NUQSANA PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection & Testing Report

ITR Number: AEM-EL-ITR-001
ITR Type: GENERAL
Contract No.: 6515-C-270-007

AGNICO EAGLE

Tag Number:		Equipment/ Pipe N°:		System:	
Service:		Function:		Purchase Order:	
Manufacturer:		Model:		Serial Number:	
Location Dwg :		Reference Datasheet:		Installation Detail Dwg:	
Reference Datasheet Number:					

Item N°	Inspection Points	C	NC/ NCR #	N/A	Completed By/ Date
21	PANEL AND DOOR CLOSED AND BOLTED	C	NC # _____	N/A	Promec: CLIENT:

Comments

Sign Off			
Promec Signature:		CLIENT Signature:	
Date:		Date:	

Legend					
C	Conformance	NC	Non Conformance	N/A	Not Applicable
NCR	Non Conformance Report				

AGNICO EAGLE

Vendor Document Status

1 ☐ Proceed to next submission and status.

2 ☐ Proceed with exceptions as noted to next submission and status.

3 ☐ Do not proceed.
Revise as noted and resubmit next submission and status.

4 ☑ Complete, no further submission required.

By: Jean-Francois Tremblay Date: 2017-05-02

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Agnico Eagle No. 6515-C-270-007-141-TES-0002 R: Sub001

DOCUMENT FOR INFORMATION

NUQSANA PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection & Testing Report

ITR Number: AEM-EL-ITR-001
ITR Type: GENERAL
Contract No.: 6515-C-270-007

AGNICO EAGLE

Tag Number:		**Equipment/ Pipe N°:**		**System:**	
Service:		**Function:**		**Purchase Order:**	
Manufacturer:		**Model:**		**Serial Number:**	
Location Dwg :		**Reference Datasheet:**		**Installation Detail Dwg:**	
Reference Datasheet Number:					

Item N°	Inspection Points	C	NC/ NCR #	N/A	Completed By/ Date
1	DEVICE INSTALLED AS PER INSTALLATION DETAILS, LOCATION OR MANUFACTURERS DRAWINGS	C	NC #	N/A	Promec: CLIENT:
2	EQUIPMENT ACESSIBLE AND EASY TO MAINTAIN	C	NC #	N/A	Promec: CLIENT:
3	EQUIPMENT RACK OR CLAMPING DEVICE ADEQUATE (HEIGHT, SOLIDITY ETC.)	C	NC #	N/A	Promec: CLIENT:
4	GROUNDING INSTALLED AND CONNECTED	C	NC #	N/A	Promec: CLIENT:
5	TERMINAL CONNECTION CONNECTED AND TORQUED	C	NC #	N/A	Promec: CLIENT:
6	BREAKER CONNECTIONS CONNECTED AND TORQUED	C	NC #	N/A	Promec: CLIENT:
7	LUG BOLT TORQUE	C	NC #	N/A	Promec: CLIENT:
8	POWER BUS BAR BOLTED AND TORQUED	C	NC #	N/A	Promec: CLIENT:
9	GROUND BUS BAR BOLTED AND TORQUED	C	NC #	N/A	Promec: CLIENT:
10	MEGGER EQUIPMENT	C	NC #	N/A	Promec: CLIENT:
11	MEGGER CABLES	C	NC #	N/A	Promec: CLIENT:
12	HI-POT TEST	C	NC #	N/A	Promec: CLIENT:
13	PANELS IDENTIFIED	C	NC #	N/A	Promec: CLIENT:
14	UNIT DRAWER IDENTIFIED	C	NC #	N/A	Promec: CLIENT:
15	BREAKERS IDENTIFIED	C	NC #	N/A	Promec: CLIENT:
16	CABLES IDENTIFIED	C	NC #	N/A	Promec: CLIENT:
17	SEAL O RING INSTALLED (IF APPLICABLE)	C	NC #	N/A	Promec: CLIENT:
18	FUSES INSTALLED AND OF ADEQUATE SIZE	C	NC #	N/A	Promec: CLIENT:
18	VISUAL INSPECTION	C	NC #	N/A	Promec: CLIENT:
20	CLEAN / VACUUMED	C	NC #	N/A	Promec: CLIENT:

NUQSANA PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection & Testing Report

ITR Number: AEM-EL-ITR-001
ITR Type: GENERAL
Contract No.: 6515-C-270-007

AGNICO EAGLE

Tag Number:		**Equipment/ Pipe N°:**		**System:**	
Service:		**Function:**		**Purchase Order:**	
Manufacturer:		**Model:**		**Serial Number:**	
Location Dwg :		**Reference Datasheet:**		**Installation Detail Dwg:**	
Reference Datasheet Number:					

Item N°	Inspection Points	C	NC/ NCR #	N/A	Completed By/ Date
21	PANEL AND DOOR CLOSED AND BOLTED	C	NC # _____	N/A	Promec: CLIENT:

Comments

Sign Off			
Promec Signature:		**CLIENT Signature:**	
Date:		**Date:**	

Legend					
C	Conformance	NC	Non Conformance	N/A	Not Applicable
NCR	Non Conformance Report				

AGNICO EAGLE

Vendor Document Status

1 ☐ Proceed to next submission and status.

2 ☐ Proceed with exceptions as noted to next submission and status.

3 ☐ Do not proceed.
Revise as noted and resubmit next submission and status.

4 ☑ Complete, no further submission required.

By: JEAN-FRANCOIS TREMBLAY Date: 2017-06-22

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Agnico Eagle No. 6515-C-270-007-141-TES-0021 R: Sub002

DOCUMENT FOR INFORMATION

NUQSANA PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection & Testing Report

ITR Number: AEM-IN-ITR-001B
ITR Type: FLOW SWITCH
Contract No.: 6515-C-270-007

AGNICO EAGLE

Tag Number:		**Equipment/ Pipe N°:**		**System:**	
Service:		**Function:**		**Purchase Order:**	
Manufacturer:		**Model:**		**Serial Number:**	
Location Dwg :		**Reference Datasheet:**		**Installation Detail Dwg:**	
Reference Datasheet Number:					

Item N°	Inspection Points	C	NC/ NCR #	N/A	Completed By/ Date
1	INSTRUMENT TAG ATTACHED	C	NC #	N/A	Promec: CLIENT:
2	CABLE TAG ATTACHED	C	NC #	N/A	Promec: CLIENT:
3	DEVICE INSTALLED AS PER INSTALLATION DETAILS, LOCATION OR MANUFACTURER'S DRAWING	C	NC #	N/A	Promec: CLIENT:
4	EQUIPMENT ACCESSIBLE AND EASY TO MAINTAIN	C	NC #	N/A	Promec: CLIENT:
5	WIRING CORRECT AND PROPERLY LABELED	C	NC #	N/A	Promec: CLIENT:
6	FLOW ARROW OR ORIENTATION MATCHES PROCESS FLOW	C	NC #	N/A	Promec: CLIENT:
7	PROCESS CONNECTION ADEQUATE (SCREWED OR FLANGED)	C	NC #	N/A	Promec: CLIENT:
8	CALIBRATION CERTIFICATE AVAILABLE	C	NC #	N/A	Promec: CLIENT:
9	ELECTRICAL SUPPLY COMPATIBLE WITH SOURCE	C	NC #	N/A	Promec: CLIENT:
10		C	NC #	N/A	Promec: CLIENT:
11		C	NC #	N/A	Promec: CLIENT:

Comments

Sign Off			
Promec Signature:		**CLIENT Signature:**	
Date:		**Date:**	

Legend					
C	Conformance	**NC**	Non Conformance	**N/A**	Not Applicable
NCR	Non Conformance Report				

AGNICO EAGLE

Vendor Document Status

1 ☐ Proceed to next submission and status.

2 ☐ Proceed with exceptions as noted to next submission and status.

3 ☐ Do not proceed.
Revise as noted and resubmit next submission and status.

4 ☑ Complete, no further submission required.

By: JEAN-FRANCOIS TREMBLAY Date: 2017-06-22

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Agnico Eagle No. 6515-C-270-007-141-TES-0022 R: Sub002

DOCUMENT FOR INFORMATION

NUQSANA PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection & Testing Report

ITR Number: AEM-IN-ITR-001C
ITR Type: FLOW TRANSMITTER
Contract No.: 6515-C-270-007

AGNICO EAGLE

Tag Number:		**Equipment/ Pipe N°:**		**System:**	
Service:		**Function:**		**Purchase Order:**	
Manufacturer:		**Model:**		**Serial Number:**	
Location Dwg :		**Reference Datasheet:**		**Installation Detail Dwg:**	
Reference Datasheet Number:					

Item N°	Inspection Points	C	NC/ NCR #	N/A	Completed By/ Date
1	INSTRUMENT TAG ATTACHED	C	NC #	N/A	Promec: CLIENT:
2	CABLE TAG ATTACHED	C	NC #	N/A	Promec: CLIENT:
3	DEVICE INSTALLED AS PER INSTALLATION DETAILS, LOCATION OR MANUFACTURER'S DRAWING	C	NC #	N/A	Promec: CLIENT:
4	EQUIPMENT ACESSIBLE AND EASY TO MAINTAIN	C	NC #	N/A	Promec: CLIENT:
5	EQUIPMENT RACK OR CLAMPING DEVICE ADEQUATE (HEIGHT, SOLIDITY ETC.)	C	NC #	N/A	Promec: CLIENT:
6	WIRING CORRECT AND PROPERLY LABELED	C	NC #	N/A	Promec: CLIENT:
7	MINIMUM STRAIGHT PIPE LENGHT UPSTREAM AND DOWNSTREAM REQUIREMENT	C	NC #	N/A	Promec: CLIENT:
8	GROUNDING OF DEVICE	C	NC #	N/A	Promec: CLIENT:
9	FLOW ARROW OR ORIENTATION MATCHES PROCESS FLOW	C	NC #	N/A	Promec: CLIENT:
10	DISPLAY VISIBLE	C	NC #	N/A	Promec: CLIENT:
11	PROCESS CONNECTION ADEQUATE (SCREWED OR FLANGED)	C	NC #	N/A	Promec: CLIENT:
12	CALIBRATION CERTIFICATE AVAILABLE	C	NC #	N/A	Promec: CLIENT:
13	ELECTRICAL SUPPLY COMPATIBLE WITH SOURCE	C	NC #	N/A	Promec: CLIENT:

Comments

Sign Off			
Promec Signature:		**CLIENT Signature:**	
Date:		**Date:**	

Legend					
C	Conformance	**NC**	Non Conformance	**N/A**	Not Applicable
NCR	Non Conformance Report				

NUQSANA PROMEC MINING	AGNICO-EAGLE MINES Ltd. Inspection & Testing Report ITR Number: AEM-IN-ITR-002A ITR Type: PUSH BUTTON STATION Contract No.: 6515-C-270-007	AGNICO EAGLE

AGNICO EAGLE — Vendor Document Status

1 ☐ Proceed to next submission and status.
2 ☐ Proceed with exceptions as noted to next submission and status.
3 ☐ Do not proceed. Revise as noted and resubmit next submission and status.
4 ✓ Complete, no further submission required.

By: JEAN-FRANCOIS TREMBLAY Date: 2017-06-29

Review and authorization to fabricate is only for general conformance with the design concept of the Project as expressed in the Contract Documents. Sole responsibility for the accuracy and completeness of this document, including but not limited to dimensions and quantities, remains with the Supplier/Contractor. Agnico Eagle does not warrant the accuracy or completeness of any of the information contained herein, nor does Agnico Eagle authorize or approve any construction means, methods, techniques, sequences or any safety precautions or procedures.

Agnico Eagle No: 6515-C-270-007-141-TES-0023 • Sub002

DOCUMENT FOR INFORMATION

Tag Number:		Equipment/ Pipe N°:		System:	
Service:		Function:		Purchase Order:	
Manufacturer:		Model:		Serial Number:	
Location Dwg :		Reference Datasheet:		Installation Detail Dwg:	
Reference Datasheet Number:					

Item N°	Inspection Points	C	NC/ NCR #	N/A	Completed By/ Date
1	INSTRUMENT TAG ATTACHED	C	NC #	N/A	Promec: CLIENT:
2	CABLE TAG ATTACHED	C	NC #	N/A	Promec: CLIENT:
3	DEVICE INSTALLED AS PER INSTALLATION DETAILS, LOCATION OR MANUFACTURER'S DRAWING	C	NC #	N/A	Promec: CLIENT:
4	EQUIPMENT ACCESSIBLE AND EASY TO MAINTAIN / OPERATE	C	NC #	N/A	Promec: CLIENT:
5	EQUIPMENT RACK OR CLAMPING DEVICE ADEQUATE (HEIGHT, SOLIDITY ETC.)	C	NC #	N/A	Promec: CLIENT:
6	WIRING CORRECT AND PROPERLY LABELED	C	NC #	N/A	Promec: CLIENT:
7		C	NC #	N/A	Promec: CLIENT:
8		C	NC #	N/A	Promec: CLIENT:
9		C	NC #	N/A	Promec: CLIENT:
10		C	NC #	N/A	Promec: CLIENT:
11		C	NC #	N/A	Promec: CLIENT:

Comments

Sign Off			
Promec Signature:		CLIENT Signature:	
Date:		Date:	

Legend					
C	Conformance	NC	Non Conformance	N/A	Not Applicable
NCR	Non Conformance Report				

AGNICO EAGLE

Vendor Document Status

1 ☐ Proceed to next submission and status.

2 ☐ Proceed with exceptions as noted to next submission and status.

3 ☐ Do not proceed.
Revise as noted and resubmit next submission and status.

4 ☑ Complete, no further submission required.

By: JEAN-FRANCOIS TREMBLAY Date: 2017-06-22

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Agnico Eagle No. 6515-C-270-007-141-TES-0024 R: Sub002

DOCUMENT FOR INFORMATION

AGNICO-EAGLE MINES Ltd.
Inspection & Testing Report

ITR Number: AEM-IN-ITR-003A
ITR Type: LEVEL TRANSMITTER
Contract No.: 6515-C-270-007

Tag Number:		**Equipment/ Pipe N°:**		**System:**	
Service:		**Function:**		**Purchase Order:**	
Manufacturer:		**Model:**		**Serial Number:**	
Location Dwg :		**Reference Datasheet:**		**Installation Detail Dwg:**	
Reference Datasheet Number:					

Item N°	Inspection Points	C	NC/ NCR #	N/A	Completed By/ Date
1	INSTRUMENT TAG ATTACHED	C	NC #	N/A	Promec: CLIENT:
2	CABLE TAG ATTACHED	C	NC #	N/A	Promec: CLIENT:
3	DEVICE INSTALLED AS PER INSTALLATION DETAILS, LOCATION OR MANUFACTURER'S DRAWING	C	NC #	N/A	Promec: CLIENT:
4	EQUIPMENT ACCESSIBLE AND EASY TO MAINTAIN	C	NC #	N/A	Promec: CLIENT:
5	EQUIPMENT RACK OR CLAMPING DEVICE ADEQUATE (HEIGHT, SOLIDITY ETC.)	C	NC #	N/A	Promec: CLIENT:
6	WIRING CORRECT AND PROPERLY LABELED	C	NC #	N/A	Promec: CLIENT:
7	NOZZLE IS UNOBSTRUCTED OR ADEQUATE	C	NC #	N/A	Promec: CLIENT:
8	DISPLAY VISIBLE	C	NC #	N/A	Promec: CLIENT:
9	PROCESS CONNECTION ADEQUATE (SCREWED OR FLANGED)	C	NC #	N/A	Promec: CLIENT:
10	CALIBRATION CERTIFICATE AVAILABLE	C	NC #	N/A	Promec: CLIENT:
11	ELECTRICAL SUPPLY COMPATIBLE WITH SOURCE	C	NC #	N/A	Promec: CLIENT:

Comments

Sign Off			
Promec Signature:		**CLIENT Signature:**	
Date:		**Date:**	

Legend					
C	Conformance	**NC**	Non Conformance	**N/A**	Not Applicable
NCR	Non Conformance Report				

AGNICO EAGLE

Vendor Document Status

1 ☐ Proceed to next submission and status.

2 ☐ Proceed with exceptions as noted to next submission and status.

3 ☐ Do not proceed.
Revise as noted and resubmit next submission and status.

4 ☑ Complete, no further submission required.

By: JEAN-FRANCOIS TREMBLAY Date: 2017-06-22

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Agnico Eagle No. 6515-C-270-007-141-TES-0027 R: Sub002

DOCUMENT FOR INFORMATION

AGNICO-EAGLE MINES Ltd.
Inspection & Testing Report

ITR Number: AEM-IN-ITR-004C
ITR Type: PRESSURE SWITCH
Contract No.: 6515-C-270-007

Tag Number:		**Equipment/ Pipe N°:**		**System:**	
Service:		**Function:**		**Purchase Order:**	
Manufacturer:		**Model:**		**Serial Number:**	
Location Dwg :		**Reference Datasheet:**		**Installation Detail Dwg:**	
Reference Datasheet Number:					

Item N°	Inspection Points	C	NC/ NCR #	N/A	Completed By/ Date
1	INSTRUMENT TAG ATTACHED	C	NC #	N/A	Promec: CLIENT:
2	CABLE TAG ATTACHED	C	NC #	N/A	Promec: CLIENT:
3	DEVICE INSTALLED AS PER INSTALLATION DETAILS, LOCATION OR MANUFACTURER'S DRAWING	C	NC #	N/A	Promec: CLIENT:
4	EQUIPMENT ACCESSIBLE AND EASY TO MAINTAIN	C	NC #	N/A	Promec: CLIENT:
5	WIRING CORRECT AND PROPERLY LABELED	C	NC #	N/A	Promec: CLIENT:
6	BLOCK AND BLEED VALVE	C	NC #	N/A	Promec: CLIENT:
7	PROCESS CONNECTION ADEQUATE (SCREWED OR FLANGED)	C	NC #	N/A	Promec: CLIENT:
8	CALIBRATION CERTIFICATE AVAILABLE	C	NC #	N/A	Promec: CLIENT:
9	ELECTRICAL SUPPLY COMPATIBLE WITH SOURCE	C	NC #	N/A	Promec: CLIENT:
10		C	NC #	N/A	Promec: CLIENT:
11		C	NC #	N/A	Promec: CLIENT:

Comments

Sign Off			
Promec Signature:		**CLIENT Signature:**	
Date:		**Date:**	

Legend					
C	Conformance	**NC**	Non Conformance	**N/A**	Not Applicable
NCR	Non Conformance Report				

AGNICO EAGLE

Vendor Document Status

1 ☐ Proceed to next submission and status.

2 ☐ Proceed with exceptions as noted to next submission and status.

3 ☐ Do not proceed.
Revise as noted and resubmit next submission and status.

4 ☑ Complete, no further submission required.

By: JEAN-FRANCOIS TREMBLAY Date: 2017-06-22

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Agnico Eagle No. 6515-C-270-007-141-TES-0029 R: Sub002

DOCUMENT FOR INFORMATION

NUQSANA PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection & Testing Report

ITR Number: AEM-IN-ITR-006A
ITR Type: On / OFF VALVE
Contract No.: 6515-C-270-007

AGNICO EAGLE

Tag Number:		**Equipment/ Pipe N°:**		**System:**	
Service:		**Function:**		**Purchase Order:**	
Manufacturer:		**Model:**		**Serial Number:**	
Location Dwg :		**Reference Datasheet:**		**Installation Detail Dwg:**	
Reference Datasheet Number:					

Item N°	Inspection Points	C	NC/ NCR #	N/A	Completed By/ Date
1	INSTRUMENT TAG ATTACHED	C	NC #	N/A	Promec: CLIENT:
2	CABLE TAG ATTACHED	C	NC #	N/A	Promec: CLIENT:
3	DEVICE INSTALLED AS PER INSTALLATION DETAILS, LOCATION OR MANUFACTURER'S DRAWING	C	NC #	N/A	Promec: CLIENT:
4	EQUIPMENT ACCESSIBLE AND EASY TO MAINTAIN	C	NC #	N/A	Promec: CLIENT:
5	WIRING CORRECT AND PROPERLY LABELED	C	NC #	N/A	Promec: CLIENT:
6	SS AIR SUPPLY TUBING MINIMUM 3/8"	C	NC #	N/A	Promec: CLIENT:
7	MINIMUM STRAIGHT PIPE LENGHT UPSTREAM AND DOWNSTREAM REQUIREMENT	C	NC #	N/A	Promec: CLIENT:
8	POSITIONER, SOLENOID OR LIMIT SWITCH IS UNDAMAGED	C	NC #	N/A	Promec: CLIENT:
9	FLOW ARROW OR ORIENTATION MATCHES PROCESS FLOW	C	NC #	N/A	Promec: CLIENT:
10	OPERATION BLOCK IN VALVE	C	NC #	N/A	Promec: CLIENT:
11	PROCESS CONNECTION ADEQUATE (SCREWED OR FLANGED)	C	NC #	N/A	Promec: CLIENT:
12	CALIBRATION CERTIFICATE AVAILABLE	C	NC #	N/A	Promec: CLIENT:
13	ELECTRICAL SUPPLY COMPATIBLE WITH SOURCE	C	NC #	N/A	Promec: CLIENT:

Comments

Sign Off			
Promec Signature:		**CLIENT Signature:**	
Date:		**Date:**	

Legend					
C	Conformance	**NC**	Non Conformance	**N/A**	Not Applicable
NCR	Non Conformance Report				

AGNICO EAGLE

Vendor Document Status

1 ☐ Proceed to next submission and status.

2 ☐ Proceed with exceptions as noted to next submission and status.

3 ☐ Do not proceed.
Revise as noted and resubmit next submission and status.

4 ☑ Complete, no further submission required.

By: JEAN-FRANCOIS TREMBLAY Date: 2017-06-22

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Agnico Eagle No. 6515-C-270-007-141-TES-0056 R: Sub001

DOCUMENT FOR INFORMATION

NUQSANA PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection & Testing Report

ITR Number: AEM-IN-ITR-001A
ITR Type: FLOW ELEMENT
Contract No.: 6515-C-270-007

AGNICO EAGLE

Tag Number:		**Equipment/ Pipe N°:**		**System:**	
Service:		**Function:**		**Purchase Order:**	
Manufacturer:		**Model:**		**Serial Number:**	
Location Dwg :		**Reference Datasheet:**		**Installation Detail Dwg:**	
Reference Datasheet Number:					

Item N°	Inspection Points	C	NC/ NCR #	N/A	Completed By/ Date
1	INSTRUMENT TAG ATTACHED	C	NC #	N/A	Promec: CLIENT:
2	CABLE TAG ATTACHED	C	NC #	N/A	Promec: CLIENT:
3	DEVICE INSTALLED AS PER INSTALLATION DETAILS, LOCATION OR MANUFACTURER'S DRAWING	C	NC #	N/A	Promec: CLIENT:
4	EQUIPMENT ACCESSIBLE AND EASY TO MAINTAIN	C	NC #	N/A	Promec: CLIENT:
5	EQUIPMENT RACK OR CLAMPING DEVICE ADEQUATE (HEIGHT, SOLIDITY ETC.)	C	NC #	N/A	Promec: CLIENT:
6	WIRING CORRECT AND PROPERLY LABELED	C	NC #	N/A	Promec: CLIENT:
7	MINIMUM STRAIGHT PIPE LENGHT UPSTREAM AND DOWNSTREAM REQUIREMENT	C	NC #	N/A	Promec: CLIENT:
8	GROUNDING OF DEVICE	C	NC #	N/A	Promec: CLIENT:
9	FLOW ARROW OR ORIENTATION MATCHES PROCESS FLOW	C	NC #	N/A	Promec: CLIENT:
10	PROCESS CONNECTION ADEQUATE (SCREWED OR FLANGED)	C	NC #	N/A	Promec: CLIENT:
11	DEFICIENCY LIST ITEMS CLEARED	C	NC #	N/A	Promec: CLIENT:
12	CALIBRATION CERTIFICATE AVAILABLE	C	NC #	N/A	Promec: CLIENT:
13	ELECTRICAL SUPPLY COMPATIBLE WITH SOURCE	C	NC #	N/A	Promec: CLIENT:

Comments

Sign Off			
Promec Signature:		**CLIENT Signature:**	
Date:		**Date:**	

Legend					
C	Conformance	**NC**	Non Conformance	**N/A**	Not Applicable
NCR	Non Conformance Report				

AGNICO EAGLE

Vendor Document Status

1 ☐ Proceed to next submission and status.

2 ☐ Proceed with exceptions as noted to next submission and status.

3 ☐ Do not proceed.
Revise as noted and resubmit next submission and status.

4 ☑ Complete, no further submission required.

By: JEAN-FRANCOIS TREMBLAY Date: 2017-06-22

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Agnico Eagle No. 6515-C-270-007-141-TES-0025 R: Sub002

DOCUMENT FOR INFORMATION

AGNICO-EAGLE MINES Ltd.
Inspection & Testing Report

ITR Number: AEM-IN-ITR-004A
ITR Type: PRESSURE INDICATOR
Contract No.: 6515-C-270-007

NUQSANA PROMEC MINING

AGNICO EAGLE

Tag Number:		**Equipment/ Pipe N°:**		**System:**	
Service:		**Function:**		**Purchase Order:**	
Manufacturer:		**Model:**		**Serial Number:**	
Location Dwg :		**Reference Datasheet:**		**Installation Detail Dwg:**	
Reference Datasheet Number:					

Item N°	Inspection Points	C	NC/ NCR #	N/A	Completed By/ Date
1	INSTRUMENT TAG ATTACHED	C	NC #	N/A	Promec: CLIENT:
2	DEVICE INSTALLED AS PER INSTALLATION DETAILS, LOCATION OR MANUFACTURER'S DRAWING	C	NC #	N/A	Promec: CLIENT:
3	EQUIPMENT ACCESSIBLE AND EASY TO MAINTAIN	C	NC #	N/A	Promec: CLIENT:
4	PROCESS CONNECTION ADEQUATE (SCREWED OR FLANGED)	C	NC #	N/A	Promec: CLIENT:
5	OPERATION BLOCK IN VALVE	C	NC #	N/A	Promec: CLIENT:
6	READING VISIBLE	C	NC #	N/A	Promec: CLIENT:
7	CALIBRATION CERTIFICATE AVAILABLE	C	NC #	N/A	Promec: CLIENT:
8	ELECTRICAL SUPPLY COMPATIBLE WITH SOURCE	C	NC #	N/A	Promec: CLIENT:
9		C	NC #	N/A	Promec: CLIENT:
10		C	NC #	N/A	Promec: CLIENT:
11		C	NC #	N/A	Promec: CLIENT:

Comments

Sign Off			
Promec Signature:		**CLIENT Signature:**	
Date:		**Date:**	

Legend					
C	Conformance	**NC**	Non Conformance	**N/A**	Not Applicable
NCR	Non Conformance Report				

AGNICO EAGLE

Vendor Document Status

1 ☐ Proceed to next submission and status.

2 ☐ Proceed with exceptions as noted to next submission and status.

3 ☐ Do not proceed.
Revise as noted and resubmit next submission and status.

4 ☑ Complete, no further submission required.

By: JEAN-FRANCOIS TREMBLAY Date: 2017-06-22

Review and authorization to fabricate are only for general conformance with the design concept of the Project as expressed in the Contract Documents. Sole responsibility for the accuracy and completeness of this document, including but not limited to dimensions and quantities, remains with the Supplier/Contractor. Agnico Eagle does not warrant the accuracy or completeness of any of the information contained herein, nor does Agnico Eagle authorize or approve any construction means, methods, techniques, sequences or any safety precautions or procedures.

