill debris the material will be track packed using a dozer.

Should you have any questions regarding the geotechnical report, please do not hesitate to contact the on site Environmental staff.

Sincerely,

Mike Tanguay
HSE Manager
Jericho Mine Site

Roland Jones
Mine Manager
Jericho Mine Site

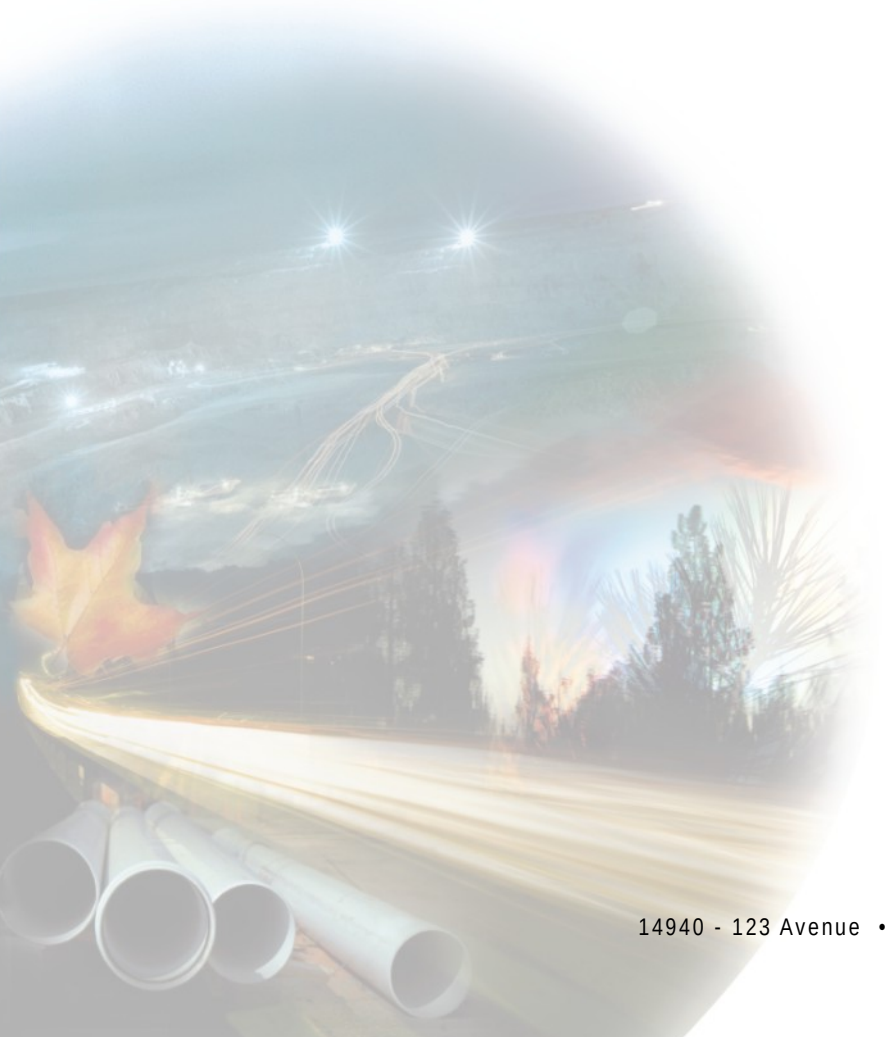
cc. Greg Missal
Vice-President, Government and Regulatory Affairs

Tahera Diamond Corporation

JERICHO DIAMOND MINE
2006 GEOTHECHNICAL INSPECTION

1100060.010

September 2006



EBA Engineering Consultants Ltd.
p. 780.451.2121 • f. 780.454.5688
14940 - 123 Avenue • Edmonton, Alberta T5V 1B4 • CANADA

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7.0 LANDFILL 3
8.0 AIRSTRIP TANK CONTAINMENT AREA 4
9.0 GENERATOR TANK CONTAINMENT AREA 4
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11.0 C1 DIVERSION 4
12.0 CLOSURE 6

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Appendix B Divider Dyke A
Appendix C East Dam
Appendix D Tankfarm
Appendix E Landfill
Appendix F Airstrip Tank Containment Area
Appendix G Generator Tank Containment
Appendix H East Sump
Appendix I C1 Diversion

1.0 INTRODUCTION

EBA Engineering Consultants Ltd. (EBA) completed the 2006 annual geotechnical inspection of the earth containment structures at the Jericho Mine.

This report presents the observations and recommendations for each structure for consideration by Tahera Diamond Corporation (Tahera). It is understood that Tahera will also use this report to fulfill the water licence requirement for an annual geotechnical inspection of the completed water retaining structures as specified in the Jericho Diamond Mine Water License NEWB1JER0410, Part G, Section 4.

The following structures were evaluated:

- Processed Kimberlite Containment Area (PKCA) Dams and Dykes (West Dam, East Dam, Divider Dyke)
- Fuel Containment Facilities
- Landfill
- Collection Ponds (East Sump)
- C1 Diversion

The water license also requires inspection of waste rock collection ponds and the landfarm. The current waste rock dumps drain directly into the open pit; therefore, no collection ponds have been constructed. No landfarm has been constructed to date.

2.0 METHODOLOGY FOR INSPECTION

The annual inspection of each structure was completed by Mr. Bill Horne, P.Eng., of EBA. The structures and immediate surrounding areas at each site were visually examined for signs of settlement, seepage, cracking, or any other signs of distress. Noteworthy observations were photographed and recorded. Where applicable, ground temperature and settlement data were collected at intervals throughout the year. These data were also reviewed in conjunction with the observations from each site to develop any recommendations presented for each structure.

The subsequent sections of this report briefly summarize the observations and measurements obtained for each of the individual structures. The respective appendices present site plans, photographs, ground temperature data, and survey data for each of the structures.

3.0 WEST DAM

The West Dam is a frozen core dam at the west end of the PKCA area. The dam was partially constructed during the winter of 2005/2006. The core was constructed to its final elevation at the south abutment; however, the center portion of the core was only constructed to 518.4 m as opposed to its final design elevation of 524 m. The core was covered with a minimum of 3 m of rockfill for thermal protection. Construction is intended to be complete during the winter of 2006/2007.

Minor settlement and cracking was noted in the dam surface as described in Appendix A. This performance is as expected in winter placed fill and will not affect the dam performance.

Ground temperature cables in the dam core at base of the key trench and at original ground elevation indicate the temperatures were between -2 and -7°C on August 19, 2006. These temperatures are colder than assumed in design.

The dam performance is satisfactory.

4.0 DIVIDER DYKE A

Divider Dyke A divides the PKCA into two areas. Fine processed kimberlite (fine PK) is deposited upstream of Divider Dyke A. The area downstream of the Divider Dyke is a polishing pond for the PKCA water. The dyke consists of a sand and gravel filter zone, supported by rock fill structure. The filter is protected with a layer of rip rap on the upstream side.

The dyke was partially constructed in the fall of 2005. The current dyke crest elevation varies from 519.2 m to 521.6 m. The design elevation of the dyke is 524 m.

The dyke appears to performing well with turbid water upstream and clean water meeting discharge criteria downstream of the dyke.

The inspection report and photos are in Appendix B. Cracks and settlement were observed in the surface of the dyke filter zone. It is recommended that the cracked zone of the filter be excavated and recompacted in the fall of 2006, prior to raising the dyke.

5.0 EAST DAM

The East Dam is a geomembrane lined dam at the east end of the PKCA. It was constructed during the 2005/2006 winter season. The liner is keyed into sand and gravel till permafrost, and bedrock. The upstream shell of the dam is constructed of a thick till layer and a coarse processed kimberlite (coarse PK). Fine PK is deposited off of the upstream face of the dam.

Two ground temperature cables were installed in the key trench at the base of the geomembrane liner. Measured temperatures on August 19, 2006 ranged from -3 to -5°C.

No significant signs of settlement or cracking were noted. A small pond was noted in a low lying area at the downstream dam toe. No seepage from the dam was noted.

The inspection report and photos are in Appendix C. The East Dam is performing well with no signs of distress.

6.0 TANKFARM

The primary tankfarm for the site is located at the Jericho plant site area. The tankfarm has two sections; Phase 1 and Phase 2. Phase 1 was constructed in winter 2004/2005 and was used during the construction of the Jericho plant site. Phase 2 was constructed between May and October 2005. Phase 1 consists of eight tanks, and Phase 2 consists of four larger tanks.

Both tank farm containment areas are lined with a 60 mil HDPE liner for secondary containment. It is understood that the base of the Phase 1 area was constructed of frozen esker fill. The base of the Phase 2 tankfarm was constructed of run of mine rockfill.

The tanks in Phase 1 are currently empty, and the tanks in Phase 2 are partially full.

Settlement of the tanks has been measured on a regular basis using survey prisms on the top of the tanks. The vertical tank movement is shown in Figure D-2 in Appendix D.

Vertical settlement of the tanks in Phase 1 ranges from 100 to 350 mm over the past fifteen months. The settlement is visually apparent in the piping connections to the tanks. It is understood that new flexible connections were installed after the geotechnical inspection. Small gaps (up to 15 mm high) are apparent below the tank bases in Phase 1 due to differential settlement of the tank farm base.

Minimal vertical movement of the tanks in Phase 2 has been measured (up to 37 mm) over the past fourteen months. No obvious signs of movement or tank distress was noted.

The settlement of the tanks should continue to be monitored. It is recommended that the tank manufacturer be requested to evaluate the Phase 1 tanks' integrity prior to filling with fuel. It is also recommended that the integrity of the secondary containment liner in Phase 1 be evaluated by filling the area with a water head and monitoring water level drop over a period of time while observing if seepage occurs out of the tank containment area.

7.0 LANDFILL

The waste from the mine operations are currently landfilled within the till dump area. Metal debris is separated and stockpiled in a separate area. Domestic wastes are burned and placed in a small pit, which is ultimately capped with till from the open pit mine. Food wastes are not placed in the landfill; they are incinerated separately from the domestic waste. Surface and subsurface drainage from the landfill area flows towards the open pit.

A small surface crack was observed adjacent to the current landfill pit. This may be a result of settlement of landfill waste. It is recommended that the waste within the pit be compacted prior to placing backfill over the waste.

The inspection report and photos are in Appendix E. The landfill appears to be performing adequately.

8.0 AIRSTRIP TANK CONTAINMENT AREA

Two 64,000 l fuel tanks are located adjacent to the airstrip apron. The tanks are contained by a lined containment area.

The secondary containment liner is covered with a layer of crushed gravel. Small cracks were observed in the top of the berms. No other signs of berm instability were noted. It is suspected the cracks are due to settlement of the berm fill.

The inspection report and photos are in Appendix F. The containment area appears to be satisfactory.

9.0 GENERATOR TANK CONTAINMENT AREA

One 64,000 l fuel tank is located adjacent to the generator area at the plant site. The tanks are contained by a lined containment area.

The secondary containment liner is covered with a layer of crushed gravel.

The containment area appears to be satisfactory.

10.0 EAST SUMP

The East Sump is a natural pond that is currently being used to contain runoff from the open pit and catchment areas around the plant site. The water level is being maintained below the original pond level to prevent water out flow from the pond. Water is pumped out of the East Sump to the plant site or pumped to the PKCA.

The inspection report for the East Sump and photos are in Appendix H. The East Sump appears to be functioning as intended and is in satisfactory condition.

11.0 C1 DIVERSION

The C1 Diversion was constructed to divert water from the natural C1 stream around the open pit. It consists of a cut off area lined with a HDPE liner keyed into bedrock, a rock cut channel (Reach A), a transition zone to natural ground (Reach B), and two berms which contain the diverted stream (Reach C) which redirects the water back to the original stream bed.

The rock cut was constructed in the summer of 2005, and the cut off and berms were constructed in the winter 2005/2006. Water first flowed through the diversion in the spring of 2006. It is understood that some additional fish habitat structures may be added to Reach C.

The inspection report and photos of the channel are in Appendix I.

The water flows were relatively small at the time of the inspection. Very small wet areas were noted adjacent to both the north and south diversion berms but no seepage through the diversion berms was noted. A ponded area was noted downstream of the original stream C1 cutoff, but again no seepage into the ponded area was noted.

The C1 diversion works are performing as intended.

12.0 CLOSURE

EBA trusts that this report satisfies your present requirements. Should you require any additional information, please contact us.

