Form 3160-3
(June 2015)

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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

5. Lease Serial No.
NMNM018038

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☐ Oil Well ☑ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No.
GOONCH FED COM 04
221H 326517

2. Name of Operator
NOVO OIL AND GAS NORTHERN DELAWARE LLC

9. API Well No.
30-015-46613

3a. Address	3b. Phone No. *(include area code)*	10. Field and Pool, or Exploratory
1001 West Wilshire Boulevard Suite 206 Oklahoma City O	(405)404-0414	PIERCE CROSSING BONE SPRING, EA

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface SWSW / 1100 FSL / 980 FWL / LAT 32.3301615 / LONG -104.0977888

At proposed prod. zone LOT 4 / 130 FNL / 330 FWL / LAT 32.3415694 / LONG -104.0994151

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 4 / T23S / R28E / NMP

14. Distance in miles and direction from nearest town or post office*	12. County or Parish	13. State
3 miles	EDDY	NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
1102 feet	280.21	320

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
20 feet	9680 feet / 14782 feet	FED: NMB001536

21. Elevations.(Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
3014 feet	11/01/2019	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	Name *(Printed/Typed)*	Date
(Electronic Submission)	Brian Wood / Ph: (505)466-8120	08/03/2019

Title
President

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Christopher Walls / Ph: (575)234-2234	01/06/2020

Title	Office
Petroleum Engineer	CARLSBAD

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.

APPROVED WITH CONDITIONS

(Continued on page 2)

*(Instructions on page 2)

Approval Date: 01/06/2020

RMP 1-21-2020

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 wen, 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 directionany 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 wen 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 win 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 conects this information to anow 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 Conection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

(Continued on page 3)

Additional Operator Remarks

Location of Well

1. SHL: SWSW / 1100 FSL / 980 FWL / TWSP: 23S / RANGE: 28E / SECTION: 4 / LAT: 32.3301615 / LONG: -104.0977888 (TVD: 0 feet, MD: 0 feet)
   PPP: SWSW / 370 FSL / 207 FWL / TWSP: 23S / RANGE: 28E / SECTION: 4 / LAT: 32.3283708 / LONG: -104.0999669 (TVD: 9667 feet, MD: 9971 feet)
   PPP: SWNW / 2640 FSL / 250 FWL / TWSP: 23S / RANGE: 28E / SECTION: 4 / LAT: 32.334663 / LONG: -104.099699 (TVD: 9680 feet, MD: 12262 feet)
   BHL: LOT 4 / 130 FNL / 330 FWL / TWSP: 23S / RANGE: 28E / SECTION: 4 / LAT: 32.3415694 / LONG: -104.0994151 (TVD: 9680 feet, MD: 14782 feet)

BLM Point of Contact

Name:

Title:

Phone:

Email:

Approval Date: 01/06/2020

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.

7PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**NOVO OIL AND GAS**
LEASE NO.:	**NMNM018038**
LOCATION:	**Section 4, T.23 S., R.28 E., NMPM**
COUNTY:	**Eddy County, New Mexico**

WELL NAME & NO.:	**GOONCH FED COM 04 221H**
SURFACE HOLE FOOTAGE:	**1100'/S & 980'/W**
BOTTOM HOLE FOOTAGE	**130'/N & 330'/W**

COA

H2S	◉ Yes	○ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	○ Low	◉ Medium	○ High
Cave/Karst Potential	○ Critical		
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☐ Fluid Filled	☐ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☑ COM	☐ Unit

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **North East Loving** formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **13-3/8** inch surface casing shall be set at approximately **594** 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 18%, additional cement might be 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. **Excess cement calculates to 19%, additional cement might be 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 Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, 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.
  JJP11042019

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. When the operator proposes 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 intergrity 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 intergrity 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.

AFMSS

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

Operator Certification Data Report

01/07/2020

Operator Certification

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

NAME: Brian Wood

Signed on: 08/03/2019

Title: President

Street Address: 37 Verano Looop

City: Santa Fe **State:** NM **Zip:** 87508

Phone: (505)466-8120

Email address: afmss@permitswest.com

Field Representative

Representative Name:

Street Address:

City: **State:** **Zip:**

Phone:

Email address:

APD ID: 10400045324 **Submission Date:** 08/03/2019

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Well Name: GOONCH FED COM 04 **Well Number:** 221H

Well Type: CONVENTIONAL GAS WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - General

APD ID: 10400045324 **Tie to previous NOS?** N **Submission Date:** 08/03/2019

BLM Office: CARLSBAD **User:** Brian Wood **Title:** President

Federal/Indian APD: FED **Is the first lease penetrated for production Federal or Indian?** FED

Lease number: NMNM018038 **Lease Acres:** 280.21

Surface access agreement in place? **Allotted?** **Reservation:**

Agreement in place? NO **Federal or Indian agreement:**

Agreement number:

Agreement name:

Keep application confidential? N

Permitting Agent? YES **APD Operator:** NOVO OIL AND GAS NORTHERN DELAWARE LLC

Operator letter of designation:

Operator Info

Operator Organization Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Operator Address: 1001 West Wilshire Boulevard Suite 206 **Zip:** 73116

Operator PO Box:

Operator City: Oklahoma City **State:** OK

Operator Phone: (405)404-0414

Operator Internet Address:

Section 2 - Well Information

Well in Master Development Plan? NO **Master Development Plan name:**

Well in Master SUPO? NO **Master SUPO name:**

Well in Master Drilling Plan? NO **Master Drilling Plan name:**

Well Name: GOONCH FED COM 04 **Well Number:** 221H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** PIERCE CROSSING BONE SPRING, EAST **Pool Name:**

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Well Name: GOONCH FED COM 04 **Well Number:** 221H

Is the proposed well in an area containing other mineral resources? USEABLE WATER,OIL

Is the proposed well in a Helium production area? N **Use Existing Well Pad?** N **New surface disturbance?**

Type of Well Pad: MULTIPLE WELL **Multiple Well Pad Name:** Goonch Fed Com 04 **Number:** 131H (Pad G)

Well Class: HORIZONTAL **Number of Legs:** 1

Well Work Type: Drill

Well Type: CONVENTIONAL GAS WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 3 Miles **Distance to nearest well:** 20 FT **Distance to lease line:** 1102 FT

Reservoir well spacing assigned acres Measurement: 320 Acres

Well plat: Goonch_04_221H_Plat_GasCap_Plan_20190803120257.pdf

Well work start Date: 11/01/2019 **Duration:** 90 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83 **Vertical Datum:** NAVD88

Survey number: 12797 **Reference Datum:** GROUND LEVEL

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
SHL Leg #1	1100	FSL	980	FWL	23S	28E	4	Aliquot SWSW	32.3301615	-104.0977888	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	3014	0	0	Y
KOP Leg #1	70	FSL	194	FWL	23S	28E	4	Aliquot SWSW	32.32756	-104.100013	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-6188	9327	9202	Y
PPP Leg #1-1	2640	FSL	250	FWL	23S	28E	4	Aliquot SWNW	32.334663	-104.099699	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 018038	-6666	12262	9680	Y

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Well Name: GOONCH FED COM 04 **Well Number:** 221H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
PPP Leg #1-2	370	FSL	207	FWL	23S	28E	4	Aliquot SWSW	32.3283708	-104.0999669	EDDY	NEW MEXICO	NEW MEXICO	F	FEE	-6653	9971	9667	Y
EXIT Leg #1	130	FNL	330	FWL	23S	28E	4	Lot 4	32.3415694	-104.0994151	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 032636	-6666	14782	9680	Y
BHL Leg #1	130	FNL	330	FWL	23S	28E	4	Lot 4	32.3415694	-104.0994151	EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 032636	-6666	14782	9680	Y

APD ID: 10400045324 **Submission Date:** 08/03/2019

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Well Name: GOONCH FED COM 04 **Well Number:** 221H

Well Type: CONVENTIONAL GAS WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
508105	QUATERNARY	3014	0	0	OTHER : None	USEABLE WATER	N
508106	RUSTLER	2914	100	100	ANHYDRITE	NONE	N
564868	CASTILE	2044	970	970	GYPSUM	NONE	N
508107	LAMAR	541	2473	2476	LIMESTONE	NONE	N
508108	BELL CANYON	475	2539	2542	SANDSTONE	OIL	N
508109	CHERRY CANYON	-600	3614	3641	SANDSTONE	NATURAL GAS, OIL	N
508110	BRUSHY CANYON	-1613	4627	4636	SANDSTONE	OIL	N
508111	BONE SPRING	-3056	6070	6152	LIMESTONE	NATURAL GAS, OIL	N
508112	AVALON SAND	-3564	6578	6671	OTHER : Shale	OIL	N
508113	BONE SPRING 2ND	-4023	7037	7141	OTHER : Carbonate	NATURAL GAS, OIL	N
508114	BONE SPRING 2ND	-4771	7785	7910	SANDSTONE	OIL	N
508115	BONE SPRING 3RD	-5068	8082	8207	OTHER : Carbonate	NATURAL GAS, OIL	N
508116	BONE SPRING 3RD	-6002	9016	9142	SANDSTONE	NATURAL GAS, OIL	N
508117	WOLFCAMP	-6326	9340	9468	OTHER : XY Carbonate	NATURAL GAS, OIL	N
508118	WOLFCAMP	-6482	9496	9645	OTHER : A Carbonate	NATURAL GAS, OIL	N
508119	WOLFCAMP	-6653	9667	9971	OTHER : B Carbonate	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Well Name: GOONCH FED COM 04 **Well Number:** 221H

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.
Requesting Variance? NO

Variance request:

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. 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.
Choke Diagram Attachment:

Goonch_04_221H_Choke_Revised_20191017100538.pdf

BOP Diagram Attachment:

Goonch_04_221H_BOP_20190803120055.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	13.37	NEW	API	N	0	594	0	594	3014	2420	594	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	8900	0	8774	3014	-5760	8900	HCL-80	43.5	BUTT	1.125	1.125	DRY	1.6	DRY	1.6
3	PRODUCTION	8.5	5.5	NEW	API	N	0	14782	0	9680	3014	-6666	14782	P-110	20	OTHER - TMK DQX, GBCD, CDC, or DWC/C	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 04 **Well Number:** 221H

Casing Attachments

Casing ID: 1 **String Type:** SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Goonch_04_221H_Casing_Design_Assumptions_20190803120114.pdf

Casing ID: 2 **String Type:** INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Goonch_04_221H_Casing_Design_Assumptions_20190803120126.pdf

Casing ID: 3 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Goonch_04_221H_Casing_Design_Assumptions_20190803120137.pdf

Section 4 - Cement

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Well Name: GOONCH FED COM 04 **Well Number:** 221H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
PRODUCTION	Lead		0	0	0	0	0	0	0	None	None
PRODUCTION	Tail		8400	14782	928	13	1.89	1753	20	Class H	fluid loss + retarder + LCM
SURFACE	Lead		0	9	0	0	0	0	0	None	None
SURFACE	Tail		0	594	509	13.8	1.62	824	100	Class C	gel + accelerator + LCM
INTERMEDIATE	Lead	4000	0	4000	542	2.27	11.9	1235	20	Class C or H	fluid loss + retarder + LCM
INTERMEDIATE	Tail		4000	8900	200	14.8	1.34	268		Class C or H	fluid loss + retarder + LCM
INTERMEDIATE	Lead	4000	0	4000	690	2.27	11.9	1573	20	Class C or H	fluid loss + retarder + LCM
INTERMEDIATE	Tail		4000	8900	200	14.8	1.34	268	20	Class C or H	fluid loss + 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
0	594	OTHER : Fresh water spud	8.3	8.3							

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Well Name: GOONCH FED COM 04 **Well Number:** 221H

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
594	8900	OTHER : Brine diesel emulsion	8.8	9.2							
8900	14782	OIL-BASED MUD	8.8	12.5							

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 MWD tools from the intermediate casing to TD.

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

GAMMA RAY LOG,

Coring operation description for the well:

No core or drill stem test is planned.

