




Prepared For:



FIGURE 6.4-11

**Fifteen Mile Stream Spatial Boundaries: Geology, Soils and Sediment**

**Halifax County, NS**

-  FMS Study Area
-  Geology, Soils and Sediment Local Assessment Area
-  Geology, Soils and Sediment Regional Assessment Area



Coordinate System: NAD 1983 CSRS UTM Zone 20N  
 Projection: Transverse Mercator  
 Datum: North American 1983 CSRS  
 Units: Meter

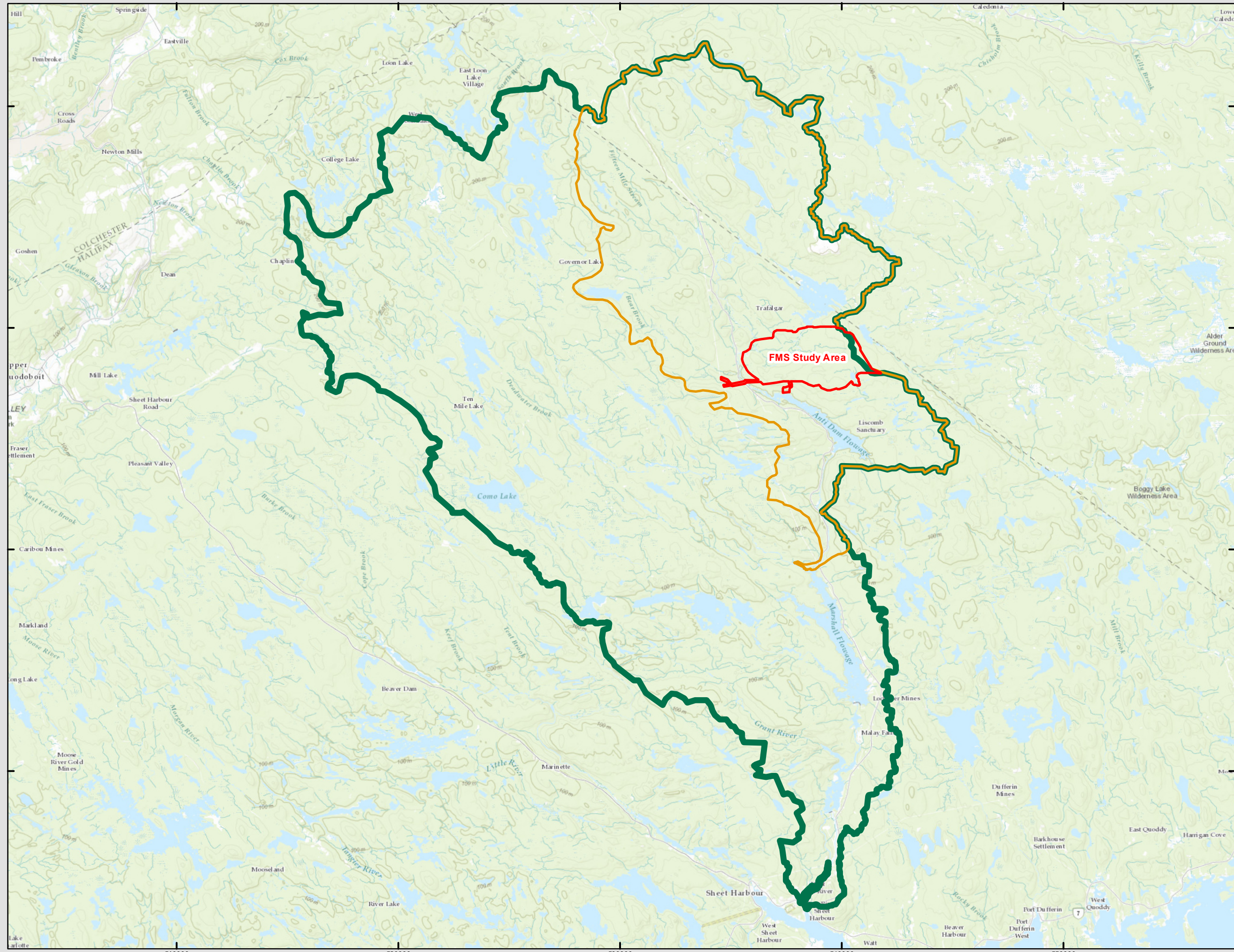


0 2 4 8 km  
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Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap



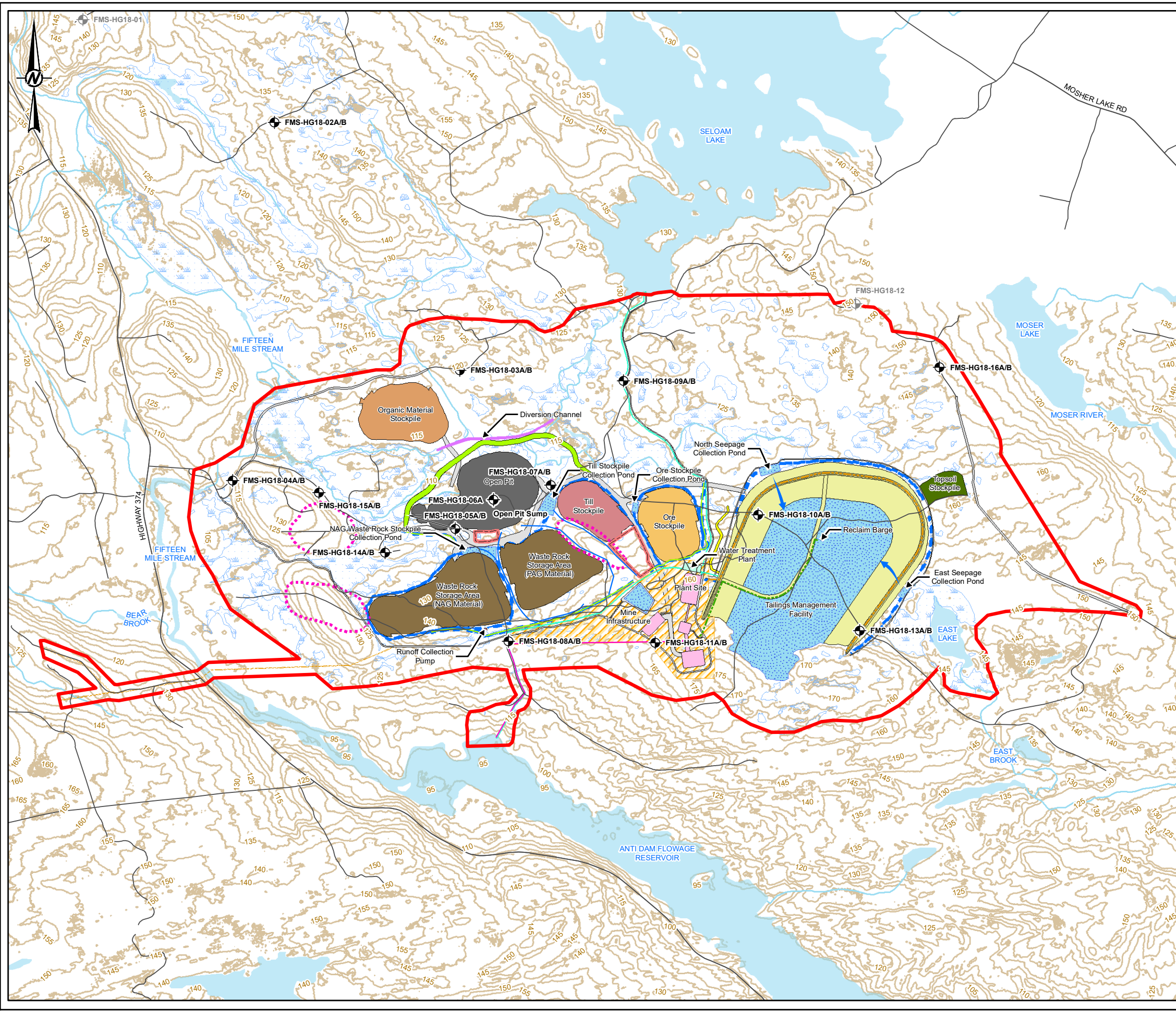
McCallum Environmental Ltd.



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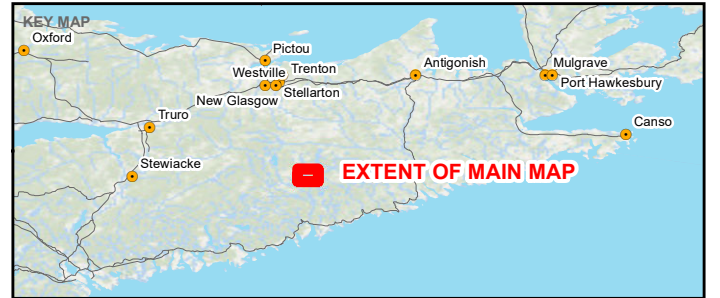
5010000  
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4980000





- LEGEND**
- Hydrogeological Drilling Location
  - Removed from Scope
  - Existing Road
  - FMS Study Area
  - Topographic Contour (5m Interval)
  - Watercourse
  - Waterbody
  - Wetland

- PROPOSED SITE INFRASTRUCTURE**
- Diversion channel
  - Pit
  - Buildings
  - Water Treatment
  - Plant and Admin Building Footprint
  - Seloam Diversion Berm
  - Tailings Management Facility
  - Water Management Pond / TMF pond
  - Topsoil Stockpile
  - Organics Pile
  - Till Stockpile
  - Low Grade Stockpile
  - Waste Rock Storage Area
  - Access Road / Haul Road
  - Contractor Laydown Area
  - Outflow Channel
  - Water Management Pump
  - Water Management Ditch
  - Water Intake/Discharge Pipe
  - Powerline Tie In Options
  - Potential Borrow Pit
  - Tailings Pipeline
  - Collection Ditch
  - Reclaim Pipeline
  - Non-Contact Water Ditch
  - Water Treatment Pipeline



**NOTE(S)**  
 1. ALL LOCATIONS ARE APPROXIMATE

**REFERENCE(S)**  
 1. MCCALLUM ENVIRONMENTAL LTD. EIS PROJECT AREA, (VER.200227, RECEIVED 2020-04-07).  
 2. PROPOSED INFRASTRUCTURE, (VER.200630, RECEIVED 2020-08-28).  
 PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
 COORDINATE SYSTEM: UTM ZONE 20 VERTICAL DATUM: CGVD28

