

**Water Licence Application Questionnaire
for
Municipal Undertakings**



'To provide for the conservation, development and utilization of waters in a manner that will provide the optimum benefit there from for all Canadians and for the residents of the Northwest Territories in particular.'

January 2009

The purpose of this questionnaire is to solicit supplemental information from an applicant to support their application for a water license (or its renewal). It is anticipated that the completion of this questionnaire will reduce delays arising from the NWT Water Board having to solicit additional information after an application has already been submitted. This information will also be useful during the pre-screening of your application, which must be undertaken prior to development and approval of a water.

The applicant should complete the questionnaire to the best of his/her ability, recognizing that some questions may not be relevant to the project under consideration. For questions that do not relate to the operation undertaking, the applicant is requested to indicate “N/A” (Not Applicable).

NOTE: If space is insufficient for any of the responses on this questionnaire, use the back of the sheet or an attachment.

If any questions arise while completing the questionnaire, the applicant may wish to contact the NWT Water Board at (867) 678-2942.

This questionnaire can be sent with the application for a new licence or the renewal of an existing licence to the following contact information:

Executive Director
NWT Water Board
P.O. 2531
Inuvik, NT, Canada
X0E 0T0
Email: info@nwtwb.com

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SECTION 1. GENERAL

1.1. **Date:** April 10, 2012

1.2. **Applicant**

Shell Canada Energy
(Company, Corporation, Hamlet, Town)

Randall Warren, Manager Reclamation and Drilling Waste
(Person to contact and its position)

400 – 4 Avenue SW, PO Box 100, Station M

Calgary, Alberta T2P 2H5
(Postal address)

403-691-2521
(Telephone number)

403-269-7948
(Facsimile number)

1.3. **Community Status**

City Village Town **Camp** Other: _____

1.4. **Population (according to most recent census results), and the Estimated Growth Rate over next five years or Camp Maximal Capacity:**

Camp Farewell can accommodate a maximum of 150 people.

1.5. **Indicate the status of the municipality's license on the date of application.**

New Application: **Yes** No

If yes, please submit your water licence Number and the date the licence was issued.

Renewal of Water License Number: N/A

Date of Issuance: N/A

1.6. Has any baseline data been collected for the main water bodies in the area?

Yes **No** Unknown

If yes, please attach:

- All data gathered on the physical, biological and chemical characteristics at each sampling location;
- A summary or program details indicating sampling locations, description of waste at each location, sampling frequency, and parameters analyzed;
- An outline of Quality Assurance/Quality Control methods being applied to sampling, preservation and analysis within the program.

1.7. Has any baseline data collection and evaluation been undertaken with respect to the various biophysical components of the environment potentially affected by the project (e.g., wildlife, soils, air quality) in addition to water related information requested in this questionnaire?

Yes **No** Unknown

If yes, please attach copies of reports or cite titles, authors and dates (prepared by, title and completion date).

If no, do you plan on doing such studies? If you do plan on doing such studies, please describe the proposals.

1.8. Attach detailed maps which show the relative locations of the:

- raw water intake,
- water treatment facilities,
- fuel & chemical storage,
- sewage treatment facilities,
- wastewater treatment area and discharge outlets,
- solid waste disposal areas and drainage patterns,
- hazardous waste disposal area,
- transportation access routes,

- existing waterbodies/courses and any changes to these water bodies/courses which have or may occur as a result of water use of waste disposal facilities, locations of environmental monitoring sites.

Refer to the site plan located in the Project Description (Figure 5-1). There is no hazardous waste disposal area on the site.

1.9. Attach detailed scale plan drawing(s) of the proposed (or present) sewage treatment system. The drawing(s) must be stamped by an engineer registered in NWT and include the following:

- details of pond size and elevation;
- precise details of all retaining structures (dimensions, materials of construction, etc.);
- details of the drainage basin, and existing and proposed drainage modifications;
- details of all decant, siphon mechanisms etc, including sewage treatment facilities;
- details regarding direction and route followed by wastewater flow from the area;
- indications of the distance to nearby major watercourses, and fish bearing waters;
- location and construction of liners;
- leachate and groundwater collection systems; and

control structures.

