

March 28, 2013

Northwest Territories Water Board P.O. Box 2531 125 Mackenzie Road Suite 302, Professional Building Inuvik, NT X0E 0T0

Mr. Mike Harlow Executive Director

Dear Mr. Harlow:

Camp Farewell 2012 Annual Report, Northwest Territories Water Board Type "B" Water License #N7L1-1834

This letter and attachments constitute the 2012 Annual Report for Northwest Territories Water Board (NWTWB) Water License #N7L1-1834 on behalf of Shell Canada Energy (Shell). The Camp Farewell (the site) is located at latitude 69°12′30.0″ N and longitude 135°06′04.4″ W in the Mackenzie Delta. The current NWTWB water license commenced on July 18, 2012 and will expire on July 17, 2017.

During the 2012 site visits, the tanks and buildings on-site were noted to be secure and in good condition. Siding from the camp building was observed to be missing in one area. Site inspections of Camp Farewell were conducted by IEG personnel approximately every 50 days (Figure 1).

The only activity conducted on site in 2012 relevant to the NWTWB is the draining of the onsite lagoon. On June 17, 2012, IEG personnel travelled to the site to collect a surface water sample (SW12-001) from the former sewage lagoon, and submitted the sample for chemical analyses to the ALS Laboratory located in Edmonton, Alberta. Surface water parameters analyzed were below applicable guidelines. The Northwest Territories Water Board issued a type "B" water license (N7L1-1834) on July 18, 2012 to allow for discharge of the lagoon water into the Mackenzie River in 2012. On July 29 and 30, 2012 a total of 160 m³ of the lagoon water was discharged. An additional surface water sample was collected on August 6, 2012 and submitted for analyses.

Based on the analytical results SW12-002 (August 6, 2012) exceeded the Northwest Territories Water Board License (N7L1-1834) chlorine guidelines after the discharge of the lagoon. The reason for the reported chlorine concentration in excess of guideline is not known, however may be a result of laboratory error. Note that this reported chlorine concentration is within an order of magnitude of the detection limit and that the final receptor (The Beaufort Sea) is a salt water body. Additionally, chlorine is present in most disinfected drinking water at concentrations of 0.2 mg/L to 1.0 mg/L (WHO, 1996). Therefore a post discharge chlorine concentration of 0.18 mg/L is not considered to be an environmental concern with respect to the site or nearby water bodies. The remaining surface

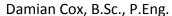
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water parameters analyzed were below the applicable guideline. Analytical results of surface water samples collected from the former sewer lagoon are summarized included in Table 1.

If you have any questions please feel free to contact Damian Cox at (403) 648-4320 or by email at dcox@klohn.com.

Yours truly,

IEG CONSULTANTS LTD.



Senior Environmental Scientist/Project Manager

DC

References:

Guidelines for drinking-water quality, 2nd ed. Vol.2. *Health criteria and other supporting information. World Health Organization, Geneva, 1996.*

c.c. Water Resources Officer – Aboriginal Affairs and Northern Development Canada Randall Warren – Shell Canada Energy

Attachments:

Table 1 Surface Water Analytical Results for Effluent Quality Requirements

Figure 1 Site Plan

Shell Canada Energy – Industrial Water License N7N1-1834

Laboratory Analytical Results



Table 1: Surface Water Analytical Results for Effluent Quality Requirements

| | GENERAL | | | | EFFLU | ENT QUAL | .ITY | | |
|-------------------------|-----------------------------|---------|------------------------|---------------------------|----------------|------------------------|------------------------|----------------|-----------------|
| Location | Sample Date (yyyy-mm-dd) | Hd | Ammonia - Total (as N) | Biochemical Oxygen Demand | Chlorine-Total | Phosphorus (P) - Total | Total Suspended Solids | Oil and Grease | Coliforms-Fecal |
| | Units | - | mg/L | mg/L | mg/L | mg/L | mg/L | mg/L | CFU/100mL |
| GUIDELINES | | | | | | | | | |
| CCME CEQG - Freshwater | Aquatic Life | 6.5-9.0 | | - | - | - | | - | - |
| N7L1-1834 Licence Guide | lines | - | - | 70 | 0.1 | - | 70 | 5.00 | 10,000 |
| ANALYTICAL | | | | | | | | | |
| SW12-001 | 2012-06-17 | 8.94 | - | 4.8 | <0.10 | - | 5.0 | <1.0 | <1 |
| SW12-002 | 2012-08-06 | 7.81 | 2.44 | 3.0 | 0.18 | 0.285 | 9.0 | <1.0 | <2 |

^{1.} Current and/or relevant guidelines are bolded

Canadian Council of Ministers of the Environment (CCME) Canadian Environmental Quality Guidelines (CEQG), 1999 (Update 7.0, September 2007)

Canadian Water Quality Guidelines for the Protection of Aquatic Life, Summary Table, November 2006



 ⁽yellow highlight) = Exceeds applicable guidelines

^{3.} View analytical report for more comprehensive results

^{4.} Guidelines are based on Part D of the NWT Water Boards Water Licence N7L1-1834

^{5. -} data not available and/or analyzed



AS A MUTUAL PROTECTION TO OUR CLEMT. THE PLEUC MO DURSELVES ALL REPORTS AND DRAWNOS ARE SUBMITTED FOR DE OUR CLEMT FOR A REGISTION PROJECT AND AUTHORIZATION FOR THE ATTRIBUTES, CONCUL-SIONS OR ABSTRACTS FROM OR DE TRATE STATEMENTS, CONCUL-SIONS OR ABSTRACTS FROM OR DEPARTS OF THE PROPERTY OF THE PRO-



Farewell Camp and Stockpile Site
Operations and Maintenance Plan

Site Plan

Sile Fia

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FIGURE 1



WATER REGISTER: N7L1-1834

July 18, 2012

Mr. Randal Warren
Manager; DAR and Drilling Waste
Projects and Technology
Shell Canada Energy
400- 4th Avenue S.W.
P.O. Box 100, Station M
Calgary, Alberta T2P 2H5

Dear Mr. Warren:

Re: Issuance of a Type "B" Water Licence- Camp Farewell

Attached is Water Licence N7L1-1834 granted by the Northwest Territories Water Board (the Board) in accordance with the *Northwest Territories Waters Act*. A copy of this Licence has been filed in the Public Registry at the Board offices in Yellowknife and in Inuvik. Water Licence N7L1-1834 has been approved for a period of five years commencing July 18, 2012 and expiring July 17, 2017. Also attached are the general procedures for the administration of Licences in the Northwest Territories. Please review these carefully and address any questions to one of the Board offices.

