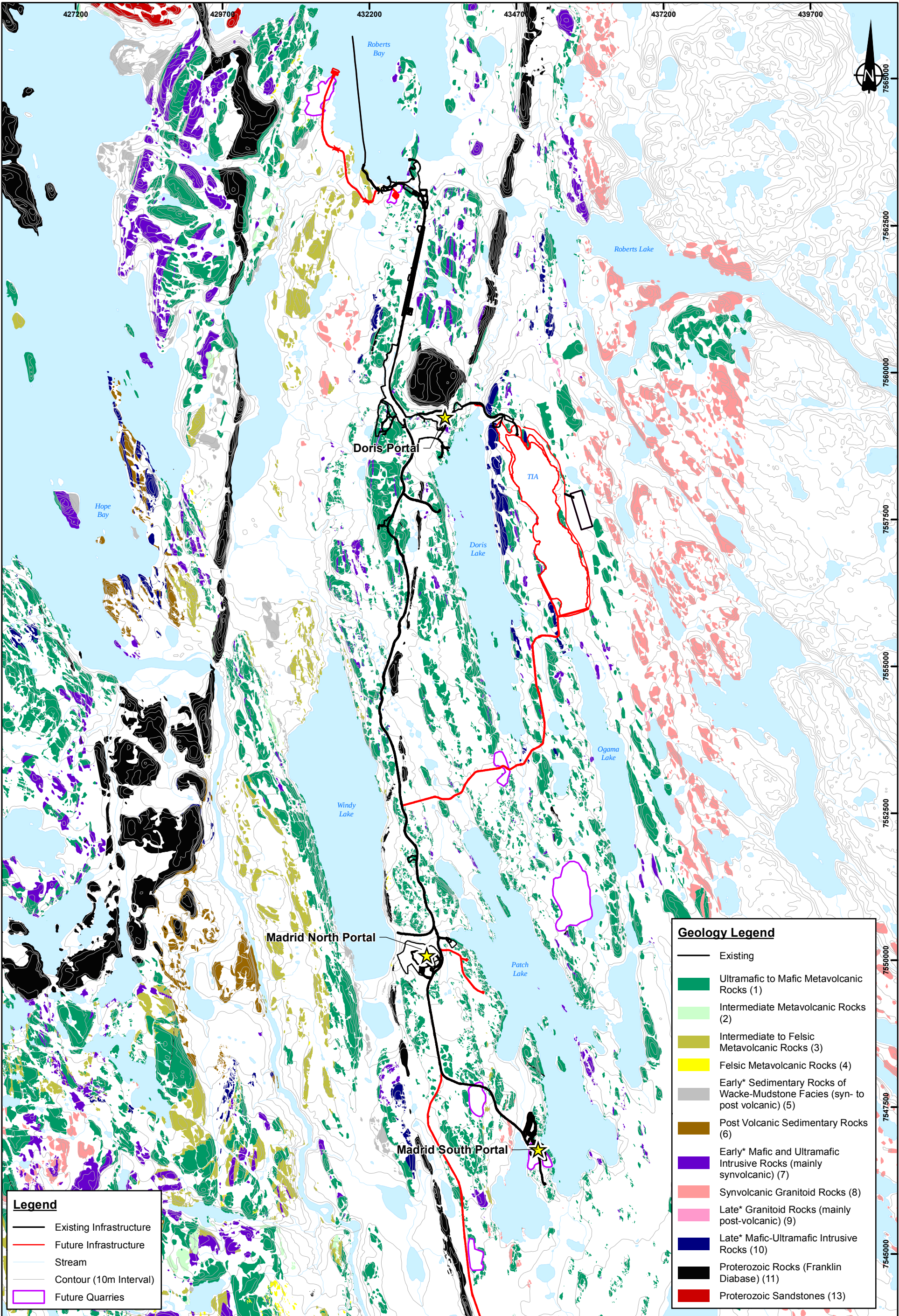


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Legend

- Existing Infrastructure
- Future Infrastructure
- Stream
- Contour (10m Interval)
- Future Quarries

Geology Legend

- Existing
- Ultramafic to Mafic Metavolcanic Rocks (1)
- Intermediate Metavolcanic Rocks (2)
- Intermediate to Felsic Metavolcanic Rocks (3)
- Felsic Metavolcanic Rocks (4)
- Early* Sedimentary Rocks of Wacke-Mudstone Facies (syn- to post volcanic) (5)
- Post Volcanic Sedimentary Rocks (6)
- Early* Mafic and Ultramafic Intrusive Rocks (mainly synvolcanic) (7)
- Synvolcanic Granitoid Rocks (8)
- Late* Granitoid Rocks (mainly post-volcanic) (9)
- Late* Mafic-Ultramafic Intrusive Rocks (10)
- Proterozoic Rocks (Franklin Diabase) (11)
- Proterozoic Sandstones (13)

0 500 1000 1500 2000 2500
Metres

Notes:

- *early and late used in a relative sense only.
- Coordinate System: NAD 1983 UTM Zone 13N
- Base Topo Data: CanVec, Natural Resources Canada



Project No: 1CT022.004.200.10
Filename: 1CT022.004.200.10_Fig_2_OutcropMapping_mzs

