



**Aboriginal Affairs and
Northern Development Canada**

**Affaires autochtones et
Développement du Nord Canada**



Imperial Oil Resources NWT Limited Norman Wells Operations Sahtu Land and Water Board

June 2014



Presentation Overview

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- Background
- Water Licence Scope
- Definitions
- Aquatic Effects Monitoring Program
- Effluent Quality Criteria
- Total Petroleum Hydrocarbons
- Surveillance Network Program
- Closure and Reclamation
- Securities



AANDC Recommends That...

- The “Scope” as outlined in Part A: Scope and Definitions of the Water Licence is amended to include both operations (oil and gas production) and closure
- The “Definitions” as outlined in Part A: Scope and Definitions of the Water Licence be updated to include the following:
 - Progressive Reclamation – selected closure activities that can be taken at or before permanent closure. Progressive reclamation takes advantage of cost and operating efficiencies by using the resources available from an operation to reduce the overall reclamation costs incurred
- An Aquatic Effects Monitoring Plan (AEMP) be developed using AANDCs “*Guidelines for Designing and Implementing Aquatic Effects Monitoring Programs for Development Projects in the Northwest Territories*”. The AEMP should be submitted to the Sahtu Land and Water Board (the “Board”) for review and approval six months following approval of the water license renewal
- An AEMP Working Group be established to assist in the development of the AEMP for IORL’s Norman Wells Operation



AANDC Recommends That...

- A Closure and Reclamation Plan for the Norman Wells Operations be developed based on the concepts referenced in the “*Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories*”. The guidelines and timelines associated with the development of a final Closure and Reclamation Plan
- A Closure and Reclamation Working Group be established to assist in the development of the CRP for IORL’s Norman Wells Operation
- Oil and grease be replaced by TPH as an EQC in the water licence
- A TPH limit of 3.0 mg/L maximum average and 5.0 mg/L maximum grab be included as an EQC
- The Board establish a process as part of the water licence to review and assess the existing securities against the liabilities for the Norman Wells Operation
- The Surveillance Network Program be updated (see Annex A)



Background

- The current Imperial Oil Ltd. Norman Wells Type A water licence will expire on August 29th, 2014
- Imperial Oil Ltd. (IOL) has submitted a renewal application with the Sahtu Land and Water Board (SLWB)
- IOL has a long standing history in the Mackenzie Valley region; the existing water licence was issued in 2004 by the SLWB
- Essentially the operation has remained the same throughout the term of the previous licence
- Upgrades to existing infrastructure is not proposed



Scope

- Current Water Licence scope
 - to use water and dispose of Waste for industrial undertakings in oil and gas production for operational activities during production life
- IOL's operation may close or enter into a closure approach during the 10 year term of water licence renewal

Recommendation:

- ***AANDC recommends that the “Scope” as outlined in Part A: Scope and Definitions of the Water Licence be amended to include both operations (oil and gas production) and closure***



Definitions

- AANDC has requested additional definitions be included in the water licence particularly regarding waste handling/storage areas and closure.
- IOL has provided some recommended definitions and AANDC concurs with the following items: *biocell, groundwater treatment facilities, landfarm and reclamation*
- AANDC would like to include Progressive Reclamation to the list

Recommendation:

- ***AANDC recommends that the “Definitions” as outlined in Part A: Scope and Definitions of the Water Licence be updated to include the following item:***
 - ***“Progressive Reclamation – selected closure activities that can be taken at before permanent closure. Progressive reclamation takes advantage of cost and operating efficiencies by using the resources available from an operation to reduce the overall reclamation costs incurred. It enhances environmental protection and shortens the timeframe for achieving the closure objectives “***



Aquatic Effects Monitoring Program

- Aquatic Monitoring was conducted by Imperial from 2002-2006
- Imperial has not conducted any additional monitoring since that time
- AANDC prepared a Guidance document regarding the design process for an Aquatic Effects Monitoring Program (AEMP, 2009)
- AEMPs should be developed using input from all interested parties – Working Group



Aquatic Effects Monitoring Program

Recommendations:

- ***AANDC recommends that an AEMP be developed using AANDC's "Guidelines for Designing and Implementing Aquatic Effects Monitoring Programs for Development Projects in the Northwest Territories". The AEMP should be submitted to the Board for review and approval six months following approval of the water licence renewal***
- ***AANDC recommends that an AEMP Working Group be established to assist in the development of the AEMP for IORL's Norman Wells Operation***



Effluent Quality Criteria - Total Petroleum Hydrocarbons (TPH)

- In the water licence renewal application, Imperial requested that the current Oil and Grease parameter be replaced with Total Petroleum Hydrocarbons
- The rationale was that Oil and Grease does not distinguish between petroleum based hydrocarbons and those which may be associated with animal fats or other non-petroleum products
- AANDC agree that TPH has a lower detection limit than Oil and Grease and would be more useful in detecting potential impacts from Imperial's Norman Wells Operations



Effluent Quality Criteria - Total Petroleum Hydrocarbons (TPH)

- Based on historical data provided from Imperial, an effluent quality criteria set at 3.0 mg/L maximum average and 5.0 mg/L maximum grab would be appropriate for the operation and should not pose a regulatory compliance issue

Recommendation:

- ***AANDC recommends that Oil and Grease be replaced by TPH as an EQC in the water licence. AANDC recommends that a TPH limit of 3.0 mg/L maximum average and 5.0 mg/L maximum grab be included as an EQC***



Surveillance Network Program (SNP)

- Currently, SNP consists of two designated sampling stations at the intake from the Mackenzie River and outlet from the Central Processing Facility
- Also some regulatory criteria exists for surface water run-off facilities which have been categorized subject to whether contamination is suspected or not
- AANDC believes that all surface water run-off facilities should be monitored for contamination
- Additionally, all monitoring locations, included groundwater wells, should be formally included in the SNP

Recommendation:

- **AANDC's recommendations for SNP Site were provided in the written intervention in tabular format**



Closure and Reclamation

- Imperial has been operating for several decades
- Several areas of the site have closed previously and Imperial has been incorporating the concept of progressive reclamation where possible
- AANDC believes that an overall Closure and Reclamation Plan (CRP) is required and that aspects of the recently released closure guidelines could be applied
- The CRP should be developed with input from all interested parties – Working Group



Closure and Reclamation

Recommendations:

- ***AANDC recommends that a Closure and Reclamation Plan for the Norman Wells Operation be developed based on the concepts referenced in the “Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories”. The guidelines will provide the Licensee with an understanding of information requirements, expectations and timelines associated with the development of a final Closure and Reclamation Plan***
- ***AANDC recommends that a Closure and Reclamation Working Group be established to assist in the development of the CRP for IORL’s Norman Wells Operation***



Securities

- AANDC agrees with the Board that security for the Norman Wells Operation should be reviewed
- AANDC is willing to work with all parties to review existing security against potential site liability

Recommendation:

- ***AANDC recommends that the SLWB establish a process as part of the water licence to review and assess the existing securities against the liabilities for the Norman Wells Operation***



In Closing

- AANDC would like to thank the SLWB for providing the opportunity to present its technical intervention and associated recommendations
- AANDC is available to answer questions the Board or others may have