

December 12, 2013

Mr. Jim Stevens
Director, Inuvik – Tuktoyaktuk Mackenzie Highway Project
Department of Transportation
Government of the Northwest Territories
Lahm Ridge Tower, 2nd Floor
4501 – 51 Ave, P.O. Box 1320
Yellowknife, NT X1A 2L9

Dear Mr. Stevens:

**Re: Government of the Northwest Territories (GNWT), Department of Transportation
Application for Water Licence – Inuvik to Tuktoyaktuk Highway Project.**

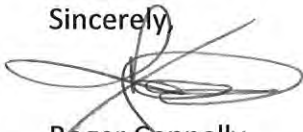
The Northwest Territories Water Board (NWTWB) is pleased to enclose NWTWB Type A Water Licence N7L1-1835. This licence entitles the GNWT to use water and dispose of Waste for “miscellaneous undertakings” (as per Schedule VIII of the NWT Water Regulations) associated with the construction of the Inuvik to Tuktoyaktuk Highway as outlined in your application received June 17, 2013 and in all additional information submitted to the NWTWB prior to and including October 15, 2013.

This licence is issued in accordance with the conditions as outlined in the body of the licence. Accompanying documentation includes General Procedures for the Administration of Licences issued under the NWT Waters Act and the Reasons for Decision as they relate to the licensing proceedings and conditions.

As per Section 9(1)(b) of the NWT Water Regulations, the water use fees for the first year of this licence are now due in the amount of \$1,625.00. Please remit payment to this office in favour of Receiver General for Canada.

Should you have any questions regarding this licence, please contact Liz Castaneda at 867-675-0070 or Freda Wilson at 867-678-2942.

Sincerely,



Roger Connelly
Vice-Chairperson

Copy to: Public Register
Parties to the Proceedings

NORTHWEST TERRITORIES WATER BOARD

Pursuant to the *Northwest Territories Waters Act* and Regulations the Northwest Territories Water Board, hereinafter referred to as the “Board”, hereby grants a Water Licence to:

GOVERNMENT OF THE NORTHWEST TERRITORIES – DEPARTMENT OF TRANSPORTATION

(Licensee)

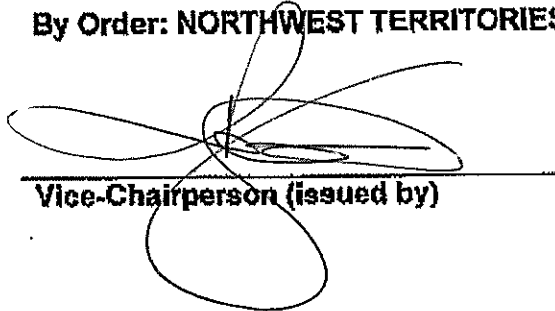
of Lahm Ridge Tower, 2nd Floor
4501, 50 Avenue
P.O. Box 1320
YELLOWKNIFE, NT X1A 2L9

Hereinafter called the “Licensee”, the right to use water and dispose of Waste subject to the restrictions and conditions contained in the *Northwest Territories Waters Act* and Regulations made thereunder and subject to, and in accordance with, the conditions specified in this Licence.

Water Licence Number	N7L1-1835
Water Licence Type	Type “A”
Water Management Area	WMA 3. and 7. as per Schedule 1 of the Regulations
Location	Kilometre post 0 (68°25’2.857”N, 113°46’31.172”W) and kilometer post 119 (69°16’21.059”N, 132°54’11.131”), and including Granular Source Pit 177
Purpose	Construction of the Inuvik – Tuktoyaktuk Highway Project (ITH)
Quantity of Water Not To Be Exceeded	Year 1 – 162,500 m³ Year 2 – 145,000 m³ Year 3 – 123,000 m³ Year 4 – 50,000 m³
Effective Date of Licence	December 12, 2013
Expiry Date of Licence	December 11, 2023

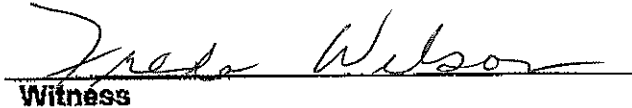
This Water Licence issued and recorded at Board Offices located at Inuvik and Yellowknife, NT and includes, and is subject to, any current or future annexed conditions or amendments to the *Northwest Territories Waters Act* and Regulations.

By Order: NORTHWEST TERRITORIES WATER BOARD



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Vice-Chairperson (issued by)



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Witness



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**Minister of Aboriginal Affairs and Northern
Development Canada (approved by)**

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PART A: SCOPE AND DEFINITIONS

1. Scope

- a) This Licence entitles the Licensee to use water and dispose of Waste for “miscellaneous undertakings” (as per Schedule VIII of the Regulations) associated with the Construction of the Inuvik to Tuktoyaktuk Highway (ITH) as outlined in the Application received June 17, 2013 and in all supplemental information submitted to the Board prior to and including October 15, 2013 (ITH Project Overview, supporting documentation titled: “*Water Licence Application for Construction of Inuvik – Tuktoyaktuk Highway, June 2013*”), with coordinates 68°25’2.857”N, 113°46’31.172”W at kilometre post 0, and 69°16’21.059”N, 132°54’11.131”W at kilometer post 119, and including Granular Source Pit 177.
- b) Licence N7L1-1835 determines terms and conditions for water use and Waste disposal for both the Construction period and a subsequent monitoring period. It does not cover any highway operations and maintenance activities requiring a Water Licence not provided for in this Licence. Such activities would require an Application to, and approval by, the Board.

