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TSXV: SRM

November 29, 2010

Phyllis Beaulieu, Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, Nunavut
X0B 1J0

Delivered by email

RE: Summary of discharge from Process Kimberlite Containment Area (PKCA)

Discharge of the Process Kimberlite Containment Area (PKCA) ceased on September 26th. Efforts to create 1 metre of freeboard within the PKCA were successful. The results from water sampling completed on September 21 and September 29th are attached. The discharge water meets quality criteria required by Part G, Section 6 and Part G, Section 7 as well as the acceptable BTEX/Oil and Grease criteria established by the Nunavut Water Board in 2009. The sample results from acute toxicity daphnia and trout bioassays are also included below. Efforts were made to collect a sample from the mixing zone in C3 lake and the water was processed as a daphnia bioassay. It is very possible that the sample water was contaminated during the sampling process but Shear Minerals will ensure that sampling procedures are standardized and protocols are in place to prevent future occurrences. The daphnia bioassay observed 85 percent mortality in undiluted sample water.

Total water used for domestic purposes from October 1 to October 10th inclusive was 2700 litres. Grey water discharged to the east cell of PKCA (12W 0477385, 7318758) was 3000 litres. The mine site was vacated on October 11th and no further water use is anticipated until the New Year.

Should you have any questions or concerns, please do not hesitate to contact me.

Sincerely,

Michelle Tanguay
Environment Manager
michelle@shearminerals.com
Tel: (250) 362-9530

cc: Melissa Joy
Water Resource Officer
Indian & Northern Affairs Canada
PO Box 100, Iqaluit, NU, X0A 0H0

