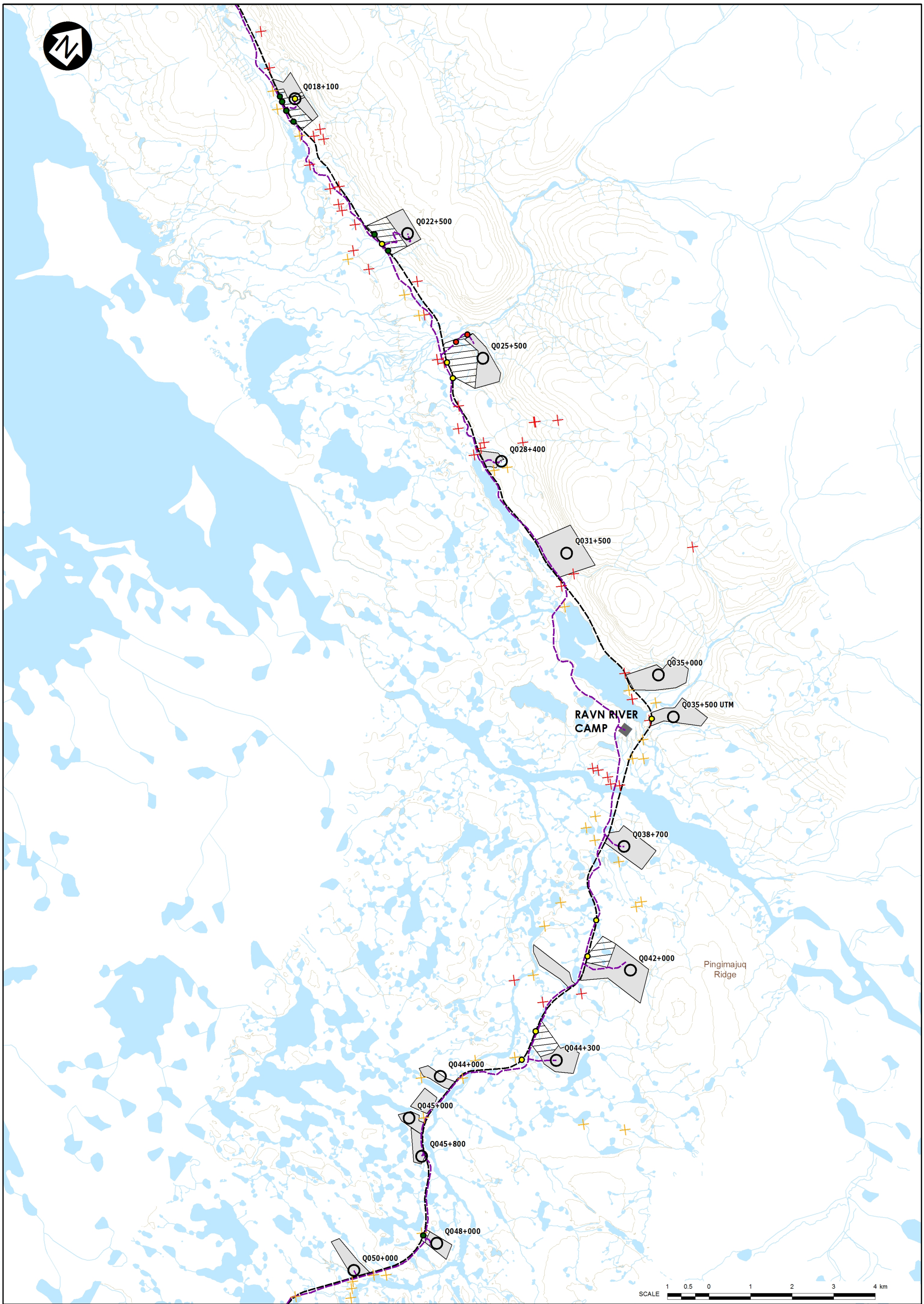

LEGEND:

QUARRY SITE YEAR SURVEYED
- 2007
- 2008
- 2010

STREAM CROSSING
FISH BARRIER (CONFIRMED)
FISH BARRIER (AERIAL PHOTO INTERPRETATION)
CONTOUR

MILNE INLET TOTE ROAD (EXISTING)
RAILWAY ALIGNMENT (PROPOSED)
CONSTRUCTION ACCESS ROAD (PROPOSED)
POTENTIAL AREAS OF QUARRY ACCESS
QUARRY SITE
WATER
INFRASTRUCTURE

NOTES:

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5. LOCATION OF PROPOSED INFRASTRUCTURE IS APPROXIMATE AND SUBJECT TO FIELD ADJUSTEMENTS
6. CONTOUR INTERVAL IS 25 AND IS IN METRES.

BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

Quarry Sites (MAP B)

North/South Consultants Inc.
Aquatic Environment Specialists

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-	-
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Q048+000
Q050+000
Q053+700
MID-RAIL CAMP
Mid-rail Camp Lake
Q056+750
Q060+000
Q064+400
Q067+200a
Q071+000
Q074+200
Q077+200
Q079+600
Q082+700

SCALE 1 0.5 0 1 2 3 4 km

LEGEND:

QUARRY SITE YEAR SURVEYED
- 2007
- 2008
- 2010

STREAM CROSSING
FISH BARRIER (CONFIRMED)
FISH BARRIER (AERIAL PHOTO INTERPRETATION)
CONTOUR

MILNE INLET TOTE ROAD (EXISTING)
RAILWAY ALIGNMENT (PROPOSED)
CONSTRUCTION ACCESS ROAD (PROPOSED)
POTENTIAL AREAS OF QUARRY ACCESS
QUARRY SITE
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BAFFINLAND IRON MINES CORPORATION