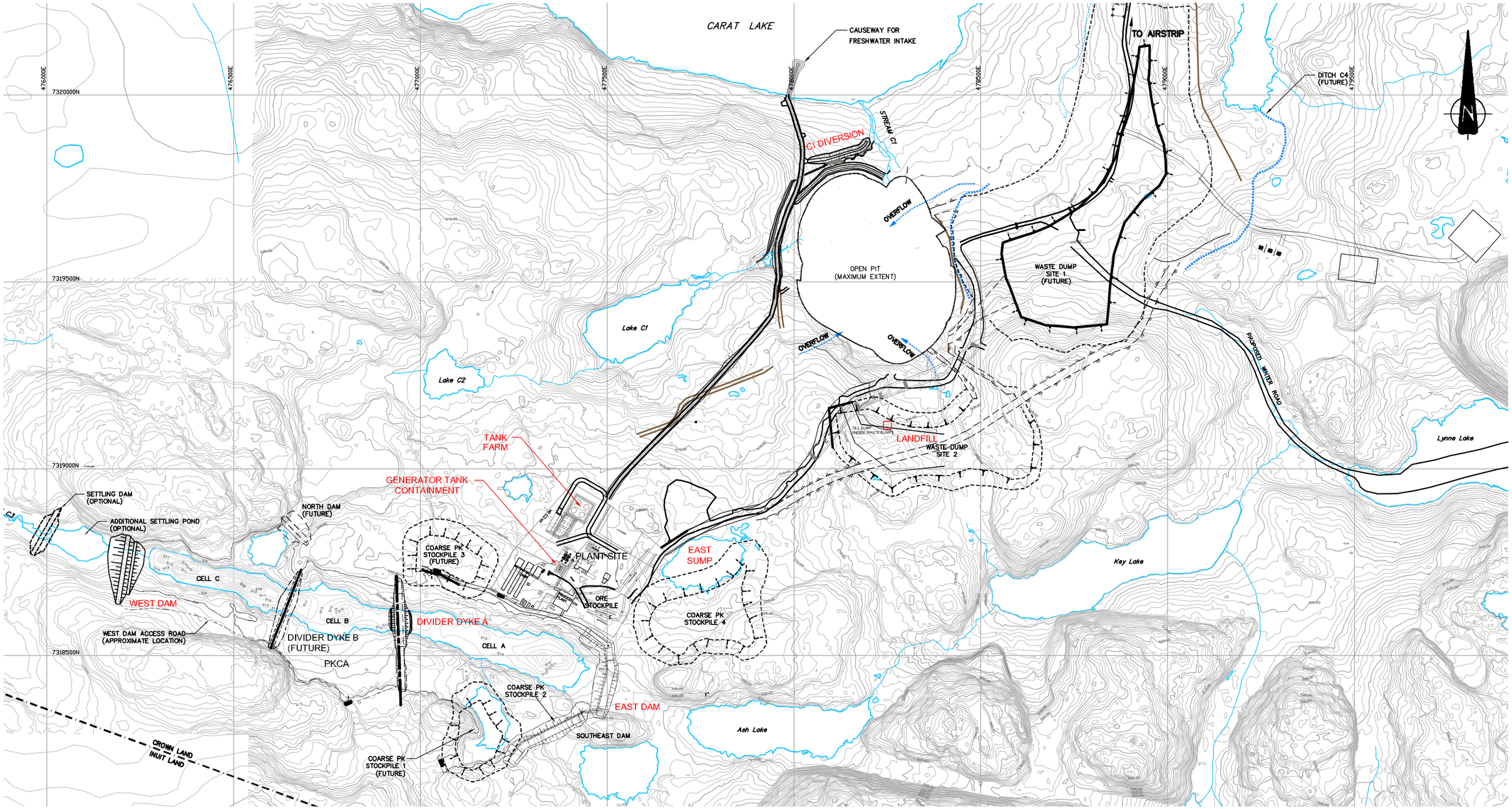
EBA Engineering Consultants Ltd.

W.T. Horne, P.Eng.
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reviewed by:

K. Jones, P.Eng.
Project Director, Circumpolar Regions
Direct Line: 780.451.2130 x277
kjones@eba.ca

/jnk



LEGEND:

AREAS EVALUATED 2006 GEOTECHNICAL INSPECTION

0 500

Scale (metres)

CLIENT

Tahera Diamond Corporation

Jericho Project
2006 Geotechnical Inspection

Jericho Mine Site Plan

EBA Engineering Consultants Ltd.

PROJECT NO./FILE NO.	DWN	CKD	REV
1100060.010 1100060010Q01b.dwg	DBD	BH	1
OFFICE: EBA-EDM	DATE: September 26, 2006		

FIGURE 1

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APPENDIX

APPENDIX A WEST DAM

GEOTECHNICAL INSPECTION SUMMARY

Location: **Jericho Mine**
Facility: **West Dam**
Observation Date: **July 27th, 2006**

Inspected by: William T. Horne, P.Eng.
EBA Engineering Consultants Ltd.

OPERATING CONDITION	
Minimum Crest Elevation	521.6
Top of Core or Liner	518.6
Water Levels - Upstream	517.0
Water Levels - Downstream	515.3 (approx)
Discharge	Ongoing from July 9, 2006 – pump over dam to pond downstream of West Dam

OBSERVED CONDITION

Features:	Present (Yes/No)	Dimensions	Extent	Description	Photographic Records
Erosion	None noted				
Cracking	WD-1	3 to 10 mm wide, 10 m long approximately 200 mm deep	Isolated	Several discontinuous cracks associated with settlement	A4
Settlement	WD-2	Numerous Voids 200 mm by 100 mm by 200 mm deep in an area 13 m by 7 m	Isolated	Voids in cover	A5
	WD-4	Area 6 m by 6 m, up to 150 mm deep	Isolated	Settlement area, 1cm wide cracks, subsidence holes 50 mm by 200 mm, by 300 m deep and 200 mm by 300 by 100 mm deep	A8
Seepage	None noted				

Other Features	WD-3 Wet area downstream south dam toe.	20 by 25 m	Isolated	Appeared to be a natural wet area, made wetter by a small leak from the discharge line.	A6, A7

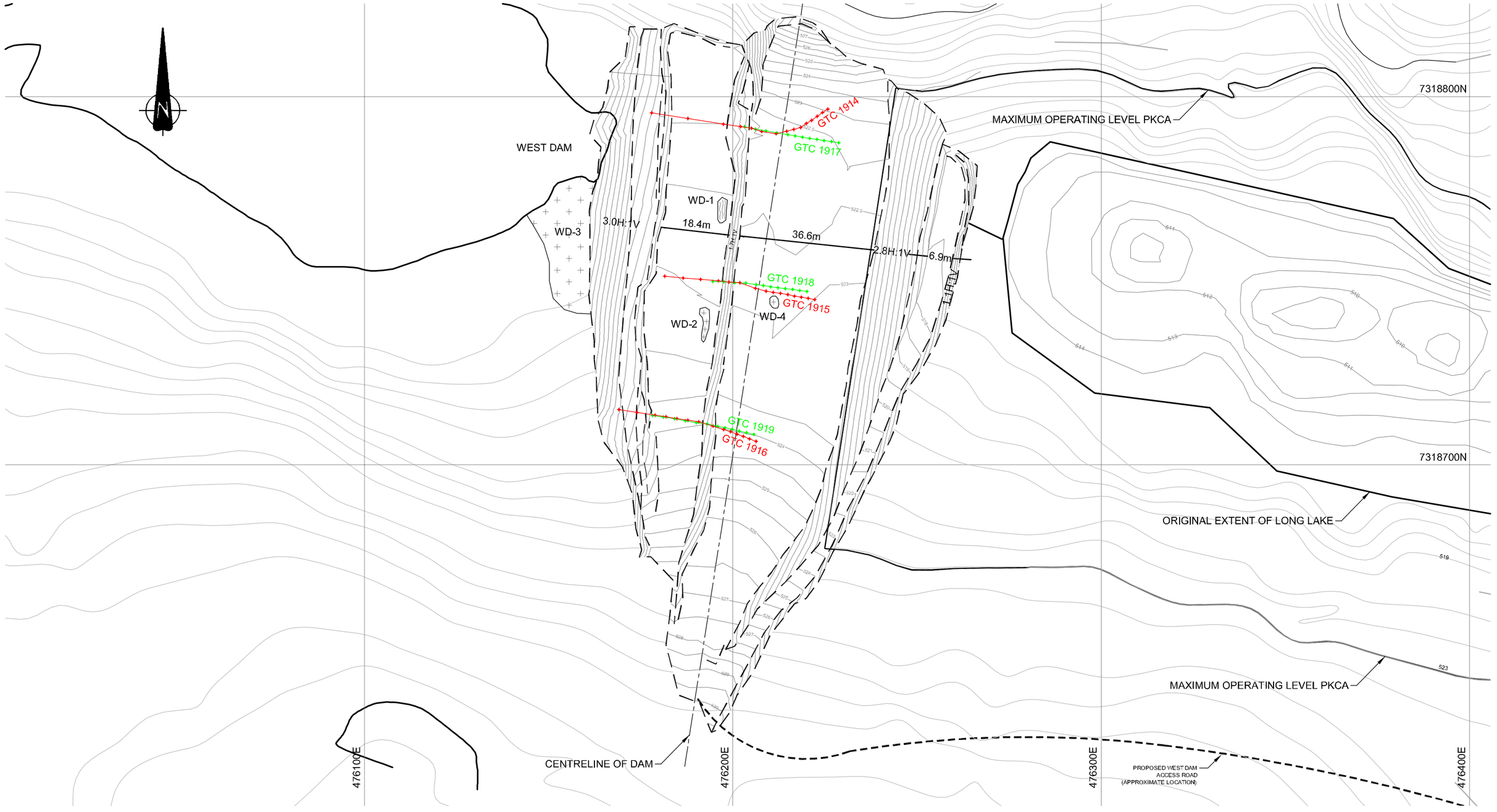
THERMAL SUMMARY:

Dam Core Frozen – Ground temperature measurements in attached figures.

RECOMMENDATIONS AND CONCLUSIONS:

Inspect and possibly strip top layer of frozen core when construction recommences in 2006.

Dam performance is satisfactory.



NOTE:

GROUND TEMPERATURE CABLES 1914, 1915 AND 1916 IN BASE OF CORE KEY TRENCH.

GROUND TEMPERATURE CABLES 1917, 1918 AND 1919 AT ORIGINAL GROUND LEVEL IN CORE ZONE.

0 50

Scale (metres)

CLIENT

Tahera Diamond Corporation

Jericho Project
2006 Geotechnical Inspection

West Dam
2006 Geotechnical Inspection

EBA Engineering Consultants Ltd.

PROJECT NO./FILE NO.	DWN	CKD	REV
1100060.010 1100060010Q02b.dwg	DBD	BH	1
OFFICE: EBA-EDM	DATE: September 27, 2006		

