



Northwest  
Territories Environment and Natural Resources

June 14, 2012

Jan Davies  
Executive Director  
Northwest Territories Water Board  
P.O. Box 1326  
Yellowknife, NT  
X1A 2N9

Dear Ms. Davies,

**Re: Shell Canada Energy  
Camp Farewell  
Water Licence Application – N7L1-1834  
Request for Review and Comments**

The Department of Environment and Natural Resources (ENR) has reviewed the application at reference based on its mandated responsibilities under the *Environmental Protection Act*, the *Forest Management Act*, the *Forest Protection Act* and the *Wildlife Act* and provides the following attached comments and recommendations for consideration.

**Topic: Project Description for Camp Farewell's Water Licence Application**

**Comment(s)**

Section, 5.5 Solid Waste Management, states:

"When the site is in use, solid waste at Camp Farewell will be handled as follows:

- Combustible non-plastic waste may be burned on-site in the approved incinerator attached to the permanent camp building (Figure 5-1). Larger construction debris such as pallets will be burned in a metal sloop. Ash from the incinerator and sloop will be tested and, if suitable, transported to the Inuvik landfill upon receiving approval. Burn permits will be acquired, if necessary.

- Non-hazardous camp waste that is not incinerated, such as plastics, will be stored in animal-proof containers for shipment to the Inuvik landfill.”

Section 5.6.2, Hazardous Materials, states:

- “..If hazardous materials are required for a project based out of Camp Farewell, they will be securely stored, with the proper documentation and labelling. These wastes would be hauled to an approved facility for disposal.”

**Recommendation(s):**

With respect to the segregation and storage of food and food contaminates waste:

- Storing refuse in a manner likely to attract wildlife is a violation of the Wildlife Act. Food and food contaminated waste must be stored separate to all other wastes, and in airtight sealed manner, *and* enclosed in a wildlife proof container prior to final transport, treatment or disposal.

With respect to the incineration of waste and/or burning of construction debris:

There are important potential environmental concerns associated with waste incineration that must be addressed through proper equipment selection, operation, maintenance and record keeping. These include potential releases of mercury, as well as dioxins and furans (PCDD/F), which are persistent organic pollutants (POPs). Mercury and POPs bio-accumulate in the environment and may cause adverse effects to human health and the environment.

- The open burning of non-segregated municipal solid wastes (MSW) – this includes camp waste or construction debris - is an unacceptable waste management option. ENR only supports the controlled open burning of paper products, paperboard packaging and untreated wood wastes.

Incineration practices must meet the requirements of Environment Canada's *Technical Document for Batch Waste Incineration*. The technical document provides information on appropriate incineration technologies, best management and operational practices, monitoring and reporting.

**Recommendation(s)**

With respect to the disposal of incinerator ash:

- Incineration ash can be contaminated with toxic compounds and should therefore be tested to ensure that it is disposed of in an appropriate and approved manner. If incinerator bottom and/or fly ash are targeted for disposal in the NWT, it must be tested prior to disposal to ensure that it meets the criteria specified in the NWT *Environmental Guideline for Industrial Waste Discharges*.

## Recommendation(s)

With respect to the generation, transport, and receiving of hazardous waste:

- Hazardous waste generators, carriers and receivers in the NWT are required to register with the ENR, Environment Division, and to initiate documentation of hazardous wastes with manifest tracking forms.

Comments and recommendations were provided by ENR technical experts in the Environmental Protection Division and/or the Inuvik Region and were coordinated and collated by the Environmental Assessment and Monitoring Section (EAM).

Should you have any questions or concerns, please do not hesitate to contact Patrick Clancy, Environmental Regulatory Analyst at 920-6118 or [patrick\\_clancy@gov.nt.ca](mailto:patrick_clancy@gov.nt.ca).

Sincerely,



Patrick Clancy  
Environmental Regulatory Analyst  
Environmental Assessment and Monitoring  
Land and Water Division  
Department of Environment and Natural Resources  
Government of the Northwest Territories



Environment  
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Environnement  
Canada

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5019 52<sup>nd</sup> Street, 4<sup>th</sup> Floor  
P.O. Box 2310  
Yellowknife, NT X1A 2P7

June 15, 2012

Our File No.: 4709 002 017

Your File No.: N7L1-1834

Jan Charles Davies  
Executive Director  
Northwest Territories Water Board  
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125 Mackenzie Road  
Suite 302 Professional Building  
Inuvik, NT X0E 0T0

Via Email at [daviesj@nwtwb.com](mailto:daviesj@nwtwb.com)

Dear Mr. Davies

**RE: N7L1-1834 – Shell Canada Energy – Camp Farewell – Water License Application**

Environment Canada (EC) understands that Shell Canada Energy (the Proponent) submitted a Project Description (Project Description for Camp Farewell's Water License Application, IEG Consultants, February 2012) for the Camp Farewell Water License Application to the Northwest Territories Water Board. This Project Description states that the Proponent does not have any defined projects or schedule for work at Camp Farewell and that in the event that Shell initiates any programs other than site care and maintenance, appropriate regulatory approvals, including Project Descriptions, will be completed and submitted to the EISC (page i).

