

District I1625 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 Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170**District IV**1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

Form C-101
August 1, 2011

Permit 287448

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

| | | |
|--|---------------------------------------|-------------------------------|
| 1. Operator Name and Address DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102 | | 2. OGRID Number 6137 |
| | | 3. API Number 30-015-47573 |
| 4. Property Code 320827 | 5. Property Name SPUD MUFFIN 31 30 | 6. Well No. 236H |

7. Surface Location

| | | | | | | | | | |
|---------------|---------------|-----------------|--------------|--------------|------------------|---------------|-------------------|---------------|----------------|
| UL - Lot O | Section 31 | Township 23S | Range 29E | Lot Idn O | Feet From 625 | N/S Line S | Feet From 1805 | E/W Line E | County Eddy |
|---------------|---------------|-----------------|--------------|--------------|------------------|---------------|-------------------|---------------|----------------|

8. Proposed Bottom Hole Location

| | | | | | | | | | |
|---------------|---------------|-----------------|--------------|--------------|-----------------|---------------|------------------|---------------|----------------|
| UL - Lot A | Section 30 | Township 23S | Range 29E | Lot Idn A | Feet From 20 | N/S Line N | Feet From 440 | E/W Line E | County Eddy |
|---------------|---------------|-----------------|--------------|--------------|-----------------|---------------|------------------|---------------|----------------|

9. Pool Information

| | |
|--------------------------|-------|
| CEDAR CANYON;BONE SPRING | 11520 |
|--------------------------|-------|

Additional Well Information

| | | | | |
|---------------------------|-----------------------------|--|-------------------------|------------------------------------|
| 11. Work Type New Well | 12. Well Type OIL | 13. Cable/Rotary | 14. Lease Type State | 15. Ground Level Elevation 2962 |
| 16. Multiple N | 17. Proposed Depth 18961 | 18. Formation Bone Spring | 19. Contractor | 20. Spud Date 6/1/2021 |
| 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 |
|------|-----------|-------------|------------------|---------------|-----------------|---------------|
| Surf | 17.5 | 13.375 | 48 | 139 | 139 | 0 |
| Int1 | 12.25 | 9.625 | 40 | 2644 | 420 | 0 |
| Prod | 8.75 | 5.5 | 17 | 18961 | 2598 | 2144 |

Casing/Cement Program: Additional Comments

Int 1 Intermediate Squeeze Sk - As Needed TOC @ Surf WT 9.0 YLD 3.3 Slurry Description - Squeeze Lead: Class C Cement + additives Sk - 266 TOC @ Surf WT 9.0 YLD 3.3 Slurry Description - Lead: Class C Cement + additives Sk - 154 TOC @ 500' above shoe WT 13.2 YLD 1.4 Slurry Description - Tail: Class H / C + additives

22. Proposed Blowout Prevention Program

| Type | Working Pressure | Test Pressure | Manufacturer |
|------------|------------------|---------------|--------------|
| Annular | 5000 | 5000 | |
| Double Ram | 5000 | 5000 | |
| Annular | 5000 | 5000 | |
| Double Ram | 5000 | 5000 | |

23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief.
I further certify I have complied with 19.15.14.9 (A) NMAC ☒ and/or 19.15.14.9 (B) NMAC ☒ if applicable.

OIL CONSERVATION DIVISION

| | | | |
|----------------|------------------------------------|---------------------------------|-------------------------------|
| Signature: | | | |
| Printed Name: | Electronically filed by Jeff Walla | Approved By: | Scott Cox |
| Title: | Supervisor Land | Title: | Petroleum Engineer Supervisor |
| Email Address: | Jeff.Walla@dvn.com | Approved Date: | 10/27/2020 |
| Date: | 10/13/2020 | Phone: | 575-748-9925 |
| | | Expiration Date: 10/27/2022 | |
| | | Conditions of Approval Attached | |

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State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

| | | |
|---------------------------------------|--|---|
| ¹ API Number | ² Pool Code 11520 | ³ Pool Name CEDAR CANYON;BONE SPRING |
| ⁴ Property Code | ⁵ Property Name SPUD MUFFIN 31-30 | ⁶ Well Number 236H |
| ⁷ OGRID No. 6137 | ⁸ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P. | ⁹ Elevation 2961.5 |

¹⁰ Surface Location

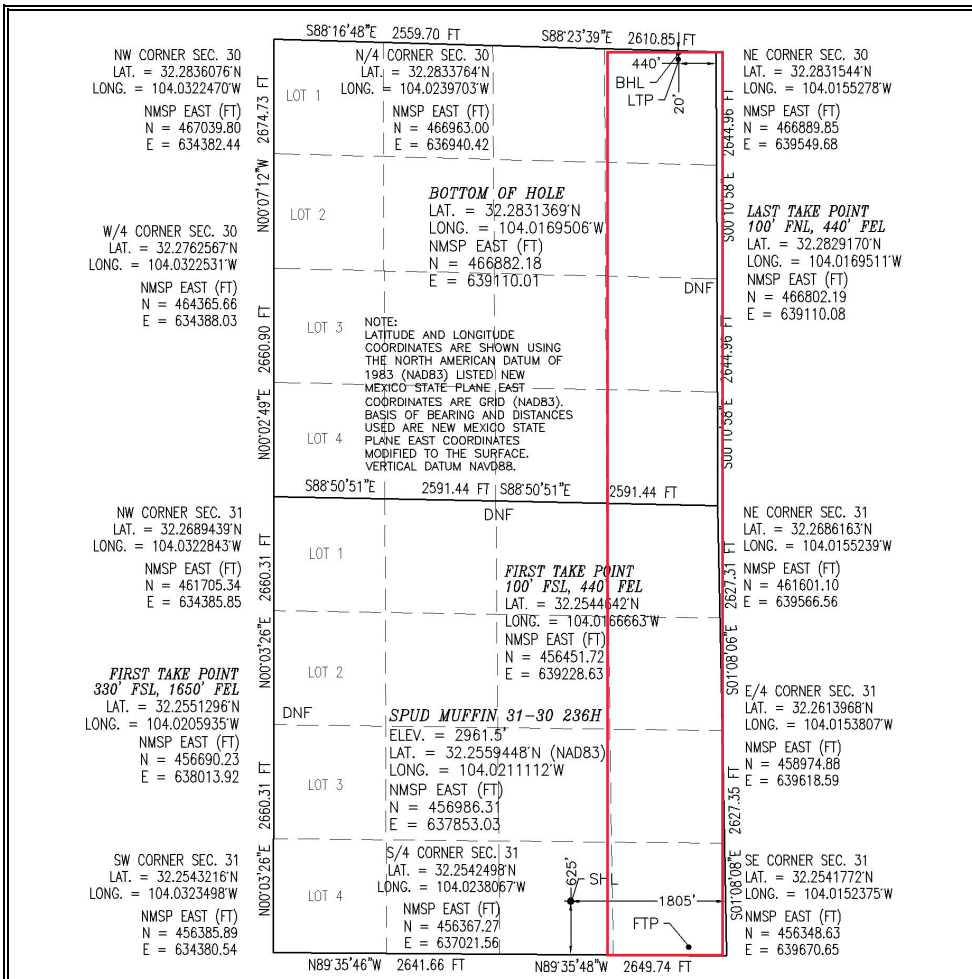
| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|-----------|-------------|------------|---------|---------------|------------------|---------------|----------------|-------------|
| O | 31 | 23 S | 29E | | 625 | SOUTH | 1805 | EAST | EDDY |

¹¹ Bottom Hole Location If Different From Surface

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|-----------|-------------|-------------|---------|---------------|------------------|---------------|----------------|-------------|
| A | 30 | 23 S | 29 E | | 20 | NORTH | 440 | EAST | EDDY |

| | | | |
|---|-------------------------------|----------------------------------|-------------------------|
| ¹² Dedicated Acres 320 | ¹³ Joint or Infill | ¹⁴ Consolidation Code | ¹⁵ Order No. |
|---|-------------------------------|----------------------------------|-------------------------|

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

¹⁷ OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Jenny Harms 10-12-2020
Signature Date

JENNY HARMS

Printed Name

JENNY.HARMS@DVN.COM

E-mail Address

¹⁸ SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

SEPTEMBER 14, 2020

Date of Survey

Signature and Seal of Professional Surveyor:

Certificate Number: 12797
Surveyor's License No. 8480

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State of New Mexico
Energy, Minerals and Natural Resources
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GAS CAPTURE PLAN

Date: 10/27/2020

☒ Original

Operator & OGRID No.: [6137] DEVON ENERGY PRODUCTION COMPANY, LP

☐ Amended - Reason for
Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

| Well Name | API | Well Location (ULSTR) | Footages | Expected MCF/D | Flared or Vented | Comments |
|-------------------------|--------------|--------------------------|-------------|-------------------|---------------------|----------|
| SPUD MUFFIN 31 30 #236H | 30-015-47573 | O-31-23S-29E | 0625S 1805E | 3 | None | |

