Form 3160-5
(October 2024)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0220
Expires: October 31, 2027

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. NMNM 0022636

6. If Indian, Allottee or Tribe Name: N/A

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 #178

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

9. API Well No.: 30-005-20224

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)*: M-34-08S-30E 660 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

Like Approval by NMOCD

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: 04/17/2025

THE SPACE FOR FEDERAL OR STATE OFICE USE

Approved by

Title: Petroleum Engineer

Date: 04/21/2025

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: Bureau of Land Management (BLM)

From: Langan Engineering and Environmental Services

Info: Shell Oil Company (Western Division)

Date: March 26, 2025

Re: Plug and Abandonment – End of Well Report
Cato San Andres Unit #178 / API 30-005-20224
Section 34, Township 8S, Range 30E
Langan Project No.: 781014301

Work Summary:

08/04/24 – Conducted PJSM and discussed Step 7 Safe Work Process. MIRU pump truck and equipment. Checked WHP = 0 PSI. Pumped 4.5 bbls down 4.5'' production casing. Pressured to 80 PSI. Shut down centrifugal. Observed leak at wellhead packing/slips (4.5 x 9.625). 4.5 bbls in 4.5" = 283' from surface. Gas tested cellar area. MU ball valves on casing outlet. Removed 4.5 x 2" XO swage and ball valve from existing 4.5" Bell Nipple. Made up NU flange, 5 1/8" 5K GV and nightcap. Secured well for WL Eval. SDFN.

08/05/24 - Moved in and spotted equipment. Conducted PJSM and discussed JSA review. RU WLU and crane. MU/PU WL lubricator. Pressure tested lubricator to 250 PSI, 5 minutes/500 PSI, 5 minutes. Opened well with 0 PSI. RIH with 3.625" GRJB. Tagged restriction at 325'KB. Began POOH. Attempted to RIH with 3.8125" Impression Block, could not pass through wellhead. Decision made to RD and move to well #138.

12/16/24 – Crew traveled. Conducted PJSM - discussed equipment inspections, 7 Step, overhead lifts and stop work authority, daily operations, and rig move. RD WOR off previous well. Continued to move on Well #178. 4.5" casing broke off at 8-5/8" bradenhead. Discussed with Shell management. Waited on welder and pump truck. Continued to rig up equipment. Pumped 10 bbls down 4.5" casing and continued to trickle water at 0.5 bpm while welding casing. Continued to monitor gas concentrations. Filled out hot work permit. Began repairs on 4.5" casing

at surface. Cleaned up area. Replaced 4" swedge back in top of well and shut well in. SDFN. Crew traveled.

12/17/24 – Crew traveled. Conducted PJSM discussed Equipment Inspections, 7 Step, JSA review, overhead lifts and stop work authority. Discussed daily operations and rig move. Inspected equipment and work areas. Checked pressures. 4.5"= 0 PSI; 8-5/8"= 0 PSI. Installed flange on wellhead. Nipple up BOP to test stand and pressure test to 250 PSI and 800 PSI for 5 minutes each. Made up 3-7/8" tri-cone. RIH to tag. Tagged at 350' KB. Began POOH laying down 11 joints. RU wireline. Pressure tested to 1500 PSI. RIH with camera - looked like an anomaly at 344' WLM. Began POOH with wireline. RIH with tubing to 350'. RU wireline and pressure test to run camera through tubing. RIH with wireline camera through tubing. Did not see any issues with casing to 350'. Could not see anything at previous questionable area at 344'. Observed a lot of formation fill at 350'. Began POOH with wireline and POOH with tubing. Shut well in and shut down operations on well until 03 January 2025. Rig crew moved equipment with wheels to Roswell yard along with the workstring. Crew traveled.

01/03/25 – NPT- Drake-Rig crew made modification to catwalk.

01/04/25 – NPT- Drake-Rig crew made modification to catwalk and installed new motor on closing unit.

01/05/25 – Crew traveled and brought equipment back to location. Conducted PJSM - Discussed equipment inspections, 7 Step, JSA review, overhead lifts, stop work authority, daily operations and rig move. Continued moving equipment back onto location. Mechanic changed alternator on WOR. ND BOP and place on test stand. Pressure tested BOP to 250 and 800 PSI for 5 minutes. Made up NU BOP to WH and function tested. All tests good. Unloaded workstring onto pipe racks. Drift and tally workstring. Ensured wellhead and all equipment is secure. SDFN. Crew traveled.

