

Eureka Water and Sewer – Project 60428978

November 19, 2020

Addendum 3:

Please note the following responses to questions, changes, corrections, additions, deletions, information and/or instructions.

Questions and Responses

Q12: The site is subject to a Type B water license in Nunavut (for water use and waste disposal) and the license is set to expire Aug 10, 2021. Will the Contractor be responsible for assisting or amending and modifying the existing license to allow for the work to proceed?

A12:

ECCC will be responsible for amending the existing license and applying for any future licenses. The Contractor may be asked to provide ECCC with some project details/information during the application process. The Contractor may also be asked to provide information to fulfil the annual reporting requirements (such as, but not limited to, the total water quantities used during the field season).

Q13: The Weather Station currently has a 30t crane on site. Would it be possible to use this piece of equipment during construction? If so, please provide equipment specifications and the rental rates if [bidder] were to provide a certified crane operator.

A13: The hourly rental is \$205. The crane availability must be coordinated with the Station. The contractor is to provide a licenced operator familiar with this machine, fuel and maintenance activities required during use. The Contractor must meet with the Station Representative before and after use to identify condition and other operational requirements. The Contractor must sign off on liability for the use of this equipment and be responsible for any damage caused by their negligence or misuse. See attached photos of crane at the end of this Addendum.

Q14: Please confirm that unit heaters are not required in the Raw Water Creek Supply, Raw Water Transfer and Retention Basin pump station buildings.

A14: Unit heaters are not required in the Raw Water Creek Supply, Raw Water Transfer and Retention Basin pump station buildings.

Q15: Section 33 47 19 1.4 indicates that samples are submitted to the Departmental Representative for testing. Please provide the frequency of testing and where they are to be submitted to. Please also provide frequency of the testing requirements for compaction density testing.

A15: Subsection 1.4.1 and 1.4.2 in 33 47 19.14 will be changed to say: "Submit samples from each individual granular source and gradation to an accredited laboratory for sieve analysis and standard proctor testing and acceptance before progressing with work. The cost of obtaining the samples and the cost of testing shall be borne by the Contractor. With the 50 mm granular, submit density proctor sample at beginning and midpoint of work. Departmental representative will complete nuclear densometer testing minimum once per lift on the reservoir, following completion of a Control Strip Density test from 31 24 13 subsection 3.6.6 strip and establishment of minimum compaction passes.

Q16: Where do the sand samples need to be shipped to?

A16: Submit samples from sand source to an accredited laboratory for sieve testing and acceptance before progressing with work. The cost of obtaining the samples and the cost of testing shall be borne by the Contractor. With the sand sample submit gradation sample at beginning and midpoint of work.

Q17: Please confirm that the Contractor is not responsible for testing of contaminated soil within the scope of removal of contaminated soil.

A17: Contractor is not responsible for testing of contaminated soil within the scope of removal of contaminated soil.

Q18: Please provide any environmental regulations for the creek crossing to the sand pit. Will a snow or ice crossing be required?

A18: Any crossing of a waterbody must be completed while the waterbody is frozen. If this cannot occur, other regulatory requirements may be triggered.

Q19: Please clarify the following from the reservoir cross section detail in drawing C-3001: "USE TRAFFIC GRAVEL TO LINE INTERIOR 0.5m LAYER OF GRANULAR BERM". Will the traffic base be placed 0.5m thick on the interior slope of the berm?

A19: The requirement in Drawing C-3001 for a 0.5 layer of traffic gravel on the interior is to be removed. The berm shall consist of the 50 mm granular. The surface will still need to be rolled for a smooth surface and a sand layer placed over top.

Q20: Section 02 55 13 1.9.3 - "All costs associated with the cleanup or treatment of contamination of areas within or surrounding the contaminated soil handling areas due to the migration of contaminants from those areas as a result of Contractor's actions or inactions are the responsibility of Contractor. These costs are to include all costs of investigation to determine the extent of contamination migration, as well as soil excavation and treatment costs." Given the

lack of detailed information and widespread contamination known to exist throughout the site, the Contractor cannot be held responsible for migration of contaminants that are not previously defined. Please provide a detailed map indicating all known contamination at the Eureka site.

A20: Clause 1.9.3 in Section 02 55 13 shall be changed to: "The contractor shall construct the contamination cell. All contaminated soil spills that occur during this excavation and contaminated soil movement work shall be cleaned up and placed in the cell. If the cell leaks the liner shall be repaired and the impacted soil placed in the cell at no additional cost. Rev 1 of Drawing C-0003 has been provided to indicate the contaminated area that shall be removed from the work area to a depth of approximately 0.8 m.

Q21: Can the sand borrow pit (2.4 Km from the work site) could be used in mass backfill / Embankments?

