Form 3160-3 (June 2015) UNITED STATE DEPARTMENT OF THE I BUREAU OF LAND MAN APPLICATION FOR PERMIT TO D	INTERIOR RECEAR	FORM APPROVED OMB No. 1004-0137 Expires: January 31, 2018 5. Lease Serial No. 6. If Indian, Allotee or Tribe Name
1b. Type of Well:   Oil Well   Gas Well   O	REENTER Other Single Zone Multiple Zone	7. If Unit or CA Agreement, Name and No. 8. Lease Name and Well No. [329742]
2. Name of Operator [229137] 3a. Address	3b. Phone No. (include area code)	9. API Well No. <b>30-025-47879</b> 10. Field and Pool, or Exploratory <b>[97088]</b>
<ul> <li>4. Location of Well (Report location clearly and in accordance At surface At proposed prod. zone</li> </ul>		11. Sec., T. R. M. or Blk. and Survey or Area
<ul> <li>14. Distance in miles and direction from nearest town or post of</li> <li>15. Distance from proposed* <ul> <li>location to nearest</li> <li>property or lease line, ft.</li> <li>(Also to nearest drig. unit line, if any)</li> </ul> </li> <li>18. Distance from proposed location* <ul> <li>to nearest well, drilling, completed,</li> </ul> </li> </ul>	16. No of acres in lease 17. Space	12. County or Parish     13. State       ing. Unit dedicated to this well       /BIA Bond No. in file
applied for, on this lease, ft. 21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start* 24. Attachments	23. Estimated duration
<ul> <li>The following, completed in accordance with the requirements of (as applicable)</li> <li>1. Well plat certified by a registered surveyor.</li> <li>2. A Drilling Plan.</li> <li>3. A Surface Use Plan (if the location is on National Forest Syster SUPO must be filed with the appropriate Forest Service Office</li> </ul>	<ul> <li>4. Bond to cover the operation Item 20 above).</li> <li>5. Operator certification.</li> </ul>	Hydraulic Fracturing rule per 43 CFR 3162.3-3 ns unless covered by an existing bond on file (see rmation and/or plans as may be requested by the
25. Signature Title	Name (Printed/Typed)	Date
Approved by (Signature)	Name (Printed/Typed)	Date
Title Application approval does not warrant or certify that the applicat 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, of the United States any false, fictitious or fraudulent statements	make it a crime for any person knowingly and	I willfully to make to any department or agency
GCP Rec 10/20/2020		./

0/20/2020	
	CONDITIONS
	APPROVED WITH COMP
	Approval Date: 09/28/2020

KZ 10/22/2020

SL

\*(Instructions on page 2)

## INSTRUCTIONS

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

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

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

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the 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.

## **Additional Operator Remarks**

#### Location of Well

0. SHL: NWNE / 465 FNL / 2035 FEL / TWSP: 25S / RANGE: 35E / SECTION: 20 / LAT: 32.121856 / LONG: -103.387594 (TVD: 0 feet, MD: 0 feet ) PPP: SWNE / 1321 FNL / 1640 FEL / TWSP: 25S / RANGE: 35E / SECTION: 20 / LAT: 32.119498 / LONG: -103.386316 (TVD: 12365 feet, MD: 13521 feet ) PPP: NWNE / 100 FNL / 1640 FEL / TWSP: 25S / RANGE: 35E / SECTION: 20 / LAT: 32.122856 / LONG: -103.386318 (TVD: 12238 feet, MD: 12300 feet ) BHL: SWNE / 2590 FNL / 1640 FEL / TWSP: 25S / RANGE: 35E / SECTION: 29 / LAT: 32.101495 / LONG: -103.386306 (TVD: 12401 feet, MD: 19992 feet )

#### **BLM Point of Contact**

Name: Deborah Ham Title: Legal Landlaw Examiner Phone: (575) 234-5965 Email: dham@blm.gov

#### **Review and Appeal Rights**

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

# PECOS DISTRICT SURFACE USE CONDITIONS OF APPROVAL

OPERATOR'S NAME: COG Operating LLC LEASE NO.: Lease Number NMNM132951 LOCATION: Section 20, T. 25 S., R. 35 E. COUNTY: Lea

#### Legal Description:

#### Well Pad 1

Green Beret Federal Com 702H Surface Hole Location: 465' FNL & 2125' FEL, Section 20, T. 25 S., R. 35 E. Bottom Hole Location: 2590' FNL & 2310' FEL, Section 29, T. 25 S, R 35 E.

Green Beret Federal Com 501H

Surface Hole Location: 465' FNL & 2095' FEL, Section 20, T. 25 S., R. 35 E. Bottom Hole Location: 2590' FNL & 1980' FEL, Section 29, T. 25 S, R 35 E.

Green Beret Federal Com 801H Surface Hole Location: 465' FNL & 2065' FEL, Section 20, T. 25 S., R. 35 E. Bottom Hole Location: 2590' FNL & 1760' FEL, Section 29, T. 25 S, R 35 E.

Green Beret Federal Com 602H

Surface Hole Location: 465' FNL & 2035' FEL, Section 20, T. 25 S., R. 35 E. Bottom Hole Location: 2590' FNL & 1640' FEL, Section 29, T. 25 S, R 35 E.

#### Well Pad 2

Green Beret Federal Com 701H Surface Hole Location: 370' FNL & 790' FEL, Section 20, T. 25 S., R. 35 E. Bottom Hole Location: 2590' FNL & 1210' FEL, Section 29, T. 25 S, R 35 E.

Green Beret Federal Com 601H Surface Hole Location: 370' FNL & 760' FEL, Section 20, T. 25 S., R. 35 E. Bottom Hole Location: 2590' FNL & 660' FEL, Section 29, T. 25 S, R 35 E.

Tank Battery Facilities: 842' FNL & 2124' FEL, Sec. 20-T25S-R35E

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Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

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## I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

# **II. PERMIT EXPIRATION**

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

# III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

## **IV. NOXIOUS WEEDS**

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

# V. SPECIAL REQUIREMENT(S)

#### **Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken**:

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

**Ground-level Abandoned Well Marker to avoid raptor perching**: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

This authorization is subject to your Certificate of Participation and/or Certificate of Inclusion under the New Mexico Candidate Conservation Agreement. Because it involves surface disturbing activities covered under your Certificate, your Habitat Conservation Fund Account with the Center of Excellence for Hazardous Materials Management (CEHMM) will be debited according to Exhibit B Part 2 of the Certificate of Participation.

#### Hydrology:

The entire well pad(s) will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility. The berm would be maintained through the life of the wells and after interim reclamation has been completed.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 <sup>1</sup>/<sub>2</sub> times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

When crossing ephemeral drainages the pipeline(s) will be buried to a minimum depth of 48 inches from the top of pipe to ground level. Erosion control methods such as gabions and/or rock aprons should be placed on both up and downstream sides of the pipeline crossing. In addition, curled (weed free) wood/straw fiber wattles/logs and/or silt fences should be placed on the downstream side for sediment control during construction and maintained until soils and vegetation have stabilized. Water bars should be placed within the ROW to divert and dissipate surface runoff. A pipeline access road is not permitted to cross these ephemeral drainages. Traffic should be diverted to a preexisting route. Additional seeding may be required in floodplains and drainages to restore energy dissipating vegetation.

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Prior to pipeline installation/construction a leak detection plan will be developed. The method(s) could incorporate gauges to detect pressure drops, situating valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

Any water erosion that may occur due to the construction of overhead electric line and during the life of the power line will be quickly corrected and proper measures will be taken to prevent future erosion. A power pole should not be placed in drainages, playas, wetlands, riparian areas, or floodplains and must span across the features at a distance away that would not promote further erosion.

# VI. CONSTRUCTION

## A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

#### B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

#### C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

#### D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

#### E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

#### F. EXCLOSURE FENCING (CELLARS & PITS)

#### **Exclosure Fencing**

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

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#### G. ON LEASE ACCESS ROADS

#### **Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

#### Surfacing

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

#### Crowning

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

#### Ditching

Ditching shall be required on both sides of the road.

#### **Turnouts**

Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

#### Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

#### **Cross Section of a Typical Lead-off Ditch**



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

#### Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope:  $\underline{400'}_{4\%} + 100' = 200'$  lead-off ditch interval

#### **Cattle guards**

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

#### **Fence Requirement**

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

#### **Public Access**

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

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# VII. PRODUCTION (POST DRILLING)

#### A. WELL STRUCTURES & FACILITIES

#### **Placement of Production Facilities**

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

#### **Exclosure Netting (Open-top Tanks)**

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

#### **Chemical and Fuel Secondary Containment and Exclosure Screening**

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

#### **Open-Vent Exhaust Stack Exclosures**

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

#### **Containment Structures**

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

#### **Painting Requirement**

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, <u>Shale Green</u> from the BLM Standard Environmental Color Chart (CC-001: June 2008).

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#### **B. PIPELINES**

#### BURIED PIPELINE STIPULATIONS

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The Holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The Holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 <u>et seq.</u> (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, <u>et seq</u>. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, <u>et seq</u>.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of  $\underline{36}$  inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be 30 feet:

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- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed <u>20</u> feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)
- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed <u>30</u> feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)
- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately <u>6</u> inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

() seed mixture 1	() seed mixture 3
(X) seed mixture 2	() seed mixture 4
() seed mixture 2/LPC	() Aplomado Falcon Mixture

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

#### OR

If the entire project is covered under the Permian Basin Programmatic Agreement (cultural resources only):

The proponent has contributed funds commensurate to the undertaking into an account for offsite mitigation. Participation in the PA serves as mitigation for the effects of this project on cultural resources. If any human skeletal remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered at any time during construction, all construction activities shall halt and the BLM will be notified as soon as possible within 24 hours. Work shall not resume until a Notice to Proceed is issued by the BLM. See Stipulation 17 for more information.

If the proposed project is split between a Class III inventory and a Permian Basin Programmatic Agreement contribution, the portion of the project covered under Class III inventory should default to the first paragraph stipulations.

17. The holder is hereby obligated to comply with procedures established in the Native American Graves Protection and Repatriation Act (NAGPRA) to protect such cultural items as human remains, associated funerary objects, sacred objects, and objects of cultural patrimony discovered inadvertently during the course of project implementation. In the event that any of the cultural items listed above are discovered during the course of project work, the proponent shall immediately halt the disturbance and contact the BLM within 24 hours for instructions. The proponent or initiator of any project shall be held responsible for protecting, evaluating, reporting, excavating, treating, and disposing of these cultural items according to the procedures established by the BLM in consultation with Indian Tribes."

18. Any paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

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19. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes associated roads, pipeline corridor and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

20. <u>Escape Ramps</u> - The operator will construct and maintain pipeline/utility trenches [that are not otherwise fenced, screened, or netted] to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

- a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
- b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.
- 21. Special Stipulations:

#### Lesser Prairie-Chicken

Oil and gas activities will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

#### C. ELECTRIC LINES

STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 <u>et seq</u>. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and

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Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, <u>et seq</u>. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, <u>et seq</u>.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

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#### If the entire project is covered under the Permian Basin Programmatic Agreement (cultural resources only):

The proponent has contributed funds commensurate to the undertaking into an account for offsite mitigation. Participation in the PA serves as mitigation for the effects of this project on cultural resources. If any human skeletal remains, funerary objects, sacred objects, or objects of cultural patrimony are discovered at any time during construction, all construction activities shall halt and the BLM will be notified as soon as possible within 24 hours. Work shall not resume until a Notice to Proceed is issued by the BLM. See Stipulation 11 for more information.

If the proposed project is split between a Class III inventory and a Permian Basin Programmatic Agreement contribution, the portion of the project covered under Class III inventory should default to the first paragraph stipulations.

11. The holder is hereby obligated to comply with procedures established in the Native American Graves Protection and Repatriation Act (NAGPRA) to protect such cultural items as human remains, associated funerary objects, sacred objects, and objects of cultural patrimony discovered inadvertently during the course of project implementation.

In the event that any of the cultural items listed above are discovered during the course of project work, the proponent shall immediately halt the disturbance and contact the BLM within 24 hours for instructions. The proponent or initiator of any project shall be held responsible for protecting, evaluating, reporting, excavating, treating, and disposing of these cultural items according to the procedures established by the BLM in consultation with Indian Tribes."

12. Any paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on the holder's behalf, on public or Federal land shall be immediately reported to the Authorized Officer. The holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to the proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

13. Special Stipulations:

For reclamation remove poles, lines, transformer, etc. and dispose of properly. Fill in any holes from the poles removed.

#### Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken:

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

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#### VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed.

If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

#### IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

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#### Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be <u>no</u> primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

Species	l <u>b/acre</u>
Sand dropseed (Sporobolus cryptandrus) Sand love grass (Eragrostis trichodes) Plains bristlegrass (Setaria macrostachya)	1.0 1.0 2.0

\*Pounds of pure live seed:

Pounds of seed  $\mathbf{x}$  percent purity  $\mathbf{x}$  percent germination = pounds pure live seed

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# PECOS DISTRICT DRILLING OPERATIONS CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	COG Operating LLC
LEASE NO.:	NMNM132951
WELL NAME & NO.:	Green Beret Federal Com 602H
SURFACE HOLE FOOTAGE:	465' FNL & 2035' FEL
<b>BOTTOM HOLE FOOTAGE</b>	2590' FNL & 1640' FEL
LOCATION:	Section 20, T 25S, R 35E, NMPM
COUNTY:	Lea County, New Mexico

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

## A. HYDROGEN SULFIDE

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

## **B.** CASING

- 1. The **13-3/8**" surface casing shall be set at approximately **1170'** (or a minimum of 25' into the Rustler Anhydrite and above the salt) and cemented to surface.
  - a. **If cement does not circulate to 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 **6 hours** after pumping cement, ideally between 8-10 hours after.
  - b. WOC time for a primary cement job will be a minimum of <u>8 hours</u> or <u>500 psi</u> compressive strength, whichever is greater. This is to include the lead cement.
  - c. If cement falls back, remedial cementing will be done prior to drilling out the shoe.
  - d. WOC time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 psi compressive strength, whichever is greater.

- 2. The **7-5/8''** intermediate casing shall be cemented to surface.
  - a. If cement does not circulate to surface, see B.1.a, c & d.
- 3. The **5-1/2**" **x 5**" production casing shall be cemented with at least **200**' **tie-back** into the previous casing. Operator shall provide method of verification.

#### C. PRESSURE CONTROL

- 1. 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.
- Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the intermediate casing shoe shall be 10,000 (10M) psi. Variance approved to use a 5M annular. This annular must be tested to 70% of its rated pressure (5000 psi).
- 3. Required safety valves, with appropriate wrenches and subs for the drill string being utilized, will be in the open position and accessible on the rig floor.

## **D. SPECIAL REQUIREMENTS**

- 1. 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.
  - a. The well sign on location shall include the surface and bottom hole lease numbers. <u>When the Communitization Agreement number is known, it shall also</u> <u>be on the sign.</u>

DR 09/28/2020

# **GENERAL REQUIREMENTS**

- 1. The BLM is to be notified in advance for a representative to witness:
  - a. Spudding the well (minimum of 24 hours)
  - b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
  - c. BOP/BOPE tests (minimum of 4 hours)

Eddy County: Call the Carlsbad Field Office, (575) 361-2822

Lea County: Call the Hobbs Field Station, (575) 393-3612

- 2. 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:
    - i. Notify the BLM when moving in and removing the Spudder Rig.
    - ii. Notify the BLM when moving in the 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
    - iii. BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
- 3. 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.
- 4. 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 available upon request. 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. <u>Wait on cement (WOC) for Potash Areas:</u> After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the

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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  $\underline{24}$  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. <u>Wait on cement (WOC) for Water Basin:</u> 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 <u>8 hours</u>. 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 the portion of 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. If the operator has proposed a multi-bowl wellhead assembly in the APD, it must meet or exceed the pressure rating of the BOP system. Additionally, 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. 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 Onshore Order 2 III.A.2.i must be followed.
- 5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the BOP/BOPE 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 which 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. The results of the test shall be made available upon request.
  - 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 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. This test shall be performed prior

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to the test at full stack pressure.

f. BOP/BOPE must be tested 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

1. 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

- 1. 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.
- 2. Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

#### **1. Geologic Formations**

TVD of target	12,361' EOL	Pilot hole depth	NA
MD at TD:	19,992'	Deepest expected fresh water:	207'

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface	Water	
Rustler	957	Water	
Top of Salt	1346	Salt	
Base of Salt	5058	Salt	
Lamar	5387	Salt Water	
Bell Canyon	5415	Salt Water	
Cherry Canyon	6350	Oil/Gas	
Brushy Canyon	7919	Oil/Gas	
Bone Spring Lime	9156	Oil/Gas	
1st Bone Spring Sand	10386	Oil/Gas	
2nd Bone Spring Sand	10906	Oil/Gas	
3rd Bone Spring Sand	11991	Target Oil/Gas	
Wolfcamp	12411	Not Penetrated	
Wolfcamp B	12756	Not Penetrated	

#### 2. Casing Program

Hole Size	Casing	g Interval	Csg. Size	Weight	Grade	Conn.	SF	SF Burst	SF	SF
Hole Size	From	То	Csy. 512e	(lbs)	Grade	Conn.	Collapse	SF Buist	Body	Joint
14.75"	0	1170	10.75"	45.5	N80	BTC	4.61	1.67	19.54	20.61
9.875"	0	8500	7.625"	29.7	HCL80	BTC	1.56	1.08	2.88	2.90
8.750"	8500	11845	7.625"	29.7	HCP110	TL-FJ	1.27	1.11	2.67	1.87
6.75"	0	11645	5.5"	23	P110	BTC	1.81	1.86	3.28	3.25
6.75"	11645	19,992	5"	18	P110	BTC	1.81	1.86	3.28	3.25
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet	1.6 Dry 1.8 Wet

Intermediate casing will be kept at least 1/3 full while running casing.to mitigate collapse. Surface burst based on 0.7 frac gradient at the shoe with Gas Gradient 0.1 psi/ft to surface and All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

The 5" casing will be run back 200' into the intermediate casing to ensure the coupling OD clearance is greater than .422" for the cement bond tie in.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	Y
Does the above casing design meet or exceed BLM's minimum standards? If not provide	Y
justification (loading assumptions, casing design criteria).	
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching	Y
the collapse pressure rating of the casing?	
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary?	
Is well located in SOPA but not in R-111-P?	Ν
If yes, are the first 2 strings cemented to surface and 3 <sup>rd</sup> string cement tied back	
500' into previous casing?	
la unalle sectore l'in D. 444. D. and OODAO	NI
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2 <sup>nd</sup> string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

#### 3. Cementing Program

Casing	# Sks	Wt. lb/ gal	YId ft3/ sack	H₂0 gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	558	13.5	1.75	9	12	Lead: Class C + 4% Gel + 1% CaCl2
Sun.	250	14.8	1.34	6.34	8	Tail: Class C + 2% CaCl2
Inter.	850	10.3	3.3	22	24	Halliburton tunded light
Stage 1	250	14.8	1.35	6.6	8	Tail: Class H
Prod	540	12.7	2	10.7	72	Lead: 50:50:10 H Blend
FIUU	1057	14.4	1.24	5.7	19	Tail: 50:50:2 Class H Blend

If losses are encountered in the intermediate section a DV/ECP tool will be run ~50' above the Lamar Lime top, cement will be adjusted accordingly if this contingency is necessary.

