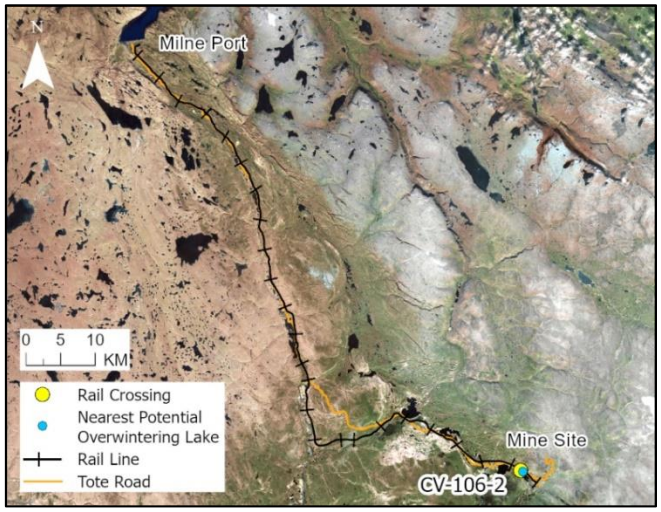
RAIL CV-106-2

LOCATION AND CROSSING DESCRIPTION

Site ID:	CV-106-2	**Dates Surveyed:**	22-Jun-19; 19-Aug-19	**Waterbody Type:**	Pond
Project Interaction:	Pond Infilling + Culvert	**Centreline UTM Coordinates:**	17W 559616 E 7914084 N	**Culvert Length (m):**	24
Number of Barrels:	2	**Culvert Diameter/Span (mm):**	1500	**Slope (%):**	1

GENERAL PHYSICAL CHARACTERISTICS

Surface Area (m^2):	1,198	**Shoreline Length (m):**	300	**Drainage Basin Area (m^2):**	1.283
Maximum Depth (m):	0.2 (measured)			**Mean Depth (m):**	-



SUMMARY

The rail crosses and infills a portion of a small pond on an unnamed seasonal stream at CV-106-2. This system feeds into a larger stream that is crossed by the rail at CV-104-5 approximately 1.4 km downstream from the centreline. It then flows west to the Tote Road crossing BG-01 and then south to Camp Lake (approximately 2.5 km from CV-106-1a). The stream is also crossed by the rail at CV-105-2, 105-3, 105-4, 106-1,106-1a, and 106-3. There is a small lake (CV-106-3) with sufficient depth to provide overwintering for Ninespine Stickleback and possibly also juvenile char approximately 270 m upstream of the site. This stream is generally shallow and slow-moving pool/flat habitat over cobble/gravel/fines substrate throughout, interspersed with larger, connected ponds (e.g., the pond at CV-105-3). This pond is off of the main flow path for this stream system, but remains connected to the larger pond to the west and more intermittently to the stream to the north that flows out of the potential overwintering lake/pond at CV-106-3. The infill area within the pond is shallow (<0.05 m) with 100% fines/instream vegetation. There are no downstream or upstream barriers in this stream between potential overwintering waterbodies.

This pond provides minimal open-water season rearing habitat for juvenile Arctic Char due mainly to its shallow depth and lack of cover. The pond does not provide overwintering or spawning habitat for char due to insufficient depth in winter. This pond provides open-water season rearing and spawning habitat for Ninespine Stickleback, though it is of insufficient depth to support overwintering for this species.

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BARRIERS

Upstream/ Downstream	UTM		Barrier Type			Height (m)	Gradient (°)	Description	Site Label
	Easting	Northing	1	2	3				
Inflowing Stream	NO BARRIERS								
Outflowing Stream	NO BARRIERS								