FIGURE A-1

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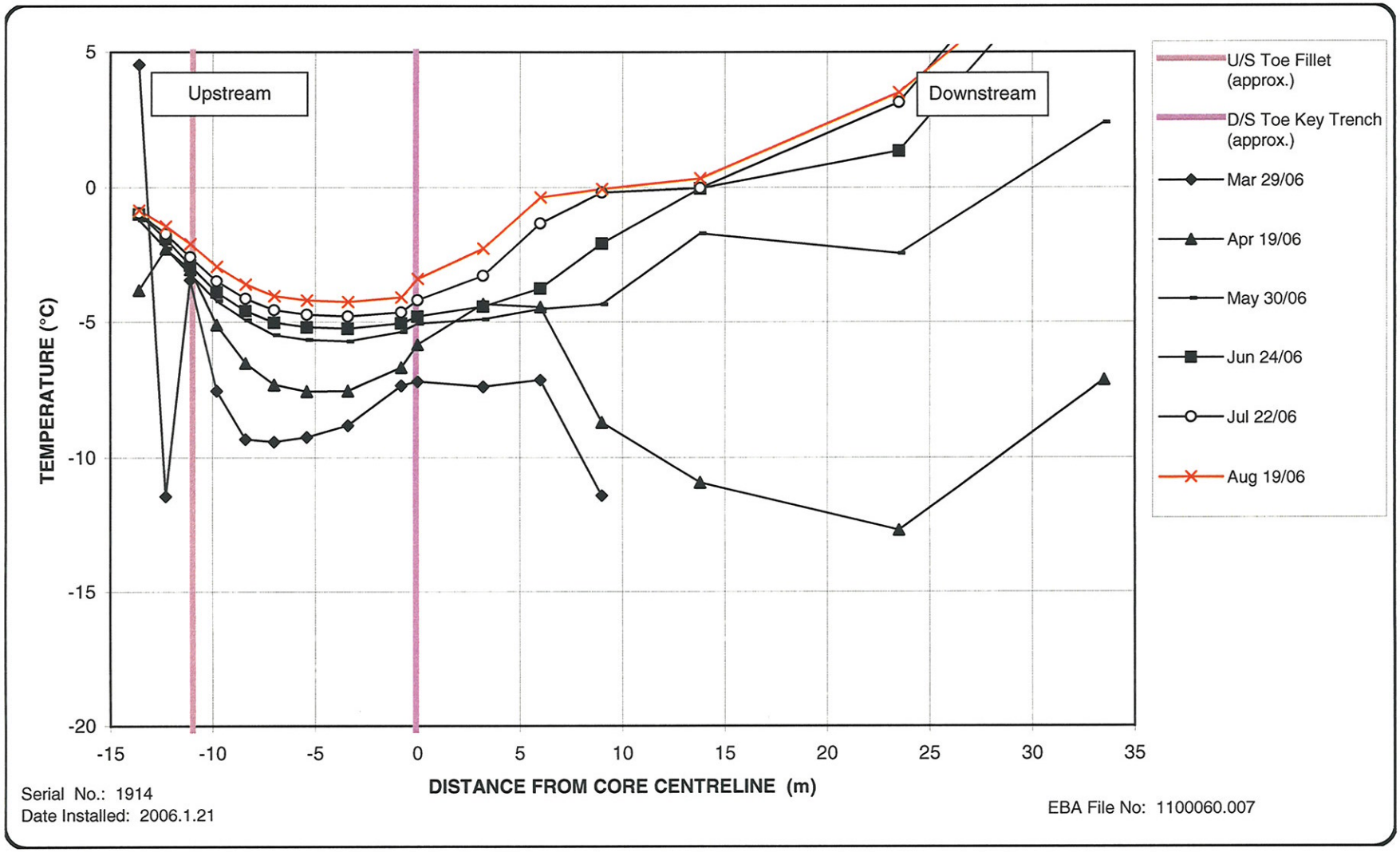
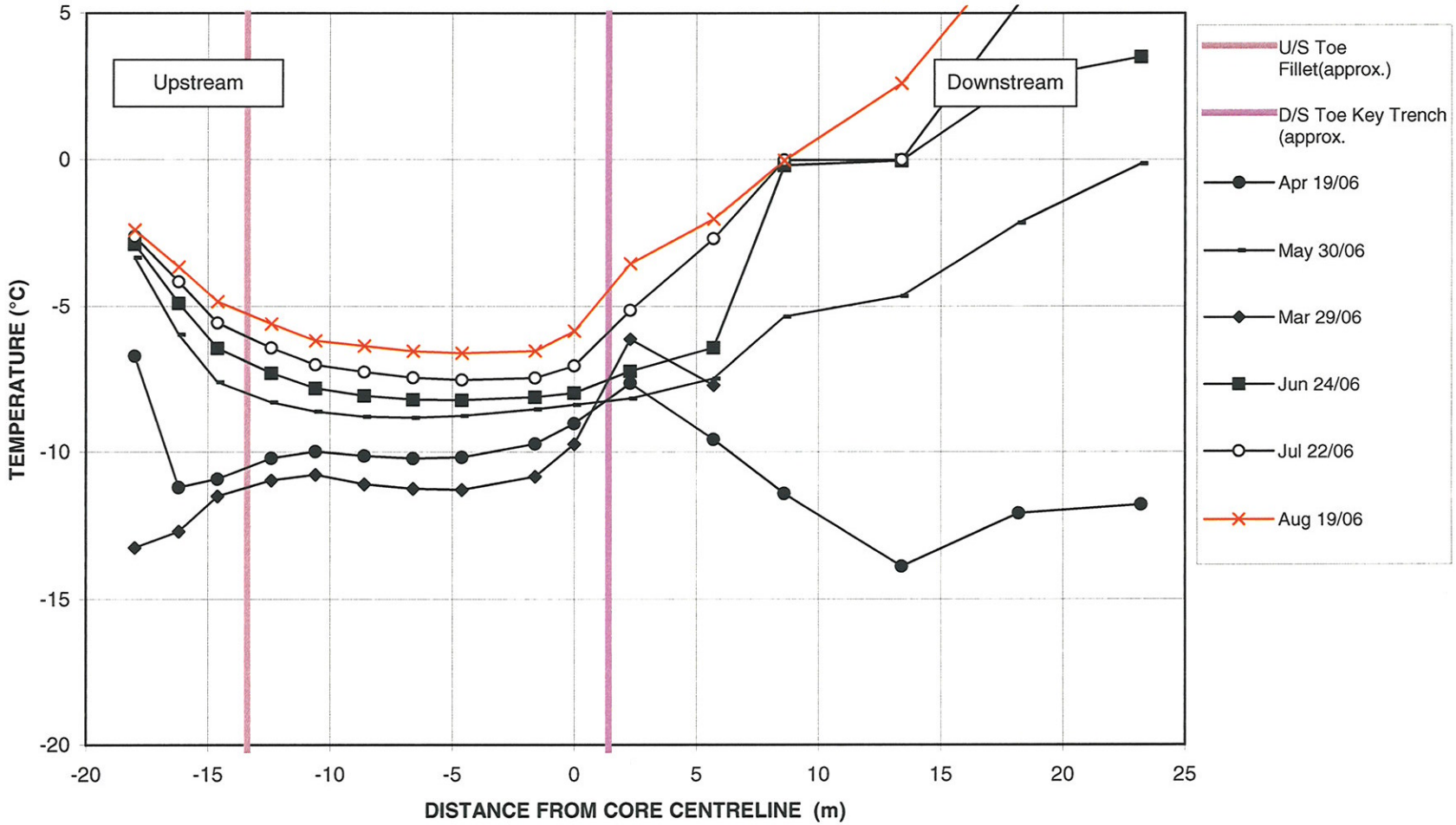


Figure A.2
Horizontal Ground Temperature Distribution
West Dam
Station 0+035, El. 513 m



Serial No.: 1915
Date Installed: 2006.1.20

EBA File No: 1100060.007

Figure A.3
Horizontal Ground Temperature Distribution
West Dam
Station 0+080, El. 514 m

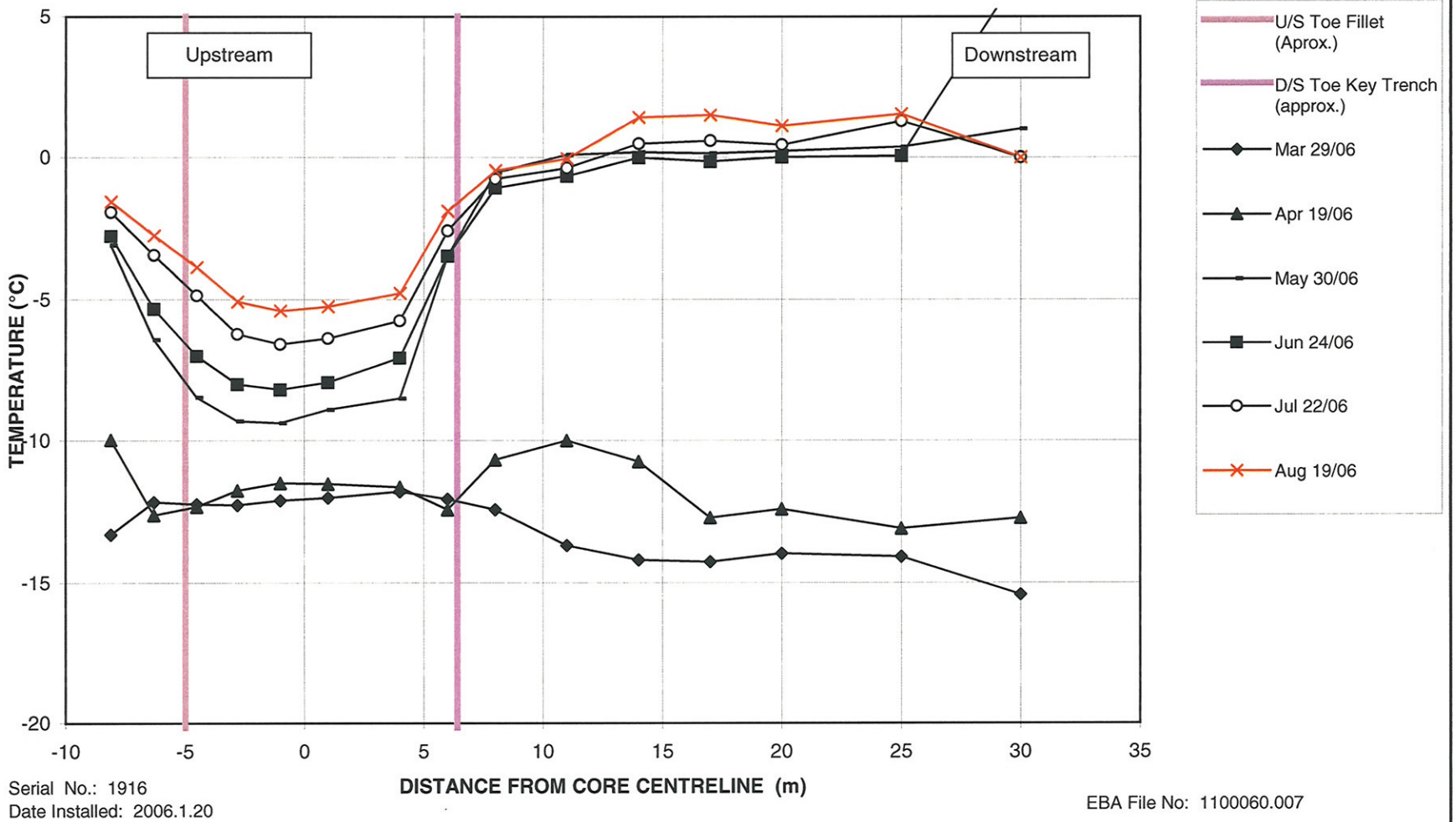


Figure A.4
Horizontal Ground Temperature Distribution
West Dam
Station 0+120, El. 518 m

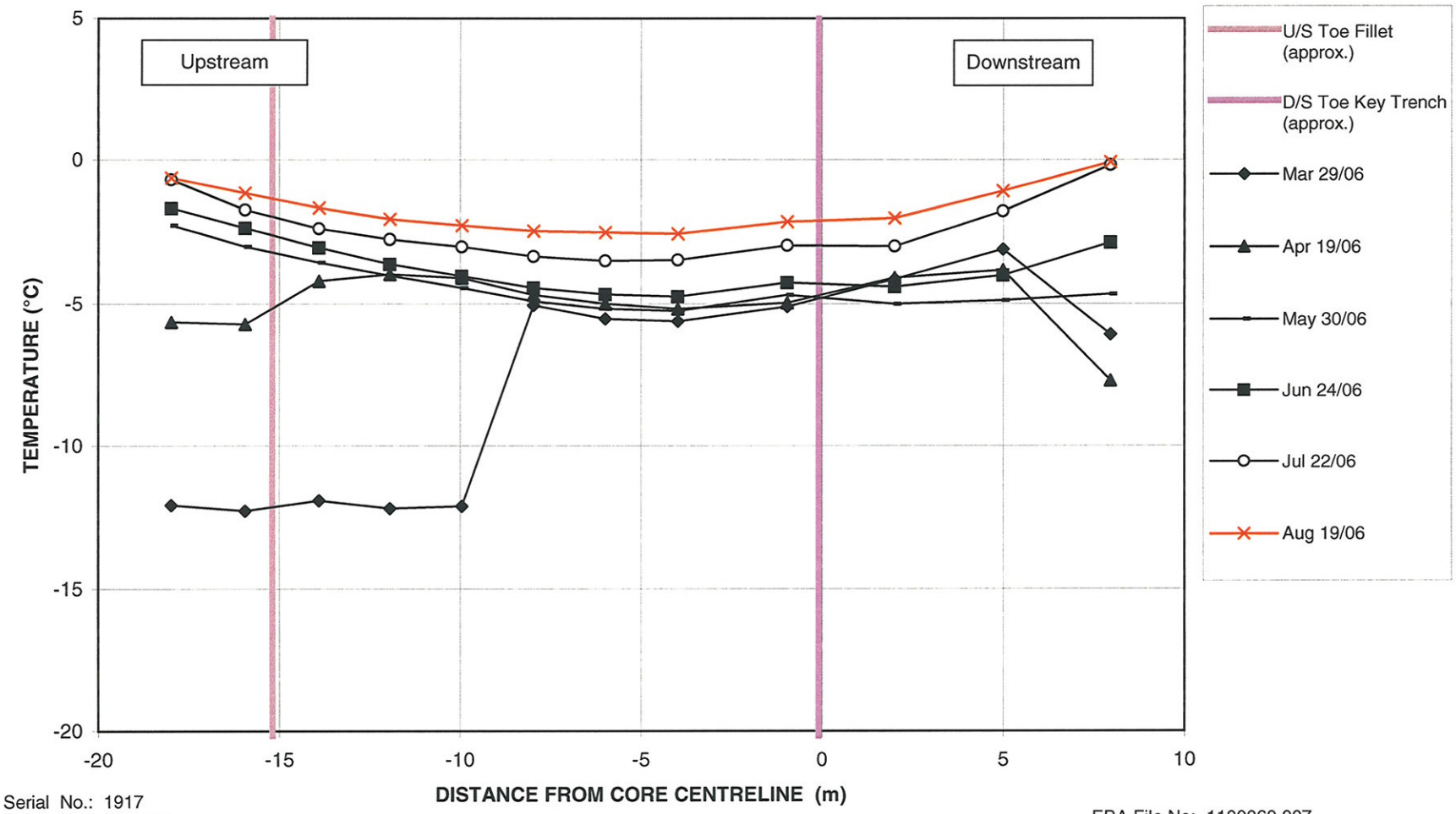


Figure A.5
Horizontal Ground Temperature Distribution
West Dam
Station 0+035, El. 516 m

