







Prepared For:



FIGURE 6.1-1

FMS Study Area  
Baseline Noise Monitoring  
Locations

Trafalgar, NS

-  Noise Monitoring Locations
-  FMS Infrastructure Layout
-  Field Delineated Wetlands within FMS Study Area
-  NSE Wetlands outside FMS Study Area
-  Proposed Property Boundary
-  FMS Study Area



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



0 250 500 1,000 m

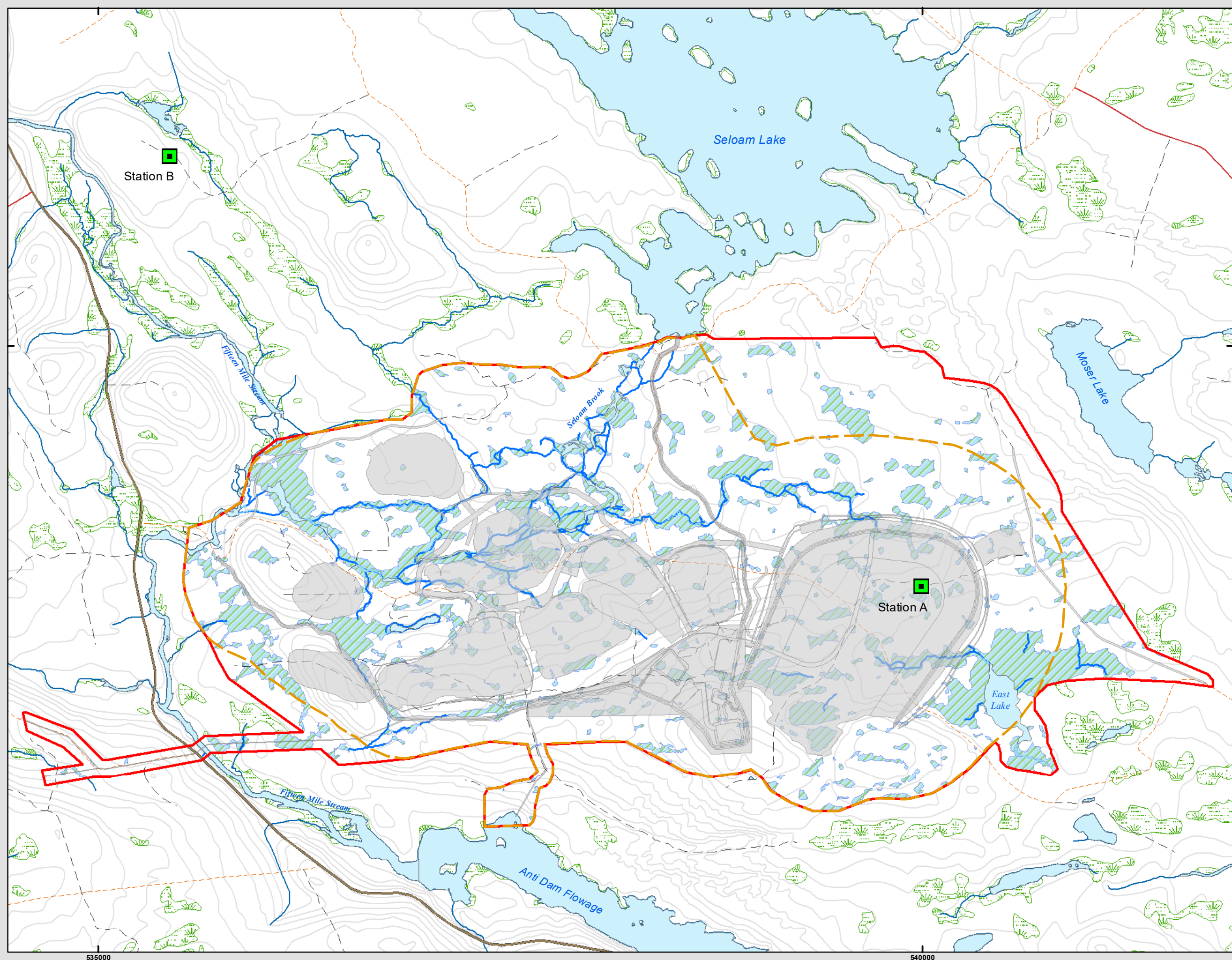
1:21,500 Scale when printed @ 11" x 17"

Drawn By: EP Date: 2020-08-26

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



McCallum Environmental Ltd.



535000

540000

500000


Prepared For:



FIGURE 6.1-2

**Touquoy Mine Site  
Baseline Noise Monitoring  
Locations**

**Moose River, NS**

-  Noise Monitoring Location
-  Touquoy Infrastructure
-  NSE Wetlands
-  Touquoy Mine Site



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



0 125 250 500 m

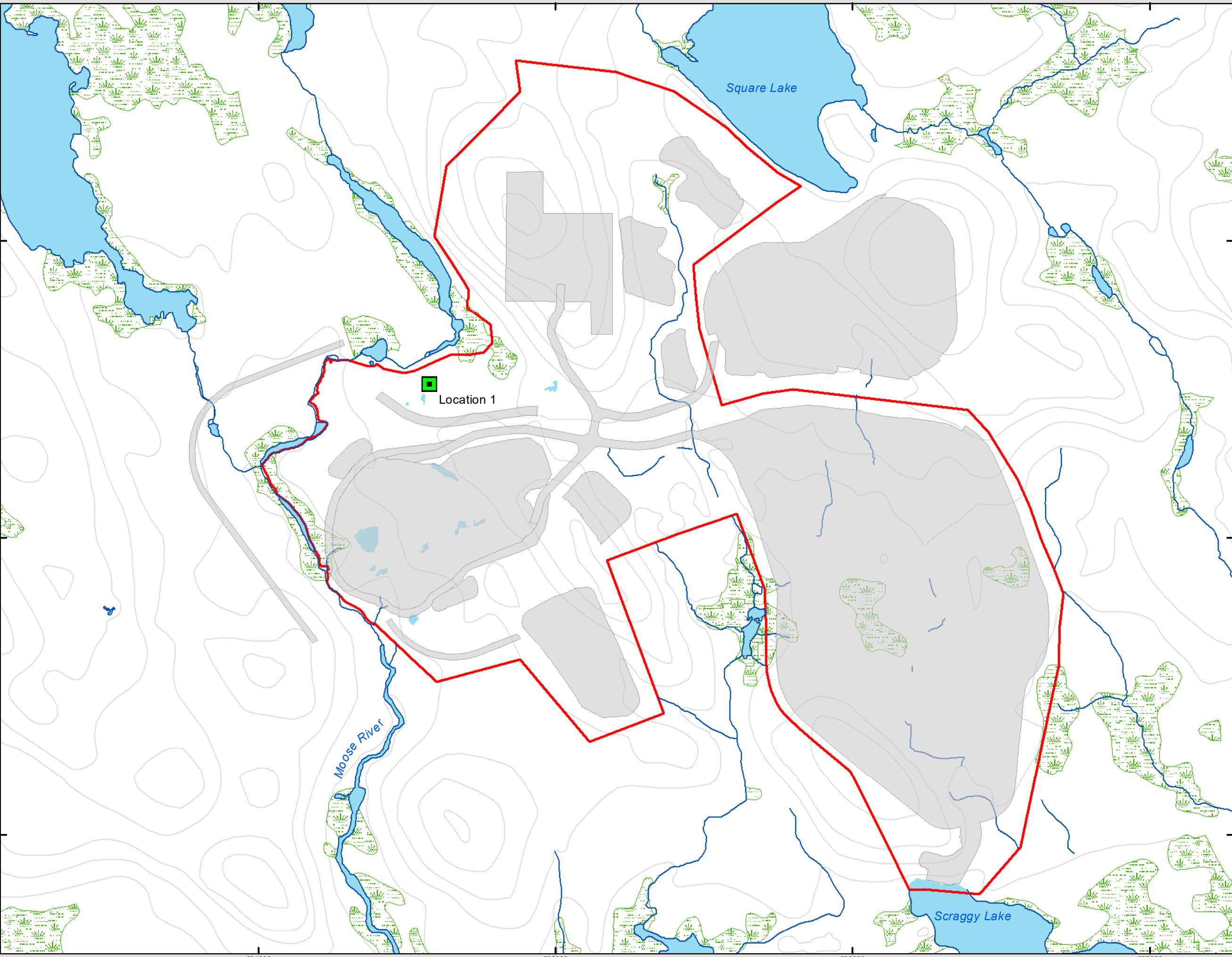
1:12,000 Scale when printed @ 11" x 17"

Drawn By: LP Date: 2019-10-03

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



McCallum Environmental Ltd.






