

2012 ENVIRONMENTAL BASELINE PROGRAMME CHIDLIAK PROJECT, BAFFIN ISLAND, NUNAVUT











REPORT

OCTOBER 2012 ISSUED FOR USE EBA FILE: Y22101249



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EXECUTIVE SUMMARY

The Chidliak Project site (the project site), owned and operated by Peregrine Diamonds Ltd. (Peregrine) is situated on Hall Peninsula, southeast Baffin Island, Nunavut approximately 75 kilometres (km) east of Iqaluit. EBA Engineering Consultants Ltd. operating as EBA, A Tetra Tech Company (EBA) was retained by Peregrine to conduct the 2012 baseline environmental studies on the project site from July 14 to 16.

The 2012 environmental baseline studies involved the survey and assessment of surface water quality, potable-water quality, caribou and carnivores, raptor nests, and preliminary habitat assessments at CH-6 and -7. These studies were conducted over a Chidliak study area of approximately 2,639 square kilometres that has been surveyed in previous years' programmes. The scope of the 2012 baseline environmental studies was reduced from previous years' programmes. In 2011, there were five spring and summer survey events; however, as Peregrine concentrated their exploration activities in 2012 within the Southern Focus Area, a 12 km (maximum) radius area inland which is roughly centred around Discovery Camp, the scope was reduced.

Fourteen surface water quality stations were sampled for routine parameters, nutrients, total metals, total organic carbon, and oil and grease. Laboratory water quality results indicated that the majority of analytes sampled were at or below laboratory detection limits, and all parameters were within the CCME FAL guidelines at all water quality stations sampled, except pH, total aluminum, and total cadmium. The water quality samples were considered to represent natural background conditions since these same parameters were also reported above guideline values during previous sampling years.

Potable-water quality samples, to be analyzed for total coliforms, faecal coliforms, and *Escherichia* coliforms (*E. coli*) were collected at Discovery camp. Discovery camp was the only camp open at the time of the July field event. Laboratory results of the potable-water quality parameters collected from within the camp water system were below laboratory detection limits and within appropriate health criteria (Guidelines for Canadian Drinking Water Quality).

One aerial caribou survey, covering approximately 12% of the study area, was conducted during the July field event. No caribou were observed during the aerial survey; however, 12 caribou (including two calves) were observed incidentally while completing additional baseline studies. Based on habitat conditions described by Chowns and Popko (1980) at the suspected calving areas (the nearest being approximately 40 km from the Southern Focus Area), the majority of the study area and the entire Southern Focus Area does not provide calving habitat.

A total of four known raptor nesting sites were surveyed during this time. Each of these known nest sites are located on east and southeast facing cliffs, approximately 10 – 15 m agl, and within 650 m from the nearest waterbody. Of the four nests surveyed, one active Peregrine Falcon nest site was detected during the July aerial nest reconnaissance. This nesting site represents a Peregrine Falcon territory that has been active since 2010. Due to the special conservation status of the Peregrine Falcon (a species considered Special Concern), this species and its nesting sites are considered sensitive to disturbance. A conservative 1.5 km buffer was recommended near known raptor nests (including those identified from previous years) from early May to mid-August.

Habitats at CH-6 and -7 were characterized as barren rock and sparsely vegetated bedrock habitats, respectively. The cold, dry climate and shallow soils at the two sites result in sparse vegetation cover. Plant compositions were similar between the two sites, with greater species diversity at CH-7 in direct response to moister soil conditions in the surface drainage sheds. Habitats at CH-6 and -7 are common across the study area and are not considered sensitive nor do they have special conservation status in Nunavut.

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APPENDICES

Appendix A **EBA's General Conditions**

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ACRONYMS & ABBREVIATIONS

% Per Cent

°C Degrees Celsius
agl Above ground level
asl Above sea level
ALS ALS Laboratory Group

CCME FAL Canadian Council of Ministers of the Environment for the Protection of Freshwater Aquatic Life

CESCC Canadian Endangered Species Conservation Council

cm Centimetre

COC Chain-of-custody form

COSEWIC Committee on the Status of Endangered Wildlife in Canada

EBA EBA, A Tetra Tech Company

EC Electrical conductivity

E. coli Escherichia coli, a member of the faecal pathogen coliform group

g Gram

GPS Global Positioning System

Hydro Hydrology station (includes surface water quality and water discharge from 2009 - 2011)

km Kilometre

km² Square kilometre km/hr Kilometres per hour

m Metre

mg/L Milligram per litre

mL Millilitre mm Millimetre

MaxxamMaxxam Analytics Inc.MPNMost probable numberNFINational Forest InventoryNTSNational Topographic SystemPeregrinePeregrine Diamonds Ltd.RPDRelative Per Cent Difference

SARA Species at Risk Act SE Standard error

SFA Southern Focus Area
TOC Total organic carbon

μm Micrometre

μS/cm Microsiemens per centimetre

UV Ultra-Violet

WQ Water quality (surface water)
QA/QC Quality assurance/quality control

1.0 INTRODUCTION

The Chidliak Project site (the project site), owned and operated by Peregrine Diamonds Ltd. (Peregrine) is situated on Hall Peninsula, southeast Baffin Island, Nunavut approximately 75 kilometres (km) east of Iqaluit (Figure 1). EBA Engineering Consultants Ltd. operating as EBA, A Tetra Tech Company (EBA) was retained by Peregrine to conduct the 2012 baseline environmental studies on the project site to facilitate understanding of the environmental baseline conditions and ultimately to function as a key management tool for planning exploration activities to avoid or minimize impacts to the surrounding environment.

I.I Project Background

Peregrine began systematic exploration within the Chidliak Project block in the summer of 2008 following receipt of their respective permits and licences. Since then, Peregrine has conducted ground and airborne geophysical surveys, land and lake-based drilling programmes, collection of mini-bulk samples (by hand and small equipment), and operation of three exploration camps (Discovery Camp in 2008, addition of Sunrise Camp in 2009, and addition of Aurora Camp in 2011) across their Chidliak project site. In 2012, Peregrine focused their exploration activities to a small 12 km radius (maximum) area roughly centred around Discovery Camp, inland approximately 20 km from the nearest marine environment (called the Southern Focus Area) (Figure 1).

Environmental baseline studies were initiated by EBA in 2009. To date, a total of three years of baseline environmental studies have been conducted across the Chidliak project site for select key disciplines (EBA 2009, 2011, and 2012). Therefore in 2012, the fourth year, the environmental baseline studies concentrated on key disciplines present in the Southern Focus Area, yet maintained the regional caribou and carnivore survey for consistency between years.

1.2 2012 Baseline Environmental Studies Objectives

The scope of the 2012 baseline environmental studies was reduced from previous years' programmes because Peregrine concentrated their exploration activities within the Southern Focus Area and baseline environmental knowledge across the Chidliak project site was available for the past three years.

The main objective of the 2012 environmental baseline programme was to continue collecting baseline information on the surface water quality, potable water quality at operating camps, caribou and carnivores (across a Chidliak study area approximately 2,639 square kilometres (km²) surveyed in previous years), preliminary habitat assessments at Peregrine's main exploration sites (CH-6 and CH-7 within the Southern Focus Area), and raptor nest occupancy at known nest sites. The 2012 environmental baseline programme was conducted from July 14 to 16, 2012.

2.0 METHODS

Ms. Karla Langlois, P.Biol with EBA, has carried out the baseline field programmes since 2009 with help from local field assistants (from Pangnirtung and Iqaluit) provided by Peregrine. In 2012, Ms. Rhoda Noah, from Pangnirtung assisted Karla during the baseline environmental studies. Ms. Shirley Standafer-Pfister,

Peregrine Diamonds' environmental manager, acted as a quality control assessor and an assistant during the aerial surveys and preliminary habitat assessment.

2. I Surface Water Quality

The aim of the surface water quality sampling programme was to obtain reliable data to determine baseline July water quality conditions and to prevent contamination and deterioration of the samples before analysis to the degree possible. For comparative purposes, the surface water quality data were evaluated against the Canadian Council of Ministers of the Environment (CCME) guidelines for the Protection of Freshwater Aquatic Life (FAL).

In 2012, the surface water quality sampling methods were consistent with those employed during the 2009 to 2011 baseline programmes, and the water quality samples were collected consistent with standard grab-sampling methods, including:

- *in situ* field pH, water temperature, and electrical conductivity (EC) collected using a calibrated Oakton® Multi-Parameter 35 Series meter, which was allowed sufficient time to come to equilibrium before recording the field parameters;
- field parameters measured upstream from the surface water quality sampling station to minimize water disturbance;
- the surface water quality station approached downstream or downwind of the water quality sampling location;
- the water quality sample collected into the current or wind, and off-shore as much as possible without disturbing the bottom sediment;
- disposable, powderless, nitrile gloves worn during handling of all the bottles and equipment;
- care taken to avoid touching the inner portions of the sample and preservative bottles and caps with gloved hands;
- triple-rinse bottles with source water prior to collecting water sample (except for the oil and grease samples) and dispose of the rinsate away from the sampling station;
- plunge the sample bottle into the water (at arm's length from the sampler) in a horizontal position to minimize collection of bottom sediment;
- water quality samples shipped to the laboratory as soon as possible to meet the recommended laboratory hold time for parameter analysis (where possible, due to transportation from the remote study area);
- water quality samples transported in laboratory-issued portable coolers with ice packs, to ensure that the water quality samples remain below 4 °C to the degree possible;
- ensure water quality samples remain upright and secured in the cooler, and the cooler is sealed with tape prior to shipping; and

 a chain-of-custody (COC) form prepared and shipped with the water quality samples to the laboratory for analysis.

The laboratory detection limits were appropriate for the CCME FAL guidelines.

2.1.1 Quality Controls

Three types of quality control samples were collected with the field sampling programme: trip blank, field blank and duplicate samples. Trip blanks (also referred to as Travel blanks), were prepared by ALS, accompanied the sample bottles to the site, were left intact, and returned to the laboratory with the water quality samples. One trip blank was submitted for the July field event and analyzed for the full suite of parameters (routine, nutrients, total metals, total organic carbon, and oil and grease). Trip blanks were used to test for possible contamination that might arise during the handling, transport and storage of samples.

Field blanks were prepared in the field using de-ionized water supplied by ALS. One field blank sample was collected and analyzed for the full suite of parameters. Field blanks were used to test for contamination arising from the sampling equipment, handling, or from ambient conditions during sampling.

Duplicate samples were collected in the field using source water from random stations. Duplicate samples were collected to test the validity and precision of sampling procedures and laboratory methodology. At least one duplicate sample was collected for every 10 field samples, representing 10 Per Cent (%) (or greater) replicate sampling. All duplicate samples were analyzed for the full suite of parameters. Duplicate samples were compared to their respective field samples using a Relative Per Cent Difference (RPD) Assessment.

2.1.2 Field Samples

A total of 14 surface water quality sampling stations were to be sampled during the July field event; 12 were sampled, as two were dry at the time of the event. These 12 water quality stations were positioned along lakes and streams, upstream and downstream of known project footprints, as well as outside the proposed project's zone of influence. The water quality stations were established in association with proposed exploration activities since 2009. A water quality sampling location was situated downstream of each proposed exploration activity area (including camps), and four surface water quality stations were situated in sub watersheds with no exploration activity.

2.2 Camp Potable Water Quality

In 2012, Peregrine opened and operated two camps, Sunrise and Discovery camps, both within the Southern Focus Area. The aim of the 2012 camp potable-water quality sampling programme was to determine if water quality at the two Chidiak camps met the Guidelines for Canadian Drinking Water Quality (Federal-Provincial-Territorial Committee on Drinking Water of the Federal-Provincial-Territorial Committee on Health and the Environment 2010) and to prevent contamination and deterioration of the samples before analysis, as much as possible.

At the time of the July field event, potable-water quality samples were collected from Discovery Camp. Potable water quality samples were not collected at the Sunrise camp since the camp was not yet in operation at the time of the field event.

Water quality samples were collected from taps at the beginning and end of the camps' water distribution system, as well as at the raw water source, at the pump intake pipe. Discovery Camp includes two water holding tanks that were filled from the local water source (from the proximal glacial rill). One water tank supplies water to the Kitchen and Dry 2 tents, and is sanitized using ultra-violet (UV) filtration and addition of sodium hypochlorite (household bleach) to disinfect the distribution system. The second water tank supplies water to the wash basins in the toilet and Dry 1 tents, and is sanitized using the addition of household bleach only. At the time of the July field event, potable-water samples were collected at the Discovery Camp raw water intake source, and from the taps located in the Kitchen, Dry 1, Dry 2, and Bathroom tents.

The sample bottles, preservatives, coolers, and ice packs used in the collection and shipment of the camp and quality control samples were supplied by Maxxam Analytics (Maxxam) laboratory from Ottawa. Maxxam in Ottawa was contracted to facilitate sample transport (daily flight service from Iqaluit) and ensure samples were analyzed within 24 hours of collection (thus preventing sample deterioration and loss of data).

Potable-water quality sampling methods included the following:

- immediately prior to collecting potable-water quality samples, the water distribution lines were purged by running water through the taps for 10 minutes;
- disposable, powderless, nitrile gloves were worn during handling of all the bottles and equipment;
- sample bottles filled to the laboratory designated volume (appropriate headspace given);
- sample bottles were provided by the laboratory with preservative added, and therefore, were not rinsed prior to sample collection;
- once the sample was collected, the bottle lids were tightened and the bottle inverted at least three times to mix the preservatives;
- sample bottles were transported in laboratory-issued portable coolers with ice packs, to ensure that the water quality samples remained below 4 °C;
- ensure water quality samples remain upright and secured in the cooler, and the cooler is sealed with tape prior to shipping;
- a COC form is prepared and shipped with the water quality samples to the laboratory for analysis; and
- samples were shipped priority class to ensure samples met the required 24 hour holding time.

Two quality control samples were collected in the field, including a field blank and a duplicate sample. A trip blank, supplied by the lab, was not included in the potable-water field event, since the trip blank could not meet the 24 hour hold time for analysis. The camp potable-water quality samples and the two quality control samples were submitted to Maxxam laboratories for analysis of total and faecal coliforms and *Escherichia* Coli (E. *coli*).

2.3 Aerial Caribou Survey

The objective of the aerial caribou surveys was to determine the distribution and abundance of caribou in the study area at the time of the July field event (when caribou were in their post-calving area). The aerial caribou survey maintained the same flight transects previously flown during past years' baseline studies. This included a study area totalling 2,637 km². The study area was divided into six parallel transects, totalling 404 km in length (or covering approximately 12% of the entire study area).

Immediately prior to beginning the survey, weather conditions were documented and the A-Star helicopter windows were calibrated to represent a 400 m boundary on each side of the helicopter flying at 150 m above ground level (agl). Calibrating the aircraft windows allows observers to determine which caribou are inside 400 m and which ones are beyond (outside) 400 m. All caribou inside and outside the 400 m boundary on either side of the helicopter were counted.

If it had been necessary, the helicopter would have passed over the observed caribou, gained altitude, and then circled back to the general area where the caribou were last seen to ensure all caribou in the group were recorded. The helicopter would perform no more than one additional pass near the caribou before continuing the survey on transect.

Flight altitude and ground speed was 150 m agl and 100 - 160 kilometres per hour (km/hr) (depending on the tail winds), respectively. All caribou and caribou sign observed were recorded on standardized datasheets. Information recorded for each caribou observation included the GPS location, number of caribou observed, activity, and herd composition (if possible without disturbing the animal(s)). Following the caribou survey, caribou density estimates were calculated using Jolly's Method 2¹ (Jolly 1969) using unequal length transects.

Incidental observations of caribou seen outside the caribou survey, as well as other species, including carnivores, waterfowl/water birds, and raptors, were also recorded.

2.4 Aerial Carnivore Survey

The objective of the carnivore survey was to document the presence of carnivores (*e.g.* polar bears, wolves, foxes, and wolverines) and the location of sensitive carnivore areas (*i.e.* carnivore dens) at the time of the field event.

National Topographic System (NTS) maps at a 1:20,000 scale were reviewed and consultations with on-site Peregrine staff were used to identify potential fox and wolf denning habitat. Due to the limited amount of suitable denning habitat known in the study area, the carnivore and carnivore den survey was completed in conjunction with the aerial caribou survey. As encountered, sites that possess potential fox and wolf denning habitat such as eskers, stream banks, and lakeshores were surveyed.

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¹ Jolly (1969) established aerial survey protocols and density estimate calculations for surveying wildlife populations, that provide the foundation for contemporary surveys. The systematic aerial surveys carried out in the study area follow these same basic principles established by Jolly (1969), including a constant survey height and speed, fixed survey widths, and parallel transects. This method calculates population estimates based on the sum of animals counted along each transect and the area of each transect. These values were then used to estimate a population variance, which was used to estimate the standard error of total population and the 95% confidence limits of the total population size.

A specific den assessment, including general habitat characterization, GPS location, slope aspect, estimated distance to the nearest waterbody, and the activity status (active vs. inactive) were to be recorded for all dens, if encountered.

Incidental observations of other species, including waterfowl/water birds and raptors were also recorded during the aerial carnivore survey.

2.5 Aerial Raptor Nest Reconnaissance

Aerial cliff-nesting raptor surveys have been completed annually across the study area since 2009, and a few known and probable nest sites have been detected. No known raptor nest site occurs within the Southern Focus Area.

The objective of the aerial raptor nest reconnaissance survey was to monitor the use of known and probable raptor nest sites. The survey involved the use of a helicopter, which remained at least 30 m from the cliff face and slowly approached in view of the known nest site. As required, evidence of nest occupancy (including seeing at least one adult bird at the nest site, two adults together, finding a nest containing eggs or young, and flushing an adult from a nest) was determined by slowly passing by the nest site. At most, two flight passes were performed to establish the location and occupancy of nest sites.

Nest occupation and species presence data will be reported, and sensitive areas and timing restrictions, if any, will be determined in association with the Southern Focus Area.

2.6 Species at Risk Surveys

Peregrine Falcon, Short-eared Owl, wolverine, and polar bear are considered to have special conservation status² and may occur within the Southern Focus Area or local vicinity. Of the four Species at Risk potentially occurring in the local region, only Peregrine Falcon and polar bear have been detected during past years' baseline studies and by camp staff. Short-eared Owl and wolverine have not yet been detected. Contradictory information suggests the Short-eared Owl may or may not occur on Baffin Island (Canadian Wildlife Service 2009; Sibley 2003, Nunami Jacques Whitford 2008). In addition, wolverines may occur in the study area; however, they are considered to occur in low population densities with no viable breeding population on Baffin Island (Nunami Jacques Whitford 2008).

The objective of the survey was to detect the occurrence of Species at Risk within the study area. In general, Species at Risk potentially occupying the Southern Focus Area or local region occur randomly across the landscape, except for Peregrine Falcons who nest on cliff ledges. Due to the general randomness of occurrence, the Species at Risk surveys were completed in association with the aerial caribou/carnivore

² Peregrine Falcon, Short-eared Owl, and polar bear were listed by the Species At Risk Act (SARA) as Special Concern species (Schedule 1). Whereas, the wolverine was assessed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as a Special Concern species (assessed May 2003). By definition, these species are sensitive to human activities or natural events due to their biological characteristics (*e.g.*, low reproductive rate).

survey. Plus, a specific raptor nest reconnaissance survey was also completed to detect the occurrence of Peregrine Falcons and their sensitive nesting areas.

Any area important to a species with special conservation status is considered a sensitive habitat and was mapped in relation to the Southern Focus Area. All incidental observations of species with special conservation status (including those documented in camp wildlife logs) will be analyzed and reported.

2.7 Preliminary Habitat Assessments

The objective of the preliminary habitat assessment was to document existing habitat type(s) occurring at the proposed CH-6 and CH-7 kimberlite sites. The ground-based survey involved walking transects in consecutively larger circles away from the proposed development sites to document dominant vegetation species, species compositions, and any sensitive areas within habitats encountered.

All incidental observations of wildlife species observed and their sign were documented in relation to the corresponding habitat types and unique landscape features, if any, during the July field event.

3.0 RESULTS

The 2012 field programme was conducted from July 14 to 16. At the time of the July field event, weather ranged from clear to overcast, few rain showers, winds were light to strong, and the temperatures ranged from approximately 8 to 15 degrees Celsius (°C). Snow remained across approximately 1% of the eastern and northern portions of the study area, but less than 1% cover across the remainder. Ice also persisted across most of the large sized lakes in the eastern limit of the study area, but all other lakes were clear at the time of the field event.

3.1 Surface Water Quality

Surface water quality sampling was conducted on July 14 and 15, 2012 (Photograph 1). During this time, all surface water quality sampling stations were ice-free, but ice shards were flowing downstream of Sunrise Lake past water quality station WQ-5 at the time of the field event. In addition, the upper reaches of the ephemeral watercourses, including water quality stations Hydro-1 and -2 and WQ-12 were dry. As the water quality sampling Station at WQ-12 was dry, it was subsequently moved approximately 600 m west to collect downstream water quality conditions from an existing drill site.

As a result, 12 of the 14 surface water quality stations were sampled at the time of the July field event (Figure 2).

3.1.1 Quality Controls

As part of the quality control programme, a trip blank, field blank, and duplicate samples were collected and analyzed for the full suite of parameters, including: routine parameters, nutrients, total metals, total organic carbon, and oil and grease. A summary of the laboratory results of the quality control samples are provided in Tables 1, 2a, and 2b, and the detailed laboratory reports are included in Appendix B.

3.1.1.1 Field and Trip Blanks

ALS laboratory analyzed a field and trip blank for the full suite of parameters. Laboratory analysis of the field and trip blanks indicate that all parameters were below the laboratory detection limits, and the methods employed during the collection, transportation, and analysis of these samples did not lead to the introduction of potential contaminants (Table 1).

3.1.1.2 Duplicates

A total of two duplicate samples were collected at the time of the July field event to represent 10% of the field samples. These duplicate samples were collected with the field samples at water quality stations WQ-3 and WQ-7 using the same sampling methods, and were analyzed as blind duplicates for the full suite of parameters.

To determine the reliability of the duplicate samples and, therefore, the precision of the sampling and analytical methods, a RPD assessment was conducted between the duplicates and their field samples (Tables 2a and 2b). Since analytical error increases near the detection limit, only the results five times greater than the detection limit were considered applicable to the RPD assessment. Results that were not applicable to the RPD assessment (those less than five times the detection limit) are considered reliable.

Based on the RPD assessment of the laboratory results, all parameters collected and analyzed in both duplicate samples (Duplicates 1 and 2) were considered reliable (Tables 2a and 2b); therefore, the sampling and analytical methods employed were acceptable.

3.1.2 Field Samples

Due to dry conditions, 12 of the 14 surface water quality stations were sampled at the time of the July field event. Existing site conditions were described including surface water temperatures, pH, and EC using a calibrated handheld Oakton® Multi-Parameter probe, and summarized in Table 3. The pH of the sampling stations ranged from 6.05 to 7.86, EC ranged from 4.2 to 23.8 μ S/cm, and surface water temperatures ranged from 4.4 to 14.9 °C (Table 3). In general, the pH levels remained similar between the watercourse and lake water quality stations; however, the EC and water temperatures of the lake water quality stations were generally lower than those of the watercourse stations when compared.

Table 3. Surface Water Quality Station Description and Field Conditions, 2012

Surface Water Quality Station	General Description	рН	Electrical Conductivity (µS/cm)	Surface Water Temperature (°C)
Hydro-1	First-order watercourse	Dry; not sampled	Dry; not sampled	Dry; not sampled
Hydro-2	First-order watercourse	Dry; not sampled	Dry; not sampled	Dry; not sampled
WQ-3	Lake outlet – reference lake	6.46	4.2	4.4
WQ-4	Sunrise Camp Lake shoreline	6.64	6.5	9.5
WQ-5	McKeand River at Sunrise Lake outlet	6.95	6.4	5.4
WQ-6	McKeand River downstream of Discovery Camp	6.42	4.4	9.0

Table 3. Surface Water Quality Station Description and Field Conditions, 2012

Surface Water Quality Station	General Description	pH	Electrical Conductivity (µS/cm)	Surface Water Temperature (°C)
WQ-7	McKeand River	6.62	5.3	13.6
WQ-8	Third-order watercourse; reference watercourse	7.86	6.9	14.2
Hydro-9	Second-order watercourse	6.42	6.4	14.1
Hydro-10	Second-order watercourse	6.14	7.2	12.1
Hydro-11	First-order watercourse	6.05	23.8	14.9
WQ-12	First-order watercourse	6.67	8.3	14.2
WQ-13	Second-order watercourse; reference watercourse	7.15	7.8	11.6
WQ-14	Third-order watercourse	7.68	10.6	10.6

Laboratory analysis of the surface water quality samples indicates that many of the analyzed parameters were below the laboratory detection limits (Tables 4a and 4b). When these field results are compared to the CCME FAL guidelines, pH and total aluminum levels are outside criteria levels at many of the water quality stations, except for stations WQ-12 and -14. In addition, total cadmium levels were above criteria levels at Station Hydro-11. The remaining stations reported total cadmium levels below the laboratory detection limit (0.000010 mg/L), yet considered above the CCME FAL guideline value.

The surface water quality conditions represent natural background conditions, including pH, aluminum, and cadmium levels outside CCME FAL guidelines.

