

April 22, 2013

EDI Job Number: 13-Y-0167

Assessment and Abandoned Mines Branch (AAM) K-419,
Department of Energy, Mines and Resources, Yukon Government
Room 2C Royal Centre, 4114 – 4th Ave
PO 2703, Whitehorse, YT, Y1A 2C6

Attention: Adrienne Turcotte, Mount Nansen Project Officer

Re: Mount Nansen Surface Water and Snow Trip Report

Trip Dates:	April 15-17, 2013
EDI Field Staff:	Joel MacFabe, Meghan Marjanovic, Caleb Light, and Danny Skookum

1. Hydrology

Sampling dates:	April 15-16, 2013
Weather at time of sampling:	Ranging from clear to overcast; calm; 0°C to -10°C.

Site	Sampled? (Yes/No)	Notes / Explanations
ATM-DC2/4	Yes	Barometric loggers downloaded (ATM-DC-2 and ATM-DC-4)
H-PC-U	No	Channel frozen to bed.
H-PC-DSP	No	Channel frozen to bed, stilling well buried with snow and sediment from snow clearing of road above site (see 'Additional Information' Section)
H-DC-DX	No	Channel frozen to bed
H-DC-DX+105	Yes	Saturated snow within channel created unsuitable conditions for discharge measurement
H-DC-D1	No	Channel frozen to bed
H-DC-D1b	No	Channel frozen to bed



Site	Sampled? (Yes/No)	Notes / Explanations
H-DC-U1	No	Channel frozen to bed
H-DC-U2	No	Channel frozen to bed.
H-DC-B	No	Layered ice created unsuitable conditions for discharge measurement
H-DC-M	Yes	Salt tracer measurement conducted and downloaded logger
H-DC-R	No	Channel frozen to bed
H-VC-REF	Yes	Conducted Salt tracer measurement conducted.
H-VC-U	Yes	Conducted salt tracer and ADV measurements, surveyed station and downloaded logger
H-VC-DBC	Yes	Conducted salt tracer and ADV measurements, surveyed station and downloaded logger
H-BC	No	Channel frozen to bed
H-VC-UMN	Yes	Conducted salt tracer and ADV measurements.
H-MN	No	Channel frozen to bed
H-VC-R	Yes	Conducted salt tracer and ADV measurements, surveyed station and downloaded logger
H-SEEP	Yes	Measured discharge at pipe and recorded flow rate reading at new flow meter, no staff gauge reading during ice conditions, note outflow pipe was not affixed to culvert at time of visit (see 'Additional Information' Section)
H-TP	No	No staff gauge reading during ice conditions

2. Water Quality

Sampling dates:	April 16-17, 2013.
Weather at time of sampling:	Ranging from clear to overcast with periods of light snow; calm; -5°C to -8°C.

Site	Sampled? (Yes/No)	Notes / Explanations
WQ-PIT1	Yes	Sampled below ice surface
WQ-PIT2	Yes	Sampled at 3.5 m below ice surface
WQ-PIT3	Yes	Sampled at 7 m below ice surface
WQ-SEEP	Yes	Site conditions normal for time of year, note outflow pipe was not affixed to culvert at time of visit (see 'Additional Information' Section)
WQ-TP	Yes	Site conditions normal for time of year



Site	Sampled? (Yes/No)	Notes / Explanations
WQ-D1	No	Frozen to bed
WQ-D1B	No	Frozen to bed
WQ-DC-DX	No	Frozen to bed
WQ-DC-DX+105	Yes	Site conditions normal for time of year
WQ-DC-U	Yes	Site conditions normal for time of year
WQ-DC-U1	No	Frozen to bed
WQ-DC-U2	No	Frozen to bed
WQ-DC-R	No	Frozen to bed
WQ-PW	Yes	Site conditions normal for time of year
WQ-VC-U	Yes	Site conditions normal for time of year
WQ-VC-REF	Yes	Site conditions normal for time of year
WQ-VC-R	Yes	Samples were collected 100 m downstream of the road crossing, at the winter sampling location.
WQ-VC-DBC	Yes	Site conditions normal for time of year
WQ-VC-UMN	Yes	Site conditions normal for time of year
WQ-MN	No	Frozen to bed
WQ-MS-03	No	Frozen to bed
WQ-MS-08	No	Frozen to bed
WQ-ADIT-SEEP	No	Frozen to bed
WQ-BC	No	Frozen to bed
WQ-PC-U	No	Frozen to bed
WQ-PC-D	No	Frozen to bed
Quality Assurance/Quality Control Samples		
Field Replicate A	Yes	Collected from WQ-VC-DBC
Field Replicate B	No	Not required due to number of sites frozen to bed (program aims for approximately 1 replicate per 10 samples)
Field Blank	Yes	Samples filled with de-ionized water on site
Trip Blank	Yes	Samples provided by lab and were transported to and from site

3. Snow Survey

Sampling dates:	April 16, 2013
Weather at time of sampling:	Ranging from clear to overcast with snow later half of the day; calm; 0°C to -5°C.



