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NUNAVUT IMALIRIYIN KATIMAYINGI
NUNAVUT WATER BOARD
OFFICE DES EAUX DU NUNAVUT

File No: 3BC-MAR0709

April 27, 2007

Robert Zubrin
Mars Society
11111 W. 8th Avenue Unit A
Lakewood Colorado 80215
United States of America
Email: Zubrin@aol.com

RE: NWB Licence No. 3BC-MAR0709

Dear Mr. Zubrin:

Please find attached Licence No. 3BC-MAR0709 issued to MARS SOCIETY by the Acting Chief Executive Officer of the Nunavut Water Board pursuant to Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada*. The terms and conditions of the attached Licence related to water use and waste disposal are an integral part of this approval.

Sincerely,

Original signed by:

Thomas Kabloona
Acting Executive Officer

TK/rqd

Enclosure: Licence No. **3BC-MAR0709**

cc: Jim Rogers, DIAND Iqaluit
Peter Kusugak DIAND Inspector
Salamonie Shoo, Qikiqtani Inuit Association
Erin Calder, Nunavut Wildlife Management Board
Colette Spagnuolo, INAC
Cindy Parker, Environment Canada
Earle Baddaloo, GN-DOE
Tania Gordanier, Department of Fisheries and Oceans
Carson Gillis, NTI
Doug Sitland, CGS



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NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

DECISION

LICENCE NUMBER: 3BC-MAR0709

This is the decision of the Nunavut Water Board (NWB) with respect to an application for a Water Licence dated March 1, 2007 made by:

MARS SOCIETY

to allow for the use of water and disposal of waste during camp operations at the Mars Project located within the Qikiqtani Region, Nunavut (camp located at latitude 75°26'N; longitude 89°50'W).

DECISION

After having been satisfied that the application was in conformity with the applicable Land Use Plan and exempt from the requirement for screening by the Nunavut Impact Review Board in accordance with Schedule 12.1, Paragraph 5 of the *Nunavut Land Claim Agreement* (NLCA), the NWB decided that the application could proceed through the regulatory process. In accordance with S.55.1 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWSRTA) and Article 13 of the NLCA, public notice of the application was given and interested persons were invited to make representations to the NWB.

After reviewing the submission of the Applicant and considering the representations made by interested persons, the NWB, having given due regard to the facts and circumstances, the merits of the submissions made to it and to the purpose, scope and intent of the NLCA and of the NWSRTA, waived the requirement to hold a public hearing and furthermore delegated its authority to approve the application to the Chief Administrative Officer pursuant to S. 13.7.5 of the NLCA and S. 49(a) of the NWSRTA, and determined that:

**Licence Number 3BC-MAR0709 be issued subject to the terms and conditions contained therein.
(Motion #: 2007-02)**

SIGNED this 27th day of April, 2007 at Gjoa Haven, NU.

Original signed by:

Thomas Kabloona
Acting Chief Executive Officer

LICENCE ~~3BC-EDE0611~~ 3BC-MAR0709

Pursuant to the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada*, the Nunavut Water Board, hereinafter referred to as the Board, hereby grants to

MARS SOCIETY

(Licensee)

of

11111 W. 8TH AVENUE UNIT A

Lakewood Colorado 80215 United States of America

(Mailing Address)

hereinafter called the Licensee, the right to alter, divert or otherwise use water for a period subject to restrictions and conditions contained within this Licence:

3BC-MAR0709

Licence Number

NUNAVUT 04

Water Management Area

QIKIQTANI REGION, NUNAVUT

Location

WATER USE AND WASTE DISPOSAL

Purpose

MUNICIPAL – TYPE “B”

Classification of Undertaking

1 CUBIC METRE PER DAY

Quantity of Water Not to Exceed

April 27, 2007

Date of Licence

September 30, 2009

Expiry Date of Licence

Dated this 27th day of April 2007 at Gjoa Haven, NU.

Thomas Kabloona, Acting Chief Executive Officer

PART A: SCOPE, DEFINITIONS AND ENFORCEMENT

1. Scope

This Licence allows for the use of water and the disposal of waste for an undertaking classified as Municipal at the Mars Project located within the Qikiqtani Region, Nunavut (camp located at latitude 75°26'N; longitude 89°50'W).