3.2 Camp Potable Water Quality

Discovery Camp has been in seasonal operation since 2008; and potable-water quality sampling has been conducted at this site since 2010. Potable-water quality samples as well as a duplicate sample and field blank were collected at Discovery Camp at the conclusion of the July field event and submitted to Maxxam in Ottawa for analysis of total and faecal coliforms, and *E. coli*. The duplicate sample was collected with the Kitchen potable water quality sample. An additional potable water quality sample was collected at the raw water intake hose in the water-supply stream (Photograph 2).

Laboratory analysis indicated that all parameters from the Discovery camp water systems, including the duplicate sample were below laboratory detection limits, except at the raw water source (Table 5). In addition, results from the quality control samples, the duplicate and field blanks, indicated that the sampling methods employed during the collection, transportation, and analysis of these samples did not lead to the introduction of potential contaminants.

Since a detectable level of naturally occurring coliforms was reported in the raw water source samples and not within samples collected from the camp water systems, these results indicate that the UV and bleaching system used at the Discovery Camp was an effective disinfectant. The potable-water quality samples from Discovery Camp were considered within the appropriate health criteria.

3.3 Aerial Caribou Survey

A single aerial caribou survey, covering 12% of the entire study area, was conducted on July 14, 2012 using an A-star helicopter. On July 14, the weather was overcast and approximately 13 °C. In the most easterly and northern portions of the study area, snow covered approximately 1% of the land, but was reduced to less than 1% throughout the rest of the study area. No caribou were observed on transect during the July aerial caribou survey; however, three incidental caribou observations were recorded over a two day period. On July 14, a group of two caribou was observed on a residual snow patch approximately 4.5 km southeast of the Southern Focus Area (Figure 3). On July 15, a group of nine caribou (including two calves) was observed incidentally while water quality sampling (Photograph 3), and later a lone caribou was observed approximately 3.5 km from the larger group (Figure 3).

Furthermore, a caribou pellet group was observed while water quality sampling at Station WQ14 (Figure 3)

Additional incidental caribou observations were reported by Peregrine staff in the 2012 Wildlife Log and are summarized in Section 3.9.

3.4 Aerial Carnivore Survey

Carnivores were surveyed in conjunction with the aerial caribou survey. As encountered, sites that were considered potential carnivore denning habitat were surveyed, including sand deposits and gravel ridges, particularly near waterbodies or potential look-out points. During the survey, no carnivores or carnivore dens were observed.

Additional incidental carnivore observations were reported by Peregrine staff in the 2012 Wildlife Log and are summarized in Section 3.9.

3.5 Aerial Raptor Nest Reconnaissance

An aerial raptor nest reconnaissance was conducted on July 14 and 15, 2012, at a time when cliff-nesting raptors would be incubating eggs or hatchlings. A total of four known or probable raptor nest sites detected during the previous years' surveys were visited during this July field event (Figure 4). All four nesting sites surveyed during the 2012 reconnaissance were located on east and southeast facing cliffs, approximately 10 to 15 m above ground level (agl), and within 650 m of the nearest waterbody.

All known or probable nest sites were outside the Southern Focus Area; the nearest being approximately 4 km to the southeast. Since 2009, Rough-legged Hawks, Common Ravens, and Peregrine Falcons had been documented occupying or likely occupying these nest sites. At the time of the 2012 raptor nest reconnaissance, one active nest site was confirmed, and a second possibly active nest site was recorded.

The confirmed active nest site (nest site 1), approximately 11 km north of the Southern Focus Area, was occupied by a Peregrine Falcon at the time of the survey (Table 6) (Photograph 4). The scrape was located approximately 15 m agl on an east facing cliff wall, and an adult remained on the scrape during the reconnaissance. Peregrine Falcons were also flushed from this cliff in 2010 and 2011, but no scrape was observed in those years.

A second nest site was potentially active during the July reconnaissance survey (Table 6). When approaching the cliff, the pilot observed an unknown raptor flush from the area of a known stick nest site.

This raptor was not identified to species and the nest was not observed after two observation passes along the cliff. This stick nest was considered inactive in 2011, but was occupied by Rough-legged Hawks in 2010, and likely occupied by Common Ravens in 2009 (Table 6).

The third raptor nest site was first reported in 2010 as a probable nest site, as evidence of a pair of Roughlegged Hawks occupying the immediate area (Table 6). However, no active nest was detected. Later in 2011, no raptors were observed in the area. This cliff was revisited during the 2012 nest reconnaissance survey, and two inactive stick nests were observed; one in satisfactory condition and another in poor condition (Table 6). In addition, several possible old scrape sites, as evidence from the vegetation cover on two cliff ledges were detected. No raptors were observed at or near the nest site during the 2012 nest reconnaissance survey.

The fourth nest site, a stick nest in satisfactory condition, was first detected in 2011 (Table 6). In 2011, the nest was considered inactive and no raptors were seen at or near the nest site. At the time of the 2012 nest reconnaissance, this stick nest remained inactive (Table 6).

Table 6. Summary of Raptor Nest Site Observations, 2009 - 2012

Nest Site	Potential Species	2012 Observation	General Nest Site Description	Summary from Previous Survey Years	Distance to Southern Focus Area (approx.)
1	Peregrine Falcon	Active scrape. Adult Peregrine Falcon observed on scrape; adult did not flush from nest site.	Scrape approximately 15 m agl on east facing wall, approximately 180 m from permanent watercourse.	A Peregrine Falcon flushed from the same cliff face during both 2010 and 2011 surveys but no scrape confirmed at this time.	11 km
2	Rough- legged Hawk and/or Common Raven	Possible active nest. Pilot saw an unknown raptor flush from the cliff. Possible active nest site.	Nest approximately 10 m agl on southeast facing cliff, and within approximately 650 m from the nearest lake.	Identified in 2009 as a probable Common Raven nest site as evidence by an adult pair in the local area. In 2010, this nest was occupied by a Rough-legged Hawk as evidence of an adult sitting on the nest. In 2011, the nest was considered inactive.	4 km
3	Multiple Species	Inactive nest site. 1 inactive stick nest in generally good condition. An additional stick nest in poor condition in immediate vicinity. Possible inactive scrape sites detected. No raptors observed.	Nests approximately 10 m agl on east facing wall, approximately 350 m from the nearest lake.	Pair of Rough-legged Hawks observed together near the cliff in 2010, but no nest detected at this time. No raptors observed near cliff in 2011.	15.5 km

Table 6. Summar	v of Raptor Nest	Site Observations	. 2009 - 2012
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Nest Site	Potential Species	2012 Observation	General Nest Site Description	Summary from Previous Survey Years	Distance to Southern Focus Area (approx.)
4	Rough- legged Hawk and/or Common Raven	Inactive stick nest. 1 inactive stick nest in satisfactory condition. No raptors observed.	Nest approximately 10 m agl on east facing wall, overhanging a lake.	Inactive stick nest observed in 2011. No raptors observed.	31.5 km

In addition to the raptor nest reconnaissance, a Rough-legged Hawk was observed along the McKeand River during the aerial caribou survey. This Rough-legged Hawk was observed approximately 13 km east of a raptor nest site (Figure 4).

3.6 Species at Risk Survey

To date, only Peregrine Falcon and polar bear have been documented in the study area. The Southern Focus Area, an area approximately 12 km maximum radius in the interior of the study area, does not provide important habitat for these species at risk.

The raptor nest reconnaissance survey was designed to monitor the use of known and probable Peregrine Falcon nest sites. A Peregrine Falcon observation from the reconnaissance survey was referenced in Section 3.5. In summary, a Peregrine Falcon active scrape was documented approximately 10.5 km north of the Southern Focus Area. Additional Peregrine Falcon observations were reported by Peregrine staff in the Wildlife Logs and are provided in Section 3.5. Species considered to be of Special Concern are sensitive to human activities or natural events due to their biological characteristics (e.g., low reproductive rate). Therefore, this active scrape is considered a sensitive area during the breeding season.

The caribou/carnivore survey (totalling 403.5 km in length) serves to detect Short-eared Owls, polar bears, and wolverines over the larger study area through incidental observations. No Short-eared Owls or wolverines were documented within the study area during the 2012 baseline surveys or in the camp wildlife sightings logs in 2012. Polar bear tracks were reported in the camp wildlife sightings logs near Popham Bay, approximately 25 km east of the study area. A polar bear sub-adult was observed near Sunrise Camp on April 16, 2012 and was guided at a distance safely away from camp by two Inuit employees on snowmobiles.

3.7 Preliminary Habitat Assessments

A preliminary assessment of habitat(s) existing at CH-6 and -7 was conducted at the time of the July field event.

The CH-6 site is located on a plain with a gradual slope to the north for approximately 100 m, and then slopes again to the west. Soils are xeric and rapid to well-drained, and the site is dominated by glacial till material with cobble and exposed bedrock (Photograph 6). Based on Canada's National Forest Inventory (NFI) Land Cover Classification Scheme, habitat existing at CH-6 is considered barren rock with less than

1% vegetation cover (Figure 5). Nonetheless, a low cover of a few species of ericaceous shrubs (*i.e.* alpine bearberry and Arctic willow), herbs (*i.e.* Arctic white heather, alpine chickweed, and mountain sorrel), and grasses/grass-like plants (Arctic woodrush, alpine bluegrass), lichen, and mosses are present where soil substrate exists.

The CH-7 site is located mid-slope with a downward gradient towards the west and drains into an ephemeral watercourse at the toe of the slope. Soils are generally xeric and rapid to well-drained; however, narrow belts of moderately moist soils exist where surface water sheds based on topographic position (*i.e.* lower slope and toe receiving areas) (Photograph 7). Based on the land cover classification scheme, habitat existing at CH-7 is considered sparsely vegetated bedrock with 2-10% vegetation cover consisting of grasses and prostrate shrubs (Figure 5). During the preliminary habitat assessment, the existing habitat at CH-7 centre was dominated by till colluvium material and cryptogram crusts with 1% vegetation cover. Grass and grass-like plants were most common followed by moss and lichen. Vegetation cover increases along the narrow, disjointed belts where surface water sheds. Approximately 8% vegetation cover, dominated by graminoids and moss, exist in these areas of moister soil conditions leading downslope.

Plant species identified during the foot transects are provided in Table 7 below. Plant compositions are similar between the CH-6 and -7 sites, with greater species diversity at CH-7 in direct response to moister soils in the surface drainage areas.

Table 7. Summary of Plant Species Observed at CH-6 and -7, July 2012

Common Name	Scientific Name	NU Conservation Status ¹
	Lichen	
Rock Lichen species	-	-
Reindeer Lichen species	Cladina species	-
Cup Lichen	Cladonia species	
Pelt Lichen species	Peltigera species	
	Moss	
Moss species	Dicranum species	-
Fir Clubmoss	Huperzia selago	-
	Grass and Grass-Lik	(e
Alpine Bluegrass	Poa alpina	Secure
Polar Grass	Arctagrostis latifolia	Secure
Ice Grass	Phippsia algida	Secure
Alpine Sweet Grass	Hierochloe alpina	Secure
Sedge species	Carex species	Secure
Tussock Cotton-grass	Eriophorum vaginatum	Secure
Arctic Woodrush	Luzula arctica	Secure
	Dwarf Shrubs	
Arctic Willow	Salix arctica	Secure
Net-veined Willow	Salix reticulata	Secure
Alpine Bearberry	Arctostaphylos alpina	Secure

Table 7. Summary of Plant Species Observed at CH-6 and -7. July 2012

Common Name	Scientific Name	NU Conservation Status ¹
Alpine Azalea	Loiseleuria procumbens	Secure
	Herbs	
Mountain Sorrel*	Oxyria digyna	Secure
Moss Campion	Silene acaulis	Secure
Arctic Poppy	Papaver radicatum	Undetermined
Arctic White Heather	Cassiope tetragona	Secure
Gray-Leaf Whitlow-grass	Draba cinerea	Secure
Rock Whitlow-grass	Draba glabella	Secure
Alpine Bittercress	Cardamine bellidifolia	Secure
Alpine Chickweed	Cerastium alpinum	Secure
Alpine Brook Saxifrage	Saxifraga rivularis	Secure
Snowy Buttercup	Ranunculus nivalis	Secure

^{1.} Canadian Endangered Species Conservation Council (CESCC) (2006).

No sensitive habitats, including lakes or permanent watercourses, near CH-6 and -7 were documented at during the July field event.

3.8 Incidental Observations of Non-Target Wildlife Species

While completing the 2012 baseline surveys, additional non-targeted wildlife species were observed and recorded.

Juvenile Arctic Char were observed at two water quality stations. Observations included approximately eight char, averaging approximately 25 cm in length at water quality station WQ-8, and one char (approximately 15 cm in length) at Station Hydro-9.

Several observations of Snow Buntings were documented during the July field event. A single Snow Bunting was seen during the preliminary habitat assessment at CH-7and others while water quality sampling at stations WQ-8 and -13. Other birds, including 12 Glaucous Gulls, a pair of Red-throated Loons, 4 Pacific Loons, 3 Long-tailed Ducks, and 5 Red-breasted Mergansers were documented incidentally during the July field event. In addition, Canada Goose feathers and droppings were also observed at water quality Station Hydro-11.

A single observation of lemming sign (pellets) was also noted at CH-7, and an Arctic woolly bear caterpillar (*Gynaephora groenlandica*) was observed at CH-6.

3.9 Camp Wildlife Sightings Log

Wildlife sightings were reported by Peregrine staff and contractors (*i.e.* such as pilots) from March 29 to September 6, while the two camps were in operation. During this six month period, 29 wildlife observations were reported within the study area (Figure 6), plus three wildlife observations reported outside the study area. As this is an anecdotal Wildlife Log, the same individual(s) wildlife may have been observed and recorded over multiple days and records may be biased towards species, such as caribou.

Whereas, species groups such as birds and small mammals may be reported less often. As well, camps and other work areas of greatest use had higher wildlife sightings than areas of little use.

Of particular interest in the Wildlife Log:

- A total of ten caribou were reportedly seen (as well as a single observation of caribou tracks) from March 29 to September 6. Caribou, and their sign, were documented in March, April, June, August, and September. Two caribou was the maximum group size detected during this time. Of these observations, two calves were reported. One calf was reported on April 8 and another on June 19. The calf reportedly seen on April 8 may have been a yearling rather than a calf, since the observation was well before the known calving season.
- "Lots" of polar bear tracks were reported near Popham Bay in May, approximately 25 km east of the study area in the Wildlife Logs. However, as reported in Section 3.6, one polar bear sub-adult was observed near Sunrise Camp on the eastern edge of the Southern Focus Area on April 16, 2012 and the information was reported in an internal Peregrine safety report.
- A total of seven fox observations were recorded, including two observations of fox tracks. Visual observations were generally within 1 km of a camp in April, May, and September.
- Ptarmigan were the most common bird species recorded in the Logs. A total of 15 Ptarmigan observations were noted. However, five Common Ravens, one Snow Bunting, and one Snowy Owl were also reported. The Snowy Owl was reported on March 30, a time outside when Snowy Owls are expected to return to the study area. Uncertainty with this Snowy Owl observation exists. Considering the date of observation and the general colouration of the bird, this Snowy Owl observation may instead indicate a Gyrfalcon (white colour phase).
- A single observation of a Peregrine falcon chasing a Ptarmigan was noted in June, and a single falcon (species not reported) was seen in April.
- A total of six Arctic char were angled from Sunrise Lake.

Wildlife Logs for 2012 are attached as Appendix C.

4.0 DISCUSSION

4.1 Surface Water Quality

The surface water quality samples represent natural background conditions at each of the sampling stations. The water quality collected at stations within the Southern Focus Area, including downstream from the drill and camp sites, is of similar quality as water collected at stations well outside the zone-of-influence.

Surface water quality samples have been collected since 2009. Routinely, the water quality at the sampling stations report low pH, water hardness, conductivity, nutrients, and total metal levels. Many of the total metals levels are reported below the laboratory detectable limits. Notably, cadmium levels were reported below the laboratory detection limits at all sampling stations (except Station Hydro-11), yet were considered above the CCME FAL guidelines due to the low water hardness. Similarly, total aluminum levels

are considered above the CCME FAL guidelines as a direct function of the low pH levels. The CCME FAL guidelines should be used with caution when comparing water quality within the study area.

Aquatic environments with soft water hardness, such as seen within the study area, represent poorly buffered systems that are sensitive to changes in pH from both natural and human sources.

The quality of the surface water has remained consistent in all analytical results since 2009.

4.2 Camp Potable Water Quality

Potable water quality sampling at Discovery camp began in 2010. Since that time, all potable-water quality samples collected from the camps water distribution system have met the appropriate health criteria. To date, the potable water quality results indicate that the UV and bleaching system used at the Discovery Camp is an effective disinfectant, and the water within the camp's distribution system tests within the appropriate health criteria.

4.3 Aerial Caribou Survey

No caribou were observed during the aerial caribou survey. However, a total of 12 caribou were observed incidentally; most notably a group of nine caribou including two calves. The results of the 2012 caribou survey efforts indicate caribou exist at low densities. Results from the 2012 aerial caribou survey align with those seen during previous caribou surveys across the study area. Since 2009, the calculated relative density within the study areas has ranged from 0 - 0.009 caribou/km², and the estimated population abundance has ranged from 0 - 18 (\pm Standard Error (SE)). To date, a group size of 20 caribou (seen in April 2010) was the largest group size reported within the study area.

Furthermore, few caribou calves have been detected within the study area since 2009. Besides the two calves observed in July 2012, another calf was detected in July 2011, and four calves were reported in July 2010 during the aerial caribou surveys and within the Camp Wildlife Logs (total of seven calves detected since 2009). All calf observations have occurred in the month of July.

Chowns and Popko (1980) delineated several suspected caribou calving areas, the nearest being approximately 40 km from the Southern Focus Area (at the head of Smith Channel). From this aerial calving ground survey, Chowns and Popko (1980) indicated female caribou may have an affinity to large valley habitats at elevations less than 450 m where snow melt is advanced during the peak calving season (early June). It is these areas, large valleys at lower elevations, where the suspected caribou calving areas exist. In contrast, the majority of the study area lies in higher elevation upland-plateau habitat, areas of focus during Peregrine's exploration drilling activity.

Based on the existing evidence, no sensitive caribou areas are known or suspected within the study area, including the Southern Focus Area.

4.4 Aerial Carnivore Survey

To date, no carnivores (Arctic and red fox, wolf, and wolverine) or carnivore dens have been reported during the aerial surveys since 2009. However, the occasional fox and more rarely, wolves, have been reported in the camp wildlife logs. Since 2009, a total of 21 foxes and five wolves have been reported in the camp wildlife logs (however these likely include multiple observations of a single individual animal).

Carnivore observations have been reported throughout the camp operating season; however, no dens or young have been detected.

No fox dens have been reported within the study area. However, denning may occur wherever appropriate habitat exists.

Few wolves have been observed in the study area since 2009. Based on the low calculated caribou densities since 2009, the study area may not provide sufficient prey to sustain higher wolf densities. In addition, limited suitable denning sites within the study area may also restrict wolf densities.

No observations of wolverines have been documented since 2009. Wolverine's may or may not occur within the study area.

4.5 Aerial Raptor Nest Reconnaissance

During the 2012 aerial raptor nest reconnaissance, a total of four known nesting sites were surveyed. Nest site conditions at each of these four known locations are described as east and southeast facing cliffs, approximately 10 - 15 m agl, and within 650 m from the nearest waterbody. At the time of the July field event, one active and one potentially active nesting site were documented.

An active Peregrine Falcon scrape was detected. This nesting cliff site represents a breeding Peregrine Falcon territory occupied since 2010.

A second potentially active nest site was detected during the July field event. An unknown raptor flushed from the area of a known stick nest, but no nest was observed. In the 2010, this nest was occupied by Rough-legged Hawks and in 2009 was likely occupied by Common Ravens. Interestingly, a Rough-legged Hawk was observed along the McKeand River, approximately 13 km from this nest site, and potentially within the hunting territory of the occupants of this nest site.

A conservative 1.5 km buffer was recommended near known raptor nests (including those identified from previous years) from early May to mid-August.

4.6 Species at Risk Survey

In 2012, Peregrine Falcons were detected within the study area in April, June, and July during the baseline surveys as well as in the camp wildlife sighting logs. Polar bear tracks were also reported outside the study area near Popham Bay, and a single sub-adult was seen near Sunrise Camp in April.

Since 2009, only Peregrine Falcon and polar bear have been documented in the study area, including the Southern Focus Area. The Southern Focus Area, an area with a maximum 12 km radius in the interior of the study area, does not provide important habitat for species at risk. Polar bears may occupy the Southern Focus Area during the spring and summer months, but a negligible amount of food or other critical habitat exists within this area to support polar bears; infrequent observations near Chidliak camps of bears passing through the Chidliak area have been made by Peregrine personnel. In addition, rolling hill topography dominates the Southern Focus Area and no suitable cliff-nesting habitat exists to support breeding Peregrine Falcons. However, Peregrine Falcons may use this area for hunting.

Species considered to be of Special Concern are sensitive to human activities or natural events due to their biological characteristics (e.g., low reproductive rate). Therefore, the active Peregrine Falcon scrape is considered a sensitive area during the breeding season.

4.7 Preliminary Habitat Assessments

In general, the cold and dry climate and shallow soils at the CH-6 and -7 sites result in sparse vegetation cover. Areas dominated by rock and exposed hilltops exhibit low plant cover generally dominated by graminoids and lichen, whereas, plant cover slightly increases in wetter more sheltered areas.

The NFI Land Cover Classification indicates CH-6 is located within barren rock habitat, and CH-7 is located in sparsely vegetated bedrock habitat. These two habitat types, barren rock and sparsely vegetated bedrock habitat, are the most common types present in the Southern Focus Area and are not considered sensitive to disturbances.

Similarly, the populations of the plant species detected in the preliminary assessment are not considered sensitive nor do they have special conservation status in Nunavut.

5.0 CONCLUSIONS

The study area is considered a pristine environment. Concluding statements regarding the 2012 baseline studies are presented here:

- The quality of the surface water sampled was characteristic of oligotrophic waterbodies, which exhibit low nutrients and pH values. The water quality sample results are representative of natural conditions. Based on data collected annually since 2009, the quality of surface water has remained the same.
- The quality of potable-water within the Discovery camp water-distribution system is within health criteria and, consequently, the treatment systems employed were appropriate.
- No caribou were observed during the caribou survey; however, 12 were seen incidentally. Based on these results, caribou existed randomly at very low population densities in the study area during the July field event.
- No carnivores or carnivore dens were observed within the study area during the July field event; however, a few foxes and fox tracks have been reported by Peregrine staff in the camp wildlife sighting logs. No other carnivores occupying the study area were reported in the camp wildlife sighting logs.
- An active Peregrine Falcon scrape was detected during the aerial raptor nest reconnaissance survey. This nest site has likely been occupied by Peregrine Falcons since at least 2010, when first surveyed. Rough-legged Hawks may also occupy nest sites around the study area. Nesting raptors likely exist at low densities. A conservative 1.5 km buffer is recommended near known raptor nests (including those identified from previous years) to protect nesting raptors from disturbance during their sensitive breeding season.

- A single species at risk, Peregrine Falcon was observed nesting within the study area in 2012. This active nest site is considered sensitive to disturbance, and a conservative 1.5 km buffer is recommended around the nest during nesting season.
- The cold and dry climate and shallow soils at the CH-6 and -7 sites result in sparse vegetation cover. Habitats at CH-6 and -7 are common across the study area and are not considered sensitive to disturbances.

6.0 CLOSURE

We trust this report meets your present requirements. If you have any questions or comments, please contact the undersigned.