Volumes Subject to Observed Hole Conditions and/or Fluid Caliper Results Lab reports with the 500 psi compressive strength time for the cement will be onsite for review.

Casing String	TOC	% Excess
Surface	0'	50%
1 <sup>st</sup> Intermediate	0'	50%
Production	8,000'	35% OH in Lateral (KOP to EOL)

#### 4. Pressure Control Equipment

NI	A variance is requested for the use of a diverter on the surface casing.
Ν	See attached for schematic.

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Туре		x	Tested to:		
			Ann	ular	х	2500psi		
		5M	Blind Ram		х	5000psi		
9-7/8"	13-5/8"		Pipe Ram		х			
				Double	e Ram	х	5000psi	
			Other*					
			5M Ar	nnular	Х	5000psi		
	13-5/8"				Blind	Ram	Х	
6-3/4"		10M	3" 10M Pipe Ram		Ram	Х	10000psi	
			Double	e Ram	Х	rooopsi		
			Other*					

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

	Formation integrity test will be performed per Onshore Order #2.
Y	On Exploratory wells or 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. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
Y	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
	N Are anchors required by manufacturer?
Y	A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested.

#### 5. Mud Program

Depth		Turno	Weight	Viscosity	Water Loss	
From	То	Туре	(ppg)	viscosity	Water Loss	
0	Surf. Shoe	FW Gel	8.6 - 8.8	28-34	N/C	
Surf csg	9-5/8" Int shoe	Brine Diesel Emulsion	8.4 - 9	28-34	N/C	
7-5/8" Int shoe	Lateral TD	OBM	9.6 - 12.5	35-45	<20	

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

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

## 6. Logging and Testing Procedures

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

Additional logs planned		Interval		
Ν	Resistivity	Pilot Hole TD to ICP		
Ν	Density	Pilot Hole TD to ICP		
Y	CBL	Production casing (If cement not circulated to surface)		
Υ	Mud log	Intermediate shoe to TD		
Ν	PEX			

#### 7. Drilling Conditions

Condition	Specify what type and where?		
BH Pressure at deepest TVD	8035 psi at 12361' TVD		
Abnormal Temperature	NO 180 Deg. F.		

No abnormal pressure or temperature conditions are anticipated. Sufficient mud materials to maintain mud properties and weight increase requirements will be kept on location at all times.

Sufficient supplies of Paper/LCM for periodic sweeps to control seepage and losses will be maintained on location.

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

N H2S is presentY H2S Plan attached

#### 8. Other Facets of Operation

x	H2S Plan.
х	BOP & Choke Schematics.
х	Directional Plan

# NORTHERN DELAWARE BASIN

LEA COUNTY, NM GREEN BERET FED COM PROJECT GREEN BERET FED COM #602H

OWB PWP1

# **Anticollision Report**

17 February, 2020

## **Concho Resources LLC**

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Reference Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	GREEN BERET FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum
Reference	PWP1		

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria			
Interpolation Method:	Stations	Error Model:	ISCWSA	
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D	
Results Limited by:	Maximum ellipse separation of 1,000.0 usft	Error Surface:	Pedal Curve	
Warning Levels Evaluation	ated at: 2.00 Sigma	Casing Method:	Not applied	

Survey Tool Program			Date 2/17/2020		
	From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
	0.0 11,880.0	,	) PWP1 (OWB) 3 PWP1 (OWB)	Standard Keeper 104 MWD+IFR1+FDIR	Standard Wireline Keeper ver 1.0.4 OWSG MWD + IFR1 + FDIR Correction

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Dista Between Centres (usft)		Separation Factor	Warning
GREEN BERET FED COM PROJECT						
DUO SONIC 29 FED 4H - OWB - OWB						Out of range
GREEN BERET FED COM #501H - OWB - PWP1	2,500.0	2,501.3	60.0	47.3	4.728	CC, ES
GREEN BERET FED COM #501H - OWB - PWP1	2,600.0	2,601.3	61.2	48.1	4.683	SF
GREEN BERET FED COM #701H - OWB - PWP1	12,194.6	12,195.4	471.5	448.4	20.435	CC
GREEN BERET FED COM #701H - OWB - PWP1	19,992.7	20,227.0	502.4	366.3	3.692	ES, SF
GREEN BERET FED COM #702H - OWB - PWP1	2,415.9	2,418.1	90.0	83.2	13.155	CC
GREEN BERET FED COM #702H - OWB - PWP1	2,500.0	2,502.2	90.0	83.1	13.047	ES
GREEN BERET FED COM #702H - OWB - PWP1	19,992.7	20,249.9	718.5	581.8	5.253	SF
GREEN BERET FED COM #801H - OWB - PWP1	2,500.0	2,501.3	30.0	23.1	4.349	CC, ES
GREEN BERET FED COM #801H - OWB - PWP1	19,992.7	20.496.2	514.9	381.3	3.855	SF

Offset Design GREEN BERET FED COM PROJECT - GREEN BERET FED COM #501H - OWB - PWP1								Offset Site Error:	3.0 usft					
Survey Program: 0-MWD+IFR1+FDIR									Offset Well Error:	3.0 usf				
Reference		Offset		Semi Major Axis		Distance								
leasured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbo +N/-S (usft)	re Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.0	0.0	1.3	1.3	3.0	3.0	-90.29	-0.3	-60.0	60.0					
100.0	100.0	101.3	101.3	3.0	3.0	-90.29	-0.3	-60.0	60.0	54.0	6.00	9.995		
200.0	200.0	201.3	201.3	3.0	3.0	-90.29	-0.3	-60.0	60.0	54.0	6.04	9.930		
300.0	300.0	301.3	301.3	3.0	3.1	-90.29	-0.3	-60.0	60.0	53.9	6.12	9.798		
400.0	400.0	401.3	401.3	3.0	3.2	-90.29	-0.3	-60.0	60.0	53.8	6.25	9.608		
500.0	500.0	501.3	501.3	3.1	3.4	-90.29	-0.3	-60.0	60.0	53.6	6.40	9.372		
600.0	600.0	601.3	601.3	3.1	3.6	-90.29	-0.3	-60.0	60.0	53.4	6.59	9.104		
700.0	700.0	701.3	701.3	3.1	3.8	-90.29	-0.3	-60.0	60.0	53.2	6.81	8.816		
800.0	800.0	801.3	801.3	3.2	4.0	-90.29	-0.3	-60.0	60.0	53.0	7.04	8.518		
900.0	900.0	901.3	901.3	3.2	4.2	-90.29	-0.3	-60.0	60.0	52.7	7.30	8.216		
1,000.0	1,000.0	1,001.3	1,001.3	3.2	4.5	-90.29	-0.3	-60.0	60.0	52.4	7.58	7.918		
1,100.0	1,100.0	1,101.3	1,101.3	3.3	4.8	-90.29	-0.3	-60.0	60.0	52.1	7.87	7.627		
1,200.0	1,200.0	1,201.3	1,201.3	3.4	5.1	-90.29	-0.3	-60.0	60.0	51.8	8.17	7.346		
1,300.0	1,300.0	1,301.3	1,301.3	3.4	5.4	-90.29	-0.3	-60.0	60.0	51.5	8.48	7.076		
1,400.0	1,400.0	1,401.3	1,401.3	3.5	5.7	-90.29	-0.3	-60.0	60.0	51.2	8.80	6.818		
1,500.0	1,500.0	1,501.3	1,501.3	3.5	6.0	-90.29	-0.3	-60.0	60.0	50.9	9.13	6.573		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation
Anticollision Report

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<b>Reference Wellbore</b>	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

irvey Pro	ogram: 0-iv	IWD+IFR1+F											Offset Well Error:	3.0 us
Refer	ence	Offs	et	Semi Majo	r Axis				Dist	ance				
easured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface	Offset Wellbo +N/-S	+E/-W	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
		(usit)		(usit)	(usit)	(°)	(usft)	(usft)	(usit)	(usit)	(usit)			
1,600.0	1,600.0	1,601.3	1,601.3	3.6	6.3	-90.29	-0.3	-60.0	60.0		9.46	6.340		
1,700.0	1,700.0	1,701.3	1,701.3	3.7	6.6	-90.29	-0.3	-60.0	60.0		9.81	6.119		
1,800.0	1,800.0	1,801.3	1,801.3	3.8	6.9	-90.29	-0.3	-60.0	60.0	49.8	10.15	5.910		
1,900.0	1,900.0	1,901.3	1,901.3	3.9	7.2	-90.29	-0.3	-60.0	60.0	49.5	10.50	5.713		
2,000.0	2,000.0	2,001.3	2,001.3	3.9	7.6	-90.29	-0.3	-60.0	60.0	49.1	10.86	5.525		
2,100.0	2,100.0	2,101.3	2,101.3	4.0	7.9	-90.29	-0.3	-60.0	60.0	48.8	11.22	5.348		
0 000 0	0 000 0	0.004.0	0.004.0			00.00	0.0	00.0	00.0	40.4	44.50	E 404		
2,200.0	2,200.0	2,201.3	2,201.3	4.1	8.2	-90.29	-0.3	-60.0	60.0	48.4	11.58	5.181		
2,300.0	2,300.0	2,301.3	2,301.3	4.2	8.6	-90.29	-0.3	-60.0	60.0	48.1	11.95	5.022		
2,400.0	2,400.0	2,401.3	2,401.3	4.3	8.9	-90.29	-0.3	-60.0	60.0	47.7	12.32	4.871		
2,500.0	2,500.0	2,501.3	2,501.3	4.4	9.2	-90.29	-0.3	-60.0	60.0	47.3	12.69	4.728 C		
2,600.0	2,600.0	2,601.3	2,601.3	4.5	9.6	-133.28	-0.3	-60.0	61.2	48.1	13.07	4.683 S	F	
2,671.7	2,671.6	2,672.9	2,672.9	4.5	9.8	-135.47	-0.3	-60.0	63.6	50.2	13.35	4.763		
2,700.0	2,699.8	2,072.9	2,072.9	4.5	9.8 9.9	-135.47	-0.3	-60.0	64.8	50.2	13.35	4.703		
					9.9 10.3				69.3					
2,800.0	2,799.7	2,801.0	2,801.0	4.6		-139.93	-0.3	-60.0		55.4	13.87	4.993		
2,900.0	2,899.5	2,900.8	2,900.8	4.7	10.6	-142.92	-0.3	-60.0	73.9	59.6	14.30	5.172		
3,000.0	2,999.3	3,000.6	3,000.6	4.8	10.9	-145.55	-0.3	-60.0	78.8	64.1	14.74	5.348		
3,100.0	3,099.1	3,100.4	3.100.4	4.9	11.3	-147.86	-0.3	-60.0	83.8	68.6	15.18	5.520		
3,200.0	3,198.9	3,200.2	3,200.2	4.5 5.0	11.6	-149.91	-0.3	-60.0	88.9	73.3	15.64	5.689		
3,300.0	3,298.8	3,300.1	3,300.1	5.1	12.0	-149.91	-0.3	-60.0	94.2		16.09	5.852		
3,400.0	3,398.6	3,399.9	3,399.9	5.2	12.0	-153.37	-0.3	-60.0	99.5	82.9	16.56	6.010		
	3,498.4			5.3	12.3					87.9	17.02			
3,500.0	3,490.4	3,499.7	3,499.7	5.3	12.7	-154.84	-0.3	-60.0	104.9	67.9	17.02	6.162		
3,600.0	3.598.2	3,599.5	3,599.5	5.4	13.0	-156.16	-0.3	-60.0	110.3	92.9	17.49	6.310		
3,700.0	3,698.1	3,699.4	3,699.4	5.5	13.4	-157.36	-0.3	-60.0	115.8	97.9	17.96	6.452		
3,800.0	3,797.9	3,799.2	3,799.2	5.6	13.7	-158.45	-0.3	-60.0	121.4	103.0	18.43	6.588		
3,900.0	3,897.7	3,899.0	3,899.0	5.7	14.1	-159.44	-0.3	-60.0	127.0	108.1	18.90	6.720		
4,000.0	3,997.5	3,998.8	3,998.8	5.8	14.4	-160.35	-0.3	-60.0	132.6	113.2	19.37	6.847		
4,000.0	0,001.0	5,550.0	0,000.0	0.0	14.4	-100.00	-0.5	-00.0	102.0	110.2	15.57	0.047		
4,100.0	4,097.3	4,098.6	4,098.6	5.9	14.8	-161.18	-0.3	-60.0	138.3	118.4	19.84	6.969		
4,200.0	4,197.2	4,198.5	4,198.5	6.0	15.1	-161.95	-0.3	-60.0	144.0	123.6	20.32	7.086		
4,300.0	4,297.0	4,298.3	4,298.3	6.1	15.5	-162.66	-0.3	-60.0	149.7	128.9	20.79	7.199		
4,400.0	4,396.8	4,398.1	4,398.1	6.2	15.8	-163.32	-0.3	-60.0	155.4	134.1	21.27	7.307		
4,500.0	4,496.6	4,497.9	4,497.9	6.3	16.2	-163.93	-0.3	-60.0	161.1	139.4	21.74	7.412		
1,000.0	1,100.0	1,107.10	1,101.0	0.0	10.2	100.00	0.0	00.0						
4,600.0	4,596.4	4,597.7	4,597.7	6.4	16.5	-164.50	-0.3	-60.0	166.9	144.7	22.22	7.513		
4,700.0	4,696.3	4,697.6	4,697.6	6.5	16.9	-165.03	-0.3	-60.0	172.7	150.0	22.69	7.610		
4,800.0	4,796.1	4,797.4	4,797.4	6.6	17.2	-165.53	-0.3	-60.0	178.5	155.3	23.17	7.703		
4,900.0	4,895.9	4,897.2	4,897.2	6.7	17.6	-165.99	-0.3	-60.0	184.3	160.6	23.65	7.794		
5,000.0	4,995.7	4,997.0	4,997.0	6.8	17.9	-166.43	-0.3	-60.0	190.1	166.0	24.12	7.881		
.,	,	,	,	2.0			2.0							
5,100.0	5,095.5	5,096.8	5,096.8	6.9	18.3	-166.84	-0.3	-60.0	195.9	171.3	24.60	7.965		
5,200.0	5,195.4	5,196.7	5,196.7	7.1	18.6	-167.23	-0.3	-60.0	201.8	176.7	25.08	8.046		
5,300.0	5,295.2	5,296.5	5,296.5	7.2	19.0	-167.59	-0.3	-60.0	207.6	182.1	25.56	8.124		
5,400.0	5,395.0	5,396.3	5,396.3	7.3	19.4	-167.94	-0.3	-60.0	213.5	187.4	26.03	8.199		
5,500.0		5,496.1	5,496.1	7.4	19.7	-168.27	-0.3	-60.0	219.3	192.8	26.51	8.273		
5,600.0	5,594.6	5,602.1	5,602.1	7.5	20.1	-168.30	1.5	-59.6	223.9	196.9	26.99	8.294		
5,700.0	5,694.5	5,708.4	5,708.3	7.6	20.5	-167.69	7.1	-58.2	225.6	198.2	27.44	8.221		
5,800.0	5,794.3	5,810.9	5,810.3	7.7	20.8	-166.60	15.5	-56.2	225.1	197.2	27.86	8.077		
5,900.0		5,910.8	5,909.8	7.9	21.2	-165.47	23.9	-54.1	224.4	196.1	28.29	7.932		
6,000.0	5,993.9	6,010.7	6,009.4	8.0	21.5	-164.35	32.4	-52.0	223.8		28.71	7.794		
	,	.,	,											
6,100.0	6,093.7	6,110.6	6,108.9	8.1	21.9	-163.21	40.9	-50.0	223.3	194.1	29.13	7.664		
6,200.0	6,193.6	6,210.5	6,208.4	8.2	22.2	-162.07	49.4	-47.9	222.9	193.3	29.55	7.541		
6,300.0	6,293.4	6,310.4	6,307.9	8.3	22.6	-160.93	57.8	-45.8	222.5		29.97	7.425		
6,400.0	6,393.2	6,410.3	6,407.4	8.4	22.9	-159.79	66.3	-43.8	222.3	191.9	30.38	7.316		
6,500.0	6,493.0	6,510.2	6,507.0	8.6	23.3	-158.64	74.8	-41.7	222.1	191.3	30.80	7.212		
.,	.,	.,	.,	2.0										
		6,610.1	6,606.5	8.7	23.6	-157.49	83.2	-39.6	222.1		31.21	7.115		

