Appendix 15a

Site Photos

– Old Dump Pond

Site Photographs – Old Dump Pond

Photo 1 View of Old Dump Pond from the Reservoir (looking southeast)

Photo 2 View of Old Dump Pond (looking north)

Site Photographs – Old Dump Pond

Photo 3 View of inlet to Old Dump Pond (looking north)

Photo 4 View of Old Dump Pond (looking east)

Site Photographs – Old Dump Pond

Photo 5 View of eastern shore of Old Dump Pond

Photo 6 View of Old Dump Pond outlet near the new houses being built

Site Photographs – Old Dump Pond

Photo 7 View of Old Dump Pond outlet

Photo 8 View of stream flowing out of Old Dump Pond towards the Residential Subdivision

Site Photographs – Old Dump Pond

Photo 9 View of small wetland near stream outlet and the Residential Subdivision

Appendix 15b

Sample Coordinates

– Old Dump Pond

Sample Coordinates - Old Dump Pond
Phase II/III ESAs, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Sample ID	Coordinates	
	Easting	Northing
TEST PITS		
TP-226	0675345	6149220
TP-227	0675237	6149244
TP-228	0675174	6149318
TP-229	-	-
TP-230	0675181	6149331
TP-231	0675152	6149309
TP-232	0675151	6149320
TP-233	-	-
SURFACE SOIL		
BS224	0675347	6149219
BS225	0675338	6149226
BS226	0675275	6149251
BS227	0675245	6149257
BS228	0675326	6149255
MONITOR WELLS		
MW-31	0675162	6149304
MW-32	0675152	6149310
MW-33	0675149	6149317
MW-34	0675171	6149328
MW-61	0675208	6149327
MW-62	0675186	6149282
AUGER SAMPLES		
AG1	0675181	6149287
AG2	0675176	6149293
AG3	-	-
AG4	0675173	6149315
AG5	0675168	6149306
SEDIMENT		
SED-25	0675175	6149271
SED-26	0675170	6149262
SED-27	0675143	6149253
SED-28	0675151	6149255
SED-29	0675040	6149261
SED-30	0674978	6149307
SED-31	0675021	6149347
SED-32	0675086	6149333
SED-33	0675070	6149295
SED-34	0675126	6149308
SED-35	0675203	6149246
SED-36	0675228	6149230
SED-37	0675270	6149216
SURFACE WATER		
SW-1	-	-
SW-2	0675058	6149310
SW-3	0675165	6149258
FISH		
FISH-1	0675171	6149261
FISH-2	0675172	6149261
FISH-3	0674957	6149322
FISH-4	0674944	6149330
BENTHIC		
BENTHIC-1	0675070	6149295

Notes:
"-" = Coordinates not recorded

Appendix 15c

Test Pit and Monitor Well Records

– Old Dump Pond

SHEET: _____ OF _____

FIELD TEST PIT RECORD

JOB NUMBER: 1044836 JOB NAME: _____ DATE: Aug 3, 09
TEST PIT NO.: TP226 TEST PIT SIZE: _____ ELEVATION: _____
MACHINE TYPE: _____ CONTRACTOR: _____ DATUM: _____
TEMPERATURE: _____ WEATHER: _____

DEPTH FROM	DEPTH TO	SOIL DESCRIPTION	SAMPLES NO.	SAMPLES DEPTH	IN SITU DENSITY TEST NO.	IN SITU DENSITY TEST DEPTH	REMARKS
0	0.3	brown silty sand and gravel, trace boulders + cobbles	BS1	0.3			wet @ bottom

LOCATION SKETCH

WATER CONDITIONS IN TEST PIT:

☑ Test Pit Dry.

JOB NO.: _____
TEST PIT NO.: _____
ENGINEER: _____

SHEET: _____ OF _____

FIELD TEST PIT RECORD

JOB NUMBER: 1044856
TEST PIT NO.: TP207
MACHINE TYPE: _____
TEMPERATURE: _____

JOB NAME: _____
TEST PIT SIZE: _____
CONTRACTOR: _____
WEATHER: _____

DATE: Aug 3, 09
ELEVATION: _____
DATUM: _____

DEPTH FROM	DEPTH TO	SOIL DESCRIPTION	SAMPLES NO.	SAMPLES DEPTH	IN SITU DENSITY TEST NO.	IN SITU DENSITY TEST DEPTH	REMARKS
0	0.3	dark brown organics and light grey sand	BS2	0.3			veg @ b.r.

LOCATION SKETCH

WATER CONDITIONS IN TEST PIT:

☐ Test Pit Dry.

JOB NO.: _____
TEST PIT NO.: _____
ENGINEER: _____

SHEET: _____ OF _____

FIELD TEST PIT RECORD

JOB NUMBER: 1049856
TEST PIT NO.: TP208
MACHINE TYPE: _____
TEMPERATURE: _____

JOB NAME: _____
TEST PIT SIZE: _____
CONTRACTOR: _____
WEATHER: _____

DATE: Aug 3, 09
ELEVATION: _____
DATUM: _____

DEPTH FROM	DEPTH TO	SOIL DESCRIPTION	SAMPLES NO.	SAMPLES DEPTH	IN SITU DENSITY TEST NO.	IN SITU DENSITY TEST DEPTH	REMARKS
0	2.8	brown silty sand and gravel	BS1	0.5-0.9			
			BS2	1.8-2.4			
							Debris: steel pipe, rusted drum?

LOCATION SKETCH

WATER CONDITIONS IN TEST PIT:

gw @ 2.3m

☐ Test Pit Dry.

JOB NO.: _____
TEST PIT NO.: _____
ENGINEER: _____

SHEET: _____ OF _____

FIELD TEST PIT RECORD

JOB NUMBER: 1044852
TEST PIT NO.: TP09-7
MACHINE TYPE: _____
TEMPERATURE: _____

JOB NAME: _____
TEST PIT SIZE: _____
CONTRACTOR: _____
WEATHER: _____

DATE: Aug 3, 09
ELEVATION: _____
DATUM: _____

DEPTH FROM	DEPTH TO	SOIL DESCRIPTION	SAMPLES NO.	SAMPLES DEPTH	IN SITU DENSITY TEST NO.	IN SITU DENSITY TEST DEPTH	REMARKS
0	0.25	brown silty sand and gravel, (trace cobbles)	BS1	0.00-0.25			clay @ bot.
							Debris: steel, pipe

LOCATION SKETCH

WATER CONDITIONS IN TEST PIT:

☐ Test Pit Dry.

JOB NO.: _____
TEST PIT NO.: _____
ENGINEER: _____

SHEET: _____ OF _____

FIELD TEST PIT RECORD

JOB NUMBER: 10-4185-2
TEST PIT NO.: TP230
MACHINE TYPE: _____
TEMPERATURE: _____

JOB NAME: _____
TEST PIT SIZE: _____
CONTRACTOR: _____
WEATHER: _____

DATE: Aug 3, 09
ELEVATION: _____
DATUM: _____

DEPTH FROM	DEPTH TO	SOIL DESCRIPTION	SAMPLES NO.	SAMPLES DEPTH	IN SITU DENSITY TEST NO.	IN SITU DENSITY TEST DEPTH	REMARKS
0	0.3	brown silty sand and gravel	BS1	0.3			veg@b.r.
0.3	0.6	dark brown to black silty sand and gravel	BS2	0.6			Debris: black metal

LOCATION SKETCH

WATER CONDITIONS IN TEST PIT:

☑ Test Pit Dry.

JOB NO.: _____
TEST PIT NO.: _____
ENGINEER: _____

SHEET: _____ OF _____

FIELD TEST PIT RECORD

JOB NUMBER: 1044856 JOB NAME: _____ DATE: Aug 3, 09
TEST PIT NO.: TP231 TEST PIT SIZE: _____ ELEVATION: _____
MACHINE TYPE: _____ CONTRACTOR: _____ DATUM: _____
TEMPERATURE: _____ WEATHER: _____

DEPTH FROM	DEPTH TO	SOIL DESCRIPTION	SAMPLES NO.	SAMPLES DEPTH	IN SITU DENSITY TEST NO.	IN SITU DENSITY TEST DEPTH	REMARKS
0	0.3	brown silty sand					wet @ b.r.
			BS1	0.3-0.5			
0.3	2.4	black organics	BS2	0.8-1.0			Debris: steel pipe

LOCATION SKETCH

WATER CONDITIONS IN TEST PIT:
gw @ 0.9m
& Sheen on water
☐ Test Pit Dry.