Please be advised that this letter, with attached procedures, all inspection reports and correspondence related thereto are part of the Board public registry and are intended to keep all interested parties informed of the manner in which the Licence requirements are being met. All public registry material will be considered if an amendment to the Licence or its renewal is requested.

In accordance with the Northwest Territories Water Regulations (NTWR) section 6(1) and 9(1)(b) there will be a requirement for a further payment of the water use fee based on the approved water use of 150 cubic metres per day. The annual water use fee has been calculated to be \$547.50 and is payable to the Receiver General of Canada on the anniversary of the date of issuance of the licence as per section 9(6)(b)(ii) of the NTWR. At the time of your Water Licence application there was a payment of \$30.00 for the first year fee payment and there remains a balance of \$517.50 to be paid for the water use fee at the time the Licence is issued.

Please note for future Water Licence applications in accordance with NTWR section 6(1) an application for a Licence or for the amendment or renewal of a Licence shall be accompanied by a deposit equal to any water use fee that would be payable in respect of the first year of the Licence that is being applied for.

Please read all the conditions carefully and note that in accordance with the attached Water Licence Part B, condition 10, a security deposit in the amount of \$2,000,000.00 shall be posted with the Minister and copied to the Board prior to the start of the operation pursuant to section 17 of the *Northwest*

Territories Waters Act. Submit payment of the security, made out to the Receiver General for Canada in the amount of \$2,000,000.00, to: Aboriginal Affairs and Northern Development Canada, P.O. Box 1500, Yellowknife, NT, X1A 2R3 Attention: Robert Jenkins.

Supplemental information to be submitted by Licensee as required through Licence conditions:

- post and maintain security deposit (by August 17, 2012)
- an Annual Report (by March 31, 2013-2017);
- a map or drawing of SNP sampling locations (by August 17, 2012)
- post signs to identify SNP sampling stations (by August 17, 2012)
- an updated operation and maintenance plan for the Waste Disposal Facilities (by August 17, 2012)
- an updated Emergency Response & Spill Contingency Plan (by August 17, 2012)
- an updated Abandonment and Restoration Plan (by July 17, 2013)
- submit to an Analyst for approval a Quality Assurance/Quality Control Plan (by August 17, 2012)

The full cooperation of Shell Canada Energy is anticipated and appreciated.

Should you have any further questions or concerns, please communicate with the Northwest Territories Water Board by telephone at (867) 678-2942 or via e-mail at info@nwtwb.com.

Sincerely,

Eddie Dillon Chairperson

NWT Water Board

Attached:

Water Licence N7L1-1834

General Procedures for the administration of licences issued under the Northwest

Territories Waters Act in the Northwest Territories

Distribution:

Conrad Baetz, AANDC-NMDO Robert Jenkins, AANDC-WRD

Krista Beavis, Klohn Crippen Berger

Patrick Clancy, GNWT-ENR

Rick Walbourne, DFO Stacey LeBlanc, EC

GENERAL PROCEDURES FOR THE ADMINISTRATION OF LICENCES ISSUED UNDER THE NORTHWEST TERRITORIES WATERS ACT IN THE NORTHWEST TERRITORIES

- At the time of issuance, a copy of the Licence is placed on the Northwest Territories Water Board public registry in the Yellowknife and Inuvik Offices, and is then available to the public.
- 2. To enforce the terms and conditions of the Licence, the Minister of Aboriginal Affairs and Northern Development Canada has appointed Inspectors in accordance with Section 35(1) of the Northwest Territories Waters Act. The Inspectors coordinate their activities with officials of the Water Resources Division of Aboriginal Affairs and Northern Development Canada. The Inspector responsible for Licence N7L1-1834 is located in the North Mackenzie District Office in Inuvik.
- 3. To keep the Northwest Territories Water Board and members of the public informed of the Licensee's conformity to Licence conditions, the Inspectors prepare reports which detail observations on how each item in the Licence has been met. These reports are forwarded to the Licensee with a covering letter indicating what action, if any, should be taken. The inspection reports and covering letters are places on the Northwest Territories Water Board public registry, as are any responses received from the Licensee pertaining to the inspection reports. It is therefore of prime importance that you react in all areas of concern regarding all inspection reports so that these concerns may be clarified.
- 4. If the renewal of Licence N7L1-1834 is contemplated it is the responsibility of the Licensee to apply to the Northwest Territories Water Board for renewal of the Licence. The past performance of the Licensee, new documentation and information, and points raised during a public hearing, if required, will be used to determine the terms and conditions of any Licence renewal. Please note that if the Licence expires and another has not been issued, then water and Waste disposal must cease, or you, the Licensee, would be in contravention of the Northwest Territories Waters Act. An application for renewal of Licence N7L1-1834 should be made at least eight (8) months in advance of the Licence expiry date.
- 5. If, for some reason, Licence N7L1-1834 requires amendment, then a public hearing may be required. You are reminded that applications for amendments should be submitted as soon as possible to provide the Northwest Territories Water Board with ample time to go through the amendment process. The process may take up to six (6) months or more depending on the scope of the amendment requested.

6. Specific clauses of your Licence make reference to the Board, Analyst or Inspector. The contact person, address, phone and fax number of each is:

Board: Executive Director

Northwest Territories Water Board

P.O. Box 2531 Inuvik, NT X0E 0T0

Phone No: (867) 678-2942 Fax No: (867) 678-2943

Analyst: Analyst

Taiga Environmental Laboratory

Aboriginal Affairs and Northern Development Canada

P.O. Box 1500, 4601 – 52nd Avenue

Yellowknife, NT X1A 2R3 Phone No: (867) 669-2788 Fax No: (867) 669-2718

Inspector: Water Resource Officer

North Mackenzie District Office

Aboriginal Affairs and Northern Development Canada

P.O. Box 2100 Inuvik, NT X0E 0T0 Phone No: (867) 777-8900 Fax No: (867) 777-2090

7. Your Licence requires a security deposit be submitted. Should the security deposit be submitted in the form of a "letter of credit", recommended wording is outlined below. It is advised that a "draft" letter of credit be forwarded to Water Resources Division for review. The contact person, address, phone and fax number of the individual administering security deposits is:

Manager

Water Resources Division

Aboriginal Affairs and Northern Development Canada

P.O. Box 1500, 4923 – 52nd Street YELLOWKNIFE, NT X1A 2R3 Phone No: (867) 669-2654

Fax No: (867) 669-2716

[BANK

ADDRESS]

IRREVOCABLE LETTER OF CREDIT

[The term "DOCUMENTARY CREDIT" may also be used instead of "Letter of Credit"]