EC reviewed the Proponent's 2010 water license renewal application and provided specialist advice pursuant to EC's mandated responsibilities arising from the *Canadian Environmental Protection Act*, Section 36(3) of the *Fisheries Act*, the *Migratory Birds Convention Act*, and the *Species at Risk Act* (letter dated October 28, 2010), included as an attachment). EC recommends that our original comments be reviewed again by the Proponent in order to ensure our mandated responsibilities as outlined above are met, that the comments provided previously are once more considered and applied, and the environment is protected.

If there are any changes in the project proposal or more information becomes available, EC should be notified, as further review may be necessary. Please do not hesitate to contact me at (867) 669-4748 or [Stacey.LeBlanc@ec.gc.ca](mailto:Stacey.LeBlanc@ec.gc.ca) with any questions concerning the above points or to request copies of the original letters sent to the Proponent.

Yours truly,

Stacey LeBlanc  
Environmental Assessment Coordinator, EPO

cc: Randall Warren (Shell Energy Canada)  
Carey Ogilvie (Head, Environmental Assessment North, EPO)

Canada



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Affairs Canada

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PO Box 1500  
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Our File: N7L1-1834  
Your File: N7L1-1834

June 15<sup>th</sup>, 2012

Jan Davies  
Executive Director  
NWT Water Board  
Box 1326  
Yellowknife, NT X0A 2N9

Dear Mr. Davies,

**RE: Shell Canada Energy – Camp Farewell - Water Licence Renewal Application  
N7L1-1834, June 2012**

The Water Resources Division and Aboriginal Affairs and Northern Development Canada (AANDC) have reviewed Camp Farewell water licence application N7L1-1834, submitted by Shell Canada Energy. AANDC would like to submit the following comments for the consideration of the NWT Water Board:

**Water License General Conditions**

- The most recent annual report for Camp Farewell was submitted in 2006. Annual Reports are to be submitted for each year that the Camp Farewell facility is licensed and AANDC is unaware as to whether or not annual reports have been submitted for the years 2007 through 2011.

**Definitions and terms**

- Definitions for “Closure and Reclamation” should be added within the water license Part B – General Conditions.
- Section 2.4 of the “Abandonment and Restoration Plan” should be replaced by the more appropriate and commonly used “Closure and Reclamation” definition.
- References to Indian and Northern Affairs Canada or INAC in the water license should be replaced by Aboriginal Affairs and Northern Development or AANDC.

- Part D, Section 7 of the water license should refer to Part D, Item 6 and not Part D, Item 5.

#### Wastewater/sewage storage

- Melt water accumulating in Camp Farewell sewage lagoon (approx. 1,350m<sup>3</sup>/year) is sampled and analyzed for quality and decanted in the Mackenzie River every second year. Will the sewage lagoon be used at any point in the future? Will the sewage lagoon be progressively reclaimed if it is no longer needed to handle sewage waste?
- AANDC understands that Camp Farewell sewage is no longer being treated at the site. Grey and black water are being stored in two of the 400 barrel tanks (82,000 L each) before being transported via ice roads or barges to Inuvik waste water lagoon. It is noted that the project description does not mention any contingencies for wastewater/sewage storage except for a water restriction order during times of limited storage availability. Shell should plan to have sufficient containment on site to store any wastewater/sewage when it cannot be trucked to Inuvik (i.e. due to weather, transportation etc.). Other programs, submitted previously for work in the ISR, have included mobile treatment plants or other options/plans to temporarily deal with wastewater. Shell should submit additional information and/or a contingency plan for storage of wastewater in the event that transportation is delayed.

#### SNP Monitoring and Camp Farewell monitoring program

- It appears that site monitoring conducted at the Camp Farewell since the Environmental Site Assessment (ESA) has been limited to the analysis of the black staining area associated with the treated soil area. Considering the contamination at the site, AANDC recommends that the groundwater monitoring at appropriate locations (as per the ESA) should be a requirement of the renewed water licence. AANDC suggests that the NWTWB consider establishing SNP sites: down gradient from the Burn Pit; down gradient from the Tank Farm (historical spill area); and, near ESA sampling stations S06-63 and S06-68 (perimeter of Gravel Pad Area). These monitoring stations would allow active monitoring of groundwater contamination and assist in determining the success of excavation work and help determine if contamination is actively migrating off-site.
- As potential exists for hydrocarbon and sewage contamination near the Mackenzie River shoreline, it is also recommended that Shell include SNP sampling to adequately delineate contamination and potential migration from this area.

