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August 29, 2014

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Manager of Licensing
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P.O. Box 119
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Re: July 2014 – Monthly Monitoring Report for Water Licence 2BB-BOS1217

This report is comprised of monitoring requirements as set out in Part J of water licence 2BB-BOS1217. Boston Camp was shut down in November 2011 and has not been reopened since that time. The project is currently operating in a care and maintenance status with seasonal water management and licence compliance being the focus of activities under 2BB-BOS1217.

Part J Item 2: Water Use Volumes

No water was used as the camp was not operational.

Part J Item 3: Minewater Discharge Volumes

Minewater was not pumped from underground during this period.

Part J Items 4 and 5: Sewage Disposal Facility Daily Effluent Discharge and Sewage Sludge

Effluent was not discharged at BOS-3 and no sludge was removed from the sewage disposal facility.

Part J Items 5: Daily Quantities of Effluent Discharged – Containment Pond, Bulk Fuel Storage and Landfarm

Effluent was not discharged from BOS-2C, BOS-5 or BOS-6 this month.

Part J Items 6 and 7: Water Source and Waste Disposal Coordinates

GPS coordinates of locations of water sources and waste associated with camp and drilling activities are kept on file. At this time, there are no water sources being used and no wastes being produced.

Part J Items 8 and 11 (also Part D Items 9 and 19): Sampling at Containment Pond, Minewater, Bulk Fuel Storage, and Landfarm

Samples were collected from BOS-2C (Containment Pond), BOS-2P (Portal), and BOS-5 (Bulk Fuel Storage) during the month. No samples were collected at BOS-6 (Landfarm); there is no water at this facility to sample. Samples collected from BOS-2C include parameter requirements for monitoring station BOS-5 from Part D, Item 19 of the licence, as the containment pond facility has in the past been utilized as a temporary holding location for effluent from the bulk fuel storage facility. Results for all July sampling are presented in Tables 1 to 3 below.

Water in the fuel farm BOS-5 and water in BOS-2C did not meet the more stringent Part D, Item 19 discharge criteria for lead (although they did meet the criteria for discharge to tundra from BOS-2 under Part D, Item 9 for lead). All water in BOS-5 was pumped to Containment Pond BOS-2C for consolidation purposes. Water was not discharged to the environment from these facilities. Water in BOS-2P (Portal) was compliant with Part D, Item 9 criteria, and 544.7 m³ was discharged directly to tundra on July 7, 2014, based on prior authorization from the Inspector.