JOB NO.: _____
TEST PIT NO.: _____
ENGINEER: _____

SHEET: _____ OF _____

FIELD TEST PIT RECORD

JOB NUMBER: 2011051C
TEST PIT NO.: TP232
MACHINE TYPE: _____
TEMPERATURE: _____

JOB NAME: _____
TEST PIT SIZE: _____
CONTRACTOR: _____
WEATHER: _____

DATE: Aug 3, 09
ELEVATION: _____
DATUM: _____

DEPTH FROM	DEPTH TO	SOIL DESCRIPTION	SAMPLES NO.	SAMPLES DEPTH	IN SITU DENSITY TEST NO.	IN SITU DENSITY TEST DEPTH	REMARKS
0	0.6	brown silty sand and gravel, trace cobbles	BS1	0.3 0.5			
0.6	1.8	black sand and gravel	BS2	0.8 1.0			Below: bottom, Steel

LOCATION SKETCH

WATER CONDITIONS IN TEST PIT:
gw @ 1.5m

☐ Test Pit Dry.

JOB NO.: _____
TEST PIT NO.: _____
ENGINEER: _____

SHEET: _____ OF _____

FIELD TEST PIT RECORD

JOB NUMBER: 1044852c
TEST PIT NO.: TP233
MACHINE TYPE: _____
TEMPERATURE: _____

JOB NAME: _____
TEST PIT SIZE: _____
CONTRACTOR: _____
WEATHER: _____

DATE: Aug 3/09
ELEVATION: _____
DATUM: _____

DEPTH FROM	DEPTH TO	SOIL DESCRIPTION	SAMPLES NO.	SAMPLES DEPTH	IN SITU DENSITY TEST NO.	IN SITU DENSITY TEST DEPTH	REMARKS
0	2.8	brown silty sand	BS1				
							Debris: steel,
			BS2				pipe, siding

LOCATION SKETCH

WATER CONDITIONS IN TEST PIT:
gw @ 2.8m

☐ Test Pit Dry.

JOB NO.: _____
TEST PIT NO.: _____
ENGINEER: _____

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MONITOR WELL RECORD

BOREHOLE No. MW31
PAGE 1 of 1
PROJECT No. 121410103
DRILLING METHOD
SIZE
DATUM N/A

CLIENT Newfoundland and Labrador Department of Environment and Conservation
PROJECT Phase II/III ESAs, HHERA and RAP/RMP
LOCATION Former U.S. Military Site and Residential Subdivision, Hopedale, NL
DATES (mm-dd-yy): BORING 9-10-09 WATER LEVEL 0.74m 10-15-09

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY	SAMPLES N-VALUE OR RQD %	HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)	WELL CONSTRUCTION DETAILS
							mm						0.61 m STICK UP CAST IRON WELL HEAD
0		Brown, coarse, SAND (SP)			SS	1	51	5	0		50.1	-	BACKFILL
1		CLAY (CL)		▼									BENTONITE
2					SS	2	406	4	1		10.7	-	
		Brown, coarse, SAND (SP); some clay			SS	3	432	12	0		5.0	-	50 mm DIAMETER No. 10 SLOT PVC SCREEN IN No. 2 SILICA SAND PACK
3		Pink and light to dark grey, BEDROCK			RC	4	100%		0		-	-	
4					RC	5	100%		0		-	-	END CAP
		End of Borehole											
5													
6													
7													
8													
9													
10													

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MONITOR WELL RECORD

BOREHOLE No. MW32
PAGE 1 of 1
PROJECT No. 121410103
DRILLING METHOD
SIZE
DATUM N/A

CLIENT Newfoundland and Labrador Department of Environment and Conservation
PROJECT Phase II/III ESAs, HHERA and RAP/RMP
LOCATION Former U.S. Military Site and Residential Subdivision, Hopedale, NL
DATES (mm-dd-yy): BORING 9-10-09 WATER LEVEL 0.42m 10-15-09

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY	SAMPLES N-VALUE OR RQD %	HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)	WELL CONSTRUCTION DETAILS (0.61 m STICK UP)
							mm						CAST IRON WELL HEAD
0		Brown, coarse, SAND (SP)		▼	SS	1	279	6	0		4.2	-	BACKFILL
1					SS	2	102	6	0		4.7	-	BENTONITE
		Brown, coarse, SAND (SP); some clay			SS	3	457	8	0		2.5	-	
2		Brown, coarse, SAND (SP); some cobbles			SS	4	203	67/305	0		4.8	-	50 mm DIAMETER No. 10 SLOT PVC SCREEN IN No. 2 SILICA SAND PACK
		Pink and grey, trace bright green, BEDROCK			RC	5	100%		0		-	-	
3					RC	6	100%		0		-	-	
		Pink and light to dark grey, BEDROCK			RC	7	100%		0		-	-	
4													END CAP
		End of Borehole											
5													
6													
7													
8													
9													
10													

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MONITOR WELL RECORD

BOREHOLE No. MW33
PAGE 1 of 1
PROJECT No. 121410103
DRILLING METHOD
SIZE
DATUM N/A

CLIENT Newfoundland and Labrador Department of Environment and Conservation
PROJECT Phase II/III ESAs, HHERA and RAP/RMP
LOCATION Former U.S. Military Site and Residential Subdivision, Hopedale, NL
DATES (mm-dd-yy): BORING 9-10-09 WATER LEVEL 0.37m 10-15-09

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY	SAMPLES N-VALUE OR RQD %	HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)	WELL CONSTRUCTION DETAILS
							mm						0.61 m STICK UP CAST IRON WELL HEAD
0		Brown, coarse, SAND (SP)		▼	SS	1	150	4			3.5	-	BACKFILL
1					SS	2	178	8			12.7	-	BENTONITE
		Brown, coarse, SAND (SP); some clay			SS	3	229	24			3.6	-	
2		Brown, coarse, SAND (SP); some clay, trace cobbles			SS	4	254	32			8.3	-	50 mm DIAMETER No. 10 SLOT PVC SCREEN IN No. 2 SILICA SAND PACK
		Light to dark grey, BEDROCK			RC	5	100%				-	-	
3													
4					RC	6	100%				-	-	END CAP
		End of Borehole											
5													
6													
7													
8													
9													
10													

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MONITOR WELL RECORD

BOREHOLE No. MW34
PAGE 1 of 1
PROJECT No. 121410103
DRILLING METHOD
SIZE
DATUM N/A

CLIENT Newfoundland and Labrador Department of Environment and Conservation
PROJECT Phase II/III ESAs, HHERA and RAP/RMP
LOCATION Former U.S. Military Site and Residential Subdivision, Hopedale, NL
DATES (mm-dd-yy): BORING 9-10-09 WATER LEVEL 1.61m 10-15-09

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY	SAMPLES N-VALUE OR RQD %	HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)	WELL CONSTRUCTION DETAILS (0.61 m STICK UP)
							mm						CAST IRON WELL HEAD
0		Brown, coarse, SAND (SP)			SS	1	102	6/150			3.4	-	
		Light to dark grey, BEDROCK											BACKFILL
1				▼	RC	2	84%				-	-	BENTONITE
2					RC	3	100%				-	-	
3													50 mm DIAMETER No. 10 SLOT PVC SCREEN IN No. 2 SILICA SAND PACK
4					RC	4	100%				-	-	
5					RC	5	100%				-	-	
6		End of Borehole											END CAP
7													
8													
9													
10													

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MONITOR WELL RECORD

BOREHOLE No. MW61
PAGE 1 of 1
PROJECT No. 121410103
DRILLING METHOD
SIZE
DATUM N/A

CLIENT Newfoundland and Labrador Department of Environment and Conservation
PROJECT Phase II/III ESAs, HHERA and RAP/RMP
LOCATION Former U.S. Military Site and Residential Subdivision, Hopedale, NL
DATES (mm-dd-yy): BORING 9-27-09 WATER LEVEL 1.79m 10-15-09

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY	SAMPLES N-VALUE OR RQD %	HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)	WELL CONSTRUCTION DETAILS (0.61 m STICK UP)
							mm						CAST IRON WELL HEAD
0		Dark brown, coarse, SAND (SP); trace cobbles and organics			SS	1	178	58/460	0	D	-	-	BACKFILL
1		Light to dark grey, trace pink and white, BEDROCK			RC	2	100%		0		-	-	BENTONITE
2		Dark grey, trace black, BEDROCK		▼	RC	3	100%		0		-	-	50 mm DIAMETER No. 10 SLOT PVC SCREEN IN No. 2 SILICA SAND PACK
3		Dark grey and white, BEDROCK											
4					RC	4	100%		0		-	-	
		End of Borehole											END CAP
5													
6													
7													
8													
9													
10													

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Stantec — MONITOR WELL RECORD