CLIENT  
 ATLANTIC MINING NS CORP

PROJECT  
 FIFTEEN MILE STREAM GOLD PROJECT  
 ENVIRONMENTAL IMPACT STATEMENT

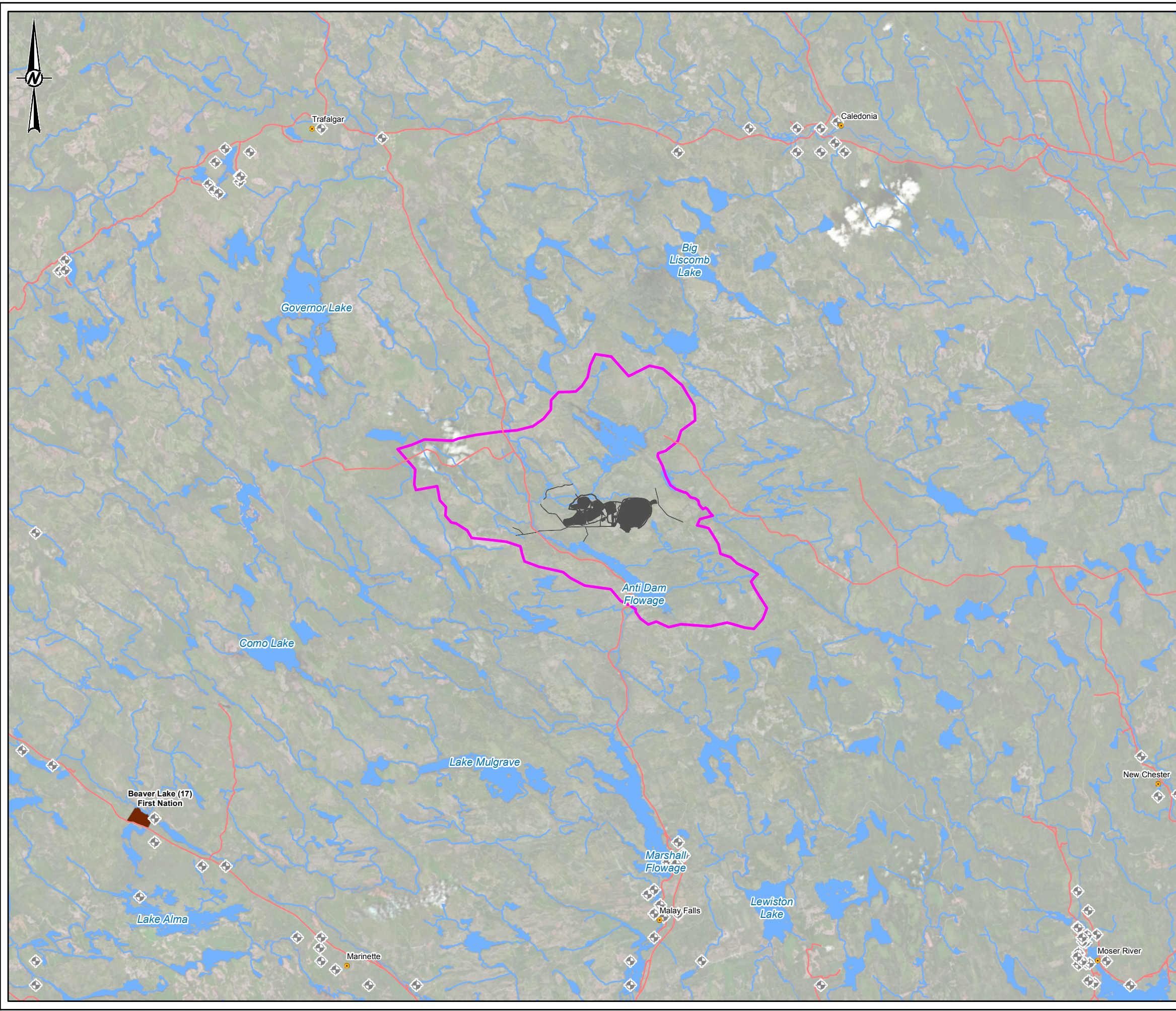
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CONSULTANT	YYYY-MM-DD	2020-10-09
	DESIGNED	---
	PREPARED	RRD
	REVIEWED	MB
	APPROVED	PMCC

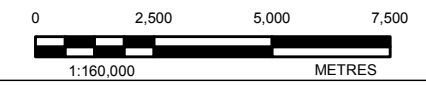
PROJECT NO. 1895674 CONTROL 0033 REV. 0 FIGURE 6.5-1

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 IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B





- LEGEND**
- Nova Scotia Well Logs Database (N.S. DNR, 2018)
  - Roads
  - Proposed Mine Infrastructure
  - Local Assessment Area
  - Watercourse
  - Waterbody



**NOTE(S)**  
 THIS FIGURE WAS PREPARED FOR ATLANTIC GOLD AND IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING GOLDR ASSOCIATES LTD. REPORT NO. 1895674

**REFERENCE(S)**  
 BASE MAP DATA: ESRI, GARMIN, GEBCO, NOAA NGDC, AND OTHER CONTRIBUTORS  
 PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
 COORDINATE SYSTEM: UTM ZONE 20 VERTICAL DATUM: CGVD28

**CLIENT**  
 ATLANTIC MINING NS CORP

**PROJECT**  
 FIFTEEN MILE STREAM GOLD PROJECT  
 ENVIRONMENTAL IMPACT STATEMENT

**TITLE**  
 LOCATION OF PRIVATE WATER WELLS

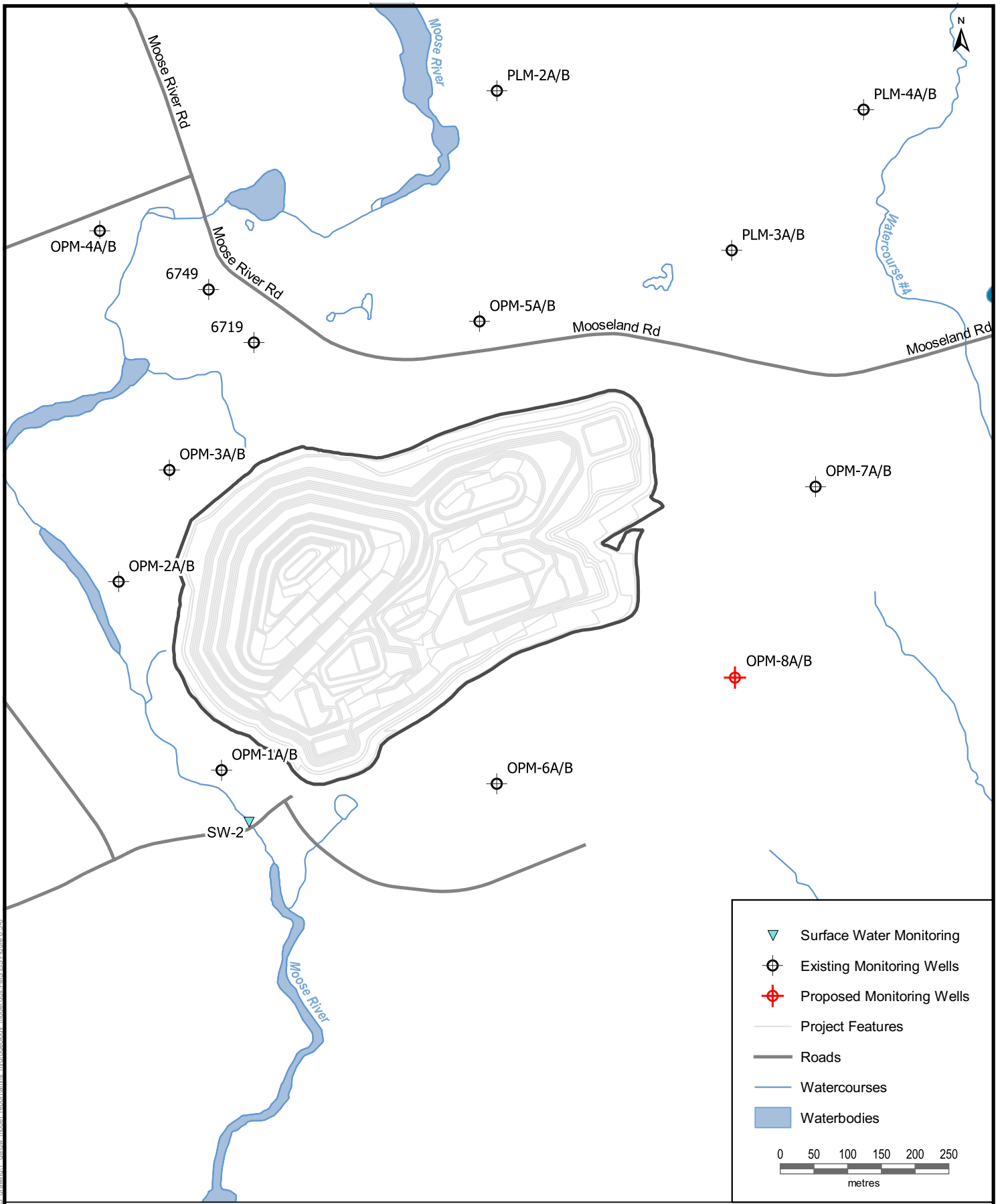
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	PREPARED	RRD
	REVIEWED	MB
	APPROVED	PM

PROJECT NO. 1895674      REV. 0      FIGURE 6.5-2

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25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B





	Surface Water Monitoring
	Existing Monitoring Wells
	Proposed Monitoring Wells
	Project Features
	Roads
	Watercourses
	Waterbodies

0 50 100 150 200 250  
metres

THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO THE FIFTEEN MILE STREAM GOLD PROJECT EIS NAD83 UTM Zone 20

<h2>EXISTING AND PROPOSED MONITORING WELLS AROUND TOUQUOY PIT</h2> <p>FIFTEEN MILE STREAM GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT</p>	Project: 121619250	Figure No.: 6.5-6
	Scale: 1:7,500	
	Date: 2021-01-27	Client:
	Dwn. By: JK	
	App'd By: -	