01/06/25 – Crew traveled. Conducted PJSM - discussed equipment inspections, 7 Step, JSA review, overhead lifts, stop work authority, daily operations and safety goals for the day. Inspected equipment and work areas. Checked pressures. 4.5"= 0 PSI. 8-5/8"= 0 PSI. Made up

3-7/8" tri-cone bit. RIH and tagged at 350'. RU power swivel. Broke circulation immediately. Washed down to 390' KB. Began drilling on something hard (potentially metal). Began POOH with tri-cone bit. RIH with 12 joints + 6' pup joint with mule shoe. Placed EOT at 388' KB. Waited on wireline unit with downhole camera. NPT-Drake. Waited on wireline unit. RU wireline. Pressure tested lubricator to 800 PSI. RIH with downhole camera through tubing. Not able to pump, due to wireline did not bring pump in tee. Results inconclusive. Planned to make another run while pumping in the morning. Began WL POOH and RD. Began POOH with tubing. Shut well in and drain up. Crew traveled.

01/07/2025 – Crew traveled. Conducted PJSM - discussed equipment inspections, 7 Step, JSA review, overhead lifts, stop work authority, daily operations and safety goals for the day. Inspected equipment and work areas. Checked pressures. 4.5"= 0 PSI; 8-5/8"= 0 PSI. Made up 3.06" mule shoe. RIH with workstring and placed EOT at 388'. Broke circulation and pumped 10 bbls at 4 bpm, to clean up tubing and wellbore. RU wireline. Pressure tested to 800 PSI. RIH with downhole camera. Began POOH and RD wireline POOH with tubing. Waited on orders. Swapped out tubing tong motor. Made up 3-7/8" tri-cone bit. RIH to top of obstruction. Waited for Shell management to review downhole camera video. RU swivel and began attempting to drill down. Bit and tubing bouncing with ~25% metal in returns. Began RD swivel and POOH with tri-cone bit. Made up 3-7/8" junk mill and RIH. RU power swivel and attempted to drill through obstruction. Milled 1' in last 1.5 hours. Final depth 391'. Gold magnetic metal in returns. Power swivel died and closing unit motor locked up. Planned to swap out both in morning. Pulled up to connection and shut well in. SDFN. Crew traveled.

01/08/2025 – Began NPT-Drake. Crew traveled and brought new closing unit and power swivel. Conducted PJSM - Discussed Equipment Inspections, 7 Step, JSA review, overhead lifts, stop work authority, daily operations, and rig move. Rigged up new closing unit. Performed draw down and function test. Rigged up new power swivel and prep to begin milling operations. Ended NPT-Drake. Broke circulation immediately. Worked tubing and checked weights. Began milling operations at 391'. Something broke loose at 393'. Continued washing down - acted as if something was being pushed. EOT at 1746' KB with 55 joints. Circulated wellbore clean. RD

power swivel. Standback 27 stands (54 jts) and a single (55 jts total) out of hole with 3-7/8" junk mill. Shut well in for night. Drained up all equipment and SDFN. Crew traveled.

01/09/2025 – Crew traveled. Inspected equipment and work areas. Conducted PJSM - Discussed Equipment Inspections, 7 Step, JSA review, overhead lifts, stop work authority, daily operations and safety goals for the day. Checked pressures. 4.5"= 0 PSI; 8-5/8"= 0 PSI. Began NPT-Shell. Waited on weather - heavy snowstorm. Could not get water or heavy haul trucks on the roads. Discussed with Shell management and decision was made to shut down and let storm pass and let the roads dry out. Crew traveled and waited on weather.

01/10/2025 – NPT- waited on road conditions. Crew traveled. Conducted PJSM - Discussed Equipment Inspections, 7 Step, JSA review, overhead lifts, stop work authority, daily operations and safety goals for the day. Inspected equipment and work areas. Checked pressures. 4.5"= 0 PSI; 8-5/8"= 0 PSI. Made up 3-7/8" junk mill and RIH to 1746'. RU power swivel and broke circulation with 11 bbls away. Began washing down with workstring. EOT at 2917' KB. Circulated clean. Began POOH with mill and workstring with 92 joints. Secured well. Drained up and SDFN. Crew traveled.