BOREHOLE No. MW62
PAGE 1 of 1
PROJECT No. 121410103
DRILLING METHOD
SIZE
DATUM N/A

CLIENT Newfoundland and Labrador Department of Environment and Conservation
PROJECT Phase II/III ESAs, HHERA and RAP/RMP
LOCATION Former U.S. Military Site and Residential Subdivision, Hopedale, NL
DATES (mm-dd-yy): BORING 9-28-09 WATER LEVEL 0.56m 10-15-09

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES RECOVERY	SAMPLES N-VALUE OR RQD %	HYDROCARBON ODOUR	APPARENT MOISTURE CONTENT	PID (ppm)	TPH (ppm)	WELL CONSTRUCTION DETAILS
							mm						0.61 m STICK UP CAST IRON WELL HEAD
0		Brown, coarse, SAND (SP); trace cobbles and cobbles		▼	SS	1	229	4	0	M	-	-	BENTONITE
1		Brown to dark brown, coarse, SAND (SP); some cobbles			SS	2	203	10	0	M	-	-	
		Brown, coarse, SAND (SP); trace gravel and light pink clay			SS	3	203	22	0	S	-	-	
2		Dark and light grey with some white, BEDROCK			SS	4	279	22/305	0	S	-	-	50 mm DIAMETER No. 10 SLOT PVC SCREEN IN No. 2 SILICA SAND PACK
					RC		100%		0		-	-	
3					RC		100%		0		-	-	
4		End of Borehole											END CAP
5													
6													
7													
8													
9													
10													

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Appendix 15d

Soil Vapour Concentrations

– Old Dump Pond

Sample Tipping Results - Old Dump Pond
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Sample ID	Sample Depth (mbgs)	Hydrocarbon Odour	Soil Vapour Concentration (ppm)
TEST PITS			
TP226-BS1	0.3	No	0.8
TP227-BS1	0.3	No	0.9
TP228-BS1	0.5-0.9	No	0.7
TP228-BS2	1.8-2.4	No	9.3
TP229-BS1	0.0-0.25	No	1.1
TP230-BS1	-	No	1.3
TP230-BS2	-	No	21.9
TP231-BS1	0.3-0.5	No	5.9
TP231-BS2	0.8-1.0	No	10.5
TP232-BS1	0.3-0.5	No	2.0
TP232-BS2	0.8-1.0	No	2.5
TP233-BS1	-	No	1.3
TP233-BS2	-	No	13.8
SURFACE SOIL			
BS224	0.00-0.14	No	0.9
BS225	0.00-0.09	No	0.9
BS226	0.00-0.11	No	1.0
BS227	0.00-0.19	No	1.0
BS228	0.00-0.10	No	0.9
SEDIMENT			
SED-25	-	No	1.7
SED-26	-	No	3.9
SED-27	-	No	1.4
SED-28	-	No	0.9
SED-29	-	No	0.3
SED-30	-	No	0.2
SED-31	-	No	1.0
SED-32	-	No	0.5
SED-33	-	No	0.7
SED-34	-	No	8.1
SED-35	-	No	3.5
SED-36	-	No	2.3
SED-37	-	No	1.8

Notes:
"-" = Value not recorded

Appendix 15e

Laboratory Analytical Results Summary Tables

– Old Dump Pond

Table 15.1 Results of Laboratory Analysis of TPH/BTEX in Soil - Old Dump Pond
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Sample ID	Sample Depth (m)	Benzene	Toluene	Ethylbenzene	Xylenes	C_6-C_{10} (Gas Range)	C_{10}-C_{21} (Fuel Range)	C_{21}-C_{32} (Lube Range)	Modified TPH - Tier I[2]	Resemblence
RDL		0.03	0.03	0.03	0.05	3	15	15	20	-
Units		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
Tier I RBSLs[1]		0.16	14	58	17	-	-	-	690	-
TEST PITS										
TP227-BS1	0.0 - 0.3	<0.03	<0.03	<0.03	<0.05	6	23	38	67	-
TP228-BS1	0.5 - 0.9	<0.03	<0.03	<0.03	<0.05	<3	28	20	48	-
TP229-BS1	0.0 - 0.5	<0.03	<0.03	<0.03	<0.05	<3	100	390	500	-
TP230-BS2	0.4 - 0.6	<0.03	<0.03	<0.03	0.07	17	280	390	690	-
TP230-BS2 Lab-Dup	0.4 - 0.6	<0.03	<0.03	<0.03	<0.05	20	-	-	-	-
TP231-BS2	0.8 - 1.0	<0.03	0.39	0.05	0.25	12	780	520	1,300	-
TP233-BS2	1.8 - 2.8	<0.03	0.17	<0.03	<0.05	10	1,100	1,700	2,800	-
SURFACE SAMPLES										
BS224	0.00 - 0.14	<0.03	<0.03	<0.03	<0.05	<3	44	220	260	-
BS226	0.00 - 0.11	<0.1	<0.1	<0.1	<0.3	<10	480	1,500	2,000	-
BS228	0.00 - 0.10	<0.1	<0.1	<0.1	<0.3	<10	210	1,100	1,300	-
MONITOR WELLS										
MW31-SS2	1.52 - 2.13	<0.03	<0.03	<0.03	<0.05	<3	<15	<15	<20	-
MW32-SS4	1.83 - 2.13	<0.03	<0.03	<0.03	<0.05	<3	<15	<15	<20	-
MW33-SS4	1.83 - 2.13	<0.03	0.27	<0.03	0.07	6	58	180	240	OP F, LO
MW34-SS1	0.00 - 0.15	<0.03	<0.03	<0.03	<0.05	<3	<15	39	39	Possible LO
MW61-SS1	0.00 - 0.46	<0.03	0.09	<0.03	<0.05	<3	340	3,100	3,400	WFO, LO
MW62-SS3	1.22 - 1.83	<0.03	<0.03	<0.03	<0.05	<3	25	58	84	WFO, Possible LO
AUGER SAMPLES										
AG1-FS2	1.52	<0.03	<0.03	<0.03	<0.05	<3	<15	46	46	Possible LO
AG3-FS2	1.83	<0.03	<0.03	<0.03	<0.05	<3	<15	30	30	Possible LO
AG5-FS2	0.91	<0.03	0.06	<0.03	<0.05	<3	300	1,500	1,800	WFO, LO, (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, lube oil impacts (September, 2003)

2 = Modified TPH - Tier I does not include BTEX

RDL = Reportable Detection Limit for routine analysis

Lab-Dup = Laboratory duplicate sample

< # = Not detected above RDL noted

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

OP F=One product in fuel oil range; LO = Lube oil fraction; WFO = Weathered fuel oil fraction

(1)=Unidentified compound(s) in fuel/lube range

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

Table 15.2 Results of Laboratory Analysis of PCBs in Soil - Old Dump Pond
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Sample ID	Sample Depth (m)	Polychlorinated Biphenyls (PCBs)
	RDL	0.05
	Units	mg/kg
	Criteria[1]	1.3
MONITOR WELLS		
MW31-SS2	1.52 - 2.13	<0.05
MW32-SS2	0.61 - 1.22	25
MW33-SS2	0.61 - 1.22	4
MW61-SS1	0.00 - 0.46	29
MW62-SS3	1.22 - 1.83	0.2
AUGER SAMPLES		
AG2-FS2	1.52	0.54
AG4-FS1	0.30	1.1

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
Shaded = Value exceeds applicable criteria

Table 15.3 Results of Laboratory Analysis of PAHs in Soil - Old Dump Pond
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	RDL	Units	Criteria[1,3]	Criteria[2,3]	MONITOR WELLS
					MW31-SS3
Non-carcinogenic PAHs					
1-Methylnaphthalene	0.005	mg/kg	-	-	<0.005
2-Methylnaphthalene	0.005	mg/kg	-	-	<0.005
Acenaphthene	0.005	mg/kg	-	-	<0.005
Acenaphthylene	0.005	mg/kg	-	-	<0.005
Anthracene	0.005	mg/kg	2.5	-	<0.005
Fluoranthene	0.005	mg/kg	50	-	<0.005
Fluorene	0.005	mg/kg	-	-	<0.005
Naphthalene	0.005	mg/kg	-	-	<0.005
Perylene	0.005	mg/kg	-	-	<0.005
Phenanthrene	0.005	mg/kg	-	-	<0.005
Pyrene	0.005	mg/kg	-	-	<0.005
Carcinogenic PAHs					
Benzo(a)anthracene	0.005	mg/kg	-		<0.005
Benzo(a)pyrene	0.005	mg/kg	20	-	<0.005
Benzo(b)fluoranthene	0.005	mg/kg	-	-	<0.005
Benzo(k)fluoranthene	0.005	mg/kg	-	-	<0.005
Benzo(g,h,i)perylene	0.005	mg/kg	-	-	<0.005
Chrysene	0.005	mg/kg	-	-	<0.005
Dibenz(a,h,)anthracene	0.005	mg/kg	-	-	<0.005
Indeno(1,2,3-c,d) pyrene	0.005	mg/kg	-	-	<0.005
Benzo (a)pyrene TPE[4]			-	5.3	0.006