V:\121619250\_121619250\_121619250\_hydrogeology\_model\ons\ems\ems\_figure\_6.5-6






Prepared For:



FIGURE 6.5-9

**Fifteen Mile Stream  
Spatial Boundaries:  
Groundwater**

**Halifax County, NS**

-  FMS Study Area
-  Groundwater Local Assessment Area
-  Groundwater Regional Assessment Area



Coordinate System: NAD 1983 CSRS UTM Zone 20N  
Projection: Transverse Mercator  
Datum: North American 1983 CSRS  
Units: Meter



0 2.5 5 10 km

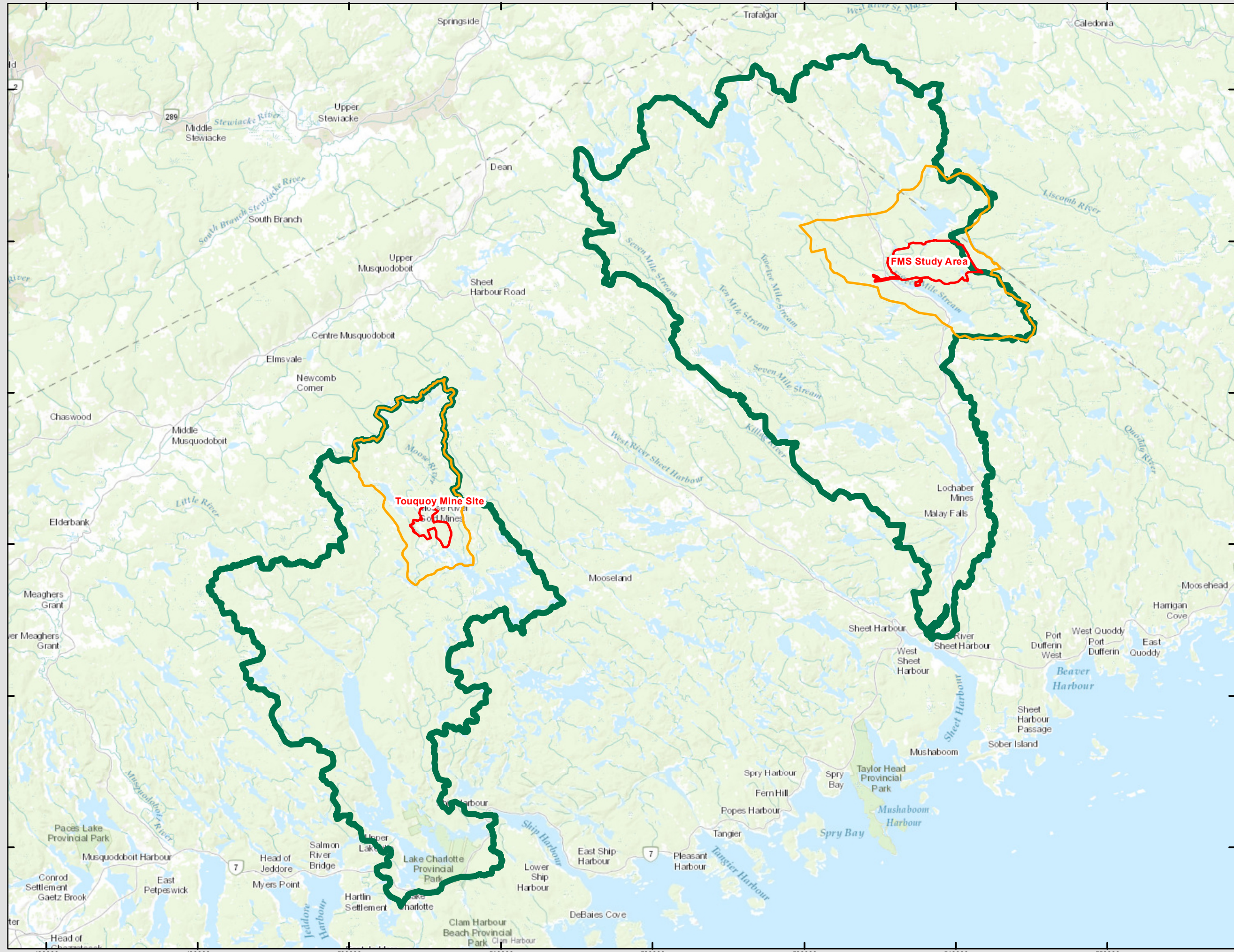
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Drawn By: EP Date: 2020-03-10

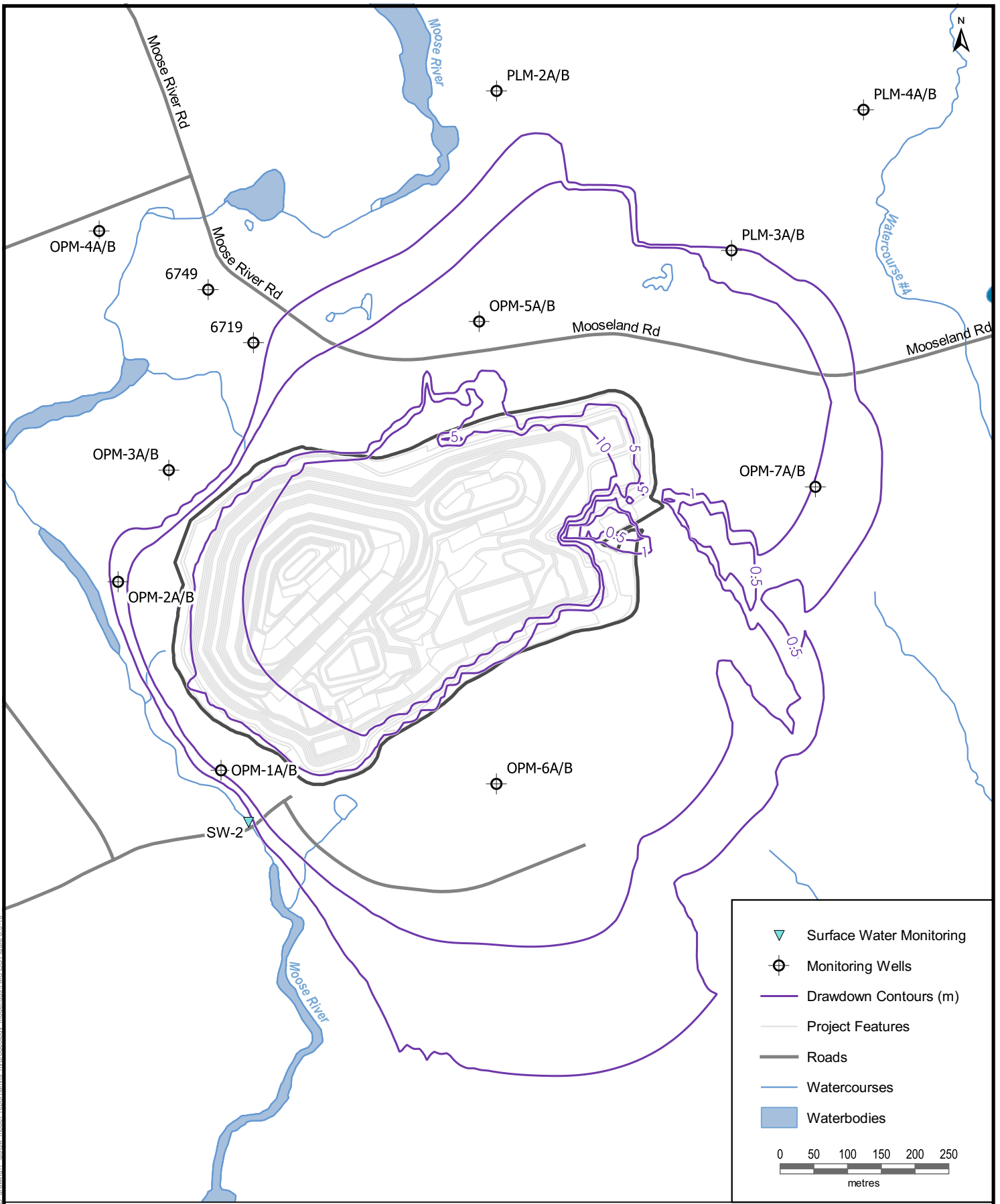
Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap



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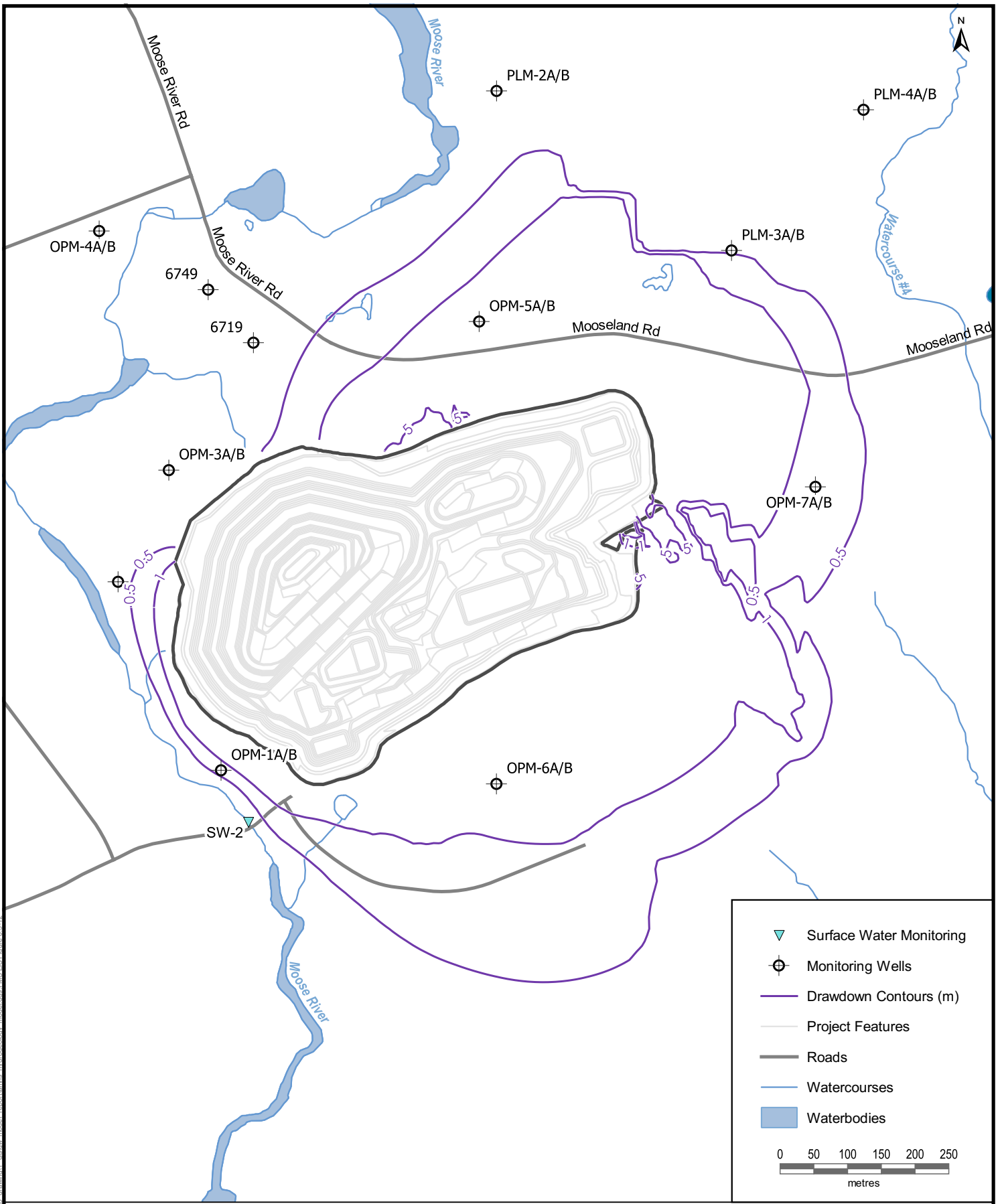