Prepared For:



FIGURE 6.1-3

**Fifteen Mile Stream  
Spatial Boundaries: Noise**

**Halifax County, NS**

-  Project Area
-  Noise Local Assessment Area
-  Noise Regional Assessment Area



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



0 2,000 4,000 8,000 m

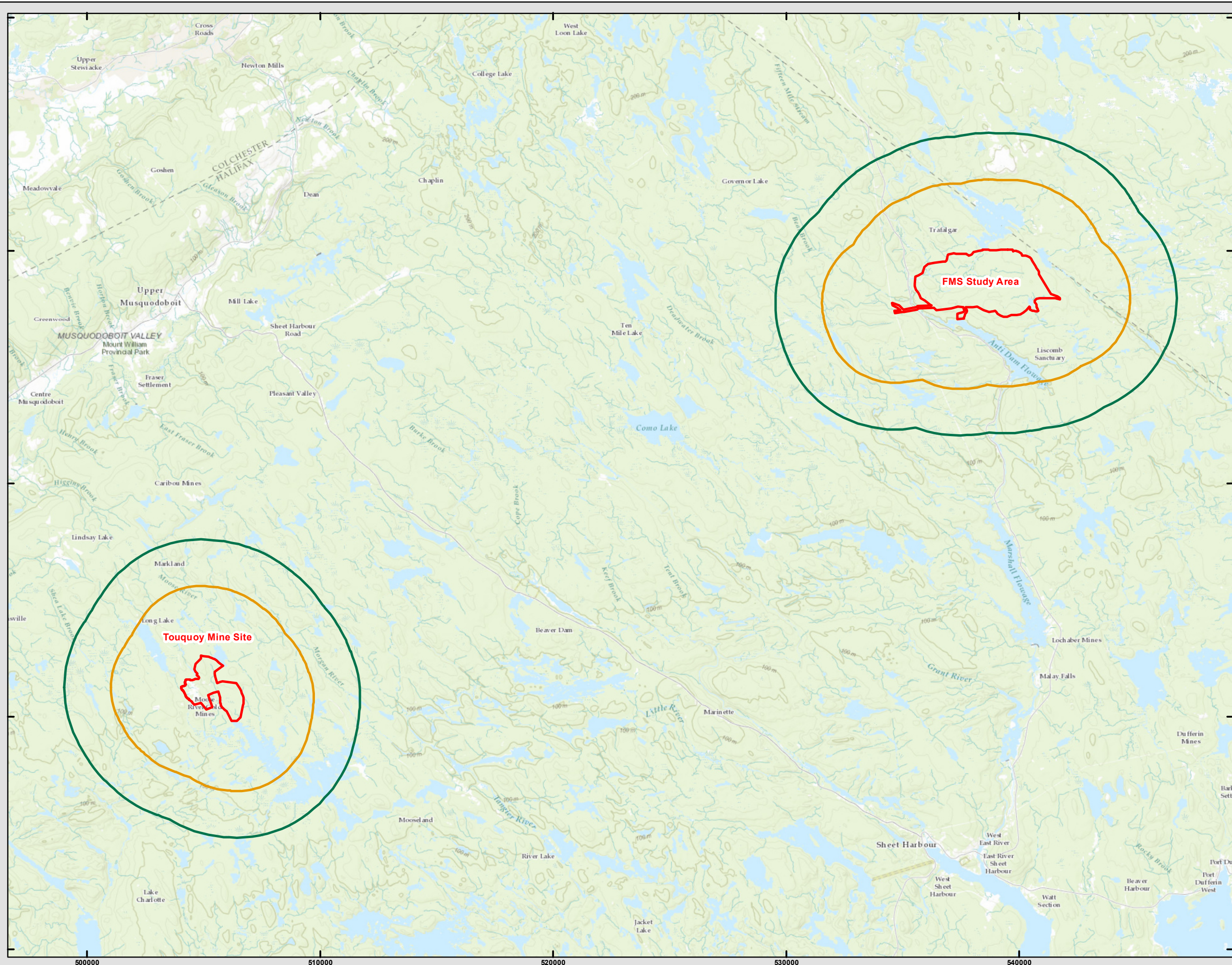
1:152,000 Scale when printed @ 11" x 17"

Drawn By: LP 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



McCallum Environmental Ltd.



Prepared For:



FIGURE 6.1-4

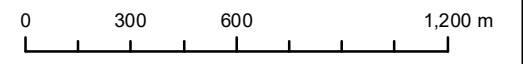
FMS Study Area  
Predicted Sound Levels at  
Property Boundary

Trafalgar, NS

- All Other Noise Contours (dBA)
- 55 dBA Noise Contour
- FMS Infrastructure Layout
- Proposed Property Boundary
- FMS Study Area



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



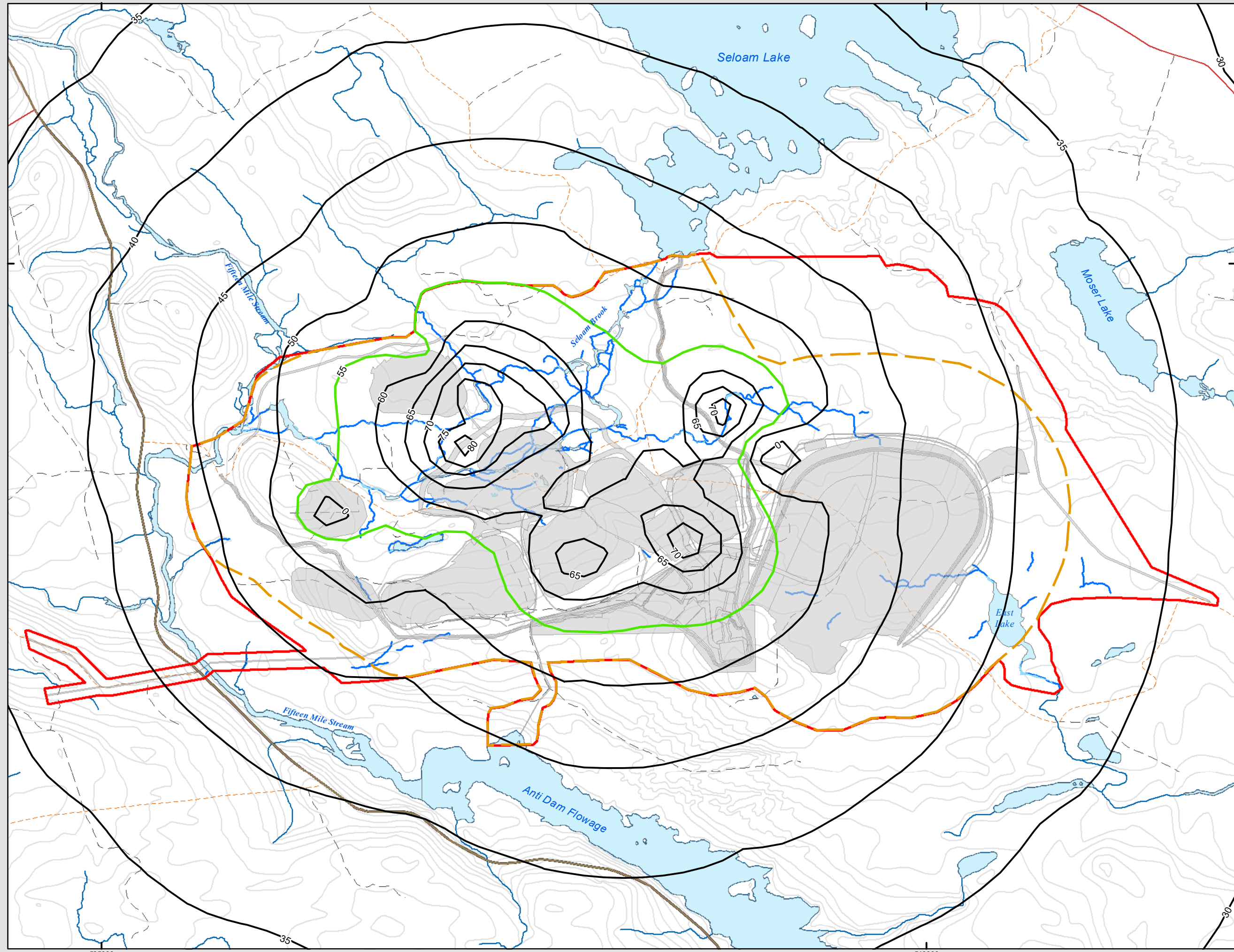
1:21,500 Scale when printed @ 11" x 17"

Drawn By: EP Date: 2020-03-10

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 Community



McCallum Environmental Ltd.