Refer to the Water Management Plan located in Appendix C and Sections 2, 3 and 4 of the Operations and Maintenance Plan located in Appendix A of the Project Description.

1.10. Attach detailed scale plan drawings of the proposed (or present) solid waste disposal area. The drawings must include the following:

- precise details of all retaining structures (dimensions, materials of construction, etc.);
- details of the drainage basin, and existing and proposed drainage modifications;
- details regarding direction and route followed by wastewater flow from the area;
- indications of the distance to nearby major watercourses, and fish bearing waters;
- all sources of seepage presently encountered in the vicinity of these areas;
- the volume of each seepage flow (m³/day); and
- the direction of each flow.

There is no solid waste disposal area located at Camp Farewell.

1.11. Attach the present or proposed contingency plan which will be used for each portion of the waste control system in the event it fails to operate properly.

Refer to the Emergency Response Plan for Camp Farewell in the Operations and Maintenance Plan located in Appendix A of the Project Description. The sewage treatment plant can treat sewage prior to being discharged into the Mackenzie River. However, at this time, there are no plans for the sewage treatment plant to be used, and any sewage generated at the site will be trucked to Inuvik for disposal.

- 1.12. **Attach the present or proposed spill contingency plan which will be employed in case a spill of hazardous materials occurs. Describe courses of action, mitigative methods and equipment available for use.**

Refer to the Emergency Response Plan for Camp Farewell in the Operations and Maintenance Plan located in Appendix A of the Project Description.

NOTE: Individual detailed large scale drawings of all facilities (dam, decant system, ditch, dike, water treatment plant, etc) constructed or proposed must be attached. Specific details with regard to the methods of construction, materials used, etc. are required.

SECTION 2. WATER SUPPLY

2.1. **Volume of water use (m³/day)** Up to 150 m³/day (non-potable)

2.2. **Type of source**

Lake River Well Other: _____

Unnamed lake in the summer and the Mackenzie River in the winter.

2.3. **Name of raw water source and alternative, if any**

2.4. **Usual break-up & freeze-up months**

Break-up: late April Freeze-up: early October

2.5. **Please provide short descriptions for the following**

Freshwater intake facility:

Operating capacity of the pumps used:

Refer to the Water Management Plan located in Appendix C of the Project Description.

2.6. **Type of water storage facility (i.e. Reservoir, storage, tank, none. For other, please provide a description)**

Storage tank

2.7. **What is the capacity of the water storage facility? m³**

27.25 m³

2.8. What is the rate of withdrawal from the source? (m³/day)

Up to 150 m³/day

2.9. Is water drawn from the source? Yes

If yes, during what month(s) is it drawn? And for what period of time is it drawn (days/weeks/months)?

Varies depending on project requirements. If drawn to construct an ice road, during winter months and for 2-3 weeks at 150 m³/day. Typically the camp is only operated in the summer months, and withdrawal would be up to 50 m³/day.

2.10. What is the rate of flow of source (if river) or size (if lake)?

Unknown

2.11. At the intended rate of water usage, describe the effects on the river or lake from which water will be drawn.

The impact of water withdrawal on the Mackenzie River and on Unnamed Lake is expected to be negligible, due to the significant difference in withdrawal rate and source size and the intermittent nature of water use.

2.12. General condition of

Water supply facility: **Satisfactory** Unsatisfactory

If unsatisfactory, explain:

Storage facility: **Satisfactory** Unsatisfactory

If unsatisfactory, explain:

Distribution system: **Satisfactory** Unsatisfactory

If unsatisfactory, explain:

2.13. **Are there any changes planned in the water supply system?**

Yes **No**

If yes, please attach a copy of the plan, or describe changes.

SECTION 3. WATER TREATMENT

3.1. Indicate the quality of the raw water prior to treatment & distribution and give a description

Good Fair Poor

Description:

3.2. Indicate the capacity of the treatment facility (L/minute)

The treatment facility is essentially a tank where solids are allowed to settle out. The capacity of the tank is 27.25 m³.

