shear diamonds

Care and Maintenance Plan
Jericho Project, Nunavut

Air Quality Management Plan

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Summary

An Air Quality Management Plan (AQMP) was required for the Jericho diamond mine under the terms of the Project Certificate (N.002 Section 5.). In April 2004, Tahera Diamond Corporation (TDC) submitted an AQMP to the Nunavut Impact Review Board (NIRB) which was widely distributed but never approved.

Shear Diamonds Ltd. (Shear) acquired the Jericho diamond mine in August of 2010. Prior to Shear's acquisition of the project it had been abandoned by the previous owners TDC and was under Indian and Northern Affairs Canada's (INAC) care. An AQMP for the site was never approved and the monitoring within the submitted plan was not undertaken in the interim during operations nor while the project was under INAC's care. A desktop review of the data collected for baseline and during operations revealed that efforts were deficient.

The AQMP described herein has been developed to provide a methodology for the collection of data including addressing the deficiencies above and the comments received by reviewers on the original 2004 plan. To that end, Shear Diamonds will implement this program during care and maintenance (C&M) to enhance knowledge of background air quality and to get an understanding of current conditions at the mine site.

While the project is on C&M some components of the AQMP will not be applicable. Data collected under the AQMP during C&M will be used to inform, identify the need for mitigations, and aid in the design of a more rigorous program when Shear transitions the Jericho diamond mine from C&M to operations.

Management of Exhaust Emission and Fugitive Dust

Exhaust Emissions

Sources of exhaust emission during the care and maintenance period include;

- Mobile equipment/Light duty trucks
- Generators
- Drills
- Light duty trucks
- Waste Incinerator

Mobile Equipment/Light duty trucks.

The exhaust from mobile equipment will be limited to the equipment required to keep roadways and the airstrip free of snow, support drilling activities, de-construct contaminated fuel berms and construct a landfarm. Light duty trucks will be used for personnel movement within the mine site.

Generators

Generators will be used to produce electricity for the operation of the camp accommodation complex. Portable generators will also be used to support the drill program, operate a hydrocarbon remediation unit and will be used for dewatering support.

Drills

A diamond drill and a reverse circulation (RC) drill will be drilling in the pit. The diamond drill will also be utilized for a spring exploration drill program on the Polar and Carat properties.

Waste Incinerator

The incinerator currently at site is a dual-burn, batch incinerator, Westland CY-2050-FA “D”. The manufactures specification for the incinerator can be found in Appendix I . During C&M camp occupancy will average 30 people generating approximately 190 kilograms each week of waste to be incinerated.

Efforts to reduce waste production will be implemented as per the Waste Management Plan submitted by Shear to the Nunavut Water Board in February 2011. Incineration guidelines[1,2] and

[1] Technical Document for Batch Waste Incineration. Environment Canada. January 2010
[2] Canada-Wide Standards for Dioxans and Furans. Effective May 1, 2001.

waste segregation and handling[3]standard operating procedures will be part of the Waste Management Plan.

Anti-idling standards have been developed with specific thresholds related to temperature. Shear is in the process of investigating the potential purchase of a waste oil boiler that can be hooked up in series with the existing boiler system in the truck shop and thus create heated short term storage for vehicles during the care and maintenance period. To prevent damage to vehicles and ensure efficient operation vehicles will have functioning block heaters and battery blankets and will be plugged into a hotline at -5 Celsius. Idling will commence at -25 Celsius for vehicles that remain outside.

Fuel consumption at the mine site is tracked at use source. Vehicle fuel consumption is tracked at the fueling station and is recorded specifically by vehicle type and unit. Fuel consumption at the generators is recorded daily and inputted into an on-going record sheet. These data collection points will aid in identifying any maintenance issues contributing to excessive fuel use and inefficient combustion.

Fugitive Dust

Sources of fugitive dust during the care and maintenance period include:

- Wind erosion from active storage piles
- Wind erosion from dry fine PK beaches
- Dust generated from vehicles travelling on roads
- Wash from aircraft (helicopter and fixed-wing)
- Material drops

Visual monitoring will be implemented to assess the areas directly adjacent to the PKCA, roadways, airstrip and stockpiles to evaluate if dust control measures are required and if subsequent mitigations will be undertaken. Mitigating measures that may be implemented are:

- Reduction of speed limits of vehicular traffic on roadways
- Water application on roadways
- Water application to the airstrip
- Procedure changes in material handling

The material handling will be limited during care and maintenance. The proposed projects are small in scale and will not require excessive movement of material. Aside from the construction

[3] Transport of Dangerous Goods Regulations

of a landfarm and the de-construction of contaminated fuel-containment berms, no activities planned for site will require material movement.