Sincerely,

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TABLES

Table I	QA/QC Results, July 2012
Table 2a	July Field Event Duplicate 1 Assessment (Relative Per Cent Difference), 2012
Table 2b	July Field Event Duplicate 2 Assessment (Relative Per Cent Difference), 2012
Table 3	Surface Water Quality Station Description and Field Conditions, 2012
Table 4a	July Surface Water Quality Results, 2012
Table 4b	July Surface Water Quality Results, 2012
Table 5	Discovery Camp Potable Water Quality Results, July 15, 2012
Table 6	Summary of Raptor Nest Site Observations, 2009 – 2012
Table 7	Summary of Plant Species Observed at CH-6 and -7, July 2012



Table 1. QA/QC Results, July 2012

Parameter		15, 2012	Units	Detection	
Farailleter	Trip Blank	Field Blank	Ullits	Limit	
Major I	ons, Nutrients	, and Inorganio	cs		
Calcium (Ca)-Total	<0.50	<0.50	mg/L	0.50	
Magnesium (Mg)-Total	<0.10	<0.10	mg/L	0.10	
Phosphorus (P), Total	<0.020	<0.020	mg/L	0.020	
Potassium (K)-Total	<0.50	< 0.50	mg/L	0.50	
Sodium (Na)-Total	<1.0	<1.0	mg/L	1.0	
Hardness (as CaCO3)	<1.3	<1.3	mg/L	1.3	
Nitrate and Nitrite as N	<0.071	<0.071	mg/L	0.071	
Nitrate (as N)	< 0.050	< 0.050	mg/L	0.050	
Nitrite (as N)	< 0.050	< 0.050	mg/L	0.050	
Nitrogen, Total	<0.21	<0.21	mg/L	0.21	
Total Kjeldahl Nitrogen	<0.20	<0.20	mg/L	0.20	
pH	5.61	5.52	pН	0.10	
Electrical Conductivity (EC)	0.39	0.46	uS/cm	0.20	
Ammonia-N	< 0.0050	< 0.0050	mg/L	0.0050	
Total Organic Carbon	<1.0	<1.0	mg/L	1.0	
Total Suspended Solids	<3.0	<3.0	mg/L	3.0	
Turbidity	<0.10	<0.10	NŤU	0.10	
	Organio				
Oil and Grease	<1.0	<1.0	mg/L	1.0	
on and ordaec	Total Me		9/ =	1.0	
Aluminum (Al)	<0.0050		m a /l	0.0050	
Aluminum (Al)	<0.0050	<0.0050 <0.00040	mg/L	0.00040	
Antimony (Sb) Arsenic (As)	<0.00040	<0.00040	mg/L mg/L	0.00040	
Barium (Ba)	<0.0030	<0.0030	mg/L	0.00040	
Beryllium (Be)	<0.0030	<0.0030	mg/L	0.0030	
Boron (B)	<0.050	<0.050	mg/L	0.0010	
Cadmium (Cd)	<0.00010	<0.00010	mg/L	0.000010	
Chromium (Cr)	<0.0010	<0.0010	mg/L	0.00010	
Cobalt (Co)	<0.0010	<0.0010	mg/L	0.0010	
Copper (Cu)	<0.0020	<0.0020	mg/L	0.0020	
Iron (Fe)	<0.030	<0.030	mg/L	0.0010	
Lead (Pb)	<0.00010	<0.00010	mg/L	0.00010	
Lithium (Li)	<0.010	<0.010	mg/L	0.00010	
Manganese (Mn)	<0.0050	<0.0050	mg/L	0.0050	
Mercury (Hg)	<0.00000	<0.00000	mg/L	0.0000	
Molybdenum (Mo)	<0.0050	<0.0050	mg/L	0.0050	
Nickel (Ni)	<0.0020	<0.0020	mg/L	0.0030	
Selenium (Se)	<0.0020	<0.0020	mg/L	0.0020	
Silver (Ag)	<0.00040	<0.00040	mg/L	0.00040	
Strontium (Sr)	<0.00010	<0.00010	mg/L	0.000020	
Thallium (TI)	<0.00010	<0.00010	mg/L	0.00010	
Tin (Sn)	<0.050	<0.050	mg/L	0.050	
Titanium (Ti)	<0.0010	<0.0010	mg/L	0.0010	
Uranium (U)	<0.0010	<0.0010	mg/L	0.0010	
Vanadium (V)	<0.0010	<0.0010	mg/L	0.00010	
Zinc (Zn)	<0.0010	<0.0010	mg/L	0.0010	
•	<0.00 4 0	<0.00 4 0	my/L	0.0040	
Legend Detectoble Levels					
Detectable Levels					
< = below the detection limit.					

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Table 2a. July Field Event Duplicate 1 Assessment (Relative Per Cent Difference), 2012

Table 2a. July Field Ev		vent Results			Duplicate Assessment				
Parameter	WQ7		Units	Detection Limit	WQ7	Duplicate 1	Applicable? Yes or No ¹	RPD ²	Duplicate Reliable? Yes or No ³
		Мај	or lons,	Nutrients, a	nd Inorganio	cs			
Calcium (Ca)-Total	<0.50	<0.50	mg/L	0.50	-	-	No	-	Yes
Phosphorus (P), Total	<0.10	<0.10	mg/L	0.10	-	-	No	-	Yes
Potassium (K)-Total	<0.020	<0.020	mg/L	0.020	-	-	No	-	Yes
Magnesium (Mg)-Total	<0.50	<0.50	mg/L	0.50			No	-	Yes
Sodium (Na)-Total	<1.0	<1.0	mg/L	1.0	-	-	No	-	Yes
Hardness (as CaCO3)	<1.3	<1.3	mg/L	1.3	-	-	No	-	Yes
Nitrate and Nitrite as N	<0.071	<0.071	mg/L	0.071	-	-	No	-	Yes
Nitrate (as N)	<0.050	< 0.050	mg/L	0.050	-	-	No	-	Yes
Nitrite (as N)	< 0.050	<0.050	mg/L	0.050	-	-	No	-	Yes
Nitrogen, Total	<0.21	<0.21	mg/L	0.21	-	-	No	-	Yes
Total Kjeldahl Nitrogen	<0.20	<0.20	mg/L	0.20	-	-	No	-	Yes
рН	6.11	5.80	рΗ	0.10	61.1	58.0	Yes	5.21	Yes
Electrical Conductivity (EC)	3.77	3.69	uS/cm	0.20	18.9	18.5	Yes	2.14	Yes
Ammonia-N	<0.0050	< 0.0050	mg/L	0.0050	-	-	No	-	Yes
Total Organic Carbon	1.1	<1.0	mg/L	1.0	1.1	-	No	-	Yes
Total Suspended Solids	<3.0	<3.0	mg/L	3.0	-	-	No	-	Yes
Turbidity	0.34	0.30	NTU	0.10	3.4	3.0	No	-	Yes
•				Organics					
Oil and Grease	<1.0	<1.0	mg/L	1.0	-	-	-	-	Yes
	1110	1110	9, =	Total Meta	s				
Aluminum (Al)	0.0121	0.0108	mg/L	0.0050	2.42	2.16	No	_	Yes
Antimony (Sb)	<0.00040	<0.00040	mg/L	0.00040	-	-	No	_	Yes
Arsenic (As)	<0.00040	<0.00040	mg/L	0.00040	_	-	No		Yes
Barium (Ba)	<0.0030	<0.0030	mg/L	0.0030	_	-	No	-	Yes
Beryllium (Be)	<0.0030	<0.0010	mg/L	0.0010		-	No	_	Yes
Boron (B)	<0.050	<0.050	mg/L	0.050			No		Yes
Cadmium (Cd)	<0.00010	<0.00010	mg/L	0.000010	_	-	No	-	Yes
Chromium (Cr)	<0.0010	<0.0010	mg/L	0.00010	<u>-</u>	-	No	-	Yes
Cobalt (Co)	<0.0010	<0.0010		0.0010			No		Yes
Copper (Cu)	<0.0020	<0.0020	mg/L	0.0020		-	No	-	Yes
,			mg/L		-	-		-	
Iron (Fe)	<0.030	<0.030	mg/L	0.030	-	-	No	-	Yes
Lead (Pb)	<0.00010	<0.00010	mg/L	0.00010	-	-	No	-	Yes
Lithium (Li)	<0.010	<0.010	mg/L	0.010	-	-	No	-	Yes
Manganese (Mn)	<0.0050	<0.0050	mg/L	0.0050	-	-	No	-	Yes
Mercury (Hg)	<0.000020	<0.000020	mg/L	0.000020	-	-	No	-	Yes
Molybdenum (Mo)	<0.0050	<0.0050	mg/L	0.0050	-	-	No	-	Yes
Nickel (Ni)	<0.0020	<0.0020	mg/L	0.0020	-	-	No	-	Yes
Selenium (Se)	<0.00040	<0.00040	mg/L	0.00040	-	-	No	-	Yes
Silver (Ag)	<0.000020	<0.000020	mg/L	0.000020	-	-	No	-	Yes
Strontium (Sr)	0.00164	0.00165	mg/L	0.00010	16.4	16.5	Yes	0.61	Yes
Thallium (TI)	<0.00010	<0.00010	mg/L	0.00010	-	-	No	-	Yes
Tin (Sn)	<0.050	<0.050	mg/L	0.050	-	-	No	-	Yes
Titanium (Ti)	<0.0010	<0.0010	mg/L	0.0010	-	-	No	-	Yes
Uranium (U)	<0.00010	<0.00010	mg/L	0.00010	-	-	No	-	Yes
Vanadium (V)	<0.0010	<0.0010	mg/L	0.0010	-	-	No	-	Yes
Zinc (Zn)	<0.0040	<0.0040	mg/L	0.0040	-	-	No	-	Yes
Legend									

< = below the detection limit.

¹ Applicability to the Relative Per Cent Difference (RPD) Assessment requires that results be at least 5 x the detection limit since analytical error

Relative Per Cent Difference. RPD(%) = 200 x ABS(x - y)/(x + y), where ABS = Absolute difference, x = the analytical result of the original sample,

³ Duplicate samples are reliable when their RPD is less than 20%.

^{- =} not applicable to the RPD Assessment.

Table 2b. July Field Event Duplicate 2 Assessment (Relative Per Cent Difference), 2012

Table 2b. July Field Ev						, ·		ent		
	July Field Event Results			Detection	Duplicate Assessment Augusticate Duplicate					
Parameter	WQ3	Duplicate 2	Units	Limit	WQ3	Duplicate 2	Applicable? Yes or No ¹	RPD^2	Reliable? Yes or No ³	
	•	Maj	or lons,	Nutrients, a	nd Inorganio	cs				
Calcium (Ca)-Total	<0.50	<0.50	mg/L	0.50	-	-	No	-	Yes	
Magnesium (Mg)-Total	<0.10	<0.10	mg/L	0.10	-	-	No	-	Yes	
Phosphorus (P), Total	<0.020	<0.020	mg/L	0.020	-	-	No	-	Yes	
Potassium (K)-Total	<0.50	<0.50	mg/L	0.50	-	-	No	-	Yes	
Sodium (Na)-Total	<1.0	<1.0	mg/L	1.0	-	-	No	-	Yes	
Hardness (as CaCO3)	<1.3	<1.3	mg/L	1.3	-	-	No	-	Yes	
Nitrate and Nitrite as N	<0.071	<0.071	mg/L	0.071	-	-	No	-	Yes	
Nitrate (as N)	<0.050	<0.050	mg/L	0.050	-	-	No	-	Yes	
Nitrite (as N)	<0.050	<0.050	mg/L	0.050	_	-	No	-	Yes	
Nitrogen, Total	<0.21	<0.21	mg/L	0.21	_	-	No	-	Yes	
Total Kjeldahl Nitrogen	<0.21	<0.21	mg/L	0.20			No		Yes	
pH	6.07	5.55	pH	0.20	60.7	55.5	Yes	8.95	Yes	
			•							
Electrical Conductivity (EC)	2.96	2.94	uS/cm	0.20	14.8	14.7	Yes	0.68	Yes	
Ammonia-N	<0.0050	<0.0050	mg/L	0.0050	-	-	No	-	Yes	
Total Organic Carbon	<1.0	<1.0	mg/L	1.0	-	-	No	-	Yes	
Total Suspended Solids	<3.0	<3.0	mg/L	3.0	-	-	No	-	Yes	
Turbidity	0.19	0.19	NTU	0.10	1.9	1.9	No	-	Yes	
•				Organics						
Oil and Grease	<1.0	<1.0	mg/L	1 1		-	-	-	Yes	
			· · · · · · · · · ·	Total Meta	s					
Aluminum (Al)	0.0052	0.0052	mg/L	0.0050	1.04	1.04	No	-	Yes	
Antimony (Sb)	<0.0032	<0.0032	mg/L	0.0030	-	-	No		Yes	
• ` '	<0.00040	<0.00040		0.00040			No	<u> </u>	Yes	
Arsenic (As)			mg/L			-				
Barium (Ba)	<0.0030	<0.0030	mg/L	0.0030	-	-	No	-	Yes	
Beryllium (Be)	<0.0010	<0.0010	mg/L	0.0010	-	-	No	-	Yes	
Boron (B)	<0.050	<0.050	mg/L	0.050	-	-	No	-	Yes	
Cadmium (Cd)	<0.000010	<0.000010	mg/L	0.000010	-	-	No	-	Yes	
Chromium (Cr)	<0.0010	<0.0010	mg/L	0.0010	-	-	No	-	Yes	
Cobalt (Co)	<0.0020	<0.0020	mg/L	0.0020	-	-	No	-	Yes	
Copper (Cu)	<0.0010	<0.0010	mg/L	0.0010	-	-	No	-	Yes	
Iron (Fe)	<0.030	<0.030	mg/L	0.030	-	-	No	-	Yes	
Lead (Pb)	<0.00010	<0.00010	mg/L	0.00010	-	-	No	-	Yes	
Lithium (Li)	<0.010	<0.010	mg/L	0.010	-	-	No	-	Yes	
Manganese (Mn)	<0.0050	<0.0050	mg/L	0.0050	-	-	No	-	Yes	
Mercury (Hg)	<0.000020	<0.000020	mg/L	0.000020	-	-	No	-	Yes	
Molybdenum (Mo)	< 0.0050	< 0.0050	mg/L	0.0050	-	-	No	-	Yes	
Nickel (Ni)	<0.0020	<0.0020	mg/L	0.0020	-	-	No	-	Yes	
Selenium (Se)	<0.00040	<0.00040	mg/L	0.00040	-	-	No	-	Yes	
Silver (Ag)	<0.000020	<0.000020	mg/L	0.000020	-	-	No	-	Yes	
Strontium (Sr)	0.00126	0.00124	mg/L	0.00010	12.6	12.4	Yes	1.6	Yes	
Thallium (TI)	<0.00010	<0.00010	mg/L	0.00010	-	-	No	-	Yes	
Tin (Sn)	<0.050	<0.050	mg/L	0.050	-	-	No	-	Yes	
Titanium (Ti)	<0.0010	<0.0010	mg/L	0.0010	-	-	No	-	Yes	
Uranium (U)	<0.00010	<0.00010	mg/L	0.00010	-	-	No	-	Yes	
Vanadium (V)	<0.0010	<0.0010	mg/L	0.0010	-	-	No	-	Yes	
Zinc (Zn)	<0.0040	<0.0040	mg/L	0.0040	-	-	No	-	Yes	
Legend	1010010	13.0010	g, <u>-</u>	2.0010					. 33	

< = below the detection limit.

¹ Applicability to the Relative Per Cent Difference (RPD) Assessment requires that results be at least 5 x the detection limit since analytical error

Relative Per Cent Difference. $RPD(\%) = 200 \times ABS(x - y)/(x + y)$, where ABS = Absolute difference, x = the analytical result of the original sample,

³ Duplicate samples are reliable when their RPD is less than 20%.

^{- =} not applicable to the RPD Assessment.

Table 4a. July Surface Water Quality Results, 2012

Parameter	Water Quality Station Results (July 14 to 15, 2012)								Detection	CCME Guideline
r arameter	Hydro 1	Hydro 2	WQ3	WQ4	WQ5	WQ6	WQ7	Units	Limit	COME Guideline
			Ma	ajor Ions, Nut	trients, and li	norganics				
Calcium (Ca)	na	na	<0.50	<0.50	<0.50	<0.50	<0.50	mg/L	0.50	
Magnesium (Mg)	na	na	<0.10	0.11	0.11	<0.10	<0.10	mg/L	0.10	
Phosphorus (P), Total	na	na	<0.020	<0.020	<0.020	<0.020	<0.020	mg/L	0.020	
Potassium (K)-Total	na	na	<0.50	<0.50	<0.50	<0.50	<0.50	mg/L	0.50	
Sodium (Na)-Total	na	na	<1.0	<1.0	<1.0	<1.0	<1.0	mg/L	1.0	
Hardness (as CaCO3)	na	na	<1.3	<1.3	<1.3	<1.3	<1.3	mg/L	1.3	
Nitrate and Nitrite as N	na	na	<0.071	<0.071	< 0.071	<0.071	<0.071	mg/L	0.071	
Nitrate (as N)	na	na	<0.050	0.057	< 0.050	<0.050	< 0.050	mg/L	0.050	2.935
Nitrite (as N)	na	na	<0.050	<0.050	< 0.050	<0.050	<0.050	mg/L	0.050	0.060
Nitrogen, Total	na	na	<0.21	<0.21	<0.21	<0.21	<0.21	mg/L	0.21	
Total Kjeldahl Nitrogen	na	na	<0.20	<0.20	<0.20	<0.20	<0.20	mg/L	0.20	
pH	na	na	6.07	6.25	5.97	6.23	6.11	pН	0.10	6.50 - 9.00
Electrical Conductivity	na	na	2.96	4.74	4.58	3.10	3.77	uS/cm	0.20	
Ammonia-N	na	na	<0.0050	0.0058	<0.0050	<0.0050	<0.0050	mg/L	0.0050	39.7219 - 125.8272
Total Organic Carbon	na	na	<1.0	<1.0	1.9	<1.0	1.1	mg/L	1.0	
Total Suspended Solids	na	na	<3.0	<3.0	<3.0	<3.0	<3.0	mg/L	3.0	
Turbidity	na	na	0.19	0.35	0.29	0.27	0.34	NTU	0.10	
					Organics					
Oil and Grease	na	na	<1.0	<1.0	<1.0	<1.0	<1.0	mg/L	1.0	
				То	tal Metals					
Aluminum (Al)	na	na	0.0052	0.0143	0.0137	0.0126	0.0121	mg/L	0.0050	0.0050**
Antimony (Sb)	na	na	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	mg/L	0.00040	
Arsenic (As)	na	na	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	mg/L	0.00040	0.00500
Barium (Ba)	na	na	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	mg/L	0.0030	
Beryllium (Be)	na	na	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	mg/L	0.0010	
Boron (B)	na	na	<0.050	<0.050	<0.050	<0.050	<0.050	mg/L	0.050	1.500
Cadmium (Cd)	na	na	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	mg/L	0.000010	0.000001***
Chromium (Cr)	na	na	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	mg/L	0.0010	0.0010
Cobalt (Co)	na	na	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	mg/L	0.0020	
Copper (Cu)	na	na	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	mg/L	0.0010	0.0020****
Iron (Fe)	na	na	<0.030	<0.030	<0.030	<0.030	<0.030	mg/L	0.030	0.300
Lead (Pb)	na	na	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	mg/L	0.00010	0.00100****
Lithium (Li)	na	na	<0.010	<0.010	<0.010	<0.010	<0.010	mg/L	0.010	
Manganese (Mn)	na	na	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	mg/L	0.0050	
Mercury (Hg)	na	na	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	mg/L	0.000020	0.000026
Molybdenum (Mo)	na	na	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	mg/L	0.0050	0.0730
Nickel (Ni)	na	na	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	mg/L	0.0020	0.0250****
Selenium (Se)	na	na	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	mg/L	0.00040	0.00100
Silver (Ag)	na	na	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	mg/L	0.000020	0.000100
Strontium (Sr)	na	na	0.00126	0.00236	0.00214	0.00148	0.00164	mg/L	0.00010	
Thallium (TI)	na	na	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	mg/L	0.00010	0.00080
Tin (Sn)	na	na	<0.050	<0.050	<0.050	<0.050	<0.050	mg/L	0.050	
Titanium (Ti)	na	na	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	mg/L	0.0010	
Uranium (U)	na	na	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	mg/L	0.00010	0.01500
Vanadium (V)	na	na	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	mg/L	0.0010	
Zinc (Zn)	na	na	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	mg/L	0.0040	0.0300

Legend

Stations Hydro 1 and -2 were dry and/or too shallow to sample at the time of the field program.

Canadian Council of Ministers of the Environment - Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (December 2007).

Outside CCME FAL Guidelines

Detection Limit above CCME FAL Guidelines < denotes result below detection level

--- = No CCME FAL Guideline

^{* =} CCME guideline for Ammonia-N (Total Ammonia) is pH and water temperature dependent at each station. The calculation of the guideline assumes the water temperature is 5 °C and rounds the analyzed pH to the nearest guideline value. There is no guideline value for water with pH <6.0.

^{**} CCME guideline for Aluminum is specific to the pH of the water at this site during this particular sampling event. Guideline for pH values < 6.5 = 0.005mg/L and ≥ 6.5 = 0.1 mg/L.

^{*** =} CCME guideline for Cadmium is dependent on hardness of the water and is calculated using the formula: Cd guideline = 10 exp{0.86[log(hardness)]-3.2} for each sample. The value 1.3 mg/L was used for hardness concentrations <1.3 mg/L.

^{**** =} CCME guideline dependent on hardness of the water at each station during this particular sampling event.

Table 4b. July Surface Water Quality Results, 2012

	Wate	Units	Detection Limit	CCME Guideline					
WQ8	Hydro 9 Hydro 10 Hydro 11 WQ12 WQ13 WQ14								
		Мајо	or Ions, Nutri	ents, and Ino	rganics				
<0.50	<0.50	<0.50	1.30	<0.50	<0.50	0.57	mg/L	0.50	
0.14	<0.10	0.11	0.77	0.28	0.11	0.19	mg/L	0.10	
<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	mg/L	0.020	
<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	mg/L	0.50	
<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	mg/L	1.0	
<1.3	<1.3	<1.3	6.4	<1.3	<1.3	2.2		1.3	
			<0.071		0.100	< 0.071		0.071	
			< 0.050		0.100	< 0.050		0.050	2.935
							_		0.060
							_		
									6.50 - 9.00
									39.7219 - 125.8272
							_		
							_		
0.54	1.12	0.55			0.50	0.20	INTO	0.10	
-1.0	-1.0	-1.0			-1.0	-1.0	ma/l	1 10	I
<1.0	<1.0	<1.0			<1.0	<1.0	IIIg/L	1.0	
2 2 4 2 2		22121			2 22 15	0.0100			l
							_		0.0050 - 0.1000**
							_		
									0.00500
									1.500
							_		0.000001-0.000003*
							mg/L		0.0010
<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	mg/L		
<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	mg/L	0.0010	0.0020****
<0.030		<0.030	<0.030	0.048			mg/L		0.300
<0.00010	<0.00010	<0.00010	<0.00010	< 0.00010	<0.00010	< 0.00010	mg/L	0.00010	0.00100****
<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	mg/L	0.010	
< 0.0050	< 0.0050	< 0.0050	0.0235	< 0.0050	< 0.0050	< 0.0050	mg/L	0.0050	
<0.000020	< 0.000020	<0.000020	<0.000020	< 0.000020	<0.000020	<0.000020	mg/L	0.000020	0.000026
< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	< 0.0050	mg/L	0.0050	0.0730
<0.0020	<0.0020	< 0.0020	0.0076	< 0.0020	< 0.0020	< 0.0020	mg/L	0.0020	0.0250****
<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	mg/L	0.00040	0.00100
<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	<0.000020	_	0.000020	0.000100
0.00226	0.00152	0.00192	0.00769	0.00252	0.00264	0.00457	mg/L	0.00010	
<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	_		0.00080
							_		
									0.01500
<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	mg/L	0.0010	
									1
	<0.50 0.14 <0.020 <0.50 <1.0 <1.3 <0.071 0.062 <0.050 <0.21 <0.20 5.96 5.73 0.0111 <1.0 <3.0 0.54	WQ8 Hydro 9 <0.50	WQ8 Hydro 9 Hydro 10 <0.50	WQ8 Hydro 9 Hydro 10 Hydro 11 x (0.50) < 0.50 < 0.50 1.30 0.14 < 0.10	WQ8	Major lons, Nutrients, and Inorganics	WQ8	MQ8	MQ8

Legend

Canadian Council of Ministers of the Environment - Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (December 2007).

Outside CCME FAL Guidelines

Detection Limit above CCME FAL Guidelines

< denotes result below detection level

^{--- =} No CCME FAL Guideline

^{* =} CCME guideline for Ammonia-N (Total Ammonia) is pH and water temperature dependent at each station. The calculation of the guideline assumes the water ** CCME guideline for Aluminum is specific to the pH of the water at this site during this particular sampling event. Guideline for pH values < 6.5 = 0.005mg/L and

^{*** =} CCME guideline for Cadmium is dependent on hardness of the water and is calculated using the formula: Cd guideline = 10 exp{0.86[log(hardness)]-3.2} for

^{**** =} CCME guideline dependent on hardness of the water at each station during this particular sampling event.