Agnico Eagle No. 6515-C-270-007-141-TES-0026 R: Sub002

DOCUMENT FOR INFORMATION

NUQSANA PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection & Testing Report

ITR Number: AEM-IN-ITR-004B
ITR Type: PRESSURE SAFETY VALVE
Contract No.: 6515-C-270-007

AGNICO EAGLE

Tag Number:		**Equipment/ Pipe N°:**		**System:**	
Service:		**Function:**		**Purchase Order:**	
Manufacturer:		**Model:**		**Serial Number:**	
Location Dwg :		**Reference Datasheet:**		**Installation Detail Dwg:**	
Reference Datasheet Number:					

Item N°	Inspection Points	C	NC/ NCR #	N/A	Completed By/ Date
1	INSTRUMENT TAG ATTACHED	C	NC #	N/A	Promec: CLIENT:
2	DEVICE INSTALLED AS PER INSTALLATION DETAILS, LOCATION OR MANUFACTURER'S DRAWING	C	NC #	N/A	Promec: CLIENT:
3	EQUIPMENT ACCESSIBLE AND EASY TO MAINTAIN	C	NC #	N/A	Promec: CLIENT:
4	FLOW ARROW ON SENSOR OR ORIENTATION MATCHES PROCESS FLOW	C	NC #	N/A	Promec: CLIENT:
5	PROCESS CONNECTION ADEQUATE (SCREWED OR FLANGED)	C	NC #	N/A	Promec: CLIENT:
6	CALIBRATION CERTIFICATE AVAILABLE	C	NC #	N/A	Promec: CLIENT:
7	ELECTRICAL SUPPLY COMPATIBLE WITH SOURCE	C	NC #	N/A	Promec: CLIENT:
8		C	NC #	N/A	Promec: CLIENT:
9		C	NC #	N/A	Promec: CLIENT:
10		C	NC #	N/A	Promec: CLIENT:
11		C	NC #	N/A	Promec: CLIENT:

Comments

Sign Off			
Promec Signature:		**CLIENT Signature:**	
Date:		**Date:**	

Legend					
C	Conformance	**NC**	Non Conformance	**N/A**	Not Applicable
NCR	Non Conformance Report				

NUQSANA PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection & Testing Report

ITR Number: AEM-IN-ITR-003B
ITR Type: LEVEL GAUGE GLASS
Contract No.: 6515-C-270-007

Vendor Document Status
AGNICO EAGLE
1 ☐ Proceed to next submission and status.
2 ☐ Proceed with exceptions as noted to next submission and status
3 ☐ Do not proceed. Revise as noted and resubmit next submission and status.
4 ☑ Complete, no further submission required.
By: JEAN-FRANCOIS TREMBLAY Date: 2017-06-29
Review and authorization to fabrication only for general conformance with the design concept of the Project and compliance to the Contract Documents. Sole responsibility for the accuracy and completeness of the documents, including but not limited to dimensions and quantities, remains with the Supplier/Contractor. Agnico Eagle does not warrant the accuracy or completeness of any of the information contained herein, nor does Agnico Eagle authorize or approve any construction means, methods, techniques, sequences or any safety precautions or procedures.
Agnico Eagle No. 6515-C-270-007-141-TES-0057 #: Sub002
DOCUMENT FOR INFORMATION

AGNICO EAGLE

Tag Number:		**Equipment/ Pipe N°:**		**System:**	
Service:		**Function:**		**Purchase Order:**	
Manufacturer:		**Model:**		**Serial Number:**	
Location Dwg :		**Reference Datasheet:**		**Installation Detail Dwg:**	
Reference Datasheet Number:					

Item N°	Inspection Points	C	NC/ NCR #	N/A	Completed By/ Date
1	INSTRUMENT TAG ATTACHED	C	NC #	N/A	Promec: CLIENT:
2	DEVICE INSTALLED AS PER INSTALLATION DETAILS, LOCATION OR MANUFACTURER'S DRAWING	C	NC #	N/A	Promec: CLIENT:
3	EQUIPMENT ACCESSIBLE AND EASY TO MAINTAIN	C	NC #	N/A	Promec: CLIENT:
4	PROCESS CONNECTION ADEQUATE (SCREWED OR FLANGED)	C	NC #	N/A	Promec: CLIENT:
5	HAVE OPERATION BLOCK IN VALVE	C	NC #	N/A	Promec: CLIENT:
6	READING VISIBLE	C	NC #	N/A	Promec: CLIENT:
7	CALIBRATION CERTIFICATE AVAILABLE	C	NC #	N/A	Promec: CLIENT:
8	ELECTRICAL SUPPLY COMPATIBLE WITH SOURCE	C	NC #	N/A	Promec: CLIENT:
9		C	NC #	N/A	Promec: CLIENT:
10		C	NC #	N/A	Promec: CLIENT:
11		C	NC #	N/A	Promec: CLIENT:

Comments

Sign Off			
Promec Signature:		**CLIENT Signature:**	
Date:		**Date:**	

Legend					
C	Conformance	**NC**	Non Conformance	**N/A**	Not Applicable
NCR	Non Conformance Report				

AGNICO EAGLE

Vendor Document Status

1 ☐ Proceed to next submission and status.

2 ☐ Proceed with exceptions as noted to next submission and status.

3 ☐ Do not proceed.
Revise as noted and resubmit next submission and status.

4 ☑ Complete, no further submission required.

By: Jean-Francois Tremblay Date: 2017-05-02

Review and authorization to fabricate are only for general conformance with the design concept of the Project as expressed in the Contract Documents. Sole responsibility for the accuracy and completeness of this document, including but not limited to dimensions and quantities, remains with the Supplier/Contractor. Agnico Eagle does not warrant the accuracy or completeness of any of the information contained herein, nor does Agnico Eagle authorize or approve any construction means, methods, techniques, sequences or any safety precautions or procedures.

Agnico Eagle No. 6515-C-270-007-141-TES-0012 R: Sub001

DOCUMENT FOR INFORMATION

NUQSANA PROMEC MINING

AGNICO-EAGLE MINES Ltd.
Inspection & Testing Report

ITR Number: AEM-EL-ITR-005
ITR Type: MOTOR
Contract No.: 6515-C-270-007

AGNICO EAGLE

Tag Number:		**Equipment/ Pipe N°:**		**System:**	
Service:		**Function:**		**Purchase Order:**	
Manufacturer:		**Model:**		**Serial Number:**	
Location Dwg :		**Reference Datasheet:**		**Installation Detail Dwg:**	
Reference Datasheet Number:					

Item N°	Inspection Points	C	NC/ NCR #	N/A	Completed By/ Date
1	EQUIPEMENT ACCESSIBLE AND EASY TO MAINTAIN	C	NC #	N/A	Promec: CLIENT:
2	NAME PLATE DATA AGREES WITH MOTOR DATA SHEET	C	NC #	N/A	Promec: CLIENT:
3	MOTOR ENCLOSURE TYPE IS SUITABLE FOR USE IN AREA CLASSIFICATION	C	NC #	N/A	Promec: CLIENT:
4	GROUNDING CONDUCTORS INSTALLED AND CONNECTED (4/ 0 for motor over 100 HP)	C	NC #	N/A	Promec: CLIENT:
5	MOTOR HAS BEEN INSULATION RESISTANCE TESTED (Megger)	C	NC #	N/A	Promec: CLIENT:
6	MOTOR TERMINATIONS HAVE BEEN PROPERLY MADE UP	C	NC #	N/A	Promec: CLIENT:
7	ROTATION CHECKED	C	NC #	N/A	Promec: CLIENT:
8	DEFICIENCY LIST ITEMS CLEARED	C	NC #	N/A	Promec: CLIENT:

Comments

Sign Off			
Promec Signature:		**CLIENT Signature:**	
Date:		**Date:**	

Legend					
C	Conformance	**NC**	Non Conformance	**N/A**	Not Applicable
NCR	Non Conformance Report				

AGNICO EAGLE

Vendor Document Status

1 ☐ Proceed to next submission and status.

2 ☐ Proceed with exceptions as noted to next submission and status.

3 ☐ Do not proceed.
Revise as noted and resubmit next submission and status.

4 ☑ Complete, no further submission required.

By: Jean-Francois Tremblay Date: 2017-05-02

Review and authorization to fabricate are only for general conformance with the design concept of the Project as expressed in the Contract Documents. Sole responsibility for the accuracy and completeness of this document, including but not limited to dimensions and quantities, remains with the Supplier/Contractor. Agnico Eagle does not warrant the accuracy or completeness of any of the information contained herein, nor does Agnico Eagle authorize or approve any construction means, methods, techniques, sequences or any safety precautions or procedures.

Agnico Eagle No. 6515-C-270-007-141-TES-0018 R: Sub001

DOCUMENT FOR INFORMATION

Agnico-Eagle Mines Ltd.
Miscellaneous Field Report

ITR Number : AEM-GE-ITR-006
Contract no. : C22466T / C22498E

SYSTEM:	TAG NO. :	
LOCATION:	AREA:	UNIT:

DATE	ACTIVITY

PROMEC DESIGNATE - SIGNATURE | TITLE | DATE

CLIENT DESIGNATE - SIGNATURE | TITLE | DATE

AGNICO EAGLE

Vendor Document Status

1 ☐ Proceed to next submission and status.

2 ☐ Proceed with exceptions as noted to next submission and status.

3 ☐ Do not proceed.
Revise as noted and resubmit next submission and status.

4 ☑ Complete, no further submission required.

By: Jean-Francois Tremblay Date: 2017-05-02

Review and authorization to fabricate are only for general conformance with the design concept of the Project as expressed in the Contract Documents. Sole responsibility for the accuracy and completeness of this document, including but not limited to dimensions and quantities, remains with the Supplier/Contractor. Agnico Eagle does not warrant the accuracy or completeness of any of the information contained herein, nor does Agnico Eagle authorize or approve any construction means, methods, techniques, sequences or any safety precautions or procedures.

Agnico Eagle No. 6515-C-270-007-141-TES-0015 R: Sub001

DOCUMENT FOR INFORMATION

Fuel Tanks Piping

Supply and Installation

Punchlist

Document Number : AEM-GE-ITR-003

Contract Number : C22466T / C22498E

Equipment/System description:

ITEM No	DESCRIPTION	CAT 1	CAT 2	CAT 3	COMMENTS	COMPLETED
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

CAT 1 = Effects commissioning
CAT 2 = Effects operation
CAT 3 = Post operation

TO BE VALIDATED

AT A LATER DATE

AGNICO EAGLE

Vendor Document Status

1 ☐ Proceed to next submission and status.

2 ☐ Proceed with exceptions as noted to next submission and status.

3 ☐ Do not proceed.
Revise as noted and resubmit next submission and status.

4 ☑ Complete, no further submission required.

By: Jean-Francois Tremblay Date: 2017-05-02

Review and authorization to fabricate are only for general conformance with the design concept of the Project as expressed in the Contract Documents. Sole responsibility for the accuracy and completeness of this document, including but not limited to dimensions and quantities, remains with the Supplier/Contractor. Agnico Eagle does not warrant the accuracy or completeness of any of the information contained herein, nor does Agnico Eagle authorize or approve any construction means, methods, techniques, sequences or any safety precautions or procedures.

Agnico Eagle No. 6515-C-270-007-141-TES-0016 R: Sub001

DOCUMENT FOR INFORMATION

Date: _____

To: _____

Project No: _____

Contract No: _____

Contract Title: _____

Contractor: _____

We, _____ (Contractor's Name), the Contractor for the above described contract, hereby certify that we have reviewed the Contract Documents pertaining to:

Contract No.: _____

Contract Name: _____

Partial Completion Certificates: _____

and having physically inspected the Work performed, do hereby file claim for a notice of Final Completion.

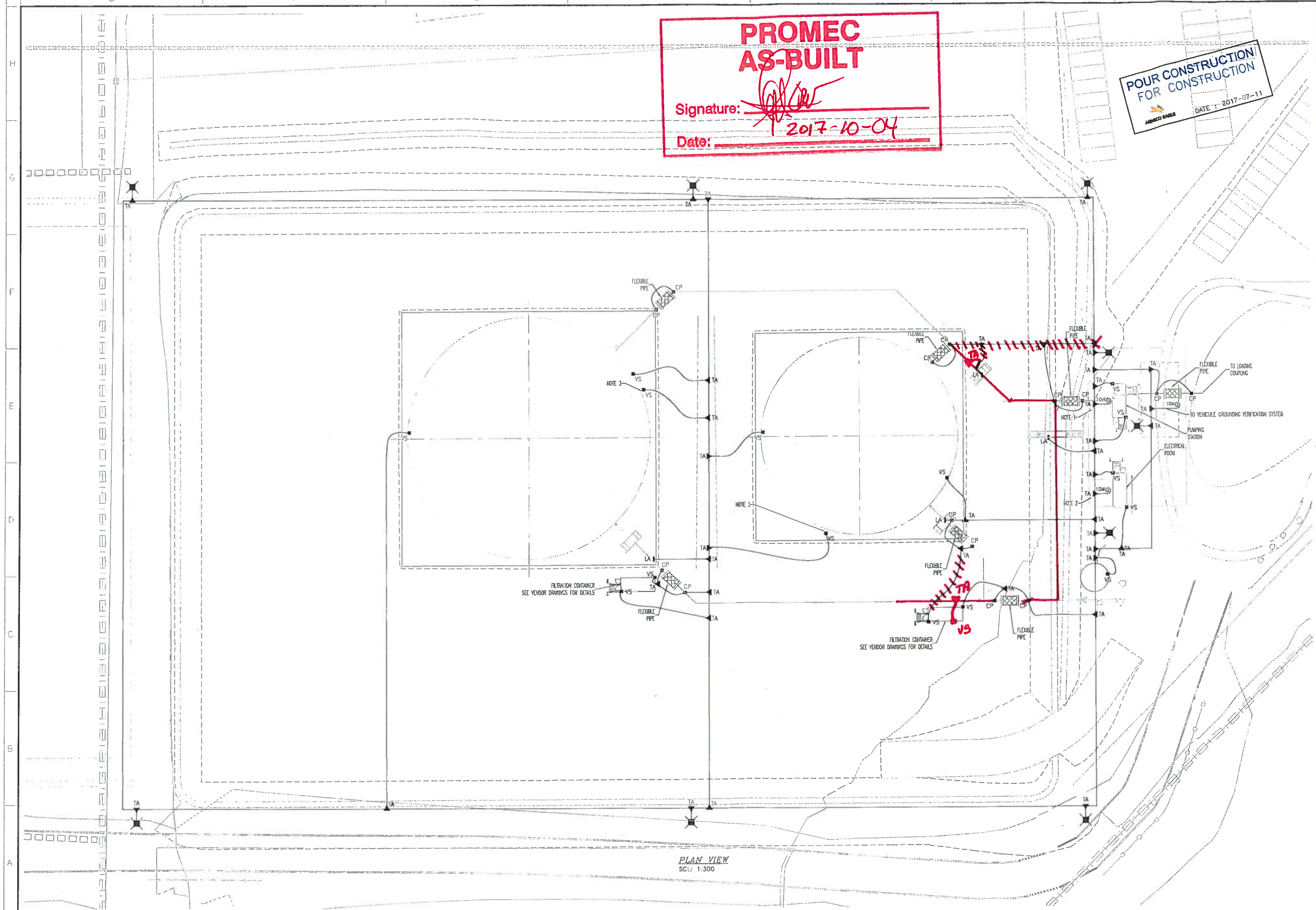
I do declare that I am, _____ (Responsible's Name), HAVING AUTHORITY FROM MY COMPANY TO PETITION FOR THE ABOVE REFERRED TO FINAL COMPLETION NOTICE.

Signature: _____

Name: _____

Title: _____

NO. DESSIN DRAWING NO. 65-116-275-201_R0



WORK AREA

WSP

1075, 3e AVENUE EST
VAL-D'OR (QUÉBEC) CANADA J9P 0J7
TÉL.: 819 825-4274 | TÉLÉC.: 819 824-1514 | WWW.WSPGROUP.COM
Réf. 151-06440-40

NOTES GÉNÉRALES / GENERAL NOTES

1. GROUND EQUIPMENT INSIDE THE PUMPING STATION AT THE CONNECTION POINT.
2. GROUND THE MAIN SAFETY SWITCH IN THE ELECTRICAL ROOM CONTAINER.
3. GROUND THE STAIRWELL OF THE TANK.

- GROUND ALL THE PROTECTION BOLLARDS.
- GROUND ALL METALLIC ELEMENTS IN THE RETENTION BASIN AREA AND IN TRUCK LOADING AREA.
- THE LOCATION OF THE GROUND CONNECTIONS AND CONDUCTORS ARE APROXIMATIVE AND SHALL BE COORDINATED WITH OTHER CONTRACTORS.
- THE LOCATION OF CONTAINERS SHALL BE COORDINATED WITH OTHER CONTRACTORS.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
GROUNDING LAYOUT	65-103-275-201
LEGEND, TABLES & DETAILS	65-116-275-200

AGNICO EAGLE

REV	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
0	2017-07-11	ISSUED FOR CONSTRUCTION	F.M.G.	L.S.	

REVISIONS

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
275 – POWER ELECTRICAL
GROUNDING LAYOUT
PLAN VIEW

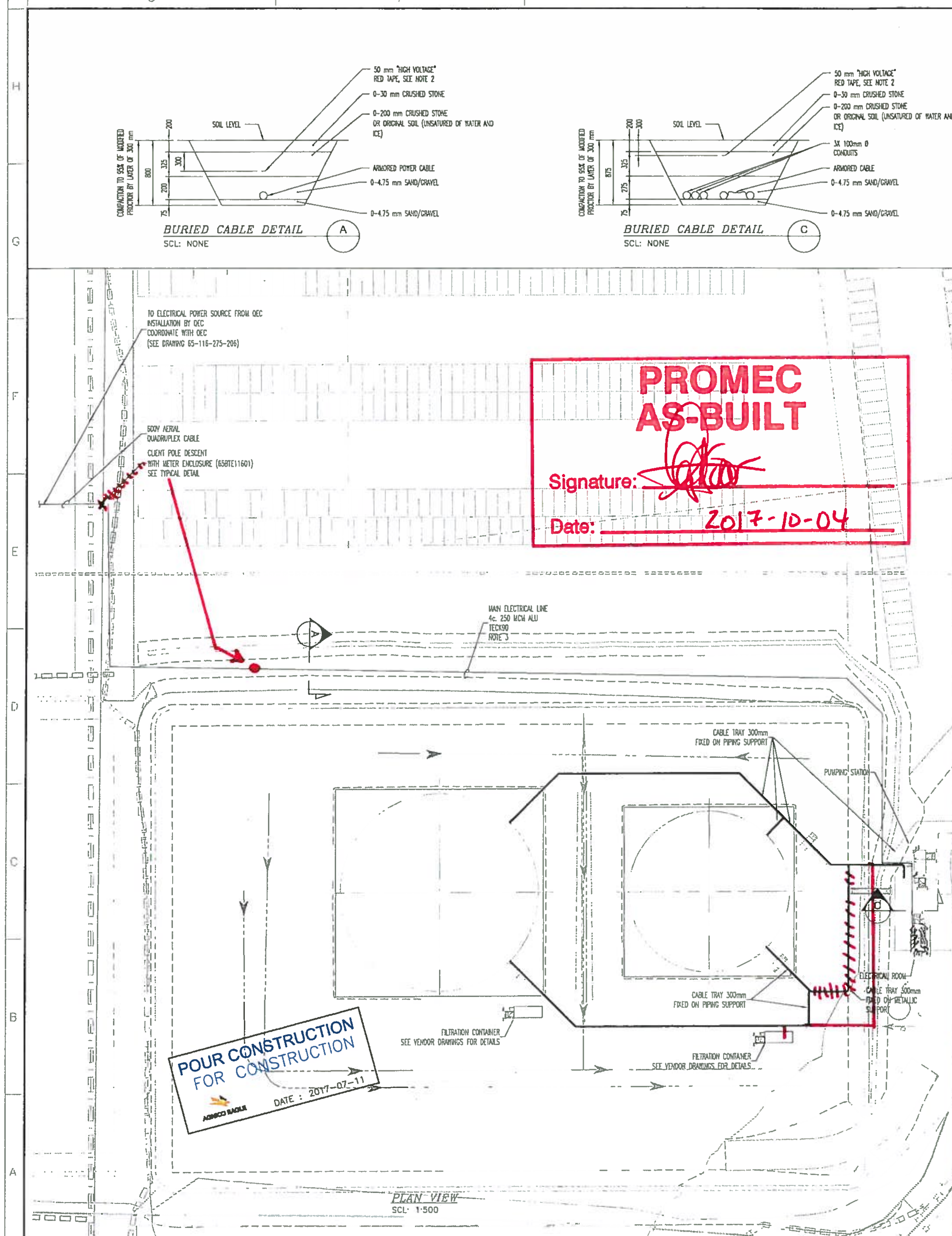
		DATE
DESSINÉ PAR / DRAWN BY	RÉMI HÉNAULT, Tech.	2016-06-22
VÉRIFIÉ PAR / CHECKED BY	RÉMI HÉNAULT, Tech.	2016-06-22
APPROUVÉ PAR / APPROVED BY	LUC SÉNÉCAL, P.Eng.	2017-07-11
ÉCHELLE / SCALE	INDICATED	2016-01-25

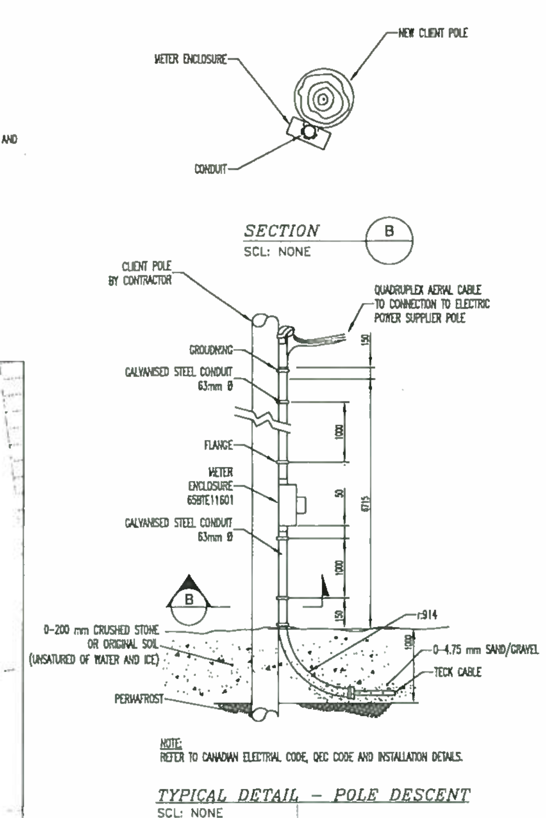
NO. DESSIN / DRAWING NO. 65-116-275-201

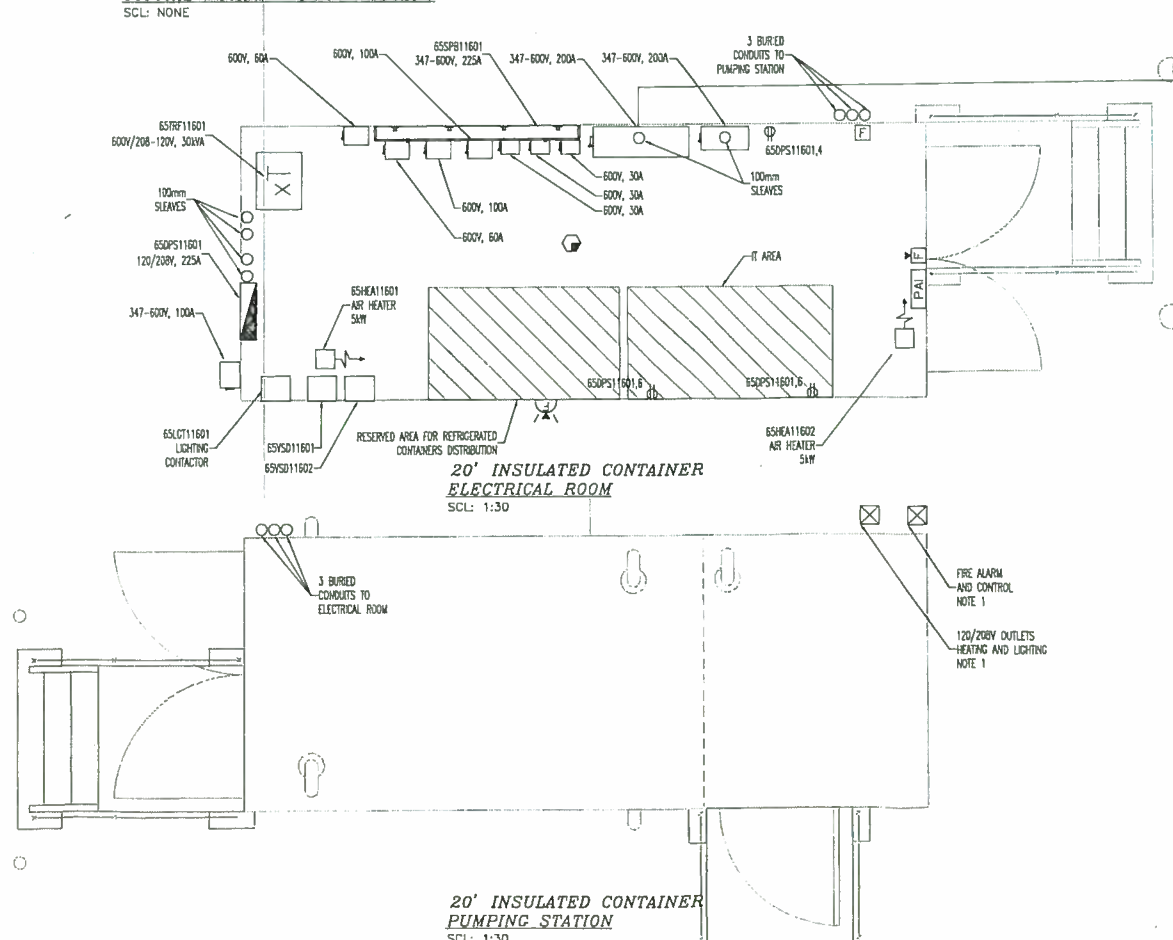
NO. PROJET / PROJECT NO.	RÉVISION	FEUILLE / SHT
6515	0	1/1

FILE NO. 65-116-275-201_R0.dwg

NO. DESSIN / DRAWING NO. 65-116-275-202_R0







PANEL No. : 65DPS11601

Tension:	120 208 Volts
Powered by:	TRANSFORMER 30kVA
Installation:	SURFACE
Location:	ELECTRICAL ROOM CONTAINER
Type:	NQ442L2C

Enclosure type:	NEMA 1
Main breaker:	-
No. of circuits:	42 CCTs
Bars:	225 A
Ampacity:	10 kA

Local and description	TYPE REF	TYPE QTY	WATTS	BREAK TYPE	BREAK AMP	CT #		CT #	BREAK AMP	BREAK TYPE	WATTS	TYPE QTY	TYPE REF	Local and description
LIGHTING FIXTURE TANK #2	L	7	241		15	1	A	2	15		240	2	P	OUTLET PUMPING STATION
	L	7	242			3	B	4	15		120	1	P	OUTLET ELECTRICAL ROOM
L. CONT. CTRL FEEDER	L	1	37		15	5	C	6	15		240	2	P	O. ELEC. ROOM IT AREA 103
LIGHT./ EMER. LIGHT. PUMP.STATIO	L	5	216		15	7	A	8	15		400	1	O	CABINET 65PLC11601
LIGHT./ EMER. LIGHT. ELEC. ROOM	L	4	180		15	9	B	10	30		1000	1	H	65HEA11603
L. FILTRATION CONTAINER TANK #1	L	3	144		15	11	C	12			1000	1	H	
LIGHTING FIXTURE TANK #1	L	7	241		15	13	A	14	15		888	2	M	MOT.OP. VALVES FEEDER
	L	7	242			15	B	16	15		200	1	P	O.UTILITY CAB.65PLC11601
L.TANK#1 / TANK #2 GROUND FLOO	L	4	138		15	17	C	18	15		100	1	O	INSTRUMENT
	L	4	138			19	A	20	15		50	1	M	VEN. FLT. CONTAINER. TANK #1
L. OUT.ELEC.ROOM / OUT.PUMP.ST	L	7	241		15	21	B	22	15		50	1	M	VEN. FLT. CONTAINER. TANK #2
	L	7	242			23	C	24	15					
L. FILTRATION CONTAINER TANK #2	L	2	144		15	25	A	26	15					
65HEA11605 FILTRATION	H	1	2500		30	27	B	28	15					
CONTAINER TANK #1	H	1	2500			29	C	30	15					
65HEA11606 FILTRATION	H	1	2500		30	31	A	32	15					
CONTAINER TANK #1	H	1	2500			33	B	34	15					
65HEA11607 FILTRATION	H	1	2500		30	35	C	36	15					
CONTAINER TANK #2	H	1	2500			37	A	38	15					
65HEA11608 FILTRATION	H	1	2500		30	39	B	40	15					
CONTAINER TANK #2	H	1	2500			41	C	42	15					

TYPE (REF)	Total(W)	Qty
(L) Lighting	2446	13
(P) Outlet	800	4
(H) Heating	22000	10
(M) Motors	988	3
(W) Water heater	0	0
(O) Others	500	2

TYPE (REF)	Qty (ref)
(S) Spare	0

	Watts	Amp
Phase A	7558	62.98
Phase B	6775	51.46
Phase C	8401	78.34
Total R	26734	74.21

WSP

1075, 3e AVENUE EST
VAL-D'OR (QUÉBEC) CANADA J9P 0J7
TÉL. : 819 825-4274 | TÉLÉC. : 819 824-1514 | WWW.WSPGROUP.COM
Ref. 151-08440-40

NOTES GÉNÉRALES / GENERAL NOTES

1. THE PUMPING STATION CONTAINER COMES PREWIRED WITH THOSE JONCTION BOXES. ELECTRICAL CONTRACTOR SHALL CONNECT THOSE JONCTION BOXES TO THE RIGHT SERVICES IN THE ELECTRICAL CONTAINER. ALL CABLES BETWEEN CONTAINERS SHALL BE TECK TYPE AND INSTALLED BURIED IN TRENCH. INSTALL 3X 100mm Ø CONDUITS FOR FUTURE CABLES.
2. THE RED TAPES SHALL BE INSTALLED ABOVE THE ELECTRICAL CABLES AND FOLLOW ALL THE BURIED PART OF THEM.
3. COORDINATE THE EXACT LOCATION AND DEPTH OF THE MAIN FEEDER CABLE.

- THE LOCATION OF PIPING IS APPROXIMATE AND SHALL BE COORDINATE WITH OTHER MECHANICAL DRAWINGS.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
EQUIPMENT LAYOUT, DETAILS AND SERVICES PANEL	65-103-275-202
LIGHTING	65-116-285-201
LEGEND, TABLES & DETAILS	65-116-275-200
SINGLE LINE DIAGRAM	65-116-275-203

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
0	2017-07-11	ISSUED FOR CONSTRUCTION	F.M.G.	L.S.	