DATE OF ISSUE: [Date] **OUR REFERENCE NUMBER:** [Bank's reference

number

AMOUNT: CAD\$########.00

MAXIMUM ########.00

CANADIAN DOLLARS ONLY

APPLICANT: BENEFICIARY:

["Customer" can be used instead

of "Applicant"]

[Company's Name]

[Company's Address]

RECEIVER GENERAL FOR CANADA ON BEHALF OF THE MINISTER OF INDIAN AFFAIRS AND NORTHERN

DEVELOPMENT

4923 - 52nd STREET, 2nd FLOOR

P.O. BOX 1500

YELLOWKNIFE, NT X1A 2R3

ATTENTION: REGIONAL DIRECTOR GENERAL DIAND - NT REGION

RE: SECURITY PURSUANT TO [the Water Licence Type and Number]

AT THE REQUEST AND FOR THE ACCOUNT OF [Company's Name] (THE "APPLICANT"), WE, [Bank's Name], HEREBY ESTABLISH IN YOUR FAVOUR OUR IRREVOCABLE LETTER OF CREDIT NO. [Bank's Reference Number] ("CREDIT") FOR SUMS NOT EXCEEDING IN THE AGGREGATE [Amount of Security required stated in Canadian Dollars].

THIS CREDIT IS AVAILABLE WITH US FOR DRAWING AT SIGHT, WITHOUT ENQUIRY AS TO WHETHER YOU HAVE RIGHT AS BETWEEN YOURSELF AND THE APPLICANT TO MAKE SUCH DEMAND AND WITHOUT RECOGNIZING ANY CLAIM OF THE APPLICANT, AGAINST PRESENTATION TO US, BY YOU OR YOUR DULY AUTHORIZED REPRESENTATIVE OR AGENT, OF THE FOLLOWING DOCUMENTS:

- A SIGHT DRAFT DRAWN ON [Bank's Name and Address of the Branch that the security can be drawn at, usually one of the Bank's larger commercial banking centres]; AND
- 2. THE ORIGINAL OF THIS IRREVOCABLE LETTER OF CREDIT NO. [Bank's Reference Number] FOR ENDORSEMENT OF PAYMENT THEREON; AND

- 3. A STATEMENT SIGNED BY AN OFFICIAL OF THE DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT CERTIFYING
- A) THAT THE SIGNATORY IS AN OFFICIAL OF THE DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT AND HAS AUTHORITY TO SIGN THE STATEMENT ON BEHALF OF THE MINISTER OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT (THE "MINISTER"), AND
- B) EITHER
- THAT THE MINISTER IS ENTITLED TO APPLY THE AMOUNT DRAWN, BEING ALL OR PART OF THE SECURITY POSTED AND MAINTAINED PURSUANT TO [the Water Licence Type and Number] ISSUED BY THE NORTHWEST TERRITORIES WATER BOARD, WHETHER AS ORIGINALLY ISSUED OR AS AMENDED OR RENEWED FROM TIME TO TIME, OR
- II THAT THIS LETTER OF CREDIT IS DUE TO EXPIRE IN THIRTY (30) DAYS OR LESS AND THAT THE APPLICANT HAS NOT REPLACED THIS CREDIT BY POSTING WITH THE MINISTER OTHER SECURITY SATISFACTORY TO THE MINISTER.

PARTIAL DRAWINGS ARE PERMITTED.

THIS CREDIT IS EFFECTIVE FROM [Time] .AM. ON [Effective Date as required by Water Licence] AND SHALL EXPIRE AT OUR COUNTERS AT [Time] P.M. [Expiry Date] (THE "INITIAL EXPIRATION DATE"). THIS CREDIT SHALL BE RENEWED AUTOMATICALLY FOR AN ADDITIONAL ONE-YEAR PERIOD FROM THE INITIAL EXPIRATION DATE, AND FOR AN ADDITIONAL ONE-YEAR PERIOD FROM EACH FUTURE EXPIRATION DATE, UNLESS AT LEAST NINETY (90) DAYS PRIOR TO THE OPERATIVE EXPIRATION DATE WE NOTIFY YOU IN WRITING BY REGISTERED MAIL OR COURIER THAT WE ELECT NOT TO CONSIDER THIS CREDIT RENEWED FOR SUCH ADDITIONAL PERIOD.

WE HEREBY AGREE THAT ALL DRAFTS DRAWN UNDER AND IN COMPLIANCE WITH THE TERMS OF THIS CREDIT SHALL BE DULY HONOURED BY US IF PRESENTED FOR PAYMENT ON OR BEFORE THE OPERATIVE EXPIRATION DATE.

EXCEPT SO FAR AS IS OTHERWISE EXPRESSLY STATED HEREIN, THIS CREDIT IS SUBJECT TO THE UNIFORM CUSTOMS AND PRACTICE FOR DOCUMENTARY CREDITS (1993 REVISION), INTERNATIONAL CHAMBER OF COMMERCE, PUBLICATION NO. 500. NOTWITHSTANDING ARTICLE 17 OF SAID PUBLICATION, IS THIS CREDIT EXPIRES DURING AN INTERRUPTION OF BUSINESS AS DESCRIBED IN ARTICLE 17, WE AGREE TO EFFECT PAYMENT IF THIS CREDIT IS

| DRAWN ON BUSINESS. | US WI | THIN | FIFTEEN | (15) | DAYS | AFTER | THE | RESUMPTION | OF |
|-----------------------|----------|---------|---------|------|-----------|-------------|-------|---------------|----|
| [Bank's Name |] | | | | | | | | |
| Official's Nam | ne and P | ositior | <u></u> | | <u>[O</u> | fficial's N | ame a | and Position] | |

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 to

| SHELL CANADA | ENERGY |
|---|--|
| (Licensee) 400- 4 Avenue S.W., P.O of <u>CALGARY, ALBER</u> (Mailing Address) | |
| to the restrictions and conditions conta | ght to alter, divert or otherwise use water subject ained in the <i>Northwest Territories Waters Act</i> and ubject to and in accordance with the conditions |
| Licence Number | N7L1-1834 |
| Licence Type | "B" |
| Water Management Area | NORTHWEST TERRITORIES 07 |
| Location | Within a two kilometre radius of Latitude 69°12'30" N. Longitude135°06'04" W. MACKENZIE RIVER DELTA, N.W.T |
| Purpose | TO USE WATER AND DISPOSE OF WASTE FOR INDUSTRIAL UNDERTAKINGS AND ASSOCIATED USES |
| Description | OIL AND GAS EXPLORATION AND DEVELOPMENT |
| Quantity of Water Not To Be Exceeded | 150 CUBIC METRES DAILY |
| Effective Date of Licence | JULY 18 TH , 2012 |
| Expiry Date of Licence | JULY 17 TH , 2017 |
| This Licence issued and recorded a conditions. | t Inuvik includes and is subject to the annexed |
| | NODTHWEST TERRITORIES WATER BOARD |

