

SENES Consultants

MEMORANDUM



121 Granton Drive, Unit 12
Richmond Hill, Ontario
Canada L4B 3N4
Tel: (905) 764-9380
Fax: (905) 764-9386
E-mail: senes@senes.ca
Web Site: <http://www.senes.ca>

TO: Jessie Hoyt – PWGSC 350600-207
Ron Breadmore - AANDC

FROM: Charles Gravelle 20 November 2013

SUBJ: **Great Slave Lake Mine Site Remediation Program
Borrow Source Assessment**

The results of the Environmental Site Assessment work completed between 2010 and 2013 at the Outpost Island, Blanchet and Copper Pass mine sites (collectively known as the Great Slave Lake mine sites) have confirmed the limits of borrow material at the respective mine sites included under the Great Slave Lake Mine Site Remediation Program. Figures 1, 2 and 3 give a 1:50,000 scale overview of Outpost Island, Blanchet and Copper Pass respectively. A smaller Key Plan on each of the figures presents an overview of all three locations relative to Great Slave Lake. Enclosed is a summary of the available borrow material at the respective mine sites and the information relevant to the quarrying permit application. For ease of review each mine site is discussed under separate header.

In general terms the Blanchet mine site is the only site with a readily available source of fine to medium aggregate that could be used in the remediation works at the other two mine sites in addition to the remediation works at the Blanchet mine site.

Outpost Island Mine Site

There are no viable borrow sources on the islands save for the waste rock which is mixed with tailings and as such makes the material unsuitable as borrow material. For the purposes of the current remedial program we have considered the Outpost Island mine site to have no viable borrow source and **no quarrying of borrow** will take place at this mine site. In discrete locations there is waste rock that is free of tailings, this clean waste rock, that is available, is scheduled to be used to cover the adjacent mine openings. Photographs of the available waste rock are presented in Appendix A. There are two locations where waste rock is available as shown in plan on Figure 4. The coordinates for the respective waste rock areas are presented along with the estimated volumes in Table 1.

No overburden or vegetation is present within the limits of the waste rock piles and as such no overburden storage area, timber disposal plan or topsoil reinstatement plan is required.

The anticipated camp location is provided on Figure 4. For the purposes of the Quarry Permit application we have assumed a soft camp at the East Island however the remediation contractor may choose to use a barge camp and the docking location for the barge would be consistent with the location selected for the 1994 remediation work as reported in the 1994 Clean-up Report.

The remediation contractor selected for the remediation program is responsible for submitting a camp location plan as well as a Quarry Operations Plan which will detail the location and methodology to be used by the contractor in establishing the camp and operating the borrow.

Table 1: Borrow Area Coordinates and Aggregate Matrix at Outpost Island Mine Site

| Borrow Area Identifier | UTM Coordinates | | Aggregate Matrix | Estimated Volume (m ³) |
|------------------------|-----------------|---------|------------------|------------------------------------|
| | Northing | Easting | | |
| OBA-1 | 6846975 | 369558 | Waste Rock | 300 |
| | 6847006 | 369656 | | |
| | 6846958 | 369564 | | |
| | 6846993 | 369659 | | |
| OBA-2 | 6847518 | 371205 | Waste Rock | 100 |
| | 6847518 | 371235 | | |
| | 6847497 | 371205 | | |
| | 6847497 | 371235 | | |

Note: Coordinates are provided as per NTS Map Sheet 85 H11.

Blanchet Mine Site

The Blanchet mine site has three viable borrow areas as shown in plan on Figure 5. The inferred coordinates for each borrow area and nature of the aggregate within the borrow areas are summarized in Table 2.

In general, the primary and tertiary borrow sources are located within the near shore environment along Great Slave Lake and as such a portion of these potential borrow areas are located within the 30 + 1 m setback requirement mandated by regulation for borrow areas near water bodies. Furthermore these potential borrow areas are located within an area that is vegetated with larger trees and heavy brush (more details are presented below with respect to the nature of the vegetation within the respective borrow areas). In order to optimize the available borrow within these two areas a variance will be required and the final limits of the borrow sources will need to be reviewed and confirmed by the permit inspector as well as the Departmental Representative during the initial stages of the remediation program (prior to excavation earthworks) at the Blanchet mine site.

It is understood that the organic material within the borrow area is to be stripped prior to borrow recovery and this material would need to be stockpiled into the Organic Overburden Storage Area located outside the mandated setback from a water body. For this program the stockpile of organic material would be placed on the eastern portion of the borrow areas.

The remediation contractor as part of their contractual submissions are required to prepare an Erosion, Sediment and Drainage Control Plan which must address how the borrow sources are to be managed to mitigate concerns with erosion and the migration of fine grained particles from the borrow area during precipitation events or snow melt. The Quarry Plan will address how the borrow areas are to be rehabilitated post-remediation (i.e. issue of positive drainage will be addressed).

Table 2 Borrow Area Coordinates and Aggregate Matrix at Blanchet Mine Site

| Borrow Area Identifier | UTM Coordinates | | Aggregate Matrix | Estimated Volume (m ³) |
|------------------------|-----------------|---------|-------------------------|------------------------------------|
| | Northing | Easting | | |
| BBA-1 | 6873544 | 425528 | Sands and Gravels | 12,000 |
| | 6873542 | 425663 | | |
| | 6873510 | 425480 | | |
| | 6873480 | 425635 | | |
| BBA-2 | 6874316 | 426948 | Fine Sand and Silts | 4,500 |
| | 6874322 | 426965 | | |
| | 6874302 | 427000 | | |
| | 6874251 | 426907 | | |
| BBA-3 | 6874269 | 426898 | Fine Sand/Silt and Clay | 6,000 |
| | 6873542 | 425663 | | |
| | 6873554 | 425748 | | |
| | 6873480 | 425635 | | |
| | 6873470 | 425678 | | |

Note: Coordinates are provided as per NTS Map Sheet 85 H16.