REVISIONS

2017-07-11

TITRE / TITLE
AGNICO EAGLE – MELIADINE DIVISION
116 – FUEL TANK FARM
275 – POWER ELECTRICAL
EQUIPMENT LAYOUT, DETAILS AND SERVICES PANEL
PLAN VIEW

DESSINÉ PAR / DRAWN BY	BRIAN FILDES, Tech.	2016-06-22
VÉRIFIÉ PAR / CHECKED BY	RÉMI HÉNAULT, Tech.	2016-06-22
APPROUVÉ PAR / APPROVED BY	LUC SÉNÉCAL, P.Eng.	2017-07-11
ÉCHELLE / SCALE	INDICATED	DATE 2016-01-25
NO. DESSIN / DRAWING NO.	65-116-275-202	
NO. PROJET / PROJECT NO. 6515	REVISION 0	FEUILLE / SHT 1 / 1

FILE 65-116-275-202_R0.d

APPENDIX L

Inspection Report – Non-Compliance Reports

AGNICO EAGLE

NON-CONFORMANCE/CORRECTIVE ACTION REPORT

Document Control Code: 6515-C-260-002-NCR-001

AEM SUPERVISOR - INSPECTOR

FROM SUPPLIER	FROM SITE	☑ NRC N°:	1	REV :	0
		☐ CAR N°:			

PROJECT :	MELIADINE	AEM PROJECT N°:	6515
CONTRACTOR:	INUKSHUK	CONTRACT N°:	6515-C-260-002
EQUIPMENT :		SUBCONTRACTOR:	SUB ARC WELDING

☑ NON-COMPLIANCE DESCRIPTION ☐ CORRECTIVE ACTION DESCRIPTION

Leak issue on the fuelling tank nozzle on tank no 2, 13.5ML
Fuel coming out from pressure test port on fuelling nozzle neck reinforcement plate.
How this leak happened ?
How permanent repair on the leak can be done in summer 2018 ?
What is the procedure and action plan ?

AEM BY	SIGNATURE	DATE
Bruno Roy		

SUPPLIER OR CONTRACTOR (VENDOR)

☐ PROPOSAL FOR CORRECTION (VENDOR) ☐ CAUSE DESCRIPTION (*ANNEX ADDITIONAL SHEETS TO THE DOCUMENT IF NOT ENOUGH SPACE*)

VENDOR BY : SIGNATURE DATE

AEM Package or resident engineer

TREATMENT TO BE APPLIED TO NON-COMPLIANCE IS (*ANNEX ADDITIONAL SHEETS TO THE DOCUMENT IF NOT ENOUGH SPACE*)

ACCEPT AS IS — COMMENTS

REDO TO MEET REQUIREMENTS

CORRECT WITH OR WITHOUT REQUEST FOR CONCESSION

PROPOSAL REJECTED; CORRECT ACCORDING TO COMMENTS

REJECTED

RETURN TO SUBCONTRACTOR

AEM BY : SIGNATURE DATE

CLIENT BY : SIGNATURE DATE

AEM Supervisor - Inspector

TREATMENT VERIFICATION

CORRECTED ➢ WITH REQUEST FOR CONCESSION
➢ WITHOUT REQUEST FOR CONCESSION
CORRECTED TO MEET THE REQUIREMENTS

ACCEPTED AS IS
DROPPED FOR OTHER APPLICATIONS
REJECTED
RETURNED TO SUBCONTRACTOR

RESULT : ACCEPTED REJECTED NEW TREATMENT REQUIRED

CORRECTIVE ACTION REQUIRED Yes ☐ No ☐

Comments :

COSTS :

PROJECT MANAGER SIGNATURE DATE

HOURS :

CLIENT SIGNATURE (IF REQUIRED) DATE

AEM QAQC

REPORT CLOSED BY : Signature Date

AGNICO EAGLE

NON-CONFORMANCE/CORRECTIVE ACTION REPORT

Document Control Code: 6515-C-260-002-NCR-002

AEM SUPERVISOR - INSPECTOR

FROM SUPPLIER	FROM SITE	☑ NRC N°:	2	REV :	0
		☐ CAR N°:			

PROJECT :	MELIADINE	AEM PROJECT N°:	6515
CONTRACTOR:	INUKSHUK	CONTRACT N°:	6515-C-260-002
EQUIPMENT :		SUBCONTRACTOR:	

☑ NON-COMPLIANCE DESCRIPTION ☐ CORRECTIVE ACTION DESCRIPTION

Leak was observed between Man hole welding joint to reinforcement plate. on tank no 2, 13.5ML
How this leak happened ?
How permanent repair on the leak can be done in summer 2018 ?
What is the procedure and action plan ?

AEM BY	SIGNATURE	DATE
Bruno Roy		

SUPPLIER OR CONTRACTOR (VENDOR)

☐ PROPOSAL FOR CORRECTION (VENDOR) ☐ CAUSE DESCRIPTION (*ANNEX ADDITIONAL SHEETS TO THE DOCUMENT IF NOT ENOUGH SPACE*)

VENDOR BY : _____ SIGNATURE _____ DATE

AEM Package or resident engineer

TREATMENT TO BE APPLIED TO NON-COMPLIANCE IS (*ANNEX ADDITIONAL SHEETS TO THE DOCUMENT IF NOT ENOUGH SPACE*)

	COMMENTS
ACCEPT AS IS	
REDO TO MEET REQUIREMENTS	
CORRECT WITH OR WITHOUT REQUEST FOR CONCESSION	
PROPOSAL REJECTED; CORRECT ACCORDING TO COMMENTS	
REJECTED	
RETURN TO SUBCONTRACTOR	

AEM BY : _____ SIGNATURE _____ DATE

CLIENT BY : _____ SIGNATURE _____ DATE

AEM Supervisor - Inspector

TREATMENT VERIFICATION

CORRECTED ➢ WITH REQUEST FOR CONCESSION
➢ WITHOUT REQUEST FOR CONCESSION
CORRECTED TO MEET THE REQUIREMENTS
ACCEPTED AS IS
DROPPED FOR OTHER APPLICATIONS
REJECTED
RETURNED TO SUBCONTRACTOR

RESULT : ACCEPTED REJECTED NEW TREATMENT REQUIRED

CORRECTIVE ACTION REQUIRED: Yes ☐ No ☐

Comments :

COSTS :

HOURS :

PROJECT MANAGER SIGNATURE _____ DATE

CLIENT SIGNATURE (IF REQUIRED) _____ DATE

AEM QAQC

REPORT CLOSED BY : _____ Signature _____ Date

APPENDIX M

Construction Summary for Rankin Inlet Itivia Site Fuel Storage and Containment Facilities

TETRA TECH

Civil Earthworks Construction Summary – Rankin Inlet Tank Farm

- Construction management and quality assurance performed by Agnico Eagle Construction
- Primary civil construction contractor was MTKSL
- Subcontractors included: Texel Geosol for liner installation and liner QC; Glacier Blasting and Shoring for drill/blast operations
- Crushing operations at Itivia Quarry contracted to Inukshuk Contracting Ltd.
- All survey conducted by Hamel Arpentage
- Explotech conducted pre-and post-inspection surveys of infrastructure surrounding the tank farm and quarry sites. Explotech also installed/monitored four (4) seismographs located in representative areas around the Tank Farm blasting area, with the closest located at the Department of National Defense barracks, in order to perform monitoring of every blast.

1. Site Preparation (April 25 to May 2)

- Multiple discussions held with airport authority, community and Department of National Defense stakeholders prior to project commencement
- Temporary access road to tank farm area constructed of overburden from first blasts and later built up with rock from Itivia Quarry
- Snow cleared from tank farm footprint in advance of drill/blast operations
- OG surveyed of tank farm footprint

2. Drill/Blast (April 27 to June 6)

- All blast patterns designed by MTKSL and reviewed/accepted by Explotech
- Glacier drill/blast contractor – all explosive products supplied by AEM
- Controlled blasting procedures (all blasts were matted) were used for all blasts to control flyrock and limit overpressures (dBL, noise nuisance)
- Between 2 and 3 blasts per day were conducted within the tank farm footprint, for a total of 88 blasts
- Pre-shear blasting was conducted along both the north and west walls to control the rock quality of the high walls
- Additional drilling was required to remove bedrock “tights” within the pedestal and adjacent floor areas of the 20 ML tank (July 3)

3. Excavation (May 1 to June 25)

- Design assumed bedrock depth within the Tank Farm footprint to be approximately 2 m below the ground surface – construction planning and scheduling was therefore based on having an essentially balanced cut/fill operation, with the blasted bedrock to be used to produce the granular fill materials, in addition to providing a sufficient source of feed for creation of the laydown area
- However, as discussed in RFI’s 05, 06 and 08, bedrock was significantly deeper than anticipated over most of the containment area
- The actual quantities of overburden removed from the footprint area were more than triple the design estimated quantities (43,445 m3 actual vs 14,300 m3 design)

- Shortage of bedrock within the footprint area required use of alternative sources of feed material to produce the needed granular fill
- In addition, much of the overburden within the footprint area was assessed as being ice-rich silt till and was deemed unsuitable for backfill material within the planned laydown area. Disposal of this material occurred either within the designated waste dump area north of the laydown or within "deep" fills (greater than 1.5 m) within the laydown 3 area.
- Additional excavation efforts were therefore required to reach either a competent bedrock surface (13.5 ML tank pedestal) or a minimum 1.5 m additional depth below the design depth and backfilled with 0-200 mm material within the affected containment area in order to minimize thaw settlement which could potentially impact the liner

4. Rock Face Scaling (June 19 – June 22)

- As excavation progressed in depth, the north and west rock walls were exposed
- Although pre-shear blasting controlled some of the end product of the walls, the final high walls required cleaning/scaling due to the blocky nature of the rock
- Inspections of the free face were conducted by AEM Engineering personnel on three occasions: pre-scaling (June 19), post-scaling (June 22) and a final inspection on June 29
- 2 large rock blocks identified defined by sub-horizontal faults filled with ice-rich silt gouge
- Faulting largely covered with the containment berm which is expected to provide both a buttressing effect and some thermal protection
- Survey monuments to be installed to monitor movements

5. Overburden Pushback and Protection Berm (July 15 to August 1)

- Overburden removed from bedrock for a distance of 3 m from the edge of the north high wall
- In those areas where bedrock was either not encountered or was a lower elevation than expected from design n the high wall (RFI 09), the overburden was sloped back at a 2H:1V angle and protected with a fillet of thaw-stable 0-600 mm minus blast rock material.
- The 600 mm minus tied into both the containment berm and the protection berm around the excavation area
- Protection berm consisted of till removed from the tank farm excavation and the core covered with 0-600 mm minus blast rock material.

6. Under Liner Material Placement (June 10 to September 26)

7.1 Floor

- To compensate for the lack of bedrock, protect the underlying permafrost and provide a trafficable surface for haul traffic, placement of 600 mm minus blast rock began in the southwest and southern areas of the containment area
- Material placement closely followed the additional excavation of this area to avoid unnecessary disturbance of the thermal regime
- The 600 mm minus was placed in controlled lifts and compacted with the 10-tonne vibratory compactor
- Backfill within the tank pedestals consisted of placement of 0-200 mm material directly on bedrock – 0-200 mm was placed in controlled lifts and compacted with the 10-tonne vibratory compactor

- Within the tank pedestals and the 13.5 ML tank containment area, 30 mm minus under liner was placed on either the 0-600 mm material (containment area) or 0-200 mm (pedestals). The 0-30 mm material was placed in controlled lifts and compacted with the 10-tonne vibratory compactor
- Under liner material placement in the containment area around the 20 ML tank was revised as per RFI 12, with 100 mm of the 30 mm minus under liner bedding being replaced with sand
- As RFI 12 was released during placement of 30 mm minus under liner material, 100 mm was removed and replaced with sand.

6.2 Containment Berm (June 24 to September 26)

- The 600 mm minus core was placed in controlled, compacted lifts, then the 30 mm minus placed with an excavator on top and bucket tamped into place.

7. Liner System Installation (July 14 to October 6)

- Solmax Textured 60 mil HDPE installed throughout and 540 g/m2 geotextile
- Full order was purchased by AEM in 2015 and was stored outside in MTKSL's equipment yard prior to installation - approximately 15% of this order was discovered to have been damaged and was unusable due to improper storage and handling procedures
- Installation of the liner system occurred in two phases in order to facilitate full construction of the 13.5 ML tank and partial construction of the 20 ML tank in 2017
- Liner on the tank pedestal footprints was completed first (July 14 to July 16), the 13.5 ML tank and first three rings of the 20 ML tank were erected, then liner installation proceeded throughout the remainder of the containment area (September 12 to October 6)
- Liner on the tank pedestals was protected with plywood after installation and before the remaining liner was installed
- Liner installation QA was carried out by AEM and quality control testing by Texel

8. Tank Erection (July 29 to September 8)

- Civil earthworks within the Tank Farm area was generally suspended during erection of the 13.5 ML tank and partial erection of the 20 ML tank

9. Over Liner Material Placement (July 16 to October 9)

- Over liner material placement on the tank pedestals and in the 13.5 ML tank containment area followed the original design specification of placement of 30 mm minus placed on geotextile placed on HDPE
- Sand directly under the tank footprints was placed by Inukshuk July 27 to August 1. As per ECN-02 and RFI-13, the 1V:120H slope under the tanks was backfilled entirely with sand.
- Following RFI 12 however, within the 20 ML tank containment area, 100 mm of sand was placed directly on the HDPE, covered with geotextile, then covered with 200 mm of 30 mm minus

Equipment Used for Construction (MTKSL):

- CAT D8 Bulldozer
- CAT D6 Bulldozer
- CAT 330L Excavator
- CAT 345C Excavator
- CAT 320 Excavator
- CAT 980 Loader
- CAT IT62
- CAT skid steers
- CAT 740 articulated haul trucks
- CAT CS56 10-ton vibratory drum compactor
- HAMM 5-ton vibratory drum compactor
- Various small hand-pushed compactors

QA/QC Summary

1. Bedrock conditions under the tank pedestal areas were verified by AEM.

2. Suitability of overburden material for use as laydown backfill/waste was assessed by AEM. When deemed unsuitable for use as laydown backfill, the overburden was hauled to the overburden waste disposal area immediately south of the Laydown 3 area.

3. 600 mm minus and 200 mm minus was placed according to the Technical Specifications for Civil Earthworks Revision 3 (6515-GNS-014, June 6, 2017). Compaction efforts consisted of a minimum number (4) of passes with a 10-tonne vibratory compactor. Suitability for placement and compaction efforts were assessed visually and approved by AEM.

4. 30 mm minus was placed and compacted (under liner) according to the Technical Specifications for Civil Earthworks (6515-GNS-014, June 6, 2017). Compaction efforts consisted of a minimum number (4) of passes with a 10-tonne vibratory compactor and were visually assessed and approved by AEM.

5. A total of thirty (30) samples of 30 mm minus crushed material were tested for moisture content and particle size analysis (results attached). Due to the nature of the feed material (blasted quarry rock), the material was generally low on particles sized between 0.63 mm and 14 mm with a low average moisture content (0.7%)

6. Texel Geosol was responsible for all quality control of the liner installation process.

APPENDIX N

Particle Size Summary – 30 mm minus

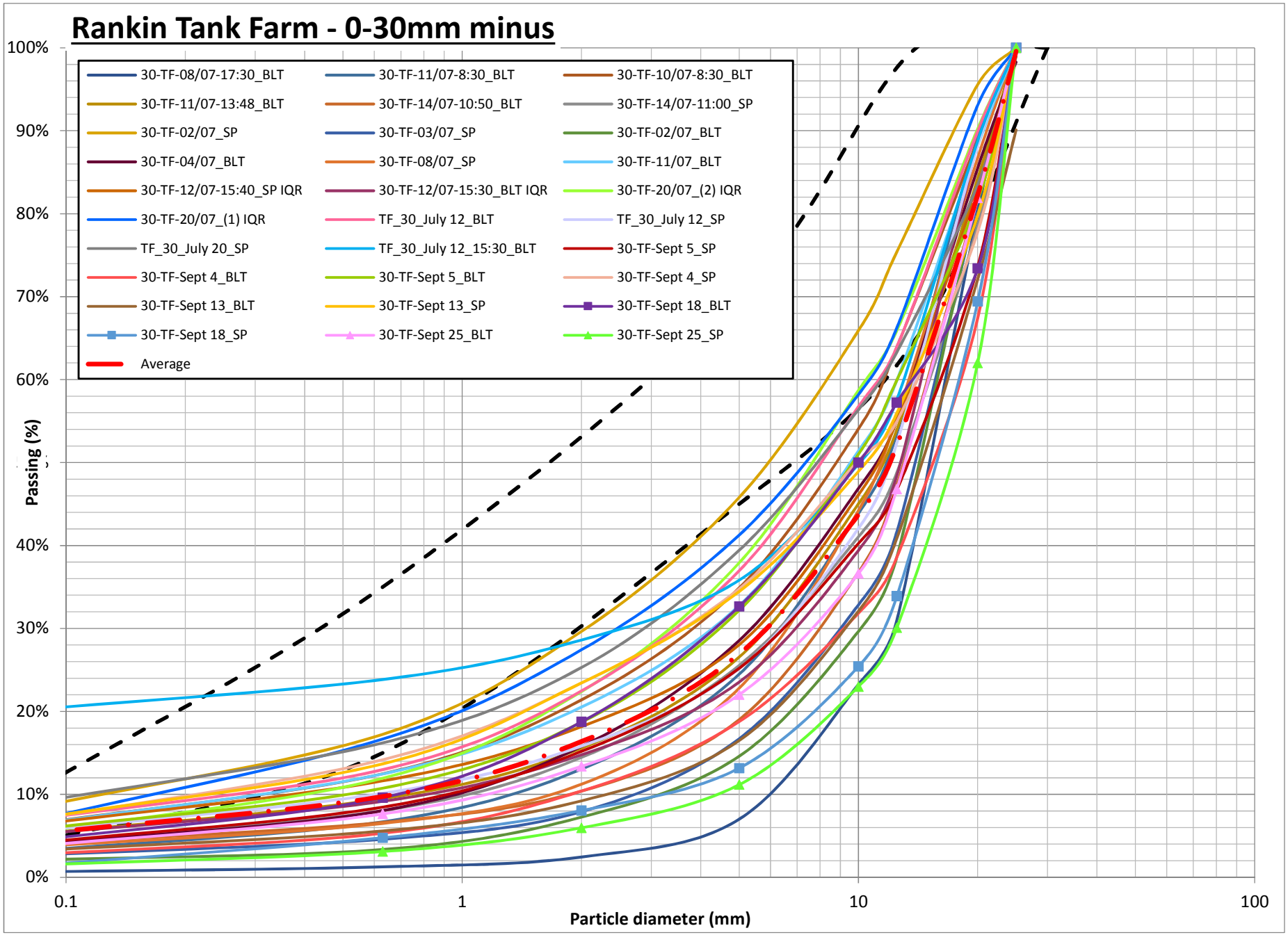

Rankin Tank Farm - 0-30mm minus
100%
90%
80%
70%
60%
40%
30%
20%
10%
0%
Passing (%)
0.1
1
10
100
Particle diameter (mm)
30-TF-08/07-17:30_BLT
30-TF-11/07-8:30_BLT
30-TF-10/07-8:30_BLT
30-TF-11/07-13:48_BLT
30-TF-14/07-10:50_BLT
30-TF-14/07-11:00_SP
30-TF-02/07_SP
30-TF-03/07_SP
30-TF-02/07_BLT
30-TF-04/07_BLT
30-TF-08/07_SP
30-TF-11/07_BLT
30-TF-12/07-15:40_SP IQR
30-TF-12/07-15:30_BLT IQR
30-TF-20/07_(2) IQR
30-TF-20/07_(1) IQR
TF_30_July 12_BLT
TF_30_July 12_SP
TF_30_July 20_SP
TF_30_July 12_15:30_BLT
30-TF-Sept 5_SP
30-TF-Sept 4_BLT
30-TF-Sept 5_BLT
30-TF-Sept 4_SP
30-TF-Sept 13_BLT
30-TF-Sept 13_SP
30-TF-Sept 18_BLT
30-TF-Sept 18_SP
30-TF-Sept 25_BLT
30-TF-Sept 25_SP
Average

Table 1: Summary of Particle Size Analysis Results - 30 mm minus Rankin Inlet Tank Farm

No.	Sample ID	Sieve Size (mm)								Moisture Content
		25.00	20.00	12.50	10.00	5.00	2.00	0.63	0.08	
1	30-TF-02/07_SP	100.0%	95.6%	75.4%	65.9%	45.8%	29.6%	17.2%	8.2%	0.34%
2	30-TF-03/07_SP	100.0%	81.6%	41.7%	32.8%	16.7%	7.9%	4.6%	2.6%	0.10%
3	30-TF-02/07_BLT	98.9%	82.3%	38.6%	29.7%	14.6%	7.2%	3.4%	2.1%	0.10%
4	30-TF-04/07_BLT	98.3%	85.5%	55.1%	46.9%	28.5%	15.8%	8.0%	3.8%	1.08%
5	30-TF-08/07_SP	100.0%	86.7%	55.5%	44.2%	22.8%	11.2%	6.5%	3.6%	0.22%
6	30-TF-11/07_BLT	100.0%	88.2%	59.9%	51.4%	32.8%	20.5%	12.5%	6.2%	0.29%
7	30-TF-08/07-17:30_BLT	100.0%	80.2%	31.0%	23.3%	7.0%	2.4%	1.3%	0.6%	0.65%
8	30-TF-11/07-8:30_BLT	100.0%	89.4%	53.5%	43.8%	24.5%	13.1%	6.7%	3.1%	0.49%
9	30-TF-10/07-8:30_BLT	100.0%	88.8%	63.9%	54.1%	34.9%	21.4%	12.5%	6.3%	0.71%
10	30-TF-11/07-13:48_BLT	100.0%	84.3%	53.9%	45.0%	26.5%	15.6%	9.5%	5.1%	0.38%
11	30-TF-14/07-10:50_BLT	100.0%	82.1%	47.3%	36.8%	19.0%	10.4%	6.6%	4.0%	0.48%
12	30-TF-14/07-11:00_SP	100.0%	78.6%	48.8%	41.0%	25.6%	14.5%	8.0%	4.0%	0.43%
13	30-TF-12/07-15:40_SP IQR	100.0%	83.2%	55.1%	46.1%	28.0%	18.2%	11.6%	6.2%	0.39%
14	30-TF-12/07-15:30_BLT IQR	100.0%	88.5%	48.4%	39.4%	23.5%	14.8%	9.2%	5.1%	0.44%
15	30-TF-20/07_(1) IQR	100.0%	93.1%	66.2%	58.2%	41.3%	27.4%	16.7%	6.7%	0.73%
16	30-TF-20/07_(2) IQR	100.0%	90.2%	65.9%	58.7%	37.9%	22.4%	11.9%	5.2%	0.73%
17	TF_30_July 12_BLT	100.0%	89.9%	63.9%	56.7%	37.0%	22.5%	13.0%	6.8%	0.80%
18	TF_30_July 12_SP	100.0%	88.2%	52.3%	42.1%	25.2%	15.8%	10.1%	5.5%	0.27%
19	TF_30_July 20_SP	100.0%	83.5%	63.3%	56.4%	39.4%	25.3%	16.2%	8.9%	0.71%
20	TF_30_July 12_15:30_BLT	100.0%	88.8%	57.6%	49.8%	35.8%	28.6%	23.8%	20.2%	0.31%
21	30-TF-Sept 5_SP	100.0%	73.6%	46.7%	40.2%	25.2%	15.2%	8.5%	4.0%	0.34%
22	30-TF-Sept 4_BLT	100.0%	67.4%	38.6%	31.8%	18.8%	10.4%	5.3%	2.7%	0.22%
23	30-TF-Sept 5_BLT	100.0%	81.6%	59.9%	51.0%	32.2%	18.7%	10.7%	5.7%	0.48%
24	30-TF-Sept 4_SP	100.0%	77.8%	55.0%	50.2%	34.8%	23.4%	14.2%	6.8%	1.07%
25	30-TF-Sept 13_BLT	90.1%	72.1%	40.9%	32.1%	16.5%	9.2%	5.6%	3.2%	0.75%
26	30-TF-Sept 13_SP	100.0%	79.8%	56.0%	48.9%	34.5%	23.4%	13.7%	6.9%	0.97%
27	30-TF-Sept 18_BLT	100.0%	73.4%	57.2%	50.0%	32.6%	18.7%	9.6%	4.3%	0.96%
28	30-TF-Sept 18_SP	100.0%	69.4%	33.9%	25.4%	13.2%	8.0%	4.8%	1.4%	3.08%
29	30-TF-Sept 25_BLT	100.0%	81.9%	46.8%	36.6%	22.0%	13.4%	7.6%	3.7%	1.39%
30	30-TF-Sept 25_SP	100.0%	62.0%	30.1%	23.0%	11.2%	6.0%	3.1%	1.4%	1.25%
Average		**99.6%**	**82.3%**	**52.1%**	**43.7%**	**26.9%**	**16.4%**	**9.7%**	**5.1%**	**0.7%**

Required Test Frequency (1/XX)=	500	m3
Design Quantity =	9545	m3
No. Tests Required =	19	

APPENDIX O

Inspection Report – Tank Farm Area Final Wall

RANKIN TANK FARM – FINAL WALL - VISIT REPORT

Date: June 21st, 2017

From: Vanessa Smith

To: Jack Dutil, Mark Long, Stephane Gionest,

Cc: Éric Côté, Philemon Desrochers Gagnon, Philippe Lapointe, Véronique Falmagne, Christopher Penna.

THIS REPORT IS A SUMMARY OF THE RECOMMENDATION MADE TO SUPPORT THE TANK FARM AREA FINAL WALL AS REQUESTED BY THE RANKIN CONSTRUCTION TEAM.

The Rankin fuel tank farm laydown area was visited on Monday June 19, 2017 by Veronique Falmagne, Senior Mining Advisor, Vanessa Smith, Mine Engineer, and Philippe Lapointe, Engineering Superintendent. We were met on site by Stephane Gionet and inspected the northeast wall area. The northwest wall and corner were not cleaned out and were not as visible.

Figure 1 - Inspection area

From what could be observed, the rock quality is good on the northwest wall except near the north corner where a fault zone can be seen. The fault zone seems to be trending Southeast-Northwest approximately parallel to the northwest wall. The corner area appears to be in bad ground and will require further assessment once the blast has been cleared out.

Elsewhere the rock is good and half barrels are clearly visible along the northwest wall and part of the Northeast wall that was exposed. Large blocks will have to be scaled down and at least one area on the northeast wall may require re-blasting.

Recommendations provided during the visit include:

- Scrape and push back overburden at least 5 m from the crest then sloped to 1V:3H as indicated on the plan and covered with rock to maintain long term stability.

- The northwest corner will break back farther due to the fault zone and looks lower than the rest of the wall. In this area it will be necessary to clean out the blast and remove, then slope the broken / weak fault material. The overburden will need to be scraped back and sloped from the final crest location. Therefore it may need to be done in two passes.

- The face should be screened and bolted as a preventive measure to reduce long term deterioration from freeze/thaw action and mitigate liability of loose falling on bystanders. Regardless of the plan to fence the area, the easy accessibility of the site and location within the community puts the area at high risk of trespassing.

A follow-up inspection will be carried out tomorrow, June 22, 2017 to assess the scaling which has been carried out over the past days.

Should you have any question, do not hesitate to contact the Engineering department,

Regards,

Vanessa Smith, P. Eng.
Mine Engineer
Meliadine Project

RANKIN TANK FARM – FINAL WALL INSPECTION #2 - VISIT REPORT

Date: June 29th, 2017

From: Vanessa Smith

To: Jack Dutil, Mark Long, Stephane Gionest,

Cc: Éric Côté, Philemon Desrochers Gagnon, Philippe Lapointe, Véronique Falmagne, Christopher Penna.

THIS REPORT IS A SUMMARY OF THE SECONE INSPECTION CONDUCTED ON JUNE 22ND ONCE SCALING ACTIVIITES WERE COMPLETED IN THE TANK FARM AREA FINAL WALL AS REQUESTED BY THE RANKIN CONSTRUCTION TEAM.

The Rankin fuel tank farm laydown area was visited for a second inspection on Thursday June 22, 2017 following the requested scaling of the final wall area. Stephane Gionet was present for the second inspection of the northeast wall area. The northwest wall and corner were completely cleaned out and visible for this second inspection.

Figure 1 - Inspection area after scaling

Figure 2 - Inspection area after scaling – showing fault

Figure 2 shows some smaller rocks which should be removed as part of the final scaling. The rock quality is good on the northwest wall except near the north corner where a fault zone can be seen. The fault zone seems to be trending Southeast-Northwest approximately parallel to the northwest wall. This area continues to be of concern for the long term stability of the area. This structure has up to 6-inches of frozen gauge within (Figure 3).

Figure 3 – Fault Gauge – measured thickness (Photo taken by J. Pyliuk, Tetratech)

Figure 4 - Inspection area after scaling

Figure 4 shows the size of the blocks which were scaled since the previous inspection allowing for a proper inspection of the area. Figure 5 also shows the amount of scaling conducted; the drill rod was uncovered in the lasted area. The half barrels are clearly visible along the northwest wall and part of the Northeast wall that are fully exposed.

Figure 5 - Inspection area after scaling – corner area

Recommendations provided during the visit include:

- Final scaling for smaller blocks remains to be done.
- Scrape and push back overburden at least 5 m from the crest then sloped to 1V:3H as indicated on the plan and covered with rock to maintain long term stability.
- Screened and bolting of the final wall area remains to the discretion of the construction department and Tetratech. Following the removal of the larger blocks in the area the condition of the area has improved. The area which remains of concern due to deterioration from freeze/thaw action is the fault area. A proposal to create a thermal cap in this area was discussed with Tetratech. This area would have to be cleaned of any loose/melted gauge (pressure washer or other). Then a form would be built to retain the grout within/along the fault area to act as a thermal seal and infill for the open fault.

