

Prepared for

Suncor Energy Inc.
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2015 Summer Site Inspection Report

K'asho Got'ine District, Sahtu Settlement Area, Northwest Territories

Submitted to:



Sahtu Land and Water Board

File 25501491 | AUGUST 2015



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1.0 INTRODUCTION

Nehkedi Environmental Ltd. (Nehkedi) was retained by Suncor Energy Inc. (Suncor) to conduct the Summer Site Inspection (SSI) for the Tweed Lake M-47 Re-Suspension based on the Terms of Reference and Conditions of Water Licence S14L1-004 (and associated Land Use Permit S14A-006). The SSI was carried out by Nehkedi on July 21, 2015. This report summarizes the observations and findings for the M-47 wellsite and the associated access road.

2.0 INSPECTION LOCATIONS

2.1 Winter Access Roads

The winter access road consists of approximately 15 kilometres (km) of winter access road. The access route originates at the Government of Northwest Territories (GNWT) winter road, which terminates in Colville Lake, and follows existing cut lines southeast and then northeast to the Tweed Lake M-47 wellsite. A small section of the winter access was located within the Colville Lake airport boundaries.

During operations, minor drainages and low areas were crossed using snow fills. Snow fills were also used to level the access road for traffic.

Summer Site Inspection

The following items were noted; refer to Photographs 1 to 6.

- No significant areas of erosion or exposed mineral soil were observed.

Actions Taken and Next Steps

The following actions are recommended:

- As per licence requirements, it is recommended that the site be inspected again in the summer of 2016.

2.2 M-47 Wellsite, Tweed Lake

The M-47 wellsite is located at N 66°56'47.11" and W 125°54'09.42". It was constructed and drilled during the winter of 1984 by Petro-Canada (now Suncor) and covered an area of approximately 150 m by 150 m. Petro-Canada applied for a second Water Licence in November 2003 for the purpose of re-entering the existing borehole to conduct a reservoir evaluation. Water Licence S03L1-020 was issued in February 2004. Instead of excavating new sumps, the winter 2004 operations used the pre-existing camp sump.

In January 2004, Petro-Canada voluntarily proposed a sump reclamation project at M-47. Upon receiving the necessary approvals, minor reclamation work was undertaken to address the settling of the on-site sumps. Berms were re-contoured and seeded with Forestry Canada # 1 seed mix. Details of the fertilizer and loading rates are not available.

In 2014, WL S14L1-004 (LUP S14A-006) was issued to re-suspend the well. During winter 2014/2015, re-suspension activities were completed and the well is currently suspended. At the time of inspection, the wellhead was chained, locked and proper signage was present.

Summer Site Inspection

The following items were noted during the site inspection; refer to Photographs 7 to 16:

- The well head was chained, locked and sign posted.
- Erosion was not observed at the site.

Action Taken and Next Steps

Actions taken during the site inspection consisted of:

- Minor amounts of garbage were collected from site during inspection and removed from site.

The following actions are recommended:

- As per licence requirements, it is recommended that the site be inspected again in the summer of 2016.

3.0 CLOSURE

NESTL trusts that this report satisfies the SLWB's information requirements. If there are any questions or concerns, please contact the undersigned.

Respectfully submitted,
Nehkedi Environmental Ltd.



Darren Heck, M.Sc., EP, PMP
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Reviewed by:



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4.0 DISCLAIMER

This report has been prepared and the work referred to within, has been undertaken by Nehkedi Environmental Ltd. for *Suncor Energy Inc.* using generally accepted environmental consulting practices. The material within reflects NESTL's best judgment based on the material available at the time of preparation. It is intended for the exclusive use of *Suncor Energy Inc.*, its affiliated companies and partners, their respective insurers, agents, employees, advisors, and applicable regulatory agencies. Any use, reliance on, or decision based on this report made by any person other than those identified above, is the sole responsibility of such other person. NESTL makes no representation or warranty to any other person with regard to this report and the work referred to within and accepts no duty or care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties, or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made, or any action taken based on this report, or the work referred to in this report.