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to DCP OPERATING COMPANY, LP and will be connected to DCP OPERATING COMPANY, LP High/Low Pressure gathering system located in Lea County, New Mexico. It will require 2000' of pipeline to connect the facility to High/Low Pressure gathering system. DEVON ENERGY PRODUCTION COMPANY, LP provides (periodically) to DCP OPERATING COMPANY, LP a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, DEVON ENERGY PRODUCTION COMPANY, LP and DCP OPERATING COMPANY, LP have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at DCP OPERATING COMPANY, LP Processing Plant located in Sec. 05 Twn. 21S, Rng. 36E, Lea County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on DCP OPERATING COMPANY, LP system at that time. Based on current information, it is DEVON ENERGY PRODUCTION COMPANY, LP's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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

Form APD Comments

Permit 287448

PERMIT COMMENTS

| | | |
|---|--|----------------------------------|
| Operator Name and Address: DEVON ENERGY PRODUCTION COMPANY, LP [6137] 333 West Sheridan Ave. Oklahoma City, OK 73102 | | API Number: 30-015-47573 |
| | | Well: SPUD MUFFIN 31 30 #236H |
| Created By | Comment | Comment Date |
| drebecca | C-102, Plats, Drilling Plan, Directional Plan, GCP & H2S Plan attached in Sec 7 - Forms. | 10/12/2020 |

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

Form APD Conditions

Permit 287448

PERMIT CONDITIONS OF APPROVAL

| | |
|---|----------------------------------|
| Operator Name and Address: DEVON ENERGY PRODUCTION COMPANY, LP [6137] 333 West Sheridan Ave. Oklahoma City, OK 73102 | API Number: 30-015-47573 |
| | Well: SPUD MUFFIN 31 30 #236H |

| | |
|-----------------|--|
| OCD Reviewer | Condition |
| ksimmons | Will require a directional survey with the C-104 |
| ksimmons | Cement is required to circulate on both surface and intermediate1 strings of casing |
| kpickford | Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string |
| kpickford | Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system. |
| kpickford | The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud |
| kpickford | The Operator is to notify NMOCD by sundry (Form C-103) within ten (10) days of the well being spud 2)- Drilling Sundries Form C-103 (Casing and Cement test are to be submitted within 10 days 3)- Completion Reports & Logs are to be submitted within 45 days |

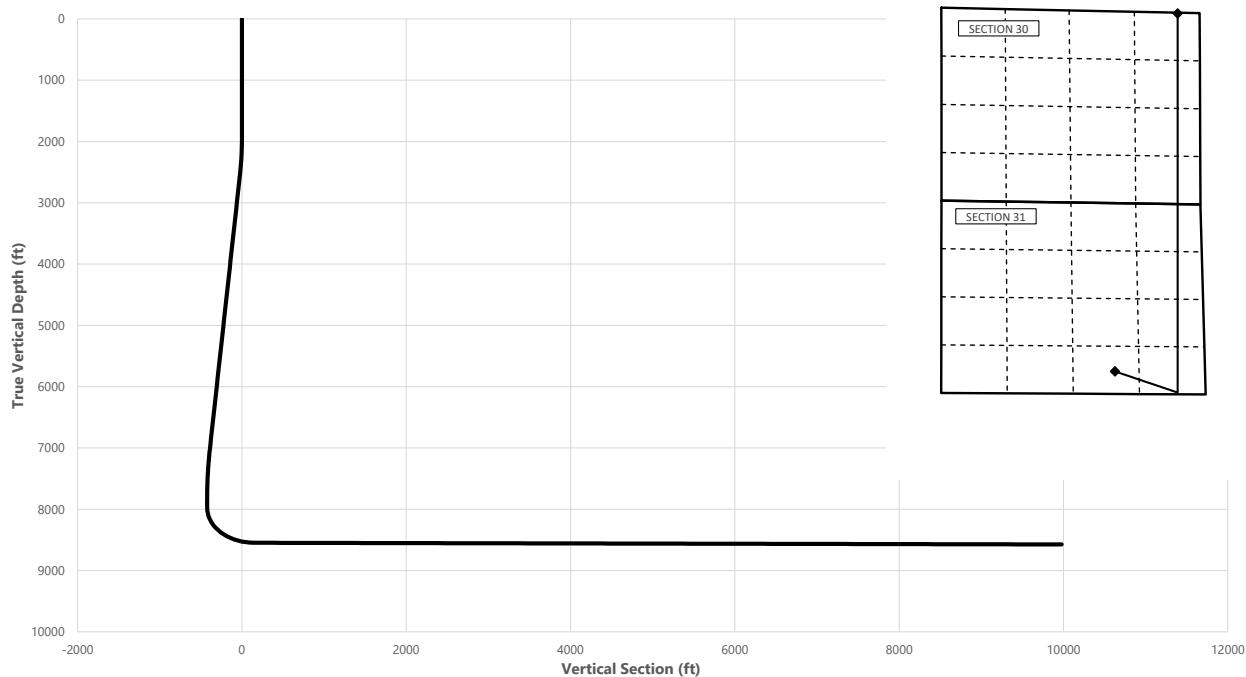
SPUD MUFFIN 31-30 236H



Well: SPUD MUFFIN 31-30 236H
County: Eddy
Wellbore: Permit Plan
Design: Permit Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1927
Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

| MD (ft) | INC (°) | AZI (°) | TVD (ft) | NS (ft) | EW (ft) | VS (ft) | DLS (°/100ft) | Comment |
|------------|------------|------------|-------------|------------|------------|------------|------------------|------------------|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | SHL |
| 2000.00 | 0.00 | 115.00 | 2000.00 | 0.00 | 0.00 | 0.00 | 0.00 | Start Tangent |
| 2500.00 | 15.00 | 115.00 | 2494.31 | -27.50 | 58.98 | -19.85 | 1.00 | Hold Tangent |
| 7231.24 | 15.00 | 115.00 | 7064.33 | -545.01 | 1168.78 | -393.39 | 0.00 | Drop to Vertical |
| 7981.24 | 0.00 | 115.00 | 7805.79 | -586.27 | 1257.25 | -423.16 | 2.00 | Hold Vertical |
| 8149.49 | 0.00 | 0.00 | 7974.04 | -586.27 | 1257.25 | -423.16 | 0.00 | KOP |
| 9047.93 | 89.84 | 0.00 | 8547.00 | -14.87 | 1257.25 | 143.68 | 10.00 | Landing Point |
| 18960.86 | 89.84 | 0.00 | 8574.00 | 9898.03 | 1257.25 | 9977.56 | 0.00 | BHL |



| Key Depths | MD (ft) | TVD (ft) |
|-----------------------------------|------------|-------------|
| Rustler | 0.00 | 0.00 |
| Top of Salt | 469.00 | 469.00 |
| Base of Salt | 2551.44 | 2544.00 |
| Lamar | 2799.91 | 2784.00 |
| Bell Canyon | 2799.91 | 2784.00 |
| Cherry Canyon | 3721.31 | 3674.00 |
| Brushy Canyon | 5325.99 | 5224.00 |
| 1st Bone Spring Lime | 6630.43 | 6484.00 |
| 1st Bone Spring Sand | 7643.66 | 7469.00 |
| BONE SPRING 2ND / Point of Penetr | 8459.32 | 8269.00 |
| Exit | 18880.86 | 8573.79 |

SHL
KOP
Point of Penetration
Exit
BHL

| MD (ft) | TVD (ft) | Lat (°) | Long (°) | Section Footages |
|------------|-------------|------------|-------------|---|
| 0.00 | 0.00 | 32.2559 | -104.0212 | 625' FSL, 1805' FEL of Sec 31 in T23S, R29E |
| 8149.49 | 7974.04 | 32.2542 | -104.0171 | 48' FSL, 440' FEL of Sec 31 in T23S, R29E |
| 8459.32 | 8269.00 | 32.2545 | -104.0167 | 100' FSL, 440' FEL of Sec 31 in T23S, R29E |
| 18880.86 | 8573.79 | 32.2829 | -104.0170 | 100' FNL, 440' FEL of Sec 30 in T23S, R29E |
| 18960.86 | 8574.00 | 32.2830 | -104.0170 | 20' FNL, 440' FEL of Sec 30 in T23S, R29E |