Air Quality Monitoring

The air quality monitoring conducted at site to-date was:

- One instance of collection and analysis of lichen from one location during year 2000 baseline assessments,
- one instance of vegetation composition at two transects during baseline during year 2000 and,
- one instance of snow sample collection at nine locations during operations in 2007.

Ambient Air Quality Monitoring

The 2004 AQMP submitted by TDC was based on emission dispersion modelling using Industrial Source Complex (ISC3). Environment Canada's review of the submitted plan indicated that the atmospheric dispersion modelling be redone using site meteorology and CALPUFF. CALFUFF and ISC3 are both atmospheric dispersion models, however: ICS3 is a plume model that requires straight-line, steady-state assumptions whereas CALPUFF is a puff model and includes in the calculations the potential for temporally and/or spatially varying flow fields and stagnation conditions.

Site meteorology was not available and subsequently regional meteorological data (2002 MM5) was provided by Environment Canada. Amec Earth & Environmental completed the requested dispersion modeling (Appendix II) on behalf of TDC and the model was submitted to NIRB in September 2007 as an update to the original air quality management plan. The air quality management plan was not changed to incorporate findings from the dispersion model before the project was abandoned. Shear has used the 2007 dispersion modeling and wind rose calculations in the design of passive monitoring programs for the care and maintenance period. The dispersion model findings and recommended monitoring sites will be used for the placement of $PM_{2.5}$, PM_{10} and TSP samplers once the project enters into operations. A site-specific meteorology station will be installed during care and maintenance and that data will be available to re-do the CALPUFF model during operations if necessary.

The limited exhaust sources during care and maintenance will not be monitored directly at site with continuous air samplers as the use of emission producing equipment will be limited in time and seasonal in nature. Equipment used will be maintained in good working order to minimize

unnecessary exhaust emissions and regular maintenance schedules, pursuant to manufacturer`s recommendations, will be implemented. Shear Diamonds will track and report air emissions resulting from diesel use once the project commences operations.

Under the Canada-wide standards for dioxins and furans facilities are not required to conduct annual stack testing on incinerators if incineration of wastes is less than 26 tonnes/year. C&M at Jericho will not generate more than 26 tonnes/year however, during operations the facility will be close to and likely above that limit. Implementation of efforts to reduce emissions will be undertaken during care and maintenance and once the project moves towards operations a one-time stack test will be conducted to evaluate the effectiveness of reduction efforts. The data from the stack test as well as compiled waste through put data will be used to make decisions regarding whether changes to waste management practices and/or upgrades to the existing incinerator are necessary to meet standards. Environment Canada will be contacted for assistance regarding best incinerator technologies.

The Aquatic Effects Monitoring Plan (AEMP) to be conducted during care and maintenance has included instances of testing for sedimentary dioxins and furans within lakes. One lake (Lynne) is southeast of the project area and downwind of the stockpiles and incinerator. One lake (C-4) is northeast and in closer proximity to the incinerator location. A sample will also be analyzed for dioxans and furans that is sampled from Cigar Lake (approx. 10 km from site) as a reference. The samples will be taken by dredge grab, analyzed for presence/absence and will be re-addressed prior to commencing operations.

Dustfall Monitoring

Shear Diamonds will be completing a reduced mine-site footprint passive dust fall monitoring program during care and maintenance because the status of the mine will be neither operation nor static (e.g. light vehicle traffic will indicate dust deposition while not capturing the whole scope of dust associated with full operations nor affording the ability to evaluate pre-operational conditions). The data collected from a full scale dust-fall monitoring program would have limited value at this time. Implementation of a full local area dust deposition monitoring program will commence with operations.