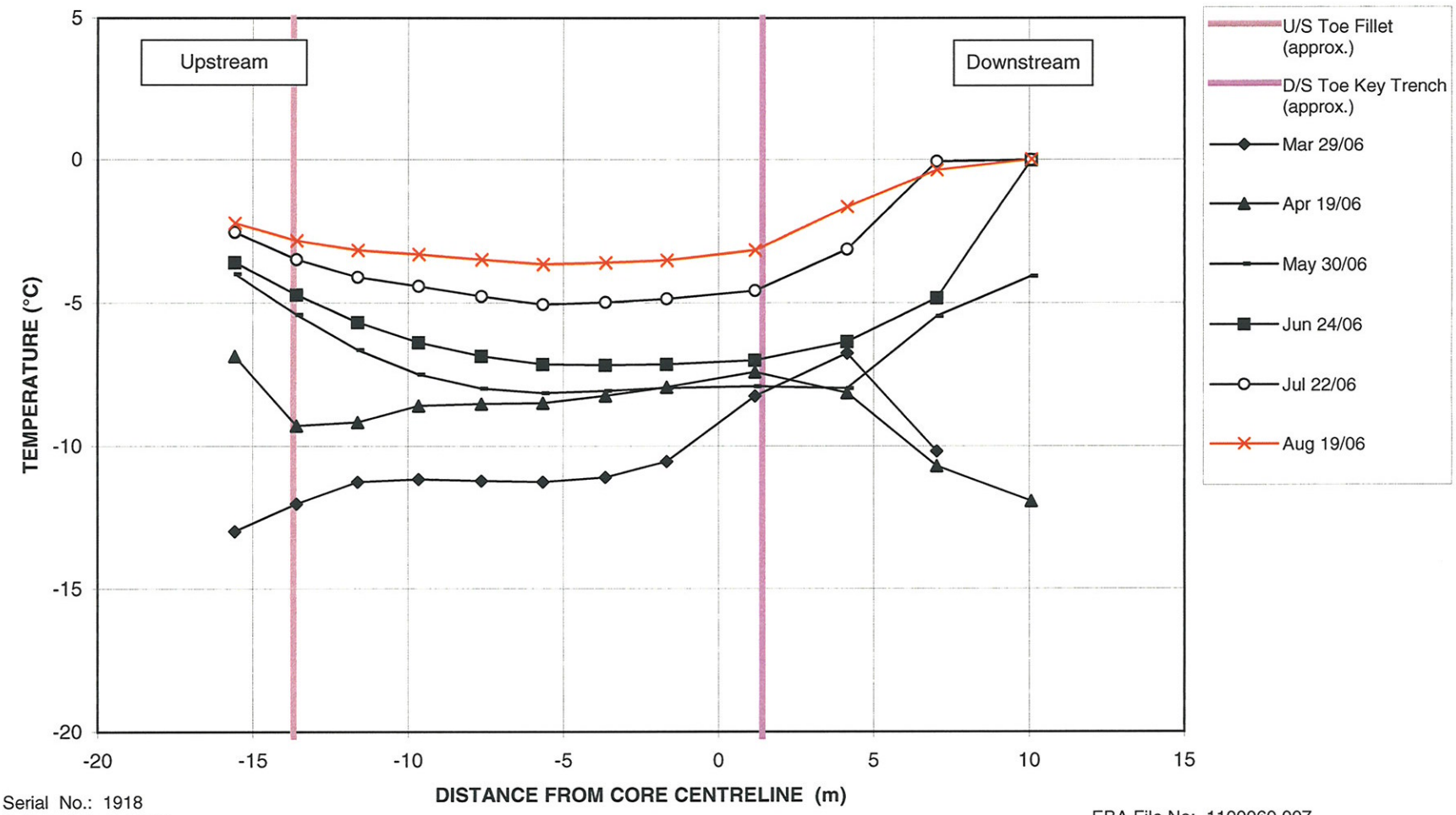


Figure A.6
Horizontal Ground Temperature Distribution
West Dam
Station 0+080, El. 518 m

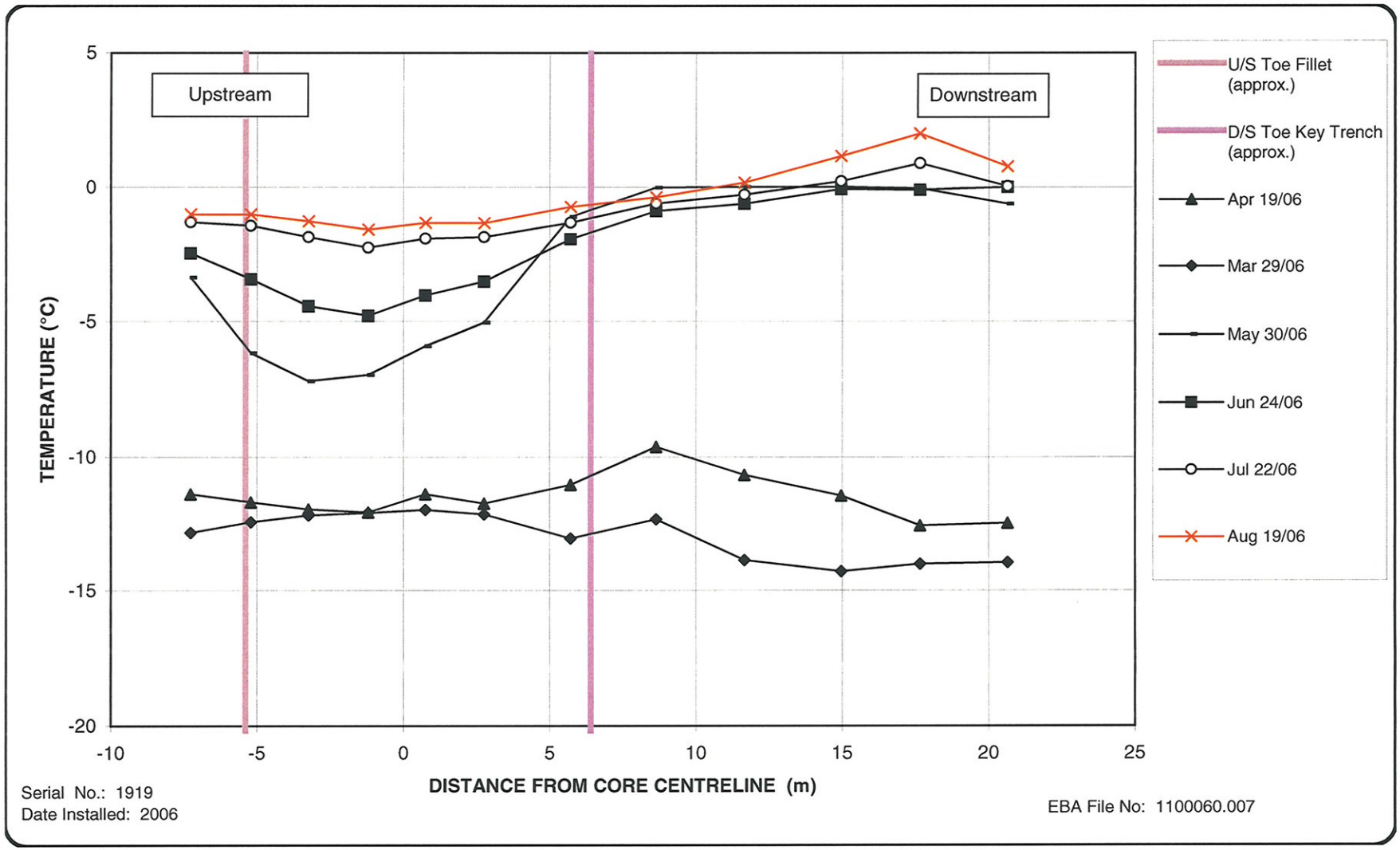


Figure A.7
Horizontal Ground Temperature Distribution
West Dam
Station 0+120, El. 520 m



Photo A1
West Dam - Upstream Slope, looking south.



Photo A2
West Dam - Downstream slope, looking south.



Photo A3
West Dam - Upstream slope, looking north.



Photo A4
West Dam - Feature WD-1, isolated cracking in downstream shell.



Photo A5
West Dam - Feature WD-2, voids in downstream shell.

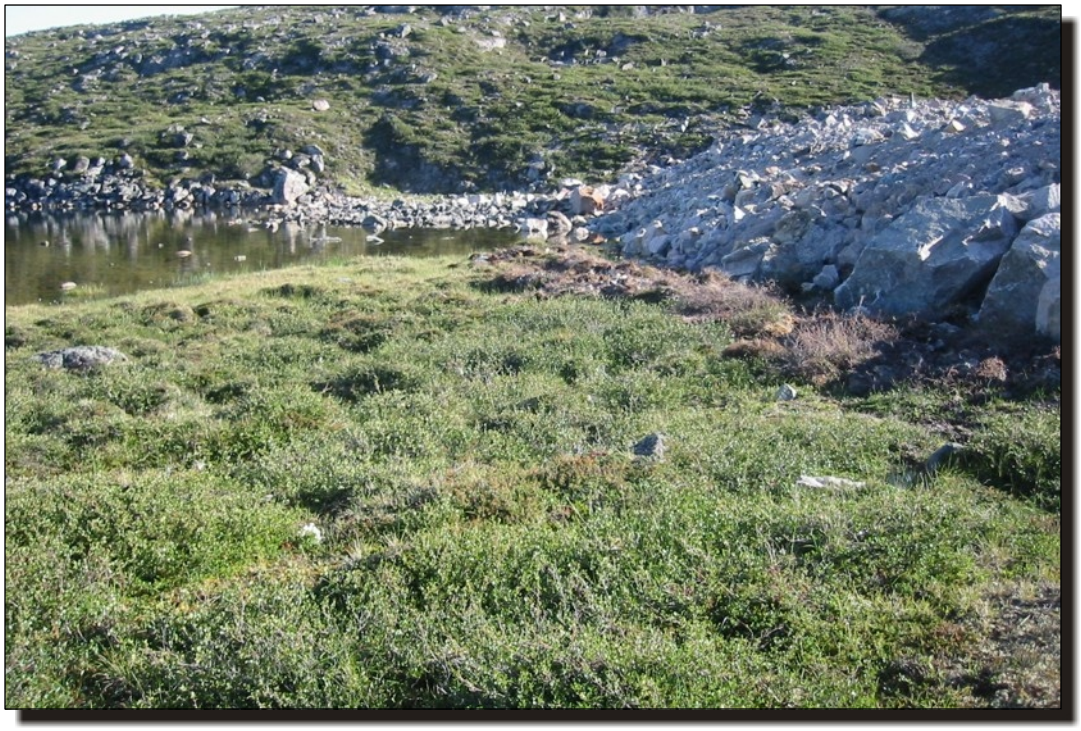


Photo A6
West Dam - Feature WD-3, wet area at downstream dam toe.



Photo A7
West Dam - Feature WD-3, wet area at downstream toe, discharge line.



Photo A8
West Dam - Feature WD-4, settlement in dam crest fill.

APPENDIX

APPENDIX B DIVIDER DYKE A

GEOTECHNICAL INSPECTION SUMMARY

Location: **Jericho Mine**
Facility: **Divider Dyke A**
Observation Date: **July 27th, 2006**

Inspected by: William T. Horne, P.Eng.
EBA Engineering Consultants Ltd.

OPERATING CONDITION:	
Minimum Crest Elevation	519.2
Top of Core or Liner	N/A
Water Levels - Upstream	517.0
Water Levels - Downstream	517.0
Discharge	Ongoing – through filter dyke

OBSERVED CONDITION:					
Features:	Present	Dimensions	Extent	Description	Photographic Records
Erosion	None noted				
Cracking	DD-2	10 to 40 mm wide, 400 to 800 mm deep	Discontinuous along most of the exposed filter zone	Cracks parallel to the dyke axis	B5, B6
Settlement	DD-1	1 m diameter, 150 mm deep	Isolated	Settlement in dyke filter zone.	B4
Seepage	None noted			No visible seepage, but seepage is occurring as evidence that the water levels upstream and downstream of the dyke are essentially equal, and Fine PK discharge is occurring upstream of the dyke.	

Other Features	None noted				

THERMAL SUMMARY:

No ground temperature measurements in the dyke – water elevation is similar on upstream and downstream sides; therefore it is concluded that the seepage is occurring through unfrozen dyke material.

RECOMMENDATIONS AND CONCLUSIONS:

Excavate and recompact top layer of filter zone to eliminate settlement cracks.

Dyke performance is satisfactory.

476800E
476900E
477000E
477100E
7318677.206N
476937.011E
DD2
0+250
DOWNSTREAM
7318600N
0+200
UPSTREAM
DD1
DIVIDER DYKE A
(INTERM AS-BUILT ELEV.
CREST ELEV. 519.2 m – 521.6 m)
0+150
7318520.269N
476942.354E
7318500N
0+100
0
50
Scale (metres)

CLIENT
Tahera Diamond Corporation

Jericho Project
2006 Geotechnical Inspection

Divider Dyke A
2006 Geotechnical Inspection

EBA Engineering Consultants Ltd.

PROJECT NO./FILE NO.	DWN	CKD	REV
1100060.010 1100060010Q03b.dwg	DBD	BH	1
OFFICE: EBA-EDM	DATE: September 27, 2006		

FIGURE B-1

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Photo B1
Divider Dyke - Upstream slope, looking north.



Photo B2
Divider Dyke - Downstream slope, looking north.



Photo B3
Divider Dyke - Crest, looking south.



Photo B4
Feature DD-1 - Settlement.



Photo B5
Feature DD-2 - Cracking in dyke filter.



Photo B6
Feature DD-3 - Cracking in dyke filter.

APPENDIX

APPENDIX C EAST DAM

GEOTECHNICAL INSPECTION SUMMARY

Location: **Jericho Mine**
Facility: **East Dam**
Observation Date: **July 27th, 2006**

Inspected by: William T. Horne, P.Eng.
EBA Engineering Consultants Ltd.