V:\121619250\1216192504\_hydro\modelling\hydro\modelling\modelling\FMS EIS\Figure 6.5-10

THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO THE FIFTEEN MILE STREAM GOLD PROJECT EIS NAD83 UTM Zone 20

<p><b>PREDICTED DRAWDOWN CONTOURS FROM FULLY DEWATERED TOUQUOY PIT AT TOUQUOY MINE SITE PRIOR TO DEPOSITION OF FMS TAILINGS</b></p> <p>FIFTEEN MILE STREAM GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT</p>	Project: 121619250	Figure No.: 6.5-10
	Scale: 1:7,500	
	Date: 2021-01-27	Client:
	Dwn. By: JK	<b>Atlantic Gold</b>
	App'd By: -	





V:\121619250\1216192504\_hydro\modelling\modelling\FMS EIS\Figure 6.5-12

THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO THE FIFTEEN MILE STREAM GOLD PROJECT EIS NAD83 UTM Zone 20

**PREDICTED DRAWDOWN CONTOURS FROM FILLED TOUQUOY PIT AT TOUQUOY MINE SITE FOLLOWING DEPOSITION OF FMS TAILINGS**

FIFTEEN MILE STREAM GOLD PROJECT ENVIRONMENTAL IMPACT STATEMENT

Project:	121619250
Scale:	1:7,500
Date:	2021-01-27
Dwn. By:	JK
App'd By:	-

Figure No.: **6.5-12**

Client:



