

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		5. Lease Serial No. NMNM008005
2. Name of Operator ENCANA OIL & GAS (USA) INCORPORATED Contact: JEVIN CROTEAU E-Mail: jevin.croteau@encana.com		6. If Indian, Allottee or Tribe Name EASTERN NAVAJO
3a. Address 370 17TH STREET, SUITE 1700 DENVER, CO 80202	3b. Phone No. (include area code) Ph: 720-876-5339	7. If Unit or CA/Agreement, Name and/or No. NMNM132981A
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 9 T23N R9W NENE 260FNL 309FEL 36.248043 N Lat, 107.786758 W Lon		8. Well Name and No. NAGEEZI UNIT 507H
		9. API Well No. 30-045-35855-00-X1
		10. Field and Pool or Exploratory Area BASIN MANCOS
		11. County or Parish, State SAN JUAN COUNTY, NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Encana is requesting authorization to install gas lift on the subject well. Please find attached the gas lift install procedure and gas lift design.

NMOCD
NOV 15 2018
DISTRICT III

14. I hereby certify that the foregoing is true and correct.

**Electronic Submission #437393 verified by the BLM Well Information System
For ENCANA OIL & GAS (USA) INCORPO, sent to the Farmington
Committed to AFMSS for processing by JACK SAVAGE on 11/06/2018 (19JWS0030SE)**

Name (Printed/Typed) JEVIN CROTEAU	Title AUTHORIZED REPRESENTATIVE
Signature (Electronic Submission)	Date 09/27/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By <u>JACK SAVAGE</u>	Title <u>PETROLEUM ENGINEER</u>	Date <u>11/06/2018</u>
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.		Office <u>Farmington</u>

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

NMOCD

NU A09-2309 507H

Tubing – Gas Lift Install Procedure – 9/25/18

Scope

Install a tapered tubing string, 2-7/8" x 2-3/8", with 2-7/8" gas lift valves. Gas lift valves will be installed in the 2-7/8" tubing above the liner top. A tubing anchor catcher will be set at approx. 50° and tubing set in tension. A 2-7/8" X nipple will be set just below the TAC in the 2-7/8". The 2-3/8" string will start at approx. 50° (above the liner top) and land at 80°.

Current Wellbore Details:

All depths from KB (14')
7" Int csg set at 5,088' MD (~66°)
4 1/2" liner – top at 4,874' MD (~50°)
Perfs (30 stages) 5,531' – 12,500' MD

Proposed Tubing Details:

All depths from KB (14')
2-7/8" tbg to 4,820' MD (TOL @ 4,874' & 50°)
2-7/8" Gas Lift Valves – 2,164', 2,799', 3,465', 3,977', 4,507'
2-7/8" x 7" TAC set @ 4,820'
2-7/8" Profile Nipple @ 4,824' MD (~50°)
2-7/8" x 2-3/8" x-over @ 4,825' MD
2-3/8" tbg to 5,290' MD (80°)

Procedure:

1. Complete drillout and circulate hole clean.
2. PU and TIH w/ approx. 465' of J55 2-3/8" 4.7# tbg.
3. X-over to 2-7/8". Liner top is @ 4,874'.
4. Make up 2-7/8" X Nipple and 7" tubing anchor. Run approx. 4,920' of 2-7/8", J55, 6.4# tbg with gas lift valves installed per Superior design (depths noted above).
5. Install tubing hanger and tree. Land tubing in 15,000 lb tension.
6. Turn over to Production for gas lift operations.

Contact Information:

Casey Morse	Production Engineer	720-876-3753 (o) 603-205-3780 (c)
Tony Ferrari	Production Coordinator	505-599-2412 (o) 505-258-3875 (c)
James Jmieff	Production Manager	720-876-5343 (o) 720-412-0339 (c)

SUPERIOR ENERGY SERVICES

Encana - Nageezi Unit # 507H

DESIGN DATE: 9/20/2018	DESIGNED BY: Pat Drake
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Well Data:

The well to be completed with 2.875" and 2.375" TBG - No Packer
 The production CSG is 7.0" 26.0# w/ 6.276" ID 6.151" drift.

