



NWT OFFICE OF THE REGULATOR OF OIL AND GAS OPERATIONS

Office of the Regulator of Oil and Gas Operations

P.O. Box 1320, Yellowknife, NT X1A 2L9

Tel: 867-767-9097 • Fax: 867-920-0798 • Web: [www.oroogo.gov.nt.ca](http://www.oroogo.gov.nt.ca)

Courier Address: 4th floor, 5201 – 50th Avenue, Yellowknife, NT X1A 3S9

Ryan Munro, P.Eng.  
Manager, Abandonment Engineering  
Canadian Natural Resources Ltd.  
Suite 2100, 8800 – 2 ST SW  
CALGARY AB T2P 4J8

February 15<sup>th</sup>, 2023

Dear Ryan Munro:

**Inspection: Emile Lake A-77 (WID 1964) Well – ACW-2019-010-CNRL-A-77-WID1964**

Inspectors Michael Martin, Chief Safety Officer/Chief Conservation Officer, and Brandon Bradbury, Safety Officer/Conservation Officer inspected the abandonment of the Emile Lake A-77 (WID1964) well on February 8<sup>th</sup>, 2023.

The inspection was carried out to ensure Canadian Natural Resources Ltd. was adhering to the terms of the Well Approval for this operation (ACW-2019-010-CNRL-A-77-WID1964).

Please see the attached Operations Summary Inspection Report for your reference. This report will be posted to the Office of the Regulator of Oil and Gas Operations' Public Registry at [www.oroogo.gov.nt.ca](http://www.oroogo.gov.nt.ca).

If you have any questions, please contact me at (867) 767-9097 or by email at [Brandon\\_Bradbury@gov.nt.ca](mailto:Brandon_Bradbury@gov.nt.ca).

Sincerely,

Brandon Bradbury  
Safety Officer  
Conservation Officer

Encl. Emile Lake A-77 (WID 1964) Operation Summary Inspection Report – February 15<sup>th</sup>, 2023

- c. Department of Lands, Dehcho Region;  
Department of Environment and Natural Resources, Dehcho Region.  
Dale Duffy, Superintendent, Abandonments, CNRL

# OROGO Operations Inspection Summary Report

## Well Information

Well name: Emile Lake A-77

4 digit WID: 1964

Operator: Canadian Natural Resources Ltd

Well status: Suspended

OROGO risk level: Level 1

Shallow wellbore plug?  Yes  No24-hour operations?  Yes  NoCoordinates (*In decimal degrees; verified onsite*)Datum:  NAD 27  NAD 83  Unknown

Lat: 60° 46' 10.0" N

Long: 122° 43' 39.5" W

Completed in H<sub>2</sub>S zone? Yes Estimated % of H<sub>2</sub>S: 0% or Measured % of H<sub>2</sub>S: 0%

Program step on arrival: 52: Rig out service rig and release all services.

Program step on departure: 52: Rig out service rig and release all services.

## Inspection Date and Contact Information

Date of inspection: February 8<sup>th</sup>, 2023

Access method: Vehicle

OROGO Inspectors:

- Michael Martin – Chief Safety Officer /

Conservation Officer

- Brandon Bradbury – Safety Officer/Conservation Officer

## Activity Inspected

OA#: OA-2018-005-CNRL

Nature of activity: Abandonment

ACW#: ACW-2019-010-CNRL-A-77-WID 1964

Contractor on site (if applicable): N/A

Name: N/A

Company: N/A

Rig Number: N/A

Phone: N/A

Email: N/A

## Inspection Results

### Rig Safety

Accumulator function test

- 
- Compliant
- 
- 
- Non-Compliant
- 
- 
- Corrected Non-Compliance

Comments: Rig and associated infrastructure had demobilized at the time of the inspection.

Equipment certifications

- 
- Compliant
- 
- 
- Non-Compliant
- 
- 
- Corrected Non- Compliance

Comments: Rig and associated infrastructure had demobilized at the time of the inspection.

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|   |  |  |
|---|--|--|
| Authorization / Approval available                    | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Boiler inspection                                     | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non-Compliance  | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Guards and covers on moving equipment                 | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Pump lines and hoses secured, intact and appropriate? | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Adequate lighting                                     | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Wind indicators visible and functional                | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Fire extinguishers                                    | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Equipment spacing                                     | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Engine kills  | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Sufficient N <sub>2</sub> back-up?                    | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Flow turns  | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| General housekeeping                                  | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |

Other Rig Safety notes:  
N/A

### Personnel Safety

|  |  |  |
|--|--|--|
| Valid safety tickets                                 | <input type="checkbox"/> Compliant   | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| <input type="checkbox"/> First Aid / CPR             | <input type="checkbox"/> Non-Compliant   |  |
| <input type="checkbox"/> H2S                         | <input type="checkbox"/> Corrected Non- Compliance   |  |
| <input type="checkbox"/> WHIMS                       |  |  |
| <input type="checkbox"/> TDG                         |  |  |
| <input type="checkbox"/> BOP                         |  |  |
| <input type="checkbox"/> Other (specify in comments) |  |  |
| Safety meetings and documentation                    | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| SCBAs and/or supplied air available and visible      | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| First Aid equipment and EMS on site and accessible   | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Gas detection equipment on site and accessible       | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Communication plans available                        | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Hazard identification and signage                    | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| ERP available upon request                           | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Safety Plan available upon request                   | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| BOP drills and documentation                         | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Function tests and documentation                     | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Other Personnel Safety notes:<br>N/A                 |  |  |

### Blowout Prevention Equipment

|                    |  |  |
|--------------------|--|--|
| BOP certifications | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
|--------------------|--|--|

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|  |  |  |
|--|--|--|
| BOP pressure rating                              | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Kill sheet in dog house                          | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Stabbing valves and cross-overs                  | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Flow lines and choke lines secured               | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Other Blowout Prevention Equipment notes:<br>N/A |  |  |

**Specific to Shallow Wellbore Plug (☒ Not Applicable)**

|                        |  |                |
|------------------------|--|----------------|
| Snubbing unit in place | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: N/A. |
|------------------------|--|----------------|

Other Shallow Wellbore Plug notes:  
Click or tap here to enter text.

**Specific to 24-Hour Operations (☒ Not Applicable)**

|                  |  |               |
|------------------|--|---------------|
| Cross-over notes | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: N/A |
|------------------|--|---------------|

Other 24-hour operations notes:  
Click or tap here to enter text.

**Environment**

|   |  |  |
|---|--|--|
| Rig matting                                     | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Drip trays                                      | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Materials handling and storage                  | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Spill response equipment on site and accessible | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |
| Tubing laydown area protection                  | <input type="checkbox"/> Compliant<br><input type="checkbox"/> Non-Compliant<br><input type="checkbox"/> Corrected Non- Compliance | Comments: Rig and associated infrastructure had demobilized at the time of the inspection. |

Other Environment notes:  
Click or tap here to enter text.

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### Safety Plan

Compliant?  Yes  No

Comments: Rig and associated infrastructure had demobilized at the time of the inspection.

### Environmental Protection Plan

Compliant?  Yes  No

Comments: Rig and associated infrastructure had demobilized at the time of the inspection.

### Emergency Response (Contingency) Plan

Compliant?  Yes  No

Comments: Rig and associated infrastructure had demobilized at the time of the inspection.

### Authorization and Approvals

Following program as approved?  Yes  No

Comments: Rig and associated infrastructure had demobilized at the time of the inspection.

Meeting all conditions?  Yes  No

Comments: Rig and associated infrastructure had demobilized at the time of the inspection.

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## Other Documents Requested / Received During Inspection

Details:

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## Photographs

Number of photographs attached:4 [Click or tap here to enter text.](#)

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## Additional Comments / Observations

On February 2<sup>nd</sup>, 2023, the Office of the Regulator for Oil and Gas Operations (OROGO) received an application from Canadian Natural Resources Ltd. (CNRL) to vary ACW-2019-010-CNRL-A-77-WID1964 Variation 4 for the abandonment of the Emile Lake A-77 well (WID1964). CNRL requested a change to the wellbore abandonment program to allow for remedial casing expansion procedures and was approved on February 3<sup>rd</sup>, 2023. This variation for the use of a casing expander tool was also approved for ACW-2019-009-CNRL-K-77-WID1862 as well where no concerns were noted during active operations.

At the time of the inspection, the Emile Lake A-77 wellhead had a 'Vent Nanny' installed to monitor the effectiveness of the casing expansion on repairing the SCVF. The February 7, 2023 'Vent Nanny' report (Photo #4) showed a continuing decrease in the SCVF following the casing expansion operations.

Although no concerns were noted during the inspection, CNRL personnel must ensure the ground surface over the wellhead is mounded after cut and cap operations to ensure no ponding of water occurs above the abandoned well. All waste items seen in Photo #2 must also be removed for proper offsite disposal at an authorized disposal facility.

As a reminder, as required by section 89 of the *Oil and Gas Drilling and Production Regulations*, Canadian Natural Resources Ltd. is required to submit a Well Operations Report 30 days following the cut and cap of this well.

Overall, there were no major concerns noted during the inspection and the Inspectors were pleased with the well abandonment operation. Your cooperation to submit a Well Operations Report 30 days following the cut and cap of this well is anticipated and appreciated.

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This inspection was conducted under the *Oil and Gas Operations Act* and associated regulations.

