District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

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

Form C-101
Revised July 18, 2013

NM OIL CONSERVATION
ARTESIA DISTRICT
AUG 11 2017
RECEIVED

☐ AMENDED REPORT

# APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

| 1. Operator Name and Address | 2. OGRID Number |
|---|---|
| Percussion Petroleum Operating, LLC<br>919 Milam St., Suite 2475, Houston, TX 77002 | 371755<br>3. API Number<br>30-015-44383 |

| 4. Property Code | 5. Property Name | 6. Well No. |
|---|---|---|
| 318940 | Goodman 22 | 2H |

**7. Surface Location**

| UL - Lot | Section | Township | Range | Lot Idn | Feet from | N/S Line | Feet From | E/W Line | County |
|---|---|---|---|---|---|---|---|---|---|
| C | 22 | 19S | 25E | | 714 | NORTH | 2302 | WEST | EDDY |

**8. Proposed Bottom Hole Location**

| UL - Lot | Section | Township | Range | Lot Idn | Feet from | N/S Line | Feet From | E/W Line | County |
|---|---|---|---|---|---|---|---|---|---|
| C | 23 | 19S | 25E | | 970 | NORTH | 2677 | WEST | EDDY |

**9. Pool Information**

| Pool Name | Pool Code |
|---|---|
| N. SEVEN RIVERS; GLORIETA-YESO | 97565 |

**Additional Well Information**

| 11. Work Type | 12. Well Type | 13. Cable/Rotary | 14. Lease Type | 15. Ground Level Elevation |
|---|---|---|---|---|
| N | O | R | P | 3475' |
| **16. Multiple** | **17. Proposed Depth** | **18. Formation** | **19. Contractor** | **20. Spud Date** |
| N | 8465' | YESO | SILVER OAK DRILLING | 10/15/17 |

| Depth to Ground water | Distance from nearest fresh water well | Distance to nearest surface water |
|---|---|---|
| | | |

☑ **We will be using a closed-loop system in lieu of lined pits**

**21. Proposed Casing and Cement Program**

| Type | Hole Size | Casing Size | Casing Weight/ft | Setting Depth | Sacks of Cement | Estimated TOC |
|---|---|---|---|---|---|---|
| SURFACE | 12.25 | 9.625 | 36 | 1,215' | 600 | SURFACE |
| PRODUCTION | 8.75 | 5.5 | 17 | 8,465' | 2250 | SURFACE |
| | | | | | | |

**Casing/Cement Program: Additional Comments**

| |
|---|
| |

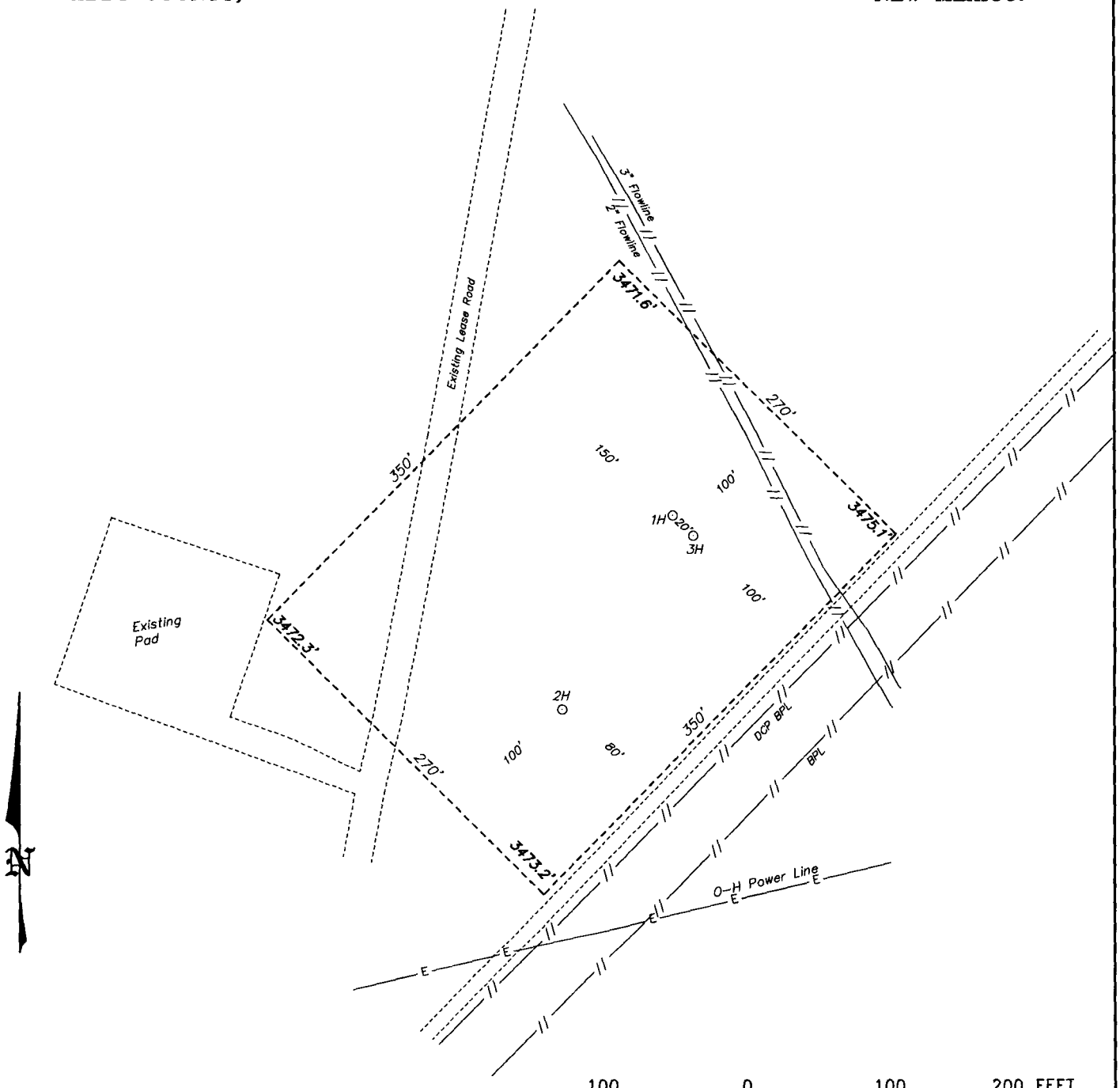
**22. Proposed Blowout Prevention Program**

