

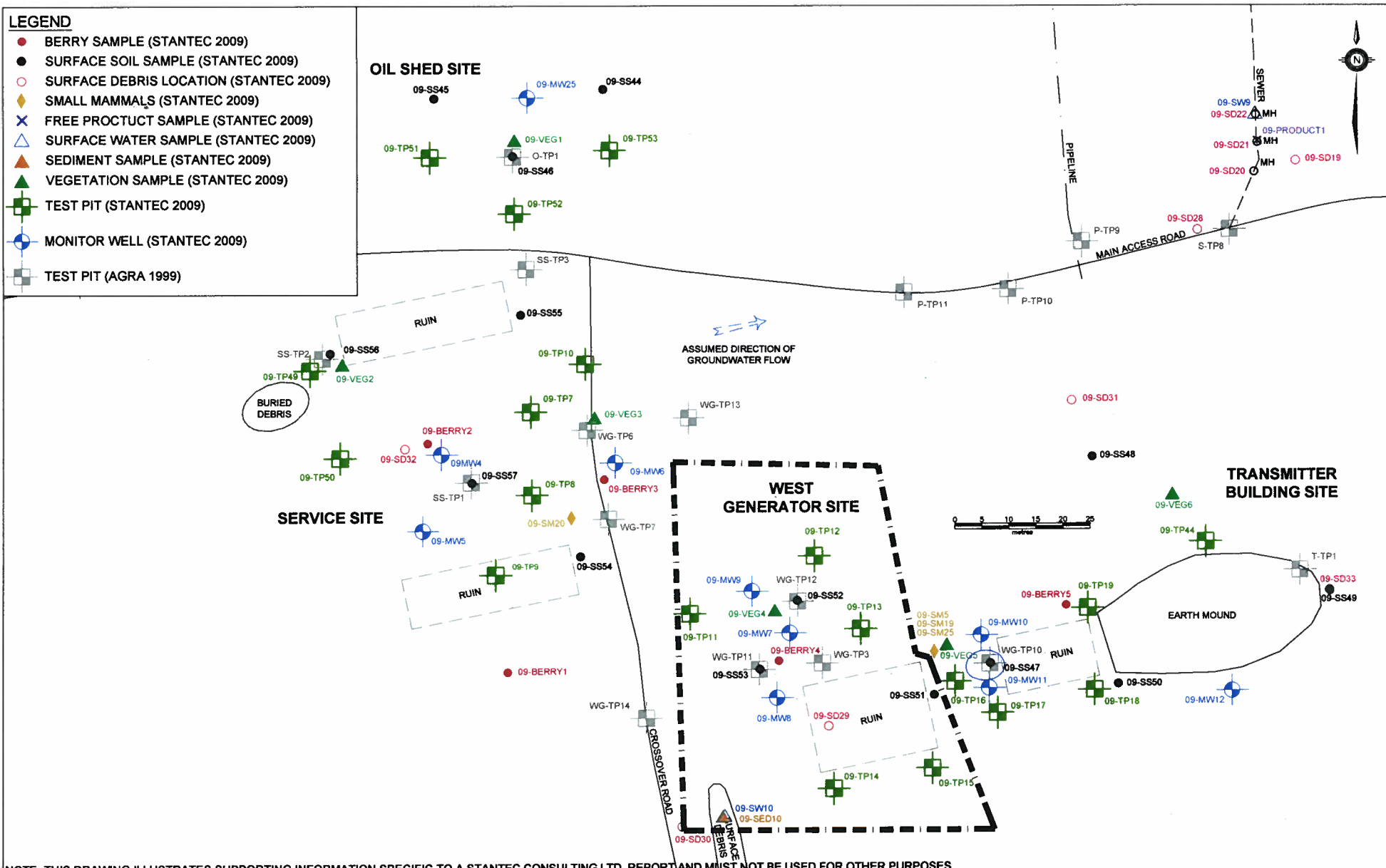
# **Appendix 6a**

Site Drawings

– West Generator Site

# LEGEND

- BERRY SAMPLE (STANTEC 2009)
- SURFACE SOIL SAMPLE (STANTEC 2009)
- SURFACE DEBRIS LOCATION (STANTEC 2009)
- ◆ SMALL MAMMALS (STANTEC 2009)
- × FREE PRODUCT SAMPLE (STANTEC 2009)
- △ SURFACE WATER SAMPLE (STANTEC 2009)
- ▲ SEDIMENT SAMPLE (STANTEC 2009)
- ▲ VEGETATION SAMPLE (STANTEC 2009)
- TEST PIT (STANTEC 2009)
- MONITOR WELL (STANTEC 2009)
- TEST PIT (AGRA 1999)



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT:

NEWFOUNDLAND AND LABRADOR DEPARTMENT OF ENVIRONMENT AND CONSERVATION

PROJECT TITLE:

PHASE III ENVIRONMENTAL SITE ASSESSMENT, HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENTS, REMEDIAL ACTION PLAN FOR THE FORMER U.S. MILITARY FACILITY OF NORTHWEST POINT, NL

DRAWING TITLE:

SITE PLAN - WEST GENERATOR SITE

SCALE:

1:800

DATE:

JUNE 17, 2010

DRAWN BY:

N.M.

CHECKED BY:

A.R.

EDITED BY:

-

REV. No.

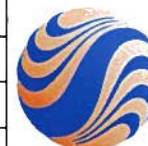
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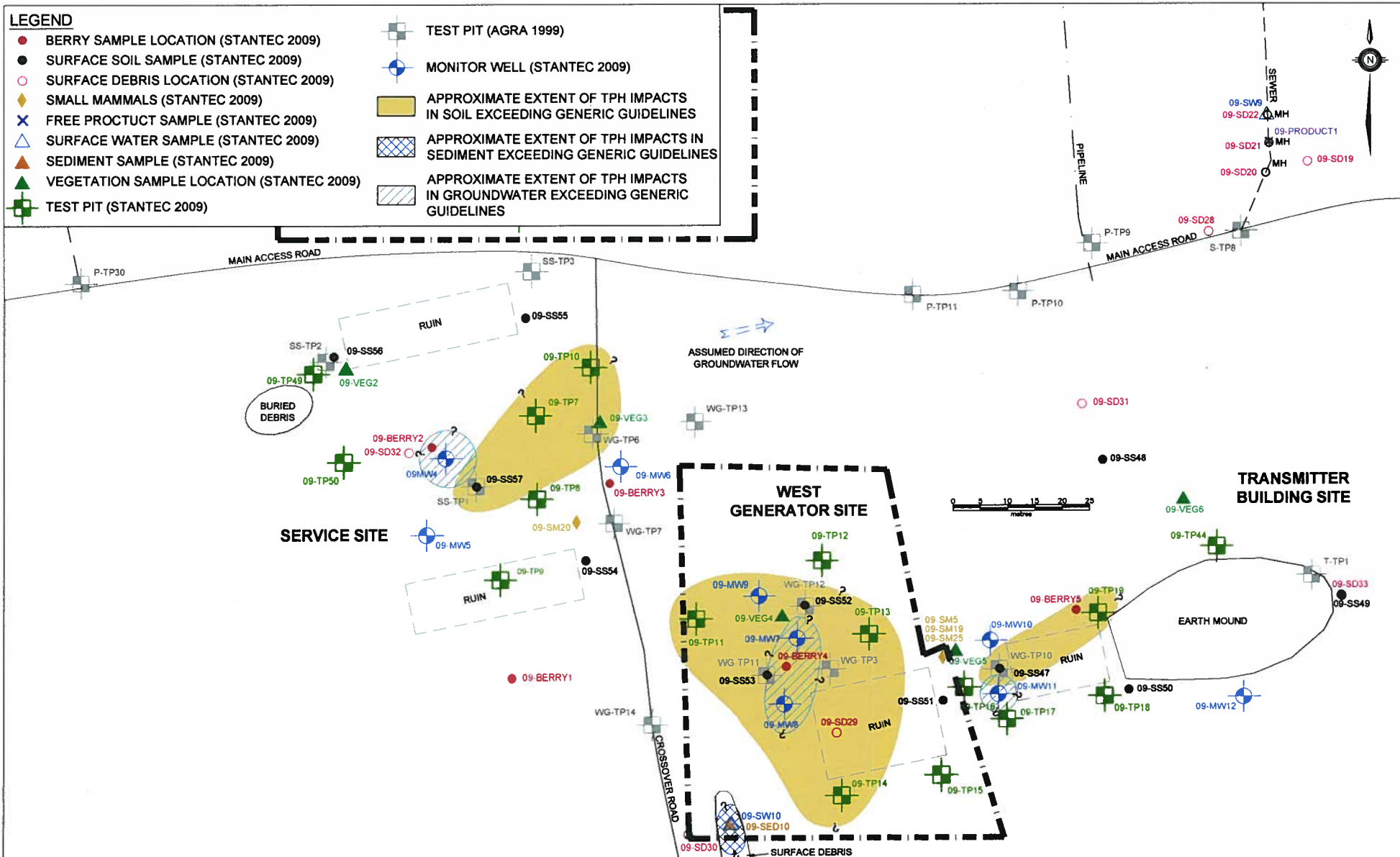
121410105-EE-06A

CAD FILE:

1044857-EE-07.DWG



Stantec



CLIENT:

NEWFOUNDLAND AND LABRADOR DEPARTMENT OF ENVIRONMENT AND CONSERVATION

PROJECT TITLE:

PHASE III ENVIRONMENTAL SITE ASSESSMENT, HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENTS,  
REMEDIAL ACTION PLAN FOR THE FORMER U.S. MILITARY FACILITY OF NORTHWEST POINT, NL

DRAWING TITLE:

APPROXIMATE EXTENT OF TPH IMPACTS EXCEEDING GENERIC GUIDELINES -  
WEST GENERATOR SITE

SCALE:

1:800

DATE:

JUNE 18, 2010

DRAWN BY:

N.M.

CHECKED BY:

A.R.

EDITED BY:

-

REV. No.

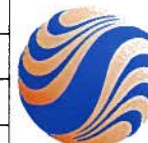
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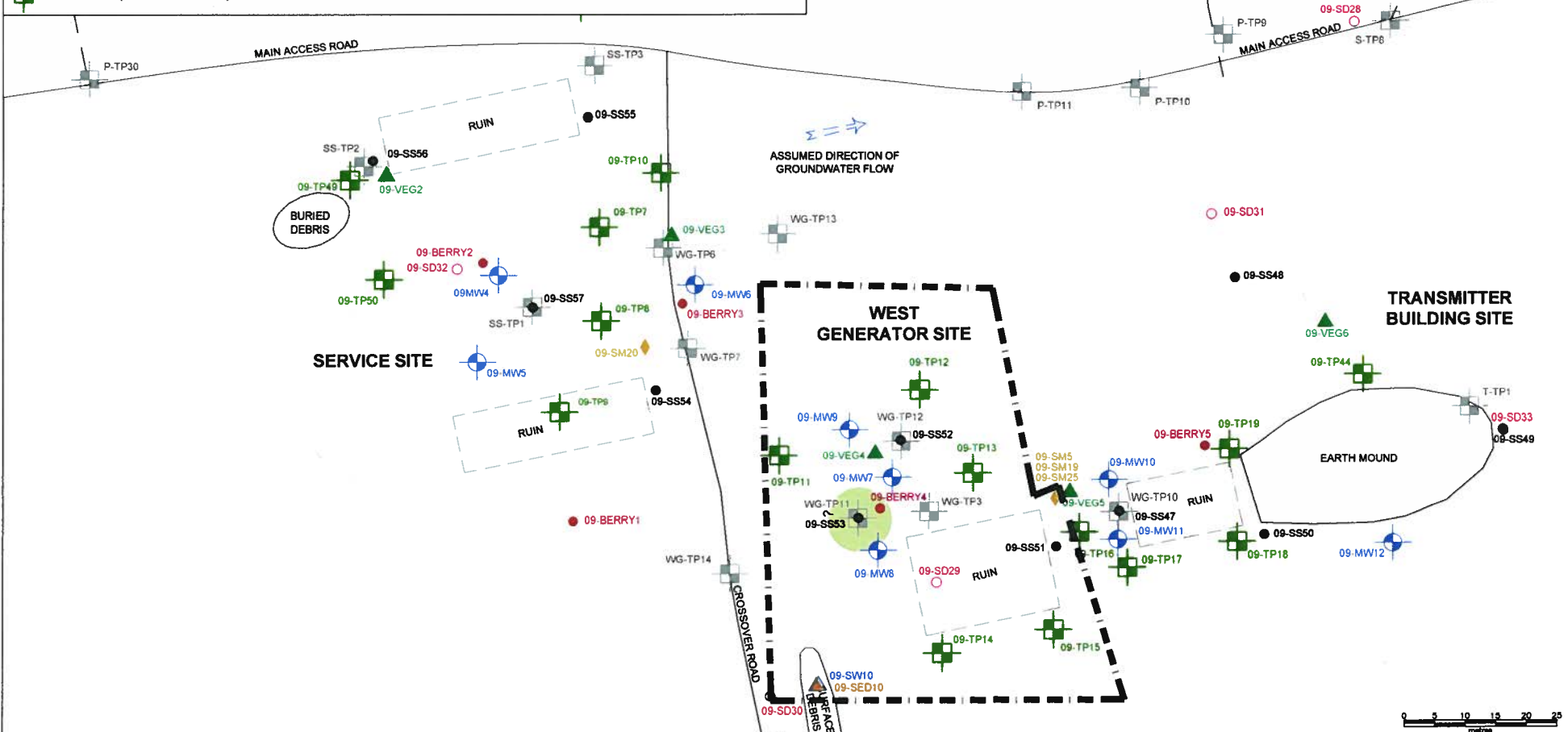
1044857-EE-10.DWG



**Stantec**

# LEGEND

- BERRY SAMPLE LOCATION (STANTEC 2009)
- SURFACE SOIL SAMPLE (STANTEC 2009)
- SURFACE DEBRIS LOCATION (STANTEC 2009)
- ◆ SMALL MAMMALS (STANTEC 2009)
- ✕ FREE PROCTURCT SAMPLE (STANTEC 2009)
- △ SURFACE WATER SAMPLE (STANTEC 2009)
- ▲ SEDIMENT SAMPLE (STANTEC 2009)
- ▲ VEGETATION SAMPLE LOCATION (STANTEC 2009)
- ⊕ TEST PIT (STANTEC 2009)
- ⊕ TEST PIT (AGRA 1999)
- ⊕ MONITOR WELL (STANTEC 2009)
- APPROXIMATE EXTENT OF BENZENE IMPACTS IN SOIL EXCEEDING GENERIC GUIDELINES



