

Form 3160-3
(June 2015)FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

| | | |
|---|--|--|
| 1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER 1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone | | 5. Lease Serial No. NMNM013233 6. If Indian, Allottee or Tribe Name 7. If Unit or CA Agreement, Name and No. 8. Lease Name and Well No. GOONCH FED COM 0409 136H |
| 2. Name of Operator NOVO OIL AND GAS NORTHERN DELAWARE LLC 3a. Address 1001 West Wilshire Boulevard Suite 206, Oklahoma City, OK 3b. Phone No. (include area code) (405) 404-0414 | | 9. API Well No. 10. Field and Pool, or Exploratory CULEBRA BLUFF; BONE SPRING, SOUTH CORRAL DRAW BONE SPRING 11. Sec., T. R. M. or Blk. and Survey or Area SEC 4/T23S/R28E/NMP |
| 4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface LOT 2 / 464 FNL / 1338 FEL / LAT 32.3406399 / LONG -104.0881831 At proposed prod. zone SWSE / 10 FSL / 2310 FEL / LAT 32.3126368 / LONG -104.0914004 | | 12. County or Parish EDDY 13. State NM |
| 14. Distance in miles and direction from nearest town or post office* 4 miles | | 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 464 feet |
| 16. No of acres in lease 17. Spacing Unit dedicated to this well 320.22 | | 18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 20 feet |
| 19. Proposed Depth 9366 feet / 19760 feet | | 20. BLM/BIA Bond No. in file FED: NMB001536 |
| 21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3036 feet | | 22. Approximate date work will start* 04/01/2020 |
| 23. Estimated duration 90 days | | 24. Attachments |

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

- | | |
|---|---|
| 1. Well plat certified by a registered surveyor. 2. A Drilling Plan. 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). 5. Operator certification. 6. Such other site specific information and/or plans as may be requested by the BLM. |
|---|---|

| | | |
|--|---|---------------------------|
| 25. Signature (Electronic Submission) Title President | Name (Printed/Typed) BRIAN WOOD / Ph: (405) 404-0414 | Date 01/17/2020 |
| Approved by (Signature) (Electronic Submission) Title Assistant Field Manager Lands & Minerals | Name (Printed/Typed) Cody Layton / Ph: (575) 234-5959 Office Carlsbad Field Office | Date 12/18/2020 |

Application approval 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.
 Conditions of approval, if any, are attached.

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.



(Continued on page 2)

*(Instructions on page 2)

INSTRUCTIONS

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

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM connects this information to an evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

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

Additional Operator Remarks

Location of Well

0. SHL: LOT 2 / 464 FNL / 1338 FEL / TWSP: 23S / RANGE: 28E / SECTION: 4 / LAT: 32.3406399 / LONG: -104.0881831 (TVD: 0 feet, MD: 0 feet)
PPP: NWNE / 0 FNL / 2310 FEL / TWSP: 23S / RANGE: 28E / SECTION: 9 / LAT: 32.327371 / LONG: -104.091375 (TVD: 9387 feet, MD: 14413 feet)
PPP: NWSE / 2640 FSL / 2310 FEL / TWSP: 23S / RANGE: 28E / SECTION: 4 / LAT: 32.334648 / LONG: -104.091356 (TVD: 9398 feet, MD: 11757 feet)
PPP: LOT 2 / 201 FNL / 2316 FEL / TWSP: 23S / RANGE: 28E / SECTION: 4 / LAT: 32.34136 / LONG: -104.9135 (TVD: 8251 feet, MD: 8358 feet)
BHL: SWSE / 10 FSL / 2310 FEL / TWSP: 23S / RANGE: 28E / SECTION: 9 / LAT: 32.3126368 / LONG: -104.0914004 (TVD: 9366 feet, MD: 19760 feet)

BLM Point of Contact

Name: Gavin Mickwee
Title: Land Law Examiner
Phone: (575) 234-5972
Email: gmickwee@blm.gov

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

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 30-015- | ² Pool Code 15011 | ³ Pool Name CULEBRA BLUFF; BONE SPRING, SOUTH |
| ⁴ Property Code | ⁵ Property Name GOONCH FED COM 0409 | |
| ⁷ OGRID No. 372920 | ⁸ Operator Name NOVO OIL & GAS NORTHERN DELAWARE, LLC | ⁶ Well Number 136H |
| | | ⁹ Elevation 3035.5 |

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 |
|---------------|----------|-------------|-------------|---------|---------------|------------------|---------------|----------------|-------------|
| 2 | 4 | 23 S | 28 E | | 464 | NORTH | 1338 | 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 |
|---------------|----------|-------------|-------------|---------|---------------|------------------|---------------|----------------|-------------|
| O | 9 | 23 S | 28 E | | 10 | SOUTH | 2310 | EAST | EDDY |

| | | | |
|--|-------------------------------|--|-------------------------|
| ¹² Dedicated Acres 320.22 | ¹³ Joint or Infill | ¹⁴ Consolidation Code C | 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>NW CORNER SEC. 4 LAT. = 32.3419277°N LONG. = 104.1004691°W NMSP EAST (FT) N = 488203.46 E = 613253.56</p> <p>W/4 CORNER SEC. 4 LAT. = 32.3345328°N LONG. = 104.1007792°W NMSP EAST (FT) N = 485513.07 E = 613163.63</p> <p>SW CORNER SEC. 4 LAT. = 32.3271399°N LONG. = 104.1010900°W NMSP EAST (FT) N = 482823.39 E = 613073.47</p> <p>FIRST TAKE POINT 100' FSL, 2310' FEL LAT. = 32.3416436°N LONG. = 104.0913478°W NMSP EAST (FT) N = 488106.35 E = 616070.76</p> <p>LAST TAKE POINT 100' FSL, 2310' FEL LAT. = 32.3128841°N LONG. = 104.0914033°W NMSP EAST (FT) N = 477643.94 E = 616077.24</p> <p>SW CORNER SEC. 9 LAT. = 32.3125842°N LONG. = 104.1011208°W NMSP EAST (FT) N = 477528.19 E = 613075.43</p> | | <p>N/4 CORNER SEC. 4 LAT. = 32.3419193°N LONG. = 104.0921814°W NMSP EAST (FT) N = 488206.06 E = 615813.06</p> <p>GOONCH FED COM 0409 136H ELEV. = 3035.5' LAT. = 32.3406399°N (NAD83) LONG. = 104.0881831°W NMSP EAST (FT) N = 487743.44 E = 617048.96</p> <p>S/4 CORNER SEC. 4 LAT. = 32.3271360°N LONG. = 104.0925614°W NMSP EAST (FT) N = 482827.80 E = 615707.79</p> <p>NOTE: LATITUDE AND LONGITUDE COORDINATES ARE SHOWN USING THE NORTH AMERICAN DATUM OF 1983 (NAD83). LISTED NEW MEXICO STATE PLANE EAST COORDINATES ARE GRID (NAD83) BASIS OF BEARING AND DISTANCES USED ARE NEW MEXICO STATE PLANE EAST COORDINATES MODIFIED TO THE SURFACE. VERTICAL DATUM NAVD83.</p> <p>BOTTOM OF HOLE LAT. = 32.3126368°N LONG. = 104.0914004°W NMSP EAST (FT) N = 477553.98 E = 616078.33</p> | | <p>NE CORNER SEC. 4 LAT. = 32.3419104°N LONG. = 104.0838735°W NMSP EAST (FT) N = 488208.68 E = 618378.80</p> <p>E/4 CORNER SEC. 4 LAT. = 32.3348965°N LONG. = 104.0837492°W NMSP EAST (FT) N = 485657.22 E = 618423.16</p> <p>SE CORNER SEC. 4 LAT. = 32.3271286°N LONG. = 104.0840436°W NMSP EAST (FT) N = 482831.13 E = 618338.83</p> <p>E/4 CORNER SEC. 9 LAT. = 32.3199338°N LONG. = 104.0840079°W NMSP EAST (FT) N = 482013.77 E = 618355.92</p> <p>SE CORNER SEC. 9 LAT. = 32.3126281°N LONG. = 104.0839243°W NMSP EAST (FT) N = 477556.11 E = 618387.96</p> | |
|---|--|---|--|--|--|

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.

Brian Wood **1-11-20**

Signature Date

BRIAN WOOD

Printed Name **brian@permitswest.com**

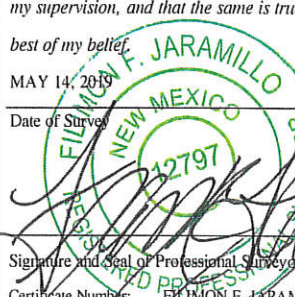
E-mail Address **(505) 466-8120**

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.

MAY 14, 2019

Date of Survey



Signature and Seal of Professional Surveyor

Certificate Number: **FILIMON F. JARAMILLO, PLS 12797**

SURVEY NO. 7273

Intent ☒ YES As Drilled ☐

API #

| | | |
|---------------------------------------|---------------------|-------------|
| Operator Name: | Property Name: | Well Number |
| NOVO OIL & GAS NORTHERN DELAWARE, LLC | GOONCH FED COM 0409 | 136H |

Kick Off Point (KOP)

| | | | | | | | | | |
|------------------------|--------------|-----------------|--------------|----------|--------------------------|-------------------|--------------|------------------|----------------|
| UL | Section 4 | Township 23S | Range 28E | Lot 2 | Feet 464 | From N/S NORTH | Feet 1338 | From E/W EAST | County EDDY |
| Latitude 32.3406399 | | | | | Longitude 104.0881831 | | | NAD 83 | |

First Take Point (FTP)

| | | | | | | | | | |
|------------------------|--------------|-----------------|--------------|----------|--------------------------|-------------------|--------------|------------------|----------------|
| UL | Section 4 | Township 23S | Range 28E | Lot 2 | Feet 100 | From N/S NORTH | Feet 2310 | From E/W EAST | County EDDY |
| Latitude 32.3416436 | | | | | Longitude 104.0913478 | | | NAD 83 | |

Last Take Point (LTP)

| | | | | | | | | | |
|------------------------|--------------|-----------------|--------------|-----|--------------------------|-------------------|--------------|------------------|----------------|
| UL O | Section 9 | Township 23S | Range 28E | Lot | Feet 100 | From N/S SOUTH | Feet 2310 | From E/W EAST | County EDDY |
| Latitude 32.3128841 | | | | | Longitude 104.0914033 | | | 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 |
| NOVO OIL & GAS NORTHERN DELAWARE, LLC | GOONCH FED COM 0409 | 133H |