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Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Reference Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	GREEN BERET FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Irvey Pro	oram: 0-M	WD+IFR1+F	JIR										Offect Woll Error	3.0 u
Refer	-	Offs		Semi Majo	Avis				Dist	ance			Offset Well Error:	3.0 u
easured	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbo	re Centre	Between	Between		Separation	Warning	
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	(usft)	(usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Centres (usft)	Ellipses (usft)	Separation (usft)	Factor	-	
6,619.1	6,611.9	6,629.1	6,625.5	8.7	23.7	-157.27	84.9	-39.2	222.1	190.8	31.29	7.097		
6,700.0	6,692.7	6,710.0	6,706.0	8.8	23.7	-156.34	91.7	-33.2	222.1			7.024		
6,800.0	6,792.5	6,809.9	6,805.5	8.9	24.4	-155.19	100.2	-35.5	222.2			6.938		
6,900.0	6,892.3	6,909.8	6,905.0	9.0	24.7	-154.05	108.7	-33.4	222.4			6.857		
7,000.0	6,992.1	7,009.7	7,004.5	9.1	25.1	-152.90	117.1	-31.4	222.7			6.781		
7,100.0	7,091.9	7,109.6	7,104.1	9.3	25.4	-151.76	125.6	-29.3	223.1	189.9	33.25	6.710		
7,200.0	7,191.8	7,209.5	7,203.6	9.4	25.8	-150.63	134.1	-27.2	223.6	189.9	33.65	6.644		
7,300.0	7,291.6	7,309.4	7,303.1	9.5	26.1	-149.50	142.6	-25.2	224.1	190.1	34.05	6.582		
7,400.0	7,391.4	7,409.3	7,402.6	9.6	26.5	-148.37	151.0	-23.1	224.8			6.525		
7,500.0	7,491.2	7,509.2	7,502.1	9.8	26.8	-147.25	159.5	-21.0	225.5		34.85	6.471		
7,600.0	7,591.0	7,609.1	7,601.7	9.9	27.2	-146.14	168.0	-19.0	226.3	191.1	35.25	6.421		
7,700.0	7,690.9	7,709.0	7,701.2	10.0	27.6	-145.04	176.5	-16.9	227.2	191.6	35.64	6.375		
7,800.0	7,790.7	7,808.9	7,800.7	10.0	27.9	-143.95	184.9	-14.8	228.2			6.333		
7,900.0	7,890.5	7,908.8	7,900.2	10.2	28.3	-142.87	193.4	-12.8	229.3			6.293		
8,000.0	7,990.3	8,008.7	7,999.7	10.4	28.6	-141.79	201.9	-10.7	230.4			6.257		
8,100.0	8,090.2	8,108.6	8,099.3	10.5	29.0	-140.73	210.4	-8.6	231.7	194.4	37.22	6.224		
8,200.0	8,190.0	8,208.5	8,198.8	10.6	29.3	-139.68	218.8	-6.6	233.0	195.4	37.62	6.193		
8,300.0	8,289.8	8,308.4	8,298.3	10.7	29.7	-138.64	227.3	-4.5	234.4		38.01	6.166		
8,400.0	8,389.6	8,408.3	8,397.8	10.8	30.1	-137.62	235.8	-2.4	235.8		38.41	6.140		
8,500.0	8,489.4	8,508.2	8,497.3	11.0	30.4	-136.61	244.3	-0.4	237.4			6.118		
8,600.0	8,589.3	8,608.1	8,596.9	11.1	30.8	-135.61	252.7	1.7	239.0	199.8	39.19	6.097		
8,700.0	8,689.1	8,708.0	8,696.4	11.2	31.1	-134.62	261.2	3.8	240.7	201.1	39.59	6.079		
8,800.0	8,788.9	8,807.9	8,795.9	11.3	31.5	-133.65	269.7	5.8	242.4		39.98	6.063		
8,900.0	8,888.7	8,907.8	8,895.4	11.5	31.8	-132.69	278.2	7.9	244.2			6.048		
9,000.0	8,988.5	9,007.7	8,994.9	11.6	32.2	-131.75	286.6	10.0	246.1			6.036		
9,100.0	9,088.4	9,107.6	9,094.4	11.7	32.6	-130.82	295.1	12.0	248.1	206.9	41.17	6.025		
9,200.0	9,188.2	9,207.5	9,194.0	11.8	32.9	-129.91	303.6	14.1	250.1	208.5	44 57	6.016		
	9,188.2				32.9				250.1			6.008		
9,300.0		9,307.4	9,293.5	12.0		-129.01	312.0	16.2						
9,400.0	9,387.8	9,407.3	9,393.0	12.1	33.6	-128.13	320.5	18.2	254.3			6.002		
9,500.0	9,487.6	9,507.2	9,492.5	12.2	34.0	-127.26	329.0	20.3	256.5		42.77	5.997		
9,600.0	9,587.5	9,607.1	9,592.0	12.3	34.4	-126.40	337.5	22.4	258.8	215.6	43.18	5.993		
9,700.0	9,687.3	9,707.0	9,691.6	12.5	34.7	-125.56	345.9	24.4	261.1	217.5	43.58	5.991		
			-											
9,800.0	9,787.1	9,806.9	9,791.1	12.6	35.1	-124.74	354.4	26.5	263.5			5.990		
9,900.0	9,886.9	9,906.8	9,890.6	12.7	35.4	-123.93	362.9	28.6	265.9			5.989		
10,000.0	9,986.7	10,006.7	9,990.1	12.8	35.8	-123.14	371.4	30.7	268.4	223.6		5.990		
10,100.0	10,086.6	10,106.6	10,089.6	13.0	36.1	-122.36	379.8	32.7	270.9	225.7	45.21	5.992		
10 200 0	10 106 4	10 206 5	10 100 0	10.4	26 F	121 50	200.2	24.0	070 F	007.0	16.00	E 004		
10,200.0	10,186.4	10,206.5	10,189.2	13.1	36.5	-121.59	388.3	34.8	273.5			5.994		
10,300.0	10,286.2	10,306.4	10,288.7	13.2	36.9	-120.84	396.8	36.9	276.1	230.1	46.04	5.997		
10,400.0		10,406.3	10,388.2	13.3	37.2	-120.10	405.3	38.9	278.8			6.001		
10,500.0	10,485.8	10,513.2		13.5	37.6	-119.95	411.2	41.2	280.9			5.989		
10,600.0	10,585.7	10,623.4	10,603.6	13.6	37.9	-124.19	395.4	43.6	279.3	231.7	47.58	5.870		
0 670 0	10 004 5	10 700 0	10 670 5	40 -	00.4	100.10	000 1	45.5	077 0	000.0	40.00	F 7F 4		
10,678.9		10,700.9	10,676.5	13.7	38.1	-130.19	369.4	45.5	277.9			5.751		
10,700.0	10,685.5	10,719.7	10,693.6	13.7	38.2	-132.01	361.4	45.9	278.1	229.5		5.727		
10,800.0	10,785.3	10,798.6	10,760.9	13.8	38.4	-140.93	320.5	47.7	285.1	235.4	49.71	5.736		
10,900.0	10,885.1	10,861.2	10,809.0	14.0	38.5	-149.07	280.6	49.1	306.9	256.2	50.71	6.051		
11,000.0	10,984.9	10,910.5	10,843.0	14.1	38.6	-155.71	244.9	50.2	345.3	294.2	51.19	6.746		
11,100.0	11,084.8	10,950.0	10,867.4	14.2	38.6	-160.95	213.9	51.0	398.6			7.794		
11,200.0	11,184.6	10,980.8	10,884.7	14.3	38.7	-164.88	188.4	51.6	463.3	412.5	50.80	9.120		
11,300.0	11,284.4	11,006.2	10,897.6	14.5	38.7	-167.99	166.5	52.1	536.3	485.9	50.40	10.640		
11,400.0	11,384.2	11,025.0	10,906.5	14.6	38.7	-170.18	150.0	52.4	615.2	565.2	50.03	12.298		
11,500.0	11,484.0	11,050.0	10,917.2	14.7	38.7	-172.97	127.4	52.9	698.5			14.011		
11,600.0	11,583.9	11,059.6	10,921.0	14.8	38.8	-173.99	118.6	53.0	784.8	735.2	49.63	15.812		

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Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:
Project:	LEA COUNTY, NM	TVD Reference:
Reference Site:	GREEN BERET FED COM PROJECT	MD Reference:
Site Error:	3.0 usft	North Reference:
Reference Well:	GREEN BERET FED COM #602H	Survey Calculation Method:
Well Error:	3.0 usft	Output errors are at
Reference Wellbore	OWB	Database:
Reference Design:	PWP1	Offset TVD Reference:

Well GREEN BERET FED COM #602H KB=26' @ 3306.2usft (MCVAY 8) KB=26' @ 3306.2usft (MCVAY 8) Grid Minimum Curvature 2.00 sigma edm Offset Datum

Offs	et Desig	gn	GREEN	N BERET	FED COM	/ PROJI	ECT - GRI	EEN BERET	FED CON	I #501H -	OWB - F	WP1		Offset Site Error:	3.0 usft
Surve	ey Program	<b>n:</b> 0-MV	VD+IFR1+F	DIR										Offset Well Error:	3.0 usft
	Reference	Э	Offse	ət	Semi Major	r Axis				Dist	ance				
Meas			Measured	Vertical	Reference	Offset	Highside	Offset Wellbo	re Centre	Between	Between	Minimum	Separation	Warning	
Dep (ust		pth	Depth	Depth	(	(	Toolface	+N/-S	+E/-W	Centres	Ellipses	Separation	Factor		
(us	n) (us	sft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
		,683.7	( <b>ustt)</b> 11,075.0	<b>(usπ)</b> 10,926.7	<b>(usπ)</b> 15.0	( <b>usπ)</b> 38.8	-175.59	(usft) 104.3	(usft) 53.3	( <b>USII</b> ) 873.6		( <b>usπ)</b> 49.58	17.619		

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Reference Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	GREEN BERET FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

-	-	tandard Keep											Offset Well Error:	3.0 u
Refer		Offs		Semi Major					Dista					
easured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbo +N/-S (usft)	re Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
6,900.0	6,892.3	6,937.7	6,933.9	9.0	9.1	50.00	165.3	1,164.0	994.0	981.6	12.39	80.225		
7,000.0	6,992.1	7,037.2	7,033.1	9.1	9.2	50.00	170.0	1,158.0	984.0	971.4		78.324		
7,100.0	7,091.9	7,136.7	7,132.3	9.3	9.3	50.00	174.8	1,152.0	974.0	961.2		76.464		
7,200.0	7,191.8	7,236.2	7,231.5	9.4	9.4	50.00	179.5	1,145.9	964.0	951.0		74.644		
7,300.0	7,291.6	7,335.7	7,330.7	9.5	9.5	50.00	184.3	1,139.9	953.9	940.8		72.864		
7,400.0	7,391.4	7,435.2	7,429.9	9.6	9.6	50.00	189.0	1,133.9	943.9	930.6		71.123		
7,400.0	7,391.4	7,433.2	1,423.3	5.0	9.0	50.00	109.0	1,155.5	545.5	550.0	13.27	11.125		
7,500.0	7,491.2	7,534.7	7,529.1	9.8	9.7	50.00	193.7	1,127.9	933.9	920.4	13.45	69.421		
7,600.0	7,591.0	7,634.2	7,628.3	9.9	9.8	50.00	198.5	1,121.9	923.9	910.2	13.64	67.756		
7,700.0	7,690.9	7,733.6	7,727.5	10.0	9.9	50.00	203.2	1,115.9	913.8	900.0		66.129		
7,800.0	7,790.7	7,833.1	7,826.7	10.1	10.0	50.00	207.9	1,109.9	903.8	889.8		64.537		
7,900.0	7,890.5	7,932.6	7,925.9	10.2	10.2	50.00	212.7	1,103.9	893.8	879.6		62.981		
,	,							,						
8,000.0	7,990.3	8,032.1	8,025.1	10.4	10.3	50.00	217.4	1,097.9	883.8	869.4	14.38	61.459		
8,100.0	8,090.2	8,131.6	8,124.3	10.5	10.4	50.00	222.2	1,091.9	873.8	859.2	14.57	59.972		
8,200.0	8,190.0	8,231.1	8,223.5	10.6	10.5	50.00	226.9	1,085.9	863.7	849.0	14.76	58.517		
8,300.0	8,289.8	8,330.6	8,322.7	10.7	10.6	50.00	231.6	1,079.9	853.7	838.8	14.95	57.095		
8,400.0	8,389.6	8,430.1	8,421.9	10.8	10.7	50.00	236.4	1,073.9	843.7	828.6	15.15	55.705		
8,500.0	8,489.4	8,529.6	8,521.1	11.0	10.8	50.00	241.1	1,067.9	833.7	818.3	15.34	54.345		
8,600.0	8,589.3	8,629.1	8,620.3	11.1	10.9	50.00	245.9	1,061.9	823.7	808.1	15.54	53.016		
8,700.0	8,689.1	8,728.6	8,719.5	11.2	11.0	50.00	250.6	1,055.9	813.6	797.9	15.73	51.716		
8,800.0	8,788.9	8,828.1	8,818.7	11.3	11.1	50.00	255.3	1,049.8	803.6	787.7	15.93	50.444		
8,900.0	8,888.7	8,927.6	8,917.9	11.5	11.2	50.00	260.1	1,043.8	793.6	777.5	16.13	49.201		
9,000.0	8,988.5	9,027.1	9,017.1	11.6	11.4	50.00	264.8	1,037.8	783.6	767.2	16.33	47.984		
9,100.0	9,088.4	9,126.6	9,116.3	11.7	11.5	50.00	269.5	1,031.8	773.6	757.0	16.53	46.794		
9,200.0	9,188.2	9,226.1	9,215.5	11.8	11.6	50.00	274.3	1,025.8	763.5	746.8	16.73	45.630		
9,300.0	9,288.0	9,325.6	9,314.7	12.0	11.7	50.00	279.0	1,019.8	753.5	736.6	16.94	44.491		
9,400.0	9,387.8	9,425.1	9,413.9	12.1	11.8	50.00	283.8	1,013.8	743.5	726.4	17.14	43.377		
9,500.0	9,487.6	9,524.6	9,513.1	12.2	11.9	50.00	288.5	1,007.8	733.5	716.1	17.35	42.287		
9,600.0	9,587.5	9,624.1	9,612.3	12.3	12.0	50.00	293.2	1,001.8	723.5	705.9	17.55	41.220		
9,700.0	9,687.3	9,723.6	9,711.5	12.5	12.1	50.00	298.0	995.8	713.4	695.7	17.76	40.175		
9,800.0	9,787.1	9,823.1	9,810.7	12.6	12.3	50.00	302.7	989.8	703.4	685.4	17.97	39.153		
9,900.0	9,886.9	9,922.6	9,909.9	12.7	12.4	50.00	307.4	983.8	693.4	675.2	18.17	38.152		
10,000.0	9,986.7	10,022.1	10,009.1	12.8	12.5	50.01	312.2	977.8	683.4	665.0		37.173		
10,100.0	10,086.6	10,121.6	10,108.3	13.0	12.6	50.01	316.9	971.8	673.3	654.8	18.59	36.213		
10,200.0	10,186.4	10,221.1	10,207.5	13.1	12.7	50.01	321.7	965.8	663.3	644.5		35.274		
10,300.0		10,320.6	10,306.7	13.2	12.8	50.01	326.4	959.8	653.3	634.3		34.354		
10,400.0	10,386.0	10,420.1	10,405.9	13.3	13.0	50.01	331.1	953.8	643.3	624.1	19.23	33.453		
10 505 5	40	40 - 10 -	10 555					<b></b>		<b></b> -		00		
10,500.0	10,485.8	10,519.6	10,505.1	13.5	13.1	50.01	335.9	947.7	633.3	613.8		32.570		
10,600.0	10,585.7	10,619.1	10,604.3	13.6	13.2	50.01	340.6	941.7	623.2	603.6		31.705		
10,700.0		10,718.5	10,703.5	13.7	13.3	50.01	345.3	935.7	613.2	593.3		30.857		
10,800.0		10,818.0	10,802.7	13.8	13.4	50.01	350.1	929.7	603.2	583.1	20.09	30.027		
10,900.0	10,885.1	10,917.5	10,901.9	14.0	13.5	50.01	354.8	923.7	593.2	572.9	20.31	29.213		
44.000.0	40.004.5	44 047 0	44.004		10 -	F0.04		o 17 -	F00 -	500 F	00 55	00.110		
11,000.0		11,017.0	11,001.1	14.1	13.7	50.01	359.6	917.7	583.2	562.6		28.416		
11,100.0		11,116.5	11,100.3	14.2	13.8	50.01	364.3	911.7	573.1	552.4	20.74	27.634		
11,200.0		11,216.0	11,199.5	14.3	13.9	50.01	369.0	905.7	563.1	542.2		26.867		
11,300.0		11,315.5	11,298.7	14.5	14.0	50.01	373.8	899.7	553.1	531.9		26.116		
11,400.0	11,384.2	11,415.0	11,398.0	14.6	14.1	50.01	378.5	893.7	543.1	521.7	21.40	25.379		
			11 1 <del>1 -</del> -							<b>_</b> ·	<b></b>	0		
11,500.0		11,514.5	11,497.2	14.7	14.3	50.01	383.2	887.7	533.1	511.4	21.62	24.656		
11,600.0		11,614.0	11,596.4	14.8	14.4	50.01	388.0	881.7	523.0	501.2		23.947		
11,700.0		11,713.5	11,695.6	15.0	14.5	50.01	392.7	875.7	513.0	490.9		23.252		
11,800.0	,	11,813.0	11,794.8	15.1	14.6	50.02	397.5	869.7	503.0	480.7		22.570		
11,879.4	11,862.8	11,892.0	11,873.6	15.2	14.7	50.02	401.2	864.9	495.0	472.6	22.46	22.037		
44.000 -												<b>0</b> · · · · ·		
11 900 0	11,883.3	11,912.5	11 80/ 0	15.2	14.7	3.83	402.2	863.7	493.0	470.4	22.53	21.884		