| Type | Working Pressure | Test Pressure | Manufacturer |
|---|---|---|---|
| 13 5/8" Double-Ram, Annular | 5,000 psi | 250 low/ 3000 high | Shaffer |

| 23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief.<br>**I further certify that I have complied with 19.15.14.9 (A) NMAC ☐ and/or 19.15.14.9 (B) NMAC ☐, if applicable.**<br>Signature: Patrick Wales | OIL CONSERVATION DIVISION<br>Approved By: Raymond W. Godoy |
|---|---|
| Printed name: Patrick Wales | Title: Geologist |
| Title: Drilling Engineer | Approved Date: 8-17-17 Expiration Date: 8-17-19 |
| E-mail Address: pwales@totalenergyservices.us | |
| Date: 8/7/2017 Phone: 432-682-1598 | Conditions of Approval Attached RAB - Circ CMT. |

# SECTION 22, TOWNSHIP 19 SOUTH, RANGE 25 EAST, N.M.P.M.,

EDDY COUNTY, NEW MEXICO.



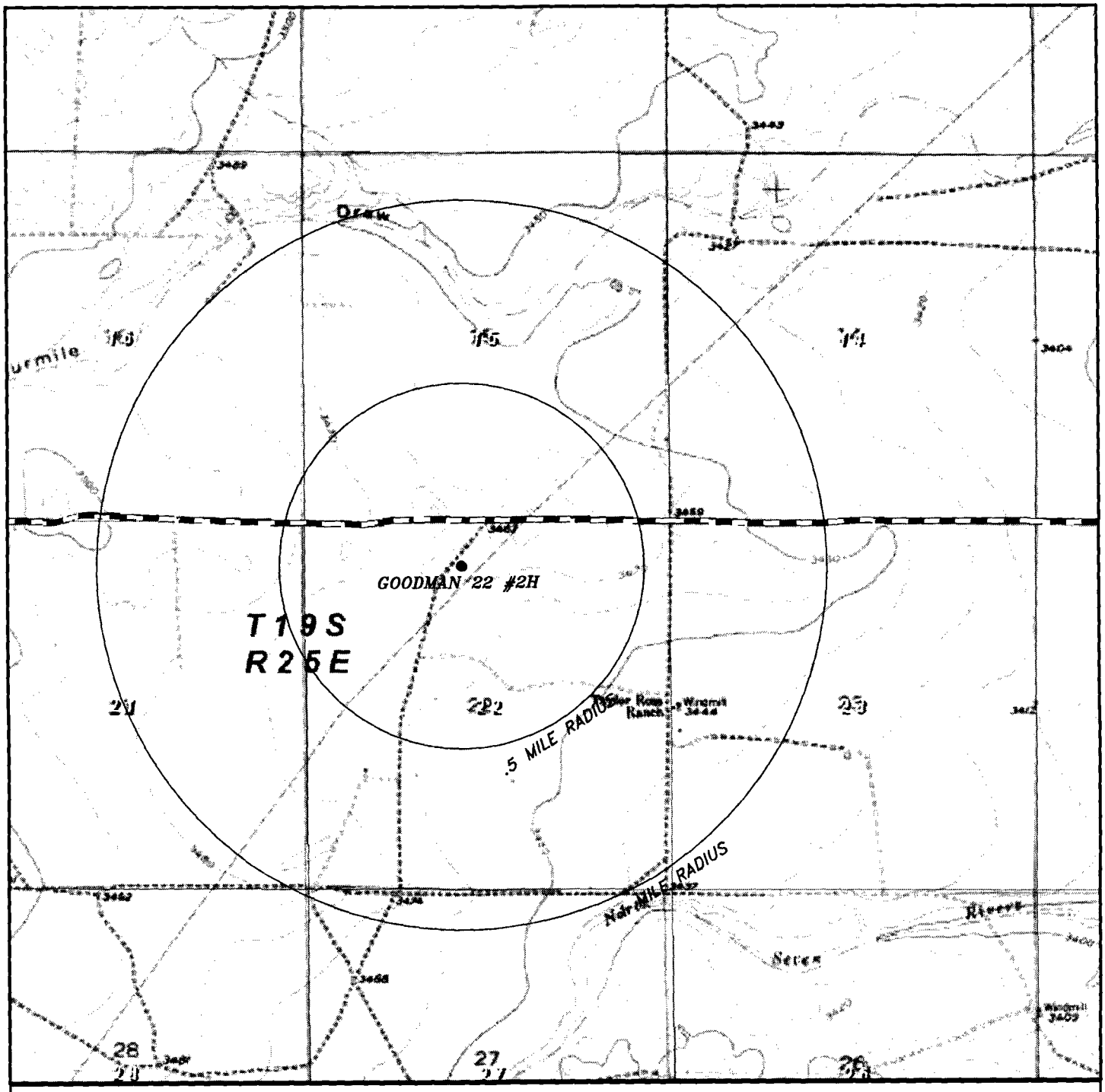

**PERCUSSION PETROLEUM OPERATING, LLC**

REF: GOODMAN 22 #2H / WELL PAD TOPO

THE GOODMAN 22 #2H LOCATED 714' FROM THE NORTH LINE AND 2302' FROM THE WEST LINE OF SECTION 22, TOWNSHIP 19 SOUTH, RANGE 25 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO.