OPERATING CONDITION:	
Minimum Crest Elevation	524.5 (approx.)
Top of Core or Liner	523.3
Water Levels - Upstream	517.0
Water Levels - Downstream	N/A
Discharge	N/A

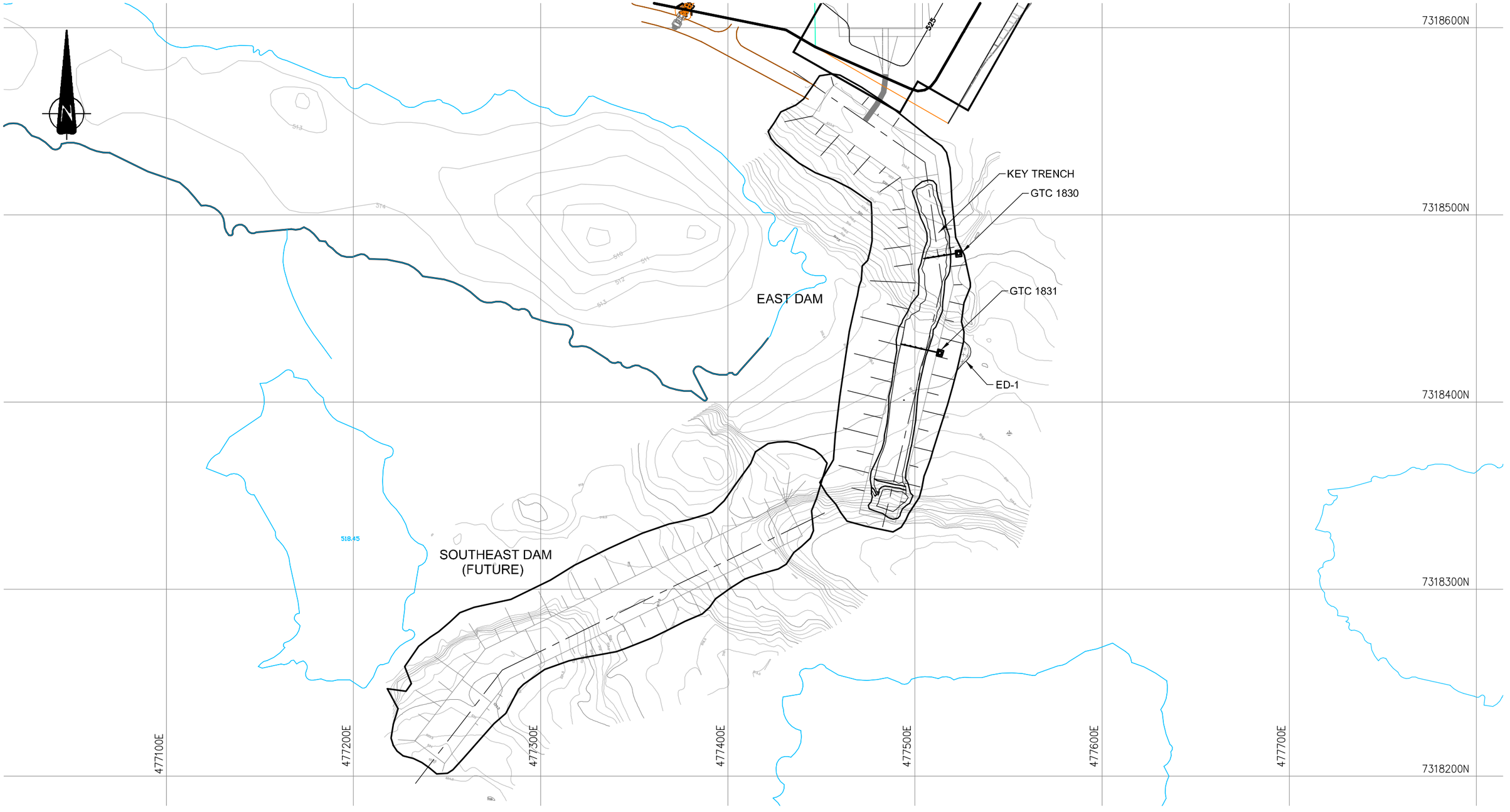
OBSERVED CONDITION:

Features:	Present	Dimensions	Extent	Description	Photographic Records
Erosion	None noted				
Cracking	None noted				
Settlement	None noted				
Seepage	None noted				
Other Features	ED-1 Wet area at dam toe	10 m by 6 m		Wet area in natural low area at dam toe Approximate Elev. 517.0 m	C3

THERMAL SUMMARY:

Ground temperature measurements in attached figures. Base of liner is frozen.

RECOMMENDATIONS AND CONCLUSIONS:
Initiate settlement monitoring. Dam performance is satisfactory.



LEGEND:
GROUND TEMPERATURE CABLES (APPROXIMATE LOCATION)
CABLES AT BASE OF LINER IN KEY TRENCH

0 100
Scale (metres)

CLIENT
Tahera Diamond Corporation

Jericho Project
2006 Geotechnical Inspection

East Dam
2006 Geotechnical Inspection

EBA Engineering Consultants Ltd.

PROJECT NO./FILE NO.	DWN	CKD	REV
1100060.010 1100060010Q04b.dwg	DBD	BH	1
OFFICE: EBA-EDM	DATE: September 27, 2006		

FIGURE C-1

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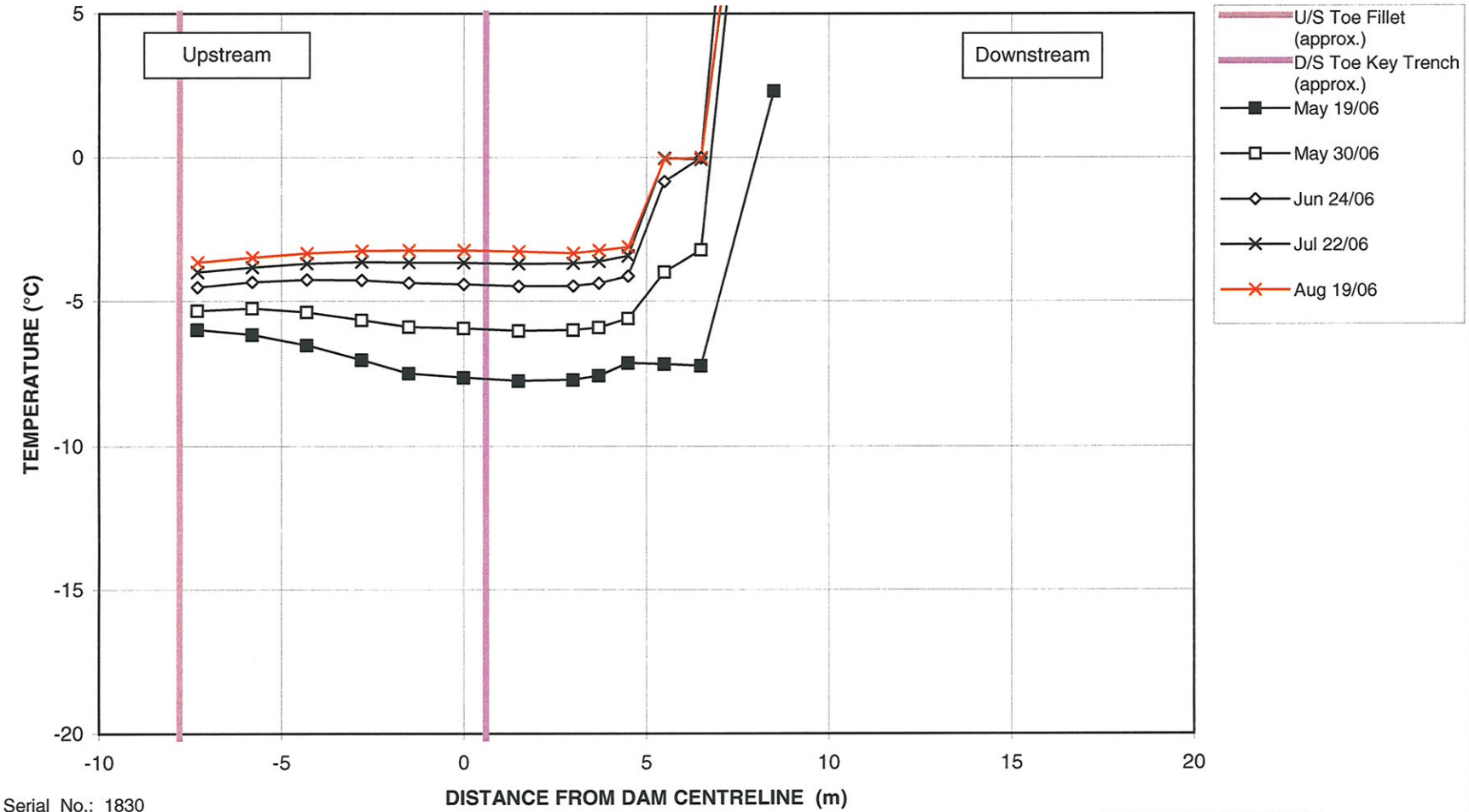


Figure C.2
Horizontal Ground Temperature Distribution
East Dam
Cable 1830 Station 0+150, El. 515 m

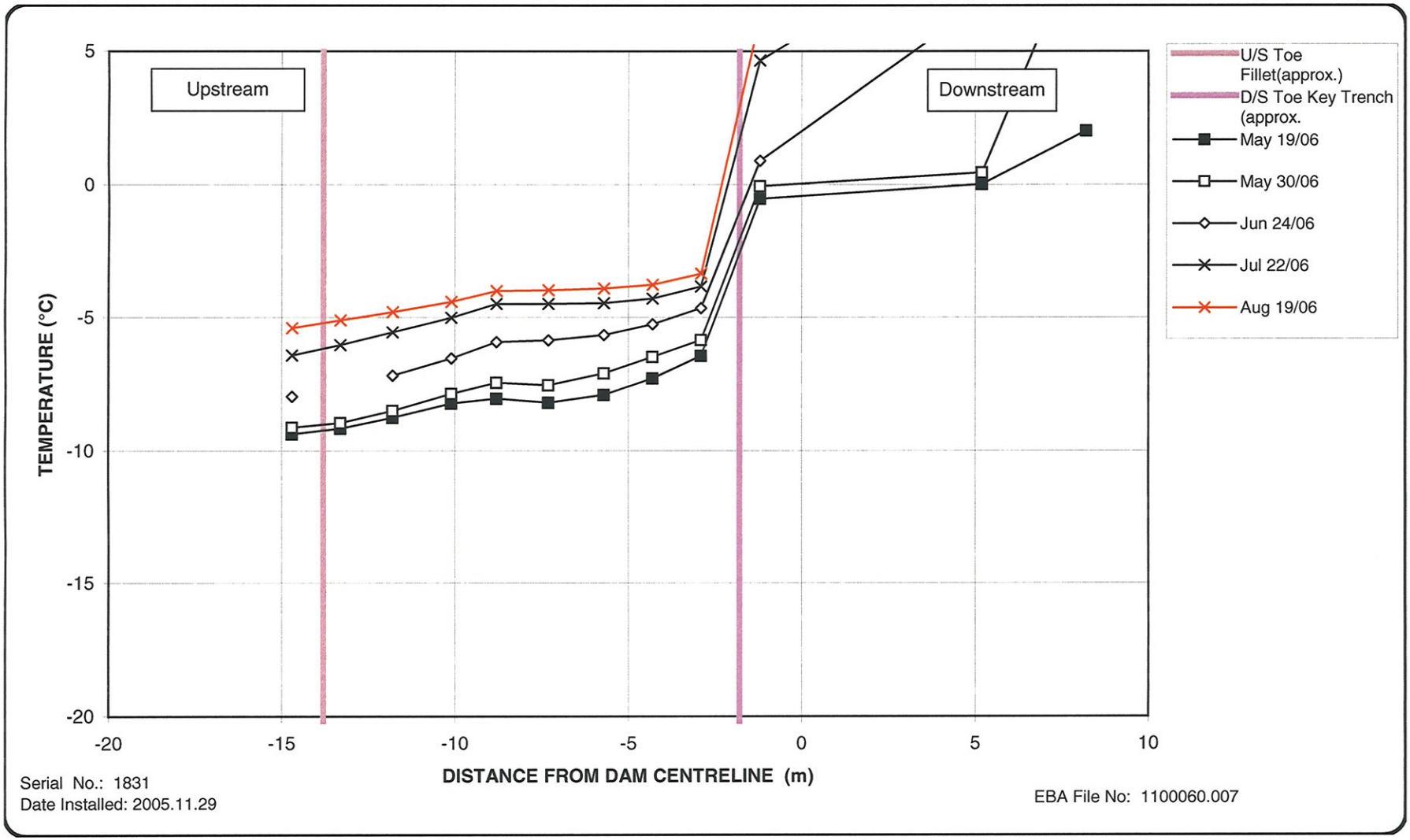


Figure C.3
Horizontal Ground Temperature Distribution
East Dam
Cable 1831 Station 0+100, El. 517 m



Photo C1
East Dam - Downstream slope, looking southwest.



Photo C2
East Dam - Downstream slope, looking west.



Photo C3
East Dam - Feature ED-1, ponded water at low area at downstream dam toe.



Photo C4
Dam Crest - 200 mm minus material over lined portion of dam, coarse PK in upstream shell.



Photo C5
East Dam - Settlement monitoring point.



Photo C6
East Dam - Upstream face, fine PK against coarse PK.



Photo C7
PKCA- Extent of fine PK against East Dam visible. Divider Dyke visible in centre of PKCA.

APPENDIX

APPENDIX D TANKFARM

GEOTECHNICAL INSPECTION SUMMARY

Location: **Jericho Mine**
Facility: **Tankfarm**
Observation Date: **July 27th, 2006**

Inspected by: William T. Horne, P.Eng.
EBA Engineering Consultants Ltd.