2. Definitions

In this Licence **N7L1-1835**:

“Act” means the *Northwest Territories Waters Act*;

“Acid Generating Materials” means the production of acidic leachate, seepage or drainage from works, pits, open stockpiles, waste rock stockpiles, Construction rock and other rocks used for the purposes associated with the Project that can lead to the release of Acidic Substances into Ground Waters or Surface Waters;

“Acidic Substances” means any class of substances that neutralize and are neutralized by alkalis and contain hydrogen that can be replaced by metals;

“Adaptive Management” means a management strategy to minimize risks associated with uncertainty and that provides a flexible framework for environmental mitigation measures to be implemented and actions to be taken when certain thresholds are exceeded;

“Amendment” means a change to any terms and conditions of this Licence as provided for under Section 18(1)(b) of the Act;

“Analyst” means a person designated under Section 35(1) of the Act;

“Annually” means, in the context of frequency of monitoring, one sampling event occurring every 365 days with a minimum of 200 days between sampling events;

“Application” means the Type “A” Water Licence Application from the Licensee received by the Board on June 17, 2013;

“Aquatic Effects Monitoring Plan” means an environmental Monitoring Program designed to determine the effects of Project activities on the aquatic environment resulting from the Project, to evaluate the accuracy of predictions of impacts, to assess the effectiveness of planned mitigation measures and to identify additional impact mitigation measures to avert or reduce negative environmental effects;

“Borrow Pit” or “Granular Source Pit” means any site where materials, such as gravel, sand, silt or clay, are extracted for the purpose of constructing roads or access roads as described in the Pit Development Plans (PDPs) or the Application and as listed in Schedule 1, Part A, Item 2;

“Bulk Fuel Storage Facilities” means permanent or transient fuel storage tanks, containment areas, or associated structures or accessories constructed or employed for the purposes of storing, offloading or distribution of fuel or other related petroleum products;

“Canadian Council of the Ministers of Environment (CCME)” means the organization of Canadian Ministers of the Environment that sets guidelines for Canadian environmental protection such as the *Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life*;

“Category E Lands” means those lands and waters within the Inuvialuit Settlement Region where the cultural and renewable resources are determined by the Inuvialuit communities and the Inuvialuit Final Agreement Co-Management bodies to be of extreme significance and sensitivity and deserving of the highest level of protection.

“Closure” means the permanent dismantlement of a component of the Project, including Granular Source Pits, with the intent of making the component incapable of its intended use. This includes the removal of associated equipment and structures, including all culverts and bridges, used in the Construction or maintenance of the highway Project;

“Construction” means any activities undertaken to construct or build any component of, or associated with, the development of the Inuvik to Tuktoyaktuk Highway;

“Contingency Plan” means any plan dealing with or taking into account an uncertain or chance occurrence or event;

“Discharge” or “Deposit” means the release of any Waters or Waste to the receiving environment;

“Domestic Waste” means all solid or liquid Waste generated from the accommodations, kitchen facilities and all other domestic facilities;

“Engineer” means a Professional Engineer registered with the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists;

“Engineered Structure” means any constructed facility which was designed and approved by a Professional Engineer registered with the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists;

“Ground Waters” means Waters occupying the pores and fractures in rock, soil or muskeg below the surface of the ground in a liquid or frozen state;

“Hazardous Waste” means a Waste which is a dangerous substance or material that is no longer used for its original purpose and is intended for recycling, treatment, disposal or storage;

“Inspector” means a person designated under Section 35(1) of the Act;

“Licence” means this Type “A” Water Licence, N7L1-1835 as issued by the Board in accordance with the Act, to the Licensee;

“Maximum Average Concentration” means the running average of any four (4) consecutive analytical results obtained during a single open water season. If less than four (4) analytical results are obtained then the running average is the average of those samples collected.

“Metal Leaching” means the mobilization or solubilization of metals into aqueous solution under neutral, acidic or alkaline conditions;

“Minister” means the Minister of Aboriginal Affairs and Northern Development Canada;

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

“Monitoring Program” means any program designed to collect data on the quality or quantity of Surface Waters or Ground Waters to assess impacts on the environment of the appurtenant undertakings;

“Monthly” means, in the context of monitoring frequency, one sampling event occurring every thirty (30) days with a minimum of twenty (20) days between sampling events;

“Project” means the Construction of the Inuvik to Tuktoyaktuk Highway as outlined in the Application received June 17, 2013 and in all supplemental information submitted to the Board prior to and including October 15, 2013;

"Reclamation" means the process of returning a disturbed site to its natural state or one for other productive uses that prevents or minimizes any adverse effects on the environment or threats to human health and safety;

"Regulations" means Regulations proclaimed pursuant to Section 33 of the Act;

"Sewage" means all toilet Wastes and greywater;

"Spill" means to allow or accidentally release Wastes from containment vessels or structures into the receiving environment;

"Surface Waters" means flowing or standing Waters such as streams, rivers, lakes or ponds;

"Traditional Knowledge" means the practical knowledge that has been gathered through the experience of living in close contact with nature and that has been handed down to Inuvialuit from generation to generation;

"Waste" as defined by Section 2 of the Act;

"Water Licence Application" means the Type A Water Licence Application as submitted to the Board comprising documentation dated June 13, 2013 and all additional supporting documents received by the Board up to and including October 15, 2013;

"Water Intake Facility" comprised of the water intake infrastructure associated with water withdrawal from a Water Source;

"Water Source" comprises one of the following water bodies referenced in the Construction Atlas submitted to the Board on September 20, 2013: Lake KP1, Lake KP5, Lake KP11, Lake Inuvik 4, Lake Inuvik 5, Lake Inuvik 6, Mackenzie River, Tuk 4 (KP102), Tuk 3/Lake 105, KP110, Tuk 1, Lake 119, Lake 120, KP24, Jimmy Lake, Lake 37 (KP29), Lake KP29B, Lake 35, Lake KP82A, Lake KP82B, Lake KP85, Lake KP86, Lake KP91, Lake KP100, Lake KP101, Lake KP41, Lake KP42, Lake KP45, Lake KP50A, Lake KP50B, Lake KP 54, Lake KP55, Lake KP61, Lake KP70, Lake 11BC (KP71), Lake KP77, Lake KP78, Lake 29A;