Should you have any question, do not hesitate to contact the Engineering department,

Regards,

Vanessa Smith, P. Eng.
Mine Engineer
Meliadine Project

APPENDIX P

Inspection Report – Blasting Operation

EXPLOTECH

Specialists in Explosives, Blasting and Vibration
Consulting Engineers

October 6, 2017

Agnico Eagle Mines Ltd.
Meliadine Project
Rankin Inlet, Nunavut, Canada
X0C 0G0

Attention: Mr. Mark Long

Re: Department of National Defence Personal Accommodation Building
Final Report for Blasting Operations for Laydown Yard/Tank Farm and Itivia Pit Quarry
Rankin Inlet, Nunavut
April 25, 2017 to September 28, 2017

Dear Mr. Long,

Please accept this report as a comprehensive synopsis of all actions and items corresponding to the undertaken Blasting Operations for the Laydown Yard/Tank Farm and Itivia Pit Quarry as it directly relates to the Department of National Defence (DND) Personal Accommodation Building located in Rankin Inlet, Nunavut.

As a brief summary, a pre-blast inspection survey of the DND Personal Accommodation Building was completed on April 25, 2017 prior to the start of blasting at the Laydown Yard/Tank Farm. Following the completion of that blasting campaign, a post-blast survey was completed on June 15, 2017. Details on the comparative review between the pre and post blast surveys for the DND Personal Accommodation Building has been included in this report. This report also details the results of the vibration monitoring program developed and implemented in response to the blasting operations for the Laydown Yard/Tank Farm and Itivia Pit Quarry Project in Rankin Inlet, Nunavut. A comprehensive vibration monitoring program involving seismographs installed at representative locations around the blasting areas was in place from April 25, 2017 through September 28, 2017, which included a seismograph specifically installed at the DND property in question from April 25, 2017 to June 15, 2017. This program was implemented to measure vibrations adjacent to the blasting operations in order to guard against possible adverse impacts on the surrounding structure.

Historically, blasting operations attract a great deal of attention from occupants of buildings immediately adjacent to the project. Blasting tends to be highly visible, often noisy and occasionally a disruptive imposition on the day-to-day activities of the local community. Inhabitants of buildings close to the blasting may feel vibrations from the operation and as a result, become much more conscious of many of the previously unnoticed cracks, water stains, and similar defects in their homes and offices. Though there is an intuitive belief by most occupants that if they can feel the blast vibrations they must be damaging, these vibrations typically induce far lower strains on building components than the day-to-day environmental stresses that maintain every structure in a dynamic state. The combination of low particle velocities and frequencies beyond the natural frequencies of most structures generated by blasting and construction equipment are typically not damaging.

Pre-blast inspection surveys are often performed as a means of alleviating concerns expressed by building owners in close proximity to construction and blasting operations and to provide a baseline for assessing and evaluating complaints of damage following the completion of construction operations. With regards to the pre and post blast surveys completed at the DND Personal Accommodation Building, a visual inspection of all rooms located on the first floor of the structure was conducted, with all documented observations recorded by hand in a log book due to security concerns. Pre-existing defects that were observed and recorded were primarily cosmetic cracks in the drywall adjacent to windows, corners, door jams and plaster joints. In addition to the numerous drywall cracks, several screws protruding through the drywall (screw pops) were commonly noted throughout the structure.

During the interim period between the pre and post-blasting inspection surveys, the plumbing located in the North West wing of the building had frozen and subsequently burst creating flooding in a large portion of the main floor area. At the time of the June 15, 2017 post-blast inspection survey, many access points had been cut into the drywall to accommodate the extensive plumbing repairs required. These changes were excluded from the post-blast inspection survey as they were deemed to be external

influences not related to the blasting operations. For the remainder of the building that was unaffected by the plumbing repairs, no notable changes were observed relating to the blasting or construction operations.

A full time on-site Vibration Monitoring Program was implemented to delineate vibration intensities experienced at specific structures in the vicinity of the work. Vibration monitoring sensors listed below were installed at the nearest properties prior to the commencement and during the progression of both listed blasting operations on site:

Laydown Yard/Tank Farm Blasting Operations - April 2017 to June 2017

- **BE9028:** Nuna Logistics – Geophone sandbagged on ground at the Northwest corner of the trailer on Itivia Street. Linear Microphone installed in the direction of the blasting.
- **BE15860:** DND Barracks – Geophone sandbagged on carpet inside Room 166 in the Southern corner of the DND Personal Accommodation Building (Barracks). No Linear Microphone installed.
- **BE18909:** Old Ila Apartment – Geophone sandbagged on ground underneath the South end of the apartment building. Linear Microphone installed on the outside of the wooden plywood enclosure in the direction of the blasting.
- **BE21127:** Nunavut Excavating (Trailer) – Geophone sandbagged on ground at the Southwest corner of the trailer on Itivia Street. Linear Microphone installed in the direction of the blasting.

Itivia Pit Quarry - June 2017 to September 2017

- **BE9028:** Nuna Logistics – Geophone sandbagged on ground at the Northwest corner of the trailer on Itivia Street. Linear Microphone installed in the direction of the blasting.
- **BE18909:** Old Ila Apartment – Geophone sandbagged on ground underneath the South end of the apartment building. Linear Microphone installed on the outside of the wooden plywood enclosure in the direction of the blasting.
- **BE21127:** Nunavut Excavating (Trailer) – Geophone sandbagged on ground at the Southwest corner of the trailer on Itivia Street. Linear Microphone installed in the direction of the blasting.
- **BE8446:** Nunavut Excavating (Shop) – Geophone sandbagged on ground along the South side of the new shop. Linear Microphone installed in the direction of the blasting.
- **BE7369:** Muster Point Itivia – Geophone sandbagged on the ground under the steel base of the temporary electrical service at the muster point on Itivia Street.

The monitoring instruments installed consisted of Instantel tri-directional digital seismographs capable of measuring ground vibration intensities up to 254mm/s and air overpressures up to 148dB(L) at a frequency response of 2 – 250Hz. The units were programmed to measure all vibration levels continuously at a sampling rate of 1024 samples per second. Following each five or fifteen minute interval, the units reviewed the 307,200 or 921,600 measured vibrations and permanently recorded the peak particle velocity for that time interval while deleting all subordinate vibration intensities. This process was repeated for all subsequent five or fifteen minute time intervals thereby providing maximum vibration intensities experienced at the structure throughout the day. Such a configuration permits continuous monitoring of vibration levels and provides complete coverage of all vibrations, construction induced or otherwise, experienced at the monitor locations. Events recorded under this program mode are marked by an “H” on the enclosed vibration summary report.

As an additional analytical tool, the seismographs were configured to record a more detailed waveform in the event that vibration intensities exceeded a pre-set trigger level set at 2 mm/s or 5mm/s depending on the installation location. This feature permits advanced analysis in the event that elevated readings are recorded. Events recorded under this program mode are marked by a “W” on the enclosed vibration summary report.

Particle velocity is the descriptor of choice when dealing with vibrations because of its superior correlation with the appearance of cosmetic cracking. While particle velocities provide one measurement statistic, structural response to varied frequency necessitates the inclusion of frequency analysis in all vibration measurement. As such, the United States Bureau of Mines developed a set of criteria utilizing a graded scale incorporating reduced permissible particle velocities at reduced dominant frequencies (Refer to Figure 1). This set of criteria is now almost universally accepted as the basis for controlling blast and construction induced vibrations. This is not to say that damage automatically occurs once these levels are breached and, in fact, threshold damage would not occur in the average residence until ground vibrations reached significantly higher intensities than those listed. Damage as a result of transient vibrations at particle intensities below the above noted USBM threshold limits has never been scientifically observed.

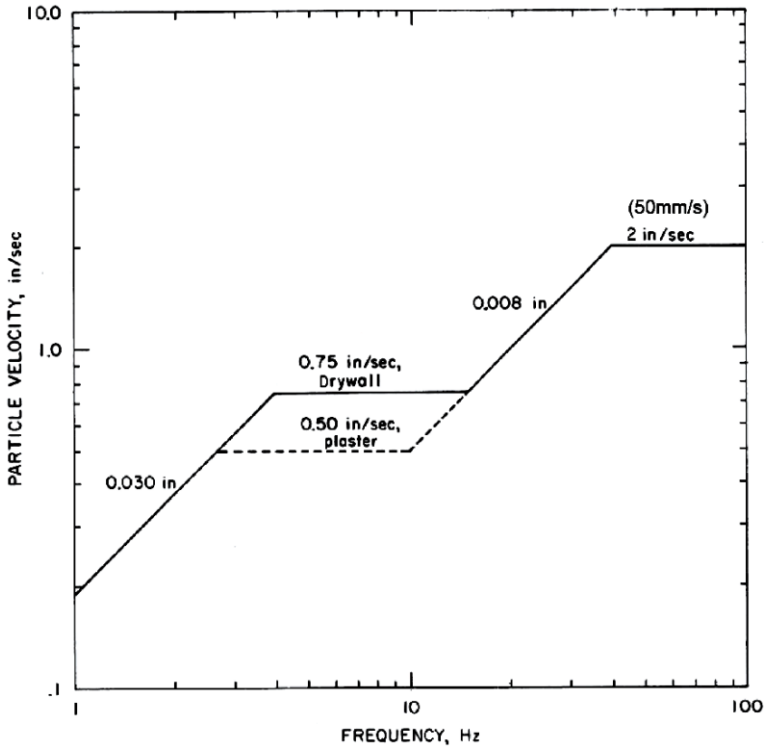


Figure 1 – USBM Z-Curve

It is an intrinsic nature of blast induced vibrations that these vibrations decrease with increasing distance. Under typical conditions, the vibration intensity decreases by two thirds of its previous value for every doubling of distance. That is to say that a peak particle velocity measurement of 100mm/s at a distance of 100 m from the blast location will have decreased to 33.3mm/s at a separation distance of 200m and 11.1 mm/s at a separation distance of 400m. While the nature of the transmitting medium (rock, earth, water) and presence of joint sets, fractures, faults and shear zones will all impact the rate of decay of the ground vibrations, the fact that within consistent media, intensities diminish with distance is unavoidable.

In regards to the blasting operations as part of the Laydown Yard/Tank Farm and Itivia Pit Project, Explotech Engineering recommended that Ontario Provincial Standard Specification (OPSS) 120, *General Specification for the Use of Explosives,* was implemented. This specification is merely a simplification of the aforementioned USBM Z-Curve and limits ground vibrations to 50mm/s for frequencies at or above 40Hz and

20mm/s for frequencies below 40Hz. Damage as a result of transient vibrations at particle intensities below these threshold limits have never been scientifically observed.

A review of the data collected on the project confirms that all of the recorded or predictable vibrations attributable to the blasting or construction operations resided below 11mm/s. The maximum vibration reading recorded at the DND Personal Accommodation Building during the Laydown Yard/Tank Farm blasting operations was a 10.67mm/s at a dominant frequency of 28.75Hz, recorded on May 19, 2017 at 17:52.

Following the completion of the blasting operations for the Laydown Yard/Tank Farm, operations were relocated to the Itivia Pit Quarry, situated approximately 700m removed from the DND Personal Accommodation Building. In order to ensure the closest structures to the blasting were monitored at all times, the seismograph located at the Personal Accommodation Building was relocated to the Muster Point on Itivia Street. This location served as the new closest point to quarry blasting (approximately 200m) and was situated directly in between the Personal Accommodation Building and quarry blasting. The maximum vibration recorded at the Muster Point on Itivia Street was a 5.842mm/s at a dominant frequency of 39.25Hz on July 6, 2017 at 7:59. With consideration for the attenuation of the vibrations over the additional 500m to the DND Personal Accommodation Building, the vibrations induced on the property would have resided below 3mm/s.

Vibration induced damage associated with blasting operations has never been observed at the measured and predictable intensities experienced at the subject property and consequently, attribution of any physical defects to the blasting operations is scientifically unjustifiable. While vibrations of this intensity would be clearly perceptible and may cause minor excitation in some items, knick-knacks and wall hangings, they would be insufficient to initiate damage in even historical or unusual structures.

Based on our inspections and subsequent comparison, as well as the vibration monitoring data measured and predicted throughout both blasting campaigns, it is our

opinion that the blasting operations undertaken in Rankin Inlet have not initiated any changes to the property located at Department of National Defence (DND) Personal Accommodation Building. We trust this information will prove beneficial and will assist in alleviating any concerns of damage to the building as a result of the blasting operations. Should you or the property representatives have any questions or additional concerns related to this brief report, we welcome the opportunity to address these at your leisure.

Kindest regards,

Brent McClelland, B.Eng.
Explotech Engineering Ltd.

Mitch Malcomson, P.Eng. (ON)
Explotech Engineering Ltd.

Rankin Inlet Laydown Yard/Tank Farm
M7704A - Nuna Logistics
April 25, 2017 to June 15, 2017

Event Report: Event List - z:\7. monitoring data\archived seismo readings\m77xx\m7704a - nunalogistics - rankin

Type	Serial No.	Date/Time	Trigger	Tran Peak (mm/s)	Vert Peak (mm/s)	Long Peak (mm/s)	PVS1 (mm/s)	Description
H	BE15860	Apr 25 /17 12:39:26	Manual	0.635	1.270	0.508	1.374	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Apr 26 /17 06:51:29	Manual	0.508	0.635	0.381	0.660	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Apr 27 /17 06:02:54	Manual	0.889	1.143	0.762	1.198	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Apr 27 /17 13:57:55	Manual	0.508	1.397	0.508	1.470	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Apr 28 /17 06:02:52	Manual	0.889	1.778	0.889	1.836	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Apr 29 /17 06:02:36	Manual	0.762	2.032	1.016	2.083	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	Apr 29 /17 12:58:47	Vert	0.762	2.032	1.016	2.083	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Apr 29 /17 13:02:03	Manual	0.635	2.159	0.762	2.178	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	Apr 29 /17 17:00:59	Vert	0.635	2.159	0.762	2.178	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Apr 29 /17 17:05:01	Manual	0.254	0.381	0.254	0.475	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Apr 30 /17 06:02:37	Manual	0.889	2.159	1.143	2.225	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	Apr 30 /17 12:59:34	Vert	0.889	2.159	1.143	2.225	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Apr 30 /17 13:02:51	Manual	0.889	1.778	1.143	1.955	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 1 /17 06:02:36	Manual	0.889	2.032	1.143	2.110	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 1 /17 13:29:51	Vert	0.889	2.032	0.889	2.110	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 1 /17 13:33:04	Manual	0.762	1.778	0.889	1.823	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 2 /17 06:02:35	Manual	0.762	2.032	0.889	2.083	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 2 /17 08:07:47	Vert	0.762	2.032	0.889	2.083	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 2 /17 08:11:01	Manual	1.651	3.175	1.778	3.248	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 2 /17 13:31:13	Vert	1.651	3.175	1.778	3.248	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 2 /17 13:34:30	Manual	1.397	2.667	1.905	2.715	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 2 /17 18:00:12	Vert	1.397	2.667	1.905	2.715	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 2 /17 18:03:30	Manual	0.254	0.635	0.254	0.648	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 3 /17 06:02:36	Manual	1.651	7.112	1.905	7.140	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 3 /17 08:08:13	Vert	1.651	7.112	1.905	7.140	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 3 /17 08:11:27	Manual	1.524	4.445	2.159	4.461	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 3 /17 13:29:51	Vert	1.524	4.445	2.159	4.461	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 3 /17 13:33:07	Manual	2.413	5.207	2.540	5.511	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 3 /17 18:00:24	Vert	2.413	5.207	2.540	5.511	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 3 /17 18:03:40	Manual	1.016	1.016	0.762	1.397	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 4 /17 06:02:34	Manual	1.143	2.413	1.143	2.446	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 4 /17 08:00:53	Vert	1.143	2.413	1.143	2.446	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 4 /17 08:04:08	Manual	2.032	5.969	2.286	5.982	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 4 /17 13:31:52	Vert	2.032	5.969	2.286	5.982	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 4 /17 13:35:58	Manual	1.270	3.175	1.905	3.343	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 4 /17 18:01:10	Vert	1.270	3.175	1.905	3.343	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 4 /17 18:04:29	Manual	0.635	2.159	0.508	2.163	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 4 /17 20:08:23	Vert	0.381	2.159	0.508	2.163	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 4 /17 20:11:40	Manual	0.635	0.635	0.508	0.823	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 5 /17 06:02:36	Manual	1.524	3.429	1.905	3.508	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 5 /17 08:00:03	Vert	1.524	3.429	1.905	3.508	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 5 /17 08:03:19	Manual	1.143	3.048	1.905	3.093	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 5 /17 13:30:58	Vert	1.143	3.048	1.905	3.093	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 5 /17 13:34:17	Manual	0.889	1.778	1.270	1.818	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 6 /17 06:02:36	Manual	2.286	4.191	2.540	4.581	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 6 /17 08:00:04	Vert	2.286	4.191	2.540	4.581	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 6 /17 08:03:17	Manual	1.143	3.683	1.905	3.953	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 6 /17 13:30:36	Vert	1.143	3.683	1.905	3.953	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 6 /17 13:34:01	Manual	1.651	4.572	2.032	4.752	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 6 /17 18:00:56	Vert	1.651	4.572	2.032	4.752	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 6 /17 18:06:24	Manual	0.635	0.635	0.635	0.907	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 7 /17 06:03:22	Manual	2.032	3.556	2.286	3.772	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 7 /17 07:59:55	Vert	2.032	3.556	2.286	3.772	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 7 /17 08:03:07	Manual	1.651	3.810	2.413	3.921	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 7 /17 13:29:52	Vert	1.651	3.810	2.413	3.921	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 7 /17 13:33:13	Manual	1.905	4.191	2.540	4.798	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 7 /17 18:14:54	Vert	1.905	4.191	2.540	4.798	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 7 /17 18:25:12	Manual	0.254	0.508	0.254	0.508	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 8 /17 06:02:35	Manual	2.159	4.953	3.302	5.134	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 8 /17 07:59:44	Vert	2.159	4.953	3.302	5.134	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 8 /17 08:03:40	Manual	1.143	2.413	1.143	2.469	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 8 /17 10:47:52	Vert	1.143	2.413	1.016	2.469	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 8 /17 10:52:33	Manual	2.667	5.207	3.175	5.464	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 8 /17 17:58:03	Vert	2.667	5.207	3.175	5.464	DND Barracks, Rankin Inlet, Nunavut

Rankin Inlet Laydown Yard/Tank Farm
M7704A - Nuna Logistics
April 25, 2017 to June 15, 2017

Event Report: Event List - z:\7. monitoring data\archived seismo readings\m77xx\m7704a - nunalogistics - rankin

Type	Serial No.	Date/Time	Trigger	Tran Peak (mm/s)	Vert Peak (mm/s)	Long Peak (mm/s)	PVS1 (mm/s)	Description
H	BE15860	May 8 /17 18:01:17	Manual	1.016	2.032	0.762	2.048	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 8 /17 22:27:36	Vert	0.508	2.032	0.635	2.048	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 8 /17 22:31:00	Manual	1.143	1.524	1.016	2.036	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 9 /17 06:02:33	Manual	1.905	3.937	2.667	4.154	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 9 /17 07:59:38	Vert	1.905	3.937	2.667	4.154	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 9 /17 08:05:10	Manual	1.143	2.921	1.016	2.989	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 9 /17 11:15:49	Vert	1.143	2.921	0.889	2.989	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 9 /17 11:19:03	Manual	2.032	4.953	2.413	5.058	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 9 /17 13:29:37	Vert	2.032	4.953	2.413	5.058	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 9 /17 13:33:38	Manual	1.524	3.683	1.778	3.797	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 9 /17 17:56:43	Vert	1.524	3.683	1.778	3.797	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 9 /17 18:00:02	Manual	0.254	0.508	0.254	0.524	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 10 /17 06:02:35	Manual	2.032	3.302	2.413	3.389	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 10 /17 07:59:26	Vert	2.032	3.302	2.413	3.389	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 10 /17 08:03:23	Manual	1.778	4.318	2.286	4.731	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 10 /17 17:59:35	Vert	1.778	4.318	2.286	4.731	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 10 /17 18:03:00	Manual	0.254	0.635	0.381	0.660	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 12 /17 06:29:25	Manual	2.921	4.572	2.286	4.728	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 12 /17 17:59:07	Vert	2.921	4.572	2.286	4.728	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 12 /17 18:02:22	Manual	0.381	0.762	0.381	0.783	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 13 /17 06:02:34	Manual	1.778	3.937	1.778	4.117	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 13 /17 13:30:00	Vert	1.778	3.937	1.778	4.117	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 13 /17 13:33:17	Manual	2.921	4.064	2.667	4.327	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 13 /17 17:52:00	Vert	2.921	4.064	2.667	4.327	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 13 /17 17:55:20	Manual	0.254	0.381	0.254	0.381	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 14 /17 06:02:34	Manual	2.286	4.699	3.429	5.127	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 14 /17 07:59:56	Vert	2.286	4.699	3.429	5.127	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 14 /17 08:03:07	Manual	2.159	8.509	2.540	8.548	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 14 /17 17:27:39	Vert	2.159	8.509	2.540	8.548	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 14 /17 17:30:58	Manual	0.254	0.635	0.254	0.648	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 15 /17 06:02:34	Manual	2.159	4.572	2.667	4.665	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 15 /17 07:59:51	Long	2.159	4.572	2.667	4.665	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 15 /17 08:06:47	Manual	1.270	1.651	1.397	1.955	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 16 /17 06:02:39	Manual	1.397	2.159	1.270	2.389	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 16 /17 08:00:04	Vert	1.397	2.159	1.270	2.389	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 16 /17 08:03:18	Manual	1.778	3.302	2.159	3.377	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 16 /17 17:56:54	Vert	1.778	3.302	2.159	3.377	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 16 /17 18:00:12	Manual	0.254	0.762	0.381	0.783	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 17 /17 06:02:34	Manual	1.651	4.953	1.778	4.981	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 17 /17 07:59:46	Vert	1.651	4.953	1.778	4.981	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 17 /17 08:03:06	Manual	2.413	5.334	2.540	5.496	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 17 /17 17:52:25	Vert	2.413	5.334	2.540	5.496	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 17 /17 17:55:47	Manual	0.254	0.508	0.254	0.524	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 18 /17 06:02:36	Manual	2.032	5.461	2.921	5.692	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 18 /17 07:56:39	Vert	2.032	5.461	2.921	5.692	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 18 /17 07:59:58	Manual	2.921	5.334	3.048	5.515	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 18 /17 17:52:56	Vert	2.921	5.334	3.048	5.515	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 18 /17 17:56:17	Manual	0.254	0.254	0.254	0.381	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 19 /17 06:02:34	Manual	2.286	4.953	2.540	5.149	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 19 /17 07:59:33	Vert	2.286	4.953	2.540	5.149	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 19 /17 08:02:46	Manual	2.159	10.67	3.048	10.84	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 19 /17 17:52:37	Vert	2.159	10.67	3.048	10.84	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 19 /17 17:55:54	Manual	0.254	0.635	0.254	0.648	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 20 /17 06:02:34	Manual	1.651	4.064	1.778	4.080	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 20 /17 07:59:49	Vert	1.651	4.064	1.778	4.080	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 20 /17 08:03:02	Manual	1.905	4.064	2.413	4.533	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 20 /17 17:58:27	Vert	1.905	4.064	2.413	4.533	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 20 /17 18:01:45	Manual	0.254	0.381	0.254	0.381	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 21 /17 06:02:34	Manual	1.524	3.429	1.778	3.524	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 21 /17 07:59:27	Vert	1.524	3.429	1.778	3.524	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 21 /17 08:02:40	Manual	1.397	2.540	1.270	2.753	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 21 /17 17:48:33	Vert	1.397	2.540	1.270	2.753	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 21 /17 17:51:49	Manual	0.254	0.254	0.254	0.381	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 22 /17 06:02:34	Manual	1.397	3.302	1.524	3.494	DND Barracks, Rankin Inlet, Nunavut

Rankin Inlet Laydown Yard/Tank Farm
M7704A - Nuna Logistics
April 25, 2017 to June 15, 2017

Event Report: Event List - z:\7. monitoring data\archived seismo readings\m77xx\m7704a - nunalogistics - rankin

Type	Serial No.	Date/Time	Trigger	Tran Peak (mm/s)	Vert Peak (mm/s)	Long Peak (mm/s)	PVS1 (mm/s)	Description
W	BE15860	May 22 /17 07:59:22	Vert	1.397	3.302	1.524	3.494	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 22 /17 08:02:40	Manual	1.651	6.350	2.413	6.356	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 22 /17 17:59:16	Vert	1.651	6.350	2.413	6.356	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 22 /17 18:02:36	Manual	0.254	0.889	0.381	0.898	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 23 /17 06:02:41	Manual	1.524	3.048	1.651	3.137	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 23 /17 07:54:35	Vert	1.524	3.048	1.651	3.137	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 23 /17 07:57:52	Manual	1.651	2.667	1.397	2.706	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 23 /17 17:59:38	Vert	1.651	2.667	1.397	2.706	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 23 /17 18:02:54	Manual	0.254	0.254	0.254	0.381	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 24 /17 06:02:35	Manual	2.159	5.334	3.175	5.816	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 24 /17 07:59:27	Vert	2.159	5.334	3.175	5.816	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 24 /17 08:02:43	Manual	1.016	3.429	1.016	3.497	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 24 /17 10:50:13	Vert	1.016	3.429	0.889	3.497	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 24 /17 10:57:11	Manual	2.159	9.779	2.667	9.918	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 24 /17 17:58:25	Vert	2.159	9.779	2.667	9.918	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 24 /17 18:01:44	Manual	0.254	0.254	0.254	0.381	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 25 /17 06:04:00	Manual	1.270	3.175	1.397	3.218	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 25 /17 07:58:23	Vert	1.270	3.175	1.397	3.218	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 25 /17 08:02:24	Manual	2.540	5.969	3.683	6.592	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 25 /17 17:59:14	Vert	2.540	5.969	3.683	6.592	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 25 /17 18:02:36	Manual	0.254	0.381	0.254	0.421	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 26 /17 06:02:34	Manual	0.762	4.191	0.889	4.216	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 26 /17 07:59:42	Vert	0.635	4.191	0.762	4.216	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 26 /17 08:02:57	Manual	0.508	1.270	0.762	1.283	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 27 /17 06:02:41	Manual	1.397	1.524	1.397	2.020	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 28 /17 06:02:36	Manual	1.270	2.794	1.651	2.843	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 28 /17 07:58:50	Vert	1.270	2.794	1.651	2.843	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 28 /17 08:02:05	Manual	1.397	3.302	1.524	3.372	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 28 /17 17:58:57	Vert	1.397	3.302	1.524	3.372	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 28 /17 18:02:13	Manual	0.381	0.889	0.381	0.907	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 29 /17 06:02:34	Manual	1.651	2.540	1.524	2.646	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 29 /17 07:59:45	Vert	1.651	2.540	1.524	2.646	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 29 /17 08:03:42	Manual	1.016	1.524	0.889	1.591	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 30 /17 06:02:36	Manual	0.889	2.794	1.905	2.794	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 30 /17 13:29:34	Vert	0.889	2.794	1.905	2.794	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 30 /17 13:32:52	Manual	2.159	4.064	1.778	4.229	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 30 /17 17:57:35	Vert	2.159	4.064	1.778	4.229	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 30 /17 18:00:54	Manual	0.381	0.889	0.381	0.889	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 31 /17 06:02:36	Manual	1.524	3.302	1.397	3.312	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 31 /17 07:58:32	Vert	1.524	3.302	1.397	3.312	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 31 /17 08:01:50	Manual	1.397	3.937	2.286	3.996	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	May 31 /17 13:31:32	Vert	1.397	3.937	2.286	3.996	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	May 31 /17 13:35:38	Manual	0.381	1.143	0.381	1.150	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Jun 1 /17 06:02:36	Manual	1.778	5.969	3.302	6.409	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	Jun 1 /17 07:58:30	Vert	1.778	5.969	3.302	6.409	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Jun 1 /17 08:02:40	Manual	1.905	5.842	3.302	5.922	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	Jun 1 /17 13:29:20	Vert	1.905	5.842	3.302	5.922	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Jun 1 /17 13:32:42	Manual	1.143	2.159	1.016	2.338	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	Jun 1 /17 17:58:18	Vert	1.143	2.159	1.016	2.338	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Jun 1 /17 18:01:41	Manual	0.254	0.508	0.254	0.524	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Jun 2 /17 06:03:18	Manual	1.270	3.810	1.905	3.976	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	Jun 2 /17 07:59:25	Vert	1.270	3.810	1.905	3.976	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Jun 2 /17 08:02:41	Manual	1.016	1.778	1.270	1.778	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Jun 3 /17 06:02:36	Manual	0.635	1.778	0.889	1.778	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Jun 4 /17 06:02:37	Manual	0.889	2.413	1.143	2.609	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	Jun 4 /17 13:29:16	Vert	0.889	2.413	1.143	2.609	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Jun 4 /17 13:32:35	Manual	0.889	2.794	0.889	2.910	DND Barracks, Rankin Inlet, Nunavut
W	BE15860	Jun 4 /17 17:58:17	Vert	0.889	2.794	0.889	2.910	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Jun 4 /17 18:01:33	Manual	0.254	0.381	0.254	0.402	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Jun 5 /17 06:02:34	Manual	0.762	1.397	0.889	1.540	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Jun 6 /17 06:02:36	Manual	0.635	0.889	0.635	1.040	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Jun 7 /17 06:02:38	Manual	0.635	1.143	0.635	1.314	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Jun 8 /17 06:02:36	Manual	0.381	1.016	0.381	1.085	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Jun 9 /17 06:02:43	Manual	1.143	1.651	0.635	1.901	DND Barracks, Rankin Inlet, Nunavut

Rankin Inlet Laydown Yard/Tank Farm
M7704A - Nuna Logistics
April 25, 2017 to June 15, 2017

Event Report: Event List - z:\7. monitoring data\archived seismo readings\m77xx\m7704a - nunalogistics - rankin

Type	Serial No.	Date/Time	Trigger	Tran Peak (mm/s)	Vert Peak (mm/s)	Long Peak (mm/s)	PVS1 (mm/s)	Description
H	BE15860	Jun 10 /17 06:02:36	Manual	0.381	0.508	0.254	0.582	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Jun 11 /17 06:02:37	Manual	0.254	0.635	0.381	0.696	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Jun 12 /17 06:02:39	Manual	0.381	0.762	0.381	0.773	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Jun 13 /17 06:02:37	Manual	0.381	0.889	0.381	0.933	DND Barracks, Rankin Inlet, Nunavut
H	BE15860	Jun 15 /17 06:55:13	Manual	0.254	0.254	0.254	0.440	DND Barracks, Rankin Inlet, Nunavut

APPENDIX Q

Inspection Report – Quality Control Final Report for Geomembrane Installation

RANKIN INLET TANK FARM
AGNICO EAGLE MINES LIMITED
Rankin Inlet, Nunavut
Texel Geosol Project No. C-15152

QUALITY CONTROL FINAL REPORT BY TEXEL GEOSOL INC.