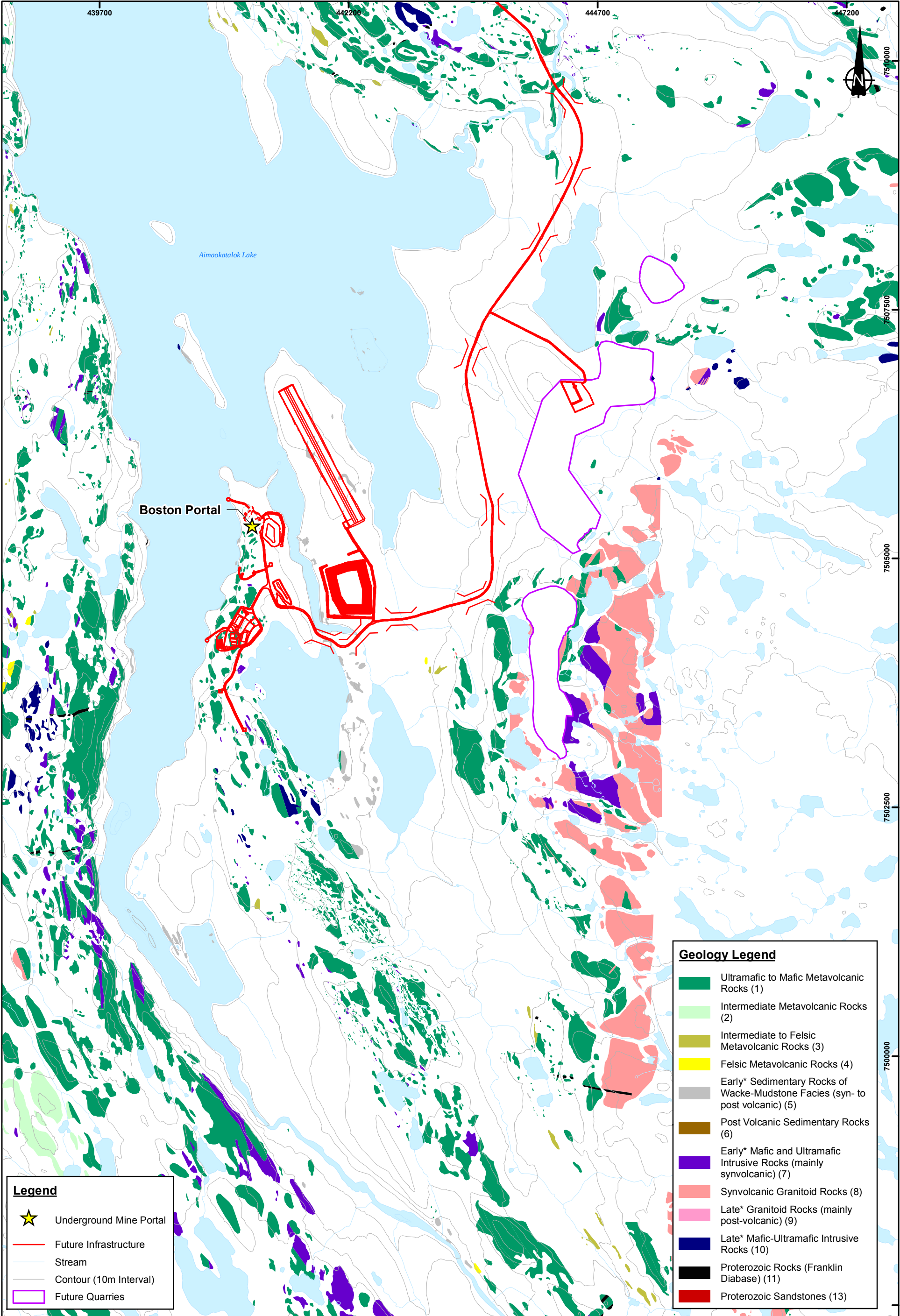


HOPE BAY PROJECT

Overburden Summary Report

Doris and Madrid Mining Area
Outcrop Mapping (After Sherlock 2002)

Date: Nov. 2016
Approved: MMM
Drawing: 2

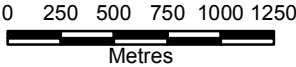


Legend

- Underground Mine Portal
- Future Infrastructure
- Stream
- Contour (10m Interval)
- Future Quarries

Geology Legend

- Ultramafic to Mafic Metavolcanic Rocks (1)
- Intermediate Metavolcanic Rocks (2)
- Intermediate to Felsic Metavolcanic Rocks (3)
- Felsic Metavolcanic Rocks (4)
- Early* Sedimentary Rocks of Wacke-Mudstone Facies (syn- to post volcanic) (5)
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- Early* Mafic and Ultramafic Intrusive Rocks (mainly synvolcanic) (7)
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- Late* Mafic-Ultramafic Intrusive Rocks (10)
- Proterozoic Rocks (Franklin Diabase) (11)
- Proterozoic Sandstones (13)



Notes:
1. *early and late used in a relative sense only.
2. Coordinate System: NAD 1983 UTM Zone 13N
3. Base Topo Data: CanVec, Natural Resources Canada



Project No: 1CT022.004.200.10
Filename: 1CT022.004.200.10_Fig_3_BostonMiningArea_mzs