"Waters" means waters as defined by Section 2 of the Act;

PART B: GENERAL CONDITIONS

1. The water use fee shall be paid by the Licensee Annually in advance of any water use.
2. The Licensee shall file an Annual Report with the Board and the Inspector not later than June 30 of each year which shall contain the following information on Project-related activities during the prior 12 month period May 1 to April 30;

- a) the Monthly and annual quantities in cubic metres of water obtained from each Water Source;
- b) the Monthly and annual quantities in cubic metres of water obtained from all Water Source combined;
- c) the Monthly and annual quantities of solid Waste accepted by the Hamlet of Tuktoyaktuk and/or Town of Inuvik;
- d) the Monthly and annual quantities in cubic metres of Sewage accepted by the Hamlet of Tuktoyaktuk and/or Town of Inuvik;
- e) the Monthly and annual quantities and types of Hazardous Waste removed from the Project and associated disposal locations;
- f) a summary report which includes all data and information generated under the "Surveillance Network Program (SNP)" [Schedule 1] in an electronic and printed format acceptable to the Board;
- g) a summary of Construction activities completed and an updated Construction schedule;
- h) a summary of Modifications and/or major maintenance work as related to the Construction Project completed;
- i) a report on any studies required by the Board that relate to Waste management, water use, aquatic effects and Closure and Reclamation and a brief description of any future studies planned by the Licensee;
- j) the results of the "Aquatic Effects Monitoring Plan (AEMP)" and "Permafrost Monitoring Plan (PMP)";
- k) A description of any updates and/or revisions to any of the following plans:
 - i. Sedimentation and Erosion Control Plan;
 - ii. Waste Management Plan;
 - iii. Explosives Management Plan;
 - iv. Spill Contingency Management Plan and Spill Response Procedure;
 - v. Emergency Response Plan;
 - vi. Aquatic Effects Monitoring Plan;
 - vii. Permafrost Monitoring Plan;
 - viii. Fish and Fish Habitat Protection Plan;
 - ix. Wildlife and Wildlife Habitat Protection Plan;
 - x. Surveillance Network Program (SNP);
 - xi. Quality Assurance / Quality Control Plan;
 - xii. Pit Development Plans; and
 - xiii. Closure and Reclamation Plans.

- l) A summary of pre-Construction surveys and any follow-up activities related to muskrat push-ups on lakes where winter snow removal and/or winter water withdrawal occurred;
 - m) a summary of each lake's relative water level before and after water withdrawal and a comparison of the changes in water level for each lake to the initial predictions based on bathymetry testing completed prior to Construction of the Project;
 - n) a summary of the Adaptive Management considerations and activities related to the Construction of the Project;
 - o) a list and description including location and volumes of all unauthorized Discharges, Spills and summaries of follow-up action taken;
 - p) an outline of any Spill training exercises carried out;
 - q) a summary of any progressive reclamation of Granular Source Pits, winter roads, access trails, Water Supply Facilities, camp facilities and Construction laydowns and any other facility related to the Project undertaken during the year and an outline of any reclamation work anticipated for the next year; and
3. A summary reporting schedule for submission of plans and documentations to the Board, as outlined throughout this Licence, is provided in Schedule 2.
 4. Where Amendments to any of the plans referenced in Part B, Item 2k may result in additional impacts to Category E Lands, the Licensee shall undertake consultations with the appropriate HTC's and the Licensee shall provide to the Board a summary of the consultations so completed in relation to Category E Lands.
 5. The Licensee shall comply with the "Surveillance Network Program" (SNP) included in this Licence, and any Amendment to the said "Surveillance Network Program" as may be made from time to time, pursuant to the conditions of this Licence.
 6. The "Surveillance Network Program" (SNP) and compliance dates specified in this Licence may be modified at the discretion of the Board.
 7. Meters, devices or other such methods used for measuring the volumes of water used and Waste Discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.
 8. The Licensee shall, within thirty (30) days of this Licence issuance, post the necessary signs, to identify the stations of the "Surveillance Network Program (SNP)". All postings shall be located and maintained to the satisfaction of an Inspector.
 9. The Licensee shall ensure a copy of this Licence is maintained at the site of operation at all times.

10. The Licensee shall submit all Water Licence monitoring data in spreadsheet format accompanied by a PDF copy or other electronic form acceptable to the Board.
11. The Licensee shall submit all reports to the Board in printed format accompanied by a PDF copy or other electronic form acceptable to the Board.
12. The Licensee shall provide the Board with the names and contact addresses for all Construction Contractors prior to Construction.
13. The Licensee shall ensure that all Contractors and Sub-Contractors are aware of, and shall conform to, all Terms and Conditions of this Licence.
14. This Licence is issued subject to the conditions contained herein with respect to the taking of water and the Deposit 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 Deposit of such Waste may enter any Waters.
15. Whenever new Acts and Regulations are made, or the existing *Northwest Territories Waters Act* or Regulations under the Act are amended, or any other statutes imposing more stringent conditions relating to the quantity or type of Waste that may be so Deposited, this Licence shall be deemed, upon promulgation of such Statutes or Regulations, to be automatically amended to conform with such Statutes or Regulations.
16. The Licensee shall take every reasonable precaution to protect the environment.
17. 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 for which any and all applicable licences and permits shall also be obtained by Licensee.
18. The Licensee shall comply with the Government of Canada's April 5, 2013 Notice of Decision "*Government of Canada Response to the Panel Report on the Proposal to Construct the Inuvik to Tuktoyaktuk Highway*" which confirms certain commitments made by Proponent to manage and mitigate potential environmental impacts arising from the Project that apply to the Act and the management of Waters and Waste as contemplated by this Licence.
19. Within the limitations of Part B, Item 21, no Construction shall proceed unless the Board has approved the plans and agreements described in Part C, Items 1, 3, 5, 7, and 10, Part E, Items 1, 5 and Part G, Item 1 of this Licence.
20. Within the limitations of Part B, Items 21, no summer Construction shall proceed unless the Board has approved the plans described in Part E, Item 2, and Part H, Item 1 of this Licence.