The work performed by NESTL with respect to this report and any conclusions or recommendations made in this report reflect NESTL's judgment based on the conditions observed at the time set out in this report and on information available at the time of preparation. Unless otherwise stated, the findings cannot be extended to previous or future Site conditions, where applicable, or to areas not directly assessed within the scope of work. Environmental conditions, other than those addressed by the investigation described in this report, may exist within the Site. If Site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

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Client:	Suncor Energy Inc.	Project:	25501491 - Summer Site Inspection
Site Name:	Tweed Lake	Site Location:	M-47

Photograph ID: 1	
Photo Location: Access road - near water source access	
Direction: East	
Survey Date: 7/21/2015	
Comments: View of the winter access road towards the water withdrawal source (Colville Lake)	

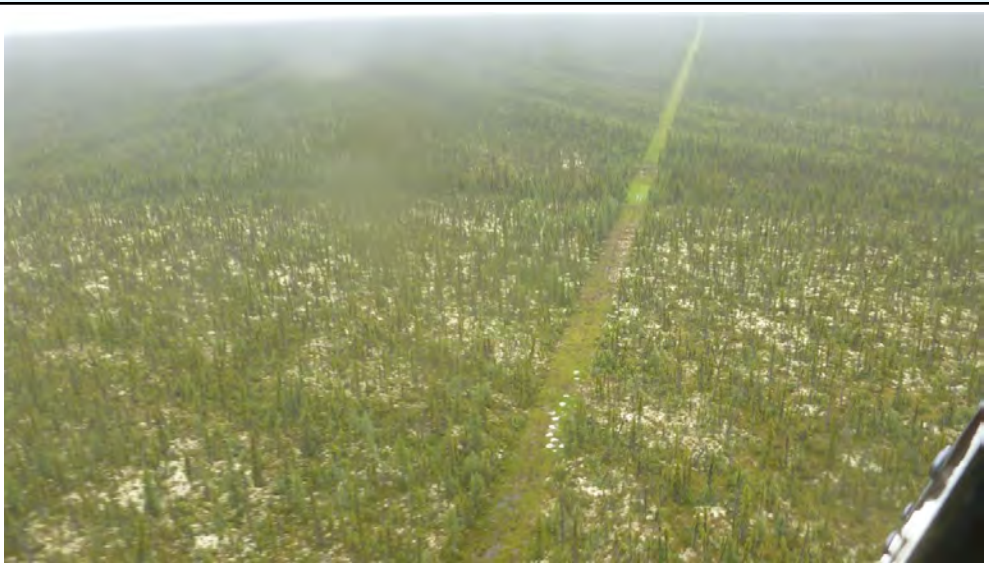
Photograph ID: 2	
Photo Location: Access road - near water source access	
Direction: South	
Survey Date: 7/21/2015	
Comments: View of the winter access road at the turn point towards Colville Lake (bottom of photograph)	


Client:	Suncor Energy Inc.	Project:	25501491 - Summer Site Inspection
Site Name:	Tweed Lake	Site Location:	M-47

Photograph ID: 3	
Photo Location: Access road - near Colville Lake Airport	
Direction: South	
Survey Date: 7/21/2015	
Comments: View of the winter access road at the Colville Lake Airport.	

Photograph ID: 4	
Photo Location: Access road - Colville Lake Airport	
Direction: Southeast	
Survey Date: 7/21/2015	
Comments: View of a portion of the winter access road that crosses across the Colville Lake Airport runway.	

Client:	Suncor Energy Inc.	Project:	25501491 - Summer Site Inspection
Site Name:	Tweed Lake	Site Location:	M-47



Photograph ID: 5	
Photo Location: Access road - southeast to northwest portion	
Direction: Southeast	
Survey Date: 7/21/2015	
Comments: View along the winter access road.	

Photograph ID: 6	
Photo Location: Access road - southwest to northeast portion	
Direction: Northeast	
Survey Date: 7/21/2015	
Comments: View along the winter access road towards M-47 wellsite.	

Client:	Suncor Energy Inc.	Project:	25501491 - Summer Site Inspection
Site Name:	Tweed Lake	Site Location:	M-47

Photograph ID: 7	
Photo Location: M-47 wellsite	
Direction: Southwest	
Survey Date: 7/21/2015	
Comments: Aerial overview of the M-47 wellsite.	