#### Abandonment and Restoration Plan (2011 version)

- The licence number should be revised within the Executive Summary, Section 1, for fulfillment of the requirements outlined in the Northwest Territories Water Board of

the new licence number for Camp Farewell, # N7L1-1834.

- Replace “Abandonment and Restoration” in Part G with “Closure and Reclamation”. AANDC will however use “Abandonment and Restoration” in the comments below when referring to the 2011 updated plan produced by Shell Canada.
- Section 5.2.8 of 2011 Abandonment and Restoration Plan, Under Soil Remediation – Remediation Plan, describes Shell Canada’s intention to construct a soil treatment area at the Camp Farewell Site in the future where excavated hydrocarbon contaminated material will be treated. Contaminated material to be treated would consist of 370 m<sup>3</sup> of gravel fill (from fuel tank area) and 75 m<sup>3</sup> of gravel fill material from the burn pit. AANDC recommends the scope of the water licence should incorporate the soil treatment area and the licence itself or a management plan under the water licence should include treatment criteria. This is necessary to ensure proper operation and compliance. Note, the A&R Plan should include details regarding how the soil treatment area will be closed following closure and reclamation of the Camp Farewell site.
- Shell Canada Energy water licence states under Part G, item 1, that the proponent is required to provide an updated Interim Abandonment and Restoration Plan including a complete Phase II Environmental Assessment. The 2008 version of the plan provided important and useful tools from the 2006 Environmental Assessment such as: Figure 6 (Sampling locations exceeding reference guidelines), Figure 7 (Interpreted areas of soil with hydrocarbon parameters exceeding guidelines, Table 1 (Soil analytical Results), Table 3, 4, 5, 6A, 6B (Piezometer Water Quality results). AANDC recommends that these figures and tables be updated and modified and included in the revised A&R Plan.
- AANDC recommends that Shell Canada refer to the above figures and tables when providing information such as the 2008-2009 locations where soil were or were not excavated for treatment. Where appropriate, AANDC also recommends that Shell use corresponding sampling station numbers for their sampling results such that results can be properly compared over time.
- A Progressive Reclamation Schedule was provided with 2008 A&R Plan, Section 7.3, in accordance with sustainable development and environmental stewardship. The proposed schedule from 2008 illustrated monitoring and remedial actions plans for 2009, 2010, 2011, 2012, 2013 and 2014. Shell Canada has followed this schedule in 2008 and 2009, but it is unclear if the progressive schedule was followed in recent years or if the schedule will be followed in the future years, as the Progressive Reclamation Schedule was not provided with the 2011 A&R Plan. AANDC notes that the 2011 A&R Plan further describes, under Section 5.3, that the concept of progressive reclamation “does not apply to Camp Farewell”. AANDC is confused by this statement but continues to recommend that the Progressive Reclamation Schedule be re-inserted in the A&R Plan (Closure & Reclamation Plan) as it is an integral part of the Closure and Reclamation process.

- Further to the above comment, AANDC recommends the proponent to report, via Shell Canada Energy Annual Report, annual progress updates such that comparisons with the 2008 A&R Progressive Reclamation Schedule can be made. Important activities included in the 2008 Schedule include establishment of baseline soil and water quality (groundwater, surface & shallow soil sampling (2009); locations from which contaminated soils were excavated onsite (2009); respective volumes and destination details of excavated treatable and non-treatable soil materials (2009); details on dewatering of backfill open excavations (2010); details of heavy equipment and material moved, as well as information on the equipment remaining at the site; and any ongoing post remediation surface or groundwater monitoring at the site (Tank Farm & Historical Spill Area, Burn Pit, Perimeter of Gravel Pad, etc.)). Furthermore, a map representing each post monitoring locations (if different from Figure 6 from the 2008 A&R Plan) should be provided.
- The A&R Plan, p. 4, refers to Leases No. 107 C/4-2-10 & Lease No. 107 C/4-1-7. Appendix 2 and Appendix B both refer to Camp Farewell Lease Agreements and provide copies of Lease No. 107 C/4-1-8 & No. 107 C/4-2-15. The correct Leases No. should be provided and the appropriate Sections updated, where appropriate.
- The A&R Plan states, p. 4, that the Lease specifies in Termination (Part 11) that *Upon termination or expiration of this lease, the lessee shall deliver up possession of the land in a condition satisfactory to the Minister.* As the Lease does not request further specifics on the closure and reclamation aspects of Camp Farewell's airstrip docking/staging location and road access prior to closure time; and to avoid a situation where expenses may be incurred by the Minister, the preferred closure and reclamation approach must be provided for all site components.
- The 2008 A&R Plan specifies that the gravel layer at the base pad is contaminated with barium as these soils were originally mixed with drilling mud products to establish good gravel adhesion and compaction. An earlier assessment at Stockpile #2 revealed that when a free portion of the insulation liner was squeezed, it produced an apparent mixture of water and hydrocarbon. Furthermore, Shell is uncertain if the liner is one complete layer or a series of pads; and Shell specifies that the gravel pad was extended beyond the perimeter of the subsurface line (depth between 0.38 m & 0.62 m). Currently, Shell Canada Camp Farewell A&R Plan involves leaving the current urethane and gravel layers of the base pad in place as Shell believes that removing these layers would expose pre-camp natural sub surface which has experienced subsidence from the Site base due to static loading and melting. The depressed exposed surface would be voided of the insulation acting plant material and that the dark color and lack of vegetation would lead to ground thawing. The 2008 A&R plan also stated that leaving the urethane liner in place would provide an effective impermeable layer to prevent contamination of underlying soils and groundwater. Has any site data been collected to substantiate the conclusion that the potentially sparse urethane layer is preventing contaminant movement to underlying soils? As well, does Shell anticipate any lateral movement of contaminants,



