Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2025

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*

5. Lease Serial No. NMNM0073394D

6. If Indian, Allottee or Tribe Name

7. If Unit of CA/Agreement, Name and/or No. Cato San Andres Unit

1. Type of Well
☑ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No. Cato San Andres Unit #198

2. Name of Operator Shell Oil Company (Western Division)

9. API Well No. 30-005-20599

3a. Address P.O. Box 576, Houston, TX 77210

3b. Phone No. *(include area code)* (832) 337-2434

10. Field and Pool or Exploratory Area Cato; San Andres

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*
L-07-09S-30E 1980 FSL 660 FWL

11. Country or Parish, State Chaves County, New Mexico, USA

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☑ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☑ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ 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 recomplete 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 perfonned 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 recompletion 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 detennined that the site is ready for final inspection.)

Please refer to the attached Plug and Abandonment End of Well Report.

Accepted for Record

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*
Samantha Baker

Title SGWS Legacy Program Manager

Signature Samantha Baker

Date 12/13/2024

THE SPACE FOR FEDERAL OR STATE OFICE USE

Approved by

Title Petroleum Engineer

Date 12/18/2024

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 RFO

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)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area or regional procedures and practices, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.
PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c)and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.
ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.
EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.
Response to this request is mandatory.
The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect ofthis form to U.S. Department ofthe Interior, Bureau ofLand Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

LANGAN

Technical Memorandum

300 Union Boulevard, Suite 405 Lakewood, CO 80228 T: 303.262.2000 F: 303.262.2001

To: BLM

From: Langan

Info: Shell

Date: December 06, 2024

Re: Plug and Abandonment – End of Well Report
Cato San Andres Unit #198 / API 30-005-20599
Section 4, Township 9S, Range 30E
Langan Project No.: 781014301

Work Summary:

8/03/24 – The crew discussed After Action Reports (AARs) from the previous day and conducted a Job Safety Analysis (JSA) review. Inspected work areas and performed an H2S sweep at the wellhead, checking the wellhead pressure (WHP) which was 0 psi. Pump 5 bbls to the 5 1/2" production casing, slight vacuum. Cut a 5 1/2" stump and began a freshwater trickle down the casing. They welded a 5 1/2" bell nipple onto the stump. Offloaded and installed a 5 1/8" 5K crossover (XO) flange and gate valve, securing the well for wireline (WL).

Move in wireline and crane equipment, conducting a safety meeting with crews. Inspected work areas and spotted equipment, then raised the crane and wireline unit. Set up and pressure tested lubricator at 200 psi for 5 minutes and 500 psi for 5 minutes, bleeding back to 100 psi. Opened the 5 1/8" gate valve with 31 turns and ran in with the wireline unit and a 4.4" OD GRJB. They tagged a restriction at 3367' Kelly Bushing (KB) and pulled out of the hole, unable to determine the fluid level. Secured the well, removed the wireline and crane equipment, and removed the 5 1/8" gate valve, securing the well with a 5 1/2"x2" swage and ball valve.

8/18/24 - Crew arrived at the location with equipment en route from the Drake Yard in Roswell. Conducted gas checks and safety meeting. The team began leveling the location in the area of the base beam and rig, moving in the base beam and spotting it. Move in rig, spotted the doghouse and office trailer, and prepared the rig to raise the mast. Offloaded and moved auxiliary equipment, encountering an issue with the weight indicator hose that would need replacement. Pipe racks were in transit, and water was being hauled to storage tanks on the west side of the

field. The crew departed the location to get a replacement hose and continued hauling water to storage tanks.

8/19/24 – Upon arriving at the location, crew noticed an airplane spraying approximately 1 mile south of the location, with a slight breeze from south to north. They evacuated the location to the north end of the field and contacted management to discuss the situation. The decision was made to suspend operations for the day.

8/20/24 – Operations remained suspended due to herbicide spraying in the area. After consultation with Drake and CWI, crew agreed that a blowout preventer (BOP) test stand would be beneficial to the operation. Made arrangements for materials, a welder, and weld inspection, with fabrication expected to begin and conclude the next day.

8/21/24 – Operations were still suspended due to herbicide spraying. Finalized preliminary work on the test stand and inspected welds.

8/22/24 – Arrived at the location to find aerial spraying in close proximity to the south. The crew suspended operations and moved personnel to the north end of the field. The decision was made to suspend operations and demobilize personnel. Engineering personnel arranged a conference call with the New Mexico Bureau of Land Management (BLM), who confirmed a plane in the area in the morning but stated it was a cleanup pass and all spraying in the area was finished or would be postponed. The team finalized the test stand and tested the pump.

8/23/24 – Pre-Job safety meeting. Checked well pressures, finding the 5 1/2" casing had no recordable pressure but was venting a small amount with no lower explosive limit (LEL) recorded, while the 8 5/8" casing had no pressure and no gas. Changed out the hose for the weight indicator, installed a load cell, and leveled and adjusted the rig. Raised the derrick, extended and guy-wired it off, spotted the auxiliary trailer, and moved in the catwalk. Installed the wellhead section to the test stand, nippled up the blowout preventers (BOPs) to the wellhead, and connected hoses, charging the closing unit.

Filled the BOP stack with water and tested the blind rams and outside ball valve at 250 psi low and 800 psi high for 5 minutes each, with the test coming back good. Installed a test joint with a

TIW valve and tested the pipe rams, TIW, and inside valve to 250 psi low for 5 minutes each, testing good. Repaired a hydraulic leak on the forklift pipe clamp and held a safety meeting discussing BOP installation on the well. Pump truck moved in and gravity-fed 5 barrels of water down the 5 1/2" casing. Removed the casing swedge and ball valve assembly, installed the BOPs and wellhead section, and secured the well on blinds.

Conducted a drawdown test on the closing unit, finding the system charged from 0 to 3000 psi in 2 minutes and 33 seconds, with the auxiliary pump kicking out at 2900 psi and the main pump at 3000 psi. The blind and pipe rams closed and opened in under 2.5 seconds, with the final pressure after BOP cycles being 2100 psi. Installed a forklift pipe clamp, unloaded, numbered, and tallied a total of 131 joints of 2 3/8" #4.7 J55 pipe on location. Lowered the rig floor, rigged up tubing handling equipment and catwalk extension, and secured the well for the night.

8/24/24 – Pre job safety meeting. Checked gas levels (none detected) and well pressures, with the 5 1/2" casing venting a small amount of vapor and no LEL recorded, and the 8 5/8" casing showing no pressure and no gas. Moved in a pump manifold, rigged up, and shell-tested the manifold. A tubing line stringing crew arrived, and they held a safety meeting. Moved the auxiliary trailer, moved in stringing equipment, and restrung the tubing line, cycling several times.

After moving out the stringing unit and re-spotting the auxiliary trailer, they installed pump-flowline parts. Opened the opposite side of the 5 1/2" wellhead to vent during testing and began testing pump-flow lines to 250 low and 1500 psi high on lines to the rig floor, manifold, and 5 1/2" casing side, with the test coming back good. Continued laying flow line from the 8 5/8" surface casing to the return tank. Secured the well for the night.

8/25/24 – Began checking gas and well pressures, followed by a safety meeting. Prepared to run a Cast Iron Bridge Plug (CIBP) and began running it to 1690'. Continued the run to 3180'. Paused to conduct a BOP drill with full muster.

Continued running CIBP to the setting depth of 3270', setting the bridge plug with 3.5' out on joint 103. After laying down the landing joint and pulling joint 103 to 3243'. Begin circulation at 2 barrels per minute. Small amount of returns at 73 barrels and stopped pumping due to water

shortage. Resumed pumping down the workstring with no returns, pumping a total of 20 barrels before stopping and discussing the situation with engineering. Pull out with the workstring and run a radial bond log (RBL).

Pulled out to surface and secured the well on blinds, then moved out pipe racks and moved in logging equipment, rigging up wireline and pressure control equipment (PCE). After testing the PCE to 250 psi low and 500 psi high for 5 minutes each, run in with the RBL, finding fluid level at 1210'. Continued logging down at 60 feet per minute, tagged the bridge plug at 3350' WLM, and logged out at 60 feet per minute until fluid level at 1224', then pulled to surface. Rigged down wireline equipment and secured the well for the night.

8/26/24 – Pre job safety meeting. Crew checked gas and well pressures. Prepared to run in with a tagging tool. Began run with tool and successfully tagged the bridge plug at 3372'. Pulled to 3367' and paused for approvals for cementing operations. Disconnected cementing hoses and bypassed the manifold, flushing the line and testing it to 1500 psi. Pumped 5 bbls of freshwater spacer, followed by 8.4 barrels of Type I/II cement with a 1.18 yield at 15.6 ppg, plus 6.5 bbls of freshwater for displacement based on the last known fluid level. Began pulling slowly from 3367' to 2986'. At the surface, they secured the well for the night.

8/27/24 – Pre job safety meeting. Checked gas and well pressures. Ran in with a tagging tool and tagged the cement plug at 3359.45'. Pulled to 3335' and pumped a 20-bbl weighted lost circulation material (LCM) pill. Prepared the LCM pill by mixing 20 bbls with 300 pounds of bentonite, 200 pounds of barite, and 65 pounds of LCM, achieving a viscosity of 50 at 9.5 ppg.

Pumped the 20-barrel LCM pill and pulled from 3335' to 2512', displacing tubing with 10 barrels. Run in and got tubing displacement from 2512' to 3335', connected the line, and tested to 1500 psi in preparation for the cement job. Pumped 5 bbls of freshwater spacer, followed by 25 sacks (5.25 bbls) of Type I/II cement with a 1.18 yield, 1.5% calcium chloride at 15.6 ppg, and 11.5 barrels of displacement. Pulled from 3335' to 1844', noting some water in joints during breakout. Topped off the well with 5 bbls and circulated for 3 bbls. Wait on cement. Paused operations for lightning within 3 miles. Tagged cement at 3159'. Circulated the well clean with full returns and began pulling out to the surface. Filled the well with water and pressured the casing to 500 psi.

The starting pressure was 540 psi, with the drop rate slowing around 520 psi. The final pressure after 10 minutes was 500 psi. Secured the well for the night.

8/28/24 – Pre job safety meeting. Checked gas and well pressures. Rigged up wireline and PCE, recalibrated the Vaetrix digital gauge, and tested the PCE against blind rams to 250 psi low and 500 psi high for 5 minutes each. Began logging at 60 fpm, tagged at 3148', and continued logging out at 60 feet per minute. Pumped Stage 1 of plug 2, with 5 bbls of freshwater, 63 sacks (13.2 bbls) of Type I/II cement at 15.6 ppg with a 1.18 yield, and 9.5 bbls of freshwater for displacement. Pulled out and laid down pipe to 2543', reversed out until clean (with a trace of cement), and prepared for the second stage of plug #2. Ran in to 2605' and pumped Stage 2 of plug 2 with 5 bbls of fresh water, 70 sacks (14.7 bbls) of Type I/II cement at 15.6 ppg with a 1.18 yield, and 7.4 bbls of freshwater for displacement. Secured the well for the night.

8/29/24 – Pre job safety meeting. Checked gas and well pressures. Run in well and tagged up at 2023'. Pumped a 10 bbls of abandonment fluid at 9.5 ppg with a viscosity of 55. Pumped 5 bbls of freshwater, followed by 58 sacks (12.2 bbls) of 15.6 ppg Type I/II cement with a 1.18 yield and 2% calcium chloride, plus 4 bbls of freshwater for displacement. Pulled tubing from 1622' to 1053', reverse circulated tubing with 6.2 bbls, and ran in to 1116'. Pumped 68 sacks (14.2 bbls) of 15.6 ppg Type I/II cement with a 1.18 yield and 2% calcium chloride, plus 2 bbls for displacement. Wait on cement. Tag at 531', pulled to the surface, and secured the well for the night.

8/30/24 – Crew traveled to well location but was unable to get a cement bulk truck and dirty water truck to the location due to muddy roads. Shut down for the day.

8/31/24 – Pre job safety meeting. Checked gas and well pressures (slight vacuum). Inspected equipment and work areas. Ran in with tubing and tagged top of cement (TOC) at 508'. Pumped a brine gel spacer from 479' to 320'. Pressure tested lines to 1500 psi, pumping 3.8 bbls of brine gel with 2 sacks of gel and 1 sack of barite, displacing with 1.2 bbls of freshwater and shutting down the pump. Rigged up and nippled up the wireline unit, BOPs, and lubricator, pressure testing the lubricator to 250 psi for 5 minutes and 1500 psi for 5 minutes. Ran in with a 3 1/8" x 3' perforating gun with 6 spf, perforating at 240', then pulled out. Confirmed all shots were fired.

Confirmed communication into the 8 5/8" casing, breaking circulation from the 8 5/8" casing valves with 12 bbls of freshwater and pumped an additional 8 bbls at 4.3 bpm with 20 psi pump pressure. Ran in with tubing to 320' and pumped 1 bbl of freshwater then 1.8 bbls of cement in the 5 1/2" casing. Continued pumping into the perforations at 240' into the 8 5/8" annulus, pumping cement to the surface in the 8 5/8" x 5 1/2" casing. Closed the 2" ball valves on the 8 5/8" casing and continued pumping cement to the surface in the 5 1/2" x 2 3/8" annulus.

In total, pumped 13.5 bbls of 15.6 ppg Type I/II cement, with 39 sacks in the 8 5/8" casing and 37 sacks in the 5 1/2" casing, for a total of 109 sacks during pumping. Washed out lines, rigged down the pump truck and temporary iron, rigged down the BOPs. Secured the well and shut down for the night.

9/01/24 - Pre job safety meeting. Checked gas and well pressures. Tagged the top of cement at 24' from the surface, contacted the office and Bureau of Land Management (BLM), and made the decision to release, demobilize, and move out (RDMO), planning to top off the cement after the wellhead has been removed.

12/06/24 - Pre job safety meeting. Checked gas and well pressures. Dug cellar 3 ft down using the backhoe. Cement was at surface in casing at 4’ and low in 8 5/8” casing. Installed P&A marker per all local regulations. Backfilled location.

New Mexico - CSAU 198 - P&A Schematic

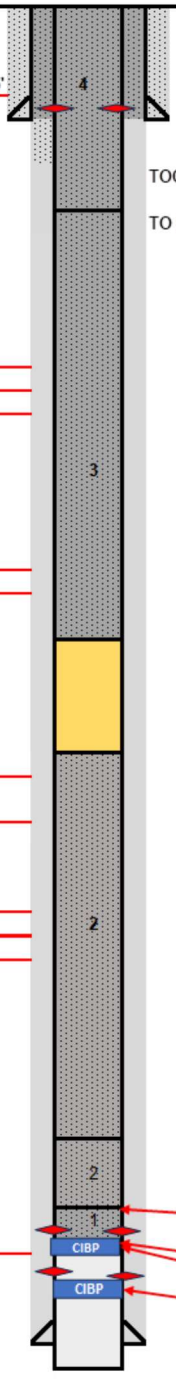
SHL Location:	Section 05, T9S, R30E	Cato San Andres Unit 198	Network:	
	Chaves Co, New Mexico	Lat. 30° 40' 42.126"	GLE	ft
API Number	30-005-20599		DFE	ft
Acual BHL:	Vertical well		RKB	ft
Objectives:	NM CSAU P&A			

Formations

Zones of Interest		
Formation	Top	Base
Water Table Depth	32'	
Base of Red Beds	235'	933'
Rustler	942'	998'
Yates	1461'	1590'
Queen	2232'	
Graybury	2432'	
Four Mile Draw	2645'	
San Andres	2675'	
Slaughter A (SA)	3339'	

MD/TVD (ft)
3463'

Directional
Vertical Hole



Water Table = 32'
F/500'-Suface
63 sks (74 cf) inc. 10% excess

Top of Red Beds 235'

8-5/8" 32# (0-260') TOC = Surface
(12.25" Hole)

TOC 280' (per CBL X 2)

TO Plug 3 Stage 2 (Actual Tag 531')

Plug 3 -Stage 2 - 570'
(F/1100'-T/530")
58 sks (68 cf) inc. 10% excess

Base of Red Beds = 933'
Top of Rustler = 942'
Bottom of Rustler = 998'

Plug 3-Stage 1 -511'
(F/1611-T/1100")
68sks (80 cf)

Top of Yates = 1461' (cover up 1361')
Base of Yates = 1511'(cover below to 1611')

Spacer - 412'
9 ppg abandonment fluid (2023' to 1611')
10 bbls

Queen = 2150'(cover up 2050')

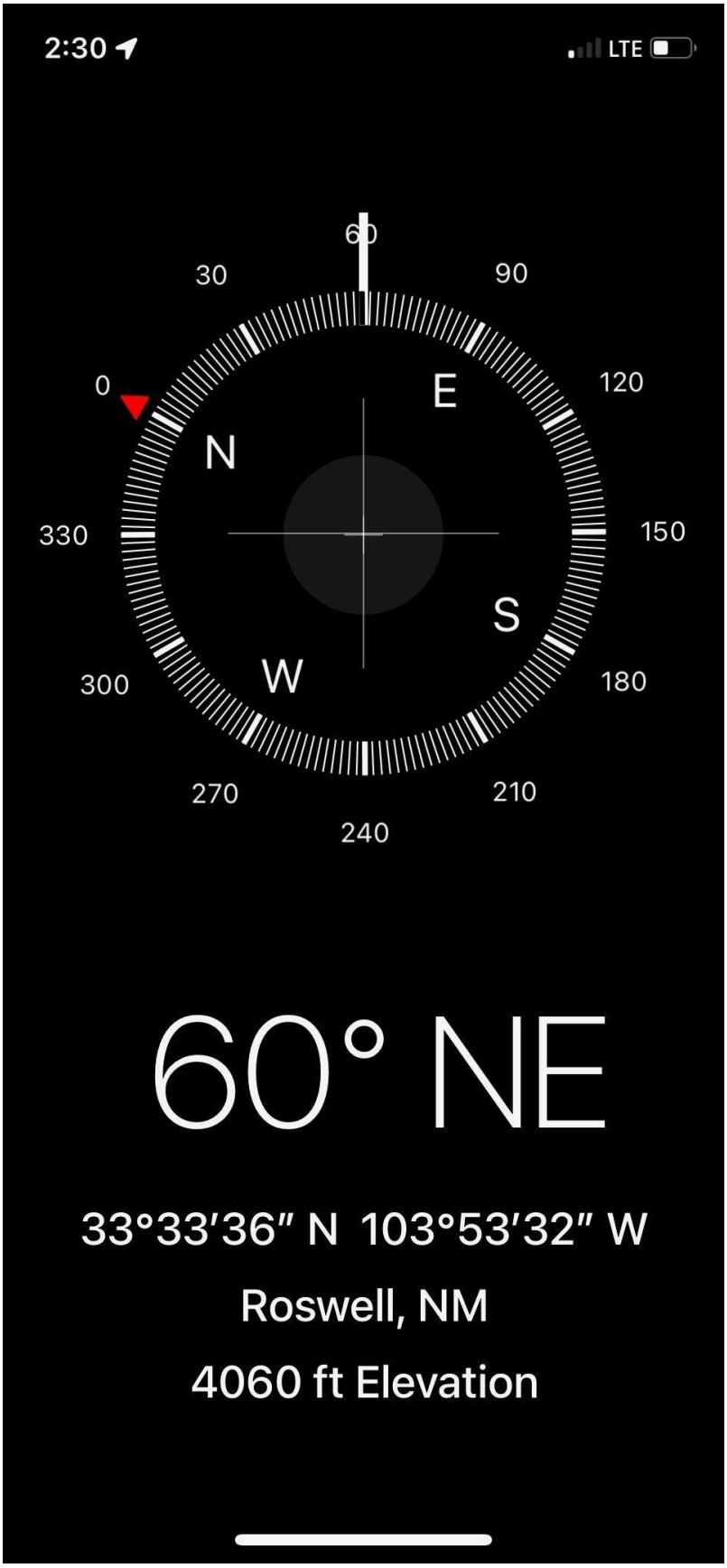
Grayburg = 2282' (cover below 2332')

Four Mile Draw -2645'
San Andres - 2745'

Plug 2- 1136' - 2 stages
(F/3159'-T/2023')

Plug 1 - 213'
(F/3372'- T/3159'
Current TOC-3159 (3152' TOC before 2nd CBL)
3350' WL tag of CIBP
CIBP 3372' Tbg tag (had actualy moved downward)
CIBP set at 3270' (set by Shell Team)
Original Old CIBP set 3424' (23' below bottom perf)
3345-3401' Perforations
5-1/2" 15.50# (0-3463')
(7.875" hole)

San Andres "A "Zone 3339"


2:30
LTE
60
30
90
0
E
120
N
330
150
S
300
W
180
270
210
240
60° NE
33°33′36″ N 103°53′32″ W
Roswell, NM
4060 ft Elevation


SHELL
CSAU #198
API #30-005-20591
L-04-0
1980FSL 660FWL
CHAVES COUNTY, NM

Sante Fe Main Office
Phone: (505) 476-3441

General Information
Phone: (505) 629-6116

Online Phone Directory
https://www.emnrd.nm.gov/ocd/contact-us

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Operator: CANO PETRO OF NEW MEXICO, INC. 801 Cherry Street Fort Worth, TX 76102	OGRID: 248802
	Action Number: 413744
	Action Type: [C-103] Sub. Plugging (C-103P)

CONDITIONS

Created By	Condition	Condition Date
loren.diede	None	6/17/2025