**Atlantic Gold**





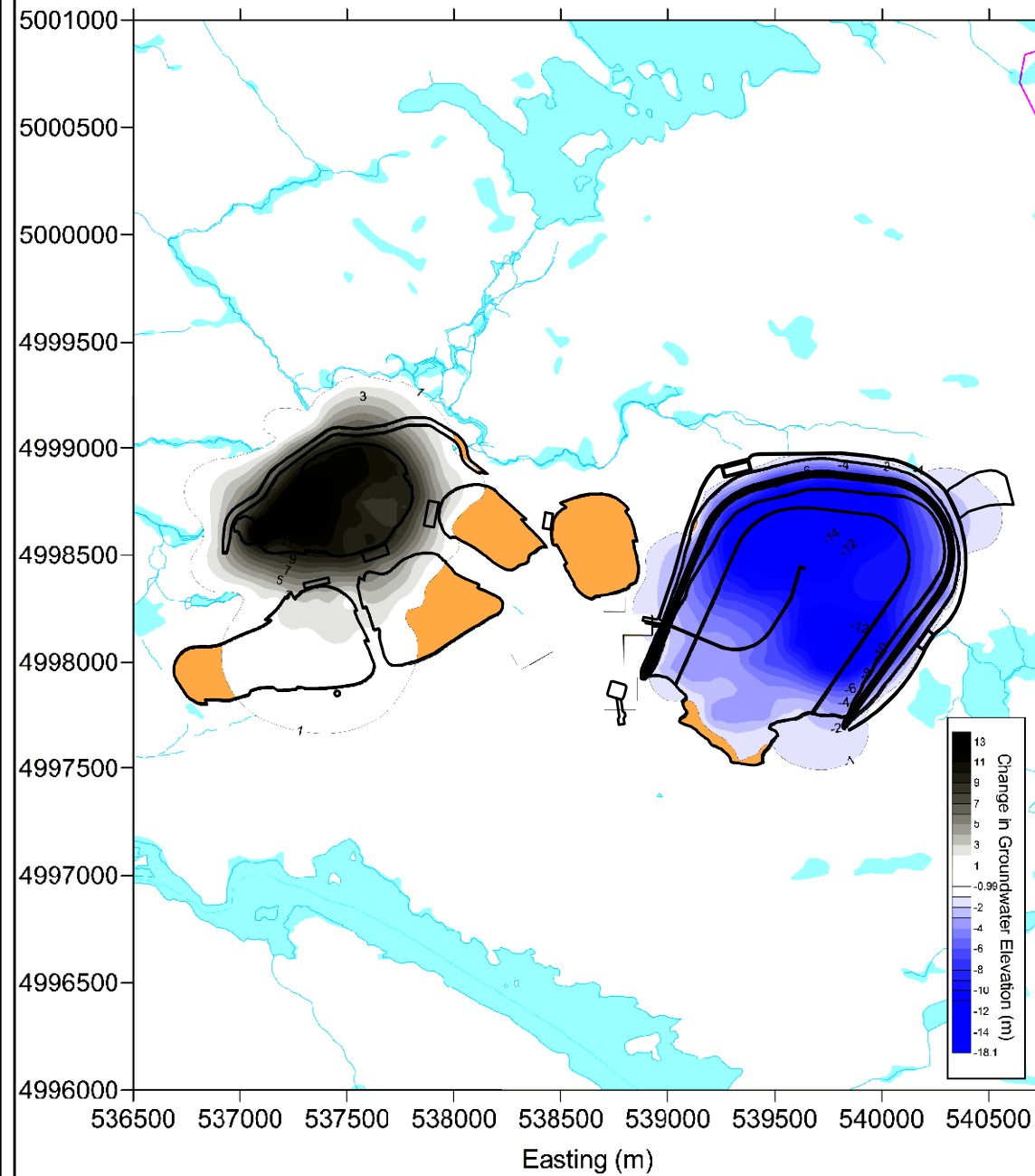




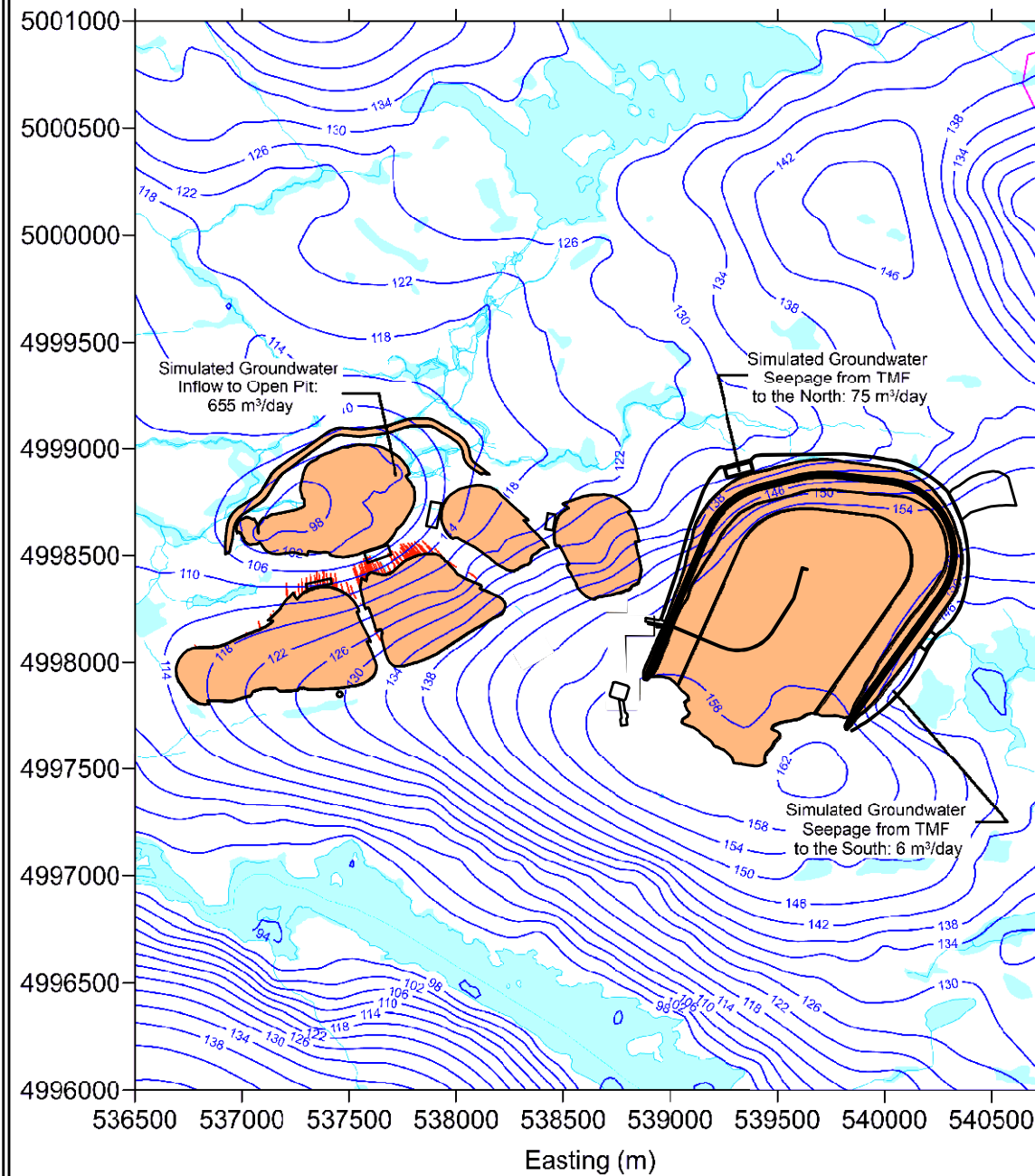




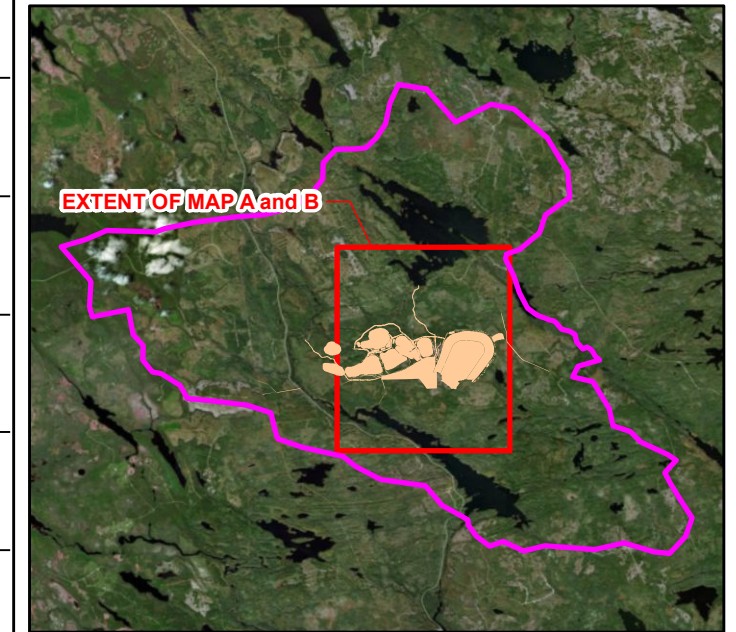
**MAP A**  
Operations - Drawdown



**MAP B**  
Operations - Groundwater Elevation



- LEGEND**
- SIMULATED GROUNDWATER ELEVATION (MASL)
  - PARTICLE TRACKING RESULTS
  - MODEL DOMAIN
  - MINE INFRASTRUCTURE



- NOTE(S)**
1. GROUNDWATER ELEVATIONS AND DRAWDOWN ARE REPRESENTATIVE OF MODEL SLICE 4 (INTERFACE BETWEEN OVERBURDEN AND UPPER BEDROCK) AT MODEL SIMULATION TIME 2190 DAYS
  2. DRAWDOWN/CHANGE IN WATER LEVEL ELEVATION CONTOURS ARE SPECIFIED AS 1 M INTERVALS, WITH SCALE BAR INDICATING RANGE. CHANGE IS CALCULATED AS CALIBRATION - FORECAST GROUNDWATER ELEVATION VALUES
  3. SIMULATED GROUNDWATER ELEVATION CONTOURS AS SPECIFIED AS 4 M INTERVALS

- REFERENCE(S)**
1. MCCALLUM ENVIRONMENTAL LTD. EIS PROJECT AREA, (VER.200227, RECEIVED 2020-04-07).
  2. MCCALLUM ENVIRONMENTAL LTD. PROPOSED INFRASTRUCTURE, (VER.200310, RECEIVED 2020-04-07).
- PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
COORDINATE SYSTEM: UTM ZONE 20 VERTICAL DATUM: CGVD28

CLIENT  
**ATLANTIC MINING NS CORP**

PROJECT  
**FIFTEEN MILE STREAM GOLD PROJECT  
ENVIRONMENTAL IMPACT STATEMENT**

TITLE  
**SIMULATED GROUNDWATER ELEVATIONS, DRAWDOWN, AND  
SEEPAGE PATHWAYS  
END OF OPERATIONS PERIOD**

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DESIGNED	---	
PREPARED	RRD	
REVIEWED	SD	
APPROVED	PMMC	

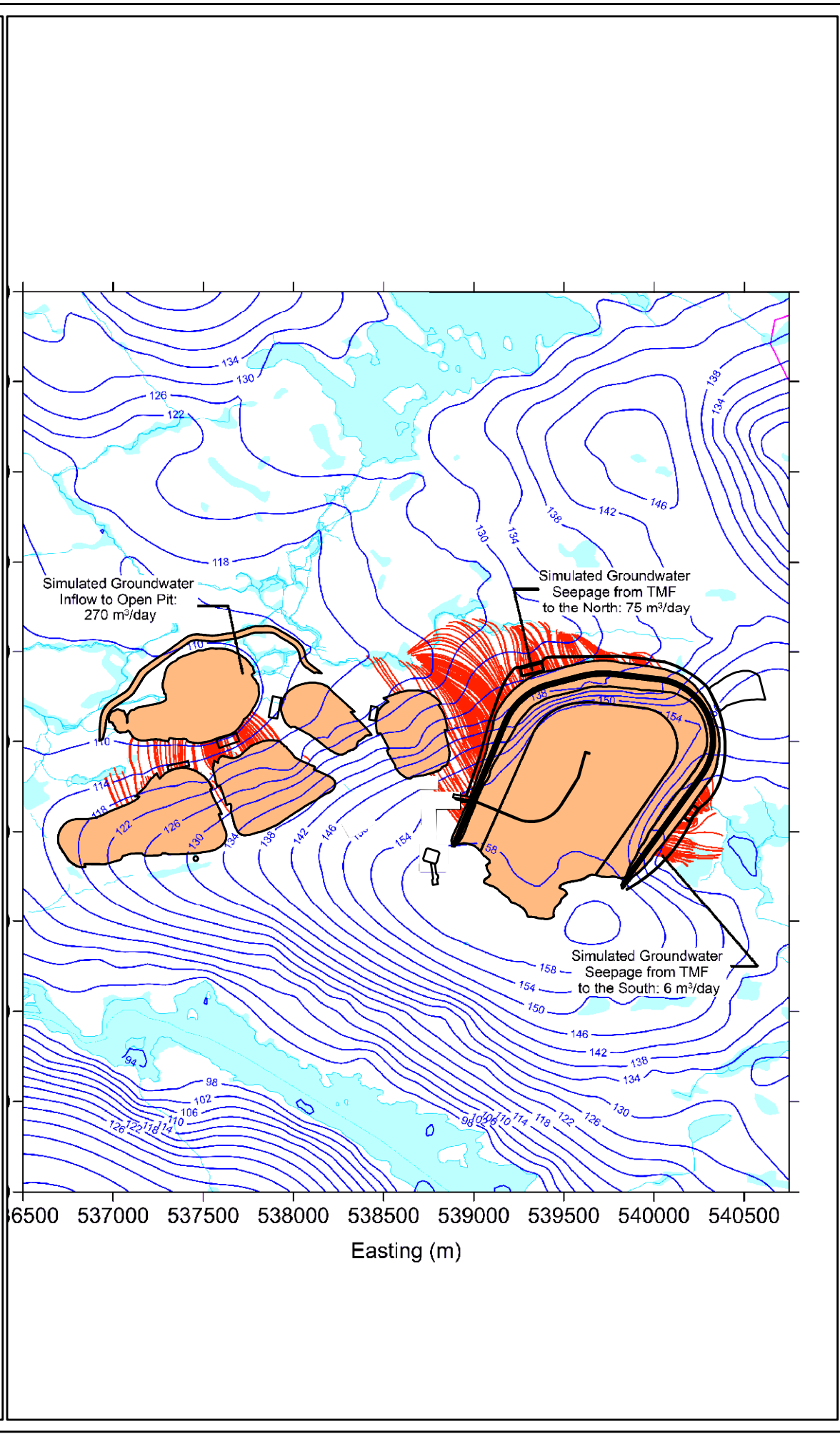
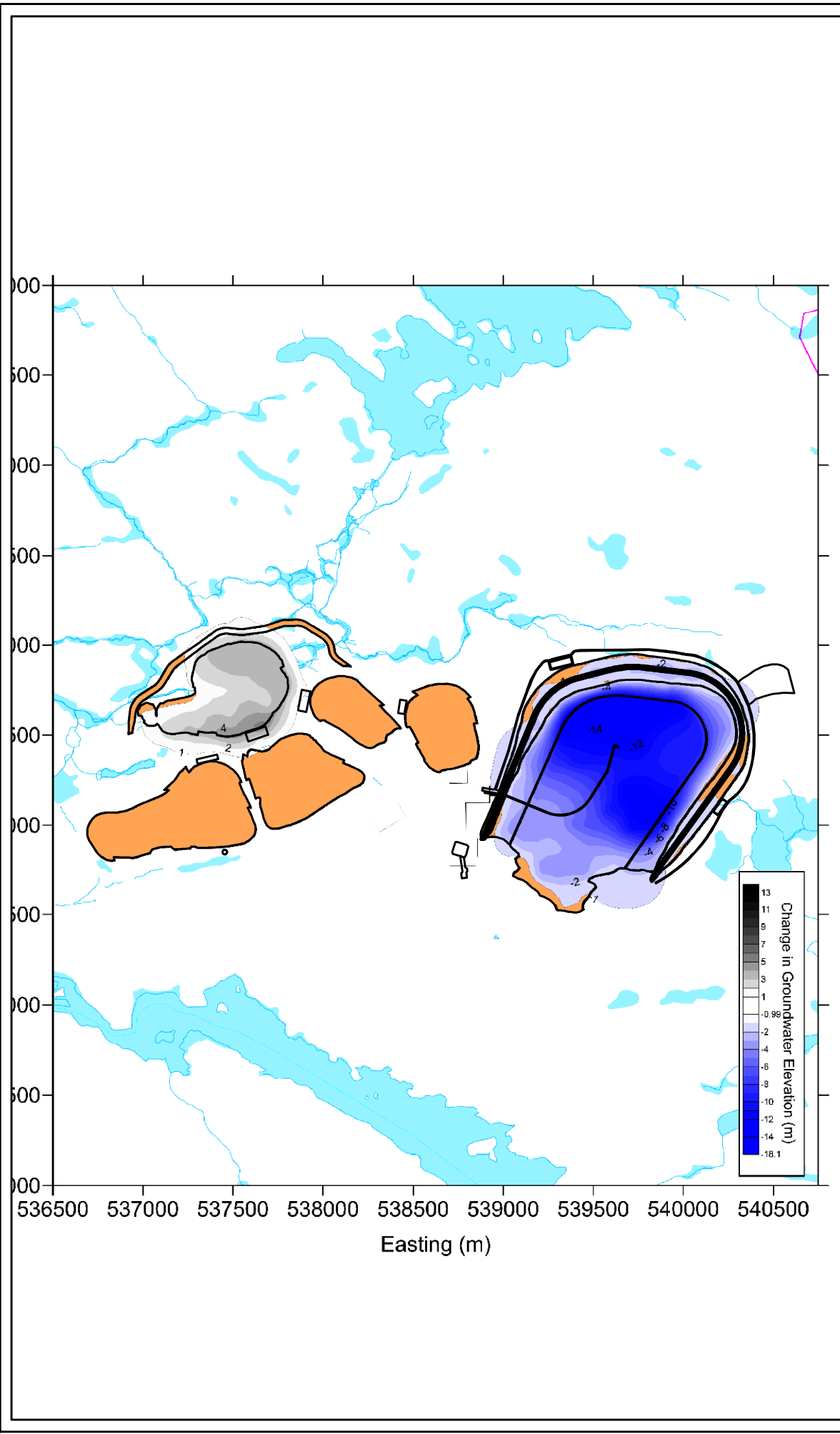
PROJECT NO. 1895674      REV. 0      FIGURE 6.5-16