NORTHWEST TERRITORIES WATER BOARD

Witness

PART A: SCOPE AND DEFINITIONS

1. Scope

- a) This Licence entitles Shell Canada Energy to use water and dispose of Waste as an industrial undertaking associated with oil and gas exploration and development in the Mackenzie Delta at Farewell Camp and Stockpile Site (Camp Farewell) located at Latitude 69°12'30" North, and Longitude 135°06'04" West, Northwest Territories;
- b) 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 *Northwest Territories Waters 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 automatically amended to conforming to such Regulations; and
- c) 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.
- d) This Licence is issued subject to the conditions contained herein with respect to the use of Waters as prescribed in Section 8 of the *Act* and the deposit of Waste to any Waters as prescribed in Section 9 of the *Act*.

2. <u>Definitions</u>

In this Licence: N7L1-1834

"Act" means the Northwest Territories Waters Act;

"Analyst" means an Analyst designated by the Minister under Section 35(1) of the Northwest Territories Waters Act;

- "Average Concentration" means the discrete average of up to four (4) consecutive analytical results submitted to the Board in accordance with the sampling and analysis requirements specified in the "Surveillance Network Program";
- "Board" means the Northwest Territories Water Board established under Section 10 of the Northwest Territories Waters Act;
- "Freeboard" means the vertical distance between water line and the lowest elevation of the effective water containment crest on a dam or dyke's upstream slope;
- <u>"Geotechnical Engineer"</u> means a professional engineer registered with the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists whose principal field of specialization is the design and construction of earthworks in a permafrost environment;
- "Greywater" means all liquid Wastes from showers, baths, sinks, kitchens and domestic washing facilities, but does not include toilet Waste;
- "Inspector" means an Inspector designated by the Minister under Section 35(1) of the Northwest Territories Waters Act;
- "Licensee" means the holder of this Licence;
- "Minister" means the Minister of Aboriginal Affairs and Northern Development Canada (AANDC);
- "<u>Modification</u>" 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;
- "Regulations" mean Regulations proclaimed pursuant to Section 33 of the Northwest Territories Waters Act;
- "Sewage" means all toilet Wastes and Greywater;
- "Sewage Treatment Facilities" comprises the area and engineered structures designed to contain Sewage as identified in the project description and also include a Sump constructed of impervious material and/or with an impervious liner;
- "Sump" means an excavation for the purpose of catching or storing water and/or Waste;
- "Waste" means Waste as defined by Section 2 of the Northwest Territories Waters Act;

- "<u>Waste Disposal Facilities</u>" mean all facilities designated for the disposal of Waste and include the Sewage disposal facilities, solid Waste disposal facilities, and bagged toilet Wastes disposal facilities;
- "Water Supply Facilities" mean all facilities designed to collect, treat and supply water for industrial purposes; and
- "<u>Waters</u>" mean Waters as defined by Section 2 of the *Northwest Territories Waters* Act:

PART B: GENERAL CONDITIONS

- 1. The Licensee shall file an Annual Report with the Board not later than March 31st of the year following the calendar year reported which shall contain the following information:
 - a) the monthly and annual quantities in cubic metres of fresh water obtained from all sources;
 - b) the monthly and annual quantities in cubic metres of each and all Waste discharged;
 - c) the location and direction of flow of all Waste discharged to the water or the land:
 - d) a summary of the monthly and annual quantities of Waste stored on site and transported off site;
 - e) the results of sampling carried out under the "Surveillance Network Program";
 - f) a summary of any Modifications carried out on the Water Supply Facilities and Sewage Treatment Facilities, including all associated structures;
 - g) a list of any spills and unauthorized discharges;
 - h) details on the restoration of any Sumps;
 - a summary of any abandonment and restoration work completed during the year and an outline of any work anticipated for the next year;

- j) a summary of any studies requested by the Board that relate to Waste disposal, water use, or reclamation, and a brief description of any future studies planned;
- k) notation of updates and/or revisions to the approved Spill Contingency Plan, Waste Disposal Facilities operations and maintenance plan, and sewage treatment plan;
- an outline of any spill training and communications exercises carried out;
 and
- m) any other details on water use or Waste disposal requested by the Board within forty-five (45) days before the annual report is due.
- The Licensee shall comply with the "Surveillance Network Program" annexed to 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.
- 3. The "Surveillance Network Program" and compliance dates specified in the Licence may be modified at the discretion of the Board.
- 4. The Licensee shall, within thirty (30) days of the issuance of this Licence, submit to the Board for approval a map or drawing indicating the location of all Surveillance Network Program sampling stations.
- 5. The Licensee shall, within thirty (30) days of the issuance of this Licence, post the necessary signs to identify the stations of the "Surveillance Network Program". All postings shall be located and maintained to the satisfaction of an Inspector.
- 6. Any meters, devices or other such methods used for measuring the volumes of water used or Waste disposed and discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.
- 7. The Licensee shall immediately report to the 24 Hour Spill Report Line (867-920-8130) any spills which are reported to, or observed by, the Licensee within the project boundaries.
- 8. All monitoring data shall be submitted in printed form and electronically in spreadsheet format on a diskette or other electronic forms acceptable to the Board.
- All reports shall be submitted to the Board in printed format accompanied by an electronic copy in a common word processing format on diskette or other electronic forms acceptable to the Board.

- 10. Within thirty (30) days of issuance of this Licence, the Licensee shall have posted and shall maintain a security deposit in the amount of Two Million (\$2,000,000.00) Dollars pursuant to Section 17 of the Act and Section 12 of the Regulations, in a form suitable to the Minister. The security deposit shall be maintained until such time as it is fully or in part refunded by the Minister pursuant to Section 17 of the Act.
- 11. The Licensee shall ensure a copy of this Licence is maintained at the site of operation at all times.