- i. This Licence is issued subject to the conditions contained herein with respect to the taking of water and the depositing of waste of any type in any waters or in any place under any conditions where such waste or any other waste that results from the deposits of such waste may enter any waters. Whenever new Regulations are made or existing Regulations are amended by the Governor in Council under the Nunavut Waters and Nunavut Surface Rights Tribunal Act, or other statutes imposing more stringent conditions relating to the quantity or type of waste that may be so deposited or under which any such waste may be so deposited, this Licence shall be deemed, upon promulgation of such Regulations, to be subject to such requirements; and;
- ii. Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

2. Definitions

“Act” means the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

“Amendment” means a change to original terms and conditions of this Licence requiring correction, addition or deletion of specific terms and conditions of the Licence; modifications inconsistent with the terms of the set terms and conditions of the Licence;

“Appurtenant Undertaking” means an undertaking in relation to which a use of water or a deposit of waste is permitted by a licence issued by the Board;

“Board” means the Nunavut Water Board established under the *Nunavut Land Claims Agreement* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*;

“Engineer” means a professional engineer registered to practice in Nunavut in accordance with the Engineering, Geological and Geophysical Act (Nunavut) S.N.W.T. 1998, c.38, s.5;

“Greywater” means all liquid wastes from showers, baths, sinks, kitchens and domestic washing facilities, but does not include toilet wastes;

“Inspector” means an Inspector designated by the Minister under Section 85 (1) of the *Act*;

“Licensee” means the holder of this Licence;

“Modification” means an alteration to a physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion;

“Nunavut Land Claims Agreement” (NLCA) means the *“Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada”*, including its preamble and schedules, and any amendments to that agreement made pursuant to it;

“Regulations” means the *Northwest Territories Water Regulations* sor/93-303 8th June, 1993;

“Sewage” means all toilet wastes and greywater;

“Spill Contingency Plan” means a Plan developed to deal with unforeseen petroleum and chemical events that may occur during the operations conducted under the Licence;

“Sump” means an excavation in impermeable soil for the purpose of catching or storing water or waste;

“Toilet Wastes” means all human excreta and associated products, but does not include greywater;

“Waste” means, as defined in S.4 of the *Act*, any substance that, by itself or in combination with other substances found in water, would have the effect of altering the quality of any water to which the substance is added to an extent that is detrimental to its use by people or by any animal, fish or plant, or any water that would have that effect because of the quantity or concentration of the substances contained in it or because it has been treated or changed, by heat or other means.

3. Enforcement

- i. Failure to comply with this Licence will be a violation of the *Act*, subjecting the Licensee to the enforcement measures and the penalties provided for in the *Act*;
- ii. All inspection and enforcement services regarding this Licence will be provided by Inspectors appointed under the *Act*; and
- iii. For the purpose of enforcing this Licence and with respect to the use of water and deposit or discharge of waste by the licensee, Inspectors appointed under the *Act*,

hold all powers, privileges and protections that are conferred upon them by the Act or by other applicable law.

PART B: GENERAL CONDITIONS

1. The water use fees of \$30, payable to the Receiver General for Canada, shall be sent to the Board annually in advance of any use in accordance with Section 9 of the *Regulations*.
2. Licensee shall file an Annual Report on the appurtenant undertaking with the Board no later than March 31st of the year following the calendar year being reported which shall contain the following information:
 - i. A summary report of water use and waste disposal activities, including photographic records of the camp showing the water supply and waste disposal facilities;
 - ii. A list of unauthorized discharges and a summary of follow-up actions taken;
 - iii. A up-to-date copy of the Spill Contingency Plan;
 - iv. A description of all progressive and or final reclamation work undertaken, including photographic records of site conditions before, during and after completion of operations;
 - v. Results of the Monitoring Program; and
 - vi. Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.
3. The Licensee shall notify the NWB of any changes in operating plans or conditions associated with this project at least thirty (30) days prior to any such change.
4. The Licensee shall install flow meters or other such devices, or implement suitable methods required for the measuring of water volumes, to be operated and maintained to the satisfaction of an Inspector.
5. If the Licensee contemplates the renewal of this Licence, it is the responsibility of the Licensee to apply to the NWB for its renewal. The past performance of the Licensee, new documentation and information, and issues raised during a public hearing, if the NWB is required to hold one, will be used to determine the terms and conditions of the Licence renewal. Note that if the Licence expires before the NWB issues a new one, then water use and waste disposal must cease, or the Licensee will be in contravention of the Nunavut Land Claims Agreement. The NWB recommends that an application for the renewal of this Licence be filed at least three months before the Licence expiry date.