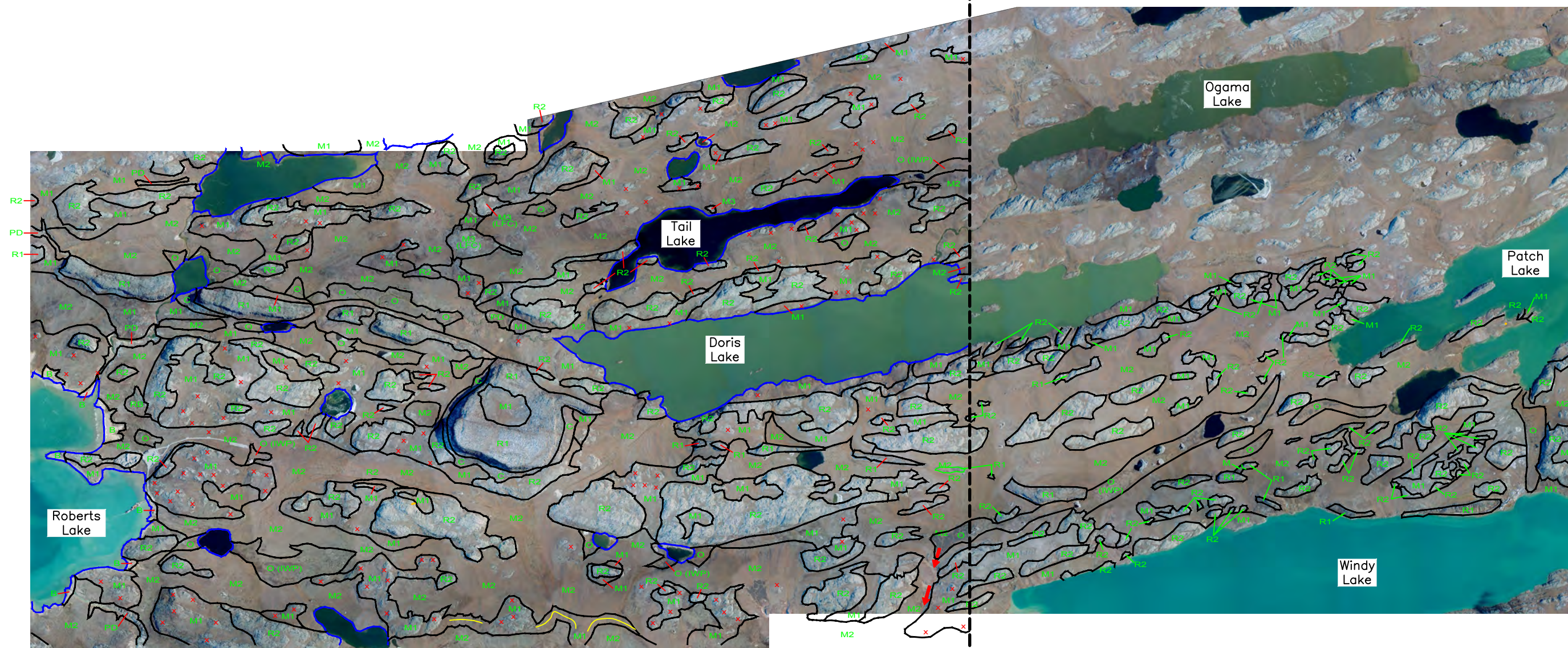


HOPE BAY PROJECT

Overburden Summary Report

Boston Mining Area Outcrop Mapping
(After Sherlock 2002)

Date: Nov. 2016	Approved: MMM	Drawing: 3
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LEGEND

Quaternary Holocene Deposits

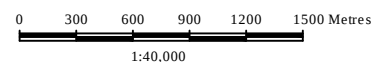
- B** Active Marine Beach Deposits
- C** Colluvium
- O** Organic Deposits: Peat and organic mud
- PD** Areas of Permafrost Degradation
- M** Inactive Marine Beach Deposits
 - M1** Littoral Deposits: Sand, gravel, cobbles and boulders
 - M2** Marine Blanket: Undifferentiated clay, silt and sand judged to be 2.5 to 20m thick
 - M3** Marine Veneer: Same as M2 but generally judged to be less than 2.5m thick

Pre-Cambrian Bedrock

- R1** Neoproterozoic-Age Diabase Dykes and Sills
- R2** Folded, northward striking, metamorphosed and foliated Archean volcanics and lesser sedimentary rocks

On-Site Symbols

- Geologic Boundaries Interpreted from Topographic Map and Aerial Photos (all boundaries are approximate)
- (IWP)** Ice Wedge Polygons
- (LFC)** Linear Frost Cracks
- Frost Shattered Rock
- Gully
- Marine Wave Eroded Slope
- RB** Raised Marine Beach
- X** Small Bedrock Outcrops



SRK JOB NO.: 1CT022.004

FILE NAME: 1CT022.004.200.10_Fig_4_SurficialGeo.dwg



HOPE BAY PROJECT

Overburden Summary Report

Surficial Geology and
Permafrost Features at
Doris and Madrid Mining Areas

DATE:
June 2016

APPROVED:
MMM

FIGURE:
4

LEGEND

QUATERNARY SEDIMENTS

POSTGLACIAL

A - alluvial deposits: generally sand and gravel

A₁ - alluvial deposits of 1st alluvial terrace

A₂ - alluvial deposits of 2nd alluvial terrace

A₃ - alluvial deposits of 3rd alluvial terrace

L - lacustrine deposits: mainly silt and sand

L_r - recent lacustrine sediments: silt and fine sand

M - marine deposits: silty clay with trace of sand

M₁ - marine deposits of 1st marine terrace

M₂ - marine deposits of 2nd marine terrace

GLACIAL

Gf - glaciofluvial deposits: coarse sand and some gravel

bG - bouldery glaciofluvial deposits: boulder lags and cobbly bouldery gravels

Gt - till deposits: bouldery stony sandy silts and fine sands with boulders

PRE-QUATERNARY

R - bedrock outcrop: predominantly basalt

SYMBOLS

— well defined geological boundary

- - - conventional geological boundary

- - - lineaments: faults

~ ~ ~ esker

▣ drumlin or drumlinoid feature

△ talus fan

* patterned ground: ice-wedge polygons (permafrost)

patterned ground: earth hummocks (permafrost)