Table 1. BOS-2C (Containment Pond) Water Quality Results, July 2014

Sample ID			BOS2C-31JUL14	Part D Item 9	
ALS ID			L1496362-3	Maximum Average Concentration (mg/L)	Maximum Concentration in any Grab Sample (mg/L)
Date Sampled			7/31/2014 5:20:00 PM		
Parameter	Units	Detection Limit	Results		
Conductivity	uS/cm	2	1160		
Hardness (as CaCO ₃)	mg/L	0.5	660		
pH	pH	0.1	7.85	6.0 - 9.5	6.0 - 9.5
Total Suspended Solids	mg/L	3	3.3	25	50
Alkalinity, Total (as CaCO ₃)	mg/L	1	74.4		
Ammonia, Total (as N)	mg/L	0.005	-		
Nitrate (as N)	mg/L	0.25	566		
Nitrite (as N)	mg/L	0.05	<0.050 *		
Sulfate (SO ₄)	mg/L	5	619		
Aluminum (Al)-Total	mg/L	0.005	0.0297		
Antimony (Sb)-Total	mg/L	0.0005	0.00497		
Arsenic (As)-Total	mg/L	0.0005	0.36	0.5	1.00
Barium (Ba)-Total	mg/L	0.02	0.021		
Beryllium (Be)-Total	mg/L	0.001	<0.0010		
Boron (B)-Total	mg/L	0.1	<0.10		
Cadmium (Cd)-Total	mg/L	0.00001	0.000042		
Calcium (Ca)-Total	mg/L	0.1	158		
Chromium (Cr)-Total	mg/L	0.001	<0.0010		
Cobalt (Co)-Total	mg/L	0.0003	0.0182		
Copper (Cu)-Total	mg/L	0.001	0.0012	0.30	0.60
Iron (Fe)-Total	mg/L	0.03	0.662		
Lead (Pb)-Total	mg/L	0.0005	0.0166	0.20	0.4/0.001**
Lithium (Li)-Total	mg/L	0.005	0.012		
Magnesium (Mg)-Total	mg/L	0.1	64.5		
Manganese (Mn)-Total	mg/L	0.0003	0.06		
Mercury (Hg)-Total	mg/L	0.00001	<0.000010		
Molybdenum (Mo)-Total	mg/L	0.001	0.0028		
Nickel (Ni)-Total	mg/L	0.001	0.0628	0.50	1.00
Potassium (K)-Total	mg/L	2	12.5		
Selenium (Se)-Total	mg/L	0.0001	0.00018		
Silver (Ag)-Total	mg/L	0.00002	<0.000020		
Sodium (Na)-Total	mg/L	2	13.1		
Thallium (Tl)-Total	mg/L	0.0002	<0.00020		
Tin (Sn)-Total	mg/L	0.0005	<0.00050		
Titanium (Ti)-Total	mg/L	0.01	0.016		
Uranium (U)-Total	mg/L	0.0002	0.00209		
Vanadium (V)-Total	mg/L	0.001	0.0013		
Zinc (Zn)-Total	mg/L	0.005	0.0123	0.50	1.00
Oil and Grease	mg/L	5	<5.0		
Oil And Grease (Visible Sheen)		n/a	NO	No visible sheen	No visible sheen
Phenols (4AAP)	mg/L	0.001	0.0014		
Benzene	mg/L	0.0005	<0.00050		0.37**
Ethylbenzene	mg/L	0.0005	<0.00050		0.09**
Methyl t-butyl ether (MTBE)	mg/L	0.0005	<0.00050		
Toluene	mg/L	0.0005	<0.00050		0.002**
ortho-Xylene	mg/L	0.0005	<0.00050		

Sample ID			BOS2C-31JUL14	Part D Item 9	
ALS ID			L1496362-3	Maximum Average Concentration (mg/L)	Maximum Concentration in any Grab Sample (mg/L)
Date Sampled			7/31/2014 5:20:00 PM		
Parameter	Units	Detection Limit	Results		
meta- & para-Xylene	mg/L	0.0005	<0.00050		
Xylenes	mg/L	0.00075	<0.00075		
4-Bromofluorobenzene (SS)	%	Surrogate	108.1		
1,4-Difluorobenzene (SS)	%	Surrogate	101		
EPH10-19 (sg)	mg/L	0.25	<0.25		
EPH19-32 (sg)	mg/L	0.25	<0.25		
Acenaphthene	mg/L	0.00001	<0.000010		
Acenaphthylene	mg/L	0.00001	<0.000010		
Acridine	mg/L	0.00001	<0.000010		
Anthracene	mg/L	0.00001	<0.000010		
Benz(a)anthracene	mg/L	0.00001	<0.000010		
Benzo(a)pyrene	mg/L	0.00001	<0.000010		
Benzo(b)fluoranthene	mg/L	0.00001	<0.000010		
Benzo(g,h,i)perylene	mg/L	0.00001	<0.000010		
Benzo(k)fluoranthene	mg/L	0.00001	<0.000010		
Chrysene	mg/L	0.00001	<0.000010		
Dibenz(a,h)anthracene	mg/L	0.00001	<0.000010		
Fluoranthene	mg/L	0.00001	<0.000010		
Fluorene	mg/L	0.00001	<0.000010		
Indeno(1,2,3-c,d)pyrene	mg/L	0.00001	<0.000010		
Naphthalene	mg/L	0.00005	<0.000050		
Phenanthrene	mg/L	0.00002	<0.000020		
Pyrene	mg/L	0.00001	<0.000010		
Quinoline	mg/L	0.00001	<0.000010		
Acenaphthene d10	%	Surrogate	76.2		
Acridine d9	%	Surrogate	71		
Chrysene d12	%	Surrogate	69.2		
Naphthalene d8	%	Surrogate	68.5		
Phenanthrene d10	%	Surrogate	76		

Bold/shading indicates exceedance of applicable criteria (see footnotes)

* Detection limit adjusted due to sample matrix effects.