Prepared for:

NUNA KIVALLIQ EARTHWORKS INC

By:

Texel GEOSOL

December, 2017

RANKIN INLET TANK FARM
AGNICO EAGLE MINES LIMITED
Rankin Inlet, Nunavut
Texel Geosol Project No. C-15152

QUALITY CONTROL FINAL REPORT BY TEXEL GEOSOL INC.

Prepared for:

NUNA KIVALLIQ EARTHWORKS INC
NUNA SERVICES LTD

9839-31 Avenue
Edmonton, Alberta
T6N 1C5

By:

TEXEL GEOSOL INC.
1300, 2e Rue, Parc industriel
Sainte-Marie, Québec, Canada
G6E 1G8

December, 2017

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- APPENDIX I - Quality control test results obtained on site by Texel Geosol Inc
- APPENDIX II - Field Memos and Communications
- APPENDIX III - US-EPA Classification for Types of Break
- APPENDIX IV - Record drawing

LIST OF FIGURES

1. INTRODUCTION

The following report was prepared by Texel Geosol, for Nuna Kivalliq Earthworks Inc.

This report contains a description as well as a certification of all work conducted by Texel Geosol, installer of the geosynthetics. It also contains the record drawing of the geomembrane installation for the Rankin Inlet tank farm. All installation work conducted on the geosynthetics took place between July 14 and October 6, 2017.

2. HUMAN RESOURCES

The following list identifies the key personnel involved with the physical realization of this project

TEXEL GEOSOL INC. (Geosynthetic Installer)

- Mr. François Thivierge, Construction and project Manager
- Mr. Jacques St-Gelais, Operation Manager
- Mr. Eric Black and Simon Jodoin, Site Foreman
- Mr. Michael Gilbert and Anthony Michon-Duquette, Field QC Inspector
- Mr. Simon-Carl Marcoux, Kléber Nault, Olivier Belval, Phillipe Allie and David Beaulieu, Technicians

NUNA KIVALLIQ EARTHWORKS INC (General Contractor - Client)

- Mr. Matt Gallant, Project Manager

AGNICO EAGLE CONSTRUCTION (Quality Assurance)

3. GEOMEMBRANE INSTALLATION

This section includes a description of the work and the installation procedures used during the deployment of the geomembrane. Also, the construction quality control procedures are detailed in this section

3.1. Description of the work

The scope of the installation was to completely cover the Rankin Inlet Tank Farm with a geosynthetic lining system. Texel Geosol installed approximately 15959 sm of 60 mil HDPE textured geomembrane and 805 sm of 60 mil HDPE smooth . All the installation, seaming and repair procedures were conducted according to the project plans and specifications, and manufacturer's recommendations.

3.2. Installation Procedures

The geomembrane rolls were later deployed and installed by Texel Geosol as prescribed in the specifications. Panels were placed to minimize seams across the side slope and the tie-in seams. The panels were overlapped about 125 to 150 mm, allowing adequate double fusion welding and leaving enough material to perform peel and shear tests on seam samples (see section 3.3.2.1 for a description of these tests).

All seams between panels were made using an automated polymer fusion process, the fusion being obtained through a double hot wedge. These parallel welds create an air channel which allow air-pressure testing of the continuity of the seam (see Fig. 1).

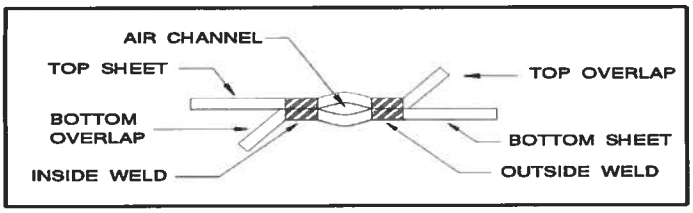


***Figure 1* - Double -Track Geomembrane Weld**

In restrictive areas where this process could not be adequately applied, such as corners, repair work and pipe penetrations, a manual extrusion fillet welding was employed (see Fig. 2).

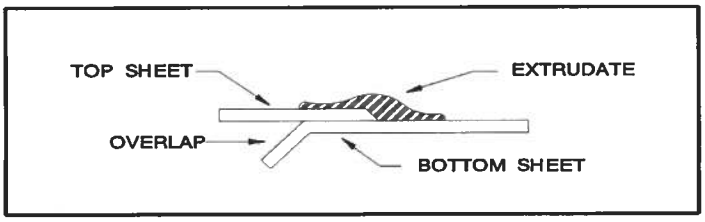


***Figure 2* - Fillet-Extruded Geomembrane Weld**

3.3. Geomembrane quality control

3.3.1. On-site geomembrane installation

3.3.1.1 Welding trial tests

Trial tests were performed prior to any on-site seaming in order to quantify the calibration of the welding equipment. On each sample, four peel tests and one shear tests were performed. A peel adhesion test is conducted by submitting a one inch-wide seam specimen to a tensile effort on a calibrated, portable tensiometer and trying to "peel", or open the seam (see Fig. 3). A shear strength test is similar, but the tension is applied in the plane of the seam (see Fig. 4). The peel test gives an indication of the quality of the seam while the shear test demonstrates the actual behavior of the seam in service.

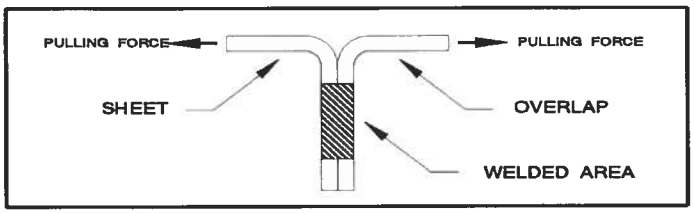


Figure 3 **- Peel Adhesion Test**

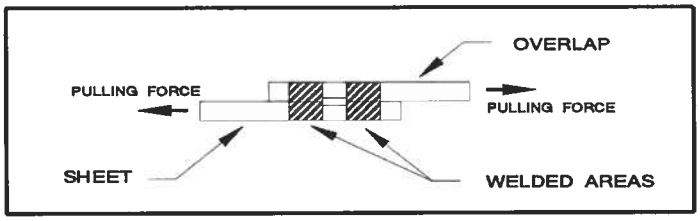


Figure 4 **- Shear Strength Test**

For each trial test, the QC Inspector recorded the date, time, ambient and operating temperatures, equipment number, speed setting, operator's initials, peel and shear values and corresponding type of break. The only type of break acceptable is designated as "FTB", as per the US-EPA classification for types of breaks, available in appendix III. The seams were made only after a satisfactory trial test had been obtained. All the results of these tests are also included in appendix I.

3.3.1.2 On-site non-destructive testing

The continuity of all seams (100%) was verified by non-destructive methods. These methods include the air-pressure test and the vacuum-box test. Any seam that failed one of these tests was rebuilt or repaired until a satisfactory result was obtained. All the results of these tests are included in Appendix I of this report.

a) Air-Pressure Testing

Air-pressure testing was employed as the primary test method. This non-destructive test method consists of injecting air at a predetermined pressure in the center air channel of fusion-welded seams (see Fig. 5). If the seam is continuous there will be very little or no drop of pressure. If a leak is present within the area under pressure, it is located and repaired. This type of non-destructive test is faster than the vacuum-box test, less observer-dependent and represents a supplementary mechanical resistance test since the geomembrane sheets are pulled away from each other by the air pressure in the channel.

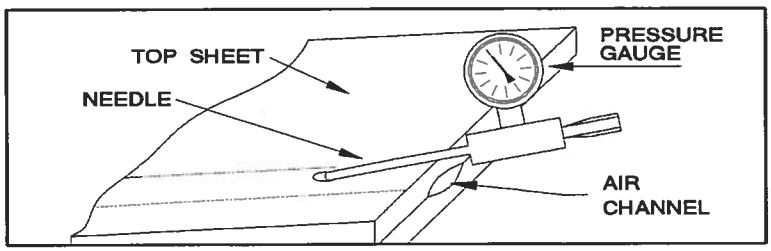


Figure 5 **- Air-Pressure Test**

b) Vacuum-box test

Wherever the air-pressure test could not be used, the vacuum-box test was employed. In this test, a film of soapy water is sprinkled over the area to be tested. A box fitted with a transparent upper cover and a neoprene lower rim is placed over that same area and connected to a vacuum pump; a negative pressure of 5 psi is then applied (see Fig. 6). If there is a puncture or discontinuous seam within this area, bubbles will appear and be detected by the observer.

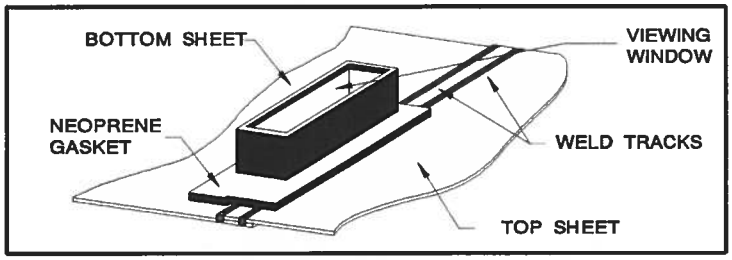


***Figure 6* - Vacuum-Box Test**

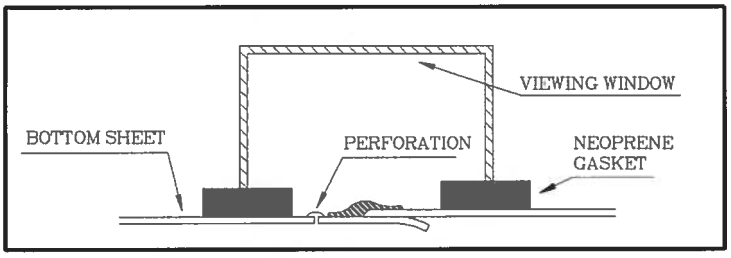


***Figure 7* - Vacuum-Box Test**

3.3.1.3 On-site destructive tests

Finally, a destructive testing program was applied, where seam samples taken from the installed geomembrane were tested for peel adhesion and shear strength on a calibrated, portable tensiometer. On each sample, four peel tests and one shear tests were performed. All the results from these tests are included in Appendix I of this report.

3.4. Repair Procedures

All materials were visually inspected for blemishes, punctures and other defects or damages that may have occurred during transport or panel placement. Any defect or damage was repaired as per the procedures described in this section.

Demobilization was not authorized until Texel Geosol, Nuna Kivalliq Earthworks Inc and Agnico Eagle Construction completed a last visual inspection of the installation work. Any defect revealed by any step of the Quality Control Program was repaired and verified according to the prescribed procedures:

- All pockmarks, pinholes, T-seams, etc., smaller than the tip of the extruder were covered with an extrusion bead;
- All punctures, holes, tears, etc., wider than the tip of the extruder were repaired with extrusion-welded patches;
- Any seam revealed as defective by the CQC or CQA Programs was entirely rebuilt through a fusion and/or extrusion seaming process.

Prior to any fillet extrusion welding, the geomembrane was buffed to insure better adhesion of the extruded material. All repairs were visually inspected and verified by a non-destructive testing method, as described in section 3.3.2.2.

3.5. Record Drawing

The record drawing of the geomembrane installation, showing all panels, panel identification, pipe penetrations, repairs and destructive test locations, is included in Appendix IV of this report.

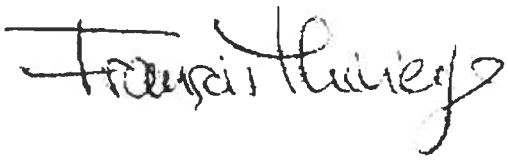
4. GEOTEXTILE QUALITY CONTROL

Approximately 33 527 sm of non-woven geotextile was installed by Texel Geosol according to the project plans and specifications. The geotextile panels were overlapped approximately 100 to 150 mm and thermally bonding (hot air or wedge) or sewing in order to ensure the continuity of the cushion layer.

Any holes or tears in the geotextile were repaired according to the project specifications. All geotextile materials were installed by Texel Geosol.

5. CERTIFICATION

Texel Geosol certifies having installed all geosynthetic materials according to the project plans and specifications provided by the consultant Tetra Tech, for Nuna Kivalliq Earthworks Inc. All installation work conducted by Texel Geosol meets or exceeds the standards of the geosynthetic industry.



12-07-17

François Thivierge, P.Eng., MBA
Construction Director
TEXEL GEOSOL INC.

Date

(mm-dd-yy)

APPENDIX I

QUALITY CONTROL PROCEDURES CONDUCTED ON SITE BY TEXEL GEOSOL INC.

Texel GEOSOL

Fusion Trial Tests
Calibration par Fusion

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Trial Test No. No. de Calibration	Date (mm/dd/yy)	Time Heure	Ambient Temp. Temp. Ambiante	Equipment No. No. Équipement	Equipment Temp. Temp. Équipement	Equipment Speed Vitesse Équipement	Peel Resistance Résistance Pelage "A" (ppi)	Peel Type of Break Type de Brisure	Peel Resistance Résistance Pelage "B" (ppi)	Peel Type of Break Type de Brisure	Shear Resistance Résist. Cisaillement (ppi)	Shear Type of Break Type de Brisure	Tech.-Welder Soudeur	Tensiometer No. No. Tensiomètre
F-1	07-18-17	09:45	13 °C	MD 007	860 °F	500	120	SE1	117	SE1	173	BRK	D.B	T-9709
"	"	"	"	"	"	"	142	SE1	120	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	132	SE1	119	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	121	SE1	122	SE1	N/A	N/A	"	"
F-2	07-16-17	08:30	17 °C	MD 007	860 °F	500	112	SE1	119	SE1	157	BRK	D.B	T-9709
"	"	"	"	"	"	"	119	SE1	120	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	119	SE1	121	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	112	SE1	118	SE1	N/A	N/A	"	"
F-3	07-16-17	08:30	17 °C	MD 007	860 °F	425	121	SE1	135	SE1	166	BRK	D.B	T-9709
"	"	"	"	"	"	"	131	SE1	128	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	139	SE1	133	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	132	SE1	130	SE1	N/A	N/A	"	"
F-4	09-12-17	16:15	-2 °C	MD 007	860 °F	350	135	SE1	139	SE1	186	BRK	K.N	T-9709
"	"	"	"	"	"	"	136	SE1	134	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	126	SE1	133	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	123	SE1	142	SE1	N/A	N/A	"	"
F-5	09-13-17	07:10	0 °C	MD 007	860 °F	350	141	SE1	150	SE1	200	BRK	K.N	T-9709
"	"	"	"	"	"	"	137	SE1	150	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	146	SE1	136	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	144	SE1	153	SE1	N/A	N/A	"	"
F-6	09-13-17	09:30	0 °C	M9858	750 °F	300	157	SE1	143	SE1	205	BRK	K.N	T-9709
"	"	"	"	"	"	"	156	SE1	142	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	170	SE1	156	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	155	SE1	149	SE1	N/A	N/A	"	"

Texel GEOSOL

Fusion Trial Tests
Calibration par Fusion

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Trial Test No. No. de Calibration	Date (mm/dd/yy)	Time Heure	Ambient Temp. Temp. Ambiante	Equipment No. No. Équipement	Equipment Temp. Temp. Équipement	Equipment Speed Vitesse Équipement	Peel Resistance Résistance Pelage "A" (ppi)	Peel Type of Break Type de Brisure	Peel Resistance Résistance Pelage "B" (ppi)	Peel Type of Break Type de Brisure	Shear Resistance Résist. Cisaillement (ppi)	Shear Type of Break Type de Brisure	Tech.-Welder Soudeur	Tensiometer No. No. Tensiomètre
F-7	09-13-17	13:30	2 °C	MD 007	860 °F	500	113	SE1	123	SE1	167	BRK	K.N	T-9709
"	"	"	"	"	"	"	113	SE1	124	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	118	SE1	126	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	124	SE1	130	SE1	N/A	N/A	"	"
F-8	09-14-17	07:15	-2 °C	MD 007	860 °F	450	121	SE1	138	SE1	194	BRK	K.N	T-9709
"	"	"	"	"	"	"	119	SE1	142	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	120	SE1	160	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	129	SE1	153	SE1	N/A	N/A	"	"
F-9	09-14-17	07:15	-2 °C	M9858	750 °F	300	133	SE1	131	SE1	208	BRK	K.N	T-9709
"	"	"	"	"	"	"	129	SE1	153	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	135	SE1	149	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	137	SE1	144	SE1	N/A	N/A	"	"
F-10	09-14-17	12:00	2 °C	MD 007	860 °F	450	120	SE1	122	SE1	169	BRK	K.N	T-9709
"	"	"	"	"	"	"	128	SE1	117	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	126	SE1	126	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	129	SE1	117	SE1	N/A	N/A	"	"
F-11	09-14-17	12:00	2 °C	M9858	750 °F	300	128	SE1	137	SE1	182	BRK	K.N	T-9709
"	"	"	"	"	"	"	137	SE1	141	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	141	SE1	137	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	152	SE1	138	SE1	N/A	N/A	"	"
F-12	09-15-17	06:45	0 °C	M9858	750 °F	300	145	SE1	157	SE1	216	BRK	K.N	T-9709
"	"	"	"	"	"	"	146	SE1	143	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	146	SE1	166	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	153	SE1	139	SE1	N/A	N/A	"	"

Texel
GEOSOL

Fusion Trial Tests
Calibration par Fusion

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Trial Test No. No. de Calibration	Date (mm/dd/yy)	Time Heure	Ambient Temp. Temp. Ambiante	Equipment No. No. Équipement	Equipment Temp. Temp. Équipement	Equipment Speed Vitesse Équipement	Peel Resistance Résistance Pelage "A" (ppi)	Peel Type of Break Type de Brisure	Peel Resistance Résistance Pelage "B" (ppi)	Peel Type of Break Type de Brisure	Shear Resistance Résist. Cisaillement (ppi)	Shear Type of Break Type de Brisure	Tech.-Welder Soudeur	Tensiometer No. No. Tensiomètre
F-13	09-15-17	11:40	2 °C	MD 007	860 °F	450	128	SE1	124	SE1	176	BRK	K.N	T-9709
"	"	"	"	"	"	"	142	SE1	128	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	125	SE1	129	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	144	SE1	130	SE1	N/A	N/A	"	"
F-14	09-17-17	16:00	5 °C	MD 007	860 °F	450	134	SE1	128	SE1	179	BRK	K.N	T-9709
"	"	"	"	"	"	"	134	SE1	116	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	136	SE1	133	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	120	SE1	138	SE1	N/A	N/A	"	"

Texel GEOSOL

Fusion Trial Tests
Calibration par Fusion

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Trial Test No. No. de Calibration	Date (mm/dd/yy)	Time Heure	Ambient Temp. Temp. Ambiante	Equipment No. No. Équipement	Equipment Temp. Temp. Équipement	Equipment Speed Vitesse Équipement	Peel Resistance Résistance Pelage "A" (ppi)	Peel Type of Break Type de Brisure	Peel Resistance Résistance Pelage "B" (ppi)	Peel Type of Break Type de Brisure	Shear Resistance Résist. Cisaillement (ppi)	Shear Type of Break Type de Brisure	Tech.-Welder Soudeur	Tensiometer No. No. Tensiomètre
F-15	09-18-17	07:00	4 °C	MD 007	860 °F	450	136	SE1	128	SE1	190	BRK	K.N	T-9709
"	"	"	"	"	"	"	130	SE1	126	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	130	SE1	135	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	131	SE1	129	SE1	N/A	N/A	"	"
F-16	09-18-17	08:15	4 °C	MD 007	860 °F	300	175	SE1	168	SE1	216	BRK	K.N	T-9709
"	"	"	"	"	"	"	187	SE1	185	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	174	SE1	176	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	187	SE1	184	SE1	N/A	N/A	"	"
F-17	09-18-17	12:00	4 °C	M9858	750 °F	300	147	SE1	166	SE1	202	BRK	K.N	T-9709
"	"	"	"	"	"	"	149	SE1	163	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	146	SE1	153	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	146	SE1	161	SE1	N/A	N/A	"	"
F-18	09-18-17	13:30	4 °C	MD 007	860 °F	300	153	SE1	166	SE1	197	BRK	K.N	T-9709
"	"	"	"	"	"	"	169	SE1	171	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	175	SE1	174	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	172	SE1	171	SE1	N/A	N/A	"	"

Texel GEOSOL

Fusion Trial Tests
Calibration par Fusion

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Trial Test No. No. de Calibration	Date (mm/dd/yy)	Time Heure	Ambient Temp. Temp. Ambiante	Equipment No. No. Équipement	Equipment Temp. Temp. Équipement	Equipment Speed Vitesse Équipement	Peel Resistance Résistance Pelage "A" (ppi)	Peel Type of Break Type de Brisure	Peel Resistance Résistance Pelage "B" (ppi)	Peel Type of Break Type de Brisure	Shear Resistance Résist. Cisaillement (ppi)	Shear Type of Break Type de Brisure	Tech.-Welder Soudeur	Tensiometer No. No. Tensiomètre
F-19	09-19-17	06:45	6 °C	MD 007	860 °F	450	118	SE1	126	SE1	184	BRK	K.N	T-9709
"	"	"	"	"	"	"	132	SE1	123	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	134	SE1	121	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	145	SE1	127	SE1	N/A	N/A	"	"
F-20	09-19-17	11:45	7 °C	MD 007	860 °F	450	121	SE1	140	SE1	172	BRK	K.N	T-9709
"	"	"	"	"	"	"	125	SE1	138	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	113	SE1	134	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	142	SE1	130	SE1	N/A	N/A	"	"
F-21	09-19-17	15:00	7 °C	MD 007	860 °F	450	188	SE1	179	SE1	181	BRK	K.N	T-9709
"	"	"	"	"	"	"	168	SE1	172	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	172	SE1	165	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	170	SE1	177	SE1	N/A	N/A	"	"
F-22	09-20-17	07:00	3 °C	MD 007	860 °F	300	146	SE1	137	SE1	177	BRK	K.N	T-9709
"	"	"	"	"	"	"	148	SE1	129	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	146	SE1	124	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	149	SE1	130	SE1	N/A	N/A	"	"
F-23	09-20-17	13:30	7 °C	MD 007	860 °F	550	125	SE1	131	SE1	180	BRK	K.N	T-9709
"	"	"	"	"	"	"	127	SE1	134	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	132	SE1	134	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	120	SE1	132	SE1	N/A	N/A	"	"

Texel GEOSOL

Fusion Trial Tests
Calibration par Fusion

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Trial Test No. No. de Calibration	Date (mm/dd/yy)	Time Heure	Ambient Temp. Temp. Ambiante	Equipment No. No. Équipement	Equipment Temp. Temp. Équipement	Equipment Speed Vitesse Équipement	Peel Resistance Résistance Pelage "A" (ppi)	Peel Type of Break Type de Brisure	Peel Resistance Résistance Pelage "B" (ppi)	Peel Type of Break Type de Brisure	Shear Resistance Résist. Cisaillement (ppi)	Shear Type of Break Type de Brisure	Tech.-Welder Soudeur	Tensiometer No. No. Tensiomètre
F-24	09-20-17	16:00	6 °C	MD 007	860 °F	300	160	SE1	169	SE1	200	BRK	K.N	T-9709
"	"	"	"	"	"	"	172	SE1	174	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	171	SE1	170	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	184	SE1	177	SE1	N/A	N/A	"	"
F-25	09-22-17	14:20	6 °C	MD 007	860 °F	550	142	SE1	134	SE1	182	BRK	K.N	T-9709
"	"	"	"	"	"	"	137	SE1	134	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	137	SE1	137	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	129	SE1	125	SE1	N/A	N/A	"	"
F-26	09-23-17	07:30	-2 °C	MD 007	860 °F	550	152	SE1	140	SE1	211	BRK	K.N	T-9709
"	"	"	"	"	"	"	160	SE1	143	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	153	SE1	152	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	148	SE1	140	SE1	N/A	N/A	"	"
F-27	09-23-17	07:30	-2 °C	MD 007	860 °F	350	136	SE1	186	SE1	214	BRK	K.N	T-9709
"	"	"	"	"	"	"	127	SE1	182	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	127	SE1	182	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	133	SE1	187	SE1	N/A	N/A	"	"
F-28	09-23-17	07:30	-2 °C	MD 007	860 °F	300	161	SE1	175	SE1	211	BRK	K.N	T-9709
"	"	"	"	"	"	"	188	SE1	186	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	174	SE1	191	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	190	SE1	179	SE1	N/A	N/A	"	"
F-29	09-23-17	13:00	5 °C	MD 007	860 °F	600	129	SE1	131	SE1	175	BRK	K.N	T-9709
"	"	"	"	"	"	"	124	SE1	128	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	104	SE1	119	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	128	SE1	130	SE1	N/A	N/A	"	"

Texel GEOSOL

Fusion Trial Tests
Calibration par Fusion

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Trial Test No. No. de Calibration	Date (mm/dd/yy)	Time Heure	Ambient Temp. Temp. Ambiante	Equipment No. No. Équipement	Equipment Temp. Temp. Équipement	Equipment Speed Vitesse Équipement	Peel Resistance Résistance Pelage "A" (ppi)	Peel Type of Break Type de Brisure	Peel Resistance Résistance Pelage "B" (ppi)	Peel Type of Break Type de Brisure	Shear Resistance Résist. Cisaillement (ppi)	Shear Type of Break Type de Brisure	Tech.-Welder Soudeur	Tensiometer No. No. Tensiomètre
F-30	09-23-17	14:30	5 °C	MD 007	860 °F	300	129	SE1	146	SE1	161	BRK	K.N	T-9709
"	"	"	"	"	"	"	141	SE1	137	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	135	SE1	146	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	143	SE1	145	SE1	N/A	N/A	"	"
F-31	09-24-17	07:00	0 °C	MD 007	860 °F	350	172	SE1	166	SE1	206	BRK	K.N	T-9709
"	"	"	"	"	"	"	125	SE1	168	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	153	SE1	169	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	145	SE1	151	SE1	N/A	N/A	"	"
F-32	09-24-17	07:00	0 °C	MD 007	860 °F	600	141	SE1	143	SE1	204	BRK	K.N	T-9709
"	"	"	"	"	"	"	141	SE1	149	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	141	SE1	157	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	142	SE1	147	SE1	N/A	N/A	"	"
F-33	09-24-17	07:00	0 °C	MD 007	860 °F	300	173	SE1	167	SE1	205	BRK	K.N	T-9709
"	"	"	"	"	"	"	171	SE1	165	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	162	SE1	172	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	173	SE1	173	SE1	N/A	N/A	"	"
F-34	09-24-17	11:45	1 °C	MD 007	860 °F	600	134	SE1	130	SE1	190	BRK	K.N	T-9709
"	"	"	"	"	"	"	131	SE1	143	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	132	SE1	142	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	145	SE1	135	SE1	N/A	N/A	"	"

