

June 25, 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, 4114-4th Avenue
PO 2703, Whitehorse, YT, Y1A 2C6

Attention: Erik Pit, Type II Project Manager

Re: Mount Nansen Water Resources Investigations – Field Memo: June 15 to 17, 2015

The following memo is a brief field update from EDI’s mid-June 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.

Trip Dates:	June 15 - 17, 2015
EDI Field Staff:	Pat Tobler, Scott Dilling and Danny Skookum
Weather conditions during monitoring:	Conditions ranged from sunny to cloudy with light winds and daytime high air temperatures from 18 to 22°C
Any changes to project scope, schedule or budget:	None. All sampling and monitoring was conducted within the planned scope.
Additional Comments:	<p>Many creeks and seeps had low flows and several sites were dry (Back Creek, Pony Creek).</p> <p>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.</p> <p>H-VC-R continuous logger will remain in current location for the open water season. A new location was originally planned for this station this year in order to capture better winter stage data. Options for winter to be discussed with AAM at a later time.</p>
Wildlife Sightings:	A black bear and grizzly bear were seen while driving to Carmacks along Mount Nansen Road. Arctic grayling observed at WQ-VC-UMN.
Site concerns (safety):	<p>The caribou leg (bait) wired to a tree beside the Mount Nansen Rd still remains near the access point to the H/WQ-VC-UMN site.</p> <p>Within the Brown McDade pit, the crew noticed precarious rocks on the west pit wall, near where the samples are collected. The sample location in the pit may need to be adjusted (close to shore) on subsequent trips to minimize the risk of rock fall to the crew, unless the rocks can be removed/scaled.</p>



Table 1. Summary of hydrometric program tasks completed during the June 15-17, 2015 sampling event.

HYDROLOGY

Station	Hydrometric Measurement Type	Notes & Comments
ATM-VC5	None	Barometric logger was downloaded and a back-up Solinst Barologger was removed from the site. The back-up barologger was put in place until confirmation was received from AAM that the weather station was continuing to collect barometric data during maintenance activities. This was confirmed in June.
H-DC-DX+105	Volumetric	A volumetric discharge estimate was collected. A significant amount of vegetation was present along the channel bed.
H-DC-D1b	Salt Tracer	Salt tracer measurement was collected. There was minor ice along the stream banks. Water flows to subsurface approximately 15 m downstream of station.
H-DC-B	Salt Tracer	Salt tracer measurement was collected.
H-DC-M WEIR	Volumetric	Volumetric discharge estimate made at downstream end of weir. Weir pond recently cleaned by AAM and fine sediment moved beyond banks of pond. 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. Denison planning to clean and de-scale pipes shortly.
H-TP	SG	Water level very low. Staff gauge was wetted (1.037 m).
H-PC-DSP	None	Channel dry, no measurement obtained.



Table 2. Summary of water quality program tasks completed during the June 15-17, 2015 sampling event.

WATER QUALITY

Site	Sampled? (Yes/No)	Notes / Explanations
WQ-PIT-1	Yes	Sample collected at a depth of 0.25 m (near-top).
WQ-PIT-2	Yes	Sample collected at a depth of 3.4 m (mid-point).
WQ-PIT-3	Yes	Sample collected at a depth of 6.25 m (near-bottom). Full depth of pit lake 6.75 m.
WQ-SEEP	Yes	Moderate flow rate from pipe. Denison planning to clean out pipes in next few days.
WQ-TP	Yes	Pond is completely ice free. Low water level in pond.
WQ-DC-DX	Yes	Low flow level with clear water.
WQ-DC-DX+105	Yes	Low flow in channel with clear water.
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.
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. Completely ice free.
WQ-DC-R	Yes	Moderate 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-DESS-01	Yes	Low flow. Volumetric flow rate estimated to be 0.042 L/s.
WQ-DESS-02	No	Site dry, no samples collected.
WQ-DESS-03	No	Site dry, no samples collected.
WQ-LW-SEEP-01	No	Seep was dry, no samples collected.
WQ-BC	No	No flow or standing water. Very little evidence of erosion at secondary channels active during spring freshet.
WQ-VC-U	Yes	Low flow level with clear water.
WQ-VC-DBC	Yes	Low flow level with clear water. Fine sediment accumulation along bed in slow moving areas, possibly from upstream placer mining activity.
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.
Quality Assurance/Quality Control Samples		
Field Replicate 1	Yes	Collected from WQ-VC-DBC-r



WATER QUALITY

Site	Sampled? (Yes/No)	Notes / Explanations
Field Replicate 2	Yes	Collected from WQ-DC-DX-r
Field Replicate 3	Yes	Collected from WQ-SEEP-r
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.