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 5157 **Anticipated Surface Pressure:** 3027

Anticipated Bottom Hole Temperature(F): 165

Anticipated abnormal pressures, temperatures, or potential geologic hazards? NO

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Goonch_04_221H_H2S_Plan_20190803120222.pdf

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Well Name: GOONCH FED COM 04 **Well Number:** 221H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Goonch_04_221H_Horizontal_Drill_Plan_20190803115911.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Goonch_04_221H_Speedhead_Specs_20190803115939.pdf
Goonch_04_221H_Anti_Collision_Report_20190803115955.pdf
Goonch_04_221H_CoFlex_Certs_Revised_20191017100603.pdf
Goonch_04_221H_Drill_Plan_Revised_20191017100612.pdf

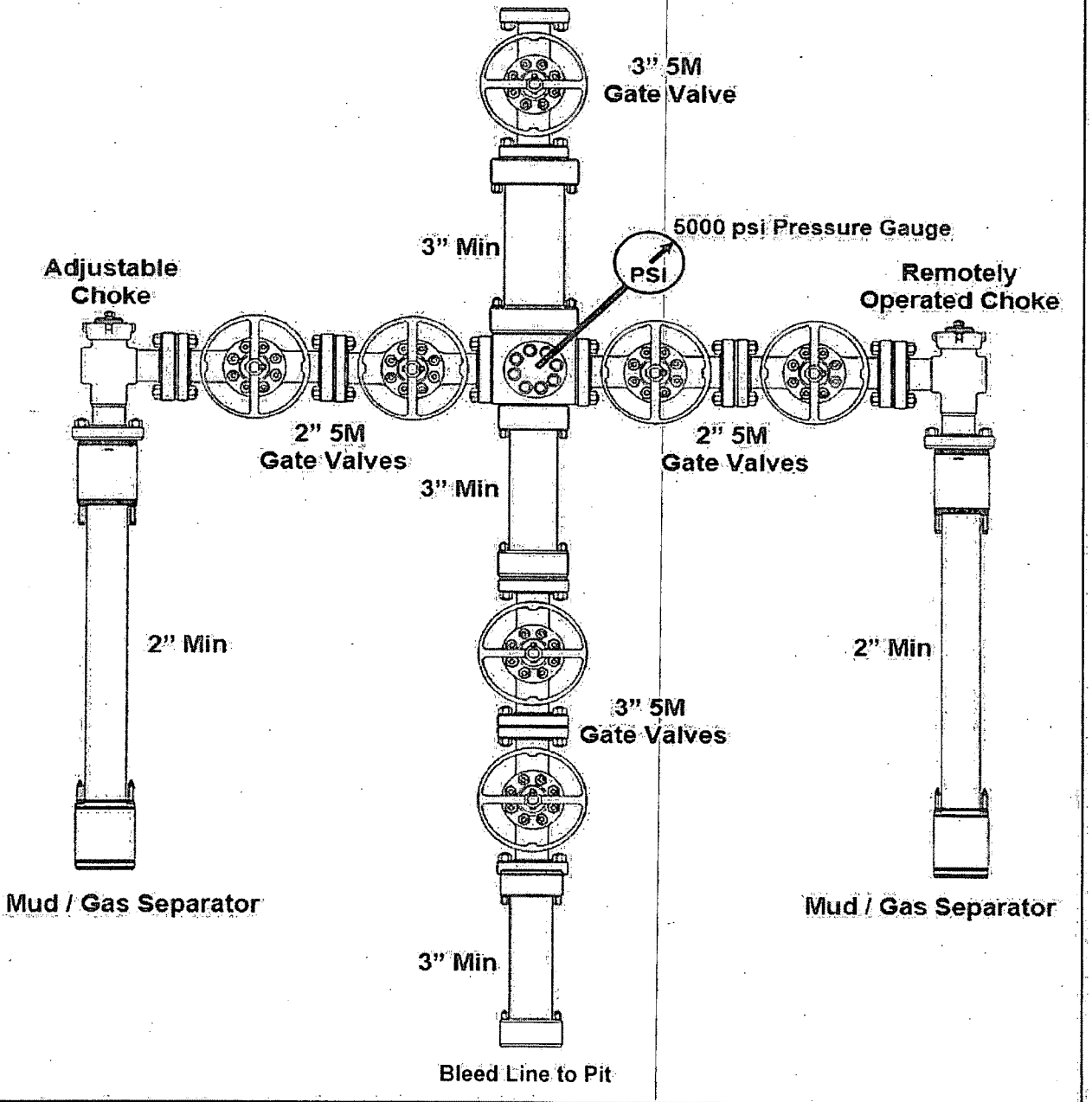
Other Variance attachment:

Goonch_04_221H_Casing_Variance_Request_20190803120024.pdf
Goonch_04_221H_Alternative_Casing_Spec_Request_20191017100622.pdf

NOVO	NOVO OIL & GAS, LLC	Date	7/15/2019
	1001 West Wilshire Boulevard, Suite 206 Oklahoma City, Oklahoma 73116	Page No.	1 of 1

5M CHOKE MANIFOLD SCHEMATIC

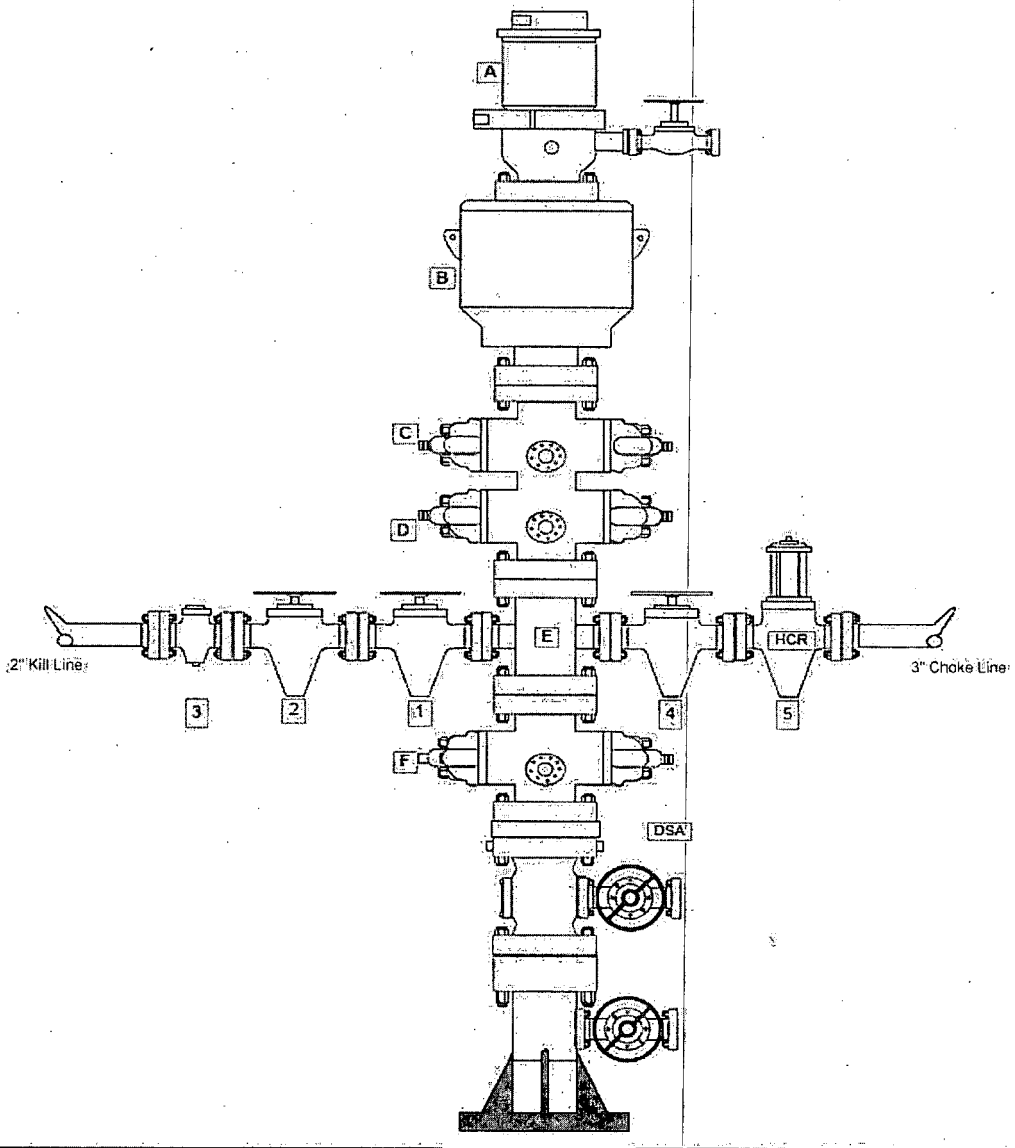
ITEM	SIZE	PRESSURE	DESCRIPTION



NOVO	NOVO OIL & GAS, LLC	Date	2/21/2019
	1001 West Wilshire Boulevard, Suite 206 Oklahoma City, Oklahoma 73116	Page No.	1 of 1

5M BLOWOUT PREVENTER SCHEMATIC

BLOWOUT PREVENTOR COMPONENTS			
ITEM	SIZE	PRESSURE	DESCRIPTION
A	13-5/8"	1,500 psi	Rotating Head + Valve
B	13-5/8"	5,000 psi	Annular Preventer
C	13-5/8"	5,000 psi	Pipe Rams
D	13-5/8"	5,000 psi	Blind Rams
E	13-5/8"	5,000 psi	Mud Cross
F	13-5/8"	5,000 psi	Pipe Rams



KILL LINE			
ITEM	SIZE	PRESSURE	DESCRIPTION
1	2"	5,000 psi	Gate Valve
2	2"	5,000 psi	Gate Valve
3	2"	5,000 psi	Check Valve

CHOKE LINE			
ITEM	SIZE	PRESSURE	DESCRIPTION
4	3"	5,000 psi	Gate Valve
5	3"	5,000 psi	HCR Valve

Goonch Fed Com 04 221H 3-string Casing Design Assumptions

Surface Casing

Collapse: $DF_C = 1.125$

a. Full internal Evacuation: Collapse force is equal to mud gradient (0.433 psi/ft) in which the casing will be run and internal evacuation of casing.

b. Cementing: Collapse force is equal net force of the planned cement slurry gradient (0.718 psi/ft) in which the casing will be run and internal force equivalent to fresh water displacement gradient (0.433 psi/ft).

Burst: $DF_B = 1.125$

a. Casing Pressure Test: According to BLM Onshore Order No. 2 with 0.22 psi/ft or 1500 psi, whichever is greater but not to exceed 70% of the minimum internal yield.

Tensile: $DF_T = 1.60$

a. Overpull: A tensile force of 100,000 lbs over string weight with a buoyancy factor of 0.8727 in water (8.33 ppg).

Intermediate Casing

Collapse: $DF_C = 1.125$

a. Full Internal Evacuation: Collapse force is equal to mud gradient (0.531 psi/ft) in which the casing will be run and internal evacuation of casing.

b. Cementing: Collapse force is equal net force of the planned cement slurry gradient (0.626 psi/ft) in which the casing will be run and internal force equivalent to the displacement of fluid gradient.

Burst: $DF_B = 1.125$

a. Casing Pressure Test: According to BLM Onshore Order No. 2 with 0.22 psi/ft or 1500 psi, whichever is greater but to exceed 70% of the minimum internal yield.

b. Gas Kick: Internal burst load of a 50 bbl gas kick at the casing with drill pipe in the hole. External force will be 10.2 ppg brine water gradient (0.531 psi/ft) and internal force will be with 10.0 ppg brine water gradient (0.521 psi/ft) with gas kick.

Tensile: $DF_T = 1.60$

a. Overpull: A tensile force of 100,000 lbs over string weight with a buoyancy factor of 0.8441 in brine water (10.2 ppg).

Production Casing

Collapse: $DF_C = 1.125$

a. Full Internal Evacuation: Collapse force is equal to mud gradient (0.531 psi/ft) in which the casing will be run and internal evacuation of casing.

b. Cementing: Collapse force is equal net force of the planned cement slurry gradient (0.688 psi/ft) in which the casing will be run and internal force equivalent to fresh water displacement gradient (0.433 psi/ft).