Seven locations for dustfall collection have been selected for monitoring during care and maintenance. The locations are shown in Figure 1. Locations were chosen to reflect the following criteria:

- Locations chosen are in line with dispersion modeling findings that the direction of higher winds is from the northwesterly and north-northwesterly direction and most frequent are from southerly and northwesterly directions. (Locations: 1,3,7)

- The locations reflect that equipment use will be limited during care and maintenance but that wind dispersal from stockpiles and the PKCA is not operationally dependent.(Locations 1,4,7)
- They correspond with lichen samples for analysis purposes(Locations 1,2,3,4)
- Data ensuing from sampling will be valuable to determine dust source and areas for potential mitigation measures (all locations)
- One sample site outside the project footprint will be utilized as a background sample. (Location 2- 10 km from site)

Dustfall jars will be mobilized annually in April and collected in the summer. During the care and maintenance period the dust fall collection jars will remain in-situ for 30 +/- 2 days and three sampling periods will be conducted in the summer months. Locations of the dustfall monitoring locations are shown in Figure 1. Care will be taken when samples are collected and during the mobilized period to prevent helicopter wash from biasing the samples.

Snow Sampling

One instance of snow sampling was conducted in 2007 by TDC. The analysis data and location map are attached in Appendix III. The sampling was done with an aluminum snow corer possibly impacting metals results. Also, the methodology was not recorded but given the reference in file data to vegetative entrainment it is suspected that a suitable pit was not dug for core sample access. At five sites, all of which exceeded the CCME fresh water environmental quality guidelines, soil and vegetation entrainment was identified. The results indicated low sulphate and nitrate concentrations yet there is no method information regarding how the samples were melted prior to analysis and no discussion was made regarding photochemical transformation of nitrates or the stability of sulphate upon melting.

Shear Minerals will not be completing a snow sampling monitoring program at this time. As the mine site will only be active intermittently throughout the care and maintenance period the data collected will not provide substantially more information than that available through the dustfall monitoring program. The benefits of the addition of a snow sampling program will be investigated and if deemed necessary will commence with operations. An annual snow sampling monitoring program, if indicated as necessary, will be designed to include locations that are also sampled for lichen metal concentration, aquatic sediment monitoring sites and dustfalls. This will be done in order to best to get an understanding of the contaminant deposition and to provide information and evaluation for the implementation of corrective actions if warranted.

Biomonitoring

Lichen Metals Concentrations

In September of 2000 two lichen samples were collected for metals analysis at an area directly east of the airstrip however conflicting data sources indicate it may have been a composite species sample and therefore has unpredictable variation and reduced comparability for multi-year application. Different species of lichen have considerable variability in uptakes for specific metals. Also, as both samples were taken from the same area it is not possible to assign the results from the one sample to the whole project footprint. The results from lichen metals samples in 2000 are in Appendix IV. Of note is that some element levels (i.e arsenic 2.0 mg/kg) of the lichen collected are approximately three times that what has been found in background samples elsewhere in the north. Puckett and Finegan (1980) found that lichen background levels for arsenic were averaged at 0.27 mg/kg and the Ekati reference area indicates levels of 0.21 mg/kg. The discrepancies represented when comparing historic site lichen samples to other background samples as well as the differences between available background data reinforces the need for site-specific background information.

In order to address deficiencies in background information regarding lichen metals Shear Diamonds will conduct a full scale lichen collection program in 2011. Sixteen locations for lichen sample collection are shown in Figure 2. Samples sites are grouped into three categories. Eight near sample sites are within 1.5 to 2 km of the mine footprint and are aligned in cardinal and ordinal directions. Four middle sample sites are within 10 km and are aligned cardinal and four 30 km distant background sites are aligned ordinal. The decision to include four background sites was based on the proximity of the Lupin mine site and tailings facilities (30 km) and the potential to investigate the cumulative effect. Background samples taken to the north will be used as representative background for the Jericho project specific. The time required to realize a measurable impact from lichen sampling disallowed the use of wind rose for sample locating as seasonal and annual variations in wind direction are expected. Analysis data will be compared against the wind rose data calculated in the 2007 air modeling assessment and if significant correlations between metals levels and wind rose are realized then the sampling locations will be adjusted accordingly.