3.3. Type of water treatment facility (i.e. Filtration & Chlorination, Chlorination only, UV, None. If other, please describe)

Gravity separation of solids.

3.4. Describe in detail the method of water treatment (i.e. backwash, flocculation, sedimentation, chemicals used), and provide the results of the most recent bacteriological and chemical analysis. Attach a diagram if possible.

Sedimentation

3.5. Have there been any problems or health and environmental concerns with the water treatment facilities?

Yes **No**

If yes, please describe:

3.6. Are there any changes planned in the water treatment facilities?

Yes No

If yes, please attach a copy of the plan or indicate change

SECTION 4. SEWAGE DISPOSAL

4.1. Indicate the level of treatment the sewage will be receiving (primary, secondary or tertiary. If other, please describe)

Refer to the Water Management Plan located in Appendix C of the Project Description, and Sections 2, 3 and 4 of the Operations and Maintenance Plan in Appendix A of the Project Description.

At this time, Shell intends on trucking any sewage generated at the site to Inuvik for disposal as opposed to using the onsite sewage treatment plant.

4.2. Pre-treatment (if applicable)

Screening Maceration

4.3. Lagoons (if applicable)

Anaerobic aerobic facultative

4.4. Indicate the capacity of the sewage treatment facility (m³)

Refer to the Water Management Plan located in Appendix C of the Project Description, and Sections 2, 3 and 4 of the Operations and Maintenance Plan in Appendix A of the Project Description.

4.5. Indicate the retention time of the sewage while in the treatment facility (days)

Refer to the Water Management Plan located in Appendix C of the Project Description, and Sections 2, 3 and 4 of the Operations and Maintenance Plan in Appendix A of the Project Description.

4.6. Indicate the estimated rate of discharge of wastewater

150 m³/day

4.7. Indicate the location of the discharge point

Refer to the site plan included in the Water Management Plan, Appendix C in the Project Description. However, as indicated above, at this time Shell does not intend to discharge sewage into the Mackenzie River and will truck sewage generated at the site to Inuvik for disposal.

4.8. Will the discharge be seasonal or continuous?

Discharge will be seasonal while the camp is in operation.

If seasonal, during what month(s) will it occur? Varies depending on project requirements.

What is the duration of the discharge (days/weeks/months)

4.9. Comment on the general condition of the:

Sewage collection system
Discharge control system
Dams, diversion, dykes or berms

According to the latest inspection report dated January 19, 2005, the waste disposal features were inspected and found to be acceptable.

4.10. Have there been any problems or health and environmental concerns with the sewage disposal facilities?

Yes No

If yes, please describe:

4.11. The average depth of the wastewater lagoon is (meters)

The average depth of the lagoon is unknown. The lagoon currently only contains spring run-off. Prior to it reaching the 1 meter freeboard, the contents are tested,

treated if required, and then decanted when the contents meet discharge criteria.

4.12. **What is the design freeboard? (meters)** approximately 1 m

4.13. **Is there any harvesting of fish or shellfish in the waters where waste is discharged?**

Yes No

If yes, please indicate species harvested, and estimate amounts.

4.14. **Will the municipality be using a honey bag pit?**

Yes No

If yes, describe its location, drainage and operation & maintenance

4.15. **Are there any sources of commercial or industrial liquid waste being discharged or deposited to the municipal system which may affect the quality of the effluent or leachate produced?**

Yes No

If yes, please describe:

4.16. **Have any spills occurred in the past five years?**

Yes No

If yes, please submit a list of all spills with the date of the spill, the type of spill, the quantity spilled, the location of the spill, the method used to clean the spill and the results of the clean-up.

4.17. **Have there been any operating problems with the lagoon?**

Yes No

If yes, please describe:

4.18. **Are there any changes planned in the sewage disposal facilities?**

Yes **No**

If yes, please describe and if possible, attach a copy of the plan:

Although a sewage treatment plant exists on-site, Shell intends on trucking any sewage generated at the site to Inuvik for disposal.