FISH HABITAT POTENTIAL

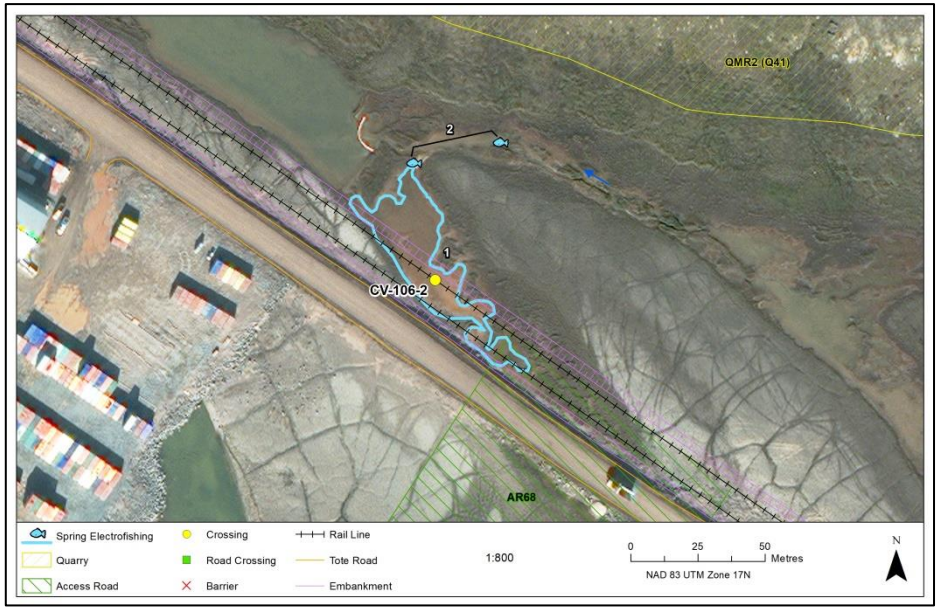
Nearest Potential Overwintering Habitat - ARCH: Unnamed pond at CV-106-3/Camp Lake

Distance to Nearest Potential Overwintering Habitat - ARCH (km): 0.27/2.6

Overwintering Habitat Upstream of Site - ARCH (Y/N): Unnamed pond (at CV-106-3)

Species	Spawning	Overwintering	Rearing	Adults Present
ARCH	N	N	Y	N
NNST	Y	N	Y	Y

FISHING SITES



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FISHERIES DATA

Date: 22-Jun-19 **Temperature (°C):** 20.0 **Gear Used:** Backpack Electrofisher/Visual

Distance Fished (m): Whole pond/30 m inflow **Duration Fished (seconds):** NR/408

Species	Season	Reach	Effort (Seconds)	Fish Captured	Fish Observed	CPUE (No. Fish/60 Seconds)	Length Range (mm)
ARCH	Spring	1 (pond)	NR	0	0	-	-
NNST	Spring	1 (pond)	NR	61	0	-	30 – 45 (measured)
ARCH	Spring	2 (inflow)	408	0	0	-	-
NNST	Spring	2 (inflow)	408	19	0	2.79	35 – 60 (measured)

Date: 19-Aug-19 **Temperature (°C):** 14.0 **Gear Used:** Visual

Distance Fished (m): N/A **Duration Fished (seconds):** N/A

Species	Season	Effort (Seconds)	Fish Captured	Fish Observed	CPUE (No. Fish/60 Seconds)	Length Range (mm)
ARCH	Summer/Fall	-	0	0	-	-
NNST	Summer/Fall	-	0	>50	-	20 – 60 (estimated)

INFILL HABITAT

Habitat Use – ARCH: Juvenile rearing (minimal) **Habitat Use – NNST:** Rearing; Spawning (probable) **Maximum Water Depth (m):** 0.05

Area	Fines (%)	Gravel (%)	Small Cobble (%)	Large Cobble (%)	Boulders (%)
Nearshore	90	0	10	0	0
Offshore	90	0	10	0	0

OTHER NOTES/OBSERVATIONS

Stickleback were evenly distributed throughout the pond and its inflow at the north end. Juvenile char were not captured or observed in either season in 2018 or 2019 surveys, but were documented from nearby sites (upstream and downstream) in the system. Char are typically found in deeper runs in this stream system, which are absent from the CV-106-2 area. There are no barriers between the potential downstream or upstream overwintering locations.

Stickleback likely overwinter in this stream system (i.e., in the unnamed pond at CV-106-3) rather than Camp Lake (velocities are higher downstream in the larger stream connecting to Camp Lake). Conversely, Camp Lake is expected to be more important for char overwintering (i.e., the unnamed lake at CV-106-3 is relatively small).

RAIL CV-106-2

22-JUN-19

A

B

Photos 1. Photos taken during spring of: (A) the entire pond; and (B) inlet stream habitat.

RAIL CV-106-2

19-AUG-19

A

B

C

D

E

F

Photos 2. Photos taken at the infill site in summer/fall: (A) facing upstream; (B) facing downstream; (C) across (left bank looking at right bank); (D) diagonal from left bank above the centreline looking downstream; (E) across (left bank looking at left bank); and (F) diagonal from left bank below the centreline looking upstream.