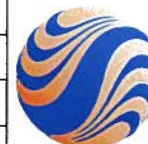
NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CUSTOMER: NEWFOUNDLAND AND LABRADOR DEPARTMENT OF ENVIRONMENT AND CONSERVATION

PROJECT TITLE: PHASE III ENVIRONMENTAL SITE ASSESSMENT, HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENTS, REMEDIAL ACTION PLAN FOR THE FORMER U.S. MILITARY FACILITY OF NORTHWEST POINT, NL

DRAWING TITLE: APPROXIMATE EXTENT OF BENZENE IMPACTS EXCEEDING GENERIC GUIDELINES - WEST GENERATOR SITE

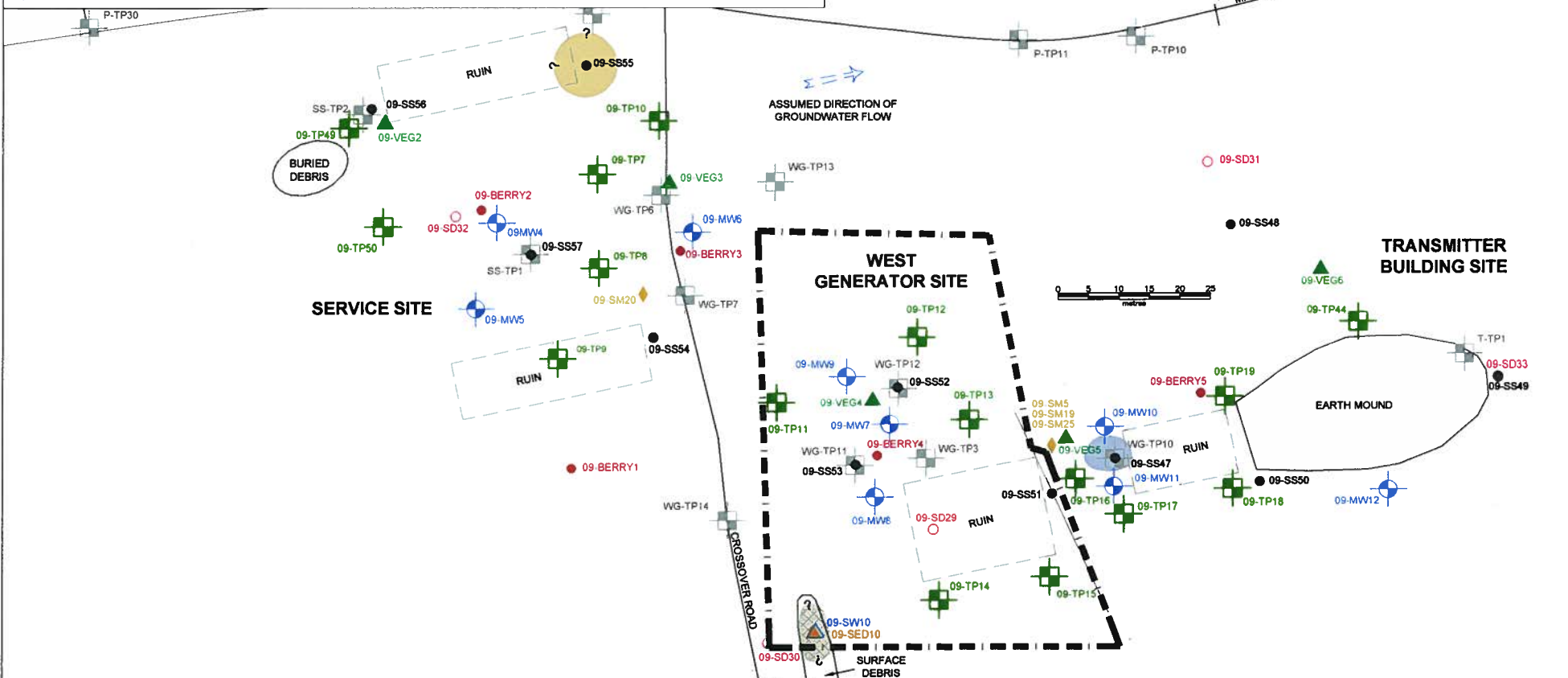
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| DRAWN BY: N.M.               | CHECKED BY: A.R.    |
| EDITED BY: -                 | REV. No. 0          |
| DRAWING No: 121410105-EE-06C |                     |
| CAD FILE: 1044857-EE-15.DWG  |                     |



Stantec

# LEGEND

- BERRY SAMPLE LOCATION (STANTEC 2009)
- SURFACE SOIL SAMPLE (STANTEC 2009)
- SURFACE DEBRIS LOCATION (STANTEC 2009)
- ◆ SMALL MAMMALS (STANTEC 2009)
- ✕ FREE PRODUCT SAMPLE (STANTEC 2009)
- △ SURFACE WATER SAMPLE (STANTEC 2009)
- ▲ SEDIMENT SAMPLE (STANTEC 2009)
- ▲ VEGETATION SAMPLE LOCATION (STANTEC 2009)
- ⊕ TEST PIT (STANTEC 2009)
- ⊕ MONITOR WELL (STANTEC 2009)
- ⊕ TEST PIT (AGRA 1999)
- APPROXIMATE EXTENT OF METALS IMPACTS IN SOIL EXCEEDING GENERIC GUIDELINES
- APPROXIMATE EXTENT OF METALS IMPACTS IN SURFACE WATER EXCEEDING GENERIC GUIDELINES
- APPROXIMATE EXTENT OF METALS IMPACTS IN GROUNDWATER EXCEEDING GENERIC GUIDELINES
- APPROXIMATE EXTENT OF METALS IMPACTS IN SEDIMENT EXCEEDING GENERIC GUIDELINES



CLIENT:

NEWFOUNDLAND AND LABRADOR DEPARTMENT OF ENVIRONMENT AND CONSERVATION

PROJECT TITLE:

PHASE III ENVIRONMENTAL SITE ASSESSMENT, HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENTS, REMEDIAL ACTION PLAN FOR THE FORMER U.S. MILITARY FACILITY OF NORTHWEST POINT, NL

DRAWING TITLE:

APPROXIMATE EXTENT OF METALS IMPACTS EXCEEDING GENERIC GUIDELINES - WEST GENERATOR SITE

SCALE:

1:800

DATE:

JUNE 21, 2010

DRAWN BY:

N.M.

CHECKED BY:

A.R.

EDITED BY:

-

REV. No.

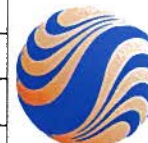
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DRAWING No:

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CAD FILE:

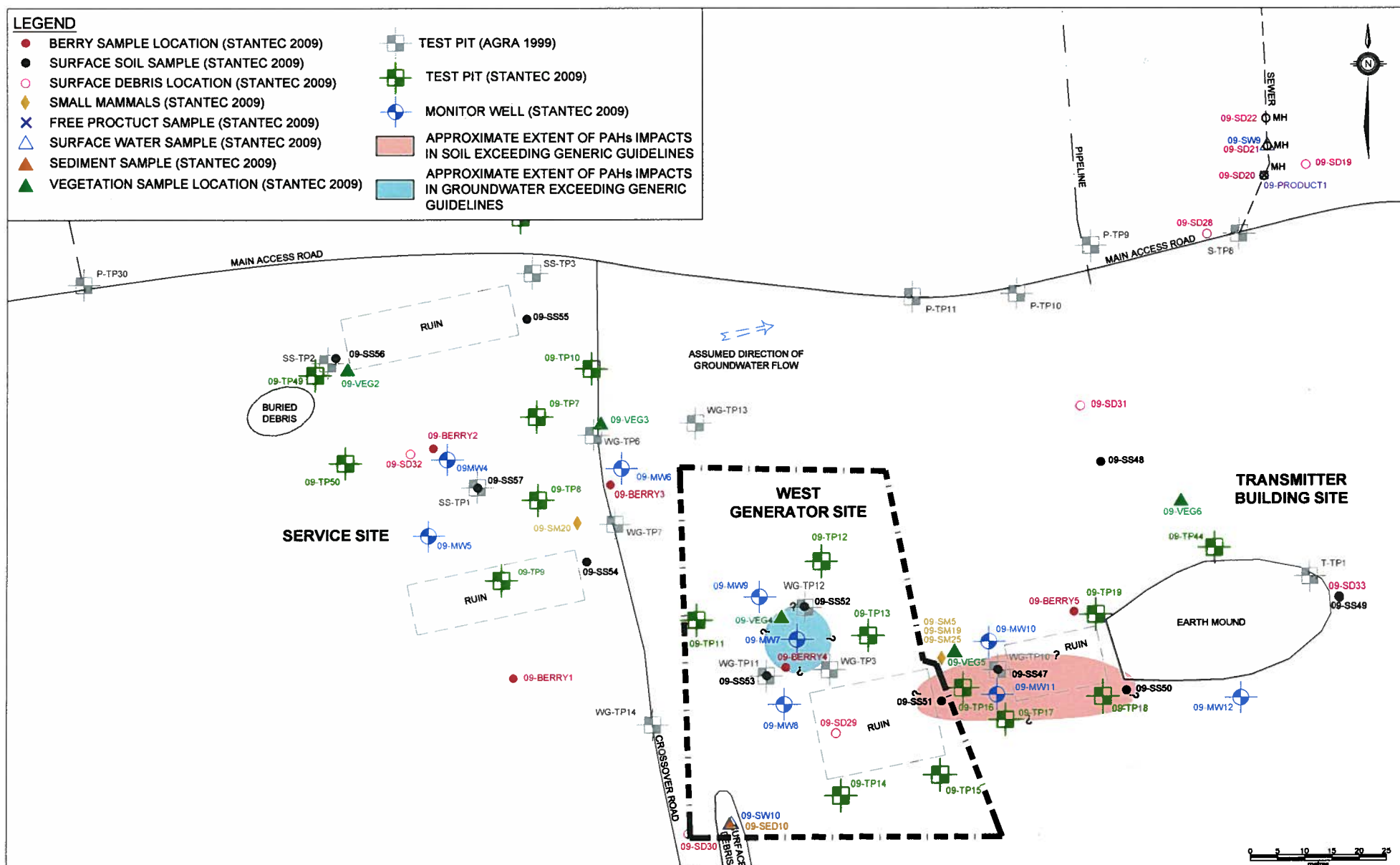
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Stantec

# LEGEND

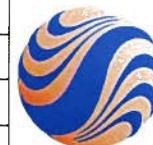
- BERRY SAMPLE LOCATION (STANTEC 2009)
- SURFACE SOIL SAMPLE (STANTEC 2009)
- SURFACE DEBRIS LOCATION (STANTEC 2009)
- ◆ SMALL MAMMALS (STANTEC 2009)
- ✕ FREE PROCTURCT SAMPLE (STANTEC 2009)
- △ SURFACE WATER SAMPLE (STANTEC 2009)
- ▲ SEDIMENT SAMPLE (STANTEC 2009)
- ▲ VEGETATION SAMPLE LOCATION (STANTEC 2009)
- TEST PIT (AGRA 1999)
- TEST PIT (STANTEC 2009)
- MONITOR WELL (STANTEC 2009)
- APPROXIMATE EXTENT OF PAHs IMPACTS IN SOIL EXCEEDING GENERIC GUIDELINES
- APPROXIMATE EXTENT OF PAHs IMPACTS IN GROUNDWATER EXCEEDING GENERIC GUIDELINES



NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

|                |                                                                                                                                                                          |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CLIENT:        | NEWFOUNDLAND AND LABRADOR DEPARTMENT OF ENVIRONMENT AND CONSERVATION                                                                                                     |
| PROJECT TITLE: | PHASE III ENVIRONMENTAL SITE ASSESSMENT, HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENTS, REMEDIAL ACTION PLAN FOR THE FORMER U.S. MILITARY FACILITY OF NORTHWEST POINT, NL |
| DRAWING TITLE: | APPROXIMATE EXTENT OF PAHs IMPACTS EXCEEDING GENERIC GUIDELINES - WEST GENERATOR SITE                                                                                    |

|             |                   |             |               |
|-------------|-------------------|-------------|---------------|
| SCALE:      | 1:800             | DATE:       | JUNE 21, 2010 |
| DRAWN BY:   | N.M.              | CHECKED BY: | A.R.          |
| EDITED BY:  | -                 | REV. No.    | 0             |
| DRAWING No: | 121410105-EE-6E   |             |               |
| CAD FILE:   | 1044857-EE-12.DWG |             |               |



**Stantec**

# **Appendix 6b**

Site Photos

– West Generator Site

## Site Photographs – West Generator Site



Photo 1 View of the site



Photo 2 View of concrete building pad and surface debris (09-SD29) at the site

## **Appendix 6c**

Sample Coordinates

– West Generator Site

**Sample Coordinates - West Generator Site**  
**Phase III ESA, HHERA and RAP**  
**Former U.S Military Facility, Northwest Point, NL**  
**Stantec Consulting Ltd. Project No. 121410105**

| Sample ID            | Coordinates (NAD27) |          |
|----------------------|---------------------|----------|
|                      | Easting             | Northing |
| <b>TEST PITS</b>     |                     |          |
| 09-TP11              | 694204              | 5931118  |
| 09-TP12              | 694219              | 5931148  |
| 09-TP13              | 694224              | 5931139  |
| 09-TP14              | 694228              | 5931117  |
| 09-TP15              | 694239              | 5931120  |
| <b>MONITOR WELLS</b> |                     |          |
| 09-MW7               | 694215              | 5931134  |
| 09-MW8               | 694213              | 5931122  |
| 09-MW9               | 694208              | 5931142  |
| <b>SURFACE SOIL</b>  |                     |          |
| 09-SS51              | 694237              | 5931131  |
| 09-SS52              | 694222              | 5931133  |
| 09-SS53              | 694210              | 5931131  |
| <b>SURFACE WATER</b> |                     |          |
| 09-SW10              | 694200              | 5931127  |
| <b>SEDIMENT</b>      |                     |          |
| 09-SED10             | 694200              | 5931127  |
| <b>VEGETATION</b>    |                     |          |
| 09-VEG4              | 694212              | 5931138  |
| <b>BERRIES</b>       |                     |          |
| 09-BERRY4            | 694213              | 5931129  |

## **Appendix 6d**

Test Pit Records and Monitor Well Records

– West Generator Site



# TEST PIT RECORD

CLIENT NL Department of Environment and Conservation  
PROJECT Phase III ESA, HHRA & ERA, Former US Military Facility  
LOCATION Northwest Point, NL  
DATES (mm-dd-yy): DUG 8-5-09 WATER LEVEL 0.5m 8-5-09