SECTION 5. SOLID WASTE DISPOSAL

This section does not apply to Camp Farewell as there is no solid waste disposal site present. Combustible camp garbage is incinerated on site and/or disposed at the local Inuvik landfill (with approval). Once approval is obtained the ash is hauled to the landfill in Inuvik. Non-combustible solid waste is stored on site for transport to Inuvik for landfill disposal as well.

5.1. Indicate the capacity of the disposal area (m³)

5.2. The average depth of the solid waste disposal site is (meters)

5.3. Are there any sources of commercial or industrial solid waste being deposited in the municipal system which may affect the quality of the effluent or leachate produced?

Yes No

If yes, please describe:

5.4. Briefly describe how the solid waste will be picked up & delivered to the disposal area

5.5. Is the solid waste site fenced?

Yes No

5.6. Will the municipality be using a dead animal pit?

Yes No

If yes, please describe its location, drainage and operation & maintenance:

5.7. Will the municipality be using a bulky metal waste disposal area?

Yes No

If yes, please describe its location and operation & maintenance:

5.8. Will the municipality be using a hazardous waste disposal area?

Yes No

If yes, please describe its location, structure and operation & maintenance:

5.9. Are there any hazardous commercial wastes entering the solid waste disposal system?

Yes No

If yes, please describe (source, volume, special handling and disposal methods for these wastes):

5.10. If any natural watercourse may gain access to the proposed solid waste disposal area, what methods will be used to decrease the amount of runoff water entering these areas? Indicate the volume of water which may enter these areas from the source(s) in question and attach all pertinent details of proposed diversions

5.11. Please describe the nature of any diversions of watercourses

5.12. Have there been any problems or health and environmental concerns with the solid waste disposal facilities?

Yes No

If yes, please describe:

5.13. **Are any changes planned in the solid waste disposal system?**

Yes No

If yes, please describe and, if possible, attach a copy of the plan:

SECTION 6. ABANDONMENT AND RESTORATION PROGRAM

6.1. **List and describe the locations of abandoned or restored water treatment facilities.**

N/A

6.2. **List and describe the locations of abandoned or restored sewage treatment facilities.**

The previous sewage treatment system, an RBC system, was replaced by the current extended aeration sewage treatment system in the summer of 2002. The RBC facilities were removed from the site.

6.3. **List and describe the locations of abandoned or restored solid waste disposal facilities.**

N/A

6.4. **Do you have an abandonment and restoration plan?**

Yes No

If yes, please attach a copy of the plan.

Refer to Appendix E in the Project Description.

SECTION 7. WATER QUALITY MONITORING PROGRAM

7.1. Briefly describe the methodology that is presently used to sample the raw water supply

There is no sampling of the raw water supply because this is a pristine and undisturbed water source that is used only for domestic purposes and not as a potable water source. Withdrawal will be in accordance with Department of Fisheries and Oceans (DFO). Freshwater intake end-of-pipe fish screen guidelines.

7.2. Briefly describe any monitoring that is done on wastewater effluent and leachate

Shell has been in compliance with the requirements of the Surveillance Network Program outlined in its former Water License N7L1-1762. The former license and amendments are provided in the Water Management Plan included in Appendix C of the Project Description.

7.3. Recognized laboratory performing analysis of samples

Name of the laboratory: Maxxam Analytics

Contact name: Parminder Virk

Postal address: 4000 – 19 Street NE, Calgary, Alberta, T2E 6P8

Telephone number: 403-219-3650

Facsimile number: 403-735-2240

7.4. Are any changes planned in the water quality monitoring program?

Yes **No**

If yes, please describe

SECTION 9. LIST OF ATTACHMENTS

<i>Reference to the question in the questionnaire</i>	<i>Title of the documents</i>	<i>Date of the documents</i>	<i>Author(s) of the documents</i>	<i>Number of pages of the documents</i>
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