The primary borrow source is located between the base of the escarpment and the shoreline of Great Slave Lake due north of the former camp area. The preparation of this borrow source will entail initial clearing and grubbing, the removal and stockpiling of organic material and cutting of approximately 1 to 2 m of aggregate down to within 300 mm of the groundwater table. The estimated surface area of this borrow source is 8000 m² with an estimated average depth of 1.5 m.

Photographs of the borrow area are provided in Appendix A. The results of grain size analyses for the aggregate within this borrow area are provided in Appendix B.

The secondary borrow source is located near the mine site. The preparation of this area will entail clearing and grubbing, removal of ore stained surficial soils to a depth of 0.5 m, the recovery and stockpiling of minimal organic material and cutting of approximately 1 to 1.5 m of fine grained aggregate down to within 300 mm of the groundwater table. The estimated surface area of this borrow source is 3500 m² with an estimated average depth of 1.25 m.

Photographs of the borrow area are provided in Appendix A. The results of grain size analyses for the aggregate within this borrow area are provided in Appendix B.

The tertiary borrow source is located at the Beach Area of the site where fine grained soils have been identified. Within this borrow area the surficial soils are organic rich and the upper 300 mm of organic material will be side-cast for re-use as borrow source cover. The groundwater table is relatively shallow within this area and as such a minimal cut can be achieved in this area. The estimated surface area of this borrow source is 6000 m² with an average depth of 1 m.

Photographs of the borrow area are provided in Appendix A. The results of grain size analyses for the aggregate within this borrow area are provided in Appendix B.

The organic overburden storage area is presented on Figure 5 for each potential borrow source location; final location may vary as per the remediation contractor.

The anticipated camp location is provided on Figure 5. Similar to the Outpost Island mine site the remediation contractor may select to use a barge camp for this site. The barge would be docked in the bay immediately adjacent the beach and camp area.

The remediation contractor selected for the remediation program is responsible for submitting a camp location plan as well as a Quarry Operations Plan which will detail the location and methodology to be used by the contractor in establishing the camp and operating the borrow.

It is estimated that a spruce forest covers 80% of the primary borrow area, 20% of the secondary borrow area and 70% of the tertiary borrow area. The areas will need to be cleared using hand tools before quarrying operations begin. All areas will be brought back to the minimum required grades as per the regulations and organic cover reinstated where applicable once the remedial works have been completed.

Copper Pass Mine Site

On the basis of the subsurface investigation work undertaken at this site it has been determined that the majority of the surficial or near surface overburden is impacted with arsenic and as such we have inferred that there are no viable borrow materials at this site save for some of the waste rock that does not contain arsenic based minerals. For the purposes of this program there are limited waste rock stockpiles that will be used as borrow. Photographs of the waste rock are provided in Appendix A. The location of the stockpiles is provided on Figure 6. The estimated volume of waste rock is approximately 2000 m³.

On the basis of the Phase II ESA it is possible that the fine to medium aggregates (sands and gravels) encountered at depth near Trench # 2 will meet the site specific remediation standards. Should analytical data confirm this, the area would be an alternate borrow source. The estimated lateral extent of the sandy material is approximately 5000 m² with an estimated depth of 1 m. Grain size analysis of this material, based on the nearby surface sample collected and analysed, is provided in Appendix B. Photographs of the potential borrow area are provided in Appendix A. The coordinates and estimated volume of waste rock are presented in Table 3.

Table 3 Borrow Area Coordinates and Aggregate Matrix at Copper Pass Mine Site

| Borrow Area Identifier | UTM Coordinates | | Aggregate Matrix | Estimated Volume (m ³) |
|------------------------|-----------------|---------|------------------|------------------------------------|
| | Northing | Easting | | |
| CBA | 6920118 | 455316 | Sands | 5,000 |
| | 6920110 | 455398 | | |
| | 6920154 | 455372 | | |
| | 6920050 | 455356 | | |
| | 6920043 | 455374 | | |

Note: Coordinates are provided as per NTS Map Sheet 75 L05.

No overburden storage area is required for the Copper Pass Mine Site as the overburden on site is contaminated and will be disposed of as such.

The anticipated camp location is provided on Figure 6. The remediation contractor selected for the remediation program is responsible for submitting a camp location plan as well as a Quarry Operations Plan which will detail the location and methodology to be used by the contractor in establishing the camp and operating the borrow.

It is estimated that a spruce forest covers 5% of the borrow area. The area will need to be cleared using hand tools before quarrying operations begin. All areas will be brought back to the minimum required grades as per the regulations and organic cover reinstated where applicable once the remedial works have been completed.