Table 5. Discovery Camp Potable Water Quality Results, July 15, 2012

Analyte	Field Blank	Raw Water Source	Dry 1 Tap	Bathroom Tap	Dry 2 Tap	Kitchen Tap	Duplicate	Units	Detection Limit	Drinking Water Quality Guideline^
Faecal Coliforms	0	0	0	0	0	0	0	CFU/100 mL	0	
Total Coliforms	0	12	0	0	0	0	0	CFU/100 mL	0	0
Escherichia coliforms (E.coli)	0	0	0	0	0	0	0	CFU/100 mL	0	0

Legend

Outside the Canadian Drinking Water Quality Guideline

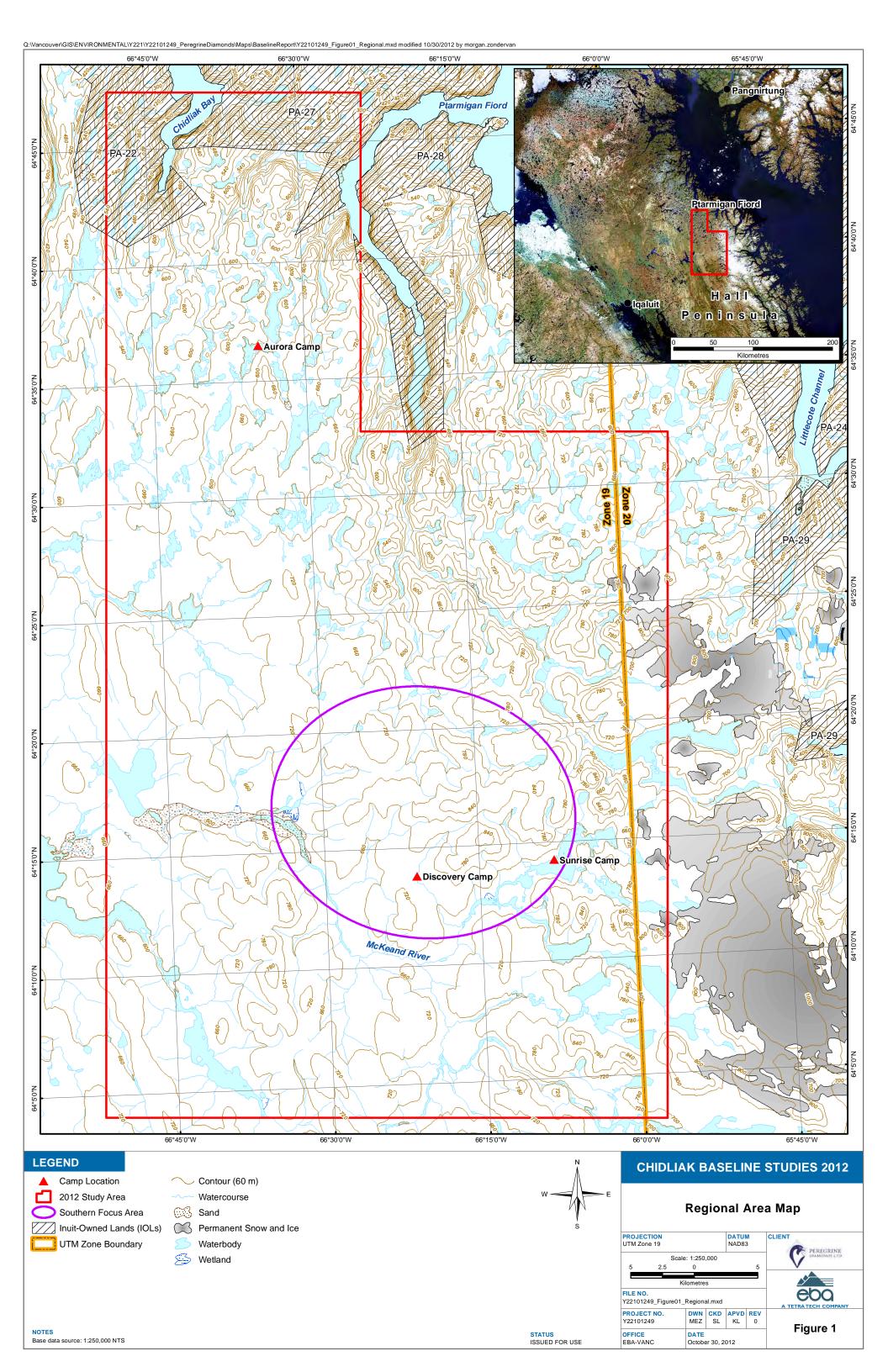
[^] Federal-Provincial-Territorial Committee on Drinking Water (2008) Guidelines for Canadian Drinking Water Quality

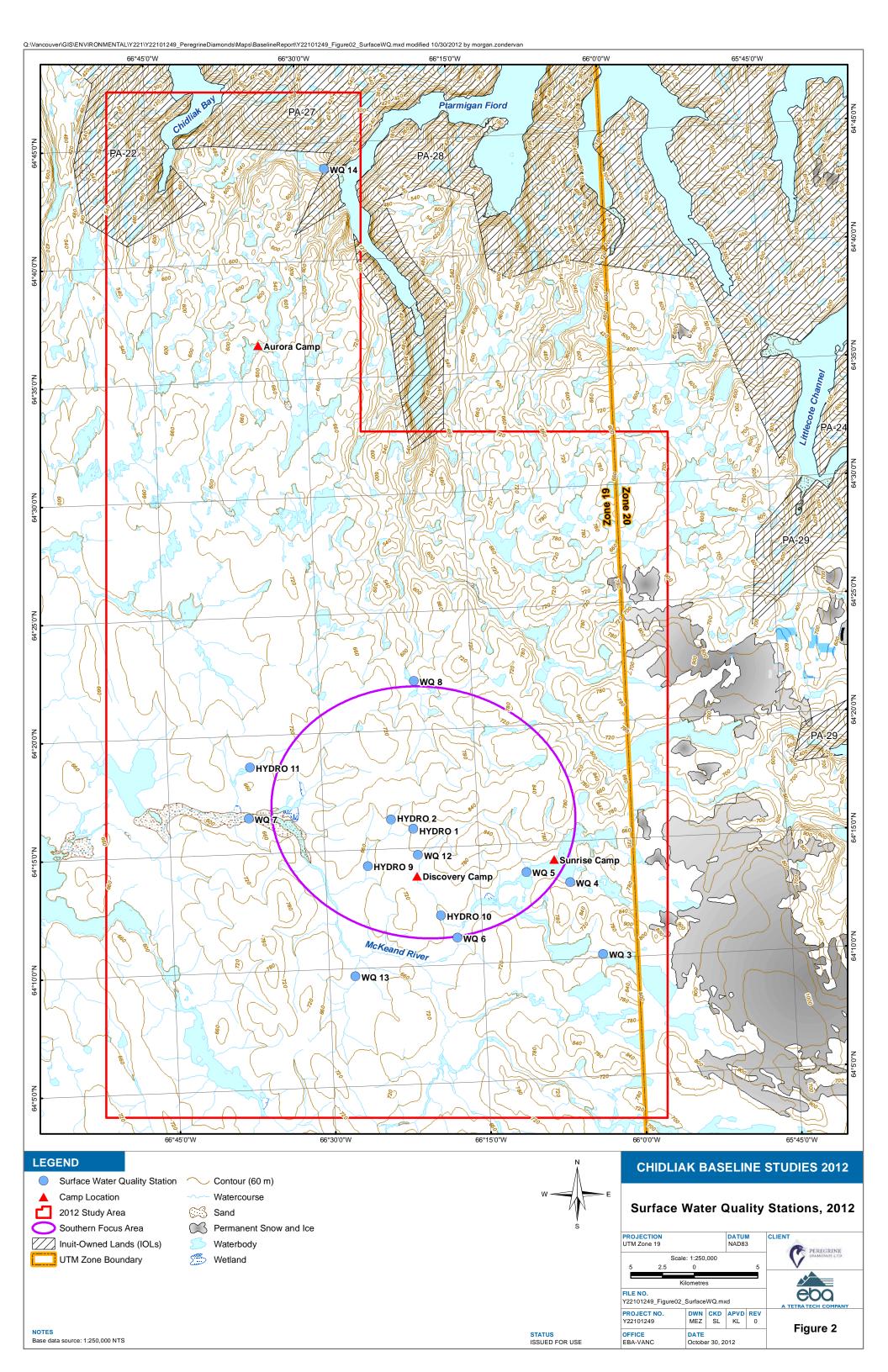
⁻⁻⁻ denotes no Canadian Drinking Water Quality Guideline

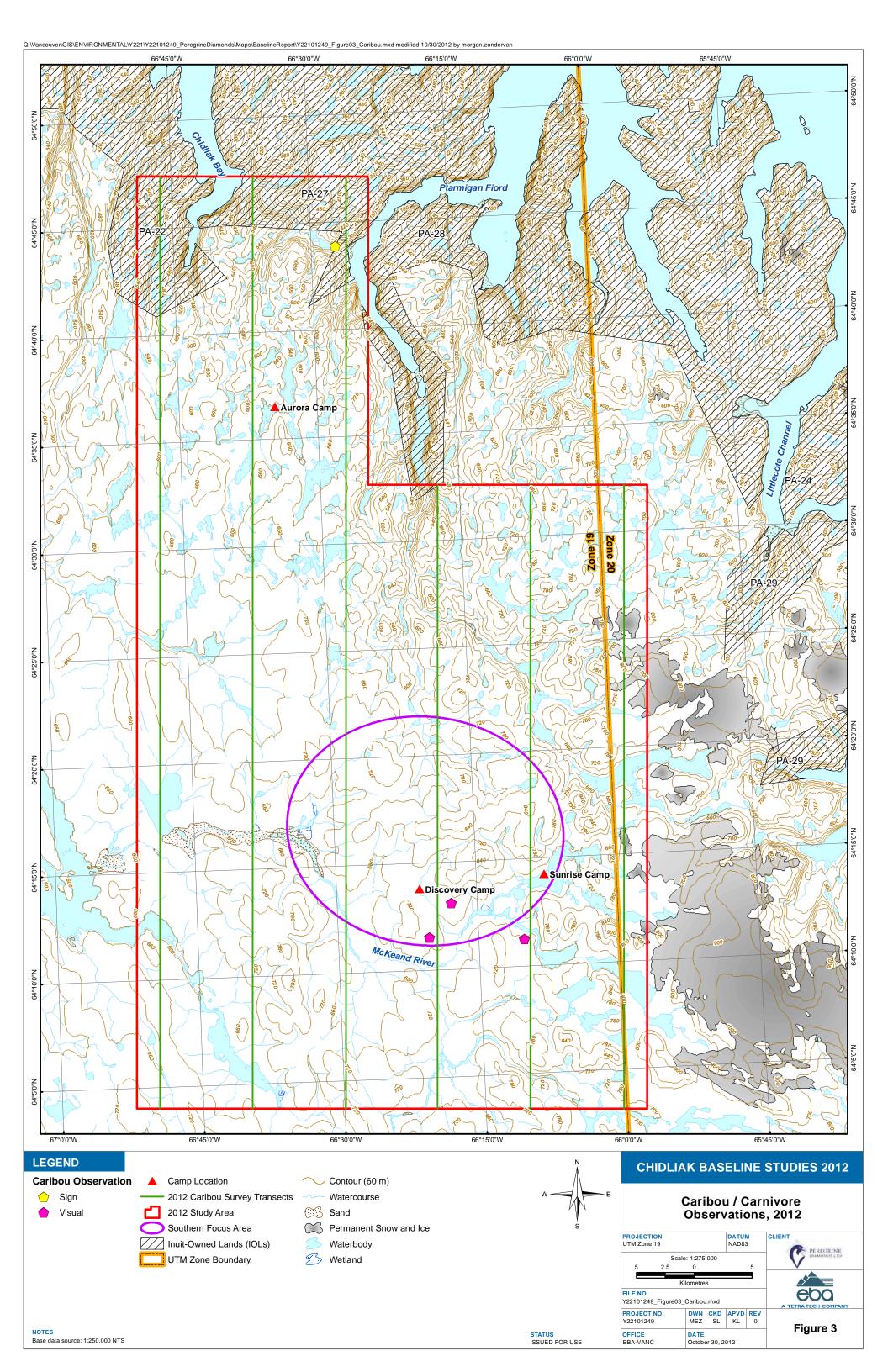
FIGURES

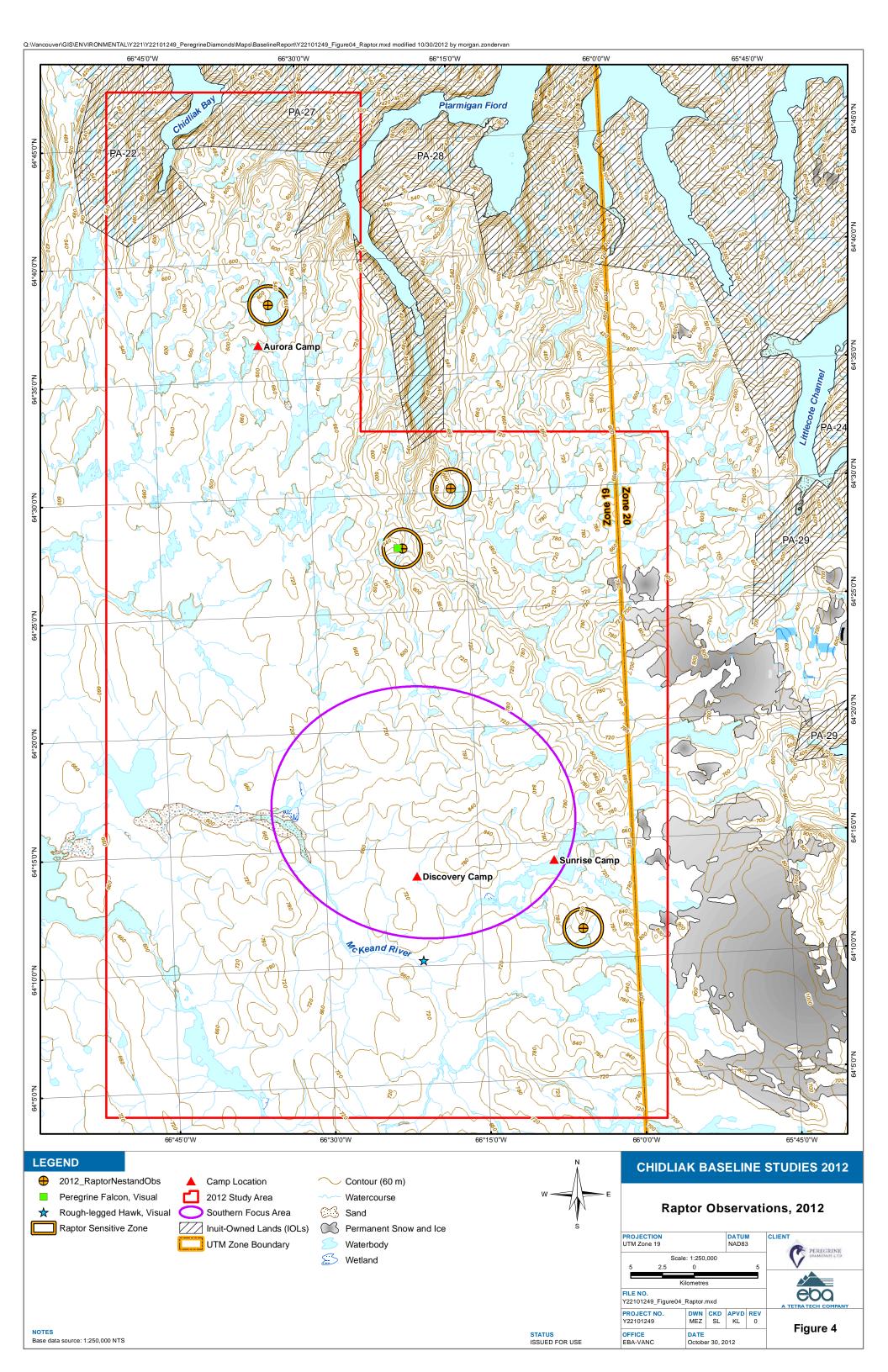
Figure I	Regional Area Map
Figure 2	Surface Water Quality Stations, 2012
Figure 3	Caribou/Carnivore Observations, 2012
Figure 4	Raptor Observations, 2012
Figure 5	Land Cover Classification within the Southern Focus Area, including CH-6 and -7
Figure 6	Camp Wildlife Sighting Logs, 2012

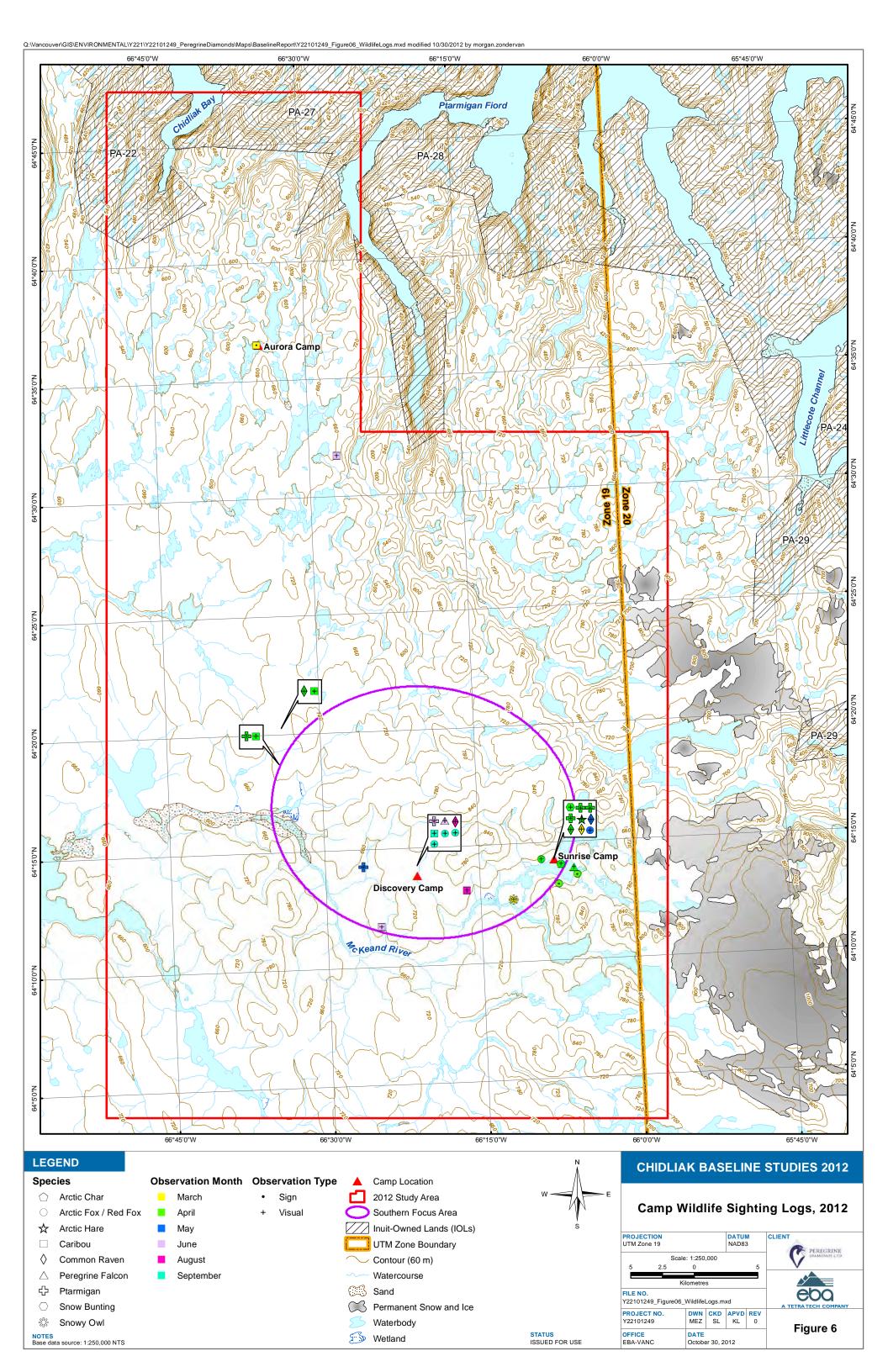












PHOTOGRAPHS

Photo I	Karla Langlois (right) and Rhoda Noah (left) water quality sampling at Station Hydro-II at the time of the July field event. Photo courtesy of Shirley Standafer-Pfister, Peregrine Diamonds.
Photo 2	Potable-water quality samples were collected from the nearby water supply stream and inside Discovery camp's water distribution system. Photo courtesy of Shirley Standafer-Pfister, Peregrine Diamonds.
Photo 3	A group of seven adult caribou and two calves, as partially seen here, were observed incidentally during the July field event. Photo courtesy of Shirley Standafer-Pfister, Peregrine Diamonds.
Photo 4	This active Peregrine Falcon scrape, as seen here, has been an active breeding territory since 2010.
Photo 5	Habitat at CH-6, as seen here, is dominated by cobble and less than one per cent vegetation cover.
Photo 6	Cobble dominated habitat at CH-7, as seen here, supports slightly higher vegetation cover than CH-6 due to the presence of moister soil conditions in the surface drainage sheds.





Karla Langlois (right) and Rhoda Noah (left) water quality sampling at Station Hydro-11 at the time of the July field event. Photo courtesy of Shirley Standafer-Pfister, Photo 1: Peregrine Diamonds.



Photo 2: Potable-water quality samples were collected from the nearby water supply stream and inside Discovery camp's water distribution system. Photo courtesy of Shirley Standafer-Pfister, Peregrine Diamonds.



A group of seven adult caribou and two calves, as partially seen here, were observed incidentally during the July field event. Photo courtesy of Shirley Standafer-Photo 3: Pfister, Peregrine Diamonds.



This active Peregrine Falcon scrape, as seen here, has been an active breeding Photo 4: territory since 2010. Photo courtesy of Shirley Standafer-Pfister, Peregrine Diamonds.



Photo 5: Habitat at CH-6, as seen here, is dominated by cobble with less than one per cent vegetation cover.



Cobble dominated habitat at CH-7, as seen here, supports slightly higher vegetation Photo 6: cover than CH-6 due to the presence of moister soil conditions in the surface drainage sheds.

APPENDIX A EBA'S GENERAL CONDITIONS



GENERAL CONDITIONS

GEO-ENVIRONMENTAL REPORT

This report incorporates and is subject to these "General Conditions".

1.0 USE OF REPORT AND OWNERSHIP

This report pertains to a specific site, a specific development, and a specific scope of work. It is not applicable to any other sites, nor should it be relied upon for types of development other than those to which it refers. Any variation from the site or proposed development would necessitate a supplementary investigation and assessment.

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2.0 ALTERNATE REPORT FORMAT

Where EBA submits both electronic file and hard copy versions of reports, drawings and other project-related documents and deliverables (collectively termed EBA's instruments of professional service), only the signed and/or sealed versions shall be considered final and legally binding. The original signed and/or sealed version archived by EBA shall be deemed to be the original for the Project.

Both electronic file and hard copy versions of EBA's instruments of professional service shall not, under any circumstances, no matter who owns or uses them, be altered by any party except EBA. The Client warrants that EBA's instruments of professional service will be used only and exactly as submitted by EBA.

Electronic files submitted by EBA have been prepared and submitted using specific software and hardware systems. EBA makes no representation about the compatibility of these files with the Client's current or future software and hardware systems.

3.0 NOTIFICATION OF AUTHORITIES

In certain instances, the discovery of hazardous substances or conditions and materials may require that regulatory agencies and other persons be informed and the client agrees that notification to such bodies or persons as required may be done by EBA in its reasonably exercised discretion.

4.0 INFORMATION PROVIDED TO EBA BY OTHERS

During the performance of the work and the preparation of the report, EBA may rely on information provided by persons other than the Client. While EBA endeavours to verify the accuracy of such information when instructed to do so by the Client, EBA accepts no responsibility for the accuracy or the reliability of such information which may affect the report.