basin surveys
focused on excellence in the oilfield
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com


| W.O. Number: 32898 | Drawn By: K GOAD | Date: 05-15-2017 | Survey Date: 05-06-2017 | Sheet 1 of 1 Sheets |
|---|---|---|---|---|




GOODMAN 22 #2H
Located 714' FNL and 2302' FWL
Section 22, Township 19 South, Range 25 East,
N.M.P.M., Eddy County, New Mexico.

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Hobbs, New Mexico 88241
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basinsurveys.com

0' 1000' 2000' 3000' 4000'
SCALE: 1" = 2000'

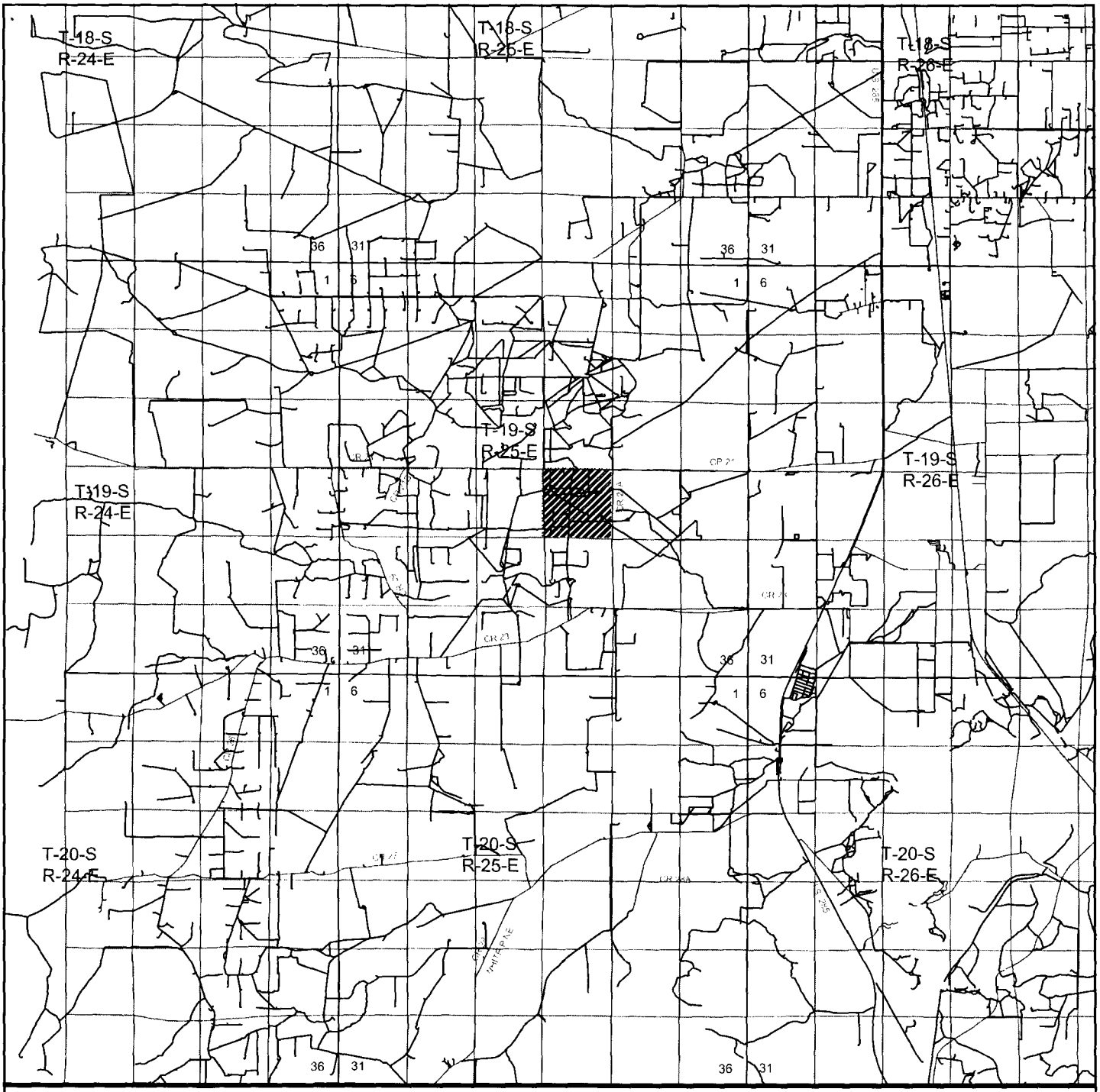
W.O. Number: KJG 32898

Survey Date: 05-06-2017

YELLOW TINT - USA LAND
BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND

N

PERCUSSION PETROLEUM OPERATING, LLC




# GOODMAN 22 #2H

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## Section 22, Township 19 South, Range 25 East,
## N.M.P.M., Eddy County, New Mexico.