Site	Sampled? (Yes/No)	Notes / Explanations
SC-MET	Yes	Four snow courses sampled
SC-WR	Yes	Three snow courses were sampled
SC-DC	Yes	Ten snow courses were sampled
SC-NF	Yes	Two snow courses were sampled
SC-SF	Yes	Two snow courses were sampled
YG-Airstrip	Yes	One snow course sampled

4. Additional Trip Information: Scope, Budget and Schedule

Any changes to project scope (i.e. additional sites sampled):	NA
Any events resulting in changes to budget:	NA
Any alterations to sample scheduling:	NA
Additional Comments:	NA

Additional Information: On Site Observations

Wildlife sightings:	NA
Site concerns including safety concerns:	NA
Any additional notes/concerns:	 <p>H-PC-DSP stilling well site is buried by snow and sediment from snow clearing on road above.</p>



H/WQ-SEEP pipe was not secured to the culvert at the time of site visit. Sampling crew temporarily affixed it but more robust connections are recommended.

Regards,

EDI Environmental Dynamics Inc.



Seepage Discharge Measurements: *Preliminary Discharge Data - Subject to Review

Hydrometric Station	Time	H-SEEP (Pipe Outlet)			H-SEEP (Old Flow Meter)		H-SEEP (New Flow Meter)		H-SEEP Staff Gauge	TAILINGS POND Staff Gauge	Notes
		m ³ /s (+/-10%)	L/s	L/Min	m ³ /s	L/Min	m ³ /s	L/Min	m	m	
17-Apr-2012	17:38	0.007	7.2	430	-	-	-	-	-	-	
01-May-2012	14:42	0.003	3.1	186	-	-	-	-	-	-	
15-May-2012	15:36	0.003	2.6	156	-	-	-	-	-	-	
30-May-2012	7:58	0.003	2.7	162	0.002	112.3	0.003	171.0	-	-	New flow meter similar to
11-Jun-2012	15:18	0.003	2.6	156	0.002	106.4	0.003	156.4	-	-	New flow meter similar to
25-Jun-2012	14:45	0.002	1.9	116	0.002	125.0	0.003	188.9	-	-	Old flow meter similar to
09-Jul-2012	12:26	0.003	2.9	174	0.003	171.2	0.002	120.0	-	-	Old flow meter similar to
23-Jul-2012	13:47	0.004	3.6	216	0.002	148.6	0.004	210.9	0.328	-	New flow meter similar to
06-Aug-2012	13:48	0.004	3.5	210	0.002	142.3	0.003	205.0	0.338	-	New flow meter similar to
21-Aug-2012	13:38	0.004	3.6	217	0.003	150.5	0.004	218.9	0.254	0.770	New flow meter similar to
05-Sep-2012	13:45	0.003	3.3	198	-	-	0.004	227.5	0.258	0.765	Note: Tailings Pond staff gauge was recorded on Sept 6 at 8:47.
17-Sep-2012	14:42	0.003	3.5	210	0.003	154.5	0.004	224.3	0.265	0.766	Old flow meter similar to
02-Oct-2012	14:25	0.004	3.6	216	0.003	160.0	0.004	227.9	ice	ice	New flow meter similar to volumetric.
16-Oct-2012	14:30	0.003	3.4	204	-	-	0.003	202.3	ice	ice	Flow meters have been repositioned with pipe, old flow
13-Nov-2012	17:00	0.003	3.2	192	-	-	0.004	213.3	ice	ice	Old flow meter removed.
12-Dec-2012	12:45	0.004	3.5	210	-	-	0.003	197.4	ice	ice	
14-Jan-2013	17:30	0.003	3.1	186	-	-	0.003	201.4	ice	ice	
12-Feb-2013	14:45	0.003	2.9	172	-	-	0.003	199.7	ice	ice	
13-Mar-2013	9:25	0.003	3.2	192	-	-	0.003	195.4	ice	ice	
17-Apr-2013	12:04	0.003	2.7	162	-	-	0.002	149.8	ice	ice	
Discharge Measurement Colour Codes											
Volumetric											
Direct Flow Meter Reading											
No fill = indicates that this value was converted from original											