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NUNAVUT WATER BOARD  
NUNAVUT IMALIRIYIN KATIMAYINGI  
OFFICE DES EAUX DU NUNAVUT

File: **3BC-MAR1014/TR/H1, I1**

January 12, 2011

Joseph E. Palaia, IV  
MARS Society  
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Lakewood, CO 80215 USA  
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**Subject: Licence No. 3BC-MAR1014, “Flashline Mars Arctic Research Station Project; Devon Island, Qikiqtani Region, Nunavut” – Mars Society; Submission of the Spill Response and Abandonment and Restoration Plans**

Dear Mr. Palaia:

The Nunavut Water Board (“NWB”) has completed a technical review of the revised “Spill Response Plan” and “Abandonment and Restoration Plan” (Plans) for the Mars Society’s Flashline Arctic Research Station Devon Island, Nunavut, Canada, which were submitted on December 8, 2010.

The revised Plans were distributed for information, and comments were received from Fisheries and Oceans Canada (DFO) on December 23, 2010, from Environment Canada (EC) and from Indian and Northern Affairs Canada (INAC) on January 10, 2011.

### **Spill Response Plan**

In its submission, DFO concludes that the proposal is not likely to result in impacts to fish and fish habitat.

EC notes that the Plan should include: “**all spills**” of oil, fuel, or other deleterious materials, **regardless of size**, are to be reported to the NWT-NU 24hr Spill Line (867) 920-8130. EC recommends the use of secondary containment, such as self-supporting insta-berms, for storage of all barreled fuel rather than relying on natural depressions to contain spills. EC recommends that the Plan include the provision that drip pans be used when refueling equipment on site in order to help prevent spills from occurring, and also a section which provides direction regarding response action for spills on various types of terrain (e.g. spills on land, water, snow/ice, muskeg etc.). It is also recommended to include 24 Hour NWT/NU Spill Response Form within the Plan.

In its submission, INAC notes that the Plan meets most of Part H Conditions of the licence. However, INAC recommends including a topographic map which better represents the area and a detailed description of the facility. It is also recommended the use of some sort of berm structure as secondary containment for the fuel on-site rather than absorbent pads, and secondary containment measures at the temporary fuel holding area near the airstrip. INAC notes that the Plan should state the correct contact information for INAC as follows: Peter Kusugak – INAC Manager of Field Operations, phone (867) 975-4295, and fax (867) 975-6445.

The Spill Response Plan was found to be generally meeting the reporting requirements of licence 3BC-MAR1014. The NWB has, therefore, approved the Plan under **Board Motion No. 2010-23-L10**, dated January 12, 2011.

However, the Licensee is requested to address the identified deficiencies and submit an Addendum to the Spill Response Plan within thirty (30) days of the date of this letter. The Addendum should include:

- Response action for spills on various types of terrain (e.g. spills on land, water, snow/ice, muskeg etc.)
- An appropriate topographic map of the area with detailed description of the facility and buildings;
- “**All spills**” of oil, fuel, or other deleterious materials, **regardless of size**, are to be reported to the NWT-NU 24hr Spill Line (867) 920-8130;
- Contact information for INAC shall be: Peter Kusugak – INAC Manager of Field Operations, phone (867) 975-4295, and fax (867) 975-6445;
- 24 Hour NWT/NU Spill Response Form.

The Licensee is also recommended to use a secondary containment measures for the fuel on-site, including at the temporary fuel holding area near the airstrip.

### **Abandonment and Restoration Plan**

In its comments, DFO expresses no objections with the Plan.

EC states that the SmartAsh 100 Incinerator should not be used to burn camp wastes or human waste. Due to its low heat and high moisture content, human solid waste is very difficult to burn and should be incinerated in equipment designed for this type of waste. Prior to burning human waste, a letter from manufacturer should be provided to the Board which shall state that the incineration equipment is capable of meeting the Canada-wide Standards for Dioxins and Furans emissions when burning this type of waste.

INAC indicates that the Plan meets most of Part I conditions of the licence. However, it is recommended that the proponent include in the Plan all remediation activities planned for the airstrip.

The Abandonment and Restoration Plan was found to be generally meeting the reporting requirements of licence 3BC-MAR1014. The NWB has, therefore, approved the Plan under **Board Motion No. 2011-23-L10**, dated January 12, 2011.

However, the Licensee is requested to submit an Addendum to the Abandonment and Restoration Plan within thirty (30) days of the date of this letter which will include:

- Remediation activities planned for the airstrip;

The Licensee should provide a technical documentation stating that the incineration equipment is capable of meeting the Canada-wide Standards for Dioxins and Furans emissions when burning human solid waste.

The Licensee is advised of its obligations to comply with all of the terms and conditions in its licence as well as all applicable regulations.

Should you have any questions, please feel free to contact the undersigned at 867-360-6338 ext. 30 or [k.kharatyan@nunavutwaterboard.org](mailto:k.kharatyan@nunavutwaterboard.org), at your earliest convenience.

Yours truly,

*Original Signed By:*

Karén Kharatyan  
Technical Advisor

cc: Distribution List – Qikiqtani