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basinsurveys.com


0 1 MI 2 MI 3 MI 4 MI

SCALE: 1" = 2 MILES

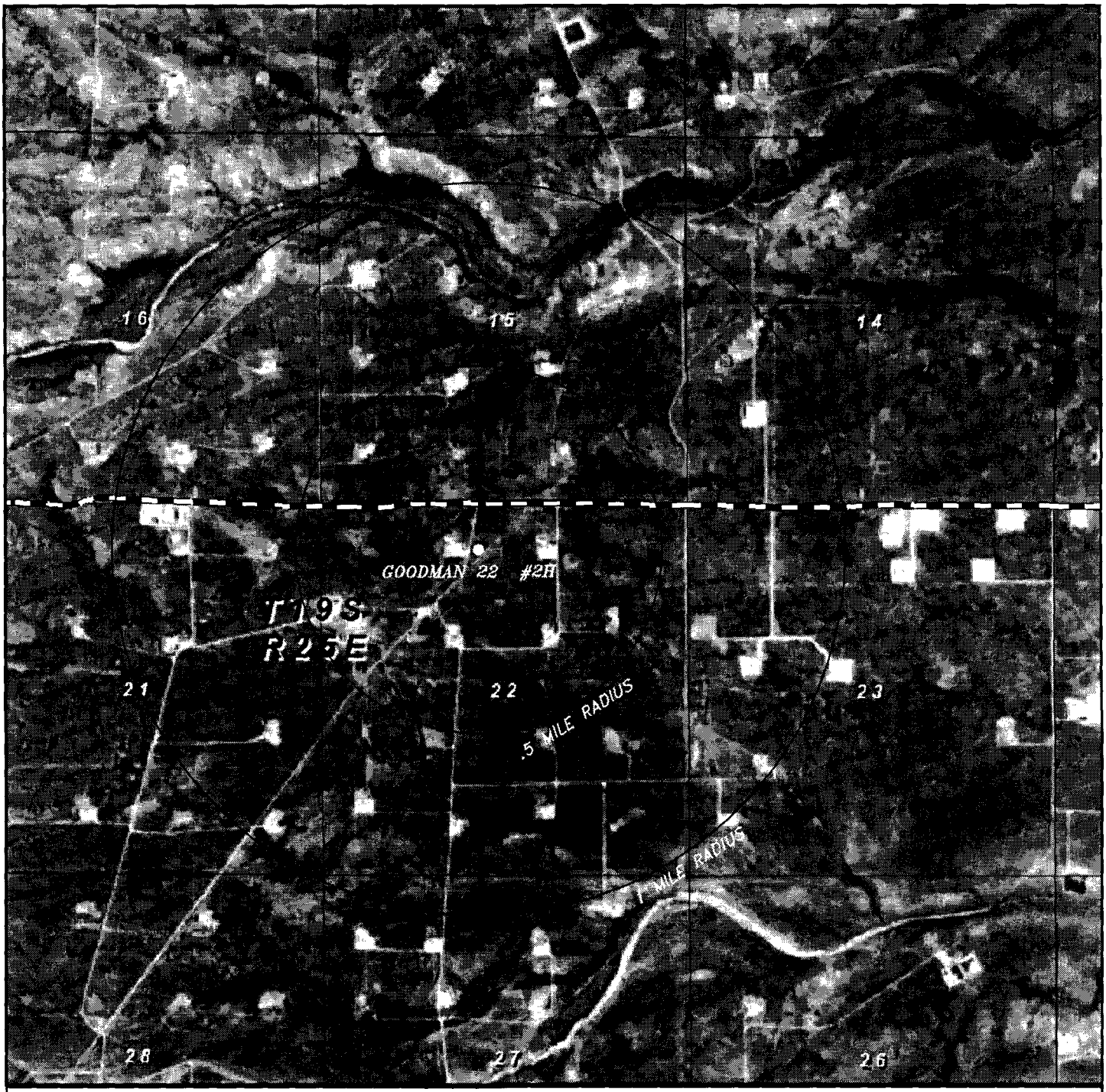
W.O. Number: KJG 32898

Survey Date: 05-06-2017

*YELLOW TINT - USA LAND*
*BLUE TINT - STATE LAND*
*NATURAL COLOR - FEE LAND*

N

*PERCUSSION PETROLEUM OPERATING, LLC*




# GOODMAN 22 #2H
## Located 714' FNL and 2302' FWL
## Section 22, Township 19 South, Range 25 East, N.M.P.M., Eddy County, New Mexico.

basin surveys
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0' 1000' 2000' 3000' 4000'
SCALE: 1" = 2000'

W.O. Number: KJG 32898

Survey Date: 05-06-2017

YELLOW TINT - USA LAND
BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND

N

PERCUSSION PETROLEUM OPERATING, LLC

# Percussion Petroleum Operating, LLC



| | | |
|---|---|---|
| **Well:** | | Goodman 2H |
| **Location:** | **SHL** | Section 22, T19S, R25E, 714 FNL, 2302 FWL<br>Lat: 32.651827° N, Long: -104.473705° W<br>State Plane NME-3001: N: 600894.3, E: 498134.5 |
| | **BHL** | Section 23, T19S, R25E, 970 FNL, 2677 FWL<br>Lat: 32.651104° N, Long: -104.455441°W<br>State Plane NME-3001: N: 600624.1, E: 503755.6 |
| **County:** | | Eddy |
| **State:** | | New Mexico |
| **Rig:** | | Silver Oak Drilling |
| **Spud Date:** | | Oct-17 |
| **AFE Number:** | | 1064 |
| **True Vertical Depth:** | | 2992' ft |
| **Total Measured Depth:** | | 8465' ft |
| **Elevation:** | | GL = 3,475' KB= 25' |
| **Directions:** | | From the intersection of Highway 285 and Rockin R Red Road go west approximately 3.5 miles turn left (south) onto lease road. |

| | |
|---|---|
| **Prepared By:** | Lelan J Anders |
| **Operations Manager:** | Lelan J Anders |
| **Engineering:** | Lelan J Anders |
| **Exploration:** | C.J. Lipinski |
| **Land:** | Josh Grisham |

# DRILLING PROGRAM

**CASING DEPTHS:**

9-5/8" 32# J-55 LT&C set at **1,213 ft** inside
12 1/4 open hole, cemented to surface

5 1/2" 17# L-80 BT&C set at **8,465 ft** inside
8 3/4 open hole, cemented to surface

**POTENTIAL PROBLEMS:**

0' - 1213' Gravel, Red Beds and Water Sands. Seepage and loses. Tight hole.

1213' - TD Hole cleaning, seepage, and loses.

**MUD PROGRAM:**

| Interval | Mud Type | Mud Weight | Viscosity | Water Loss | Plastic Viscosity | Yield Point |
|---|---|---|---|---|---|---|
| 0' - 1213' | FW / Gel | 8.4 - 9.2 PPG | 36 - 42 | NC | 3 - 5 | 5 - 7 |
| | Paper and gel sweeps to clean hole | | | | | |
| 1213' - KOP' | FW / Cut Brine | 8.3 - 9.2 PPG | 28 - 30 | NC | 1 | 1 |
| | Gel sweeps to clean hole and LCM pills for loss circulation. Raise vis to 34 - 40 if needed. | | | | | |
| KOP' - TD' | Cut Brine | 8.6 - 9.2 PPG | 29 - 32 | 10 - 12 | 4 - 5 | 6 - 10 |

Salt gel sweeps to clean hole and LCM pill for loss circulation. Only acid soluble LCM below surface casing. Increase vis to 34 - 40 if needed. If drag becomes a problem add Surfac PG. Drill curve and lateral section with XCD Polymer / Cut Brine / Starch system.
**Drill as close to pressure balanced as possible.**
**Estimated BHP for the Yeso formation is 1100 psi.**

**Mud additions to be coordinated through PPO representative.**
**This program is only a guide and hole conditions will dictate mud system requirements and changes.**

**ESTIMATED FORMATION TOPS / LITHOLOGY:** **3,475'** **Ground Level** **25' RKB**

| Formation | MD | TVD | SS | Lithology |
|---|---|---|---|---|
| San Andes | | 829 | 2646 | Dolomite |
| Glorieta | | 2454 | 1021 | Silty Dolomite |
| Yeso | | 2590 | 885 | Dolomite |
| Tubb | | 3196 | 279 | Dolomite |

**DRILL STEM TEST:** None

**MUD LOGGING:** A one man mud logging unit will be in service prior to spudding well to total depth. Samples in the lateral/pay will be taken every 10'. Mud logger will assist in picking surface casing point. Only authorized personnel will be allowed access to mud logging unit. Mud logger will be in contact with C.J. Lipinski. EOL at 100' FSL is a h line. Cut short to 120' FSL to avoid crossing hard line. Do not exceed without approval from Lelan J Anders, Operations Manager. Drilling Foreman is to be notified of changes in drilling parameters.

**ELECTRIC LINE LOGS** None

**DIRECTIONAL SURVEYS:** Straight hole specifications. Maximum deviation from vertical shall be no more than 3° inclination.
We will directionally drill according to the well plan in order to hit our intended landing zone.
We will drill as per directional plan to ~100 ft from lease line enabling us to locate our FTP 330' FSL.
We will run 5 1/2" casing with 2 jt shoe track to TD and cement in place. Our LTP will be 330' FNL.
See directional plan for more details.
**THIS IS A HORIZONTAL WELL WITH EXTREMELY TIGHT TOLERANCES. KEEP LELAN ANDEF AND CJ LIPINSKI INFORMED WITH ANY PROBLEMS MAINTAINING TARGET.**

## Straight Hole Specifications

| Well Depth Feet | Maximum Distance Between Surveys | Maximum Deviati From Vertical |
|---|---|---|
| 0' - 100' | | 3° |
| 100' - 2,000' | MWD and Motor thru this section of hole.* | 10° |
| 2,000' - TD | MWD and Motor thru this section of hole. | |

* Depending on directional plan. If vertical hole is used to 1800' MD (surface casing point) then min d minimum distance between surverys will be 250' MD 3° max deviation from vertical

**WELLHEAD EQUIP:**

| | |
|---|---|
| 9-5/8" Casing | 9-5/8" 3M x 11" 3M SOW |
| 5 1/2" Casing | 11" 5M x 7-1/16" 10M Tubing Head |

**CASING DESIGN:**

## 9-5/8" CASING

| | | | |
|---|---|---|---|
| 9-5/8" Shoe | | Casing Burst: | 3,520 psi |
| 1 Jt 9-5/8" 36# J-55 STC | | Casing Collapse: | 2,020 psi |
| 9-5/8" Insert Float | | Casing Tensile: | 394,000 lbs |
| 9-5/8" 36# J-55 STC To Surface | | | |

**CASING SAFETY FACTORS**

| | API Recommended Safety Factor | Actual Safety Factor | Scenerio | External Fluids | Internal Fluids |
|---|---|---|---|---|---|
| Collapse: | 1.125 | 3.30 | Lost Circulation | Mud | None |
| Burst: | 1.125 | 1.46 | Plug Bump | Cement + 2000 psi applied pressure | Mud/Water |
| Tensile: | 1.8 | 2.80 | 100k Overpull | Mud | Mud |

**CENTRALIZER PLACEMENT**

Stop collar 10 feet above shoe with centralizer. One on first collar and every forth collar to surface, or as required by the BLM.

## 5 1/2" CASING

| | | | |
|---|---|---|---|
| 5 1/2" Shoe | | Casing Burst: | 7,740 psi |
| 2 Jts 5 1/2" 17# L80 BTC | | Casing Collapse: | 6,280 psi |
| 5 1/2" Float Collar | | Casing Tensile: | 348,000 lbs |

5 1/2" 17# L80 BTC Casing To Surface

**CASING SAFETY FACTORS**

| | API Recommended Safety Factor | Actual Safety Factor | Scenerio | External Fluids | Internal Fluids |
|---|---|---|---|---|---|
| Collapse: | 1.125 | 3.75 | Lost Circulation | Mud | None |
| Burst: | 1.125 | 2.47 | Plug Bump | Cement + 2000 psi applied pressure | Mud/Water |
| Tensile: | 1.8 | 2.29 | 100k Overpull | Mud | Mud |

**CENTRALIZER PLACEMENT**

Stop collar 10 feet above shoe with centralizer. One on first collar and every 10 collars to 1200 feet with one centralizer in 9-5/8" casing, or as required by the BLM.

## REQUIREMENTS FOR ALL CASING:

Long string casing to be hydro tested before leaving yard.
Thread lock Float Shoe and joint connection between float equipment.
Unload and visually inspect casing, arranging on racks in order of running.
Strap all casing as it is unloaded, threads off. Count all joints on location.
Clean and inspect threads, drift, redope.
Check all casing markings and threads for correctness.
Check crossovers and crossover collars. Have back up collars.
Rope off and mark all casing not to be used.
PPO representative to supervise all casing operations.
Torque casing to optimal value.

## CEMENT SCHEDULE:

### 9-5/8" CASING

Annular Volume: **379.9** cubic ft

Lead Cement: **605.2 sks** Class "C" + 2% CaCl + 0.25 pps Celloflake
Weight 14.8 ppg, Yield 1.32 cfs, Mix Water 6.3 gps.
These volumes based on circulating cement to surface plus 100% excess
**If cement does not circulate 1 inch cement to surface.**

### 5 1/2" CASING

Annular Volume: **2158.3** cubic ft

Lead Cement: **494.9 sks** 65/65/6 Class "C"+ 6% gel + 5% salt + 0.25pps Celloflake + 0.2% C41-
Weight 12.6 ppg, Yield 1.97 cfs, Mixing Water 10.84 gps
Tail Cement: **1727.3 sks** Class "C" + 2% CaCl + 0.25pps Celloflake
Weight 14.8 ppg, Yield 1.32 cfs, Mix Water 6.3 gps.
These volumes based on circulating cement to surface plus 50% excess

## REQUIREMENTS FOR ALL CEMENT:

Have cement supervisor independently check cement volumes and displacement volumes.
Collect and identify cement sample from each pod.
Minimize out of hole time. Have cement head already installed on casing joint etc.
Run casing at a smooth even pace being certain not to break down well bore.
Plan for unexpected events, plug doesn't bump at target volume, pump or lift pressures off, etc.
Do not over pump displacement volume.
Ensure plug dropped behind good cement. Chase plug with 10 bbls of sugar water.
Weigh cement samples and take wet samples throughout job.

Run material balance at end of each job to ensure water and cement volumes used confirm was mixed at proper weight as designated.

## DRILLING PROCEDURE

1. Build road and location as per rig requirements. Install Conductor to 90 ft. (THIS IS A CLOSED LOOP MUD SYSTEM)

2. Notify OCD (Artesia District 2) of rig moving in and tentative spud date.

3. Move in and rig up drill rig. Install valve in conductor pipe. Rig up closed loop system.

4. Order float equipment, Texas Pattern Guide Shoe, centralizers, and 9-5/8" casing to location. Visually inspect casing and arrange on racks in order of running. Rope off and mark all casing not to be used. Count all joints. Strap casing as it is unloaded ( THREADS OFF ). Inspect casing and check all casing markings and threads for correctness. Inspect and clean threads, redope, and drift casing. Closely inspect any crossover joints and have back up crossover collars on location. PPO supervisor to oversee all casing inspections, drifting, strapping, etc.

5. Drill 12-1/4" hole with fresh water Native Spud Mud to TD of surface hole interval. BHA 12-1/4" bit, bit sub, 12" OD stabilizer, 1- 8" drill collar, 12" OD stabilizer, 6 - 8" drill collars and 9 - 6" drill collars. Directional surveys as per DD and MWD company to stay on well plan to TD of surface hole.

6. Notify OCD of TD and cement job.

7. Pump 2 high vis sweeps and circulate hole clean prior to pulling out of hole.

8. Pull out of hole and record any tight spots on IADC report. SLM out of hole. Make sure cement crew will be on location and rigged up before casing is on bottom prior to starting out of hole. Keep hole full.

9. Rig up casing crew and run 9-5/8" casing per casing design. Fill casing every 5 joints and circulate one joint off bottom. Run centralizers per design or as required by NMOCD. Wash to bottom if necessary.

10. Rig up cementers and test lines to 2000 psi. Have cement supervisor INDEPENDENTLY check cement volumes and displacement volumes. Collect and identify cement sample from each pod. Minimize out of hole time.

11. Circulate casing for 3 casing volumes minimum or until hole cleans up. While circulating hold final job meeting with cement company going over cement volumes, mixing water requirements, displacement volumes, pump pressure and rates, and contingency plans for unexpected events (i.e. plug does not bump at theoretical displacement volume etc.). Add 100% excess to calculated cement volume required. Don't over displace. Top out cement to surface with 1" tubing IF necessary.