535000

540000

Prepared For:



FIGURE 6.1-5

FMS Study Area  
Noise Contour at 5 km  
Distance

Trafalgar, NS

- Closest Residences
- 30 dBA Noise Contour
- 45 dBA Noise Contour
- 55 dBA Noise Contour
- FMS Infrastructure Layout
- Noise Regional Assessment Area
- Proposed Property Boundary
- FMS Study Area



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



0 0.5 1 2 Kilometers

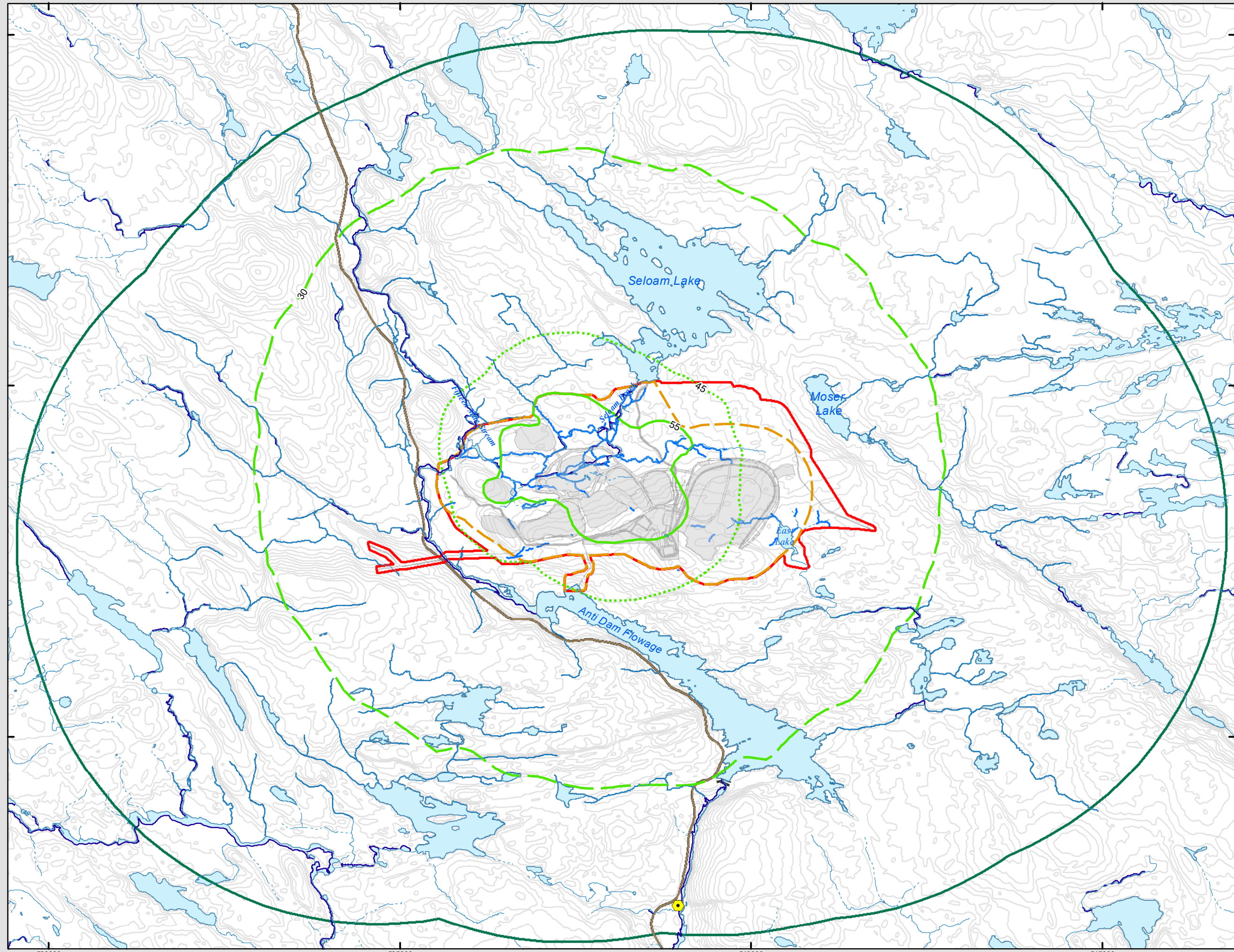
1:50,500 Scale when printed @ 11" x 17"

Drawn By: EP Date: 2020-10-29

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



McCallum Environmental Ltd.






Prepared For:



FIGURE 6.2-1

### Fifteen Mile Stream Spatial Boundaries: Air

Halifax County, NS

-  Air Regional Assessment Area
-  Air Local Assessment Area
-  Project Area



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



0 3.75 7.5 15 Kilometers

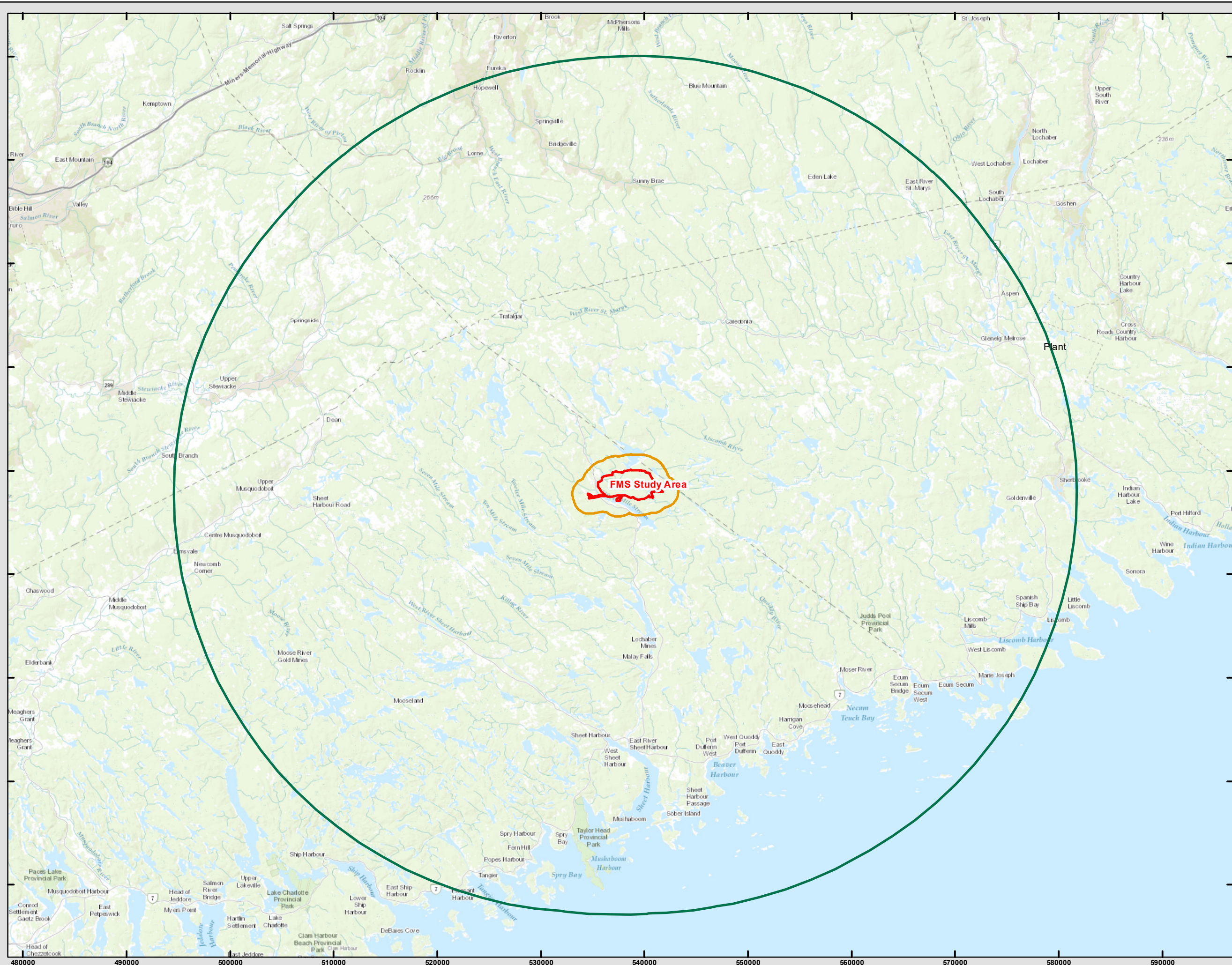
1:342,000 Scale when printed @ 11" x 17"

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



McCallum Environmental Ltd.