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IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

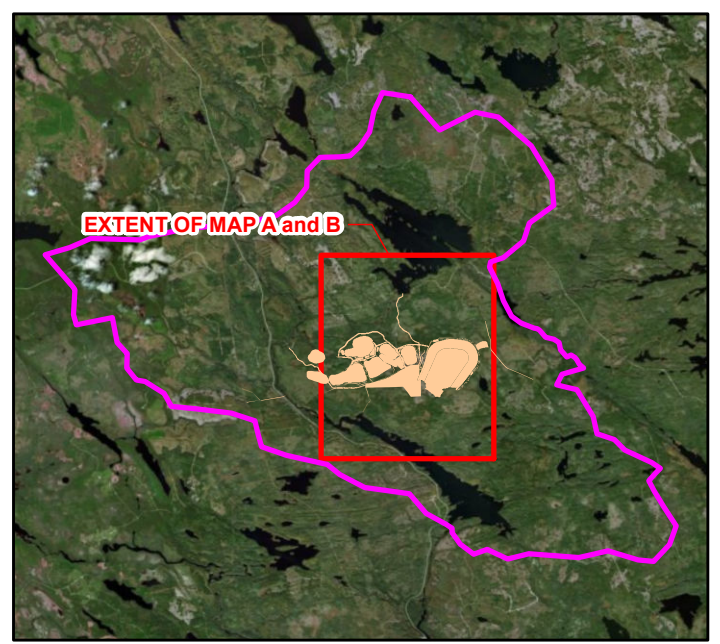


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**LEGEND**

- SIMULATED GROUNDWATER ELEVATION (MASL)
- PARTICLE TRACKING RESULTS
- MODEL DOMAIN
- MINE INFRASTRUCTURE



**NOTE(S)**

1. GROUNDWATER ELEVATIONS AND DRAWDOWN ARE REPRESENTATIVE OF MODEL SLICE 4 (INTERFACE BETWEEN OVERBURDEN AND UPPER BEDROCK) AT MODEL SIMULATION TIME 2190 DAYS
2. DRAWDOWN/CHANGE IN WATER LEVEL ELEVATION CONTOURS ARE SPECIFIED AS 1 M INTERVALS, WITH SCALE BAR INDICATING RANGE. CHANGE IS CALCULATED AS CALIBRATION - FORECAST GROUNDWATER ELEVATION VALUES
3. SIMULATED GROUNDWATER ELEVATION CONTOURS AS SPECIFIED AS 4 M INTERVALS

**REFERENCE(S)**

1. MCCALLUM ENVIRONMENTAL LTD. EIS PROJECT AREA, (VER.200227, RECEIVED 2020-04-07).
2. MCCALLUM ENVIRONMENTAL LTD. PROPOSED INFRASTRUCTURE, (VER.200310, RECEIVED 2020-04-07).

PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
 COORDINATE SYSTEM: UTM ZONE 20 VERTICAL DATUM: CGVD28

CLIENT  
 ATLANTIC MINING NS CORP

PROJECT  
 FIFTEEN MILE STREAM GOLD PROJECT  
 ENVIRONMENTAL IMPACT STATEMENT

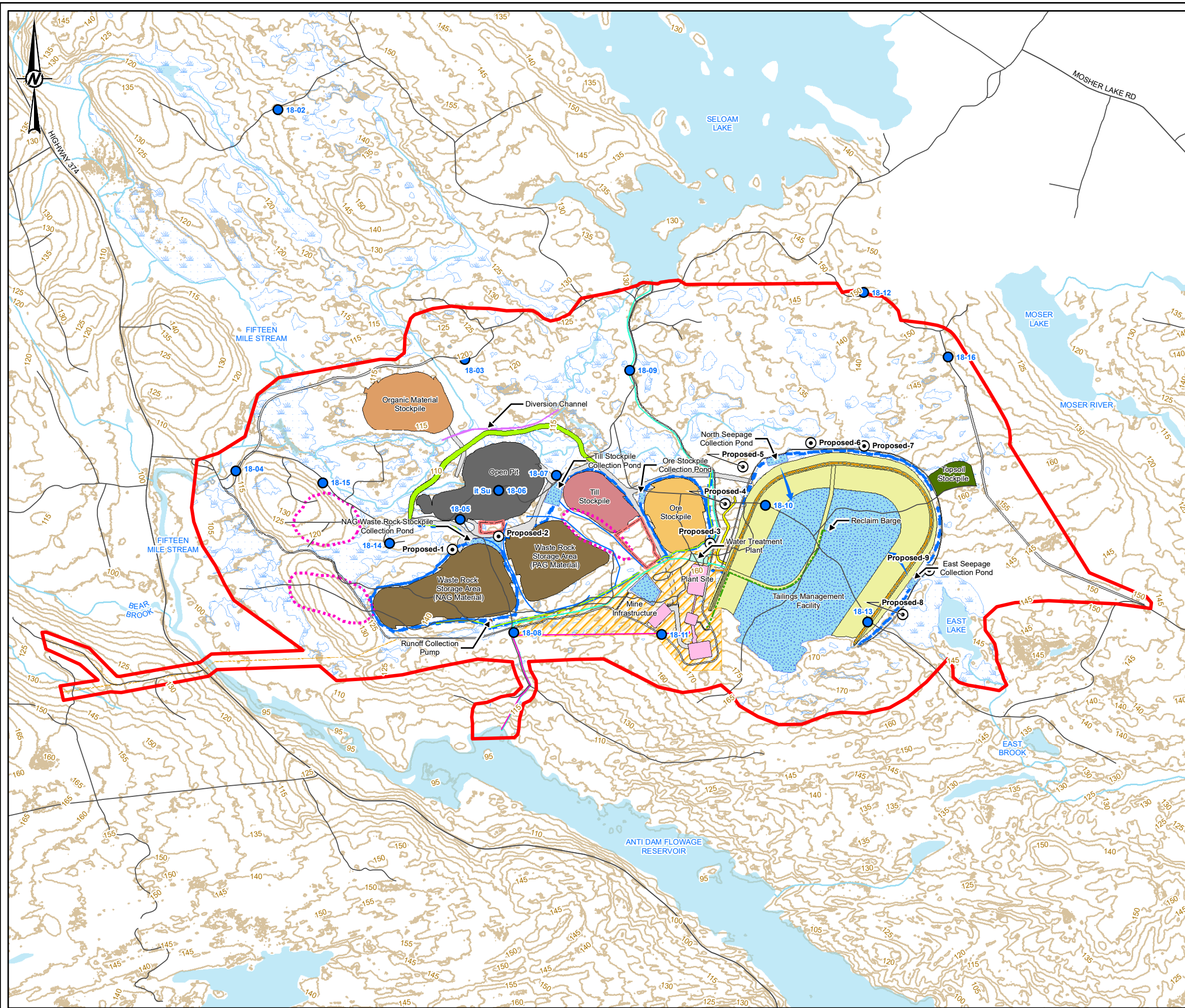
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CONSULTANT	YYYY-MM-DD	2020-04-16
DESIGNED		--
PREPARED		RRD
REVIEWED		CA
APPROVED		PMMC

PROJECT NO.	CONTROL	REV.	FIGURE
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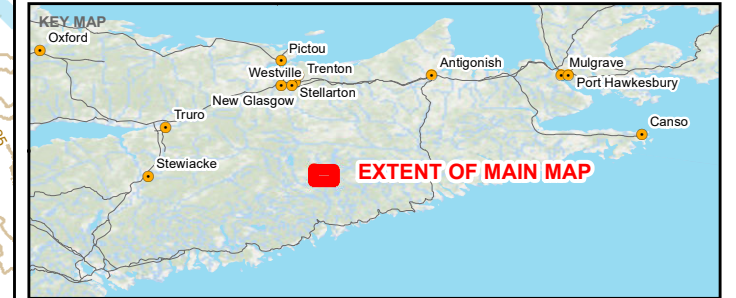
IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B





- LEGEND**
- Current Monitoring Well Location
  - Proposed Monitoring Well Location
  - Existing Road
  - FMS Study Area
  - Topographic Contour (5m Interval)
  - Watercourse
  - Waterbody
  - Wetland

- PROPOSED SITE INFRASTRUCTURE**
- Diversion channel
  - Pit
  - Buildings
  - Water Treatment
  - Plant and Admin Building Footprint
  - Seloam Diversion Berm
  - Tailings Management Facility
  - Water Management Pond / TMF pond
  - Topsoil Stockpile
  - Organics Pile
  - Till Stockpile
  - Low Grade Stockpile
  - Waste Rock Storage Area
  - Access Road / Haul Road
  - Contractor Laydown Area
  - Outflow Channel
  - Water Management Pump
  - Water Management Ditch
  - Water Intake/Discharge Pipe
  - Powerline Tie In Options
  - Potential Borrow Pit
  - Tailings Pipeline
  - Collection Ditch
  - Reclaim Pipeline
  - Non-Contact Water Ditch
  - Water Treatment Pipeline



**NOTE(S)**  
 1. ALL LOCATIONS ARE APPROXIMATE

**REFERENCE(S)**  
 1. MCCALLUM ENVIRONMENTAL LTD. EIS PROJECT AREA, (VER.200227, RECEIVED 2020-04-07).  
 2. PROPOSED INFRASTRUCTURE, (VER.200630, RECEIVED 2020-08-28).