TEST PIT No. 09-TP11  
PROJECT No. 121410105  
DATUM \_\_\_\_\_

| DEPTH (m) | ELEVATION (m) | DESCRIPTION                                                                                               | STRATA PLOT                                                                       | WATER LEVEL | SAMPLES |        |             |       |             | PID READINGS (ppm) | CHEMICAL ANALYSIS (ppm) |         |         |              |         |
|-----------|---------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------|---------|--------|-------------|-------|-------------|--------------------|-------------------------|---------|---------|--------------|---------|
|           |               |                                                                                                           |                                                                                   |             | TYPE    | NUMBER | HYDROCARBON | ODOUR | OTHER TESTS |                    | TPH                     | BENZENE | TOLUENE | ETHYLBENZENE | XYLENES |
| 0         |               | Loose, brown, silty SAND with gravel (SM); some metal debris                                              |  | ▽           |         |        |             |       |             |                    |                         |         |         |              |         |
|           |               |                                                                                                           |                                                                                   |             | BS      | 1      | 0           |       |             | 0.0                | 22.0                    | nd      | nd      | nd           | nd      |
| 1         |               | End of Test Pit<br><br>Rapid groundwater seepage observed at 0.5 m depth.<br><br>Bedrock not encountered. |                                                                                   |             |         |        |             |       |             |                    |                         |         |         |              |         |
| 2         |               |                                                                                                           |                                                                                   |             |         |        |             |       |             |                    |                         |         |         |              |         |
| 3         |               |                                                                                                           |                                                                                   |             |         |        |             |       |             |                    |                         |         |         |              |         |
| 4         |               |                                                                                                           |                                                                                   |             |         |        |             |       |             |                    |                         |         |         |              |         |
| 5         |               |                                                                                                           |                                                                                   |             |         |        |             |       |             |                    |                         |         |         |              |         |



## TEST PIT RECORD

CLIENT NL Department of Environment and Conservation  
PROJECT Phase III ESA, HHRA & ERA, Former US Military Facility  
LOCATION Northwest Point, NL  
DATES (mm-dd-yy): DUG 8-5-09 WATER LEVEL 0.9m 8-5-09

TEST PIT No. 09-TP12  
PROJECT No. 121410105  
DATUM \_\_\_\_\_

| DEPTH (m) | ELEVATION (m) | DESCRIPTION                                                                           | STRATA PLOT | WATER LEVEL | SAMPLES |        |             |       | PID READINGS (ppm) | CHEMICAL ANALYSIS (ppm) |     |         |         |              |         |
|-----------|---------------|---------------------------------------------------------------------------------------|-------------|-------------|---------|--------|-------------|-------|--------------------|-------------------------|-----|---------|---------|--------------|---------|
|           |               |                                                                                       |             |             | TYPE    | NUMBER | HYDROCARBON | ODOUR |                    | OTHER TESTS             | TPH | BENZENE | TOLUENE | ETHYLBENZENE | XYLENES |
| 0         |               | Compact, brown, SAND (SP)                                                             |             |             | BS      | 1      | 0           |       | 4.3                | -                       | -   | -       | -       | -            |         |
|           |               |                                                                                       |             |             |         |        |             |       |                    |                         |     |         |         |              |         |
| 1         |               | Dense, grey, SILT with sand (ML); some clay                                           |             |             | BS      | 2      | 0           |       | 0.0                | -                       | -   | -       | -       | -            |         |
|           |               |                                                                                       |             |             |         |        |             |       |                    |                         |     |         |         |              |         |
| 2         |               |                                                                                       |             |             |         |        |             |       |                    |                         |     |         |         |              |         |
|           |               | End of Test Pit                                                                       |             |             |         |        |             |       |                    |                         |     |         |         |              |         |
| 3         |               | Moderate groundwater seepage observed at 0.9 m depth.<br><br>Bedrock not encountered. |             |             |         |        |             |       |                    |                         |     |         |         |              |         |
| 4         |               |                                                                                       |             |             |         |        |             |       |                    |                         |     |         |         |              |         |
| 5         |               |                                                                                       |             |             |         |        |             |       |                    |                         |     |         |         |              |         |



## TEST PIT RECORD

CLIENT NL Department of Environment and Conservation  
PROJECT Phase III ESA, HHRA & ERA, Former US Military Facility  
LOCATION Northwest Point, NL  
DATES (mm-dd-yy): DUG 8-5-09 WATER LEVEL 1.9m 8-5-09

TEST PIT No. 09-TP13  
PROJECT No. 121410105  
DATUM \_\_\_\_\_

| DEPTH (m) | ELEVATION (m) | DESCRIPTION                                           | STRATA PLOT                                                                        | WATER LEVEL                                                                         | SAMPLES |        |                   |             | PID READINGS (ppm) | CHEMICAL ANALYSIS (ppm) |         |         |              |         |  |
|-----------|---------------|-------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------|--------|-------------------|-------------|--------------------|-------------------------|---------|---------|--------------|---------|--|
|           |               |                                                       |                                                                                    |                                                                                     | TYPE    | NUMBER | HYDROCARBON ODOUR | OTHER TESTS |                    | TPH                     | BENZENE | TOLUENE | ETHYLBENZENE | XYLENES |  |
| 0         |               | Compact, brown to grey, SAND (SP); trace to some silt |  |  | BS      | 1      | 0                 |             | 10.9               | -                       | -       | -       | -            | -       |  |
|           |               |                                                       |                                                                                    |                                                                                     |         |        |                   |             |                    |                         |         |         |              |         |  |
| 1         |               |                                                       |                                                                                    |                                                                                     |         |        |                   |             |                    |                         |         |         |              |         |  |
|           |               |                                                       |                                                                                    |                                                                                     |         |        |                   |             |                    |                         |         |         |              |         |  |
|           |               |                                                       |                                                                                    |                                                                                     | BS      | 2      | 2                 |             | 30.4               | 2100                    | nd      | nd      | nd           | nd      |  |
|           |               |                                                       |                                                                                    |                                                                                     |         |        |                   |             |                    |                         |         |         |              |         |  |
|           |               | End of Test Pit                                       |                                                                                    |                                                                                     |         |        |                   |             |                    |                         |         |         |              |         |  |
|           |               | Rapid groundwater seepage observed at 1.9 m depth.    |                                                                                    |                                                                                     |         |        |                   |             |                    |                         |         |         |              |         |  |
| 3         |               | Bedrock not encountered.                              |                                                                                    |                                                                                     |         |        |                   |             |                    |                         |         |         |              |         |  |
|           |               |                                                       |                                                                                    |                                                                                     |         |        |                   |             |                    |                         |         |         |              |         |  |
|           |               |                                                       |                                                                                    |                                                                                     |         |        |                   |             |                    |                         |         |         |              |         |  |
| 4         |               |                                                       |                                                                                    |                                                                                     |         |        |                   |             |                    |                         |         |         |              |         |  |
|           |               |                                                       |                                                                                    |                                                                                     |         |        |                   |             |                    |                         |         |         |              |         |  |
|           |               |                                                       |                                                                                    |                                                                                     |         |        |                   |             |                    |                         |         |         |              |         |  |
| 5         |               |                                                       |                                                                                    |                                                                                     |         |        |                   |             |                    |                         |         |         |              |         |  |



# TEST PIT RECORD

CLIENT NL Department of Environment and Conservation  
PROJECT Phase III ESA, HHRA & ERA, Former US Military Facility  
LOCATION Northwest Point, NL  
DATES (mm-dd-yy): DUG 8-5-09 WATER LEVEL 1.5m 8-5-09

TEST PIT No. 09-TP14  
PROJECT No. 121410105  
DATUM \_\_\_\_\_

| DEPTH (m) | ELEVATION (m) | DESCRIPTION                                            | STRATA PLOT | WATER LEVEL | SAMPLES |        |             |       |             | PID READINGS (ppm) | CHEMICAL ANALYSIS (ppm) |         |         |              |         |
|-----------|---------------|--------------------------------------------------------|-------------|-------------|---------|--------|-------------|-------|-------------|--------------------|-------------------------|---------|---------|--------------|---------|
|           |               |                                                        |             |             | TYPE    | NUMBER | HYDROCARBON | ODOUR | OTHER TESTS |                    | TPH                     | BENZENE | TOLUENE | ETHYLBENZENE | XYLENES |
| 0         |               | Loose to compact, brown, SAND (SP); trace metal debris |             |             | BS      | 1      | 0           |       |             | 0.0                | -                       | -       | -       | -            | -       |
|           |               |                                                        |             |             |         |        |             |       |             |                    |                         |         |         |              |         |
| 1         |               | Dense, grey, SILT with sand (ML)                       |             | ▽           | BS      | 2      | 0-1         |       |             | 35.2               | 220                     | nd      | nd      | nd           | nd      |
|           |               |                                                        |             |             |         |        |             |       |             |                    |                         |         |         |              |         |
| 2         |               | End of Test Pit                                        |             |             |         |        |             |       |             |                    |                         |         |         |              |         |
|           |               | Very slow groundwater seepage observed at 1.5 m depth. |             |             |         |        |             |       |             |                    |                         |         |         |              |         |
|           |               | Bedrock not encountered.                               |             |             |         |        |             |       |             |                    |                         |         |         |              |         |
| 3         |               |                                                        |             |             |         |        |             |       |             |                    |                         |         |         |              |         |
|           |               |                                                        |             |             |         |        |             |       |             |                    |                         |         |         |              |         |
|           |               |                                                        |             |             |         |        |             |       |             |                    |                         |         |         |              |         |
| 4         |               |                                                        |             |             |         |        |             |       |             |                    |                         |         |         |              |         |
|           |               |                                                        |             |             |         |        |             |       |             |                    |                         |         |         |              |         |
|           |               |                                                        |             |             |         |        |             |       |             |                    |                         |         |         |              |         |
| 5         |               |                                                        |             |             |         |        |             |       |             |                    |                         |         |         |              |         |
|           |               |                                                        |             |             |         |        |             |       |             |                    |                         |         |         |              |         |



## TEST PIT RECORD

CLIENT NL Department of Environment and Conservation  
PROJECT Phase III ESA, HHRA & ERA, Former US Military Facility  
LOCATION Northwest Point, NL  
DATES (mm-dd-yy): DUG 8-5-09 WATER LEVEL 1.3m 8-5-09

TEST PIT No. 09-TP15  
PROJECT No. 121410105  
DATUM \_\_\_\_\_

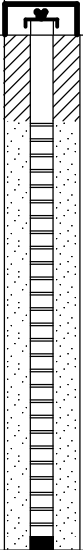
| DEPTH (m) | ELEVATION (m) | DESCRIPTION                                        | STRATA PLOT                                                                        | WATER LEVEL                                                                       | SAMPLES |        |             |       |             | PID READINGS (ppm) | CHEMICAL ANALYSIS (ppm) |         |         |              |         |
|-----------|---------------|----------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------|--------|-------------|-------|-------------|--------------------|-------------------------|---------|---------|--------------|---------|
|           |               |                                                    |                                                                                    |                                                                                   | TYPE    | NUMBER | HYDROCARBON | ODOUR | OTHER TESTS |                    | TPH                     | BENZENE | TOLUENE | ETHYLBENZENE | XYLENES |
| 0         |               | Loose to compact, brown, SAND (SP-SM); some silt   |  |  | BS      | 1      | 0           |       |             | 0.0                | -                       | -       | -       | -            | -       |
|           |               |                                                    |                                                                                    |                                                                                   |         |        |             |       |             |                    |                         |         |         |              |         |
| 1         |               |                                                    |                                                                                    |                                                                                   | BS      | 2      | 0           |       |             | 0.0                | -                       | -       | -       | -            | -       |
|           |               |                                                    |                                                                                    |                                                                                   |         |        |             |       |             |                    |                         |         |         |              |         |
| 2         |               | End of Test Pit                                    |                                                                                    |                                                                                   |         |        |             |       |             |                    |                         |         |         |              |         |
|           |               | Rapid groundwater seepage observed at 1.3 m depth. |                                                                                    |                                                                                   |         |        |             |       |             |                    |                         |         |         |              |         |
|           |               | Bedrock not encountered.                           |                                                                                    |                                                                                   |         |        |             |       |             |                    |                         |         |         |              |         |
| 3         |               |                                                    |                                                                                    |                                                                                   |         |        |             |       |             |                    |                         |         |         |              |         |
|           |               |                                                    |                                                                                    |                                                                                   |         |        |             |       |             |                    |                         |         |         |              |         |
| 4         |               |                                                    |                                                                                    |                                                                                   |         |        |             |       |             |                    |                         |         |         |              |         |
|           |               |                                                    |                                                                                    |                                                                                   |         |        |             |       |             |                    |                         |         |         |              |         |
| 5         |               |                                                    |                                                                                    |                                                                                   |         |        |             |       |             |                    |                         |         |         |              |         |



# MONITOR WELL RECORD

BOREHOLE No. 09-MW07  
PAGE 1 of 1  
PROJECT No. 121410105  
DRILLING METHOD Auger  
SIZE 100mm HS  
DATUM \_\_\_\_\_

CLIENT NL Department of Enviroment and Conservation  
PROJECT Phase III ESA, HHRA & ERA, Former US Military Facility  
LOCATION Northwest Point, NL  
DATES (mm-dd-yy): BORING 8-8-09 WATER LEVEL 1.52m 8-8-09

| DEPTH (m) | ELEVATION (m) | DESCRIPTION              | STRATA PLOT                                                                        | WATER LEVEL | SAMPLES |        |          |                     | HYDROCARBON<br>ODOUR | APPARENT<br>MOISTURE<br>CONTENT | PID (ppm) | TPH (ppm) | WELL<br>CONSTRUCTION<br>DETAILS                                                                                                                                                                     |
|-----------|---------------|--------------------------|------------------------------------------------------------------------------------|-------------|---------|--------|----------|---------------------|----------------------|---------------------------------|-----------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |               |                          |                                                                                    |             | TYPE    | NUMBER | RECOVERY | N-VALUE<br>OR RQD % |                      |                                 |           |           |                                                                                                                                                                                                     |
| 0         |               |                          |                                                                                    |             |         |        | mm       |                     |                      |                                 |           |           | 0.91 m STICK UP<br>CAST IRON<br>WELL HEAD                                                                                                                                                           |
|           |               | Brownish grey, SAND (SP) |   |             | SS      | 1      | 455      | 4                   | 1                    |                                 | 48.8      | -         | <br>BENTONITE<br><br>50 mm DIAMETER<br>No. 10 SLOT PVC<br>SCREEN IN No. 2<br>SILICA SAND<br>PACK<br><br>END CAP |
| 1         |               |                          |                                                                                    |             | SS      | 2      | 305      | 6                   | 1-2                  |                                 | 91.0      | -         |                                                                                                                                                                                                     |
|           |               | Grey, CLAY (CL)          |   |             | SS      | 3      | 305      | 4                   | 1-2                  |                                 | 409       | 9000      |                                                                                                                                                                                                     |
| 2         |               | Grey, silty CLAY (CL-ML) |  |             | SS      | 4      | 330      | 22                  | 1                    |                                 | 134       | -         |                                                                                                                                                                                                     |
|           |               |                          |                                                                                    |             | SS      | 5      | 330      | 38                  | 1                    |                                 | 249       | -         |                                                                                                                                                                                                     |
| 3         |               |                          |                                                                                    |             |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |
| 4         |               | End of Borehole          |                                                                                    |             |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |
| 5         |               |                          |                                                                                    |             |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |
| 6         |               |                          |                                                                                    |             |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |
| 7         |               |                          |                                                                                    |             |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |
| 8         |               |                          |                                                                                    |             |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |
| 9         |               |                          |                                                                                    |             |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |
| 10        |               |                          |                                                                                    |             |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |

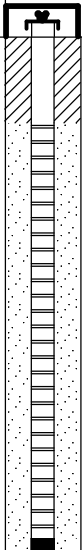
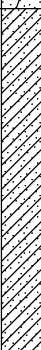


# MONITOR WELL RECORD

BOREHOLE No. **09-MW08**PAGE **1** of **1**PROJECT No. **121410105**DRILLING METHOD **Auger**SIZE **100mm HS**

DATUM

CLIENT **NL Department of Environment and Conservation**PROJECT **Phase III ESA, HHRA & ERA, Former US Military Facility**LOCATION **Northwest Point, NL**DATES (mm-dd-yy): BORING **8-7-09**WATER LEVEL **1.52m** **8-7-09**

| DEPTH (m) | ELEVATION (m) | DESCRIPTION                                        | STRATA PLOT                                                                        | WATER LEVEL                                                                       | SAMPLES |        |          |                     | HYDROCARBON<br>ODOUR | APPARENT<br>MOISTURE<br>CONTENT | PID (ppm) | TPH (ppm) | WELL<br>CONSTRUCTION<br>DETAILS                                                                                                                                                                     |
|-----------|---------------|----------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------|--------|----------|---------------------|----------------------|---------------------------------|-----------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |               |                                                    |                                                                                    |                                                                                   | TYPE    | NUMBER | RECOVERY | N-VALUE<br>OR RQD % |                      |                                 |           |           |                                                                                                                                                                                                     |
| 0         |               |                                                    |                                                                                    |                                                                                   |         |        | mm       |                     |                      |                                 |           |           | 0.91 m STICK UP<br>CAST IRON<br>WELL HEAD                                                                                                                                                           |
|           |               | Brown, SAND (SP); some<br>organics                 |   |                                                                                   | SS      | 1      | 380      | 5                   | 0                    |                                 | 0.0       | -         | <br>BENTONITE<br><br>50 mm DIAMETER<br>No. 10 SLOT PVC<br>SCREEN IN No. 2<br>SILICA SAND<br>PACK<br><br>END CAP |
| 1         |               | Brown, SAND with gravel (SP);<br>some organics     |   |                                                                                   | SS      | 2      | 330      | 4                   | 0                    |                                 | 0.0       | -         |                                                                                                                                                                                                     |
| 2         |               | Grey, CLAY (CL) with layers<br>of brown, SAND (SP) |  |  | SS      | 3      | 480      | 4                   | 1                    |                                 | 17.8      | 1100      |                                                                                                                                                                                                     |
|           |               |                                                    |                                                                                    |                                                                                   | SS      | 4      | 405      | 4                   | 1                    |                                 | 24.6      | -         |                                                                                                                                                                                                     |
| 3         |               |                                                    |                                                                                    |                                                                                   |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |
| 4         |               | End of Borehole                                    |                                                                                    |                                                                                   |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |
| 5         |               |                                                    |                                                                                    |                                                                                   |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |
| 6         |               |                                                    |                                                                                    |                                                                                   |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |
| 7         |               |                                                    |                                                                                    |                                                                                   |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |
| 8         |               |                                                    |                                                                                    |                                                                                   |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |
| 9         |               |                                                    |                                                                                    |                                                                                   |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |
| 10        |               |                                                    |                                                                                    |                                                                                   |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |

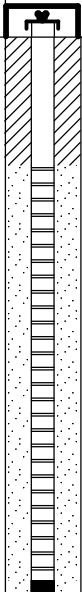


# MONITOR WELL RECORD

BOREHOLE No. **09-MW09**PAGE **1** of **1**PROJECT No. **121410105**DRILLING METHOD **Auger**SIZE **100mm HS**

DATUM

CLIENT **NL Department of Environment and Conservation**PROJECT **Phase III ESA, HHRA & ERA, Former US Military Facility**LOCATION **Northwest Point, NL**DATES (mm-dd-yy): BORING **8-7-09**WATER LEVEL **2.13m** **8-7-09**

| DEPTH (m) | ELEVATION (m) | DESCRIPTION                       | STRATA PLOT                                                                       | WATER LEVEL                                                                       | SAMPLES |        |          |                     | HYDROCARBON<br>ODOUR | APPARENT<br>MOISTURE<br>CONTENT | PID (ppm) | TPH (ppm) | WELL<br>CONSTRUCTION<br>DETAILS                                                                                                                                                                     |
|-----------|---------------|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------|--------|----------|---------------------|----------------------|---------------------------------|-----------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |               |                                   |                                                                                   |                                                                                   | TYPE    | NUMBER | RECOVERY | N-VALUE<br>OR RQD % |                      |                                 |           |           |                                                                                                                                                                                                     |
| 0         |               |                                   |                                                                                   |                                                                                   |         |        | mm       |                     |                      |                                 |           |           | 0.61 m STICK UP<br>CAST IRON<br>WELL HEAD                                                                                                                                                           |
|           |               | Grey, SILT (ML); some<br>organics |  |                                                                                   | SS      | 1      | 305      | 8                   | 0                    |                                 | 9.4       | -         | <br>BENTONITE<br><br>50 mm DIAMETER<br>No. 10 SLOT PVC<br>SCREEN IN No. 2<br>SILICA SAND<br>PACK<br><br>END CAP |
| 1         |               | Very dense, grey, SILT (ML)       |  |                                                                                   | SS      | 2      | 330      | 8                   | 0                    |                                 | 9.3       | -         |                                                                                                                                                                                                     |
|           |               |                                   |                                                                                   |                                                                                   | SS      | 3      | 305      | 34                  | 1                    |                                 | 10.4      | -         |                                                                                                                                                                                                     |
| 2         |               | Dark grey, silty CLAY<br>(CL-ML)  |  |  | SS      | 4      | 255      | 32                  | 1-2                  |                                 | 334       | 810       |                                                                                                                                                                                                     |
| 3         |               |                                   |                                                                                   |                                                                                   |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |
| 4         |               | End of Borehole                   |                                                                                   |                                                                                   |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |
| 5         |               |                                   |                                                                                   |                                                                                   |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |
| 6         |               |                                   |                                                                                   |                                                                                   |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |
| 7         |               |                                   |                                                                                   |                                                                                   |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |
| 8         |               |                                   |                                                                                   |                                                                                   |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |
| 9         |               |                                   |                                                                                   |                                                                                   |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |
| 10        |               |                                   |                                                                                   |                                                                                   |         |        |          |                     |                      |                                 |           |           |                                                                                                                                                                                                     |

## **Appendix 6e**

Laboratory Analytical Results Summary Tables

– West Generator Site

**Table 6.1 Results of Laboratory Analysis of TPH/BTEX in Soil - West Generator Site**  
**Phase III ESA, HHERA and RAP**  
**Former U.S Military Facility, Northwest Point, NL**  
**Stantec Consulting Ltd. Project No. 121410105**

| Sample Location                 | Sample Depth (m) | Benzene | Toluene | Ethyl-benzene | Xylenes | TPH Purgeable (<C <sub>10</sub> ) | TPH Extractable (C <sub>10</sub> -C <sub>32</sub> ) | C <sub>6</sub> -C <sub>10</sub> (Gas Range) | C <sub>10</sub> -C <sub>21</sub> (Fuel Range) | C <sub>21</sub> -C <sub>32</sub> (Lube Range) | Modified TPH - Tier I <sup>2</sup> | Resemblance |
|---------------------------------|------------------|---------|---------|---------------|---------|-----------------------------------|-----------------------------------------------------|---------------------------------------------|-----------------------------------------------|-----------------------------------------------|------------------------------------|-------------|
| <b>Units</b>                    |                  | mg/kg   | mg/kg   | mg/kg         | mg/kg   | mg/kg                             | mg/kg                                               | mg/kg                                       | mg/kg                                         | mg/kg                                         | mg/kg                              | -           |
| <b>Tier I RBSLs<sup>1</sup></b> |                  | 0.16    | 14      | 58            | 17      | -                                 | -                                                   | -                                           | -                                             | -                                             | 140                                | -           |
| <b>1999 Sampling (AGRA)</b>     |                  |         |         |               |         |                                   |                                                     |                                             |                                               |                                               |                                    |             |
| WG-TP3                          | 1.9              | <4      | <4      | 7.3           | 11.2    | 2,640                             | 29,700                                              | -                                           | -                                             | -                                             | 32,340                             | D           |
| WG-TP6                          | 1.5              | <4      | <4      | 5.5           | 8.1     | 339                               | 16,400                                              | -                                           | -                                             | -                                             | 16,739                             | D           |
| WG-TP7                          | 2.5              | <0.002  | <0.002  | <0.002        | <0.004  | <0.02                             | <0.2                                                | -                                           | -                                             | -                                             | <0.022                             | -           |
| WG-TP9                          | 1.5              | <0.002  | <0.002  | <0.002        | <0.004  | <0.02                             | <0.2                                                | -                                           | -                                             | -                                             | <0.022                             | -           |
| WG-TP11                         | 1.5              | 4.2     | 8.4     | 3.6           | 29.2    | 489                               | 4,330                                               | -                                           | -                                             | -                                             | 4,819                              | D           |
| WG-TP12                         | 0.5              | <0.002  | <0.002  | 0.122         | 0.612   | 20.5                              | 2410                                                | -                                           | -                                             | -                                             | 2,431                              | D           |
| WG-TP13                         | 1.5              | <0.002  | <0.002  | <0.002        | <0.004  | <0.02                             | <0.2                                                | -                                           | -                                             | -                                             | <0.22                              | -           |
| WG-TP14                         | 2.5              | <0.002  | <0.002  | <0.002        | <0.004  | <0.02                             | <0.2                                                | -                                           | -                                             | -                                             | <0.22                              | -           |
| <b>MDL</b>                      | -                | 0.002   | 0.002   | 0.002         | 0.002   | 0.02                              | 0.2                                                 | -                                           | -                                             | -                                             | 0.2                                | -           |
| <b>2009 Sampling (Stantec)</b>  |                  |         |         |               |         |                                   |                                                     |                                             |                                               |                                               |                                    |             |
| 09-TP11-BS1                     | 0.4 - 0.8        | <0.03   | <0.03   | <0.03         | <0.05   | -                                 | -                                                   | <3                                          | 120                                           | 91                                            | 220                                | WFO/LO      |
| 09-TP13-BS2                     | 1.7 - 2.2        | <0.03   | <0.03   | <0.03         | <0.05   | -                                 | -                                                   | 8                                           | 2,000                                         | 63                                            | 2,100                              | WFO         |
| 09-TP14-BS2                     | 1.3 - 1.8        | <0.03   | <0.03   | <0.03         | <0.05   | -                                 | -                                                   | 4                                           | 190                                           | 22                                            | 220                                | WFO/NRF     |
| 09-MW7-SS3                      | 1.2 - 1.8        | <0.03   | 0.08    | 1.4           | 7.2     | -                                 | -                                                   | 710                                         | 8,200                                         | 100                                           | 9,000                              | FO          |
| 09-MW8-SS3                      | 1.2 - 1.8        | <0.03   | <0.03   | <0.03         | <0.05   | -                                 | -                                                   | 6                                           | 1,100                                         | 19                                            | 1,100                              | WFO         |
| 09-MW9-SS4                      | 1.8 - 2.4        | <0.03   | <0.03   | <0.03         | <0.05   | -                                 | -                                                   | 110                                         | 700                                           | <15                                           | 810                                | FO          |
| <b>RDL</b>                      | -                | 0.03    | 0.03    | 0.03          | 0.05    | -                                 | -                                                   | 3                                           | 15                                            | 15                                            | 20                                 | -           |

**Notes:**

1 = Partnership in RBCA (Risk-Based Corrective Action) Implementation (PIRI) Tier I Risk Based Screening Levels (RBSLs) for a residential site with non-potable groundwater and coarse grained soil, fuel oil impacts (September, 2003)

2 = Modified TPH - Tier I does not include BTEX

MDL = Method Detection Limit; RDL = Reportable Detection Limit for routine analysis

< # = Not detected above MDL/RDL noted

"-" = Indicates value is not available or does not apply

D = Diesel; FO = Fuel oil; WFO = Weathered fuel oil; LO = Lube oil; NRF = No resemblance to petroleum products in fuel oil range

Shaded = Value exceeds generic guideline for a residential site, non-potable groundwater, coarse grained soil and fuel oil impacts

**Table 6.2 Results of Laboratory Analysis of Petroleum Hydrocarbon Fractionation in Soil - West Generator Site  
Phase III ESA, HHERA and RAP  
Former U.S Military Facility, Northwest Point, NL  
Stantec Consulting Ltd. Project No. 121410105**

| Parameter               | Units | Criteria <sup>1</sup> | 2009 Sampling (Stantec) |      |
|-------------------------|-------|-----------------------|-------------------------|------|
|                         |       |                       | 09-TP14-BS2             | RDL  |
| Benzene                 | mg/L  | 0.16                  | <0.03                   | 0.03 |
| Toluene                 | mg/L  | 14                    | <0.03                   | 0.03 |
| Ethylbenzene            | mg/L  | 58                    | <0.03                   | 0.03 |
| Xylene (Total)          | mg/L  | 17                    | <0.05                   | 0.05 |
| Aliphatic >C6-C8        | mg/L  | -                     | 0.6 ( 1 )               | 0.3  |
| Aliphatic >C8-C10       | mg/L  | -                     | 5.6 ( 1 )               | 0.6  |
| Aliphatic >C10-C12      | mg/L  | -                     | 59                      | 8    |
| Aliphatic >C12-C16      | mg/L  | -                     | 190                     | 15   |
| Aliphatic >C16-C21      | mg/L  | -                     | 23                      | 15   |
| Aliphatic >C21-C32      | mg/L  | -                     | <15                     | 15   |
| Aromatics (-EX) >C8-C10 | mg/L  | -                     | <0.1                    | 0.1  |
| Aromatic >C10-C12       | mg/L  | -                     | 20                      | 4    |
| Aromatic >C12-C16       | mg/L  | -                     | 53                      | 15   |
| Aromatic >C16-C21       | mg/L  | -                     | <15                     | 15   |
| Aromatic >C21-C32       | mg/L  | -                     | <15                     | 15   |
| Modified TPH (Tier 2)   | mg/L  | 140                   | 350                     | 20   |
| Resemblance             | -     | -                     | FO                      | -    |

**Notes:**

1 = Partnership in RBCA (Risk-Based Corrective Action) Implementation (PIRI) Tier I Risk Based Screening Levels (RBSLs) for a residential site with non-potable groundwater and coarse grained soil, fuel oil impacts (September, 2003)

(1) = Elevated VPH RDL(s) due to detected levels in the method blank.