KZ 06/29/2018

District I
1625 N. French Dr., Hobbs, NM 88240
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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: 1/12/2020

X Original Operator & OGRID No.: Novo Oil & Gas Northern Delaware, LLC (372920)
☐ 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: A C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule 19.15.18.12.A

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 | API | SHL (ULSTR) | SHL Footages | Expected MCF/D | Flared or Vented | Comments |
|--------------------------|---------|-------------|--------------------|----------------|------------------|-------------------------------|
| Goonch Fed Com 04 135H | 30-015- | B-4-23S-28E | 592 FNL & 1494 FEL | 200 | 30 days | Time depends on well clean up |
| Goonch Fed Com 0409 136H | 30-015- | B-4-23S-28E | 464 FNL & 1338 FEL | 400 | 30 days | Time depends on well clean up |
| Goonch Fed Com 04 235H | 30-015- | B-4-23S-28E | 546 FNL & 1531 FEL | 2000 | 30 days | Time depends on well clean up |
| Goonch Fed Com 0409 236H | 30-015- | B-4-23S-28E | 418 FNL & 1375 FEL | 4000 | 30 days | Time depends on well clean up |

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. Gas from the CTB will be piped north $\approx 1540'$ to an existing Enterprise Field Services L. L. C. (151618) line in SESE 33-22s-28e. Final route depends on archaeology inspection results. Novo Oil & Gas Northern Delaware, LLC will provide (periodically) to its Gas Transporter a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Novo Oil & Gas Northern Delaware, LLC and its Gas Transporter have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at an as yet undetermined Gas Transporter Processing Plant located in Eddy 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 its Gas Transporter system at that time. Based on current information, it is Novo Oil & Gas Northern Delaware, LLC's belief an existing or new system can take this gas upon completion of the well(s). Safety requirements during cleanout operations from using 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



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Drilling Plan Data Report

12/18/2020

APD ID: 10400053389

Submission Date: 01/17/2020

Highlighted data
reflects the most
recent changes

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Well Name: GOONCH FED COM 0409

Well Number: 136H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Geologic Formations

| Formation ID | Formation Name | Elevation | True Vertical Depth | Measured Depth | Lithologies | Mineral Resources | Producing Formation |
|--------------|------------------|-----------|---------------------|----------------|-------------------|-------------------|---------------------|
| 638018 | QUATERNARY | 3036 | 0 | 0 | OTHER : None | USEABLE WATER | N |
| 638019 | RUSTLER | 2936 | 100 | 100 | ANHYDRITE | NONE | N |
| 638025 | CASTILE | 2066 | 970 | 970 | ANHYDRITE | NONE | N |
| 638017 | BELL CANYON | 462 | 2574 | 2607 | SANDSTONE | NATURAL GAS, OIL | N |
| 638026 | BASE OF SALT | 462 | 2574 | 2607 | SALT | NONE | N |
| 638021 | CHERRY CANYON | -600 | 3636 | 3695 | SANDSTONE | NATURAL GAS, OIL | N |
| 638014 | BRUSHY CANYON | -1613 | 4649 | 4736 | SANDSTONE | NATURAL GAS, OIL | N |
| 638015 | BONE SPRING LIME | -3075 | 6111 | 6218 | LIMESTONE | NATURAL GAS, OIL | N |
| 638022 | BONE SPRING 1ST | -4080 | 7116 | 7223 | SANDSTONE | NATURAL GAS, OIL | N |
| 638010 | BONE SPRING 2ND | -4345 | 7381 | 7488 | OTHER : Carbonate | NATURAL GAS, OIL | N |
| 638011 | BONE SPRING 2ND | -4855 | 7891 | 7998 | SANDSTONE | NATURAL GAS, OIL | N |
| 638012 | BONE SPRING 3RD | -5215 | 8251 | 8358 | OTHER : Carbonate | NATURAL GAS, OIL | N |
| 638013 | BONE SPRING 3RD | -6075 | 9111 | 9223 | SANDSTONE | NATURAL GAS, OIL | Y |

Section 2 - Blowout Prevention

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC**Well Name:** GOONCH FED COM 0409**Well Number:** 136H**Pressure Rating (PSI):** 5M**Rating Depth:** 12000

Equipment: A 13.625 5,000-psi BOP system will be installed on a multi-bowl (speed head) wellhead with a 13.625 flanged casing spool. Top flange of casing spool will be set in a cellar below ground level. BOP system will consist of a single pipe ram on the bottom, mud cross, double pipe ram with blind rams on bottom and pipe rams on top, and annular preventer. Blowout preventer will be installed on top of the 13.375 surface casing and will remain installed to TD of the well. Wellhead, blowout preventer, and choke manifold diagram are included.

Requesting Variance? YES

Variance request: Variance is requested to use a co-flex hose between the BOP system and choke manifold. A typical co-flex pressure test certificate is attached. An equipment specific co-flex pressure test certificate will be on site when testing the BOP.

Testing Procedure: BOP system will be isolated with a test plug and tested by an independent tester to 250-psi low and 5000-psi high for 10 minutes before drilling out the surface shoe. All casing strings will be tested in accordance with Onshore Order 2 III.B.1.h. Surface casing will be pressure tested to 250 psi low and 1500 psi high. Intermediate casing will be tested to 250 psi low and 0.22 psi/ft (1958 psi) high for 30 minutes.

Choke Diagram Attachment:

Goonch_0409_136H_Choke_20200117103900.pdf

BOP Diagram Attachment:

Goonch_0409_136H_BOP_20200117103906.pdf

Section 3 - Casing

| Casing ID | String Type | Hole Size | Csg Size | Condition | Standard | Tapered String | Top Set MD | Bottom Set MD | Top Set TVD | Bottom Set TVD | Top Set MSL | Bottom Set MSL | Calculated casing length MD | Grade | Weight | Joint Type | Collapse SF | Burst SF | Joint SF Type | Joint SF | Body SF Type | Body SF |
|-----------|--------------|-----------|----------|-----------|----------|----------------|------------|---------------|-------------|----------------|-------------|----------------|-----------------------------|--------|--------|-----------------|-------------|----------|---------------|----------|--------------|---------|
| 1 | SURFACE | 17.5 | 13.375 | NEW | API | N | 0 | 175 | 0 | 175 | 3039 | 2864 | 175 | J-55 | 54.5 | BUTT | 1.125 | 1.125 | DRY | 1.6 | DRY | 1.6 |
| 2 | INTERMEDIATE | 12.25 | 9.625 | NEW | API | N | 0 | 5900 | 0 | 5793 | 3041 | -2754 | 5900 | HCL-80 | 43.5 | BUTT | 1.125 | 1.125 | DRY | 1.6 | DRY | 1.6 |
| 3 | PRODUCTION | 8.75 | 5.5 | NEW | API | N | 0 | 19760 | 0 | 9366 | 3041 | -6327 | 19760 | P-110 | 20 | OTHER - TMK DQX | 1.125 | 1.125 | DRY | 1.6 | DRY | 1.6 |

Casing Attachments

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC**Well Name:** GOONCH FED COM 0409**Well Number:** 136H**Casing Attachments**

Casing ID: 1 **String Type:** SURFACE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**Goonch_0409_136H_Casing_Design_Assumptions_20200117104028.pdf

Casing ID: 2 **String Type:** INTERMEDIATE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**Goonch_0409_136H_Casing_Design_Assumptions_20200117104053.pdf

Casing ID: 3 **String Type:** PRODUCTION**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**

Goonch_0409_136H_Casing_Design_Assumptions_20200117104233.pdf

5.5in_DQX_Casing_Spec_20200117104558.pdf

Section 4 - Cement

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC**Well Name:** GOONCH FED COM 0409**Well Number:** 136H

| String Type | Lead/Tail | Stage Tool Depth | Top MD | Bottom MD | Quantity(sx) | Yield | Density | Cu Ft | Excess% | Cement type | Additives |
|--------------|-----------|------------------|--------|-----------|--------------|-------|---------|-------|---------|-------------|-----------------------------|
| SURFACE | Lead | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | None | None |
| SURFACE | Tail | | 0 | 175 | 150 | 1.62 | 13.8 | 243 | 100 | Class C | gel + accelerator + LCM |
| PRODUCTION | Lead | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | None | None |
| PRODUCTION | Tail | | 5400 | 1976 0 | 3065 | 1.42 | 13.2 | 4352 | 20 | Class H | fluid loss + retarder + LCM |
| INTERMEDIATE | Lead | | 0 | 5900 | 855 | 2.28 | 11.9 | 1949 | 20 | Class C | gel + extender + LCM |
| INTERMEDIATE | Tail | | 0 | 5900 | 200 | 1.34 | 14.8 | 268 | 20 | Class C | gel + retarder + LCM |

Section 5 - Circulating Medium

Mud System Type: Closed**Will an air or gas system be Used?** NO**Description of the equipment for the circulating system in accordance with Onshore Order #2:****Diagram of the equipment for the circulating system in accordance with Onshore Order #2:**

Describe what will be on location to control well or mitigate other conditions: All necessary mud products (barite, bentonite, LCM) to control weight and fluid loss will be on site at all times. Mud program may change due to hole conditions.

Describe the mud monitoring system utilized: An electronic PVT mud system will monitor flow rate, pump pressure, stroke rate, and volume.

Circulating Medium Table

| Top Depth | Bottom Depth | Mud Type | Min Weight (lbs/gal) | Max Weight (lbs/gal) | Density (lbs/cu ft) | Gel Strength (lbs/100 sqft) | PH | Viscosity (CP) | Salinity (ppm) | Filtration (cc) | Additional Characteristics |
|-----------|--------------|-------------------------------|----------------------|----------------------|---------------------|-----------------------------|----|----------------|----------------|-----------------|----------------------------|
| 175 | 5900 | OTHER : Brine diesel emulsion | 9.8 | 10.2 | | | | | | | |
| 5900 | 1976 0 | OIL-BASED MUD | 8.5 | 10 | | | | | | | |
| 0 | 175 | OTHER : Fresh water spud | 8.3 | 8.3 | | | | | | | |

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC**Well Name:** GOONCH FED COM 0409**Well Number:** 136H

Section 6 - Test, Logging, Coring

List of production tests including testing procedures, equipment and safety measures:

A 2-person mud logging program will be used from 3000' to TD.

GR log will be acquired by MDW tools from the intermediate casing to TD.