◇ frost mound

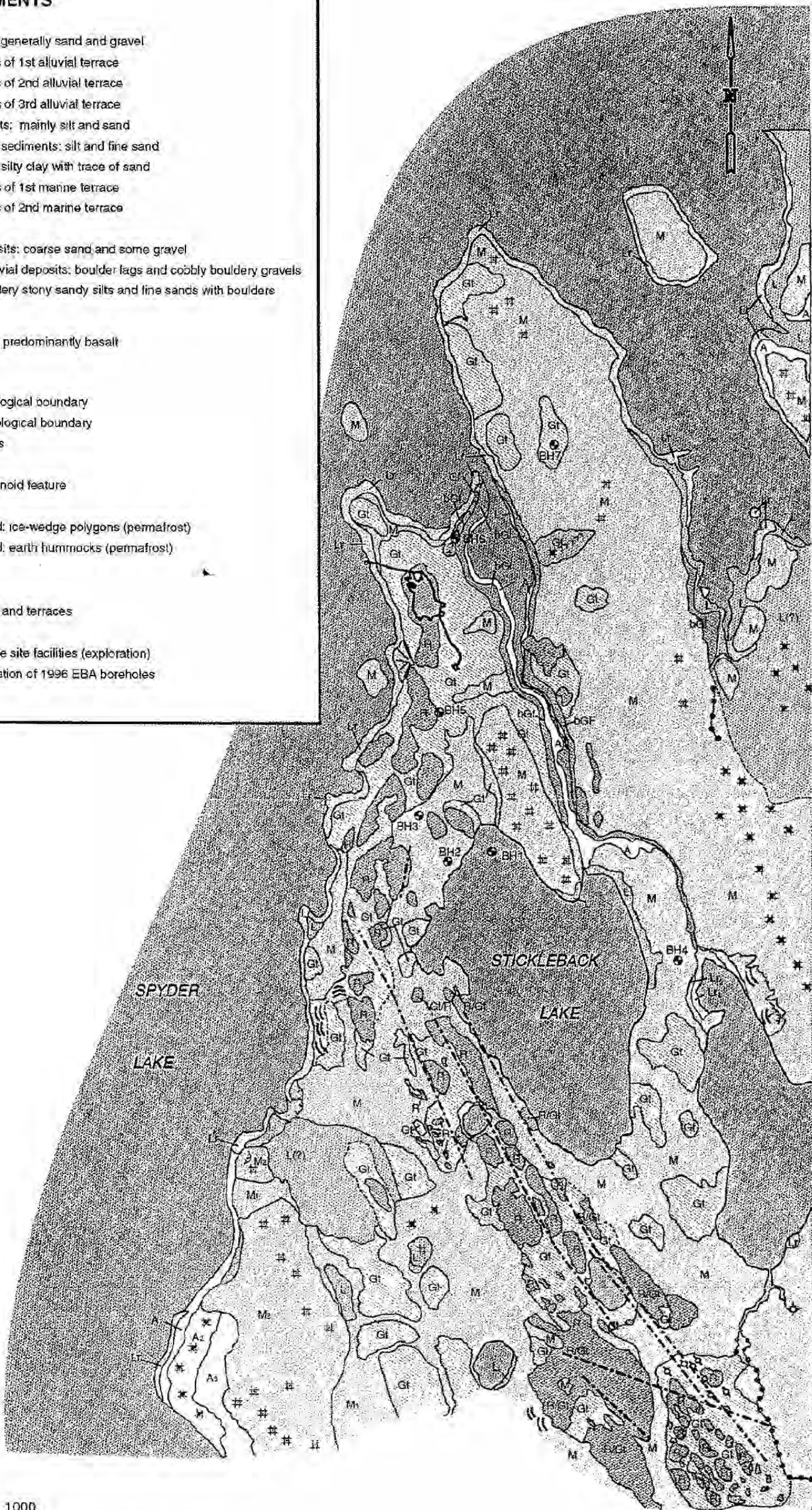
∩ thaw slump

~ ~ ~ solifluction lobes and terraces

- - - beaded stream

○ Boston Gold Mine site facilities (exploration)

