



April 30, 2019

Inuvialuit Water Board
PO Box 2531
Inuvik, NT
X0E 0T0

Mr. Bijaya Adhikari
Science and Regulatory Coordinator

Dear Mr. Adhikari:

**RE: N7L1-1834 – Shell Canada Energy, Camp Farewell – 2018 Annual Report
Response to Inuvialuit Water Board (IWB) comments dated April 17, 2019**

Thank you for your feedback regarding the Camp Farewell Remediation Program, Annual Report 2018. Comments provided by the IWB are addressed below:

1. **Part B, Item 1a:** The 2018 Remediation program at Camp Farewell was conducted between July 18, 2018 and September 21, 2018. The approximate monthly quantities of fresh water obtained from sources at the Site were as follows:
 - ◆ July 2018 – Brought in on barge from Inuvik on spacer barge , no fresh water used from Site. Volume of 60m³ used from the spacer barge.
 - ◆ August 2018 – Mackenzie River source , volume of 60 m³.
 - ◆ September 2018 – Mackenzie River source , volume of 40m³.
2. **Part B, Item 1i:** Abandonment and restoration works:
 - a. All foam encountered within the 2018 excavation extents was removed from the surface soil. Attached is an updated figure (Figure 5) that outlines the approximate areas of remaining foam, suspected area of foam to be excavated in 2019, and the total extent of foam excavated during the 2018 remediation program. Please note that foam was not encountered in all areas of the 2018 excavation and specific coordinates of excavated foam were not recorded.
 - b. The existing groundwater monitoring network at the Camp Farewell Site (piezometers P06-01 to P06-07) is presented on Figure 2. This network, as it currently exists, may not be sufficient to monitor the potential for biodegradation impacts from the polyurethane foam at the Site. This is due to the fact that the extents of the polyurethane foam at the

Site are not currently known. The remediation program is ongoing, and areas have yet to be excavated that could contain foam. Following the completion of the remediation program in 2019, Shell and IEG will develop a plan to monitor the potential impacts to groundwater from the biodegradation of the remaining polyurethane foam and areas downgradient from excavations where foam was removed at the Site as part of the long-term monitoring program.

- c. Groundwater sampling of the existing piezometers was not completed as part of the 2018 remediation activities. A 2018 field inspection of the existing monitoring network at the Site indicated that four locations (P06-1, P06-3, P06-5, and P06-7) require repair/replacement. Groundwater was last sampled at the Site in 2015 and was reported in the 2016 report submitted to the IWB entitled *Camp Farewell 2015 Decommissioning and Soil Assessment Program*. The following is a summary of the 2015 groundwater analytical results:

Groundwater samples collected from two piezometers (P06-01 and P06-03) contained concentrations of total dissolved solids (TDS) that exceeded the GNWT guidelines. Groundwater samples collected from four piezometers (P06-1, P06-2, P06-3 and P06-7) contained concentrations of aluminum, cadmium, copper, iron, and selenium that exceeded the GNWT guidelines. One groundwater sample (P06-03) contained concentrations of naphthalene that exceeded the GNWT guideline.

There is currently not enough recent groundwater chemical data to complete trend analysis and remediation activities at the Site are still ongoing. Groundwater quality trend analysis and monitoring will be a part of the long-term groundwater monitoring program.

Following the completion of the excavation activities in 2019, a new groundwater monitoring program will be developed and will include the repair/replacement and potentially the expansion of the existing groundwater monitoring network. Historical groundwater information, including baseline assessments can be found in the previously submitted assessment reports:

- Golder and Associates (Golder). 2000. Baseline Environmental Site Assessment, Camp Farewell, Mackenzie Delta, Northwest Territories.
- Komex International Ltd. (Komex). 2001. Phase I and Phase II Environmental Site Assessment of the Shell Farewell Stockpile and Campsite.
- WorleyParsons Komex. 2006. 2006 Environmental Site Assessment, Camp Farewell, NT

The Water Licence Part C, Item 1 specified that water should be collected from an unnamed lake north of the camp site during summer work activities. This fresh water source location was selected based on camp facilities and infrastructure that were historically located at the Site; however, these facilities have been decommissioned. Camp facilities for the 2018 remediation program were located on a barge anchored to the shoreline at the Site. Based on the relocation of camp facilities, it was not feasible to use the unnamed lake north of the Site as a fresh water source during the 2018

remediation program. Instead, water for the daily operation of the barge camp was sourced from a spacer barge and from the Middle Channel of the Mackenzie River. Due to this change in preferred fresh water source, and camp facilities, approval from an inspector to utilize the Middle Channel as a fresh water source during the 2019 remediation program is requested.

As a result of the updates listed above in this letter, we will be updating the Annual report and submitting another copy to the IWB and yourself.

We trust the information provided above and within the Camp Farewell Remediation Program, Annual Report 2018 satisfy the reporting requirements and your expressed comments. If you have any further questions or comments, please don't hesitate to contact me at (403) 648-4292 or kschepanow@klohn.com.

Yours truly,
IEG CONSULTANTS LTD.