Prepared For:



FIGURE 6.2-2

FMS Study Area  
Air Contour Total  
Suspended Particulate  
Matter 24-Hour Levels with  
Mitigation

Trafalgar, NS

120 µg/m³ Total Suspended Particulate  
Matter (Max. Permissible Ground Level  
Concentration)

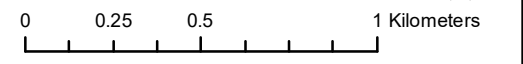
TSP Ranges (µg/m³)

- 120-300
- 300-400
- 400-500
- 500-600
- 600-700
- 700-800
- 800-900
- 900-1000
- 1000-1485
- 1485

- FMS Infrastructure Layout
- Proposed Property Boundary
- FMS Study Area



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



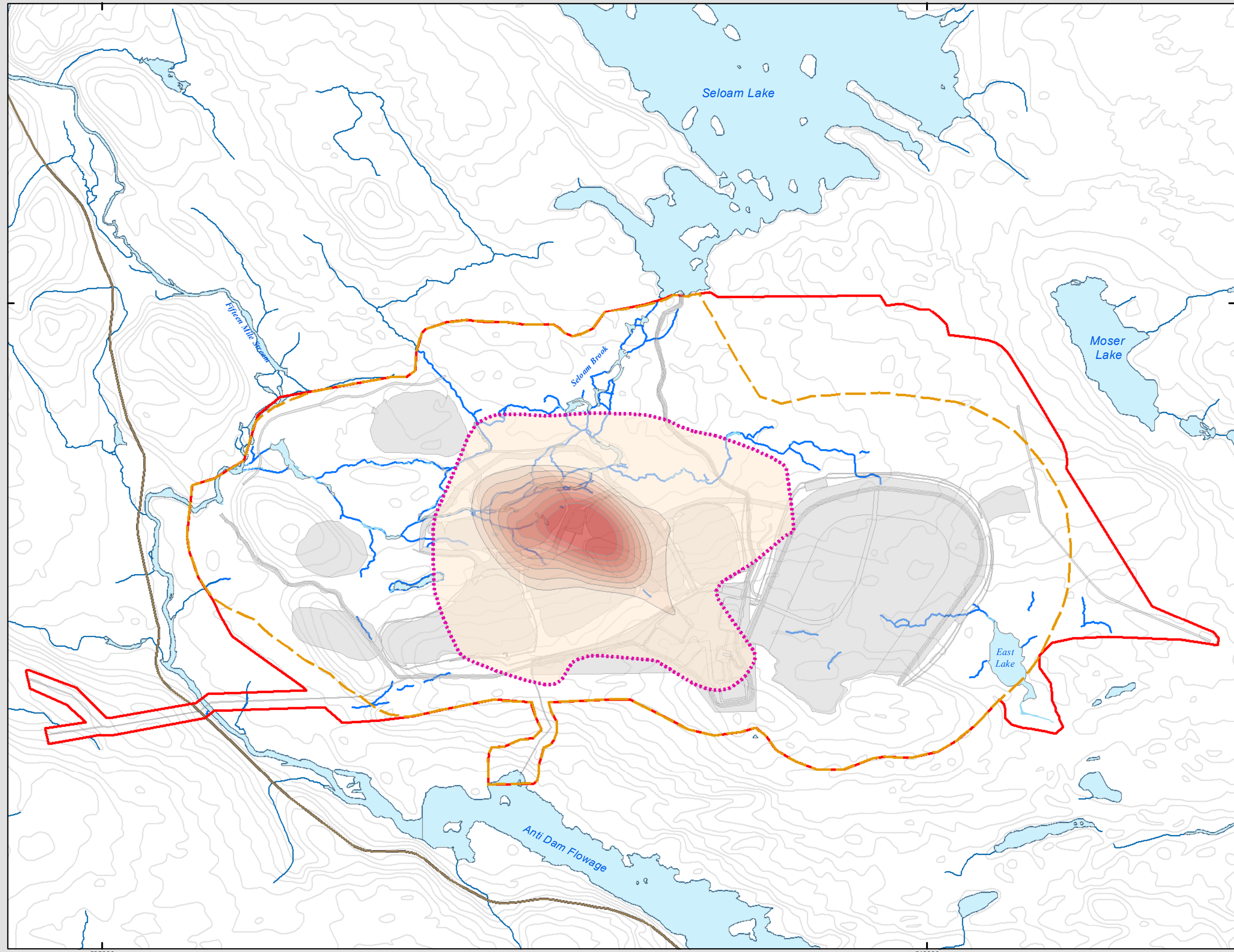
1:21,500 Scale when printed @ 11" x 17"

Drawn By: AS Date: 2020-10-29

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



McCallum Environmental Ltd.



535000

540000

500000

Prepared For:

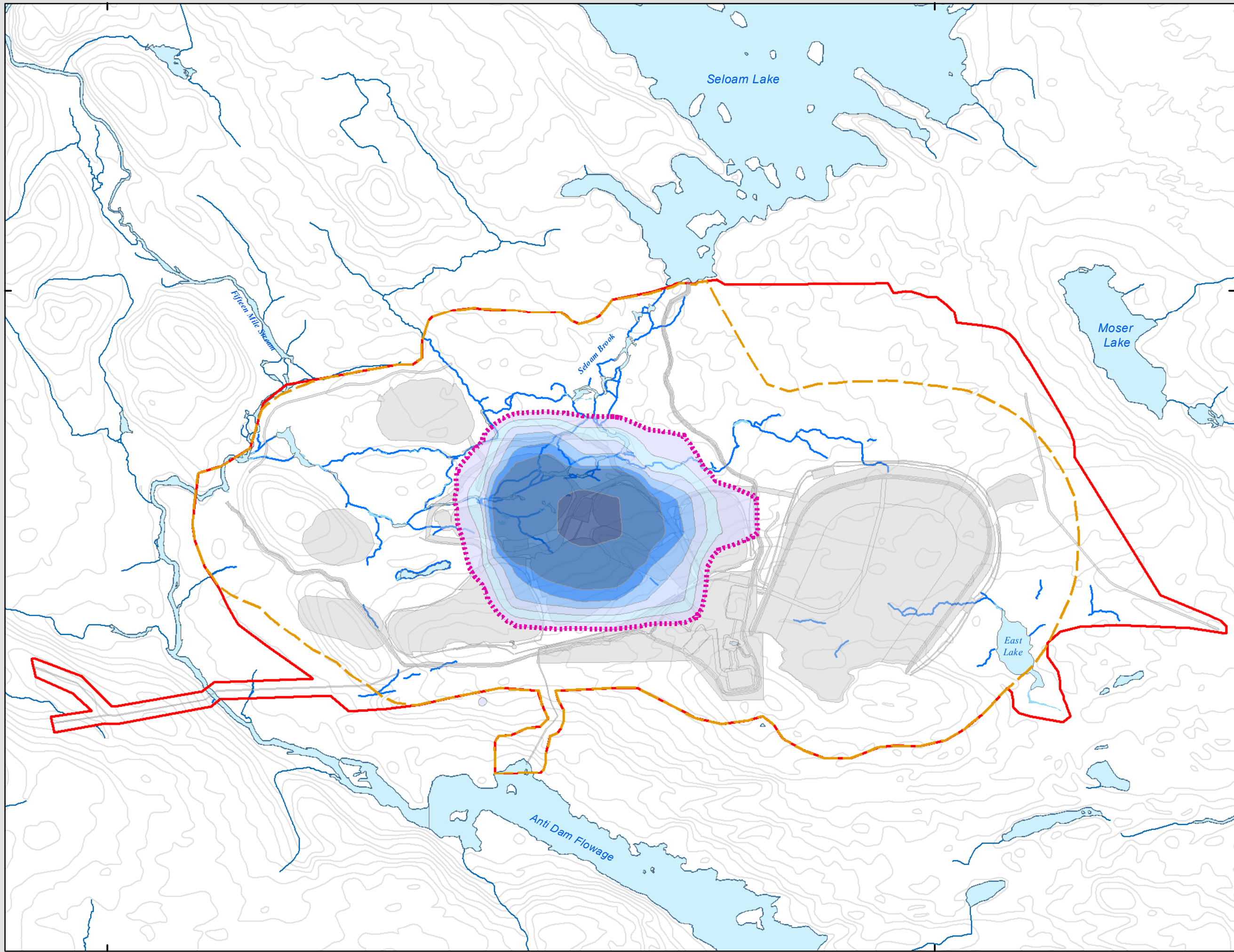


FIGURE 6.2-3

FMS Study Area  
Air Contour PM10 24-hour  
Levels with Mitigation

Trafalgar, NS

- 50 µg/m³ PM10 (Max. Permissible Ground Level Concentrations)
- PM10 Ranges (µg/m³)**
- 50-60
- 60-70
- 70-80
- 80-90
- 90-100
- 100-200
- 200-300
- FMS Infrastructure Layout
- Proposed Property Boundary
- FMS Study Area



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

0 0.25 0.5 1 Kilometers

1:21,500 Scale when printed @ 11" x 17"

Drawn By: AS Date: 2020-10-29

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





Prepared For:



FIGURE 6.3-1

**FMS Study Area  
Light Assessment  
Monitoring Locations**

**Trafalgar, NS**

- Light Monitoring Locations
- Field Delineated Wetlands within FMS Study Area
- FMS Infrastructure Layout
- NSE Wetlands outside FMS Study Area
- Proposed Property Boundary
- FMS Study Area