Legend

NOTES:
 All elevations in metres (m)
 Coordinates displayed as UTM Zone 10

REFERENCE:

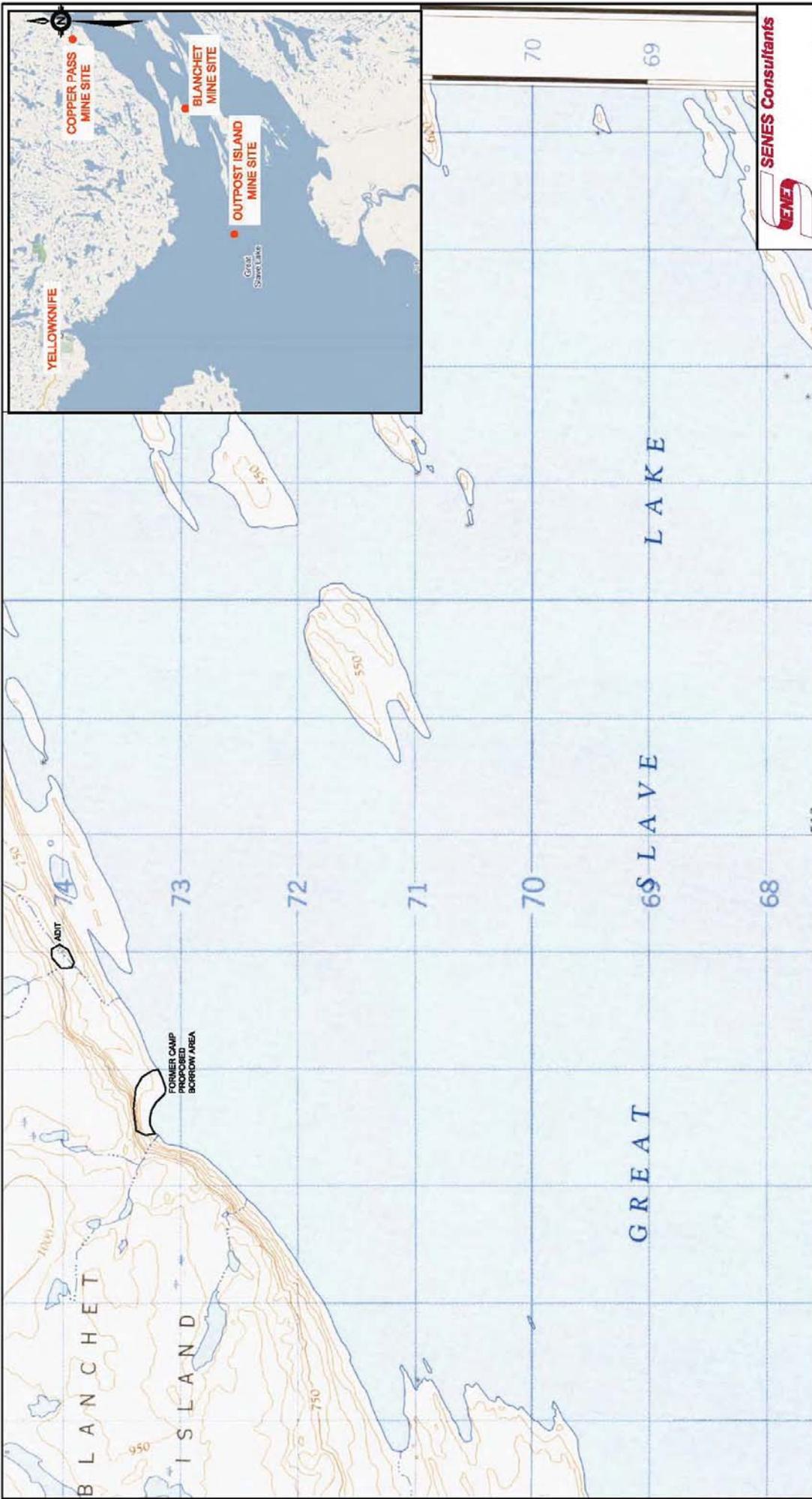
REVISIONS:

| No. | Date: | By: | Revisions |
|-----|-------|-----|-----------|
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SENEC Consultants

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA
BORROW SOURCE ASSESSMENT
OUTPOST ISLAND MINE SITE
LOCATION PLAN

| | | | |
|---------|----------|--------------|-----------|
| Client: | P.A.F. | Project No.: | 50000-207 |
| Date: | Nov 2013 | Scale: | 1:50,000 |
| | | Sheet: | FIGURE 1 |



PUBLIC WORKS AND GOVERNMENT SERVICES CANADA
BORROW SOURCE ASSESSMENT
 BLANCHET ISLAND MINE SITE
 LOCATION PLAN

REVISIONS:

| No. | Date | By | Revisions |
|-----|------|----|-----------|
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LEGEND:

REFERENCE:
 1. INTS 1:50,000 Magnetnet 05 H 18

NOTES:
 All elevations in metres (m)
 Coordinates displayed as UTM Zone 18

Scale: 1:50,000
 Date: May 2013
 Project No: 300000-207
 Figure 2



PUBLIC WORKS AND GOVERNMENT
SERVICES CANADA

**BORROW SOURCE ASSESSMENT
COPPER PASS MINE SITE
LOCATION PLAN**

Project No: 150000
Revision: 1
Date: Nov 2013
Scale: 1:50,000
Figure: 3

REVISIONS:

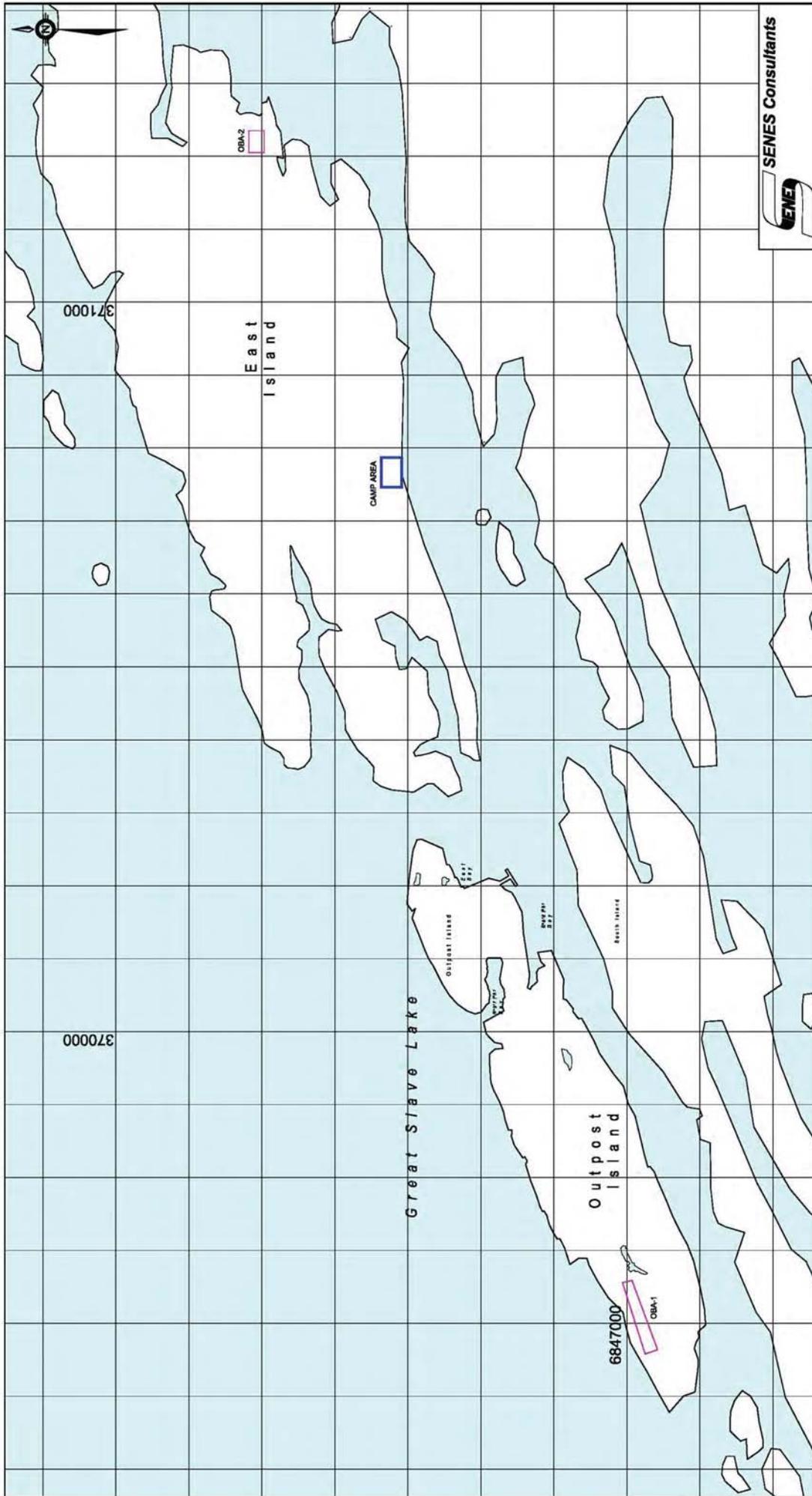
| No. | Date | By: | Remarks |
|-----|------|-----|---------|
| | | | |
| | | | |
| | | | |
| | | | |

LEGEND:

REFERENCE:
1. NTS 1:50,000 Mapsheet 75 L 05

NOTES:

All elevations in metres (m)
Coordinates displayed as UTM Zone 10



PUBLIC WORKS AND GOVERNMENT
SERVICES CANADA
BORROW SOURCE ASSESSMENT
OUTPOST ISLAND MINE SITE
BORROW AREAS

Drawn By: P.A.F. | Approved By: C.F.G. | Project No: 300000-207
Date: Nov 2013 | Scale: 1:5000 | FIGURE 4

REVISIONS:

| No. | Date: | By: | Revisions |
|-----|-------|-----|-----------|
| | | | |
| | | | |
| | | | |
| | | | |

REFERENCE:

NOTES:
All elevations in metres (m)
Coordinates displayed as UTM Zone 10

Legend

| | |
|---|--------------------|
|  | BORROW SOURCE AREA |
|  | CAMP AREA |



SENES Consultants

PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

BORROW SOURCE ASSESSMENT
 BLANCHET ISLAND MINE SITE
 BORROW AREAS

Date: Nov 2013
 Project No.: 350600-207
 Scale: 1:5 000
 Figure: 5

REVISIONS:

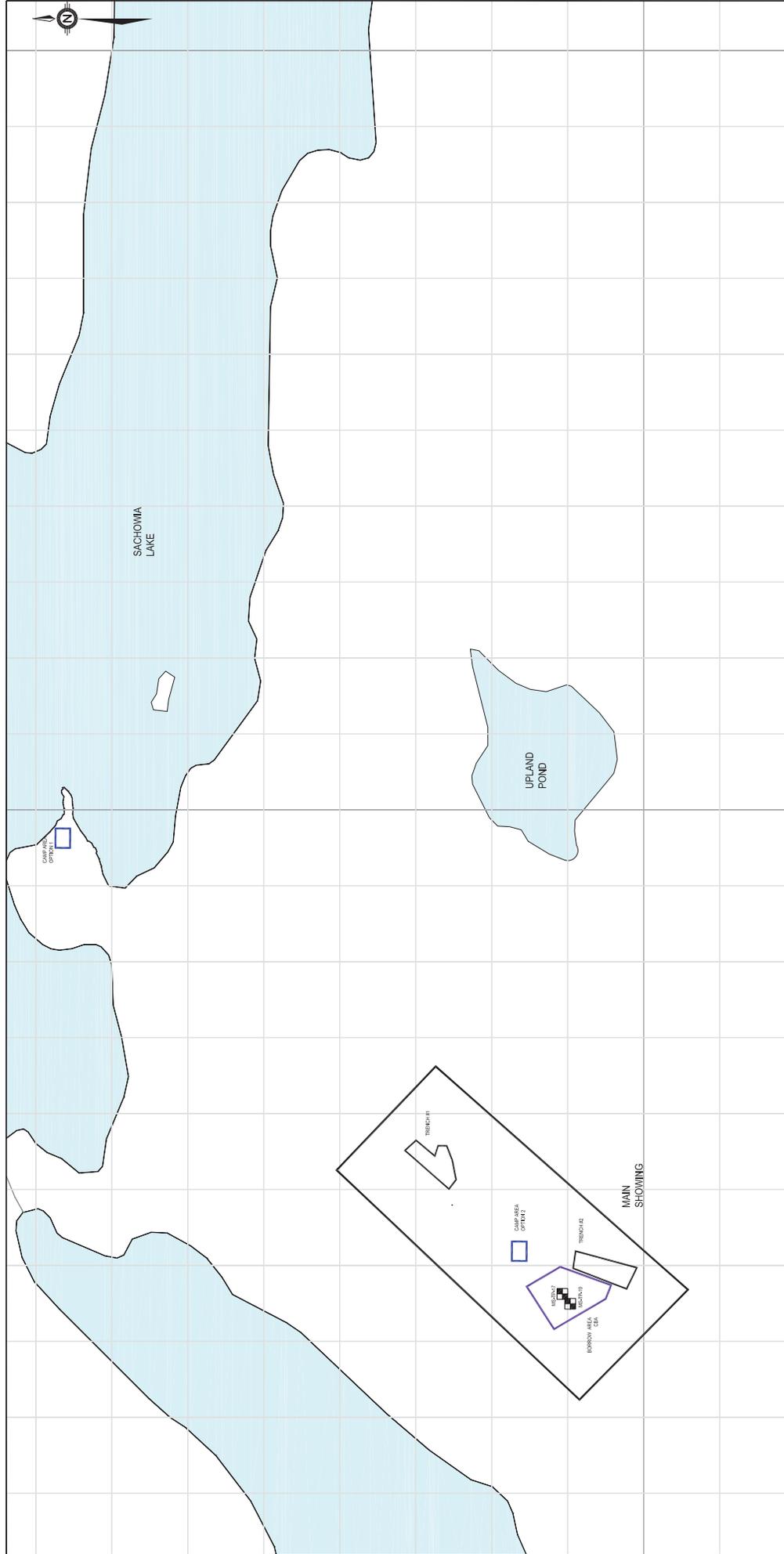
| No. | Date: | By: | Revisions |
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LEGEND:

- BORROW SOURCE AREA
- ORGANIC OVERBURDEN STORAGE AREA
- CAMP AREA
- TP-5
- BORROW SOURCE TESTPIT

NOTES:
 All elevations in metres (m)
 Coordinates displayed as UTM Zone 10

REFERENCE:
 1. NTS 1:50,000 Mapsheet 65 H 16



PUBLIC WORKS AND GOVERNMENT SERVICES CANADA

BORROW SOURCE ASSESSMENT
COPPER PASS MINE SITE
BORROW AREAS

Drawn By: J.S.Z. Approved By: C.F.G. Project No: 359600-207
Date: Nov 2013 Scale: 1:5,000 FIGURE 6

REVISIONS:

| No. | Date: | By: | Revisions |
|-----|-------|-----|-----------|
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LEGEND:

-  BORROW SOURCE AREA
-  CAMP AREA
-  MS-TP-19 BORROW SOURCE TESTPIT

REFERENCE:

1. NTS 1:50,000 Mapsheet 85 H 16

NOTES:

All elevations in metres (m)
Coordinates displayed as UTM Zone 10

APPENDIX A
PHOTO LOGS

OUTPOST ISLAND MINE SITE



Photograph No. 1: Aerial view of Outpost Island borrow Area 1, waste rock pile is circled red.



Photograph No. 2: View of waste rock pile at Outpost Island borrow Area 1 from top of pile.



Photograph No. 3: View of waste rock at Outpost Island borrow Area 1 from the side.



Photograph No. 4: Waste rock and exploration trenches on Eastern Island (Outpost Island borrow Area 2).

BLANCHET MINE SITE



Photograph No. 1: Aerial view of Blanchet Borrow Areas 1 and 3 (circled red).



Photograph No. 2: View from the lake of Blanchet Borrow Area 1.



Photograph No. 3: Slope of Blanchet Borrow Area 1.



Photograph No. 4: Blanchet Borrow Area 3 to the left of drums.



Photograph No. 5: Aerial view of Blanchet Borrow Area 2 (circled red).



Photograph No. 6: Blanchet Borrow Area 2 as seen from top of slope.



Photograph No. 7: View across Blanchet Borrow Area 2.

COPPER PASS MINE SITE



Photograph No. 1: Typical waste rock pile near Trench 1.



Photograph No. 2: Overview of Copper Pass Mine Borrow Area. The borrow area is at the base of the slope.



Photograph No. 3: Waste rock on the Copper Pass Mine Borrow Area slope.