ALS 9/24/2010 L931747		Sample ID ALS ID			JER WQ2 L931747-1	JER WQ3 L931747-2	JER WQ4 L931747-3	JER WQ2 L9373547-1	JER WQ4 L937347-2
		Date Sampled			9/14/2010 12AM	9/14/2010 12AM	9/14/2010 12AM	9/29/2010 10AM	9/29/2010 11:45 AM
Analyte	Units	LOR	Maximum Avg. 4- Sample	Maximum Grab	Water	Water	Water	Water	Water
Hardness (as CaCO3)	mg/L	1.3	-	-	56.9	33.1	10.5	60.2	5.5
Total Suspended Solids	mg/L	3	15	25	<3.0	12	<3.0	<3.0	<3.0
Total Dissolved Solids	mg/L	5	2000	4000	120	57	16	101	17
Turbidity	NTU	0.1	-	-	0.47	1.32	0.43	0.48	0.38
Acidity (as CaCO3)	mg/L	5	-	-	<5.0	<5.0	<5.0	<5.0	<5.0
Alkalinity, Total (as CaCO3)	mg/L	5	-	-	50.5	35	10.6	48.4	<5.0
Ammonia-N	mg/L	0.005	-	-	0.0097	<0.0050	<0.0050	0.0228	<0.0050
Bicarbonate (HCO3)	mg/L	5	-	-	61.6	42.7	13	59	5.6
Carbonate (CO3)	mg/L	5	-	-	<5.0	<5.0	<5.0	<5.0	<5.0
Chloride (Cl)	mg/L	0.5	500	1000	5.76	3.63	1.08	5.64	<0.50
Conductivity (EC)	uS/cm	0.2	-	-	182	97.4	30.2	189	14.4
Fluoride (F)	mg/L	0.05	-	-	0.103	0.06	<0.050	0.097	<0.050
Hardness (as CaCO3)	mg/L	n/a	-	-	56.8	33.1	10.5	60.2	5.5
Hydroxide (OH)	mg/L	5	-	-	<5.0	<5.0	<5.0	<5.0	<5.0
Ion Balance	%	n/a	-	-	91	Low EC	Low EC	99.3	Low EC
Nitrate and Nitrite as N	mg/L	0.071	-	-	1.98	0.404	<0.071	1.93	<0.071
Nitrate (as N)	mg/L	0.05	28	56	1.98	0.404	0.066	1.93	<0.050
Nitrite (as N)	mg/L	0.05	2.5	5	<0.050	<0.050	<0.050	<0.050	<0.050
pH	pH	0.1	-	-	8.09	7.76	7.42	8	7.04
Ortho Phosphate as P	mg/L	0.005	-	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Orthophosphate (PO4-P)	mg/L	0.001	-	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
TDS (Calculated)	mg/L	n/a	-	-	96.2	49.6	15.1	96.3	4.1
Sulfate (SO4)	mg/L	0.5	-	-	19.3	6.31	1.88	19.3	1.18
Total Inorganic Carbon	mg/L	1	-	-	9.6	7.5	2.4	-	-
Total Organic Carbon	mg/L	1	-	-	4.3	5.9	4.6	3.5	3.4
Fecal Coliforms	CFU/100mL	1	-	-	<1	-	-	<1	-
Daphnia Magna - Pass/Fail		n/a	-	-	-	-	-	-	-
Trout Bioassay - Pass/Fail		n/a	-	-	See attached	-	-	-	See attached
Aluminum (Al)-Total	mg/L	0.02	1.5	3	<0.020	0.062	0.04	<0.020	0.028
Antimony (Sb)-Total	mg/L	0.0004	-	-	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Arsenic (As)-Total	mg/L	0.0004	0.05	0.1	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Barium (Ba)-Total	mg/L	0.0002	-	-	0.0273	0.0143	0.00419	0.0253	0.00165
Beryllium (Be)-Total	mg/L	0.001	-	-	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
Bismuth (Bi)-Total	mg/L	0.0002	-	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Boron (B)-Total	mg/L	0.02	-	-	0.023	<0.020	<0.020	<0.020	<0.020
Cadmium (Cd)-Total	mg/L	0.0002	0.0012	0.0024	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Calcium (Ca)-Total	mg/L	0.5	-	-	13.7	7.93	2.58	11.7	1.23
Chromium (Cr)-Total	mg/L	0.0008	0.087	0.17	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080
Cobalt (Co)-Total	mg/L	0.0002	-	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Copper (Cu)-Total	mg/L	0.001	0.02	0.04	0.0016	0.002	<0.0010	0.0018	0.0011
Iron (Fe)-Total	mg/L	0.01	-	-	0.051	0.257	0.096	0.051	0.032
Lead (Pb)-Total	mg/L	0.001	0.01	0.02	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Magnesium (Mg)-Total	mg/L	0.1	-	-	8.1	4.44	1.46	7.1	0.68
Manganese (Mn)-Total	mg/L	0.002	-	-	0.0139	0.0104 *	0.0033	0.0136	0.0023
Mercury (Hg)-Total	mg/L	0.0001	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Molybdenum (Mo)-Total	mg/L	0.0001	0.73	1.5	0.00422	0.00092	0.00015	0.0043	<0.00010
Nickel (Ni)-Total	mg/L	0.0002	0.05	0.1	0.00194	0.00104	0.00052	0.00198	0.00035
Potassium (K)-Total	mg/L	0.1	-	-	6.12	2.97	1.12	4.9	0.3
Selenium (Se)-Total	mg/L	0.0004	-	-	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Silver (Ag)-Total	mg/L	0.0004	-	-	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Sodium (Na)-Total	mg/L	1	-	-	8.3	4.5	1.7	7.1	<1.0
Strontium (Sr)-Total	mg/L	0.0002	-	-	0.232	0.0968	0.0193	0.227	0.00659
Thallium (Tl)-Total	mg/L	0.0001	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	mg/L	0.0004	-	-	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Titanium (Ti)-Total	mg/L	0.005	-	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Uranium (U)-Total	mg/L	0.0001	0.5	1	0.00384	0.00066	0.00021	0.00322	0.00018
Vanadium (V)-Total	mg/L	0.0005	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc (Zn)-Total	mg/L	0.004	0.25	0.5	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Aluminum (Al)-Dissolved	mg/L	0.001	1	2	0.013	0.054	0.038	<0.010	0.016
Antimony (Sb)-Dissolved	mg/L	0.0004	-	-	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Arsenic (As)-Dissolved	mg/L	0.0004	-	-	0.00041	<0.00040	<0.00040	<0.00040	<0.00040
Barium (Ba)-Dissolved	mg/L	0.0001	-	-	0.0272	0.0142	0.00417	0.0249	0.00152
Beryllium (Be)-Dissolved	mg/L	0.0005	-	-	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Bismuth (Bi)-Dissolved	mg/L	0.00005	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron (B)-Dissolved	mg/L	0.002	-	-	0.0234	0.0096	0.0034	0.0242	<0.0020
Cadmium (Cd)-Dissolved	mg/L	0.0001	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Calcium (Ca)-Dissolved	mg/L	0.5	-	-	11.5 *	7.22 *	2.27 *	12.2 *	1.15 *
Chromium (Cr)-Dissolved	mg/L	0.0004	-	-	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Cobalt (Co)-Dissolved	mg/L	0.0001	-	-	0.0001	0.00015	<0.00010	<0.00010	<0.00010
Copper (Cu)-Dissolved	mg/L	0.0006	-	-	0.00165	0.00181	0.00116	0.00161	0.00108
Iron (Fe)-Dissolved	mg/L	0.01	-	-	0.037	0.282	0.103	0.012	<0.010
Lead (Pb)-Dissolved	mg/L	0.0001	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Magnesium (Mg)-Dissolved	mg/L	0.1	-	-	6.81 *	3.67 *	1.17 *	7.23 *	0.63 *
Manganese (Mn)-Dissolved	mg/L	0.002	-	-	0.0133	0.0165	0.0033	0.008	<0.0020
Mercury (Hg)-Dissolved	mg/L	0.0001	-	-	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Molybdenum (Mo)-Dissolved	mg/L	0.0001	-	-	0.00425	0.00085	0.00016	0.00405	<0.00010
Nickel (Ni)-Dissolved	mg/L	0.0001	-	-	0.00177	0.001	0.00048	0.00181	0.00034
Potassium (K)-Dissolved	mg/L	0.1	-	-	5.20 *	2.20 *	0.63 *	5.34 *	0.20 *
Selenium (Se)-Dissolved	mg/L	0.0004	-	-	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040
Silver (Ag)-Dissolved	mg/L	0.0002	-	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Sodium (Na)-Dissolved	mg/L	0.5	-	-	7.44 *	3.77 *	1.42 *	7.92 *	0.91 *
Strontium (Sr)-Dissolved	mg/L	0.0001	-	-	0.228	0.0947	0.0174	0.23	0.00629
Thallium (Tl)-Dissolved	mg/L	0.00005	-	-	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Tin (Sn)-Dissolved	mg/L	0.0002	-	-	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Titanium (Ti)-Dissolved	mg/L	0.0003	-	-	<0.00030	0.00129	0.00046	<0.00030	<0.00030
Uranium (U)-Dissolved	mg/L	0.0001	-	-	0.00325	0.00055	0.00018	0.0034	0.00017
Vanadium (V)-Dissolved	mg/L	0.0001	-	-	0.00016	0.00019	0.00012	0.0001	<0.00010
Zinc (Zn)-Dissolved	mg/L	0.001	-	-	0.0022	0.0023	0.0022	<0.0010	0.001
Biochemical Oxygen Demand	mg/L	2	15	25	<2.0	-	-	<2.0	-
Oil and Grease	mg/L	1	-	5	<1.0	-	-	1.2	-
Benzene	mg/L	0.0005	0.37	0.37	<0.00050	-	-	<0.00050	-
Ethylbenzene	mg/L	0.0005	0.09	0.09	<0.00050	-	-	<0.00050	-
Toluene	mg/L	0.0005	0.002	0.002	<0.00050	-	-	<0.00050	-
o-Xylene	mg/L	0.0005	-	-	<0.00050	-	-	<0.00050	-
m+p-Xylene	mg/L	0.0005	-	-	<0.00050	-	-	<0.00050	-
Xylenes	mg/L	0.00071	-	-	<0.00071	-	-	<0.00071	-
F1(C6-C10)	mg/L	0.1	-	-	<0.10	-	-	<0.10	-
F1-BTEX	mg/L	0.1	-	-	<0.10	-	-	<0.10	-
F2 (>C10-C16)	mg/L	0.25	-	-	<0.25	-	-	<0.25	-
F3 (C16-C34)	mg/L	0.25	-	-	<0.25	-	-	<0.25	-
F4 (C34-C50)	mg/L	0.25	-	-	<0.25	-	-	<0.25	-
* = Result Qualified	Mouse-over the result to see the qualification.								
Applied Guideline:	Client Guideline - Discharge Criteria JER-WQ2								
Color Key:	Within Guideline								