RDL = Reportable Detection Limit

"-" = indicates value is not available or does not apply

< # = Not detected above RDL noted

FO = Fuel oil

Shaded = Value exceeds applicable criteria

**Table 6.3 Results of Laboratory Analysis of Metals in Soil - West Generator Site**  
**Phase III ESA, HHERA and RAP**  
**Former U.S Military Facility, Northwest Point, NL**  
**Stantec Consulting Ltd. Project No. 121410105**

| Parameters       | Units | Criteria <sup>1</sup> | 1999 Sampling (AGRA) |         |      | 2009 Sampling (Stantec) |     |            |     |            |            |     |
|------------------|-------|-----------------------|----------------------|---------|------|-------------------------|-----|------------|-----|------------|------------|-----|
|                  |       |                       | WG-TP11              | WG-TP12 | MDL  | 09-TP14-BS1             | RDL | 09-MW7-SS1 | RDL | 09-SS51    | 09-SS53    | RDL |
| Sample Depth (m) |       |                       | 1.5                  | 1.5     | -    | 0.0 - 0.4               | -   | 0.0 - 0.6  | -   | 0.0 - 0.15 | 0.0 - 0.15 | -   |
| Aluminum         | mg/kg | -                     | 8,390                | 7,420   | 5    | 5,400                   | 10  | 5,800      | 10  | 5,400      | 2,500      | 10  |
| Antimony         | mg/kg | 20                    | <0.1                 | <0.1    | 0.1  | <2                      | 2   | <2         | 2   | <2         | <2         | 2   |
| Arsenic          | mg/kg | 12                    | 0.4                  | 0.4     | 0.1  | <2                      | 2   | <2         | 2   | <2         | <2         | 2   |
| Barium           | mg/kg | 500                   | 86                   | 68      | 0.5  | 39                      | 5   | 65         | 5   | 64         | 25         | 5   |
| Beryllium        | mg/kg | 4                     | 0.2                  | 0.2     | 0.2  | <2                      | 2   | <2         | 2   | <2         | <2         | 2   |
| Bismuth          | mg/kg | -                     | <0.2                 | <0.2    | 0.2  | <2                      | 2   | <2         | 2   | <2         | <2         | 2   |
| Boron            | mg/kg | -                     | -                    | -       | -    | <5                      | 5   | <5         | 5   | <5         | <5         | 5   |
| Cadmium          | mg/kg | 10                    | 0.6                  | 5.9     | 0.5  | <0.3                    | 0.3 | <0.3       | 0.3 | <0.3       | <0.3       | 0.3 |
| Chromium         | mg/kg | 64                    | 17                   | 14      | 1    | 10                      | 2   | 14         | 2   | 13         | 5          | 2   |
| Cobalt           | mg/kg | 50                    | 5                    | 4       | 1    | 3                       | 1   | 4          | 1   | 5          | 2          | 1   |
| Copper           | mg/kg | 63                    | 14                   | 11      | 1    | 12                      | 2   | 11         | 2   | 10         | 4          | 2   |
| Iron             | mg/kg | -                     | 12,800               | 10,900  | 5    | 6,300                   | 50  | 9,400      | 50  | 8,400      | 4,400      | 50  |
| Lead             | mg/kg | 140                   | <5                   | <5      | 5    | 25                      | 0.5 | 9.5        | 0.5 | 5.7        | 32         | 0.5 |
| Lithium          | mg/kg | -                     | -                    | -       | -    | 3                       | 2   | 6          | 2   | 5          | 3          | 2   |
| Manganese        | mg/kg | -                     | 216                  | 170     | 1    | 68                      | 2   | 140        | 2   | 130        | 46         | 2   |
| Mercury          | mg/kg | 6.6                   | 0.03                 | 0.03    | 0.01 | <0.1                    | 0.1 | <0.1       | 0.1 | <0.1       | <0.1       | 0.1 |
| Molybdenum       | mg/kg | 10                    | <4                   | <4      | 4    | <2                      | 2   | <2         | 2   | <2         | <2         | 2   |
| Nickel           | mg/kg | 50                    | 10                   | 9       | 5    | 6                       | 2   | 9          | 2   | 8          | 4          | 2   |
| Rubidium         | mg/kg | -                     | -                    | -       | -    | 6                       | 2   | 13         | 2   | 11         | 5          | 2   |
| Selenium         | mg/kg | 1                     | <0.1                 | <0.1    | 0.1  | <2                      | 2   | <2         | 2   | <1         | <1         | 1   |
| Silver           | mg/kg | 20                    | <5                   | <5      | 5    | <0.5                    | 0.5 | <0.5       | 0.5 | <0.5       | <0.5       | 0.5 |
| Strontium        | mg/kg | -                     | -                    | -       | -    | 14                      | 5   | 14         | 5   | 14         | 7          | 5   |
| Thallium         | mg/kg | 1                     | -                    | -       | -    | <0.1                    | 0.1 | <0.1       | 0.1 | <0.1       | <0.1       | 0.1 |
| Tin              | mg/kg | -                     | -                    | -       | -    | <2                      | 2   | <2         | 2   | <2         | <2         | 2   |
| Uranium          | mg/kg | 23                    | -                    | -       | -    | 0.3                     | 0.1 | 0.4        | 0.1 | 0.3        | 0.2        | 0.1 |
| Vanadium         | mg/kg | 130                   | 30                   | 25      | 5    | 15                      | 2   | 22         | 2   | 20         | 9          | 2   |
| Zinc             | mg/kg | 200                   | 26                   | 34      | 2    | 30                      | 5   | 34         | 5   | 40         | 100        | 5   |

**Notes:**

1 = CCME Canadian Soil Quality Guidelines for Protection of Environmental and Human Health at a Residential/Parkland site (2007)

MDL = Method Detection Limit; RDL = Reportable Detection Limit for routine analysis

< # = Not detected above MDL/RDL noted

"-" = No applicable guideline

**Table 6.4 Results of Laboratory Analysis of PAHs in Soil - West Generator Site**  
**Phase III ESA, HHERA and RAP**  
**Former U.S Military Facility, Northwest Point, NL**  
**Stantec Consulting Ltd. Project No. 121410105**

| Parameters                      | Units | Criteria <sup>1,3</sup> | Criteria <sup>2,3</sup> | 1999 Sampling (AGRA) |         |       | 2009 Sampling (Stantec) |       |            |            |                 |       |
|---------------------------------|-------|-------------------------|-------------------------|----------------------|---------|-------|-------------------------|-------|------------|------------|-----------------|-------|
|                                 |       |                         |                         | WG-TP11              | WG-TP12 | MDL   | 09-SS51                 | RDL   | 09-SS52    | 09-SS53    | 09-SS53 Lab-Dup | RDL   |
| Sample Depth (m)                |       |                         |                         | 1.5                  | 0.75    | -     | 0.0 - 0.15              | -     | 0.0 - 0.15 | 0.0 - 0.15 | 0.0 - 0.15      | -     |
| Non-carcinogenic PAHs           |       |                         |                         |                      |         |       |                         |       |            |            |                 |       |
| 1-Methylnaphthalene             | mg/kg | -                       | -                       | -                    | -       | -     | 0.48                    | 0.005 | <0.005     | <0.005     | <0.005          | 0.005 |
| 2-Methylnaphthalene             | mg/kg | -                       | -                       | -                    | -       | -     | 0.89                    | 0.005 | <0.005     | 0.007      | 0.009           | 0.005 |
| Acenaphthene                    | mg/kg | -                       | -                       | <0.02                | <0.02   | 0.002 | 2.5                     | 0.005 | 0.019      | 0.060      | 0.058           | 0.005 |
| Acenaphthylene                  | mg/kg | -                       | -                       | <0.01                | <0.01   | 0.001 | 0.13                    | 0.005 | <0.005     | <0.005     | <0.005          | 0.005 |
| Anthracene                      | mg/kg | 2.5                     | -                       | <0.01                | <0.01   | 0.001 | 6.3(1)                  | 0.03  | 0.033      | 0.12       | 0.14            | 0.005 |
| Fluoranthene                    | mg/kg | 50                      | -                       | <0.01                | 0.2     | 0.001 | 26(1)                   | 0.03  | 0.18       | 0.56       | 0.58            | 0.005 |
| Fluorene                        | mg/kg | -                       | -                       | 1.22                 | <0.01   | 0.001 | 3.1                     | 0.005 | 0.014      | 0.054      | 0.063           | 0.005 |
| Naphthalene                     | mg/kg | -                       | -                       | 17.9                 | <0.02   | 0.002 | 2.8                     | 0.005 | <0.005     | 0.018      | 0.025           | 0.005 |
| Perylene                        | mg/kg | -                       | -                       | -                    | -       | -     | 1.6                     | 0.005 | 0.023      | 0.045      | 0.057           | 0.005 |
| Phenanthrene                    | mg/kg | -                       | -                       | 1.12                 | <0.01   | 0.001 | 22(1)                   | 0.03  | 0.14       | 0.44       | 0.5             | 0.005 |
| Pyrene                          | mg/kg | -                       | -                       | <0.03                | 0.34    | 0.003 | 19(1)                   | 0.03  | 0.15       | 0.44       | 0.45            | 0.005 |
| Carcinogenic PAHs               |       |                         |                         |                      |         |       |                         |       |            |            |                 |       |
| Benzo(a)anthracene              | mg/kg | -                       | -                       | <0.01                | 0.12    | 0.001 | 10(1)                   | 0.03  | 0.099      | 0.26       | 0.26            | 0.005 |
| Benzo(a)pyrene                  | mg/kg | 20                      | -                       | <0.03                | 0.17    | 0.003 | 7.6(1)                  | 0.03  | 0.084      | 0.18       | 0.18            | 0.005 |
| Benzo(b)fluoranthene            | mg/kg | -                       | -                       | <0.04                | 0.22    | 0.004 | 7.1(1)                  | 0.03  | 0.077      | 0.17       | 0.16            | 0.005 |
| Benzo(g,h,i)perylene            | mg/kg | -                       | -                       | <0.02                | 0.05    | 0.002 | 3.9                     | 0.005 | 0.079      | 0.19       | 0.18            | 0.005 |
| Benzo(k)fluoranthene            | mg/kg | -                       | -                       | <0.04                | 0.18    | 0.004 | 7.1(1)                  | 0.03  | 0.077      | 0.17       | 0.16            | 0.005 |
| Chrysene                        | mg/kg | -                       | -                       | <0.01                | 0.22    | 0.001 | 10(1)                   | 0.03  | 0.11       | 0.26       | 0.25            | 0.005 |
| Indeno(1,2,3-c,d) pyrene        | mg/kg | -                       | -                       | <0.03                | 0.14    | 0.003 | 5                       | 0.005 | 0.081      | 0.16       | 0.16            | 0.005 |
| Dibenz(a,h,)anthracene          | mg/kg | -                       | -                       | <0.04                | <0.04   | 0.004 | 1.3                     | 0.005 | 0.016      | 0.030      | 0.029           | 0.005 |
| Benzo(a)pyrene TPE <sup>4</sup> |       | -                       | 5.3                     | 0.041                | 0.259   | -     | 12.0                    | -     | 0.135      | 0.29       | 0.287           | -     |

**Notes:**

1 = CCME Canadian Soil Quality Guidelines for the Protection of Environmental Health at a Residential/Parkland Site (2008)

2 = CCME Canadian Soil Quality Guidelines for Protection of Human Health for a Residential Site (Direct Soil Contact) (2008)

3 = As per CCME recommendations, soil samples are compared against the SQG for the protection of human health and environmental health separately

4 = Carcinogenic PAHs Assessed as Benzo(a)pyrene Total Potency Equivalent (TPE)

(1) - Elevated RDL(s) due to sample dilution

MDL = Method Detection Limit; RDL = Reportable Detection Limit for routine analysis

Lab-Dup = Laboratory duplicate sample

< # = Not detected above MDL/RDL noted

"-" = No applicable guideline or does not apply

Shaded = Value exceeds applicable criteria

**Table 6.5 Results of Laboratory Analysis of PCBs in Soil - West Generator Site**  
**Phase III ESA, HHERA and RAP**  
**Former U.S Military Facility, Northwest Point, NL**  
**Stantec Consulting Ltd. Project No. 121410105**

| Sample Location         | Sample Depth (m) | Polychlorinated Biphenyls (PCBs) |
|-------------------------|------------------|----------------------------------|
| RDL                     |                  | 0.05                             |
| Units                   |                  | ug/g                             |
| Criteria <sup>1</sup>   |                  | 1.3                              |
| 2009 Sampling (Stantec) |                  |                                  |
| 09-MW9-SS4              | 1.9 - 2.4        | <0.05                            |
| 09-SS51                 | 0.0 - 0.15       | <0.05                            |

**Notes:**

1 = CCME Canadian Soil Quality Guidelines for a Residential/Parkland site (2007)