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Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Reference Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	GREEN BERET FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

urvev Pro	ogram: 0-S	tandard Keer	er 104, 121	21-MWD+IFR	1+FDIR								Offset Well Error:	3.0 us
Refer	-	Offs		Semi Majo					Dist	ance			Onset wen Error:	3.0 u
	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbo	re Centre	Between	Between	Minimum	Separation	Warning	
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	(usft)	(usft)	Toolface (°)	+N/-S	+E/-W	Centres (usft)	Ellipses (usft)	Separation (usft)		wannig	
				. ,			(usft)	(usft)						
11,925.0		11,937.3	11,918.7	15.2	14.8	-50.11	403.4	862.2	490.4			21.742		
11,950.0	11,933.2	11,962.0	11,943.3	15.2	14.8	-67.74	404.5	860.7	487.8			21.599		
11,975.0	11,958.0	11,986.5	11,967.7	15.2	14.8	-75.33	405.7	859.2	485.2			21.457		
12,000.0		12,010.7	11,991.8	15.2	14.9	-79.83	406.9	857.7	482.7	460.0		21.316		
12,025.0	12,006.8	12,034.6	12,015.6	15.2	14.9	-83.06	408.0	856.3	480.3	457.6	22.68	21.179		
12,050.0	12,030.8	12,058.0	12,039.1	15.2	14.9	-85.71	409.1	854.9	478.0	455.3	22.71	21.048		
12,075.0		12,081.1	12,062.0	15.2	14.9	-88.03	410.2	853.5	476.0			20.925		
12,100.0		12,103.6	12,084.5	15.2	15.0	-90.17	411.3	852.1	474.3			20.811		
12,125.0		12,126.0	12,106.8	15.2	15.0	-92.21	412.3	850.8	473.0		22.84	20.709		
12,150.0		12,150.3	12,131.1	15.2	15.0	-94.24	412.6	849.3	472.1	449.2		20.616		
12,175.0	12,143.3	12,175.3	12,156.0	15.3	15.0	-96.18	411.6	847.8	471.6	448.6	22.98	20.519		
10 101 0	40 450 5	40 405 4	40.470.0	45.0	45.0	07.05	400.0	0.40.0	474 5	440.4	00.07	00 405 6		
12,194.6		12,195.4	12,176.0	15.3	15.0	-97.65	409.8	846.6	471.5		23.07	20.435 C		
12,200.0		12,201.0	12,181.6	15.3	15.0	-98.05	409.2	846.3	471.5		23.10	20.411		
12,225.0		12,227.7	12,207.9	15.3	15.0	-99.87	405.2	844.8	471.7	448.5		20.285		
12,250.0		12,255.2	12,234.8	15.3	15.1	-101.63	399.6	843.2	472.4	448.9		20.133		
12,275.0	12,220.9	12,283.7	12,262.2	15.3	15.1	-103.36	392.1	841.6	473.4	449.7	23.74	19.945		
12,300.0	12,238.1	12,313.3	12,290.3	15.3	15.1	-105.05	382.7	840.0	474.8	450.7	24.09	19.712		
12,325.0		12,344.1	12,318.7	15.4	15.1	-106.70	371.0	838.4	476.5			19.428		
12,350.0		12,376.2	12,347.5	15.4	15.1	-108.32	356.9	836.8	478.4	453.4	25.06	19.089		
12,375.0		12,409.7	12,376.5	15.4	15.1	-109.90	340.2	835.3	480.6			18.697		
12,400.0	12,296.8	12,444.6	12,405.4	15.4	15.1	-111.43	320.7	833.7	483.0	456.5	26.45	18.258		
12,425.0	12,308.7	12,481.1	12,433.9	15.4	15.1	-112.91	298.1	832.2	485.5	458.2	27.30	17.784		
12,425.0		12,401.1	12,453.9	15.5	15.1	-112.91	290.1	830.8	488.1	459.8		17.289		
12,475.0		12,558.9	12,488.6	15.5	15.2	-115.65	242.9	829.5	490.6		29.22	16.790		
12,500.0		12,600.3	12,513.9	15.5	15.2	-116.88	210.1	828.2	493.1	462.8		16.304		
12,525.0	12,344.6	12,643.4	12,537.0	15.5	15.2	-118.00	173.9	827.2	495.4	464.2	31.26	15.847		
12,550.0	12,350.5	12,688.0	12,557.5	15.5	15.3	-118.98	134.2	826.4	497.5	465.3	32.24	15.433		
12,550.0		12,000.0	12,557.5	15.6	15.3	-119.80	91.6	825.7	497.3			15.076		
12,600.0		12,734.0	12,587.8	15.6	15.3	-120.44	46.3	825.4	500.8			14.784		
12,625.0		12,829.3	12,596.7	15.6	15.4	-120.88	-1.0	825.3	501.8		34.46	14.565		
12,648.0	12,361.0	12,874.0	12,600.6	15.6	15.4	-121.09	-45.5	825.5	502.4	467.6	34.82	14.431		
12,700.0	12,361.3	12,934.3	12,601.2	15.7	15.4	-121.12	-105.8	826.0	502.5	467.4	35.08	14.323		
12,800.0		13,034.3	12,601.2	15.8	15.5	-121.12	-205.8	826.9	502.5			14.136		
12,900.0		13,134.3	12,602.3	15.9	15.6	-121.12	-305.8	827.9	502.5		36.09	13.925		
13,000.0		13,134.3	12,602.3	16.1	15.0	-121.12	-405.8	828.8	502.5		36.69	13.694		
			12,602.0											
13,100.0	12,363.5	13,334.3	12,003.4	16.3	15.9	-121.12	-505.8	829.7	502.5	465.1	37.37	13.447		
13,200.0	12,364.0	13.434.3	12,603.9	16.6	16.1	-121.12	-605.8	830.6	502.5	464.4	38.10	13.187		
13,300.0		13,534.3	12,603.5	16.9	16.3	-121.12	-705.8	831.6	502.5			12.918		
	12,365.1		12,605.0	10.9	16.6	-121.12	-805.8	832.5	502.5		39.75	12.910		
13,400.0			12,605.6	17.2	17.0	-121.12	-905.8	833.4	502.5			12.041		
	12,365.6			17.6	17.0	-121.12	-905.8 -1,005.8	834.3	502.5 502.5			12.360		
13,000.0	12,300.2	13,834.3	12,000. I	10.1	0.11	-121.12	-1,005.6	034.3	502.5	400.9	41.61	12.011		
13,700.0	12,366.7	13,934.3	12,606.7	18.6	18.0	-121.13	-1,105.8	835.3	502.5	459.9	42.60	11.795		
13,800.0		14,034.3	12,607.2	19.2	18.5	-121.13	-1,205.7	836.2	502.5			11.514		
13,900.0	-	14,034.3	12,607.2	19.2	10.5	-121.13	-1,305.7	837.1	502.5			11.236		
14,000.0		14,134.3	12,608.3	20.4		-121.13	-1,305.7					10.962		
-				20.4	19.7 20.4			838.0 830.0	502.5			10.962		
14,100.0	12,300.9	14,334.3	12,608.8	21.0	20.4	-121.13	-1,505.7	839.0	502.5	455.5	40.99	10.094		
14,200.0	12,369.5	14,434.3	12,609.4	21.7	21.1	-121.13	-1,605.7	839.9	502.5	454.3	48.17	10.432		
14,200.0		14,434.3	12,609.9	21.7	21.1	-121.13	-1,705.7	840.8	502.5		49.38	10.432		
14,300.0		14,534.3	12,610.5	22.4	21.8	-121.13	-1,805.7	840.8	502.5			9.927		
14,500.0		14,734.3	12,611.0	23.8	23.2	-121.13	-1,905.7	842.6	502.5			9.686		
14,000.0	12,371.6	14,834.3	12,611.6	24.5	24.0	-121.13	-2,005.7	843.6	502.5	449.3	53.16	9.451		
14 700 0	12,372.2	14,934.3	12 612 1	25.3	24.7	-121.13	-2,105.7	844.5	502.5	448.0	54.47	9.225		
14,100.0	12.312.2	14,934.3	12,012.1	20.3	24.7	-121.13	-2.105./	044.5	JUZ.5	440.0	04.47	9.220		

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Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Reference Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	GREEN BERET FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

													Offset Well Error:	3.0 us
Refere	ence	Offs	et	Semi Majo	Axis				Dist	ance				
easured	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbo	re Centre	Between	Between	Minimum	Separation	Warning	
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	(usft)	(usft)	Toolface (°)	+N/-S	+E/-W	Centres (usft)	Ellipses (usft)	Separation (usft)	Factor	-	
			. ,	. ,		-121.13	(usft) -2,205.7	(usft)	502.5	446.7		9.005		
14,800.0 14,900.0	12,372.7 12,373.3	15,034.3 15,134.3	12,612.7 12,613.2	26.0 26.8	25.5 26.3	-121.13	-2,205.7	845.4 846.3	502.5	440.7	55.80 57.14	8.793		
15,000.0	12,373.8	15,234.3	12,613.7	20.0	20.0	-121.13	-2,405.7	847.3	502.5	443.9	58.51	8.588		
15,100.0	12,374.4	15,334.3	12,614.3	28.3	27.8	-121.13	-2,505.7	848.2	502.5	442.6	59.89	8.390		
15,200.0	12,374.9	15,434.3	12,614.8	20.0	28.6	-121.13	-2,605.7	849.1	502.5	441.2	61.29	8.199		
15,300.0	12,375.4	15,534.3	12,615.4	29.9	20.0	-121.13	-2,705.7	850.0	502.5	439.8	62.70	8.014		
10,000.0	12,010.4	10,004.0	12,010.4	20.0	20.4	121.10	2,700.7	000.0	002.0	400.0	02.10	0.014		
15,400.0	12,376.0	15,634.3	12,615.9	30.6	30.2	-121.13	-2,805.7	851.0	502.5	438.3	64.12	7.836		
15,500.0	12,376.5	15,734.3	12,616.5	31.4	31.0	-121.13	-2,905.7	851.9	502.5	436.9	65.55	7.665		
15,600.0	12,377.1	15,834.3	12,617.0	32.2	31.8	-121.13	-3,005.6	852.8	502.5	435.4	67.00	7.499		
15,700.0	12,377.6	15,934.3	12,617.6	33.0	32.6	-121.13	-3,105.6	853.7	502.4	434.0	68.46	7.339		
15,800.0	12,378.2	16,034.3	12,618.1	33.8	33.4	-121.13	-3,205.6	854.7	502.4	432.5	69.93	7.185		
15,900.0	12,378.7	16,134.3	12,618.7	34.6	34.2	-121.13	-3,305.6	855.6	502.4	431.0	71.41	7.037		
16,000.0	12,379.3	16,234.3	12,619.2	35.4	35.1	-121.13	-3,405.6	856.5	502.4	429.6	72.89	6.893		
16,100.0	12,379.8	16,334.3	12,619.8	36.3	35.9	-121.13	-3,505.6	857.4	502.4	428.1	74.39	6.754		
16,200.0	12,380.3	16,434.3	12,620.3	37.1	36.7	-121.13	-3,605.6	858.3	502.4	426.6	75.89	6.621		
16,300.0	12,380.9	16,534.3	12,620.8	37.9	37.5	-121.13	-3,705.6	859.3	502.4	425.0	77.40	6.491		
16,400.0	12,381.4	16,634.3	12,621.4	38.7	38.3	-121.13	-3,805.6	860.2	502.4	423.5	78.92	6.366		
16,500.0	12,381.4	16,734.3	12,621.4	30.7	38.3 39.2	-121.13	-3,805.6	861.1	502.4	423.5	80.44	6.246		
16,600.0	12,382.0	16,834.3	12,621.9	40.3	40.0	-121.13	-4,005.6	862.0	502.4	422.0	81.97	6.129		
	12,382.5				40.0	-121.13				420.5				
16,700.0 16,800.0	12,383.6	16,934.3 17,034.3	12,623.0 12,623.6	41.2 42.0	40.8 41.7		-4,105.6	863.0	502.4 502.4		83.51 85.05	6.016		
10,000.0	12,303.0	17,034.3	12,023.0	42.0	41.7	-121.13	-4,205.6	863.9	502.4	417.4	60.05	5.907		
16,900.0	12,384.2	17,134.3	12,624.1	42.8	42.5	-121.13	-4,305.6	864.8	502.4	415.8	86.60	5.802		
17,000.0	12,384.7	17,234.3	12,624.7	43.7	43.3	-121.13	-4,405.6	865.7	502.4	414.3	88.15	5.699		
17,100.0	12,385.2	17,334.3	12,625.2	44.5	44.2	-121.13	-4,505.6	866.7	502.4	412.7	89.71	5.601		
17,200.0	12,385.8	17,434.3	12,625.8	45.3	45.0	-121.13	-4,605.6	867.6	502.4	411.2	91.27	5.505		
17,300.0	12,386.3	17,534.3	12,626.3	46.1	45.8	-121.13	-4,705.5	868.5	502.4	409.6	92.84	5.412		
,000.0	12,000.0	,00.110	12,020.0	10.1	10.0	121110	1,1 00.0	000.0	002.1	100.0	02.01	0.112		
17,400.0	12,386.9	17,634.3	12,626.8	47.0	46.7	-121.13	-4,805.5	869.4	502.4	408.0	94.41	5.322		
17,500.0	12,387.4	17,734.3	12,627.4	47.8	47.5	-121.13	-4,905.5	870.4	502.4	406.4	95.98	5.234		
17,600.0	12,388.0	17,834.3	12,627.9	48.7	48.4	-121.13	-5,005.5	871.3	502.4	404.9	97.56	5.150		
17,700.0	12,388.5	17,934.3	12,628.5	49.5	49.2	-121.13	-5,105.5	872.2	502.4	403.3	99.14	5.068		
17,800.0	12,389.1	18,034.3	12,629.0	50.3	50.0	-121.13	-5,205.5	873.1	502.4	401.7	100.73	4.988		
17,900.0	12,389.6	18,134.3	12,629.6	51.2	50.9	-121.13	-5,305.5	874.0	502.4	400.1	102.32	4.910		
18,000.0	12,390.1	18,234.3	12,630.1	52.0	51.7	-121.13	-5,405.5	875.0	502.4	398.5	103.91	4.835		
18,100.0	12,390.7	18,334.3	12,630.7	52.8	52.6	-121.13	-5,505.5	875.9	502.4	396.9	105.50	4.762		
18,200.0	12,391.2	18,434.3	12,631.2	53.7	53.4	-121.13	-5,605.5	876.8	502.4	395.3	107.10	4.691		
18,300.0	12,391.8	18,534.3	12,631.8	54.5	54.3	-121.13	-5,705.5	877.7	502.4	393.7	108.70	4.622		
18,400.0	12,392.3	18,634.3	12,632.3	55.4	55.1	-121.13	-5,805.5	878.7	502.4	392.1	110.30	4.555		
18,500.0	12,392.9	18,734.3	12,632.8	56.2	55.9	-121.14	-5,905.5	879.6	502.4	390.5	111.90	4.490		
18,600.0	12,393.4	18,834.3	12,633.4	57.1	56.8	-121.14	-6,005.5	880.5	502.4	388.9	113.51	4.426		
18,700.0	12,394.0	18,934.3	12,633.9	57.9	57.6	-121.14	-6,105.5	881.4	502.4	387.3	115.12	4.364		
18,800.0	12,394.5	19,034.3	12,634.5	58.8	58.5	-121.14	-6,205.5	882.4	502.4	385.7	116.73	4.304		
18,900.0	12,395.0	19,134.3	12,635.0	59.6	59.3	-121.14	-6,305.5	883.3	502.4	384.1	118.34	4.245		
19,000.0	12,395.0	19,134.3 19,234.3	12,635.0	59.6 60.4	59.3 60.2	-121.14 -121.14	-6,305.5 -6,405.5	884.2	502.4 502.4	382.4	118.34	4.245		
19,000.0	12,395.6	19,234.3			60.2 61.0	-121.14 -121.14	-6,405.5 -6,505.4	885.1	502.4 502.4	380.8	121.58	4.100		
19,100.0			12,636.1	61.3 62.1										
-	12,396.7	19,434.3	12,636.7	62.1	61.9	-121.14	-6,605.4	886.1	502.4	379.2	123.20	4.078		
19,300.0	12,397.2	19,534.3	12,637.2	63.0	62.7	-121.14	-6,705.4	887.0	502.4	377.6	124.82	4.025		
19.400.0	12,397.8	19,634.3	12,637.8	63.8	63.6	-121.14	-6,805.4	887.9	502.4	376.0	126.44	3.973		
19,400.0	12,397.0	19,034.3	12,638.3	64.7	64.4	-121.14	-6,905.4	888.8	502.4	370.0	128.06	3.973		
19,600.0	12,398.9	19,734.3	12,638.8	65.5	65.3	-121.14	-7,005.4	889.8	502.4	374.3	120.00	3.874		
19,000.0	12,398.9	19,034.3	12,639.4	66.4	66.1	-121.14	-7,005.4 -7,105.4	890.7	502.4 502.4	372.7	129.09	3.874		
19,700.0	12,399.4	19,934.3 20,034.3	12,639.4	67.2	67.0	-121.14 -121.14	-7,105.4 -7,205.4	890.7 891.6	502.4 502.4	369.5	131.32	3.826		
19,000.0	12,400.0	20,034.3	12,039.9	07.2	07.0	-121.14	-1,200.4	091.0	JUZ.4	309.5	132.94	3.119		