Burst: $DF_B = 1.125$

a. Pressure Test: Pressure test will be to 80% of Internal Yield Pressure of casing intended for fracture stimulation.

Tensile: $DF_T = 1.60$

a. Overpull: A tensile force of 100,000 lbs over string weight with a buoyancy factor of 0.8472 in oil-based mud (10.0 ppg).

Goonch Fed Com 04 221H 3-string Casing Design Assumptions

Surface Casing

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Goonch Fed Com 04 221H 3-string Casing Design Assumptions

Surface Casing

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NOVO

H_2S Drilling Operations Plan

a. All personnel will be trained in H_2S working conditions as required by Onshore Order 6 before drilling out of the surface casing.

b. Two briefing areas will be established. Each will be at least 150' from the wellhead, perpendicular from one another, and easily entered and exited. See H_2S page 5 for more details.

c. H_2S Safety Equipment/Systems:

i. Well Control Equipment

- Flare line will be ≥150' from the wellhead and ignited by a pilot light.
- Beware of SO_2 created by flaring.
- Choke manifold will include a remotely operated choke.
- Mud gas separator

ii. Protective Equipment for Essential Personnel

- Every person on site will be required to wear a personal H_2S and SO_2 monitor at all times while on site. Monitors will not be worn on hard hats. Monitors will be worn on the front of the chest.
- One self-contained breathing apparatus (SCBA) 30-minute rescue pack will be at each briefing area. Two 30-minute SCBA packs will be stored in the safety trailer.
- Four work/escape packs will be on the rig floor. Each pack will have a long enough hose to allow unimpaired work activity.
- Four emergency escape packs will be in the doghouse for emergency evacuation.
- Hand signals will be used when wearing protective breathing apparatus.
- Stokes litter or stretcher
- Two full OSHA compliant body harnesses
- A 100-foot long x 5/8" OSHA compliant rope
- One 20-pound ABC fire extinguisher

iii. H_2S Detection & Monitoring Equipment

- Every person on site will be required to wear a personal H_2S and SO_2 monitor at all times while on site. Monitors will not be worn on hard hats. Monitors will be worn on the front of the chest.
- A stationary detector with three sensors will be in the doghouse.
- Sensors will be installed on the rig floor, bell nipple, and at the end of the flow line or where drilling fluids are discharged.
- Visual alarm will be triggered at 10 ppm.
- Audible alarm will be triggered at 10 ppm.
- Calibration will occur at least every 30 days. Gas sample tubes will be kept in the safety trailer.

iv. Visual Warning System

- Color-coded H_2S condition sign will be set at the entrance to the pad.
- Color-coded condition flag will be installed to indicate current H_2S conditions.
- Two wind socks will be installed that will be visible from all sides.

v. Mud Program

- A water based mud with a pH of $\geq$10 will be maintained to control corrosion, H_2S gas returns to the surface, and minimize sulfide stress cracking and embrittlement.
- Drilling mud containing H_2S gas will be degassed at an optimum location for the rig configuration.
- This gas will be piped into the flare system.
- Enough mud additives will be on location to scavenge and/or neutralize H_2S where formation pressures are unknown.

vi. Metallurgy

- All equipment that has the potential to be exposed to H_2S will be suitable for H_2S service.
- Equipment that will meet these metallurgical standards include the drill string, casing, wellhead, BOP assembly, casing head and spool, rotating head, kill lines, choke, choke manifold and lines, valves, mud-gas separators, DST tools, test units, tubing, flanges, and other related equipment (elastomer packings and seals).

vii. Communication from well site

- Cell phones and/or two-way radios will be used to communicate from the well site.

d. A remote-controlled choke, mud-gas separator, and a rotating head will be installed before drilling or testing any formation expected to contain H_2S.

Company Personnel to be Notified	
Kurt Shipley, Vice-President - Operations	Office: (405) 609-1596

Local & County Agencies	
Loving Fire Department	911 or (575) 745-3600
Eddy County Sheriff (Carlsbad)	911 (575) 887-7551
Eddy County Emergency Management (Carlsbad)	(575) 887-9511
Carlsbad Medical Center Hospital	(575) 887-4100
Eddy County South Road Department (Carlsbad)	(575) 885-4835

State Agencies	
NM State Police (Carlsbad)	(575) 885-3138
NM Oil Conservation (Artesia)	(575) 748-1283
NM Oil Conservation (Santa Fe)	(505) 476-3440
NM Dept. of Transportation (Roswell)	(575) 637-7201

Federal Agencies	
BLM Carlsbad Field Office	(575) 234-5972
National Response Center	(800) 424-8802
US EPA Region 6 (Dallas)	(800) 887-6063
	(214) 665-6444

Residents within 3/4 mile

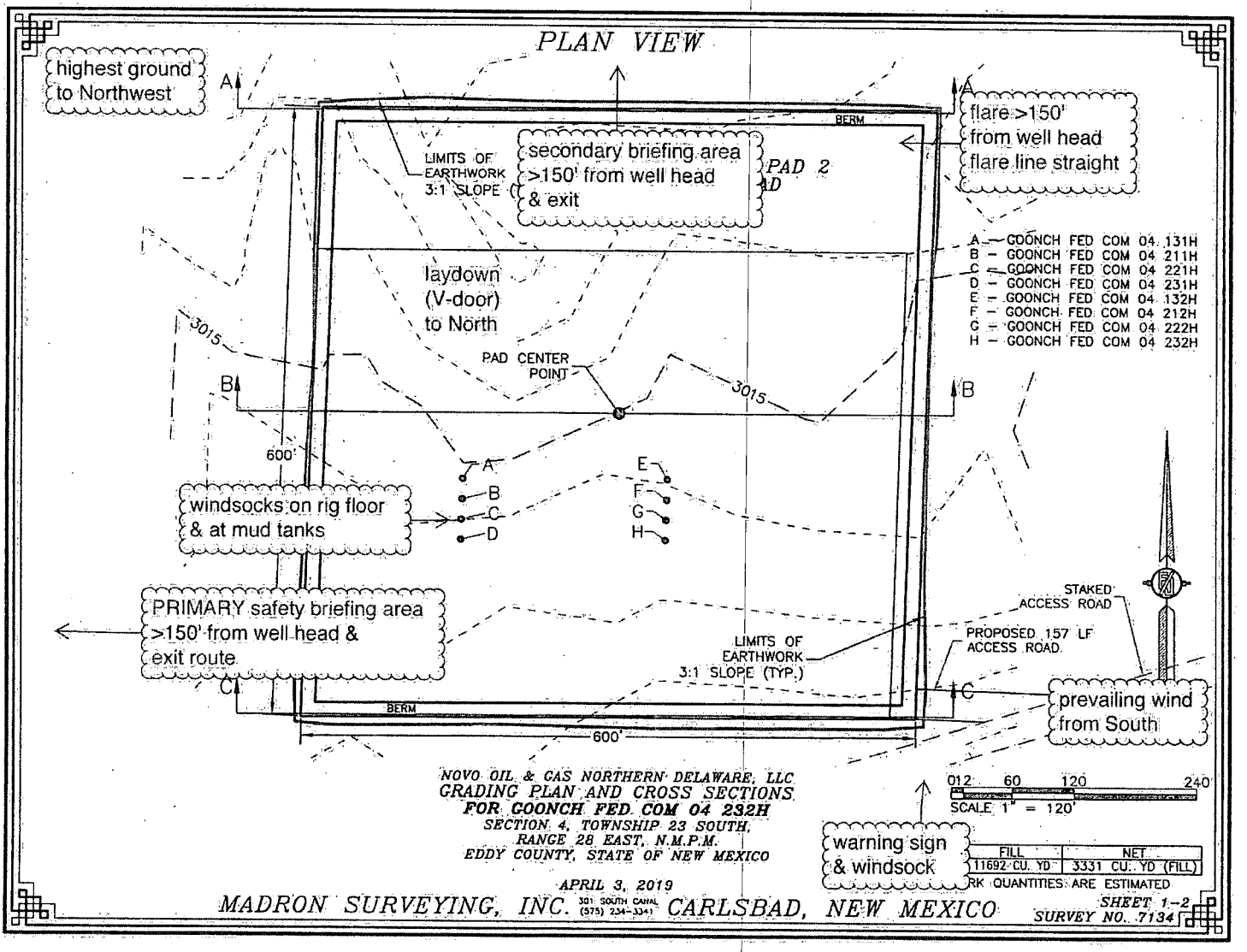
none

Air Evacuation

Med Flight Air Ambulance (Albuquerque)	(800) 842-4431
Lifeguard (Albuquerque)	(888) 866-7256

Veterinarians

Desert Willow Veterinary Services (Carlsbad)	(575) 885-3399
Animal Care Center (Carlsbad)	(575) 885-5352



NOVO OIL & GAS NORTHERN DELAWARE, LLC
GRADING PLAN AND CROSS SECTIONS
FOR GOONCH FED COM 04 232H
SECTION 4, TOWNSHIP 23 SOUTH,
RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO

APRIL 3, 2019

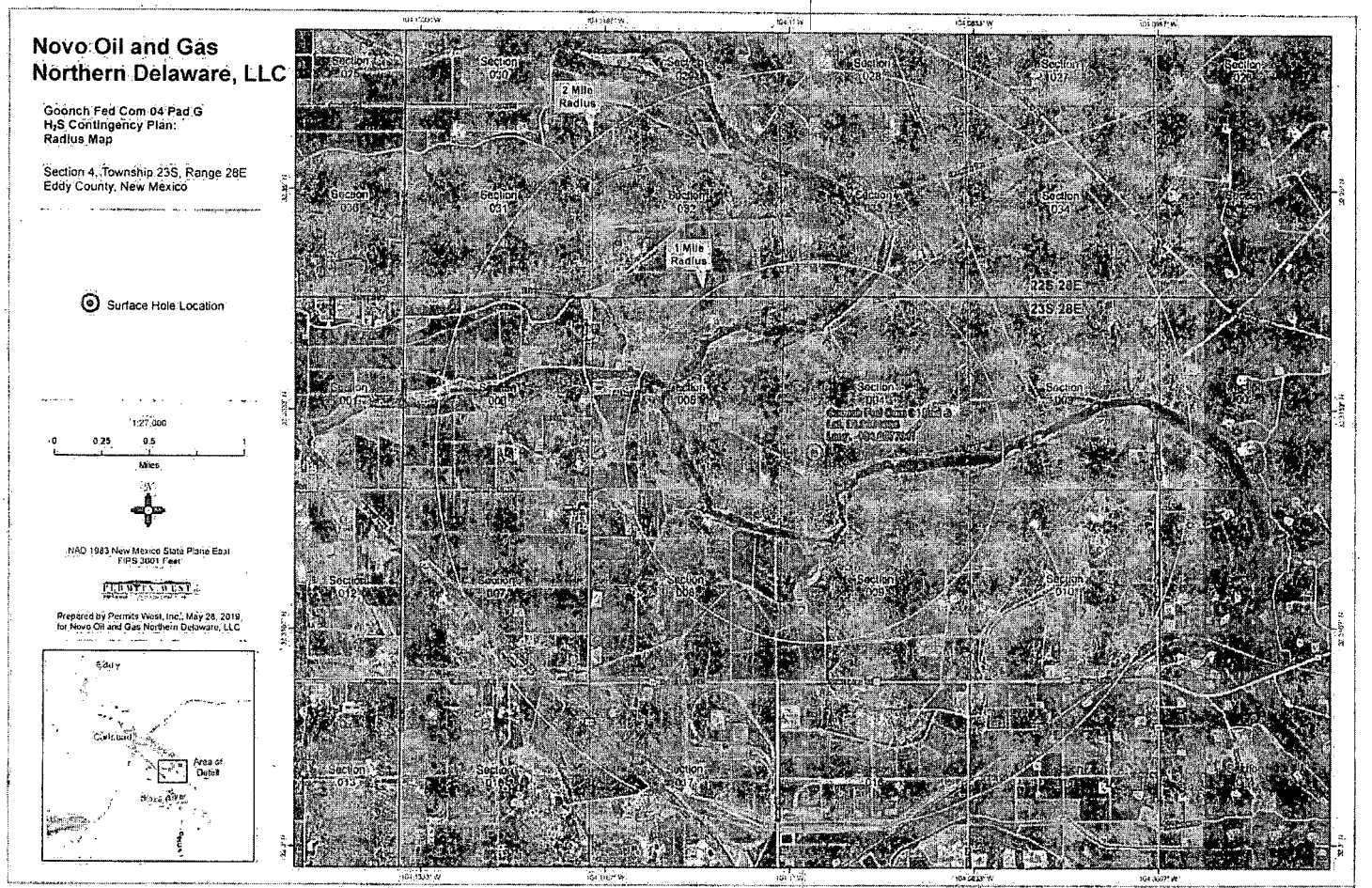
MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 CARLSBAD, NEW MEXICO