Design Criteria:

KO/OP pressure = 800 psi / 800 psi
 Gas specific gravity = 0.830
 Kill fluid gradient = 0.465 psi/ft
 Static surface temperature = 74° F.
 Flowing surface temperature = 86° F.
 Bottom hole temperature = 135° F.
 Datum Depth = 4856 feet TVD | Geothermal grad. = 1.256°F/100 ft
 Oil gravity = 41° API / 0.820 sg
 Water specific gravity = 1.030
 Flowing well head pressure = 200 psi / 200 psi / 200 psi
 Design rates = 500 blpd / 400 blpd / 300 blpd
 Design injection rates = 500 mcf / 500 mcf / 500 mcf

Recommendations:

Install (5) 2-7/8" x 1-1/2" conventional g/l mandrels w/ 1.5" OD valves per design
 Perfs @ ~ 5,531' to 12,500' / 4,856' to 4,883' (MD/TVD)

SUPERIOR ENERGY SERVICES

Company: Encana
 Field: Lybrook Gallup
 Well: Nageezi Unit # 507H
 Lease:
 State: NM

Design Date: 9/20/2018
 Designed By: Pat Drake
 Design For: Casey Morse
 Phone Number: 505-320-7002
 County: San Juan

Design Parameters

Comments

GLV's @ 2164', 2799', 3465, 3977' and 4507' MD
 2.31" X-nipple @ 4849' MD / 4658' TVD
 2-7/8" x 2-3/8" Tubing X-over @ 4850' MD / 4659' TVD
 TOL @ 4874' MD / 4673' TVD
 2-3/8" Tailpipe w/ EOT @ 5290' MD / 4838' TVD

Lift gas Data

Kick off pressure	800 psig	Operating pressure	800 psig
Lift gas gravity	0.830	Kill fluid gradient	0.465 psi/ft

Temperature Data

Static Surface	74 °F	Flowing Surface	86 °F
Bottom Hole	135 °F	Temperature model	Straight line

PVT Data

Oil specific gravity	0.820	Water specific gravity	1.030
Oil API gravity	41.	Gas specific gravity	0.830

Depths

Max Vlv depth	4400 feet	Perforations	5531 / 4856 (MD/TVD) feet
Fluid level	0 feet		

Reservoir

Formation GLR	0 scf/bbl	Static bottom hole pressure	1900 psig
Productivity Index	0.0 bbl/dy/psi		

Flowing Gradients

	Inj Rate	WHP	RATE	GLR	% WATER	CORRELATION
1	500 mcf/d	200 psig	500 blpd	1000 scf/bbl	20.00	Hagendorn-Brown
2	500 mcf/d	200 psig	400 blpd	1250 scf/bbl	20.00	Hagendorn-Brown
3	500 mcf/d	200 psig	300 blpd	1667 scf/bbl	20.00	Hagendorn-Brown

Well Geometry

Tubing #	TVD	MD	Casing I.D.	Tubing O.D.	Tubing I.D.	Tubing Threads
1	1979	2009	6.276	2.875	2.441	EUE 8RD
2	2038	2070	6.276	2.875	2.441	EUE 8RD
3	2512	2556	6.276	2.875	2.441	EUE 8RD
4	3048	3104	6.276	2.875	2.441	EUE 8RD
5	3525	3593	6.276	2.875	2.441	EUE 8RD
6	4014	4094	6.276	2.875	2.441	EUE 8RD
7	4400	4507	6.276	2.875	2.441	EUE 8RD
8	4659	4850	6.276	2.875	2.441	EUE 8RD
9	4673	4874	6.276	2.875	2.441	EUE 8RD
10	4856	5531	4.000	2.375	1.995	EUE 8RD