21. In approving the plans and agreements described in Part B, Items 19 and 20 of this Licence, the Board approval will be limited to those elements that relate to Waters and Waste.

PART C: CONDITIONS APPLYING TO CONSTRUCTION

1. The Licensee shall within thirty (30) days of Licence issuance submit to the Board an updated schedule of Construction activities for the first year of Construction. The Licensee shall thereafter each year submit to the Board by September 31 an updated schedule of Construction activities for the winter Construction program.
2. The Licensee shall not use Acid Generating Materials and/or Metal Leaching materials in the Construction of the Project.
3. The Licensee shall within fifteen (15) days of Licence issuance submit to the Board for approval a detailed design report for all Engineered Structures related to the Project that is signed and stamped by a Engineer that includes:
 - a) Construction drawings;
 - b) Construction specifications; and
 - c) Construction quality control/quality assurance plan.
4. The Licensee shall ensure that all Construction of Engineered Structures is supervised by an Engineer. The Licensee shall also ensure that for all Engineered Structures the following post-construction information is signed and stamped by an Engineer, and submitted to the Board and an Inspector: Construction records, as-built documentation, and a summary of any deviations from original design that required Engineer approval. The post-construction information shall be provided to the Board within ninety (90) days of completion of the Construction.
5. The Licensee shall within fifteen (15) days of Licence issuance, submit to the Board for approval an Explosives Management Plan (EMP).
6. The Licensee shall ensure that there is no obstruction of water flow in watercourses as a result of Engineered Structures being placed in, or about, a watercourse.
7. The Licensee shall within thirty (30) days of Licence issuance submit to the Board for approval a Permafrost Monitoring Plan (PMP). The Permafrost Monitoring Plan shall address monitoring of active layer and near-surface permafrost impacts from the winter road Construction to aggregate sources, as well as, the all-weather highway and watercourse crossings. The implementation of this plan shall inform the overall Adaptive Management program of the Project.

8. If any of the Plans referred to in Part C, Items 5 and 7 are not approved by the Board, the Licensee shall revise the unapproved Plans and resubmit them to the Board for approval within thirty (30) days of receiving notification of the Board's decision.
9. The Licensee shall on an annual basis review all subject Plans referred to in Part C, Items 5 and 7 and modify as necessary, or as requested by the Board, to reflect changes in operations and technology. Any proposed Modifications to the plans shall be submitted to and approved by the Board prior to implementation.
10. The Licensee shall within fifteen (15) days of Licence issuance submit to the Board for approval a Pit Development Plan for each Granular Source Pit to be utilized during Year 1 Construction. In subsequent years of Construction, the Licensee shall no later than thirty (30) days prior to the development of each additional Granular Source Pit, submit to the Board for approval a Pit Development Plan. Each Pit Development Plan shall address: the effects of pit development and operations on, Surface Water, permafrost; permafrost re-establishment post-closure; mitigation measures; Acid Generating Materials and/or Metal Leaching monitoring and mitigation; and closure and reclamation. The Licensee shall consult the Inuvik and Tuktoyaktuk Hunters and Trappers Committees prior to regulatory approval of the said plans. The implementation of each Pit Development Plan shall inform the overall Adaptive Management program of the Project.
11. The Plan referenced in Part C Item 10 shall be developed to be consistent with the Inuvialuit Settlement Region Granular Resource Management Plan.
12. The Licensee shall within thirty (30) days of Licence issuance submit to the Board a Fish and Fish Habitat Protection Plan (FFHPP). The FFHPP shall include and address: details on how removal of water from lakes or placement of Engineered Structures on watercourse crossings may affect the ability of fish to migrate between lakes; management plans for fish and fish habitat in areas affected by Construction; and a long-term maintenance plan for Hans and Zed Creek crossings. The implementation of this plan shall inform the overall Adaptive Management program of the Project.
13. The Licensee shall within thirty (30) days of Licence issuance submit to the Board a Wildlife and Wildlife Habitat Protection Plan (WWHPP). The WWHPP shall address how the removal of water from lakes in winter months may affect muskrat populations. The implementation of this plan shall inform the overall Adaptive Management program of the Project.
14. When a Granular Source Pit is used for more than one year the Licensee shall not use the same road alignment to access that pit in subsequent years.
15. Blasting activities in Borrow Pits shall meet Fisheries and Oceans Canada 1998 *"Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters"*.

16. Construction of winter ice bridges or snow fills shall be in accordance with Fisheries and Oceans Canada's *"Operational Statement for Ice Bridges and Snow Fills"*.
17. Where applicable, relevant Fisheries and Oceans Canada's operational statements shall be applied.
18. The Licensee shall not use any dust suppressant other than water, with no additives.
19. The Licensee shall undertake necessary corrective measures to mitigate negative impacts on surface drainage resulting from the Licensee's activities. Camps or work facilities shall be located so as to minimize negative impacts to surface drainage.
20. The Licensee shall prevent any Wastes associated with the Project from entering into any Water Body.
21. The Licensee shall construct and operate all Infrastructure and Facilities designed to contain, withhold, divert or retain Water or Waste in accordance with all applicable Federal or Territorial legislation and industry standards.
22. The Licensee shall construct and operate any Bulk Fuel Storage Facilities in accordance with all applicable Federal and Territorial legislation and industry standards, including:
 - a. *Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products* (2003); and
 - b. *National Fire Code of Canada* (2010).
23. The Licensee shall not store Waste on the surface of frozen streams or lakes except what is required for immediate use as and where approved by an Inspector.