List of open and cased hole logs run in the well:

GAMMA RAY LOG, MUD LOG/GEOLOGIC LITHOLOGY LOG,

Coring operation description for the well:

No core or drill stem test is planned.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 4672**Anticipated Surface Pressure:** 2604**Anticipated Bottom Hole Temperature(F):** 150**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO**Describe:****Contingency Plans geohazards description:****Contingency Plans geohazards attachment:****Hydrogen Sulfide drilling operations plan required?** YES**Hydrogen sulfide drilling operations plan:**

Goonch_0409_136H_H2S_Plan_20200117104929.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Goonch_0409_136H_Horizontal_Plan_20200117104947.pdf

Other proposed operations facets description:**Other proposed operations facets attachment:**

Goonch_0409_136H_Drill_Plan_20200117104955.pdf

CoFlex_Certs_20200117105006.pdf

Goonch_0409_136H_Speedhead_Specs_20200117105014.pdf

Goonch_0409_136H_Anti_Collision_Report_20200117105028.pdf

Other Variance attachment:

Goonch_0409_136H_Alternative_Casing__Spec_Request_20200117105037.pdf

Goonch_0409_136H_Casing_Cementing_Variance_20200117105042.pdf

Novo Oil & Gas Northern Delaware, LLC
 Goonch Fed Com 0409 136H
 SHL 464' FNL & 1338' FEL 4-23S-28E
 BHL 10' FSL & 2310' FEL 9-23S-28e
 Eddy County, NM

DRILL PLAN PAGE 1

"Pad I"

Drilling Program

1. ESTIMATED TOPS

| Formation Name | TVD KB | MD | Bearing |
|---------------------------------------|--------|--------|---------------|
| Quaternary | 0' | 0' | water |
| Rustler anhydrite | 100' | 100' | N/A |
| Castile anhydrite | 970' | 970' | N/A |
| Base salt | 2574' | 2607' | |
| Bell Canyon sandstone | 2574' | 2607' | hydrocarbons |
| Cherry Canyon sandstone | 3636' | 3695' | hydrocarbons |
| Brushy Canyon sandstone | 4649' | 4736' | hydrocarbons |
| Bone Spring limestone | 6111' | 6218' | hydrocarbons |
| 1 st Bone Spring sandstone | 7116' | 7223' | hydrocarbons |
| 2 nd Bone Spring carbonate | 7381' | 7488' | hydrocarbons |
| 2nd Bone Spring sandstone | 7891' | 7998' | hydrocarbons |
| 3d Bone Spring carbonate | 8251' | 8358' | hydrocarbons |
| (KOP | 8929' | 9036' | hydrocarbons) |
| 3 rd Bone Spring sandstone | 9111' | 9223' | hydrocarbons |
| TD | 9366' | 19760' | hydrocarbons |

2. NOTABLE ZONES

Third Bone Spring is the goal. All perforations will be $\geq 100'$ from the dedication perimeter. Closest water well (C 00800) is 1.3 miles south. Water bearing strata were reported from 50' to 155' in this 200' deep well.

Novo Oil & Gas Northern Delaware, LLC
Goonch Fed Com 0409 136H
SHL 464' FNL & 1338' FEL 4-23S-28E
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Eddy County, NM

DRILL PLAN PAGE 2

"Pad I"

3. PRESSURE CONTROL

A 13.625" 5,000-psi BOP system will be installed on a multi-bowl (speed head) wellhead with a 13.625" flanged casing spool. Top flange of casing spool will be set in a cellar below ground level. BOP system will consist of a single pipe ram on the bottom, mud cross, double pipe ram with blind rams on bottom and pipe rams on top, and annular preventer. Blowout preventer will be installed on top of the 13.375" surface casing and will remain installed to TD of the well. Wellhead, blowout preventer, and choke manifold diagram are included.

BOP system will be isolated with a test plug and tested by an independent tester to 250-psi low and 5000-psi high for 10 minutes before drilling out the surface shoe. Variance is requested to use a co-flex hose between the BOP system and choke manifold. A typical co-flex pressure test certificate is attached. An equipment specific co-flex pressure test certificate will be on site when testing the BOP.

All casing strings will be tested in accordance with Onshore Order 2 III.B.1.h. Surface casing will be pressure tested to 250 psi low and 1500 psi high. Intermediate casing will be tested to 250 psi low and 1500 psi high for 30 minutes.

4. CASING & CEMENT

Variance is requested for an option to use a surface rig to drill the surface hole, set the surface casing, and cement the surface casing. If the schedule between rigs would preclude presetting the surface casing, then the primary rig will MIRU and drill all of the well.

All casing will be API and new. Alternate couplings could be substituted on the 5.5" production casing due to coupling availability. Alternate grades could be substituted on the 5.5" production casing to meet maximum stimulation pressures. See attached casing assumption worksheet.

Novo Oil & Gas Northern Delaware, LLC
 Goonch Fed Com 0409 136H
 SHL 464' FNL & 1338' FEL 4-23S-28E
 BHL 10' FSL & 2310' FEL 9-23S-28e
 Eddy County, NM

DRILL PLAN PAGE 3

"Pad I"

| Hole O. D. | Set MD | Set TVD | Casing O. D. | Weight (lb/ft) | Grade | Joint | Collapse | Burst | Tension |
|------------|-------------|------------|-------------------------|----------------|----------|---------|----------|-------|---------|
| 17.5" | 0' - 175' | 0' - 175' | 13.375" surface | 54.5 | J-55 | BTC | 1.125 | 1.125 | 1.6 |
| 12.25" | 0' - 5900' | 0' - 5793' | 9.625" intermed. | 43.5 | HCL-80 | BTC | 1.125 | 1.125 | 1.6 |
| 8.75" | 0' - 19760' | 0' - 9366' | 5.5" product. | 20 | P-110 | TMK DQX | 1.125 | 1.125 | 1.6 |
| 8.75" | 0' - 19760' | 0' - 9366' | 5.5" alternate product. | 20 | P-110 | GBCD | 1.125 | 1.125 | 1.6 |
| 8.75" | 0' - 19760' | 0' - 9366' | 5.5" alternate product. | 20 | P-110 HC | CDC | 1.125 | 1.125 | 1.6 |

| Name | Type | Sacks | Yield | Cu. Ft. | Weight | Blend |
|--------------|------|-------------|-------|---------|--|---------------------------------------|
| Surface | Tail | 150 | 1.62 | 243 | 13.8 | Class C + gel + accelerator + LCM |
| TOC = GL | | 100% Excess | | | Centralizers on every jt to GL | |
| Intermediate | Lead | 855 | 2.28 | 1949 | 11.9 | Class C + gel + extender + LCM |
| | Tail | 200 | 1.34 | 268 | 14.8 | Class C + gel + retarder + LCM |
| TOC = GL | | 20% Excess | | | Centralizers on bottom 3 jts and then 1 centralizer every 4th jt to GL | |
| Production | Tail | 3065 | 1.42 | 4352 | 13.2 | Class H + fluid loss + retarder + LCM |
| TOC = 5400' | | 20% Excess | | | None planned | |

5. MUD PROGRAM

An electronic PVT mud system will monitor flow rate, pump pressure, stroke rate, and volume. All necessary mud products (barite, bentonite, LCM) to control weight and fluid loss will be on site at all times. Mud program may change due to hole conditions. A closed loop system will be used.

Novo Oil & Gas Northern Delaware, LLC
Goonch Fed Com 0409 136H
SHL 464' FNL & 1338' FEL 4-23S-28E
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Eddy County, NM

DRILL PLAN PAGE 4

"Pad I"

| Type | Interval (MD) | lb/gal | Viscosity | Fluid Loss |
|-----------------------|----------------|------------|-----------|------------|
| fresh water spud | 0' - 175' | 8.3 | 30 - 60 | NC |
| brine diesel emulsion | 175' - 5900' | 9.8 - 10.2 | 35 - 45 | NC |
| OBM | 5900' - 19760' | 8.5 - 10.0 | 35 - 65 | 4 - 6 |

6. CORES, TESTS, & LOGS

No core or drill stem test is planned.

A 2-person mud logging program will be used from $\approx 3000'$ to TD.

GR log will be acquired by MDW tools from the intermediate casing to TD.

7. DOWN HOLE CONDITIONS

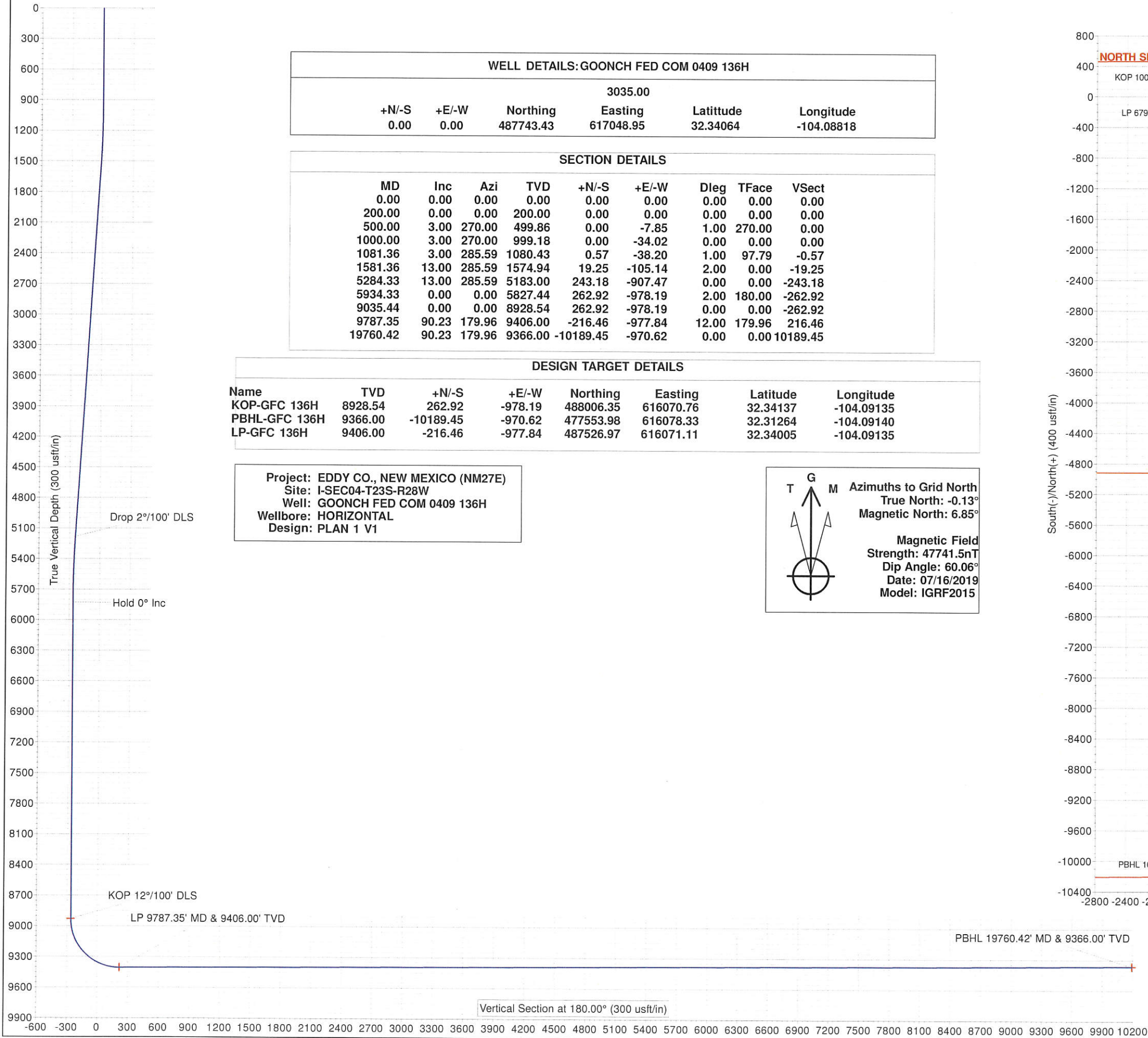
No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is ≈ 4672 psi. Expected bottom hole temperature is $\approx 150^\circ$ F.