** Part D, Item 19 criteria for Bulk Fuel Storage Facilities

Table 2. BOS-5 (Bulk Fuel Storage Facility) Water Quality Results, July 2014

Sample ID			BOS5-07JUL14	BOS5-31JUL14	Part D Item 19 Maximum Concentration in any Grab Sample (mg/L)
ALS ID			L1483339-1	L1496362-1	
Date Sampled			7/7/2014 3:30:00 PM	7/31/2014 2:15:00 PM	
Parameter	Units	Detection Limit		Results	
Conductivity	uS/cm	2	943	1070	
Hardness (as CaCO ₃)	mg/L	0.5	495	601	
pH	pH	0.1	7.88	7.83	
Alkalinity, Total (as CaCO ₃)	mg/L	1	55.8	74	
Nitrate (as N)	mg/L	0.25	<0.050 *	551	
Nitrite (as N)	mg/L	0.05	<0.010 *	<0.050 *	
Sulfate (SO ₄)	mg/L	5	448	530	
Aluminum (Al)-Total	mg/L	0.005	0.0197	0.0564	
Antimony (Sb)-Total	mg/L	0.0005	0.00455	0.00485	
Arsenic (As)-Total	mg/L	0.0005	0.135	0.751	
Barium (Ba)-Total	mg/L	0.02	0.03	<0.020	
Beryllium (Be)-Total	mg/L	0.001	<0.0010	<0.0010	
Boron (B)-Total	mg/L	0.1	<0.10	0.38	
Cadmium (Cd)-Total	mg/L	0.00001	0.000264	0.000109	
Calcium (Ca)-Total	mg/L	0.1	127	145	
Chromium (Cr)-Total	mg/L	0.001	<0.0010	<0.0010	
Cobalt (Co)-Total	mg/L	0.0003	0.00598	0.0556	