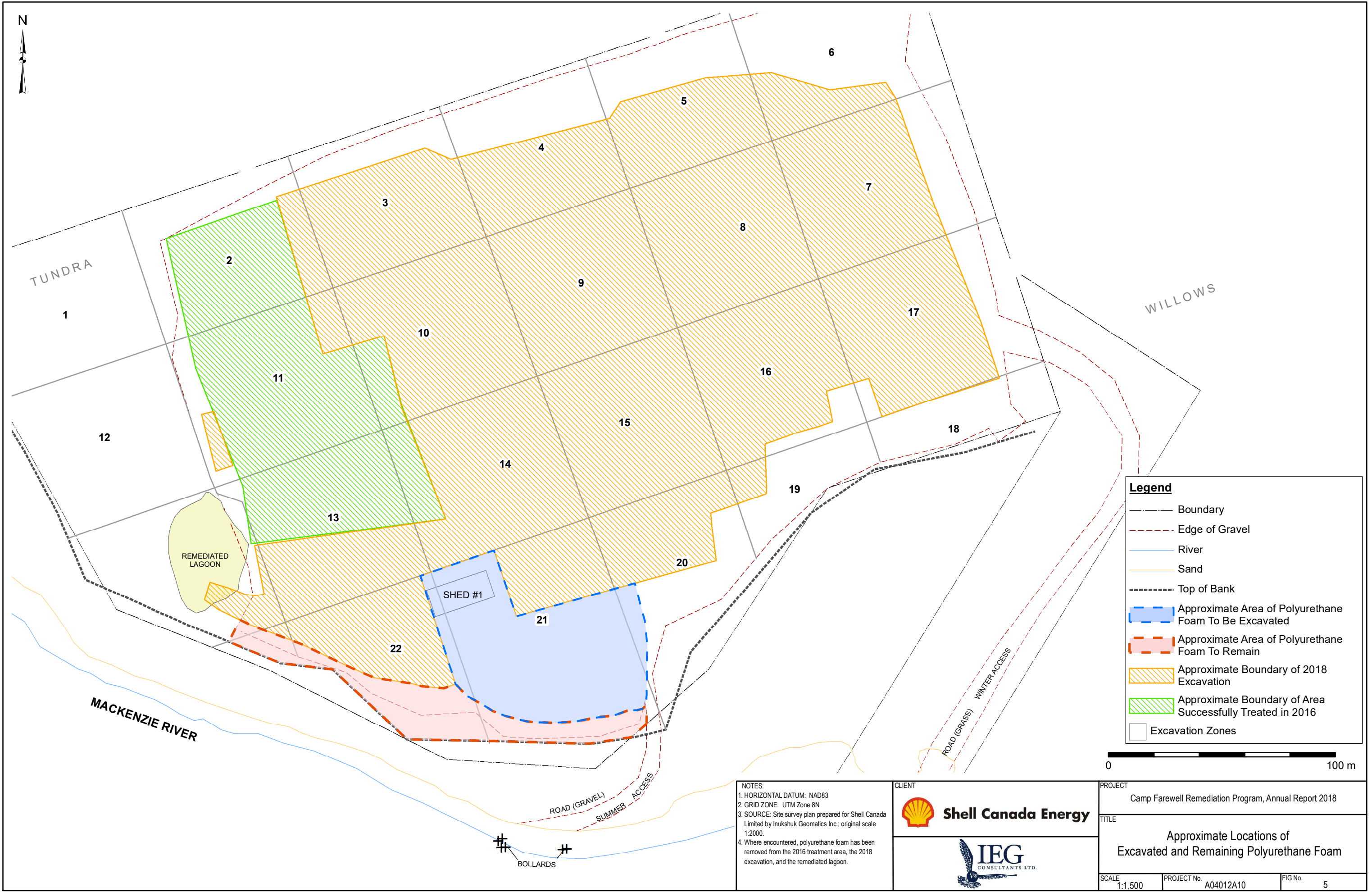
Kyle Schepanow, M.Sc., P.Geo. (Alberta)
Senior Hydrogeologist

KS

c.c.: David Brown & Grahame Bensted – Shell Canada Energy
Mardy Semmler – Inuvialuit Water Board

Attachments: Figure 5 – Approximate Locations of the Excavated and Remaining Polyurethane Foam

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Legend

- Boundary
- Edge of Gravel
- River
- Sand
- Top of Bank
- Approximate Area of Polyurethane Foam To Be Excavated
- Approximate Area of Polyurethane Foam To Remain
- Approximate Boundary of 2018 Excavation
- Approximate Boundary of Area Successfully Treated in 2016
- Excavation Zones

NOTES:
 1. HORIZONTAL DATUM: NAD83
 2. GRID ZONE: UTM Zone 8N
 3. SOURCE: Site survey plan prepared for Shell Canada Limited by Inukshuk Geomatics Inc.; original scale 1:2000.
 4. Where encountered, polyurethane foam has been removed from the 2016 treatment area, the 2018 excavation, and the remediated lagoon.

CLIENT

PROJECT
Camp Farewell Remediation Program, Annual Report 2018

TITLE
Approximate Locations of Excavated and Remaining Polyurethane Foam

SCALE 1:1,500 PROJECT No. A04012A10 FIG No. 5