An H2S plan is attached.

8. OTHER INFORMATION

Anticipated spud date is upon approval. It is expected it will take ≈ 3 months to drill and complete the well.

GOONCH FED COM 0409 136H



| WELL DETAILS:GOONCH FED COM 0409 136H | | | | | | |
|---------------------------------------|-------|-----------|-----------|----------|------------|--|
| 3035.00 | | | | | | |
| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | |
| 0.00 | 0.00 | 487743.43 | 617048.95 | 32.34064 | -104.08818 | |

| SECTION DETAILS | | | | | | | | |
|-----------------|-------|--------|---------|-----------|---------|-------|--------|----------|
| MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 200.00 | 0.00 | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 500.00 | 3.00 | 270.00 | 499.86 | 0.00 | -7.85 | 1.00 | 270.00 | 0.00 |
| 1000.00 | 3.00 | 270.00 | 999.18 | 0.00 | -34.02 | 0.00 | 0.00 | 0.00 |
| 1081.36 | 3.00 | 285.59 | 1080.43 | 0.57 | -38.20 | 1.00 | 97.79 | -0.57 |
| 1581.36 | 13.00 | 285.59 | 1574.94 | 19.25 | -105.14 | 2.00 | 0.00 | -19.25 |
| 5284.33 | 13.00 | 285.59 | 5183.00 | 243.18 | -907.47 | 0.00 | 0.00 | -243.18 |
| 5934.33 | 0.00 | 0.00 | 5827.44 | 262.92 | -978.19 | 2.00 | 180.00 | -262.92 |
| 9035.44 | 0.00 | 0.00 | 8928.54 | 262.92 | -978.19 | 0.00 | 0.00 | -262.92 |
| 9787.35 | 90.23 | 179.96 | 9406.00 | -216.46 | -977.84 | 12.00 | 179.96 | 216.46 |
| 19760.42 | 90.23 | 179.96 | 9366.00 | -10189.45 | -970.62 | 0.00 | 0.00 | 10189.45 |

| DESIGN TARGET DETAILS | | | | | | | |
|-----------------------|---------|-----------|---------|-----------|-----------|----------|------------|
| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
| KOP-GFC 136H | 8928.54 | 262.92 | -978.19 | 488006.35 | 616070.76 | 32.34137 | -104.09135 |
| PBHL-GFC 136H | 9366.00 | -10189.45 | -970.62 | 477553.98 | 616078.33 | 32.31264 | -104.09140 |
| LP-GFC 136H | 9406.00 | -216.46 | -977.84 | 487526.97 | 616071.11 | 32.34005 | -104.09135 |

Project: EDDY CO., NEW MEXICO (NM27E)
Site: I-SEC04-T23S-R28W
Well: GOONCH FED COM 0409 136H
Wellbore: HORIZONTAL
Design: PLAN 1 V1

T

G

M

Azimuths to Grid North

True North: -0.13°

Magnetic North: 6.85°

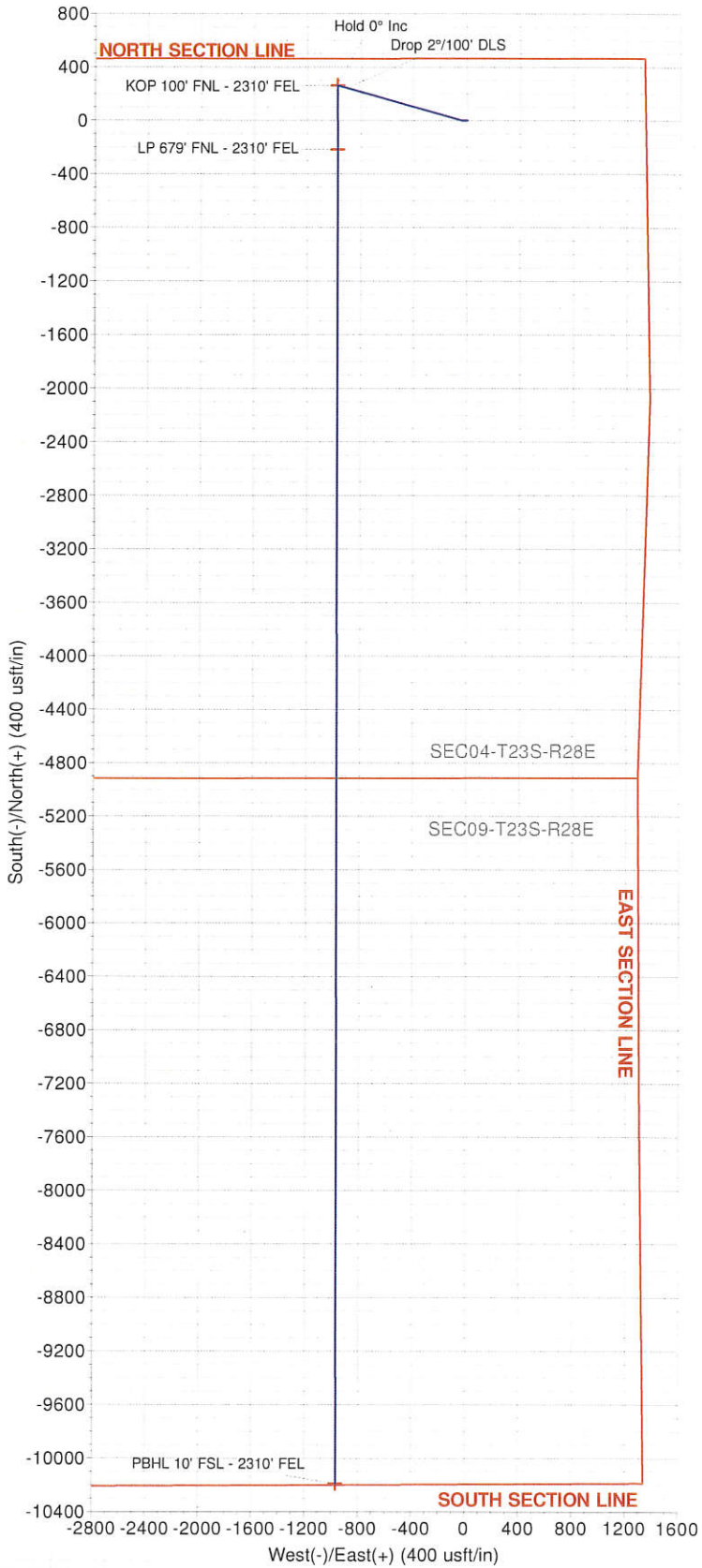
Magnetic Field

Strength: 47741.5nT

Dip Angle: 60.06°

Date: 07/16/2019

Model: IGRF2015



| | | | | | | | |
|--------------------|---------------------------|------------------------------|----------------------|----------------|--|--|--|
| Project | | EDDY CO., NEW MEXICO (NM27E) | | | | | |
| Map System: | US State Plane 1983 | | System Datum: | Mean Sea Level | | | |
| Geo Datum: | North American Datum 1983 | | | | | | |
| Map Zone: | New Mexico Eastern Zone | | | | | | |

| | | | | | | | |
|------------------------------|-----------|---------------------|-----------------|--------------------------|------------|--|--|
| Site | | I-SEC04-T23S-R28W | | | | | |
| Site Position: | | Northing: | 488,208.70 usft | Latitude: | 32.34191 | | |
| From: | Lat/Long | Easting: | 618,378.81 usft | Longitude: | -104.08387 | | |
| Position Uncertainty: | 0.00 usft | Slot Radius: | 13-3/16" | Grid Convergence: | 0.13 ° | | |

| | | | | | | | |
|-----------------------------|--------------|--------------------------|----------------------------|-----------------|----------------------|---------------|--|
| Well | | GOONCH FED COM 0409 136H | | | | | |
| Well Position | +N/-S | 0.00 usft | Northing: | 487,743.43 usft | Latitude: | 32.34064 | |
| | +E/-W | 0.00 usft | Easting: | 617,048.95 usft | Longitude: | -104.08818 | |
| Position Uncertainty | 0.00 usft | | Wellhead Elevation: | 3,035.00 usft | Ground Level: | 3,035.00 usft | |

| | | | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|--|--|
| Wellbore | | HORIZONTAL | | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) | | |
| | IGRF2015 | 07/16/19 | 6.98 | 60.06 | 47,741.48746903 | | |

| | | | | | | | |
|--------------------------|--------------------------------|---------------------|---------------------|----------------------|------|--|--|
| Design | | PLAN 1 V1 | | | | | |
| Audit Notes: | | | | | | | |
| Version: | | Phase: | PLAN | Tie On Depth: | 0.00 | | |
| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) | | | |
| | 0.00 | 0.00 | 0.00 | 180.00 | | | |