Photograph ID: 8	
Photo Location: M-47 well centre	
Direction: Southeast	
Survey Date: 7/21/2015	
Comments: View of the wellhead. Note the wellhead is chained, locked and affixed with proper signage.	

Client:	Suncor Energy Inc.	Project:	25501491 - Summer Site Inspection
Site Name:	Tweed Lake	Site Location:	M-47
Photograph ID: 9			
Photo Location: M-47 well centre			
Direction: Ground Surface			
Survey Date: 7/21/2015			
Comments: View of muskox tracks adjacent to the wellhead.			
Photograph ID: 10			
Photo Location: M-47 well centre			
Direction: Southwest			
Survey Date: 7/21/2015			
Comments: View across the wellsite.			

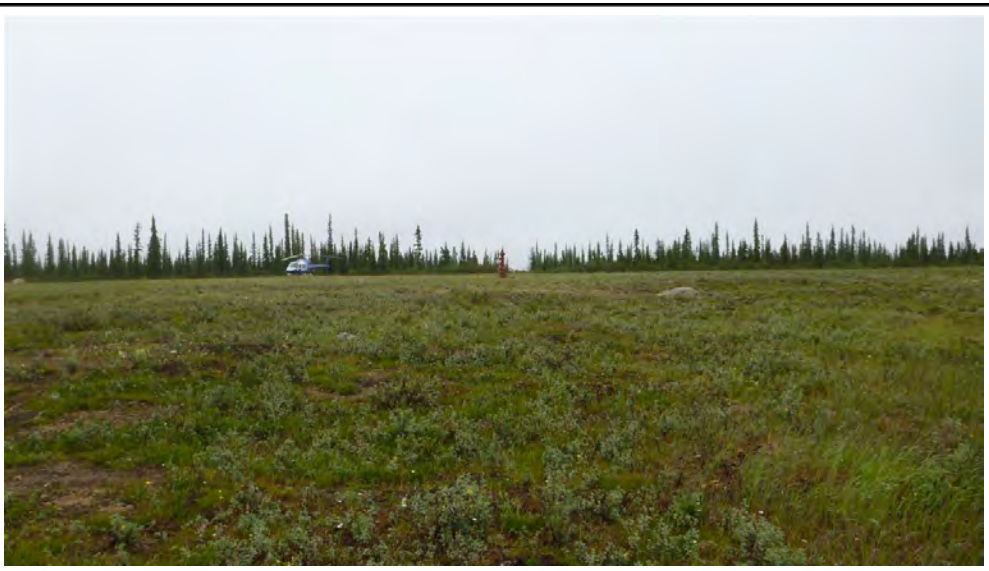
Client:	Suncor Energy Inc.	Project:	25501491 - Summer Site Inspection
Site Name:	Tweed Lake	Site Location:	M-47

Photograph ID: 11	
Photo Location: M-47 well centre	
Direction: Southeast	
Survey Date: 7/21/2015	
Comments: View across the wellsite.	


Photograph ID: 12	
Photo Location: M-47 well centre	
Direction: Northeast	
Survey Date: 7/21/2015	
Comments: View across the wellsite.	


Client:	Suncor Energy Inc.	Project:	25501491 - Summer Site Inspection
Site Name:	Tweed Lake	Site Location:	M-47

Photograph ID: 13	
Photo Location: M-47 well centre	
Direction: Northwest	
Survey Date: 7/21/2015	
Comments: View across the wellsite.	

Photograph ID: 14	
Photo Location: M-47 wellsite entrance	
Direction: Northeast	
Survey Date: 7/21/2015	
Comments: View across the wellsite. Note vegetation is well established.	

Client:	Suncor Energy Inc.	Project:	25501491 - Summer Site Inspection
Site Name:	Tweed Lake	Site Location:	M-47

Photograph ID: 15	
Photo Location: South corner of M-47 wellsite	
Direction: Northeast	
Survey Date: 7/21/2015	
Comments: View along the southeast edge of the wellsite.	

Photograph ID: 16	
Photo Location: North corner of M-47 wellsite	
Direction: Southwest	
Survey Date: 7/21/2015	
Comments: View along the northwest edge of the wellsite.	