SHEET 1 OF 2
SURVEY NO. 7134

Novo Oil and Gas
Northern Delaware, LLC

Goonch Fed Com 04 Pad G
H_2S Contingency Plan:
Radius Map

Section 4, Township 23S, Range 28E
Eddy County, New Mexico



Surface Hole Location

1:27,000

0 0.25 0.5 1

Miles

NAD 1983 New Mexico State Plane East FIPS 3001 Feet

PERMITS WEST

Prepared by Permits West, Inc., May 28, 2019, for Novo Oil and Gas Northern Delaware, LLC

Novo Oil & Gas, LLC

HAWKEYE DIRECTIONAL, LLC

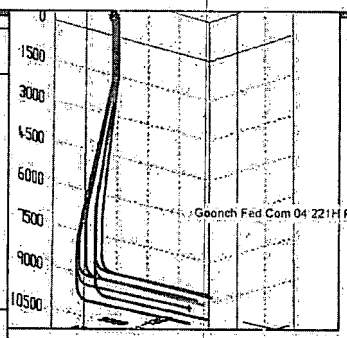
PROJECT DETAILS: Eddy County, NM

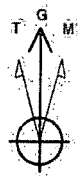
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone
North Reference: Grid
System Datum: Mean Sea Level
To convert a True Direction to a Grid Direction, Subtract 0.13°
To convert a Magnetic Direction to a True Direction, Add 6.99° East
To convert a Magnetic Direction to a Grid Direction, Add 6.87°

WELL DETAILS: Goonch Fed Com 04 221H

GL 3013.5' + 25' KB @ 3038.50usft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	483924.86	614090.74	32° 19' 48.581 N	104° 5' 52.040 W



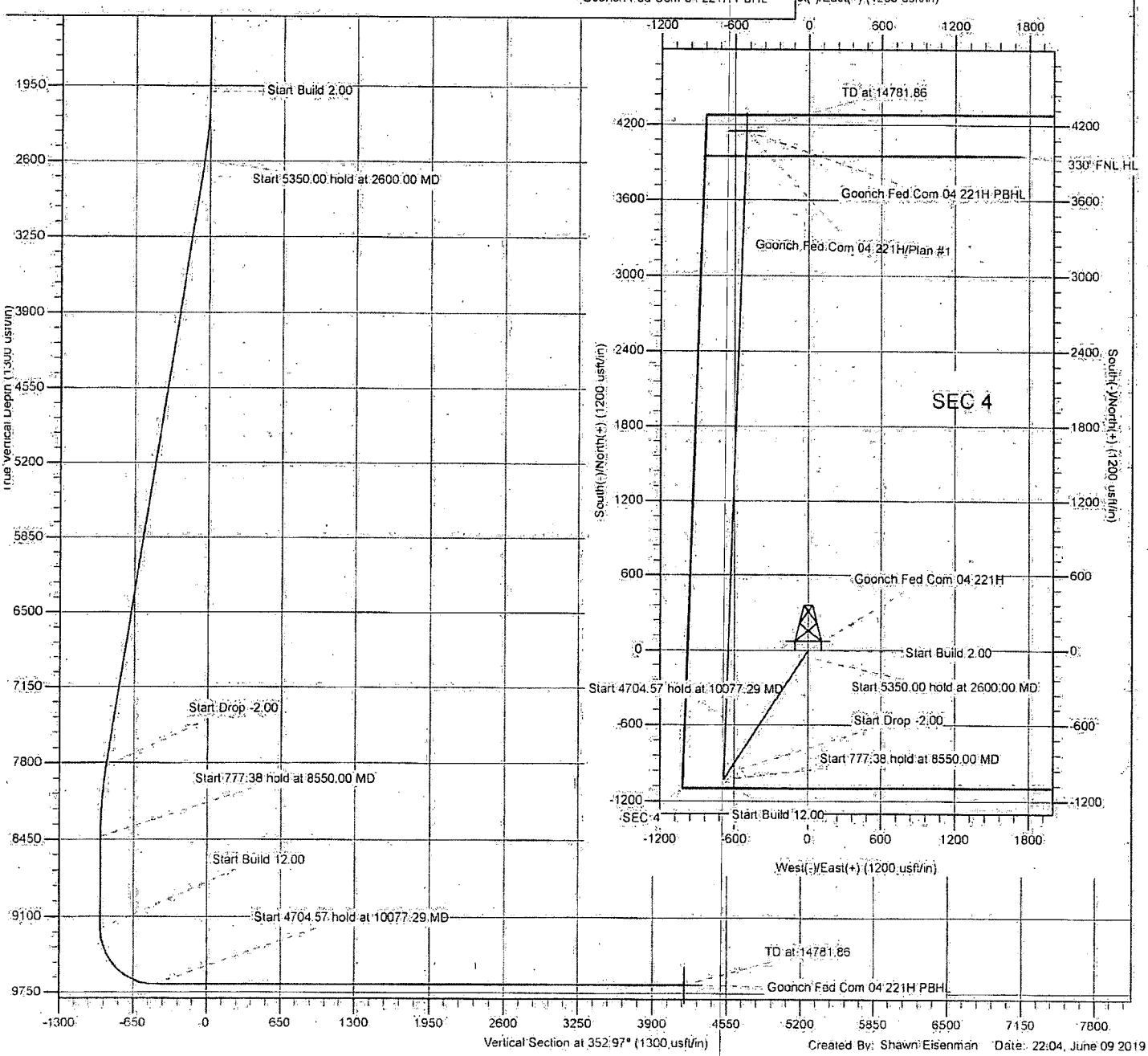


Azimuths to Grid North
True North: -0.13°
Magnetic North: 6.87°

Magnetic Field
Strength: 47745.7nT
Dip Angle: 60.05°
Date: 06/06/2019
Model: IGRF2015

SECTION DETAILS

	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
3	2600.00	12.00	213.66	2595.62	-52.11	-34.70	2.00	213.66	-47.47	Start 5350.00 hold at 2600.00 MD
4	7950.00	12.00	213.66	7828.71	-977.94	-651.22	0.00	0.00	-890.93	Start Drop -2.00
5	8550.00	0.00	0.00	8424.33	-1030.05	-685.92	2.00	180.00	-938.40	Start 777.38 hold at 8550.00 MD
6	9327.38	0.00	0.00	9201.72	-1030.05	-685.92	0.00	0.00	-938.40	Start Build 12.00
7	10077.29	89.99	1.93	9679.18	-552.94	-669.84	12.00	1.93	-466.84	Start 4704.57 hold at 10077.29 MD
8	14781.86	89.99	1.93	9680.00	4148.96	-511.41	0.00	0.00	4180.36	TD at 14781.86
										Goonch Fed Com 04 221H PBHL



Created By: Shawn Eisenman Date: 22:04, June 09 2019

Database:	HED_Compass_DSN	**Local Co-ordinate Reference:**	Well Goonch Fed Com 04 221H
Company:	Novo Oil & Gas, LLC	**TVD Reference:**	GL 3013.5' + 25' KB @ 3038.50usft
Project:	Eddy County, NM	**MD Reference:**	GL 3013.5' + 25' KB @ 3038.50usft
Site:	SEC 4 - T23S - R28E	**North Reference:**	Grid
Well:	Goonch Fed Com 04 221H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project Eddy County, NM

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site SEC 4 - T23S - R28E

Site Position:		**Northing:**	483,964.87 usft	**Latitude:**	32° 19' 48.977 N
From:	Map	**Easting:**	614,092.09 usft	**Longitude:**	104° 5' 52.023 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.13 °

Well Goonch Fed Com 04 221H

Well Position	**+N/-S**	-40.01 usft	**Northing:**	483,924.86 usft	**Latitude:**	32° 19' 48.581 N
	+E/-W	-1.35 usft	**Easting:**	614,090.74 usft	**Longitude:**	104° 5' 52.040 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**		**Ground Level:**	3,013.50 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	06/06/19	6.99	60.05	47,745.65856332

Design Plan #1

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	352.97

Plan Survey Tool Program **Date** 06/09/19

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	14,781.86	Plan #1 (OH)	MWD	
				OWSG MWD - Standard	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,600.00	12.00	213.66	2,595.62	-52.11	-34.70	2.00	2.00	0.00	213.66	
7,950.00	12.00	213.66	7,828.71	-977.94	-651.22	0.00	0.00	0.00	0.00	
8,550.00	0.00	0.00	8,424.33	-1,030.05	-685.92	2.00	-2.00	0.00	180.00	
9,327.38	0.00	0.00	9,201.72	-1,030.05	-685.92	0.00	0.00	0.00	0.00	
10,077.29	89.99	1.93	9,679.18	-552.94	-669.84	12.00	12.00	0.00	1.93	
14,781.86	89.99	1.93	9,680.00	4,148.96	-511.41	0.00	0.00	0.00	0.00	Goonch Fed Com 04

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Project:	Eddy County, NM	**MD Reference:**	GL 3013.5' + 25' KB @ 3038.50usft
Site:	SEC 4 - T23S - R28E	**North Reference:**	Grid
Well:	Goonch Fed Com 04 221H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	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	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
2,100.00	2.00	213.66	2,099.98	-1.45	-0.97	-1.32	2.00	2.00	0.00
2,200.00	4.00	213.66	2,199.84	-5.81	-3.87	-5.29	2.00	2.00	0.00
2,300.00	6.00	213.66	2,299.45	-13.06	-8.70	-11.90	2.00	2.00	0.00
2,400.00	8.00	213.66	2,398.70	-23.21	-15.45	-21.14	2.00	2.00	0.00
2,500.00	10.00	213.66	2,497.47	-36.23	-24.12	-33.00	2.00	2.00	0.00
2,600.00	12.00	213.66	2,595.62	-52.11	-34.70	-47.47	2.00	2.00	0.00
Start 5350.00 hold at 2600.00 MD									
2,700.00	12.00	213.66	2,693.44	-69.41	-46.22	-63.24	0.00	0.00	0.00
2,800.00	12.00	213.66	2,791.25	-86.72	-57.75	-79.00	0.00	0.00	0.00
2,900.00	12.00	213.66	2,889.07	-104.02	-69.27	-94.77	0.00	0.00	0.00
3,000.00	12.00	213.66	2,986.88	-121.33	-80.79	-110.53	0.00	0.00	0.00
3,100.00	12.00	213.66	3,084.70	-138.63	-92.32	-126.30	0.00	0.00	0.00
3,200.00	12.00	213.66	3,182.51	-155.94	-103.84	-142.06	0.00	0.00	0.00
3,300.00	12.00	213.66	3,280.33	-173.24	-115.36	-157.83	0.00	0.00	0.00
3,400.00	12.00	213.66	3,378.14	-190.55	-126.89	-173.60	0.00	0.00	0.00
3,500.00	12.00	213.66	3,475.96	-207.85	-138.41	-189.36	0.00	0.00	0.00
3,600.00	12.00	213.66	3,573.77	-225.16	-149.94	-205.13	0.00	0.00	0.00
3,700.00	12.00	213.66	3,671.59	-242.47	-161.46	-220.89	0.00	0.00	0.00
3,800.00	12.00	213.66	3,769.40	-259.77	-172.98	-236.66	0.00	0.00	0.00
3,900.00	12.00	213.66	3,867.22	-277.08	-184.51	-252.42	0.00	0.00	0.00
4,000.00	12.00	213.66	3,965.03	-294.38	-196.03	-268.19	0.00	0.00	0.00
4,100.00	12.00	213.66	4,062.84	-311.69	-207.56	-283.95	0.00	0.00	0.00
4,200.00	12.00	213.66	4,160.66	-328.99	-219.08	-299.72	0.00	0.00	0.00
4,300.00	12.00	213.66	4,258.47	-346.30	-230.60	-315.49	0.00	0.00	0.00
4,400.00	12.00	213.66	4,356.29	-363.60	-242.13	-331.25	0.00	0.00	0.00
4,500.00	12.00	213.66	4,454.10	-380.91	-253.65	-347.02	0.00	0.00	0.00
4,600.00	12.00	213.66	4,551.92	-398.21	-265.17	-362.78	0.00	0.00	0.00
4,700.00	12.00	213.66	4,649.73	-415.52	-276.70	-378.55	0.00	0.00	0.00
4,800.00	12.00	213.66	4,747.55	-432.82	-288.22	-394.31	0.00	0.00	0.00
4,900.00	12.00	213.66	4,845.36	-450.13	-299.75	-410.08	0.00	0.00	0.00
5,000.00	12.00	213.66	4,943.18	-467.44	-311.27	-425.84	0.00	0.00	0.00