SPUD MUFFIN 31-30 236H



Well: SPUD MUFFIN 31-30 236H
County: Eddy
Wellbore: Permit Plan
Design: Permit Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1927
Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

| MD (ft) | INC (°) | AZI (°) | TVD (ft) | NS (ft) | EW (ft) | VS (ft) | DLS (°/100ft) | Comment |
|------------|------------|------------|-------------|------------|------------|------------|------------------|--------------------|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | SHL |
| 100.00 | 0.00 | 115.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 114.00 | 0.00 | 115.00 | 114.00 | 0.00 | 0.00 | 0.00 | 0.00 | Rustler |
| 200.00 | 0.00 | 115.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 300.00 | 0.00 | 115.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 400.00 | 0.00 | 115.00 | 400.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 469.00 | 0.00 | 115.00 | 469.00 | 0.00 | 0.00 | 0.00 | 0.00 | Top of Salt |
| 500.00 | 0.00 | 115.00 | 500.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 600.00 | 0.00 | 115.00 | 600.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 700.00 | 0.00 | 115.00 | 700.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 800.00 | 0.00 | 115.00 | 800.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 900.00 | 0.00 | 115.00 | 900.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1000.00 | 0.00 | 115.00 | 1000.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1100.00 | 0.00 | 115.00 | 1100.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1200.00 | 0.00 | 115.00 | 1200.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1300.00 | 0.00 | 115.00 | 1300.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1400.00 | 0.00 | 115.00 | 1400.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1500.00 | 0.00 | 115.00 | 1500.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1600.00 | 0.00 | 115.00 | 1600.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1700.00 | 0.00 | 115.00 | 1700.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1800.00 | 0.00 | 115.00 | 1800.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1900.00 | 0.00 | 115.00 | 1900.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2000.00 | 0.00 | 115.00 | 2000.00 | 0.00 | 0.00 | 0.00 | 0.00 | Start Tangent |
| 2100.00 | 3.00 | 115.00 | 2099.95 | -1.11 | 2.37 | -0.80 | 3.00 | |
| 2200.00 | 6.00 | 115.00 | 2199.63 | -4.42 | 9.48 | -3.19 | 3.00 | |
| 2300.00 | 9.00 | 115.00 | 2298.77 | -9.94 | 21.31 | -7.17 | 3.00 | |
| 2400.00 | 12.00 | 115.00 | 2397.08 | -17.64 | 37.82 | -12.73 | 3.00 | |
| 2500.00 | 15.00 | 115.00 | 2494.31 | -27.50 | 58.98 | -19.85 | 1.00 | Hold Tangent |
| 2551.44 | 15.00 | 115.00 | 2544.00 | -33.13 | 71.05 | -23.91 | 0.00 | Base of Salt |
| 2600.00 | 15.00 | 115.00 | 2590.90 | -38.44 | 82.44 | -27.75 | 0.00 | |
| 2700.00 | 15.00 | 115.00 | 2687.49 | -49.38 | 105.89 | -35.64 | 0.00 | |
| 2799.91 | 15.00 | 115.00 | 2784.00 | -60.31 | 129.33 | -43.53 | 0.00 | Lamar, Bell Canyon |
| 2800.00 | 15.00 | 115.00 | 2784.09 | -60.32 | 129.35 | -43.54 | 0.00 | |
| 2900.00 | 15.00 | 115.00 | 2880.68 | -71.26 | 152.81 | -51.43 | 0.00 | |
| 3000.00 | 15.00 | 115.00 | 2977.27 | -82.19 | 176.26 | -59.33 | 0.00 | |
| 3100.00 | 15.00 | 115.00 | 3073.86 | -93.13 | 199.72 | -67.22 | 0.00 | |
| 3200.00 | 15.00 | 115.00 | 3170.46 | -104.07 | 223.18 | -75.12 | 0.00 | |
| 3300.00 | 15.00 | 115.00 | 3267.05 | -115.01 | 246.64 | -83.01 | 0.00 | |
| 3400.00 | 15.00 | 115.00 | 3363.64 | -125.95 | 270.09 | -90.91 | 0.00 | |
| 3500.00 | 15.00 | 115.00 | 3460.23 | -136.88 | 293.55 | -98.80 | 0.00 | |
| 3600.00 | 15.00 | 115.00 | 3556.83 | -147.82 | 317.01 | -106.70 | 0.00 | |
| 3700.00 | 15.00 | 115.00 | 3653.42 | -158.76 | 340.46 | -114.59 | 0.00 | |
| 3721.31 | 15.00 | 115.00 | 3674.00 | -161.09 | 345.46 | -116.28 | 0.00 | Cherry Canyon |
| 3800.00 | 15.00 | 115.00 | 3750.01 | -169.70 | 363.92 | -122.49 | 0.00 | |
| 3900.00 | 15.00 | 115.00 | 3846.60 | -180.64 | 387.38 | -130.38 | 0.00 | |
| 4000.00 | 15.00 | 115.00 | 3943.20 | -191.57 | 410.83 | -138.28 | 0.00 | |
| 4100.00 | 15.00 | 115.00 | 4039.79 | -202.51 | 434.29 | -146.17 | 0.00 | |
| 4200.00 | 15.00 | 115.00 | 4136.38 | -213.45 | 457.75 | -154.07 | 0.00 | |
| 4300.00 | 15.00 | 115.00 | 4232.97 | -224.39 | 481.21 | -161.96 | 0.00 | |
| 4400.00 | 15.00 | 115.00 | 4329.57 | -235.33 | 504.66 | -169.86 | 0.00 | |
| 4500.00 | 15.00 | 115.00 | 4426.16 | -246.27 | 528.12 | -177.75 | 0.00 | |
| 4600.00 | 15.00 | 115.00 | 4522.75 | -257.20 | 551.58 | -185.65 | 0.00 | |
| 4700.00 | 15.00 | 115.00 | 4619.34 | -268.14 | 575.03 | -193.54 | 0.00 | |
| 4800.00 | 15.00 | 115.00 | 4715.94 | -279.08 | 598.49 | -201.44 | 0.00 | |
| 4900.00 | 15.00 | 115.00 | 4812.53 | -290.02 | 621.95 | -209.33 | 0.00 | |
| 5000.00 | 15.00 | 115.00 | 4909.12 | -300.96 | 645.40 | -217.23 | 0.00 | |
| 5100.00 | 15.00 | 115.00 | 5005.72 | -311.89 | 668.86 | -225.12 | 0.00 | |
| 5200.00 | 15.00 | 115.00 | 5102.31 | -322.83 | 692.32 | -233.02 | 0.00 | |
| 5300.00 | 15.00 | 115.00 | 5198.90 | -333.77 | 715.77 | -240.92 | 0.00 | |
| 5325.99 | 15.00 | 115.00 | 5224.00 | -336.61 | 721.87 | -242.97 | 0.00 | Brushy Canyon |
| 5400.00 | 15.00 | 115.00 | 5295.49 | -344.71 | 739.23 | -248.81 | 0.00 | |
| 5500.00 | 15.00 | 115.00 | 5392.09 | -355.65 | 762.69 | -256.71 | 0.00 | |
| 5600.00 | 15.00 | 115.00 | 5488.68 | -366.58 | 786.15 | -264.60 | 0.00 | |
| 5700.00 | 15.00 | 115.00 | 5585.27 | -377.52 | 809.60 | -272.50 | 0.00 | |
| 5800.00 | 15.00 | 115.00 | 5681.86 | -388.46 | 833.06 | -280.39 | 0.00 | |
| 5900.00 | 15.00 | 115.00 | 5778.46 | -399.40 | 856.52 | -288.29 | 0.00 | |
| 6000.00 | 15.00 | 115.00 | 5875.05 | -410.34 | 879.97 | -296.18 | 0.00 | |
| 6100.00 | 15.00 | 115.00 | 5971.64 | -421.27 | 903.43 | -304.08 | 0.00 | |
| 6200.00 | 15.00 | 115.00 | 6068.23 | -432.21 | 926.89 | -311.97 | 0.00 | |
| 6300.00 | 15.00 | 115.00 | 6164.83 | -443.15 | 950.34 | -319.87 | 0.00 | |

SPUD MUFFIN 31-30 236H



Well: SPUD MUFFIN 31-30 236H
County: Eddy
Wellbore: Permit Plan
Design: Permit Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1927
Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