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)
RDL = Reportable Detection Limit for routine analysis
< # = Not detected above RDL noted
"-" = indicates value is not available or does not apply

Table 15.4 Results of Laboratory Analysis of VOCs in Soil - Old Dump Pond
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	RDL	Units	Criteria[1]	Criteria[2]	MONITOR WELLS		AUGER SAMPLES		
					MW61-SS1	MW62-SS3	AG1-FS2	AG3-FS2	AG5-FS2
1,1,1-Trichloroethane	30	ug/kg	-	-	<30	<30	<30	<30	<30
1,1,2,2-Tetrachloroethane	30	ug/kg	-	-	<30	<30	<30	<30	<30
1,1,2-Trichloroethane	30	ug/kg	-	-	<30	<30	<30	<30	<30
1,1-Dichloroethane	30	ug/kg	-	-	<30	<30	<30	<30	<30
1,1-Dichloroethylene	30	ug/kg	-	-	<30	<30	<30	<30	<30
1,2-Dichlorobenzene	30	ug/kg	-	1,000	160	<30	<30	<30	<30
1,2-Dichloroethane	30	ug/kg	-	-	44	<30	<30	<30	<30
1,2-Dichloropropane	30	ug/kg	-	-	<30	<30	<30	<30	<30
1,3-Dichlorobenzene	30	ug/kg	-	1,000	65	<30	<30	<30	<30
1,4-Dichlorobenzene	30	ug/kg	-	1,000	270	<30	<30	<30	<30
Benzene	30	ug/kg	30/11	-	<30	<30	<30	<30	<30
Bromodichloromethane	30	ug/kg	-	-	<30	<30	<30	<30	<30
Bromoform	30	ug/kg	-	-	<30	<30	<30	<30	<30
Bromomethane	200	ug/kg	-	-	<200	<200	<200	<200	<200
Carbon Tetrachloride	30	ug/kg	-	-	<30	<30	<30	<30	<30
Chlorobenzene	30	ug/kg	-	2,000	<30	<30	<30	<30	<30
Chloroform	30	ug/kg	-	-	<30	<30	<30	<30	<30
Chloromethane	30	ug/kg	-	-	<30	<30	<30	<30	<30
cis-1,2-Dichloroethylene	30	ug/kg	-	-	<30	<30	<30	<30	<30
cis-1,3-Dichloropropene	30	ug/kg	-	-	<30	<30	<30	<30	<30
Dibromochloromethane	30	ug/kg	-	-	<30	<30	<30	<30	<30
Ethylbenzene	30	ug/kg	82	-	<30	<30	<30	<30	<30
Ethylene Dibromide	30	ug/kg	-	-	<30	<30	<30	<30	<30
Methylene Chloride(Dichloromethane)	30	ug/kg	-	-	<30	<30	<30	<30	<30
o-Xylene	30	ug/kg	-	-	<30	<30	<30	<30	<30
p+m-Xylene	30	ug/kg	-	-	96	<30	<30	<30	53
Styrene	30	ug/kg	-	-	<30	<30	<30	<30	<30
Tetrachloroethylene	30	ug/kg	200	-	<30	<30	<30	<30	<30
Toluene	30	ug/kg	370	-	190	<30	<30	<30	110
trans-1,2-Dichloroethylene	30	ug/kg	-	-	<30	<30	<30	<30	<30
trans-1,3-Dichloropropene	30	ug/kg	-	-	<30	<30	<30	<30	<30
Trichloroethylene	30	ug/kg	-	-	41	<30	<30	<30	<30
Trichlorofluoromethane (FREON 11)	30	ug/kg	10	-	<30	<30	<30	<30	<30
Vinyl Chloride	30	ug/kg	-	-	<30	<30	<30	<30	<30

Notes:
1 = CCME Canadian Soil Quality Guidelines for a Residential/Parkland site, subsoil (2007)
2 = CCME Interim remediation criteria for soil that have not beem replaced by Canadian Soil Quality Guidelines (1991)
RDL = Reportable Detection Limit for routine analysis
< # = Not detected above RDL noted
Shaded = Value exceeds applicable CCME Soil Quality Guidelines

Table 15.5 Results of Laboratory Analysis of Available Metals in Soil - Old Dump Pond
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	RDL	Units	Criteria[1]	TEST PITS						MONITOR WELLS	
				TP227-BS1	TP228-BS2	TP229-BS1	TP230-BS2	TP231-BS2	TP233-BS2	MW31-SS3	MW34-SS1
Aluminum	10	mg/kg	-	1,600	7,100	12,000	9,800	7,100	9,100	18,000	5,600
Antimony	2	mg/kg	20	<2	<2	99	<2	16	42	<2	<2
Arsenic	2	mg/kg	12	<2	<2	10	<2	5	6	<2	<2
Barium	5	mg/kg	500	11	34	240	52	51	120	55	45
Beryllium	2	mg/kg	4	<2	<2	<2	<2	<2	<2	<2	<2
Bismuth	2	mg/kg	-	<2	<2	18	<2	<2	<2	<2	<2
Boron	5	mg/kg	-	<5	<5	31	<5	9	21	<5	<5
Cadmium	0.3	mg/kg	10	<0.3	0.4	15	0.9	7.2	11	<0.3	<0.3
Chromium	2	mg/kg	64	15	14	68	28	33	100	31	12
Cobalt	1	mg/kg	50	<1	2	20	4	8	13	9	4
Copper	2	mg/kg	63	<2	5	2,500	56	160	380	28	16
Iron	50	mg/kg	-	2,900	7,600	96,000	11,000	61,000	77,000	19,000	8,900
Lead	0.5	mg/kg	140	0.9	4.3	8,100	22	250	590	5.1	22
Lithium	2	mg/kg	-	<2	3	4	3	4	5	16	6
Manganese	2	mg/kg	-	30	71	860	93	270	380	180	140
Mercury	0.1	mg/kg	6.6	<0.1	<0.1	67	0.4	0.5	1.9	<0.1	<0.1
Molybdenum	2	mg/kg	10	<2	<2	23	<2	4	9	<2	<2
Nickel	2	mg/kg	50	6	6	110	10	51	87	27	12
Rubidium	2	mg/kg	-	5	<2	5	2	4	7	16	4
Selenium	2	mg/kg	1	<2	<2	7	<2	<2	<2	<2	<2
Silver	0.5	mg/kg	20	<0.5	<0.5	9.5	<0.5	0.9	2.9	<0.5	<0.5
Strontium	5	mg/kg	-	<5	14	22	16	15	50	35	8
Thallium	0.1	mg/kg	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1
Tin	2	mg/kg	50	<2	2	420	4	320	180	<2	<2
Uranium	0.1	mg/kg	23	<0.1	0.2	0.4	0.4	0.5	0.6	1.2	0.3
Vanadium	2	mg/kg	130	6	14	42	15	32	43	36	13
Zinc	5	mg/kg	200	7	17	3,400	400	1,300	2,700	50	120

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

Table 15.6 Results of Laboratory Analysis of TPH/BTEX in Sediment - Old Dump Pond
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Sample ID	Benzene	Toluene	Ethyl Benzene	Xylenes	C_6-C_{10} (Gas Range)	C_{10}-C_{21} (Fuel Range)	C_{21}-C_{32} (Lube Range)	Modified TPH[2]	Resemblence
RDL	0.03	0.03	0.03	0.05	3	15	15	20	-
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
Criteria[1]	-	-	-	-	-	-	-	1,500	-
SEDIMENT									
SED-35	<0.03	<0.03	<0.03	<0.05	<3	52	130	180	OP F/L
SED-36	<0.03	<0.03	<0.03	<0.05	<3	28	68	95	OP F/L
SED-37	<0.03	<0.03	<0.03	<0.05	<3	<15	<15	<20	-

Notes:
1 = Ontario Ministry of Environment Guidelines for oil and grease in Freshwater Sediment. 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
OP F/L=One product in the fuel/lube oil range