● approximate location of 1996 EBA boreholes



Note: Spyder Lake is now called Aimaokatalok Lake



Job No: 1CT022.004

Filename: 1CT022.004.200.10_Fig_05.ppt



HOPE BAY PROJECT

Overburden Summary Report

Geology and Permafrost at
Boston Mining Area

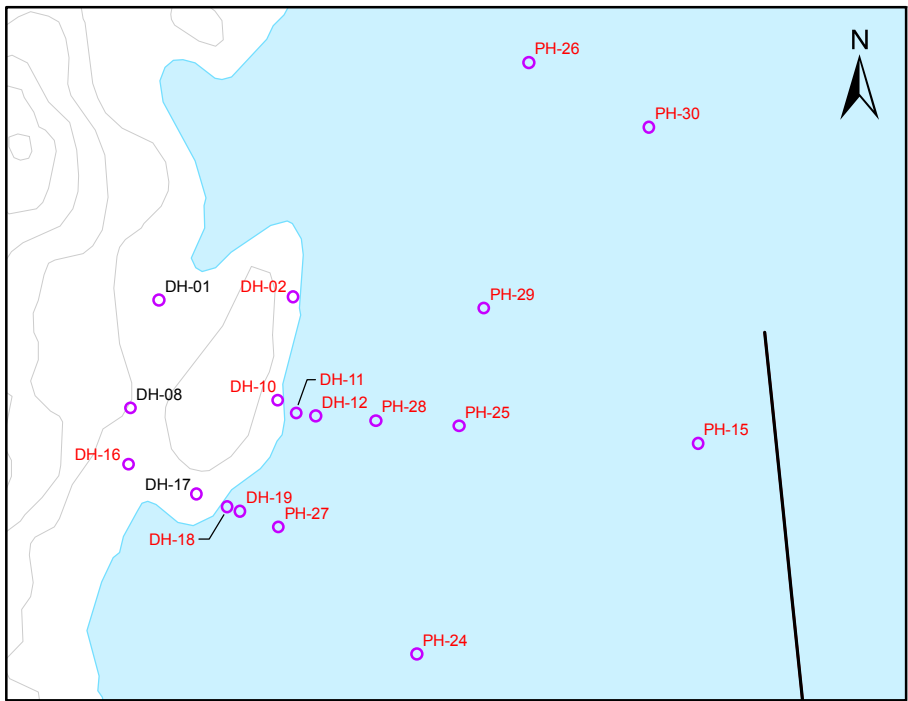
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Approved:
MMM