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Site:	SEC 4 - T23S - R28E	North Reference:	Grid
Well:	Goonch Fed Com 04 221H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,100.00	12.00	213.66	5,040.99	-484.74	-322.79	-441.61	0.00	0.00	0.00
5,200.00	12.00	213.66	5,138.81	-502.05	-334.32	-457.38	0.00	0.00	0.00
5,300.00	12.00	213.66	5,236.62	-519.35	-345.84	-473.14	0.00	0.00	0.00
5,400.00	12.00	213.66	5,334.44	-536.66	-357.36	-488.91	0.00	0.00	0.00
5,500.00	12.00	213.66	5,432.25	-553.96	-368.89	-504.67	0.00	0.00	0.00
5,600.00	12.00	213.66	5,530.07	-571.27	-380.41	-520.44	0.00	0.00	0.00
5,700.00	12.00	213.66	5,627.88	-588.57	-391.94	-536.20	0.00	0.00	0.00
5,800.00	12.00	213.66	5,725.70	-605.88	-403.46	-551.97	0.00	0.00	0.00
5,900.00	12.00	213.66	5,823.51	-623.18	-414.98	-567.73	0.00	0.00	0.00
6,000.00	12.00	213.66	5,921.33	-640.49	-426.51	-583.50	0.00	0.00	0.00
6,100.00	12.00	213.66	6,019.14	-657.79	-438.03	-599.27	0.00	0.00	0.00
6,200.00	12.00	213.66	6,116.95	-675.10	-449.55	-615.03	0.00	0.00	0.00
6,300.00	12.00	213.66	6,214.77	-692.40	-461.08	-630.80	0.00	0.00	0.00
6,400.00	12.00	213.66	6,312.58	-709.71	-472.60	-646.56	0.00	0.00	0.00
6,500.00	12.00	213.66	6,410.40	-727.02	-484.13	-662.33	0.00	0.00	0.00
6,600.00	12.00	213.66	6,508.21	-744.32	-495.65	-678.09	0.00	0.00	0.00
6,700.00	12.00	213.66	6,606.03	-761.63	-507.17	-693.86	0.00	0.00	0.00
6,800.00	12.00	213.66	6,703.84	-778.93	-518.70	-709.63	0.00	0.00	0.00
6,900.00	12.00	213.66	6,801.66	-796.24	-530.22	-725.39	0.00	0.00	0.00
7,000.00	12.00	213.66	6,899.47	-813.54	-541.74	-741.16	0.00	0.00	0.00
7,100.00	12.00	213.66	6,997.29	-830.85	-553.27	-756.92	0.00	0.00	0.00
7,200.00	12.00	213.66	7,095.10	-848.15	-564.79	-772.69	0.00	0.00	0.00
7,300.00	12.00	213.66	7,192.92	-865.46	-576.32	-788.45	0.00	0.00	0.00
7,400.00	12.00	213.66	7,290.73	-882.76	-587.84	-804.22	0.00	0.00	0.00
7,500.00	12.00	213.66	7,388.55	-900.07	-599.36	-819.98	0.00	0.00	0.00
7,600.00	12.00	213.66	7,486.36	-917.37	-610.89	-835.75	0.00	0.00	0.00
7,700.00	12.00	213.66	7,584.18	-934.68	-622.41	-851.52	0.00	0.00	0.00
7,800.00	12.00	213.66	7,681.99	-951.98	-633.94	-867.28	0.00	0.00	0.00
7,900.00	12.00	213.66	7,779.81	-969.29	-645.46	-883.05	0.00	0.00	0.00
7,950.00	12.00	213.66	7,828.71	-977.94	-651.22	-890.93	0.00	0.00	0.00
Start Drop -2.00									
8,000.00	11.00	213.66	7,877.71	-986.24	-656.75	-898.49	2.00	-2.00	0.00
8,100.00	9.00	213.66	7,976.18	-1,000.69	-666.37	-911.65	2.00	-2.00	0.00
8,200.00	7.00	213.66	8,075.21	-1,012.28	-674.08	-922.21	2.00	-2.00	0.00
8,300.00	5.00	213.66	8,174.65	-1,020.98	-679.88	-930.13	2.00	-2.00	0.00
8,400.00	3.00	213.66	8,274.40	-1,026.78	-683.74	-935.42	2.00	-2.00	0.00
8,500.00	1.00	213.66	8,374.34	-1,029.69	-685.68	-938.07	2.00	-2.00	0.00
8,550.00	0.00	0.00	8,424.33	-1,030.05	-685.92	-938.40	2.00	-2.00	0.00
Start 777.38 hold at 8550.00 MD									
8,600.00	0.00	0.00	8,474.34	-1,030.05	-685.92	-938.40	0.00	0.00	0.00
8,700.00	0.00	0.00	8,574.34	-1,030.05	-685.92	-938.40	0.00	0.00	0.00
8,800.00	0.00	0.00	8,674.34	-1,030.05	-685.92	-938.40	0.00	0.00	0.00
8,900.00	0.00	0.00	8,774.34	-1,030.05	-685.92	-938.40	0.00	0.00	0.00
9,000.00	0.00	0.00	8,874.34	-1,030.05	-685.92	-938.40	0.00	0.00	0.00
9,100.00	0.00	0.00	8,974.34	-1,030.05	-685.92	-938.40	0.00	0.00	0.00
9,200.00	0.00	0.00	9,074.34	-1,030.05	-685.92	-938.40	0.00	0.00	0.00
9,300.00	0.00	0.00	9,174.34	-1,030.05	-685.92	-938.40	0.00	0.00	0.00
9,327.38	0.00	0.00	9,201.72	-1,030.05	-685.92	-938.40	0.00	0.00	0.00
Start Build 12.00									
9,350.00	2.71	1.93	9,224.33	-1,029.51	-685.90	-937.87	12.00	12.00	0.00
9,375.00	5.71	1.93	9,249.26	-1,027.68	-685.84	-936.06	12.00	12.00	0.00
9,400.00	8.71	1.93	9,274.06	-1,024.54	-685.73	-932.95	12.00	12.00	0.00
9,425.00	11.71	1.93	9,298.66	-1,020.11	-685.58	-928.58	12.00	12.00	0.00

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Well:	Goonch Fed Com 04 221H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,450.00	14.71	1.93	9,322.99	-1,014.40	-685.39	-922.93	12.00	12.00	0.00
9,475.00	17.71	1.93	9,347.00	-1,007.42	-685.16	-916.04	12.00	12.00	0.00
9,500.00	20.71	1.93	9,370.60	-999.20	-684.88	-907.91	12.00	12.00	0.00
9,525.00	23.71	1.93	9,393.74	-989.76	-684.56	-898.57	12.00	12.00	0.00
9,550.00	26.71	1.93	9,416.36	-979.11	-684.20	-888.06	12.00	12.00	0.00
9,575.00	29.71	1.93	9,438.38	-967.30	-683.80	-876.38	12.00	12.00	0.00
9,600.00	32.71	1.93	9,459.76	-954.35	-683.37	-863.58	12.00	12.00	0.00
9,625.00	35.71	1.93	9,480.43	-940.31	-682.90	-849.70	12.00	12.00	0.00
9,650.00	38.71	1.93	9,500.34	-925.20	-682.39	-834.77	12.00	12.00	0.00
9,675.00	41.71	1.93	9,519.43	-909.07	-681.84	-818.82	12.00	12.00	0.00
9,700.00	44.71	1.93	9,537.65	-891.96	-681.27	-801.92	12.00	12.00	0.00
9,725.00	47.71	1.93	9,554.94	-873.92	-680.66	-784.09	12.00	12.00	0.00
9,750.00	50.71	1.93	9,571.27	-855.01	-680.02	-765.39	12.00	12.00	0.00
9,775.00	53.71	1.93	9,586.59	-835.26	-679.36	-745.88	12.00	12.00	0.00
9,800.00	56.71	1.93	9,600.85	-814.74	-678.66	-725.60	12.00	12.00	0.00
9,825.00	59.71	1.93	9,614.02	-793.51	-677.95	-704.61	12.00	12.00	0.00
9,850.00	62.71	1.93	9,626.05	-771.61	-677.21	-682.97	12.00	12.00	0.00
9,875.00	65.71	1.93	9,636.93	-749.12	-676.45	-660.74	12.00	12.00	0.00
9,900.00	68.71	1.93	9,646.61	-726.08	-675.68	-637.97	12.00	12.00	0.00
9,925.00	71.71	1.93	9,655.07	-702.58	-674.88	-614.74	12.00	12.00	0.00
9,950.00	74.71	1.93	9,662.29	-678.66	-674.08	-591.09	12.00	12.00	0.00
9,975.00	77.71	1.93	9,668.25	-654.39	-673.26	-567.11	12.00	12.00	0.00
10,000.00	80.71	1.93	9,672.92	-629.85	-672.43	-542.86	12.00	12.00	0.00
10,025.00	83.71	1.93	9,676.31	-605.10	-671.60	-518.39	12.00	12.00	0.00
10,050.00	86.71	1.93	9,678.39	-580.20	-670.76	-493.79	12.00	12.00	0.00
10,077.29	89.99	1.93	9,679.18	-552.94	-669.84	-466.84	12.00	12.00	0.00
Start 4704.57 hold at 10077.29 MD									
10,100.00	89.99	1.93	9,679.18	-530.25	-669.08	-444.41	0.00	0.00	0.00
10,200.00	89.99	1.93	9,679.20	-430.30	-665.71	-345.63	0.00	0.00	0.00
10,300.00	89.99	1.93	9,679.22	-330.36	-662.34	-246.85	0.00	0.00	0.00
10,400.00	89.99	1.93	9,679.24	-230.42	-658.98	-148.07	0.00	0.00	0.00
10,500.00	89.99	1.93	9,679.25	-130.47	-655.61	-49.29	0.00	0.00	0.00
10,600.00	89.99	1.93	9,679.27	-30.53	-652.24	49.49	0.00	0.00	0.00
10,700.00	89.99	1.93	9,679.29	69.41	-648.87	148.27	0.00	0.00	0.00
10,800.00	89.99	1.93	9,679.31	169.36	-645.50	247.05	0.00	0.00	0.00
10,900.00	89.99	1.93	9,679.32	269.30	-642.14	345.83	0.00	0.00	0.00
11,000.00	89.99	1.93	9,679.34	369.24	-638.77	444.61	0.00	0.00	0.00
11,100.00	89.99	1.93	9,679.36	469.19	-635.40	543.39	0.00	0.00	0.00
11,200.00	89.99	1.93	9,679.38	569.13	-632.03	642.18	0.00	0.00	0.00
11,300.00	89.99	1.93	9,679.39	669.07	-628.67	740.96	0.00	0.00	0.00
11,400.00	89.99	1.93	9,679.41	769.02	-625.30	839.74	0.00	0.00	0.00
11,500.00	89.99	1.93	9,679.43	868.96	-621.93	938.52	0.00	0.00	0.00
11,600.00	89.99	1.93	9,679.44	968.90	-618.56	1,037.30	0.00	0.00	0.00
11,700.00	89.99	1.93	9,679.46	1,068.85	-615.20	1,136.08	0.00	0.00	0.00
11,800.00	89.99	1.93	9,679.48	1,168.79	-611.83	1,234.86	0.00	0.00	0.00
11,900.00	89.99	1.93	9,679.50	1,268.73	-608.46	1,333.64	0.00	0.00	0.00
12,000.00	89.99	1.93	9,679.51	1,368.68	-605.09	1,432.42	0.00	0.00	0.00
12,100.00	89.99	1.93	9,679.53	1,468.62	-601.73	1,531.20	0.00	0.00	0.00
12,200.00	89.99	1.93	9,679.55	1,568.56	-598.36	1,629.98	0.00	0.00	0.00
12,300.00	89.99	1.93	9,679.57	1,668.51	-594.99	1,728.76	0.00	0.00	0.00
12,400.00	89.99	1.93	9,679.58	1,768.45	-591.62	1,827.54	0.00	0.00	0.00
12,500.00	89.99	1.93	9,679.60	1,868.39	-588.25	1,926.32	0.00	0.00	0.00
12,600.00	89.99	1.93	9,679.62	1,968.34	-584.89	2,025.10	0.00	0.00	0.00
12,700.00	89.99	1.93	9,679.64	2,068.28	-581.52	2,123.88	0.00	0.00	0.00