Photograph No. 4: Toe of the Copper Pass Mine Borrow Area slope where the alternate borrow source may be derived.



Photograph No. 5: South end of the Copper Pass Mine Borrow Area. Potential borrow located beneath stained surficial soil.



Photograph No. 6: North end of the Copper Pass Mine Borrow Area. Potential borrow located beneath stained surficial soil.

APPENDIX B

GRAIN SIZE ANALYSES

- **Blanchet Island**
- **Copper Pass**

BLANCHET MINE SITE

Your P.O. #: 350600-207
Your Project #: BLANCHET
Site Location: BLANCHET MINE
Your C.O.C. #: A134826

Attention: Charles Gravelle

SENES CONSULTANTS LIMITED
121 GRANTON DRIVE, UNIT 12
RICHMOND HILL, ON
CANADA T4B 3N4

Report Date: 2013/10/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B393411
Received: 2013/10/08, 08:00

Sample Matrix: Soil
Samples Received: 6

| Analyses | Quantity | Date Extracted | Date Analyzed | Laboratory Method | Analytical Method |
|--|----------|-------------------|------------------|-------------------|-------------------|
| Particle Size Analysis - D422 (extended) | 6 | 2013/10/10 | 2013/10/10 | WIN SOP-00038 | UBC MMSA |

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Janelle Kochan, B.Sc., Project Manager,
Email: JKochan@maxxam.ca
Phone# (204) 772-7276 Ext:2209

=====
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

Page 1 of 7

Maxxam Job #: B393411
 Report Date: 2013/10/22

 SENES CONSULTANTS LIMITED
 Client Project #: BLANCHET
 Site Location: BLANCHET MINE
 Your P.O. #: 350600-207

| Sample Details/Parameters | Result | RDL | UNITS | Extracted | Analyzed | By | Batch |
|---|--------|------|-------|------------|------------|----|---------|
| HU0594 TP-1 Sampling Date Matrix S | | | | | | | |
| PARTICLE SIZE DISTRIBUTION ANALYSIS (SOIL) | | | | | | | |
| Percent Passing | | | | | | | |
| <0.005mm Hydrometer | 3.12 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <0.075mm, Sieve #200 | 8.36 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <0.425mm, Sieve #40 | 25.37 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <19mm, Sieve ASTM 3/4" | 46.19 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <2.00mm, Sieve #10 | 30.62 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <25mm, Sieve ASTM 1" | 48.12 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <37.5mm, Sieve ASTM 1.5" | 51.10 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <4.75mm, Sieve #4 | 33.87 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <50mm, Sieve ASTM 2" | 51.10 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <75mm, Sieve ASTM 3" | 100.0 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <9.5mm, Sieve ASTM 3/8" | 38.24 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| Percent of Entire Sample | | | | | | | |
| < 19.0mm & >9.5mm | 7.95 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| < 25.0mm & >19.0mm | 1.92 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| < 37.5mm & > 25.0mm | 2.98 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| < 50mm & > 37.5mm | <0.01 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| < 75mm & > 50mm | 48.90 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <0.005mm | 3.12 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <0.075mm & >0.005mm | 5.24 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <0.425mm & >0.075mm | 17.01 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <2.00mm & >0.425mm | 5.25 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <4.75mm & >2.00mm | 3.25 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <9.5mm & >4.75mm | 4.37 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| >75mm | <0.01 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| % of the <4.75mm Fraction | | | | | | | |
| %Clay (<0.005mm) | 10.20 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| %Sand (<4.75mm & >0.075mm) | 84.56 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| %Silt (<0.075mm & >0.005mm) | 5.24 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| HU0595 TP-2 Sampling Date Matrix S | | | | | | | |
| PARTICLE SIZE DISTRIBUTION ANALYSIS (SOIL) | | | | | | | |
| Percent Passing | | | | | | | |
| <0.005mm Hydrometer | 46.87 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <0.075mm, Sieve #200 | 82.78 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <0.425mm, Sieve #40 | 93.53 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <19mm, Sieve ASTM 3/4" | 99.98 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <2.00mm, Sieve #10 | 97.30 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <25mm, Sieve ASTM 1" | 99.98 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <37.5mm, Sieve ASTM 1.5" | 100.0 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <4.75mm, Sieve #4 | 98.50 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <50mm, Sieve ASTM 2" | 100.0 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <75mm, Sieve ASTM 3" | 100.0 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <9.5mm, Sieve ASTM 3/8" | 99.39 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| Percent of Entire Sample | | | | | | | |
| < 19.0mm & >9.5mm | 0.59 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| < 25.0mm & >19.0mm | <0.01 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| < 37.5mm & > 25.0mm | 0.02 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| < 50mm & > 37.5mm | <0.01 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| < 75mm & > 50mm | <0.01 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <0.005mm | 46.87 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <0.075mm & >0.005mm | 35.91 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <0.425mm & >0.075mm | 10.75 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |

Maxxam Job #: B393411
 Report Date: 2013/10/22

 SENES CONSULTANTS LIMITED
 Client Project #: BLANCHET
 Site Location: BLANCHET MINE
 Your P.O. #: 350600-207

| Sample Details/Parameters | Result | RDL | UNITS | Extracted | Analyzed | By | Batch |
|---|--------|------|-------|------------|------------|----|---------|
| HU0597 TP-4 Sampling Date Matrix S | | | | | | | |
| PARTICLE SIZE DISTRIBUTION ANALYSIS (SOIL) | | | | | | | |
| Percent Passing | | | | | | | |
| <25mm, Sieve ASTM 1" | 84.27 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <37.5mm, Sieve ASTM 1.5" | 88.82 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <4.75mm, Sieve #4 | 18.57 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <50mm, Sieve ASTM 2" | 100.0 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <75mm, Sieve ASTM 3" | 100.0 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <9.5mm, Sieve ASTM 3/8" | 39.08 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| Percent of Entire Sample | | | | | | | |
| < 19.0mm & >9.5mm | 34.26 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| < 25.0mm & >19.0mm | 10.93 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| < 37.5mm & > 25.0mm | 4.55 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| < 50mm & > 37.5mm | 11.18 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| < 75mm & > 50mm | <0.01 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <0.005mm | 1.07 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <0.075mm & >0.005mm | 1.16 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <0.425mm & >0.075mm | 7.03 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <2.00mm & >0.425mm | 4.72 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <4.75mm & >2.00mm | 4.59 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <9.5mm & >4.75mm | 20.51 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| >75mm | <0.01 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| % of the <4.75mm Fraction | | | | | | | |
| %Clay (<0.005mm) | 7.66 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| %Sand (<4.75mm & >0.075mm) | 91.18 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| %Silt (<0.075mm & >0.005mm) | 1.16 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| HU0598 TP-5 Sampling Date Matrix S | | | | | | | |
| PARTICLE SIZE DISTRIBUTION ANALYSIS (SOIL) | | | | | | | |
| Percent Passing | | | | | | | |
| <0.005mm Hydrometer | 20.14 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <0.075mm, Sieve #200 | 30.10 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <0.425mm, Sieve #40 | 35.64 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <19mm, Sieve ASTM 3/4" | 49.89 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <2.00mm, Sieve #10 | 39.59 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <25mm, Sieve ASTM 1" | 49.89 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <37.5mm, Sieve ASTM 1.5" | 58.64 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <4.75mm, Sieve #4 | 43.86 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <50mm, Sieve ASTM 2" | 58.64 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <75mm, Sieve ASTM 3" | 100.0 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <9.5mm, Sieve ASTM 3/8" | 46.73 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| Percent of Entire Sample | | | | | | | |
| < 19.0mm & >9.5mm | 3.15 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| < 25.0mm & >19.0mm | <0.01 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| < 37.5mm & > 25.0mm | 8.75 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| < 50mm & > 37.5mm | <0.01 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| < 75mm & > 50mm | 41.36 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <0.005mm | 20.14 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <0.075mm & >0.005mm | 9.95 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <0.425mm & >0.075mm | 5.54 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <2.00mm & >0.425mm | 3.95 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <4.75mm & >2.00mm | 4.27 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| <9.5mm & >4.75mm | 2.87 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |
| >75mm | <0.01 | 0.01 | % | 2013/10/10 | 2013/10/10 | | 7241588 |

Maxxam Job #: B393411
Report Date: 2013/10/22

SENES CONSULTANTS LIMITED
Client Project #: BLANCHET
Site Location: BLANCHET MINE
Your P.O. #: 350600-207

General Comments

Results relate only to the items tested.

Validation Signature Page

Maxxam Job #: B393411

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

A handwritten signature in blue ink, appearing to read "Andy Lu". The signature is written in a cursive, flowing style.

Andy Lu, Data Validation Coordinator

=====

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

COPPER PASS MINE SITE

Maxxam Job #: B269568
 Report Date: 2012/08/17

DECOMMISSIONING CONSULTING SERVICES LIMITED
 Client Project #: 350047-202 030, COPPER PASS

Your P.O. #: 350047-202 030
 Sampler Initials: JM

PARTICLE SIZE DISTRIBUTION ANALYSIS (SOIL)

| | | | | | |
|---------------|--------------|-----------------|-----------------|------------|-----------------|
| Maxxam ID | | ED2758 | ED2769 | | |
| Sampling Date | | 2012/08/01 | 2012/08/01 | | |
| COC Number | | 311281-0 | 311281-0 | | |
| | UNITS | MS-TP-17 | MS-TP-19 | RDL | QC Batch |

| Percent Passing | | | | | |
|-------------------------------------|---|-------|-------|------|---------|
| <0.005mm Hydrometer | % | 8.13 | 7.67 | 0.01 | 6090735 |
| <0.075mm, Sieve #200 | % | 44.28 | 40.36 | 0.01 | 6090735 |
| <0.425mm, Sieve #40 | % | 66.47 | 61.83 | 0.01 | 6090735 |
| <2.00mm, Sieve #10 | % | 79.96 | 76.00 | 0.01 | 6090735 |
| <4.75mm, Sieve #4 | % | 84.30 | 83.52 | 0.01 | 6090735 |
| Percent of Entire Sample | | | | | |
| <0.005mm | % | 8.13 | 7.67 | 0.01 | 6090735 |
| <0.075mm & >0.005mm | % | 36.16 | 32.69 | 0.01 | 6090735 |
| <0.425mm & >0.075mm | % | 22.19 | 21.47 | 0.01 | 6090735 |
| <2.00mm & >0.425mm | % | 13.49 | 14.17 | 0.01 | 6090735 |
| <4.75mm & >2.00mm | % | 4.34 | 7.52 | 0.01 | 6090735 |
| >4.75mm | % | 15.70 | 16.48 | 0.01 | 6090735 |
| % of the <4.75mm Fraction | | | | | |
| %Clay (<0.005mm) | % | 10.16 | 10.10 | 0.01 | 6090735 |
| %Sand (<4.75mm & >0.075mm) | % | 53.68 | 57.21 | 0.01 | 6090735 |
| %Silt (<0.075mm & >0.005mm) | % | 36.16 | 32.69 | 0.01 | 6090735 |