Sample ID			BOS5-07JUL14	BOS5-31JUL14	Part D Item 19
ALS ID			L1483339-1	L1496362-1	Maximum
Date Sampled			7/7/2014 3:30:00 PM	7/31/2014 2:15:00 PM	Concentration
Parameter	Units	Detection Limit		Results	in any Grab Sample (mg/L)
Copper (Cu)-Total	mg/L	0.001	0.0013	0.0076	
Iron (Fe)-Total	mg/L	0.03	0.617	0.873	
Lead (Pb)-Total	mg/L	0.0005	0.0149	0.0196	0.001
Lithium (Li)-Total	mg/L	0.005	0.0118	0.0111	
Magnesium (Mg)-Total	mg/L	0.1	43	58.1	
Manganese (Mn)-Total	mg/L	0.0003	0.0226	0.126	
Mercury (Hg)-Total	mg/L	0.00001	<0.000010	<0.000010	
Molybdenum (Mo)-Total	mg/L	0.001	<0.0010	0.0059	
Nickel (Ni)-Total	mg/L	0.001	0.0257	0.2	
Potassium (K)-Total	mg/L	2	8.7	12.1	
Selenium (Se)-Total	mg/L	0.0001	0.00033	0.00041	
Silver (Ag)-Total	mg/L	0.00002	<0.000020	<0.000020	
Sodium (Na)-Total	mg/L	2	9.4	12.3	
Thallium (Tl)-Total	mg/L	0.0002	<0.00020	<0.00020	
Tin (Sn)-Total	mg/L	0.0005	<0.00050	<0.00050	
Titanium (Ti)-Total	mg/L	0.01	<0.010	0.015	
Uranium (U)-Total	mg/L	0.0002	0.00121	<0.00020	
Vanadium (V)-Total	mg/L	0.001	0.0012	<0.0010	
Zinc (Zn)-Total	mg/L	0.005	0.0268	0.0066	
Oil and Grease	mg/L	5	<5.0	<5.0	15
Oil And Grease (Visible Sheen)		n/a	No	NO	No visible sheen
Phenols (4AAP)	mg/L	0.001	0.0013	0.025	
Benzene	mg/L	0.0005	<0.00050	<0.00050	0.370
Ethylbenzene	mg/L	0.0005	<0.00050	<0.00050	0.090
Methyl t-butyl ether (MTBE)	mg/L	0.0005	<0.00050	<0.00050	
Toluene	mg/L	0.0005	<0.00050	<0.00050	0.002
ortho-Xylene	mg/L	0.0005	<0.00050	0.00104	
meta- & para-Xylene	mg/L	0.0005	<0.00050	0.00084	
Xylenes	mg/L	0.00075	<0.00075	0.00188	
4-Bromofluorobenzene (SS)	%	Surrogate	96.8	110.7	
1,4-Difluorobenzene (SS)	%	Surrogate	100.3	100.8	
EPH10-19 (sg)	mg/L	0.25	<0.25	<0.25	
EPH19-32 (sg)	mg/L	0.25	<0.25	<0.25	
Acenaphthene	mg/L	0.00001	<0.000010	<0.000020 *	
Acenaphthylene	mg/L	0.00001	<0.000010	<0.000010	
Acridine	mg/L	0.00001	<0.000010	<0.000020 *	
Anthracene	mg/L	0.00001	<0.000010	<0.000010	
Benz(a)anthracene	mg/L	0.00001	<0.000010	<0.000010	
Benzo(a)pyrene	mg/L	0.00001	<0.000010	<0.000010	
Benzo(b)fluoranthene	mg/L	0.00001	<0.000010	<0.000010	
Benzo(g,h,i)perylene	mg/L	0.00001	<0.000010	<0.000010	
Benzo(k)fluoranthene	mg/L	0.00001	<0.000010	<0.000010	
Chrysene	mg/L	0.00001	<0.000010	<0.000010	
Dibenz(a,h)anthracene	mg/L	0.00001	<0.000010	<0.000010	
Fluoranthene	mg/L	0.00001	<0.000010	<0.000010	
Fluorene	mg/L	0.00001	<0.000010	<0.000020 *	
Indeno(1,2,3-c,d)pyrene	mg/L	0.00001	<0.000010	<0.000010	
Naphthalene	mg/L	0.00005	<0.000050	0.000254	
Phenanthrene	mg/L	0.00002	<0.000020	<0.000020	
Pyrene	mg/L	0.00001	<0.000010	<0.000010	
Quinoline	mg/L	0.00001	<0.000010	<0.000020 *	
Acenaphthene d10	%	Surrogate	95.6	124.1	
Acridine d9	%	Surrogate	106.3	72.2	
Chrysene d12	%	Surrogate	113.1	76.8	
Naphthalene d8	%	Surrogate	85.5	69.6	
Phenanthrene d10	%	Surrogate	99.3	62.3	

Bold/shading indicates exceedance of Part D Item 19 Maximum Concentration in a Grab Sample.

* Detection Limit raised due to sample matrix effects

Table 3. BOS-2P (Portal) Water Quality Results, July 2014

Sample ID			BOS2P-31JUL14	Part D Item 9	
ALS ID			L1496362-2	Maximum Average Concentration (mg/L)	Maximum Concentration in any Grab Sample (mg/L)
Date Sampled			7/31/2014 4:30:00 PM		
Parameter	Units	Detection Limit	Results		
pH	pH	0.1	7.54	6.0 - 9.5	6.0 - 9.5
Total Suspended Solids	mg/L	3	4.2	25	50
Arsenic (As)-Total	mg/L	0.0005	0.0598	0.5	1.0
Copper (Cu)-Total	mg/L	0.001	0.003	0.30	0.60
Lead (Pb)-Total	mg/L	0.0005	<0.00050	0.20	0.4
Nickel (Ni)-Total	mg/L	0.001	0.077	0.50	1.00
Zinc (Zn)-Total	mg/L	0.005	0.0088	0.50	1.00
Oil And Grease (Visible Sheen)		n/a	NO	No visible sheen	No visible sheen

Part J Item 9 and 10: Sewage Disposal Facility Effluent

No samples were taken from monitoring station BOS-3 or BOS-4 as the sewage disposal facility was not operational.