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Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Reference Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	GREEN BERET FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset	Design	GREE	N BERET	FED COM	M PROJI	ECT - GR	EEN BERET	FED COM	1 #701H -	OWB - F	WP1		Offset Site Error:	3.0 usft
Survey	Program: 0-8	tandard Keep	er 104, 121	21-MWD+IFR	1+FDIR								Offset Well Error:	3.0 usft
Re	ference	Offs	et	Semi Majo	r Axis				Dist	ance				
Measure	d Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbo	re Centre	Between	Between	Minimum	Separation	Warning	
Depth	Depth	Depth	Depth			Toolface	+N/-S	+E/-W	Centres		Separation	Factor	•	
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
19.99	2.7 12.401.0	20.227.0	12.641.0	68.9	68.6	-121.14	-7.398.1	893.4	502.4	366.3	136.09	3.692 E		

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Reference Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	GREEN BERET FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

urvey Pro	ogram: 0-S	tandard Keep	er 104, 121	35-MWD+IFR	1+FDIR								Offset Well Error:	3.0 us
Refer	-	Offs		Semi Majo					Dist	ance				
easured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbor +N/-S (usft)	re Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.0	0.0	2.2	2.2	3.0	3.0	-90.30	-0.5	-90.0	90.0					
100.0		102.2	102.2	3.0	3.0	-90.30	-0.5	-90.0	90.0		6.00	15.000		
200.0		202.2	202.2	3.0	3.0	-90.30	-0.5	-90.0	90.0		6.00	14.992		
		302.2		3.0	3.0		-0.5	-90.0	90.0		6.01			
300.0			302.2			-90.30					6.01	14.977		
400.0		402.2	402.2	3.0	3.0	-90.30	-0.5	-90.0	90.0			14.954		
500.0	500.0	502.2	502.2	3.1	3.1	-90.30	-0.5	-90.0	90.0	84.0	6.03	14.923		
600.0	600.0	602.2	602.2	3.1	3.1	-90.30	-0.5	-90.0	90.0	84.0	6.05	14.884		
700.0	700.0	702.2	702.2	3.1	3.1	-90.30	-0.5	-90.0	90.0		6.07	14.837		
800.0		802.2	802.2	3.1	3.1	-90.30	-0.5	-90.0	90.0		6.09			
												14.784		
900.0	900.0	902.2	902.2	3.2	3.2	-90.30	-0.5	-90.0	90.0		6.11	14.723		
1,000.0	1,000.0	1,002.2	1,002.2	3.2	3.2	-90.30	-0.5	-90.0	90.0	83.9	6.14	14.655		
1,100.0	1,100.0	1,102.2	1,102.2	3.3	3.3	-90.30	-0.5	-90.0	90.0	83.8	6.17	14.581		
				3.3	3.3		-0.5	-90.0	90.0					
1,200.0	1,200.0	1,202.2	1,202.2			-90.30					6.21	14.500		
1,300.0	1,300.0	1,302.2	1,302.2	3.4	3.4	-90.30	-0.5	-90.0	90.0		6.24	14.414		
1,400.0	1,400.0	1,402.2	1,402.2	3.5	3.5	-90.30	-0.5	-90.0	90.0		6.28	14.322		
1,500.0	1,500.0	1,502.2	1,502.2	3.5	3.5	-90.30	-0.5	-90.0	90.0	83.7	6.33	14.225		
1 600 0	1,600.0	1 600 0	1,602.2	3.6	3.6	-90.30	-0.5	-90.0	90.0	83.6	6.37	14.123		
1,600.0	-	1,602.2												
1,700.0	1,700.0	1,702.2	1,702.2	3.7	3.7	-90.30	-0.5	-90.0	90.0		6.42	14.016		
1,800.0	1,800.0	1,802.2	1,802.2	3.8	3.8	-90.30	-0.5	-90.0	90.0		6.47	13.906		
1,900.0	1,900.0	1,902.2	1,902.2	3.9	3.9	-90.30	-0.5	-90.0	90.0		6.53	13.791		
2,000.0	2,000.0	2,002.2	2,002.2	3.9	3.9	-90.30	-0.5	-90.0	90.0	83.4	6.58	13.674		
0 400 0	0 400 0	0 400 0	0 400 0	10	4.0	00.00	0.5	00.0	00.0	00.4	0.04	40.550		
2,100.0	2,100.0	2,102.2	2,102.2	4.0	4.0	-90.30	-0.5	-90.0	90.0		6.64	13.553		
2,200.0	2,200.0	2,202.2	2,202.2	4.1	4.1	-90.30	-0.5	-90.0	90.0		6.70	13.430		
2,300.0	2,300.0	2,302.2	2,302.2	4.2	4.2	-90.30	-0.5	-90.0	90.0		6.77	13.304		
2,400.0	2,400.0	2,402.2	2,402.2	4.3	4.3	-90.30	-0.5	-90.0	90.0		6.83	13.176		
2,415.9	2,415.9	2,418.1	2,418.1	4.3	4.3	-90.30	-0.5	-90.0	90.0	83.2	6.84	13.155 C	C	
2,500.0	2,500.0	2,502.2	2,502.2	4.4	4.4	-90.30	-0.5	-90.0	90.0		6.90	13.047 E	S	
2,600.0	2,600.0	2,600.9	2,600.9	4.5	4.5	-131.84	1.2	-90.7	91.9		6.97	13.186		
2,671.7	2,671.6	2,672.1	2,672.0	4.5	4.6	-131.57	4.0	-92.0	95.4		7.02	13.591		
2,700.0	2,699.8	2,700.3	2,700.2	4.6	4.6	-131.60	5.3	-92.5	97.1	90.0	7.04	13.785		
2,800.0	2,799.7	2,800.2	2,799.9	4.6	4.7	-131.69	9.6	-94.4	102.9	95.8	7.12	14.458		
2,900.0	2,899.5	2,900.0	2,899.6	4.7	4.8	-131.78	13.9	-96.3	108.8		7.20	15.108		
3,000.0	2,999.3	2,999.8	2,999.4	4.8	4.9	-131.85	18.2	-98.1	114.7	107.4	7.29	15.735		
3,100.0	3,099.1	3,099.6	3,099.1	4.9	5.0	-131.92	22.5	-100.0	120.6	113.2	7.38	16.338		
3,200.0	3,198.9	3,199.5	3,198.8	5.0	5.1	-131.98	26.8	-101.9	126.4	119.0	7.47	16.919		
3,300.0	3,298.8	3,299.3	3,298.5	5.1	5.2	-132.04	31.1	-103.8	132.3	124.7	7.57	17.477		
3,400.0	3,398.6	3,399.1	3,398.2	5.2	5.3	-132.09	35.4	-105.6	138.2		7.67	18.013		
3,500.0	3,498.4	3,499.0	3,497.9	5.3	5.4	-132.14	39.7	-107.5	144.0	136.3	7.77	18.527		
3,600.0	3,598.2	3,598.8	3,597.7	5.4	5.5	-132.18	44.0	-109.4	149.9	142.0	7.88	19.020		
3,700.0	3,698.1	3,698.6	3,697.4	5.5	5.6	-132.22	48.3	-111.3	155.8	147.8	7.99	19.493		
3,800.0		3,798.4	3,797.1	5.6	5.7	-132.26	52.6	-113.2	161.7		8.11	19.946		
3,900.0	3,897.7	3,898.3	3,896.8	5.7	5.8	-132.30	56.9	-115.0	167.5	159.3	8.22	20.379		
4,000.0	3,997.5	3,998.1	3,996.5	5.8	5.9	-132.33	61.2	-116.9	173.4	165.1	8.34	20.793		
4,100.0	4,097.3	4,097.9	4,096.2	5.9	6.0	-132.36	65.5	-118.8	179.3	170.8	8.46	21.190		
4,200.0		4,197.7	4,196.0	6.0	6.1	-132.39	69.9	-120.7	185.2		8.58	21.569		
4,300.0		4,297.6	4,295.7	6.1	6.2	-132.41	74.2	-122.5	191.0		8.71	21.931		
,	,	,0	,											
4,400.0	4,396.8	4,397.4	4,395.4	6.2	6.3	-132.44	78.5	-124.4	196.9	188.1	8.84	22.277		
4,500.0		4,497.2	4,495.1	6.3	6.5	-132.46	82.8	-126.3	202.8		8.97	22.608		
4,600.0		4,597.1	4,594.8	6.4	6.6	-132.49	87.1	-128.2	208.6		9.10	22.924		
4,700.0		4,696.9	4,694.5	6.5	6.7	-132.51	91.4	-130.1	214.5		9.24	23.225		
4,800.0		4,796.7	4,794.3	6.6	6.8	-132.53	95.7	-131.9	220.4		9.37	23.514		
-,000.0	4,730.1	-,100.1	4,104.0	0.0	0.0	102.00	35.1	101.8	220.4	211.0	3.51	20.014		
4,900.0	4,895.9	4,896.5	4,894.0	6.7	6.9	-132.55	100.0	-133.8	226.3	216.7	9.51	23.789		
,	,	,	,											

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Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Reference Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	GREEN BERET FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

urvey Pro	ogram: 0-S	tandard Keer	er 104, 121	35-MWD+IFR	1+FDIR								Offset Well Error:	3.0 us
Refer	-	Offs		Semi Majo					Dist	ance			Chool Hen Litor.	0.0 u
easured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbon +N/-S (usft)	re Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,000.0	4,995.7	4,996.4	4,993.7	6.8	7.0	-132.56	104.3	-135.7	232.1	222.5	9.65	24.052		
5,100.0	5,095.5	4,990.4 5,096.2	4,993.7 5,093.4	6.9	7.0	-132.58	104.5	-137.6	232.1			24.303		
5,200.0	5,195.4	5,196.0	5,193.1	7.1	7.1	-132.60	112.9	-137.0	238.0			24.543		
5,200.0	5,295.2	5,295.8	5,292.8	7.1	7.3	-132.60	112.9	-139.5	249.8		10.08	24.343		
5,300.0	5,395.0	5,395.7	5,392.6	7.2	7.4	-132.63	121.5	-141.3	249.0		10.08	24.772		
5,500.0	5,494.8		5,392.0	7.3	7.5	-132.63	121.5	-145.2	255.0		10.23			
5,500.0	5,494.0	5,495.5	5,492.5	7.4	7.0	-132.04	125.0	-145.1	201.5	201.1	10.30	25.200		
5,600.0	5,594.6	5,595.3	5,592.0	7.5	7.7	-132.65	130.1	-147.0	267.4	256.8	10.53	25.400		
5,700.0	5,694.5	5,695.2	5,691.7	7.6	7.8	-132.67	134.4	-148.8	273.2	262.6		25.591		
5,800.0	5,794.3	5,795.0	5,791.4	7.7	8.0	-132.68	138.7	-150.7	279.1			25.773		
5,900.0	5,894.1	5,894.8	5,891.1	7.9	8.1	-132.69	143.1	-152.6	285.0			25.948		
6,000.0	5,993.9	5,994.6	5,990.9	8.0	8.2	-132.70	147.4	-154.5	290.9		11.14	26.115		
-,	-,	-,	-,											
6,100.0	6,093.7	6,094.5	6,090.6	8.1	8.3	-132.71	151.7	-156.4	296.7	285.4	11.29	26.274		
6,200.0	6,193.6	6,194.3	6,190.3	8.2	8.4	-132.73	156.0	-158.2	302.6	291.2	11.45	26.426		
6,300.0	6,293.4	6,294.1	6,290.0	8.3	8.6	-132.74	160.3	-160.1	308.5	296.9	11.61	26.572		
6,400.0	6,393.2	6,393.9	6,389.7	8.4	8.7	-132.74	164.6	-162.0	314.4	302.6		26.712		
6,500.0	6,493.0	6,493.8	6,489.4	8.6	8.8	-132.75	168.9	-163.9	320.2	308.3	11.93	26.845		
6,600.0	6,592.8	6,593.6	6,589.2	8.7	8.9	-132.76	173.2	-165.7	326.1	314.0	12.09	26.973		
6,700.0	6,692.7	6,693.4	6,688.9	8.8	9.0	-132.77	177.5	-167.6	332.0	319.7	12.25	27.095		
6,800.0	6,792.5	6,793.3	6,788.6	8.9	9.2	-132.78	181.8	-169.5	337.8	325.4	12.42	27.212		
6,900.0	6,892.3	6,893.1	6,888.3	9.0	9.3	-132.79	186.1	-171.4	343.7	331.1	12.58	27.324		
7,000.0	6,992.1	6,992.9	6,988.0	9.1	9.4	-132.80	190.4	-173.3	349.6	336.8	12.74	27.431		
7,100.0	7,091.9	7,092.7	7,087.8	9.3	9.5	-132.80	194.7	-175.1	355.5	342.6	12.91	27.534		
7,200.0	7,191.8	7,192.6	7,187.5	9.4	9.6	-132.81	199.0	-177.0	361.3	348.3	13.08	27.632		
7,300.0	7,291.6	7,292.4	7,287.2	9.5	9.8	-132.82	203.3	-178.9	367.2	354.0	13.24	27.726		
7,400.0	7,391.4	7,392.2	7,386.9	9.6	9.9	-132.83	207.6	-180.8	373.1	359.7	13.41	27.817		
7,500.0	7,491.2	7,492.0	7,486.6	9.8	10.0	-132.83	211.9	-182.6	379.0	365.4	13.58	27.903		
7,600.0	7,591.0	7,591.9	7,586.3	9.9	10.1	-132.84	216.3	-184.5	384.8	371.1	13.75	27.986		
7,700.0	7,690.9	7,691.7	7,686.1	10.0	10.3	-132.85	220.6	-186.4	390.7	376.8	13.92	28.065		
7,800.0	7,790.7	7,791.5	7,785.8	10.1	10.4	-132.85	224.9	-188.3	396.6	382.5	14.09	28.141		
7,900.0	7,890.5	7,891.4	7,885.5	10.2	10.5	-132.86	229.2	-190.2	402.4	388.2	14.26	28.214		
8,000.0	7,990.3	7,991.2	7,985.2	10.4	10.6	-132.86	233.5	-192.0	408.3	393.9	14.44	28.284		
8,100.0	8,090.2	8,091.0	8,084.9	10.5	10.7	-132.87	237.8	-193.9	414.2			28.351		
8,200.0	8,190.0	8,190.8	8,184.6	10.6	10.9	-132.87	242.1	-195.8	420.1	405.3	14.78	28.415		
8,300.0	8,289.8	8,290.7	8,284.4	10.7	11.0	-132.88	246.4	-197.7	425.9	411.0	14.96	28.477		
8,400.0	8,389.6	8,390.5	8,384.1	10.8	11.1	-132.88	250.7	-199.5	431.8	416.7	15.13	28.536		
8,500.0	8,489.4	8,490.3	8,483.8	11.0	11.2	-132.89	255.0	-201.4	437.7	422.4	15.31	28.592		
0.000	0	o ·										<b>0</b> 0 0 0 0		
8,600.0	8,589.3	8,590.1	8,583.5	11.1	11.4	-132.89	259.3	-203.3	443.6		15.48	28.647		
8,700.0	8,689.1	8,690.0	8,683.2	11.2	11.5	-132.90	263.6	-205.2	449.4	433.8		28.699		
8,800.0	8,788.9	8,789.8	8,782.9	11.3	11.6	-132.90	267.9	-207.1	455.3			28.749		
8,900.0	8,888.7	8,889.6	8,882.7	11.5	11.7	-132.91	272.2	-208.9	461.2			28.797		
9,000.0	8,988.5	8,989.5	8,982.4	11.6	11.9	-132.91	276.5	-210.8	467.0	450.9	16.19	28.843		
0.400.0	0.000.4	0.000.0	0.000.4	- AA	40.0	400.00	000.0	040 7	470.0	450 5	40.07	00.007		
9,100.0	9,088.4	9,089.3	9,082.1	11.7	12.0	-132.92	280.8	-212.7	472.9			28.887		
9,200.0	9,188.2	9,189.1	9,181.8	11.8	12.1	-132.92	285.1	-214.6	478.8			28.929		
9,300.0	9,288.0	9,288.9	9,281.5	12.0	12.2	-132.93	289.5	-216.4	484.7			28.969		
9,400.0	9,387.8	9,388.8	9,381.2	12.1	12.4	-132.93	293.8	-218.3	490.5			29.008		
9,500.0	9,487.6	9,488.6	9,481.0	12.2	12.5	-132.93	298.1	-220.2	496.4	479.3	17.09	29.045		
0.000.0	0 507 5	0 500 1	0 500 -	10.0	10.0	400.04		000	F00 -	105 -	47.0-	00.007		
9,600.0	9,587.5	9,588.4	9,580.7	12.3	12.6	-132.94	302.4	-222.1	502.3		17.27	29.081		
9,700.0	9,687.3	9,688.3	9,680.4	12.5	12.7	-132.94	306.7	-224.0	508.2		17.45	29.115		
9,800.0	9,787.1	9,788.1	9,780.1	12.6	12.9	-132.94	311.0	-225.8	514.0		17.64	29.147		
9,900.0	9,886.9	9,887.9	9,879.8	12.7	13.0	-132.95	315.3	-227.7	519.9		17.82	29.179		
10,000.0	9,986.7	9,987.7	9,979.5	12.8	13.1	-132.95	319.6	-229.6	525.8	507.8	18.00	29.209		
40.400.0	40.000 -	40.007.5	40.070.0	10 -	10.0	400.05	000 0			E 10 -	10.10	00.007		
10,100.0	10,086.6	10,087.6	10,079.3	13.0	13.2	-132.95	323.9	-231.5	531.7	513.5	18.18	29.237		