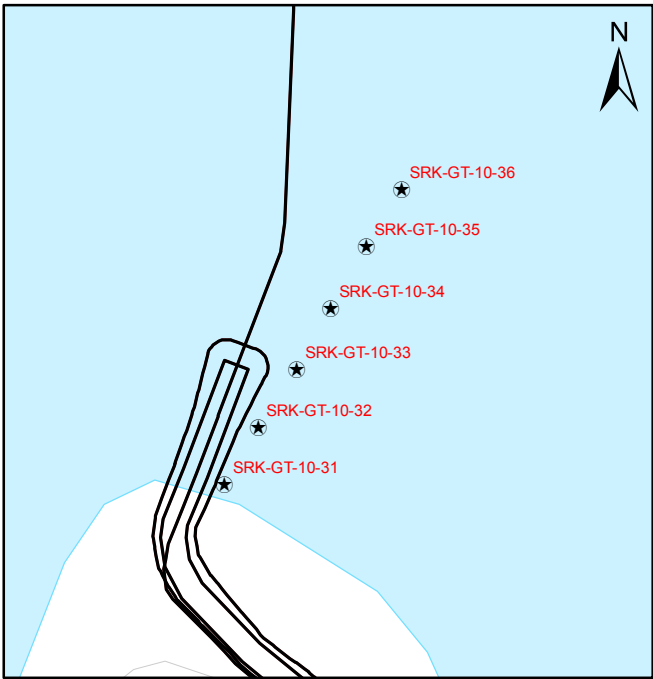
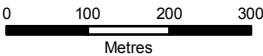
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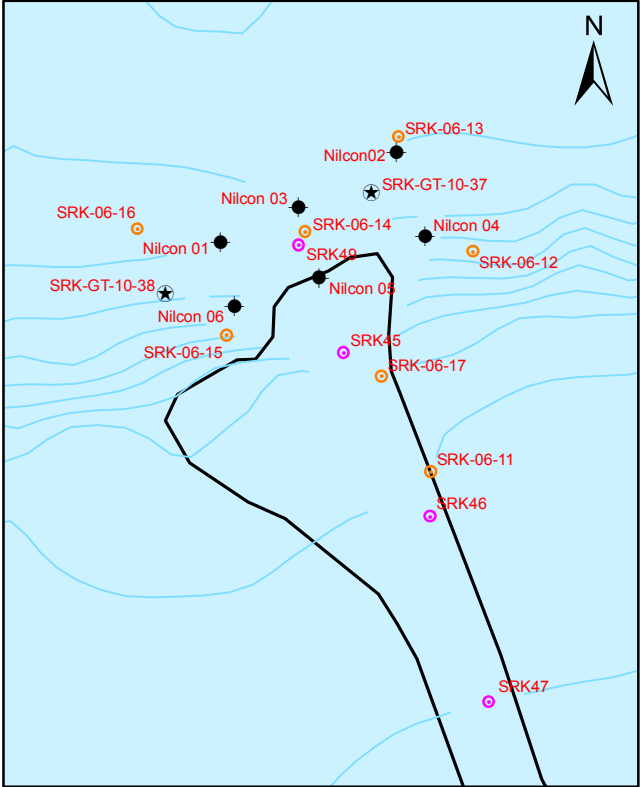
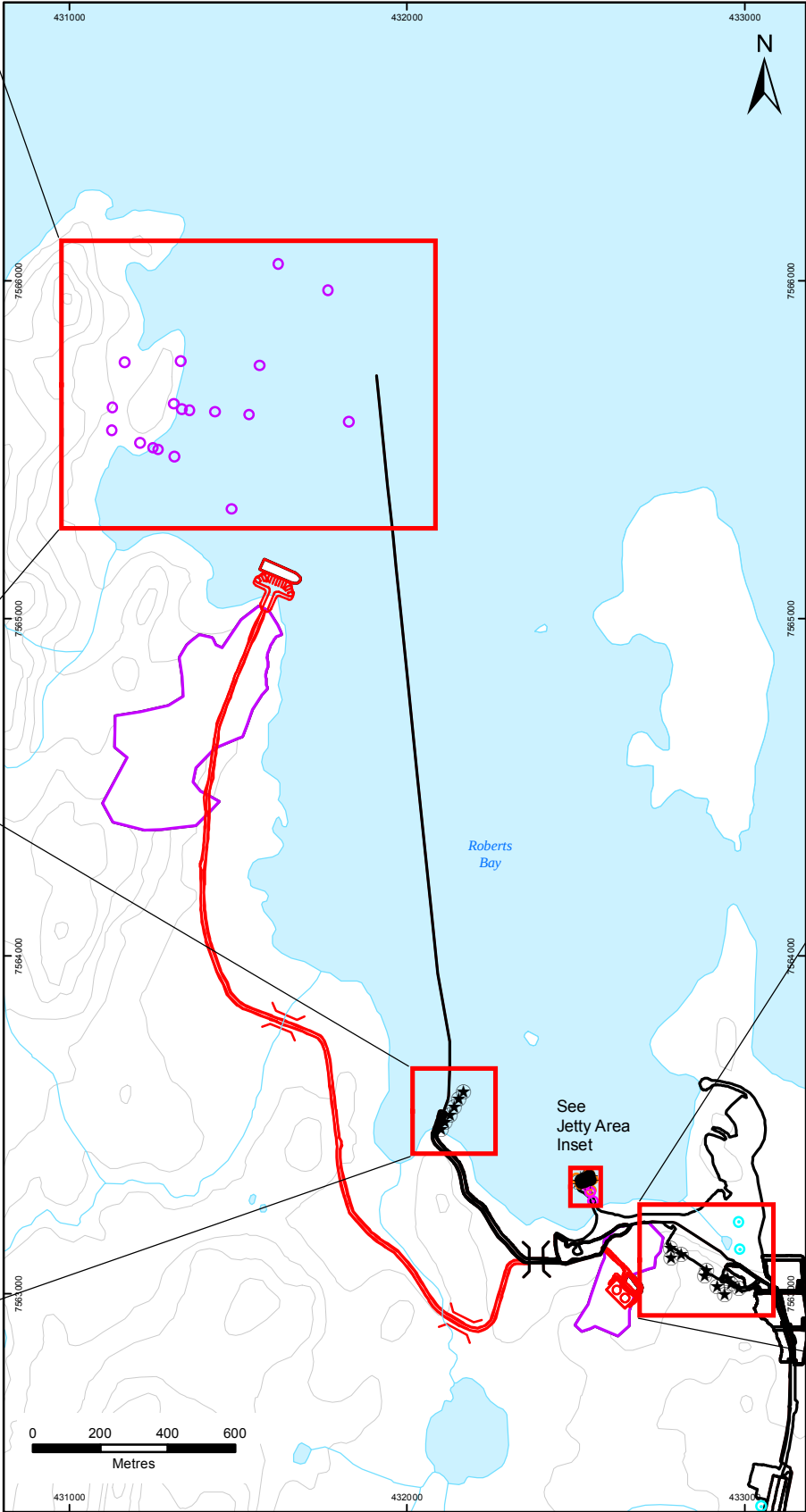
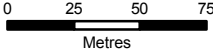
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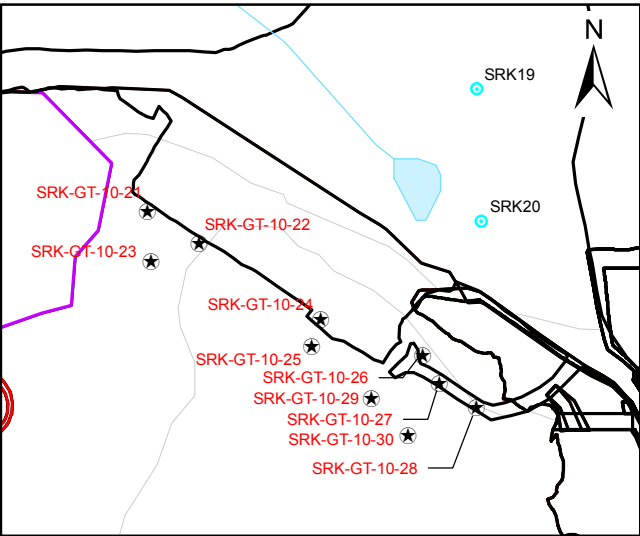
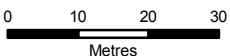
Deep Water Port Area