OPERATING CONDITION:	
Phase 1 (southern portion)	No fuel in tanks
Phase 2 (northern portion)	Operational

OBSERVED CONDITION:					
Features:	Present	Dimensions	Extent	Description	Photographic Records
Erosion	None noted				
Cracking	None noted				
Settlement	TF-1 Settlement in the south portion of the tankfarm	Uneven surface throughout the southern half of the tank farm	Throughout southern portion	Settlement apparent under tanks. Gaps 15 mm high under several of the tanks. Piping connections higher than tank flanges due to tanks settling (up to 60 mm higher). Some of the tanks appear to be listing.	D3, D4, D5, D6
Seepage	None noted				
Other Features	TF-2 Stained Soil	Numerous small areas, larger area at south end of area	Sporadic, most at valve locations	Hydrocarbon stained soil on inside surface of tankfarm base	D7

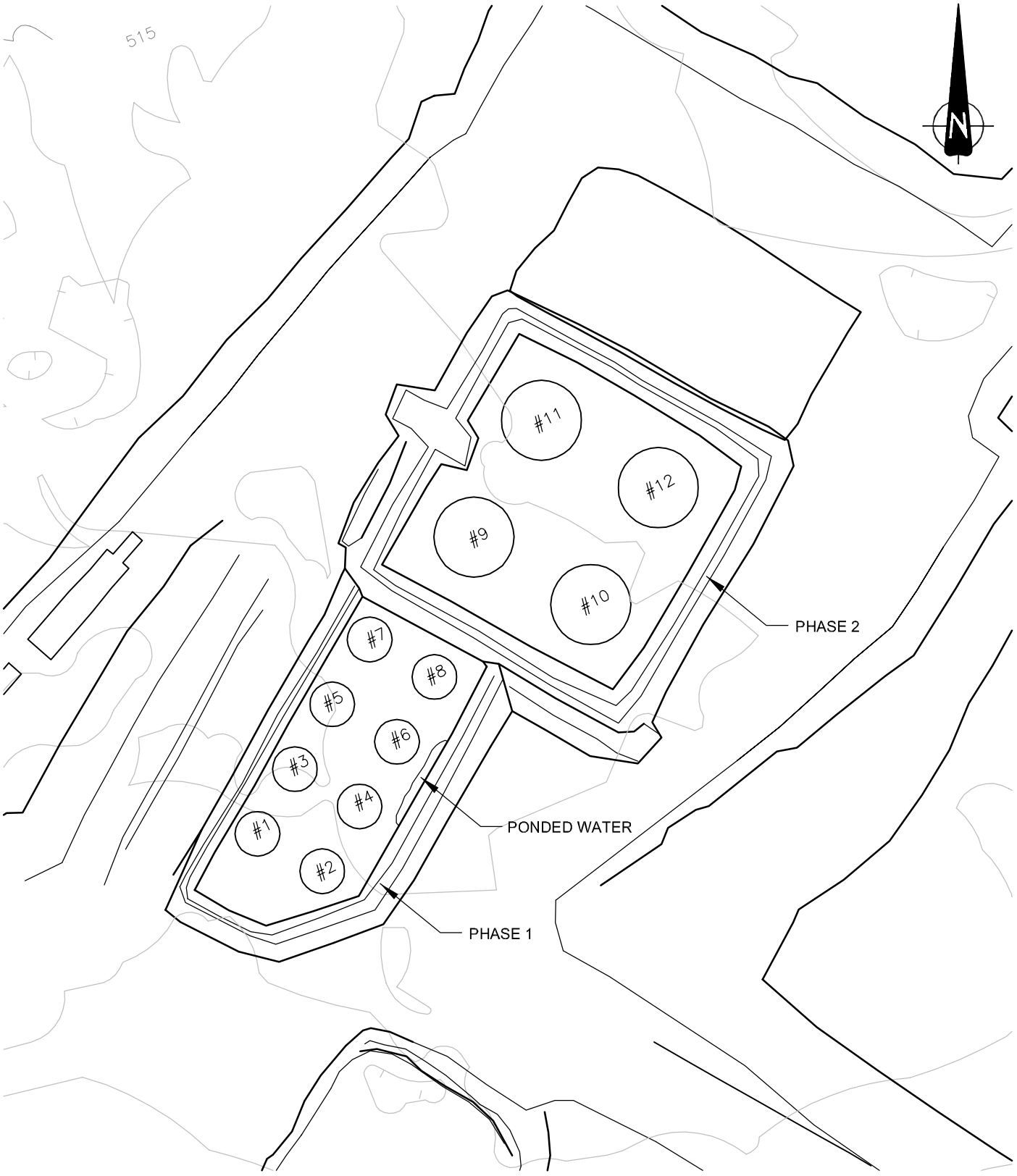
	TF-3 Ponded Water	3 m by 5 m and 1 m by 5 m	Isolated	Ponded water along inside west berm, approximately 50 mm deep by Tank #8 and #4.	D8

THERMAL SUMMARY:

Not applicable

RECOMMENDATIONS AND CONCLUSIONS:

Continue monitoring to determine if settlement is ongoing. Obtain clarification from tank engineer to determine if the tanks are safe to fill with petroleum products. Confirm geomembrane liner integrity.



0 50

Scale (metres)

CLIENT

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2006 Geotechnical Inspection

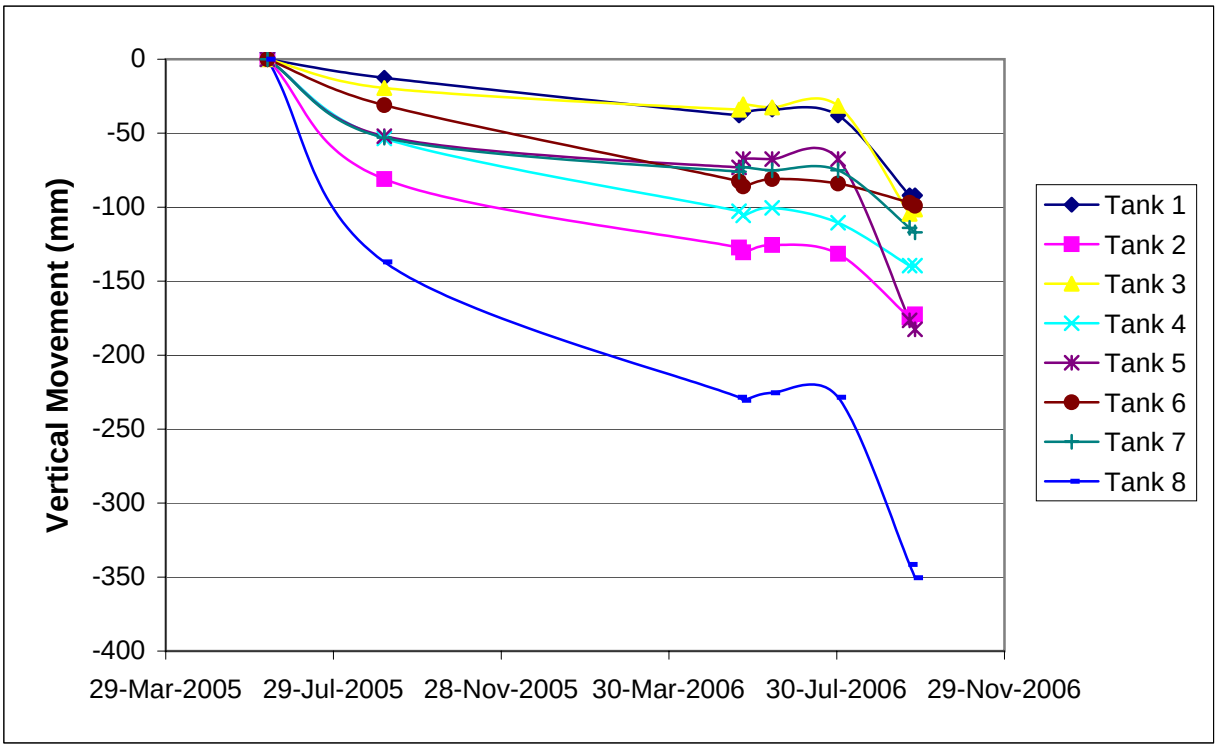
Tank Farm
2006 Geotechnical Inspection

EBA Engineering Consultants Ltd.

PROJECT NO./FILE NO.	DWN	CKD	REV
1100060.010 1100060010Q05b.dwg	DBD	BH	1
OFFICE: EBA-EDM	DATE: September 27, 2006		

FIGURE D-1

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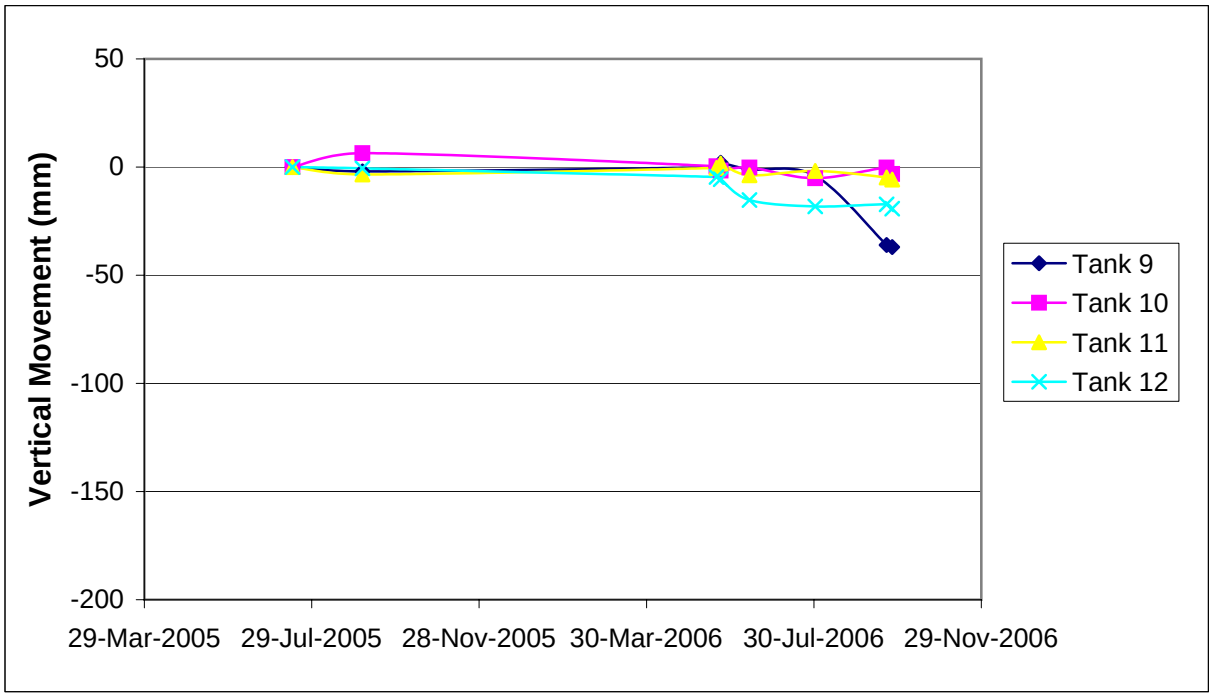


Figure D-2
Tank Farm Settlement Monitoring



Photo D1
Tankfarm - first phase in foreground, second phase in background.



Photo D2
Tankfarm - first phase.



Photo D3
Tankfarm - Feature TF-1, pipes disconnected from tank flanges. Note difference in elevation from pipe to tank flange.



Photo D4
Tankfarm - Feature TF-1, pipes disconnected from tank flanges. Note difference in elevation from pipe to tank flange.



Photo D5
Tankfarm - Feature TF-1, gap under tank due to differential settlement of pad.



Photo D6
Tankfarm - Feature TF-1, gap under tank due to differential settlement of pad.



Photo D7
Tankfarm - Feature TF-2, stained soil.



Photo D8
Tankfarm - Feature TF-3, ponded water in tankfarm containment area.

APPENDIX

APPENDIX E LANDFILL

GEOTECHNICAL INSPECTION SUMMARY

Location: **Jericho Mine**
Facility: **Landfill**
Observation Date: **July 27th, 2006**

Inspected by: William T. Horne, P.Eng.
EBA Engineering Consultants Ltd.