Texel GEOSOL

Fusion Trial Tests
Calibration par Fusion

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Trial Test No. No. de Calibration	Date (mm/dd/yy)	Time Heure	Ambient Temp. Temp. Ambiante	Equipment No. No. Équipement	Equipment Temp. Temp. Équipement	Equipment Speed Vitesse Équipement	Peel Resistance Résistance Pelage "A" (ppi)	Peel Type of Break Type de Brisure	Peel Resistance Résistance Pelage "B" (ppi)	Peel Type of Break Type de Brisure	Shear Resistance Résist. Cisaillement (ppi)	Shear Type of Break Type de Brisure	Tech.-Welder Soudeur	Tensiometer No. No. Tensiomètre
F-35	09-24-17	11:45	1 °C	MD 007	860 °F	350	175	SE1	166	SE1	200	BRK	K.N	T-9709
"	"	"	"	"	"	"	175	SE1	169	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	177	SE1	178	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	177	SE1	174	SE1	N/A	N/A	"	"
F-36	09-25-17	09:30	5 °C	MD 007	860 °F	600	128	SE1	123	SE1	183	BRK	K.N	T-9709
"	"	"	"	"	"	"	130	SE1	135	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	137	SE1	133	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	132	SE1	128	SE1	N/A	N/A	"	"
F-37	09-25-17	09:30	5 °C	MD 007	860 °F	350	117	SE1	122	SE1	194	BRK	K.N	T-9709
"	"	"	"	"	"	"	121	SE1	125	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	117	SE1	126	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	117	SE1	168	SE1	N/A	N/A	"	"
F-38	09-25-17	09:30	5 °C	MD 007	860 °F	300	170	SE1	168	SE1	197	BRK	K.N	T-9709
"	"	"	"	"	"	"	164	SE1	160	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	163	SE1	164	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	173	SE1	165	SE1	N/A	N/A	"	"
F-39	09-27-17	12:00	-2 °C	MD 007	860 °F	600	134	SE1	133	SE1	182	BRK	K.N	T-9709
"	"	"	"	"	"	"	132	SE1	127	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	132	SE1	135	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	136	SE1	131	SE1	N/A	N/A	"	"

Texel GEOSOL

Fusion Trial Tests
Calibration par Fusion

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Trial Test No. No. de Calibration	Date (mm/dd/yy)	Time Heure	Ambient Temp. Temp. Ambiante	Equipment No. No. Équipement	Equipment Temp. Temp. Équipement	Equipment Speed Vitesse Équipement	Peel Resistance Résistance Pelage "A" (ppi)	Peel Type of Break Type de Brisure	Peel Resistance Résistance Pelage "B" (ppi)	Peel Type of Break Type de Brisure	Shear Resistance Résist. Cisaillement (ppi)	Shear Type of Break Type de Brisure	Tech.-Welder Soudeur	Tensiometer No. No. Tensiomètre
F-40	09-27-17	12:00	-2 °C	MD 007	860 °F	350	127	SE1	123	SE1	178	BRK	K.N	T-9709
"	"	"	"	"	"	"	124	SE1	127	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	129	SE1	129	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	127	SE1	132	SE1	N/A	N/A	"	"
F-41	09-27-17	12:00	-2 °C	MD 007	860 °F	300	165	SE1	166	SE1	203	BRK	K.N	T-9709
"	"	"	"	"	"	"	171	SE1	165	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	153	SE1	160	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	157	SE1	166	SE1	N/A	N/A	"	"
F-42	10-04-17	07:00	-3 °C	MD 007	860 °F	500	148	SE1	136	SE1	196	BRK	K.N	T-9709
"	"	"	"	"	"	"	169	SE1	168	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	146	SE1	142	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	169	SE1	146	SE1	N/A	N/A	"	"
F-43	10-06-17	10:45	-3 °C	MD 007	860 °F	500	121	SE1	124	SE1	171	BRK	K.N	T-9709
"	"	"	"	"	"	"	127	SE1	120	SE1	N/A	N/A	"	"
"	"	"	"	"	"	"	127	SE1	118	SE1	N/A	N/A	"	"
"	"	"	"	"	"		114	SE1	122	SE1	N/A	N/A	"	"

Texel GEOSOL

Extrusion Trial Tests
Calibration par Extrusion

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Trial Test No. No. de Calibration	Date (mm/dd/yy)	Time Heure	Ambient Temp. Temp. Ambiante	Equipment No. No. Équipement	Equipment Temp. Temp. Équipement	Pre-Heat Temp. Temp. Pré-Chauf.	Peel Resistance Résistance Pelage (ppi)	Peel Type of Break Type de Brisure	Shear Resistance Résist. Cisaillement (ppi)	Shear Type of Break Type de Brisure	Tech.-Welder Soudeur	Tensiometer No. No. Tensiomètre
E-1	07-15-17	13:00	16 °C	EX-E	250 °C	250 °C	124	SE3	161	BRK	E.B	T-9709
"	"	"	"	"	"	"	133	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	128	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	128	SE3	N/A	N/A	"	"
E-2	07-16-17	12:30	20 °C	EX-E	250 °C	250 °C	119	SE3	157	BRK	E.B	T-9709
"	"	"	"	"	"	"	119	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	119	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	116	SE3	N/A	N/A	"	"
E-3	09-13-17	11:00	0 °C	EX-E	260 °C	260 °C	160	SE3	176	BRK	S.M	T-9709
"	"	"	"	"	"	"	166	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	145	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	149	SE3	N/A	N/A	"	"
E-4	09-14-17	09:50	0 °C	EX-E	260 °C	260 °C	113	SE3	187	BRK	S.M	T-9709
"	"	"	"	"	"	"	121	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	140	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	148	SE3	N/A	N/A	"	"
E-5	09-15-17	07:00	0 °C	EX-E	260 °C	260 °C	92	SE3	199	BRK	K.N	T-9709
"	"	"	"	"	"	"	122	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	110	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	107	SE3	N/A	N/A	"	"

Texel GEOSOL

Extrusion Trial Tests
Calibration par Extrusion

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Trial Test No. No. de Calibration	Date (mm/dd/yy)	Time Heure	Ambient Temp. Temp. Ambiante	Equipment No. No. Équipement	Equipment Temp. Temp. Équipement	Pre-Heat Temp. Temp. Pré-Chauf.	Peel Resistance Résistance Pelage (ppi)	Peel Type of Break Type de Brisure	Shear Resistance Résist. Cisaillement (ppi)	Shear Type of Break Type de Brisure	Tech.-Welder Soudeur	Tensiometer No. No. Tensiomètre
E-6	09-18-17	13:30	4 °C	EX-E	260 °C	260 °C	152	SE3	186	BRK	S.M	T-9709
"	"	"	"	"	"	"	160	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	169	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	155	SE3	N/A	N/A	"	"
E-7	09-20-17	07:00	3 °C	EX-E	260 °C	260 °C	130	SE3	194	BRK	S.M	T-9709
"	"	"	"	"	"	"	129	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	122	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	131	SE3	N/A	N/A	"	"
E-8	09-20-17	16:00	6 °C	EX-E	260 °C	260 °C	132	SE3	185	BRK	S.M	T-9709
"	"	"	"	"	"	"	120	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	133	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	130	SE3	N/A	N/A	"	"
E-9	09-23-17	10:00	2 °C	EX-E	260 °C	260 °C	107	SE3	198	BRK	S.M	T-9709
"	"	"	"	"	"	"	131	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	137	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	142	SE3	N/A	N/A	"	"
E-10	09-24-17	14:00	5 °C	EX-E	260 °C	260 °C	92	SE3	188	BRK	S.M	T-9709
"	"	"	"	"	"	"	98	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	95	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	99	SE3	N/A	N/A	"	"

Texel GEOSOL

Extrusion Trial Tests
Calibration par Extrusion

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Trial Test No. No. de Calibration	Date (mm/dd/yy)	Time Heure	Ambient Temp. Temp. Ambiante	Equipment No. No. Équipement	Equipment Temp. Temp. Équipement	Pre-Heat Temp. Temp. Pré-Chauf.	Peel Resistance Résistance Pelage (ppi)	Peel Type of Break Type de Brisure	Shear Resistance Résist. Cisaillement (ppi)	Shear Type of Break Type de Brisure	Tech.-Welder Soudeur	Tensiometer No. No. Tensiomètre
E-11	09-25-17	15:45	7 °C	EX-E	255 °C	255 °C	100	SE3	172	BRK	S.M	T-9709
"	"	"	"	"	"	"	116	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	106	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	93	SE3	N/A	N/A	"	"
E-12	09-27-17	16:40	3 °C	EX-E	255 °C	255 °C	154	SE3	194	BRK	S.M	T-9709
"	"	"	"	"	"	"	108	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	157	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	121	SE3	N/A	N/A	"	"
E-13	10-03-17	10:00	-2 °C	EX-E	275 °C	275 °C	93	SE3	192	BRK	S.M	T-9709
"	"	"	"	"	"	"	120	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	127	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	123	SE3	N/A	N/A	"	"
E-14	10-04-17	10:45	-3 °C	EX-E	280 °C	280 °C	118	SE3	208	BRK	S.M	T-9709
"	"	"	"	"	"	"	88	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	109	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	120	SE3	N/A	N/A	"	"
E-15	10-06-17	13:40	-2 °C	EX-E	280 °C	285 °C	112	SE3	197	BRK	P.A	T-9709
"	"	"	"	"	"	"	121	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	118	SE3	N/A	N/A	"	"
"	"	"	"	"	"	"	120	SE3	N/A	N/A	"	"

Texel
GEOSOL

Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: Rankin Inlet Tank Farm

Project No. / No. de Projet: C-15152

QC Inspector / Inspecteur CQ: Anthony Duquette-Michon

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
1-2	07-15-17	10:00	38.9	F-1	D.B	07-15-17	10:22	X	-	31	31	Full seam	O
2-3	07-15-17	10:18	39	F-1	D.B	07-15-17	10:38	X	-	31	31	Full seam	O
3-4	07-15-17	10:40	39	F-1	D.B	07-15-17	11:40	X	-	30	30	Full seam	O
4-5	07-15-17	12:05	39.6	F-1	D.B	07-15-17	12:42	X	-	31	31	Full seam	O
5-6	07-15-17	12:40	39.4	F-1	D.B	07-15-17	13:02	X	-	31	31	Full seam	O
8-9	07-16-17	08:50	6.65	F-3	D.B	07-16-17	09:25	X	-	28	28	Full seam	O
9-10	07-16-17	09:39	6.65	F-3	D.B	07-16-17	09:46	X	-	31	30	Full seam	O
7-8	07-16-17	09:52	31.9	F-2	D.B	07-16-17	10:13	X	-	30	30	Full seam	O
7-9	07-16-17	09:52	4.5	F-2	D.B	07-16-17	10:13	X	-	30	30	Full seam	O
7-10	07-16-17	09:52	12.8	F-2	D.B	07-16-17	10:13	X	-	30	30	Full seam	O
10-11	07-16-17	10:13	12.4	F-2	D.B	07-16-17	10:38	X	-	31	31	Full seam	O
9-11	07-16-17	10:13	4.5	F-2	D.B	07-16-17	10:38	X	-	31	31	Full seam	O
8-11	07-16-17	10:13	31.9	F-2	D.B	07-16-17	10:38	X	-	31	31	Full seam	O

Texel GEOSOL

Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
11-12	07-16-17	10:38	48.2	F-2	D.B	07-16-17	11:37	X	-	32	31	Full seam	O
12-13	07-16-17	11:39	49	F-2	D.B	07-16-17	12:08	X	-	31	30.5	Full seam	O
13-14	07-16-17	12:02	49.2	F-2	D.B	07-16-17	12:23	X	-	30	30	Full seam	O
14-15	07-16-17	12:25	49.2	F-2	D.B	07-16-17	12:45	X	-	32	31	Full seam	O
15-16	07-16-17	13:08	16.2	F-2	D.B	07-16-17	13:30	X	-	30	30	Full seam	O
15-17	07-16-17	13:08	16.8	F-2	D.B	07-16-17	13:30	X	-	30	30	Full seam	O
15-18	07-16-17	13:08	16.3	F-2	D.B	07-16-17	13:30	X	-	30	30	Full seam	O
16-17	07-16-17	12:45	2.1	F-3	D.B	07-16-17	12:56	X	-	27	26	Full seam	O
17-18	07-16-17	12:51	2.1	F-3	D.B	07-16-17	13:09	X	-	32	31	Full seam	O
19-20	09-12-17	16:35	16.7	F-4	K.N	09-12-17	16:52	X	-	30.5	30	Full seam	O
20-21	09-12-17	17:05	16.8	F-4	K.N	09-12-17	17:26	X	-	32	31	Full seam	O
21-22	09-13-17	07:20	16.5	F-5	K.N	09-13-17	07:33	X	-	31	30.5	Full seam	O
22-23	09-13-17	07:34	16.6	F-5	K.N	09-13-17	07:51	X	-	31	30.5	Full seam	O

Texel GEOSOL

Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
23-24	09-13-17	07:52	15.8	F-5	K.N	09-13-17	08:04	X	-	30	29	Full seam	O
24-25	09-13-17	08:05	16.6	F-5	K.N	09-13-17	08:17	X	-	31	30	Full seam	O
25-26	09-13-17	08:16	16.6	F-5	K.N	09-13-17	08:29	X	-	31	30.5	Full seam	O
26-27	09-13-17	08:30	16.4	F-5	K.N	09-13-17	08:42	X	-	30.5	30	Full seam	O
1-20	09-13-17	09:40	0.9	F-6	K.N	09-13-17	AM	-	X	-	-	Full seam	O
1-21	09-13-17	09:40	5.8	F-6	K.N	09-13-17	10:33	X	-	30	30	Full seam	O
2-21	09-13-17	09:40	0.9	F-6	K.N	09-13-17	AM	-	X	-	-	Full seam	O
2-22	09-13-17	09:40	5.8	F-6	K.N	09-13-17	10:39	X	-	33	33	Full seam	O
3-22	09-13-17	09:40	0.9	F-6	K.N	09-13-17	10:39	X	-	33	33	Full seam	O
3-23	09-13-17	09:40	5.8	F-6	K.N	09-13-17	10:39	X	-	33	33	From North 0m to 4m	O
"	"	"	"	"	"	09-13-17	10:14	X	-	33	31	4m to 5.8m	O
4-23	09-13-17	09:40	0.9	F-6	K.N	09-13-17	10:14	X	-	33	31	Full seam	O
4-24	09-13-17	09:40	5.8	F-6	K.N	09-13-17	10:14	X	-	33	31	Full seam	O

Texel GEOSOL

Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
5-24	09-13-17	09:40	0.9	F-6	K.N	09-13-17	10:14	X	-	33	31	Full seam	O
5-25	09-13-17	09:40	5.8	F-6	K.N	09-13-17	10:14	X	-	33	31	Full seam	O
6-25	09-13-17	09:40	0.9	F-6	K.N	09-13-17	10:11	X	-	30	30	Full seam	O
6-26	09-13-17	09:40	5.8	F-6	K.N	09-13-17	10:11	X	-	30	30	Full seam	O
27-28	09-13-17	14:00	15.7	F-7	K.N	09-13-17	08:42	X	-	31	30	Full seam	O
19-29	09-13-17	16:23	9.4	F-7	K.N	09-13-17	14:13	X	-	30	29	Full seam	O
30-31	09-13-17	16:30	5.2	F-7	K.N	09-13-17	16:31	X	-	31	31	Full seam	O
29-30	09-13-17	16:40	6.1	F-6	K.N	09-13-17	16:36	X	-	28	27	Full seam	O
29-31	09-13-17	16:40	3.2	F-6	K.N	09-13-17	17:11	X	-	28	27	Full seam	O
29-32	09-13-17	16:50	3.4	F-6	K.N	09-13-17	17:11	X	-	28	27	Full seam	O
31-32	09-13-17	16:55	2	F-6	K.N	09-13-17	16:57	X	-	27	26	Full seam	O
19-30	09-13-17	17:00	3.4	F-6	K.N	09-13-17	17:02	X	-	31	31	Full seam	O
30-35	09-14-17	12:20	10.8	F-10	K.N	09-14-17	12:34	X	-	31	30.5	Full seam	O

Texel GEOSOL

Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
6-33	09-14-17	08:24	40.3	F-8	K.N	09-14-17	08:48	X	-	31.5	31.5	Full seam	O
33-34	09-14-17	09:00	40.3	F-8	K.N	09-14-17	09:41	X	-	31	31	Full seam	O
26-33	09-14-17	09:28	0.8	F-9	K.N	09-14-17	10:01	X	-	31	30	Full seam	O
27-33	09-14-17	09:28	5.9	F-9	K.N	09-14-17	10:01	X	-	31	30	Full seam	O
27-34	09-14-17	09:28	0.8	F-9	K.N	09-14-17	10:01	X	-	31	30	Full seam	O
28-34	09-14-17	09:28	5.9	F-9	K.N	09-14-17	10:01	X	-	31	30	Full seam	O
19-35	09-14-17	12:26	5.3	F-11	K.N	09-14-17	12:34	X	-	30.5	29	Full seam	O
35-36	09-14-17	12:34	10.1	F-10	K.N	09-14-17	12:50	X	-	32	31	Full seam	O
36-37	09-14-17	12:52	9.8	F-10	K.N	09-14-17	13:05	X	-	29.5	29.5	Full seam	O
37-38	09-14-17	13:02	9.6	F-10	K.N	09-14-17	13:14	X	-	30	30	Full seam	O
38-39	09-14-17	13:20	9.1	F-10	K.N	09-14-17	13:26	X	-	31	30	Full seam	O
39-40	09-14-17	13:35	9.5	F-10	K.N	09-14-17	13:47	X	-	30	30	Full seam	O
1-41	09-14-17	16:25	39.2	F-10	K.N	09-14-17	17:11	X	-	32	32	From West 0m to 8.4m	O

Texel GEOSOL

Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Project No. / No. de Projet: **C-15152**

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
"	"	"	"	"	"	09-14-17	17:13	X	-	31	30	8.4m to 39.2m	O
41-42	09-14-17	17:03	39.3	F-10	K.N	09-15-17	06:41	X	-	32	32	Full seam	O
20-41	09-15-17	07:05	5.9	F-12	K.N	09-15-17	07:29	X	-	32	32	Full seam	O
19-41	09-15-17	07:05	0.8	F-12	K.N	09-15-17	07:29	X	-	32	32	Full seam	O
19-42	09-15-17	07:05	5.9	F-12	K.N	09-15-17	07:29	X	-	32	32	Full seam	O
35-42	09-15-17	07:20	1.9	F-12	K.N	09-15-17	08:17	X	-	28	27	Full seam	O
36-42	09-15-17	07:20	6.65	F-12	K.N	09-15-17	08:17	X	-	28	27	Full seam	O
37-42	09-15-17	07:20	6.65	F-12	K.N	09-15-17	08:17	X	-	28	27	Full seam	O
38-42	09-15-17	07:20	6.65	F-12	K.N	09-15-17	08:17	X	-	28	27	Full seam	O
39-42	09-15-17	07:20	6.65	F-12	K.N	09-15-17	08:17	X	-	28	27	Full seam	O
40-42	09-15-17	07:20	6.65	F-12	K.N	09-15-17	08:17	X	-	28	27	Full seam	O
40-43	09-15-17	12:00	9.6	F-13	K.N	09-15-17	12:06	X	-	31	30	Full seam	O
43-44	09-15-17	12:07	11.2	F-13	K.N	09-15-17	12:15	X	-	31	30	Full seam	O

Texel GEOSOL

Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
44-45	09-15-17	12:15	10.8	F-13	K.N	09-15-17	12:29	X	-	31	29	Full seam	O
45-46	09-15-17	12:22	10.6	F-13	K.N	09-15-17	12:34	X	-	29	29	Full seam	O
46-47	09-15-17	12:29	10.5	F-13	K.N	09-15-17	12:43	X	-	30.5	30	Full seam	O
47-48	09-15-17	14:17	10.5	F-13	K.N	09-15-17	14:22	X	-	30.5	29	Full seam	O
42-43	09-15-17	12:35	3.8	F-12	K.N	09-15-17	13:58	X	-	28	28	Full seam	O
48-49	09-15-17	14:30	10.7	F-13	K.N	09-15-17	14:38	X	-	27	26	Full seam	O
49-50	09-15-17	14:47	10.7	F-13	K.N	09-15-17	15:58	X	-	32	32	Full seam	O
50-51	09-17-17	16:12	10.7	F-14	K.N	09-17-17	16:21	X	-	30.5	30.5	Full seam	O
51-52	09-17-17	16:18	10.7	F-14	K.N	09-17-17	16:26	X	-	31	30	Full seam	O
52-53	09-17-17	16:25	11	F-14	K.N	09-17-17	16:36	X	-	31	30	Full seam	O
53-54	09-17-17	16:35	11	F-14	K.N	09-17-17	16:48	X	-	32	31	Full seam	O
54-55	09-17-17	16:45	11.2	F-14	K.N	09-17-17	16:56	X	-	29.5	28	Full seam	O
55-56	09-17-17	17:03	11.1	F-14	K.N	09-17-17	17:30	X	-	30	30	Full seam	O

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Seaming Procedures
Procédures de Soudures

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Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
56-57	09-17-17	17:09	11.3	F-14	K.N	09-17-17	17:32	X	-	30.5	30.5	Full seam	O
57-58	09-18-17	08:25	5.7	F-15	K.N	09-18-17	08:30	X	-	30.5	30	Full seam	O
16-59	09-18-17	10:50	16.7	F-16	K.N	09-18-17	11:49	X	-	31.5	31.5	Full seam	O
45-59	09-18-17	14:24	3.7	F-18	K.N	09-18-17	14:36	X	-	30	30	Full seam	O
46-59	09-18-17	14:24	6.65	F-18	K.N	09-18-17	14:47	X	-	33	32	Full seam	O
47-59	09-18-17	14:24	6.65	F-18	K.N	09-18-17	14:47	X	-	33	32	From East 0m to 2m	O
"	"	"	"	"	"	09-18-17	15:54	X	-	31	30	2m to 6.65m	O
48-59	09-18-17	14:24	0.5	F-18	K.N	09-18-17	15:54	X	-	31	30	Full seam	O
48-60	09-18-17	14:24	6.2	F-18	K.N	09-18-17	15:54	X	-	31	30	Full seam	O
49-60	09-18-17	14:24	6.65	F-18	K.N	09-18-17	15:47	X	-	32	32	Full seam	O
50-60	09-18-17	14:24	6.65	F-18	K.N	09-18-17	15:47	X	-	32	32	Full seam	O
51-60	09-18-17	14:24	6.65	F-18	K.N	09-18-17	16:12	X	-	30.5	29	Full seam	O
52-60	09-18-17	14:24	6.65	F-18	K.N	09-18-17	16:10	X	-	30	29.5	Full seam	O

Texel GEOSOL

Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

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Project No. / No. de Projet: **C-15152**

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
17-60	09-18-17	12:15	16.7	F-17	K.N	09-18-17	12:49	X	-	30	29	Full seam	O
18-60	09-18-17	12:15	16.5	F-17	K.N	09-18-17	12:49	X	-	30	29	Full seam	O
41-59	09-18-17	13:05	2.2	F-17	K.N	09-18-17	13:15	X	-	32	31	Full seam	O
42-59	09-18-17	13:05	4.5	F-17	K.N	09-18-17	13:15	X	-	32	31	Full seam	O
59-60	09-18-17	12:50	6.65	F-17	K.N	09-18-17	13:00	X	-	30.5	29.5	Full seam	O
Patch-59	09-18-17	13:40	12.9	F-18	K.N	09-18-17	13:51	X	-	32	30.5	Full seam	O
Patch-43	09-18-17	14:00	3.2	F-18	K.N	09-18-17	14:13	X	-	30.5	29.5	Full seam	O
Patch-44	09-18-17	14:00	6.65	F-18	K.N	09-18-17	14:13	X	-	30.5	29.5	Full seam	O
Patch-45	09-18-17	14:00	3.2	F-18	K.N	09-18-17	14:13	X	-	30.5	29.5	Full seam	O
Patch-42	09-18-17	PM	0.8	E-6	S.M	09-18-17	PM	-	X	-	-	Full seam	O
61-62	09-19-17	07:37	10	F-19	K.N	09-19-17	07:45	X	-	33.5	33.5	Full seam	O
62-63	09-19-17	07:45	4.9	F-19	K.N	09-19-17	07:51	X	-	30.5	29.5	Full seam	O
66-67	09-19-17	12:35	38.4	F-20	K.N	09-19-17	12:56	X	-	30.5	30	Full seam	O

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Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

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Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
61-64	09-19-17	08:47	38.8	F-19	K.N	09-19-17	09:10	X	-	32	31.5	Full seam	O
64-65	09-19-17	10:22	38.4	F-19	K.N	09-19-17	10:42	X	-	31	30.5	Full seam	O
65-66	09-19-17	12:12	38.4	F-20	K.N	09-19-17	12:33	X	-	32	31.5	Full seam	O
53-61	09-19-17	17:11	6.65	F-21	K.N	09-19-17	07:29	X	-	30	29	Full seam	O
54-61	09-19-17	17:11	6.65	F-21	K.N	09-19-17	07:36	X	-	30.5	30.5	Full seam	O
55-61	09-19-17	17:11	6.65	F-21	K.N	09-19-17	07:36	X	-	30.5	30.5	Full seam	O
56-61	09-19-17	17:11	6.65	F-21	K.N	09-19-17	07:36	X	-	30.5	30.5	Full seam	O
57-61	09-19-17	17:11	2.5	F-21	K.N	09-19-17	07:42	X	-	30.5	30.5	Full seam	O
57-62	09-19-17	17:11	7.1	F-21	K.N	09-19-17	07:42	X	-	30.5	30.5	Full seam	O
58-62	09-19-17	17:11	1.3	F-21	K.N	09-19-17	AM	-	X	-	-	Full seam	O
58-63	09-19-17	17:11	4.9	F-21	K.N	09-19-17	07:19	X	-	30	29	Full seam	O
67-68	09-19-17	13:27	38.3	F-20	K.N	09-19-17	13:47	X	-	31.5	30	Full seam	O
34-69	09-19-17	16:25	41	F-20	K.N	09-19-17	16:46	X	-	31	31	Full seam	O

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Seaming Procedures
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Project No. / No. de Projet: **C-15152**

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
68-70	09-20-17	13:55	38.6	F-23	K.N	09-20-17	14:14	X	-	30	30	Full seam	O
70-71	09-20-17	14:52	39.5	F-23	K.N	09-20-17	15:58	X	-	30	29	Full seam	O
7-71	09-20-17	16:32	4,7	F-24	K.N	09-20-17	16:45	X	-	30	30	Full seam	O
10-71	09-20-17	16:32	2	F-24	K.N	09-20-17	16:45	X	-	30	30	Full seam	O
10-70	09-20-17	16:32	4,7	F-24	K.N	09-20-17	16:45	X	-	30	30	Full seam	O
11-70	09-20-17	16:32	2	F-24	K.N	09-20-17	16:45	X	-	30	30	Full seam	O
60-61	09-20-17	09:12	6.65	F-22	K.N	09-20-17	10:01	X	-	30	30	Full seam	O
18-64	09-20-17	09:12	2	F-22	K.N	09-20-17	10:00	X	-	31	30	Full seam	O
15-64	09-20-17	09:12	4.7	F-22	K.N	09-20-17	10:00	X	-	31	30	Full seam	O
15-65	09-20-17	09:12	2	F-22	K.N	09-20-17	10:00	X	-	31	30	Full seam	O
14-65	09-20-17	09:12	4.7	F-22	K.N	09-20-17	09:52	X	-	30	28	Full seam	O
14-66	09-20-17	09:12	2	F-22	K.N	09-20-17	09:52	X	-	30	28	Full seam	O
13-66	09-20-17	09:12	4.7	F-22	K.N	09-20-17	09:52	X	-	30	28	Full seam	O

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Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
13-67	09-20-17	09:12	2	F-22	K.N	09-20-17	09:55	X	-	25	25	Full seam	O
12-67	09-20-17	09:12	4.7	F-22	K.N	09-20-17	09:55	X	-	25	25	Full seam	O
12-68	09-20-17	09:12	2	F-22	K.N	09-20-17	09:55	X	-	25	25	Full seam	O
11-68	09-20-17	09:12	4.7	F-22	K.N	09-20-17	09:55	X	-	25	25	Full seam	O
71-72	09-22-17	14:30	39.5	F-25	K.N	09-22-17	15:32	X	-	33	33	Full seam	O
72-73	09-22-17	15:45	39.6	F-25	K.N	09-22-17	16:04	X	-	33	32.5	Full seam	O
73-74	09-22-17	16:01	40	F-25	K.N	09-22-17	16:21	X	-	30.5	30.5	Full seam	O
74-75	09-22-17	16:20	39.8	F-25	K.N	09-22-17	16:47	X	-	31	31	Full seam	O
75-76	09-22-17	16:45	40.1	F-25	K.N	09-22-17	07:04	X	-	32.5	32	Full seam	O
76-77	09-23-17	07:45	10	F-26	K.N	09-23-17	08:04	X	-	31	30.5	Full seam	O
78-79	09-23-17	08:21	7.3	F-26	K.N	09-23-17	08:26	X	-	30.5	30.5	Full seam	O
78-80	09-23-17	08:50	10.7	F-26	K.N	09-23-17	09:05	X	-	31	31	Full seam	O
80-81	09-23-17	08:55	11.1	F-26	K.N	09-23-17	09:10	X	-	31	30.5	Full seam	O