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COMPASS 5000.15 Build 91E

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Reference Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	GREEN BERET FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

	esign													3.0 us
-	-			35-MWD+IFR1+FDIR Semi Major Axis Distance									Offset Well Error:	3.0 us
Refer easured	vence Vertical	Offs Measured	et Vertical	Reference	r Axis Offset	Highside	Offset Wellbo	re Centre	Dist Between	ance Between	Minimum	Separation	Warning	
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	(usft)	(usft)	Toolface (°)	+N/-S	+E/-W	Centres (usft)	Ellipses (usft)	Separation (usft)	•	wannig	
	. ,			. ,			(usft)	(usft)						
10,200.0		10,187.4	10,179.0	13.1	13.4	-132.96	328.2	-233.4	537.5					
10,300.0		10,287.2	10,278.7	13.2	13.5	-132.96	332.5	-235.2	543.4					
10,400.0		10,387.0	10,378.4	13.3	13.6	-132.96	336.8	-237.1	549.3					
10,500.0		10,486.9	10,478.1	13.5	13.8	-132.97	341.1	-239.0	555.1	536.2				
10,600.0		10,586.7	10,577.8	13.6	13.9	-132.97	345.4	-240.9	561.0			29.363		
10,700.0	10,685.5	10,686.5	10,677.6	13.7	14.0	-132.97	349.7	-242.7	566.9	547.6	19.29	29.385		
10,800.0	10,785.3	10,786.4	10,777.3	13.8	14.1	-132.98	354.0	-244.6	572.8	553.3	19.48	29.406		
10,900.0		10,886.2	10,877.0	14.0	14.3	-132.98	358.3	-246.5	578.6					
11,000.0	10,984.9	10,986.0	10,976.7	14.1	14.4	-132.98	362.7	-248.4	584.5		19.85			
11,100.0	11,084.8	11,085.8	11,076.4	14.2	14.5	-132.98	367.0	-250.3	590.4	570.3	20.04	29.464		
11,200.0	11,184.6	11,185.7	11,176.1	14.3	14.6	-132.99	371.3	-252.1	596.3					
11,300.0	11,284.4	11,285.5	11,275.9	14.5	14.8	-132.99	375.6	-254.0	602.1	581.7	20.41	29.498		
11,400.0	11,384.2	11,385.3	11,375.6	14.6	14.9	-132.99	379.9	-255.9	608.0		20.60			
11,500.0	11,484.0	11,485.1	11,475.3	14.7	15.0	-133.00	384.2	-257.8	613.9		20.79			
11,600.0	11,583.9	11,585.0	11,575.0	14.8	15.1	-133.00	388.5	-259.6	619.7					
11,700.0	11,683.7	11,684.8	11,674.7	15.0	15.3	-133.00	392.8	-261.5	625.6	604.5	21.17	29.556		
11 000 0	11 700 5	11 704 0	11 774 4	45 4	4E 4	122.00	207 4	000 4	604 5	640.4	04.00	20 500		
11,800.0	11,783.5	11,784.6	11,774.4	15.1	15.4	-133.00	397.1	-263.4	631.5		21.36			
11,879.4 11,900.0	11,862.8 11,883.3	11,863.9 11,884.4	11,853.6 11,874.2	15.2 15.2	15.5 15.5	-133.00 -178.99	400.5 401.4	-264.9 -265.3	636.2 637.4		21.51 21.55	29.579 29.580		
11,925.0	11,908.3	11,909.3	11,899.0	15.2 15.2	15.6	127.56 110.69	402.5	-265.7	638.8			29.619		
11,950.0	11,933.2	11,934.1	11,923.8	15.2	15.6	110.69	403.5	-266.2	640.2	618.7	21.59	29.656		
11,975.0	11,958.0	11,958.7	11,948.3	15.2	15.6	104.12	404.6	-266.7	641.7	620.1	21.61	29.692		
12,000.0	11,982.5	11,983.0	11,972.6	15.2	15.7	100.90	405.7	-267.1	643.2					
12,025.0		12,007.0	11,996.6	15.2	15.7	99.16	406.7	-267.6	644.7					
12,050.0		12,030.6	12,020.2	15.2	15.7	98.20	407.7	-268.0	646.3					
12,075.0		12,053.8	12,043.3	15.2	15.7	97.73	408.7	-268.5	648.1	626.4	21.73			
	,													
12,100.0	12,077.4	12,076.4	12,065.9	15.2	15.8	97.57	409.7	-268.9	650.0	628.2	21.78	29.850		
12,125.0	12,100.0	12,098.5	12,087.9	15.2	15.8	97.63	410.6	-269.3	652.2	630.4	21.83	29.880		
12,150.0	12,122.0	12,119.9	12,109.3	15.2	15.8	97.82	411.6	-269.7	654.6	632.8	21.88	29.923		
12,175.0	12,143.3	12,141.6	12,131.0	15.3	15.8	98.16	412.5	-270.1	657.4	635.5	21.93	29.977		
12,200.0	12,163.9	12,166.7	12,156.1	15.3	15.8	98.72	412.6	-270.6	660.5	638.5	21.97	30.062		
12,225.0		12,192.7	12,182.1	15.3	15.8	99.33	411.3	-271.0	663.8					
12,250.0		12,219.9	12,209.1	15.3	15.8	99.99	408.4	-271.5	667.4	645.3				
12,275.0		12,248.2	12,237.1	15.3	15.8	100.70	403.8	-272.0	671.1					
12,300.0		12,278.0	12,266.0	15.3	15.9	101.45	397.2	-272.5	675.0		22.29			
12,325.0	12,254.3	12,309.2	12,296.0	15.4	15.9	102.24	388.3	-272.9	679.1	656.7	22.45	30.251		
12,350.0	12,269.5	12,342.1	12,326.8	15.4	15.9	103.06	376.9	-273.4	683.3	660.6	22.67	30.140		
12,330.0		12,342.1	12,358.5	15.4	15.9	103.00	362.5	-273.4	687.6					
12,375.0			12,390.7	15.4	15.9	103.91	344.9	-273.0	691.8			29.640		
12,400.0		12,413.7		15.4	15.9	104.79	323.4	-274.7	696.0			29.040		
	12,319.5		12,425.4	15.5	15.9	105.58	297.9	-274.7	700.1	675.7				
,	,510.0	,+0+.2	, .00.0	10.0	10.0		207.0	210.0	700.1	010.1	24.00	20.122		
12,475.0	12,329.1	12,538.3	12,488.1	15.5	16.0	107.47	267.7	-275.3	704.0	679.0	25.03	28.125		
12,500.0		12,585.0	12,519.0	15.5	16.0	108.33	232.6	-275.6	707.6	681.9				
12,525.0		12,634.4	12,547.7	15.5	16.0	109.13	192.4	-275.7	710.9		26.54			
12,550.0	12,350.5	12,686.4	12,573.3	15.5	16.1	109.85	147.2	-275.8	713.7	686.4	27.32	26.124		
12,575.0		12,740.7	12,594.6	15.6	16.1	110.44	97.3	-275.7	715.9		28.06	25.517		
12,600.0		12,796.8	12,610.5	15.6	16.1	110.87	43.5	-275.5	717.5		28.70			
12,625.0		12,854.3	12,620.1	15.6	16.2	111.13	-13.1	-275.1	718.5					
12,648.0		12,905.3	12,623.0	15.6	16.2	111.19	-64.0	-274.7	718.7					
12,700.0		12,957.3	12,623.2	15.7	16.2	111.19	-116.0	-274.2	718.7					
12,800.0	12,361.8	13,057.3	12,623.8	15.8	16.2	111.19	-216.0	-273.3	718.7	688.4	30.35	23.684		
10.000.0	40.000	40.457.6	40.004.0		10.0	444.40	010 -	-272.4	718.7	687.7	<b></b>	00.17-		
12,900.0	12,362.4	13,157.3	12,624.3	15.9	16.3	111.19	-316.0	_272 /	718 7	6877	31.01	23.177		

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Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Reference Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	GREEN BERET FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

urvev Pro	gram: 0-S	tandard Keer	er 104. 121	35-MWD+IFR	1+FDIR								Offset Well Error:	3.0 u
Refer	-	Offs		Semi Majo					Dist	ance			Onset Wen Enor.	0.0 4
Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbor +N/-S	+E/-W	Between Centres	Between Ellipses	Separation		Warning	
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
13,000.0	12,362.9	13,257.3	12,624.9	16.1	16.4	111.19	-416.0	-271.4	718.7	687.0		22.636		
13,100.0		13,357.3	12,625.4	16.3	16.4	111.19	-516.0	-270.5	718.7			22.070		
13,200.0	12,364.0	13,457.3	12,626.0	16.6	16.6	111.19	-616.0	-269.6	718.7	685.3	33.45	21.487		
13,300.0	12,364.5	13,557.3	12,626.5	16.9	16.7	111.19	-716.0	-268.7	718.7	684.3	34.39	20.897		
13,400.0	12,365.1	13,657.3	12,627.1	17.2	16.9	111.19	-816.0	-267.7	718.7	683.3	35.39	20.306		
13,500.0	12,365.6	13,757.3	12,627.6	17.6	17.1	111.19	-916.0	-266.8	718.7	682.2	36.45	19.718		
13,600.0		13,857.3	12,628.2	18.1	17.4	111.19	-1,016.0	-265.9	718.7		37.55	19.139		
13,700.0	12,366.7	13,957.3	12,628.7	18.6	17.8	111.19	-1,116.0	-264.9	718.7	680.0	38.70	18.572		
13,800.0	12,367.3	14,057.3	12,629.2	19.2	18.3	111.19	-1,215.9	-264.0	718.7	678.8	39.89	18.019		
13,900.0	12,367.8	14,157.3	12,629.8	19.8	18.9	111.19	-1,315.9	-263.1	718.7	677.6	41.11	17.483		
14,000.0	12,368.4	14,257.3	12,630.3	20.4	19.5	111.19	-1,415.9	-262.2	718.7	676.3	42.37	16.964		
14,100.0	12,368.9	14,357.3	12,630.9	21.0	20.1	111.19	-1,515.9	-261.2	718.7	675.0	43.65	16.463		
14,200.0	12,369.5	14,457.3	12,631.4	21.7	20.8	111.19	-1,615.9	-260.3	718.7	673.7	44.97	15.981		
14,300.0	12,370.0	14,557.3	12,632.0	22.4	21.5	111.19	-1,715.9	-259.4	718.7	672.4	46.31	15.518		
14,400.0	12,370.5	14,657.3	12,632.5	23.1	22.2	111.19	-1,815.9	-258.4	718.7	671.0	47.68	15.074		
14,500.0	12,371.1	14,757.3	12,633.1	23.8	22.9	111.19	-1,915.9	-257.5	718.7	669.6	49.06	14.648		
14,600.0	12,371.6	14,857.3	12,633.6	24.5	23.7	111.19	-2,015.9	-256.6	718.7	668.2	50.47	14.240		
14,700.0	12,372.2	14,957.3	12,634.1	25.3	24.4	111.19	-2,115.9	-255.7	718.7	666.8	51.89	13.849		
14,800.0	12,372.7	15,057.3	12,634.7	26.0	25.2	111.19	-2,215.9	-254.7	718.7	665.3	53.34	13.474		
14,900.0	12,373.3	15,157.3	12,635.2	26.8	26.0	111.19	-2,315.9	-253.8	718.7	663.9	54.79	13.116		
15,000.0	12,373.8	15,257.3	12,635.8	27.5	26.8	111.19	-2,415.9	-252.9	718.7	662.4	56.26	12.773		
15,100.0	12,374.4	15,357.3	12,636.3	28.3	27.6	111.19	-2,515.9	-251.9	718.7	660.9	57.75	12.445		
15,200.0	12,374.9	15,457.3	12,636.9	29.1	28.4	111.19	-2,615.9	-251.0	718.7	659.4	59.24	12.131		
15,300.0	12,375.4	15,557.3	12,637.4	29.9	29.2	111.19	-2,715.9	-250.1	718.7	657.9	60.75	11.830		
15,400.0	12,376.0	15,657.3	12,638.0	30.6	30.0	111.19	-2,815.9	-249.2	718.6	656.4	62.27	11.541		
15,500.0		15,757.3	12,638.5	31.4	30.8	111.19	-2,915.8	-248.2	718.6			11.265		
- ,	,		,				,							
15,600.0	12,377.1	15,857.3	12,639.1	32.2	31.6	111.19	-3,015.8	-247.3	718.6	653.3	65.33	11.000		
15,700.0	12,377.6	15,957.3	12,639.6	33.0	32.4	111.19	-3,115.8	-246.4	718.6	651.8	66.88	10.746		
15,800.0	12,378.2	16,057.3	12,640.1	33.8	33.2	111.19	-3,215.8	-245.4	718.6	650.2	68.43	10.502		
15,900.0	12,378.7	16,157.3	12,640.7	34.6	34.0	111.19	-3,315.8	-244.5	718.6	648.6	69.99	10.268		
16,000.0		16,257.3	12,641.2	35.4	34.9	111.19	-3,415.8	-243.6	718.6		71.55	10.043		
- ,	,						-,							
16,100.0	12,379.8	16,357.3	12,641.8	36.3	35.7	111.19	-3,515.8	-242.6	718.6	645.5	73.13	9.827		
16,200.0	12,380.3	16,457.3	12,642.3	37.1	36.5	111.19	-3,615.8	-241.7	718.6	643.9	74.71	9.619		
16,300.0		16,557.3	12,642.9	37.9	37.3	111.19	-3,715.8	-240.8	718.6	642.3		9.420		
16,400.0		16,657.3	12,643.4	38.7	38.2	111.19	-3,815.8	-239.9	718.6		77.88	9.227		
16,500.0		16,757.3	12,644.0	39.5	39.0	111.19	-3,915.8	-238.9	718.6		79.47	9.042		
10,000.0	12,002.0	10,101.0	,	00.0	00.0		0,01010	200.0	110.0	000.1		0.012		
16,600.0	12,382.5	16,857.3	12,644.5	40.3	39.8	111.19	-4,015.8	-238.0	718.6	637.5	81.07	8.864		
16,700.0		16,957.3	12,645.1	41.2	40.7	111.19	-4,115.8	-237.1	718.6			8.692		
	12,383.6		12,645.6	42.0	41.5	111.19	-4,215.8	-236.1	718.6			8.526		
16,900.0		17,157.3		42.8	42.3	111.19	-4,315.8	-235.2	718.6			8.366		
	12,384.7		12,646.7	43.7	43.2	111.19	-4,415.8	-234.3	718.6			8.212		
,000.0	,504.7	,201.0	,5-10.7		10.2		1,410.0	204.0	710.0	001.1	07.01	5.2.12		
17,100.0	12,385.2	17,357.3	12,647.2	44.5	44.0	111.19	-4,515.8	-233.4	718.6	629.5	89.13	8.062		
17,200.0		17,457.3	12,647.8	45.3	44.9	111.19	-4,615.7	-232.4	718.6			7.918		
17,300.0		17,557.3	12,648.3	46.1	45.7	111.19	-4,715.7	-231.5	718.6			7.779		
17,400.0		17,657.3	12,648.9	47.0	46.5	111.19	-4,815.7	-230.6	718.6			7.644		
	12,387.4	17,057.3	12,649.4	47.8	40.3	111.19	-4,915.7	-229.6	718.6			7.514		
17,500.0	12,307.4	11,101.5	12,049.4	47.0	47.4	111.19	-4,913.7	-229.0	/ 10.0	023.0	90.04	1.014		
17.600.0	12,388.0	17,857.3	12,650.0	48.7	48.2	111.19	-5,015.7	-228.7	718.6	621.3	97.27	7.388		
17,700.0		17,957.3	12,650.5	49.5	49.1	111.19	-5,115.7	-227.8	718.6		98.91	7.265		
17,800.0		18,057.3		49.3 50.3	49.1	111.19	-5,215.7	-226.9	718.6			7.203		
17,900.0		18,157.3	12,651.6	51.2	49.9 50.8	111.19	-5,315.7	-225.9	718.6			7.032		
	12,389.6		12,651.6	51.2	50.8 51.6	111.19	-5,315.7 -5,415.7	-225.9 -225.0	718.6			6.921		
10,000.0	12,390.1	10,207.3	12,002.1	52.0	51.0	111.19	-3,413.7	-225.0	/ 10.0	014.0	103.03	0.921		
18,100.0	12,390.7	18,357.3	12,652.7	52.8	52.5	111.19	-5,515.7	-224.1	718.6	613.1	105.47	6.813		
	12,000.1	10,007.0	12,002.1	02.0	52.5		0,010.1	227.I	110.0	010.1	100.47	0.010		