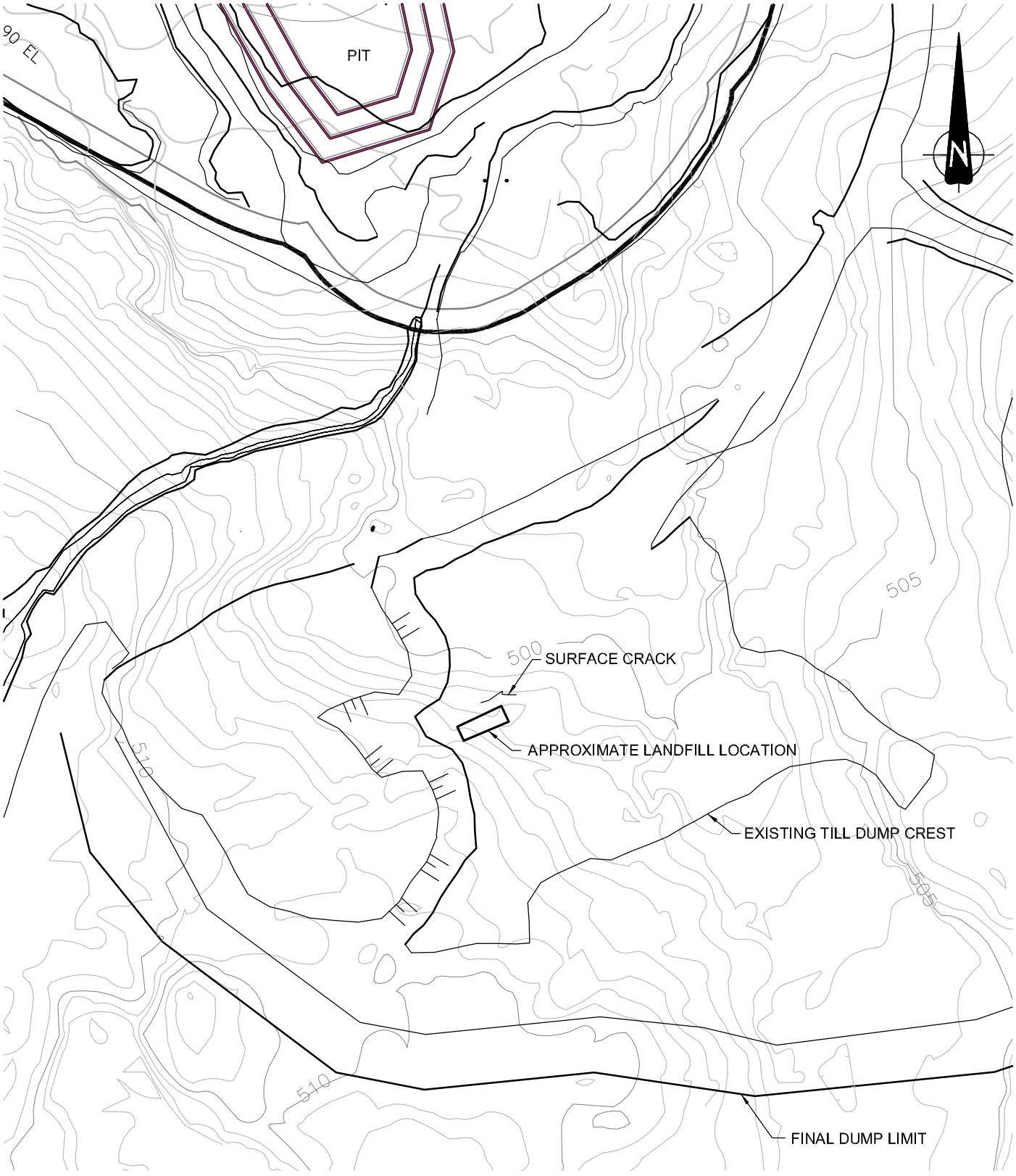
OBSERVED CONDITION:					
Features:	Present	Dimensions	Extent	Description	Photographic Records
Erosion	None noted				
Cracking	None noted	LF-1 - 10 m long, 15 mm wide, 0.3 m deep	Isolated	Surface crack adjacent to landfill – could be a result of settlement of landfilled area.	E5
Settlement	None noted				
Seepage	None noted				
Other Features	None noted				
Erosion	None noted				

THERMAL SUMMARY:
Not applicable

RECOMMENDATIONS AND CONCLUSIONS:

The landfill is constructed within the center of the till dump. Incinerated debris is covered over with till. Metallic debris and non-burnable debris is separated from the burnable debris. Some settlement cracks were observed near the active pit. It is recommended that the debris is compacted prior to covering to reduce the amount of settlement.

Overall satisfactory condition.



0 100

Scale (metres)

CLIENT

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Jericho Project

2006 Geotechnical Inspection

Landfill Area

EBA Engineering Consultants Ltd.

PROJECT NO./FILE NO.	DWN	CKD	REV
1100060.010 1100060010Q05b.dwg	DBD	BH	1
OFFICE: EBA-EDM	DATE: September 27, 2006		

FIGURE E-1

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Photo E1
Landfill location.



Photo E2
Landfill - metal debris.



Photo E3
Landfill - burnable debris.



Photo E4
Landfill - waste pit.



Photo E5
Landfill - surface crack.

APPENDIX

APPENDIX F AIRSTRIP TANK CONTAINMENT AREA

GEOTECHNICAL INSPECTION SUMMARY

Location: **Jericho Mine**
Facility: **Airstrip Tank Containment Area**
Observation Date: **July 27th, 2006**

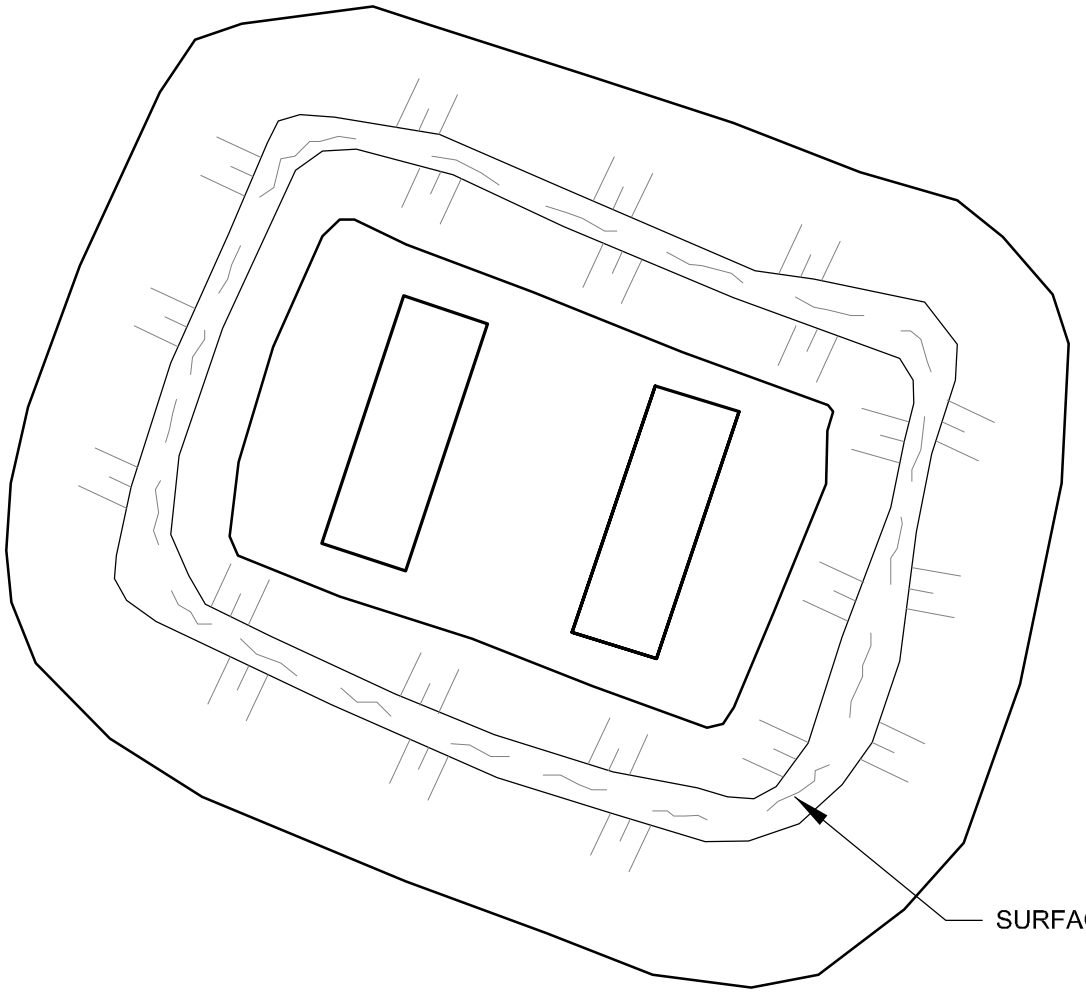
Inspected by: William T. Horne, P.Eng.
EBA Engineering Consultants Ltd.

OBSERVED CONDITION:					
Features:	Present	Dimensions	Extent	Description	Photographic Records
Erosion	None noted				
Cracking	ATF-1	3 to 15 mm wide cracks	Around most of the berm tops.	Appears to be settlement cracks. No signs of instability on the berms, i.e. no elevation difference from one side of the cracks to the other.	F2
Settlement	None noted				
Seepage	None noted				
Other Features	None noted				

THERMAL SUMMARY:
Not applicable

RECOMMENDATIONS AND CONCLUSIONS:

Satisfactory performance.



0 10

Scale (metres)

CLIENT

Tahera Diamond Corporation

Jericho Project
2006 Geotechnical Inspection

Airstrip Tank Farm
2006 Geotechnical Inspection

EBA Engineering Consultants Ltd.

PROJECT NO./FILE NO.	DWN	CKD	REV
1100060.010 1100060010Q05b.dwg	DBD	BH	1
OFFICE: EBA-EDM	DATE: September 27, 2006		

FIGURE F-1

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Photo F1
Airstrip tank farm.



Photo F2
Airstrip tank farm - settlement cracks.

APPENDIX

APPENDIX G GENERATOR TANK CONTAINMENT

GEOTECHNICAL INSPECTION SUMMARY

Location: **Jericho Mine**
Facility: **Generator Tank Containment**
Observation Date: **July 27th, 2006**

Inspected by: William T. Horne, P.Eng.
EBA Engineering Consultants Ltd.

OBSERVED CONDITION:

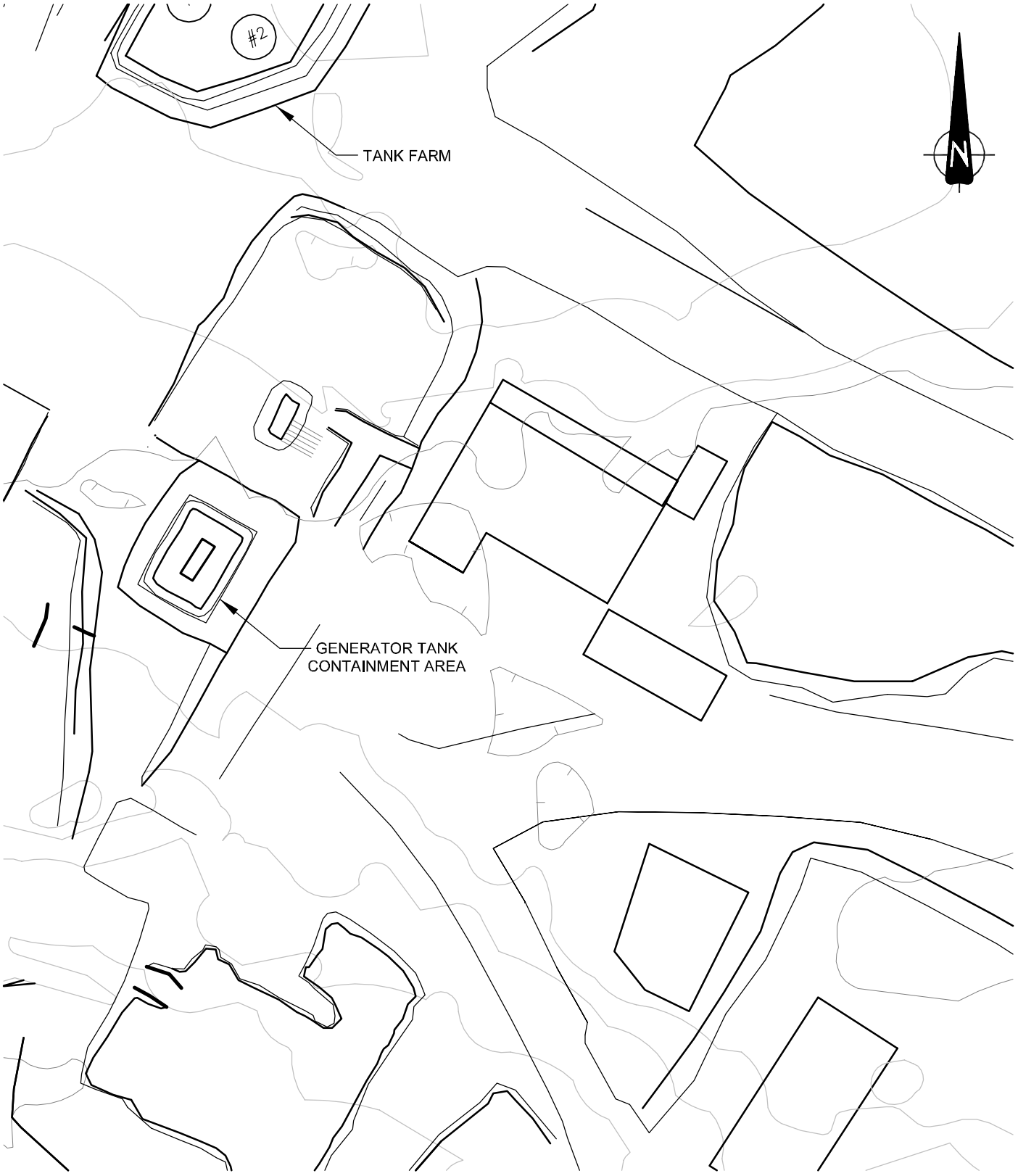
Features:	Present	Dimensions	Extent	Description	Photographic Records
Erosion	None noted				
Cracking	None noted				
Settlement	None noted				
Seepage	None noted				
Other Features	None noted				

THERMAL SUMMARY:

Not applicable

RECOMMENDATIONS AND CONCLUSIONS:

Satisfactory performance.



