



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

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 16, 2023

Dear Ryan Munro:

Inspection: North Arrowhead River C-55 (WID 1979) Well – ACW-2020-003-CNRL-C-55-WID1979

Inspectors Michael Martin, Chief Safety Officer/Chief Conservation Officer, and Brandon Bradbury, Safety Officer/Conservation Officer inspected the abandonment of the North Arrowhead River C-55 (WID1979) well on February 8th, 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-2020-003-CNRL-C-55-WID1979).

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.

If you have any questions, please contact me at (867) 767-9097 or by email at Mike_Martin@gov.nt.ca.

Sincerely,

Michael Martin
Chief Safety Officer
Chief Conservation Officer

Encl. North Arrowhead River C-55 (WID 1979) Operation Summary Inspection Report – February 8, 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: Arrowhead River C-55

4 digit WID: 1979

Operator: Canadian Natural Resources Ltd

Well status: Suspended

OROGO risk level: Level 1

Shallow wellbore plug? Yes No

24-hour operations? Yes No

Coordinates (*In decimal degrees; verified onsite*)

Datum: NAD 27 NAD 83 Unknown

Lat: 60° 34' 04.8" N

Long: 122° 55' 27.5" W

Completed in H₂S zone? Yes

Estimated % of H₂S: 1% or

Measured % of H₂S: 0%

Program step on arrival: 42: Cut and Cap well as per OROGO Well Suspension and Abandonment Guidelines and Interpretation Notes section 6E – Surface Abandonment Requirements.

Program step on departure: 42: Cut and Cap well as per OROGO Well Suspension and Abandonment Guidelines and Interpretation Notes section 6E – Surface Abandonment Requirements.

Inspection Date and Contact Information

Date of inspection: February 8th, 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-2020-003-CNRL-C-55-WID 1979 V#2

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	<input type="checkbox"/> Compliant <input type="checkbox"/> Non-Compliant <input type="checkbox"/> Corrected Non- Compliance	Comments: Rig and associated infrastructure had demobilized at the time of the inspection.
Authorization / Approval available	<input type="checkbox"/> Compliant <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <input type="checkbox"/> Corrected Non- Compliance	Comments: Rig and associated infrastructure had demobilized at the time of the inspection.
Sufficient N ₂ back-up?	<input type="checkbox"/> Compliant <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <input type="checkbox"/> Corrected Non- Compliance	Comments: Rig and associated infrastructure had demobilized at the time of the inspection.
Other Personnel Safety notes: N/A		

Blowout Prevention Equipment

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

Version: August 23, 2022

BOP pressure rating	<input type="checkbox"/> Compliant <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <input type="checkbox"/> Corrected Non- Compliance	Comments: Rig and associated infrastructure had demobilized at the time of the inspection.
Other Blowout Prevention Equipment notes: N/A		

Specific to Shallow Wellbore Plug (☒ Not Applicable)

Snubbing unit in place	<input type="checkbox"/> Compliant <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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 <input type="checkbox"/> Non-Compliant <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.		

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.

Other Documents Requested / Received During Inspection

Details:

Photographs

Number of photographs attached: 2

Additional Comments / Observations

The well head and associated infrastructure has been removed from the lease area and cut and cap operations were completed on January 24, 2023. High visibility signage was placed 1 meter to the North of the well and therefore no major concerns were noted.

Although no concerns were noted during the inspection, CNRL personnel must ensure the ground surface over the well is properly mounded after cut and cap operations to ensure no ponding of water occurs above the abandoned well. All waste items appear to have been removed from site

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 which requires the report to be submitted on or before February 24, 2023.

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.

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

Name: Michael Martin

Designation: Chief Safety Officer

Date: 2023-02-16

Signature: 

Name: Brandon Bradbury

Designation: Safety Officer

Date: 2023-02-16

Signature: 



PHOTO #1: Well abandonment sign



PHOTO #2: C-55 lease site looking East