| MD (ft) | INC (°) | AZI (°) | TVD (ft) | NS (ft) | EW (ft) | VS (ft) | DLS (°/100ft) | Comment |
|------------|------------|------------|-------------|------------|------------|------------|------------------|--|
| 6400.00 | 15.00 | 115.00 | 6261.42 | -454.09 | 973.80 | -327.76 | 0.00 | |
| 6500.00 | 15.00 | 115.00 | 6358.01 | -465.03 | 997.26 | -335.66 | 0.00 | |
| 6600.00 | 15.00 | 115.00 | 6454.60 | -475.97 | 1020.72 | -343.55 | 0.00 | |
| 6630.43 | 15.00 | 115.00 | 6484.00 | -479.29 | 1027.85 | -345.95 | 0.00 | 1st Bone Spring Lime |
| 6700.00 | 15.00 | 115.00 | 6551.20 | -486.90 | 1044.17 | -351.45 | 0.00 | |
| 6800.00 | 15.00 | 115.00 | 6647.79 | -497.84 | 1067.63 | -359.34 | 0.00 | |
| 6900.00 | 15.00 | 115.00 | 6744.38 | -508.78 | 1091.09 | -367.24 | 0.00 | |
| 7000.00 | 15.00 | 115.00 | 6840.97 | -519.72 | 1114.54 | -375.13 | 0.00 | |
| 7100.00 | 15.00 | 115.00 | 6937.57 | -530.66 | 1138.00 | -383.03 | 0.00 | |
| 7200.00 | 15.00 | 115.00 | 7034.16 | -541.59 | 1161.46 | -390.92 | 0.00 | |
| 7231.24 | 15.00 | 115.00 | 7064.33 | -545.01 | 1168.78 | -393.39 | 0.00 | Drop to Vertical |
| 7300.00 | 13.62 | 115.00 | 7130.96 | -552.20 | 1184.19 | -398.58 | 2.00 | |
| 7400.00 | 11.62 | 115.00 | 7228.54 | -561.43 | 1204.00 | -405.24 | 2.00 | |
| 7500.00 | 9.62 | 115.00 | 7326.82 | -569.23 | 1220.71 | -410.87 | 2.00 | |
| 7600.00 | 7.62 | 115.00 | 7425.68 | -575.56 | 1234.30 | -415.44 | 2.00 | |
| 7643.66 | 6.75 | 115.00 | 7469.00 | -577.87 | 1239.25 | -417.11 | 2.00 | 1st Bone Spring Sand |
| 7700.00 | 5.62 | 115.00 | 7525.01 | -580.44 | 1244.75 | -418.96 | 2.00 | |
| 7800.00 | 3.62 | 115.00 | 7624.68 | -583.85 | 1252.06 | -421.42 | 2.00 | |
| 7900.00 | 1.62 | 115.00 | 7724.57 | -585.78 | 1256.21 | -422.82 | 2.00 | |
| 7981.24 | 0.00 | 115.00 | 7805.79 | -586.27 | 1257.25 | -423.16 | 2.00 | Hold Vertical |
| 8000.00 | 0.00 | 0.00 | 7824.56 | -586.27 | 1257.25 | -423.17 | 0.00 | |
| 8100.00 | 0.00 | 0.00 | 7924.56 | -586.27 | 1257.25 | -423.17 | 0.00 | |
| 8149.49 | 0.00 | 0.00 | 7974.04 | -586.27 | 1257.25 | -423.16 | 0.00 | KOP |
| 8200.00 | 5.05 | 0.00 | 8024.49 | -584.04 | 1257.25 | -420.96 | 10.00 | |
| 8300.00 | 15.05 | 0.00 | 8122.83 | -566.61 | 1257.25 | -403.67 | 10.00 | |
| 8400.00 | 25.05 | 0.00 | 8216.65 | -532.37 | 1257.25 | -369.70 | 10.00 | |
| 8459.32 | 30.98 | 0.00 | 8269.00 | -504.51 | 1257.25 | -342.07 | 10.00 | BONE SPRING 2ND / Point of Penetration |
| 8500.00 | 35.05 | 0.00 | 8303.10 | -482.35 | 1257.25 | -320.08 | 10.00 | |
| 8600.00 | 45.05 | 0.00 | 8379.55 | -418.09 | 1257.25 | -256.33 | 10.00 | |
| 8700.00 | 55.05 | 0.00 | 8443.68 | -341.52 | 1257.25 | -180.38 | 10.00 | |
| 8800.00 | 65.05 | 0.00 | 8493.54 | -254.99 | 1257.25 | -94.53 | 10.00 | |
| 8900.00 | 75.05 | 0.00 | 8527.61 | -161.11 | 1257.25 | -1.40 | 10.00 | |
| 9000.00 | 85.05 | 0.00 | 8544.87 | -62.74 | 1257.25 | 96.19 | 10.00 | |
| 9047.93 | 89.84 | 0.00 | 8547.00 | -14.87 | 1257.25 | 143.68 | 10.00 | Landing Point |
| 9100.00 | 89.84 | 0.00 | 8547.14 | 37.20 | 1257.25 | 195.33 | 0.00 | |
| 9200.00 | 89.84 | 0.00 | 8547.41 | 137.20 | 1257.25 | 294.54 | 0.00 | |
| 9300.00 | 89.84 | 0.00 | 8547.69 | 237.20 | 1257.25 | 393.74 | 0.00 | |
| 9400.00 | 89.84 | 0.00 | 8547.96 | 337.20 | 1257.25 | 492.94 | 0.00 | |
| 9500.00 | 89.84 | 0.00 | 8548.23 | 437.20 | 1257.25 | 592.14 | 0.00 | |
| 9600.00 | 89.84 | 0.00 | 8548.50 | 537.20 | 1257.25 | 691.35 | 0.00 | |
| 9700.00 | 89.84 | 0.00 | 8548.78 | 637.20 | 1257.25 | 790.55 | 0.00 | |
| 9800.00 | 89.84 | 0.00 | 8549.05 | 737.20 | 1257.25 | 889.75 | 0.00 | |
| 9900.00 | 89.84 | 0.00 | 8549.32 | 837.20 | 1257.25 | 988.95 | 0.00 | |
| 10000.00 | 89.84 | 0.00 | 8549.59 | 937.20 | 1257.25 | 1088.16 | 0.00 | |
| 10100.00 | 89.84 | 0.00 | 8549.87 | 1037.20 | 1257.25 | 1187.36 | 0.00 | |
| 10200.00 | 89.84 | 0.00 | 8550.14 | 1137.20 | 1257.25 | 1286.56 | 0.00 | |
| 10300.00 | 89.84 | 0.00 | 8550.41 | 1237.20 | 1257.25 | 1385.76 | 0.00 | |
| 10400.00 | 89.84 | 0.00 | 8550.68 | 1337.20 | 1257.25 | 1484.97 | 0.00 | |
| 10500.00 | 89.84 | 0.00 | 8550.96 | 1437.20 | 1257.25 | 1584.17 | 0.00 | |
| 10600.00 | 89.84 | 0.00 | 8551.23 | 1537.20 | 1257.25 | 1683.37 | 0.00 | |
| 10700.00 | 89.84 | 0.00 | 8551.50 | 1637.20 | 1257.25 | 1782.57 | 0.00 | |
| 10800.00 | 89.84 | 0.00 | 8551.77 | 1737.20 | 1257.25 | 1881.78 | 0.00 | |
| 10900.00 | 89.84 | 0.00 | 8552.05 | 1837.20 | 1257.25 | 1980.98 | 0.00 | |
| 11000.00 | 89.84 | 0.00 | 8552.32 | 1937.20 | 1257.25 | 2080.18 | 0.00 | |
| 11100.00 | 89.84 | 0.00 | 8552.59 | 2037.20 | 1257.25 | 2179.38 | 0.00 | |
| 11200.00 | 89.84 | 0.00 | 8552.86 | 2137.20 | 1257.25 | 2278.59 | 0.00 | |
| 11300.00 | 89.84 | 0.00 | 8553.14 | 2237.20 | 1257.25 | 2377.79 | 0.00 | |
| 11400.00 | 89.84 | 0.00 | 8553.41 | 2337.20 | 1257.25 | 2476.99 | 0.00 | |
| 11500.00 | 89.84 | 0.00 | 8553.68 | 2437.19 | 1257.25 | 2576.19 | 0.00 | |
| 11600.00 | 89.84 | 0.00 | 8553.95 | 2537.19 | 1257.25 | 2675.40 | 0.00 | |
| 11700.00 | 89.84 | 0.00 | 8554.23 | 2637.19 | 1257.25 | 2774.60 | 0.00 | |
| 11800.00 | 89.84 | 0.00 | 8554.50 | 2737.19 | 1257.25 | 2873.80 | 0.00 | |
| 11900.00 | 89.84 | 0.00 | 8554.77 | 2837.19 | 1257.25 | 2973.00 | 0.00 | |
| 12000.00 | 89.84 | 0.00 | 8555.04 | 2937.19 | 1257.25 | 3072.21 | 0.00 | |
| 12100.00 | 89.84 | 0.00 | 8555.32 | 3037.19 | 1257.25 | 3171.41 | 0.00 | |
| 12200.00 | 89.84 | 0.00 | 8555.59 | 3137.19 | 1257.25 | 3270.61 | 0.00 | |
| 12300.00 | 89.84 | 0.00 | 8555.86 | 3237.19 | 1257.25 | 3369.81 | 0.00 | |
| 12400.00 | 89.84 | 0.00 | 8556.13 | 3337.19 | 1257.25 | 3469.02 | 0.00 | |
| 12500.00 | 89.84 | 0.00 | 8556.41 | 3437.19 | 1257.25 | 3568.22 | 0.00 | |
| 12600.00 | 89.84 | 0.00 | 8556.68 | 3537.19 | 1257.25 | 3667.42 | 0.00 | |