6. If this Licence requires an amendment, a public hearing may be required. The Licensee should submit applications for amendment as soon as possible to give the NWB sufficient time to go through the amendment process. The process may vary depending on the scope of the amendment requested.
7. The Licensee shall ensure a copy of this Licence is maintained at the site of operations at all times. Any communication with respect to this Licence shall be made in writing to the attention of:

(i) Manager of Licensing:

Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0
Telephone: (867) 360-6338
Fax: (867) 360-6369

(ii) Inspector Contact:

Water Resources Officer, INAC
Nunavut District, Nunavut Region
P.O. Box 100
Iqaluit, NU X0A 0H0
Telephone: (867) 975-4298
Fax: (867) 979-6445

8. The Licensee shall submit one paper copy and one electronic copy of all reports, studies, and plans to the Board. Reports or studies submitted to the Board by the Licensee shall include a detailed executive summary in Inuktitut.
9. It is the responsibility of the Licensee to ensure that any documents or correspondence submitted by the Licensee to the Board have been acknowledged by the Manager of Licensing.
10. This Licence is not assignable except as provided in Section 44 of the *Act*.

PART C: CONDITIONS APPLYING TO WATER USE

1. The volume of water for the purposes of this Licence shall not exceed 1 cubic metre per day.
2. The use of streams is not authorized as a water source unless approved by the Board.
3. If the Licensee requires water in sufficient volume that the source water body may be drawn down the Licensee shall, at least 30 days prior to commencement of use of water, submit to the Board for approval the following: volume required, hydrological overview

of the water body, details of impacts, and proposed mitigation measures.

4. The Licensee shall equip all water intake hoses with a screen of an appropriate mesh size to ensure that there is no entrainment of fish and shall withdraw water at a rate such that fish do not become impinged on the screen.
5. The Licensee shall not remove any material from below the ordinary high water mark of any water body.
6. The Licensee shall not do anything that will cause erosion to the banks of any body of water and shall provide necessary controls to prevent such erosion.
7. Sediment and erosion control measures shall be implemented prior to and maintained during the operation to prevent entry of sediment into water.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. The Licensee shall locate areas designated for waste disposal at a minimum distance of thirty (30) metres from the ordinary high water mark of any water body such that the quality, quantity or flow of water is not impaired, unless otherwise authorized by the Board.
2. No open burning or on-site land filling of domestic waste is permitted.
3. The Licensee is authorized to incinerate all food waste, paper waste and wood products, and shall ensure that all hazardous wastes, waste oil and non-combustible waste generated through the course of the operation are backhauled and disposed of in an approved waste disposal site.
4. Unless otherwise approved by the Board, the Licensee shall contain all greywater in a sump located at a distance of at least thirty (30) metres above the ordinary high water mark of any water body, at a site where direct flow into a water body is not possible and no additional impacts are created.
5. The Licensee shall contain all sewage in latrine pits or use incineration, chemical or composting toilets for any camp with a design population under 300 person days per year and less than 1,000 person days for the life of the camp. Latrine pits shall be located at a distance of at least thirty (30) metres above the ordinary high water mark of any water body, treated with lime and covered with native material to achieve the pre-existing natural contours of the land prior to abandonment.
6. Unless otherwise approved by the Board the Licensee shall use incineration, chemical or composting toilets for any camp with a design population over 300 and less than 2,000 person days per year, and less than 5,000 person days per year for the life of the camp. Ashes and any remaining residue generated through the course of the operation are to be

backhauled and disposed of in an approved waste disposal site.

PART E: CONDITIONS FOR CAMPS, ACCESS INFRASTRUCTURES AND OPERATIONS

1. The Licensee shall not erect camps or store material on the surface of frozen streams or lakes except what is for immediate use. Camps shall be located such as to minimize impacts on surface drainage.
2. All activities shall be conducted in such a way as to minimize impacts on surface drainage and the Licensee shall immediately undertake any corrective measures in the event of any impacts on surface drainage.
3. Winter lake and stream crossings, including ice bridges, shall be constructed entirely of water, ice or snow; stream crossings shall be removed or notched prior to spring break-up.
4. With respect to access road, pad construction or other earthworks, the deposition of debris or sediment into any water body is prohibited. These materials shall be disposed a distance of at least thirty (30) metres from the ordinary high water mark in such a fashion that they do not enter the water.

PART F: CONDITIONS APPLYING TO MODIFICATIONS

1. The Licensee may, without written consent from the Board, carry out Modifications to the Water Supply Facilities and Waste Disposal Facilities provided that such Modifications are consistent with the terms of this License and the following requirements are met:
 - i. The Licensee has notified the Board in writing of such proposed Modifications at least sixty (60) days prior to beginning the Modifications;
 - ii. Such Modifications do not place the Licensee in contravention of the License or the Act;
 - iii. The Board has not, during the sixty (60) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than sixty (60) days; and
 - iv. The Board has not rejected the proposed Modifications.
2. Modifications for which all of the conditions referred to in Part F, Item 1 have not been met can be carried out only with written approval from the Board.