CLIENT  
 ATLANTIC MINING NS CORP

PROJECT  
 FIFTEEN MILE STREAM GOLD PROJECT  
 ENVIRONMENTAL IMPACT STATEMENT

TITLE  
**PROPOSED MONITORING WELLS**

CONSULTANT	YYYY-MM-DD	2020-10-09
	DESIGNED	—
	PREPARED	RRD
	REVIEWED	CA
	APPROVED	PMMC

PROJECT NO.	CONTROL	REV.	FIGURE
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 IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B






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FIGURE 6.6-1

**Fifteen Mile Stream  
Gold Project  
Project Locator  
Watershed Context**

**Halifax County, NS**

-  Project Area
-  Tertiary Watersheds
-  Secondary Watersheds



Coordinate System: NAD 1983 CSRS UTM Zone 20N  
Projection: Transverse Mercator  
Datum: North American 1983 CSRS  
Units: Meter



0 3 6 12 km

1:221,000

Scale when printed @ 11" x 17"

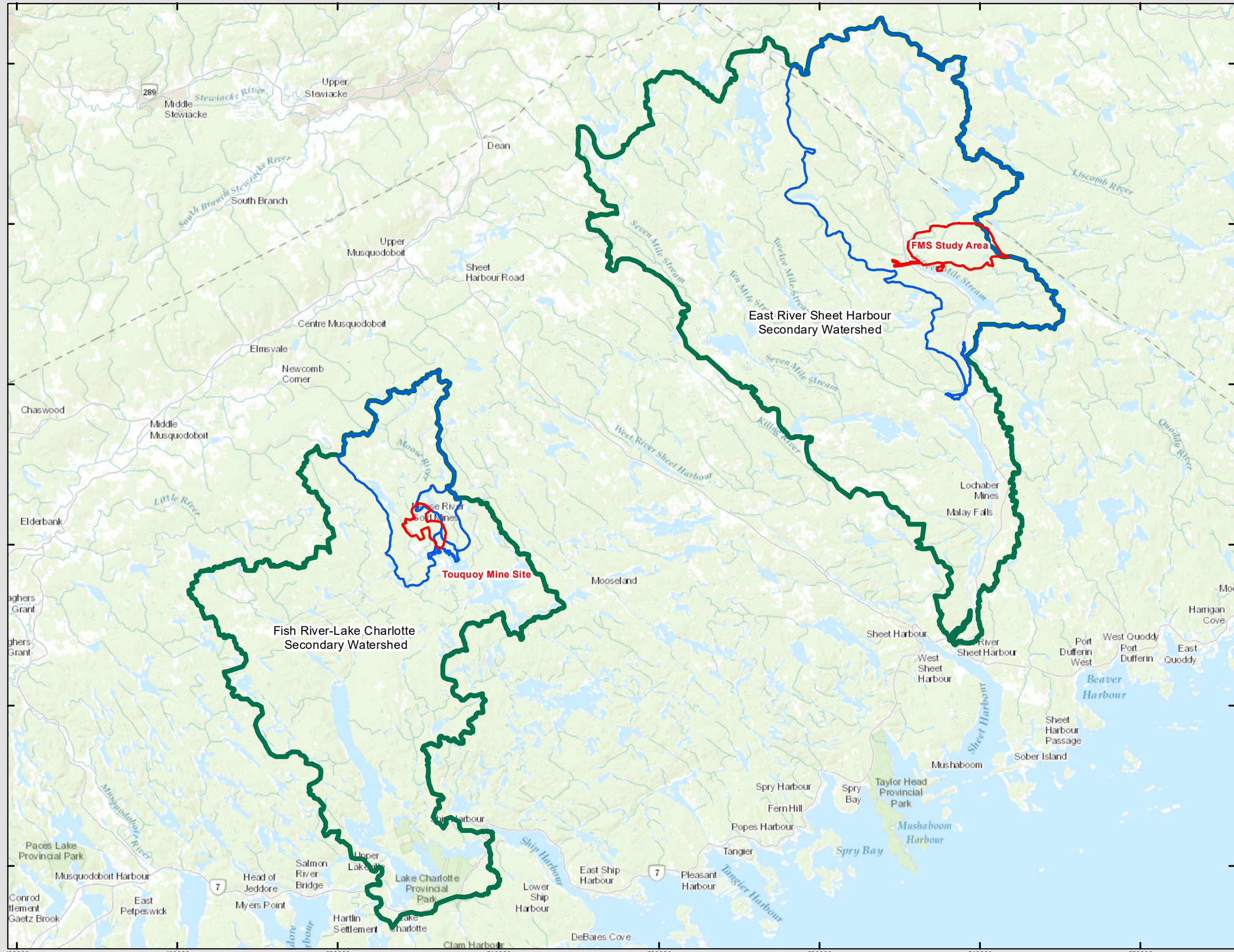
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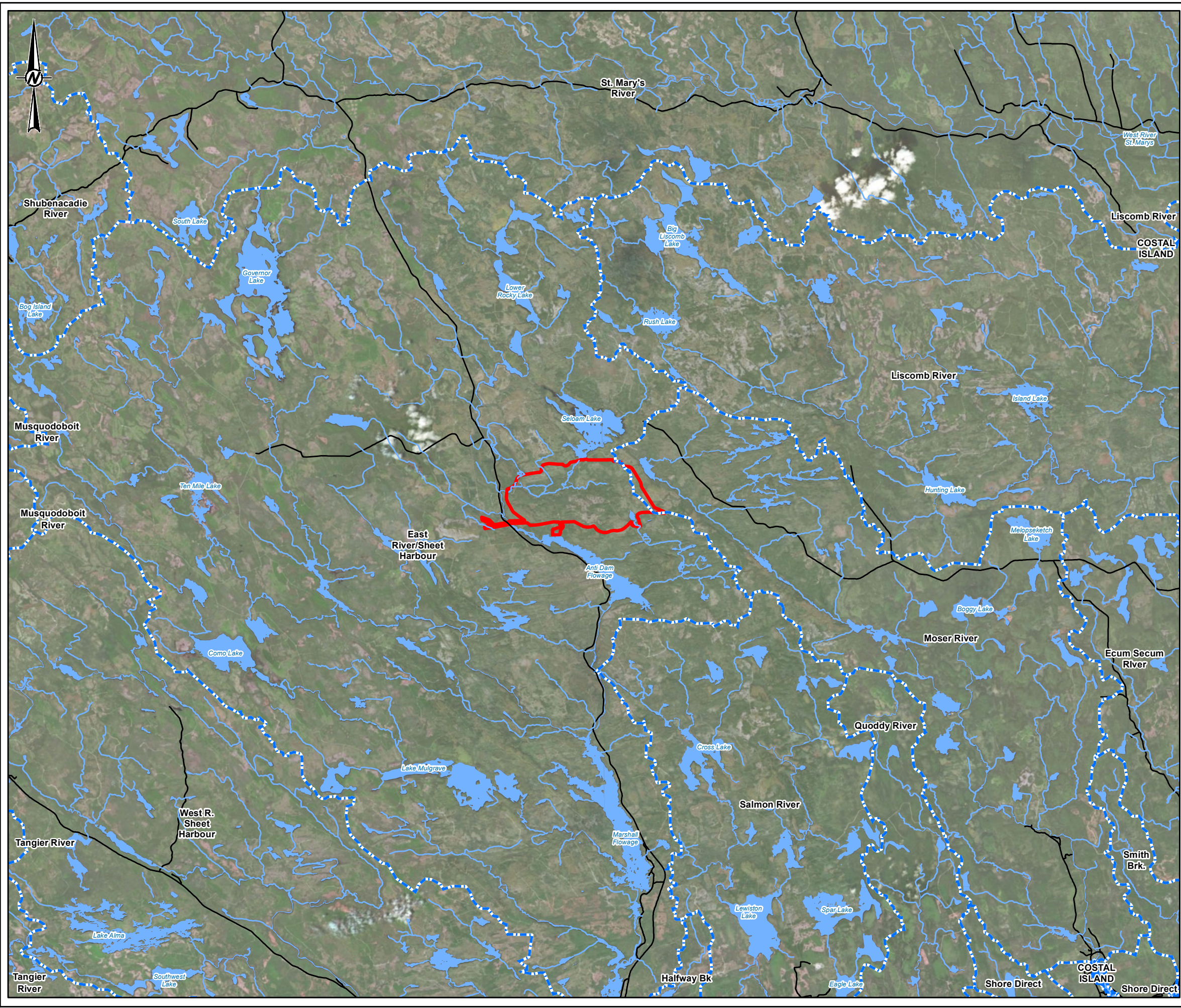
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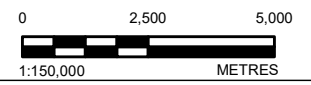






**LEGEND**

- Roads
- Fifteen Mile Stream Study Area
- Secondary Watershed Boundary
- Watercourse
- Waterbody



**NOTE(S)**  
 1. MCCALLUM ENVIRONMENTAL LTD. EIS PROJECT AREA, (VER.200227, RECEIVED 2020-04-07).  
 2. MCCALLUM ENVIRONMENTAL LTD. PROPOSED INFRASTRUCTURE, (VER.200310, RECEIVED 2020-04-07).