| | | | | | | | |
|----------------------------|------------------|--------------------------|------------------|---------------------|--|--|--|
| Survey Tool Program | | Date 07/16/19 | | | | | |
| From (usft) | To (usft) | Survey (Wellbore) | Tool Name | Description | | | |
| 0.00 | 19,760.42 | PLAN 1 V1 (HORIZONTAL) | MWD | OWSG MWD - Standard | | | |

| | | | | | | | |
|--------------------------|----------------|--------------------------|-------------------|-------------------|-------------------|----------------------|-------------------------|
| Planned Survey | | | | | | | |
| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 100.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 200.00 | 0.00 | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Nudge 1°/100' DLS | | | | | | | |
| 300.00 | 1.00 | 270.00 | 299.99 | 0.00 | -0.87 | 0.00 | 1.00 |
| 400.00 | 2.00 | 270.00 | 399.96 | 0.00 | -3.49 | 0.00 | 1.00 |
| 500.00 | 3.00 | 270.00 | 499.86 | 0.00 | -7.85 | 0.00 | 1.00 |
| Hold 3° Inc | | | | | | | |
| 600.00 | 3.00 | 270.00 | 599.73 | 0.00 | -13.09 | 0.00 | 0.00 |
| 700.00 | 3.00 | 270.00 | 699.59 | 0.00 | -18.32 | 0.00 | 0.00 |
| 800.00 | 3.00 | 270.00 | 799.45 | 0.00 | -23.55 | 0.00 | 0.00 |
| 900.00 | 3.00 | 270.00 | 899.31 | 0.00 | -28.79 | 0.00 | 0.00 |
| 1,000.00 | 3.00 | 270.00 | 999.18 | 0.00 | -34.02 | 0.00 | 0.00 |
| Turn 1°/100' DLS | | | | | | | |
| 1,081.36 | 3.00 | 285.59 | 1,080.43 | 0.57 | -38.20 | -0.57 | 1.00 |
| KOP 2°/100' DLS | | | | | | | |
| 1,100.00 | 3.37 | 285.59 | 1,099.04 | 0.85 | -39.20 | -0.85 | 2.00 |
| 1,200.00 | 5.37 | 285.59 | 1,198.74 | 2.90 | -46.54 | -2.90 | 2.00 |
| 1,300.00 | 7.37 | 285.59 | 1,298.12 | 5.88 | -57.23 | -5.88 | 2.00 |
| 1,400.00 | 9.37 | 285.59 | 1,397.05 | 9.80 | -71.26 | -9.80 | 2.00 |
| 1,500.00 | 11.37 | 285.59 | 1,495.41 | 14.64 | -88.60 | -14.64 | 2.00 |

Planned Survey

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) |
|-------------------------|------------|----------------------|---------------|---------------|---------------|------------------|---------------------|
| 1,581.36 | 13.00 | 285.59 | 1,574.93 | 19.25 | -105.14 | -19.25 | 2.00 |
| Hold 13° Inc | | | | | | | |
| 1,600.00 | 13.00 | 285.59 | 1,593.10 | 20.38 | -109.18 | -20.38 | 0.00 |
| 1,700.00 | 13.00 | 285.59 | 1,690.53 | 26.43 | -130.85 | -26.43 | 0.00 |
| 1,800.00 | 13.00 | 285.59 | 1,787.97 | 32.48 | -152.51 | -32.48 | 0.00 |
| 1,900.00 | 13.00 | 285.59 | 1,885.41 | 38.52 | -174.18 | -38.52 | 0.00 |
| 2,000.00 | 13.00 | 285.59 | 1,982.84 | 44.57 | -195.85 | -44.57 | 0.00 |
| 2,100.00 | 13.00 | 285.59 | 2,080.28 | 50.62 | -217.51 | -50.62 | 0.00 |
| 2,200.00 | 13.00 | 285.59 | 2,177.72 | 56.66 | -239.18 | -56.66 | 0.00 |
| 2,300.00 | 13.00 | 285.59 | 2,275.15 | 62.71 | -260.85 | -62.71 | 0.00 |
| 2,400.00 | 13.00 | 285.59 | 2,372.59 | 68.76 | -282.52 | -68.76 | 0.00 |
| 2,500.00 | 13.00 | 285.59 | 2,470.03 | 74.81 | -304.18 | -74.81 | 0.00 |
| 2,600.00 | 13.00 | 285.59 | 2,567.47 | 80.85 | -325.85 | -80.85 | 0.00 |
| 2,700.00 | 13.00 | 285.59 | 2,664.90 | 86.90 | -347.52 | -86.90 | 0.00 |
| 2,800.00 | 13.00 | 285.59 | 2,762.34 | 92.95 | -369.18 | -92.95 | 0.00 |
| 2,900.00 | 13.00 | 285.59 | 2,859.78 | 98.99 | -390.85 | -98.99 | 0.00 |
| 3,000.00 | 13.00 | 285.59 | 2,957.21 | 105.04 | -412.52 | -105.04 | 0.00 |
| 3,100.00 | 13.00 | 285.59 | 3,054.65 | 111.09 | -434.18 | -111.09 | 0.00 |
| 3,200.00 | 13.00 | 285.59 | 3,152.09 | 117.14 | -455.85 | -117.14 | 0.00 |
| 3,300.00 | 13.00 | 285.59 | 3,249.52 | 123.18 | -477.52 | -123.18 | 0.00 |
| 3,400.00 | 13.00 | 285.59 | 3,346.96 | 129.23 | -499.19 | -129.23 | 0.00 |
| 3,500.00 | 13.00 | 285.59 | 3,444.40 | 135.28 | -520.85 | -135.28 | 0.00 |
| 3,600.00 | 13.00 | 285.59 | 3,541.84 | 141.32 | -542.52 | -141.32 | 0.00 |
| 3,700.00 | 13.00 | 285.59 | 3,639.27 | 147.37 | -564.19 | -147.37 | 0.00 |
| 3,800.00 | 13.00 | 285.59 | 3,736.71 | 153.42 | -585.85 | -153.42 | 0.00 |
| 3,900.00 | 13.00 | 285.59 | 3,834.15 | 159.47 | -607.52 | -159.47 | 0.00 |
| 4,000.00 | 13.00 | 285.59 | 3,931.58 | 165.51 | -629.19 | -165.51 | 0.00 |
| 4,100.00 | 13.00 | 285.59 | 4,029.02 | 171.56 | -650.86 | -171.56 | 0.00 |
| 4,200.00 | 13.00 | 285.59 | 4,126.46 | 177.61 | -672.52 | -177.61 | 0.00 |
| 4,300.00 | 13.00 | 285.59 | 4,223.89 | 183.65 | -694.19 | -183.65 | 0.00 |
| 4,400.00 | 13.00 | 285.59 | 4,321.33 | 189.70 | -715.86 | -189.70 | 0.00 |
| 4,500.00 | 13.00 | 285.59 | 4,418.77 | 195.75 | -737.52 | -195.75 | 0.00 |
| 4,600.00 | 13.00 | 285.59 | 4,516.21 | 201.80 | -759.19 | -201.80 | 0.00 |
| 4,700.00 | 13.00 | 285.59 | 4,613.64 | 207.84 | -780.86 | -207.84 | 0.00 |
| 4,800.00 | 13.00 | 285.59 | 4,711.08 | 213.89 | -802.52 | -213.89 | 0.00 |
| 4,900.00 | 13.00 | 285.59 | 4,808.52 | 219.94 | -824.19 | -219.94 | 0.00 |
| 5,000.00 | 13.00 | 285.59 | 4,905.95 | 225.98 | -845.86 | -225.98 | 0.00 |
| 5,100.00 | 13.00 | 285.59 | 5,003.39 | 232.03 | -867.53 | -232.03 | 0.00 |
| 5,200.00 | 13.00 | 285.59 | 5,100.83 | 238.08 | -889.19 | -238.08 | 0.00 |
| 5,284.33 | 13.00 | 285.59 | 5,183.00 | 243.18 | -907.47 | -243.18 | 0.00 |
| Drop 2°/100' DLS | | | | | | | |
| 5,300.00 | 12.69 | 285.59 | 5,198.27 | 244.11 | -910.82 | -244.11 | 2.00 |
| 5,400.00 | 10.69 | 285.59 | 5,296.20 | 249.56 | -930.33 | -249.56 | 2.00 |
| 5,500.00 | 8.69 | 285.59 | 5,394.77 | 254.08 | -946.54 | -254.08 | 2.00 |
| 5,600.00 | 6.69 | 285.59 | 5,493.86 | 257.68 | -959.42 | -257.68 | 2.00 |
| 5,700.00 | 4.69 | 285.59 | 5,593.37 | 260.34 | -968.96 | -260.34 | 2.00 |
| 5,800.00 | 2.69 | 285.59 | 5,693.15 | 262.07 | -975.15 | -262.07 | 2.00 |
| 5,900.00 | 0.69 | 285.59 | 5,793.10 | 262.86 | -977.99 | -262.86 | 2.00 |
| 5,934.33 | 0.00 | 0.00 | 5,827.43 | 262.92 | -978.19 | -262.92 | 2.00 |
| Hold 0° Inc | | | | | | | |
| 6,000.00 | 0.00 | 0.00 | 5,893.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 6,100.00 | 0.00 | 0.00 | 5,993.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 6,200.00 | 0.00 | 0.00 | 6,093.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 6,300.00 | 0.00 | 0.00 | 6,193.10 | 262.92 | -978.19 | -262.92 | 0.00 |

| Planned Survey | | | | | | | |
|--|------------|----------------------|---------------|---------------|---------------|------------------|---------------------|
| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) |
| 6,400.00 | 0.00 | 0.00 | 6,293.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 6,500.00 | 0.00 | 0.00 | 6,393.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 6,600.00 | 0.00 | 0.00 | 6,493.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 6,700.00 | 0.00 | 0.00 | 6,593.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 6,800.00 | 0.00 | 0.00 | 6,693.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 6,900.00 | 0.00 | 0.00 | 6,793.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 7,000.00 | 0.00 | 0.00 | 6,893.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 7,100.00 | 0.00 | 0.00 | 6,993.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 7,200.00 | 0.00 | 0.00 | 7,093.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 7,300.00 | 0.00 | 0.00 | 7,193.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 7,400.00 | 0.00 | 0.00 | 7,293.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 7,500.00 | 0.00 | 0.00 | 7,393.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 7,600.00 | 0.00 | 0.00 | 7,493.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 7,700.00 | 0.00 | 0.00 | 7,593.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 7,800.00 | 0.00 | 0.00 | 7,693.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 7,900.00 | 0.00 | 0.00 | 7,793.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 8,000.00 | 0.00 | 0.00 | 7,893.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 8,100.00 | 0.00 | 0.00 | 7,993.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 8,200.00 | 0.00 | 0.00 | 8,093.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 8,300.00 | 0.00 | 0.00 | 8,193.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 8,400.00 | 0.00 | 0.00 | 8,293.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 8,500.00 | 0.00 | 0.00 | 8,393.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 8,600.00 | 0.00 | 0.00 | 8,493.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 8,700.00 | 0.00 | 0.00 | 8,593.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 8,800.00 | 0.00 | 0.00 | 8,693.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 8,900.00 | 0.00 | 0.00 | 8,793.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 9,000.00 | 0.00 | 0.00 | 8,893.10 | 262.92 | -978.19 | -262.92 | 0.00 |
| 9,035.44 | 0.00 | 0.00 | 8,928.54 | 262.92 | -978.19 | -262.92 | 0.00 |
| KOP 12°/100' DLS - KOP-GFC 136H | | | | | | | |
| 9,050.00 | 1.75 | 179.96 | 8,943.10 | 262.69 | -978.19 | -262.69 | 12.00 |
| 9,075.00 | 4.75 | 179.96 | 8,968.06 | 261.28 | -978.19 | -261.28 | 12.00 |
| 9,100.00 | 7.75 | 179.96 | 8,992.91 | 258.56 | -978.18 | -258.56 | 12.00 |
| 9,125.00 | 10.75 | 179.96 | 9,017.58 | 254.54 | -978.18 | -254.54 | 12.00 |
| 9,150.00 | 13.75 | 179.96 | 9,042.01 | 249.24 | -978.18 | -249.24 | 12.00 |
| 9,175.00 | 16.75 | 179.96 | 9,066.12 | 242.66 | -978.17 | -242.66 | 12.00 |
| 9,200.00 | 19.75 | 179.96 | 9,089.86 | 234.84 | -978.17 | -234.84 | 12.00 |
| 9,225.00 | 22.75 | 179.96 | 9,113.16 | 225.78 | -978.16 | -225.78 | 12.00 |
| 9,250.00 | 25.75 | 179.96 | 9,135.95 | 215.51 | -978.15 | -215.51 | 12.00 |
| 9,275.00 | 28.75 | 179.96 | 9,158.18 | 204.07 | -978.14 | -204.07 | 12.00 |
| 9,300.00 | 31.75 | 179.96 | 9,179.77 | 191.47 | -978.14 | -191.47 | 12.00 |
| 9,325.00 | 34.75 | 179.96 | 9,200.68 | 177.77 | -978.13 | -177.77 | 12.00 |
| 9,350.00 | 37.75 | 179.96 | 9,220.84 | 162.99 | -978.11 | -162.99 | 12.00 |
| 9,375.00 | 40.75 | 179.96 | 9,240.20 | 147.17 | -978.10 | -147.17 | 12.00 |
| 9,400.00 | 43.75 | 179.96 | 9,258.70 | 130.37 | -978.09 | -130.37 | 12.00 |
| 9,425.00 | 46.75 | 179.96 | 9,276.30 | 112.62 | -978.08 | -112.62 | 12.00 |
| 9,450.00 | 49.75 | 179.96 | 9,292.94 | 93.97 | -978.06 | -93.97 | 12.00 |
| 9,475.00 | 52.75 | 179.96 | 9,308.59 | 74.47 | -978.05 | -74.47 | 12.00 |
| 9,500.00 | 55.75 | 179.96 | 9,323.20 | 54.19 | -978.04 | -54.19 | 12.00 |
| 9,525.00 | 58.75 | 179.96 | 9,336.72 | 33.16 | -978.02 | -33.16 | 12.00 |
| 9,550.00 | 61.75 | 179.96 | 9,349.13 | 11.46 | -978.00 | -11.46 | 12.00 |
| 9,575.00 | 64.75 | 179.96 | 9,360.38 | -10.86 | -977.99 | 10.86 | 12.00 |
| 9,600.00 | 67.75 | 179.96 | 9,370.45 | -33.74 | -977.97 | 33.74 | 12.00 |
| 9,625.00 | 70.75 | 179.96 | 9,379.30 | -57.12 | -977.96 | 57.12 | 12.00 |
| 9,650.00 | 73.75 | 179.96 | 9,386.92 | -80.92 | -977.94 | 80.92 | 12.00 |

Planned Survey

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) |
|--|------------|----------------------|---------------|---------------|---------------|------------------|---------------------|
| 9,675.00 | 76.75 | 179.96 | 9,393.29 | -105.10 | -977.92 | 105.10 | 12.00 |
| 9,700.00 | 79.75 | 179.96 | 9,398.38 | -129.57 | -977.90 | 129.57 | 12.00 |
| 9,725.00 | 82.75 | 179.96 | 9,402.19 | -154.27 | -977.88 | 154.27 | 12.00 |
| 9,750.00 | 85.75 | 179.96 | 9,404.69 | -179.15 | -977.87 | 179.15 | 12.00 |
| 9,775.00 | 88.75 | 179.96 | 9,405.89 | -204.11 | -977.85 | 204.11 | 12.00 |
| 9,787.35 | 90.23 | 179.96 | 9,406.00 | -216.46 | -977.84 | 216.46 | 12.00 |
| LP 9787.35' MD & 9406.00' TVD - LP-GFC 136H | | | | | | | |
| 9,800.00 | 90.23 | 179.96 | 9,405.95 | -229.11 | -977.83 | 229.11 | 0.00 |
| 9,900.00 | 90.23 | 179.96 | 9,405.55 | -329.11 | -977.76 | 329.11 | 0.00 |
| 10,000.00 | 90.23 | 179.96 | 9,405.15 | -429.11 | -977.69 | 429.11 | 0.00 |
| 10,100.00 | 90.23 | 179.96 | 9,404.75 | -529.11 | -977.61 | 529.11 | 0.00 |
| 10,200.00 | 90.23 | 179.96 | 9,404.35 | -629.11 | -977.54 | 629.11 | 0.00 |
| 10,300.00 | 90.23 | 179.96 | 9,403.94 | -729.11 | -977.47 | 729.11 | 0.00 |
| 10,400.00 | 90.23 | 179.96 | 9,403.54 | -829.11 | -977.40 | 829.11 | 0.00 |
| 10,500.00 | 90.23 | 179.96 | 9,403.14 | -929.11 | -977.32 | 929.11 | 0.00 |
| 10,600.00 | 90.23 | 179.96 | 9,402.74 | -1,029.11 | -977.25 | 1,029.11 | 0.00 |
| 10,700.00 | 90.23 | 179.96 | 9,402.34 | -1,129.11 | -977.18 | 1,129.11 | 0.00 |
| 10,800.00 | 90.23 | 179.96 | 9,401.94 | -1,229.10 | -977.11 | 1,229.10 | 0.00 |
| 10,900.00 | 90.23 | 179.96 | 9,401.54 | -1,329.10 | -977.03 | 1,329.10 | 0.00 |
| 11,000.00 | 90.23 | 179.96 | 9,401.14 | -1,429.10 | -976.96 | 1,429.10 | 0.00 |
| 11,100.00 | 90.23 | 179.96 | 9,400.74 | -1,529.10 | -976.89 | 1,529.10 | 0.00 |
| 11,200.00 | 90.23 | 179.96 | 9,400.33 | -1,629.10 | -976.82 | 1,629.10 | 0.00 |
| 11,300.00 | 90.23 | 179.96 | 9,399.93 | -1,729.10 | -976.74 | 1,729.10 | 0.00 |
| 11,400.00 | 90.23 | 179.96 | 9,399.53 | -1,829.10 | -976.67 | 1,829.10 | 0.00 |
| 11,500.00 | 90.23 | 179.96 | 9,399.13 | -1,929.10 | -976.60 | 1,929.10 | 0.00 |
| 11,600.00 | 90.23 | 179.96 | 9,398.73 | -2,029.10 | -976.53 | 2,029.10 | 0.00 |
| 11,700.00 | 90.23 | 179.96 | 9,398.33 | -2,129.10 | -976.45 | 2,129.10 | 0.00 |
| 11,800.00 | 90.23 | 179.96 | 9,397.93 | -2,229.10 | -976.38 | 2,229.10 | 0.00 |
| 11,900.00 | 90.23 | 179.96 | 9,397.53 | -2,329.10 | -976.31 | 2,329.10 | 0.00 |
| 12,000.00 | 90.23 | 179.96 | 9,397.13 | -2,429.09 | -976.24 | 2,429.09 | 0.00 |
| 12,100.00 | 90.23 | 179.96 | 9,396.73 | -2,529.09 | -976.16 | 2,529.09 | 0.00 |
| 12,200.00 | 90.23 | 179.96 | 9,396.32 | -2,629.09 | -976.09 | 2,629.09 | 0.00 |
| 12,300.00 | 90.23 | 179.96 | 9,395.92 | -2,729.09 | -976.02 | 2,729.09 | 0.00 |
| 12,400.00 | 90.23 | 179.96 | 9,395.52 | -2,829.09 | -975.95 | 2,829.09 | 0.00 |
| 12,500.00 | 90.23 | 179.96 | 9,395.12 | -2,929.09 | -975.88 | 2,929.09 | 0.00 |
| 12,600.00 | 90.23 | 179.96 | 9,394.72 | -3,029.09 | -975.80 | 3,029.09 | 0.00 |
| 12,700.00 | 90.23 | 179.96 | 9,394.32 | -3,129.09 | -975.73 | 3,129.09 | 0.00 |
| 12,800.00 | 90.23 | 179.96 | 9,393.92 | -3,229.09 | -975.66 | 3,229.09 | 0.00 |
| 12,900.00 | 90.23 | 179.96 | 9,393.52 | -3,329.09 | -975.59 | 3,329.09 | 0.00 |
| 13,000.00 | 90.23 | 179.96 | 9,393.12 | -3,429.09 | -975.51 | 3,429.09 | 0.00 |
| 13,100.00 | 90.23 | 179.96 | 9,392.71 | -3,529.09 | -975.44 | 3,529.09 | 0.00 |
| 13,200.00 | 90.23 | 179.96 | 9,392.31 | -3,629.08 | -975.37 | 3,629.08 | 0.00 |
| 13,300.00 | 90.23 | 179.96 | 9,391.91 | -3,729.08 | -975.30 | 3,729.08 | 0.00 |
| 13,400.00 | 90.23 | 179.96 | 9,391.51 | -3,829.08 | -975.22 | 3,829.08 | 0.00 |
| 13,500.00 | 90.23 | 179.96 | 9,391.11 | -3,929.08 | -975.15 | 3,929.08 | 0.00 |
| 13,600.00 | 90.23 | 179.96 | 9,390.71 | -4,029.08 | -975.08 | 4,029.08 | 0.00 |
| 13,700.00 | 90.23 | 179.96 | 9,390.31 | -4,129.08 | -975.01 | 4,129.08 | 0.00 |
| 13,800.00 | 90.23 | 179.96 | 9,389.91 | -4,229.08 | -974.93 | 4,229.08 | 0.00 |
| 13,900.00 | 90.23 | 179.96 | 9,389.51 | -4,329.08 | -974.86 | 4,329.08 | 0.00 |
| 14,000.00 | 90.23 | 179.96 | 9,389.10 | -4,429.08 | -974.79 | 4,429.08 | 0.00 |
| 14,100.00 | 90.23 | 179.96 | 9,388.70 | -4,529.08 | -974.72 | 4,529.08 | 0.00 |
| 14,200.00 | 90.23 | 179.96 | 9,388.30 | -4,629.08 | -974.64 | 4,629.08 | 0.00 |
| 14,300.00 | 90.23 | 179.96 | 9,387.90 | -4,729.08 | -974.57 | 4,729.08 | 0.00 |
| 14,400.00 | 90.23 | 179.96 | 9,387.50 | -4,829.07 | -974.50 | 4,829.07 | 0.00 |