APPENDIX B LABORATORY ANALYSIS





EBA ENG CONSULTANTS LTD

ATTN: Karla Langois PO BOX 2244 STN M 201- 4916 49 STREET YELLOWKNIFE NT X1A 2P7 Date Received: 17-JUL-12

Report Date: 25-JUL-12 11:38 (MT)

Version: FINAL

Client Phone: 867-920-2287

Certificate of Analysis

Lab Work Order #: L1179175

Project P.O. #: NOT SUBMITTED

Job Reference: Y22101249

C of C Numbers:

Legal Site Desc: CHIDLIAK PROPERTY

Catherine Evaristo-Cordero Senior Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 9936-67 Avenue, Edmonton, AB T6E 0P5 Canada | Phone: +1 780 413 5227 | Fax: +1 780 437 2311

ALS CANADA LTD Part of the ALS Group A Campbell Brothers Limited Company



L1179175 CONTD.... PAGE 2 of 22 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1179175-1 WQ3							
Sampled By: KL on 13-JUL-12							
Matrix: Surface Water							
TOT Metals CCME Fresh Water Aquatic Life							
Hardness (from Total Ca and Mg)							
Hardness (as CaCO3)	<1.3			mg/L		20-JUL-12	
Mercury (Hg)				3			
Mercury (Hg)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401188
Total Cd in Water by CCMS (CCME - FAL)							
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L		19-JUL-12	R2401348
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0052	RRVAP	0.0050	mg/L		19-JUL-12	R2401348
Antimony (Sb)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Arsenic (As)-Total	<0.00040		0.00040	mg/L		19-JUL-12 19-JUL-12	R2401348
Barium (Ba)-Total Beryllium (Be)-Total	<0.0030 <0.0010		0.0030 0.0010	mg/L mg/L		19-JUL-12 19-JUL-12	R2401348 R2401348
Boron (B)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Chromium (Cr)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Cobalt (Co)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Copper (Cu)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Lead (Pb)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Lithium (Li)-Total	<0.010		0.010	mg/L		19-JUL-12	R2401348
Molybdenum (Mo)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401348
Nickel (Ni)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Selenium (Se)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Silver (Ag)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401348
Strontium (Sr)-Total	0.00126	RRVAP	0.00010	mg/L		19-JUL-12	R2401348
Thallium (TI)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Tin (Sn)-Total	<0.050		0.050	mg/L		19-JUL-12 19-JUL-12	R2401348
Titanium (Ti)-Total Uranium (U)-Total	<0.0010 <0.00010		0.0010 0.00010	mg/L mg/L		19-JUL-12 19-JUL-12	R2401348 R2401348
Vanadium (V)-Total	<0.0010		0.00010	mg/L		19-JUL-12	R2401348
Zinc (Zn)-Total	<0.0010		0.0040	mg/L		19-JUL-12	R2401348
Total Metals in Water by ICPOES	10.00.0		0.00.0	9. =			
Calcium (Ca)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Iron (Fe)-Total	<0.030		0.030	mg/L		19-JUL-12	R2401313
Magnesium (Mg)-Total	<0.10		0.10	mg/L		19-JUL-12	R2401313
Manganese (Mn)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401313
Potassium (K)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Sodium (Na)-Total	<1.0		1.0	mg/L		19-JUL-12	R2401313
Miscellaneous Parameters	0.0050		0.0050	m c:/l		00 11 11 40	D0400040
Ammonia, Total (as N)	<0.0050		0.0050	mg/L	04 11 11 40	23-JUL-12	R2402940
Oil and Grease	<1.0		1.0	mg/L	24-JUL-12	24-JUL-12	R2403512
Total Organic Carbon	<1.0		1.0	mg/L	40 1111 40	23-JUL-12	R2402878
Phosphorus (P)-Total	<0.020		0.020	mg/L	19-JUL-12	20-JUL-12	R2402067
Total Suspended Solids	<3.0		3.0	mg/L		19-JUL-12	R2401625
Turbidity	0.19		0.10	NTU		19-JUL-12	R2401147
pH and Conductivity pH	6.07		0.10	рН		19-JUL-12	R2401141
Conductivity (EC)	2.96		0.10	uS/cm		19-JUL-12 19-JUL-12	R2401141
Total Nitrogen	2.50		5.20	23/0111		.5 552 12	
Nitrate as N by IC							
Nitrate (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.071		0.071	mg/L		22-JUL-12	
,	10.0.1						

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

L1179175 CONTD.... PAGE 3 of 22 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1179175-1 WQ3							
Sampled By: KL on 13-JUL-12							
Matrix: Surface Water							
Nitrite as N by IC Nitrite (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
TKN in Water by Colour				,,			
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	23-JUL-12	24-JUL-12	R2403500
Total Nitrogen (Calculation) Total Nitrogen	<0.21		0.21	ma/l		24-JUL-12	
	<0.21		0.21	mg/L		24-JUL-12	
L1179175-2 WQ4							
Sampled By: KL on 13-JUL-12							
Matrix: Surface Water							
TOT Metals CCME Fresh Water Aquatic Life							
Hardness (from Total Ca and Mg)	4.0					20 1111 42	
Hardness (as CaCO3)	<1.3			mg/L		20-JUL-12	
Mercury (Hg) Mercury (Hg)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401188
Total Cd in Water by CCMS (CCME - FAL)	\0.000020		0.000020	mg/L		10-00L-12	112401100
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L		19-JUL-12	R2401348
Total Metals in Water by CRC ICPMS	10.000010		3.000010	··· <i>y</i> =			1.2.0.0.0
Aluminum (Al)-Total	0.0143	RRVAP	0.0050	mg/L		19-JUL-12	R2401348
Antimony (Sb)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Arsenic (As)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Barium (Ba)-Total	<0.0030		0.0030	mg/L		19-JUL-12	R2401348
Beryllium (Be)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Boron (B)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Chromium (Cr)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Cobalt (Co)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Copper (Cu)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Lead (Pb)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Lithium (Li)-Total	<0.010		0.010	mg/L		19-JUL-12	R2401348
Molybdenum (Mo)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401348
Nickel (Ni)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Selenium (Se)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Silver (Ag)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401348
Strontium (Sr)-Total	0.00236		0.00010	mg/L		19-JUL-12 19-JUL-12	R2401348
Thallium (TI)-Total	<0.00010		0.00010 0.050	mg/L		19-JUL-12 19-JUL-12	R2401348
Tin (Sn)-Total Titanium (Ti)-Total	<0.050 <0.0010		0.050	mg/L mg/L		19-JUL-12 19-JUL-12	R2401348 R2401348
Uranium (U)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401346
Vanadium (V)-Total	<0.0010		0.00010	mg/L		19-30L-12 19-JUL-12	R2401348
Zinc (Zn)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Total Metals in Water by ICPOES			0.0010				1.2.01040
Calcium (Ca)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Iron (Fe)-Total	<0.030		0.030	mg/L		19-JUL-12	R2401313
Magnesium (Mg)-Total	0.11		0.10	mg/L		19-JUL-12	R2401313
Manganese (Mn)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401313
Potassium (K)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Sodium (Na)-Total	<1.0		1.0	mg/L		19-JUL-12	R2401313
Miscellaneous Parameters							
Ammonia, Total (as N)	0.0058		0.0050	mg/L		23-JUL-12	R2402940
Oil and Grease	<1.0		1.0	mg/L	24-JUL-12	24-JUL-12	R2403512
Total Organic Carbon	<1.0		1.0	mg/L		23-JUL-12	R2402878
Phosphorus (P)-Total	<0.020		0.020	mg/L	19-JUL-12	20-JUL-12	R2402067
Total Suspended Solids	<3.0		3.0	mg/L		19-JUL-12	R2401625

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

L1179175 CONTD.... PAGE 4 of 22 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1179175-2 WQ4							
Sampled By: KL on 13-JUL-12							
Matrix: Surface Water	0.05		0.40	NITTL		40 1111 40	D0404447
Turbidity	0.35		0.10	NTU		19-JUL-12	R2401147
pH and Conductivity pH	6.25		0.10	рН		19-JUL-12	R2401141
Conductivity (EC)	4.74		0.10	uS/cm		19-JUL-12	R2401141
Total Nitrogen	7.77		0.20	46/0111		10 002 12	102401141
Nitrate as N by IC							
Nitrate (as N)	0.057		0.050	mg/L		19-JUL-12	R2402259
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.071		0.071	mg/L		22-JUL-12	
Nitrite as N by IC				"		40 1111 40	
Nitrite (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
TKN in Water by Colour Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	23-JUL-12	24-JUL-12	R2403500
Total Nitrogen (Calculation)	<0.20		0.20	IIIg/L	25-30L-12	24-30L-12	K2403300
Total Nitrogen Total Nitrogen	<0.21		0.21	mg/L		24-JUL-12	
L1179175-3 WQ5							
Sampled By: KL on 13-JUL-12							
Matrix: Surface Water							
TOT Metals CCME Fresh Water Aquatic Life							
Hardness (from Total Ca and Mg)							
Hardness (as CaCO3)	<1.3			mg/L		20-JUL-12	
Mercury (Hg) Mercury (Hg)-Total	0.00000		0.000000			19-JUL-12	D0404400
Total Cd in Water by CCMS (CCME - FAL)	<0.000020		0.000020	mg/L		19-JUL-12	R2401188
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L		19-JUL-12	R2401348
Total Metals in Water by CRC ICPMS	10.0000.0		0.0000.0				112101010
Aluminum (Al)-Total	0.0137	RRVAP	0.0050	mg/L		19-JUL-12	R2401348
Antimony (Sb)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Arsenic (As)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Barium (Ba)-Total	<0.0030		0.0030	mg/L		19-JUL-12	R2401348
Beryllium (Be)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Boron (B)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Chromium (Cr)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Cobalt (Co)-Total Copper (Cu)-Total	<0.0020		0.0020	mg/L		19-JUL-12 19-JUL-12	R2401348
Lead (Pb)-Total	<0.0010 <0.00010		0.0010 0.00010	mg/L mg/L		19-JUL-12 19-JUL-12	R2401348 R2401348
Lithium (Li)-Total	<0.010		0.00010	mg/L		19-JUL-12	R2401348
Molybdenum (Mo)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401348
Nickel (Ni)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Selenium (Se)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Silver (Ag)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401348
Strontium (Sr)-Total	0.00214	RRVAP	0.00010	mg/L		19-JUL-12	R2401348
Thallium (TI)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Tin (Sn)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Titanium (Ti)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Uranium (U)-Total Vanadium (V)-Total	<0.00010		0.00010	mg/L		19-JUL-12 19-JUL-12	R2401348
Zinc (Zn)-Total	<0.0010 <0.0040		0.0010 0.0040	mg/L mg/L		19-JUL-12 19-JUL-12	R2401348 R2401348
Total Metals in Water by ICPOES	\U.UU4U		0.0040	illy/L		10-00L-12	112401340
Calcium (Ca)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Iron (Fe)-Total	<0.030		0.030	mg/L		19-JUL-12	R2401313
Magnesium (Mg)-Total	0.11		0.10	mg/L		19-JUL-12	R2401313
				-			

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

L1179175 CONTD.... PAGE 5 of 22 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1179175-3 WQ5							
Sampled By: KL on 13-JUL-12							
Matrix: Surface Water							
Total Metals in Water by ICPOES							
Manganese (Mn)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401313
Potassium (K)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Sodium (Na)-Total	<1.0		1.0	mg/L		19-JUL-12	R2401313
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.0050		0.0050	mg/L		23-JUL-12	R2402940
Oil and Grease	<1.0		1.0	mg/L	24-JUL-12	24-JUL-12	R2403512
Total Organic Carbon	1.9		1.0	mg/L		20-JUL-12	R2402013
Phosphorus (P)-Total	<0.020		0.020	mg/L	19-JUL-12	20-JUL-12	R2402067
Total Suspended Solids	<3.0		3.0	mg/L		19-JUL-12	R2401625
Turbidity	0.29		0.10	NTU		19-JUL-12	R2401147
pH and Conductivity							
pH	5.97		0.10	рН		19-JUL-12	R2401141
Conductivity (EC)	4.58		0.20	uS/cm		19-JUL-12	R2401141
Total Nitrogen							
Nitrate as N by IC	0.050		0.050	//		40 1111 40	D0400050
Nitrate (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
Nitrate+Nitrite Nitrate and Nitrite (as N)	<0.071		0.071	mg/L		22-JUL-12	
Nitrite as N by IC Nitrite (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
TKN in Water by Colour Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	23-JUL-12	24-JUL-12	R2403500
Total Nitrogen (Calculation) Total Nitrogen	<0.21		0.21	mg/L		24-JUL-12	
L1179175-4 WQ7							
Sampled By: KL on 13-JUL-12							
Matrix: Surface Water							
TOT Metals CCME Fresh Water Aquatic Life							
Hardness (from Total Ca and Mg)							
Hardness (as CaCO3)	<1.3			mg/L		20-JUL-12	
Mercury (Hg)	0.000000		0.000000			40 11 11 45	D0404155
Mercury (Hg)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401188
Total Cd in Water by CCMS (CCME - FAL)	ZO 000010		0.000040	ma/l		19-JUL-12	D2404240
Cadmium (Cd)-Total Total Metals in Water by CRC ICPMS	<0.000010		0.000010	mg/L		19-JUL-12	R2401348
Aluminum (Al)-Total	0.0121	RRVAP	0.0050	mg/L		19-JUL-12	R2401348
Antimony (Sb)-Total	<0.00040		0.0030	mg/L		19-JUL-12	R2401348
Arsenic (As)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Barium (Ba)-Total	<0.0030		0.0030	mg/L		19-JUL-12	R2401348
Beryllium (Be)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Boron (B)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Chromium (Cr)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Cobalt (Co)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Copper (Cu)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Lead (Pb)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Lithium (Li)-Total	<0.010		0.010	mg/L		19-JUL-12	R2401348
Molybdenum (Mo)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401348
Nickel (Ni)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Selenium (Se)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Silver (Ag)-Total Strontium (Sr)-Total	<0.000020	RRVAP	0.000020	mg/L mg/l		19-JUL-12	R2401348
Strontium (Sr)-Total	0.00164	KKVAP	0.00010	mg/L		19-JUL-12	R2401348

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1179175-4 WQ7							
Sampled By: KL on 13-JUL-12							
Matrix: Surface Water							
Total Metals in Water by CRC ICPMS							
Thallium (TI)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Tin (Sn)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Titanium (Ti)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Uranium (U)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Vanadium (V)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Zinc (Zn)-Total	<0.0040		0.0040	mg/L		19-JUL-12	R2401348
Total Metals in Water by ICPOES	0.50		0.50			40 1111 42	D0404040
Calcium (Ca)-Total Iron (Fe)-Total	<0.50 <0.030		0.50	mg/L		19-JUL-12 19-JUL-12	R2401313
Magnesium (Mg)-Total	<0.030		0.030 0.10	mg/L mg/L		19-JUL-12 19-JUL-12	R2401313 R2401313
Manganese (Mn)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401313
Potassium (K)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Sodium (Na)-Total	<1.0		1.0	mg/L		19-JUL-12	R2401313
Miscellaneous Parameters				_			
Ammonia, Total (as N)	<0.0050		0.0050	mg/L		23-JUL-12	R2402940
Oil and Grease	<1.0		1.0	mg/L	24-JUL-12	24-JUL-12	R2403512
Total Organic Carbon	1.1		1.0	mg/L		20-JUL-12	R2402013
Phosphorus (P)-Total	<0.020		0.020	mg/L	19-JUL-12	20-JUL-12	R2402067
Total Suspended Solids	<3.0		3.0	mg/L		19-JUL-12	R2401625
Turbidity	0.34		0.10	NTU		19-JUL-12	R2401147
pH and Conductivity							
pH	6.11		0.10	рН		19-JUL-12	R2401141
Conductivity (EC)	3.77		0.20	uS/cm		19-JUL-12	R2401141
Total Nitrogen							
Nitrate as N by IC Nitrate (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
Nitrate+Nitrite Nitrate and Nitrite (as N)	<0.071		0.071	mg/L		22-JUL-12	
Nitrite as N by IC Nitrite (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
TKN in Water by Colour	10.000		0.000	9/=		.0001.1	112 102200
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	23-JUL-12	24-JUL-12	R2403500
Total Nitrogen (Calculation)							
Total Nitrogen	<0.21		0.21	mg/L		24-JUL-12	
L1179175-5 WQ8							
Sampled By: KL on 13-JUL-12							
Matrix: Surface Water							
TOT Metals CCME Fresh Water Aquatic Life							
Hardness (from Total Ca and Mg) Hardness (as CaCO3)	<1.3			mg/L		20-JUL-12	
Mercury (Hg) Mercury (Hg)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401188
Total Cd in Water by CCMS (CCME - FAL) Cadmium (Cd)-Total	<0.000010		0.000010	mg/L		19-JUL-12	R2401348
Total Metals in Water by CRC ICPMS				-			
Aluminum (Al)-Total	0.0189		0.0050	mg/L		19-JUL-12	R2401348
Antimony (Sb)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Arsenic (As)-Total	<0.00040		0.00040	mg/L		19-JUL-12 19-JUL-12	R2401348
Barium (Ba)-Total Beryllium (Be)-Total	<0.0030		0.0030 0.0010	mg/L		19-JUL-12 19-JUL-12	R2401348
Boron (B)-Total	<0.0010 <0.050		0.0010	mg/L mg/L		19-JUL-12 19-JUL-12	R2401348 R2401348
Doron (D)-Total	<0.000		0.000	ilig/L		19-30L-12	172401340

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1179175-5 WQ8							
Sampled By: KL on 13-JUL-12							
Total Metals in Water by CRC ICPMS Chromium (Cr)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Cobalt (Co)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Copper (Cu)-Total	<0.0020		0.0010	mg/L		19-JUL-12	R2401348
Lead (Pb)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Lithium (Li)-Total	<0.010		0.010	mg/L		19-JUL-12	R2401348
Molybdenum (Mo)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401348
Nickel (Ni)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Selenium (Se)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Silver (Ag)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401348
Strontium (Sr)-Total	0.00226		0.00010	mg/L		19-JUL-12	R2401348
Thallium (TI)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Tin (Sn)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Titanium (Ti)-Total	0.0022		0.0010	mg/L		19-JUL-12	R2401348
Uranium (U)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Vanadium (V)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Zinc (Zn)-Total	<0.0040		0.0040	mg/L		19-JUL-12	R2401348
Total Metals in Water by ICPOES Calcium (Ca)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Iron (Fe)-Total	<0.030		0.030	mg/L		19-JUL-12	R2401313
Magnesium (Mg)-Total	0.14		0.030	mg/L		19-JUL-12	R2401313
Manganese (Mn)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401313
Potassium (K)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Sodium (Na)-Total	<1.0		1.0	mg/L		19-JUL-12	R2401313
Miscellaneous Parameters				ŭ			
Ammonia, Total (as N)	0.0111		0.0050	mg/L		23-JUL-12	R2402940
Oil and Grease	<1.0		1.0	mg/L	24-JUL-12	24-JUL-12	R2403512
Total Organic Carbon	<1.0		1.0	mg/L		20-JUL-12	R2402013
Phosphorus (P)-Total	<0.020		0.020	mg/L	19-JUL-12	20-JUL-12	R2402067
Total Suspended Solids	<3.0		3.0	mg/L		19-JUL-12	R2401625
Turbidity	0.54		0.10	NTU		19-JUL-12	R2401147
pH and Conductivity							
pH	5.96		0.10	рН		19-JUL-12	R2401141
Conductivity (EC)	5.73		0.20	uS/cm		19-JUL-12	R2401141
Total Nitrogen							
Nitrate as N by IC							_
Nitrate (as N)	0.062		0.050	mg/L		19-JUL-12	R2402259
Nitrate+Nitrite	0.074		0.074	c: //		00 11 11 40	
Nitrate and Nitrite (as N)	<0.071		0.071	mg/L		22-JUL-12	
Nitrite as N by IC Nitrite (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
TKN in Water by Colour				5			
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	23-JUL-12	24-JUL-12	R2403500
Total Nitrogen (Calculation)				-			
Total Nitrogen	<0.21		0.21	mg/L		24-JUL-12	
L1179175-6 HYDRO9							
Sampled By: KL on 13-JUL-12							
Matrix: Surface Water							
TOT Metals CCME Fresh Water Aquatic Life							
Hardness (from Total Ca and Mg)							
Hardness (as CaCO3)	<1.3			mg/L		20-JUL-12	
Mercury (Hg)							

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1179175-6 HYDRO9							
Sampled By: KL on 13-JUL-12							
Matrix: Surface Water							
Mercury (Hg)							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401188
Total Cd in Water by CCMS (CCME - FAL)	40.000020		0.000020	g/ _		10 002 12	112401100
Cadmium (Cd)-Total	<0.00010		0.000010	mg/L		19-JUL-12	R2401348
Total Metals in Water by CRC ICPMS				J			
Aluminum (AI)-Total	0.0607	RRVAP	0.0050	mg/L		19-JUL-12	R2401348
Antimony (Sb)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Arsenic (As)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Barium (Ba)-Total	<0.0030		0.0030	mg/L		19-JUL-12	R2401348
Beryllium (Be)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Boron (B)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Chromium (Cr)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Cobalt (Co)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Copper (Cu)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Lead (Pb)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Lithium (Li)-Total	<0.010		0.010	mg/L		19-JUL-12	R2401348
Molybdenum (Mo)-Total Nickel (Ni)-Total	<0.0050		0.0050 0.0020	mg/L		19-JUL-12 19-JUL-12	R2401348
Selenium (Se)-Total	<0.0020 <0.00040		0.0020	mg/L		19-JUL-12 19-JUL-12	R2401348 R2401348
Silver (Ag)-Total	<0.00040		0.00040	mg/L mg/L		19-JUL-12 19-JUL-12	R2401348
Strontium (Sr)-Total	0.00152	RRVAP	0.000020	mg/L		19-JUL-12	R2401348
Thallium (TI)-Total	<0.00132	TXIXV/	0.00010	mg/L		19-JUL-12	R2401348
Tin (Sn)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Titanium (Ti)-Total	0.0028		0.0010	mg/L		19-JUL-12	R2401348
Uranium (U)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Vanadium (V)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Zinc (Zn)-Total	<0.0040		0.0040	mg/L		19-JUL-12	R2401348
Total Metals in Water by ICPOES							
Calcium (Ca)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Iron (Fe)-Total	0.053		0.030	mg/L		19-JUL-12	R2401313
Magnesium (Mg)-Total	<0.10		0.10	mg/L		19-JUL-12	R2401313
Manganese (Mn)-Total	<0.0050		0.0050	mg/L		19-JUL-12 19-JUL-12	R2401313
Potassium (K)-Total Sodium (Na)-Total	<0.50 <1.0		0.50 1.0	mg/L		19-JUL-12 19-JUL-12	R2401313
Miscellaneous Parameters	<1.0		1.0	mg/L		19-JUL-12	R2401313
Ammonia, Total (as N)	<0.0050		0.0050	ma/l		23-JUL-12	R2402940
Oil and Grease				mg/L	24-JUL-12		
	<1.0		1.0	mg/L	24-JUL-12	24-JUL-12	R2403512
Total Organic Carbon	<1.0		1.0	mg/L	40 11 40	20-JUL-12	R2402013
Phosphorus (P)-Total	<0.020		0.020	mg/L	19-JUL-12	20-JUL-12	R2402067
Total Suspended Solids	<3.0		3.0	mg/L		19-JUL-12	R2401625
Turbidity	1.12		0.10	NTU		19-JUL-12	R2401147
pH and Conductivity pH	E 0.4		0.40	nЦ		19-JUL-12	R2401141
Conductivity (EC)	5.84 4.91		0.10 0.20	pH uS/cm		19-JUL-12 19-JUL-12	R2401141 R2401141
Total Nitrogen	4.91		0.20	u3/UIII		19-JUL-12	112401141
Nitrate as N by IC							
Nitrate (as N)	0.155	RRV	0.050	mg/L		24-JUL-12	R2403289
Nitrate+Nitrite				··			
Nitrate and Nitrite (as N)	0.155		0.071	mg/L		24-JUL-12	
Nitrite as N by IC				J			
Nitrite (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
TKN in Water by Colour							

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1179175-6 HYDRO9							
Sampled By: KL on 13-JUL-12							
Matrix: Surface Water							
TKN in Water by Colour Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	23-JUL-12	24-JUL-12	R2403500
Total Nitrogen (Calculation)	10.20		0.20				
Total Nitrogen	<0.21		0.21	mg/L		24-JUL-12	
L1179175-7 HYDRO11							
Sampled By: KL on 13-JUL-12							
Matrix: Surface Water							
TOT Metals CCME Fresh Water Aquatic Life							
Hardness (from Total Ca and Mg) Hardness (as CaCO3)	6.4			mg/L		20-JUL-12	
Mercury (Hg)	0						
Mercury (Hg)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401188
Total Cd in Water by CCMS (CCME - FAL)							
Cadmium (Cd)-Total	0.000042		0.000010	mg/L		19-JUL-12	R2401348
Total Metals in Water by CRC ICPMS	0.040		0.0055	P		40 !!!! 40	D0404045
Aluminum (Al)-Total	0.0401		0.0050	mg/L		19-JUL-12	R2401348
Antimony (Sb)-Total	<0.00040		0.00040	mg/L		19-JUL-12 19-JUL-12	R2401348
Arsenic (As)-Total Barium (Ba)-Total	<0.00040 0.0087		0.00040	mg/L		19-JUL-12 19-JUL-12	R2401348 R2401348
Beryllium (Be)-Total	<0.0087		0.0030 0.0010	mg/L mg/L		19-JUL-12 19-JUL-12	R2401348
Boron (B)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Chromium (Cr)-Total	<0.0010		0.000	mg/L		19-JUL-12	R2401348
Cobalt (Co)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Copper (Cu)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Lead (Pb)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Lithium (Li)-Total	<0.010		0.010	mg/L		19-JUL-12	R2401348
Molybdenum (Mo)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401348
Nickel (Ni)-Total	0.0076		0.0020	mg/L		19-JUL-12	R2401348
Selenium (Se)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Silver (Ag)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401348
Strontium (Sr)-Total	0.00769		0.00010	mg/L		19-JUL-12	R2401348
Thallium (TI)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Tin (Sn)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Titanium (Ti)-Total Uranium (U)-Total	<0.0010 <0.00010		0.0010 0.00010	mg/L mg/L		19-JUL-12 19-JUL-12	R2401348 R2401348
Vanadium (V)-Total	<0.0010		0.00010	mg/L		19-JUL-12 19-JUL-12	R2401348
Zinc (Zn)-Total	0.0055		0.0010	mg/L		19-JUL-12	R2401348
Total Metals in Water by ICPOES	0.0000		0.0040	9, =		1000212	112401040
Calcium (Ca)-Total	1.30		0.50	mg/L		19-JUL-12	R2401313
Iron (Fe)-Total	<0.030		0.030	mg/L		19-JUL-12	R2401313
Magnesium (Mg)-Total	0.77		0.10	mg/L		19-JUL-12	R2401313
Manganese (Mn)-Total	0.0235		0.0050	mg/L		19-JUL-12	R2401313
Potassium (K)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Sodium (Na)-Total	<1.0		1.0	mg/L		19-JUL-12	R2401313
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.0050		0.0050	mg/L		23-JUL-12	R2402940
Oil and Grease	<1.0		1.0	mg/L	24-JUL-12	24-JUL-12	R2403512
Total Organic Carbon	1.3		1.0	mg/L		20-JUL-12	R2402013
Phosphorus (P)-Total	<0.020		0.020	mg/L	19-JUL-12	20-JUL-12	R2402067
Total Suspended Solids	<3.0		3.0	mg/L		19-JUL-12	R2401625
Turbidity	0.29		0.10	NTU		19-JUL-12	R2401147
pH and Conductivity							