Database:	HED_Compass_DSN	**Local Co-ordinate Reference:**	Well Goonch Fed Com 04 221H
Company:	Novo Oil & Gas, LLC	**TVD Reference:**	GL 3013.5' + 25' KB @ 3038.50usft
Project:	Eddy County, NM	**MD Reference:**	GL 3013.5' + 25' KB @ 3038.50usft
Site:	SEC 4 - T23S - R28E	**North Reference:**	Grid
Well:	Goonch Fed Com 04 221H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

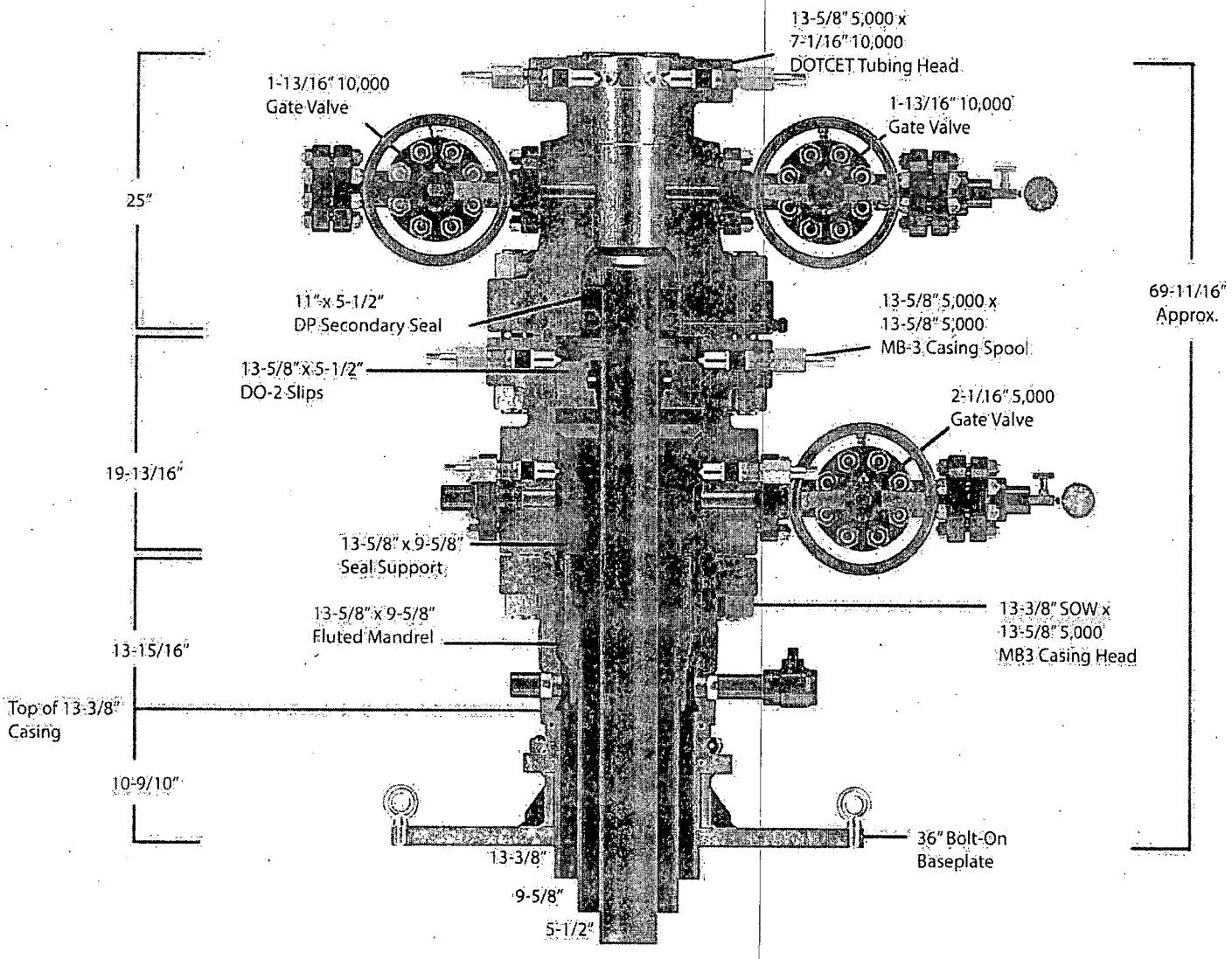
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,800.00	89.99	1.93	9,679.65	2,168.22	-578.15	2,222.66	0.00	0.00	0.00
12,900.00	89.99	1.93	9,679.67	2,268.17	-574.78	2,321.45	0.00	0.00	0.00
13,000.00	89.99	1.93	9,679.69	2,368.11	-571.42	2,420.23	0.00	0.00	0.00
13,100.00	89.99	1.93	9,679.71	2,468.05	-568.05	2,519.01	0.00	0.00	0.00
13,200.00	89.99	1.93	9,679.72	2,568.00	-564.68	2,617.79	0.00	0.00	0.00
13,300.00	89.99	1.93	9,679.74	2,667.94	-561.31	2,716.57	0.00	0.00	0.00
13,400.00	89.99	1.93	9,679.76	2,767.88	-557.95	2,815.35	0.00	0.00	0.00
13,500.00	89.99	1.93	9,679.78	2,867.82	-554.58	2,914.13	0.00	0.00	0.00
13,600.00	89.99	1.93	9,679.79	2,967.77	-551.21	3,012.91	0.00	0.00	0.00
13,700.00	89.99	1.93	9,679.81	3,067.71	-547.84	3,111.69	0.00	0.00	0.00
13,800.00	89.99	1.93	9,679.83	3,167.65	-544.48	3,210.47	0.00	0.00	0.00
13,900.00	89.99	1.93	9,679.85	3,267.60	-541.11	3,309.25	0.00	0.00	0.00
14,000.00	89.99	1.93	9,679.86	3,367.54	-537.74	3,408.03	0.00	0.00	0.00
14,100.00	89.99	1.93	9,679.88	3,467.48	-534.37	3,506.81	0.00	0.00	0.00
14,200.00	89.99	1.93	9,679.90	3,567.43	-531.00	3,605.59	0.00	0.00	0.00
14,300.00	89.99	1.93	9,679.92	3,667.37	-527.64	3,704.37	0.00	0.00	0.00
14,400.00	89.99	1.93	9,679.93	3,767.31	-524.27	3,803.15	0.00	0.00	0.00
14,500.00	89.99	1.93	9,679.95	3,867.26	-520.90	3,901.93	0.00	0.00	0.00
14,600.00	89.99	1.93	9,679.97	3,967.20	-517.53	4,000.72	0.00	0.00	0.00
14,700.00	89.99	1.93	9,679.99	4,067.14	-514.17	4,099.50	0.00	0.00	0.00
14,781.86	89.99	1.93	9,680.00	4,148.96	-511.41	4,180.36	0.00	0.00	0.00
TD at 14781.86									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Goonch Fed Com 04 22 - plan hits target center - Point	0.00	0.00	9,680.00	4,148.96	-511.41	488,073.82	613,579.33	32° 20' 29.650 N	104° 5' 57.895 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
2,000.00	2,000.00	0.00	0.00	Start Build 2.00
2,600.00	2,595.62	-52.11	-34.70	Start 5350.00 hold at 2600.00 MD
7,950.00	7,828.71	-977.94	-651.22	Start Drop -2.00
8,550.00	8,424.33	-1,030.05	-685.92	Start 777.38 hold at 8550.00 MD
9,327.38	9,201.72	-1,030.05	-685.92	Start Build 12.00
10,077.29	9,679.18	-552.94	-669.84	Start 4704.57 hold at 10077.29 MD
14,781.86	9,680.00	4,148.96	-511.41	TD at 14781.86



Quotation	Downing Wellhead Equipment	Oklahoma City, Oklahoma - USA

Reference Data:

NOVO

TITLE:

NOVO OIL & GAS, MB-3 SYSTEM,
13-3/8" x 9-5/8" x 5-1/2"

DRAWN			SIZE: A	DWG. NO.		REV.
CHECKED						
APPROVED			Scale:	Weight:	Sheet:	

Novo Oil & Gas Northern Delaware, LLC
Goonch Fed Com 04 221H
SHL 1100' FSL & 980' FWL 4-23S-28E
BHL 130' FNL & 330' FWL 4-23S-28e
Eddy County, NM

fee/fee/Fed

Drilling Program

1. ESTIMATED TOPS

Formation Name	TVD KB	MD	Bearing
Quaternary	0'	0'	water
Rustler anhydrite (surface csg @ 594' MD)	100'	100'	N/A
Castile gypsum	970'	970'	N/A
Lamar limestone	2473'	2476'	N/A
Bell Canyon sandstone	2539'	2542'	hydrocarbons
Cherry Canyon sandstone	3614'	3641'	hydrocarbons
Brushy Canyon sandstone	4627'	4636'	hydrocarbons
Bone Spring limestone	6070'	6152'	hydrocarbons
Avalon shale	6578'	6671'	hydrocarbons
1st Bone Spring sandstone	7037'	7141'	hydrocarbons
2nd Bone Spring carbonate	7250'	7359'	hydrocarbons
2nd Bone Spring sandstone	7785'	7910'	hydrocarbons
3d Bone Spring carbonate (inter. csg @ 8900' MD)	8082'	8207'	hydrocarbons
3rd Bone Spring sandstone	9016'	9142'	hydrocarbons
(KOP	9202'	9327'	hydrocarbons)
Wolfcamp XY carbonate	9340'	9468'	hydrocarbons
Wolfcamp A carbonate	9496'	9645'	hydrocarbons
Wolfcamp B carbonate (pro. csg @ 14782' MD)	9667'	9971'	hydrocarbons
TD	9680'	14782'	hydrocarbons

2. NOTABLE ZONES

Wolfcamp B carbonate is the goal. All perforations will be ≥330' from the dedication perimeter. Closest water well (C 00800) is 0.90 mile southeast. Water bearing strata were found from 50' to 155' in the 200' deep well.

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. 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.

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. See attached casing assumption worksheet.

