



Sahtu Land and Water Board

Staff Report

Division: Water Program	Report No. 16
Date Prepared: June 8, 2020	File No. S13L1-007 Modification
Meeting Date: June 18, 2020	
Subject: Type A Water Licence Modification Request submitted by Imperial Oil Resources N.W.T. Limited for temporary withdrawal of water from an alternate location to complete tank repair hydrotest - Norman Wells.	

1.0 Purpose/Report Summary

To present to the Sahtu Land and Water Board (Board) for consideration, the Temporary Modification request submitted by Imperial Oil Resources N.W.T. Limited (Imperial), on April 8, 2020, and revised on May 8, 2020, to withdraw water from the Mackenzie River at a location (the end of the Bulk Fuels unloading dock) that is not included in the approved list of water withdrawal locations under Licence S13L1-007 (Attachment 1).

2.0 Background

2.1 Project Overview

Repair work on a fuel storage tank (Tk104) within the Mainland Tank Farm is scheduled to be completed starting mid-June 2020. The tank will be cleaned and gas-freed to remove any contaminants. After repairs are completed, a tank hydrotest needs to be performed. A hydrotest involves filling the tank with water before it is used to confirm the success of the repairs and that there are no leaks or integrity concerns.

A temporary modification is being requested to withdraw water from the Mackenzie River at the end of the Bulk Fuels unloading dock to complete the hydrotest.

To minimize any potential impacts from this activity the following measures will be applied:

- Prior to initiating the hydrotest, Imperial will provide the Inspector with an anticipated timeline for sampling and discharge;
- An access point to the river will be chosen to minimize impact to shoreline vegetation;
- Water will be withdrawn through a clean suction hose that is equipped with a fish screen;
- Water samples will be collected at the intake location during initial, middle, and final filling;

- Volumes of water withdrawn will be measured with a flowmeter and tank gauging and reported in the monthly water use reports submitted to the Board;
- Water withdrawn at this location (estimated 6800 m³) will use about 0.2% of the total allowable annual water withdrawal limit, and will be below the daily maximum rate (16,000 m³/day) outlined in Licence S13L1-007;
- Secondary containment will be placed under any fuel containing equipment (e.g. pumps) and vehicles will be staged away from the river;
- Hydrotest activity will take place between July 16 and August 31, which is outside of the applicable Department of Fisheries and Oceans (DFO) restricted activity timing window (September 15 – July 15 for the NWT);
- Upon completion of the hydrotest and prior to discharge, water samples will be taken from the bottom, middle and top portions of the tank to ensure water quality meets the following criteria:
 - i. Water quality in the tank will be compared to intake water quality (baseline of the Mackenzie River) to ensure no significant differences;
 - ii. Water samples in the tank must meet effluent quality criteria outlined in Part E, conditions 15 (for total petroleum hydrocarbons, phenols, chloride) and 16 (pH) of [Imperial's Licence S13L1-007](#);
 - iii. Water samples in the tank must be analyzed for metals and the results compared to metals CCME Freshwater Aquatic Life Criteria (as per the discharge criteria approved for [Transport Canada Licence S17L8-003](#) Part E, condition 11);
- Results of the water quality testing will be provided to the Inspector 24 hours prior to initiating discharge;
- If no parameters of concern are noted, then an approval to discharge will be issued from the Inspector;
- Discharge of hydrotest water to the Mackenzie River will occur at the end of the Bulk Fuels unloading dock at a rate not to exceed 5100 m³ /day;
- Volumes discharged will be measured with an inline flowmeter and tank gauging and reported in the monthly water use report submitted to the Board;
- Hydrotest water will be filtered and discharged through a clean hose in a controlled manner to prevent flooding and erosion;
- If the discharge water contains high levels of any parameter (exceedance of criteria) a plan for dealing with the situation will be assessed by the Inspector, Imperial and the Board.

2.2 Process Requirements

Modification Request Received: April 8, 2020

Additional Information Requested: April 28, 2020

Revised Modification Request Received: May 8, 2020

Posted to Online Review System: May 20, 2020

Deadline for Comments Received: June 3, 2020

Deadline for Proponent Response: June 10, 2020

Date of Board Meeting: June 18, 2020

3.0 Comments

This Modification Request was accepted as per Part G, conditions 1 and 2 of Licence S13L1-007.