Table 15.7 Results of Laboratory Analysis of PCBs in Sediment - Old Dump Pond
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Sample ID	Polychlorinated Biphenyls (PCBs)
RDL	0.05
Units	mg/kg
Criteria[1]	0.0341
Criteria[2]	0.277
SEDIMENT	
SED-25	**0.58**
SED-26	**16**
SED-27	**2.8**
SED-27 Lab-Dup	**2.7**
SED-28	0.18
SED-29	**0.92**
SED-30	**1.7**
SED-31	**1.9**
SED-32	**0.87**
SED-33	**1.0**
SED-34	**32**
SED-35	<0.05
SED-36	<0.05
SED-37	<0.05

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 for routine analysis
< # = Not detected above RDL noted
Lab-dup = laboratory duplicate sample
Shaded = Value exceeds CCME ISQG
Shaded/ Bold = Value exceeds CCME ISQG and CCME PEL

Table 15.8 Results of Laboratory Analysis of VOCs in Sediment - Old Dump Pond
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	RDL	Units	Criteria[1]	Criteria[2]	SEDIMENT									
					SED-25	SED-26	SED-27	SED-28	SED-29	SED-29 Lab-Dup	SED-30	SED-31	SED-32	SED-33
1,1,1-Trichloroethane	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
1,1,2,2-Tetrachloroethane	30/ 50[3]	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
1,1,2-Trichloroethane	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
1,1-Dichloroethane	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
1,1-Dichloroethylene	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
1,2-Dichlorobenzene	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
1,2-Dichloroethane	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
1,2-Dichloropropane	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
1,3-Dichlorobenzene	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
1,4-Dichlorobenzene	30/ 70[3]	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Benzene	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Bromodichloromethane	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Bromoform	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Bromomethane	200	ug/kg	-	-	<200	<200	<200	<200	<200	<200	<200	<200	<200	<200
Carbon Tetrachloride	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Chlorobenzene	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Chloroethane	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Chloroform	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Chloromethane	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
cis-1,2-Dichloroethylene	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
cis-1,3-Dichloropropene	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Dibromochloromethane	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Ethylbenzene	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Ethylene Dibromide	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Methylene Chloride(Dichloromethane)	40[4]	ug/kg	-	-	<40[4]	<40[4]	<40[4]	<40[4]	<40[4]	<40[4]	<40[4]	<40[4]	<40[4]	<40[4]
o-Xylene	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
p+m-Xylene	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Styrene	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Tetrachloroethylene	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Toluene	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
trans-1,2-Dichloroethylene	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
trans-1,3-Dichloropropene	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Trichloroethylene	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Trichlorofluoromethane (FREON 11)	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30
Vinyl Chloride	30	ug/kg	-	-	<30	<30	<30	<30	<30	<30	<30	<30	<30	<30

Notes:
1 = CCME Interim Sediment Quality Guidelines (ISQGs) for freshwater sediment (2002)
2 = CCME Probable Effects Levels (PELs) for freshwater sediment (2002)
3 = Elevated RDL(s) due to method blank
4 = Elevated RDL(s) due to detected level in the method blank
RDL = Reportable Detection Limit for routine analysis
Lab-dup = laboratory duplicate sample
< # = Not detected above RDL noted
"-" = indicates value is not available or does not apply

Table 15.8 Results of Laboratory Analysis of VOCs in Sediment - Old Dump Pond
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	RDL	Units	Criteria[1]	Criteria[2]	SEDIMENT			
					SED-34	SED-35	SED-36	SED-37
1,1,1-Trichloroethane	30	ug/kg	-	-	<30	<30	<30	<30
1,1,2,2-Tetrachloroethane	30/ 50[3]	ug/kg	-	-	<50[3]	<30	<30	<30
1,1,2-Trichloroethane	30	ug/kg	-	-	<30	<30	<30	<30
1,1-Dichloroethane	30	ug/kg	-	-	<30	<30	<30	<30
1,1-Dichloroethylene	30	ug/kg	-	-	<30	<30	<30	<30
1,2-Dichlorobenzene	30	ug/kg	-	-	<30	<30	<30	<30
1,2-Dichloroethane	30	ug/kg	-	-	<30	<30	<30	<30
1,2-Dichloropropane	30	ug/kg	-	-	<30	<30	<30	<30
1,3-Dichlorobenzene	30	ug/kg	-	-	<30	<30	<30	<30
1,4-Dichlorobenzene	30/ 70[3]	ug/kg	-	-	<70[3]	<30	<30	<30
Benzene	30	ug/kg	-	-	<30	<30	<30	<30
Bromodichloromethane	30	ug/kg	-	-	<30	<30	<30	<30
Bromoform	30	ug/kg	-	-	<30	<30	<30	<30
Bromomethane	200	ug/kg	-	-	<200	<200	<200	<200
Carbon Tetrachloride	30	ug/kg	-	-	<30	<30	<30	<30
Chlorobenzene	30	ug/kg	-	-	<30	<30	<30	<30
Chloroethane	30	ug/kg	-	-	<30	<30	<30	<30
Chloroform	30	ug/kg	-	-	<30	<30	<30	<30
Chloromethane	30	ug/kg	-	-	<30	<30	<30	<30
cis-1,2-Dichloroethylene	30	ug/kg	-	-	<30	<30	<30	<30
cis-1,3-Dichloropropene	30	ug/kg	-	-	<30	<30	<30	<30
Dibromochloromethane	30	ug/kg	-	-	<30	<30	<30	<30
Ethylbenzene	30	ug/kg	-	-	<30	<30	<30	<30
Ethylene Dibromide	30	ug/kg	-	-	<30	<30	<30	<30
Methylene Chloride(Dichloromethane)	40[4]	ug/kg	-	-	<40[4]	<40[4]	<40[4]	<40[4]
o-Xylene	30	ug/kg	-	-	<30	<30	<30	<30
p+m-Xylene	30	ug/kg	-	-	<30	<30	<30	<30
Styrene	30	ug/kg	-	-	<30	<30	<30	<30
Tetrachloroethylene	30	ug/kg	-	-	<30	<30	<30	<30
Toluene	30	ug/kg	-	-	160	<30	<30	<30
trans-1,2-Dichloroethylene	30	ug/kg	-	-	<30	<30	<30	<30
trans-1,3-Dichloropropene	30	ug/kg	-	-	<30	<30	<30	<30
Trichloroethylene	30	ug/kg	-	-	<30	<30	<30	<30
Trichlorofluoromethane (FREON 11)	30	ug/kg	-	-	<30	<30	<30	<30
Vinyl Chloride	30	ug/kg	-	-	<30	<30	<30	<30

Notes:
1 = CCME Interim Sediment Quality Guidelines (ISQGs) for freshwater sediment (2002)
2 = CCME Probable Effects Levels (PELs) for freshwater sediment (2002)
3 = Elevated RDL(s) due to method blank
4 = Elevated RDL(s) due to detected level in the method blank
RDL = Reportable Detection Limit for routine analysis
Lab-dup = laboratory duplicate sample
< # = Not detected above RDL noted
"-" = indicates value is not available or does not apply

Table 15.9 Results of Lab Analysis of Available Metals in Sediment -
Phase II/III ESA, HHERA and RAP/RMP
Phase II/III ESAs, HHERA and RAP/RMP
Project No. 121410103
Stantec Consulting Ltd. Project No. 121410103