PART C: CONDITIONS APPLYING TO WATER USE

- The Licensee shall obtain water from the Middle Channel of the Mackenzie River in winter or the unnamed lake north of the camp in summer as described in the project description, or as otherwise approved by an Inspector.
- 2. The daily quantity of water used for all purposes shall not exceed 150 cubic metres.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

- The Licensee shall within thirty (30) days of the issuance of this Licence, submit to the Board for approval an updated operation and maintenance plan for the Waste Disposal Facilities. This plan shall include but not necessarily be limited to details on the design, operational capacity, management and maintenance, and disposal of sludges.
- 2. All Sewage shall be directed to the onsite Sewage Treatment Facilities as approved by an Inspector.
- 3. The Sewage Treatment Facilities shall be maintained and operated in such a manner as to prevent structural failure to the satisfaction of the Inspector.
- All Waste discharged from the onsite Sewage lagoon shall be directed to the channel of the Mackenzie River at a location approved by an Inspector.
- 5. There should be no discharge of floating solids, garbage, grease, free oil or foam.

6. All effluent discharged by the Licensee from the Sewage lagoon at "Surveillance Network Program" Station Number 1834-1 shall meet the following effluent quality requirements:

| Sample Parameter | Average Concentration | | | | | |
|-------------------------------|----------------------------|--|--|--|--|--|
| BOD₅ | 70.0 mg/L | | | | | |
| Total Suspended Solids | 70.0 mg/L | | | | | |
| Faecal Coliforms | 1 X 10 ⁴ CFU/dL | | | | | |
| Oil and Grease | 5.0 mg/L | | | | | |
| Total Residual Chlorine (TRC) | 0.1 mg/L | | | | | |

- 7. The effluent discharged shall have a pH between six (6) and nine (9) and no visible sheen of oil and grease.
- 8. Introduction of water to Waste for the purpose of achieving effluent quality requirements in Part D, Item 7 is prohibited.
- A Freeboard limit of 1.0 metre shall be maintained at all times in the Sewage lagoon, or as recommended by a qualified Geotechnical Engineer and/or as approved by the Board.
- 10. The Licensee shall advise an Inspector at least five (5) days prior to initiating and decant of the Sewage lagoon.
- 11.All 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 as may be approved by an Analyst.
- 12. The Licensee shall contain all contaminated soil or contaminated snow in such a manner as to minimize the potential for migration of contaminants into any Waters, to the satisfaction of an Inspector.
- 13. The Licensee shall store, segregate and dispose of all solid and hazardous Wastes in a manner acceptable to the Inspector.
- 14. Unless authorized by this Licence, the Licensee shall ensure that any Wastes associated with this undertaking do not enter any water body.
- 15. The Licensee shall submit to the Board a copy of each agreement(s) between third parties to store, transport or dispose of Wastes. The copy submitted to the Board shall include, at a minimum, the following:

- a. type of Waste;
- b. quantities of Waste;
- c. disposal location(s), and
- d. proof of acceptance from third parties.

PART E: CONDITIONS APPLYING TO MODIFICATIONS

- The Licensee may, without written approval from the Board, carry out Modifications to the planned undertakings provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:
 - a) the Licensee has notified an Inspector in writing of such proposed Modifications at least five (5) days prior to beginning the Modifications;
 - b) such Modifications do not place the Licensee in contravention of either the Licence or the *Act*;
 - c) an Inspector has not, during the five (5) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than five (5) days; and
 - d) an Inspector 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 an Inspector.
- The Licensee shall provide to the Board as-built plans and drawings of the Modifications referred to in this Licence within ninety (90) days of completion of the Modifications.

PART F: CONDITIONS APPLYING TO CONTINGENCY PLANNING

1. The Licensee shall submit to the Board for approval within thirty (30) days of issuance of this Licence an updated Emergency Response & Spill Contingency Plan in accordance, for example, with the *Guidelines for Spill Contingency Planning, April 2007*, developed by AANDC-Water Resources Division.

- 2. The Licensee will maintain a copy of the approved Emergency Response & Spill Contingency Plan onsite in a readily available location, to the satisfaction of an Inspector.
- 3. The Licensee shall ensure that petroleum products, hazardous material and other Wastes associated with the project do not enter any Waters.
- 4. The Licensee shall ensure that all containment berms are constructed of an impermeable material, to the satisfaction of an Inspector.
- 5. The Licensee shall ensure that fuel stored in each tank within the tank farm be no greater than 85% of the tank's capacity to allow for expansion and avoid overflows.
- 6. If, during the period of this Licence, an unauthorised discharge of Waste occurs, or if such a discharge is foreseeable, the Licensee shall:
 - a) report the incident immediately via the 24 Hour Spill Reporting Line (867) 920-8130; and
 - b) submit to an Inspector a detailed report on each occurrence not later than thirty (30) days after initially reporting the event.

PART G: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION

- The Licensee shall submit to the Board for approval within one (1) year of issuance of this Licence, an updated Interim Abandonment and Restoration Plan including plans for the abandonment and restoration of the Sewage lagoon and a complete Phase II environmental site assessment of Camp Farewell. This assessment will include the full delineation of contamination (soil and water) associated with Camp Farewell operations, located both on and off the gravel base pad.
- 2. The Licensee shall implement this Plan as and when approved by the Board.
- Following approval of the Plan, the Licensee shall review the Abandonment and Restoration Plan every two (2) years and shall modify the Plan as necessary to reflect changes in operations and technology. All proposed Modifications to the Plan shall be submitted to the Board for approval.

NORTHWEST TERRITORIES WATER BOARD

Chairman

NORTHWEST TERRITORIES WATER BOARD

LICENSEE: Shell Canada Energy

LICENCE NUMBER: N7L1-1834

EFFECTIVE DATE OF LICENCE: July 18, 2012

EFFECTIVE DATE OF

SURVEILLANCE NETWORK PROGRAM: July 18, 2012

SURVEILLANCE NETWORK PROGRAM

A. Location of Sampling Stations

Station Number Description

1834-1 Discharge from the Sewage lagoon.

B. Sampling and Analysis Requirements

1. Water at Station Number 1834-1 shall be sampled prior to, and once during decanting. Each sample shall be analyzed for the following parameters:

BOD5 Total Suspended Solids

Oil and Grease Faecal Coliforms

Ammonia pH

Phosphorous Total Residual Chlorine

- 2. More frequent sample collection may be required at the request of an Inspector.
- 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.
- 4. All analysis shall be performed in a laboratory approved by an Analyst.
- 5. The Licensee shall, by August 17, 2012, submit to an Analyst for approval a Quality Assurance/Quality Control Plan.

Page 10 of 11

6. The Plan referred to in Part B, Item 5 shall be implemented as approved by an Analyst.

C. Reports

1. The Licensee shall, within thirty (30) days following the month of discharge from the Sewage lagoon, submit to the Board and an Inspector all data and information required by the "Surveillance Network Program" including the results of the approved Quality Assurance/Quality Control Plan.