Locations are approximate as suitable lichen communities will need to be located close to the locations shown. Five gram samples of *Flavocetraria cucullata* lichen will be taken from a $1m^2$ area. *Flavovetraria cucullata* was chosen as it is locally abundant in the project area and because there is substantial background data for this species available as it is currently and has been historically sampled at both Diavik and Ekati diamond Mines. Efforts will be made to collect each of the lichen samples at areas of similar vegetative composition. Percent ground

cover 2.5 cm above ground will be determined and will be recorded including breakdowns for percent vegetation, bare ground, rock, lichen, moss and animal pellets. Samples will be collected using nitrile gloves, labeled with location and will be transported in paper bags. Samples will be collected in August at the same time that dustfall collection jars are removed from the field. The schedule for lichen monitoring will be;

- once during care and maintenance to evaluate CALPUFF dispersion, address gaps in background information and to provide information on existing conditions and;
- once in the first year of operations to evaluate impacts of operations on lichen metals levels and;
- every three years thereafter.

Vegetation Species Composition

Two transects were sampled in 2000 for vegetation species composition. The transects were located west of the airstrip and southeast of what was then, the portal. One-meter quadrants were inventoried at 10m intervals for ten instances along a linear bearing. The portal transect is not repeatable given the extent of development in the area and initial mapping of the location indicates that it is now part of the open pit. The coordinates given for the start quadrant of the transect west of the airstrip indicate that the first half of the transect is in what became a borrow area. As no data exists for this location past the initial 2000 sampling effort it is assumed that the stakes delineating the transect are no longer in place. The data associated with these transects was very specific to the area and movement of the sample location by as little as ten centimeters would introduce significant error.

Vegetation species composition will not be completed as part of the monitoring of air quality during care and maintenance. Analysis data from dustfall and lichen monitoring will be used to best site new vegetation transects in the future if such data suggests the addition of vegetation species composition would enhance the overall monitoring.

Monitoring Data Management and Assessment

The data collected during care and maintenance will include field and laboratory methods, field observations, photographs, GPS coordinates and analysis results. Monitoring efforts must be repeatable in order for the results to accurately and temporally identify effects. Shear Diamonds understands the importance of documenting, compiling, organizing and reporting on all the activities and data associated with the air quality management at the Jericho mine site and will endeavor to do so. An annual report will be completed and submitted within six month of the end of the calendar year.

Investigations into improvements and subsequent modifications to the full scale operational air quality management plan will be on-going especially as Shear transitions the project from care and maintenance into operations. Benefits will be clearly demonstrated for any changes proposed to stakeholders and regulatory bodies.

Shear Diamond Ltd. is committed to addressing issues raised by regulators and local communities and will apply corrective actions as necessary to address any concerns.

REFERENCES

Naeth, M. A.Wilkinson, S. R. **Article:** Lichens as Biomonitors of Air Quality around a Diamond Mine, Northwest Territories, Canada. Journal of Environmental Quality 2008 37: 1675–1684

Puckett, K.J. and E.J. Finegan. 1980. An analysis of the element content of lichens from the Northwest Territories, Canada. Canadian Journal of Botany. 58:2073–2089.

Canadian Council of Ministers of the Environment. 2002. Canadian water quality guidelines for the protection of aquatic life: Total particulate matter. In: Canadian environmental quality guidelines, 1999, Canadian Council of Ministers of the Environment, Winnipeg.

Environmental Guideline for Air Quality- Sulphur Dioxide and Suspended Particulates. Department of Sustainable Development. Environmental Protection Service. Nunavut

APPENDIX I

INCINERATOR SPECIFICATIONS

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WESTLAND
ENVIRONMENTAL SERVICES INC.
www.westlandenvironmental.com

DOUBLE CHAMBER CYCLONATOR INCINERATOR
SERIES CY2000

- **Built In Safety Features**
- **Readily Transportable**
- **Economical Operation**
- **Clean Burning**

CY-2050-FA "D"

Designed for Petroleum, Mining, and Lumber Industries

Capacity
1.4 m^3, 90 kg per hour.
Type No. 1, 2, & 3 waste.

Power Requirements
115 volts 60 cycle single phase.

Stack
Stainless Steel
- 14 gauge.
- 38cm diameter.
- 3m high.
- c/w stainless steel spark arrester.
- a hinged base plate for moving.

Casing
12 gauge steel.
Lining: high heat duty castable refractory over high temperature insulation.

Hearth
Refractory hearth over 6.35mm steel base.

Doors
6.35-cm steel plate c/w heavy-duty blade latch.
Charging:
- 61cm-x 71cm clear opening
- Refractory lined over steel plate.

Ash:
- 61cm x 40cm clear opening
- Refractory lined over steel plate

Air Supply
Forced air fan c/w duct to primary airs jets and to secondary over-fire air jets.