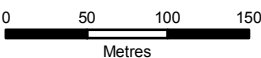
Port Area



Jetty Area



Laydown Area



Legend

- SRK58 Geotechnical Drill Holes with Thermistor Strings
- SRK27 Geotechnical Drill Holes without Thermistor Strings
- Geotechnical Auger Drill Holes (Summer 2003)
- Geotechnical Test Pits (Summer 2003)
- Geotechnical Bulk Sampling (Summer 2004)
- Vane Shearing Testing (Winter 2005)
- Condemnation Holes (2002)
- Geotechnical Drill Holes (Fall 2002)
- Geotechnical Drill Holes (Winter 2002)
- Geotechnical Drill Holes (Winter 2003)
- Geotechnical Drill Holes (Summer 2003)
- Geotechnical Drill Holes (Winter 2004)
- Geotechnical Drill Holes (Summer 2004)
- Geotechnical Drill Holes (Winter 2005)
- Geotechnical Drill Holes (Winter 2006)
- Geotechnical Drill Holes (Winter 2010)
- Geotechnical Drill Holes (1997)
- Geotechnical Drill Holes (2007)
- Geotechnical Drill Holes (2008)
- Existing Infrastructure
- Future Infrastructure
- Future Quarries

Notes:
Coordinate System: NAD 1983 UTM Zone 13N



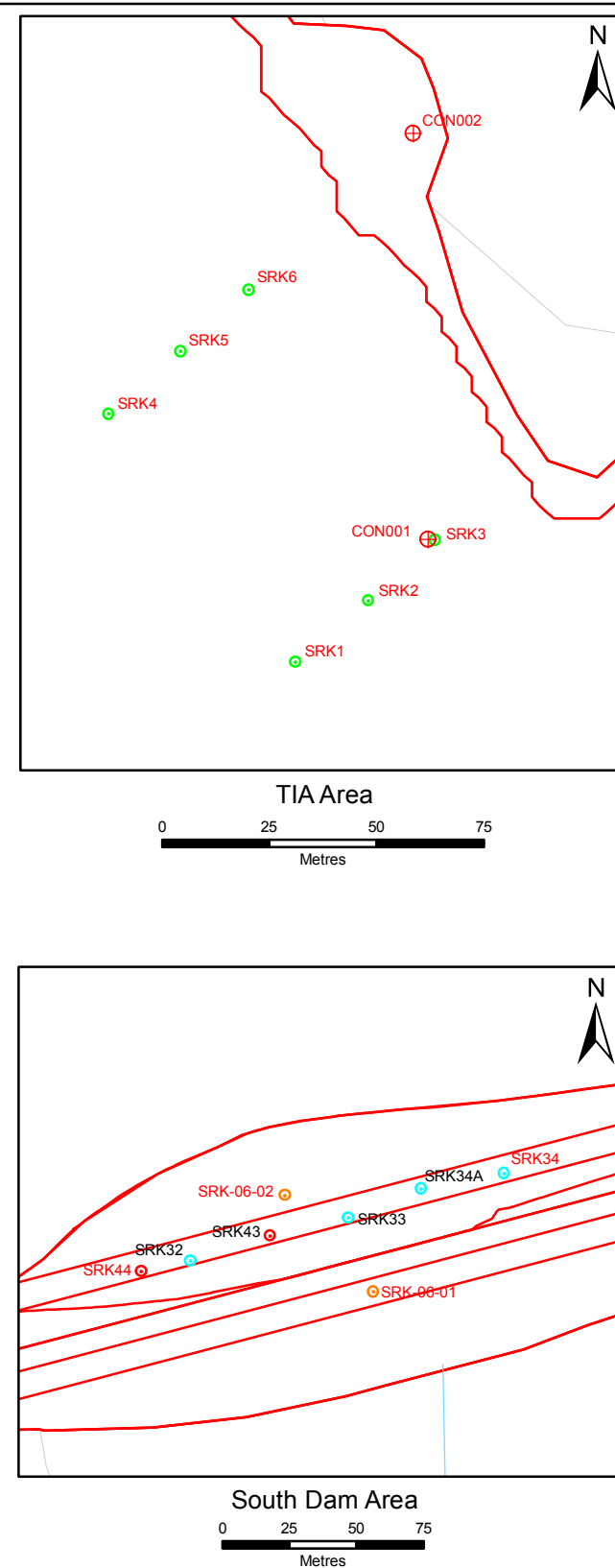
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HOPE BAY PROJECT

Overburden Summary Report
Overburden Characterization Holes
at the Doris North Mining Area
(Roberts Bay)

Date: Nov. 2016	Approved: MMM	Figure: 6
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- | | |
|---|---|
| SRK58 | Geotechnical Drill Holes with Thermistor Strings |
| SRK27 | Geotechnical Drill Holes without Thermistor Strings |
|  | Geotechnical Auger Drill Holes (Summer 2003) |
|  | Geotechnical Test Pits (Summer 2003) |
|  | Geotechnical Bulk Sampling (Summer 2004) |
|  | Vane Shearing Testing (Winter 2005) |
|  | Condemnation Holes (2002) |
|  | Percolation Drill Holes (Winter 2011) |
|  | Geotechnical Drill Holes (Fall 2002) |
|  | Geotechnical Drill Holes (Winter 2002) |
|  | Geotechnical Drill Holes (Winter 2003) |
|  | Geotechnical Drill Holes (Summer 2003) |
|  | Geotechnical Drill Holes (Winter 2004) |
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|  | Geotechnical Drill Holes (Winter 2005) |
|  | Geotechnical Drill Holes (Winter 2006) |
|  | Geotechnical Drill Holes (Winter 2010) |
|  | Geotechnical Drill Holes (1997) |
|  | Geotechnical Drill Holes (2007) |
|  | Geotechnical Drill Holes (2008) |
|  | Geotechnical Drill holes (Winter 2008) |
|  | Geotechnical Drill Holes (Winter 2016) |
|  | Existing Infrastructure |
|  | Future Infrastructure |
|  | Future Quarries |