0 50

Scale (metres)

CLIENT

Tahera Diamond Corporation

Jericho Project

2006 Geotechnical Inspection

Generator Tank Containment Area

EBA Engineering Consultants Ltd.

PROJECT NO./FILE NO.	DWN	CKD	REV
1100060.010 1100060010Q05a.dwg	DBD	BH	1
OFFICE: EBA-EDM	DATE: September 27, 2006		

FIGURE G-1

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Photo G1
Generator tank containment.



Photo G2
Generator tank farm - liner exposed.

APPENDIX

APPENDIX H EAST SUMP

GEOTECHNICAL INSPECTION SUMMARY

Location: **Jericho Mine**
Facility: **East Sump**
Observation Date: **July 27th, 2006**

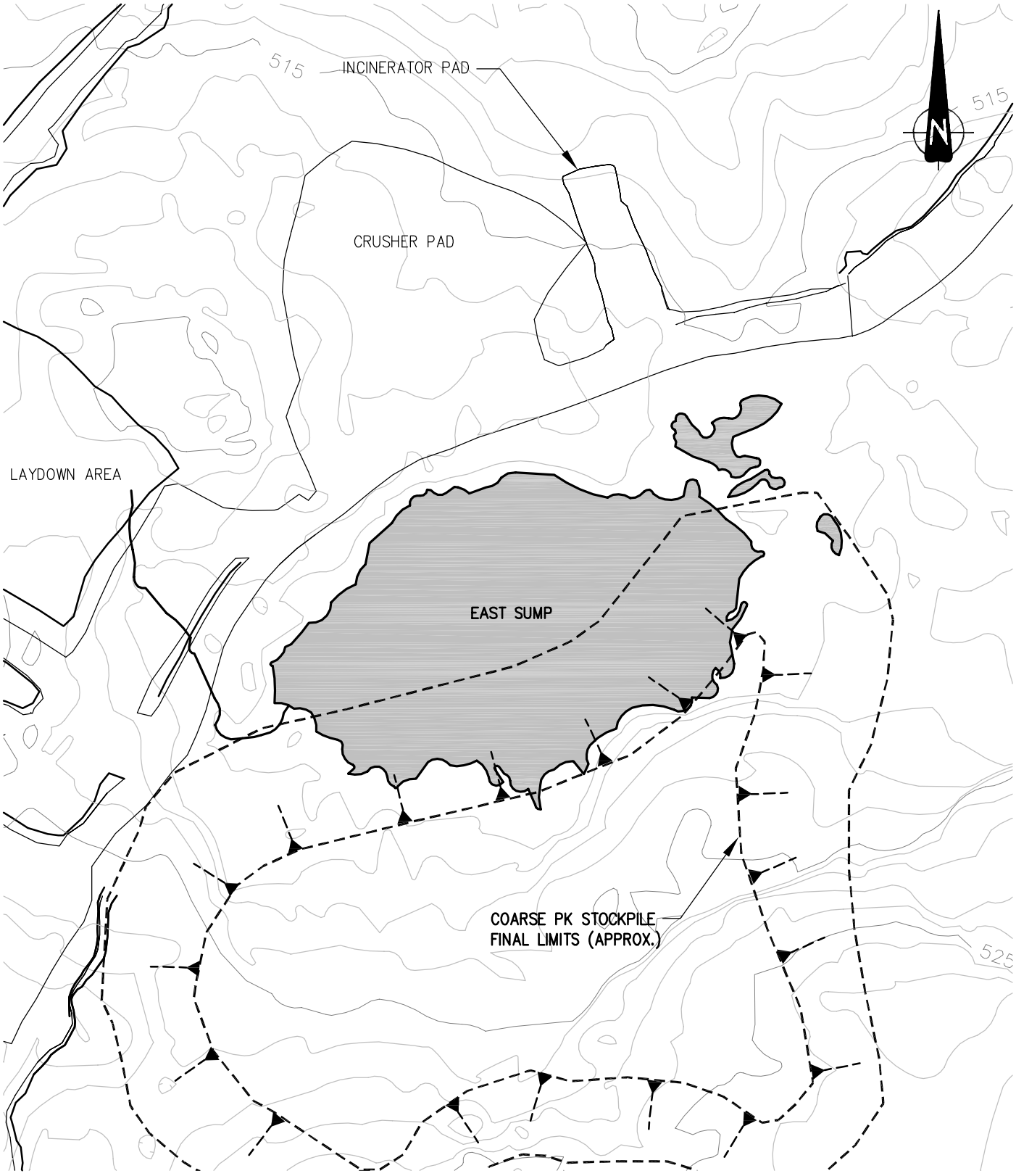
Inspected by: William T. Horne, P.Eng.
EBA Engineering Consultants Ltd.

OPERATING CONDITION:	
Maximum Pond Elev (0.5 m freeboard)	516.0
Water Levels -	514.0
Water Levels - Downstream	N/A
Discharge	To PKCA

OBSERVED CONDITION:					
Features:	Present	Dimensions	Extent	Description	Photographic Records
Erosion	None noted				
Cracking	None noted				
Settlement	None noted				
Seepage	None noted				
Other Features	None noted				

THERMAL SUMMARY:
Not applicable

RECOMMENDATIONS AND CONCLUSIONS:
Satisfactory performance.



0 100

Scale (metres)

CLIENT

Tahera Diamond Corporation

Jericho Project
2006 Geotechnical Inspection

East Sump
2006 Geotechnical Inspection

EBA Engineering Consultants Ltd.

PROJECT NO./FILE NO.	DWN	CKD	REV
1100060.010 1100060010Q05b.dwg	DBD	BH	1
OFFICE: EBA-EDM	DATE: September 27, 2006		

FIGURE H-1

Q:\...Edmonton\...Drafting\...DIVISIONS\...0101\...Projects\...1100060\...010\...1100060010Q05.dwg [Fig-H-1] September 28, 2006 - 3:55pm dbashis



Photo H1
East sump - looking north.



Photo H2
East sump - looking north along road adjacent to area.



Photo H3
East sump, south end looking east - coarse PK stockpile.

APPENDIX

APPENDIX I C1 DIVERSION

GEOTECHNICAL INSPECTION SUMMARY

Location: **Jericho Mine**
Facility: **C1 Diversion**
Observation Date: **July 27th, 2006**

Inspected by: William T. Horne, P.Eng.
EBA Engineering Consultants Ltd.

OPERATING CONDITION:	
Flow	Low flow – maximum water depth in culvert approximately 35 mm.

OBSERVED CONDITION:					
Features:	Present	Dimensions	Extent	Description	Photographic Records
Erosion	None noted				
Cracking	None noted				
Settlement	None noted				
Seepage	None noted				
Other Features	C1-1 – Damp Area	0.3 m by 0.5 m	Isolated	Damp area at downstream edge of south berm (pit road). No seepage observed. Area nearby to original stream channels in C1 area.	I16
	C1-2 – Damp Area	0.5 by 0.5 m	Isolated	Damp area downstream of north berm. No seepage observed.	I17

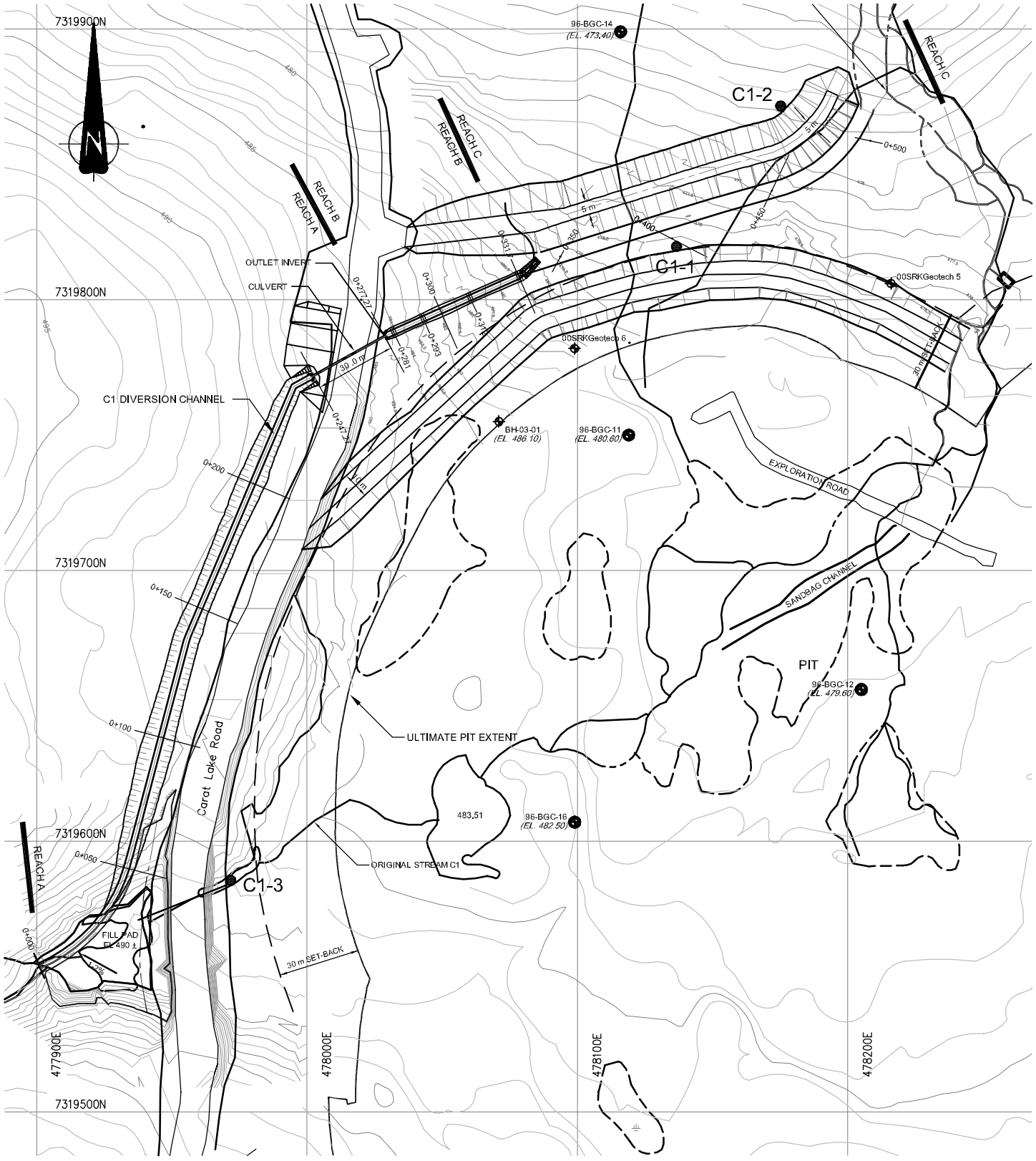
	C1-3 – Ponded water	0.5 m by 4 m	Isolated	Ponded water in remnant stream channel below C1 channel cut off. No seepage apparent.	I18
	C1-4 – Bent culvert inlet				I6

THERMAL SUMMARY:

Not applicable

RECOMMENDATIONS AND CONCLUSIONS:

C1 Diversion structure performance is satisfactory.



LEGEND:

● – FEATURE IDENTIFIED 2006 GEOTECHNICAL INSPECTION

NOTE: DRAWING BASED ON DESIGNED CONFIGURATION

0 100

Scale (metres)

CLIENT

Tahera Diamond Corporation

Jericho Project
2006 Geotechnical Inspection

Diversion Channel
2006 Geotechnical Inspection

EBA Engineering Consultants Ltd.

PROJECT NO./FILE NO.	DWN	CKD	REV
1100060.010 1100060010Q06b.dwg	DBD	BH	1
OFFICE: EBA-EDM	DATE: September 27, 2006		

FIGURE I-1

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Photo I1
C1 Diversion - Flow entering diversion channel.



Photo I2
C1 Diversion - start of diversion channel - lined cut off.



Photo I3
C1 Diversion - flow through reach A - bedrock cut.



Photo I4
C1 Diversion - Reach A - bedrock cut.



Photo I5
C1 Diversion - Reach A - downstream end.



Photo I6
C1 Diversion - Culvert below Reach A - bent culvert end.



Photo I7
C1 Diversion - Culvert below Reach A - low flow- slight bend in base of culvert at upstream end.



Photo I8
C1 Diversion - Reach B and C - below culvert - small pool in Reach B.



Photo I9
C1 Diversion - Reach B - rip rap below culvert.



Photo I10
C1 Diversion - Reach C - surface water, vegetation.



Photo I11
C1 Diversion - Reach C - water diversion berm.



Photo I12
C1 Diversion - Reach C - downstream end - surface water.



Photo I13
C1 Diversion - Reach C - end of Reach C berm - water flowing around the berm.



Photo I14
C1 Diversion - Reach C berm - downstream side.



Photo I15
Water entering Carat Lake below diversion channel.



Photo I16
Feature CD-1, Wet area adjacent to upstream Reach C berm.



Photo I17
Feature C1-2, Damp area downstream of north berm. No seepage observed.



Photo I18
Feature C1-3, Ponded water in remnant stream channel below C1 channel cut off. No seepage apparent.