12. Pump 20 barrels fresh water spacer ahead and pump cement volume per cement design for 9-5/8" casing and PPO representative. Bump plug to 500 psi over pump pressure. Drop plug in good cement. Record cement to surface on IADC report.

13. Hang casing in full tension. Close cement head for 8 hours.

14. WOC 8 hours before cutting off and 24 hours before drilling out per NMOCD rules.

15. Cut off casing and install 9-5/8" 3M x 11" 3M SOW A-section.

16. Nipple up BOP and test to 500 psi low and 3000 psi high with an independent test company before drilling out.

17. Pick up 8-3/4" bit, and directional drilling BHA. Trip in hole, tag cement and record on IADC report. Test casing to 1000 psi. Drill out float collar and float shoe with fresh water / cut brine 8.3 - 9.2 ppg to a depth Increase mud vis to 30-34 for hole cleaning and samples if needed. Mud program is a guide and hole conditions will dictate mud system requirements or changes. All mud additions will be coordinated through PPO representative.

18. Order float equipement, guide shoe, centralizers, and 5 1/2" casing to location. Check for proper size, type, and thread of casing.

Visually inspect casing and arrange on racks in order of running. Rope off and mark all casing not to be used. Count all joints. Strap casing as it is unloaded (THREADS OFF). Inspect casing and check all casing markings and threads for correctness. Inspect and clean threads, redope, and drift casing. Closely inspect any crossover joints and have back up crossover collars on location. PPO supervisor to oversee all casing inspections, drifting, strapping, etc. Casing to be hydro tested before leaving yard. Make sure there are a minimum of 2 marker joints in the string (on at KOP and one mid way through planned lateral

19. Drill curve and lateral section with XCD Polymer / Cut Brine / Starch System. Increase viscosity as needed using oil and LF-24 to help keep hole slick to TMD if needed. Mud program is a guide and hole conditions will dictate mud system requirements or changes. All mud additions will be coordinated through PPO representative. Drilling breaks and hole problems will be coordinated with drilling foreman and Engineer. Artesia and Houston offices will be advised daily or as needed.

20. Notify NMOCD of TD and cement job.

21. Pump high vis sweep and circulate hole clean.

22. Pull out of hole and record any tight spots on IADC report. SLM out of hole. Make sure cement crew will be on location and rigged up before casing is on bottom prior to starting out of hole. Keep hole full.

23. Rig up casing crew and run 5 1/2" casing per casing design. Fill casing every 10 joints and circulate casing at bottom of 9-5/8" casing and 1 joint off bottom. Run centralizers per design or as required by the NMOCD. Wash to bottom if necessary. Record any fill on IADC report.

24. Rig up cementers and test lines to 2000 psi. Have cement supervisor INDEPENDENTLY check cement volumes and displacement volumes. Collect and identify cement sample from each pod. Minimize out of hole time.

25. Circulate casing on bottom for 6 times casing volume minimum or until hole cleans up. While circulating hold final job meeting with cement company going over cement volumes, mixing water requirements, displacement volumes, pump pressure and rates, and contingency plans for unexpected events (i.e. plug does not bump at theoretical displacement volume etc.). Add 50% excess for cement volumes required. Don't over displace.

26. Pump 20 barrels fresh water spacer ahead and pump cement volume per cement design for 5 1/2" casing and PPO representative. Bump plug to 500 psi over pump pressure. Drop plug behind good cement. Chase plug with 10 bbls sugar water or as directed by Record cement to surface on IADC report.

27. Hang casing in nminimum tension needed for pack off on wellhead. Close cement head for 8 hours.

28. WOC 8 hours before cutting off per BLM rules.

29. Nipple down BOP's and cut off casing and install 7" 10M x 11" 3M tubing head with 2 x 1-13/16" valves on one side and blind ca and BR plug on other side. Install with a blind flange and needle valve for completions.

30. Clean and jet pits. Release rig.

31. MAKE SURE LOCATION IS CLEAN BEFORE YOU LEAVE!!

## REQUIREMENTS

1. All drill pipe and drill collars to be inspected by PPO representative and a total count of all joints on location.
2. Long string to be hydro tested before leaving yard.
3. Check all casing on location. Threads, size and weight.
4. All casing to be torqued to optimal torque.
5. All shoe tracks to be thread locked.
6. Mud Logger will tell what footage to catch samples.
7. Keep bit record and grade bits.
8. Check all float equipment for correct size and threads.
9. Sign and keep copies of field tickets to turn in to office.
10. Notify all State and Federal offices of events and record in morning report. ( Date / Time / Name Of Person Talked To ).
11. Check and make sure all bond coating and centralizers are in proper places.
12. PPO supervisor to be sure all casing tallies are correctly done.
13. PPO supervisor to check and ensure drill pipe tally is correct.
14. Record release dates of equipment on location.
15. Pre job safety meeting with all companies before job begins.
16. On rig floor when picking up BHA and making up float equipment.
17. Witness all testing and cement jobs.
18. Make sure that everything that is reported on IADC is correct.
19. Make sure all mud is correctly mixed by rig crews.
20. All accidents to be reported to office ASAP and a accident form sent in to office within 24 hours.
21. All trash is off location and lease road is clean at all times.
22. All records are kept as TIGHT HOLE and are not released.
23. Well record is sealed and sent to Artesia Office or is delivered to PPO supervisor to Artesia Office.