MARY RIVER PROJECT

Quarry Sites (MAP C)

North/South Consultants Inc.
Aquatic Environment Specialists

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Rail Alignment Watercourse Crossing Assessment

Location

Crossing ID: Q64+400
UTM Coordinates: 17 W 600174 7868669
Date/Time Surveyed: 7-Sept-08 / 14:36

General Physical Characteristics

Floodplain Width (m):	N/M	**Channel Pattern:**	Meandering	**Stage:**	Normal-high
Channel Confinement:	NC	**Channel Gradient (range):**	0-0.25°	**Flow Regime:**	PER
Bank Height (range in m):	0.0-0.17	**Bank Shape:**	50% UD-Flooded, 50% V	**T_W (°C):**	2.0

Hydrology & Habitat Characteristics

Distance and Direction from Crossing (m)	Channel Width (m)		Water Depth (m)				Water Velocity (m/s)			
	Wetted	High Water	25%	50%	75%	Max	25%	50%	75%	Max
20D	3.8	flooded	0.10	0.19	0.31	0.31	0.10	0.01	0.21	0.21
0	6.25	flooded	0.17	0.14	0.26	0.50	0.12	0.00	0.03	0.27
20U	7.2	flooded	0.07	0.18	0.24	0.26	0.00	0.01	0.04	0.13

Distance and Direction from Crossing (m)	Stream Morphology Composition (%)						Substrate Composition (%)				
	Riffle	Pool (<0.2 m)	Pool (>0.2 m)	Run	Cascade	Other	Fines	Gravel	Small Cobble	Large Cobble	Boulders
20D	20		30				10silt,40FT		20	10	20
0	30	50	20				50FT,5silt	10	5	10	20
20U	30	60	10				25FT,15sand	5	20	20	10

Fisheries Information

Electrofishing Conducted: Y **Effort (min):** 8:02 **Electrofisher Settings:** 600V, 50HZ, 30%

Species	Total Caught/Observed	CPUE	Length Range (mm)	Weight Range (g)
ARCH	0	-	-	-
NNST	18	2.24	21-36	<1

Rail Alignment Watercourse Crossing Assessment

Location

Crossing ID: Q64+400
UTM Coordinates: 17 W 600174 7868669
Date/Time Surveyed: 7-Sept-08 / 14:36

Fish Habitat Potential

Species	Spawning	Overwintering	Rearing	Migration Corridor
ARCH	No	No	Low	No
NNST	High	No	High	Low

Comments & Summary

The quarry site itself is dry, but it has a couple of tiny ponds near it. Any water in the area should be considered fish habitat. There is a connection of lakes and pools at UTM 17 W 601289 7868513 with a large downstream pond at UTM 17 W 598750 7869322 that eventually connects at a large downstream river at UTM 17 W 595984 7868932. Fish will be in any waterbody that the road crosses if it leads east from the AR near AR-113.This stream may not actually be crossed at this location but it connects to all of the ponds and streams to the west where the access road will lie. The quarry site is actually 200m away from the assessed water. Waypoint 525 at the 20 U

Rail Alignment Watercourse Crossing Assessment

Location

Crossing ID: Q64+400
UTM Coordinates: 17 W 600174 7868669

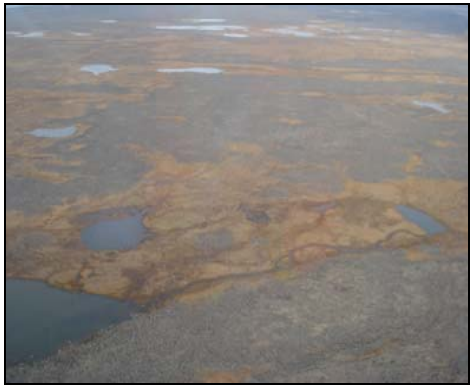
Date/Time Surveyed: 7-Sept-08 / 14:36

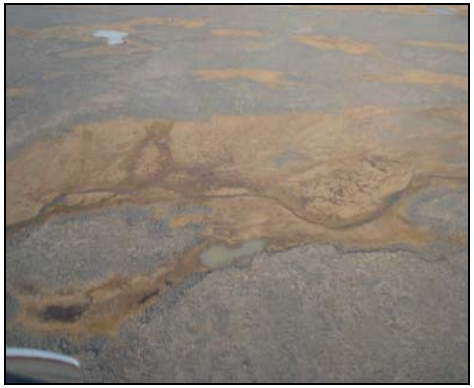
Photographs


A


B


C


D


E


F

Figure 1. View of habitat at 20M DS across (A), 20m US across (B), aerial view downstream of assessment (C), aerial view of crossing (D-E), and crossing across (F).

Q079+600
Q082+700
Q085+200
Q088+800
QTR21
Cockburn Lake
Q092+000
QTR22
QTR23
Q095+400
Q096+100
Q096+700
QTR10
QTR11
QTR06
QTR12
QTR13
QTR07
QTR14
QTR15
QTR16
QTR08
Cockburn Lake
COCKBURN TUNNELS CAMP
QTR17
Q110+200
Q114+600
QTR09
Q116+800

SCALE 1 0.5 0 1 2 3 4 km

LEGEND:

QUARRY SITE YEAR SURVEYED
- 2007
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- 2010

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FISH BARRIER (CONFIRMED)
FISH BARRIER (AERIAL PHOTO INTERPRETATION)
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MARY RIVER PROJECT

Quarry Sites (MAP D)

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Aquatic Environment Specialists

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- STREAM CROSSING
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- CONTOUR
- MILNE INLET TOTE ROAD (EXISTING)
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Quarry Sites (MAP E)

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