Timers
Cycle timer interconnected to air supply fan and gun type burner enclosed in burner housing.

Burners
650,000 BTU gun type primary burner.
Gun burner enclosed in protective plate steel housing.
450,000 BTU in secondary chamber.

Fuel Supply: Oil Fired Unit Only
1350-liter fuel storage tank c/w filter and flexible hose type connection.

Transporter
Incinerator and fuel storage mounted on skid type frame 4.27m long x 1.83m wide.
Height: 3.2m tall, with stack folded.
Constructed of W150 I-Beam c/w bumper posts.

Weight
5000 kg.

Options
* LPG Fired burner.
* Diesel fired burner.
* 2.3m Electric power cord.
* Stack winch.
* Cold climate assembly.

MANUFACTURED BY:

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DISTRIBUTED BY:

APPENDIX II

2007 DISPERSION MODELLING

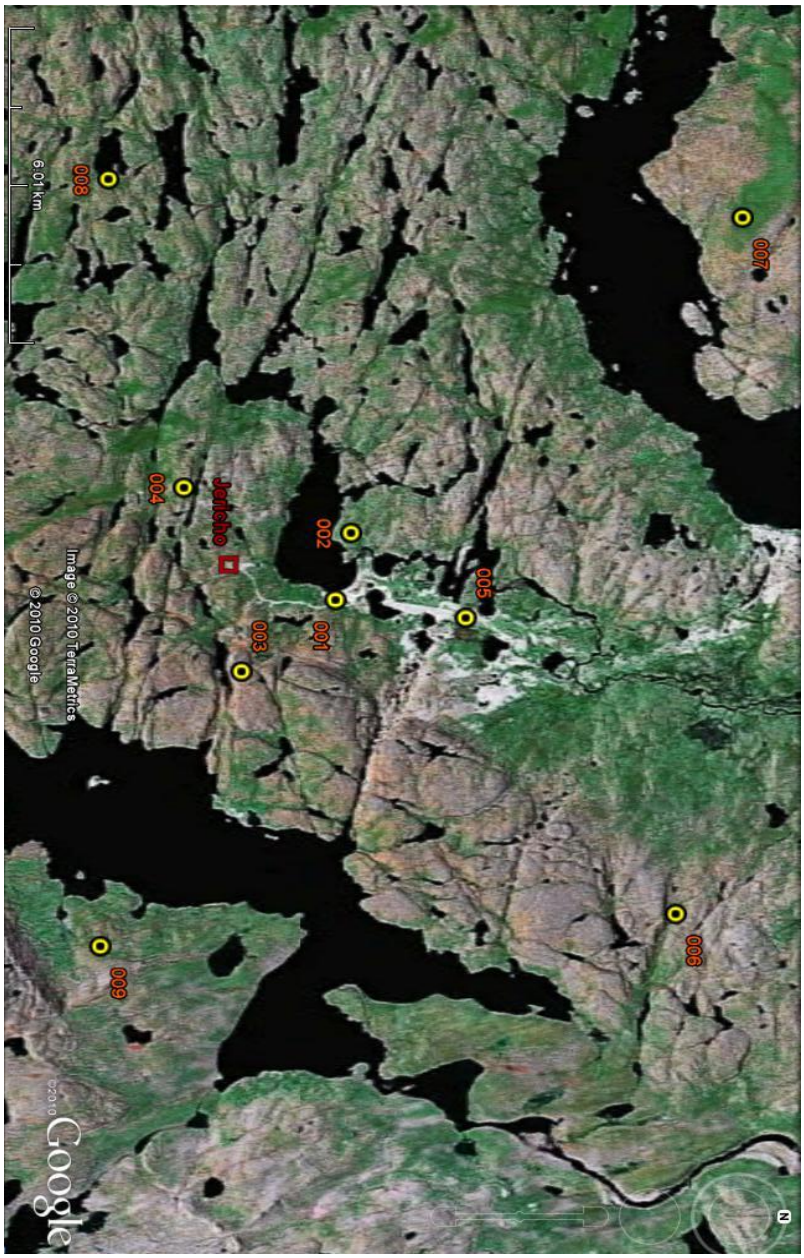
Also available at:

http://ftp.nirb.ca/03-MONITORING/00MN059-JERICHO%20DIAMOND%20MINE/02-MONITORING%20AND%20MANAGEMENT%20PLANS/Air%20Quality%20Management%20Plan/Plan/080104_Dispersion%20Modeling%20of%20Air%20Emissions_IT2E.pdf

APPENDIX III

2007 SNOW CORE SAMPLING RESULTS

Locations of 2007 snow sampling (Tahera Diamond Corporation)



Analytical results of 2007 snow samples (Tahera Diamond Corporation).