**REFERENCE(S)**  
 BASE MAP DATA: ESRI, GARMIN, GEBCO, NOAA NGDC, AND OTHER CONTRIBUTORS  
 PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
 COORDINATE SYSTEM: UTM ZONE 20 VERTICAL DATUM: CGVD28

**CLIENT**  
 ATLANTIC MINING NS CORP

**PROJECT**  
 SURFACE WATER QUALITY AND QUANTITY EFFECTS ASSESSMENT

**TITLE**  
 REGIONAL WATERSHEDS

CONSULTANT	YYYY-MM-DD	2020-04-15
	DESIGNED	---
	PREPARED	RRD
	REVIEWED	SK
	APPROVED	SK

**PROJECT NO.** 1895674 **REV.** 0 **FIGURE** 6.6-2

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25mm IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B






Prepared For:



FIGURE 6.6-3

**FMS Study Area  
East River Sheet Harbour  
Hydro System:  
Water Control Features**

Halifax County, NS

-  Water Control Feature
-  East River Sheet Harbour Secondary Watershed
-  FMS Study Area



Coordinate System: NAD 1983 CSRS UTM Zone 20N  
 Projection: Transverse Mercator  
 Datum: North American 1983 CSRS  
 Units: Meter

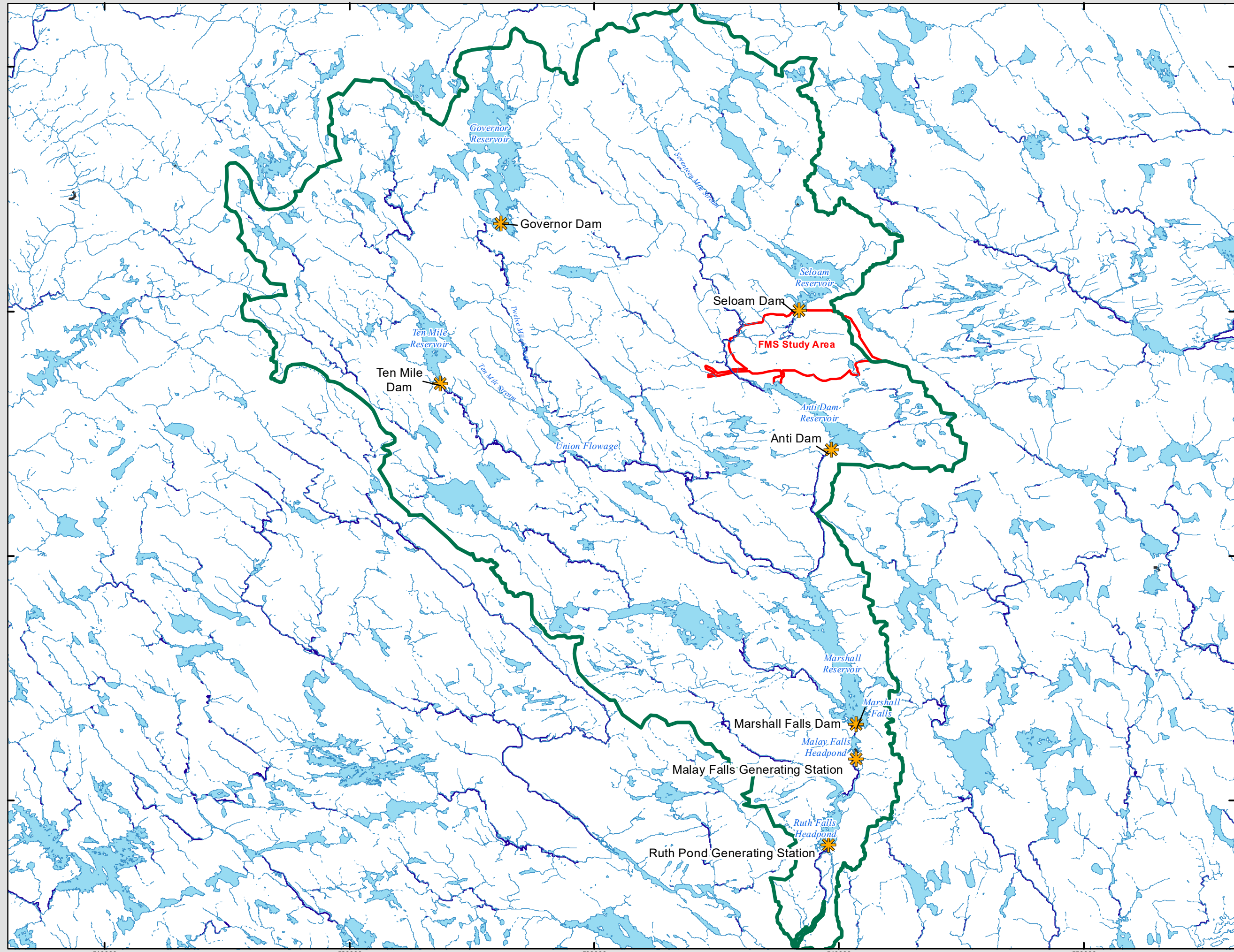


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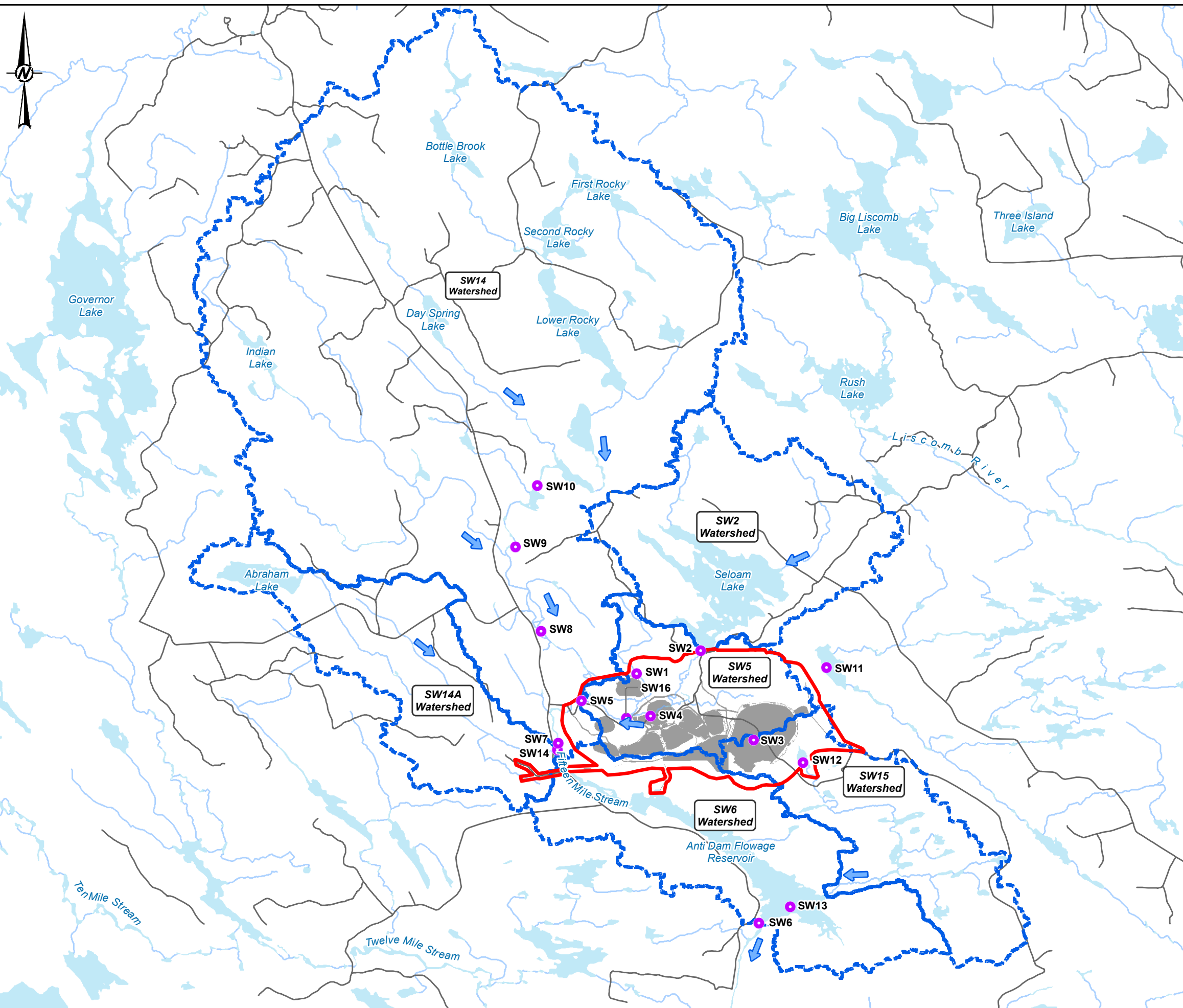
Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User



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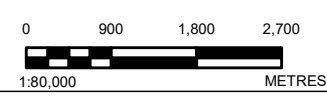






**LEGEND**

- Surface Water Flow Direction
- Surface Water Quality Monitoring Stations
- Roads
- Watercourse
- Waterbody
- Watersheds
- Proposed Infrastructure
- Fifteen Mile Stream Study Area



**NOTE(S)**  
 1. ALL LOCATIONS ARE APPROXIMATE

**REFERENCE(S)**  
 1. MCCALLUM ENVIRONMENTAL LTD. EIS PROJECT AREA, (VER.200227, RECEIVED 2020-04-07).  
 2. MCCALLUM ENVIRONMENTAL LTD. PROPOSED INFRASTRUCTURE, (VER.200310, RECEIVED 2020-04-07).  
 PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83  
 COORDINATE SYSTEM: UTM ZONE 20 VERTICAL DATUM: CGVD28

CLIENT  
 ATLANTIC MINING NS CORP

PROJECT  
 SURFACE WATER QUALITY BASELINE REPORT  
 FIFTEEN MILE STREAM GOLD PROJECT

TITLE  
**SURFACE WATER QUALITY BASELINE MONITORING LOCATIONS**

CONSULTANT	YYYY-MM-DD	2020-04-15
	DESIGNED	--
	PREPARED	RRD
	REVIEWED	NK
	APPROVED	SK

PROJECT NO. 1895674 CONTROL 0019 REV. 2 FIGURE 6.6-4

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