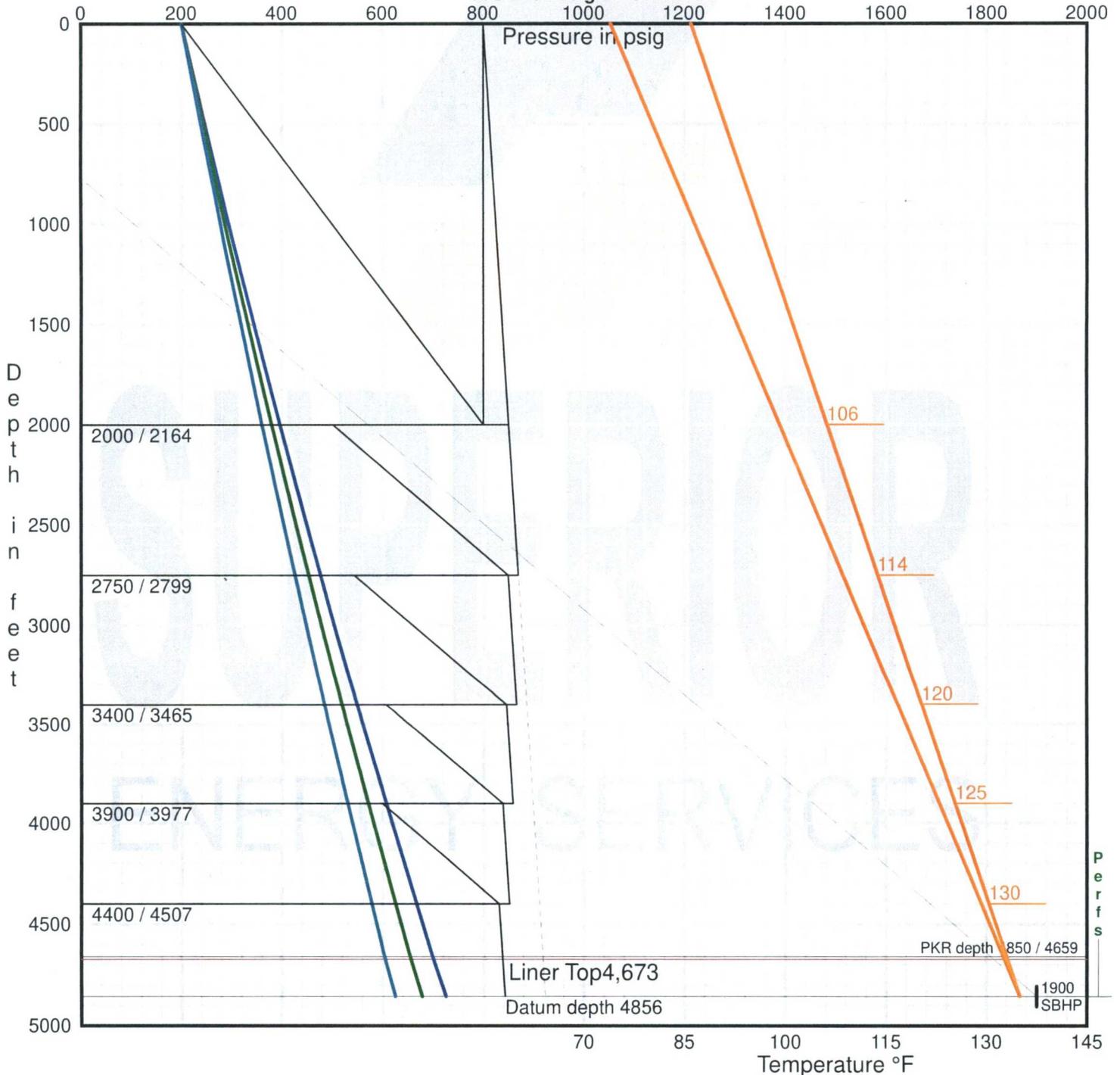
SUPERIOR ENERGY SERVICES

Company: Encana
 Field: Lybrook Gallup
 Well: Nageezi Unit # 507H
 Lease:
 State: NM

Design Date:
 Designed By:
 Design For:
 Phone Number:
 County:

9/20/2018
 Pat Drake
 Casey Morse
 505-320-7002
 San Juan

Gas Lift Design Plot



- PWH=200 RATE=500 GLR=1000 WC=0.20 - Hagendorn-Brown
- PWH=200 RATE=400 GLR=1250 WC=0.20 - Hagendorn-Brown
- PWH=200 RATE=300 GLR=1667 WC=0.20 - Hagendorn-Brown

SUPERIOR ENERGY SERVICES

Company: Encana
 Field: Lybrook Gallup
 Well: Nageezi Unit # 507H
 Lease:
 State: NM

Design Date:
 Designed By:
 Design For:
 Phone Number:
 County:

9/20/2018
 Pat Drake
 Casey Morse
 505-320-7002
 San Juan

Shop Order**Valves**

Qty	New	Rec.	Exc.
5	0	5	0

Checks

Qty	New	Rec.	Exc.
5	0	5	0

Latches

Qty	New	Rec.	Exc.
0	0	0	0

Valve details

Valve #	Valve Model	Test Rack Opening	Set	Port Size	Depth TVD	Depth MD	Special Instructions
5	GJ-20	795		12	2000	2164	W/ TC Trim
4	GJ-20	785		12	2750	2799	W/ TC Trim
3	GJ-20	770		12	3400	3465	W/ TC Trim
2	GJ-20	755		12	3900	3977	W/ TC Trim
1	GJ-20	745		12	4400	4507	W/ TC Trim

Mandrel Specifications

Qty	Type & Size	Thread	Grade	New/Rec.	Coating
5	2-7/8" x 1-1/2" conv.	8 rd EUE	J55	REC	EP

Equipment prepared by:	Loaded/ Tested by:
Comments:	
Verified by:	