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Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Reference Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	GREEN BERET FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Survey Program:         0-Standard Keeper 104, 12:135-MWD+IFR1+EDIR         0ffset Wellbore         Centres         Between         Between         Minimum         Separation         Factor         Warning           Measured         Vertical (usft)         Measured         Vertical Depth         Reference         Offset Wellbore         Centres         Between         Between         Minimum         Separation         Factor         Warning           18,200.0         12,391.2         18,457.3         12,653.8         54.5         54.2         111.20         -5,715.7         -222.1         718.6         608.4         108.77         6.606.6         115.07         6.006.1         10.807.7         6.606.6         112.07         6.412.0         6.015.7         6.008.4         101.42         6.506.6         115.37         6.028.1         101.42         6.506.6         115.3         6.22         6.01.5         111.20         -6.915.7         -211.8         718.6         606.4         113.73         6.3318         118.70.0         12.392.4         18.867.3         12.666.0         57.9         57.6         111.20         -6.215.7         -216.5         718.6         601.5         117.04         6.139           18.800.0         12.394.5         19.067.3         1	Offset D	esign	GREE	N BERE	FED COM	/ PROJ	ECT - GR	EEN BERET	FED COM	#702H -	OWB - F	WP1		Offset Site Error:	3.0 usft
Measured Depth (usft)         Vertical Depth (usft)         Measured Depth (usft)         Vertical Depth (usft)         Reference (usft)         Offset (usft)         Highside (usft)         Offset (usft)         Offset (usft)         Highside (usft)         Offset (usft)         Between (usft)         Between (usft)         Between (usft)         Minimum (usft)         Separation (usft)         Minimum Separation         Separation Factor           18,200.0         12,391.2         18,457.3         12,653.8         54.5         54.2         111.20         -5,715.7         -222.1         718.6         6005.1         108.77         6.606           18,500.0         12,392.3         18,657.3         12,654.3         55.4         55.0         111.20         -5,915.7         -221.3         718.6         6005.5         112.07         6.412           18,600.0         12,392.4         18,857.3         12,656.4         57.1         56.7         111.20         -6,015.7         -210.4         718.6         6005.5         117.07         6.412           18,600.0         12,394.0         18,957.3         12,656.5         58.8         58.4         111.20         -6,115.7         -216.6         718.6         601.5         117.04         6.139           19,000.0         12,395.6 <td< th=""><th>Survey Pro</th><th>gram: 0-S</th><th>tandard Keep</th><th>er 104, 121</th><th>35-MWD+IFR</th><th>1+FDIR</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>Offset Well Error:</th><th>3.0 usft</th></td<>	Survey Pro	gram: 0-S	tandard Keep	er 104, 121	35-MWD+IFR	1+FDIR								Offset Well Error:	3.0 usft
Depth (usft)         Depth (usft)         Depth (usft)         Depth (usft)         Depth (usft)         Depth (usft)         Toolface (usft)         +µ/.S (usft)         +E/.W (usft)         Centres (usft)         Ellipse (usft)         Separation (usft)         Factor           18,200.0         12,391.2         18,657.3         12,653.8         53.7         53.3         111.19         -5,615.7         -223.1         718.6         601.5         100.77         6.606           18,400.0         12,392.3         18,657.3         12,654.3         55.4         55.0         111.20         -5,815.7         -221.3         718.6         6008.1         110.42         6.508           18,600.0         12,392.4         18,857.3         12,655.4         57.1         56.7         111.20         -6,015.7         -210.4         718.6         6004.5         111.30         6.318           18,700.0         12,394.0         18,857.3         12,656.5         58.8         58.4         111.20         -6,215.7         -217.6         718.6         601.5         117.04         6.139           18,800.0         12,395.0         19,157.3         12,657.6         59.8         59.3         111.20         -6,515.6         -218.5         718.6         601.5         11	Refer	ence	Offs	ət	Semi Major	Axis				Dista	ance				
(ušft)(usft)(usft)(usft)(usft)(usft)(usft)(usft)(usft)(usft)(usft)(usft)(usft)18,200.012,391.218,457.312,653.253.753.3111.19-5,615.7-223.1718.6611.5107.126.70818,300.012,392.318,657.312,654.355.455.0111.20-5,715.7-222.2718.6609.8108.776.60618,400.012,392.918,675.312,654.355.455.0111.20-5,915.7-220.4718.6606.5112.076.41218,600.012,393.418,857.312,656.457.156.7111.20-6,015.7-219.4718.66003.2115.386.22818,600.012,393.418,957.312,656.558.858.4111.20-6,115.7-218.5718.6601.5117.046.13918,900.012,395.619,057.312,657.658.858.4111.20-6,215.7-217.6718.6601.5117.046.13918,900.012,395.619,257.312,657.660.460.1111.20-6,615.6-215.7718.6598.2120.365.97019,100.012,396.119,357.312,657.660.460.1111.20-6,615.6-214.8718.6599.2123.685.81019,200.012,396.719,457.312,659.863.563.5111.20-6,615.6-212.9718.5594.9					Reference	Offset	•						•	Warning	
18,200.12,391.218,457.312,653.253.753.3111.19-5,615.7-223.1718.6611.5107.126.70818,300.012,392.318,657.312,653.854.554.2111.20-5,715.7-222.2718.6609.8108.776.60618,400.012,392.318,657.312,654.956.255.9111.20-5,915.7-221.3718.66005.5112.076.41218,600.012,393.418,657.312,654.956.255.9111.20-6,015.7-219.4718.6604.8113.736.31818,700.012,394.018,957.312,656.057.957.6111.20-6,115.7-218.5718.6603.2115.386.22818,800.012,395.019,157.312,656.558.858.4111.20-6,215.7-217.6718.6601.5117.046.13918,900.012,395.019,257.312,657.059.659.3111.20-6,315.7-216.6718.6599.9118.706.05419,000.012,395.619,257.312,658.161.361.0111.20-6,615.6-213.9718.5594.9123.685.88919,200.012,397.219,557.312,659.263.062.7111.20-6,615.6-212.9718.5594.9123.685.88119,000.012,397.219,557.312,659.263.062.7111.20-6,615.6-212.9718.5594.9<				•	(ueft)	(ueft)					•		Factor		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	. ,							· · /							
18,400.0 $12,392.3$ $18,657.3$ $12,654.3$ $55.4$ $55.0$ $111.20$ $-5,815.7$ $-221.3$ $718.6$ $608.1$ $110.42$ $6.508$ $18,500.0$ $12,392.9$ $18,757.3$ $12,655.4$ $57.1$ $56.7$ $111.20$ $-5,915.7$ $-220.4$ $718.6$ $606.5$ $112.07$ $6.412$ $18,600.0$ $12,393.4$ $18,857.3$ $12,655.4$ $57.1$ $56.7$ $111.20$ $-6,015.7$ $-219.4$ $718.6$ $604.8$ $113.73$ $6.318$ $18,700.0$ $12,394.5$ $19,057.3$ $12,656.5$ $58.8$ $58.4$ $111.20$ $-6,215.7$ $-218.5$ $718.6$ $601.5$ $117.04$ $6.139$ $18,900.0$ $12,394.5$ $19,057.3$ $12,657.6$ $60.4$ $60.1$ $111.70$ $6.6156$ $590.5$ $19,000.0$ $12,395.6$ $19,257.3$ $12,657.6$ $60.4$ $60.1$ $111.20$ $-6,215.7$ $-216.6$ $718.6$ $601.5$ $117.04$ $6.139$ $19,000.0$ $12,395.6$ $19,257.3$ $12,658.7$ $62.1$ $61.3$ $111.20$ $-6,515.6$ $-215.7$ $718.6$ $598.2$ $120.36$ $5.970$ $19,100.0$ $12,396.7$ $19,457.3$ $12,658.7$ $62.1$ $61.8$ $111.20$ $-6,615.6$ $-213.9$ $718.5$ $594.9$ $123.68$ $5.810$ $19,200.0$ $12,398.7$ $12,659.2$ $63.0$ $62.7$ $111.20$ $-6,715.6$ $-212.9$ $718.5$ $594.9$ $123.68$ $5.810$ $19,900.0$		1	-												
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	18,300.0	12,391.8	18,557.3	12,653.8	54.5	54.2	111.20	-5,715.7	-222.2	718.6	609.8	108.77	6.606		
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	18,400.0	12,392.3	18,657.3	12,654.3		55.0	111.20	-5,815.7	-221.3	718.6	608.1	110.42	6.508		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$		1	- ,												
18,800.0       12,394.5       19,057.3       12,656.5       58.8       58.4       111.20       -6,215.7       -217.6       718.6       601.5       117.04       6.139         18,900.0       12,395.0       19,157.3       12,657.0       59.6       59.3       111.20       -6,315.7       -216.6       718.6       509.9       118.70       6.054         19,000.0       12,395.6       19,257.3       12,657.6       60.4       60.1       111.20       -6,415.6       -215.7       718.6       598.2       120.02       5.899         19,000.0       12,396.7       19,457.3       12,658.1       61.0       111.20       -6,615.6       -214.8       718.5       594.9       123.68       5.810         19,200.0       12,397.2       19,557.3       12,659.2       63.0       62.7       111.20       -6,615.6       -212.9       718.5       593.2       125.35       5.732         19,400.0       12,397.8       19,657.3       12,659.8       63.8       63.5       111.20       -6,815.6       -212.9       718.5       593.2       125.35       5.732         19,600.0       12,398.3       19,757.3       12,660.3       64.7       64.4       111.20       -7,015.6       -210.	18,600.0	12,393.4	18,857.3	12,655.4	57.1	56.7	111.20	-6,015.7	-219.4	718.6	604.8	113.73	6.318		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	18,700.0	12,394.0	18,957.3	12,656.0	57.9	57.6	111.20	-6,115.7	-218.5	718.6	603.2	115.38	6.228		
19,000.0       12,395.6       19,257.3       12,657.6       60.4       60.1       111.20       -6,415.6       -215.7       718.6       598.2       120.36       5.970         19,100.0       12,396.1       19,357.3       12,658.1       61.3       61.0       111.20       -6,515.6       -214.8       718.6       596.5       122.02       5.889         19,200.0       12,397.7       19,457.3       12,658.7       62.1       61.8       111.20       -6,615.6       -213.9       718.5       594.9       123.68       5.810         19,300.0       12,397.2       19,557.3       12,659.2       63.0       62.7       111.20       -6,615.6       -212.9       718.5       593.2       125.35       5.732         19,400.0       12,397.8       19,657.3       12,660.3       64.7       64.4       111.20       -6,815.6       -212.0       718.5       591.5       127.01       5.657         19,500.0       12,398.3       19,757.3       12,660.3       64.7       64.4       111.20       -7,015.6       -210.1       718.5       588.2       130.35       5.513         19,600.0       12,398.9       19,857.3       12,661.4       66.4       66.1       111.20       -7,115.6<	18,800.0	12,394.5	19,057.3	12,656.5	58.8	58.4	111.20	-6,215.7	-217.6	718.6	601.5	117.04	6.139		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	18,900.0	12,395.0	19,157.3	12,657.0	59.6	59.3	111.20	-6,315.7	-216.6	718.6	599.9	118.70	6.054		
19,200.0       12,396.7       19,457.3       12,658.7       62.1       61.8       111.20       -6,615.6       -213.9       718.5       594.9       123.68       5.810         19,300.0       12,397.2       19,557.3       12,659.2       63.0       62.7       111.20       -6,715.6       -212.9       718.5       593.2       125.35       5.732         19,400.0       12,397.8       19,657.3       12,659.8       63.8       63.5       111.20       -6,815.6       -212.0       718.5       591.5       127.01       5.657         19,500.0       12,398.3       19,757.3       12,660.3       64.7       64.4       111.20       -6,915.6       -211.1       718.5       589.9       128.68       5.584         19,600.0       12,398.9       19,857.3       12,660.9       65.5       65.2       111.20       -7,015.6       -210.1       718.5       588.2       130.35       5.513         19,700.0       12,399.4       19,957.3       12,661.9       67.2       66.9       111.20       -7,215.6       -208.3       718.5       584.9       133.68       5.375         19,800.0       12,400.5       20,157.3       12,662.5       68.1       67.8       111.20       -7,315.6<	19,000.0	12,395.6	19,257.3	12,657.6	60.4	60.1	111.20	-6,415.6	-215.7	718.6	598.2	120.36	5.970		
19,300.0       12,397.2       19,57.3       12,659.2       63.0       62.7       111.20       -6,715.6       -212.9       718.5       593.2       125.35       5.732         19,400.0       12,397.8       19,657.3       12,659.8       63.8       63.5       111.20       -6,815.6       -212.0       718.5       591.5       127.01       5.657         19,500.0       12,398.3       19,757.3       12,660.3       64.7       64.4       111.20       -6,915.6       -211.1       718.5       589.9       128.68       5.564         19,600.0       12,398.9       19,857.3       12,660.9       65.5       65.2       111.20       -7,015.6       -210.1       718.5       588.2       130.35       5.513         19,700.0       12,399.4       19,957.3       12,661.4       66.4       66.1       111.20       -7,115.6       -209.2       718.5       586.5       132.01       5.443         19,800.0       12,400.0       20,057.3       12,661.9       67.2       66.9       111.20       -7,215.6       -208.3       718.5       584.9       133.68       5.375         19,800.0       12,400.5       20,157.3       12,662.5       68.1       67.8       111.20       -7,315.6 </td <td>19,100.0</td> <td>12,396.1</td> <td>19,357.3</td> <td>12,658.1</td> <td>61.3</td> <td>61.0</td> <td>111.20</td> <td>-6,515.6</td> <td>-214.8</td> <td>718.6</td> <td>596.5</td> <td>122.02</td> <td>5.889</td> <td></td> <td></td>	19,100.0	12,396.1	19,357.3	12,658.1	61.3	61.0	111.20	-6,515.6	-214.8	718.6	596.5	122.02	5.889		
19,400.0       12,397.8       19,657.3       12,659.8       63.8       63.5       111.20       -6,815.6       -212.0       718.5       591.5       127.01       5.657         19,500.0       12,398.3       19,757.3       12,660.3       64.7       64.4       111.20       -6,915.6       -211.1       718.5       589.9       128.68       5.584         19,600.0       12,398.9       19,857.3       12,660.9       65.5       65.2       111.20       -7,015.6       -210.1       718.5       588.2       130.35       5.513         19,700.0       12,399.4       19,957.3       12,661.4       66.4       66.1       111.20       -7,115.6       -209.2       718.5       586.5       132.01       5.443         19,800.0       12,400.0       20,057.3       12,661.9       67.2       66.9       111.20       -7,215.6       -208.3       718.5       584.9       133.68       5.375         19,900.0       12,400.5       20,157.3       12,662.5       68.1       67.8       111.20       -7,315.6       -207.4       718.5       583.2       135.35       5.309         19,969.1       12,400.9       20,226.4       12,662.9       68.7       68.3       111.20       -7,384.7<	19,200.0	12,396.7	19,457.3	12,658.7	62.1	61.8	111.20	-6,615.6	-213.9	718.5	594.9	123.68	5.810		
19,500.0       12,398.3       19,757.3       12,660.3       64.7       64.4       111.20       -6,915.6       -211.1       718.5       589.9       128.68       5.584         19,600.0       12,398.9       19,857.3       12,660.9       65.5       65.2       111.20       -7,015.6       -210.1       718.5       588.2       130.35       5.513         19,700.0       12,399.4       19,957.3       12,661.4       66.4       66.1       111.20       -7,115.6       -209.2       718.5       586.5       132.01       5.443         19,800.0       12,400.0       20,057.3       12,661.9       67.2       66.9       111.20       -7,215.6       -208.3       718.5       584.9       133.68       5.375         19,900.0       12,400.5       20,157.3       12,662.5       68.1       67.8       111.20       -7,315.6       -207.4       718.5       583.2       135.35       5.309         19,969.1       12,400.9       20,226.4       12,662.9       68.7       68.3       111.20       -7,384.7       -206.7       718.5       582.1       136.44       5.266	19,300.0	12,397.2	19,557.3	12,659.2	63.0	62.7	111.20	-6,715.6	-212.9	718.5	593.2	125.35	5.732		
19,600.0       12,398.9       19,857.3       12,660.9       65.5       65.2       111.20       -7,015.6       -210.1       718.5       588.2       130.35       5.513         19,700.0       12,399.4       19,957.3       12,661.4       66.4       66.1       111.20       -7,115.6       -209.2       718.5       586.5       132.01       5.443         19,800.0       12,400.0       20,057.3       12,661.9       67.2       66.9       111.20       -7,215.6       -208.3       718.5       584.9       133.68       5.375         19,900.0       12,400.5       20,157.3       12,662.5       68.1       67.8       111.20       -7,315.6       -207.4       718.5       583.2       135.35       5.309         19,969.1       12,400.9       20,226.4       12,662.9       68.7       68.3       111.20       -7,384.7       -206.7       718.5       582.1       136.44       5.266	19,400.0	12,397.8	19,657.3	12,659.8	63.8	63.5	111.20	-6,815.6	-212.0	718.5	591.5	127.01	5.657		
19,700.0       12,399.4       19,957.3       12,661.4       66.4       66.1       111.20       -7,115.6       -209.2       718.5       586.5       132.01       5.443         19,800.0       12,400.0       20,057.3       12,661.9       67.2       66.9       111.20       -7,215.6       -208.3       718.5       584.9       133.68       5.375         19,900.0       12,400.5       20,157.3       12,662.5       68.1       67.8       111.20       -7,315.6       -207.4       718.5       583.2       135.35       5.309         19,969.1       12,400.9       20,226.4       12,662.9       68.7       68.3       111.20       -7,384.7       -206.7       718.5       582.1       136.44       5.266	19,500.0	12,398.3	19,757.3	12,660.3	64.7	64.4	111.20	-6,915.6	-211.1	718.5	589.9	128.68	5.584		
19,800.0       12,400.0       20,057.3       12,661.9       67.2       66.9       111.20       -7,215.6       -208.3       718.5       584.9       133.68       5.375         19,900.0       12,400.5       20,157.3       12,662.5       68.1       67.8       111.20       -7,315.6       -207.4       718.5       583.2       135.35       5.309         19,969.1       12,400.9       20,226.4       12,662.9       68.7       68.3       111.20       -7,384.7       -206.7       718.5       582.1       136.44       5.266	19,600.0	12,398.9	19,857.3	12,660.9	65.5	65.2	111.20	-7,015.6	-210.1	718.5	588.2	130.35	5.513		
19,900.0       12,400.5       20,157.3       12,662.5       68.1       67.8       111.20       -7,315.6       -207.4       718.5       583.2       135.35       5.309         19,969.1       12,400.9       20,226.4       12,662.9       68.7       68.3       111.20       -7,384.7       -206.7       718.5       582.1       136.44       5.266	19,700.0	12,399.4	19,957.3	12,661.4	66.4	66.1	111.20	-7,115.6	-209.2	718.5	586.5	132.01	5.443		
19,969.1 12,400.9 20,226.4 12,662.9 68.7 68.3 111.20 -7,384.7 -206.7 718.5 582.1 136.44 5.266	19,800.0	12,400.0	20,057.3	12,661.9	67.2	66.9	111.20	-7,215.6	-208.3	718.5	584.9	133.68	5.375		
	19,900.0	12,400.5	20,157.3	12,662.5	68.1	67.8	111.20	-7,315.6	-207.4	718.5	583.2	135.35	5.309		
19,992.7 12,401.0 20,249.9 12,663.0 68.9 68.5 111.20 -7,408.2 -206.5 718.5 581.8 136.77 5.253 SF	19,969.1	12,400.9	20,226.4	12,662.9	68.7	68.3	111.20	-7,384.7	-206.7	718.5	582.1	136.44	5.266		
	19,992.7	12,401.0	20,249.9	12,663.0	68.9	68.5	111.20	-7,408.2	-206.5	718.5	581.8	136.77	5.253 \$	SF	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Reference Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	GREEN BERET FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