Parameters	RDL	Units	Criteria[1]	Criteria[2]	SEDIMENT								
					SED-25	SED-26	SED-27	SED-28	SED-29	SED-30	SED-31	SED-32	SED-33
Aluminum	10	mg/kg	-	-	6,400	5,100	7,800	5,400	8,500	12,000	11,000	11,000	11,000
Antimony	2	mg/kg	-	-	<2	<2	3	<2	<2	<2	<2	<2	<2
Arsenic	2	mg/kg	5.9	17.0	<2	<2	<2	<2	<2	<2	<2	<2	<2
Barium	5	mg/kg	-	-	39	21	54	19	40	39	39	66	48
Beryllium	2	mg/kg	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
Bismuth	2	mg/kg	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
Boron	5	mg/kg	-	-	<5	<5	<5	<5	<5	<5	12	9	5
Cadmium	0.3	mg/kg	0.6	3.5	0.8	0.9	2.0	<0.3	2.2	2.9	**3.8**	0.9	2.2
Chromium	2	mg/kg	37.3	90.0	18	18	30	14	21	35	26	24	26
Cobalt	1	mg/kg	-	-	3	3	6	4	7	6	5	6	7
Copper	2	mg/kg	35.7	197	17	17	42	6	25	36	42	17	23
Iron	50/500[3]	mg/kg	-	-	9,400	16,000	49,000[3]	7,200	14,000	16,000	22,000	12,000	11,000
Lead	0.5	mg/kg	35.0	91.3	23	42	**130**	9.3	41	46	73	13	24
Lithium	2	mg/kg	-	-	5	5	5	6	7	7	5	7	7
Manganese	2	mg/kg	-	-	70	70	300	77	89	99	82	90	80
Mercury	0.1	mg/kg	0.17	0.486	<0.1	<0.1	0.3	<0.1	0.1	0.2	0.2	0.1	0.1
Molybdenum	2	mg/kg	-	-	<2	<2	4	<2	<2	3	3	<2	<2
Nickel	2	mg/kg	-	-	11	11	18	9	17	20	19	19	19
Rubidium	2	mg/kg	-	-	4	3	3	3	5	5	4	5	5
Selenium	2	mg/kg	-	-	<2	<2	<2	<2	<2	<2	<2	<2	<2
Silver	0.5	mg/kg	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	5	mg/kg	-	-	20	10	21	10	18	23	24	26	22
Thallium	0.1	mg/kg	-	-	<0.1	<0.1	<0.1	0.1	0.1	0.1	0.1	0.1	0.1
Tin	2	mg/kg	-	-	4	24	63	4	13	12	20	4	7
Uranium	0.1	mg/kg	-	-	1.0	0.8	2.3	0.5	2.4	4.5	4.0	3.8	3.4
Vanadium	2	mg/kg	-	-	13	11	18	9	15	25	20	18	17
Zinc	5	mg/kg	123	315	190	170	**350**	59	**360**	**460**	**520**	170	**410**

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

nd = Not detected above standard RDL

< = Not detected above RDL noted

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

Shaded = Value exceeds CCME ISQG

Shaded/ Bold = Value exceeds CCME ISQG and CCME PEL

Table 15.9 Results of Lab Analysis of Available Metals in Sediment -
Phase II/III ESA, HHERA and RAP/RMP
Phase II/III ESAs, HHERA and RAP/RMP
Project No. 121410103
Stantec Consulting Ltd. Project No. 121410103

Parameters	RDL	Units	Criteria[1]	Criteria[2]	SEDIMENT			
					SED-34	SED-35	SED-36	SED-37
Aluminum	10	mg/kg	-	-	5,100	4,300	6,600	7,100
Antimony	2	mg/kg	-	-	6	<2	<2	<2
Arsenic	2	mg/kg	5.9	17.0	3	<2	<2	<2
Barium	5	mg/kg	-	-	36	11	26	18
Beryllium	2	mg/kg	-	-	<2	<2	<2	<2
Bismuth	2	mg/kg	-	-	<2	<2	<2	<2
Boron	5	mg/kg	-	-	<5	<5	<5	<5
Cadmium	0.3	mg/kg	0.6	3.5	**10**	<0.3	<0.3	<0.3
Chromium	2	mg/kg	37.3	90.0	25	15	18	15
Cobalt	1	mg/kg	-	-	4	2	4	5
Copper	2	mg/kg	35.7	197	79	7	11	7
Iron	50/500[3]	mg/kg	-	-	31,000	9,600	14,000	9,400
Lead	0.5	mg/kg	35.0	91.3	**160**	27	14	2.6
Lithium	2	mg/kg	-	-	4	6	11	8
Manganese	2	mg/kg	-	-	96	70	160	120
Mercury	0.1	mg/kg	0.17	0.486	**0.8**	<0.1	<0.1	<0.1
Molybdenum	2	mg/kg	-	-	2	<2	<2	<2
Nickel	2	mg/kg	-	-	16	8	13	12
Rubidium	2	mg/kg	-	-	2	2	12	5
Selenium	2	mg/kg	-	-	<2	<2	<2	<2
Silver	0.5	mg/kg	-	-	1.4	<0.5	<0.5	<0.5
Strontium	5	mg/kg	-	-	13	6	8	16
Thallium	0.1	mg/kg	-	-	<0.1	<0.1	<0.1	<0.1
Tin	2	mg/kg	-	-	91	7	9	<2
Uranium	0.1	mg/kg	-	-	1.0	0.7	1.1	0.3
Vanadium	2	mg/kg	-	-	12	16	18	16
Zinc	5	mg/kg	123	315	**790**	37	42	26

Notes:
1 = CCME Interim Sediment Quality Guidelines (ISQGs) for freshwater sedimen (2002)
2 = CCME Probable Effects Levels (PELs) for freshwater sediment (2002)
RDL = Reportable Detection Limit
nd = Not detected above standard RDL
< = Not detected above RDL noted
"-" = indicates value is not available or does not apply
Shaded = Value exceeds CCME ISQG
Shaded/ Bold = Value exceeds CCME ISQG and CCME PEL

Table 15.10 Results of Laboratory Analysis of TOC and Grain Size in Sediment - Old Dump Pond
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	Units	SEDIMENT				
		SED-25	RDL	SED-30	SED-33	RDL
Organic Carbon (TOC)	g/kg	180	5	180	110	4
<-4 Phi (16 mm)	%	100	0.1	100	100	0.1
<-3 Phi (8mm)	%	100	0.1	100	100	0.1
<-2 Phi (4mm)	%	100	0.1	100	100	0.1
<-1 Phi (2mm)	%	72	0.1	99	99	0.1
0 Phi (1mm)	%	63	0.1	84	92	0.1
<+1 Phi (0.5 mm)	%	54	0.1	73	86	0.1
<+2 Phi (0.25 mm)	%	42	0.1	65	80	0.1
<+3 Phi (0.12 mm)	%	33	0.1	54	74	0.1
<+4 Phi (0.062 mm)	%	26	0.1	42	61	0.1
<+5 Phi (0.031 mm)	%	22	0.1	38	54	0.1
<+6 Phi (0.016 mm)	%	14	0.1	28	41	0.1
<+7 Phi (0.0078 mm)	%	9.5	0.1	17	25	0.1
<+8 Phi (0.0039 mm)	%	7.7	0.1	15	21	0.1
<+9 Phi (0.0020 mm)	%	5.5	0.1	13	14	0.1
Gravel	%	28	0.1	1.2	0.6	0.1
Sand	%	47	0.1	57	38	0.1
Silt	%	18	0.1	27	40	0.1
Clay	%	7.7	0.1	15	21	0.1

Notes:
RDL = Reportable Detection Limit
< # = Not detected above RDL noted
"-" = indicates value is not available or does not apply

Table 15.11 Results of Laboratory Analysis of TPH/BTEX in Groundwater - Old Dump Pond
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Sample ID	Benzene	Toluene	Ethylbenzene	Xylenes	C_6-C_{10} (Gas Range)	C_{11}-C_{20} (Fuel Range)	C_{21}-C_{32} (Lube Range)	Modified TPH - Tier I[2]	Resemblence
RDL	0.001	0.001	0.001	0.002	0.01	0.05	0.1	0.1	-
RDL[3]	0.002	0.001	0.001	0.002	0.01	0.05	0.1	0.1	-
Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	-
Criteria[1]	1	20	20	20	-	-	-	20	-
MONITOR WELLS									
MW31	0.002	0.005	0.01	0.035	0.32	0.3	0.2	0.8	OP G/F, Possible LO
MW33	<0.001	0.001	<0.001	<0.002	<0.01	0.09	0.1	0.2	Possible LO
MW34	<0.001	0.001	<0.001	0.002	<0.01	0.74	0.7	1.4	WFO, LO
MW34 Field-Dup	<0.001	0.001	<0.001	<0.002	<0.01	0.64	0.6	1.2	WFO, LO
MW61	0.001	0.006	0.003	0.013	0.17	6.8	3.5	10	FO, LO
MW62[3]	<0.002	0.006	0.002	0.01	1	0.19	0.1	1.3	OP G/F, Possible LO

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, lube oil impacts (September, 2003)

2 = Modified TPH - Tier I does not include BTEX

3 = Elevated RDL(s) due to matrix interference

RDL = Reportable Detection Limit for routine analysis

Field-Dup = Field duplicate sample

< # = Not detected above RDL noted

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

FO = Fuel oil fraction; LO= Lube oil fraction; OP G/F= One product in gas/fuel oil range; WFO=Weathered fuel oil fraction;

Table 15.12 Results of Laboratory Analysis of PCBs in Groundwater - Old Dump Pond
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Sample ID	Polychlorinated Biphenyls (PCBs)
RDL	0.05
Units	ug/L
Criteria[1]	0.2
MONITOR WELLS	
MW31	<0.05
MW32	1.6
MW33	4.1
MW34	2.3
MW34 Field-Dup	0.19
MW61	<0.05
MW62	<0.05
MW62 Lab-Dup	<0.05

Notes:
1 = OMOE Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the *Environmental Protection Act*, Non-Potable Groundwater (2004)
RDL = Reportable Detection Limit
Field-Dup = Field duplicate sample
< # = Not detected above RDL noted

Table 15.13 Results of Laboratory Analysis of VOCs in Groundwater - Old Dump Pond
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	RDL	Units	Criteria[1]	MONITOR WELLS
				MW62
1,2-Dichlorobenzene	0.5	ug/L	7,600	<0.5
1,3-Dichlorobenzene	1	ug/L	7,600	<1
1,4-Dichlorobenzene	1	ug/L	7,600	<1
Chlorobenzene	1	ug/L	500	<1
1,1,1-Trichloroethane	1	ug/L	200	<1
1,1,2,2-Tetrachloroethane	1	ug/L	22	<1
1,1,2-Trichloroethane	20[2]	ug/L	16,000	<20[2]
1,1-Dichloroethane	2	ug/L	9,000	4
1,1-Dichloroethylene	0.5	ug/L	0.66	<0.5
1,2-Dichloroethane	1	ug/L	17	<1
1,2-Dichloropropane	2[2]	ug/L	9.3	<2[2]
Benzene	1	ug/L	1,900	1
Bromodichloromethane	40[2]	ug/L	50,000	<40[2]
Bromoform	1	ug/L	840	<1
Bromomethane	3	ug/L	3.7	<3
Carbon Tetrachloride	1	ug/L	17	<1
Chloroethane	8	ug/L	-	<8
Chloroform	20[2]	ug/L	430	<20[2]
Chloromethane	8	ug/L	-	<8
cis-1,2-Dichloroethylene	2	ug/L	70	<2
cis-1,3-Dichloropropene	2	ug/L	3.8	<2
Dibromochloromethane	1	ug/L	50,000	<1
Ethylbenzene	1	ug/L	28,000	1
Ethylene Dibromide	1	ug/L	3.3	<1
Methylene Chloride(Dichloromethane)	3	ug/L	-	<3
o-Xylene	1	ug/L	-	1
p+m-Xylene	2	ug/L	-	6
Styrene	1	ug/L	940	<1
Tetrachloroethylene	1	ug/L	5.0	<1
Toluene	1	ug/L	5900	5
trans-1,2-Dichloroethylene	2	ug/L	100	<2
trans-1,3-Dichloropropene	1	ug/L	-	<1
Trichloroethylene	1	ug/L	21	<1
Trichlorofluoromethane (FREON 11)	8	ug/L	50	<8
Vinyl Chloride	0.5	ug/L	0.5	<0.5

Notes:

1 = OMOE Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the *Environmental Protection Act*, Non-Potable Groundwater (2004)

2 = Elevated RDL(s) due to matrix interference

RDL = Reportable Detection Limit

< # = Not detected above RDL noted

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

Table 15.14 Lab Analysis of Available Metals in Groundwater - Old Dump Pond
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	RDL	Units	Criteria[1]	MONITOR WELLS				
				MW31	MW33	MW34	MW34 Field-Dup	MW61
Aluminum	5	ug/L	-	164	198	269	382	114
Antimony	2	ug/L	16,000	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic	2	ug/L	480	<2.0	<2.0	<2.0	<2.0	<2.0
Barium	5	ug/L	23,000	20.5	16.5	44.6	49.4	46.5
Beryllium	2	ug/L	53	<2.0	<2.0	<2.0	<2.0	<2.0
Bismuth	2	ug/L	-	<2.0	<2.0	<2.0	<2.0	<2.0
Boron	5	ug/L	50,000	86.2	44.5	59.6	65.7	54
Cadmium	0.017	ug/L	11	0.018	<0.017	0.037	0.047	<0.017
Chromium	1	ug/L	2,000	1.7	1.6	1.2	1.4	<1.0
Cobalt	0.4	ug/L	100	2.30	<0.40	0.97	1.09	<0.40
Copper	2	ug/L	23	<2.0	3	13.3	15.5	<2.0
Iron	50	ug/L	-	14,700	10,900	18,100	18,900	17,900
Lead	0.5	ug/L	32	<0.50	<0.50	0.85	1.11	0.63
Manganese	2	ug/L	-	617	319	608	622	630
Molybdenum	2	ug/L	7,300	<2.0	<2.0	<2.0	2	<2.0
Nickel	2	ug/L	1,600	5.3	2.4	6.3	7	<2.0
Selenium	1	ug/L	50	<1.0	<1.0	<1.0	<1.0	<1.0
Silver	0.1	ug/L	1.2	<0.10	<0.10	<0.10	<0.10	<0.10
Strontium	5	ug/L	-	95.9	51.4	85.8	96.1	78.3
Thallium	0.1	ug/L	400	<0.10	<0.10	<0.10	<0.10	<0.10
Tin	2	ug/L	-	<2.0	<2.0	<2.0	<2.0	<2.0
Titanium	2	ug/L	-	5.3	5.2	9	11	2.9
Uranium	0.1	ug/L	-	1.15	1.62	0.12	0.1	<0.10
Vanadium	2	ug/L	200	5.1	<2.0	<2.0	2	<2.0
Zinc	5	ug/L	1,100	21	14.4	65	86	12.3

Notes:

1 = OMOE Soil, Groundwater and Sediment Standards for Use Under Part XV.1 of the *Environmental Protection Act*, Non-Potable Groundwater (2004)

RDL = Reportable Detection Limit for routine analysis

Field-Dup = Field duplicate sample

< # = Not detected above RDL noted

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

Table 15.15 Results of Laboratory Analysis of VOCs in Surface Water - Old Dump Pond
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	RDL	Units	Criteria[1]	SURFACE WATER			
				SW-1	SW-1 Lab-Dup	SW-2	SW-3
1,2-Dichlorobenzene	0.5	ug/L	0.7	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	1	ug/L	150	<1	<1	<1	<1
1,4-Dichlorobenzene	1	ug/L	26	<1	<1	<1	<1
Chlorobenzene	1	ug/L	1.3	<1	<1	<1	<1
1,1,1-Trichloroethane	1	ug/L	-	<1	<1	<1	<1
1,1,2,2-Tetrachloroethane	1	ug/L	111	<1	<1	<1	<1
1,1,2-Trichloroethane	1	ug/L	-	<1	<1	<1	<1
1,1-Dichloroethane	2	ug/L	-	<2	<2	<2	<2
1,1-Dichloroethylene	0.5	ug/L	-	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	1	ug/L	100	<1	<1	<1	<1
1,2-Dichloropropane	1	ug/L	-	<1	<1	<1	<1
Benzene	1	ug/L	370	<1	<1	<1	<1
Bromodichloromethane	1	ug/L	-	<1	<1	<1	<1
Bromoform	1	ug/L	-	<1	<1	<1	<1
Bromomethane	3	ug/L	-	<3	<3	<3	<3
Carbon Tetrachloride	1	ug/L	13.3	<1	<1	<1	<1
Chloroethane	8	ug/L	-	<8	<8	<8	<8
Chloroform	1	ug/L	1.8	<1	<1	<1	<1
Chloromethane	8	ug/L	-	<8	<8	<8	<8
cis-1,2-Dichloroethylene	2	ug/L	-	<2	<2	<2	<2
cis-1,3-Dichloropropene	2	ug/L	-	<2	<2	<2	<2
Dibromochloromethane	1	ug/L	-	<1	<1	<1	<1
Ethylbenzene	1	ug/L	90	<1	<1	<1	<1
Ethylene Dibromide	1	ug/L		<1	<1	<1	<1
Methylene Chloride(Dichloromethane)	3	ug/L	98.1	<3	<3	<3	<3
o-Xylene	1	ug/L	-	<1	<1	<1	1
p+m-Xylene	2	ug/L	-	3	2	2	3
Styrene	1	ug/L	72	<1	<1	<1	<1
Tetrachloroethylene	1	ug/L	-	<1	<1	<1	<1
Toluene	1	ug/L	-	4	4	5	5
trans-1,2-Dichloroethylene	2	ug/L	-	<2	<2	<2	<2
trans-1,3-Dichloropropene	1	ug/L	-	<1	<1	<1	<1
Trichloroethylene	1	ug/L	21	<1	<1	<1	<1
Trichlorofluoromethane (FREON 11)	8	ug/L	-	<8	<8	<8	<8
Vinyl Chloride	0.5	ug/L	-	<0.5	<0.5	<0.5	<0.5

Notes:
1 = CCME Water Quality Guidelines for the protection of freshwater aquatic life (2007)
RDL = Reportable Detection Limit
Lab-Dup = Laboratory duplicate sample
< # = Not detected above RDL noted
"-" = indicates value is not available or does not apply