A21: The permit for sand is for up to 1000 m³. It will not provide a large volume for backfill or embankments. The embankments in the design are to be constructed of supplied granular material.

Q22: Please provide a detail drawing of the anchoring system required for the floating articulating walkway.

A22: This detail to be submitted with shop drawings for approval.

Q23: Please provide a detail drawing of the 6" HDPE carrier pipe showing the pipe pivot point fittings that will follow the articulating floating walkway.

A23: The 6-inch HDPE pipe will be positioned on the walkway above the water and will only enter the water at the elbow. The pipe will be installed with the correct angle at the 4:1 angle at the crest of the berm and at the point where the water meets the berm at full water level.

Q24: Regarding the 2" internal process line, drawing D-0002 indicates "50mm HDPE pipe c/w union connection and submersible heat tracing system". Then drawing C-0006 Detail 3 note Indicates 50mm dia. rigid hose inside 150 dia. pre-insulated HDPE pipe. Can you please clarify the requirement, as well as the thickness of insulation and cover type required on the carrier pipe?

A24: A 50mm HDPE pipe c/w union connection and submersible heat tracing system installed inside 150 mm diameter pre-insulated pipe (50mm insulation) is required for the temporary intake (sheet C-5002, temporary intake detail). A 50mm diameter rigid hose inside 250 diameter pre-insulated (50mm) HDPE pipe is required for the permanent inclined intake (sheet C-0006, detail C-C). The cover material will be the 50 mm granular

Q25: Drawing C-0006 indicates that the "150mm pre-insulated HDPE pipe (placed along floating walkway) See drawing C-5002 for detail." Drawing C-5002 Temporary Intake Detail

does not show piping position on the walkway or any of the other details as mentioned above. Please provide this information.

A25: Position the 150 mm pre-insulated pipe on the walkway. Secure in place loosely to allow for movement. The piping is to be constructed in 2 lengths, connected by a flange. Pipe is to be kept on the reservoir berm when not in use.

Q26: Please provide the overall length of the of the permanent intake assembly.

A26: The length of the temporary intake pipe from the building to the discharge point is approximately 27 m. The length of the walkway is 19 m (as shown on the temporary intake detail, C-5002).

Q27: Please provide additional information on the hydrocarbon collection system. What is the desired length of hoses to make up the 100m? Where does the 4" HDPE pipe outlet go and how does it terminate? Does the 4" HDPE pipe outlet require any pipe supports?

A27: Provide the 100 m of hose in 25-meter camlock lengths. Change the 100 HDPE pipe to 25 m and terminate it in the rip rap line drainage swale to the south.

Q28: Drawing C-3001 New Raw Water Storage Reservoir Cross-Section Detail indicates a 100mm diameter corrugated perforated HDPE along the slope of the raw water reservoir. Drawing C-5001 Detail 4 indicates the cross-section of this pipe and surrounding drainage gravel. What is the distance between the gas relief piping and the liner system? Is this piping fully embedded within the slope? Please provide a cross-section of this pipe in relation to the liner system and berm slope.

A28: Replace the 100mm vent pipe with wick drains at the same locations and connect to the vent piping. Keep the dewatering system drainage piping with the cross section in Drawing C-5001, detail 4.

Q29: We are seeking clarification to the following specifications within the specification section 31 32 19.02 – Geomembranes. Many of these exceptions are due to the white/black requirement and the conductive requirement. Because of the additives and stabilizers in the carbon black master batches required to produce the geomembrane, meeting the requirements listed in specifications is not achievable in our subcontractor's opinion.

a) 2.1.1.2

- Resin Density test method ASTM D792, not ASTM D1505
- Resin Density ≥ 0.910 g/cc, not ≥ 0.920 g/cc as per spec
- ASTM D3895 – Resin OIT ≥ 100 minutes, not ≥ 140 minutes as per spec

b) 2.1.2.1

- Since W/B conductive geomembrane will contain white master batch and stabilizers in addition to the regular and conductive carbon black master batch, geomembrane will have < 5% by weight of additives other than carbon black

c) 2.1.3.8

- Sheet Density should be ≤ 0.939 g/cc as per GM17 when tested as per ASTM D792
- Carbon black content of conductive geomembrane may be more than 3% as the conductive layer contains higher amount of carbon black
- ASTM D7238/ASTM D5885 - UV Resistance - % HPOIT retained after 1600 hrs at 35%, not 60% as per spec

d) 1.5.3.6 & 2.1.3.6.

- Our subcontractor is unable to issue a certificate verifying the compatibility the geomembrane to the Iso-Wedge modified heater wedge piece of equipment. The Iso-Wedge modified heat wedge is a patented piece of equipment that is no longer available or used in geomembrane installation by the patentee.

A Specification sheet of proposed geomembrane compliant to GRI GM17 standards (also capturing the exceptions of a, b, and c above) has been included for Engineer review and pre-approval. (See attached).

