

LILLI UNIT 06-03

P&A Procedure

Engineer: JASON LEHMAN (Cell: 970-518-8897)

Date: 07/20/2017

**LOCATION:**

Qtr/Qtr: SENW Section: 3 Township: 8N Range: 58W
 Footages: 2375 FNL & 2000 FWL
 COUNTY: WELD STATE: CO API #: 05-123-14017

WELL DATA:

Surface Csg: 8.625" 24# @ 234' KB KB Elevation: 4770'
 Surface Cmt: 140 sx GL Elevation: 4760'
 Long St Csg: 4.5" 10.5# @ 6491' KB TD: 6491' KB
 Long St Cmt: 220 sx PBTD: 6476' KB
 Long St Date: 9/5/1988

Plug Back (Sand or CIBP): Sand
 Perforation Interval (1): D-Sand Perforations: 6322-6329' KB;
 Perforation Interval (2): _____
 Perforation Interval (3): _____
 Tubing: 2.375" @ 6271' KB Rods: _____
 Pump: _____
 Misc.: 2"x4-1/2" Model R Double Grip Packer @ 6266'

PRODUCTION STATUS:LTSI. Former injection well no longer in use.**BRADENHEAD:**No history of surface casing pressure**FOX HILLS COVERAGE:**No; Fox Hills exposed**COMMENTS:**No water wells within 1 mile radius**PROCEDURE:**

- 1) Perform Form 17 if not completed already. If any pressure remains or any liquids are present at the conclusion of the test, call engineer.
- 2) MIRU workover rig, pump, and tank.
- 3) Blow down well.
- 4) ND WH, NU BOP.
- 5) Release packer, POOH and stand back tbq.
- 6) RIH w/ workstring and roll hole w/ fresh water, if possible.
- 7) RU WL and RIH w/ CIBP and set @ 6272'
- 8) Dump bail 2 sx of Class G Neat cement on top of CIBP. TOC @ 6248'.
- 9) Load hole with fluid and pressure test CIBP to 1000 psi with rig pumps. Hold for 15 minutes.
Test will be considered successful if lose less than 100 psi. If test is unsuccessful, contact engineer.
- 10) RIH w/ 1' perforating gun and shoot 4-6 spf @ ~5560'
- 11) RIH w/ CICR on workstring and set @ 5460'.
- 12) Load annulus between production casing and workstring. Test to 500 psi for 15 minutes.
Test is considered successful if lose less than 50 psi. If pressure test fails, contact engineer.
- 13) Establish injection rate.
- 14) Pump 10 bbls Mud Flush (or similar spacer) followed by 110 sx of cement.

Length (ft)	OD (in)	ID (in)	ft ³ /ft	Volume (ft ³)	Yield (ft ³ /sk)	Cement (sk)	Nearest 5sk
300	9.000	4.500	0.331	99	1.150	86	90
100	4.000	0.000	0.087	9	1.150	8	10
2 bbl on top of CICR				11	1.150	10	10
TOTAL:						110	

Calculations assume 9" open hole and last 2 bbls cmt left on top of CICR.

- 15) Displace cement with 19 bbls fresh water (2 bbls short of workstring volume).

Tubing ID	Length (ft)	Disp. (BBL/ft)	Disp (BBL)	Disp -2BBL
1.995	5470	0.00387	21	19

- 16) Unsting from CICR.

- 17) Place remaining 2 bbls of cement on top of CICR. Allow to fall on CICR as pulling out. TOC: 5436'.

- 18) POOH w/ workstring.
- 19) RIH w/ 1' perforating gun and shoot 4-6 spf @ ~2500'.
- 20) RIH w/ CICR on workstring and set @ 2400'.
- 21) Load annulus between production casing and workstring. Test to 500 psi for 15 minutes.
Test is considered successful if lose less than 50 psi. If pressure test fails, contact engineer.
- 22) Establish injection rate.
- 23) Pump 10 bbls Mud Flush (or similar spacer) followed by 165 sx of cement.

Length (ft)	OD (in)	ID (in)	ft ³ /ft	Volume (ft ³)	Yield (ft ³ /sk)	Cement (sk)	Nearest 5sk
500	9.000	4.500	0.331	166	1.150	144	145
100	4.000	0.000	0.087	9	1.150	8	10
2 bbl on top of CICR				11	1.150	10	10
TOTAL:						165	

Calculations assume 9" open hole and last 2 bbls cmt left on top of CICR.

- 24) Displace cement with 7 bbls fresh water (2 bbls short of workstring volume).