Witness

NORTHWEST TERRITORIES WATER BOARD

airman

Northwest Territories Water Board Reasons for Decision

Issued pursuant to section 26 of the Northwest Territories Waters Act. S.C. 1992 C.39

Water Licence Number: N7L1-1834(Type B)

This is the decision of the Northwest Territories Water Board (Board) for the issuance of Water Licence N7L1-1834. The project is located at Latitude 69°12'30" North and Longitude 135°06'04" West in the Northwest Territories.

The Northwest Territories Water Board issued Licence N7L1-1834 in accordance with Section 14 of the *Northwest Territories Waters Act*.

Background:

Shell Canada Energy applied to the Board on March 5th, 2012 for a Water Licence for Farewell Camp and Stockpile Site (Camp Farewell) in the Mackenzie Delta. The Board deemed the application complete on May 23, 2011.

Canadian Environmental Assessment Act (CEAA)

The Water Licence application was exempt from the Canadian Environmental Assessment Act under Section 7(1)(a), specifically under Schedule 1, Part 1, Section 3(a) of the Exclusion List Regulations.

Environmental Impact Screening Committee (EISC)

On April 20, 2012 the Board received an official notification from the Environmental Impact Screening Committee that determined the application met the definition of development and that it was exempt from the screening process, as it qualified under exclusion #1 of Environmental Impact Screening Guidelines, Appendix C.

Notice of Application

In accordance with rule 38 of the Board Rules of Procedure, the Board gave notice of the application for a Water Licence regarding Camp Farewell, on May 28, 2012 in News North in English, May 31, 2012 in the Inuvik Drum in Inuvialuktun, and May 25, 2012 in L'Aquilon in French.

Reviewers' Comments

The Board sent the Water Licence application and supporting information for review to the following agencies: AANDC-NMDO, AANDC-WRD, EC, DFO and GNWT-ENR on May 23, 2012. The Board received written comments from AANDC (June 15, 2012), EC (June 15, 2012), DFO (May 28, 2012) and GNWT-ENR (June 14, 2012).

The Board considered all submitted comments at a Board meeting held via teleconference on July 10, 2012. The Board approved a Water Licence for the applicant's review. The Licence was submitted to the applicant on July 11, 2012 and it indicated in its response on July 16, 2012 that the Licence was acceptable.

Requirements of the Northwest Territories Waters Act:

Shell Canada Energy has provided the Board with its Schedule III application and supporting information for its consideration as required by section 16 of the *Northwest Territories Waters Act*.

The Board is in accordance with Paragraph 14(4)(a) of the *Northwest Territories Waters Act* by ensuring that the granting of the Water Licence to Shell Canada Energy will not adversely affect, in a significant way, any existing Licensee, providing the conditions of Water Licence N7L1-1834 are met. There are no other applicants with precedence.

The Board does not believe that any users nor persons listed in Paragraph 14(4)(b) of the *Northwest Territories Waters Act* will be adversely affected by the use of waters or the deposit of waste proposed by the Licensee provided that the Licensee operates in accordance with the terms and conditions of Water Licence N7L1-1834.

The Board is of the view that compliance with Water Licence N7L1-1834 terms and conditions will ensure that the waste will be treated and deposited in a manner that will maintain water quality in the area and will be consistent with applicable water quality standards in accordance with Sub-Paragraph 14(4)(c) (i) of the *Northwest Territories Waters Act*.

The Board drafted the terms and conditions of Water Licence N7L1-1834 in accordance with Section 15 of the *Northwest Territories Waters Act*.

In Accordance with Sub-Section 17(1) of the *Northwest Territories Waters Act*, the Board requested that a security deposit in the amount of two million dollars (\$2,000,000.00) be posted and shall be maintained in a form suitable to the Minister of Aboriginal Affairs and Northern Development Canada.

Decision to issue Water Licence N7L1-1834:

The Board has reviewed the Camp Farewell Project Application and draft Water Licence N7L1-1834 for issuance. Upon consideration of the facts and circumstances, the purpose, scope and intent of the *Northwest Territories Waters Act*, the Board has determined that it can issue Water Licence N7L1-1834.

For the above reasons the Board has determined to issue Water Licence N7L1-1834 in accordance with Sub-Section 14(1) and Sub-Paragraph 14(6)(b)(i) of the *Northwest Territories Waters Act* for the use of water and the deposit of wastes.

SIGNED this 18 day of July, 2012 on behalf of the Northwest Territories Water Board.

Eddie Dillon

Chairperson, Northwest Territories Water Board



IEG CONSULTANTS LTD.

ATTN: Krista Beavis

#500, 2618 Hopewell Place NE

CALGARY AB T1Y 717

Date Received: 19-JUN-12

Report Date: 25-JUN-12 12:52 (MT)

Version: FINAL

Client Phone: 403-648-4291

Certificate of Analysis

Lab Work Order #: L1164181

Project P.O. #: NOT SUBMITTED

Job Reference: A04012A03 C of C Numbers: 10-189625

Legal Site Desc:

Jessica Spira

Senior Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 9936-67 Avenue, Edmonton, AB T6E 0P5 Canada | Phone: +1 780 413 5227 | Fax: +1 780 437 2311

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L1164181 CONTD.... PAGE 2 of 3 Version: FINAL

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | Batch |
|-------------------------------------|--------------|------------|------|-------|-----------|-----------|----------|
| _1164181-1 SW12-001 | | | | | | | |
| Sampled By: RL on 17-JUN-12 @ 12:00 | | | | | | | |
| Matrix: water | | | | | | | |
| Miscellaneous Parameters | | | | | | | |
| Biochemical Oxygen Demand | 4.8 | | 2.0 | mg/L | | 20-JUN-12 | R2387399 |
| Chlorine, Total | <0.10 | | 0.10 | mg/L | | 21-JUN-12 | R2386373 |
| Oil and Grease | <1.0 | | 1.0 | mg/L | 21-JUN-12 | 21-JUN-12 | R2385693 |
| Special Request | See Attached | | | | | 19-JUN-12 | |
| Total Suspended Solids | 5.0 | | 3.0 | mg/L | | 21-JUN-12 | R2386266 |
| pH | 8.94 | | 0.10 | pН | | 21-JUN-12 | R2386748 |
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^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

A04012A03 L1164181 CONTD....

