

July 22, 2015

EDI Job Number: 15-Y-0146

Assessment and Abandoned Mines Branch (AAM) K-149  
Department of Energy, Mines and Resources, Yukon Government  
Room 2C Royal Center, 4114-4<sup>th</sup> Avenue  
PO 2703, Whitehorse, YT, Y1A 2C6

Attention: Erik Pit, Type II Project Manager

**Re: Mount Nansen Water Resources Investigations – Field Memo: July 13 - 15, 2015**

The following memo is a brief field update from EDI’s July 2015 trip to Mount Nansen; sampling conducted as part of the 2015/16 Water Resources Investigations. This memo provides a record of site conditions and tasks that were completed at each hydrometric station and water quality site (see attached tables). A detailed monthly report on the data collected during the trip will be provided once the water quality lab results are received.

<b>Trip Dates:</b>	July 13 - 15, 2015
<b>EDI Field Staff:</b>	Lyndsay Doetzel, Dawn Hansen and Danny Skookum
<b>Weather conditions during monitoring:</b>	Conditions for the three days included consistently partly cloudy skies, warm temperatures (15 – 20°C) and light wind.
<b>Any changes to project scope, schedule or budget:</b>	None. All sampling and monitoring was conducted within the planned scope.
<b>Additional Comments:</b>	Many creeks and seeps had low flows and several sites were dry (Back Creek, Pony Creek). Active placer mining construction works were observed along Pony Creek. This work is upstream of the H-PC-DSP/WQ-PC-U sites and includes the construction of multiple earth dams along the creek.
<b>Wildlife Sightings:</b>	Arctic grayling observed at WQ-VC-UMN and at WQ-DBC.
<b>Site concerns (safety):</b>	Within the Brown McDade pit, the EDI crew reviewed potential hazards with on-site Denison staff (Glen Craig); the sampling location was adjusted in attempt to make sampling of the pit lake as safe as possible. EDI also drafted a safety memo (dated July 16, 2015) outlining its safety concerns associated with this site, and proposed corrective actions.



Table 1. Summary of hydrometric program tasks completed during the July 13 - 15, 2015 sampling event.

**HYDROLOGY**

Station	Hydrometric Measurement Type	Notes & Comments
ATM-VC5	None	Barometric logger was downloaded.
H-DC-DX+105	None	Channel was dry. No measurements could be collected.
H-DC-D1b	Volumetric	Volumetric discharge estimate was made.
H-DC-B	Salt Tracer	Salt tracer measurement was collected.
H-DC-M WEIR	Volumetric	Volumetric discharge estimate made at downstream end of weir. All water flows through weir.
H-DC-R	Salt Tracer	Salt tracer measurement was collected. Water flows below surface upstream of station.
H-VC-U	ADV	Velocity-area discharge measurement completed using an ADV.
H-BC	None	Channel dry, no measurement obtained. Minimal evidence of erosion from braided secondary channels during spring freshet.
H-VC-DBC	ADV	Velocity-area discharge measurement completed using an ADV.
H-VC-UMN	ADV	Velocity-area discharge measurement completed using an ADV.
H-VC-R	ADV	Velocity-area discharge measurement completed using an ADV. Flows significantly receded since spring freshet and flow contained in primary channel.
H-SEEP	Volumetric	Volumetric measurement collected in addition to reading of the flow meter in the seepage pond shack.
H-TP	SG	Water level very low. Staff gauge, and all area within a 2.5 m radius was dry.
H-PC-DSP	Volumetric	Volumetric discharge estimate was made at the culvert outflow. Small amount of flow likely due to recent precipitation.
H-PW	Volumetric	Volumetric discharge estimate was made at end of discharge pipe.



Table 2. Summary of water quality program tasks completed during the July 13 - 15, 2015 sampling event.

**WATER QUALITY**

Site	Sampled? (Yes/No)	Notes / Explanations
WQ-PIT-1	Yes	Sample collected at the surface.
WQ-PIT-2	Yes	Sample collected at a depth of 1.5 m (mid-point).
WQ-PIT-3	Yes	Sample collected at a depth of 3.0 m (near-bottom). Full depth of pit lake at sample location was 3.25 m.
WQ-SEEP	Yes	Moderate flow rate from pipe; regular sample and LC50 sample collected.
WQ-TP	Yes	Low water level in pond.
WQ-DC-DX	Yes	Very low flow level with clear water.
WQ-DC-DX+105	No	Channel was dry, no sample collected.
WQ-MS-S-03	Yes	Moderate flow at site with significant algae growth along channel.
WQ-MS-S-08	No	Site dry, no samples collected, no sound of underwater flow detected.
WQ-DC-D1b	Yes	Moderate flow in channel with clear water. Water flowing in the channel goes to subsurface approximately 5 m downstream of sampling site.
WQ-DC-B	Yes	Low flow with clear water.
WQ-DC-U	Yes	Low flow with clear water.
WQ-DC-R	Yes	Low flow rate with moderately turbid water.
WQ-CH-P-13-01	Yes	Low flow at this site. Flow consisted of a slow trickle of water and was too low to estimate a volumetric flow rate.
WQ-LW-SEEP-01	No	Seep was dry, no samples collected. No evidence of recent flow.
WQ-BC	No	There was no flowing water, so no samples collected.
WQ-VC-U	Yes	Low flow level with clear water.
WQ-VC-DBC	Yes	Low flow level with clear water. Fish (grayling) observed in channel.
WQ-VC-UMN	Yes	Sample collected from regular location. Low water levels and all flow contained within main channel. Fish (grayling) observed in channel.
WQ-VC-R	Yes	Low flow at channel. All flow contained within main channel. Sampling completed at regular summer location upstream of road crossing.
WQ-PC-U	No	No flowing water at site. Pool of standing water upstream of culvert. Not suitable for sampling.
WQ-PC-D	No	Channel dry, no samples collected.
<b>Quality Assurance/Quality Control Samples</b>		
Field Replicate 1	Yes	Collected from WQ-VC-UMN
Field Replicate 2	Yes	Collected from WQ-DC-B
Field Blank	Yes	Sample bottles filled with deionized water supplied by ALS; samples were filtered and preserved as instructed.
Travel Blank	Yes	Samples provided by lab and were transported to and from site.