| Planned Survey | | | | | | | |
|----------------|------------|----------------------|---------------|---------------|---------------|------------------|---------------------|
| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) |
| 14,500.00 | 90.23 | 179.96 | 9,387.10 | -4,929.07 | -974.43 | 4,929.07 | 0.00 |
| 14,600.00 | 90.23 | 179.96 | 9,386.70 | -5,029.07 | -974.35 | 5,029.07 | 0.00 |
| 14,700.00 | 90.23 | 179.96 | 9,386.30 | -5,129.07 | -974.28 | 5,129.07 | 0.00 |
| 14,800.00 | 90.23 | 179.96 | 9,385.90 | -5,229.07 | -974.21 | 5,229.07 | 0.00 |
| 14,900.00 | 90.23 | 179.96 | 9,385.49 | -5,329.07 | -974.14 | 5,329.07 | 0.00 |
| 15,000.00 | 90.23 | 179.96 | 9,385.09 | -5,429.07 | -974.06 | 5,429.07 | 0.00 |
| 15,100.00 | 90.23 | 179.96 | 9,384.69 | -5,529.07 | -973.99 | 5,529.07 | 0.00 |
| 15,200.00 | 90.23 | 179.96 | 9,384.29 | -5,629.07 | -973.92 | 5,629.07 | 0.00 |
| 15,300.00 | 90.23 | 179.96 | 9,383.89 | -5,729.07 | -973.85 | 5,729.07 | 0.00 |
| 15,400.00 | 90.23 | 179.96 | 9,383.49 | -5,829.07 | -973.78 | 5,829.07 | 0.00 |
| 15,500.00 | 90.23 | 179.96 | 9,383.09 | -5,929.07 | -973.70 | 5,929.07 | 0.00 |
| 15,600.00 | 90.23 | 179.96 | 9,382.69 | -6,029.06 | -973.63 | 6,029.06 | 0.00 |
| 15,700.00 | 90.23 | 179.96 | 9,382.29 | -6,129.06 | -973.56 | 6,129.06 | 0.00 |
| 15,800.00 | 90.23 | 179.96 | 9,381.88 | -6,229.06 | -973.49 | 6,229.06 | 0.00 |
| 15,900.00 | 90.23 | 179.96 | 9,381.48 | -6,329.06 | -973.41 | 6,329.06 | 0.00 |
| 16,000.00 | 90.23 | 179.96 | 9,381.08 | -6,429.06 | -973.34 | 6,429.06 | 0.00 |
| 16,100.00 | 90.23 | 179.96 | 9,380.68 | -6,529.06 | -973.27 | 6,529.06 | 0.00 |
| 16,200.00 | 90.23 | 179.96 | 9,380.28 | -6,629.06 | -973.20 | 6,629.06 | 0.00 |
| 16,300.00 | 90.23 | 179.96 | 9,379.88 | -6,729.06 | -973.12 | 6,729.06 | 0.00 |
| 16,400.00 | 90.23 | 179.96 | 9,379.48 | -6,829.06 | -973.05 | 6,829.06 | 0.00 |
| 16,500.00 | 90.23 | 179.96 | 9,379.08 | -6,929.06 | -972.98 | 6,929.06 | 0.00 |
| 16,600.00 | 90.23 | 179.96 | 9,378.68 | -7,029.06 | -972.91 | 7,029.06 | 0.00 |
| 16,700.00 | 90.23 | 179.96 | 9,378.28 | -7,129.06 | -972.83 | 7,129.06 | 0.00 |
| 16,800.00 | 90.23 | 179.96 | 9,377.87 | -7,229.05 | -972.76 | 7,229.05 | 0.00 |
| 16,900.00 | 90.23 | 179.96 | 9,377.47 | -7,329.05 | -972.69 | 7,329.05 | 0.00 |
| 17,000.00 | 90.23 | 179.96 | 9,377.07 | -7,429.05 | -972.62 | 7,429.05 | 0.00 |
| 17,100.00 | 90.23 | 179.96 | 9,376.67 | -7,529.05 | -972.54 | 7,529.05 | 0.00 |
| 17,200.00 | 90.23 | 179.96 | 9,376.27 | -7,629.05 | -972.47 | 7,629.05 | 0.00 |
| 17,300.00 | 90.23 | 179.96 | 9,375.87 | -7,729.05 | -972.40 | 7,729.05 | 0.00 |
| 17,400.00 | 90.23 | 179.96 | 9,375.47 | -7,829.05 | -972.33 | 7,829.05 | 0.00 |
| 17,500.00 | 90.23 | 179.96 | 9,375.07 | -7,929.05 | -972.25 | 7,929.05 | 0.00 |
| 17,600.00 | 90.23 | 179.96 | 9,374.67 | -8,029.05 | -972.18 | 8,029.05 | 0.00 |
| 17,700.00 | 90.23 | 179.96 | 9,374.26 | -8,129.05 | -972.11 | 8,129.05 | 0.00 |
| 17,800.00 | 90.23 | 179.96 | 9,373.86 | -8,229.05 | -972.04 | 8,229.05 | 0.00 |
| 17,900.00 | 90.23 | 179.96 | 9,373.46 | -8,329.05 | -971.96 | 8,329.05 | 0.00 |
| 18,000.00 | 90.23 | 179.96 | 9,373.06 | -8,429.04 | -971.89 | 8,429.04 | 0.00 |
| 18,100.00 | 90.23 | 179.96 | 9,372.66 | -8,529.04 | -971.82 | 8,529.04 | 0.00 |
| 18,200.00 | 90.23 | 179.96 | 9,372.26 | -8,629.04 | -971.75 | 8,629.04 | 0.00 |
| 18,300.00 | 90.23 | 179.96 | 9,371.86 | -8,729.04 | -971.67 | 8,729.04 | 0.00 |
| 18,400.00 | 90.23 | 179.96 | 9,371.46 | -8,829.04 | -971.60 | 8,829.04 | 0.00 |
| 18,500.00 | 90.23 | 179.96 | 9,371.06 | -8,929.04 | -971.53 | 8,929.04 | 0.00 |
| 18,600.00 | 90.23 | 179.96 | 9,370.65 | -9,029.04 | -971.46 | 9,029.04 | 0.00 |
| 18,700.00 | 90.23 | 179.96 | 9,370.25 | -9,129.04 | -971.39 | 9,129.04 | 0.00 |
| 18,800.00 | 90.23 | 179.96 | 9,369.85 | -9,229.04 | -971.31 | 9,229.04 | 0.00 |
| 18,900.00 | 90.23 | 179.96 | 9,369.45 | -9,329.04 | -971.24 | 9,329.04 | 0.00 |
| 19,000.00 | 90.23 | 179.96 | 9,369.05 | -9,429.04 | -971.17 | 9,429.04 | 0.00 |
| 19,100.00 | 90.23 | 179.96 | 9,368.65 | -9,529.04 | -971.10 | 9,529.04 | 0.00 |
| 19,200.00 | 90.23 | 179.96 | 9,368.25 | -9,629.04 | -971.02 | 9,629.04 | 0.00 |
| 19,300.00 | 90.23 | 179.96 | 9,367.85 | -9,729.03 | -970.95 | 9,729.03 | 0.00 |
| 19,400.00 | 90.23 | 179.96 | 9,367.45 | -9,829.03 | -970.88 | 9,829.03 | 0.00 |
| 19,500.00 | 90.23 | 179.96 | 9,367.04 | -9,929.03 | -970.81 | 9,929.03 | 0.00 |
| 19,600.00 | 90.23 | 179.96 | 9,366.64 | -10,029.03 | -970.73 | 10,029.03 | 0.00 |
| 19,700.00 | 90.23 | 179.96 | 9,366.24 | -10,129.03 | -970.66 | 10,129.03 | 0.00 |

Planned Survey

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) |
|--|------------|----------------------|---------------|---------------|---------------|------------------|---------------------|
| 19,760.42 | 90.23 | 179.96 | 9,366.00 | -10,189.45 | -970.62 | 10,189.45 | 0.00 |
| PBHL 19760.42' MD & 9366.00' TVD - PBHL-GFC 136H | | | | | | | |

Plan Annotations

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | Comment |
|-----------------------------|-----------------------------|-------------------|-----------------|----------------------------------|
| | | +N/-S (usft) | +E/-W (usft) | |
| 200.00 | 200.00 | 0.00 | 0.00 | Nudge 1°/100' DLS |
| 500.00 | 499.86 | 0.00 | -7.85 | Hold 3° Inc |
| 1,000.00 | 999.18 | 0.00 | -34.02 | Turn 1°/100' DLS |
| 1,081.36 | 1,080.43 | 0.57 | -38.20 | KOP 2°/100' DLS |
| 1,581.36 | 1,574.93 | 19.25 | -105.14 | Hold 13° Inc |
| 5,284.33 | 5,183.00 | 243.18 | -907.47 | Drop 2°/100' DLS |
| 5,934.33 | 5,827.43 | 262.92 | -978.19 | Hold 0° Inc |
| 9,035.44 | 8,928.54 | 262.92 | -978.19 | KOP 12°/100' DLS |
| 9,787.35 | 9,406.00 | -216.46 | -977.84 | LP 9787.35' MD & 9406.00' TVD |
| 19,760.42 | 9,366.00 | -10,189.45 | -970.62 | PBHL 19760.42' MD & 9366.00' TVD |