RDL = Reportable Detection Limit for routine analysis

< # = Not detected above RDL noted

**Table 6.6 Results of Laboratory Analysis of TPH/BTEX in Groundwater - West Generator Site**  
**Phase III ESA, HHERA and RAP**  
**Former U.S Military Facility, Northwest Point, NL**  
**Stantec Consulting Ltd. Project No. 121410105**

| Sample Location                 | Benzene | Toluene | Ethyl-<br>benzene | Xylenes | TPH<br>Purgeable<br>(<C <sub>10</sub> ) | TPH<br>Extractable<br>(C <sub>10</sub> -C <sub>32</sub> ) | C <sub>6</sub> -C <sub>10</sub><br>(Gas Range) | C <sub>10</sub> -C <sub>21</sub><br>(Fuel Range) | C <sub>21</sub> -C <sub>32</sub><br>(Lube Range) | Modified TPH -<br>Tier I <sup>2</sup> | Resemblance |
|---------------------------------|---------|---------|-------------------|---------|-----------------------------------------|-----------------------------------------------------------|------------------------------------------------|--------------------------------------------------|--------------------------------------------------|---------------------------------------|-------------|
| <b>Units</b>                    | mg/L    | mg/L    | mg/L              | mg/L    | mg/L                                    | mg/L                                                      | mg/L                                           | mg/L                                             | mg/L                                             | mg/L                                  | -           |
| <b>Tier I RBSLs<sup>1</sup></b> | 1       | 20      | 20                | 20      | -                                       | -                                                         | -                                              | -                                                | -                                                | 12/20/20                              | -           |
| <b>2009 Sampling (Stantec)</b>  |         |         |                   |         |                                         |                                                           |                                                |                                                  |                                                  |                                       |             |
| 09-MW8                          | <0.001  | <0.001  | <0.001            | <0.002  | -                                       | -                                                         | 0.06                                           | 28                                               | 4.2                                              | 33                                    | WFO         |
| 09-MW9                          | <0.001  | <0.001  | <0.001            | <0.002  | -                                       | -                                                         | 0.48                                           | 1.1                                              | 0.2                                              | 1.8                                   | WFO/LO      |
| <b>RDL</b>                      | 0.001   | 0.001   | 0.001             | 0.002   | -                                       | -                                                         | 0.01                                           | 0.05                                             | 0.1                                              | 0.1                                   | -           |

**Notes:**

1 = Partnership in RBCA (Risk-Based Corrective Action) Implementation (PIRI) Tier I Risk Based Screening Levels (RBSLs) for a residential site with non-potable groundwater and coarse grained soil, fuel oil impacts (September, 2003)

2 = Modified TPH - Tier I does not include BTEX

MDL = Method Detection Limit; RDL = Reportable Detection Limit for routine analysis

< # = Not detected above MDL/RDL noted

"-" = indicates value is not available or does not apply

WFO= Weathered Fuel Oil; LO= Lube Oil

Shaded = Value exceeds applicable criteria

**Table 6.7 Results of Laboratory Analysis of Petroleum Hydrocarbon Fractionation in Groundwater - West Generator Site  
Phase III ESA, HHERA and RAP  
Former U.S Military Facility, Northwest Point, NL  
Stantec Consulting Ltd. Project No. 121410105**

| Parameter               | RDL  | Units | Criteria <sup>1</sup> | 2009 Sampling (Stantec) |
|-------------------------|------|-------|-----------------------|-------------------------|
|                         |      |       |                       | 09-MW7                  |
| Benzene                 | 0.01 | mg/L  | 1                     | <0.01                   |
| Toluene                 | 0.01 | mg/L  | 20                    | <0.01                   |
| Ethylbenzene            | 0.01 | mg/L  | 20                    | 0.02                    |
| Xylene (Total)          | 0.02 | mg/L  | 20                    | 0.05                    |
| Aliphatic >C6-C8        | 0.1  | mg/L  | -                     | 0.1                     |
| Aliphatic >C8-C10       | 0.1  | mg/L  | -                     | 0.2                     |
| >C8-C10 Aromatics (-EX) | 0.1  | mg/L  | -                     | 0.2                     |
| Aliphatic >C10-C12      | 0.01 | mg/L  | -                     | 5.2                     |
| Aliphatic >C12-C16      | 0.05 | mg/L  | -                     | 13                      |
| Aliphatic >C16-C21      | 0.05 | mg/L  | -                     | 2.9                     |
| Aliphatic >C21-C32      | 0.1  | mg/L  | -                     | 0.2                     |
| Aromatic >C10-C12       | 0.01 | mg/L  | -                     | 1.2                     |
| Aromatic >C12-C16       | 0.05 | mg/L  | -                     | 3.9                     |
| Aromatic >C16-C21       | 0.05 | mg/L  | -                     | 1.7                     |
| Aromatic >C21-C32       | 0.1  | mg/L  | -                     | 0.2                     |
| Modified TPH (Tier 2)   | 0.1  | mg/L  | 12/20/20              | 29                      |
| Resemblance             | -    | -     | -                     | FO                      |

**Notes:**

1 = Partnership in RBCA (Risk-Based Corrective Action) Implementation (PIRI) Tier I Risk Based Screening Levels (RBSLs) for a residential site with non-potable groundwater and coarse grained soil, gasoline/fuel oil/lube oil impacts (September, 2003)

RDL = Reportable Detection Limit

"-" = indicates value is not available or does not apply

< # = Not detected above RDL noted

Shaded = Value exceeds applicable criteria

**Table 6.8 Results of Laboratory Analysis of Dissolved Metals in Groundwater - West Generator Site**  
**Phase III ESA, HHERA and RAP**  
**Former U.S Military Facility, Northwest Point, NL**  
**Stantec Consulting Ltd. Project No. 121410105**

| Parameters | Units | Criteria <sup>1</sup> | 2009 Sampling (Stantec) |        |        |                |       |
|------------|-------|-----------------------|-------------------------|--------|--------|----------------|-------|
|            |       |                       | 09-MW7                  | 09-MW8 | 09-MW9 | 09-MW9 Lab-Dup | RDL   |
| Aluminum   | ug/L  | -                     | 126                     | 248    | <5.0   | <5.0           | 5.0   |
| Antimony   | ug/L  | 20,000                | <2.0                    | <2.0   | <2.0   | <2.0           | 2.0   |
| Arsenic    | ug/L  | 1,900                 | <2.0                    | <2.0   | <2.0   | <2.0           | 2.0   |
| Barium     | ug/L  | 29,000                | 52.4                    | 25.3   | 56.6   | 57.5           | 5.0   |
| Beryllium  | ug/L  | 67                    | <2.0                    | <2.0   | <2.0   | <2.0           | 2.0   |
| Bismuth    | ug/L  | -                     | <2.0                    | <2.0   | <2.0   | <2.0           | 2.0   |
| Boron      | ug/L  | 45,000                | 16.1                    | 13.8   | 17.0   | 16.6           | 5.0   |
| Cadmium    | ug/L  | 2.7                   | <0.017                  | <0.017 | 0.029  | 0.021          | 0.017 |
| Chromium   | ug/L  | 810                   | <1.0                    | 1.6    | <1.0   | <1.0           | 1.0   |
| Cobalt     | ug/L  | 66                    | 10.7                    | 0.64   | 1.36   | 1.37           | 0.40  |
| Copper     | ug/L  | 87                    | <2.0                    | <2.0   | <2.0   | <2.0           | 2.0   |
| Iron       | ug/L  | -                     | 7,030                   | 2,410  | 122    | 119            | 50    |
| Lead       | ug/L  | 25                    | <0.50                   | <0.50  | <0.50  | <0.50          | 0.50  |
| Manganese  | ug/L  | -                     | 771                     | 201    | 556    | 552            | 2.0   |
| Mercury    | ug/L  | 0.29                  | 0.027                   | 0.022  | <0.02  | <0.02          | 0.02  |
| Molybdenum | ug/L  | 9,200                 | <2.0                    | <2.0   | <2.0   | <2.0           | 2.0   |
| Nickel     | ug/L  | 490                   | 6.3                     | <2.0   | 2.5    | 2.5            | 2.0   |
| Selenium   | ug/L  | 63                    | <1.0                    | <1.0   | <1.0   | <1.0           | 1.0   |
| Silver     | ug/L  | 1.5                   | <0.10                   | <0.10  | <0.10  | <0.10          | 0.10  |
| Strontium  | ug/L  | -                     | 279                     | 130    | 202    | 206            | 5.0   |
| Thallium   | ug/L  | 510                   | <0.10                   | <0.10  | <0.10  | <0.10          | 0.10  |
| Tin        | ug/L  | -                     | <2.0                    | <2.0   | <2.0   | <2.0           | 2.0   |
| Titanium   | ug/L  | -                     | 5.1                     | 6.0    | <2.0   | <2.0           | 2.0   |
| Uranium    | ug/L  | 420                   | <0.10                   | 0.13   | 0.81   | 0.78           | 0.10  |
| Vanadium   | ug/L  | 250                   | 2.8                     | 5.4    | <2.0   | <2.0           | 2.0   |
| Zinc       | ug/L  | 1,100                 | 22.8                    | <5.0   | 5.2    | 5.2            | 5.0   |

**Notes:**

Environmental Protection Act. July 27, 2009. Table 3: full depth generic site condition standards in a non-potable groundwater condition, coarse-grained soil

MDL = Method Detection Limit; RDL = Reportable Detection Limit for routine analysis

< # = Not detected above MDL/RDL noted

"-" = No applicable guideline

Lab-dup = Laboratory duplicate sample

Shaded = Value exceeds applicable criteria

**Table 6.9 Results of Laboratory Analysis of PAHs in Groundwater - West Generator Site  
Phase III ESA, HHERA and RAP  
Former U.S Military Facility, Northwest Point, NL  
Stantec Consulting Ltd. Project No. 121410105**

| Parameter              | Units | Criteria <sup>1</sup> | 2009 Sampling (Stantec) |      |
|------------------------|-------|-----------------------|-------------------------|------|
|                        |       |                       | 09-MW7                  | RDL  |
| 1-Methylnaphthalene    | ug/L  | 18,000                | 150(1)                  | 0.5  |
| 2-Methylnaphthalene    | ug/L  | 18,000                | 200(1)                  | 0.5  |
| Acenaphthene           | ug/L  | 600                   | 49(1)                   | 0.1  |
| Acenaphthylene         | ug/L  | 1.8                   | 2.1(1)                  | 0.1  |
| Acridine               | ug/L  | -                     | 5.1                     | 0.5  |
| Anthracene             | ug/L  | 2.4                   | 39                      | 0.01 |
| Benzo[a]anthracene     | ug/L  | 4.7                   | 51(1)                   | 0.1  |
| Benzo[a]pyrene         | ug/L  | 0.81                  | 42(1)                   | 0.1  |
| Benzo[b]fluoranthene   | ug/L  | 0.75                  | 35                      | 0.01 |
| Benzo[ghi]perylene     | ug/L  | 0.2                   | 25                      | 0.01 |
| Benzo[k]fluoranthene   | ug/L  | 0.4                   | 35                      | 0.01 |
| Chrysene               | ug/L  | 1                     | 53(1)                   | 0.1  |
| Dibenz[a,h]anthracene  | ug/L  | 0.52                  | 6.5                     | 0.01 |
| Fluoranthene           | ug/L  | 130                   | 160(1)                  | 0.1  |
| Fluorene               | ug/L  | 400                   | 49(1)                   | 0.1  |
| Indeno[1,2,3-cd]pyrene | ug/L  | 0.2                   | 30                      | 0.01 |
| Naphthalene            | ug/L  | 1,400                 | 200(1)                  | 2    |
| Perylene               | ug/L  | -                     | 11                      | 0.01 |
| Phenanthrene           | ug/L  | 580                   | 130(1)                  | 0.1  |
| Pyrene                 | ug/L  | 68                    | 130(1)                  | 0.1  |
| Quinoline              | ug/L  | -                     | <0.5                    | 0.5  |

**Notes:**

1 = Ontario Ministry of the Environment (MOE) Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act. July 27, 2009. Table 3: full depth generic site condition standards in a non-potable groundwater condition, coarse-grained soil

RDL = Reportable Detection Limit

"-" = indicates value is not available or does not apply

(1) Elevated PAH RDL(s) due to sample dilution

Shaded = Value exceeds applicable criteria

< # = Not detected above RDL noted

**Table 6.10 Results of Laboratory Analysis of General Chemistry in Groundwater - West Generator Site**  
**Phase III ESA, HHERA and RAP**  
**Former U.S Military Facility, Northwest Point, NL**  
**Stantec Consulting Ltd. Project No. 121410105**

| Parameter                                        | Units | Criteria <sup>1</sup>       | 2009 Sampling (Stantec) |                |      |        |      |        |      |  |
|--------------------------------------------------|-------|-----------------------------|-------------------------|----------------|------|--------|------|--------|------|--|
|                                                  |       |                             | 09-MW7                  | 09-MW7 Lab-Dup | RDL  | 09-MW8 | RDL  | 09-MW9 | RDL  |  |
| Metals                                           |       |                             |                         |                |      |        |      |        |      |  |
| Dissolved Calcium                                | mg/L  | -                           | 55                      | -              | 0.1  | 23     | 0.1  | 24     | 0.1  |  |
| Dissolved Magnesium                              | mg/L  | -                           | 4.4                     | -              | 0.1  | 3.7    | 0.1  | 18     | 0.1  |  |
| Dissolved Phosphorus                             | mg/L  | <0.004 to >0.1 <sup>3</sup> | <0.1                    | -              | 0.1  | <0.1   | 0.1  | <0.1   | 0.1  |  |
| Dissolved Potassium                              | mg/L  | -                           | 2.9                     | -              | 0.1  | 3.4    | 0.1  | 7.8    | 0.1  |  |
| Dissolved Sodium                                 | mg/L  | -                           | 3.0                     | -              | 0.1  | 3.6    | 0.1  | 6.9    | 0.1  |  |
| Calculated Parameters                            |       |                             |                         |                |      |        |      |        |      |  |
| Anion Sum                                        | me/L  | -                           | 3.91                    | -              | N/A  | 1.10   | N/A  | 2.87   | N/A  |  |
| Bicarb. Alkalinity (calc. as CaCO <sub>3</sub> ) | mg/L  | -                           | 191                     | -              | 1    | 50     | 1    | 132    | 1    |  |
| Calculated TDS                                   | mg/L  | -                           | 210                     | -              | 1    | 84     | 1    | 171    | 1    |  |
| Carb.Alkalinity (calc. as CaCO <sub>3</sub> )    | mg/L  | -                           | <1                      | -              | 1    | <1     | 1    | <1     | 1    |  |
| Cation Sum                                       | me/L  | -                           | 3.55                    | -              | N/A  | 1.77   | N/A  | 3.17   | N/A  |  |
| Hardness (CaCO <sub>3</sub> )                    | mg/L  | -                           | 150                     | -              | 1    | 72     | 1    | 130    | 1    |  |
| Ion Balance (% Difference)                       | %     | -                           | 4.83                    | -              | N/A  | 23.3   | N/A  | 4.97   | N/A  |  |
| Langelier Index (@ 20C)                          | N/A   | -                           | 0.0370                  | -              | -    | -1.43  | -    | -0.207 | -    |  |
| Langelier Index (@ 4C)                           | N/A   | -                           | -0.213                  | -              | -    | -1.69  | -    | -0.457 | -    |  |
| Nitrate (N)                                      | mg/L  | 2.9                         | <0.05                   | -              | 0.05 | <0.05  | 0.05 | <0.05  | 0.05 |  |
| Saturation pH (@20C)                             | N/A   | -                           | 7.37                    | -              | -    | 8.27   | -    | 7.87   | -    |  |
| Saturation pH (@4C)                              | N/A   | -                           | 7.62                    | -              | -    | 8.53   | -    | 8.12   | -    |  |
| Inorganics                                       |       |                             |                         |                |      |        |      |        |      |  |
| Total Alkalinity (Total as CaCO <sub>3</sub> )   | mg/L  | -                           | 190                     | -              | 30   | 50     | 5    | 130    | 30   |  |
| Dissolved Chloride (Cl)                          | mg/L  | -                           | 3                       | -              | 1    | 3      | 1    | 2      | 1    |  |
| Colour                                           | TCU   | -                           | 76                      | -              | 30   | 110    | 30   | <5     | 5    |  |
| Nitrate + Nitrite                                | mg/L  | -                           | <0.05                   | -              | 0.05 | <0.05  | 0.05 | <0.05  | 0.05 |  |
| Nitrite (N)                                      | mg/L  | 0.06                        | <0.01                   | -              | 0.01 | <0.01  | 0.01 | <0.01  | 0.01 |  |
| Nitrogen (Ammonia Nitrogen)                      | mg/L  | -                           | <0.05                   | -              | 0.05 | <0.05  | 0.05 | <0.05  | 0.05 |  |
| Total Organic Compound                           | mg/L  | -                           | 44                      | -              | 30   | 41     | 10   | <10(1) | 10   |  |
| Orthophosphate (P)                               | mg/L  | -                           | <0.01                   | -              | 0.01 | <0.01  | 0.01 | <0.01  | 0.01 |  |
| pH                                               | pH    | 6.5 - 9                     | 7.41                    | 7.46           | N/A  | 6.84   | N/A  | 7.66   | N/A  |  |
| Reactive Silica (SiO <sub>2</sub> )              | mg/L  | -                           | 19                      | -              | 0.5  | 15     | 0.5  | 24     | 0.5  |  |
| Dissolved Sulphate (SO <sub>4</sub> )            | mg/L  | -                           | <2                      | -              | 2    | <2     | 2    | 8      | 2    |  |
| Turbidity                                        | NTU   | Narritive <sup>2</sup>      | 880                     | -              | 10   | 350    | 1    | 330    | 1    |  |
| Conductivity                                     | uS/cm | -                           | 350                     | 360            | 1    | 110    | 1    | 270    | 1    |  |