Part J Item 12 and 13: Seepage Monitoring

Seepage at Boston (BOS-8) is monitored seasonally when water is available to sample. Opportunistic sampling was conducted twice at BOS-8 seepage locations this month (Table 4).

Table 4. BOS-8 (Waste Rock/Ore Storage Pad) Water Quality Results, July 2014

Sample ID			BOS8-31JUL14	BOS8A-31JUL14
ALS ID			L1496362-4	L1496362-5
Date Sampled			7/31/2014 4:45:00 PM	7/31/2014 4:55:00 PM
Parameter	Units	Detection Limit	Results	Results
Conductivity	uS/cm	2	1610	1320
Hardness (as CaCO ₃)	mg/L	0.5	885	669
pH	pH	0.1	7.72	7.18
Total Suspended Solids	mg/L	3	4.3	<3.0
Alkalinity, Total (as CaCO ₃)	mg/L	1	-	-
Ammonia, Total (as N)	mg/L	0.005	0.195	0.0305
Nitrate (as N)	mg/L	0.25	-	-
Nitrite (as N)	mg/L	0.05	-	-
Sulfate (SO ₄)	mg/L	5	733	535
Aluminum (Al)-Total	mg/L	0.005	0.0579	0.0663
Antimony (Sb)-Total	mg/L	0.0005	0.0121	0.0032
Arsenic (As)-Total	mg/L	0.0005	0.0615	0.0251
Barium (Ba)-Total	mg/L	0.02	0.032	0.021
Beryllium (Be)-Total	mg/L	0.001	<0.0010	<0.0010
Boron (B)-Total	mg/L	0.1	0.2	0.16
Cadmium (Cd)-Total	mg/L	0.00001	0.000039	0.000073
Calcium (Ca)-Total	mg/L	0.1	227	142
Chromium (Cr)-Total	mg/L	0.001	0.0011	<0.0010
Cobalt (Co)-Total	mg/L	0.0003	0.0588	0.0171
Copper (Cu)-Total	mg/L	0.001	0.0082	0.006
Iron (Fe)-Total	mg/L	0.03	0.117	0.056
Lead (Pb)-Total	mg/L	0.0005	<0.00050	<0.00050
Lithium (Li)-Total	mg/L	0.005	0.0134	<0.0050
Magnesium (Mg)-Total	mg/L	0.1	77	75.9
Manganese (Mn)-Total	mg/L	0.0003	0.0547	0.701
Mercury (Hg)-Total	mg/L	0.00001	-	-
Molybdenum (Mo)-Total	mg/L	0.001	0.0019	<0.0010
Nickel (Ni)-Total	mg/L	0.001	0.272	0.0793
Potassium (K)-Total	mg/L	2	5.3	13.2
Selenium (Se)-Total	mg/L	0.0001	0.001	0.00166
Silver (Ag)-Total	mg/L	0.00002	<0.000020	0.000026
Sodium (Na)-Total	mg/L	2	44.4	55.9

Sample ID			BOS8-31JUL14	BOS8A-31JUL14
ALS ID			L1496362-4	L1496362-5
Date Sampled			7/31/2014 4:45:00 PM	7/31/2014 4:55:00 PM
Parameter	Units	Detection Limit	Results	Results
Thallium (Tl)-Total	mg/L	0.0002	<0.00020	<0.00020
Tin (Sn)-Total	mg/L	0.0005	<0.00050	<0.00050
Titanium (Ti)-Total	mg/L	0.01	0.019	0.016
Uranium (U)-Total	mg/L	0.0002	0.00042	0.00067
Vanadium (V)-Total	mg/L	0.001	<0.0010	<0.0010
Zinc (Zn)-Total	mg/L	0.005	0.0053	0.0053

Part J Item 14 (also Part F Item 7): Under-Ice Water Quality Sampling

Not applicable as on-ice drilling is not occurring pertaining to licence 2BB-BOS1217.

Incident Reporting

No incidents pertaining to this licence occurred during this month.

Should there be any questions regarding this monthly report, please contact John Roberts at John.Roberts@tmacresources.com.

Yours sincerely,



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cc. Eva Paul, Water Resources Officer, AANDC