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

| | |
|-------------------------|---|
| OPERATOR'S NAME: | Novo Oil and Gas Northern Delaware LLC |
| LEASE NO.: | NMNM013233 |
| LOCATION: | Section 4, T.23 S., R.28E., NMPM |
| COUNTY: | Eddy County, New Mexico |

| | |
|------------------------------|---------------------------------|
| WELL NAME & NO.: | Goonch Fed Com 0409 136H |
| SURFACE HOLE FOOTAGE: | 464'/N & 1338'/E |
| BOTTOM HOLE FOOTAGE: | 10'/S & 2310'/E |

COA

| | | | |
|----------------------|---|--|-------------------------------------|
| H2S | <input type="radio"/> Yes | <input checked="" type="radio"/> No | |
| Potash | <input checked="" type="radio"/> None | <input type="radio"/> Secretary | <input type="radio"/> R-111-P |
| Cave/Karst Potential | <input type="radio"/> Low | <input checked="" type="radio"/> Medium | <input type="radio"/> High |
| Cave/Karst Potential | <input type="radio"/> Critical | | |
| Variance | <input type="radio"/> None | <input checked="" type="radio"/> Flex Hose | <input type="radio"/> Other |
| Wellhead | <input type="radio"/> Conventional | <input checked="" type="radio"/> Multibowl | <input type="radio"/> Both |
| Other | <input type="checkbox"/> 4 String Area | <input type="checkbox"/> Capitan Reef | <input type="checkbox"/> WIPP |
| Other | <input type="checkbox"/> Fluid Filled | <input type="checkbox"/> Cement Squeeze | <input type="checkbox"/> Pilot Hole |
| Special Requirements | <input type="checkbox"/> Water Disposal | <input checked="" type="checkbox"/> COM | <input type="checkbox"/> Unit |

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately 230_ feet (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

- b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
- 2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
 - Cement to surface. If cement does not circulate see B.1.a, c-d above. **Excess cement calculates to 23%. Additional cement maybe required.**

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

 - ❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.
- 3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
 - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.
 - **Operator is approved for alternative casing.**
 - **Excess cement calculates to 21%. Additional cement maybe required.**

C. PRESSURE CONTROL

- 1. **Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).**
- 2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
 - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)**Communitization Agreement**

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
(575) 361-2822

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)
393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure

- rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
- b. **The operator is approve to set surface casing with Spudder Rig**
 - **Notify the BLM when moving in and removing the Spudder Rig.**
 - **Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.**
 - **BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.**
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
 3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.

- b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
- a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
 - b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
 - c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
 - d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall

have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

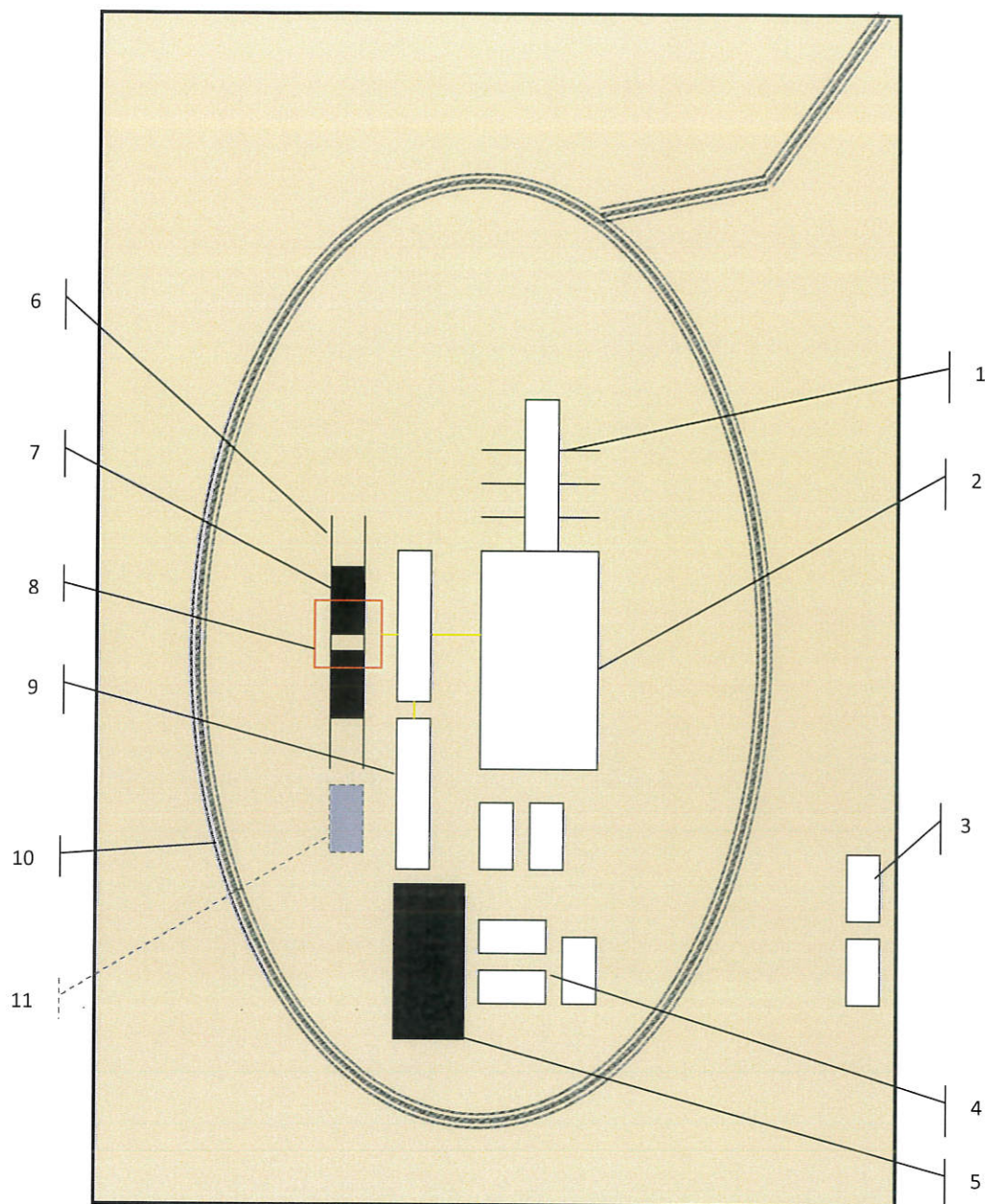
Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion 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.

ZS 121420



Schematic Closed Loop Drilling Rig*

1. Pipe Rack
2. Drill Rig
3. House Trailers/ Offices
4. Generator/Fuel/Storage
5. Overflow-Frac Tank
6. Skids
7. Roll Offs
8. Hopper or Centrifuge
9. Mud Tanks
10. Loop Drive
11. Generator (only for use with centrifuge)

*Not drawn to scale: Closed loop system requires at least 30 feet beyond mud tanks. Ideally 60 feet would be available

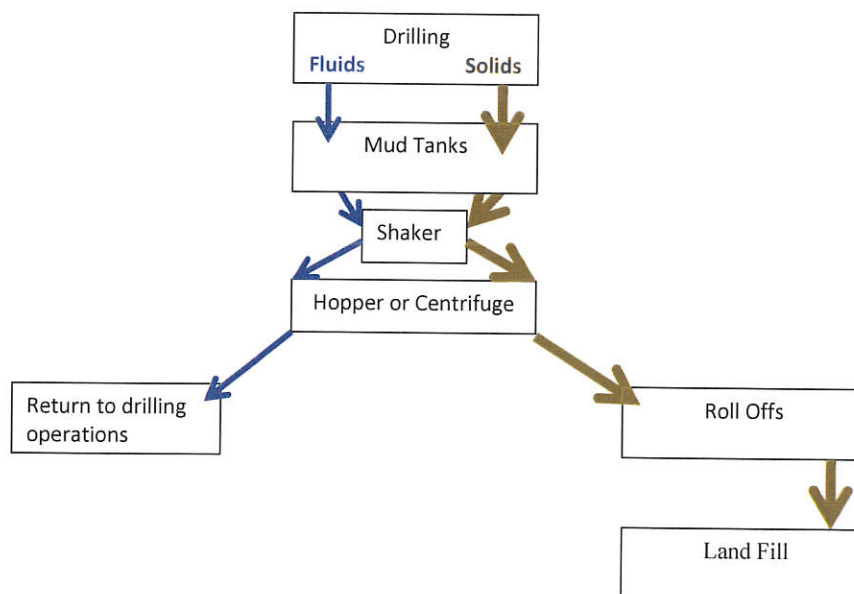


Above: Centrifugal Closed Loop System



Closed Loop Drilling System: Mud tanks to right (1)
 Hopper in air to settle out solids (2)
 Water return pipe (3)
 Shaker between hopper and mud tanks (4)
 Roll offs on skids (5)

Flow Chart for Drilling Fluids and Solids



Photos Courtesy of Gandy Corporation Oil
 Field Service

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 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

COMMENTS

Action 12778

COMMENTS

| | | | | |
|----------------------------------|--------------------------|--------------|----------------|--------------|
| Operator: | | OGRID: | Action Number: | Action Type: |
| NOVO OIL & GAS NORTHERN DELAWA | | 372920 | 12778 | FORM 3160-3 |
| Suite 206 Oklahoma City, OK73116 | | | | |
| 1001 West Wilshire Blvd | | | | |
| Created By | Comment | Comment Date | | |
| kpickford | KP GEO Review 12/22/2020 | 12/22/2020 | | |

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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

CONDITIONS

Action 12778

CONDITIONS OF APPROVAL

| | | | | |
|----------------------------------|--|--------|----------------|--------------|
| Operator: | | OGRID: | Action Number: | Action Type: |
| NOVO OIL & GAS NORTHERN DELAWA | | 372920 | 12778 | FORM 3160-3 |
| Suite 206 Oklahoma City, OK73116 | | | | |
| OCD | Condition | | | |
| Reviewer | | | | |
| kpickford | Will require a directional survey with the C-104 | | | |
| 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 | | | |