01/11/2025 – Crew traveled. Conducted PJSM - Discussed Equipment Inspections, 7 Step, JSA review, overhead lifts, stop work authority, daily operations and safety goals for the day. Inspected equipment and work areas. Checked pressures. 4.5"= 0 PSI; 8-5/8"= 0 PSI. Made up 3.06" mule shoe and RIH to tag. Tagged solid at 3250' with mule shoe (333' deeper than with 3-7/8" junk mill the day prior). Placed end of tubing at 3230'. Prepped to pump cement plug #1. Pumped cement plug #1. Pumped 10 bbls FW spacer + 42 sacks (8.7bbls). Type I/II cement with 1.18 yield at 15.6 ppg + 10 bbls displacement. Began POOH with tubing. Estimated plug: 2680' - 3230'. 550' plug. POOH with tubing. WOC. RIH to tag TOC. Tagged at 2620' KB. (60' high). BLM approved. POOH with tubing. RU wireline. Pressure tested lubricator to 800 PSI. RIH with logging tools to run CBL. Attempted to fill hole – filled, but water level dropped. Out of hole. Rig down wireline. Fluid level: 296'. Est TOC: 2430'. Shut well in and SDFN.

01/12/2025 – Crew traveled. Arrived on location. Conducted PJSM - discussed 7 Step, LSRs, LOF, and JSA. Review inspected equipment and work area. Checked WHP = 0 PSI. RIH with

2.375" workstring with 3.06". Mule Shoe BHA to tag at TOC 2590'KB. RU to pump cement plug #2, pressure tested lines to 1500 PSI – good. Lined up pump to tbg. Pumped cement plug #2. Pumped 5 bbls FW to break circulation with 50 PSI at 2.1 bpm + 10 bbls. FW spacer with 100 PSI at 1.4 bpm, pumped 46 sacks with 2% CaCl2 (9.5bbls). Type I/II cement with1.18 yield at 15.6 ppg with 100 PSI at 2 bpm + 7.3 bbls. FW displacement with 66 PSI at 3.4 bpm. Began POOH with tubing. Estimated plug: 2590' - 1990', 600' plug. WOC, POOH with tbg to 1000', reverse circulated tbg RIH with tbg to tag at 1914'KB. RU to pump cement plug #3, pressure tested lines to 1500 PSI – good. Lined up pump to tbg. Pumped cement plug #3. Pumped 4 bbls to break circulation + 6 bbls FW spacer with16 sacks (3.4bbls) with 60 PSI at 2 bpm. Type I/II cement with 1.18 yield at 15.7 ppg + 6.4 bbls displacement with 40 PSI at 3.5 bpm. Began POOH with tubing. Estimated plug: 1914' -1700', 214' plug. RD/drain pump lines, LD 8 jts to racks. Began POOH with tbg to derrick. Secured well. SDFN.

01/13/2025 – Arrived onsite. Conducted PJSM - JSA review Inspected equipment and work areas. Checked WHP = 0 PSI. RIH with 2.375" workstring and 3.06". Mule Shoe BHA, tagged TOC at 1630'KB, POOH RU WL, MU/PU WL PCE and lubricator with 3 1/8" casing gun BHA. Made up NU 5K WL PCE package. Lined up pump to pressure test lubricator. Observed leak at Bowen connection below BOPs. Began NPT - LD WL tools and lubricator, ND BOPs, replaced failed O-ring, made up NU BOPs, PU/MU WL tools and lubricator. Ended NPT (1 hour). Pressure tested lubricator to 300 PSI/800 PSI – good. RIH with perforating guns. Tagged restriction at 1599'. Perforated 4 1/2" casing at 1599'-1596' interval. Began POOH with WL, LD lubricator and WL tools. ND WL BOPs RIH with 2.375" workstring and 3.06" Mule Shoe BHA. Tagged TOC at 1630'KB. Set EOT at 1620'KB. RU cement iron to tbg. Lined up pump to tbg. Pressure tested pump line to 1500 PSI – good. Pumped cement plug #4. Pumped 6.5 bbls to break circulation + 3.5 bbls (10 bbls FW spacer) with 49 sacks (10.3 bbls) with 100 PSI at 2 bpm. Type I/II cement with 1.18 yield at 15.6 ppg + 3.5 bbls FW displacement with 66 PSI at 3 bpm, POOH with tubing. Estimated plug: 1630' - 980', 650' plug. Began POOH with tbg to derrick. Secured well. SDFN.

01/14/2025 – Arrived on location. Conducted PJSM - Discussed trapped pressure, potential ice plugs, and JSA review. Inspected equipment and work areas. Checked WHP = 0 PSI. RIH with 2.375" workstring and 3.06" Mule Shoe BHA. Tagged TOC at 1031'KB. Lined up pump to tbg.

Pressure tested pump line to 1500 PSI – good. Pumped cement plug #4 stg 2. Pumped 8.5 bbls. FW to break circulation with 66 PSI at 3.5 bpm, pumped 54 sacks (11.3 bbls) with 66 PSI at 2.5 bpm. Type I/II cement with 1.18 yield at 15.6 ppg + 0.8 bbls. FW displacement with 100 PSI at 2.2 bpm. Began POOH with tubing. Estimated plug: 1031' -320'; 711' plug. Shut down pump. Began POOH to 319'KB. Forward circulated wellbore with 10 bbls FW at 2.5 bpm with 20 PSI. WOC RIH with 2.375" workstring and 3.06" Mule Shoe BHA. Tagged TOC at 408'KB, POOH to derrick RU WLU, MU/PU 3' x 3 1/8" (6 spf) gun BHA and lubricator. Made up NU WL single ram 5K PCE, pressure tested lubricator 500 PSI/800 PSI – good. RIH with WL, perforated 4.5" casing at 314'KB-311'KB. Began POOH LD WL tools and lubricator. ND PCE, RD WL RIH with workstring from derrick to 382'KB. RU pump line to tbg. Pressure tested line to 1500 PSI – good. Closed pipe rams and 4 1/2" casing outlet valve. Opened 9 5/8" casing outlet valve. Established circulation with 2.5 bbls FW. Pumped 6.5 bbls total with 60 PSI at 1.5 bpm. Pumped cement plug #5 (surface plug). Pumped 21.2 bbl (101 sacks) into 9 5/8" x 4 1/2" annulus with 60 PSI at 2 bpm. Type I/II cement with 1.18 yield at 15.6 ppg. Opened 4 1/2" casing outlet valve. Closed 9 5/8" casing outlet valve. Pumped 7.5 bbl (36 sacks) into 4 1/2" x 2 3/8" annulus with 60 PSI at 2 bpm. Began POOH with tubing to racks, topped off 4 1/2" casing with last jt. Pumped total 28.7 bbls (137 sacks). Estimated plug: 408'KB to surface; 408' plug. RD work floor. Racked back power swivel from derrick. ND 7 1/16" 5K Dbl Ram BOP and Drake 4 1/2" 5K wellhead. MU 4 1/2" x 2" swage with ball valve to wellhead bell nipple (left in open position). RD WOR. Secured well and location. SDFN.

03/21/25 – Arrived at CSAU #178 and held a safety meeting with Langan and on-site personnel. Completed a spiral gas check. Dug the cellar 3 feet down using the backhoe. Rigged up the welder and cut off the wellhead. Cement reached the surface on the backside and was 9 feet low in the 4.5". Rigged up cementing services and topped off the 4.5" with 7 sacks. Welded the marker in place per all local regulations.

Plug & Abandonment Program
Revision: 0

Cato San Andres Unit 178
M-34-8S-30E
Chaves County, NM

NEW MEXICO - CSAU 178 - WELLBORE SCHEMATIC

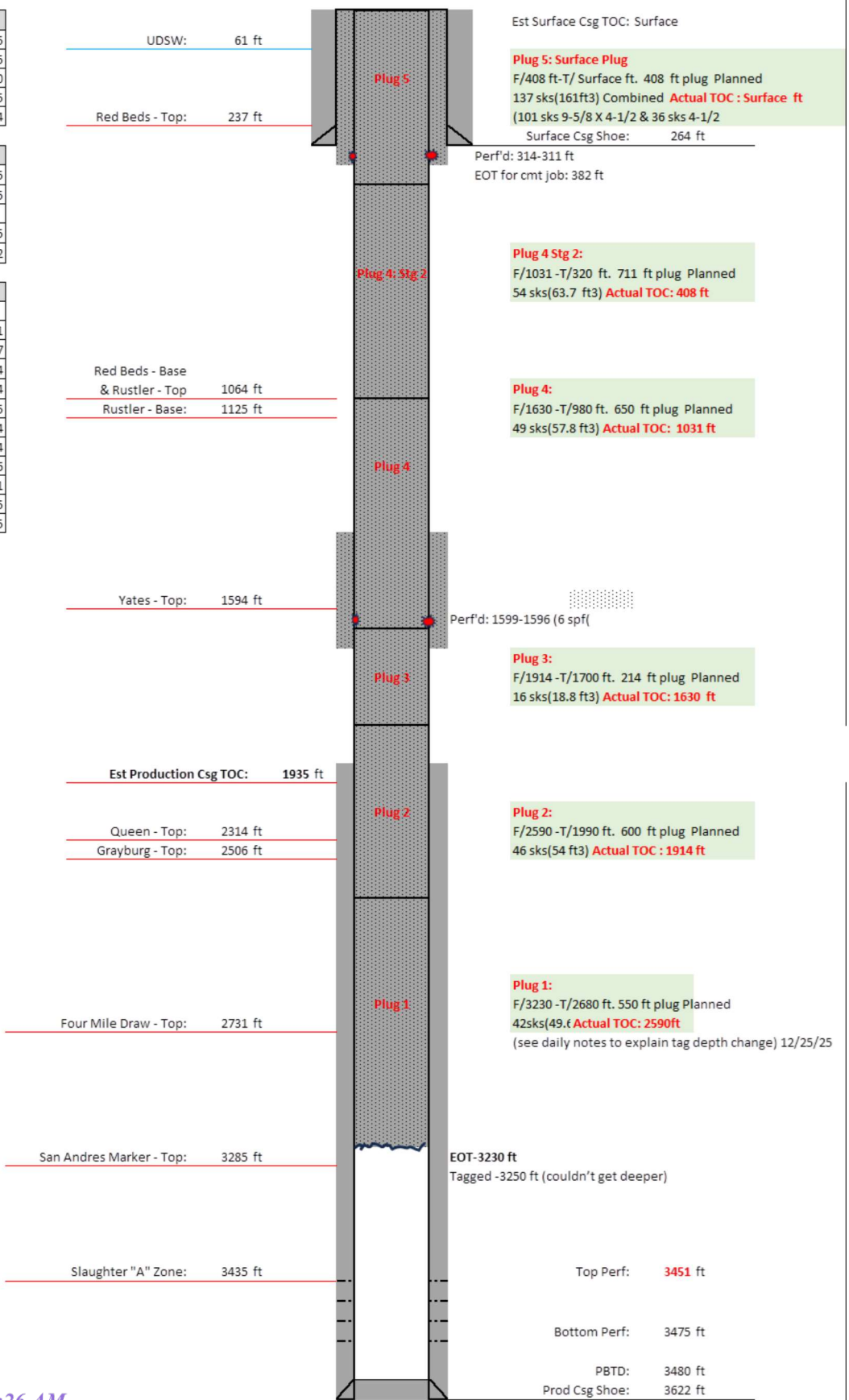
Location (Unit-Sec-Twp-Range): M-34-8S-30E
Surface Hole Latitude: 33.6035156
Surface Hole Longitude: -103.8751068
Bottom Hole Location: Vertical Well

API: 30-005-20224
GL (ft): 0
KB (ft): 10

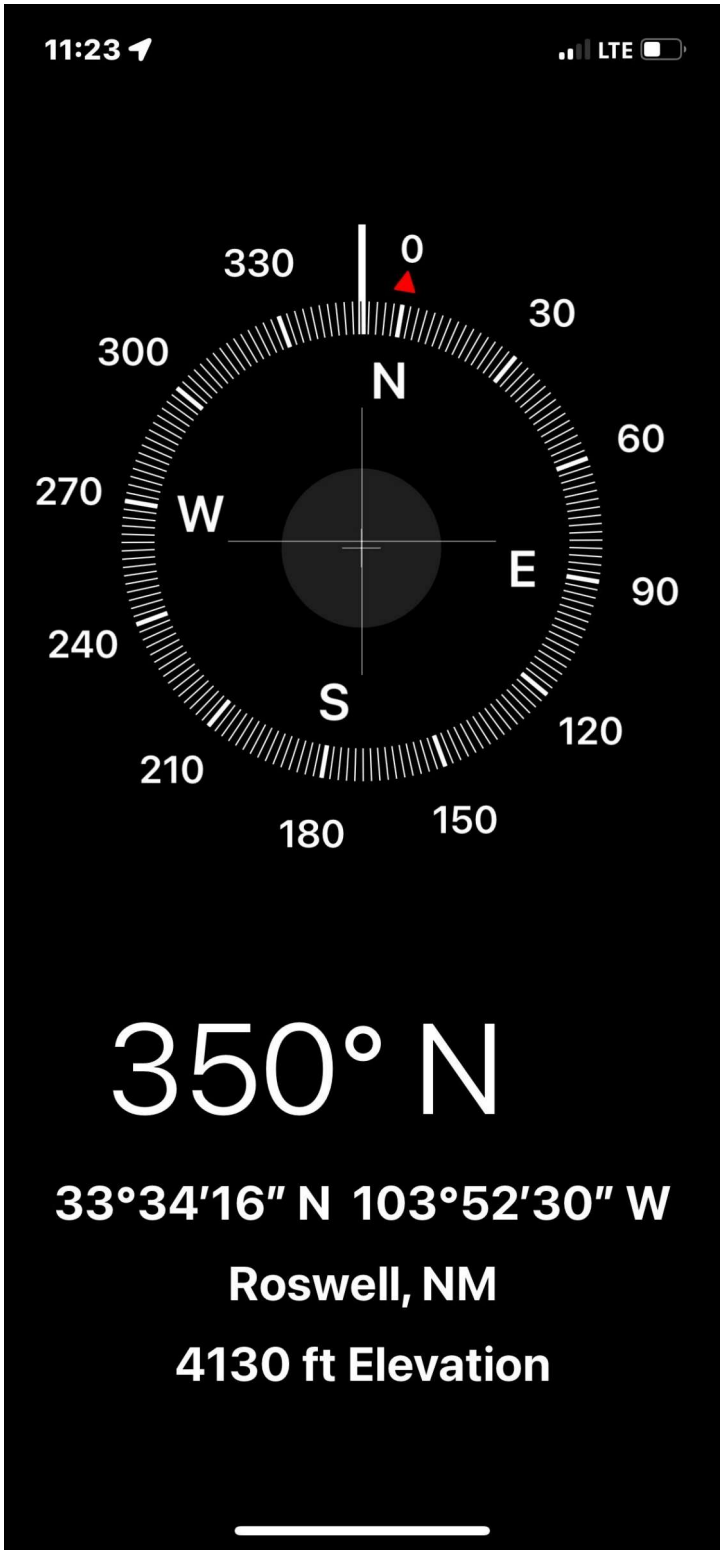
Surface Casing Information	
Size (in):	9.625
Weight (lb/ft):	53.5
Grade:	0
Hole Size (in):	12.25
Setting Depth:	264

Production Casing Information	
Size (in):	4.5
Weight (lb/ft):	10.5
Grade:	N/A
Hole Size (in):	7.875
Setting Depth:	3622

Formation Depth Information	
Formation	MD (ft)
USDW	61
Red Beds - Top	237
Red Beds - Base	1034
Rustler - Top	1064
Rustler - Base	1125
Yates - Top	1594
Queen - Top	2314
Grayburg - Top	2506
Four Mile Draw - Top	2731
San Andres Marker - Top	3285
Slaughter "A" Zone	3435




CSAU Well #178
30-005-20224
Shell NM 0276225
Sec 34 T8S R30E
Unit M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Roswell, NM
4130 ft Elevation

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: 454372
	Action Type: [C-103] Sub. Plugging (C-103P)

CONDITIONS

Created By	Condition	Condition Date
loren.diede	None	4/23/2025