SPUD MUFFIN 31-30 236H



Well: SPUD MUFFIN 31-30 236H
County: Eddy
Wellbore: Permit Plan
Design: Permit Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1927
Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

| MD (ft) | INC (°) | AZI (°) | TVD (ft) | NS (ft) | EW (ft) | VS (ft) | DLS (°/100ft) | Comment |
|------------|------------|------------|-------------|------------|------------|------------|------------------|---------|
| 12700.00 | 89.84 | 0.00 | 8556.95 | 3637.19 | 1257.25 | 3766.62 | 0.00 | |
| 12800.00 | 89.84 | 0.00 | 8557.22 | 3737.19 | 1257.25 | 3865.83 | 0.00 | |
| 12900.00 | 89.84 | 0.00 | 8557.50 | 3837.19 | 1257.25 | 3965.03 | 0.00 | |
| 13000.00 | 89.84 | 0.00 | 8557.77 | 3937.19 | 1257.25 | 4064.23 | 0.00 | |
| 13100.00 | 89.84 | 0.00 | 8558.04 | 4037.19 | 1257.25 | 4163.43 | 0.00 | |
| 13200.00 | 89.84 | 0.00 | 8558.31 | 4137.19 | 1257.25 | 4262.64 | 0.00 | |
| 13300.00 | 89.84 | 0.00 | 8558.59 | 4237.19 | 1257.25 | 4361.84 | 0.00 | |
| 13400.00 | 89.84 | 0.00 | 8558.86 | 4337.19 | 1257.25 | 4461.04 | 0.00 | |
| 13500.00 | 89.84 | 0.00 | 8559.13 | 4437.19 | 1257.25 | 4560.24 | 0.00 | |
| 13600.00 | 89.84 | 0.00 | 8559.40 | 4537.19 | 1257.25 | 4659.45 | 0.00 | |
| 13700.00 | 89.84 | 0.00 | 8559.68 | 4637.19 | 1257.25 | 4758.65 | 0.00 | |
| 13800.00 | 89.84 | 0.00 | 8559.95 | 4737.19 | 1257.25 | 4857.85 | 0.00 | |
| 13900.00 | 89.84 | 0.00 | 8560.22 | 4837.19 | 1257.25 | 4957.05 | 0.00 | |
| 14000.00 | 89.84 | 0.00 | 8560.49 | 4937.19 | 1257.25 | 5056.26 | 0.00 | |
| 14100.00 | 89.84 | 0.00 | 8560.77 | 5037.18 | 1257.25 | 5155.46 | 0.00 | |
| 14200.00 | 89.84 | 0.00 | 8561.04 | 5137.18 | 1257.25 | 5254.66 | 0.00 | |
| 14300.00 | 89.84 | 0.00 | 8561.31 | 5237.18 | 1257.25 | 5353.86 | 0.00 | |
| 14400.00 | 89.84 | 0.00 | 8561.58 | 5337.18 | 1257.25 | 5453.07 | 0.00 | |
| 14500.00 | 89.84 | 0.00 | 8561.86 | 5437.18 | 1257.25 | 5552.27 | 0.00 | |
| 14600.00 | 89.84 | 0.00 | 8562.13 | 5537.18 | 1257.25 | 5651.47 | 0.00 | |
| 14700.00 | 89.84 | 0.00 | 8562.40 | 5637.18 | 1257.25 | 5750.67 | 0.00 | |
| 14800.00 | 89.84 | 0.00 | 8562.67 | 5737.18 | 1257.25 | 5849.88 | 0.00 | |
| 14900.00 | 89.84 | 0.00 | 8562.95 | 5837.18 | 1257.25 | 5949.08 | 0.00 | |
| 15000.00 | 89.84 | 0.00 | 8563.22 | 5937.18 | 1257.25 | 6048.28 | 0.00 | |
| 15100.00 | 89.84 | 0.00 | 8563.49 | 6037.18 | 1257.25 | 6147.48 | 0.00 | |
| 15200.00 | 89.84 | 0.00 | 8563.76 | 6137.18 | 1257.25 | 6246.69 | 0.00 | |
| 15300.00 | 89.84 | 0.00 | 8564.04 | 6237.18 | 1257.25 | 6345.89 | 0.00 | |
| 15400.00 | 89.84 | 0.00 | 8564.31 | 6337.18 | 1257.25 | 6445.09 | 0.00 | |
| 15500.00 | 89.84 | 0.00 | 8564.58 | 6437.18 | 1257.25 | 6544.30 | 0.00 | |
| 15600.00 | 89.84 | 0.00 | 8564.85 | 6537.18 | 1257.25 | 6643.50 | 0.00 | |
| 15700.00 | 89.84 | 0.00 | 8565.13 | 6637.18 | 1257.25 | 6742.70 | 0.00 | |
| 15800.00 | 89.84 | 0.00 | 8565.40 | 6737.18 | 1257.25 | 6841.90 | 0.00 | |
| 15900.00 | 89.84 | 0.00 | 8565.67 | 6837.18 | 1257.25 | 6941.11 | 0.00 | |
| 16000.00 | 89.84 | 0.00 | 8565.94 | 6937.18 | 1257.25 | 7040.31 | 0.00 | |
| 16100.00 | 89.84 | 0.00 | 8566.22 | 7037.18 | 1257.25 | 7139.51 | 0.00 | |
| 16200.00 | 89.84 | 0.00 | 8566.49 | 7137.18 | 1257.25 | 7238.71 | 0.00 | |
| 16300.00 | 89.84 | 0.00 | 8566.76 | 7237.18 | 1257.25 | 7337.92 | 0.00 | |
| 16400.00 | 89.84 | 0.00 | 8567.03 | 7337.18 | 1257.25 | 7437.12 | 0.00 | |
| 16500.00 | 89.84 | 0.00 | 8567.31 | 7437.18 | 1257.25 | 7536.32 | 0.00 | |
| 16600.00 | 89.84 | 0.00 | 8567.58 | 7537.18 | 1257.25 | 7635.52 | 0.00 | |
| 16700.00 | 89.84 | 0.00 | 8567.85 | 7637.18 | 1257.25 | 7734.73 | 0.00 | |
| 16800.00 | 89.84 | 0.00 | 8568.12 | 7737.17 | 1257.25 | 7833.93 | 0.00 | |
| 16900.00 | 89.84 | 0.00 | 8568.40 | 7837.17 | 1257.25 | 7933.13 | 0.00 | |
| 17000.00 | 89.84 | 0.00 | 8568.67 | 7937.17 | 1257.25 | 8032.33 | 0.00 | |
| 17100.00 | 89.84 | 0.00 | 8568.94 | 8037.17 | 1257.25 | 8131.54 | 0.00 | |
| 17200.00 | 89.84 | 0.00 | 8569.21 | 8137.17 | 1257.25 | 8230.74 | 0.00 | |
| 17300.00 | 89.84 | 0.00 | 8569.49 | 8237.17 | 1257.25 | 8329.94 | 0.00 | |
| 17400.00 | 89.84 | 0.00 | 8569.76 | 8337.17 | 1257.25 | 8429.14 | 0.00 | |
| 17500.00 | 89.84 | 0.00 | 8570.03 | 8437.17 | 1257.25 | 8528.35 | 0.00 | |
| 17600.00 | 89.84 | 0.00 | 8570.30 | 8537.17 | 1257.25 | 8627.55 | 0.00 | |
| 17700.00 | 89.84 | 0.00 | 8570.58 | 8637.17 | 1257.25 | 8726.75 | 0.00 | |
| 17800.00 | 89.84 | 0.00 | 8570.85 | 8737.17 | 1257.25 | 8825.95 | 0.00 | |
| 17900.00 | 89.84 | 0.00 | 8571.12 | 8837.17 | 1257.25 | 8925.16 | 0.00 | |
| 18000.00 | 89.84 | 0.00 | 8571.39 | 8937.17 | 1257.25 | 9024.36 | 0.00 | |
| 18100.00 | 89.84 | 0.00 | 8571.67 | 9037.17 | 1257.25 | 9123.56 | 0.00 | |
| 18200.00 | 89.84 | 0.00 | 8571.94 | 9137.17 | 1257.25 | 9222.76 | 0.00 | |
| 18300.00 | 89.84 | 0.00 | 8572.21 | 9237.17 | 1257.25 | 9321.97 | 0.00 | |
| 18400.00 | 89.84 | 0.00 | 8572.48 | 9337.17 | 1257.25 | 9421.17 | 0.00 | |
| 18500.00 | 89.84 | 0.00 | 8572.76 | 9437.17 | 1257.25 | 9520.37 | 0.00 | |
| 18600.00 | 89.84 | 0.00 | 8573.03 | 9537.17 | 1257.25 | 9619.57 | 0.00 | |
| 18700.00 | 89.84 | 0.00 | 8573.30 | 9637.17 | 1257.25 | 9718.78 | 0.00 | |
| 18800.00 | 89.84 | 0.00 | 8573.57 | 9737.17 | 1257.25 | 9817.98 | 0.00 | |
| 18880.86 | 89.84 | 0.00 | 8573.79 | 9818.03 | 1257.25 | 9898.20 | 0.00 | Exit |
| 18900.00 | 89.84 | 0.00 | 8573.85 | 9837.17 | 1257.25 | 9917.18 | 0.00 | |
| 18960.86 | 89.84 | 0.00 | 8574.00 | 9898.03 | 1257.25 | 9977.56 | 0.00 | BHL |