Name: Michael Martin

Designation: Chief Safety Officer

Date: 2023-02-15

Signature: 

Name: Brandon Bradbury

Designation: Safety Officer

Date: 2023-02-15

Signature: 



PHOTO #1: View of the A-77 wellhead monitoring for surface casing vent flow after completing the casing expansion intervals.

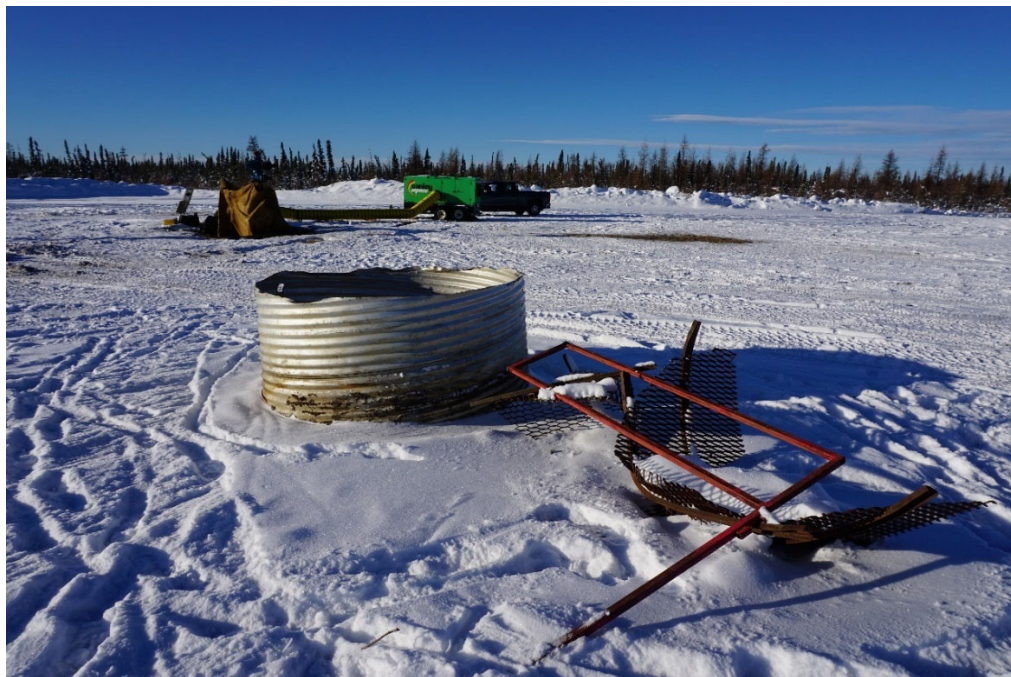


PHOTO #2: Waste metals must be removed for proper offsite disposal at an authorized disposal facility.



PHOTO #3: Heated air tubing was elevated off the ground surface and no concerns were noted.

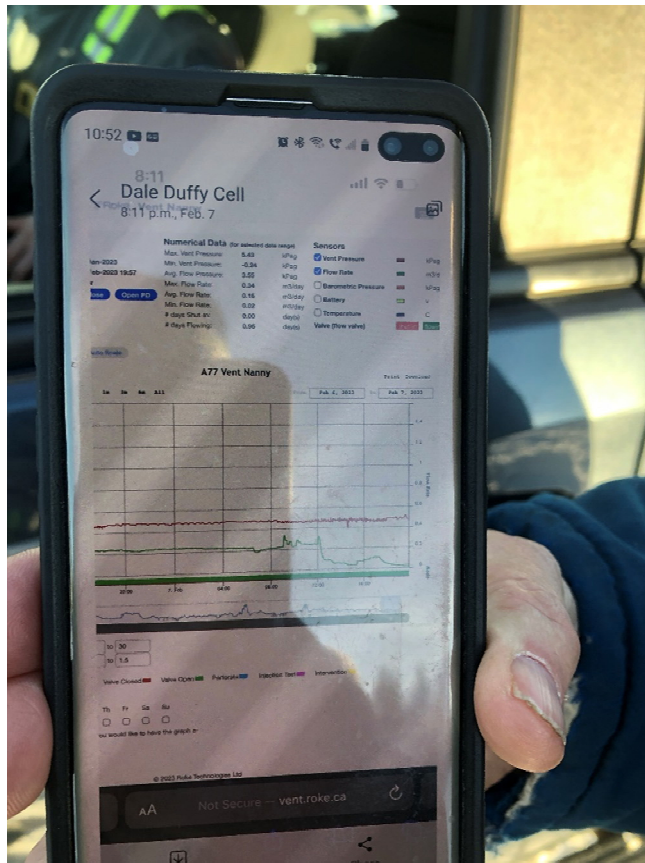


PHOTO #4: 'Vent Nanny' monitoring report for Emile Lake A-77 showing a steady decrease in the SCVF following the casing expansion on February 7, 2023.