**Notes:**

1 = CCME Water Quality Guidelines for the protection of freshwater aquatic life (2007)

2 = Maximum increase of 8 NTUs from background levels when background levels are between 8 and 80 NTUs

3 = Phosphorous guideline is dependant on trophic status of the freshwater environment

RDL = Reportable Detection Limit

< # = Not detected above RDL noted

"-" = indicates value is not available or does not apply

(1) Detection limit increased due to sample matrix

**Table 6.11 Results of Laboratory Analysis of TPH/BTEX in Surface Water - West Generator Site**  
**Phase III ESA, HHERA and RAP**  
**Former U.S Military Facility, Northwest Point, NL**  
**Stantec Consulting Ltd. Project No. 121410105**

| Sample Location                | Benzene | Toluene | Ethylbenzene | Xylenes | C <sub>6</sub> -C <sub>10</sub><br>(Gas Range) | C <sub>11</sub> -C <sub>20</sub><br>(Fuel Range) | C <sub>21</sub> -C <sub>32</sub><br>(Lube Range) | Modified TPH -<br>Tier I <sup>3</sup> | Resemblance |
|--------------------------------|---------|---------|--------------|---------|------------------------------------------------|--------------------------------------------------|--------------------------------------------------|---------------------------------------|-------------|
| <b>RDL</b>                     | 0.001   | 0.001   | 0.001        | 0.002   | 0.01                                           | 0.05                                             | 0.1                                              | 0.1                                   | -           |
| <b>Units</b>                   | mg/L    | mg/L    | mg/L         | mg/L    | mg/L                                           | mg/L                                             | mg/L                                             | mg/L                                  | -           |
| <b>Criteria<sup>1</sup></b>    | 0.37    | 0.002   | 0.09         | -       | -                                              | -                                                | -                                                | -                                     | -           |
| <b>2009 Sampling (Stantec)</b> |         |         |              |         |                                                |                                                  |                                                  |                                       |             |
| 09-SW10                        | <0.001  | 0.002   | <0.001       | <0.002  | <0.01                                          | <0.05                                            | <0.1                                             | <0.1                                  | -           |

**Notes:**

1 = CCME Water Quality Guidelines for the protection of freshwater aquatic life (2007)

2 = Modified TPH - Tier I does not include BTEX

"-" = Value is not available or does not apply

RDL = Reportable Detection Limit for routine analysis

< # = Not detected above RDL noted

**Table 6.12 Results of Lab Analysis of Dissolved Metals in Surface Water - West Generator Site  
Phase III ESA, HHERA and RAP  
Former U.S Military Facility, Northwest Point, NL  
Stantec Consulting Ltd. Project No. 121410105**

| Parameters | RDL   | Units | Criteria <sup>1</sup> | 2009 Sampling (Stantec) |
|------------|-------|-------|-----------------------|-------------------------|
|            |       |       |                       | 09-SW10                 |
| Aluminum   | 500   | ug/L  | 100 <sup>2</sup>      | 151                     |
| Antimony   | 200   | ug/L  | -                     | <2.0                    |
| Arsenic    | 200   | ug/L  | 5                     | <2.0                    |
| Barium     | 500   | ug/L  | -                     | 26.5                    |
| Beryllium  | 200   | ug/L  | -                     | <2.0                    |
| Bismuth    | 200   | ug/L  | -                     | <2.0                    |
| Boron      | 500   | ug/L  | -                     | <5.0                    |
| Cadmium    | 1.7   | ug/L  | 0.017 <sup>3</sup>    | 0.027                   |
| Chromium   | 100   | ug/L  | 8.9                   | <1.0                    |
| Cobalt     | 40    | ug/L  | -                     | 1.51                    |
| Copper     | 200   | ug/L  | 2 <sup>4</sup>        | 2.2                     |
| Iron       | 5000  | ug/L  | 300                   | 1,000                   |
| Lead       | 50    | ug/L  | 1 <sup>5</sup>        | 0.60                    |
| Manganese  | 200   | ug/L  | -                     | 127                     |
| Mercury    | 0.013 | ug/L  | 0.026                 | 0.02                    |
| Molybdenum | 200   | ug/L  | 73                    | <2.0                    |
| Nickel     | 200   | ug/L  | 25 <sup>6</sup>       | <2.0                    |
| Selenium   | 100   | ug/L  | 1                     | <1.0                    |
| Silver     | 10    | ug/L  | 0.1                   | <0.10                   |
| Strontium  | 500   | ug/L  | -                     | 86.3                    |
| Thallium   | 10    | ug/L  | 0.8                   | <0.10                   |
| Tin        | 200   | ug/L  | -                     | <2.0                    |
| Titanium   | 200   | ug/L  | -                     | 3.2                     |
| Uranium    | 10    | ug/L  | -                     | <0.10                   |
| Vanadium   | 200   | ug/L  | -                     | <2.0                    |
| Zinc       | 500   | ug/L  | 30                    | 117                     |

**Notes:**

1 = CCME Water Quality Guidelines for the protection of freshwater aquatic life (2007)

2 = Aluminum guideline = 5 µg/L at pH<6.5

= 100 µg/L at pH>=6.5

3 = Cadmium guideline =  $10^{0.86[\log(\text{hardness})]-3.2}$  = 0.017 mg/L at a water hardness of 47 mg/L as CaCO<sub>3</sub>

4 = Copper guideline = 2 µg/L at water hardness of 0-120 mg/L as CaCO<sub>3</sub>

= 3 µg/L at water hardness of 120-180 mg/L as CaCO<sub>3</sub>

= 4 µg/L at water hardness >180 mg/L as CaCO<sub>3</sub>

5 = Lead guideline = 1 µg/L at water hardness of 0-60 mg/L as CaCO<sub>3</sub>

= 2 µg/L at water hardness of 60-120 mg/L as CaCO<sub>3</sub>

= 4 µg/L at water hardness of 120-180 mg/L as CaCO<sub>3</sub>

= 7 µg/L at water hardness >180 mg/L as CaCO<sub>3</sub>

6 = Nickel guideline = 25 µg/L at water hardness of 0-60 mg/L as CaCO<sub>3</sub>

= 65 µg/L at water hardness of 60-120 mg/L as CaCO<sub>3</sub>

= 110 µg/L at water hardness of 120-180 mg/L as CaCO<sub>3</sub>

= 150 µg/L at water hardness >180 mg/L as CaCO<sub>3</sub>

"-" = Not analysed or no applicable guideline; < # = Not detected above RDL noted

Shaded = Value exceeds applicable criteria

**Table 6.13 Results of Laboratory Analysis of General Chemistry in Surface Water - West Generator Site  
Phase III ESA, HHERA and RAP  
Former U.S Military Facility, Northwest Point, NL  
Stantec Consulting Ltd. Project No. 121410105**

| Parameter                                        | RDL  | Units | Criteria <sup>1</sup>       | 2009 Sampling (Stantec) |
|--------------------------------------------------|------|-------|-----------------------------|-------------------------|
|                                                  |      |       |                             | 09-SW10                 |
| Metals                                           |      |       |                             |                         |
| Dissolved Calcium                                | 0.1  | mg/L  | -                           | 12                      |
| Dissolved Magnesium                              | 0.1  | mg/L  | -                           | 4.2                     |
| Dissolved Phosphorus                             | 0.1  | mg/L  | <0.004 to >0.1 <sup>3</sup> | <0.1                    |
| Dissolved Potassium                              | 0.1  | mg/L  | -                           | 4.5                     |
| Dissolved Sodium                                 | 0.1  | mg/L  | -                           | 5.4                     |
| Calculated Parameters                            |      |       |                             |                         |
| Anion Sum                                        | N/A  | me/L  | -                           | 1.09                    |
| Bicarb. Alkalinity (calc. as CaCO <sub>3</sub> ) | 1    | mg/L  | -                           | 50                      |
| Calculated TDS                                   | 1    | mg/L  | -                           | 77                      |
| Carb.Alkalinity (calc. as CaCO <sub>3</sub> )    | 1    | mg/L  | -                           | <1                      |
| Cation Sum                                       | N/A  | me/L  | -                           | 1.31                    |
| Hardness (CaCO <sub>3</sub> )                    | 1    | mg/L  | -                           | 47                      |
| Ion Balance (% Difference)                       | N/A  | %     | -                           | 9.17                    |
| Langelier Index (@ 20C)                          | -    | N/A   | -                           | -1.90                   |
| Langelier Index (@ 4C)                           | -    | N/A   | -                           | -2.16                   |
| Nitrate (N)                                      | 0.05 | ug/L  | 3                           | <0.05                   |
| Saturation pH (@20C)                             | -    | N/A   | -                           | 8.56                    |
| Saturation pH (@4C)                              | -    | N/A   | -                           | 8.82                    |
| Inorganics                                       |      |       |                             |                         |
| Total Alkalinity (Total as CaCO <sub>3</sub> )   | 5    | mg/L  | -                           | 50                      |
| Dissolved Chloride (Cl)                          | 1    | mg/L  | -                           | 4                       |
| Colour                                           | 50   | TCU   | Narrative                   | 330                     |
| Nitrate + Nitrite                                | 0.05 | mg/L  | -                           | <0.05                   |
| Nitrite (N)                                      | 0.01 | ug/L  | 0.06                        | <0.01                   |
| Nitrogen (Ammonia Nitrogen)                      | 0.05 | mg/L  | -                           | <0.05                   |
| Total Organic Compound                           | 5    | mg/L  | -                           | 23(3)                   |
| Orthophosphate (P)                               | 0.01 | mg/L  | -                           | <0.01                   |
| pH                                               | N/A  | pH    | 6.5 - 9                     | 6.66                    |
| Reactive Silica (SiO <sub>2</sub> )              | 0.5  | mg/L  | -                           | 17                      |
| Dissolved Sulphate (SO <sub>4</sub> )            | 2    | mg/L  | -                           | <2                      |
| Turbidity                                        | 0.1  | NTU   | Narrative <sup>4</sup>      | 34                      |
| Conductivity                                     | 1    | uS/cm | -                           | 96                      |

**Notes:**

1 = CCME Water Quality Guidelines for the protection of freshwater aquatic life (2007)

2 = Phosphorous guideline is dependant on trophic status of the freshwater environment

3 = Maximum increase of 8 NTUs from background levels when background levels are between 8 and 80 NTUs

RDL = Reportable Detection Limit

< # = Not detected above RDL noted

"" = indicates value is not available or does not apply

(3) Elevated detection limit due to matrix interference

**Table 6.14 Results of Laboratory Analysis of TPH/BTEX in Freshwater Sediment - West Generator Site**  
**Phase III ESA, HHERA and RAP**  
**Former U.S Military Facility, Northwest Point, NL**  
**Stantec Consulting Ltd. Project No. 121410105**

| Sample Location                | Benzene | Toluene | Ethyl Benzene | Xylenes | C <sub>6</sub> -C <sub>10</sub><br>(Gas Range) | C <sub>10</sub> -C <sub>21</sub><br>(Fuel Range) | C <sub>21</sub> -C <sub>32</sub><br>(Lube Range) | Modified TPH <sup>2</sup> | Resemblance |
|--------------------------------|---------|---------|---------------|---------|------------------------------------------------|--------------------------------------------------|--------------------------------------------------|---------------------------|-------------|
| <b>RDL</b>                     | 0.03    | 0.03    | 0.03          | 0.05    | 3                                              | 15                                               | 15                                               | 20                        | -           |
| <b>Units</b>                   | mg/kg   | mg/kg   | mg/kg         | mg/kg   | mg/kg                                          | mg/kg                                            | mg/kg                                            | mg/kg                     | -           |
| <b>Criteria<sup>1</sup></b>    | -       | -       | -             | -       | -                                              | -                                                | -                                                | 1,500                     | -           |
| <b>2009 Sampling (Stantec)</b> |         |         |               |         |                                                |                                                  |                                                  |                           |             |
| 09-SED10                       | <0.03   | <0.03   | <0.03         | <0.05   | <3                                             | 670                                              | 2,600                                            | 3,200                     | OPF/L       |

**Notes:**

1 = Ontario Ministry of Environment Guideline for sediments to be used as lake fill material (1993). There are no federal or provincial guidelines for TPH or BTEX in freshwater sediment