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Seaming Procedures
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Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
81-82	09-23-17	09:05	11.3	F-26	K.N	09-23-17	09:17	X	-	30.5	30.5	Full seam	O
82-83	09-23-17	09:15	11.6	F-26	K.N	09-23-17	09:23	X	-	30.5	30	Full seam	O
76-83	09-23-17	09:45	6.2	F-27	K.N	09-23-17	10:04	X	-	25	25	Full seam	O
76-82	09-23-17	09:45	6.65	F-27	K.N	09-23-17	10:04	X	-	25	25	Full seam	O
76-81	09-23-17	09:45	6.65	F-27	K.N	09-23-17	10:04	X	-	25	25	Full seam	O
76-80	09-23-17	09:45	6.65	F-27	K.N	09-23-17	10:04	X	-	25	25	Full seam	O
76-78	09-23-17	09:45	4	F-27	K.N	09-23-17	10:04	X	-	25	25	Full seam	O
77-78	09-23-17	09:45	3.9	F-28	K.N	09-23-17	10:11	X	-	30.5	30.5	Full seam	O
77-79	09-23-17	09:45	8	F-28	K.N	09-23-17	10:11	X	-	30.5	30.5	From North 0m to 4.5m	O
"	"	"	"	"	"	09-23-17	10:15	X	-	29	29	4.5m to 8m	O
7-84	09-23-17	13:43	49	F-29	K.N	09-23-17	14:06	X	-	32	32	Full seam	O
84-85	09-23-17	14:06	37.2	F-29	K.N	09-23-17	14:24	X	-	32	30	Full seam	O
84-86	09-23-17	14:24	12	F-29	K.N	09-23-17	14:36	X	-	30.5	30.5	Full seam	O

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Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
85-86	09-23-17	14:35	6.65	F-29	K.N	09-23-17	14:42	X	-	32	32	Full seam	O
7-72	09-23-17	15:40	2	F-30	K.N	09-23-17	15:59	X	-	31	31	Full seam	O
84-72	09-23-17	15:40	4.7	F-30	K.N	09-23-17	15:59	X	-	31	31	Full seam	O
84-73	09-23-17	15:40	2	F-30	K.N	09-23-17	15:59	X	-	31	31	Full seam	O
85-73	09-23-17	15:40	4.7	F-30	K.N	09-23-17	15:59	X	-	31	31	Full seam	O
85-74	09-23-17	15:40	2	F-30	K.N	09-23-17	15:59	X	-	31	31	Full seam	O
83-87	09-24-17	09:15	11.6	F-31	K.N	09-24-17	09:40	X	-	31.5	31.5	Full seam	O
76-87	09-24-17	09:15	6.65	F-31	K.N	09-24-17	09:40	X	-	31.5	31.5	Full seam	O
75-87	09-24-17	09:15	6.65	F-31	K.N	09-24-17	09:40	X	-	31.5	31.5	Full seam	O
74-87	09-24-17	09:15	4.7	F-31	K.N	09-24-17	09:40	X	-	31.5	31.5	Full seam	O
87-88	09-24-17	09:52	29.6	F-32	K.N	09-24-17	10:06	X	-	31.5	31	Full seam	O
88-89	09-24-17	10:15	30	F-32	K.N	09-24-17	10:38	X	-	27	26	Full seam	O
89-90	09-24-17	10:38	30.1	F-32	K.N	09-24-17	10:52	X	-	30.5	30.5	Full seam	O

Texel GEOSOL

Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
90-91	09-24-17	12:09	29.9	F-33	K.N	09-24-17	12:28	X	-	30	30	Full seam	O
91-92	09-24-17	12:28	29.8	F-33	K.N	09-24-17	12:43	X	-	30	30	Full seam	O
92-93	09-24-17	13:01	29.4	F-33	K.N	09-24-17	13:15	X	-	34	34	Full seam	O
85-87	09-24-17	13:23	6.65	F-34	K.N	09-24-17	13:49	X	-	32	32	Full seam	O
85-88	09-24-17	13:23	6.65	F-34	K.N	09-24-17	13:49	X	-	32	32	From West 0m to 3.5m	O
"	"	"	"	"	"	09-24-17	14:00	X	-	33	33	3.5m to 6.65m	O
85-89	09-24-17	13:23	6.65	F-34	K.N	09-24-17	14:00	X	-	33	33	Full seam	O
85-90	09-24-17	13:23	6.65	F-34	K.N	09-24-17	14:00	X	-	33	33	Full seam	O
85-91	09-24-17	13:23	6.65	F-34	K.N	09-24-17	14:00	X	-	33	33	Full seam	O
85-92	09-24-17	13:23	3.7	F-34	K.N	09-24-17	14:00	X	-	33	33	Full seam	O
86-92	09-24-17	13:23	3	F-34	K.N	09-24-17	14:00	X	-	33	33	Full seam	O
86-93	09-24-17	13:23	6.65	F-34	K.N	09-24-17	14:00	X	-	33	33	Full seam	O
94-95	09-25-17	12:31	63.7	F-35	K.N	09-25-17	12:58	X	-	33	33	Full seam	O

Texel GEOSOL

Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
96-97	09-25-17	12:52	1.8	F-37	K.N	09-25-17	13:02	X	-	32	31	Full seam	O
95-96	09-25-17	13:07	35.5	F-37	K.N	09-25-17	14:01	X	-	29	28	From North 0m to 12m	O
"	"	"	"	"	"	09-25-17	13:48	X	-	33	32	12m to 35.5m	O
95-97	09-25-17	13:07	27.3	F-36	K.N	09-25-17	13:48	X	-	33	32	Full seam	O
69-94	09-25-17	11:35	6.65	F-37	K.N	09-25-17	12:51	X	-	34	34	Full seam	O
34-94	09-25-17	11:35	6.65	F-37	K.N	09-25-17	12:51	X	-	34	34	Full seam	O
33-94	09-25-17	11:35	6.65	F-37	K.N	09-25-17	12:51	X	-	34	34	Full seam	O
6-94	09-25-17	11:35	6.65	F-37	K.N	09-25-17	12:51	X	-	34	34	Full seam	O
5-94	09-25-17	11:35	6.65	F-37	K.N	09-25-17	12:51	X	-	34	34	Full seam	O
4-94	09-25-17	11:35	6.65	F-37	K.N	09-25-17	12:51	X	-	34	34	Full seam	O
3-94	09-25-17	11:35	6.65	F-37	K.N	09-25-17	12:51	X	-	34	34	Full seam	O
2-94	09-25-17	11:35	6.65	F-37	K.N	09-25-17	12:51	X	-	34	34	Full seam	O
1-94	09-25-17	11:35	6.65	F-37	K.N	09-25-17	12:37	X	-	28	28	Full seam	O

Texel GEOSOL

Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
41-94	09-25-17	11:35	4.4	F-37	K.N	09-25-17	12:40	X	-	31.5	31.5	Full seam	O
59-94	09-25-17	16:00	6.65	F-36	K.N	09-25-17	16:07	X	-	30.5	30	Full seam	O
59-95	09-25-17	16:00	6.1	F-36	K.N	09-25-17	16:07	X	-	30.5	30	Full seam	O
59-96	09-25-17	16:00	1.8	F-36	K.N	09-25-17	16:07	X	-	30.5	30	Full seam	O
16-96	09-25-17	14:17	2.2	F-37	K.N	09-25-17	14:27	X	-	31	30	Full seam	O
15-96	09-25-17	14:17	6.65	F-37	K.N	09-25-17	14:27	X	-	31	30	From North 0m to 5.8m	O
"	"	"	"	"	"	09-25-17	14:32	X	-	31	31	5.8m to 6.65m	O
14-96	09-25-17	14:17	6.65	F-37	K.N	09-25-17	14:32	X	-	31	31	From North 0m to 4.8m	O
"	"	"	"	"	"	09-25-17	14:49	X	-	34	34	4.8m to 6.65m	O
13-96	09-25-17	14:17	6.65	F-37	K.N	09-25-17	14:49	X	-	34	34	Full seam	O
12-96	09-25-17	14:17	6.65	F-37	K.N	09-25-17	14:49	X	-	34	34	From North 0m to 4m	O
"	"	"	"	"	"	09-25-17	14:45	X	-	30.5	30	4m to 6.65m	O
11-96	09-25-17	14:17	6.65	F-37	K.N	09-25-17	15:51	X	-	30.5	30.5	Full seam	O

Texel GEOSOL

Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
8-97	09-25-17	14:17	6.65	F-37	K.N	09-25-17	15:51	X	-	30.5	30.5	Full seam	O
7-97	09-25-17	14:17	6.65	F-37	K.N	09-25-17	15:51	X	-	30.5	30.5	Full seam	O
84-97	09-25-17	14:17	6.65	F-37	K.N	09-25-17	15:51	X	-	30.5	30.5	Full seam	O
86-97	09-25-17	14:17	6.65	F-37	K.N	09-25-17	15:51	X	-	30.5	30.5	Full seam	O
93-98	09-27-17	12:16	28.7	F-38	K.N	09-27-17	12:55	X	-	29	29	From North 0m to 3.5m	O
"	"	"	"	"	"	09-27-17	12:55	X	-	31	30.5	3.5m to 28.7m	O
98-99	09-27-17	12:46	27.3	F-38	K.N	09-27-17	13:12	X	-	32	32	Full seam	O
99-100	09-27-17	13:00	26.5	F-38	K.N	09-27-17	13:16	X	-	31	31	Full seam	O
100-101	09-27-17	13:13	26.6	F-38	K.N	09-27-17	13:23	X	-	32	32	Full seam	O
101-102	09-27-17	13:24	26.4	F-38	K.N	09-27-17	13:36	X	-	33	32	Full seam	O
102-103	09-27-17	13:38	26.4	F-38	K.N	09-27-17	13:52	X	-	34	34	Full seam	O
103-104	09-27-17	13:51	26.7	F-38	K.N	09-27-17	14:04	X	-	32	31	Full seam	O
104-105	09-27-17	14:08	26.7	F-38	K.N	09-27-17	14:21	X	-	30	30	Full seam	O

Texel GEOSOL

Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
105-106	09-27-17	14:21	26.7	F-38	K.N	09-27-17	14:32	X	-	31.5	30.5	Full seam	O
86-98	09-27-17	15:45	3	F-39	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
97-98	09-27-17	15:45	1.7	F-40	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
95-98	09-27-17	15:45	2.3	F-40	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
95-99	09-27-17	15:45	3.6	F-40	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
94-99	09-27-17	15:45	3.2	F-40	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
94-100	09-27-17	15:45	3	F-40	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
69-100	09-27-17	15:45	3.8	F-39	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
69-101	09-27-17	15:45	6.65	F-39	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
69-102	09-27-17	15:45	6.65	F-39	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
69-103	09-27-17	15:45	6.65	F-39	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
69-104	09-27-17	15:45	6.65	F-39	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
69-105	09-27-17	15:45	6.65	F-38	K.N	09-27-17	16:26	X	-	30	28	Full seam	O

Texel GEOSOL

Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
69-106	09-27-17	15:45	5	F-38	K.N	09-27-17	16:26	X	-	30	28	Full seam	O
106-107	09-27-17	16:30	12	F-38	K.N	09-27-17	16:35	X	-	31	30	Full seam	O
28-108	10-04-17	08:14	14.1	F-41	K.N	10-04-17	08:48	X	-	31	30	From West 0m to 4m	O
"	"	"	"	"	"	10-04-17	PM	-	X	-	-	4m to 8m	O
"	"	"	"	"	"	10-04-17	08:42	X	-	35	35	8m to 14.1m	O
69-108	10-04-17	08:35	5.9	F-41	K.N	10-04-17	08:50	X	-	34	3	From North 0m to 1.2m	O
"	"	"	"	"	"	10-04-17	08:52	X	-	33	33	1.2m to 5.9m	O
108-109	10-06-17	11:25	14.7	F-42	K.N	10-06-17	11:35	X	-	30	30	Full seam	O
109-110	10-06-17	11:40	14.7	F-42	K.N	10-06-17	11:45	X	-	32	32	Full seam	O
110-111	10-06-17	12:05	13.8	F-42	K.N	10-06-17	12:15	X	-	32	32	Full seam	O
111-106	10-06-17	12:36	2.2	F-42	K.N	10-06-17	12:45	X	-	32	31	Full seam	O
110-106	10-06-17	12:36	6.65	F-42	K.N	10-06-17	12:45	X	-	32	31	Full seam	O
109-106	10-06-17	12:36	5.2	F-42	K.N	10-06-17	12:45	X	-	32	31	Full seam	O

Texel GEOSOL

Seaming Procedures
Procédures de Soudures

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Project No. / No. de Projet: **C-15152**

Seaming Procedures / Procédures de Soudures						Non-Destructive Testing / Essai Non-Destructif							
Seam No. No. de Soudure	Date of Seaming Date de Soudure (mm/dd/yy)	Time of Seaming Heure de Soudure	Seam Length Longueur Soudure (m)	Trial Test No. No. Calibration	Technician-Welder Soudeur	Test Date Date de l'essai (mm/dd/yy)	Time Heure	Air-Pressure Pressurisation	Vacuum Box Boîte à Vide	Starting Pressure Pression Départ (psi)	Ending Pressure Pression Fin (psi)	Testing Details/Location Détails de l'essai/Localisation	Approved (Yes/No) Approuvé (Oui/Non)
111-112	10-06-17	12:57	5.2	F-42	K.N	10-06-17	13:10	X	-	33	32	Full seam	O
112-113	10-06-17	13:05	4.1	F-42	K.N	10-06-17	13:15	X	-	30	30	Full seam	O
111-107	10-06-17	13:30	7.8	F-42	K.N	10-06-17	13:40	X	-	30	29	Full seam	O
112-107	10-06-17	13:30	2.3	F-42	K.N	10-06-17	13:40	X	-	30	29	Full seam	O
113-107	10-06-17	13:30	3.1	F-42	K.N	10-06-17	13:40	X	-	30	29	Full seam	O

Texel GEOSOL

Destructive Testing
Essai Destructif

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Destructive Test No. No. Essai Destructif	Seam No. No. de Soudure	Date (mm/dd/yy)	Sample Location Localisation de l'échantillon	Peel Resistance Résistance Pelage (ppi)	Peel Type of Break Type de Brisure	Peel Resistance Résistance Pelage (ppi)	Peel Type of Break Type de Brisure	Shear Resistance Résist. Cisaillement (ppi)	Shear Type of Break Type de Brisure	Date Repaired Date Réparée (mm/dd/yy)	Date Repair Verified Date Réparée Vérifiée (mm/dd/yy)	Lab. Testing (P/F) Lab. Indép. (A/R)	Tensiometer No. No. Tensiomètre
DT-1	5-6	07-15-17	At 10m from WEOS	123	SE1	124	SE1	159	BRK	07-15-17	07-15-17	P	T-9709
"	"	"	"	115	SE1	120	SE1	N/A	N/A	"	"	"	"
"	"	"	"	120	SE1	120	SE1	N/A	N/A	"	"	"	"
"	"	"	"	120	SE1	120	SE1	N/A	N/A	"	"	"	"
DT-2	7-10	07-16-17	At 1,3m from EEOS	112	SE1	119	SE1	141	BRK	07-16-17	07-16-17	P	T-9709
"	"	"	"	108	SE1	107	SE1	N/A	N/A	"	"	"	"
"	"	"	"	108	SE1	107	SE1	N/A	N/A	"	"	"	"
"	"	"	"	109	SE1	116	SE1	N/A	N/A	"	"	"	"
DT-3	14-15	07-16-17	At 16,2m from WEOS	108	SE1	96	SE1	135	BRK	07-16-17	07-16-17	P	T-9709
"	"	"	"	105	SE1	103	SE1	N/A	N/A	"	"	"	"
"	"	"	"	101	SE1	99	SE1	N/A	N/A	"	"	"	"
"	"	"	"	105	SE1	98	SE1	N/A	N/A	"	"	"	"
DT-4	25-26	09-13-17	At 1m from WEOS	156	SE1	118	SE1	185	BRK	09-13-17	09-13-17	P	T-9709
"	"	"	"	138	SE1	108	SE1	N/A	N/A	"	"	"	"
"	"	"	"	140	SE1	113	SE1	N/A	N/A	"	"	"	"
"	"	"	"	140	SE1	111	SE1	N/A	N/A	"	"	"	"
DT-5	33-34	09-14-17	At 1m from WEOS	114	SE1	132	SE1	182	BRK	09-14-17	09-14-17	P	T-9709
"	"	"	"	123	SE1	133	SE1	N/A	N/A	"	"	"	"
"	"	"	"	115	SE1	118	SE1	N/A	N/A	"	"	"	"
"	"	"	"	121	SE1	135	SE1	N/A	N/A	"	"	"	"
DT-6	41-42	09-15-17	At 2m from EEOS	132	SE1	128	SE1	187	BRK	09-15-17	09-15-17	P	T-9709
"	"	"	"	125	SE1	142	SE1	N/A	N/A	"	"	"	"
"	"	"	"	124	SE1	125	SE1	N/A	N/A	"	"	"	"
"	"	"	"	132	SE1	133	SE1	N/A	N/A	"	"	"	"

Texel GEOSOL

Destructive Testing
Essai Destructif

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

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Destructive Test No. No. Essai Destructif	Seam No. No. de Soudure	Date (mm/dd/yy)	Sample Location Localisation de l'échantillon	Peel Resistance Résistance Pelage (ppi)	Peel Type of Break Type de Brisure	Peel Resistance Résistance Pelage (ppi)	Peel Type of Break Type de Brisure	Shear Resistance Résist. Cisaillement (ppi)	Shear Type of Break Type de Brisure	Date Repaired Date Réparée (mm/dd/yy)	Date Repair Verified Date Réparée Vérifiée (mm/dd/yy)	Lab. Testing (P/F) Lab. Indép. (A/R)	Tensiometer No. No. Tensiomètre
DT-7	56-57	09-19-17	At 0,2m from SEOS	147	SEI	142	SEI	209	BRK	09-20-17	09-20-17	P	T-9709
"	"	"	"	148	SEI	145	SEI	N/A	N/A	"	"	"	"
"	"	"	"	145	SEI	140	SEI	N/A	N/A	"	"	"	"
"	"	"	"	144	SEI	164	SEI	N/A	N/A	"	"	"	"
DT-8	61-62	09-19-17	At 1,5m from EEOS	135	SEI	128	SEI	178	BRK	09-20-17	09-20-17	P	T-9709
"	"	"	"	145	SEI	125	SEI	N/A	N/A	"	"	"	"
"	"	"	"	140	SEI	137	SEI	N/A	N/A	"	"	"	"
"	"	"	"	145	SEI	132	SEI	N/A	N/A	"	"	"	"
DT-9	65-66	09-19-17	At 3m from EEOS	143	SEI	125	SEI	186	BRK	09-20-17	09-20-17	P	T-9709
"	"	"	"	144	SEI	120	SEI	N/A	N/A	"	"	"	"
"	"	"	"	136	SEI	131	SEI	N/A	N/A	"	"	"	"
"	"	"	"	127	SEI	127	SEI	N/A	N/A	"	"	"	"
DT-10	67-68	09-19-17	At 12m from EEOS	139	SEI	125	SEI	182	BRK	09-20-17	09-20-17	P	T-9709
"	"	"	"	126	SEI	124	SEI	N/A	N/A	"	"	"	"
"	"	"	"	134	SEI	132	SEI	N/A	N/A	"	"	"	"
"	"	"	"	125	SEI	128	SEI	N/A	N/A	"	"	"	"
DT-11	72-73	09-23-17	At 4,5m from WEOS	155	SEI	144	SEI	200	BRK	09-23-17	09-23-17	P	T-9709
"	"	"	"	146	SEI	156	SEI	N/A	N/A	"	"	"	"
"	"	"	"	148	SEI	136	SEI	N/A	N/A	"	"	"	"
"	"	"	"	145	SEI	147	SEI	N/A	N/A	"	"	"	"
DT-12	78-80	09-23-17	At 2,7m from NEOS	134	SEI	134	SEI	194	BRK	09-23-17	09-23-17	P	T-9709
"	"	"	"	131	SEI	134	SEI	N/A	N/A	"	"	"	"
"	"	"	"	107	SEI	121	SEI	N/A	N/A	"	"	"	"
"	"	"	"	122	SEI	107	SEI	N/A	N/A	"	"	"	"

Texel GEOSOL

Destructive Testing
Essai Destructif

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Destructive Test No. No. Essai Destructif	Seam No. No. de Soudure	Date (mm/dd/yy)	Sample Location Localisation de l'échantillon	Peel Resistance Résistance Pelage (ppi)	Peel Type of Break Type de Brisure	Peel Resistance Résistance Pelage (ppi)	Peel Type of Break Type de Brisure	Shear Resistance Résist. Cisaillement (ppi)	Shear Type of Break Type de Brisure	Date Repaired Date Réparée (mm/dd/yy)	Date Repair Verified Date Réparée Vérifiée (mm/dd/yy)	Lab. Testing (P/F) Lab. Indép. (A/R)	Tensiometer No. No. Tensiomètre
DT-13	84-85	09-23-17	At 2m from WEOS	112	SE1	120	SE1	199	BRK	09-23-17	09-23-17	P	T-9709
"	"	"	"	119	SE1	105	SE1	N/A	N/A	"	"	"	"
"	"	"	"	116	SE1	121	SE1	N/A	N/A	"	"	"	"
"	"	"	"	106	SE1	119	SE1	N/A	N/A	"	"	"	"
DT-14	88-89	09-24-17	At 3m from NEOS	150	SE1	145	SE1	195	BRK	09-24-17	09-24-17	P	T-9709
"	"	"	"	156	SE1	146	SE1	N/A	N/A	"	"	"	"
"	"	"	"	136	SE1	146	SE1	N/A	N/A	"	"	"	"
"	"	"	"	151	SE1	149	SE1	N/A	N/A	"	"	"	"
DT-15	92-93	09-24-17	At 3m from NEOS	144	SE1	130	SE1	181	BRK	09-24-17	09-24-17	P	T-9709
"	"	"	"	140	SE1	131	SE1	N/A	N/A	"	"	"	"
"	"	"	"	128	SE1	130	SE1	N/A	N/A	"	"	"	"
"	"	"	"	142	SE1	143	SE1	N/A	N/A	"	"	"	"
DT-16	94-95	09-25-17	At 5m from SEOS	119	SE1	128	SE1	169	BRK	09-25-17	09-25-17	P	T-9709
"	"	"	"	118	SE1	128	SE1	N/A	N/A	"	"	"	"
"	"	"	"	125	SE1	121	SE1	N/A	N/A	"	"	"	"
"	"	"	"	131	SE1	133	SE1	N/A	N/A	"	"	"	"
DT-17	101-102	09-27-17	South trench	133	SE1	127	SE1	209	BRK	N/A	N/A	P	T-9709
"	"	"	"	139	SE1	137	SE1	N/A	N/A	"	"	"	"
"	"	"	"	142	SE1	157	SE1	N/A	N/A	"	"	"	"
"	"	"	"	144	SE1	146	SE1	N/A	N/A	"	"	"	"
DT-18	109-110	10-06-17	East trench	125	SE1	126	SE1	157	BRK	N/A	N/A	P	T-9709
"	"	"	"	122	SE1	123	SE1	N/A	N/A	"	"	"	"
"	"	"	"	119	SE1	113	SE1	N/A	N/A	"	"	"	"
"	"	"	"	117	SE1	114	SE1	N/A	N/A	"	"	"	"

Texel GEOSOL

Repair Report
Rapport de Réparation

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Repair No. No. Réparation	Type & Dimensions Type et Dimensions			Location of Repair Localisation de la Réparation				Date Repaired Date Réparée (mm/dd/yy)	Date Repair Verified Date Réparée Vérifiée (mm/dd/yy)	Approved (Yes/No) Approuvé (Oui/Non)
	Patch Empiècement	Extrusion Weld or Bead Soudure Extrusion	Pipe Boot Manchon d'étanchéité	On Panel No. Sur Panneau No.	On Seam No. Sur Soudure No.	Intersection of Panels Intersection des Panneaux	Sample Location Localisation de l'échantillon			
R-1	P2			1			At 2.3m of SEOP and 1.4m of EEOP	07-15-17	07-15-17	O
R-2	P2			1			At 2.3m of SEOP and 3.6m of EEOP	07-15-17	07-15-17	O
R-3	P2			1			At 2.3m of SEOP and 5.9m of EEOP	07-15-17	07-15-17	O
R-4	P1			1			At 4.2m of SEOP and 1.8m of EEOP	07-15-17	07-15-17	O
R-5	P1			1			At 4.2m of SEOP and 4.1m of EEOP	07-15-17	07-15-17	O
R-6	P1			1			At 4.2m of SEOP and 6.4m of EEOP	07-15-17	07-15-17	O
R-7		E				7-8-9		07-16-17	07-16-17	O
R-8		E				7-9-10		07-16-17	07-16-17	O
R-9		E				8-9-11		07-16-17	07-16-17	O
R-10		E				9-10-11		07-16-17	07-16-17	O
R-11	P1			14			At 2.8m of SEOS and 1.7m of EEOS	07-16-17	07-16-17	O
R-12		E				15-16-17		07-16-17	07-16-17	O
R-13		E				15-17-18		07-16-17	07-16-17	O
R-14	P1					1-20-21		09-13-17	09-13-17	O
R-15	P1					1-2-21		09-13-17	09-13-17	O
R-16	P1					2-21-22		09-13-17	09-13-17	O
R-17		E				2-3-22		09-13-17	09-13-17	O
R-18		E				3-22-23		09-13-17	09-13-17	O
R-19		E				3-4-23		09-13-17	09-13-17	O
R-20		E				4-23-24		09-13-17	09-13-17	O
R-21		E				4-5-24		09-13-17	09-13-17	O
R-22		E				5-24-25		09-13-17	09-13-17	O

Texel GEOSOL

Repair Report
Rapport de Réparation

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

Repair No. / No. Réparation	Type & Dimensions / Type et Dimensions			Location of Repair / Localisation de la Réparation				Date Repaired / Date Réparée (mm/dd/yy)	Date Repair Verified / Date Réparée Vérifiée (mm/dd/yy)	Approved (Yes/No) / Approuvé (Oui/Non)
	Patch / Empiècement	Extrusion Weld or Bead / Soudure Extrusion	Pipe Boot / Manchon d'étanchéité	On Panel No. / Sur Panneau No.	On Seam No. / Sur Soudure No.	Intersection of Panels / Intersection des Panneaux	Sample Location / Localisation de l'échantillon			
R-23		E				5-6-25		09-13-17	09-13-17	O
R-24		E				6-25-26		09-13-17	09-13-17	O
R-25	P1				3-23		At 4m of NEOS	09-13-17	09-13-17	O
R-26		DB			1-20		Full seam	09-13-17	09-13-17	O
R-27		DB			2-21		Full seam	09-13-17	09-13-17	O
R-28	P2			28			At 1m of WEOP and 2,5m of SEOP	09-13-17	09-13-17	O
R-29	P2			28			At 2,8m of WEOP and 2,5m of SEOP	09-13-17	09-13-17	O
R-30	P2					19-29-30		09-13-17	09-13-17	O
R-31		E				29-30-31		09-13-17	09-13-17	O
R-32	P2					29-31-32		09-13-17	09-13-17	O
R-33	P2					6-26-33		09-14-17	09-14-17	O
R-34		E				26-27-33		09-14-17	09-14-17	O
R-35		E				27-33-34		09-14-17	09-14-17	O
R-36		E				27-28-34		09-14-17	09-14-17	O
R-37	P2			39			At 3m from P-38 and 2.6m from NEOP	09-14-17	09-14-17	O
R-38	P1			39			At 3m from P-38 and 1m from NEOP	09-14-17	09-14-17	O
R-40	P1					19-30-35		09-14-17	09-14-17	O
R-41	P2					1-20-41		09-15-17	09-15-17	O
R-42		E				19-20-41		09-15-17	09-15-17	O
R-43		E				19-41-42		09-15-17	09-15-17	O
R-44	P1					19-35-42		09-15-17	09-15-17	O
R-45		E				35-36-42		09-15-17	09-15-17	O

Texel GEOSOL

Repair Report
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Repair No. No. Réparation	Type & Dimensions Type et Dimensions			Location of Repair Localisation de la Réparation				Date Repaired Date Réparée (mm/dd/yy)	Date Repair Verified Date Réparée Vérifiée (mm/dd/yy)	Approved (Yes/No) Approuvé (Oui/Non)
	Patch Empiècement	Extrusion Weld or Bead Soudure Extrusion	Pipe Boot Manchon d'étanchéité	On Panel No. Sur Panneau No.	On Seam No. Sur Soudure No.	Intersection of Panels Intersection des Panneaux	Sample Location Localisation de l'échantillon			
R-46		E				36-37-42		09-15-17	09-15-17	O
R-47		E				37-38-42		09-15-17	09-15-17	O
R-48		E				38-39-42		09-15-17	09-15-17	O
R-49		E				39-40-42		09-15-17	09-15-17	O
R-50	P1				1-41		At 8.4m from WEOS	09-15-17	09-15-17	O
R-51	P2					40-42-43		09-15-17	09-15-17	O
R-52	P1			48			At 1.2m from NEOS and 0.6m of P-47	09-15-17	09-15-17	O
R-53	P1			48			At 1.2m from NEOS and 5m of P-47	09-15-17	09-15-17	O
R-54	P1			48			At 3.2m from NEOS and 0.6m of P-47	09-15-17	09-15-17	O
R-55	P1					16-17-59-60		09-18-17	09-18-17	O
R-56		E				41-42-59		09-18-17	09-18-17	O
R-57	P2					42-43-59-Patch		09-18-17	09-18-17	O
R-58		E				Patch-43-44		09-18-17	09-18-17	O
R-59		E				Patch-44-45		09-18-17	09-18-17	O
R-60	P2					Patch-45-59		09-18-17	09-18-17	O
R-61	P3					45-46-59		09-18-17	09-18-17	O
R-62		E				46-47-59		09-18-17	09-18-17	O
R-63		E				47-48-59-60		09-18-17	09-18-17	O
R-64	P1					48-49-60		09-18-17	09-18-17	O
R-65		E				49-50-60		09-18-17	09-18-17	O
R-66	P1					50-51-60		09-18-17	09-18-17	O
R-67		E				51-52-60		09-18-17	09-18-17	O

