





2.3. Sampling Methods

A summary of timing and frequency of sampling for each of the CREMP monitoring components for the Whale Tail Pit area is shown in **Table 2–2** by sampling season and month. Important to note is that the sampling frequency by area shown in the table is representative of the full study design, and not necessarily what would need to be conducted in a given year (e.g., for MF and FF areas if no changes are detected at NF areas the previous year; see **Section 2.2.4** for more information).

Sampling for the CREMP program follows the Standard Operating Procedures (SOPs) for each of the monitoring components. The SOPs include general information on field collections, pre-trip planning, field collection materials, field quality assurance / quality control protocols, step-by-step instructions on sample collection, bottle requirements and list of parameters, sample preservation, and sample handling and transportation. The SOPs are appended to the CREMP 2015 plan update (Azimuth, 2015a):

- Water chemistry, limnology, and phytoplankton sampling methods are outlined in Appendix A
- Benthic invertebrate and sediment grab chemistry methods are outlined in Appendix B
- Sediment coring is outlined in Appendix C.

The small size of the Whale Tail Pit Project lakes and comparably shallower depths relative to the Meadowbank Lakes was not amenable to using the bounded area method of generating random water quality sampling stations (see SOP and blue rectangles in **Figure 2–1**). Instead, a number of “fixed” sampling locations for limnology, water chemistry and phytoplankton were established for the Whale Tail Pit lakes³ in areas where the water depth is greater than 5 m (**Figure 2–2**). Prior to going in the field for each sampling event, two of the locations are randomly selected for sampling. Coordinates are recorded in MapSource and in the hand-held GPS units (NAD 83).

The specific sampling locations for benthic invertebrates and sediment chemistry are selected each year from within established depositional zones in each lake (see red circles on maps) with a target water depth of 8 m \pm 1.5 m. Areas in Whale Tail Lake (WTS), Nemo Lake (NEM), and Mammoth Lake (MAM) were established during the August 2015 field program. Lakes A20, A76 and DS1 were not sampled as part of the 2015 baseline program; suitable sampling locations will be selected prior to construction.

³ Bathymetry is currently not available for Lake DS1 and Lake A76. Sampling stations will be chosen when in the field until bathymetry data is available to establish either fixed sampling locations or bounded areas of sampling.



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Table 2–2. CREMP monitoring component sampling summary for Whale Tail Pit Project.

Sampling Season	Sampling Month	Monitoring Conditions	Monitoring Components	INUG	PDL	WTS	MAM	NEM*	A20*	A76*	DS1*
				REF	REF	NF	NF	NF	MF	MF	FF
Winter	January	Ice	L			✓	✓				
	February	Ice	L			✓	✓				
	March	Ice	L			✓	✓				
Spring	April/May	Ice	L,W,P	✓	✓	✓	✓	✓	✓	✓	
	June	Ice not safe									
Summer	July	Open-water	L,W,P	✓	✓	✓	✓	✓	✓	✓	✓
	August	Open-water	L,W,P	✓	✓	✓	✓	✓	✓	✓	✓
			B,S,C**	✓	✓	✓	✓	✓	✓	✓	✓
	September	Open-water	L,W,P	✓	✓	✓	✓	✓	✓	✓	✓
Autumn/ Winter	October	Ice not safe									
	November/December	Ice	L,W,P	✓	✓	✓	✓	✓	✓	✓	

Notes:

Area IDs: INUG=Inuggugayualik Lake; PDL=Pipedream Lake; WTS=Whale Tail Lake South; MAM=Mammoth Lake; NEM=Nemo Lake.

Area types: REF=reference (in grey shading); NF=near-field (in blue shading); MF=mid-field (in pink shading); FF=far-field (in teal shading).

* Sampling at NEM and the MF and FF stations during the operation phase will be conducted according to the sampling strategy outlined in the CREMP 2015 plan update (Azimuth, 2015a). NEM is the source of drinking water for the exploration camp and water quality will be monitored monthly.

Components: L=Limnology; W=Water chemistry; P=Phytoplankton; B=Benthic invertebrates; S=Sediment grab chemistry; C=Sediment coring chemistry.

✓ indicates that monitoring components are conducted at the area/month given.

** Sediment coring is conducted every three years and synchronized to the EEM field program.



2.4. Quality Assurance/Quality Control

There are no Whale Tail Pit-specific differences in QA/QC methodology and reporting. See the 2015 CREMP plan update (Azimuth, 2015a) for details.

2.5. Data Evaluation Criteria

There are no Whale Tail Pit-specific differences in data evaluation methodology and reporting. See the 2015 CREMP plan update (Azimuth, 2015a) for details.

3. REFERENCES

- Azimuth Consulting Group (Azimuth). 2016. Whale Tail Pit Core Receiving Environment Monitoring Program (CREMP): 2014-2015 Baseline Studies. Report prepared by Azimuth Consulting Group for Agnico Eagle Mines Ltd., Baker Lake, NU. January 2016.
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- Golder Associates Limited (Golder). 2016. Draft Report on Mine Site and Downstream Receiving Water Quality Predictions Whale Tail Project, Meadowbank Division. Report Number 1520817. May 2016.