2 = Modified TPH - Tier I does not include BTEX

RDL = Reportable Detection Limit for routine analysis

< # = Not detected above RDL noted

"-" = Indicates value is not available or does not apply

OPF/L= One product in fuel/lube oil range

Shaded = Value exceeds applicable criteria

**Table 6.15 Results of Laboratory Analysis of Metals in Freshwater Sediment - West Generator Site**  
**Phase III ESA, HHERA and RAP**  
**Former U.S Military Facility, Northwest Point, NL**  
**Stantec Consulting Ltd. Project No. 121410105**

| Parameters | RDL | Units | Criteria <sup>1</sup> | Criteria <sup>2</sup> | 2009 Sampling (Stantec) |
|------------|-----|-------|-----------------------|-----------------------|-------------------------|
|            |     |       |                       |                       | 09-SED10                |
| Aluminum   | 10  | mg/kg | -                     | -                     | 2,400                   |
| Antimony   | 2   | mg/kg | -                     | -                     | <2                      |
| Arsenic    | 2   | mg/kg | 5.9                   | 17                    | <2                      |
| Barium     | 5   | mg/kg | -                     | -                     | 130                     |
| Beryllium  | 2   | mg/kg | -                     | -                     | <2                      |
| Bismuth    | 2   | mg/kg | -                     | -                     | <2                      |
| Boron      | 5   | mg/kg | -                     | -                     | <5                      |
| Cadmium    | 0.3 | mg/kg | 0.6                   | 3.5                   | 0.9                     |
| Chromium   | 2   | mg/kg | 37.3                  | 90                    | 5                       |
| Cobalt     | 1   | mg/kg | -                     | -                     | 5                       |
| Copper     | 2   | mg/kg | 35.7                  | 197                   | 27                      |
| Iron       | 50  | mg/kg | -                     | -                     | 7,000                   |
| Lead       | 0.5 | mg/kg | 35                    | 91.3                  | 8.3                     |
| Lithium    | 2   | mg/kg | -                     | -                     | <2                      |
| Manganese  | 2   | mg/kg | -                     | -                     | 140                     |
| Mercury    | 0.1 | mg/kg | -                     | -                     | 0.1                     |
| Molybdenum | 2   | mg/kg | -                     | -                     | <2                      |
| Nickel     | 2   | mg/kg | -                     | -                     | 10                      |
| Rubidium   | 2   | mg/kg | -                     | -                     | 4                       |
| Selenium   | 1   | mg/kg | -                     | -                     | <1                      |
| Silver     | 0.5 | mg/kg | -                     | -                     | <0.5                    |
| Strontium  | 5   | mg/kg | -                     | -                     | 120                     |
| Thallium   | 0.1 | mg/kg | -                     | -                     | <0.1                    |
| Tin        | 2   | mg/kg | -                     | -                     | <2                      |
| Uranium    | 0.1 | mg/kg | -                     | -                     | 0.2                     |
| Vanadium   | 2   | mg/kg | -                     | -                     | 14                      |
| Zinc       | 5   | mg/kg | 123                   | 315                   | 910                     |

**Notes:**

1 = CCME Interim Sediment Quality Guidelines (ISQGs) for freshwater sediment (2002)

2 = CCME Probable Effects Levels (PELs) for freshwater sediment (2002)

RDL = Reportable Detection Limit

< = Not detected above RDL noted

"-" = indicates value is not available or does not apply

Shaded = Value exceeds CCME ISQG

Bold = Value exceeds CCME PEL

**Table 6.16 Results of Laboratory Analysis of PCBs in Vegetation - West Generator Site**  
**Phase III ESA, HHERA and RAP**  
**Former U.S Military Facility, Northwest Point, NL**  
**Stantec Consulting Ltd. Project No. 121410105**

| Sample Location         | Polychlorinated Biphenyls (PCBs) |
|-------------------------|----------------------------------|
| RDL                     | 0.05                             |
| Units                   | ug/L                             |
| Criteria                | na                               |
| 2009 Sampling (Stantec) |                                  |
| 09-VEG-04               | <0.3                             |

**Notes:**

RDL = Reportable Detection Limit

na = No applicable guideline

< # = Not detected above RDL noted

**Table 6.17 Results of Laboratory Analysis of PCBs in Berries - West Generator Site**  
**Phase III ESA, HHERA and RAP**  
**Former U.S Military Facility, Northwest Point, NL**  
**Stantec Consulting Ltd. Project No. 121410105**

| Sample Location                | Polychlorinated Biphenyls (PCBs) |
|--------------------------------|----------------------------------|
| RDL                            | 0.05                             |
| Units                          | ug/g                             |
| Criteria                       | na                               |
| <b>2009 Sampling (Stantec)</b> |                                  |
| 09-BERRY 4                     | <0.05                            |

**Notes:**

RDL = Reportable Detection Limit

na = No applicable guideline

< # = Not detected above RDL noted

## **Appendix 6f**

Results of Hydraulic Response (Bail-Down) Test

– West Generator Site

**Stantec Consulting Ltd.**

607 Torbay Road

St. John's, NL, A1A 4Y6

Tel: (709) 576-1458

**Slug Test Data Report**

Project: Northwest Point

Number: 121410105

Client: NLDEC

Page 1

**Test Well:** 09-MW8**Slug Test:** 09-MW8

Depth to Static WL: 1.13 [m]

Test Well: 09-MW8

Casing radius: 0.025 [m]

Location:

Boring radius: 0.05 [m]

Recorded by: Stantec

Screen length: 3.05 [m]

Date: 8/27/2009

Aquifer Thickness: 3.26 [m]

|    | Time [s] | Depth to WL [m] | Drawdown [m] |
|----|----------|-----------------|--------------|
| 1  | 10       | 1.43            | 0.30         |
| 2  | 20       | 1.27            | 0.14         |
| 3  | 30       | 1.22            | 0.09         |
| 4  | 40       | 1.22            | 0.09         |
| 5  | 50       | 1.21            | 0.08         |
| 6  | 60       | 1.21            | 0.08         |
| 7  | 70       | 1.20            | 0.07         |
| 8  | 120      | 1.18            | 0.05         |
| 9  | 180      | 1.17            | 0.04         |
| 10 | 240      | 1.16            | 0.03         |
| 11 | 300      | 1.16            | 0.03         |
| 12 | 360      | 1.15            | 0.02         |
| 13 | 420      | 1.15            | 0.02         |
| 14 | 480      | 1.14            | 0.01         |
| 15 | 540      | 1.14            | 0.01         |
| 16 | 600      | 1.14            | 0.01         |
| 17 | 720      | 1.13            | 0.00         |

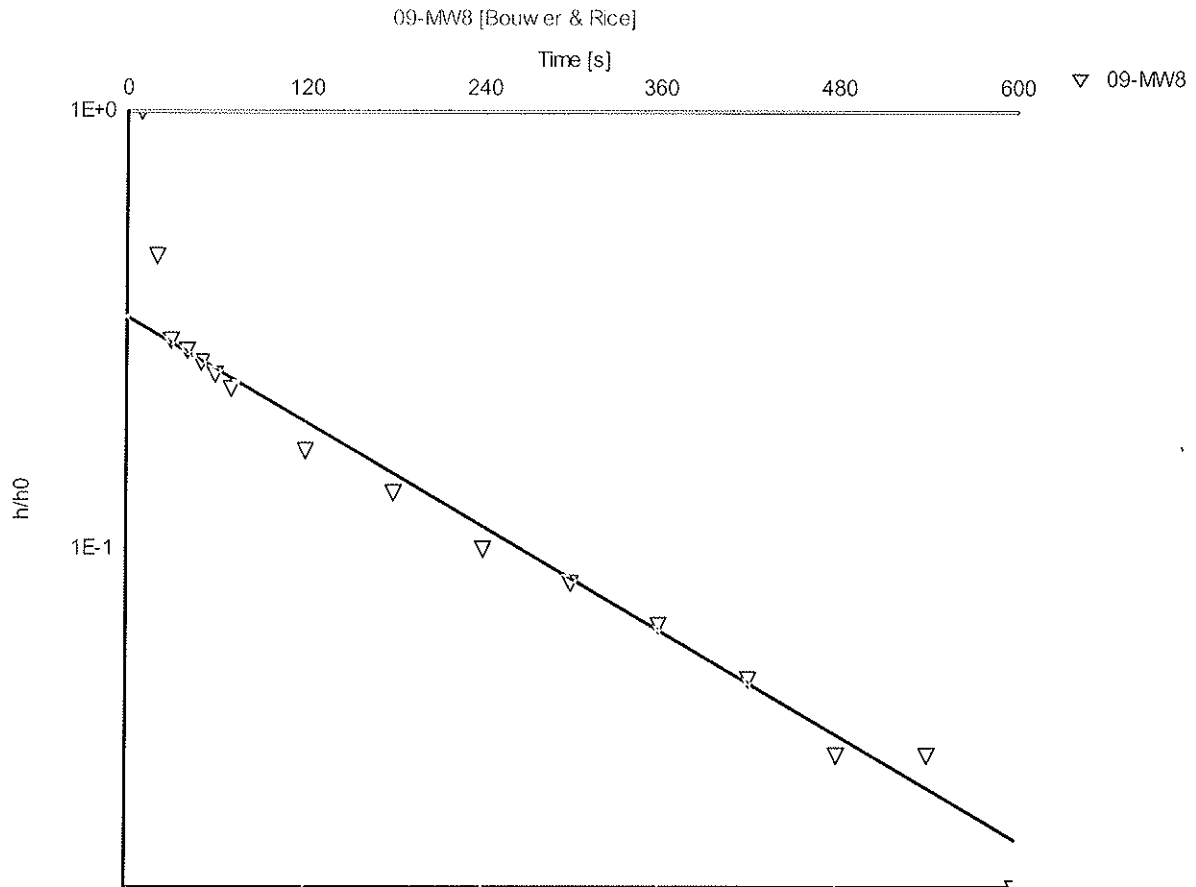
**Stantec Consulting Ltd.**

607 Torbay Road  
St. John's, NL, A1A 4Y6  
Tel: (709) 576-1458

Stantec

**Slug Test Analysis Report**

Project: Northwest Point  
Number: 121410105  
Client: NLDEC



Slug Test: 09-MW8

Analysis Method: Bouwer & Rice

Analysis Results:

Conductivity: 1.52E-6 [m/s]

|                         |                |           |                          |          |
|-------------------------|----------------|-----------|--------------------------|----------|
| <u>Test parameters:</u> | Test Well:     | 09-MW8    | Aquifer Thickness:       | 3.26 [m] |
|                         | Casing radius: | 0.025 [m] | Gravel Pack Porosity (%) | 25       |
|                         | Screen length: | 3.05 [m]  |                          |          |
|                         | Boring radius: | 0.05 [m]  |                          |          |
|                         | r(eff):        | 0.033 [m] |                          |          |

Comments:

Evaluated by: AR

Evaluation Date: 6/9/2010

**Stantec Consulting Ltd.**

607 Torbay Road

St. John's, NL, A1A 4Y6

Stantec

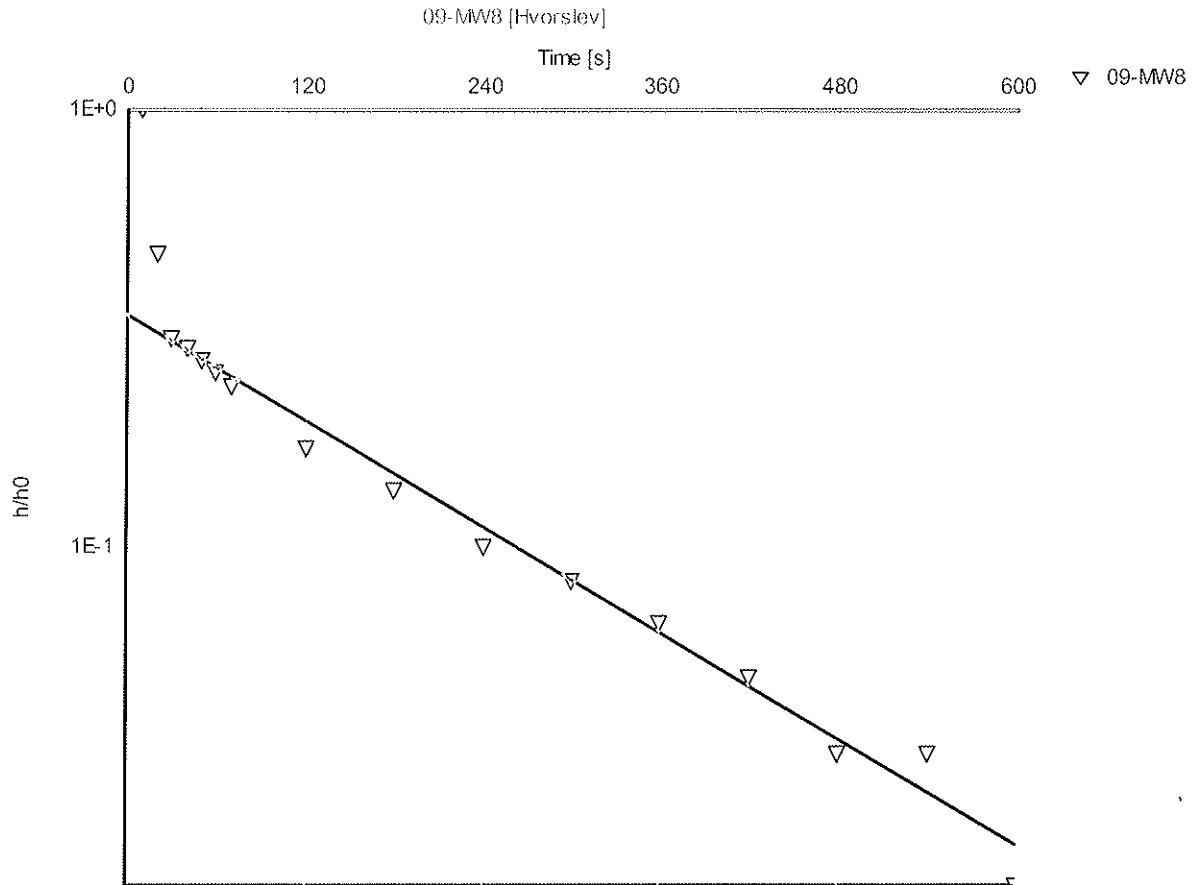
Tel: (709) 576-1458

**Slug Test Analysis Report**

Project: Northwest Point

Number: 121410105

Client: NLDEC



Slug Test: 09-MW8

Analysis Method: Hvorslev

Analysis Results:

Conductivity: 1.97E-6 [m/s]

Test parameters:

|                |           |                    |          |
|----------------|-----------|--------------------|----------|
| Test Well:     | 09-MW8    | Aquifer Thickness: | 3.26 [m] |
| Casing radius: | 0.025 [m] |                    |          |
| Screen length: | 3.05 [m]  |                    |          |
| Boring radius: | 0.05 [m]  |                    |          |

Comments:

Evaluated by: AR

Evaluation Date: 6/9/2010