Part G: Conditions Applying to Modifications

1. The Licensee may, without written consent from the Board, carry out Modification(s) to the water supply and Waste disposal facilities, bunkers, docks, bridges, flowlines, creek banks, and river banks provided that the Modification(s) are consistent with the terms of this Licence and the following requirements are met:

- a) the Licensee has provided the details of the proposed Modification(s) to the Board, in writing, at least 60 days prior to the commencement of the Modification(s);
- b) the Modification(s) does not place the Licensee in contravention of either the Licence, the Act or Federal, Territorial or Municipal Legislation;
- c) the Board has not, during the 60 days following notification of the proposed Modification(s), informed the Licensee that review of the proposal will require more than 60 days; and
- d) the Board has not rejected the proposed Modification(s).

2. Modification(s) for which all of the conditions referred to in Part G: Item 1, have not been met, can be carried out only with written approval from the Board.

Board staff note that the request was made at least 60 days in advance of the activity (a) and greater than 60 days are not required to review the request (c). However, the current Licence S13L1-007 does not have approved effluent quality criteria for metals (b); therefore, the Board needs to approve the recommended effluent quality criteria for metals for this Modification as per condition 2.

In the Board's [decision letter issued to Imperial on July 30, 2019](#) for a similar temporary modification request, the Board directed that for future modification requests of this nature, Imperial must apply for an **amendment to the Water Licence** to formally identify alternative water intake locations rather than seeking approval through the modification process on a case-by-case basis (d).

Board staff note that the amendment application to be submitted by Imperial in 2020 will include alternative water intake locations. However, as the amendment process has not yet started, and this repair work is required, Imperial has requested another stand-alone modification. Therefore, the Board needs to approve this Modification as per condition 2.

4.0 Other Agency Comments

Board staff sent the original modification request (dated April 8, 2020) received April 21, 2020 to the Federal Inspector to review and respond if it was acceptable to CIRNAC and if additional information was required. The Inspector raised a concern that the water could be contaminated with metals and that the proposed water quality testing would not analyze for those. It was recommended that the discharge water from the hydrotest be tested for the parameters listed by Imperial, as well as a full sweep of total metals. The results should be sent to the Board and

the Inspector at least 72 hours prior to discharge to ensure the water is not considered a waste. On April 28, 2020, Board staff requested Imperial to revise the Modification request to include the additional information recommended by the Inspector. The revised Modification request was received by the Board on May 8, 2020.

Board staff distributed the Modification request on the Online Review System on May 20, 2020, seeking comments and recommendations from reviewers by June 3, 2020. Comments were received from the CIRNAC Inspector who referenced the email communications between the SLWB, the Inspector, and the Licensee for the recommended water quality criteria and agreed with a 24-hour notification (Attachment 2).

5.0 Conclusion

Board staff have reviewed all information provided by the Licensee (Imperial) and responses from Federal (CIRNAC) Inspector. The proposed activity described in the Modification request will not violate the Licence (S13L1-007) conditions. Additional water quality testing for metals were recommended by the Inspector. Board staff recommend that the effluent quality discharge criteria approved for Transport Canada Licence S17L8-003 (land farm operation) that are based on CCME Freshwater Aquatic Life be approved. These criteria are supported by the Inspector and Imperial. The Inspector also recommended 24-hour notification of hydrotest sample results prior to discharge.

6.0 Recommendation

It is recommended that the Board approve this stand-alone Temporary Modification request and the effluent quality discharge criteria for metals approved for Transport Canada Licence S17L8-003 that are based on CCME Freshwater Aquatic Life.

7.0 Reference Material Attached

- 7.1 Imperial Temporary Modification Request and Location Map
- 7.2 Email correspondence between CIRNAC Inspector, Licensee and SLWB
- 7.3 Draft Letter of Approval

Respectfully submitted,



Bonnie Bergsma
Regulatory Specialist

Executive Director Comments:



Paul Dixon
Executive Director



Jody Crawford
Conventional Operations Superintendent
587-476-2398
Jody.a.crawford@esso.ca

April 8, 2020

Bonnie Bergsma
Sahtu Land and Water Board
Regulatory Specialist
P.O. Box 1
Fort Good Hope, NT
X0E 0H0

**Re: Temporary Modification
Type A Water Licence S13L1-007
Imperial Oil Resources N.W.T. Limited (Imperial)**

Dear Ms. Bergsma,

Imperial is submitting this request for a temporary modification to Water Licence S13L1-007 to allow for the withdrawal and discharge of water from the Mackenzie River at the end of the Bulk Fuels unloading dock (as shown on Attachment 1) starting in July 2020. An access point to the river will be chosen to minimize impact to shoreline vegetation.