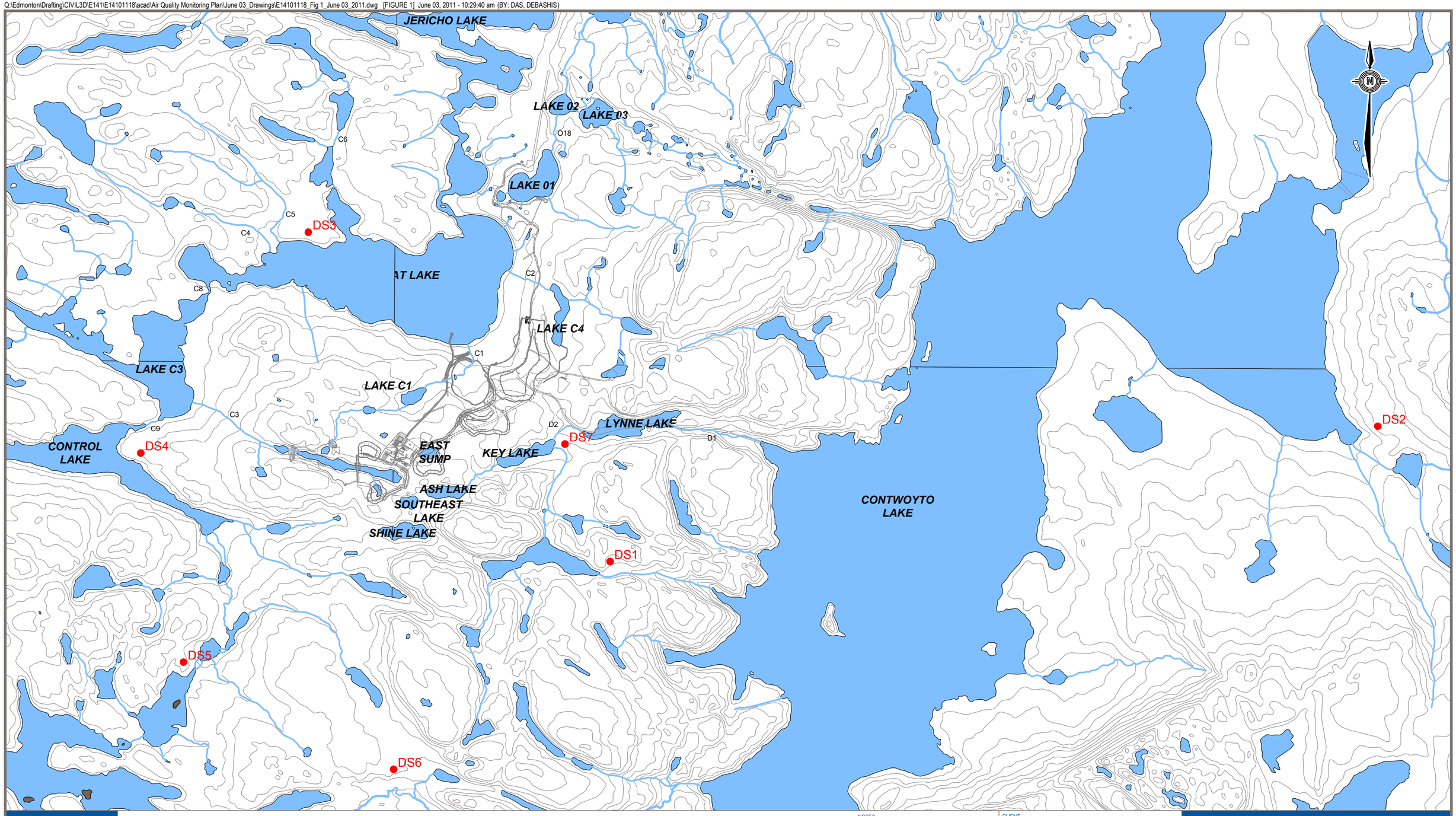
Sample ID	AQ-01	AQ-02	AQ-03	AQ-04	AQ-05	AQ-06	AQ-07	AQ-08	AQ-09	FIELD BLANK	CCME
Date Sampled	03-Apr-07	03-Apr-07	03-Apr-07	03-Apr-07	03-Apr-07	03-Apr-07	03-Apr-07	03-Apr-07	03-Apr-07	03-Apr-07	Water
Matrix	Water	Water	Water	Water	Water	Water	Water	Water	Water	Water	FWAL
Physical Tests											
Hardness (as CaCO3)	1.79	2.9	2.01	2.64	0.54	<0.50	15.2	0.55	7.31	<0.50	
Total Suspended Solids	33.3	55.3	27.3	28.7	11.3	6.0	25.3	8.0	8.0	<3.0	25
Anions and Nutrients											
Sulfate (SO4)	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Nitrate (as N)	0.0903	0.0734	0.0370	0.0713	0.0763	0.0597	0.0455	0.0598	0.0634	<0.0050	
Total Metals											
Aluminum (Al)-Total	0.155	0.194	0.0990	0.0630	0.0320	0.0153	0.150	0.0230	0.0365	0.0415	0.1
Antimony (Sb)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00027	
Arsenic (As)-Total	0.00012	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00011	<0.00010	<0.00010	<0.00010	0.005
Barium (Ba)-Total	0.00325	0.00399	0.00302	0.00300	0.00113	0.000563	0.0410	0.000775	0.00821	0.000269	
Beryllium (Be)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Bismuth (Bi)-Total	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Boron (B)-Total	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Cadmium (Cd)-Total	0.000404	0.000378	0.000238	0.000303	0.00107	0.000306	0.000294	0.000216	0.000404	0.000176	0.000017
Calcium (Ca)-Total	0.332	0.420	0.408	0.474	0.109	0.077	4.17	0.104	2.60	0.069	
Chromium (Cr)-Total	0.00059	0.00087	<0.00050	0.00063	<0.00050	<0.00050	0.00063	<0.00050	<0.00050	<0.00050	0.001
Cobalt (Co)-Total	0.00016	0.00030	0.00016	0.00018	<0.00010	<0.00010	0.00037	<0.00010	<0.00010	<0.00010	
Copper (Cu)-Total	0.00098	0.00100	0.00079	0.00030	0.00059	0.00025	0.00400	0.00033	0.00100	0.00086	0.002
Iron (Fe)-Total	0.200	0.364	0.126	0.107	0.035	<0.030	0.154	<0.030	0.034	<0.030	0.3