Texel GEOSOL

Repair Report
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Repair No. No. Réparation	Type & Dimensions Type et Dimensions			Location of Repair Localisation de la Réparation				Date Repaired Date Réparée (mm/dd/yy)	Date Repair Verified Date Réparée Vérifiée (mm/dd/yy)	Approved (Yes/No) Approuvé (Oui/Non)
	Patch Empiècement	Extrusion Weld or Bead Soudure Extrusion	Pipe Boot Manchon d'étanchéité	On Panel No. Sur Panneau No.	On Seam No. Sur Soudure No.	Intersection of Panels Intersection des Panneaux	Sample Location Localisation de l'échantillon			
R-68		E				17-18-60		09-18-17	09-18-17	O
R-69	P1				47-59		At 2m from EEOS	09-18-17	09-18-17	O
R-70	P1					18-60-61-64		09-20-17	09-20-17	O
R-71	P2					52-53-60-61		09-20-17	09-20-17	O
R-72	P1					53-54-61		09-20-17	09-20-17	O
R-73		E				54-55-61		09-20-17	09-20-17	O
R-74		E				55-56-61		09-20-17	09-20-17	O
R-75	P1					56-57-61		09-20-17	09-20-17	O
R-76		E				57-61-62		09-20-17	09-20-17	O
R-77	P1					57-58-62		09-20-17	09-20-17	O
R-78	P1					58-62-63		09-20-17	09-20-17	O
R-79	P1			69			At 0.4m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-80	P1			69			At 2.7m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-81	P1			69			At 4.8m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-82	P1			69			At 7m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-83	P1			69			At 9.2m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-84	P1			69			At 11.4m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-85	P1			69			At 13.5m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-86	P1			69			At 15.7m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-87	P1			69			At 17.8m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-88	P1			69			At 20m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-89	P1			69			At 22m from East and 1.7m of P-34	09-20-17	09-20-17	O

Texel GEOSOL

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Repair No. No. Réparation	Type & Dimensions Type et Dimensions			Location of Repair Localisation de la Réparation				Date Repaired Date Réparée (mm/dd/yy)	Date Repair Verified Date Réparée Vérifiée (mm/dd/yy)	Approved (Yes/No) Approuvé (Oui/Non)
	Patch Empiècement	Extrusion Weld or Bead Soudure Extrusion	Pipe Boot Manchon d'étanchéité	On Panel No. Sur Panneau No.	On Seam No. Sur Soudure No.	Intersection of Panels Intersection des Panneaux	Sample Location Localisation de l'échantillon			
R-90	P1			69			At 24.2m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-91	P1			69			At 26.2m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-92	P1			69			At 28.3m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-93	P1			69			At 30.3m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-94	P1			69			At 32.3m from East and 1.7m of P-34	09-20-17	09-20-17	O
R-95		DB			58-62		Full seam	09-20-17	09-20-17	O
R-96		E				76-82-83		09-23-17	09-23-17	O
R-97		E				76-81-82		09-23-17	09-23-17	O
R-98		E				76-80-81		09-23-17	09-23-17	O
R-99		E				76-78-80		09-23-17	09-23-17	O
R-100	P1					76-77-78		09-23-17	09-23-17	O
R-101		E				77-78-79		09-23-17	09-23-17	O
R-102	P1				77-79		At 4.5m from NEOS	09-23-17	09-23-17	O
R-103	P1					7-71-72		09-23-17	09-23-17	O
R-104		E				7-72-84		09-23-17	09-23-17	O
R-105		E				72-73-84		09-23-17	09-23-17	O
R-106		E				73-84-85		09-23-17	09-23-17	O
R-107		E				73-74-85		09-23-17	09-23-17	O
R-108		E				76-83-87		09-24-17	09-24-17	O
R-109		E				75-76-87		09-24-17	09-24-17	O
R-110		E				74-75-87		09-24-17	09-24-17	O
R-111	P3					74-85-87		09-24-17	09-24-17	O

Texel GEOSOL

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Repair No. No. Réparation	Type & Dimensions Type et Dimensions			Location of Repair Localisation de la Réparation				Date Repaired Date Réparée (mm/dd/yy)	Date Repair Verified Date Réparée Vérifiée (mm/dd/yy)	Approved (Yes/No) Approuvé (Oui/Non)
	Patch Empiècement	Extrusion Weld or Bead Soudure Extrusion	Pipe Boot Manchon d'étanchéité	On Panel No. Sur Panneau No.	On Seam No. Sur Soudure No.	Intersection of Panels Intersection des Panneaux	Sample Location Localisation de l'échantillon			
R-112		E				85-87-88		09-24-17	09-24-17	O
R-113		E				85-88-89		09-24-17	09-24-17	O
R-114		E				85-89-90		09-24-17	09-24-17	O
R-115		E				85-90-91		09-24-17	09-24-17	O
R-116		E				85-91-92		09-24-17	09-24-17	O
R-117		E				85-86-92		09-24-17	09-24-17	O
R-118		E				86-92-93		09-24-17	09-24-17	O
R-119	P1				85-88		At 3.5m from WEOS	09-24-17	09-24-17	O
R-120		E				34-69-94		09-25-17	09-25-17	O
R-121		E				33-34-94		09-25-17	09-25-17	O
R-122		E				6-33-94		09-25-17	09-25-17	O
R-123		E				5-6-94		09-25-17	09-25-17	O
R-124		E				4-5-94		09-25-17	09-25-17	O
R-125		E				3-4-94		09-25-17	09-25-17	O
R-126		E				2-3-94		09-25-17	09-25-17	O
R-127	P1					1-2-94		09-25-17	09-25-17	O
R-128	P1					1-41-94		09-25-17	09-25-17	O
R-129	P2					41-59-94		09-25-17	09-25-17	O
R-130	P1				95-97		At 12m from NEOS	09-25-17	09-25-17	O
R-131	P2					16-59-96		09-25-17	09-25-17	O
R-132		E				15-16-96		09-25-17	09-25-17	O
R-133		E				14-15-96		09-25-17	09-25-17	O

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	Patch / Empiècement	Extrusion Weld or Bead / Soudure Extrusion	Pipe Boot / Manchon d'étanchéité	On Panel No. / Sur Panneau No.	On Seam No. / Sur Soudure No.	Intersection of Panels / Intersection des Panneaux	Sample Location / Localisation de l'échantillon			
R-134		E				13-14-96		09-25-17	09-25-17	O
R-135		E				12-13-96		09-25-17	09-25-17	O
R-136	P1					11-12-96		09-25-17	09-25-17	O
R-137	P1					8-11-96-97		09-25-17	09-25-17	O
R-138	P1					8-7-97		09-25-17	09-25-17	O
R-139	P1					7-84-97		09-25-17	09-25-17	O
R-140	P1					84-86-97		09-25-17	09-25-17	O
R-141	P1					59-94-95		09-25-17	09-25-17	O
R-142	P1					59-95-96		09-25-17	09-25-17	O
R-143	P1				15-96		At 5.8m from NEOS	09-25-17	09-25-17	O
R-144	P1				14-96		At 4.8m from NEOS	09-25-17	09-25-17	O
R-145	P1				12-96		At 4m from NEOS	09-25-17	09-25-17	O
R-146	P1				93-98		At 3.5m from NEOS	09-28-17	09-28-17	O
R-147	P2					86-93-98		09-28-17	09-28-17	O
R-148		E				86-97-98		09-28-17	09-28-17	O
R-149		E				95-97-98		09-28-17	09-28-17	O
R-150		E				95-98-99		09-28-17	09-28-17	O
R-151		E				94-95-99		09-28-17	09-28-17	O
R-152		E				94-99-100		09-28-17	09-28-17	O
R-153		E				69-94-100		09-28-17	09-28-17	O
R-154		E				69-100-101		09-28-17	09-28-17	O
R-155		E				69-101-102		09-28-17	09-28-17	O

Texel GEOSOL

Repair Report
Rapport de Réparation

Project Name / Nom de Projet: **Rankin Inlet Tank Farm**

Project No. / No. de Projet: **C-15152**

QC Inspector / Inspecteur CQ: **Anthony Duquette-Michon**

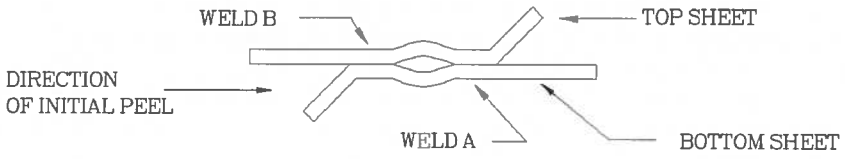
Repair No. / No. Réparation	Type & Dimensions / Type et Dimensions			Location of Repair / Localisation de la Réparation				Date Repaired / Date Réparée (mm/dd/yy)	Date Repair Verified / Date Réparée Vérifiée (mm/dd/yy)	Approved (Yes/No) / Approuvé (Oui/Non)
	Patch / Empiècement	Extrusion Weld or Bead / Soudure Extrusion	Pipe Boot / Manchon d'étanchéité	On Panel No. / Sur Panneau No.	On Seam No. / Sur Soudure No.	Intersection of Panels / Intersection des Panneaux	Sample Location / Localisation de l'échantillon			
R-156		E				69-102-103		09-28-17	09-28-17	O
R-157		E				69-103-104		09-28-17	09-28-17	O
R-158		E				69-104-105		09-28-17	09-28-17	O
R-159		E				69-105-106		09-28-17	09-28-17	O
R-160	P1				28-108		At 4m from WEOS	10-04-17	10-04-17	O
R-161	P1				28-108		At 8m from WEOS	10-04-17	10-04-17	O
R-162		DB			28-108		Between R-160 and R-161	10-04-17	10-04-17	O
R-163	P1				69-108		At 1.2m from NEOS	10-04-17	10-04-17	O
R-164	P3					106-107-111		10-06-17	10-06-17	O
R-165		E				106-110-111		10-06-17	10-06-17	O
R-166		E				106-109-110		10-06-17	10-06-17	O
R-167	P3					106-108-109		10-06-17	10-06-17	O
R-168	P2					69-106-108		10-06-17	10-06-17	O
R-169	P3				106-109		At 5.2m from int.106-109-110	10-06-17	10-06-17	O
R-170	P3			106			At 3m from int.69-106-108	10-06-17	10-06-17	O

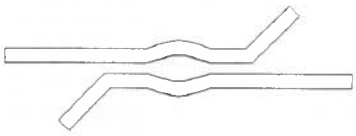
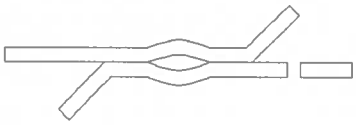
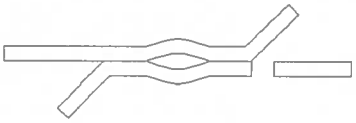
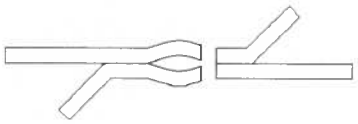
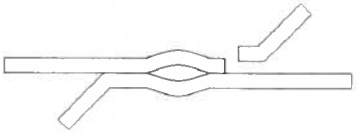
CHARTE/CHART : Empièvement/Patch (**P1** 0.3m à/to 0.6m; **P2** 0.6m à/to 1m; **P3** over 1m et plus), Extrusion (**E**), Embout/Pipe Boot (**B**), Cap strip (**CS**), Doublure/Reinforcement (**DB**) et/and Reconstruction

APPENDIX III

US-EPA CLASSIFICATION FOR TYPES OF BREAK

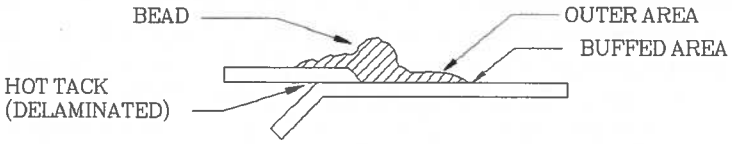
DOUBLE–TRACK GEOMEMBRANE WELD

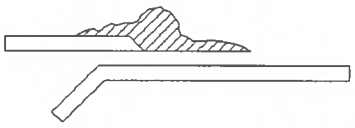
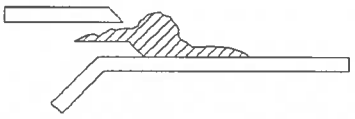
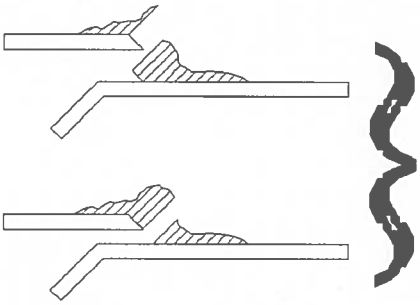
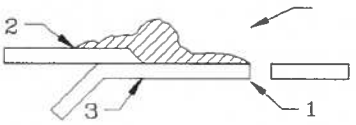
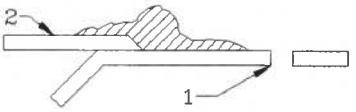
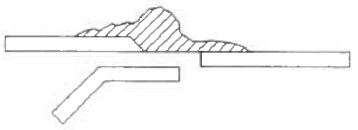


TYPES OF BREAK	CODE	BREAK DESCRIPTION	CLASSI–FICATION [a]
	AD	ADHESION FAILURE	NON–FTB
	BRK	BREAK IN SHEETING. BREAK CAN BE IN EITHER TOP OR BOTTOM SHEET.	FTB
	SE1	BREAK AT OUTHER EDGE OF SEAM. BREAK CAN BE IN EITHER TOP OR BOTTOM SHEET.	FTB
	SE2	BREAK AT INNER EDGE OF SEAM THROUGH BOTH SHEETS	FTB
	AD–BRK	BREAK IN FIRST SEAM AFTER SOME ADHESION FAILURE. BREAK CAN BE IN EITHER THE TOP OR BOTTOM SHEET.	FTB

[a] FTB="FILM–TEAR BOND."

FILLET–EXTRUDED GEOMEMBRANE WELD



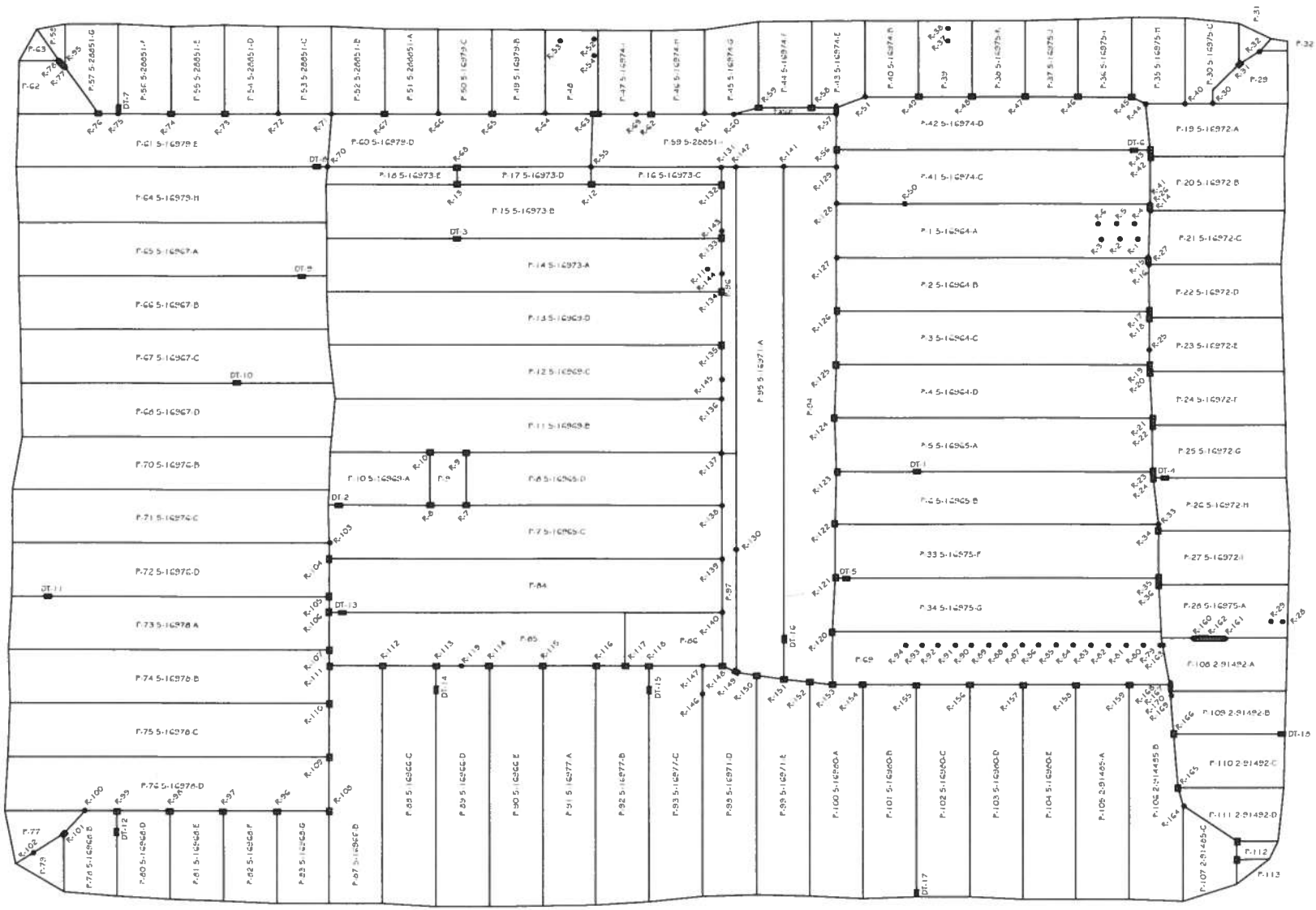
TYPES OF BREAKS	CODE	BREAK DESCRIPTION	CLASSIFICATION [a]
	AD1	FAILURE IN ADHESION. SPECIMENS MAY ALSO DELAMINATE UNDER THE BEAD AND BREAK THROUGH THE THIN EXTRUDED MATERIAL IN THE OUTER AREA.	NON–FTB
	AD2	FAILURE IN ADHESION.	NON–FTB
	AD–WLD	BREAK THROUGH THE FILLET. BREAKS THROUGH THE FILLET RANGE FROM BREAKS STARTING AT THE EDGE OF THE TOP SHEET TO BREAKS THROUGH THE FILLET AFTER SOME ADHESION FAILURE BETWEEN THE FILLET AND THE BOTTOM SHEET.	NON–FTB [b]
	SE	BREAK AT SEAM EDGE. INDICATE LOCATION BY 1,2 OR 3	FTB
	BRK	BREAK IN THE SHEET. USE 1 TO INDICATE BOTTOM SHEET AND 2 TO INDICATE TOP SHEET. IF BREAK IS IN BUFFED AREA, INDICATE WITH "(B)".	FTB
	AD–BRK	BREAK IN THE BOTTOM SHEETING AFTER SOME ADHESION FAILURE BETWEEN THE FILLET AND THE BOTTOM SHEET. (APPLICABLE TO PEEL ONLY).	FTB
	HT	BREAK AT THE EDGE OF THE HOT TACK FOR SPECIMENS WHICH COULD NOT BE DELAMINATED IN THE HOT TACK.	NO TEST

[a] FTB="FILM–TEAR BOND."

[b] ACCEPTANCE OF AD–WLD BREAKS MAY DEPEND ON WHETHER TEST VALUES MEET A MINIMUM SPECIFICATION VALUE AND NOT ON CLASSIFICATION AS A FTB OR NON–FTB BREAK.

APPENDIX IV

RECORD DRAWING



0 25 50m

NO PANNEAU / PANEL NO	ROULEAU NO / ROLL NO	
P-9	5-16964	E
P-29	5-16975	B
P-31	5-16975	D

NO PANNEAU / PANEL NO	ROULEAU NO / ROLL NO	
P-32	5-16975	E
P-39	5-16974	A
P-48	5-16978	A

NO PANNEAU / PANEL NO	ROULEAU NO / ROLL NO	
P-58	5-28851	H
P-62	5-16979	F
P-63	5-16979	G

NO PANNEAU / PANEL NO	ROULEAU NO / ROLL NO	
P-69	5-16976	A
P-77	5-16966	A
P-79	5-16966	C

NO PANNEAU / PANEL NO	ROULEAU NO / ROLL NO	
P-86	5-16966	A
P-94	5-16977	D
P-96	5-16971	B

NO PANNEAU / PANEL NO	ROULEAU NO / ROLL NO	
P-97	5-16971	C
P-112	2-91492	E
P-113	2-91492	F

INGÉNIEUR / ENGINEER:

AGNICO EAGLE CONSTRUCTION

LÉGENDE / LEGEND:

- EMPIÈCEMENT / PATCH
- MANCHON TUYAU / PIPE BOOT
- DESTRUCTIF / DESTRUCTIVE
- SOUDURE EXTRUSION / EXTRUSION WELD
- 1 PANNEAU NO. / PANEL NO.
- 1-30474 ROULEAU NO. / ROLL NO.
- ANCRAGE MECANIQUE / MECHANICAL ANCHORAGE
- SOUDURE EXISTANTE / EXISTING SEAM

CLIENT / CUSTOMER:

NUNA KIVALLIQ EARTHWORKS INC

TYPE DE PRODUIT INSTALLÉ / PRODUCT TYPE INSTALLED

GEOTEXTILE 160E - HDPE 60 MIL TEXTURED GEOTEXTILE 160E

TYPE DE PROJET / PROJECT TYPE

RANKIN INLET TANK FARM LINING AS-BUILT

NOM DU PROJET / PROJECT NAME

RANKIN INLET TANK FARM

Texel GEOSOL

1300, 2e Rue, Parc industriel
Sainte-Marie, QC, Canada
G1V 4T2

NO. PROJET / PROJECT NO.:	C-15152
FICHIER AUTOCAD: AUTOCAD FILE:	C-15152rcl.dwg
DATE (yy-mm-aa): DATE (dd-mm-yy):	17/11/17
DESSINÉ PAR / DRAWN BY:	E.B.
VÉRIFIÉ PAR / VERIFIED BY:	E.B.
APPROUVÉ PAR / APPROVED BY:	P.T
ÉCHELLE / SCALE:	1/500
DESSIN NO / DRAWING NO.:	1/1

APPENDIX R

Particle Size Summary – 20 mm minus

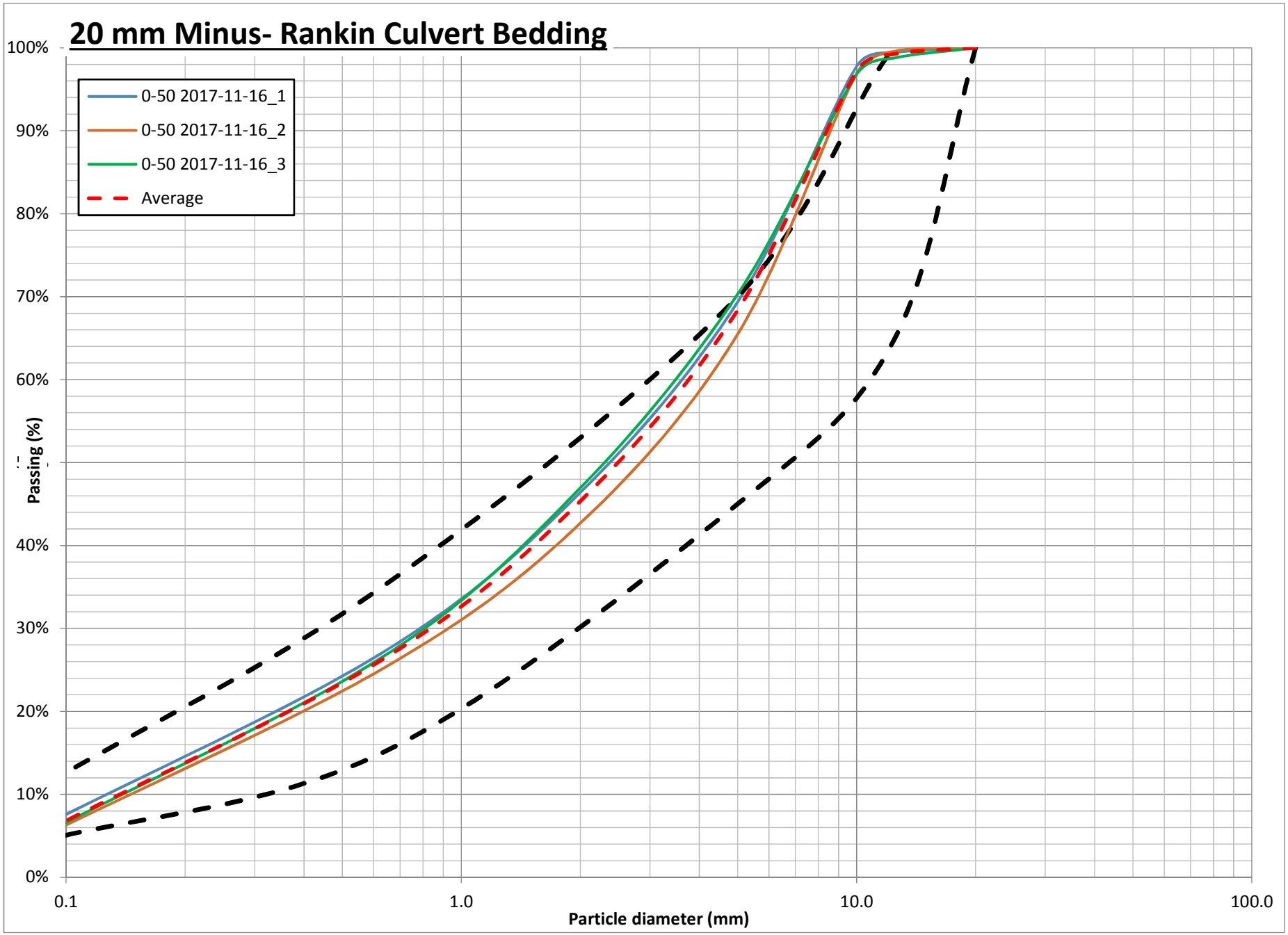

20 mm Minus- Rankin Culvert Bedding
0-50 2017-11-16_1
0-50 2017-11-16_2
0-50 2017-11-16_3
Average
100%
90%
80%
70%
60%
40%
30%
20%
10%
0%
Passing (%)
0.1
1.0
10.0
100.0
Particle diameter (mm)

Table 1: Summary of Particle Size Analysis Results - 20 mm minus Culvert Bedding Rankin

No.	Sample ID	Sieve Size (mm)							Moisture Content
		20.00	12.50	10.00	5.00	2.00	0.63	0.08	
1	0-50 2017-11-16_1	100.0%	99.4%	97.8%	69.3%	46.4%	27.1%	5.3%	3.0%
2	0-50 2017-11-16_2	100.0%	99.6%	96.9%	65.5%	42.7%	25.1%	4.0%	4.2%
3	0-50 2017-11-16_3	100.0%	98.8%	96.8%	70.3%	46.9%	26.5%	4.2%	4.1%
Average		**100.0%**	**99.3%**	**97.1%**	**68.4%**	**45.3%**	**26.2%**	**4.5%**	**3.8%**

APPENDIX S

Construction Summary of Rankin Inlet Itivia Laydown Area Culvert

Construction Summary – Rankin Laydown Culverts

- Construction management and quality assurance performed by Agnico Eagle Construction
- Contractors: Inukshuk Contracting Ltd.
- Drawing preparation by Hamel Arpentage – as-built drawings to be completed for submission of the final report (following completion of the 20 ML tank).

1. **Site Preparation (November 17)**

- Ice/snow removed from upstream and downstream of culvert location.
- Hauled appropriate bedding material to Rankin from Char River quarry.

2. **Excavation (November 18)**

- The laydown access road was excavated with a CAT 345 excavator.
- The temporary culverts previously installed in May 2017 were removed.
- Original ground was excavated underlying the road per design for installation of the bedding material and riprap.

3. **Culvert Placement and Backfill (November 19 to November 20)**

- Culvert bedding material consisted of 20 mm minus crushing reject material, which was placed in controlled lifts and compacted with either a 5-tonne vibratory drum roller (under culverts) or a small walk-behind tamper (beside and over culverts).
- Design specified two 900 mm diameter culverts were installed to design length of 30 m. The culverts were installed to the invert locations of the previously installed temporary culverts, as these positions were demonstrated to be effective during the 2017 freshet. Survey support was not available during the installation process and an as-built of the install will be completed once construction activities resume in 2018.
- The culvert sections were assembled near the installation location and placed with an excavator.
- 20 mm minus backfill material was placed on/near the installed culverts with an excavator, spread and placed by laborers with rakes, then compacted.
- Previously removed road material was then placed on top of the 20 mm minus bedding to reestablish a trafficable road surface. If required, additional cover material will be added once construction activities resume in the summer of 2018.

4. **Rip Rap Placement and Road Sloping (November 20)**

- Re-sloping of the laydown access road and placement of rip rap material on the upstream and downstream was completed with the CAT 345 Excavator.

Equipment Used for Construction:

- CAT 345 Excavator
- CAT 735 Haul Truck
- Tandem Trucks
- CAT 5-tonne Vibratory Drum Roller
- Walk-behind plate tamper

QA/QC

Particle size analysis conducted on three samples of the 20 mm minus material used as bedding material (attached). The results indicate that the material generally falls within specification (Technical Specifications for Civil Earthworks Rev 3 (6515-GNS-014, June 6, 2017)).