The water withdrawn at this location will fall within the total allowable annual water withdrawal limit and daily maximum rate outlined in Water Licence S13L1-007. Water will be used for a tank hydrotest activity following tank repair work on a fuel storage tank (Tk104) within the Mainland Tank Farm (as shown on Attachment 1). A hydro test involves filling the tank with water before it is used to confirm the success of the repairs and that there are no leaks or integrity concerns.

Around mid-June, the tank will be cleaned and gas-freed to ensure that water will not come into contact with any contaminated product. Repairs on the tank are expected to be completed by mid-July. The tank hydrotest activity is scheduled between July 16th and August 31st, which will occur outside of the applicable Department of Fisheries and Oceans restricted activity timing window (September 15 – July 15 for NWT Zone 1). Upon initiating the hydrotest, Imperial will provide the Inspector with the anticipated timeline for sampling and discharge.

To minimize environmental impact, water will be withdrawn through a clean suction hose (only used for water) that is equipped with a fish screen. The withdrawal location used has existing road access which will mitigate vegetation disturbance. Secondary containment will be placed under any fuel containing equipment (e.g. pumps), and vehicles will be staged away from water. Volumes withdrawn will be measured with a flowmeter and by periodic verification via tank gauging and reported in the monthly SLWB water report. Water samples will be collected at the intake location during initial, middle, and final filling.

Upon completion of the tank hydrotest and prior to discharge, water samples will be taken from the bottom, middle, and top portions of the tank. Water quality in the tank will be compared to intake water quality to ensure no significant differences. Where differences are noted, metals samples will be compared to metals CCME Freshwater Aquatic Life criteria outlined in the table below. Samples will also be required

to meet discharge criteria outlined in Part E of Water Licence S13L1-007 and shown below (for hydrocarbons, phenols, chlorides, and pH). Imperial will provide the results of the water quality testing to the Inspector 24 hours prior to initiating discharge.

Parameter	Applicable Average Concentration Reference Criteria (mg/L)	Applicable Grab Sample Reference Criteria (mg/L)
Total Petroleum Hydrocarbons	3.0	5.0
Phenols	0.07	0.14
Chloride	250	500
pH	6.0 – 9.0	6.0 – 9.0
Aluminum		-
Antimony		-
Arsenic		0.005
Barium		-
Beryllium		0.0053
Boron		1.5
Cadmium		-
Chromium (VI)		0.001
Chromium (III)		0.0089
Cobalt		-
Copper		-
Iron		0.3
Lead		-
Manganese		-
Mercury (inorganic)		0.000026
Methylmercury		-
Molybdenum		0.073
Nickel		-
Selenium		0.001
Silver		0.00025
Zinc		-
Uranium		0.015
Vanadium		-

The hydrotest water is proposed to be discharged to the Mackenzie River at the end of the Bulk Fuels unloading dock (as shown on Attachment 1). The estimated discharge volume is 6800 m³ (or about 0.2% of the yearly S13L1-007 total allowable water withdrawal limit) with a proposed maximum daily discharge rate of 5100 m³/day.

Water will be filtered and discharged through a clean hose (only used for water). Secondary containment will be placed under any fuel containing equipment (e.g. pumps), and vehicles will be staged away from water. The water will be discharged in a controlled manner to prevent flooding and erosion. Volumes discharged will be measured with an inline flowmeter and by periodic verification via tank gauging and reported in the monthly SLWB water report.

If you require further information, please contact Christine Wickens at 587-476-5007 or christine.a.wickens@exxonmobil.com.

Sincerely,

A handwritten signature in blue ink that reads "C Wickens". The signature is written in a cursive, slightly slanted style.

Christine Wickens
Environment and Regulatory Advisor
Imperial

Attachment 1



Subject: Re: Modification Request

Date: Friday, May 8, 2020 at 9:19:19 AM Mountain Daylight Time

From: Morton, Tim (AADNC/AANDC)

To: Wickens, Christine A, Bonnie Bergsma

CC: Benz, Kara L, Crawford, Jody A, Pangracs, Steve J, Penney2, Devin (AADNC/AANDC)

Thanks Christine for the information and the call the other day. I'm fine with the proposed 24 hour timeline proposed as long as I'm kept up to date with the progress of the project.

As the discharge is not included in the Imperial water licence I will compare it to the baseline of the MacKenzie River, the CCME for aquatic organisms, and take into account the water licence sent to you from Bonnie. If no parameters of concern are noted then an approval to discharge will follow. If the water does contain high levels of a parameter then we will work together to deal with the situation.

My partner Devin Penney is back from his acting assignment. Please add him to all future emails, he is cc'd on this email.

Tim

Sent from my Bell Samsung device over Canada's largest network.

----- Original message -----

From: "Wickens, Christine A" <christine.a.wickens@exxonmobil.com>

Date: 2020-05-07 3:14 PM (GMT-07:00)

To: Bonnie Bergsma <bonnie.bergsma@slwb.com>, "Morton, Tim (AADNC/AANDC)" <tim.morton@canada.ca>

Cc: "Benz, Kara L" <kara.l.benz@esso.ca>, "Crawford, Jody A" <jody.a.crawford@esso.ca>, "Pangracs, Steve J" <steve.j.pangracs@esso.ca>

Subject: RE: Modification Request

Hi Bonnie & Tim,

I appreciate your feedback on Imperial's request to withdraw water to complete a tank hydrotest later this summer.

In follow-up to our discussions, I have updated and reattached the request (to include metals sampling and notification prior to discharge).

Tim – as mentioned, Bonnie had provided the [Transport Canada Licence S17L8-003 Water Licence](#) as an example of effluent quality criteria.

If you need any additional information to review this request, let me know.

Take care,

Christine Wickens, P.Eng.
Environment & Regulatory Advisor

Imperial
christine.a.wickens@exxonmobil.com P 587 476 5007
imperialoil.ca | [Twitter](#) | [YouTube](#)

From: Wickens, Christine A
Sent: Tuesday, April 28, 2020 11:15 AM
To: 'Bonnie Bergsma' <bonnie.bergsma@slwb.com>
Subject: RE: Modification Request

Hi Bonnie,

I appreciate you reaching out regarding the comments from Tim. I agree that it would be easiest for us to amend the request to reflect Tim's comments (for a full metals suite and 72 hour notification prior to discharge) prior to sending out for formal review.

I'll make these updates and send the updated request to you.

Take care,

Christine Wickens, P.Eng.
Environment & Regulatory Advisor
Imperial
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imperialoil.ca | [Twitter](#) | [YouTube](#)

From: Bonnie Bergsma [<mailto:bonnie.bergsma@slwb.com>]
Sent: Tuesday, April 28, 2020 10:03 AM
To: Wickens, Christine A <christine.a.wickens@exxonmobil.com>
Subject: Modification Request

External Email - Think Before You Click

Good Morning Christine,

I have made the first step for processing the modification request by contacting Tim Morton to determine if the request would be acceptable to CIRNAC and if any additional information is required.

The response indicated a concern that the water could be contaminated with metals and recommended that in addition to the parameters and criteria listed within the request, that the water also be tested for a full sweep of total metals. The results of the tests must be submitted to the SLWB and the Inspector at least 72 hours prior to discharge to ensure the water is not considered a waste.

Would you like to amend the Modification request to include this additional testing requirement prior to our sending it out for formal review?

Thanks,
Bonnie

Bonnie Bergsma, M.Sc.
Regulatory Specialist
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All correspondence to the Board, including emails, letters, faxes, and attachments are public documents and may be posted to the public registry.



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June 19, 2020

S13L1-007

Christine Wickens,
Environment and Regulatory Advisor
Imperial Oil Resources N.W.T. Limited,
750 Mackenzie Drive, Bag 5000,
Norman Wells, NT, X0E 0V0

Sent by email

Dear Ms. Wickens,

**Re: Request for Temporary Modification to S13L1-007 – Board Approval
Withdrawal of Water from the Mackenzie River at an Alternate Intake Location**

The SLWB received your revised temporary modification request on May 8, 2020, to allow for the withdrawal of water from the Mackenzie River at a location (end of the Bulk Fuels unloading dock) that is not included in the approved list of water withdrawal locations under Licence S13L1-007. The purpose of the modification is to withdraw water in proximity to the Mainland Tank Farm in order to complete a hydrotest on a fuel storage tank (Tk104) following cleaning and repairs.