particularly when the extent of the gravel pad is larger than the extent of the liner? Such information is required prior to finalizing the Camp Farewell reclamation plan.

### Emergency Response Plan

- The Emergency Response Plan (ERP) prepared for Camp Farewell includes recommended procedures for spills, but also a variety of emergency situations such as injury incidents, illness, weather related emergencies, fires and explosions and camp fires. Please refer to the *Guidelines for Spill Contingency Planning* produced by AANDC Water Resources Division in 2007 to provide further guidance on the recommended level of detail and recommended organization of the information to be included in Spill Contingency Plans.
- Section 9.0 of the ERP provides an Emergency Contact Information Sheet to which names and phone numbers are left blank as Camp Farewell is currently shut down and not occupied. May operations at Camp Farewell resume in the future, Shell should provide the updated contact information names and contact numbers of the Spill Response Team to the board. As per AANDC 2007 *Guidelines for Spill Contingency Planning*, contact names and numbers of the Response Team should be presented into a flowchart with respective response duties in order to ensure an expedient response to a spill, as well as ensuring adequate reporting inside and outside the Camp Farewell site. In remote areas such as the site of this application, summary of communication equipment available and to be used during a spill situation is also to be provided.
- A map of the Camp Farewell site plan was provided in Section 10 of the Emergency Response Plan. It is recommended that a detailed list of all spill response equipment is provided on the same (with a legend) or a similar map in order to visually identify the location of Spill Response Equipment.
- As years pass and different users utilize the site, the type and number of products, waste material and equipment on site may change. A complete inventory of equipment, products and waste materials stored at the site should be prepared and kept up to date to ensure items can be accounted for during final closure of the site. This information should be provided within the SCP. Material Safety Data Sheets for each hazardous material stored on site should be included in Appendix to the Emergency Response Plan.
- It is recommended that a process for response to media and public enquiries should be discussed in the plan.
- Some spills from this program would fall under the AANDC lead and would be subject to AANDC Spill Reporting Protocol for Oil and Gas Operations. All spills in water, regardless of product or volume, must be immediately reported to the 24 hour Spill Line 867-920-8130. Other immediately reportable amounts, as well as minor

spill reporting requirements to the AANDC District Inspector, are outlined in the AANDC Spill Reporting Protocol for Oil and Gas Operations.

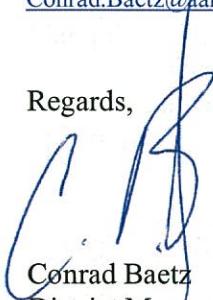
- AANDC requires the proponent to submit to the AANDC District Inspector (Inuvik) a report on all minor spills (not immediately reportable to the 24 Hour NWT Spill Line) either monthly or at an interval deemed appropriate by the Inspector.

#### Security estimate

- Security in the amount of \$2,000,000 is currently set within the existing water licence issued to Shell Canada for Camp Farewell. This amount was based on a previous estimate using the RECLAIM Model for Oil and Gas Developments. AANDC recommends that security in the amount of \$2,000,000 continue to be held within the water licence issued to Shell Canada for Camp Farewell.

If you have any further questions or concerns please contact Jeanne Arsenault, Water Resources Division, at 867-669-2658 or [Jeanne.Arsenault@aadnc-aadnc.gc.ca](mailto:Jeanne.Arsenault@aadnc-aadnc.gc.ca) or the undersigned, North Mackenzie District – Inuvik, at 867-777-8901 or [Conrad.Baetz@aadnc.aadnc.gc.ca](mailto:Conrad.Baetz@aadnc.aadnc.gc.ca) .

Regards,



Conrad Baetz  
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North Mackenzie District  
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