PART D: CONDITIONS APPLYING TO WATER USE

1. The Licensee shall install meters or other such methods to measure the withdrawal of water or Discharge Waters or Wastes to the satisfaction of an Inspector.
2. The Licensee is authorized to use water from Water Sources. The annual quantity of water used for all purposes from all Water Sources combined shall not exceed a total volume of 162,500 m³ for Year 1 Construction, 145,000 m³ for Year 2 Construction, 123,000 m³ for Year 3 Construction and 50,000 m³ for Year 4 Construction.
3. All water withdrawals from ice covered water bodies that support fish and fish habitat shall be in accordance with Fisheries and Oceans Canada's 2010 *"Protocol for Water Withdrawal from Ice-covered Waterbodies in the Northwest Territories and Nunavut"*.

PART E: CONDITIONS APPLYING TO WASTE MANAGEMENT AND DISPOSAL

1. The Licensee shall submit to the Board within fifteen (15) days of Licence issuance for approval a Waste Management Plan (WMP). The WMP shall include incinerator management strategies.
2. The Licensee shall submit to the Board not later than March 15, 2014 for approval a Sedimentation and Erosion Control Plan (SECP). The implementation of this plan shall inform the overall Adaptive Management program of the Project.
3. If any of the Plans referred to in Part E, Items 1 and 2 are not approved by the Board, the Licensee shall revise the unapproved Plans and resubmit them to the Board for approval.
4. The licensee shall manage all Sewage, solid Waste and Hazardous Waste in accordance with the approved Waste Management Plan or as otherwise approved by the Board.
5. The Licensee shall provide to the Board, within fifteen (15) days of Licence issuance, copies of agreements or letters between the Licensee and third parties where the third party has agreed to harbour, transport or dispose of Waste. Copies of such agreements or letters shall include details including, but not limited to, the type of Waste, quantities of Waste, treatment methods and disposal location.
6. The Licensee shall on an annual basis review the Plans referred to in Part E, Items 1 and 2 and modify as necessary, or as requested by the Board, to reflect changes in operations and technology. Any proposed Modifications to the plans shall be submitted to the Board for approval.
7. Surface runoff from Granular Source Pits, where flow may directly or indirectly enter a water body, shall be sampled weekly and not exceed the following effluent standards.

Parameter	Maximum Concentration	Average Concentration	Maximum Concentration of Any Grab Sample
Total Suspended Solids	50 mg/L		100 mg/L
Total Petroleum Hydrocarbons	3 mg/L		5 mg/L
pH	Between 6.0 and 9.0		Between 6.0 and 9.0

8. During Construction, if Water is present in a liquid state in watercourse crossings listed in Schedule I it shall be sampled daily at locations 50 m upstream and 100 m downstream of the watercourse crossings and shall not exceed the following effluent standards.
 - a) An increase in Total Suspended Solids between the downstream and upstream sample of 100 mg/L.
 - b) For the downstream sample, the effluent standards for Total Petroleum Hydrocarbons and pH as identified in Part E, Item 7.
9. All Water discharges to the receiving environment not addressed in Part E, Items 7 and 8 shall meet the effluent standards as specified above. In the event that the upstream Surveillance Station water quality exceeds the effluent standards outlined in Part E, Item 7 the Inspector shall be immediately notified.

PART F: CONDITIONS APPLYING TO MODIFICATIONS

1. Except for those Engineered Structures addressed by Part C, Item 4 the Licensee may, without written approval from the Board, carry out Modifications to the planned Project provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:
 - a) the Licensee has notified the Board and an Inspector in writing of such proposed Modifications at least twenty (20) days prior to beginning the Modifications;
 - b) such Modifications do not place the Licensee in contravention of either this Licence or the Act;
 - c) the Board has not, during the twenty (20) days following notification of the proposed Modifications, informed the Licensee that a review of the proposal will require more than twenty (20) days; and
 - d) 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 may be carried out only with written approval from the Board.
3. The Licensee shall provide to the Board construction records, as-built documentation and a summary of any Modifications referred to in Part F, Item 1 within ninety (90) days of completion of the Modifications.

PART G: CONDITIONS APPLYING TO CONTINGENCY PLANNING

1. The Licensee shall within 15 days of Licence issuance submit to the Board for approval, a Spill Contingency Management Plan and a Spill Response Procedure and an Emergency Response Plan (ERP) in accordance with the Aboriginal Affairs and Northern Development Canada's *"Guidelines for Spill Contingency Planning, April 2007,"* or any subsequent edition.
2. The Spill Contingency Management Plan shall include a description of proper work practices for fueling equipment and handling petroleum.
3. If not approved by the Board, the Plans referred to in Part G, Item 1 shall be revised and resubmitted within thirty (30) days of receiving notification of the Board's decision.
4. The Licensee shall review the Plans referred to in Part G, Item 1 annually and modify the Plan as necessary, or as required by the Board, to reflect changes in operation and technology. Any proposed Modifications to the plan shall be submitted to the Board for approval.
5. If, during the period of this Licence, an unauthorized Discharge of Waste occurs, or if such a Discharge is likely to occur, the Licensee shall:
 - a) implement relevant components of the Spill Contingency Management Plan, Spill Response Procedure and Emergency Response Plan;
 - b) report the incident immediately via the 24 Hour Spill Report Line (867) 920-8130; and
 - c) submit to an Inspector a detailed report on each occurrence not later than thirty (30) days after initially reporting the event.

PART H: CONDITIONS APPLYING TO THE AQUATIC EFFECTS MONITORING

1. The Licensee shall submit to the Board not later than March 15, 2014 for approval an Aquatic Effects Monitoring Plan (AEMP) that shall be in accordance with the Government of Canada's Department of Aboriginal Affairs and Northern Development Canada's 2009 *"Guidelines for Designing and Implementing Aquatic Effects Monitoring Programs for Development Projects in the Northwest Territories"*. The implementation of this plan shall inform the cumulative effects and overall Adaptive Management program of the Project.
2. If not approved by the Board, the Plan referred to in Part H, Item 1 shall be revised and resubmitted within thirty (30) days of receiving notification of the Board's decision.

3. The Licensee shall review the Plan referred to in Part H, Item 1 annually and modify the Plan as necessary to reflect changes in operation and technology, or as requested by the Board. Any proposed Modifications to the plan shall be submitted to the Board for approval before such changes are implemented.
4. The Licensee shall consult community and regional Inuvialuit organizations in the assessment of aquatic effects within the Project Area.

PART I: CONDITIONS APPLYING TO CLOSURE AND RECLAMATION

1. The Licensee shall submit to the Board for approval not later than sixty (60) days prior to closure of each Granular Source Pit, a final Closure and Reclamation Plan.
2. The Licensee shall submit to the Board for approval not later than June 30, 2014 a preliminary Closure and Reclamation Plan (excluding Granular Source Pits) for the Project.
3. The Licensee shall Annually review the Closure and Reclamation Plans referred to in Part I, Items 1 and 2 and shall modify the Plan(s) as necessary, or as required by the Board, to reflect changes in operations, technology, and results from Reclamation research and other studies. All proposed Modifications to the Plan(s) shall be submitted to the Board by June 30 of each calendar year for approval.
4. Revisions to the Plan(s) referred to in Part I, Items 1, 2 and 3 shall be submitted to, and approved by, the Board prior to implementing the submitted Modifications.
5. The Licensee shall carry out progressive Reclamation of areas that are abandoned prior to end of Construction of the Project.

NORTHWEST TERRITORIES WATER BOARD

LICENSEE: Government of the Northwest Territories – Department of Transportation

LICENSE NUMBER: N7L1-1835

EFFECTIVE DATE OF LICENSE: December 12, 2013

EFFECTIVE DATE OF SURVEILLANCE NETWORK PROGRAM: December 12, 2013

SCHEDULE I: SURVEILLANCE NETWORK PROGRAM (SNP)

A. 1. Location of Stream Crossing Surveillance Stations

Station Number			Water-course ID	Latitude	Longitude
	50 m upstream of crossing	100 m downstream of crossing			
1835-1	-a	-b	0	68°25'11"	133°46'21"
1835-2	-a	-b	1	68°25'56"	133°45'54"
1835-3	-a	-b	2	68°26'6"	133°45'52"
1835-4	-a	-b	3	68°26'23"	133°45'52"
1835-5	-a	-b	4	68°26'51"	133°45'47"
1835-6	-a	-b	5	68°27'17"	133°45'40"
1835-7	-a	-b	6	68°28'19"	133°45'26"
1835-8	-a	-b	7	68°28'45"	133°46'0"
1835-9	-a	-b	8	68°29'22"	133°45'54"
1835-10	-a	-b	9	68°29'33"	133°45'53"
1835-11	-a	-b	10	68°29'54"	133°46'1"
1835-12	-a	-b	11	68°30'5"	133°45'56"
1835-13	-a	-b	12	68°30'58"	133°46'14"
1835-14	-a	-b	13	68°32'4"	133°45'56"
1835-15	-a	-b	14	68°34'50"	133°43'14"
1835-16	-a	-b	16	68°36'46"	133°41'29"
1835-17	-a	-b	17	68°36'57"	133°41'16"
1835-18	-a	-b	18	68°37'56"	133°39'7"

Station Number			Water-course ID	Latitude	Longitude
	50 m upstream of crossing	100 m downstream of crossing			
1835-19	-a	-b	19	68°38'5"	133°38'11"
1835-20	-a	-b	20	68°38'9"	133°37'10"
1835-21	-a	-b	21	68°38'21"	133°36'22"
1835-22	-a	-b	25	68°46'3"	133°32'15"
1835-23	-a	-b	26	68°46'48"	133°32'49"
1835-24	-a	-b	31	68°52'6"	133°32'24"
1835-25	-a	-b	12a	68°56'30"	133°24'55"
1835-26	-a	-b	12b	68°31'29"	133°45'55"
1835-27	-a	-b	13a	68°32'3"	133°45'57"
1835-28	-a	-b	15a	68°34'0"	133°44'31"
1835-29	-a	-b	15b	68°36'13"	133°41'33"
1835-30	-a	-b	15c	68°36'14"	133°41'34"
1835-31	-a	-b	17a	68°36'15"	133°41'34"
1835-32	-a	-b	18a	68°37'25"	133°40'20"
1835-33	-a	-b	20a	68°38'3"	133°38'31"
1835-34	-a	-b	21a	68°38'13"	133°36'51"
1835-35	-a	-b	22a	68°39'4"	133°34'49"
1835-36	-a	-b	22b	68°40'11"	133°33'57"
1835-37	-a	-b	23a	68°42'35"	133°32'55"
1835-38	-a	-b	24a	68°44'26"	133°32'10"
1835-39	-a	-b	24b	68°45'32"	133°32'34"
1835-40	-a	-b	27a	68°45'41"	133°32'27"
1835-41	-a	-b	27b	68°47'38"	133°32'9"
1835-42	-a	-b	27b2	68°48'17"	133°32'22"
1835-43	-a	-b	27c	68°48'48"	133°33'9"
1835-44	-a	-b	28a	68°49'10"	133°33'31"
1835-45	-a	-b	29a	68°50'51"	133°32'58"
1835-46	-a	-b	30a	68°51'47"	133°33'11"
1835-47	-a	-b	33a	69°0'44"	133°18'48"
1835-48	-a	-b	33b	69°0'44"	133°18'26"
1835-49	-a	-b	34a	69°1'22"	133°15'28"
1835-50	-a	-b	34a2	69°2'33"	133°12'31"
1835-51	-a	-b	34b	69°2'44"	133°11'26"
1835-52	-a	-b	34c	69°3'26"	133°9'39"
1835-53	-a	-b	34e	69°3'58"	133°9'0"
1835-54	-a	-b	35a	69°4'44"	133°6'26"
1835-55	-a	-b	39a	69°13'13"	132°53'30"
1835-56	-a	-b	39b	69°14'41"	132°54'18"
1835-57	-a	-b	39c	69°15'2"	132°54'0"

Station Number			Water-course ID	Latitude	Longitude
	50 m upstream of crossing	100 m downstream of crossing			
1835-58	-a	-b	39d	69°15'52"	132°55'0"
1835-59	-a	-b	5a	68°27'21"	133°45'39"
1835-60	-a	-b	A10	69°6'58"	133°4'30"
1835-61	-a	-b	A11	69°6'41"	133°4'49"
1835-62	-a	-b	A12	69°6'29"	133°4'54"
1835-63	-a	-b	A13	69°4'54"	133°5'38"
1835-64	-a	-b	A2	69°11'9"	133°0'26"
1835-65	-a	-b	A2a	69°11'55"	132°55'46"
1835-66	-a	-b	A3	69°10'4"	133°2'14"
1835-67	-a	-b	A8	69°8'32"	133°2'17"
1835-68	-a	-b	A9	69°7'35"	133°2'38"

2. Location of Granular Source Pit Surveillance Stations

Station Number	Borrow Source ID	Latitude	Longitude
1835-69	177	69°14'52"	132°56'32"
1835-70	170	69°9'36"	133°5'13"
1835-71	173/305 or 174	69°3'27" or 69°3'6"	133°15'38" or 133°21'26"
1835-72	309	68°58'26"	133°31'8"
1835-73	312 West	68°52'27"	133°34'15"
1835-74	PW19A	68°49'53"	133°34'30"
1835-75	314/325	68°44'17"	133°25'38"
1835-76	PW18	68°44'35"	133°31'26"
1835-77	GSC3/GSC4	68°37'25" / 68°39'10"	133°31'34" / 133°29'32"
1835-78	PW10 (2.46)/ PW11 (2.46)	68°32'3" / 68°32'51"	133°40'57" / 133°40'28"
1835-79	I401A	68°26'18"	133°43'41"

B. Sampling and Analysis Requirements

1. Stream crossing surveillance stations located within active highway construction areas shall be sampled monthly during open water and immediately following the termination of construction activities and analyzed for the following parameters:

Routine turbidity (Nephelometric Turbidity Units)
Temperature
Dissolved Oxygen
pH
Conductivity
Total Suspended Solids
Calcium/Magnesium/Hardness
Nutrients (ammonia, nitrate, nitrite)
Total Arsenic
Basic Metal Scan (Total Cd, Cr, Cu, Co, Mn, Ni, Pb, Zn, Fe)
Total Mercury
Total Petroleum Hydrocarbons

2. Stream crossing surveillance stations located within completed highway construction areas shall be sampled annually in early summer during open water and analyzed for the following parameters:

Routine turbidity (Nephelometric Turbidity Units)
Temperature
Dissolved Oxygen
pH
Conductivity
Total Suspended Solids
Calcium/Magnesium/Hardness
Nutrients (ammonia, nitrate, nitrite)
Total Arsenic
Basic Metal Scan (Total Cd, Cr, Cu, Co, Mn, Ni, Pb, Zn, Fe)
Total Mercury
Total Petroleum Hydrocarbons

3. Granular source pit surveillance stations located with Granular Sources shall be sampled monthly during open water and analyzed for the following parameters:
Routine turbidity (Nephelometric Turbidity Units)
Temperature
Dissolved Oxygen
pH
Conductivity
Total Suspended Solids
Calcium/Magnesium/Hardness
Nutrients (ammonia, nitrate, nitrite)
Total Arsenic
Basic Metal Scan (Total Cd, Cr, Cu, Co, Mn, Ni, Pb, Zn, Fe)
Total Mercury
Total Petroleum Hydrocarbons
4. Sample collection requirements may be modified by an Inspector.
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 an Analyst.
6. All analyses shall be performed in a laboratory approved by an Analyst.
7. The Licensee shall, within thirty (30) days of License issuance, submit to an Analyst for approval a Quality Assurance/Quality Control Plan.
8. The plan referred to in Part B, Item 7 shall be implemented as approved by the Analyst.

C. Flow and Volume Measurement Requirements

1. The Licensee shall measure and record in cubic metres the daily, monthly and annual quantities of water pumped from each Water Source.

D. Reports

1. The Licensee shall, within thirty (30) days following the month being reported, submit to the Board and an Inspector all data and information required by the "Surveillance Network Program".

**SCHEDULE 2: SUPPLEMENTAL INFORMATION TO BE SUBMITTED
BY LICENSEE AS REQUIRED THROUGH LICENCE CONDITIONS**

Licence Condition	Report Title / Required Action	Timeline for Submission
Part B, Item 2	Annual Report	Not later than June 30 of each year
Part B, Item 8	Identify SNP station with sign postage	Within thirty (30) days of Licence issuance
Part C, Item 1	Updated Construction schedule and activities	Within thirty (30) days of Licence issuance for first year of Construction Annually not later than September 31 for subsequent years of Construction
Part C, Item 3	Design report for all Engineered Structures	Within fifteen (15) days of Licence issuance
Part C, Item 4	As-constructed documentation for Engineered Structures	Within ninety (90) days of completion of the Construction
Part C, Item 5	Explosives Management Plan	Within fifteen (15) days of Licence issuance
Part C, Item 7	Permafrost Monitoring Plan	Within thirty (30) days of Licence issuance
Part C, Item 10	Pit Development Plan	Within fifteen (15) days of Licence issuance for each Granular Source Pit to be utilized during Year 1 Construction Within thirty (30) days prior to the development of each additional Granular Source Pit
Part C, Item 12	Fish and Fish Habitat Protection Plan	Within thirty (30) days of Licence issuance
Part C, Item 13	Wildlife and Wildlife Habitat Protection Plan	Within thirty (30) days of Licence issuance
Part E, Item 1	Waste Management Plan	Within fifteen (15) days of Licence issuance

Licence Condition	Report Title / Required Action	Timeline for Submission
Part E, Item 2	Sedimentation and Erosion Control Plan	Not later than March 15, 2014
Part E, Item 5	Waste management agreements or letters with third parties	Within fifteen (15) days of Licence issuance
Part F, Item 1a	Notification of Modifications	Twenty (20) days prior to beginning Modifications
Part F, Item 3	As-constructed documentation for Modifications	Within ninety (90) days of completion of the Modifications
Part G, Item 1	Spill Contingency Management Plan and a Spill Response Procedure and an Emergency Response Plan	Within fifteen (15) days of Licence issuance
Part H, Item 1	Aquatic Effects Monitoring Plan	Not later than March 15, 2014
Part I, Item 1	Final Closure and Reclamation Plan for each Granular Source Pit	Not later than sixty (60) days prior to closure of each Granular Source Pit
Part I, Item 2	Preliminary Closure and Reclamation Plan (excluding Granular Source Pits) for the Project	Not later than June 30, 2014
Schedule 1: Part B, Item 7	Quality Assurance / Quality Control Plan	Within thirty (30) days of Licence issuance
Schedule 1: Part D, Item 1	Results of the SNP	Within thirty (30) days following the month being reported

GENERAL PROCEDURES FOR THE ADMINISTRATION OF LICENCES ISSUED UNDER THE NORTHWEST TERRITORIES WATERS ACT IN THAT PORTION OF THE INUVIALUIT SETTLEMENT REGION THAT IS WITHIN THE NORTHWEST TERRITORIES

1. At the time of issuance, a copy of the Water Licence is placed on the Board Water Register in the NWTWB Office in Yellowknife and Inuvik, NT, and is available to the public for inspection.
2. To enforce the terms and conditions of the Water Licence, the Minister of the Government of Canada's Department of Aboriginal Affairs and Northern Development Canada has appointed Inspectors in accordance with S. 35(1) of the *Northwest Territories Waters Act*. The Inspectors co-ordinate their activities with officials of the Water Resources Division of the Government of Canada's Department of Aboriginal Affairs and Northern Development Canada (AANDC). The Inspector responsible for Licence N7L1-1835 is located in the AANDC North Mackenzie Office located in Inuvik, NT.
3. In order to keep the Water Board and members of the public informed of the Licensee's conformance with Licence terms and conditions AANDC Inspectors prepare reports which detail observations on how each item in this Licence has been met. These reports are regularly forwarded to the Licensee with a covering letter indicating what actions, if any, should be taken to rectify infractions. The inspection reports are placed on the Public Water Register along with any/all responses received from the Licensee pertaining to inspection reports. It is of prime importance that any Licensee reacts promptly and effectively to any areas of concern so identified in the inspection reports.
4. If a renewal of Licence N7L1-1835 is contemplated it is the responsibility of the Licensee to apply to the Water Board for such Licence renewal. The Board will use past performance of the Licensee, any new documentation and information/reports, and points raised during public hearings, if required, to determine the terms and conditions of any Licence renewal. If the Water Licence expires, and another has not been issued to cover activities listed under Licence N7L1-1835, then water use and waste disposal must cease else the Licensee shall be in contravention of the *Northwest Territories Waters Act*. It is recommended that any application for any additional activities along the Inuvik – Tuktoyaktuk Highway not provided for under Licence N7L1-1835 be made at least eight (8) months in advance of the planned activity.

5. If, for any reason, Licence N7L1-1835 requires amendment by the Board, then a public hearing may be required by the Board. Licensees are reminded that applications for proposed amendments should be submitted promptly to provide the Board with sufficient time to proceed with the amendment process. The amendment process may take up to six (6) months, or more, depending on the circumstances and the scope of the amendment sought by Licensee.
6. Specific clauses of Licence N7L1-1835 make reference to "the Board", "Analyst" or "Inspector". The contacts for each is noted below:

Board: Executive Director
NWT Water Board
P.O. Box 2531, 125 Mackenzie Road
Suite 302, Professional building
Inuvik, NT X0E 0T0
Phone: (867) 678-2942
Fax: (867) 678-2943

Analyst: Water Laboratory
Aboriginal Affairs and Northern Development Canada
P.O. Box 1500
4601- 52nd Ave.
Yellowknife, NT X1A 2R3
Phone (867) 669-2780
Fax (867) 669-2718

Inspector: Aboriginal Affairs and Northern Development Canada
North Mackenzie District
Inuvik District Office
P.O. Box 2100
86 Duck Lake Road
Inuvik, NT X0E 0T0
Phone: (867) 777-8909
Fax: (867) 777-2090