## VENDOR LIST

| COMPANY | SERVICE | CONTACT NAME | CONTACT NUMBER |
|---|---|---|---|
| TBD | Drilling Rig | | |
| TBD | Directional Company | | |

| | |
|---|---|
| TBD | Mud |
| TBD | Cement |
| NA | DST |
| TBD | PVT's & Rig Monitor |
| TBD | Mud Logging |
| TBD | Conductor |
| TBD | Closed Loop System |
| TBD | Casing Crew & LD Machine |
| TBD | Location & Road |
| TBD | Stabilizers |
| TBD | Float Equipment |
| TBD | Open Hole Logging |
| TBD | H2S Equipment |
| TBD | Location & Trash Trailers |
| TBD | Living Quarters |
| TBD | Welder |
| TBD | Forklift & Trucking |
| TBD | Water |
| TBD | Rotating Head |

## PERSONNEL LIST

TBD, Drilling Foreman
Cell

Lelan J Anders, Engineering/Operations
Office 713-429-1291
Cell 281-908-1752

C.J. Lipinski, Geology
Office 713-429-5282
Cell 262-894-2811

Josh Grisham, Land
Office 713-589-2337
Cell 979-417-6858

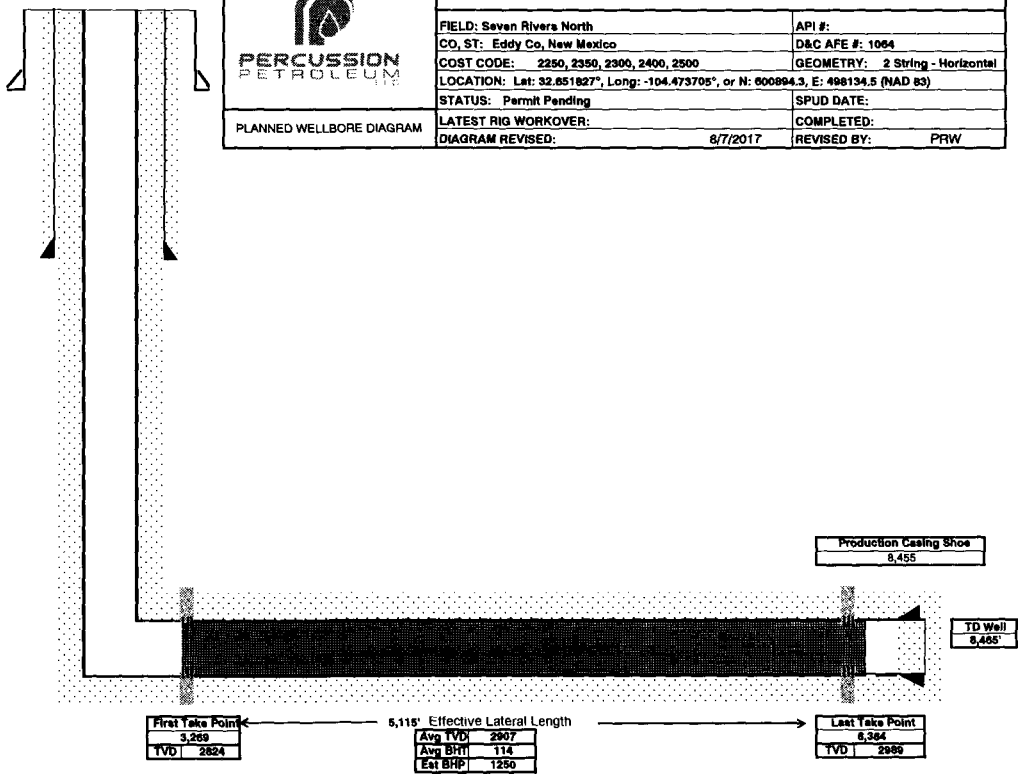
| Depth | Hole Size | Casing Data | Lithology | Fluid | Cement |
|---|---|---|---|---|---|
| 90' | | 20" 94# H-40 | | 8.4 ppg FW Gel and Gel/LCM Sweeps | Ready-Mix @ Surface |
| 1,213' | 12 1/4 | 9 5/8" 36# J-55 STC | San Andes Top @ 813' | 8.3-9.2 ppg FW Cut Brine Gel Sweeps and LCM Pills as needed | TOC @ Surface 100% Excess |
| 8,465' | 8 3/4 | 5 1/2" 17# L-80 BTC | Glorieta Top @ 2,438' TVD Yeso Top @ 2,574' TVD | 8.3-9.2 ppg FW Cut Brine Gel Sweeps and LCM Pills as needed (only acid soluable LCM) | TOC @ Surface 50% Excess |

PERCUSSION PETROLEUM

PLANNED WELLBORE DIAGRAM

## Goodman 2H

| | |
|---|---|
| FIELD: Seven Rivers North | API #: |
| CO, ST: Eddy Co, New Mexico | D&C AFE #: 1064 |
| COST CODE: 2250, 2350, 2300, 2400, 2500 | GEOMETRY: 2 String - Horizontal |
| LOCATION: Lat: 32.651827°, Long: -104.473705°, or N: 600894.3, E: 498134.5 (NAD 83) | |
| STATUS: Permit Pending | SPUD DATE: |
| LATEST RIG WORKOVER: | COMPLETED: |
| DIAGRAM REVISED: 8/7/2017 | REVISED BY: PRW |



Percussion Petroleum
Goodman 2H

-813' KB

**ESTIMATED FORMATION TOPS / LITHOLOGY:** **3,459'** **Ground Level** **25'**

| Formation | TVD | SS | Lithology |
|---|---|---|---|
| San Andes | 813' | 2646 | Dolomite |
| Glorieta | 2,438' | 1021 | Silty Dolom |
| Yeso | 2,574' | 885 | Dolomite |
| Tubb | 3,180' | 279 | Dolomite |