RDL = Reportable Detection Limit

Maxxam Job #: B269568
 Report Date: 2012/08/17

DECOMMISSIONING CONSULTING SERVICES LIMITED
 Client Project #: 350047-202 030, COPPER PASS

Your P.O. #: 350047-202 030
 Sampler Initials: JM

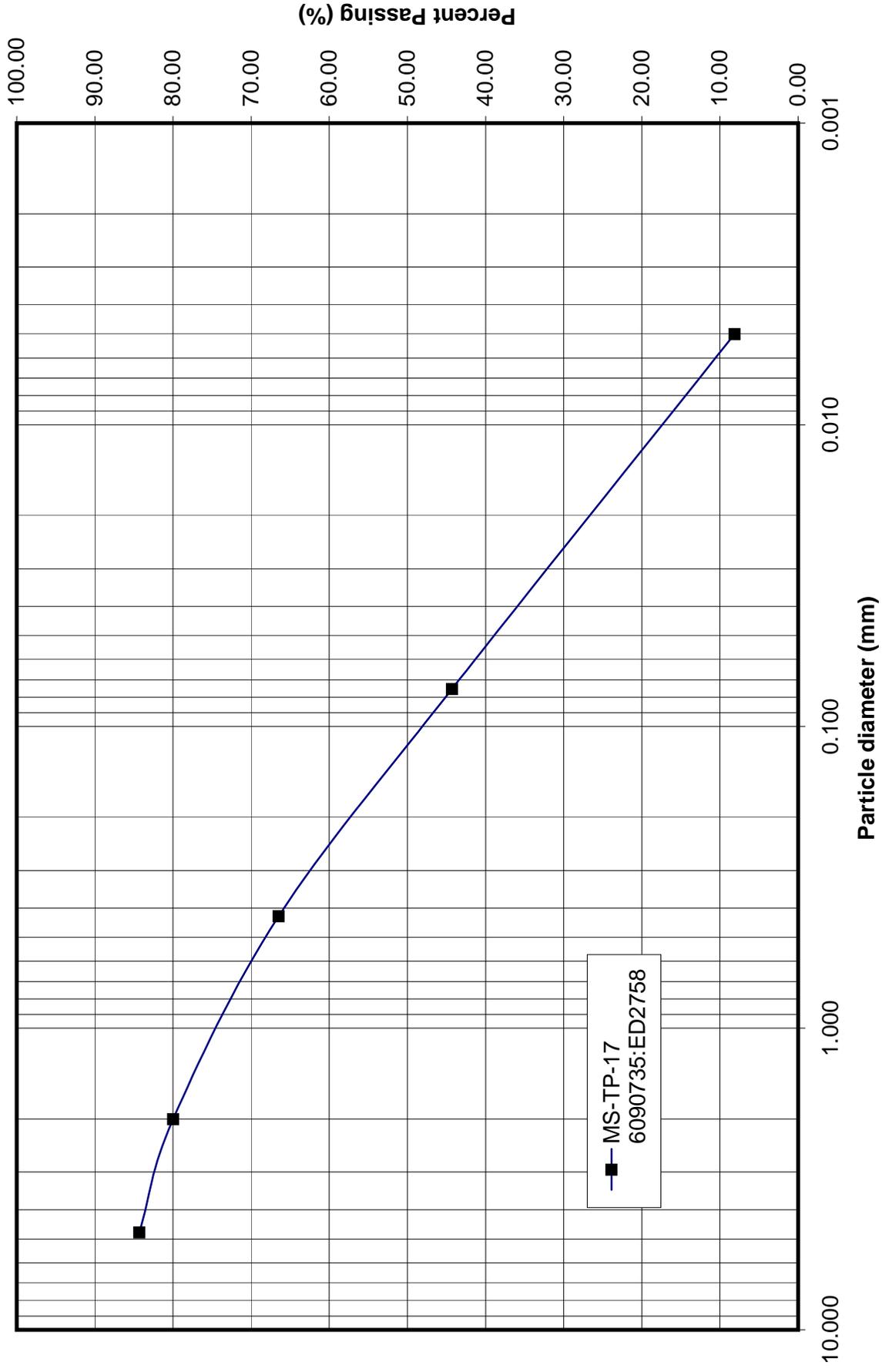
CUSTOM PARTICLE SIZE DISTRIBUTION (SOIL)

| | | | | | |
|---------------|--------------|-----------------|-----------------|------------|-----------------|
| Maxxam ID | | ED2758 | ED2769 | | |
| Sampling Date | | 2012/08/01 | 2012/08/01 | | |
| COC Number | | 311281-0 | 311281-0 | | |
| | UNITS | MS-TP-17 | MS-TP-19 | RDL | QC Batch |

| | | | | | |
|-------------------------|---|-------|-------|------|---------|
| Percent Retained | | | | | |
| Sieve - #60 (>0.25 mm) | % | 37.00 | 57.10 | 0.01 | 6086636 |
| Sieve - #100(>0.15mm) | % | 43.00 | 61.70 | 0.01 | 6086636 |
| Percent Passing | | | | | |
| <0.250mm, Sieve #60 | % | 63.00 | 42.90 | 0.01 | 6086518 |
| <0.150mm, Sieve #100 | % | 57.00 | 38.30 | 0.01 | 6086518 |

RDL = Reportable Detection Limit

Maxxam Job Number: B269568
Senes Consultants Limited



Maxxam Job Number: B269568
Senes Consultants Limited