ACUTE TOXICITY BIOASSAY UPDATE

Client: Shear Minerals

Contact: Michelle Tanguay

Sample ID: JER.WQ4

Lab #: L937347-2

Date Sampled: Sept. 29/10 11:45

Email: michelletanguay@telus.net; jerichoenvironment@jericho.com

Fax #:

Phone #: (250) 362-9530

Trout	☒	24 Hour	☒	LC50	☐	Pass/Fail	☒
		96 Hour	☐				
No Mortality/Stress observed:			☒				
Mortality/Stress observed:			☐				
Details:							

Daphnia	☐	24 Hour	☐	LC50	☐	Pass/Fail	☐
		48 Hour	☐				
No Mortality/Stress observed:			☐				
Mortality/Stress observed:			☐				
Details:							

Name: David Pic

Date: Oct. 05/10

ACUTE TOXICITY BIOASSAY UPDATE

Client: Shear Minerals

Contact: Michelle Tanguay

Sample ID: JER WQ4

Lab #: L937347-3

Date Sampled: Sept. 29/10 11:45

Email: michelletanguay@telus.net, jerichoenvironment@jericho.com

Fax #:

Phone #: (250) 362-9530

Trout	☐	24 Hour	☐	LC50	☐	Pass/Fail	☐
		96 Hour	☐				
No Mortality/Stress observed:			☐				
Mortality/Stress observed:			☐				

Details:

Daphnia	☒	24 Hour	☐	LC50	☒	Pass/Fail	☐
		48 Hour	☒				
No Mortality/Stress observed:			☐				
Mortality/Stress observed:			☒				

Details: 85% mortality observed in 100% sample concentration.

Name: Liane Steeves

Date: Oct. 06/10