A29: Replace the following clauses from 31 32 19.02 – Geomembranes with:

a) 2.1.1.2

- Resin Density shall be tested per ASTM D1505, 1/Batch
- Melt flow index remains at ≤ 0.92
- Resin Density shall be changed to ≥ 0.910 g/cc
- OIT standard (avg.) shall be tested per ASTM D3895, 1/batch, 100 min.

b) 2.1.2.1

- Sub-section 2.1.2.1 to be removed from Section 31 32 19.02.

c) 2.1.3.8 - Table 2

- Sheet Density shall be changed to tested per ASTM D792, every 10 rolls, ≤ 0.939 g/cc.
- Carbon black content change to be tested per ASTM D4218, every 2 rolls and shall not exceed 3.0%
- Oxidative Induction time shall be changed to >100 minutes
- UV Resistance - % retained after 1600 hr shall be 35%.

d) 1.5.3.6 & 2.1.3.6

Sub-section 2.1.3.6 to be replaced with the following:

"The coextruded geomembrane shall have an insulated electrically conductive bottom enabling the installed geomembrane to be tested in the field to both ASTM D7240 and ASTM D7007. In such cases, the geomembrane material shall be compatible with the Iso-Wedge modified heater wedge **or equal equipment** such as to ensure Electrical Liner Integrity Survey (ASTM D7007) may be performed as

thoroughly and accurately as possible. The conductive bottom shall be continuous over the entire sheet including beneath all seams and installed downward with the white top facing up. Both liner layers shall be tested with Electrical Liner Integrity Survey (ASTM D7007).”

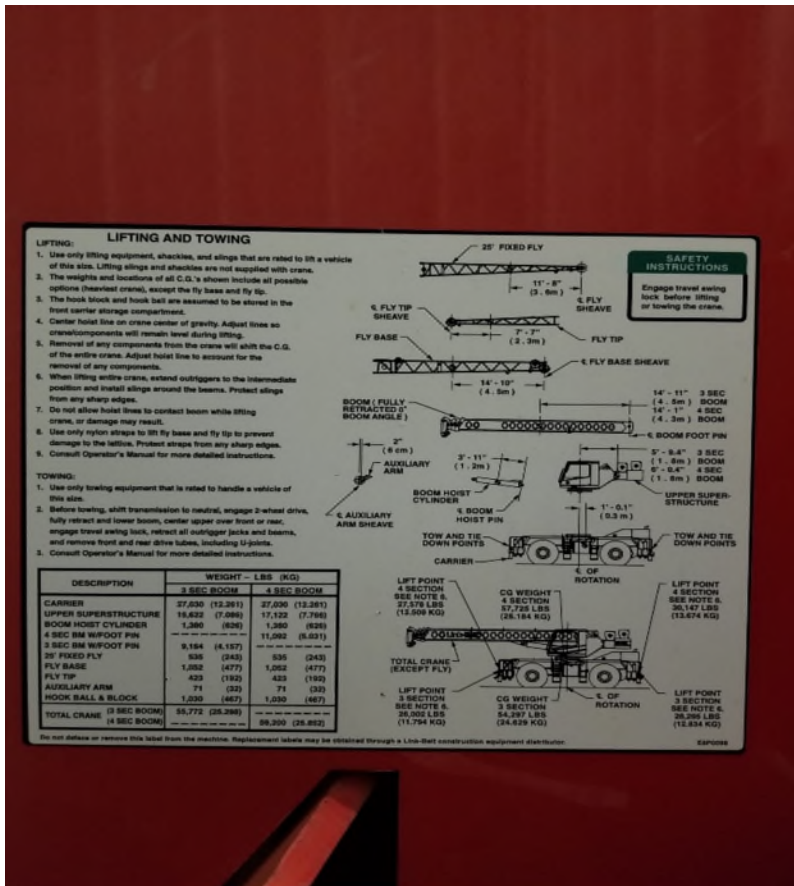
Request for Equal

The proposed material (Layfield EL 6060 White/Black Conductive) does not meet the specified parameter, as follows:

- Tear Resistance (min, avg) – shall be 165 N (or 37 lbs) to ASTM D1004, the proposed material specification listed 33 lbs (146.8 N).

Information

1. Schedule for Granular Availability:
 - a. At the end of the work season in 2021 (typically September 15), it is estimated that the following granular materials will be in stockpile and available for use:
 - i. 5,000 m3 of 19mm granular
 - ii. 43,500 m3 of 50 mm granular
 - b. The balance of the granular materials will be available by the end of season (typically September 15), 2022.



Picture 1: Lifting and Towing Specifications for Crane



Picture 2: Crane Operating Console



Picture 3: Recent Inspection



Picture 4: Crane Exterior