Table 15.16 Results of Lab Analysis of Available Metals in Surface Water - Old Dump Pond
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	RDL	Units	Criteria[1]	SURFACE WATER		
				SW-1	SW-2	SW-3
Aluminum	5	ug/L	100[2]	157	176	155
Antimony	2	ug/L	-	<2.0	<2.0	<2.0
Arsenic	2	ug/L	5	<2.0	<2.0	<2.0
Barium	5	ug/L	-	<5.0	<5.0	<5.0
Beryllium	2	ug/L	-	<2.0	<2.0	<2.0
Bismuth	2	ug/L	-	<2.0	<2.0	<2.0
Boron	5	ug/L	-	5.3	6.6	5.4
Cadmium	0.017	ug/L	0.0072[3]	0.027	0.027	<0.017
Chromium	1	ug/L	8.9	<1.0	<1.0	<1.0
Cobalt	0.4	ug/L	-	<0.40	<0.40	<0.40
Copper	2	ug/L	2[4]	2.5	2.7	3.0
Iron	50	ug/L	300	743	804	697
Lead	0.5	ug/L	1[5]	1.29	1.38	1.31
Manganese	2	ug/L	-	3.3	3.9	3.5
Molybdenum	2	ug/L	73	<2.0	<2.0	<2.0
Nickel	2	ug/L	25[6]	<2.0	<2.0	<2.0
Selenium	1	ug/L	1	<1.0	<1.0	<1.0
Silver	0.1	ug/L	0.1	<0.10	<0.10	<0.10
Strontium	5	ug/L	-	15.4	16	14.8
Thallium	0.1	ug/L	0.8	<0.10	<0.10	<0.10
Tin	2	ug/L	-	<2.0	<2.0	<2.0
Titanium	2	ug/L	-	3.5	3.1	3.1
Uranium	0.1	ug/L	-	0.22	0.23	0.21
Vanadium	2	ug/L	-	<2.0	<2.0	<2.0
Zinc	5	ug/L	30	10.8	11.1	8.9

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(hardness)]-3.2} = 0.0072 mg/L at a water hardness of 17 mg/L as $CaCO_3$

4 = Copper guideline = 2 µg/L at water hardness of 0-120 mg/L as $CaCO_3$
= 3 µg/L at water hardness of 120-180 mg/L as $CaCO_3$
= 4 µg/L at water hardness >180 mg/L as $CaCO_3$

5 =Lead guideline = 1 µg/L at water hardness of 0-60 mg/L as $CaCO_3$
= 2 µg/L at water hardness of 60-120 mg/L as $CaCO_3$
= 4 µg/L at water hardness of 120-180 mg/L as $CaCO_3$
= 7 µg/L at water hardness >180 mg/L as $CaCO_3$

6 = Nickel guideline = 25 µg/L at water hardness of 0-60 mg/L as $CaCO_3$
= 65 µg/L at water hardness of 60-120 mg/L as $CaCO_3$
= 110 µg/L at water hardness of 120-180 mg/L as $CaCO_3$
= 150 µg/L at water hardness >180 mg/L as $CaCO_3$

RDL = Reportable Detection Limit

< # = Not detected above RDL noted

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

Shaded = Value exceeds applicable criteria

Table 15.17 Results of Laboratory Analysis of General Chemistry in Surface Water - Old Dump Pond
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	RDL	Units	Criteria[1]	SURFACE WATER				
				SW-1	SW-1 Lab-Dup	SW-2	SW-3	SW-3 Lab-Dup
Calculated Parameters								
Anion Sum	N/A	me/L	-	0.44	-	0.43	0.42	-
Bicarb. Alkalinity (as $CaCO_3$)	1	mg/L	-	15	-	14	15	-
Calculated TDS	1	mg/L	-	27	-	28	27	-
Carb. Alkalinity (as $CaCO_3$)	1	mg/L	-	<1	-	<1	<1	-
Cation Sum	N/A	me/L	-	0.56	-	0.6	0.55	-
Hardness (as $CaCO_3$)	1	mg/L	-	17	-	18	17	-
Ion Balance (% Difference)	N/A	%	-	12	-	16.5	13.4	-
Langelier Index (@20°C)	-	N/A	-	-2.21	-	-2.38	-2.26	-
Langelier Index (@4°C)	-	N/A	-	-2.46	-	-2.64	-2.51	-
Nitrate (as N)	0.05	mg/L	2.9	<0.05	-	<0.05	<0.05	-
Saturation pH (@20°C)	-	N/A	-	9.43	-	9.4	9.44	-
Saturation pH (@4°C)	-	N/A	-	9.68	-	9.66	9.69	-
Inorganics								
Total Alkalinity (as $CaCO_3$)	5	mg/L		15	-	15	15	15
Dissolved Chloride (Cl)	1	mg/L		5	-	5	5	5
Colour	30	TCU		100	-	120	110	100
Nitrate + Nitrite	0.05	mg/L	-	<0.05	-	<0.05	<0.05	<0.05
Nitrite (N)	0.01	mg/L	0.06	<0.01	-	<0.01	<0.01	<0.01
Nitrogen (Ammonia Nitrogen)	0.05	mg/L	-	<0.05	<0.05	<0.05	<0.05	-
Total Organic Carbon (C)	0.5	mg/L	-	10	-	12	13	-
Orthophosphate (P)	0.01	mg/L	-	<0.01	-	<0.01	<0.01	<0.01
pH	N/A	pH	6.5 - 9	7.22	-	7.02	7.18	-
Reactive Silica (SiO_2)	0.5	mg/L	-	1.7	-	1.7	1.9	1.9
Dissolved Sulphate (SO_4)	2	mg/L	-	<2	-	<2	<2	<2
Turbidity	0.1	NTU	Narritive[2]	1.4	1.2	1.2	1	-
Conductivity	1	uS/cm	-	52	-	51	51	-
Metals								
Calcium	0.1	mg/L	-	4.9	-	5.3	4.9	-
Magnesium	0.1	mg/L	-	1.2	-	1.2	1.1	-
Phosphorus	0.1	mg/L	<0.004 to >0.1[3]	<0.1	-	<0.1	<0.1	-
Potassium	0.1	mg/L	-	0.4	-	0.4	0.4	-
Sodium	0.1	mg/L	-	4	-	5	4	-

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 freswater environment. Trophic status of Old Dump Pond is unknown

RDL = Reportable Detection Limit

< # = Not detected above RDL noted

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

Table 15.18 Results of Laboratory Analysis of PCBs in Fish - Old Dump Pond
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Sample ID	Polychlorinated Biphenyls (PCBs)
RDL	0.05
Units	mg/kg
FISH	
FISH-1	5.6
FISH-2	5.9
FISH-4	4.8

Notes:
RDL = Reportable Detection Limit
< # = Not detected above RDL noted

Table 15.19 Results of Laboratory Analysis of Available Metals in Fish - Old Dump Pond
Phase II/III ESA, HHERA and RAP/RMP
Former US Military Site and Residential Subdivision, Hopedale, NL
Project No. 121410103

Parameters	RDL	Units	FISH			
			FISH-1	FISH-2	FISH-4	FISH-4 Lab Dup
Aluminum	2.5	mg/kg	6.0	5.2	8.9	8.7
Antimony	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50
Arsenic	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50
Barium	1.5	mg/kg	1.7	1.8	1.9	2.1
Beryllium	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50
Boron	1.5	mg/kg	<1.5	<1.5	<1.5	<1.5
Cadmium	0.05	mg/kg	0.054	0.051	<0.050	<0.050
Chromium	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50
Cobalt	0.2	mg/kg	<0.20	<0.20	<0.20	<0.20
Copper	0.5	mg/kg	1.48	1.54	1.23	1.20
Iron	15	mg/kg	73	70	52	57
Lead	0.18	mg/kg	0.29	<0.18	<0.18	<0.18
Lithium	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50
Manganese	0.5	mg/kg	6.67	6.62	6.40	6.40
Molybdenum	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50
Nickel	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50
Selenium	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50
Silver	0.12	mg/kg	<0.12	<0.12	<0.12	<0.12
Strontium	1.5	mg/kg	6.5	7.6	7.4	7.8
Thallium	0.02	mg/kg	<0.020	<0.020	<0.020	<0.020
Tin	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50
Uranium	0.02	mg/kg	<0.020	<0.020	<0.020	<0.020
Vanadium	0.5	mg/kg	<0.50	<0.50	<0.50	<0.50
Zinc	1.5	mg/kg	65.0	40.6	39.5	38.9

Notes:
RDL = Reportable Detection Limit
< # = Not detected above RDL noted