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier* D.L.	Units	Extracted	Analyzed	Batch
L1179175-7 HYDRO11						
Sampled By: KL on 13-JUL-12						
Matrix: Surface Water						
pH and Conductivity						
pH	5.42	0.10	рН		19-JUL-12	R2401141
Conductivity (EC)	22.5	0.20	uS/cm		19-JUL-12	R2401141
Total Nitrogen						
Nitrate as N by IC						
Nitrate (as N)	<0.050	0.050	mg/L		19-JUL-12	R2402259
Nitrate+Nitrite						
Nitrate and Nitrite (as N)	<0.071	0.071	mg/L		22-JUL-12	
Nitrite as N by IC	-O OFO	0.050	ma/l		19-JUL-12	D2402250
Nitrite (as N)	<0.050	0.050	mg/L		19-JUL-12	R2402259
TKN in Water by Colour Total Kjeldahl Nitrogen	<0.20	0.20	mg/L	23-JUL-12	24-JUL-12	R2403500
Total Nitrogen (Calculation)	10.20	0.20				1.2.100000
Total Nitrogen	<0.21	0.21	mg/L		24-JUL-12	
L1179175-8 WQ12						
Sampled By: KL on 13-JUL-12						
Matrix: Surface Water						
TOT Metals CCME Fresh Water Aquatic Life						
Hardness (from Total Ca and Mg)						
Hardness (as CaCO3)	<1.3		mg/L		20-JUL-12	
Mercury (Hg)						
Mercury (Hg)-Total	<0.000020	0.000020	mg/L		19-JUL-12	R2401188
Total Cd in Water by CCMS (CCME - FAL)	0.000040	0.000040			40 1111 40	D0404040
Cadmium (Cd)-Total	<0.000010	0.000010	mg/L		19-JUL-12	R2401348
Total Metals in Water by CRC ICPMS Aluminum (Al)-Total	0.0551	0.0050	mg/L		19-JUL-12	R2401348
Antimony (Sb)-Total	<0.00040	0.00040	mg/L		19-JUL-12	R2401348
Arsenic (As)-Total	<0.00040	0.00040	mg/L		19-JUL-12	R2401348
Barium (Ba)-Total	0.0038	0.0030	mg/L		19-JUL-12	R2401348
Beryllium (Be)-Total	<0.0010	0.0010	mg/L		19-JUL-12	R2401348
Boron (B)-Total	<0.050	0.050	mg/L		19-JUL-12	R2401348
Chromium (Cr)-Total	<0.0010	0.0010	mg/L		19-JUL-12	R2401348
Cobalt (Co)-Total	<0.0020	0.0020	mg/L		19-JUL-12	R2401348
Copper (Cu)-Total	<0.0010	0.0010	mg/L		19-JUL-12	R2401348
Lead (Pb)-Total	<0.00010	0.00010	mg/L		19-JUL-12	R2401348
Lithium (Li)-Total Molybdenum (Mo)-Total	<0.010 <0.0050	0.010 0.0050	mg/L mg/L		19-JUL-12 19-JUL-12	R2401348 R2401348
Nickel (Ni)-Total	<0.0050	0.0050	mg/L		19-JUL-12 19-JUL-12	R2401348 R2401348
Selenium (Se)-Total	<0.0020	0.0020	mg/L		19-JUL-12	R2401348
Silver (Ag)-Total	<0.00040	0.000020	mg/L		19-JUL-12	R2401348
Strontium (Sr)-Total	0.00252	0.00010	mg/L		19-JUL-12	R2401348
Thallium (TI)-Total	<0.00010	0.00010	mg/L		19-JUL-12	R2401348
Tin (Sn)-Total	<0.050	0.050	mg/L		19-JUL-12	R2401348
Titanium (Ti)-Total	0.0034	0.0010	mg/L		19-JUL-12	R2401348
Uranium (U)-Total	<0.00010	0.00010	mg/L		19-JUL-12	R2401348
Vanadium (V)-Total	<0.0010	0.0010	mg/L		19-JUL-12	R2401348
Zinc (Zn)-Total	<0.0040	0.0040	mg/L		19-JUL-12	R2401348
Total Metals in Water by ICPOES	0.50	0.50	m c /l		40 11 11 40	D0404040
Calcium (Ca)-Total	<0.50	0.50	mg/L		19-JUL-12 19-JUL-12	R2401313
Iron (Fe)-Total Magnesium (Mg)-Total	0.048 0.28	0.030 0.10	mg/L mg/L		19-JUL-12 19-JUL-12	R2401313 R2401313
Manganese (Mn)-Total	<0.0050	0.0050	mg/L		19-JUL-12 19-JUL-12	R2401313 R2401313
	\0.0000	0.0000	g, L		10 001 12	112-101010

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1179175-8 WQ12							
Sampled By: KL on 13-JUL-12							
Matrix: Surface Water							
Total Metals in Water by ICPOES							
Potassium (K)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Sodium (Na)-Total	<1.0		1.0	mg/L		19-JUL-12	R2401313
Miscellaneous Parameters				Ü			
Ammonia, Total (as N)	<0.0050		0.0050	mg/L		23-JUL-12	R2402940
Oil and Grease	<1.0		1.0	mg/L	24-JUL-12	24-JUL-12	R2403512
Total Organic Carbon	1.6		1.0	mg/L		20-JUL-12	R2402013
Phosphorus (P)-Total	<0.020		0.020	mg/L	19-JUL-12	20-JUL-12	R2402067
Total Suspended Solids	<3.0		3.0	mg/L		19-JUL-12	R2401625
Turbidity	1.09		0.10	NTU		19-JUL-12	R2401147
pH and Conductivity							
pH	6.63		0.10	рН		19-JUL-12	R2401141
Conductivity (EC)	7.50		0.20	uS/cm		19-JUL-12	R2401141
Total Nitrogen							
Nitrate as N by IC							
Nitrate (as N)	0.131		0.050	mg/L		19-JUL-12	R2402259
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	0.131		0.071	mg/L		22-JUL-12	
Nitrite as N by IC	0.050		0.050			40 1111 40	D0400050
Nitrite (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
TKN in Water by Colour Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	23-JUL-12	24-JUL-12	R2403500
Total Nitrogen (Calculation)	VO.20		0.20	1119/12	20 002 12	24 002 12	112403300
Total Nitrogen	<0.21		0.21	mg/L		24-JUL-12	
L1179175-9 WQ14							
Sampled By: KL on 13-JUL-12							
Matrix: Surface Water							
TOT Metals CCME Fresh Water Aquatic Life							
Hardness (from Total Ca and Mg)						00 1111 40	
Hardness (as CaCO3)	2.2			mg/L		20-JUL-12	
Mercury (Hg) Mercury (Hg)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401188
Total Cd in Water by CCMS (CCME - FAL)	<0.000020		0.000020	mg/L		15-001-12	112401100
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L		19-JUL-12	R2401348
Total Metals in Water by CRC ICPMS				3			
Aluminum (Al)-Total	0.0106		0.0050	mg/L		19-JUL-12	R2401348
Antimony (Sb)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Arsenic (As)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Barium (Ba)-Total	0.0046		0.0030	mg/L		19-JUL-12	R2401348
Beryllium (Be)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Boron (B)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Chromium (Cr)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Cobalt (Co)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Copper (Cu)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Lead (Pb)-Total Lithium (Li)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Molybdenum (Mo)-Total	<0.010 <0.0050		0.010 0.0050	mg/L mg/L		19-JUL-12 19-JUL-12	R2401348 R2401348
Nickel (Ni)-Total	<0.0050		0.0050	mg/L		19-JUL-12 19-JUL-12	R2401348 R2401348
Selenium (Se)-Total	<0.0020		0.0020	mg/L		19-30L-12 19-JUL-12	R2401348
Silver (Ag)-Total	<0.00040		0.00040	mg/L		19-30L-12 19-JUL-12	R2401348
Strontium (Sr)-Total	0.00457		0.000020	mg/L		19-JUL-12	R2401348
Thallium (TI)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
	13.00010		0.00010	····•			0.040

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1179175-9 WQ14							
Sampled By: KL on 13-JUL-12							
Matrix: Surface Water							
Total Metals in Water by CRC ICPMS							
Tin (Sn)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Titanium (Ti)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Uranium (U)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Vanadium (V)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Zinc (Zn)-Total	<0.0040		0.0040	mg/L		19-JUL-12	R2401348
Total Metals in Water by ICPOES	0.57		0.50			40 1111 40	Douglas
Calcium (Ca)-Total Iron (Fe)-Total	0.57 <0.030		0.50 0.030	mg/L mg/L		19-JUL-12 19-JUL-12	R2401313 R2401313
Magnesium (Mg)-Total	0.19		0.030	mg/L		19-JUL-12 19-JUL-12	R2401313 R2401313
Manganese (Mn)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401313
Potassium (K)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Sodium (Na)-Total	<1.0		1.0	mg/L		19-JUL-12	R2401313
Miscellaneous Parameters				-			
Ammonia, Total (as N)	<0.0050		0.0050	mg/L		23-JUL-12	R2402940
Oil and Grease	<1.0		1.0	mg/L	24-JUL-12	24-JUL-12	R2403512
Total Organic Carbon	2.7		1.0	mg/L		20-JUL-12	R2402013
Phosphorus (P)-Total	<0.020		0.020	mg/L	19-JUL-12	20-JUL-12	R2402067
Total Suspended Solids	<3.0		3.0	mg/L		19-JUL-12	R2401625
Turbidity	0.20		0.10	NTU		19-JUL-12	R2401147
pH and Conductivity							
pH	6.60		0.10	рН		19-JUL-12	R2401141
Conductivity (EC)	8.59		0.20	uS/cm		19-JUL-12	R2401141
Total Nitrogen							
Nitrate as N by IC Nitrate (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
Nitrate+Nitrite	<0.030		0.030	mg/L		13 302 12	112402239
Nitrate and Nitrite (as N)	<0.071		0.071	mg/L		22-JUL-12	
Nitrite as N by IC				· ·			
Nitrite (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
TKN in Water by Colour							
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	23-JUL-12	24-JUL-12	R2403500
Total Nitrogen (Calculation)	0.04		0.04			04 1111 40	
Total Nitrogen	<0.21		0.21	mg/L		24-JUL-12	
L1179175-10 WQ6							
Sampled By: KL on 13-JUL-12							
Matrix: Surface Water							
TOT Metals CCME Fresh Water Aquatic Life							
Hardness (from Total Ca and Mg) Hardness (as CaCO3)	<1.3			mg/L		20-JUL-12	
Mercury (Hg)	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			9/ ⊏		20 002 12	
Mercury (Hg)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401188
Total Cd in Water by CCMS (CCME - FAL)				-			
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L		19-JUL-12	R2401348
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	0.0126	RRVAP	0.0050	mg/L		19-JUL-12	R2401348
Antimony (Sb)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Arsenic (As)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Barium (Ba)-Total Beryllium (Be)-Total	<0.0030		0.0030	mg/L		19-JUL-12 19-JUL-12	R2401348
Boron (B)-Total	<0.0010 <0.050		0.0010 0.050	mg/L mg/L		19-JUL-12 19-JUL-12	R2401348 R2401348
Chromium (Cr)-Total	<0.050		0.000	mg/L		19-JUL-12	R2401348 R2401348
Shi shi diri (Or) Total	\0.0010		0.0010	my/L		10-00L-12	112401340

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1179175-10 WQ6							
Sampled By: KL on 13-JUL-12							
, ,							
Matrix: Surface Water							
Total Metals in Water by CRC ICPMS Cobalt (Co)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Copper (Cu)-Total	<0.0010		0.0020	mg/L		19-JUL-12	R2401348
Lead (Pb)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Lithium (Li)-Total	<0.010		0.010	mg/L		19-JUL-12	R2401348
Molybdenum (Mo)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401348
Nickel (Ni)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Selenium (Se)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Silver (Ag)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401348
Strontium (Sr)-Total	0.00148	RRVAP	0.00010	mg/L		19-JUL-12	R2401348
Thallium (TI)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Tin (Sn)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Titanium (Ti)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Uranium (U)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Vanadium (V)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Zinc (Zn)-Total	<0.0040		0.0040	mg/L		19-JUL-12	R2401348
Total Metals in Water by ICPOES Calcium (Ca)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Iron (Fe)-Total	<0.030		0.030	mg/L		19-JUL-12	R2401313
Magnesium (Mg)-Total	<0.10		0.10	mg/L		19-JUL-12	R2401313
Manganese (Mn)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401313
Potassium (K)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Sodium (Na)-Total	<1.0		1.0	mg/L		19-JUL-12	R2401313
Miscellaneous Parameters				, and the second			
Ammonia, Total (as N)	<0.0050		0.0050	mg/L		23-JUL-12	R2402940
Oil and Grease	<1.0		1.0	mg/L	24-JUL-12	24-JUL-12	R2403512
Total Organic Carbon	<1.0		1.0	mg/L		20-JUL-12	R2402013
Phosphorus (P)-Total	<0.020		0.020	mg/L	19-JUL-12	20-JUL-12	R2402067
Total Suspended Solids	<3.0		3.0	mg/L		19-JUL-12	R2401625
Turbidity	0.27		0.10	NTU		19-JUL-12	R2401147
pH and Conductivity							
pH	6.23		0.10	рН		19-JUL-12	R2401141
Conductivity (EC)	3.10		0.20	uS/cm		19-JUL-12	R2401141
Total Nitrogen							
Nitrate as N by IC						40 11 11 15	
Nitrate (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
Nitrate+Nitrite Nitrate and Nitrite (as N)	<0.071		0.071	mg/L		22-JUL-12	
Nitrite as N by IC	<0.071		0.071	IIIg/∟		22-00L-12	
Nitrite as N by IC Nitrite (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
TKN in Water by Colour	10.000		3.000	g. -			
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	23-JUL-12	24-JUL-12	R2403500
Total Nitrogen (Calculation)				•			
Total Nitrogen	<0.21		0.21	mg/L		24-JUL-12	
L1179175-11 HYDRO10							
Sampled By: KL on 13-JUL-12							
Matrix: Surface Water							
TOT Metals CCME Fresh Water Aquatic Life							
Hardness (from Total Ca and Mg)							
Hardness (as CaCO3)	<1.3			mg/L		20-JUL-12	
Mercury (Hg)	-0.000000		0.000000	m c:/l		10 11 11 10	D2404400
Mercury (Hg)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401188

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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L1179175-11 HYDRO10 Sampled By: KL on 13-JUL-12 Matrix: Surface Water Total Cd in Water by CCMS (CCME - FAL) Cadmium (Cd)-Total < 0.000010 0.000010 mg/L 19-JUL-1. 19-JUL-1. 1	R2401348 R2401348 R2401348 R2401348 R2401348 R2401348 R2401348 R2401348 R2401348
Sampled By: KL on 13-JUL-12 Matrix: Surface Water Total Cd in Water by CCMS (CCME - FAL) Cadmium (Cd)-Total	R2401348 R2401348 R2401348 R2401348 R2401348 R2401348 R2401348 R2401348 R2401348
Matrix: Surface Water Total Cd in Water by CCMS (CCME - FAL) 19-JUL-1 Cadmium (Cd)-Total <0.000010	R2401348 R2401348 R2401348 R2401348 R2401348 R2401348 R2401348 R2401348 R2401348
Total Cd in Water by CCMS (CCME - FAL) Cadmium (Cd)-Total	R2401348 R2401348 R2401348 R2401348 R2401348 R2401348 R2401348 R2401348 R2401348
Cadmium (Cd)-Total	R2401348 R2401348 R2401348 R2401348 R2401348 R2401348 R2401348 R2401348 R2401348
Aluminum (Al)-Total	R2401348 R2401348 R2401348 R2401348 R2401348 R2401348 R2401348 R2401348
Antimony (Sb)-Total	R2401348 R2401348 R2401348 R2401348 R2401348 R2401348 R2401348 R2401348
Arsenic (As)-Total	R2401348 R2401348 R2401348 R2401348 R2401348 R2401348 R2401348
Barium (Ba)-Total	R2401348 R2401348 R2401348 R2401348 R2401348
Beryllium (Be)-Total	R2401348 R2401348 R2401348 R2401348
Boron (B)-Total	R2401348 R2401348 R2401348
Chromium (Cr)-Total <0.0010 0.0010 mg/L 19-JUL-1 Cobalt (Co)-Total <0.0020 0.0020 mg/L 19-JUL-1 Copper (Cu)-Total <0.0010 0.0010 mg/L 19-JUL-1 Lead (Pb)-Total <0.00010 0.0010 mg/L 19-JUL-1 Lithium (Li)-Total <0.010 0.010 mg/L 19-JUL-1 Molybdenum (Mo)-Total <0.0050 0.0050 mg/L 19-JUL-1 Nickel (Ni)-Total <0.0050 0.0050 mg/L 19-JUL-1 Selenium (Se)-Total <0.00040 0.00040 mg/L 19-JUL-1 Silver (Ag)-Total <0.000020 0.000020 mg/L 19-JUL-1 Strontium (Sr)-Total <0.000020 0.00010 mg/L 19-JUL-1 Thallium (Ti)-Total <0.00010 0.00010 mg/L 19-JUL-1 Titanium (Ti)-Total <0.00010 0.0010 mg/L 19-JUL-1 Uranium (U)-Total <0.00010 0.0010 mg/L 19-JUL-1 Vanadium (V)-Total <t< th=""><td>R2401348 R2401348</td></t<>	R2401348 R2401348
Cobalt (Co)-Total <0.0020 0.0020 mg/L 19-JUL-1. Copper (Cu)-Total <0.0010 0.0010 mg/L 19-JUL-1. Lead (Pb)-Total <0.00010 0.00010 mg/L 19-JUL-1. Lithium (Li)-Total <0.0010 0.010 mg/L 19-JUL-1. Molybdenum (Mo)-Total <0.0050 0.0050 mg/L 19-JUL-1. Nickel (Ni)-Total <0.0020 0.0020 mg/L 19-JUL-1. Selenium (Se)-Total <0.00040 0.00040 mg/L 19-JUL-1. Silver (Ag)-Total <0.000020 0.000020 mg/L 19-JUL-1. Strontium (Sr)-Total <0.000192 0.00010 mg/L 19-JUL-1. Thallium (Ti)-Total <0.0050 0.050 mg/L 19-JUL-1. Titanium (Ti)-Total <0.0050 0.0010 mg/L 19-JUL-1. Uranium (U)-Total <0.00010 0.00010 mg/L 19-JUL-1. Vanadium (V)-Total <0.00010 0.00010 mg/L 19-JUL-1. Total Metals in Water	R2401348
Copper (Cu)-Total <0.0010 0.0010 mg/L 19-JUL-1 Lead (Pb)-Total <0.00010 0.00010 mg/L 19-JUL-1 Lithium (Li)-Total <0.010 0.010 mg/L 19-JUL-1 Molybdenum (Mo)-Total <0.0050 0.0050 mg/L 19-JUL-1 Nickel (Ni)-Total <0.0050 0.0020 mg/L 19-JUL-1 Selenium (Se)-Total <0.00040 0.00040 mg/L 19-JUL-1 Silver (Ag)-Total <0.000020 0.000020 mg/L 19-JUL-1 Strontium (Sr)-Total 0.00192 0.00010 mg/L 19-JUL-1 Thallium (Tl)-Total <0.00010 0.0010 mg/L 19-JUL-1 Titanium (Ti)-Total <0.050 0.050 mg/L 19-JUL-1 Uranium (U)-Total <0.00010 0.0010 mg/L 19-JUL-1 Vanadium (V)-Total <0.0010 0.0010 mg/L 19-JUL-1 Zinc (Zn)-Total <0.0040 0.0040 mg/L 19-JUL-1 Total Metals in Water by ICPOES	
Lead (Pb)-Total <0.00010 0.00010 mg/L 19-JUL-1. Lithium (Li)-Total <0.010 0.010 mg/L 19-JUL-1. Molybdenum (Mo)-Total <0.0050 0.0050 mg/L 19-JUL-1. Nickel (Ni)-Total <0.0020 0.0020 mg/L 19-JUL-1. Selenium (Se)-Total <0.00040 0.00040 mg/L 19-JUL-1. Silver (Ag)-Total <0.000020 0.00020 mg/L 19-JUL-1. Strontium (Sr)-Total 0.00192 0.00010 mg/L 19-JUL-1. Thallium (TI)-Total <0.00010 0.00010 mg/L 19-JUL-1. Titanium (Ti)-Total <0.050 0.050 mg/L 19-JUL-1. Uranium (U)-Total <0.00010 0.0010 mg/L 19-JUL-1. Vanadium (V)-Total <0.0010 0.0010 mg/L 19-JUL-1. Zinc (Zn)-Total <0.0040 0.0040 mg/L 19-JUL-1. Total Metals in Water by ICPOES	. 112401340
Lithium (Li)-Total <0.010 0.010 mg/L 19-JUL-1 Molybdenum (Mo)-Total <0.0050 0.0050 mg/L 19-JUL-1 Nickel (Ni)-Total <0.0020 0.0020 mg/L 19-JUL-1 Selenium (Se)-Total <0.00040 0.00040 mg/L 19-JUL-1 Silver (Ag)-Total <0.000020 0.000020 mg/L 19-JUL-1 Strontium (Sr)-Total 0.00192 0.00010 mg/L 19-JUL-1 Thallium (Ti)-Total <0.00010 0.00010 mg/L 19-JUL-1 Titanium (Ti)-Total <0.050 0.050 mg/L 19-JUL-1 Uranium (U)-Total <0.00010 0.00010 mg/L 19-JUL-1 Vanadium (V)-Total <0.0010 0.0010 mg/L 19-JUL-1 Zinc (Zn)-Total <0.0040 0.0040 mg/L 19-JUL-1 Total Metals in Water by ICPOES 0.0040 mg/L 19-JUL-1	R2401348
Molybdenum (Mo)-Total <0.0050 0.0050 mg/L 19-JUL-1 Nickel (Ni)-Total <0.0020 0.0020 mg/L 19-JUL-1 Selenium (Se)-Total <0.00040 0.00040 mg/L 19-JUL-1 Silver (Ag)-Total <0.000020 0.000020 mg/L 19-JUL-1 Strontium (Sr)-Total 0.00192 0.00010 mg/L 19-JUL-1 Thallium (Ti)-Total <0.00010 0.00010 mg/L 19-JUL-1 Titanium (Ti)-Total <0.050 0.050 mg/L 19-JUL-1 Uranium (U)-Total <0.00010 0.00010 mg/L 19-JUL-1 Vanadium (V)-Total <0.0010 0.0010 mg/L 19-JUL-1 Zinc (Zn)-Total <0.0040 0.0040 mg/L 19-JUL-1 Total Metals in Water by ICPOES 0.0040 0.0040 mg/L 19-JUL-1	
Nickel (Ni)-Total <0.0020 0.0020 mg/L 19-JUL-1 Selenium (Se)-Total <0.00040 0.00040 mg/L 19-JUL-1 Silver (Ag)-Total <0.000020 0.000020 mg/L 19-JUL-1 Strontium (Sr)-Total 0.00192 0.00010 mg/L 19-JUL-1 Thallium (Ti)-Total <0.00010 0.00010 mg/L 19-JUL-1 Titanium (Ti)-Total <0.0010 0.0010 mg/L 19-JUL-1 Uranium (U)-Total <0.00010 0.00010 mg/L 19-JUL-1 Vanadium (V)-Total <0.0010 0.0010 mg/L 19-JUL-1 Zinc (Zn)-Total <0.0040 0.0040 mg/L 19-JUL-1 Total Metals in Water by ICPOES 0.0040 0.0040 mg/L 19-JUL-1	
Selenium (Se)-Total <0.00040 0.00040 mg/L 19-JUL-1 Silver (Ag)-Total <0.000020 0.000020 mg/L 19-JUL-1 Strontium (Sr)-Total 0.00192 0.00010 mg/L 19-JUL-1 Thallium (Ti)-Total <0.00010 0.00010 mg/L 19-JUL-1 Titanium (Ti)-Total <0.050 0.050 mg/L 19-JUL-1 Uranium (U)-Total <0.0010 0.0010 mg/L 19-JUL-1 Vanadium (V)-Total <0.0010 0.0010 mg/L 19-JUL-1 Zinc (Zn)-Total <0.0040 0.0040 mg/L 19-JUL-1 Total Metals in Water by ICPOES 0.0040 mg/L 19-JUL-1	
Silver (Ag)-Total <0.000020 0.000020 mg/L 19-JUL-1 Strontium (Sr)-Total 0.00192 0.00010 mg/L 19-JUL-1 Thallium (TI)-Total <0.00010 0.00010 mg/L 19-JUL-1 Tin (Sn)-Total <0.050 0.050 mg/L 19-JUL-1 Titanium (Ti)-Total <0.0010 0.0010 mg/L 19-JUL-1 Uranium (U)-Total <0.00010 0.00010 mg/L 19-JUL-1 Vanadium (V)-Total <0.0010 0.0010 mg/L 19-JUL-1 Zinc (Zn)-Total <0.0040 0.0040 mg/L 19-JUL-1 Total Metals in Water by ICPOES 0.0040 0.0040 mg/L 19-JUL-1	
Strontium (Sr)-Total 0.00192 0.00010 mg/L 19-JUL-1 Thallium (Tl)-Total <0.00010 0.00010 mg/L 19-JUL-1 Tin (Sn)-Total <0.050 0.050 mg/L 19-JUL-1 Titanium (Ti)-Total <0.0010 0.0010 mg/L 19-JUL-1 Uranium (U)-Total <0.00010 0.00010 mg/L 19-JUL-1 Vanadium (V)-Total <0.0010 0.0010 mg/L 19-JUL-1 Zinc (Zn)-Total <0.0040 0.0040 mg/L 19-JUL-1 Total Metals in Water by ICPOES 0.0040 0.0040 mg/L 19-JUL-1	R2401348
Tin (Sn)-Total <0.050 0.050 mg/L 19-JUL-1 Titanium (Ti)-Total <0.0010 0.0010 mg/L 19-JUL-1 Uranium (U)-Total <0.00010 0.00010 mg/L 19-JUL-1 Vanadium (V)-Total <0.0010 0.0010 mg/L 19-JUL-1 Zinc (Zn)-Total <0.0040 0.0040 mg/L 19-JUL-1 Total Metals in Water by ICPOES 0.0040 0.0040 mg/L 19-JUL-1	R2401348
Titanium (Ti)-Total <0.0010 0.0010 mg/L 19-JUL-1 Uranium (U)-Total <0.00010 0.00010 mg/L 19-JUL-1 Vanadium (V)-Total <0.0010 0.0010 mg/L 19-JUL-1 Zinc (Zn)-Total <0.0040 0.0040 mg/L 19-JUL-1 Total Metals in Water by ICPOES 0.0040 mg/L 19-JUL-1	R2401348
Uranium (U)-Total <0.00010 0.00010 mg/L 19-JUL-1 Vanadium (V)-Total <0.0010 0.0010 mg/L 19-JUL-1 Zinc (Zn)-Total <0.0040 0.0040 mg/L 19-JUL-1 Total Metals in Water by ICPOES 19-JUL-1 19-JUL-1	R2401348
Vanadium (V)-Total <0.0010 0.0010 mg/L 19-JUL-1 Zinc (Zn)-Total <0.0040 0.0040 mg/L 19-JUL-1 Total Metals in Water by ICPOES 19-JUL-1 19-JUL-1	R2401348
Zinc (Zn)-Total	R2401348
Total Metals in Water by ICPOES	
	R2401348
Calcium (Ca)-Total	
Iron (Fe)-Total	
Magnesium (Mg)-Total 0.11 0.10 mg/L 19-JUL-1 Manganese (Mn)-Total <0.0050 0.0050 mg/L 19-JUL-1	
Manganese (Mn)-Total <0.0050 0.0050 mg/L 19-JUL-1 Potassium (K)-Total <0.50 0.50 mg/L 19-JUL-1	
Sodium (Na)-Total	
Miscellaneous Parameters	. 1(2401313
Ammonia, Total (as N) <0.0050 0.0050 mg/L 23-JUL-1.	R2402940
Oil and Grease <1.0 1.0 mg/L 24-JUL-12 24-JUL-15	
Total Organic Carbon 1.1 1.0 mg/L 24-30L-12 24-30L-13	
Phosphorus (P)-Total	
Turbidity 0.33 0.10 NTU 19-JUL-1	R2401147
pH and Conductivity 6.32 0.10 pH 19-JUL-1	R2401141
Conductivity (EC) 5.28 0.10 pri 19-30L-1.	
Total Nitrogen	
Nitrate as N by IC	
Nitrate (as N) 0.153 0.050 mg/L 19-JUL-1.	R2402259
Nitrate+Nitrite	
Nitrate and Nitrite (as N) 0.153 0.071 mg/L 22-JUL-1.	2
Nitrite as N by IC	
Nitrite (as N) <0.050 0.050 mg/L 19-JUL-1	R2402259
TKN in Water by Colour	
Total Kjeldahl Nitrogen <0.20 0.20 mg/L 23-JUL-12 24-JUL-1.	1
Total Nitrogen (Calculation)	R2403500

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1179175-11 HYDRO10							
Sampled By: KL on 13-JUL-12							
' '							
Matrix: Surface Water							
Total Nitrogen (Calculation) Total Nitrogen	<0.21		0.21	mg/L		24-JUL-12	
L1179175-12 WQ13							
Sampled By: KL on 13-JUL-12							
Matrix: Surface Water							
TOT Metals CCME Fresh Water Aquatic Life							
Hardness (from Total Ca and Mg)	4.0					20 11 12	
Hardness (as CaCO3)	<1.3			mg/L		20-JUL-12	
Mercury (Hg) Mercury (Hg)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401188
Total Cd in Water by CCMS (CCME - FAL)	<0.000020		0.000020	1119/12		10 002 12	112401100
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L		19-JUL-12	R2401348
Total Metals in Water by CRC ICPMS				-			
Aluminum (Al)-Total	0.0247		0.0050	mg/L		19-JUL-12	R2401348
Antimony (Sb)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Arsenic (As)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Barium (Ba)-Total	<0.0030		0.0030	mg/L		19-JUL-12	R2401348
Beryllium (Be)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Boron (B)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Chromium (Cr)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Cobalt (Co)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Copper (Cu)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Lead (Pb)-Total Lithium (Li)-Total	<0.00010		0.00010	mg/L		19-JUL-12 19-JUL-12	R2401348
Molybdenum (Mo)-Total	<0.010 <0.0050		0.010 0.0050	mg/L mg/L		19-JUL-12 19-JUL-12	R2401348 R2401348
Nickel (Ni)-Total	<0.0030		0.0030	mg/L		19-JUL-12	R2401348
Selenium (Se)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Silver (Ag)-Total	<0.00020		0.000020	mg/L		19-JUL-12	R2401348
Strontium (Sr)-Total	0.00264		0.00010	mg/L		19-JUL-12	R2401348
Thallium (TI)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Tin (Sn)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Titanium (Ti)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Uranium (U)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Vanadium (V)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Zinc (Zn)-Total	<0.0040		0.0040	mg/L		19-JUL-12	R2401348
Total Metals in Water by ICPOES	0.50		0.50	c: II		40 11 11 40	DOMONOS
Calcium (Ca)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Iron (Fe)-Total Magnesium (Mg)-Total	<0.030		0.030	mg/L		19-JUL-12 19-JUL-12	R2401313
Manganese (Mn)-Total	0.11 <0.0050		0.10 0.0050	mg/L mg/L		19-JUL-12 19-JUL-12	R2401313 R2401313
Potassium (K)-Total	<0.0050		0.0050	mg/L		19-JUL-12 19-JUL-12	R2401313 R2401313
Sodium (Na)-Total	<1.0		1.0	mg/L		19-JUL-12	R2401313
Miscellaneous Parameters				··· <i>y</i> =			
Ammonia, Total (as N)	0.0079		0.0050	mg/L		23-JUL-12	R2402940
Oil and Grease	<1.0		1.0	mg/L	24-JUL-12	24-JUL-12	R2403512
Total Organic Carbon	1.7		1.0	mg/L		20-JUL-12	R2402013
Phosphorus (P)-Total	<0.020		0.020	mg/L	19-JUL-12	20-JUL-12	R2402067
Total Suspended Solids	<3.0		3.0	mg/L	.5 552 .2	19-JUL-12	R2401625
Turbidity	0.50		0.10	NTU		19-JUL-12	R2401023
pH and Conductivity	0.50		0.10	1410		10 001-12	1141
pH	5.02		0.10	рН		19-JUL-12	R2401141
Conductivity (EC)	6.72		0.20	uS/cm		19-JUL-12	R2401141

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L4470475 42 WO42							
L1179175-12 WQ13							
Sampled By: KL on 13-JUL-12							
Matrix: Surface Water							
Total Nitrogen							
Nitrate as N by IC	0.400		0.050	/I		40 1111 40	D0400050
Nitrate (as N)	0.100		0.050	mg/L		19-JUL-12	R2402259
Nitrate+Nitrite Nitrate and Nitrite (as N)	0.100		0.071	mg/L		22-JUL-12	
Nitrite as N by IC	0.100		0.07 1	9/ =			
Nitrite (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
TKN in Water by Colour							
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	23-JUL-12	24-JUL-12	R2403500
Total Nitrogen (Calculation)							
Total Nitrogen	<0.21		0.21	mg/L		24-JUL-12	
L1179175-13 DUP2							
Sampled By: KL							
Matrix: SURFACE WATER							
TOT Metals CCME Fresh Water Aquatic Life							
Hardness (from Total Ca and Mg)	4.5			P		00 !!!! 10	
Hardness (as CaCO3)	<1.3			mg/L		20-JUL-12	
Mercury (Hg) Mercury (Hg)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401188
Total Cd in Water by CCMS (CCME - FAL)	<0.000020		0.000020	mg/L		13 30L-12	112401100
Cadmium (Cd)-Total	<0.00010		0.000010	mg/L		19-JUL-12	R2401348
Total Metals in Water by CRC ICPMS				Ü			
Aluminum (Al)-Total	0.0052	RRVAP	0.0050	mg/L		19-JUL-12	R2401348
Antimony (Sb)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Arsenic (As)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Barium (Ba)-Total	<0.0030		0.0030	mg/L		19-JUL-12	R2401348
Beryllium (Be)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Boron (B)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Chromium (Cr)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Cobalt (Co)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Copper (Cu)-Total Lead (Pb)-Total	<0.0010 <0.00010		0.0010	mg/L		19-JUL-12 19-JUL-12	R2401348 R2401348
Lithium (Li)-Total	<0.00010		0.00010 0.010	mg/L mg/L		19-JUL-12 19-JUL-12	R2401348
Molybdenum (Mo)-Total	<0.0050		0.010	mg/L		19-JUL-12	R2401348
Nickel (Ni)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Selenium (Se)-Total	<0.0040		0.00040	mg/L		19-JUL-12	R2401348
Silver (Ag)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401348
Strontium (Sr)-Total	0.00124	RRVAP	0.00010	mg/L		19-JUL-12	R2401348
Thallium (TI)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Tin (Sn)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Titanium (Ti)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Uranium (U)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Vanadium (V)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Zinc (Zn)-Total	<0.0040		0.0040	mg/L		19-JUL-12	R2401348
Total Metals in Water by ICPOES Calcium (Ca)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Iron (Fe)-Total	<0.030		0.030	mg/L		19-JUL-12	R2401313
Magnesium (Mg)-Total	<0.10		0.10	mg/L		19-JUL-12	R2401313
Manganese (Mn)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401313
Potassium (K)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Sodium (Na)-Total	<1.0		1.0	mg/L		19-JUL-12	R2401313
Miscellaneous Parameters	I	1					

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1179175-13 DUP2							
Sampled By: KL							
Matrix: SURFACE WATER							
Ammonia, Total (as N)	<0.0050		0.0050	mg/L		23-JUL-12	R2402940
Oil and Grease	<1.0		1.0	mg/L	24-JUL-12	24-JUL-12	R2402540
Total Organic Carbon	<1.0		1.0	mg/L	24-30L-12	24-JUL-12 20-JUL-12	R2403312
_				_	10 111 12	20-JUL-12 20-JUL-12	
Phosphorus (P)-Total	<0.020		0.020	mg/L	19-JUL-12		R2402067
Total Suspended Solids	<3.0		3.0	mg/L		19-JUL-12	R2401625
Turbidity	0.19		0.10	NTU		19-JUL-12	R2401147
pH and Conductivity pH	5.55		0.10	рН		19-JUL-12	R2401141
Conductivity (EC)	2.94		0.10	uS/cm		19-JUL-12	R2401141
Total Nitrogen	2.94		0.20	u3/cm		19-30L-12	K2401141
Nitrate as N by IC							
Nitrate (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
Nitrate+Nitrite	10.000		0.000	9, =		.5 552 12	
Nitrate and Nitrite (as N)	<0.071		0.071	mg/L		22-JUL-12	
Nitrite as N by IC				3			
Nitrite (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
TKN in Water by Colour				, and the second			
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	23-JUL-12	24-JUL-12	R2403500
Total Nitrogen (Calculation)							
Total Nitrogen	<0.21		0.21	mg/L		24-JUL-12	
L1179175-14 FIELD BLANK							
Sampled By: KL							
Matrix: SURFACE WATER							
TOT Metals CCME Fresh Water Aquatic Life							
Hardness (from Total Ca and Mg)							
Hardness (as CaCO3)	<1.3			mg/L		20-JUL-12	
Mercury (Hg)							
Mercury (Hg)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401188
Total Cd in Water by CCMS (CCME - FAL)							
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L		19-JUL-12	R2401348
Total Metals in Water by CRC ICPMS	0.0050		0.0050			40 1111 40	D0404040
Aluminum (Al)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401348
Antimony (Sb)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Arsenic (As)-Total Barium (Ba)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Beryllium (Be)-Total	<0.0030 <0.0010		0.0030 0.0010	mg/L mg/L		19-JUL-12 19-JUL-12	R2401348 R2401348
Boron (B)-Total	<0.0010		0.0010	mg/L		19-JUL-12 19-JUL-12	R2401348
Chromium (Cr)-Total	<0.050		0.000	mg/L		19-JUL-12 19-JUL-12	R2401348
Cobalt (Co)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Copper (Cu)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Lead (Pb)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Lithium (Li)-Total	<0.010		0.010	mg/L		19-JUL-12	R2401348
Molybdenum (Mo)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401348
Nickel (Ni)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Selenium (Se)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Silver (Ag)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401348
Strontium (Sr)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Thallium (TI)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Tin (Sn)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Titanium (Ti)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Uranium (U)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Vanadium (V)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1179175-14 FIELD BLANK							
Sampled By: KL							
Matrix: SURFACE WATER							
Total Metals in Water by CRC ICPMS							
Zinc (Zn)-Total	<0.0040		0.0040	mg/L		19-JUL-12	R2401348
Total Metals in Water by ICPOES							
Calcium (Ca)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Iron (Fe)-Total Magnesium (Mg)-Total	<0.030 <0.10		0.030 0.10	mg/L mg/L		19-JUL-12 19-JUL-12	R2401313 R2401313
Manganese (Mn)-Total	<0.0050		0.0050	mg/L		19-30L-12	R2401313
Potassium (K)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Sodium (Na)-Total	<1.0		1.0	mg/L		19-JUL-12	R2401313
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.0050		0.0050	mg/L		23-JUL-12	R2402940
Oil and Grease	<1.0		1.0	mg/L	24-JUL-12	24-JUL-12	R2403512
Total Organic Carbon	<1.0		1.0	mg/L		20-JUL-12	R2402013
Phosphorus (P)-Total	<0.020		0.020	mg/L	19-JUL-12	20-JUL-12	R2402067
Total Suspended Solids	<3.0		3.0	mg/L		19-JUL-12	R2401625
Turbidity	<0.10		0.10	NTU		19-JUL-12	R2401147
pH and Conductivity							
pH Conductivity (EC)	5.52		0.10	pH C/a-ra		19-JUL-12	R2401141
Total Nitrogen	0.46		0.20	uS/cm		19-JUL-12	R2401141
Nitrate as N by IC							
Nitrate (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
Nitrate+Nitrite				•			
Nitrate and Nitrite (as N)	<0.071		0.071	mg/L		22-JUL-12	
Nitrite as N by IC Nitrite (as N)	<0.050		0.050	ma/l		19-JUL-12	R2402259
TKN in Water by Colour	<0.050		0.050	mg/L		19-30L-12	R2402259
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	23-JUL-12	24-JUL-12	R2403500
Total Nitrogen (Calculation)							
Total Nitrogen	<0.21		0.21	mg/L		24-JUL-12	
L1179175-15 DUP 1							
Sampled By: KL							
Matrix: SURFACE WATER							
TOT Metals CCME Fresh Water Aquatic Life Hardness (from Total Ca and Mg)							
Hardness (as CaCO3)	<1.3			mg/L		20-JUL-12	
Mercury (Hg)				-			
Mercury (Hg)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401188
Total Cd in Water by CCMS (CCME - FAL)	0.0000:-		0.000015			40 !!!! 40	DOMONO
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L		19-JUL-12	R2401348
Total Metals in Water by CRC ICPMS Aluminum (Al)-Total	0.0108	RRVAP	0.0050	mg/L		19-JUL-12	R2401348
Antimony (Sb)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Arsenic (As)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Barium (Ba)-Total	<0.0030		0.0030	mg/L		19-JUL-12	R2401348
Beryllium (Be)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Boron (B)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Chromium (Cr)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Cobalt (Co)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Copper (Cu)-Total Lead (Pb)-Total	<0.0010 <0.00010		0.0010 0.00010	mg/L mg/L		19-JUL-12 19-JUL-12	R2401348 R2401348
Lithium (Li)-Total	<0.0010		0.00010	mg/L		19-JUL-12	R2401348 R2401348
Litindiii (Li)-10tai	<0.010		0.010	mg/L		19-30L-12	112401340

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1179175-15 DUP 1							
Sampled By: KL							
Matrix: SURFACE WATER							
Total Metals in Water by CRC ICPMS							
Molybdenum (Mo)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401348
Nickel (Ni)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Selenium (Se)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Silver (Ag)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401348
Strontium (Sr)-Total	0.00165	RRVAP	0.00010	mg/L		19-JUL-12	R2401348
Thallium (TI)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Tin (Sn)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Titanium (Ti)-Total Uranium (U)-Total	<0.0010		0.0010	mg/L		19-JUL-12 19-JUL-12	R2401348
Vanadium (V)-Total	<0.00010 <0.0010		0.00010 0.0010	mg/L mg/L		19-JUL-12 19-JUL-12	R2401348 R2401348
Zinc (Zn)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Total Metals in Water by ICPOES	10.0040		0.00-10	∌, ⊑			
Calcium (Ca)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Iron (Fe)-Total	<0.030		0.030	mg/L		19-JUL-12	R2401313
Magnesium (Mg)-Total	<0.10		0.10	mg/L		19-JUL-12	R2401313
Manganese (Mn)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401313
Potassium (K)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Sodium (Na)-Total Miscellaneous Parameters	<1.0		1.0	mg/L		19-JUL-12	R2401313
Ammonia, Total (as N)	-0.0050		0.0050	ma/l		23-JUL-12	D2402040
Oil and Grease	<0.0050 <1.0		0.0050 1.0	mg/L mg/L	24-JUL-12	23-JUL-12 24-JUL-12	R2402940 R2403512
Total Organic Carbon	<1.0		1.0	mg/L	24-30L-12	20-JUL-12	R2403312 R2402013
Phosphorus (P)-Total	<0.020		0.020	mg/L	19-JUL-12	20-JUL-12 20-JUL-12	R2402013 R2402067
Total Suspended Solids	<3.0		3.0	mg/L	19-301-12	19-JUL-12	R2402007 R2401625
Turbidity	0.30		0.10	NTU		19-JUL-12	R2401023
pH and Conductivity	0.50		0.10	1110		10 002 12	1(2401147
pH pH	5.80		0.10	рН		19-JUL-12	R2401141
Conductivity (EC)	3.69		0.20	uS/cm		19-JUL-12	R2401141
Total Nitrogen							
Nitrate as N by IC							
Nitrate (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
Nitrate+Nitrite Nitrate and Nitrite (as N)	ZO 071		0.074	ma/l		22-JUL-12	
Nitrite as N by IC	<0.071		0.071	mg/L		22-00L-12	
Nitrite (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
TKN in Water by Colour				Ĭ			
Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	23-JUL-12	24-JUL-12	R2403500
Total Nitrogen (Calculation)							
Total Nitrogen	<0.21		0.21	mg/L		24-JUL-12	
L1179175-16 TRAVEL BLANK							
Sampled By: KL							
Matrix: SURFACE WATER							
TOT Metals CCME Fresh Water Aquatic Life							
Hardness (from Total Ca and Mg) Hardness (as CaCO3)	<1.3			mg/L		20-JUL-12	
Mercury (Hg)	\1.5			mg/∟		20 00L-12	
Mercury (Hg)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401188
Total Cd in Water by CCMS (CCME - FAL)				Ü			
Cadmium (Cd)-Total	<0.000010		0.000010	mg/L		19-JUL-12	R2401348
Total Metals in Water by CRC ICPMS							
Aluminum (Al)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401348

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1179175-16 TRAVEL BLANK							
Sampled By: KL							
Matrix: SURFACE WATER							
Total Metals in Water by CRC ICPMS Antimony (Sb)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Arsenic (As)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Barium (Ba)-Total	<0.0030		0.0030	mg/L		19-JUL-12	R2401348
Beryllium (Be)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Boron (B)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Chromium (Cr)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Cobalt (Co)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Copper (Cu)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Lead (Pb)-Total	<0.00010	(0.00010	mg/L		19-JUL-12	R2401348
Lithium (Li)-Total	<0.010		0.010	mg/L		19-JUL-12	R2401348
Molybdenum (Mo)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401348
Nickel (Ni)-Total	<0.0020		0.0020	mg/L		19-JUL-12	R2401348
Selenium (Se)-Total	<0.00040		0.00040	mg/L		19-JUL-12	R2401348
Silver (Ag)-Total	<0.000020		0.000020	mg/L		19-JUL-12	R2401348
Strontium (Sr)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Thallium (TI)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Tin (Sn)-Total	<0.050		0.050	mg/L		19-JUL-12	R2401348
Titanium (Ti)-Total	<0.0010		0.0010	mg/L		19-JUL-12	R2401348
Uranium (U)-Total	<0.00010		0.00010	mg/L		19-JUL-12	R2401348
Vanadium (V)-Total Zinc (Zn)-Total	<0.0010		0.0010	mg/L		19-JUL-12 19-JUL-12	R2401348
	<0.0040		0.0040	mg/L		19-JUL-12	R2401348
Total Metals in Water by ICPOES Calcium (Ca)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Iron (Fe)-Total	<0.030		0.030	mg/L		19-JUL-12	R2401313
Magnesium (Mg)-Total	<0.10		0.10	mg/L		19-JUL-12	R2401313
Manganese (Mn)-Total	<0.0050		0.0050	mg/L		19-JUL-12	R2401313
Potassium (K)-Total	<0.50		0.50	mg/L		19-JUL-12	R2401313
Sodium (Na)-Total	<1.0		1.0	mg/L		19-JUL-12	R2401313
Miscellaneous Parameters							
Ammonia, Total (as N)	<0.0050		0.0050	mg/L		23-JUL-12	R2402940
Oil and Grease	<1.0		1.0	mg/L	24-JUL-12	24-JUL-12	R2403512
Total Organic Carbon	<1.0		1.0	mg/L		20-JUL-12	R2402013
Phosphorus (P)-Total	<0.020		0.020	mg/L	19-JUL-12	20-JUL-12	R2402067
Total Suspended Solids	<3.0		3.0	mg/L		19-JUL-12	R2401625
Turbidity	<0.10		0.10	NTU		19-JUL-12	R2401147
pH and Conductivity							
pH	5.61		0.10	рН		19-JUL-12	R2401141
Conductivity (EC)	0.39		0.20	uS/cm		19-JUL-12	R2401141
Total Nitrogen							
Nitrate as N by IC							
Nitrate (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
Nitrate+Nitrite							
Nitrate and Nitrite (as N)	<0.071		0.071	mg/L		22-JUL-12	
Nitrite as N by IC Nitrite (as N)	<0.050		0.050	mg/L		19-JUL-12	R2402259
TKN in Water by Colour Total Kjeldahl Nitrogen	<0.20		0.20	mg/L	23-JUL-12	24-JUL-12	R2403500
Total Nitrogen (Calculation) Total Nitrogen	<0.21		0.21	mg/L		24-JUL-12	
	\U.Z1		0.21	g/ L		2.00L-12	

^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

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Reference Information

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Sample Parameter Qualifier Key:

Qualifier	Description
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
RRV	Reported Result Verified By Repeat Analysis
RRVAP	Reported Result Verified by Alternate Process

Lest	Meth	od R	eter	ences

ALS Test Code	Matrix	Test Description	Method Reference**
C-TOT-ORG-ED	Water	Total Organic Carbon	APHA 5310 B-Instrumental
CD-T-CCMS-FAL-ED	Water	Total Cd in Water by CCMS (CCME - FAL)	APHA 3030 B&E / EPA SW-846 6020A
ETL-HARDNESS-TOT-ED	Water	Hardness (from Total Ca and Mg)	APHA 2340 B-Calculation
HG-T-L-CVAA-ED	Water	Mercury (Hg)	EPA 245.7 / EPA 245.1
MET-T-CCMS-ED	Water	Total Metals in Water by CRC ICPMS	APHA 3030 B&E / EPA SW-846 6020A
MET-T-ICP-ED	Water	Total Metals in Water by ICPOES	APHA 3120 B-ICP-OES
N-T-CALC-ED	Water	Total Nitrogen (Calculation)	APHA 4500 N-Calculated
Total Nitrogen is a calculate	ed paramet	er. Total Nitrogen = Total Kjeldahl Nitrogen + [Ni	trate and Nitrite (as N)]
NH3-L-CFA-ED	Water	Ammonia in Water by Colour	APHA 4500 NH3-NITROGEN (AMMONIA)
This analysis is sarried out	uning prop	aduras adapted from ADUA Mothad 4500 NU2 "N	AUTROCEN (AMMONIA)" Ammonia is determined using the

This analysis is carried out using procedures adapted from APHA Method 4500 NH3 "NITROGEN (AMMONIA)". Ammonia is determined using the automated phenate colourimetric method.

NO2+NO3-CALC-ED	Water	Nitrate+Nitrite	CALCULATION
NO2-IC-ED	Water	Nitrite as N by IC	APHA 4110 B-ION CHROMATOGRAPHY
NO3-IC-ED	Water	Nitrate as N by IC	APHA 4110 B-ION CHROMATOGRAPHY
OGG-LLE-ED	Water	Oil and Grease-Gra	APHA 5520 B HEXANE MTBE EXT. GRAVIME
P-T-COL-ED	Water	Total P in Water by Colour	APHA 4500-P PHOSPHORUS

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus is determined colourimetrically after persulphate digestion of the sample.

PH/EC-ED Water pH and Conductivity APHA 4500-H, 2510

All samples analyzed by this method for pH will have exceeded the 15 minute recommended hold time from time of sampling (field analysis is recommended for pH where highly accurate results are needed)

SOLIDS-TOTSUS-ED Water Total Suspended Solids APHA 2540 D-Gravimetric
TKN-CFA-ED Water TKN in Water by Colour APHA 4500-NORG (TKN)

This analysis is carried out using procedures adapted from APHA Method 4500-Norg "Nitrogen (Organic)". Total Kjeldahl Nitrogen is determined by sample digestion at 380 celcius with analysis using an automated colourimetric finish.

TURBIDITY-ED Water Turbidity APHA 2130 B-Nephelometer

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
ED	ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA
Chain of Custody Numbers:	

^{**} ALS test methods may incorporate modifications from specified reference methods to improve performance.

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Reference Information

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Test Method References:

ALS Test Code Matrix Method Reference** **Test Description**

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.





Chain of Custody / Analytical Request Form Canada Toll Free: 1 800 668 9878

COC#		

ALS	L1179175-COFC www.alsglobal.com													Page	e _	<u>1</u> o	f	1
Report To	-	Report F	ormat / Distribut	tion		Service Requested (Rush for routine analysis subject to availability)												
Company:	EBA, A Tetra Tech Co.	Standar	Standard Other Regular (Standard Turnaround Times - Business Days)										_					
Contact:	Karla Langlois	✓ PDF	✓ Excel	Digital	Fax	() P	riority ((2-4 Bu	siness	Days)	- 50%	Surcharg	e - Cor	ntact Al	LS to C	onfirm	TAT	
Address:	PO Box 2244, unit 201, 4916-49 street	Email 1:	klanglois@eba.	ca		() E	merger	ncy (1-	2 Bus.	Days) -	100%	Surchar	ge - Co	intact A	LS to	Confirm	n TAT	
	Yellowknife, NWT X1A 2P7	Email 2:				() S	ame Da	ay or W	/eeker	nd Emer	gency -	- Contact	t ALS to	Confir	m TAT			
Phone:	867-920-2287 Fax:	Email 3:								Α	nalys	is Req	uest					
Invoice To	Same as Report ? Yes V No	Client / P	roject Informati	on		Ple	ase ir	ndicat	e bel	ow Fil	tered,	Prese	rved	or bot	h (F,	P, F/	2)	
Hardcopy of	Invoice with Report? Yes V No	Job #:	Y22101249			Р		Р	Р	Р								
Company:	Peregrine Diamonds	PO / AFE	:															
Contact:	Shirley Standafer-Pfister	LSD:	Chidliak Proper	ty												- 1	- 1	
Address:	shirley@pdiam.com							1121						İ		4.5	- 3	o E
Phone:	250-686-1769 Fax:	Quote #:	Q20910														1	Itali
	Work Order # b use only)	ALS Contact:		Sampler:	KL	tals				Grease							26 0 00	5
Sample #	Sample Identification (This description will appear on the re	eport)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	Total Metals	Routine	Nutrients	T0C	g							Mumber of Containors	MULLING
	WQ3		13-Jul-12		Surface water	Х	Х	Х	Х	Х					\top	\top		5
	WQ4		13-Jul-12		Surface Water	Х	Х	Х	Х	Х			\top		\top	\top	!	5
	WQ5		13-Jul-12		Surface Water	Х	Х	Х	Х	Х			\top	\top	\top		!	5
1000	WQ7		13-Jul-12		Surface Water	Х	Х	Х	Х	Х					\top		1	5
	WQ8		13-Jul-12		Surface Water	Х	Х	Х	Х	Х				\top	\top		1	5
	Hydro9		13-Jul-12		Surface Water	Х	Х	Х	Х	Х				\top	\top	\top	- !	5
	Hydro11		13-Jul-12		Surface Water	Х	Х	Х	Х	Х							- ;	5
	WQ12		13-Jul-12		Surface Water	Х	Х	Х	Х	Х							- ;	5
	WQ14		13-Jul-12		Surface Water	Х	Х	Х	х	х							;	5
	WQ6		14-Jul-12		Surface Water	Х	Х	Х	Х	Х							!	5
	Hydro10		14-Jul-12		Surface Water	Х	Х	·X	Х	Х								5
	WQ13		14-Jul-12		Surface Water	Х	Х	Х	Х	Х							ŧ	5
	Special Instructions / Regulations with wat	er or land use (CCI	ME-Freshwater A	Aquatic Life/BC	CSR - Commerci	al/AE	Tier	1 - N	atura	al, etc) / Ha	zardou	ıs De	tails				
CCME- Free	shwater Aquatic Life with low cadmium levels																J.E.	
			and agrees with	the Terms and	Conditions as pr	ovide	ed on	a se	para				non a	nalv	ses.			
	SHIPMENT RELEASE (client use)		MENT RECEPT									ICATIO				1		
Pologgod b					* /	Vori	fied h								1171 149 14 14 X	*	vations	

Yes / No? If Yes add SIF



Your Project #: CHIDLIAK Site Location: Y22101249

Your C.O.C. #: 36257801, 362578-01-01

Attention: Karla Langlois
EBA, A Terratech Company
#201 4916 49 Street
Box 2244
Yellowknife, NT
CANADA X1A 2P7

Report Date: 2012/07/31

This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2A6649 Received: 2012/07/16, 17:30

Sample Matrix: Water # Samples Received: 7

		Date	Date		Method
Analyses	Quantity	Extracted	Analyzed	Laboratory Method	Reference
Coliform/ E. coli, CFU/100mL	7	N/A	2012/07/17	CAM SOP-00551	MOE E3407
Fecal coliform. (CFU/100mL)	7	N/A	2012/07/17	CAM SOP-00552	SM 9222D

^{*} RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Julie Clement, Ottawa Customer Service Email: JClement@maxxam.ca Phone# (613) 274-3549

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Total cover pages: 1



Maxxam Job #: B2A6649 Report Date: 2012/07/31 EBA, A Terratech Company Client Project #: CHIDLIAK Site Location: Y22101249

MICROBIOLOGY (WATER)

Maxxam ID		OD9685	OD9686	OD9687	OD9688
Sampling Date		2012/07/16 09:22	2012/07/16 09:27	2012/07/16 09:33	2012/07/16 09:36
COC Number		362578-01-01	362578-01-01	362578-01-01	362578-01-01
	Units	DISC.RAW	DISC.KITCHEN	DISC.DRY1 LINKED TO BATH	DISC.DRY2 LINKED TO KITCHEN
Microbiological					
Fecal coliform	CFU/100mL	0	0	0	0
Background	CFU/100mL	710	0	0	0
Total Coliforms	CFU/100mL	12	0	0	0
Escherichia coli	CFU/100mL	0	0	0	0

Maxxam ID		OD9689	OD9690	OD9691
Sampling Date		2012/07/16 09:31	2012/07/16 09:28	2012/07/16 09:38
COC Number		362578-01-01	362578-01-01	362578-01-01
	Units	DISC.BATH	DUPLICATE1	FIELD BLANK
Microbiological				
Fecal coliform	CFU/100mL	0	0	0
Background	CFU/100mL	0	0	0
Total Coliforms	CFU/100mL	0	0	0
Escherichia coli	CFU/100mL	0	0	0



Maxxam Job #: B2A6649 Report Date: 2012/07/31 EBA, A Terratech Company Client Project #: CHIDLIAK Site Location: Y22101249

GENERAL COMMENTS

Revised report: Trip Blank removed 2012/08/01

Results relate only to the items tested.



Validation Signature Page

Maxxam	.loh	#•	R ₂ A	6649
viaxxaiii	JOD	#:	DZA	004:

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Tharmini Sivalingam, Team Leader

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

APPENDIX C CAMP WILDLIFE SIGHTINGS LOGS



Peregrine Diamonds Ltd. - Wildlife Sightings Form*

Please record all wildlife sightings in/around camp, when sampling, on flights and at drill sites. When recording bird sightings, also include any nest locations seen on the ground or on cliffs and ledges.

Who Saw It (Your Name) Date and Time of Day ordinates where possible) ordinates where possible) wou Know It, for example, "Mallard Duck" How Duck action? Action? Action? Action? Action? Action? Effect of You Action? Taken? Effect of You Action? Action? Action? Action? Action? Action? Action? Action? Taken? In once In once Action? Action? Action? Action? Action? Action? Action? Action? Taken? In once	the ground or on cliffs and ledg	es.					
Simeone Kullualik	Who Saw It (Your Name)	Date and Time of Day	•	and SPECIES, if you Know It, for example, "Mallard		Avoid Contact or Disturbance, What ACTION was	What Was the Effect of Your Action?
Manasie Maniapik March 30, 2012 636000E/7123500N Snowy Owl 1 none none Amie Nashalik April 1, 2012 East end Sunrise Falcon 1 flying none Simeone Kullualik, Julai April 2, 2012 sunrise lake Arctic char 3 caught Don Proven, Russ Blake, Darly Neustater, Logan McKillop April 8, 2012 617500/7134200 2 caribou (cow, calf) 2 stopped work on line moved to southeast Don Proven, Robert Joamie April 9, 2012 617500/7134250 Ptarmigan 1 na flew away west Alan O'Connor April 9, 2012 south side Sunrise lake Fox tracks 1 na na na Meena Q April 9, 2012 Sunrise camp Raven 1 na na na Alan O'Connor April 9, 2012 Southeast end Sunrise lake Fox tracks 1 na na Donald Proven April 10, 2012 Sunrise camp Ptarmigan 6 na na Donald Proven April 14, 2012 <	Simeone Kullualik	March 29, 2012/ am	Sunrise camp	Raven	1	none	none
Amie Nashalik April 1, 2012 East end Sunrise Falcon 1 flying none Simeone Kullualik, Julai April 2, 2012 sunrise lake Arctic char 3 caught Julai April 4, 2012 sunrise lake Arctic char 3 caught Don Proven, Russ Blake, Daryl Neustater, Logan McKillop April 8, 2012 617500/7134200 2 caribou (cow, calf) 2 stopped work on line moved to southeast Don Proven, Robert Joamie April 9, 2012 617500/7134250 Ptarmigan 1 na flew away west Alan O'Connor April 9, 2012 south side Sunrise lake Fox tracks 1 na na Meena Q April 9, 2012 Sunrise camp Raven 1 na na Alan O'Connor April 9, 2012 Southeast end Sunrise lake Fox tracks 1 na na Donald Proven April 10, 2012 Sunrise camp Ptarmigan 6 na na Donald Proven April 14, 2012 617762/7137039 Raven 1 <	Simeone Kullualik	March 29, 2012/ am	Aurora camp	Caribou tracks	>1	none	none
Simeone Kullualik, Julai April 2, 2012 sunrise lake Arctic char 3 caught Julai April 4, 2012 sunrise lake Arctic char 3 caught Don Proven, Russ Blake, Daryl Neustater, Logan McKillop Don Proven, Robert Joannie April 9, 2012 617500/7134200 2 caribou (cow, calf) 2 stopped work on line southeast Don Proven, Robert Joannie April 9, 2012 617500/7134250 Ptarmigan 1 na flew away west Alan O'Connor April 9, 2012 south side Sunrise lake Fox tracks 1 na na Meena Q April 9, 2012 Sunrise camp Raven 1 na na Alan O'Connor April 9, 2012 southeast end Sunrise lake Fox tracks 1 na na Donald Proven April 10, 2012 Sunrise camp Ptarmigan 6 na na Donald Proven April 14, 2012 617762/7137039 Caribou 2 na na Donald Proven April 14, 2012 617762/7137039 Raven 1 na na Robert Joannie April 21, 2012 Rabbit 1 none none Ooloo Geetah April 23, 2012 / 5 am Sunrise camp Ptarmigan 5 none none Ooloo Geetah April 24, 2012 / 11 am Sunrise camp Ptarmigan 5 none none	Manasie Maniapik	March 30, 2012	636000E/7123500N	Snowy Owl	1	none	none
Don Proven, Russ Blake, Daryl Neustater, Logan McKillop April 8, 2012 617500/7134200 2 caribou (cow, calf) 2 stopped work on line moved to southeast	Amie Nashalik	April 1, 2012	East end Sunrise	Falcon	1	flying	none
Don Proven, Russ Blake, Daryl Neustater, Logan McKillop Don Proven, Robert Joamie April 9, 2012 April 9, 2012 South side Sunrise lake Fox tracks April 9, 2012 Southeast end Sunrise lake Fox tracks April 9, 2012 Southeast end Sunrise lake Fox tracks Ina na Alan O'Connor April 9, 2012 Southeast end Sunrise lake Fox tracks Ina na Alan O'Connor April 10, 2012 Southeast end Sunrise lake Fox tracks Ina na Donald Proven April 11, 2012 Sunrise camp Ptarmigan Caribou Caribou Caribou Raven Ina na Robert Joamie April 14, 2012 April 21, 2012 Rabbit Ina Rabbit Ina Robert Joamie April 24, 2012 / 5 am Sunrise camp Ptarmigan Sunrise camp Ptarmigan Fox tracks Ina Raven Ina Rabbit Ina Rabbit Ina Robert Joamie April 24, 2012 / 5 am Sunrise camp Ptarmigan Fox tracks Ina Rabbit Ina Rabbit Ina Robert Joamie April 24, 2012 / 11 am Sunrise camp Ptarmigan Fox tracks Ina Robert Joamie Rabbit Ina Robert Joamie April 24, 2012 / 11 am Sunrise camp Ptarmigan Fox tracks Ina Robert Joamie Robert Joamie April 24, 2012 / 11 am Sunrise camp Ptarmigan Inone Robert Joamie Robert Joamie April 24, 2012 / 11 am Sunrise camp Ptarmigan Inone Robert Joamie Robert Joamie April 24, 2012 / 11 am Sunrise camp Ptarmigan Inone Robert Joamie Robert Joamie Robert Joamie April 24, 2012 / 11 am Sunrise camp Ptarmigan Inone Robert Joamie Ro	Simeone Kullualik, Julai	April 2, 2012	sunrise lake	Arctic char	3	caught	
Daryl Neustater, Logan McKillop Don Proven, Robert Joamie April 9, 2012 April 9, 2012 South side Sunrise lake Fox tracks The name of lew away western and the southeast end Sunrise lake Fox tracks The name of lew away western and the southeast end Sunrise lake April 9, 2012 South side Sunrise lake Fox tracks The name of lew away western and the southeast end Sunrise lake April 9, 2012 Southeast end Sunrise lake Fox tracks The name of lew away western and the southeast end Sunrise lake April 9, 2012 Southeast end Sunrise lake Fox tracks The name of late of the southeast end Sunrise lake The name of lew away western and the southeast end Sunrise lake Fox tracks The name of late of lew away western and the southeast end Sunrise lake The name of lew away western and the southeast end Sunrise lake Fox tracks The name of lew away western and the southeast end Sunrise lake Fox tracks The name of late of lew away western and southeast end Sunrise lake Fox tracks The name of lew away western and southeast end Sunrise lake Fox tracks The name of lew away western and the southeast end Sunrise lake Fox tracks The name of lew away end the southeast end Sunrise lake Fox tracks The name of lew away end the southeast end Sunrise end Parmigan The name of lew away end the southeast end Sunrise end Parmigan The name of lew away end the southeast end Sunrise end Parmigan The southeast end Sunrise end Parm	Julai	April 4, 2012	sunrise lake	Arctic char	3	caught	
Alan O'Connor April 9, 2012 south side Sunrise lake Fox tracks 1 na na Meena Q April 9, 2012 Sunrise camp Raven 1 na na Alan O'Connor April 9, 2012 southeast end Sunrise lake Fox tracks 1 na na Donald Proven April 10, 2012 Sunrise camp Ptarmigan 6 na na Donald Proven April 14, 2012 617762/7137039 Caribou 2 na na Donald Proven April 21, 2012 617762/7137039 Raven 1 na na Robert Joamie April 21, 2012 Rabbit 1 none none Ooloo Geetah April 23, 2012 / 5 am Sunrise camp snow bunting 2 none none Jamesie Josephee April 24, 2012 / 11 am Sunrise camp Ptarmigan 5 none none Ooloo Geetah April 24, 2012 / 6 am Sunrise camp Ptarmigan 1 none none	Daryl Neustater, Logan	April 8, 2012	617500/7134200	, .	2		
Meena Q April 9, 2012 Sunrise camp Raven 1 na na Alan O'Connor April 9, 2012 southeast end Sunrise lake Fox tracks 1 na na Donald Proven April 10, 2012 Sunrise camp Ptarmigan 6 na na Donald Proven April 14, 2012 617762/7137039 Caribou 2 na na Donald Proven April 14, 2012 617762/7137039 Raven 1 na na Robert Joamie April 21, 2012 Rabbit 1 none none Ooloo Geetah April 23, 2012 / 5 am Sunrise camp snow bunting 2 none none Jamesie Josephee April 24, 2012 / 11 am Sunrise camp Ptarmigan 5 none none Ooloo Geetah April 24, 2012 / 6 am Sunrise camp Ptarmigan 1 none none	Don Proven, Robert Joamie	April 9, 2012	617500/7134250	Ptarmigan	1	na	flew away west
Alan O'Connor April 9, 2012 southeast end Sunrise lake Fox tracks 1 na na na Donald Proven April 10, 2012 Sunrise camp Ptarmigan 6 na na na Donald Proven April 14, 2012 617762/7137039 Caribou 2 na na na Donald Proven April 14, 2012 617762/7137039 Raven 1 na na na Robert Joamie April 21, 2012 Rabbit 1 none none Ooloo Geetah April 23, 2012 / 5 am Sunrise camp snow bunting 2 none none Jamesie Josephee April 24, 2012 / 11 am Sunrise camp Ptarmigan 5 none none Ooloo Geetah April 24, 2012 / 6 am Sunrise camp Ptarmigan 1 none none	Alan O'Connor	April 9, 2012	south side Sunrise lake	Fox tracks	1	na	na
Donald Proven April 10, 2012 Sunrise camp Ptarmigan 6 na na Donald Proven April 14, 2012 617762/7137039 Caribou 2 na na Donald Proven April 14, 2012 617762/7137039 Raven 1 na na Robert Joamie April 21, 2012 Rabbit 1 none none Ooloo Geetah April 23, 2012 / 5 am Sunrise camp snow bunting 2 none none Jamesie Josephee April 24, 2012 / 11 am Sunrise camp Ptarmigan 5 none none Ooloo Geetah April 24, 2012 / 6 am Sunrise camp Ptarmigan 1 none none	Meena Q	April 9, 2012	Sunrise camp	Raven	1	na	na
Donald Proven April 14, 2012 617762/7137039 Caribou 2 na na Donald Proven April 14, 2012 617762/7137039 Raven 1 na na Robert Joamie April 21, 2012 Rabbit 1 none none Ooloo Geetah April 23, 2012 / 5 am Sunrise camp snow bunting 2 none none Jamesie Josephee April 24, 2012 / 11 am Sunrise camp Ptarmigan 5 none none Ooloo Geetah April 24, 2012 / 6 am Sunrise camp Ptarmigan 1 none none	Alan O'Connor	April 9, 2012	southeast end Sunrise lake	Fox tracks	1	na	na
Donald Proven April 14, 2012 617762/7137039 Raven 1 na na na Robert Joamie April 21, 2012 Rabbit 1 none none Ooloo Geetah April 23, 2012 / 5 am Sunrise camp snow bunting 2 none none Jamesie Josephee April 24, 2012 / 11 am Sunrise camp Ptarmigan 5 none none Ooloo Geetah April 24, 2012 / 6 am Sunrise camp Ptarmigan 1 none none	Donald Proven	April 10, 2012	Sunrise camp	Ptarmigan	6	na	na
Robert Joamie April 21, 2012 Rabbit 1 none none Ooloo Geetah April 23, 2012 / 5 am Sunrise camp snow bunting 2 none none Jamesie Josephee April 24, 2012 / 11 am Sunrise camp Ptarmigan 5 none none Ooloo Geetah April 24, 2012 / 6 am Sunrise camp Ptarmigan 1 none none	Donald Proven	April 14, 2012	617762/7137039	Caribou	2	na	na
Ooloo Geetah April 23, 2012 / 5 am Sunrise camp snow bunting 2 none none Jamesie Josephee April 24, 2012 / 11 am Sunrise camp Ptarmigan 5 none none Ooloo Geetah April 24, 2012 / 6 am Sunrise camp Ptarmigan 1 none none	Donald Proven	April 14, 2012	617762/7137039	Raven	1	na	na
Jamesie Josephee April 24, 2012 / 11 am Sunrise camp Ptarmigan 5 none none Ooloo Geetah April 24, 2012 / 6 am Sunrise camp Ptarmigan 1 none none	Robert Joamie	April 21, 2012		Rabbit	1	none	none
Ooloo Geetah April 24, 2012 / 6 am Sunrise camp Ptarmigan 1 none none	Ooloo Geetah	April 23, 2012 / 5 am	Sunrise camp	snow bunting	2	none	none
	Jamesie Josephee	April 24, 2012 / 11 am	Sunrise camp	Ptarmigan	5	none	none
	Ooloo Geetah	April 24, 2012 / 6 am	Sunrise camp	Ptarmigan	1	none	none
Ooloo Geetah April 24, 2012 / 9 pm 1 km west Sunrise Fox 1 none none	Ooloo Geetah	April 24, 2012 / 9 pm	1 km west Sunrise	Fox	1	none	none
Sean Wotherspoon April 24, 2012 668669/71308667 Seals 5 flew higher didn't dive	Sean Wotherspoon	April 24, 2012	668669/71308667	Seals	5	flew higher	didn't dive
Simeone Kullualik May 1, 2012 north side of Sunrise camp White fox 1 looking around nothing	Simeone Kullualik	May 1, 2012	north side of Sunrise camp	White fox	1	looking around	nothing
Jamesie Josephee May 2, 2012 Sunrise camp Raven 1 none none	Jamesie Josephee	May 2, 2012	Sunrise camp	Raven	1	none	none
Daryl Neustater May 2, 2012 15 km west of Sunrise Ptarmigan 1 feeding none	Daryl Neustater	May 2, 2012	15 km west of Sunrise	Ptarmigan	1	feeding	none
Daniel Akpaliak May 2, 2012 379900/7131600 zone 20 Seals 2 laying on ice none	Daniel Akpaliak	May 2, 2012	379900/7131600 zone 20	Seals	2	laying on ice	none
Geophys. crew May 2, 2012 379900/7131600 zone 20 Bear tracks lots none none	Geophys. crew	May 2, 2012	379900/7131600 zone 20		lots		none
Ken K June 19, 2012 Caribou (cow and calf) Flying over on our way to Aurora Surprised	Ken K	June 19, 2012		calf)	2		Surprised
J.J June 20, 2012 Discovery Camp Peregrine falcon going after 1 x 1 just watching none Ptarmigan	J.J	June 20, 2012	Discovery Camp	going after	1 x 1	just watching	none
Daniel Akpaliak June 23, 2012 South west of Discovery camp Caribou 2 none none	Daniel Akpaliak	June 23, 2012	· ·	Caribou	2	none	none
Daryl Neustater August 5, 2012 CHI-364 Raven 1 NA NA	Daryl Neustater	August 5, 2012	CHI-364	Raven	1	NA	NA
Daryl Neustater August 9, 2012 Discovery Camp Raven 1 NA NA	Daryl Neustater	August 9, 2012	Discovery Camp	Raven	1	NA	NA
Niel August 9, 2012 Discovery Camp Arctic fox 1 none none	Niel	August 9, 2012	Discovery Camp	Arctic fox	1	none	none
Duncan McBean and Alex Hunchak August 13, 2012 CH-31 Caribou 1 NA NA		August 13, 2012	CH-31	Caribou	1	NA	NA
Patricia Sept 6, 2012 / 11:56 am Discovery Camp Arctic fox 1 none none	Patricia	Sept 6, 2012 / 11:56 am	Discovery Camp	Arctic fox	1	none	none
Kim Sept 6, 2012 / 4:45 pm 1 km south of Discovery Caribou 1 Too far away none	Kim	Sept 6, 2012 / 4:45 pm	-	Caribou	1	Too far away	none
Joe Sept 6, 2012 / 8:20 am Discovery Camp Arctic fox 1 none none	Joe	Sept 6, 2012 / 8:20 am	Discovery Camp	Arctic fox	1	none	none

 $^{^{\}ast}$ Wildlife Sightings Logs provided by Peregrine Diamonds Ltd.