Hole O. D.	Set MD	Set TVD	Casing OD	Weight (lb/ft)	Grade	Joint	Collapse	Burst	Tension
17.5"	0' - 594'	0' - 594'	13.375" surface	54.5	J-55	BTC	1.125	1.125	1.60
12.25"	0' - 8900'	0' - 8774'	9.625" intermed.	43.5	HCL-80	BTC	1.125	1.125	1.60
8.5"	0' – 14782'	0' – 9680'	5.5" product.	20	P-110	TMK DQX	1.125	1.125	1.60

Alternate Production Casing:

Hole O. D.	Set MD	Set TVD	Casing OD	Weight (lb/ft)	Grade	Joint	Collapse	Burst	Tension
8.5"	0' – 14782'	0' – 9680'	5.5" product.	20	P-110	GBCD	1.125	1.125	1.60
8.5"	0' – 14782'	0' – 9680'	5.5" product.	20	P-110 HC	CDC	1.125	1.125	1.60

Alternate weights and grades could be substituted to meet maximum stimulation pressures.

Name	Type	Sacks	Yield	Cu. Ft.	Weight	Blend
Surface	Tail	509	1.62	824	13.8	Class C + gel + accelerator + LCM
TOC = GL		100% Excess			Centralizers on every jt to GL	
Intermediate Stage * 1	Lead	690	2.28	1573	11.9	Class C or H + fluid loss + retarder + LCM
	Tail	200	1.34	268	14.8	Class C or H + fluid loss + retarder + LCM
Intermediate Stage * 2	Lead	542	2.28	1235	11.9	Class C or H + fluid loss + retarder + LCM
	Tail	200	1.34	268	14.8	Class C or H + fluid loss + retarder + LCM
TOC = GL		20% Excess			Centralizers on bottom 3 jts and then 1 centralizer every 4th jt to GL	
Production	Tail	928	1.89	1753	13.0	Class H + fluid loss + retarder + LCM
TOC = 8400'		20% Excess			None planned	

*Stage tool set at ≈4000'.

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.

Type	Interval (MD)	lb/gal	Viscosity	Fluid Loss
fresh water spud	0' - 594'	8.3	30 - 60	NC
brine diesel emulsion	594' - 8900'	8.8 - 9.2	35 - 45	NC
OBM	8900' - 14782'	8.8 - 12.5	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 ≈3000' to TD.

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

7. DOWN HOLE CONDITIONS

No abnormal pressure or temperature is expected. Maximum expected bottom hole pressure is ≈5157 psi. Expected bottom hole temperature is ≈165° 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.

Novo owns fee leases in the S2 Section 4. Novo has NMOCD approval to be the operator in the W2 Section 4 via NMOCD Case 20184 and R-20578.

Novo Oil & Gas Northern Delaware Goonch Fed Com 04 Casing Variance Request

A 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.

Gnooch Fed Com 04 221H Alternative Casing Spec Request

Novo Oil & Gas Northern Delaware, LLC respectfully requests flexibility in the production casing spec in the event that drilling conditions and/or equipment availability determines the need for an alternate casing. The alternate casing specs are specified in the attached drill plan. The alternate casing spec sheets are attached.

GB tubulars
Casings & Connections

GB Connection Performance Properties Sheet

Rev. 1 (08/25/2015)

ENGINEERING THE RIGHT CONNECTIONS™

Casing: 5.5 OD, 20 ppf
Casing Grade: P-110

Connection: GB CD Butt 6.300
Coupling Grade: API P-110

PIPE BODY GEOMETRY

Nominal OD (in.)	5 1/2	Wall Thickness (in.)	0.361	Drift Diameter (in.)	4.653
Nominal Weight (ppf)	20.00	Nominal ID (in.)	4.778	API Alternate Drift Dia. (in.)	N/A
Plain End Weight (ppf)	19.83	Plain End Area ($in.^2$)	5.828		

PIPE BODY PERFORMANCE

Material Specification	P-110	Min. Yield Str. (psi)	110,000	Min. Ultimate Str. (psi)	125,000
Collapse		**Tension**		**Pressure**	
API (psi)	11,100	Pl. End Yield Str. (kips)	641	Min. Int. Yield Press. (psi)	12,640
High Collapse (psi)	N/A	**Torque**		**Bending**	
		Yield Torque (ft-lbs)	74,420	Build Rate to Yield (°/100 ft)	91.7

GB CD Butt 6.300 COUPLING GEOMETRY

Coupling OD (in.)	6.300	Makeup Loss (in.)	4.2500		
Coupling Length (in.)	8.500	Critical Cross-Sect. ($in.^2$)	8.527		

GB CD Butt 6.300 CONNECTION PERFORMANCE RATINGS/EFFICIENCIES

Material Specification	API P-110	Min. Yield Str. (psi)	110,000	Min. Ultimate Str. (psi)	125,000
Tension		**Efficiency**		**Bending**	
Thread Str. (kips)	667	Internal Pressure (%)	100%	Build Rate to Yield (°/100 ft)	80.0
Min. Tension Yield (kips)	891	External Pressure (%)	100%	**Yield Torque**	
Min. Tension Ult. (kips)	1,013	Tension (%)	100%	Yield Torque (ft-lbs)	31,180
Joint Str. (kips)	667	Compression (%)	100%		
		Ratio of Areas (Cplg/Pipe)	1.46		

MAKEUP TORQUE

Min. MU Tq. (ft-lbs)	10,000	Max. MU Tq. (ft-lbs)	20,000	Running Tq. (ft-lbs)	See GBT RP
				Max. Operating Tq. (ft-lbs)*	29,620

Units: US Customary (lbm, in., °F, lbf)
1 kip = 1,000 lbs
* See Running Procedure for description and limitations.
See attached: Notes for GB Connection Performance Properties.
GBT Running Procedure (GBT RP): www.gbtubulars.com/pdf/RP-GB-DWC-Connections.pdf
Blanking Dimensions: www.gbtubulars.com/pdf/GB-DWC-Blanking-Dimensions.pdf
Connection yield torque rating based on physical testing or extrapolation therefrom

U. S. Steel Tubular Products

5.500" 20.00lbs/ft (0.361" Wall) P110 HC USS-CDC®

MECHANICAL PROPERTIES	Pipe	USS-CDC®	
Minimum Yield Strength	110,000	--	psi
Maximum Yield Strength	140,000	--	psi
Minimum Tensile Strength	125,000	--	psi

DIMENSIONS	Pipe	USS-CDC®	
Outside Diameter	5.500	6.050	in.
Wall Thickness	0.361	--	in.
Inside Diameter	4.778	4.778	in.
Standard Drift	4.653	4.653	in.
Alternate Drift	--	--	in.
Coupling Length	--	9.250	in.
Nominal Linear Weight, T&C	20.00	--	lbs/ft
Plain End Weight	19.83	--	lbs/ft

SECTION AREA	Pipe	USS-CDC®	
Critical Area	5.828	5.828	sq. in.
Joint Efficiency	--	100.0	%

PERFORMANCE	Pipe	USS-CDC®	
Minimum Collapse Pressure	12,200	12,200	psi
External Pressure Leak Resistance	--	9,760	psi
Minimum Internal Yield Pressure	12,640	12,370	psi
Minimum Pipe Body Yield Strength	641,000	--	lbs
Joint Strength	--	688,000	lbs
Compression Rating	--	413,000	lbs
Reference Length	--	22,933	ft
Maximum Uniaxial Bend Rating	--	59.1	deg/100 ft

MAKE-UP DATA	Pipe	USS-CDC®	
Make-Up Loss	--	4.63	in.
Minimum Make-Up Torque	--	10,500	ft-lbs
Maximum Make-Up Torque	--	13,000	ft-lbs
Connection Yield Torque	--	16,100	ft-lbs

1. Other than proprietary collapse and connection values, performance properties have been calculated using standard equations defined by API 5C3 and do not incorporate any additional design or safety factors. Calculations assume nominal pipe OD, nominal wall thickness and Specified Minimum Yield Strength (SMYS).
2. Uniaxial bending rating shown is structural only, and equal to compression efficiency.
3. Torques have been calculated assuming a thread compound friction factor of 1.0 and are recommended only. Field make-up torques may require adjustment based on actual field conditions (e.g. make-up speed, temperature, thread compound, etc.).
4. Reference length is calculated by joint strength divided by nominal threaded and coupled weight with 1.5 safety factor.
5. Connection external pressure leak resistance has been verified to 80% API pipe body collapse pressure following the guidelines of API 5C5 Call II.

U. S. Steel Tubular Products
460 Wildwood Forest Drive, Suite 300S
Spring, Texas 77380

1-877-893-9461
connections@uss.com
www.usstubular.com

APD ID: 10400045324 **Submission Date:** 08/03/2019

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Well Name: GOONCH FED COM 04 **Well Number:** 221H

Well Type: CONVENTIONAL GAS WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Section 1 - Existing Roads

Will existing roads be used? NO

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? NO

Section 3 - Location of Existing Wells

Existing Wells Map? NO

Attach Well map:

Existing Wells description: FEE FEE FED - SUPO not required

Section 4 - Location of Existing and/or Proposed Production Facilities

Submit or defer a Proposed Production Facilities plan? DEFER

Estimated Production Facilities description: FEE FEE FED - SUPO not required

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Well Name: GOONCH FED COM 04 **Well Number:** 221H

Section 5 - Location and Types of Water Supply

Water Source Table

Water source type: OTHER

Describe type: FEE FEE FED - SUPO not required

Water source use type: OTHER **Describe use type:** FEE FEE FED - SUPO not require

Source latitude: **Source longitude:**

Source datum:

Water source permit type: OTHER

Water source transport method: TRUCKING

Source land ownership: OTHER **Describe land ownership:** FEE FEE FED - SUPO not

Source transportation land ownership: OTHER **Describe transportation land ownership:** FEE FEE F

Water source volume (barrels): 1 **Source volume (acre-feet):** 0.00012889

Source volume (gal): 42

Water source and transportation map:

Gnooch_Fed_Com_04_Fee_Fee_Fed_20190803120825.pdf

Water source comments:

New water well? N

New Water Well Info

Well latitude: **Well Longitude:** **Well datum:**

Well target aquifer:

Est. depth to top of aquifer(ft): **Est thickness of aquifer:**

Aquifer comments:

Aquifer documentation:

Well depth (ft): **Well casing type:**

Well casing outside diameter (in.): **Well casing inside diameter (in.):**

New water well casing? **Used casing source:**

Drilling method: **Drill material:**

Grout material: **Grout depth:**

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Well Name: GOONCH FED COM 04 **Well Number:** 221H

Casing length (ft.): **Casing top depth (ft.):**

Well Production type: **Completion Method:**

Water well additional information:

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Using any construction materials: NO

Construction Materials description:

Construction Materials source location attachment:

Section 7 - Methods for Handling Waste

Waste type: DRILLING

Waste content description: FEE FEE FED - SUPO not required

Amount of waste: 0 barrels

Waste disposal frequency : Daily

Safe containment description: FEE FEE FED - SUPO not required

Safe containmant attachment:

Waste disposal type: OTHER **Disposal location ownership:** OTHER

Disposal type description: FEE FEE FED - SUPO not required

Disposal location description: FEE FEE FED - SUPO not required

Reserve Pit

Reserve Pit being used? N

Temporary disposal of produced water into reserve pit? NO

Reserve pit length (ft.) **Reserve pit width (ft.)**

Reserve pit depth (ft.) **Reserve pit volume (cu. yd.)**

Is at least 50% of the reserve pit in cut?

Reserve pit liner

Reserve pit liner specifications and installation description

Cuttings Area

Cuttings Area being used? NO

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Well Name: GOONCH FED COM 04 **Well Number:** 221H

Are you storing cuttings on location?

Description of cuttings location

Cuttings area length (ft.) **Cuttings area width (ft.)**

Cuttings area depth (ft.) **Cuttings area volume (cu. yd.)**

Is at least 50% of the cuttings area in cut?