Lead (Pb)-Total	0.00166	0.000718	0.000985	0.000242	0.000762	0.000136	0.000758	0.000304	0.00142	0.000296	0.001
Lithium (Li)-Total	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	
Magnesium (Mg)-Total	0.232	0.449	0.240	0.353	0.065	<0.050	1.17	0.070	0.197	<0.050	
Manganese (Mn)-Total	0.0132	0.00927	0.0142	0.00407	0.00209	0.00231	0.443	0.00147	0.0618	0.000725	
Mercury (Hg)-Total	<0.000050	<0.000050	<0.000050	0.00104	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000026
Molybdenum (Mo)-Total	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000063	<0.000050	<0.000050	<0.000050	0.073
Nickel (Ni)-Total	<0.0040	0.00461	<0.0040	0.00445	0.00190	<0.00050	<0.0030	<0.0020	<0.0020	0.00094	0.025
Potassium (K)-Total	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	2.03	<0.50	<0.50	<0.50	
Selenium (Se)-Total	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.001
Silicon (Si)-Total	0.201	0.731	0.160	0.169	<0.050	<0.050	0.193	<0.050	<0.050	<0.050	
Silver (Ag)-Total	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	0.0001
Sodium (Na)-Total	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	
Strontium (Sr)-Total	0.00131	0.00192	0.00154	0.00272	0.00045	0.00026	0.0123	0.00050	0.00241	<0.00010	
Thallium (Tl)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tin (Sn)-Total	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Titanium (Ti)-Total	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
Uranium (U)-Total	0.000144	0.000571	0.000261	0.000096	0.000061	<0.000010	0.000082	0.000015	0.000039	<0.000010	
Vanadium (V)-Total	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	
Zinc (Zn)-Total	<0.0080	0.0017	<0.0080	0.0015	0.0028	0.0016	0.0535	<0.0050	<0.0070	0.0028	0.030
	Exceeds CCME Water Quality Guidelines for the Protection of Aquatic Life										
	For longer term exposure (e.g., 30 d or more), average suspended sediment concentrations should not be increased by more than 5 mg·L-1 over background levels.										