PART G: CONDITIONS APPLYING TO SPILL CONTINGENCY PLANNING

1. In accordance with section 6(2)(g)(i) and (ii) of the Regulations, the Licensee shall, within thirty (30) days of issuance of this Licence, keep on the site of operations a Spill Contingency Plan that will describe how petroleum products and hazardous materials will be handled, stored and disposed of, as well as how they will be contained and cleaned-up in the event of a spill. This Plan shall include, but not be limited to, the following:
 - i. The name, address and contact number for the person in charge, management or control of the contaminant (in this case, fuel oil and any other chemicals associated with the program);
 - ii. The name and address and telephone number of the employer;
 - iii. The name, job title and 24 hour contact number for the person or persons responsible for activating the spill plan;
 - iv. A detailed description of the facility, including its geographic location – in UTM coordinates (map sheet number, Eastings and Northings) and geographic coordinates (Lat/Long) – size and storage capacity;
 - v. A description of the type and amount of contaminants stored on site;
 - vi. A description of the spill prevention measures to be undertaken in the handling, storage and disposal of petroleum products and hazardous materials;
 - vii. Steps taken to report, contain, clean up and dispose of a spill;
 - viii. A site map of sufficiently large scale to show the location of buildings, contaminants storage areas, sensitive areas such as water bodies, probable pathways of contaminant flow and general topography;
 - ix. A description of the spill response training provided to employees who will respond to a spill;
 - x. An inventory and location of the response and clean up equipment available to the spill clean up team;
 - xi. The means by which the spill plan is activated; and
 - xii. The date that the spill plan was prepared.
2. The Licensee shall annually review the Plan referred to in this Part and if needed, modify it to reflect changes in operation and/or technology. The Plan and any revisions shall be submitted with the Annual Report.
3. The Licensee shall ensure that any chemicals, petroleum products or wastes associated with the project do not enter water. All sumps and fuel caches shall be located at a distance of at least thirty (30) metres from the ordinary high water mark of any adjacent water body and inspected on a regular basis.
4. The Licensee shall ensure that any equipment maintenance and servicing be conducted only in designated areas and shall implement special procedures (such as the use of drip pans) to manage motor fluids and other waste and contain potential spills.
5. If during the term of this Licence, an unauthorized discharge of waste occurs, or if such a discharge is foreseeable, the Licensee shall:

- i. Employ the Spill Contingency Plan;
- ii. Report the spill immediately to the 24-Hour Spill Line at (867) 920-8130 and to the Inspector at (867) 975-4298; and
- iii. For each spill occurrence, submit to the Inspector, no later than thirty (30) days after initially reporting the event, a detailed report that will include the amount and type of spilled product, the GPS location of the spill, and the measures taken to contain and clean up the spill site.

PART H: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION

1. The Licensee shall complete all restoration work prior to the expiry of this Licence.
2. The Licensee shall carry out progressive reclamation of any components of the project no longer required for the Licensee's operations.
3. The Licensee shall backfill and restore, to the satisfaction of an Inspector, all sumps to the pre-existing natural contours of the land.
4. The Licensee shall remove from the site infrastructures and site material, including but not limited to, all fuel caches, drums, barrels, buildings and contents, docks, water pumps and lines, material and equipment before the expiry of this License.
5. All roads and airstrips, if any, shall be re-graded to match natural contour to reduce erosion.
6. In order to promote natural growth of vegetation and the needed microclimate for seed deposition, all disturbed surfaces shall be prepared by ripping, grading, or scarifying the surface to conform to the natural topography.
7. Areas that have been contaminated by hydrocarbons from normal fuel transfer procedures shall be reclaimed to the satisfaction of an Inspector. The use of reclaimed soils for the purpose of back fill or general site grading may be carried out only upon approval by an Inspector.
8. All disturbed areas shall be contoured and stabilized upon completion of work and restored to a pre-disturbed state.

PART I: CONDITIONS APPLYING TO THE MONITORING PROGRAM

1. The Licensee shall measure and record in cubic metres the daily quantities of water utilized for camp and other purposes.

2. The Licensee shall provide the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations where sources of water are utilized for all purposes.
3. The Licensee shall determine the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations where wastes associated with camp operations and drilling operations are deposited.
4. An Inspector may impose additional monitoring requirements.
5. All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of *Standard Methods for the Examination of Water and Wastewater*, or by such other methods approved by the Board.
6. All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.
7. The Licensee shall include in the Annual Report required under Part B, Item 2 all data and information required by this Part.