Reference Information

PAGE 3 of 3 Version: FINAL

Test Method References:

| ALS Test Code | Matrix | Test Description | Method Reference** |
|---|--------|-----------------------------------|---|
| BOD-ED | Water | Biochemical Oxygen Demand (BOD) | APHA 5210 B-5 day IncubO2 electrode |
| CL2-TOT-ED | Water | Chlorine, Total | APHA 4500 CI G-Colorimetry |
| OGG-LLE-ED | Water | Oil and Grease-Gravimetric | APHA 5520 B HEXANE MTBE EXT. GRAVIME |
| PH-ED | Water | рН | APHA 4500 H-Electrode |
| All samples analyzed by the recommended for pH when | | | nended hold time from time of sampling (field analysis is |
| SOLIDS-TOTSUS-ED | Water | Total Suspended Solids | APHA 2540 D-Gravimetric |
| SPECIAL REQUEST-TG | Misc. | Special Request Taiga Yellowknife | SEE SUBLET LAB RESULTS |

^{**} ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

| Laboratory Definition Code | Laboratory Location |
|-----------------------------------|---|
| ED | ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA |
| TG | TAIGA ENVIRONMENTAL LABORATORY (INAC) |
| | |

Chain of Custody Numbers:

10-189625

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.



4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3 Tel: (867)-669-2788 Fax: (867)-669-2718

- FINAL REPORT -

Prepared For: ALS Environmental

Address: P.O. Box 2801

Yellowknife, NT

X1A 2R1

Attn: Judy Bethune **Facsimile:**

Final report has been reviewed and approved by:

Helene Harper

Manager

NOTES:

- Test methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) as a testing laboratory for specific tests registered with CALA.
- Routine methods are based on recognized procedures from sources such as
 - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
 - Environment Canada 0
 - **USEPA**
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

ReportDate: Friday, June 22, 2012 **Print Date:** Friday, June 22, 2012



Taiga Batch No.: 120364

4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3 Tel: (867)-669-2788 Fax: (867)-669-2718

- CERTIFICATE OF ANALYSIS -

Client Sample ID: L1164181-1 SW12-001 Taiga Sample ID: 001

Client Project:

Sample Type: Water Received Date: 19-Jun-12 Sampling Date: 17-Jun-12 Sampling Time: 12:00

Location:

Report Status: Final

| Test Parameter | Result | Detection Limit | Units | Analysis Date | Analytical Method * | Qualifer |
|------------------|--------|--------------------|-----------|------------------|------------------------|----------|
| Microbiology | | | | | | |
| Coliforms, Fecal | < 1 | 1 | CFU/100mL | 19-Jun-12 | SM9222:D | |

ReportDate: Friday, June 22, 2012 **Print Date:** Friday, June 22, 2012



Taiga Batch No.: 120364

4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3 Tel: (867)-669-2788 Fax: (867)-669-2718

- CERTIFICATE OF ANALYSIS -

Client Sample ID: L1164181-1 SW12-001 Taiga Sample ID: 001

* Taiga analytical methods are based on the following standard analytical methods

SM - Standard Methods for the Examination of Water and Wastewater EPA - United States Environmental Protection Agency

ReportDate: Friday, June 22, 2012 **Print Date:** Friday, June 22, 2012



Chain of Custody / Analytical Request Form Canada Toll Free: 1 800 668 9878

www.alsglobal.com

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| Calgary | , AB TIY 717 | Email 2: | | | | | Same D | ay or W | eekend | l Emerge | ncy - Cor | tact ALS to | confirm 1 | TAT | | |
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| 10000 | BACK PAGE FOR ALS LOCATIONS AND SAMPLING | | | | | 1 | | | | | | - 1 | | | If Yes a | iuu SIF |



IEG CONSULTANTS LTD.

ATTN: Krista Beavis

500,2618 HOPEWELL PL NE CALGARY AB T1Y 7J7 Date Received: 08-AUG-12

Report Date: 21-AUG-12 16:43 (MT)

Version: FINAL

Client Phone: 403-990-1382

Certificate of Analysis

Lab Work Order #: L1189962

Project P.O. #: NOT SUBMITTED

Job Reference: A04012A03 C of C Numbers: 10-189626

Legal Site Desc:

Comments: ADDITIONAL 21-AUG-12 10:10

Jessica Spira

Senior Account Manager

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ADDRESS: 9936-67 Avenue, Edmonton, AB T6E 0P5 Canada | Phone: +1 780 413 5227 | Fax: +1 780 437 2311

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L1189962 CONTD.... PAGE 2 of 3 Version: FINAL

ALS ENVIRONMENTAL ANALYTICAL REPORT

| Sample Details/Parameters | Result | Qualifier* | D.L. | Units | Extracted | Analyzed | Batch |
|--|--------------|------------|-------|---------|-----------|-----------|-----------|
| L1189962-1 SW12-002 | | | | | | | |
| L1189962-1 SW12-002 Sampled By: RL on 06-AUG-12 @ 19:00 | | | | | | | |
| | | | | | | | |
| Matrix: Water Miscellaneous Parameters | | | | | | | |
| Ammonia, Total (as N) | 2.44 | | 0.050 | mg/L | | 14-AUG-12 | R2416369 |
| Biochemical Oxygen Demand | 3.0 | | 2.0 | mg/L | | 11-AUG-12 | R2417886 |
| Chlorine, Total | 0.18 | | 0.10 | mg/L | | 12-AUG-12 | R2415093 |
| Oil and Grease | <1.0 | | 1.0 | mg/L | 21-AUG-12 | 21-AUG-12 | R2420945 |
| Special Request | See Attached | | 1.0 | IIIg/ L | 217.0012 | 09-AUG-12 | 112420343 |
| Phosphorus (P)-Total | 0.285 | | 0.020 | mg/L | 13-AUG-12 | 14-AUG-12 | R2416518 |
| Total Suspended Solids | 9.0 | | 3.0 | mg/L | 10710012 | 13-AUG-12 | R2416035 |
| pH | 7.81 | | 0.10 | pH | | 13-AUG-12 | R2415716 |
| | 7.01 | | 0.10 | Pri | | 107100 12 | 112410710 |
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^{*} Refer to Referenced Information for Qualifiers (if any) and Methodology.

A04012A03

L1189962 CONTD....

PAGE 3 of 3 Version: FINAL

Reference Information

Test Method References:

| ALS Test Code | Matrix | Test Description | Method Reference** | | | | | | |
|---------------|---------------|---|--|--|--|--|--|--|--|
| BOD-ED | Water | Biochemical Oxygen Demand (BOD) | APHA 5210 B-5 day IncubO2 electrode | | | | | | |
| CL2-TOT-ED | Water | Chlorine, Total | APHA 4500 CI G-Colorimetry | | | | | | |
| NH3-CFA-ED | Water | Ammonia in Water by Colour | APHA 4500 NH3-NITROGEN (AMMONIA) | | | | | | |
| | it using proc | edures adapted from APHA Method 4500 NH | APHA 4500 NH3-NITROGEN (AMMONIA) 3 "NITROGEN (AMMONIA)". Ammonia is determined using | | | | | | |

OGG-LLE-ED Water Oil and Grease-Gra APHA 5520 B HEXANE MTBE EXT. GRAVIME

P-T-COL-ED Water Total P in Water by Colour APHA 4500-P PHOSPHORUS

This analysis is carried out using procedures adapted from APHA Method 4500-P "Phosphorus". Total Phosphorus is determined colourimetrically after persulphate digestion of the sample.

PH-ED Water pH APHA 4500 H-Electrode

All samples analyzed by this method for pH will have exceeded the 15 minute recommended hold time from time of sampling (field analysis is recommended for pH where highly accurate results are needed)

recommended for pri where highly accurate results are needed)

SOLIDS-TOTSUS-ED Water Total Suspended Solids APHA 2540 D-Gravimetric
SPECIAL REQUEST-TG Misc. Special Request Taiga Yellowknife SEE SUBLET LAB RESULTS

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

| Laboratory Definition Code | Laboratory Location | | | | | | |
|----------------------------|---|--|--|--|--|--|--|
| ED | ALS ENVIRONMENTAL - EDMONTON, ALBERTA, CANADA | | | | | | |
| TG | TAIGA ENVIRONMENTAL LABORATORY (INAC) | | | | | | |
| | <u> </u> | | | | | | |

Chain of Custody Numbers:

10-189626

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

^{**} ALS test methods may incorporate modifications from specified reference methods to improve performance.



4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3 Tel: (867)-669-2788 Fax: (867)-669-2718

- FINAL REPORT -

Prepared For: ALS Environmental

Address: P.O. Box 2801

Yellowknife, NT

X1A 2R1

Attn: Judy Bethune Facsimile:

Final report has been reviewed and approved by:

Helene Harper

Manager

NOTES:

- For the thods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association for Laboratory Accreditation Inc. (CALA) as a testing laboratory for specific tests registered with CALA.
- Routine methods are based on recognized procedures from sources such as
 - O Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
 - o Environment Canada
 - o USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

ReportDate: Monday, August 13, 2012 **Print Date:** Monday, August 13, 2012



Taiga Batch No.: 120651

4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3 Tel: (867)-669-2788 Fax: (867)-669-2718

- CERTIFICATE OF ANALYSIS -

Client Sample ID: L1189962-1 SW12-002 Taiga Sample ID: 001

Client Project:

Sample Type: Water
Received Date: 08-Aug-12
Sampling Date: 06-Aug-12
Sampling Time: 19:00

Location:

Report Status: Final

| Test Parameter | Result | Detection Limit | Units | Analysis Analytica Date Method* | / \ = i E |
|------------------|--------|--------------------|-----------|------------------------------------|-------------|
| Microbiology | | | | | |
| Coliforms, Fecal | 2 | 1 | CFU/100mL | 09-Aug-12 SM9222:D | 88 |

ReportDate: Monday, August 13, 2012 **Print Date:** Monday, August 13, 2012



Taiga Batch No.: 120651

4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3 Tel: (867)-669-2788 Fax: (867)-669-2718

- CERTIFICATE OF ANALYSIS -

Client Sample ID: L1189962-1 SW12-002 Taiga Sample ID: 001

- DATA QUALIFERS -

Data Qualifier Descriptions:

88 Samples analysed past holding time, as per client request.

* Taiga analytical methods are based on the following standard analytical methods

SM - Standard Methods for the Examination of Water and Wastewater

EPA - United States Environmental Protection Agency

ReportDate: Monday, August 13, 2012 **Print Date:** Monday, August 13, 2012

ALS QC data 2012 (FC)

Indicates other client sample used for duplicate data

| Date | TEL | ALS ID | Test | Blank Result FC/100 mL | Original FC/100 mL | Duplicate FC/100 mL | Pass/Fail | Comments |
|----------|------------|--------|------|---------------------------|--------------------|------------------------|-----------|----------|
| Aug.8/12 | 120640-002 | | FC | <1 | <1 | <1 | Р | |



Chain of Custody / Analytical Request Form Canada Toll Free: 1 800 668 9878

www.alsglobal.com

| Page | of | |
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| Report To | | | Report Format / Distribution | | | | | | Service Request:(Rush subject to availability - Contact ALS to confirm TAT) | | | | | | | | | | |
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| Company: T | I'm consultants 1+d | | Standard: Other (specify): | | | | Regular (Standard Turnaround Times - Business Days) | | | | | | | | | | | | |
| Contact: Kn | | | Select: PDF Excel X Digital X Fax | | | | 1 | Regular (Standard Turnaround Times - Business Days) Priority(2-4 Business Days)-50% surcharge - Contact ALS to confirm TAT | | | | | | | | | | | |
| Address: \$500, 2618 Hopewell Place NE Caldary Alberta TIY 757 | | | Email 1: | Kbeavis@ | | rax | | | | | | | | ge - Contac | | | T | | |
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| Lab Work Order # (lab use only) (1189967 | | | ALS | ALS Judy Sampler DI | | | | CH | 100 | BMG : | Poloud | | ammonia | Sphore | | | 3 | Number of Containers | |
| Sample # | Sample Identi (This description will app | | 11/25 | Date (dd-mmm-yy) | Time (hh:mm) | Sample Type | Biological | 10 hal | Feca | 10 | total | Hd | ami | Phe | | | | Numbe | |
| | SW12-002 | | | 06-Aug-12 | 19:00 | water | X | X | X | X | X | X | X | X | | 1122 | | 4 | |
| | L1189962-COF | | | | | | | | | | | | | | | | | | |
| | Special Instructions / Reg | ulation with water | or land use (CCI | ME- Freshwater A | quatic Life/BC C | SR-Commercial/A | B Tier | 1-Nati | ıral/E | TC)/I | Hazar | dous | Detai | ils | | | | | |
| | By the use of this form SHIPMENT RELEASE (client use) | Failure to comple | ete all portions | of this form may c | delay analysis. I | Please fill in this fo as specified on th | orm LE | EGIBLY | of the | e white | e - rep | oort c | ору. | ON (lab | use on | ly) | | | |
| Released by: | Date: T | 3:coph | eived by: Date: Time: Temperature: 1705 O(| | | | 1 | ied by: | | | Date: | | | Time: Observation Yes / No ? If Yes add \$ | | | | | |