APPENDIX IV

2000 LICHEN SAMPLING RESULTS

	Lichen 2000 Sept 08	Lichen 2000 Sept 08	Lichen 2000 Sept 08	Average
Total Metals				
Aluminum T-Al	**908**	**917**	**1080**	**968.3**
Antimony T-Sb	<0.03	<0.03	<0.03	<0.03
Arsenic T-As	**1.88**	**1.9**	**2.1**	**2.0**
Barium T-Ba	17.4	17.3	18.6	17.8
Beryllium T-Be	<0.1	<0.1	<0.1	<0.1
Bismuth T-Bi	<0.1	<0.1	<0.1	<0.1
Cadmium T-Cd	0.07	0.06	0.07	0.1
Calcium T-Ca	1340	1330	1480	1383.3
Chromium T-Cr	**33.2**	**32.1**	**37.8**	**34.4**
Cobalt T-Co	**1.4**	**1.3**	**1.5**	**1.4**
Copper T-Cu	**2.9**	**3.01**	**3.14**	**3.0**
Iron T-Fe	**1350**	**1380**	**1560**	**1430.0**
Lead T-Pb	**1.1**	**1.1**	**1.2**	**1.1**
Lithium T-Li	1.7	1.8	2.3	1.9
Magnesium T-Mg	754	761	816	777.0
Manganese T-Mn	138	133	137	136.0
Molybdenum T-Mo	**0.55**	**0.52**	**0.59**	**0.6**
Nickel T-Ni	**16.3**	**15.9**	**17.6**	**16.6**
Phosphorus T-P	867	890	843	866.7
Potassium T-K	2310	2270	2170	2250.0
Selenium T-Se	<1	<1	<1	<1
Sodium T-Na	350	341	349	346.7
Strontium T-Sr	4	3.92	4.66	4.2
Thallium T-Tl	0.03	0.03	0.03	0.0
Tin T-Sn	<0.2	<0.2	<0.2	<0.2
Titanium T-Ti	**53.6**	**54.2**	**63.4**	**57.1**
Uranium T-U	**0.13**	**0.18**	**0.17**	**0.2**
Vanadium T-V	**2.2**	**2.1**	**2.6**	**2.3**
Zinc T-Zn	**33.6**	**33.6**	**33.9**	**33.7**

FIGURES



LEGEND

● - PASSIVE DUSTFALL STATION LOCATION

0 2 000

Scale: 1: 40 000 (metres)

NOTES
DRAWING BASED ON NTS MAP 76E13,76E14, 76L03, AND 76L04

STATUS
ISSUED FOR USE

CLIENT
shear diamonds

AIR QUALITY MONITORING PLAN
JERICHO DIAMOND MINE, NUNAVUT

PASSIVE DUSTFALL STATION LOCATION PLAN

eba A TETRA TECH COMPANY

PROJECT NO.	DWN	CKD	REV
E14101118	DBD	WL	0

OFFICE: EBA-EDM
DATE: June 03, 2011

Figure 1

Q:\Edmonton\Drafting\CIVIL3D\E141\E14101118\acad\Air Quality Monitoring Plan\June 03_Drawings\E14101118_Fig 2_June 03_2011.dwg [FIGURE 2] June 03, 2011 - 10:48:10 am (BY: DAS, DEBASHIS)

LEGEND

● - APPROXIMATE LICHEN SAMPLE LOCATION

0 5 km

Approximate Scale

NOTES

DRAWING BASED ON NTS MAP 76E13,76E14, 76L03, AND 76L04

STATUS

ISSUED FOR USE

CLIENT

shear diamonds

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AIR QUALITY MONITORING PLAN
JERICHO DIAMOND MINE, NUNAVUT

LICHEN SAMPLE SITE

PROJECT NO.	DWN	CKD	REV
E14101118	DBD	WL	0

OFFICE	DATE
EBA-EDM	June 03, 2011

Figure 2