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: N

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

Goonch_04_221H_Well_Site_Layout_Revised_20191017100659.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: No New Surface Disturbance **Multiple Well Pad Name:** Goonch Fed Com 04

Multiple Well Pad Number: 131H (Pad G)

Recontouring attachment:

Drainage/Erosion control construction: FEE FEE FED - SUPO not required

Drainage/Erosion control reclamation: FEE FEE FED - SUPO not required

Well pad proposed disturbance (acres):
Road proposed disturbance (acres):
Powerline proposed disturbance (acres):
Pipeline proposed disturbance (acres):
Other proposed disturbance (acres):
Total proposed disturbance: 0

Well pad interim reclamation (acres): 0
Road interim reclamation (acres): 0
Powerline interim reclamation (acres): 0
Pipeline interim reclamation (acres): 0
Other interim reclamation (acres): 0
Total interim reclamation: 0

Well pad long term disturbance (acres): 0
Road long term disturbance (acres): 0
Powerline long term disturbance (acres): 0
Pipeline long term disturbance (acres): 0
Other long term disturbance (acres): 0
Total long term disturbance: 0

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Well Name: GOONCH FED COM 04 **Well Number:** 221H

Disturbance Comments:

Reconstruction method: FEE FEE FED - SUPO not required

Topsoil redistribution: FEE FEE FED - SUPO not required

Soil treatment: FEE FEE FED - SUPO not required

Existing Vegetation at the well pad: FEE FEE FED - SUPO not required

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road: FEE FEE FED - SUPO not required

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline: FEE FEE FED - SUPO not required

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances: FEE FEE FED - SUPO not required

Existing Vegetation Community at other disturbances attachment:

Non native seed used? N

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? N

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? N

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed Summary **Total pounds/Acre:**

Seed Type	Pounds/Acre

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name: **Last Name:**

Phone: **Email:**

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? N

Existing invasive species treatment description:

Existing invasive species treatment attachment:

Weed treatment plan description: FEE FEE FED - SUPO not required

Weed treatment plan attachment:

Monitoring plan description: FEE FEE FED - SUPO not required

Monitoring plan attachment:

Success standards: FEE FEE FED - SUPO not required

Pit closure description: No pit

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: OTHER

Other surface owner description: FEE FEE FED - SUPO not required

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

USFS Forest/Grassland: **USFS Ranger District:**

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Well Name: GOONCH FED COM 04 **Well Number:** 221H

Section 12 - Other Information

Right of Way needed? N **Use APD as ROW?**

ROW Type(s):

ROW Applications

SUPO Additional Information:

Use a previously conducted onsite? N

Previous Onsite information:

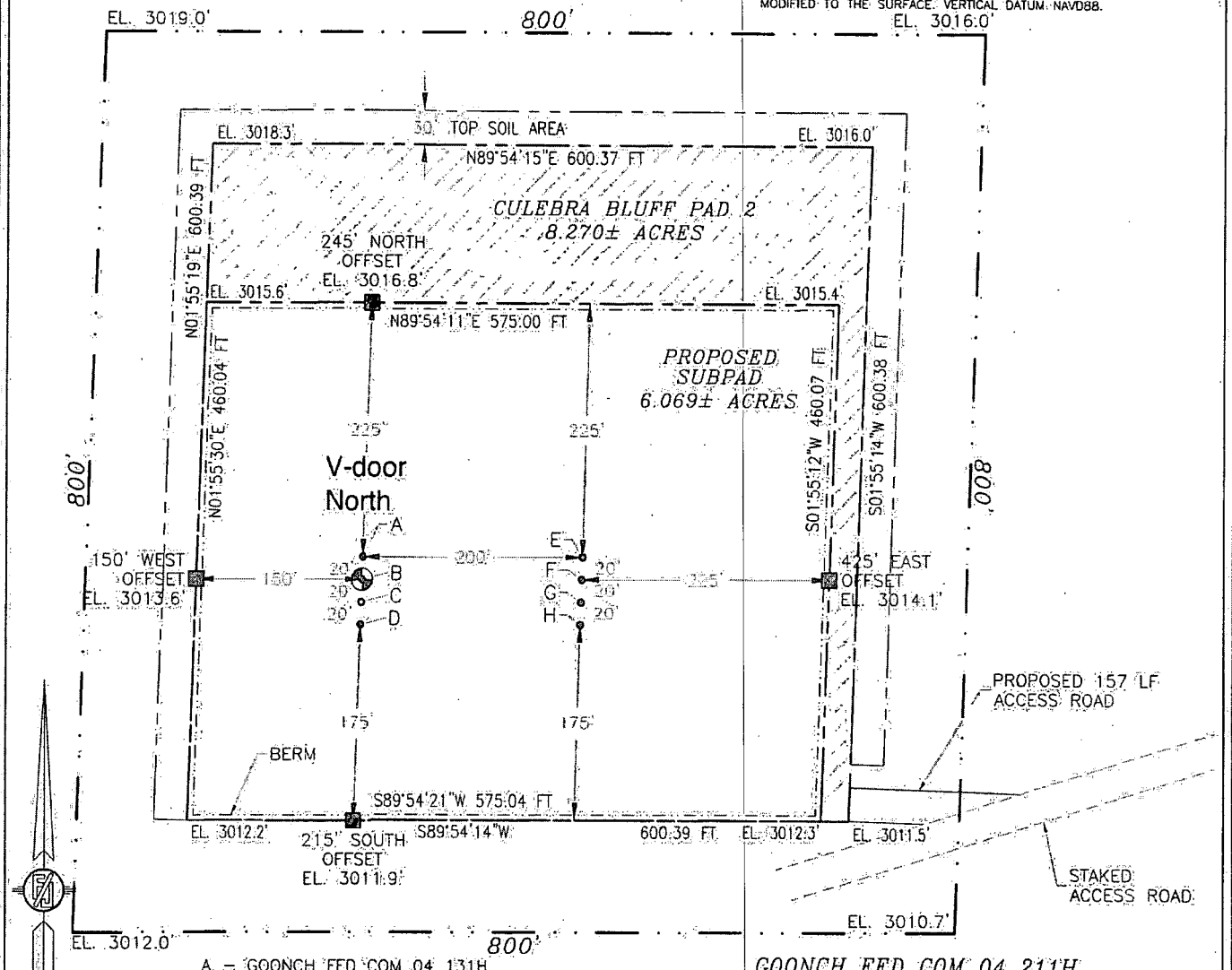
Other SUPO Attachment

Novo Oil & Gas Northern Delaware LLC Gnooch Fed Com 04

Fee Fee Fed – SUPO not required

SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M.
EDDY COUNTY, STATE OF NEW MEXICO
SITE MAP

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: NAVD88.



A = GOONCH FED COM 04 131H
B = GOONCH FED COM 04 211H
C = GOONCH FED COM 04 221H
D = GOONCH FED COM 04 231H
E = GOONCH FED COM 04 132H
F = GOONCH FED COM 04 212H
G = GOONCH FED COM 04 222H
H = GOONCH FED COM 04 232H

GOONCH FED COM 04 211H
ELEV. = 3014.3'
LAT. = 32.3302165°N (NAD83)
LONG. = 104.0977864°W
NMSP EAST (FT)
N = 483944.88
E = 614091.43

015 75 150 300
SCALE 1" = 150'

DIRECTIONS TO LOCATION

FROM STATE ROAD 31 (POTASH MINES) & CR 605 (REFINERY) GO NORTHWEST ON REFINERY ROAD APPROX 3.57 MILES TO HERRADURA BEND ROAD, TURN LEFT AND GO WEST-SOUTHWEST ON HERRADURA BEND ROAD APPROX. 0.66 OF A MILE, TURN LEFT AND GO SOUTH-SOUTHEAST APPROX. 0.59 OF A MILE TO A STAKED ACCESS ROAD ON RIGHT (WEST), FOLLOW STAKED ROAD SOUTH-SOUTHWEST 1000' TO CULEBRA BLUFF CTB #1, FROM THE SOUTHEAST CORNER OF THE CTB PAD, GO SOUTH-SOUTHWEST ALONG THE POWER LINE ROAD APPROX. 0.84 OF A MILE TO AN EXISTING CALICHE ROAD (HERRADURA BEND) AND STAKED ACCESS ROAD, FOLLOW STAKED ACCESS ROAD SOUTHWEST 0.39 OF A MILE, GO WEST 157' TO THE SOUTHEAST PAD CORNER FOR THIS LOCATION.

I, FILIMON F. JARAMILLO A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I PERSONALLY AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THAT IT WAS PREPARED AND MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.

5/10/19
DATE

FILIMON F. JARAMILLO PLS 12797

NOVO OIL & GAS NORTHERN DELAWARE, LLC
GOONCH FED COM 04 211H
LOCATED 1120 FT. FROM THE SOUTH LINE AND 980 FT. FROM THE WEST LINE OF SECTION 4, TOWNSHIP 23 SOUTH, RANGE 28 EAST, N.M.P.M. EDDY COUNTY, STATE OF NEW MEXICO

MAY 10, 2019

SURVEY NO. 6810B

MADRON SURVEYING, INC. 301 SOUTH CANAL (575) 234-3341 *CARLSBAD, NEW MEXICO*

AFMSS

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

PWD Data Report

01/07/2020

APD ID: 10400045324 **Submission Date:** 08/03/2019

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Well Name: GOONCH FED COM 04 **Well Number:** 221H

Well Type: CONVENTIONAL GAS WELL **Well Work Type:** Drill

Section 1 - General

Would you like to address long-term produced water disposal? NO

Section 2 - Lined Pits

Would you like to utilize Lined Pit PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Lined pit PWD on or off channel:

Lined pit PWD discharge volume (bbl/day):

Lined pit specifications:

Pit liner description:

Pit liner manufacturers information:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Lined pit precipitated solids disposal schedule:

Lined pit precipitated solids disposal schedule attachment:

Lined pit reclamation description:

Lined pit reclamation attachment:

Leak detection system description:

Leak detection system attachment:

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Well Name: GOONCH FED COM 04 **Well Number:** 221H

Lined pit Monitor description:

Lined pit Monitor attachment:

Lined pit: do you have a reclamation bond for the pit?

Is the reclamation bond a rider under the BLM bond?

Lined pit bond number:

Lined pit bond amount:

Additional bond information attachment:

Section 3 - Unlined Pits

Would you like to utilize Unlined Pit PWD options? N

Produced Water Disposal (PWD) Location:

PWD disturbance (acres): **PWD surface owner:**

Unlined pit PWD on or off channel:

Unlined pit PWD discharge volume (bbl/day):

Unlined pit specifications:

Precipitated solids disposal:

Decribe precipitated solids disposal:

Precipitated solids disposal permit:

Unlined pit precipitated solids disposal schedule:

Unlined pit precipitated solids disposal schedule attachment:

Unlined pit reclamation description:

Unlined pit reclamation attachment:

Unlined pit Monitor description:

Unlined pit Monitor attachment:

Do you propose to put the produced water to beneficial use?

Beneficial use user confirmation:

Estimated depth of the shallowest aquifer (feet):

Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?

TDS lab results:

Geologic and hydrologic evidence:

State authorization:

Unlined Produced Water Pit Estimated percolation:

Unlined pit: do you have a reclamation bond for the pit?

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Well Name: GOONCH FED COM 04 **Well Number:** 221H

Is the reclamation bond a rider under the BLM bond?

Unlined pit bond number:

Unlined pit bond amount:

Additional bond information attachment:

Section 4 - Injection

Would you like to utilize Injection PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Injection PWD discharge volume (bbl/day):

Injection well mineral owner:

Injection well type:

Injection well number: **Injection well name:**

Assigned injection well API number? **Injection well API number:**

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Section 5 - Surface Discharge

Would you like to utilize Surface Discharge PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Surface discharge PWD discharge volume (bbl/day):

Surface Discharge NPDES Permit?

Surface Discharge NPDES Permit attachment:

Surface Discharge site facilities information:

Surface discharge site facilities map:

Section 6 - Other

Would you like to utilize Other PWD options? N

Produced Water Disposal (PWD) Location:

PWD surface owner: **PWD disturbance (acres):**

Other PWD discharge volume (bbl/day):

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Well Name: GOONCH FED COM 04 **Well Number:** 221H

Other PWD type description:

Other PWD type attachment:

Have other regulatory requirements been met?

Other regulatory requirements attachment:

AFMSS

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

Bond Info Data Report

01/07/2020

APD ID: 10400045324 **Submission Date:** 08/03/2019

Operator Name: NOVO OIL AND GAS NORTHERN DELAWARE LLC

Well Name: GOONCH FED COM 04 **Well Number:** 221H

Well Type: CONVENTIONAL GAS WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB001536

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment: