

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM 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. NMLC057210
2. Name of Operator COG OPERATING LLC		6. If Indian, Allottee or Tribe Name
3a. Address 600 W ILLINOIS AVE MIDLAND, TX 79701		7. If Unit or CA/Agreement, Name and/or No.
3b. Phone No. (include area code) Ph: 432-685-4332		8. Well Name and No. MALJAMAR 27 SWD 3
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 27 T17S R32E Mer NMP 225FSL 2185FWL		9. API Well No. 30-025-43501
		10. Field and Pool or Exploratory Area SWD;WOLFCAMP
		11. County or Parish, State LEA 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.

COG Operating LLC respectfully requests approval for the attached completion procedure for our Maljamar 27 SWD #3 well that is currently drilling. SWD-1608

Please see attachments.

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

14. I hereby certify that the foregoing is true and correct. Electronic Submission #369418 verified by the BLM Well Information System For COG OPERATING LLC, sent to the Hobbs Committed to AFMSS for processing by DEBORAH MCKINNEY on 03/20/2017 ()	
Name (Printed/Typed) KANICIA CASTILLO	Title PREPARER
Signature (Electronic Submission)	Date 03/10/2017
THIS SPACE FOR FEDERAL OR STATE OFFICE USE	
Approved By _____	Title _____
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.	Date APR 5, 2017
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.	Office _____

(Instructions on page 2)

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

Maljamar 27 Federal SWD #3 – SWD Completion Procedure (AFE#009713)

225' FSL & 2,185' FWL

Unit N, Sec 27, T17S, R32E

Lea Co, NM

API# 30-025-43501

SWD – 1608

Objective

Complete the Maljamar 27 SWD #3 in the Wolfcamp Reef formation as detailed in the paragraphs below. The completion will be in 6-1/8" diameter open hole with 850' gross interval acidized according to the schedule below.

Well Data

Injection Formation: Wolfcamp Reef

Injection Interval: 9,650' – 10,500

Packer Set Depth: 9,600'

Completion Type: Open Hole w/ acid stimulation

MD/PBTD: 10,500'

BHT: 120 degF (estimated)

Current Status: New

Pipe Data

7" 29# L80 LTC

Nom ID=6.184"; Drift ID=6.059"; Capacity=0.0371 BPF

Burst=8,160 psi (6,528 psi @ 80%); Collapse=7,020 psi (5,616 psi @ 80%)

3-1/2" 9.3# L80 EUE GlassBore (10 ppf actual)

Liner ID=2.75"; Flange ID=2.69"; Drift ID=2.44"; Capacity=0.00735 BPF

Burst=10,160 psi (8,128 psi @ 80%); Collapse=10,540 psi (8,432 psi @ 80%); Tensile=207,200 psi

Annular Capacity 7" x 3-1/2" =0.0264 BPF

2-7/8" 6.5# L-80 (workstring)

Nom ID=2.441"; Drift ID=2.347"; Capacity=0.00579 BPF

Burst=10,570 psi (8,456 psi @ 80%); Collapse=11,170 psi (8,936 psi @ 80%); Tensile=145,000 psi

Annular Capacity 7" x 2-7/8" =0.0302 BPF

Cement Data

13-3/8" 48# H40 STC @ 985'

1st: Lead 400sx "C" @ 13.5 ppg, 1.75 yield; Tail 325sx "C" @ 14.8 ppg, 1.32 yield

9-5/8" 40# J55 LTC @ 2,285'

1st: Lead 350sx 50:50:10 "C" PozGel @ 11.8 ppg, 2.45 yield; Tail 300sx "C" @ 14.8 ppg, 1.32 yield

7" 26# L80 LTC @ 9,650' - (DV/ECP @ 8,000')

1st: 300sx 50:50:2 "H" PozGel @ 14.0 ppg, 1.37 yield

2nd: 600sx 35:65:6 "C" PozGel @ 12.5 ppg, 2.01 yield + 400sx "H" @ 14.2 ppg, 1.19 yield

Contacts

NMOCD Hobbs – 575.393.6161

Injection Tubing: Composite Lining Systems (CLS) - 432.617.0242

Injection Packer Equipment: Terrant Co. – 575.513.3300 – Rickey De La Rosa

Acid Stimulation: Elite – 575.513.9607 – Mike Brown

Packer Fluid: Catalyst - 575.390.7782 – Kenny Kearney

Wellhead: Downing - 432.889.6623 – Randy Carter

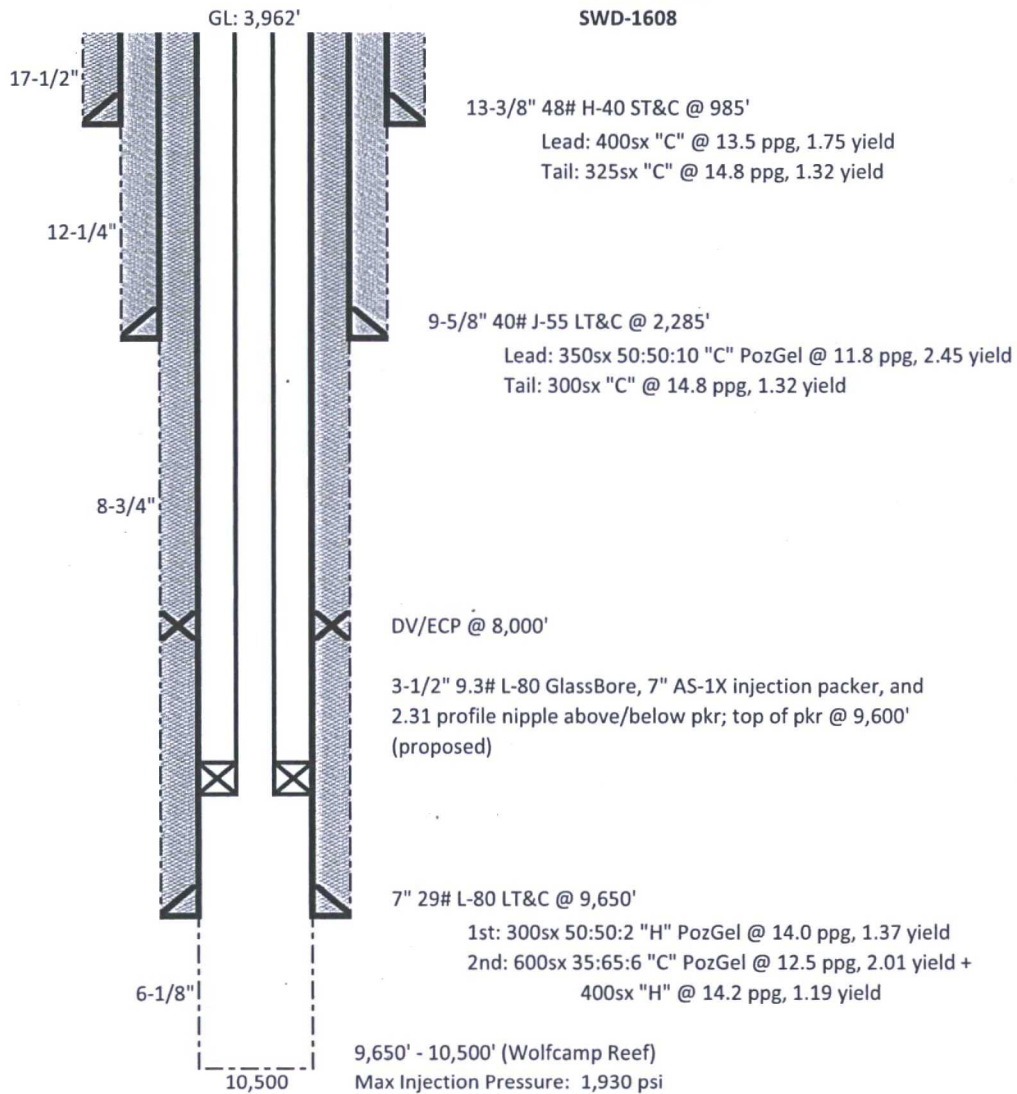
Wireline: Capitan – 575.390.3350 – Jackie Wilson

Procedure

- Notify BLM & OCD of intent to start work 24 hours prior to rig up.
- Set anchors, set two frac tanks, set two lined acid frac tanks, MIRU WSU and reverse unit.
- RU wireline and run CBL across 7" casing to ensure good cement across the casing. We will pressure up casing to 1,000 psi and hold this pressure throughout the logging job.
- NU 7-1/16" hydraulic BOP with 2-7/8" pipe rams for work string and blind rams. Close blind rams and test casing to 1,000 psi.
- Order 2-7/8" 6.5# L-80 workstring. PU 6-1/8" bit and scraper tool; TIH to clean up casing ID near DV Tool (8,000'). RIH and tag CBP set near end of 7" casing string. TOH and laydown scraper.
- RIH with 6-1/8" bit, (6) 4-1/8" drill collars, and tubing float valve and tag CIBP. RU power swivel and drill out composite plug circulating 10 ppg brine and push remnants of plug to TD (10,500'). Keep pipe rotating in OH section.
- SWI and record stabilized pressure to calculate kill mud weight. RU kill truck and pump mud to kill the well. TOH (standing back) with workstring and bit.
- RIH w/ 7" nickel plated AS-1X retrievable injection packer on 2-7/8" workstring to 9,600'. Try to circulate mud out prior to setting packer. Space out to put 20 points compression on packer. Set packer and test tubing x casing annulus to 1,000 psi. We may want to lubricate a packer in if we have trouble keeping the well dead.
- RU acid crew and acidize Wolfcamp Reef formation from 9,650' to 10,500' with 40,000 gal NE Fe 15% HCl acid (double inhibited) at 6-8 BPM dropping 15,000# rock salt diverter broken up into 3 stages @ 5,000#/stage. We will need 400 bbl of 10 ppg brine to carry the rock salt.
- Limit treating pressure to 6,000 psi and hold 1,000 psi on the annulus. Flush acid with one frac tank of fresh water to ensure we dissolve the salt blocker. Shut well in for a couple hours and let acid soak on formation.
- RIH with slickline and set a blanking plug in the profile nipple to isolate formation pressure. Verify pressure isolation; get off OOT and TOH laying down workstring.
- Install 3-1/2" pipe rams in BOP and RIH with 3-1/2" 9.3# L80 EUE GlassBore internally lined tubing. Reverse circulate annulus with approximately 254 bbls fresh water packer fluid containing corrosion inhibitor/biocide/oxygen scavenger.
- Latch onto on/off tool and plumb in wellhead. Top off annulus with packer fluid if necessary.
- RU wireline and retrieve blanking plug set in profile nipple.
- Give NMOCD Hobbs 24 hours notice for MIT. Test tubing x casing annulus to 500 psi for 30 minutes. Send MIT chart to Susan Lopez.
- RU pump truck to run injection test and test lines to 3,000 psi. Have one frac tank full of produced water to pump the job. Pumping company must be able to produce rate vs. time plot and data at the end of the job.
- Pump plug off of packer assembly and run injection test as follows without exceeding 2,500 psig:
 - 2.0 BPM for 20 minutes (40 total barrels)
 - 4.0 BPM for 20 minutes (120 total barrels)
 - 6.0 BPM for 20 minutes (240 total barrels)
 - 8.0 BPM for 20 minutes (400 total barrels)
- Collect ISIP, 5 min SIP, 10 min SIP, 15 min SIP and shut well in. RDMO and have all data sent to engineer.
- Contact SWD Operations and put well in service.

JH – 3/9/17

Maljamar 27 Federal SWD #3
225' FSL; 2,185' FWL
N, 27, T17S, R32E, Lea Co., NM
30-025-43501
SWD-1608



JH - 2/23/2017

Well History:
3/2/2017 SPUD

Conditions of Approval

COG Operating LLC

Maljamar - 03, API 3002543501

T17S-R3E, Sec 27, 225FSL & 2185FWL

April 05, 2017

1. **Operator is required to have the BLM approved NOI procedure with applicable conditions of approval on location for this workover operation.**
2. **Note: Stimulation pressures are restricted by these Conditions of Approval.**
3. Prior BLM approval of the design is required before casing or a liner is added, replaced, or repaired. Use notice of intent Form 3160-5.
4. **Do not exceed the wellhead injection pressure of (0.15 x 9650) 1450psig for stimulation operations, injectivity tests, or disposal with 3 1/2" tbg. With 2 7/8" tbg (0.2 x 9650) 1930psig is OK.**
5. Surface disturbance beyond the existing pad shall have prior BLM approval.
6. A closed loop system is required. The operator shall properly dispose of drilling/circulating contents at an authorized disposal site. Tanks are required for all operations, no excavated pits.
7. Functional H₂S monitoring equipment shall be on location.
8. 3000 (3M) Blow Out Prevention Equipment to be used. All BOPE and workover procedures shall establish fail safe well control. Blind ram(s) and pipe ram(s) designed to close on all workstring diameters used is required equipment. A manual BOP closure system (hand wheels) shall be available for use regardless of BOP design. Function test the installed BOPE to 500psig when well conditions allow. Related equipment, (choke manifolds, kill trucks, gas vent or flare lines, etc.) shall be employed when needed for reasonable well control requirements.
9. All waste (i.e. trash, salts, chemicals, sewage, gray water, etc.) created as a result of work over operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area. Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.
10. Class II (production water disposal) wells will not be permitted Stimulation Pressures or "Injectivity Tests" which exceed 0.2 x ft depth to the topmost injection through tubing with an ID equal or less than 2 1/2" or 50psig below the frac point as clearly indicated by a BLM accepted "Step Rate Test". **Initial wellhead pressure through tubing with an ID greater than 2 1/2" is restricted to 0.15 x the depth of the top perforation.**
11. A request for increased wellhead pressures requires a Step Rate Test conducted after 90 days of injection to stabilize disposal wellhead pressures and rates. The Step Rate Test is to clearly indicate any requested wellhead pressure is +50psig below frac pressure for the

wellbore's disposal formation. PRIOR to a Step Rate Test BLM – CFO is requiring a Notice of Intent.

12. The subsequent report is to include workover stimulation injection pressures. Report maximum/minimum injection rate (BPM) and max/min stimulation injection pressures (psig).
13. Submit a (BLM Form 3160-5 subsequent report via BLM's Well Information System; <https://www.blm.gov/wispermits/wis/SP> (email pswartz@blm.gov for instructions) describing (dated daily) all wellbore activity and the Mechanical Integrity Test. Include descriptions of and the setting depths of installed equipment: internally corrosive protected tubing, tubing on/off tool, profile nipple, and packer. File intermediate Form 3160-5 within 30 days of any interrupted workover procedures and a complete workover subsequent sundry.
14. Workover approval is good for 90 days (completion to be within 90 days of approval). A legitimate request can be accepted for extension of that date.
15. **The well is considered a commercial hydrocarbon producer until proven otherwise. Provide statements with evidence that paying quantities of hydrocarbons are not produced when the well has a pumped off fluid level. A copy of the well's mudlog, and an estimated insitu water salinity based on copies of open hole logs are evidence.**
16. **A minimum of 1000 barrels is to be withdrawn from the proposed disposal formation after any recent stimulation load volumes have been recovered. Reports of ten samples from the last 200bbls analyzed for hydrocarbons and insitu salinity by a reputable laboratory. BLM agreement is to be obtained prior to the well is utilized as a disposal well. Notify pswartz@blm.gov, 575-200-7902 24 hours prior to taking the 10 samples.**
17. Approval is granted for disposal of water produced from the lease, communization, or unit agreement of this well only. Disposal fluid from another operator, lease, communization, or unit agreement require surface right-of-way agreement **approvals** and authorization from the surface owner.
18. Disposal of off-lease water, water from another operator, or commercial disposal requires that the well be designated as a commercial well and surface right-of-way agreement **approvals**.
19. Non-Commercial Disposal; provide a list of the production water source lease identification and well API numbers on the complete workover subsequent sundry.
20. File intermediate **subsequent sundry** Form 3160-5 within 30 days of any interrupted workover procedures and a complete workover subsequent sundry.

An inactive/shut-in well bore is a non-producing completion that is capable of "beneficial use" i.e. production in **paying quantities** or of service use.

21. Submit evidence to support your determination that the well has been returned to active "beneficial use" for BLM approval on the Sundry Notice Form 3160-5 within 90 days of this sundry's approval date.

22. Should "beneficial use" not be achieved submit for BLM approval a plan for plug and abandonment.

Well with a Packer - Operations

- 1) Conduct a Mechanical Integrity Test of the tubing/casing annulus after a tubing, packer or casing seal is established.
- 2) The minimum test pressure should be 500 psig for 30 minutes or 300 psig for 60 minutes, with a minimum 200 psig differential between tubing and casing pressure (at test time) but no more than 70% of casing burst pressure as described by Onshore Order 2.III.B.1.h. (The tubing or reservoir pressure may need to be reduced). Verify all annular casing vents are plumbed to surface and those valves open to the surface during this pressure test. An alternate method for a BLM approved MIT is to have the fluid filled system open to atmospheric pressure and have a loss of less than five barrels in 30 days witnessed by a BLM authorized officer.
- 3) Document the pressure test on a one hour full rotation chart recorder (calibrated within the last 6 months) registering within 35 to 75 per cent of its full range. Greater than 10% pressure leakoff will be viewed as a failed MIT. Less than 10% pressure leakoff will be evaluated site specifically and may restrict injection approval.
- 4) Make arrangements 24 hours before the test for BLM to witness. In Lea County phone 575-393-3612. If no answer, leave a voice mail or email with the API#, workover purpose, and a call back phone number
- 5) **Compliance with BLM wellhead disposal pressure listed by these conditions of approval is required,**
 - a) Approved injection pressure compliance is required.
 - b) If injection pressure exceeds the approved pressure you are required to reduce that pressure and notify the BLM within 24 hours.
 - c) When injection pressure is within 50 psig of the maximum pressure, install automation equipment that will prevent exceeding that maximum. Submit a subsequent report (Sundry Form 3160-5) describing the installed automation equipment within 30 days.
- 6) **A request for increased wellhead pressures is to be accompanied by a step rate test. PRIOR to a Step Rate Test BLM – CFO is requiring a Notice of Intent.**
- 7) Class II (production water injection) wells will not be permitted stimulation injection pressures that exceed frac pressure.
- 8) Unexplained significant variations of rate or pressure to be reported within 5 days of notice.
- 9) The casing/tubing annulus is required to be monitored for communication with injection fluid or loss of casing integrity. A BLM inspector may request verification of a full annular fluid level at any time.

- 10) A "Best Management Practice" is to maintain the annulus full of packer fluid at atmospheric pressure. Equipment that will display on site, continuous open to the air fluid level above the casing vent is necessary to achieve this goal.
- 11) Excessive (+5 bbls/month) gain or loss of annular fluid volume requires notification within 24 hours. Cease injection and maintain production casing and tubing pressure near Opsia. Notify the BLM's authorized officer ("Paul R. Swartz" <pswartz@blm.gov>, cell phone 575-200-7902). If there is no response phone 575-361-2822.
- 12) Submit a (BLM Form 3160-5 subsequent report (daily reports) via BLM's Well Information System; <https://www.blm.gov/wispermits/wis/SP> describing all wellbore (dated daily) activity and include the Mechanical Integrity Test chart document.