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



0 0.25 0.5 1 Kilometers

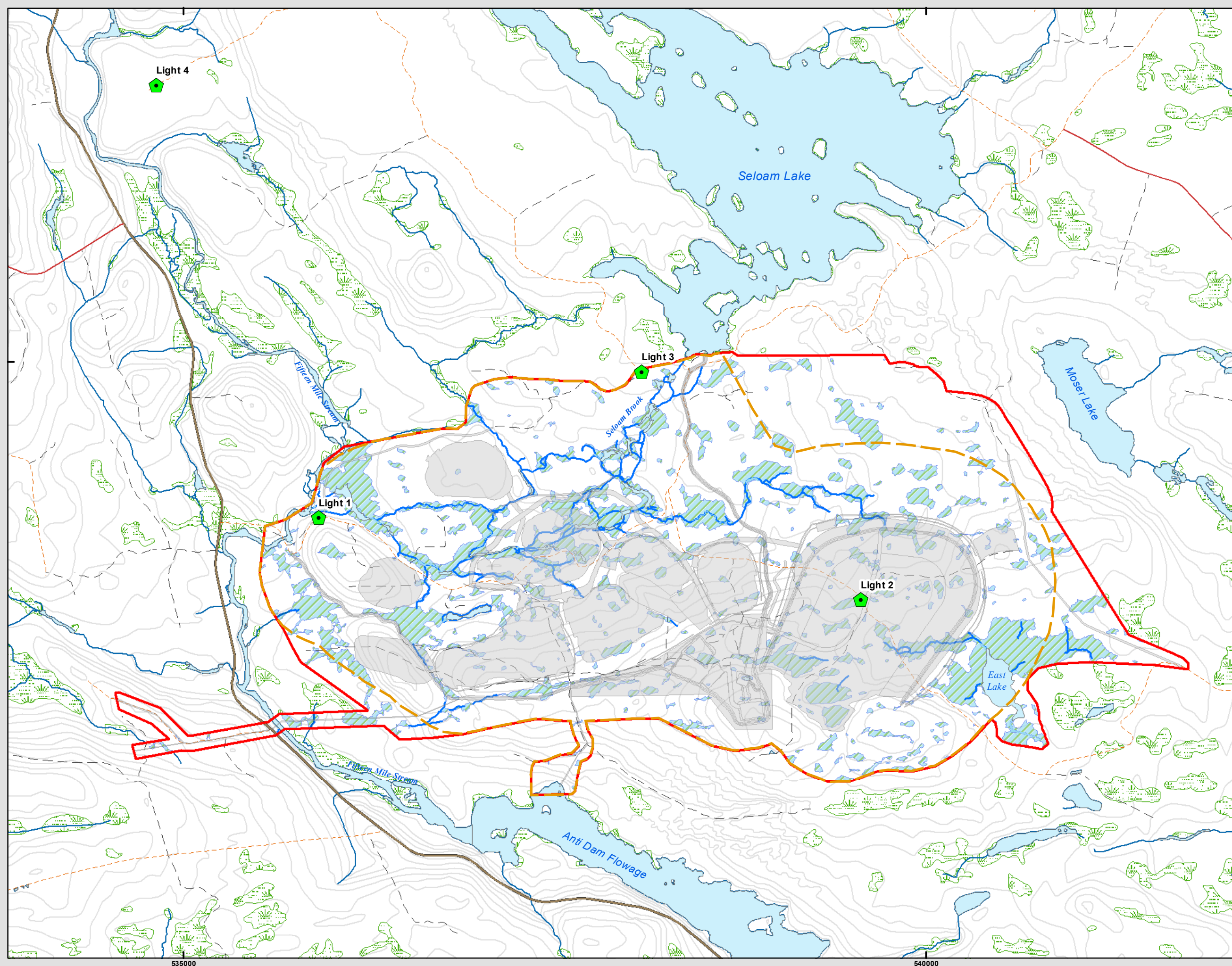
1:24,000 Scale when printed @ 11" x 17"

Drawn By: EP Date: 2020-08-26

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



McCallum Environmental Ltd.



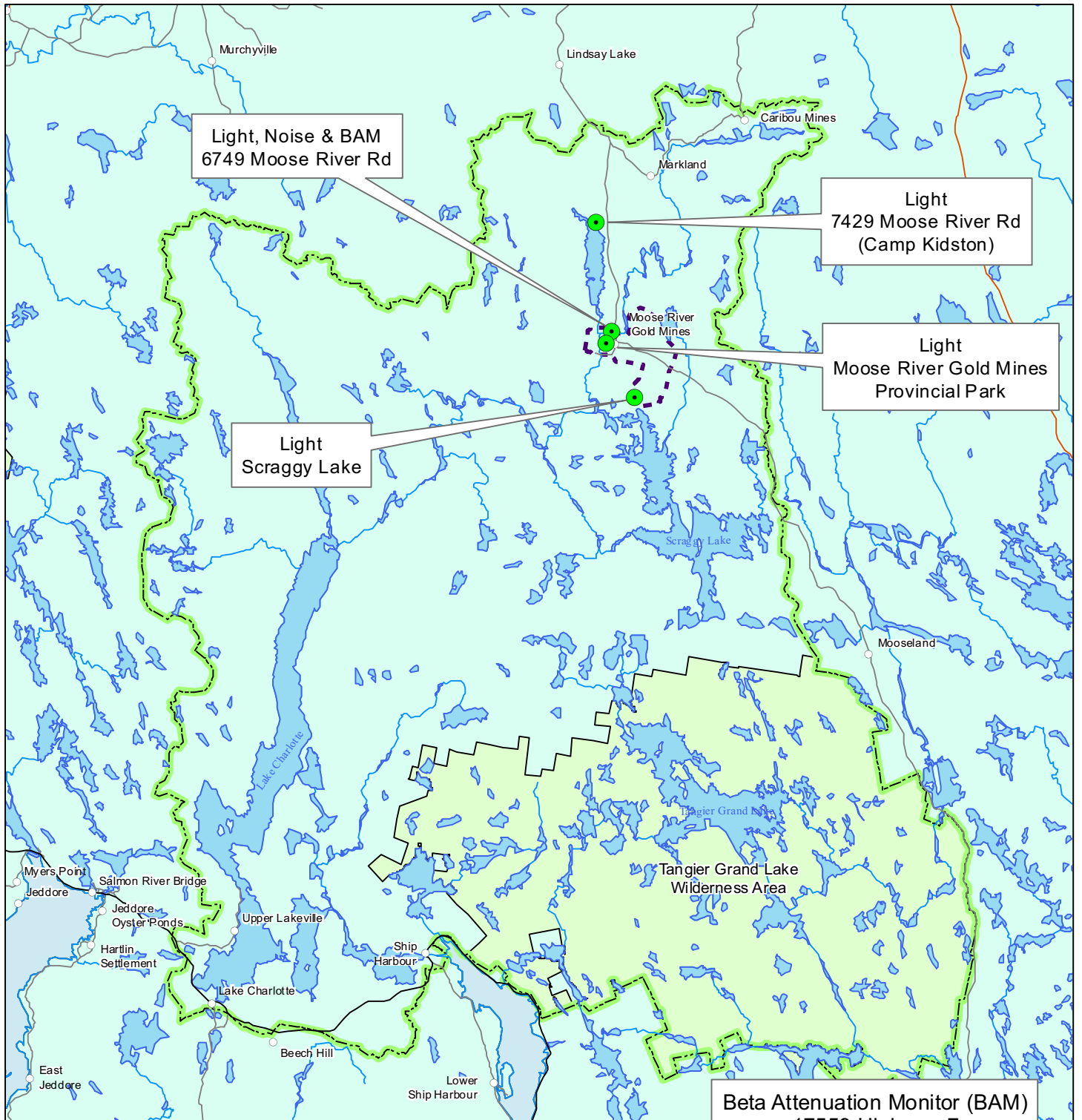



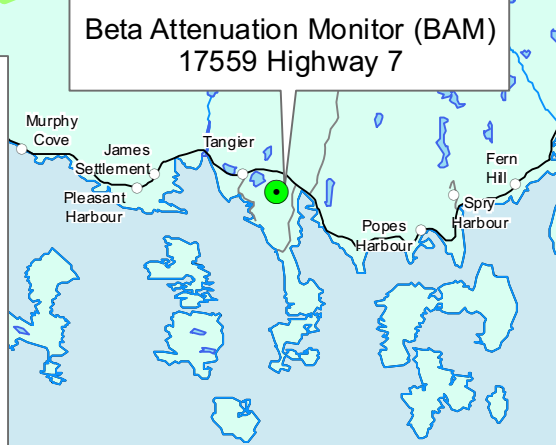


Figure 6.3-2  
 NOISE, BAM and LIGHT  
 MONITORING SITES  
 TOUQUOY GOLD PROJECT  
 DDV GOLD LTD.  
 Moose River Gold Mines  
 Halifax County, Nova Scotia

**Legend**

-  Project Study Area
-  Focus Report Study Area
-  Sample Locations

From 2007 Touquoy Gold  
 Project Focus Report






Prepared For:



FIGURE 6.3-3

**Fifteen Mile Stream  
Gold Project  
Spatial Boundaries: Light**

**Halifax County, NS**

-  Light Regional Assessment Area
-  Light Local Assessment Area
-  Project Area



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



0 1.25 2.5 5 km

1:150,000

Scale when printed @ 11" x 17"

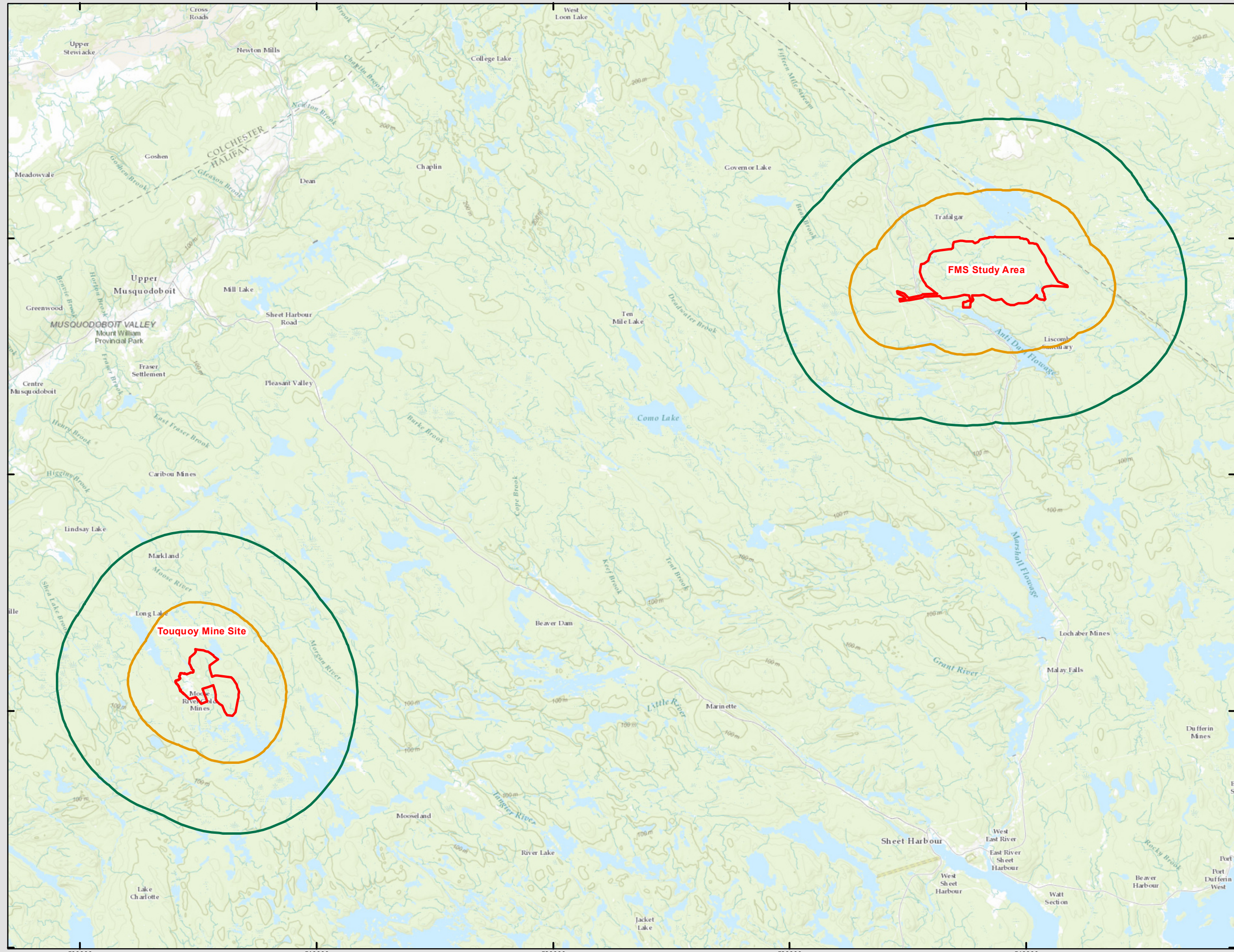
Drawn By: EP

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



McCallum Environmental Ltd.



Prepared For:



FIGURE 6.3-4

FMS Study Area  
Light Spill Limit

Trafalgar, NS

- Light Monitoring Locations
- Light Spill Limit
- FMS Infrastructure Layout
- Proposed Property Boundary
- FMS Study Area



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



0 0.25 0.5 1 Kilometers

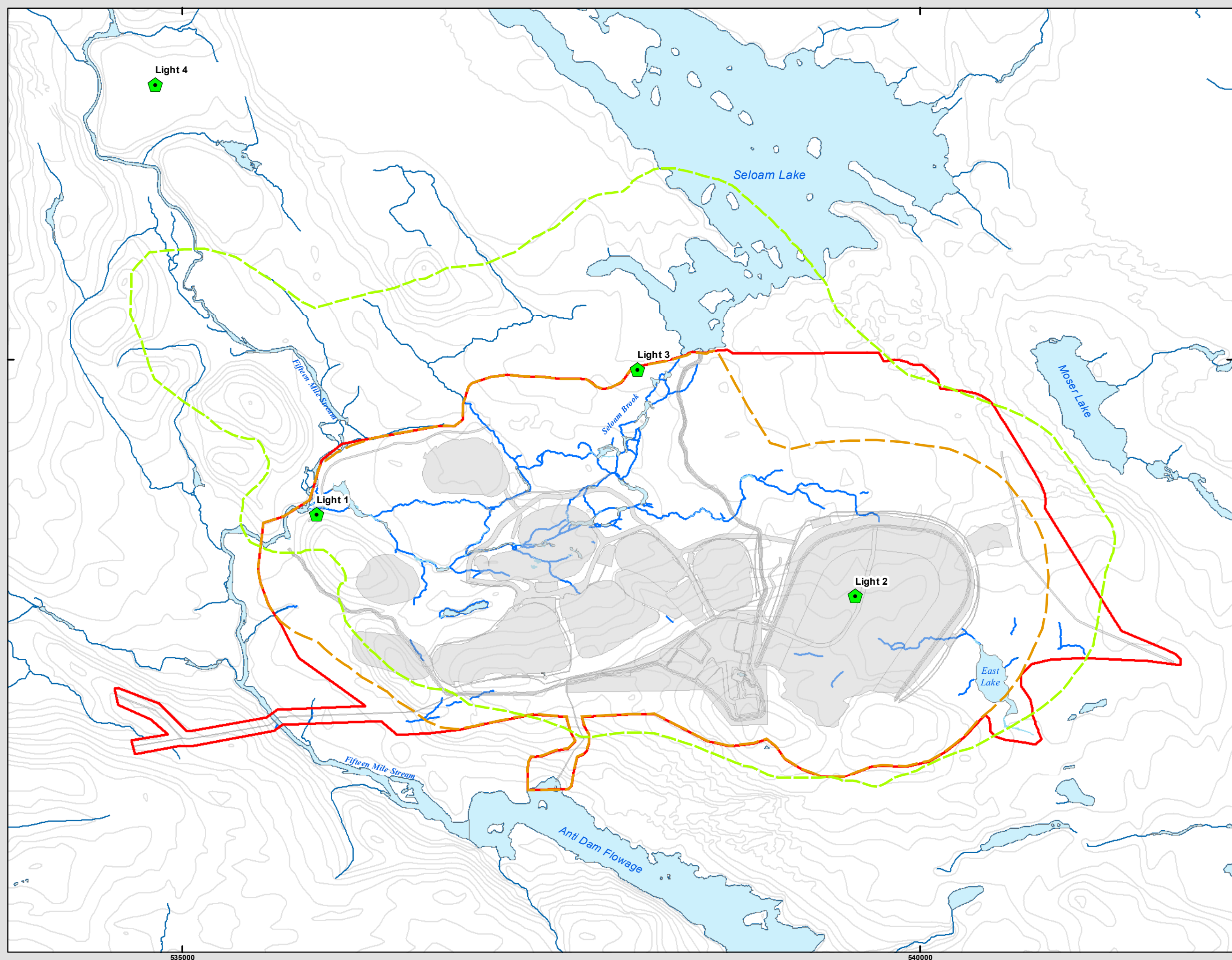
1:24,000 Scale when printed @ 11" x 17"

Drawn By: EP Date: 2020-10-29

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



McCallum Environmental Ltd.




Prepared For:



FIGURE 6.4-1

**Fifteen Mile Stream Sediment Sample Locations**

**Trafalgar, NS**

-  Sediment Sample Location
-  Field Delineated Watercourses within FMS Study Area
-  Field Delineated Wetlands within FMS Study Area
-  NSE Wetlands outside FMS Study Area
-  FMS Study Area



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



0 250 500 1,000 m

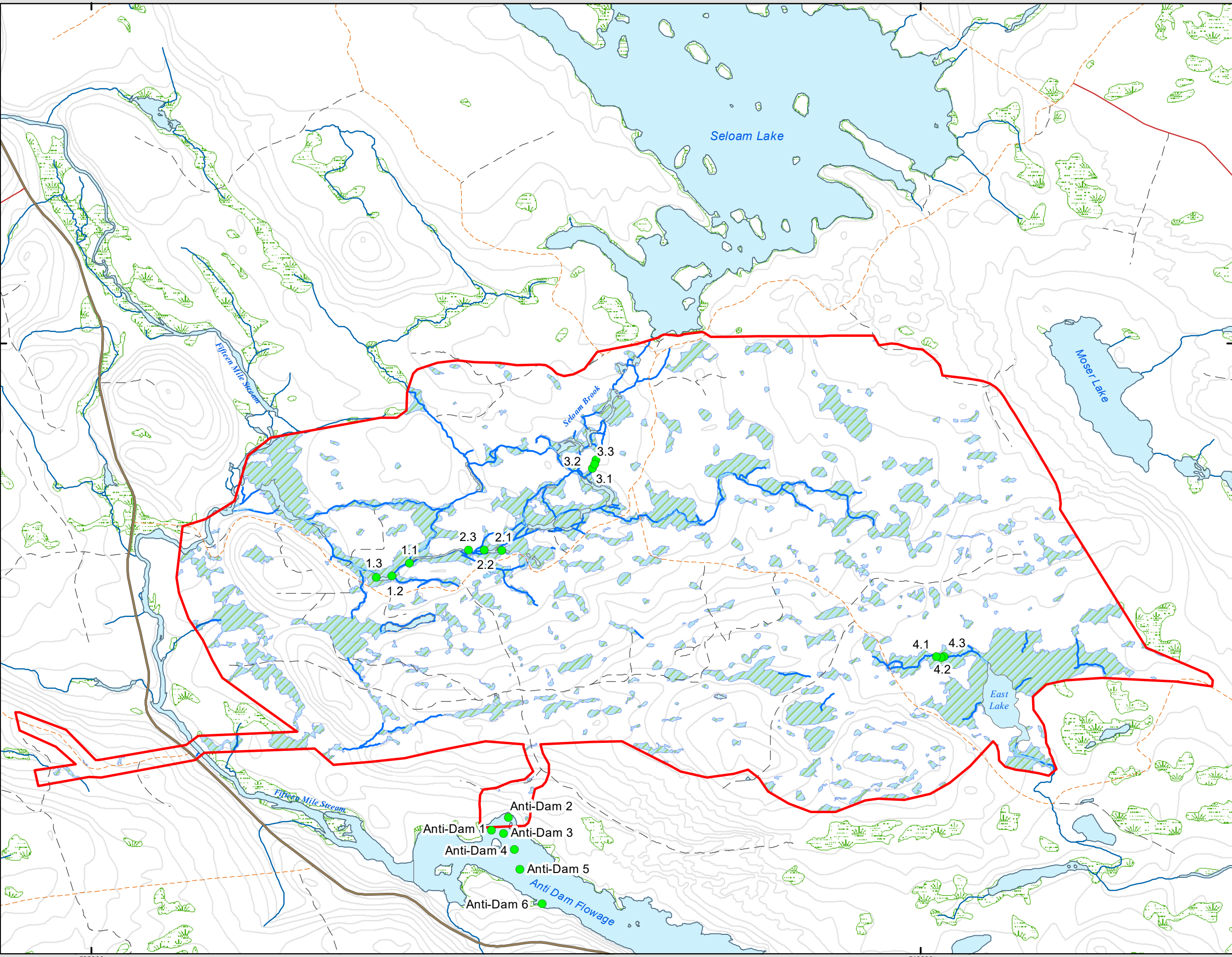
1:21,500 Scale when printed @ 11" x 17"

Drawn By: EP Date: 2020-03-10

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 Community



McCallum Environmental Ltd.



535000

540000

Prepared For:










**Atlantic Gold**

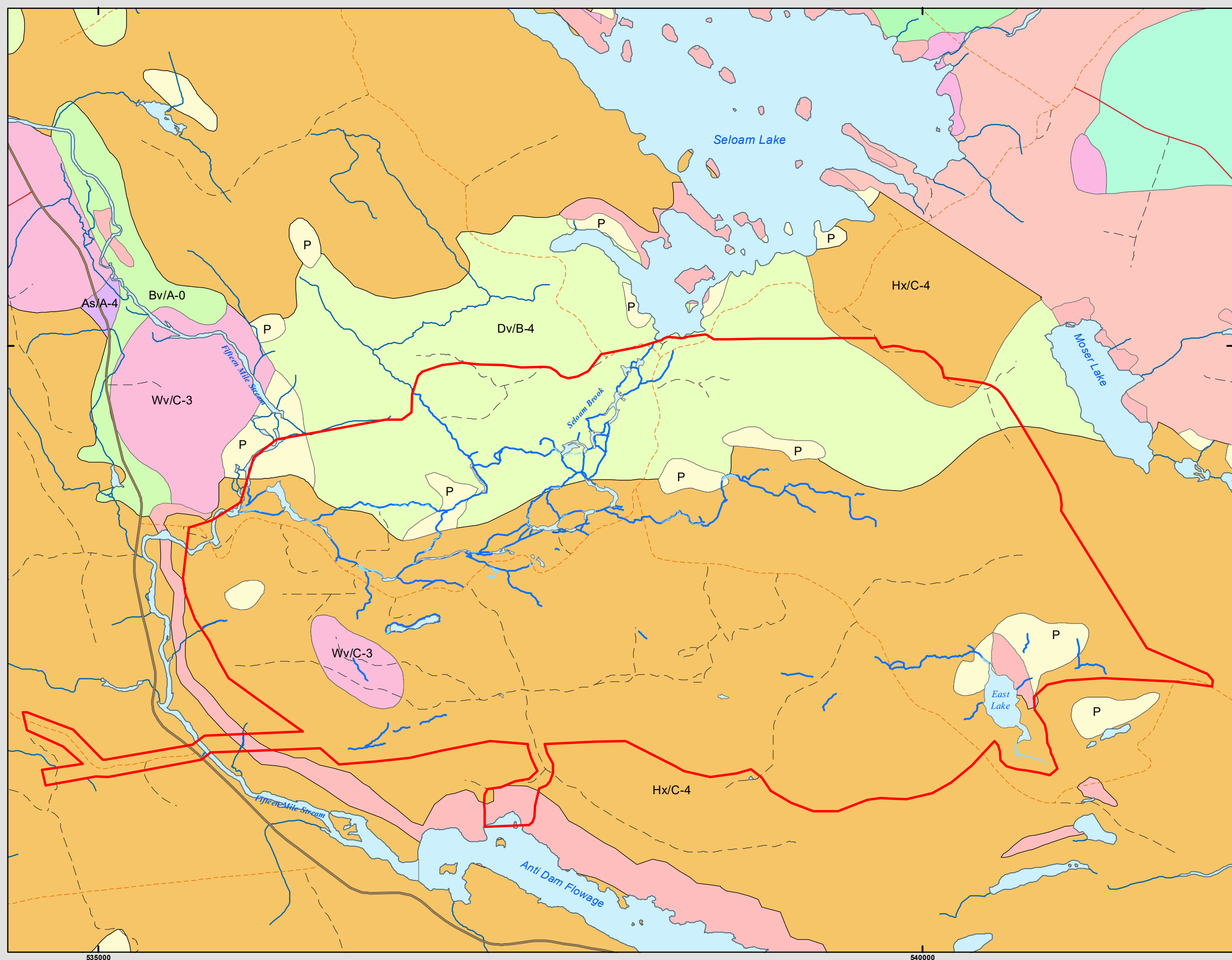
**FIGURE 6.4-2**

**Fifteen Mile Stream  
Soil Series**

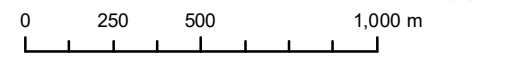
**Trafalgar, NS**

**Soil Series**

-  As/A-4
-  Bv/A-0
-  Dv/B-4
-  Hx/C-4
-  P
-  Wv/C-3
-  FMS Study Area



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



1:21,500 Scale when printed @ 11" x 17"

Drawn By: AS Date: 2020-10-29

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



**McCallum Environmental Ltd.**






Prepared For:



FIGURE 6.4-3

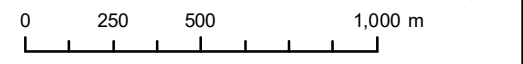
**Fifteen Mile Stream  
Regional Surficial Geology**

**Trafalgar, NS**

-  Bedrock
-  Organic Deposits
-  Silty Drumlin
-  Stony Till Plain
-  FMS Study Area



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



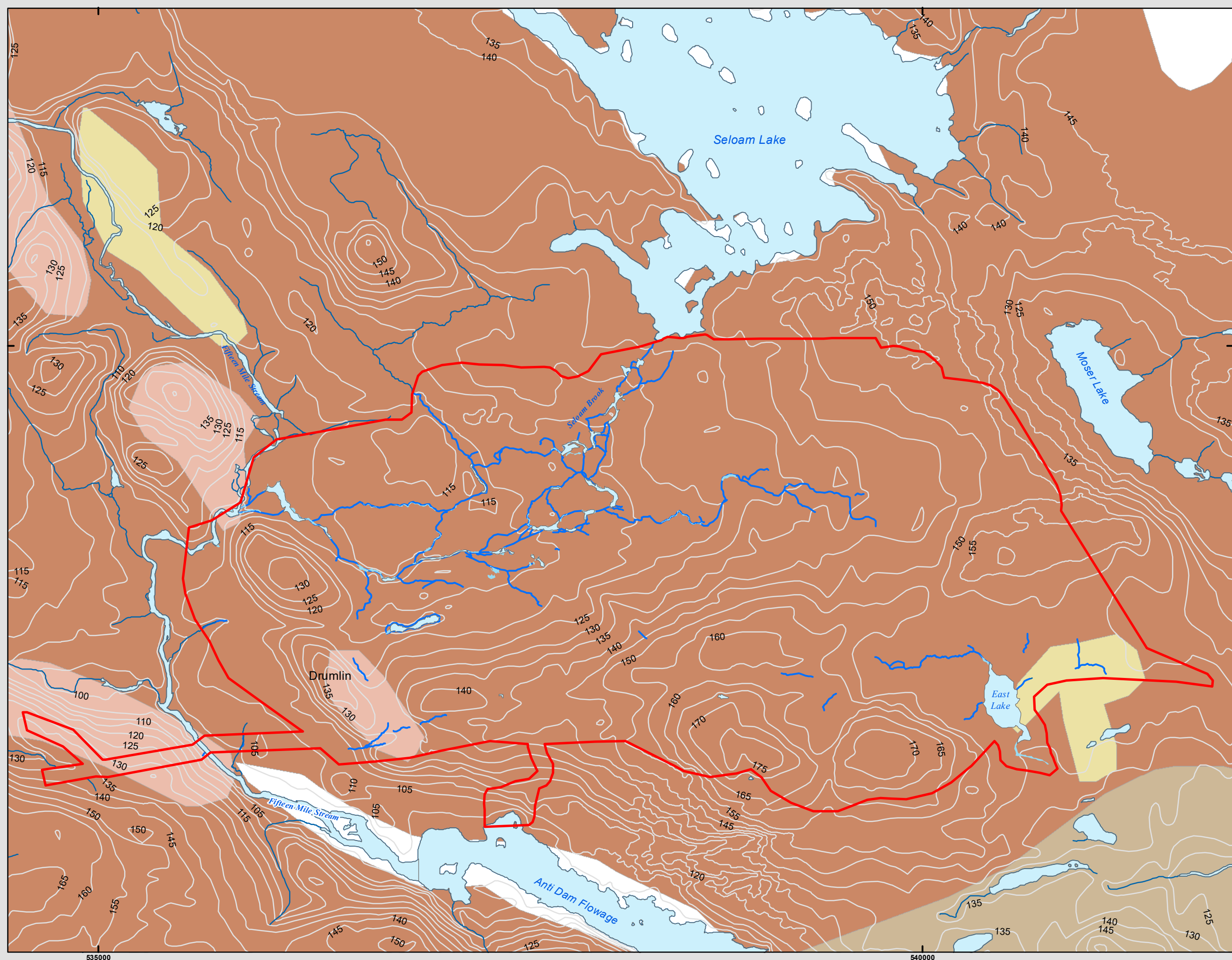
1:21,500 Scale when printed @ 11" x 17"

Drawn By: AS Date: 2020-10-29

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



McCallum Environmental Ltd.



Prepared For:











**Atlantic Gold**

**FIGURE 6.4-4**

**Fifteen Mile Stream  
Regional Bedrock Geology**

**Trafalgar, NS**

-  Goldenville Formation
-  Halifax Formation
-  Liscomb Complex: Paragneiss
-  Middle - Late Devonian diorite - gabbro
-  Middle - Late Devonian granitoid
-  Middle - Late Devonian muscovite biotite monzogranite
-  White Quarry, Stewiacke, Carrolls Corner, Macumber and Gays River Formations
-  Project Area



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



0 1.5 3 6 Kilometers

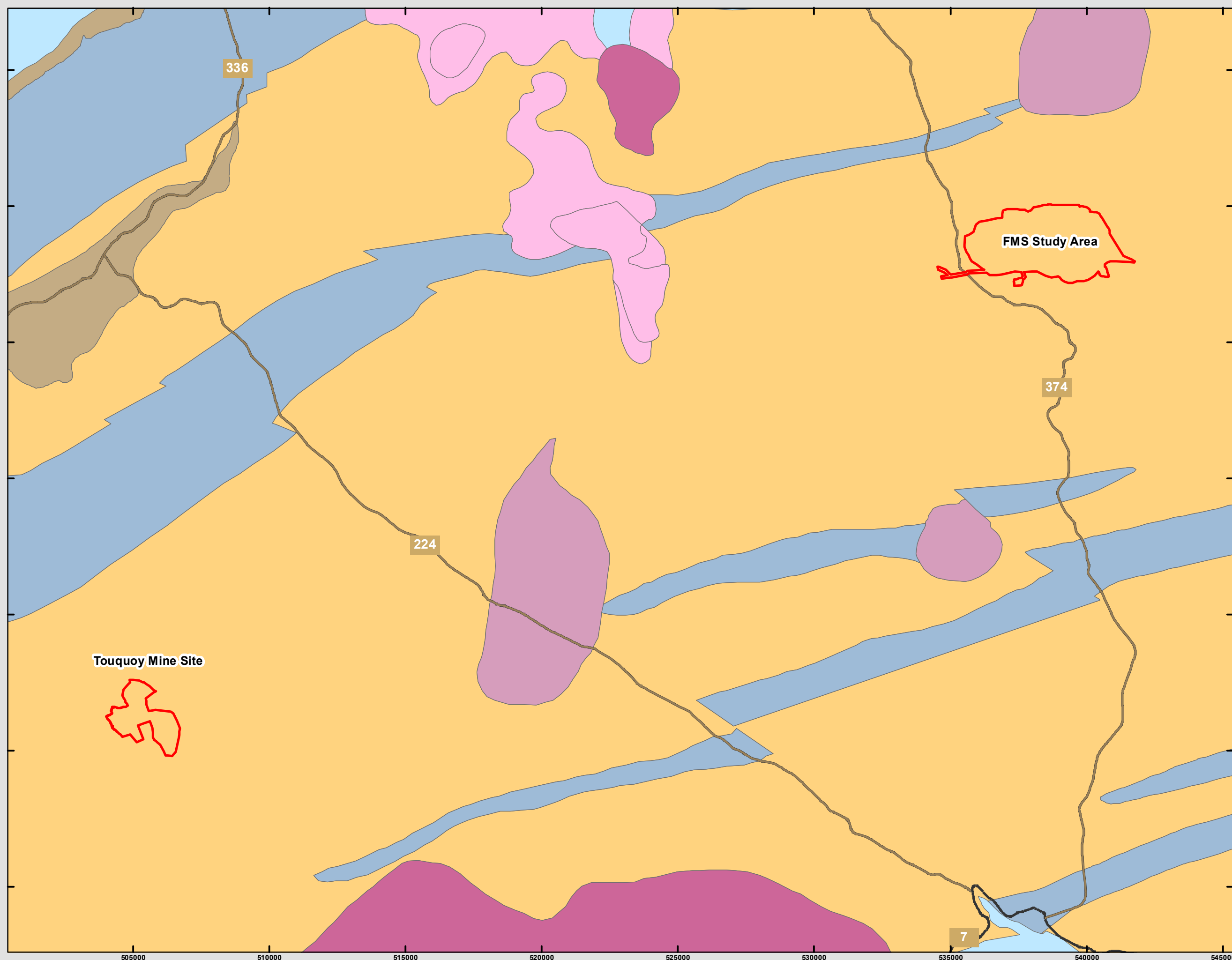
1:130,000 Scale when printed @ 11" x 17"

Drawn By: EP Date: 2020-10-29

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



**McCallum Environmental Ltd.**



5005000  
5000000  
4995000  
4990000  
4985000  
4980000  
4975000

505000 510000 515000 520000 525000 530000 535000 540000 545000