 **srk** consulting

Job No: 1CT022.004

Filename: 1CT022.004.200.10_Fig_7_DorisCamp_TIA_mzs



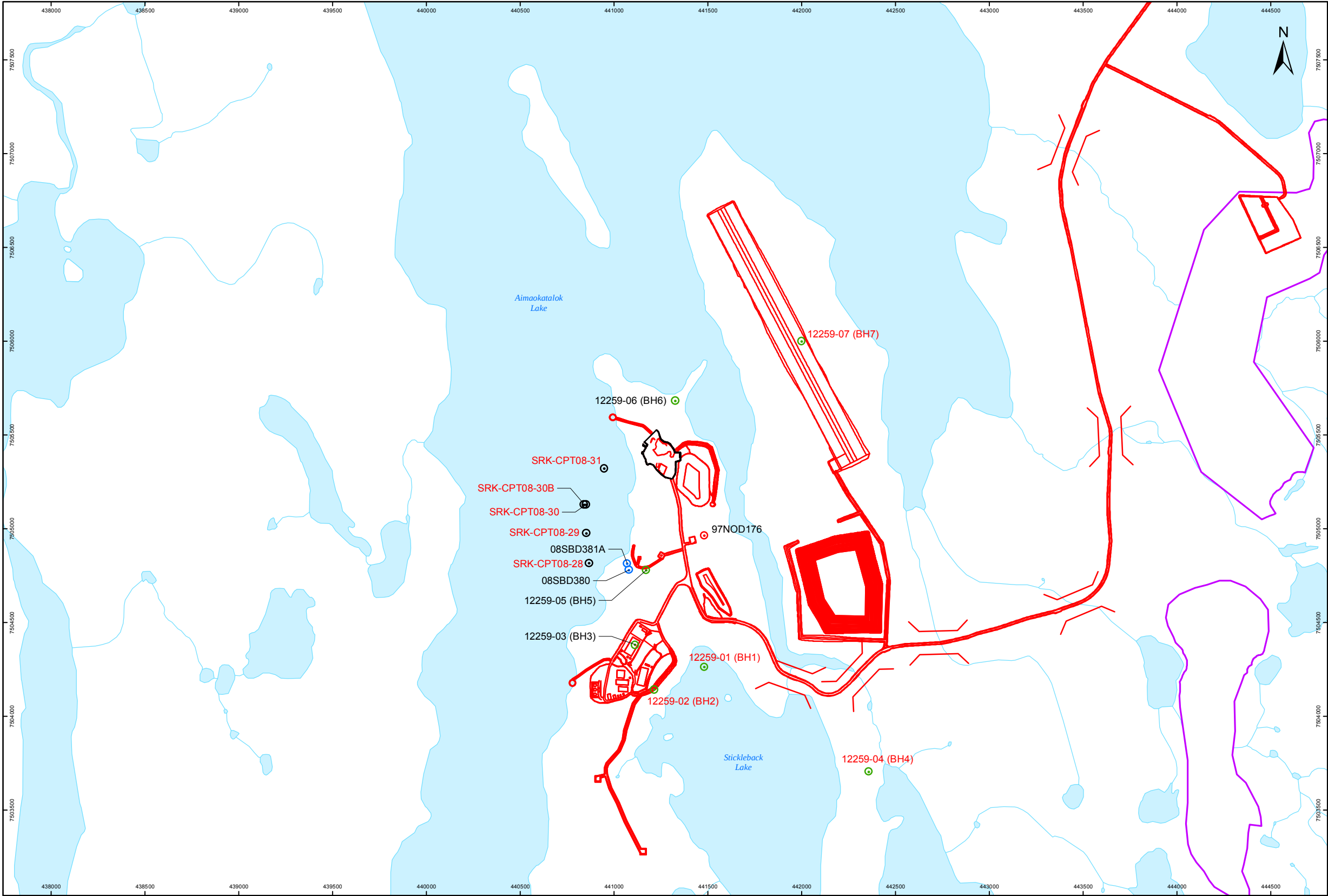
Date: Nov. 2016	Approved: MMM	Figure: 7
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Overburden Characterization Holes at the Madrid Mining Area

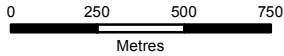
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Legend

- SRK58 Geotechnical Drill Holes with Thermistor Strings
- SRK27 Geotechnical Drill Holes without Thermistor Strings
- Geotechnical Drill Holes (Winter 1996)
- Geotechnical Drill Holes (Winter 1997)
- CPT Holes (Winter 2008)
- Geotechnical Drill Holes (Winter 2008)
- Existing Infrastructure
- Future Infrastructure
- Future Quarries



Notes:
Coordinate System: NAD 1983 UTM Zone 13N



Job No: 1CT022.004
Filename: 1CT022.004.200.10_Fig_9_BostonMiningArea_mzs



HOPE BAY PROJECT

Overburden Summary Report

Overburden Characterization Holes
at the Boston Mining Area

Date: Nov. 2016	Approved: MMM	Figure: 9
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