The Federal (CIRNAC) Inspector commented on [May 12, 2020](#) that since the Imperial Licence does not contain Effluent Quality Criteria (EQCs) for total metals to be tested in the discharge water, CIRNAC will compare the samples to the baseline of the Mackenzie River, the CCME for Freshwater Aquatic Life, and take into account the proposed EQC for metals derived from the Licence recommended by Board staff (S17L8-003). "If no parameters of concern are noted, then an approval to discharge will follow. If the water does contain high levels of a parameter, then we will work together to deal with the situation."

The Inspector also requested 24-hour notification of hydrotest sample results prior to discharge.

The Board has been made aware that Imperial will be submitting an **amendment application in 2020** that formally identifies alternative water intake locations for approval through the amendment process as directed by the Board's [decision letter issued July 30, 2019](#). However, since the amendment process has not yet started, and this repair work is required, **the Board will approve this stand-alone Modification request with the following conditions/mitigation measures to minimize any potential impact from this activity on the Mackenzie River:**

1. Prior to initiating the hydrotest, Imperial will provide the Inspector with an anticipated timeline for sampling and discharge;
2. An access point to the river will be chosen to minimize impact to shoreline vegetation;
3. Water will be withdrawn through a clean suction hose that is equipped with a fish screen;
4. Water samples will be collected at the intake location during initial, middle, and final filling;
5. Volumes of water withdrawn will be measured with a flowmeter and tank gauging and reported in the monthly water use reports submitted to the Board;

6. Water withdrawn at this location (estimated 6800 m³) will use about 0.2% of the total allowable annual water withdrawal limit, and will be below the daily maximum rate (16,000 m³/day) outlined in Licence S13L1-007;
7. Secondary containment will be placed under any fuel containing equipment (e.g. pumps) and vehicles will be staged away from the river;
8. Hydrotest activity will take place between July 16 and August 31, which is outside of the applicable Department of Fisheries and Oceans (DFO) restricted activity timing window (September 15 – July 15 for the NWT);
9. Upon completion of the hydrotest and prior to discharge, water samples will be taken from the bottom, middle and top portions of the tank to ensure water quality meets the following criteria:
 - a) Water quality in the tank will be compared to intake water quality (baseline of the Mackenzie River) to ensure no significant differences;
 - b) Water samples in the tank must meet effluent quality criteria outlined in Part E, conditions 15 (for total petroleum hydrocarbons, phenols, chloride) and 16 (pH) of [Imperial's Licence S13L1-007](#);
 - c) Water samples in the tank must be analyzed for total metals and the results compared to metals CCME Freshwater Aquatic Life Criteria (as per the discharge criteria approved for [Transport Canada Licence S17L8-003](#) Part E, condition 11);
10. Results of the water quality testing will be provided to the Inspector 24 hours prior to initiating discharge;
11. If no parameters of concern are noted, then an approval to discharge will be issued from the Inspector;
12. Discharge of hydrotest water to the Mackenzie River will occur at the end of the Bulk Fuels unloading dock at a rate not to exceed 5100 m³ /day;
13. Volumes discharged will be measured with an inline flowmeter and tank gauging and reported in the monthly water use report submitted to the Board;
14. Hydrotest water will be filtered and discharged through a clean hose in a controlled manner to prevent flooding and erosion;
15. If the discharge water contains high levels of any parameter (exceedance of criteria) a plan for dealing with the situation will be assessed by the Inspector, Imperial and the Board.

The continued cooperation of Imperial in meeting their regulatory requirements is anticipated. If you have any questions or concerns, please contact Bonnie Bergsma at (867) 496-2778 Or email bonnie.bergsma@slwb.com.

Sincerely,

Larry Wallace, Chair
Sahtu Land and Water Board

Copy (by email): Jody Crawford, Conventional Operations Superintendent
Tim Morton, CIRNAC inspector
Devin Penney, CIRNAC Inspector
Imperial Oil Distribution List