SPUD MUFFIN 31-30 236H



Well: SPUD MUFFIN 31-30 236H
County: Eddy
Wellbore: Permit Plan
Design: Permit Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1927
Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

| MD | INC | AZI | TVD | NS | EW | VS | DLS | Comment |
|------|-----|-----|------|------|------|------|-----------|---------|
| (ft) | (°) | (°) | (ft) | (ft) | (ft) | (ft) | (°/100ft) | |

SPUD MUFFIN 31-30 236H

1. Geologic Formations

| | | | |
|---------------|-------|------------------------------|-----|
| TVD of target | 8574 | Pilot hole depth | N/A |
| MD at TD: | 18961 | Deepest expected fresh water | |

Basin

| Formation | Depth (TVD) from KB | Water/Mineral Bearing/Target Zone? | Hazards* |
|----------------------|---------------------------|--|----------|
| Rustler | 114 | | |
| Top of Salt | 469 | | |
| Base of Salt | 2544 | | |
| Lamar | 2784 | | |
| Bell Canyon | 2784 | | |
| Cherry Canyon | 3674 | | |
| Brushy Canyon | 5224 | | |
| 1st Bone Spring Lime | 6484 | | |
| 1st Bone Spring Sand | 7469 | | |
| BONE SPRING 2ND | 8269 | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| #REF! | #REF! | | |

*H2S, water flows, loss of circulation, abnormal pressures, etc.

SPUD MUFFIN 31-30 236H

2. Casing Program

| Hole Size | Csg. Size | Wt (PPF) | Grade | Conn | Casing Interval | | Casing Interval | |
|-----------|-----------|-------------|-------|------|-----------------|---------|-----------------|----------|
| | | | | | From (MD) | To (MD) | From (TVD) | To (TVD) |
| 17 1/2 | 13 3/8 | 48 | H40 | BTC | 0 | 139 | 0 | 139 |
| 12 1/4 | 9 5/8 | 40 | J-55 | BTC | 0 | 2644 | 0 | 2644 |
| 8 3/4 | 5 1/2 | 17 | P110 | BTC | 0 | 18961 | 0 | 8574 |

- All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 IILB.1.h Must have table for contingency casing.

SPUD MUFFIN 31-30 236H

3. Cementing Program (3-String Primary Design)

| Casing | # Sks | TOC | Wt. (lb/gal) | Yld (ft ³ /sack) | Slurry Description |
|----------------------------------|--------------|--------------------|-----------------|--------------------------------|--|
| Surface | 139 | Surf | 13.2 | 1.4 | Lead: Class C Cement + additives |
| Int 1 | 266 | Surf | 9.0 | 3.3 | Lead: Class C Cement + additives |
| | 154 | 500' above shoe | 13.2 | 1.4 | Tail: Class H / C + additives |
| Int 1 Intermediate Squeeze | As Needed | Surf | 9.0 | 3.3 | Squeeze Lead: Class C Cement + additives |
| | 266 | Surf | 9.0 | 3.3 | Lead: Class C Cement + additives |
| | 154 | 500' above shoe | 13.2 | 1.4 | Tail: Class H / C + additives |
| Production | 512 | 500' tieback | 9.0 | 3.3 | Lead: Class H / C + additives |
| | 2086 | KOP | 13.2 | 1.4 | Tail: Class H / C + additives |

If a DV tool is ran the depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Slurry weights will be adjusted based on estimated fracture gradient of the formation. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. If cement is not returned to surface during the primary cement job on the surface casing string, a planned top job will be conducted immediately after completion of the primary job.

| Casing String | % Excess |
|---------------|----------|
| Surface | 50% |
| Intermediate | 30% |
| Production | 10% |

SPUD MUFFIN 31-30 236H

4. Pressure Control Equipment (Three String Design)

| BOP installed and tested before drilling which hole? | Size? | Min. Required WP | Type | ✓ | Tested to: |
|--|---------|------------------|--------------|---|-------------------------------|
| Int 1 | 13-58" | 5M | Annular | X | 50% of rated working pressure |
| | | | Blind Ram | X | 5M |
| | | | Pipe Ram | | |
| | | | Double Ram | X | |
| | | | Other* | | |
| Production | 13-5/8" | 5M | Annular | X | 50% of rated working pressure |
| | | | Blind Ram | X | 5M |
| | | | Pipe Ram | | |
| | | | Double Ram | X | |
| | | | Other* | | |
| | | | Annular (5M) | | |
| | | | Blind Ram | | |
| | | | Pipe Ram | | |
| | | | Double Ram | | |
| | | | Other* | | |

SPUD MUFFIN 31-30 236H

5. Mud Program (Three String Design)

| Section | Type | Weight (ppg) |
|--------------|--------|--------------|
| Surface | FW Gel | 8.5-9 |
| Intermediate | Brine | 10-10.5 |
| Production | WBM | 8.5-9 |

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

| | |
|---|-----------------------------|
| What will be used to monitor the loss or gain of fluid? | PVT/Pason/Visual Monitoring |
|---|-----------------------------|

6. Logging and Testing Procedures

| Logging, Coring and Testing | |
|-----------------------------|---|
| X | Will run GR/CNL from TD to surface (horizontal well - vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM. |
| | No logs are planned based on well control or offset log information. |
| | Drill stem test? If yes, explain. |
| | Coring? If yes, explain. |

| Additional logs planned | | Interval |
|-------------------------|-------------|-------------------|
| | Resistivity | |
| | Density | |
| X | CBL | Production casing |
| X | Mud log | KOP to TD |
| | PEX | |

7. Drilling Conditions

| Condition | Specify what type and where? |
|----------------------------|------------------------------|
| BH pressure at deepest TVD | 4013 |
| Abnormal temperature | No |

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogen Sulfide (H₂S) monitors will be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered measured values and formations will be provided to the BLM.

| | |
|---|---------------------------------|
| N | H ₂ S is present |
| Y | H ₂ S plan attached. |

SPUD MUFFIN 31-30 236H

8. Other facets of operation

Is this a walking operation? Potentially

- 1 If operator elects, drilling rig will batch drill the surface holes and run/cement surface casing; walking the rig to next wells on the pad.
- 2 The drilling rig will then batch drill the intermediate sections and run/cement intermediate casing; the wellbore will be isolated with a blind flange and pressure gauge installed for monitoring the well before walking to the next well.
- 3 The drilling rig will then batch drill the production hole sections on the wells with OBM, run/cement production casing, and install TA caps or tubing heads for completions.

NOTE: During batch operations the drilling rig will be moved from well to well however, it will not be removed from the pad until all wells have production casing run/cemented.

Will be pre-setting casing? Potentially

- 1 Spudder rig will move in and batch drill surface hole.
 - a. Rig will utilize fresh water based mud to drill surface hole to TD. Solids control will be handled entirely on a closed loop basis.
- 2 After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
- 3 The wellhead will be installed and tested once the surface casing is cut off and the WOC time has been reached.
- 4 A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
- 5 Spudder rig operations is expected to take 4-5 days per well on a multi-well pad.
- 6 The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
- 7 Drilling operations will be performed with drilling rig. At that time an approved BOP stack will be nipped up and tested on the wellhead before drilling operations commences on each well.
 - a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

Attachments

X Directional Plan
 Other, describe

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Submit Original
to Appropriate
District Office

GAS CAPTURE PLAN

Date: October 8, 2020

☒ Original Devon & OGRID No.: Devon Energy Production Co., L.P. 6137
☐ Amended - Reason for Amendment: _____

This Gas Capture Plan outlines actions to be taken by the Devon to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).

Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

| Well Name | API | SHL FOOTAGES | | | | | Expected MCF/D | Flared or Vented | CTB |
|-----------------------------------|-----|--------------|-----|-----|------|-----|----------------|------------------|-------------------------|
| SPUD MUFFIN 31-30 FED COM 231H | | 23S-29E-31 | 195 | FSL | 1353 | FWL | | | Spud Muffin 31 CTB 1 |
| SPUD MUFFIN 31-30 FED COM 232H | | 23S-29E-31 | 195 | FSL | 1383 | FWL | | | Spud Muffin 31 CTB 1 |
| SPUD MUFFIN 31-30 233H | | 23S-29E-31 | 195 | FSL | 1413 | FWL | | | Spud Muffin 31 CTB 1 |
| SPUD MUFFIN 31-30 234H | | 23S-29E-31 | 625 | FSL | 1865 | FEL | | | Spud Muffin 31 CTB 2 |
| SPUD MUFFIN 31-30 235H | | 23S-29E-31 | 625 | FSL | 1835 | FEL | | | Spud Muffin 31 CTB 2 |
| SPUD MUFFIN 31-30 236H | | 23S-29E-31 | 625 | FSL | 1805 | FEL | | | Spud Muffin 31 CTB 2 |

Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if DCP system is in place. The gas produced from production facility is dedicated to DCP and will be connected to DCP low/high pressure gathering system located in Lea County, New Mexico. It will require 1000' to DCP lateral for the Spud Muffin 31 CTB 1, and 2000' for the Spud Muffin 31 CTB 2 to DCP pipeline to connect the facility to low/high pressure gathering system. Devon will build the line to DCP and then after the line is ready for service, Devon give the to DCP for operations. Devon provides (periodically) to DCP a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Devon and DCP have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at DCP Processing Plant located in the reference table. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on DCP system at that time. Based on current information, it is Devon's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
 - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
 - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
 - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

Reference Table:

DCP Plant locations

Artesia Sec. 7, T18S, R28E,

Eunice Sec. 5, T21S, R36E

Linam Sec. 6, T19S, R37E

Zia II Sec. 19, T19S, R32E



**Devon Energy Center
333 West Sheridan Avenue
Oklahoma City, Oklahoma 73102-5015**

Hydrogen Sulfide (H₂S) Contingency Plan

For

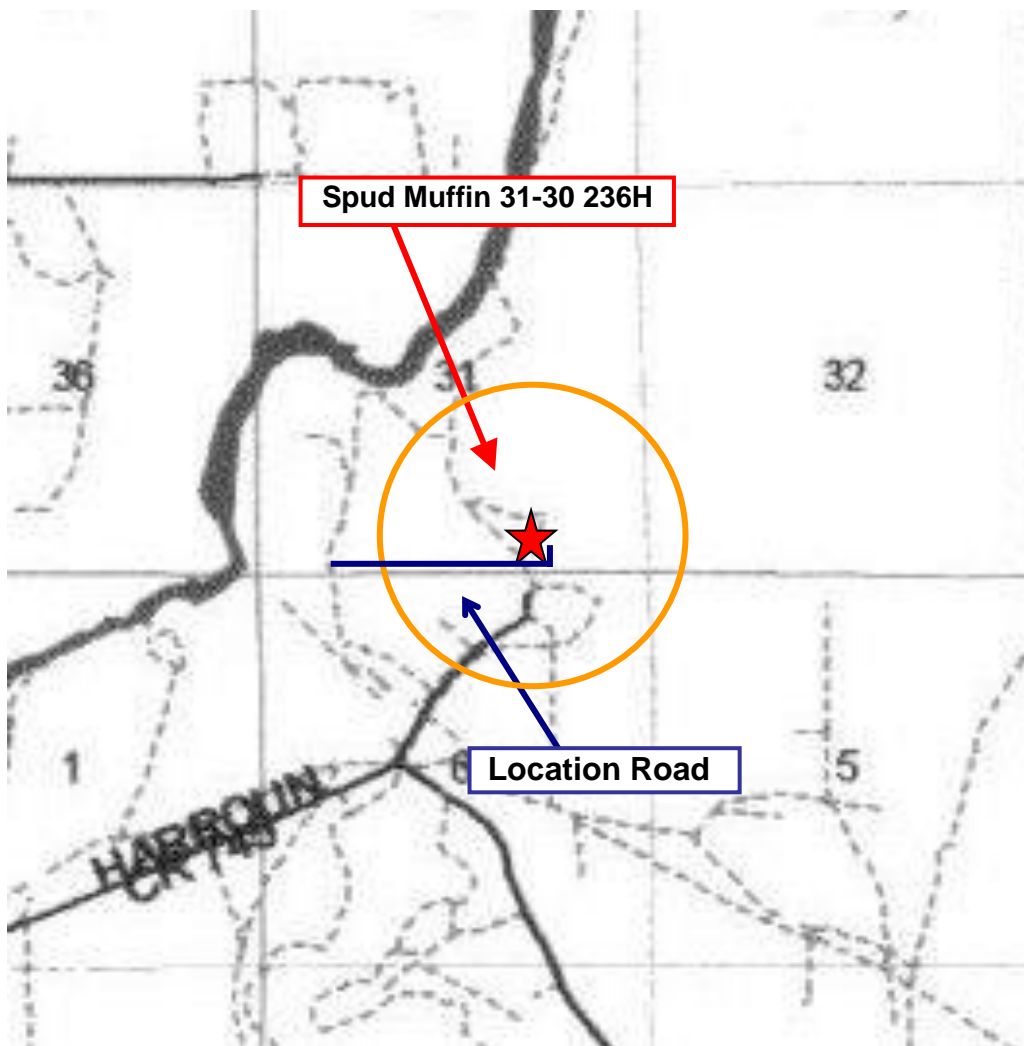
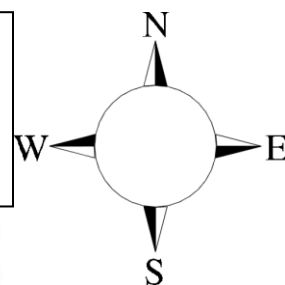
Spud Muffin 31-30 236H

**Sec-31 T-23S R-29E
625' FSL & 1805' FEL
LAT. = 32.2559488' N (NAD83)
LONG = 104.0211112' W**

Eddy County NM

Spud Muffin 31-30 236H

This is an open drilling site. H₂S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H₂S, including warning signs, wind indicators and H₂S monitor.



Assumed 100 ppm **ROE = 3000'** (Radius of Exposure)
100 ppm H₂S concentration shall trigger activation of this plan.

Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road. Crews should then block the entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'

100 ppm H₂S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H₂S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H₂S monitors and air packs in order to control the release.
- Use the “buddy system” to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the
 - Detection of H₂S, and
 - Measures for protection against the gas,
 - Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Characteristics of H₂S and SO₂

| Common Name | Chemical Formula | Specific Gravity | Threshold Limit | Hazardous Limit | Lethal Concentration |
|-------------------------|-------------------------|-------------------------|------------------------|------------------------|-----------------------------|
| Hydrogen Sulfide | H ₂ S | 1.189 Air = 1 | 10 ppm | 100 ppm/hr | 600 ppm |
| Sulfur Dioxide | SO ₂ | 2.21 Air = 1 | 2 ppm | N/A | 1000 ppm |

Contacting Authorities

Devon Energy Corp. personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Devon Energy Corp. Company response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE (H₂S) TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H₂S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H₂S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H₂S metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H₂S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H₂S zone (within 3 days or 500 feet) and weekly H₂S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H₂S Drilling Operations Plan and the Public Protection Plan.

II. HYDROGEN SULFIDE TRAINING

Note: All H₂S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H₂S.

1. Well Control Equipment

- A. Flare line
- B. Choke manifold – Remotely Operated
- C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
- D. Auxiliary equipment may include if applicable: annular preventer and rotating head.
- E. Mud/Gas Separator

2. Protective equipment for essential personnel:

30-minute SCBA units located at briefing areas, as indicated on well site diagram, with escape units available in the top doghouse. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

3. H₂S detection and monitoring equipment:

Portable H₂S monitors positioned on location for best coverage and response. These units have warning lights which activate when H₂S levels reach 10 ppm and audible sirens which activate at 15 ppm. Sensor locations:

- Bell nipple
- Possum Belly/Shale shaker
- Rig floor
- Choke manifold
- Cellar

Visual warning systems:

- A. Wind direction indicators as shown on well site diagram
- B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

4. Mud program:

The mud program has been designed to minimize the volume of H₂S circulated to surface. Proper mud weight, safe drilling practices and the use of H₂S scavengers will minimize hazards when penetrating H₂S bearing zones.

5. Metallurgy:

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H₂S trim.
- B. All elastomers used for packing and seals shall be H₂S trim.

6. Communication:

- A. Company personnel have/use cellular telephones in the field.
- B. Land line (telephone) communications at Office

7. Well testing:

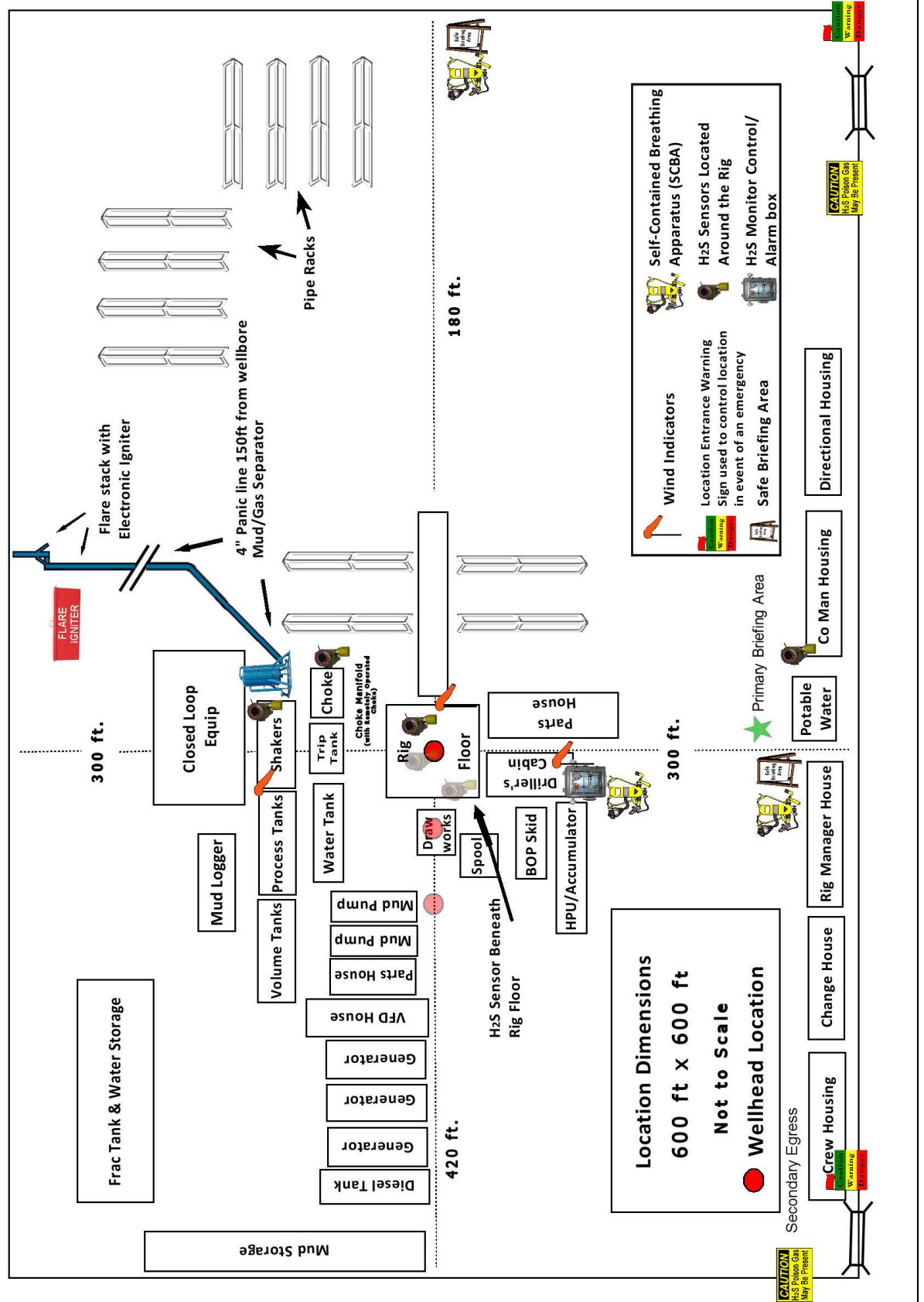
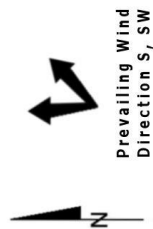
- A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H₂S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.

| <u>Devon Energy Corp. Company Call List</u> | | |
|--|---|-------------------------------|
| Drilling Supervisor – Basin – Mark Kramer | | 405-823-4796 |
| EHS Professional – Laura Wright | | 405-439-8129 |
| <u>Agency Call List</u> | | |
| <u>Lea County (575)</u> | Hobbs | |
| | Lea County Communication Authority | 393-3981 |
| | State Police | 392-5588 |
| | City Police | 397-9265 |
| | Sheriff's Office | 393-2515 |
| | Ambulance | 911 |
| | Fire Department | 397-9308 |
| | LEPC (Local Emergency Planning Committee) | 393-2870 |
| | NMOCD | 393-6161 |
| | US Bureau of Land Management | 393-3612 |
| | | |
| | | |
| <u>Eddy County (575)</u> | Carlsbad | |
| | State Police | 885-3137 |
| | City Police | 885-2111 |
| | Sheriff's Office | 887-7551 |
| | Ambulance | 911 |
| | Fire Department | 885-3125 |
| | LEPC (Local Emergency Planning Committee) | 887-3798 |
| | US Bureau of Land Management | 887-6544 |
| | NM Emergency Response Commission (Santa Fe) | (505) 476-9600 |
| | 24 HR | (505) 827-9126 |
| | National Emergency Response Center | (800) 424-8802 |
| | National Pollution Control Center: Direct | (703) 872-6000 |
| | For Oil Spills | (800) 280-7118 |
| | Emergency Services | |
| | Wild Well Control | (281) 784-4700 |
| | Cudd Pressure Control | (915) 699-0139 (915) 563-3356 |
| | Halliburton | (575) 746-2757 |
| | B. J. Services | (575) 746-3569 |
| | | |
| | | |
| <u>Give GPS position:</u> | Native Air – Emergency Helicopter – Hobbs (TX & NM) | (800) 642-7828 |
| | Flight For Life - Lubbock, TX | (806) 743-9911 |
| | Aerocare - Lubbock, TX | (806) 747-8923 |
| | Med Flight Air Amb - Albuquerque, NM | (575) 842-4433 |
| | Lifeguard Air Med Svc. Albuquerque, NM | (800) 222-1222 |
| | Poison Control (24/7) | (575) 272-3115 |
| | Oil & Gas Pipeline 24 Hour Service | (800) 364-4366 |
| | NOAA – Website - www.nhc.noaa.gov | |
| | | |

Prepared in conjunction with
Dave Small



Devon Energy - Well Pad Rig Location Layout Safety Equipment Location



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 & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

| | | |
|---------------------------------------|--|---|
| ¹ API Number | ² Pool Code 11520 | ³ Pool Name CEDAR CANYON;BONE SPRING |
| ⁴ Property Code | ⁵ Property Name SPUD MUFFIN 31-30 | ⁶ Well Number 236H |
| ⁷ OGRID No. 6137 | ⁸ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P. | ⁹ Elevation 2961.5 |

¹⁰ Surface Location

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|-----------|-------------|------------|---------|---------------|------------------|---------------|----------------|-------------|
| O | 31 | 23 S | 29E | | 625 | SOUTH | 1805 | EAST | EDDY |

¹¹ Bottom Hole Location If Different From Surface

| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|-----------|-------------|-------------|---------|---------------|------------------|---------------|----------------|-------------|
| A | 30 | 23 S | 29 E | | 20 | NORTH | 440 | EAST | EDDY |

| | | | |
|---|-------------------------------|----------------------------------|-------------------------|
| ¹² Dedicated Acres 320 | ¹³ Joint or Infill | ¹⁴ Consolidation Code | ¹⁵ Order No. |
|---|-------------------------------|----------------------------------|-------------------------|

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

| | |
|--|---|
| | <p>¹⁷ OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Jenny Harms</i> 10-12-2020 Signature Date</p> <p>JENNY HARMS Printed Name</p> <p>JENNY.HARMS@DVN.COM E-mail Address</p> |
| | <p>¹⁸ SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>SEPTEMBER 14, 2020 Date of Survey</p> <p><i>[Signature]</i> Signature and Seal of Professional Surveyor: 12797</p> <p>Certificate Number: 12797 Surveyor's License No. 8480</p> |

Intent ☒ As Drilled ☐

API #

| | | |
|--|--------------------------|-------------|
| Operator Name: | Property Name: | Well Number |
| DEVON ENERGY PRODUCTION CO., L.P. | SPUD MUFFIN 31-30 | 236H |

Kick Off Point (KOP)

| | | | | | | | | | |
|---------------------|---------------|-----------------|--------------|-----|------------------------|----------|-----------------|----------|----------------|
| UL | Section 31 | Township 23S | Range 29E | Lot | Feet 48 FSL | From N/S | Feet 440 FEL | From E/W | County EDDY |
| Latitude 32.2542 | | | | | Longitude -104.0171 | | | | NAD 83 |

First Take Point (FTP)

| | | | | | | | | | |
|------------------------|---------------|-----------------|--------------|-----|--------------------------|-------------------|-------------|------------------|----------------|
| UL P | Section 31 | Township 23S | Range 29E | Lot | Feet 100 | From N/S SOUTH | Feet 440 | From E/W EAST | County EDDY |
| Latitude 32.2544642 | | | | | Longitude 104.0166663 | | | | NAD 83 |

Last Take Point (LTP)

| | | | | | | | | | |
|------------------------|---------------|-----------------|--------------|-----|--------------------------|-------------------|-------------|------------------|----------------|
| UL A | Section 30 | Township 23S | Range 29E | Lot | Feet 100 | From N/S NORTH | Feet 440 | From E/W EAST | County EDDY |
| Latitude 32.2829170 | | | | | Longitude 104.0169511 | | | | NAD 83 |

Is this well the defining well for the Horizontal Spacing Unit?

☐ NO

Is this well an infill well?

☐ YES

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #

| | | |
|----------------|----------------|-------------|
| Operator Name: | Property Name: | Well Number |
| | | |

KZ 06/29/2018