Tubing ID	Length (ft)	Disp. (BBL/ft)	Disp (BBL)	Disp -2BBL
1.995	2400	0.00387	9	7

- 25) Unsting from CICR.
- 26) Place remaining 2 bbls of cement on top of CICR. Allow to fall on CICR as pulling out. TOC: 2374'.
- 27) POOH w/ workstring.
- 28) RIH w/ WL and cut production casing at 827'.
- 29) Circulate a MINIMUM of 2 bottoms up volumes (91 bbls) or until well is free of oil, gas, or any large cuttings.

Length (ft)	OD (in)	ID (in)	BBL/ft	Disp (BBL)	2x Disp (BBL)
234	8.097	4.500	0.0440	10	21
593	9.000	4.500	0.0590	35	70
TOTAL:				91	

- 30) Perform flow check for 5 minutes to ensure well is static and record current fluid weight in WellView.
- 31) Unland production casing.
- 32) POOH and LD production casing filling pipe every 6 joints.
- 33) RIH w/ workstring to 877' (50' inside top of casing cut).
- 34) Establish circulation.
- 35) Pump 10 bbls Mud Flush (or similar spacer) followed by 310 sx of cement 15.8 G Neat as a balanced plug. TOC @ Surface.

Length (ft)	OD (in)	ID (in)	ft ³ /ft	Volume (ft ³)	Yield (ft ³ /sk)	Cement (sk)	Nearest 5sk
234	8.097	0.000	0.358	84	1.150	73	75
593	9.000	0.000	0.442	262	1.150	228	230
50	4.000	0.000	0.087	4	1.150	4	5
TOTAL:						310	

- 36) POOH workstring. Top off cement as needed. Cement needs to be ~10' from surface.
- 37) ND BOP.
- 38) RDMO.

NOBLE ENERGY INC.
LILLI UNIT 06-03
SENW 3-8N-58W
2375 FNL & 2000 FWL
WELD COUNTY, CO
Wattenberg
PROPOSED WELLBORE SCHEMATIC
for P&A
Date: 07/20/2017
Drawing not to scale

API: 05-123-14017

GL Elev: 4760'
 KB Elev: 4770'

Spud Date: 9/1/1988

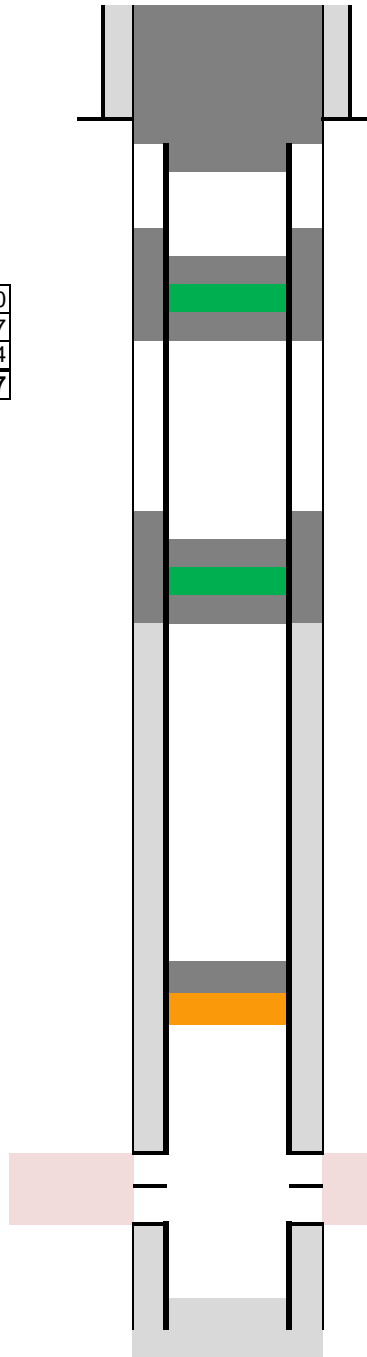
Surface Casing:
 8.625" 24# @ 234' KB
 Cement: 140 sx
 TOC: Surface

Water Well	0	200
FH:	627	827
Sfc Casing	234	434
Min. shoe plug depth:		827

TOC @ 5570'

Nio Log Top: 5574'

Production Casing:
 4.5" 10.5# @ 6491' KB
 Cement: 220 sx
 TD: 9/5/1988



Cut surface casing off 6'-8' below surface.

TOC @ Surface

Cut production casing @ 827
Pump 310 sx cement @ 877' (50' into casing top)

Perforate 2500'
CICR @ 2400'
Pump 165 sx Cement
TOC: 2000' annulus, 2374' in pipe

Perforate 5560'
CICR @ 5460'
Pump 110 sx Cement
TOC: 5260' annulus, 5436' in pipe

TOC: 6248'
Set CIBP @ 6272' w/ 2sx cement on top

D-Sand Perforations:
6322-6329' KB;

TD: 6491' KB

LEGEND	
Existing Cement	
New Cement	
CICR	
CIBP	
Existing BP	
Sand Plug	