	esign	GREE											Offered Mall Emer	2.0
Survey Pro Refer	-	tandard Keep Offs		78-MWD+IFR Semi Majo					Diet	ance			Offset Well Error:	3.0 u
Refer leasured		Measured	et Vertical	Reference		Highside	Offset Wellbo	re Centre	Between		Minimum	Separation	Warning	
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	(usft)	(usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Centres (usft)	Ellipses (usft)	Separation (usft)	Factor	warning	
0.0	0.0	1.3	1.3	3.0	3.0	-90.38	-0.2	-30.0	30.0					
100.0	100.0	101.3	101.3	3.0	3.0	-90.38	-0.2	-30.0	30.0		6.00	5.000		
200.0	200.0	201.3	201.3	3.0	3.0	-90.38	-0.2	-30.0	30.0		6.00	4.998		
300.0	300.0	301.3	301.3	3.0	3.0	-90.38	-0.2	-30.0	30.0		6.01	4.992		
400.0	400.0	401.3	401.3	3.0	3.0	-90.38	-0.2	-30.0	30.0		6.02	4.985		
500.0	500.0	501.3	501.3	3.1	3.1	-90.38	-0.2	-30.0	30.0		6.03	4.974		
600.0	600.0	601.3	601.3	3.1	3.1	-90.38	-0.2	-30.0	30.0	24.0	6.05	4.961		
700.0	700.0	701.3	701.3	3.1	3.1	-90.38	-0.2	-30.0	30.0	23.9	6.07	4.946		
800.0	800.0	801.3	801.3	3.2	3.2	-90.38	-0.2	-30.0	30.0	23.9	6.09	4.928		
900.0	900.0	901.3	901.3	3.2	3.2	-90.38	-0.2	-30.0	30.0	23.9	6.11	4.908		
1,000.0	1,000.0	1,001.3	1,001.3	3.2	3.2	-90.38	-0.2	-30.0	30.0	23.9	6.14	4.885		
1,100.0	1,100.0	1,101.3	1,101.3	3.3	3.3	-90.38	-0.2	-30.0	30.0		6.17	4.860		
1,200.0	1,200.0	1,201.3	1,201.3	3.4	3.4	-90.38	-0.2	-30.0	30.0		6.21	4.834		
1,300.0	1,300.0	1,301.3	1,301.3	3.4	3.4	-90.38	-0.2	-30.0	30.0		6.24	4.805		
1,400.0	1,400.0	1,401.3	1,401.3	3.5	3.5	-90.38	-0.2	-30.0	30.0		6.28	4.774		
1,500.0	1,500.0	1,501.3	1,501.3	3.5	3.5	-90.38	-0.2	-30.0	30.0	23.7	6.33	4.742		
1,600.0	1,600.0	1,601.3	1,601.3	3.6	3.6	-90.38	-0.2	-30.0	30.0	23.6	6.37	4.708		
1,700.0	1,700.0	1,701.3	1,701.3	3.7	3.7	-90.38	-0.2	-30.0	30.0	23.6	6.42	4.672		
1,800.0	1,800.0	1,801.3	1,801.3	3.8	3.8	-90.38	-0.2	-30.0	30.0	23.5	6.47	4.635		
1,900.0	1,900.0	1,901.3	1,901.3	3.9	3.9	-90.38	-0.2	-30.0	30.0	23.5	6.53	4.597		
2,000.0	2,000.0	2,001.3	2,001.3	3.9	3.9	-90.38	-0.2	-30.0	30.0	23.4	6.58	4.558		
2,100.0	2,100.0	2,101.3	2,101.3	4.0	4.0	-90.38	-0.2	-30.0	30.0	23.4	6.64	4.518		
2,200.0	2,200.0	2,201.3	2,201.3	4.1	4.1	-90.38	-0.2	-30.0	30.0	23.3	6.70	4.477		
2,300.0	2,300.0	2,301.3	2,301.3	4.2	4.2	-90.38	-0.2	-30.0	30.0	23.2	6.76	4.435		
2,400.0	2,400.0	2,401.3	2,401.3	4.3	4.3	-90.38	-0.2	-30.0	30.0	23.2	6.83	4.392		
2,500.0	2,500.0	2,501.3	2,501.3	4.4	4.4	-90.38	-0.2	-30.0	30.0	23.1	6.90	4.349 0	C, ES	
2,600.0	2,600.0	2,601.3	2,601.3	4.5	4.5	-134.54	-0.2	-30.0	31.2		6.98	4.473		
2,671.7	2,671.6	2,672.9	2,672.9	4.5	4.6	-138.63	-0.2	-30.0	33.7		7.06	4.767		
2,700.0	2,699.8	2,701.1	2,701.1	4.6	4.6	-140.46	-0.2	-30.0	35.0		7.11	4.917		
2,800.0	2,799.7	2,801.0	2,801.0	4.6	4.7	-145.96	-0.2	-30.0	39.8		7.31	5.443		
2,900.0	2,899.5	2,900.8	2,900.8	4.7	4.8	-150.25	-0.2	-30.0	44.9	37.3	7.53	5.960		
3,000.0	2,999.3	3,000.6	3,000.6	4.8	4.9	-153.64	-0.2	-30.0	50.1	42.4	7.76	6.466		
3,100.0	3,099.1	3,100.4	3,100.4	4.9	5.0	-156.38	-0.2	-30.0	55.6	47.6	7.99	6.959		
3,200.0	3,198.9	3,200.2	3,200.2	5.0	5.1	-158.63	-0.2	-30.0	61.1	52.9	8.22	7.439		
3,300.0	3,298.8	3,300.1	3,300.1	5.1	5.2	-160.51	-0.2	-30.0	66.7	58.3	8.44	7.903		
3,400.0	3,398.6	3,399.9	3,399.9	5.2	5.3	-162.09	-0.2	-30.0	72.4	63.7	8.67	8.352		
3,500.0	3,498.4	3,499.7	3,499.7	5.3	5.4	-163.44	-0.2	-30.0	78.1	69.2	8.89	8.786		
3,600.0	3,598.2	3,599.5	3,599.5	5.4	5.5	-164.61	-0.2	-30.0	83.9		9.11	9.204		
3,700.0	3,698.1	3,699.4	3,699.4	5.5	5.7	-165.62	-0.2	-30.0	89.7		9.34	9.606		
3,800.0	3,797.9	3,799.2	3,799.2	5.6	5.8	-166.51	-0.2	-30.0	95.5		9.55	9.994		
3,900.0		3,899.0	3,899.0	5.7	5.9	-167.30	-0.2	-30.0	101.3			10.367		
4,000.0	3,997.5	3,998.8	3,998.8	5.8	6.0	-168.01	-0.2	-30.0	107.2	97.2	9.99	10.726		
4,100.0	4,097.3	4,098.6	4,098.6	5.9	6.1	-168.64	-0.2	-30.0	113.0	102.8	10.21	11.072		
4,200.0	4,197.2	4,198.5	4,198.5	6.0	6.2	-169.21	-0.2	-30.0	118.9	108.5	10.43	11.404		
4,300.0	4,297.0	4,298.3	4,298.3	6.1	6.3	-169.72	-0.2	-30.0	124.8	114.2	10.65	11.724		
4,400.0	4,396.8	4,398.1	4,398.1	6.2	6.5	-170.19	-0.2	-30.0	130.7	119.8	10.86	12.032		
4,500.0	4,496.6	4,497.9	4,497.9	6.3	6.6	-170.62	-0.2	-30.0	136.6	125.5	11.08	12.328		
4,600.0	4,596.4	4,597.7	4,597.7	6.4	6.7	-171.01	-0.2	-30.0	142.5	131.2	11.30	12.613		
4,700.0	4,696.3	4,697.6	4,697.6	6.5	6.8	-171.37	-0.2	-30.0	148.4	136.9	11.52	12.888		
4,800.0	4,796.1	4,797.4	4,797.4	6.6	6.9	-171.71	-0.2	-30.0	154.4	142.6	11.74	13.152		
4,900.0	4,895.9	4,897.2	4,897.2	6.7	7.0	-172.01	-0.2	-30.0	160.3	148.3	11.96	13.407		
5,000.0	4,995.7	4,997.0	4,997.0	6.8	7.2	-172.30	-0.2	-30.0	166.2	154.1	12.18	13.653		

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CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Reference Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	GREEN BERET FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Survey Pro	ogram: 0-S	tandard Keen	er 104, 123	78-MWD+IFR	1+FDIR								Offset Well Error:	3.0 us
Refer	-	Offs		Semi Majo					Dist	ance			Oliset well Enor.	5.0 us
	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbo	re Centre		Between	Minimum	Separation	Warning	
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	(usft)	(usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Centres (usft)	Ellipses (usft)	Separation (usft)	Factor	3	
							· /	. ,				10.000		
5,100.0 5,200.0		5,096.8 5,196.7	5,096.8 5,196.7	6.9 7.1	7.3 7.4	-172.57 -172.82	-0.2 -0.2	-30.0 -30.0	172.2 178.1			13.890 14.118		
5,300.0		5,190.7	5,296.5	7.1	7.4	-172.82	-0.2	-30.0	184.1			14.118		
5,400.0		5,396.3	5,396.3	7.2	7.5	-173.05	-0.2	-30.0	190.0			14.552		
5,500.0	5,494.8	5,390.3	5,390.3 5,496.1	7.3	7.8	-173.47	-0.2	-30.0	190.0		13.00	14.552		
5,600.0	5,594.6	5,602.9	5,602.9	7.4	7.9	-173.55	-0.2	-30.0	200.2		13.20	14.737		
3,000.0	5,554.0	3,002.9	3,002.9	1.5	1.5	-175.55	1.5	-29.0	200.2	100.7	15.51	14.020		
5,700.0	5,694.5	5,710.2	5,710.0	7.6	8.0	-173.34	6.2	-25.7	200.9	187.2	13.73	14.635		
5,800.0	5,794.3	5,810.3	5,809.9	7.7	8.1	-173.01	12.3	-21.6	199.7	185.8	13.93	14.340		
5,900.0	5,894.1	5,910.3	5,909.6	7.9	8.2	-172.67	18.5	-17.4	198.5	184.3	14.12	14.053		
6,000.0	5,993.9	6,010.3	6,009.3	8.0	8.3	-172.33	24.6	-13.3	197.3	182.9	14.32	13.774		
6,100.0	6,093.7	6,110.3	6,109.0	8.1	8.4	-171.98	30.8	-9.1	196.1	181.5	14.52	13.505		
6,200.0	6,193.6	6,210.3	6,208.7	8.2	8.5	-171.63	36.9	-5.0	194.9		14.71	13.243		
6,300.0	6,293.4	6,310.3	6,308.4	8.3	8.6	-171.28	43.1	-0.9	193.7		14.91	12.989		
6,400.0	6,393.2	6,410.3	6,408.1	8.4	8.7	-170.92	49.2	3.3	192.5		15.11	12.742		
6,500.0	6,493.0	6,510.2	6,507.9	8.6	8.9	-170.56	55.4	7.4	191.3		15.30	12.503		
6,600.0	6,592.8	6,610.2	6,607.6	8.7	9.0	-170.19	61.5	11.5	190.2	174.7	15.50	12.271		
6,700.0	6,692.7	6,710.2	6,707.3	8.8	9.1	-169.82	67.7	15.7	189.0	173.3	15.69	12.045		
6,800.0	6,792.5	6,810.2	6,807.0	8.9	9.1	-169.82	73.8	19.8	189.0		15.88	12.045		
6,900.0	6.892.3	6,910.2	6,906.7	8.9 9.0	9.2	-169.06	79.9	23.9	187.9		16.08	11.614		
	- /			9.0 9.1	9.3 9.4									
7,000.0 7,100.0	6,992.1 7,091.9	7,010.2 7,110.2	7,006.4 7,106.1	9.1	9.4 9.5	-168.67 -168.28	86.1 92.2	28.1 32.2	185.6 184.5		16.27 16.46	11.407 11.207		
7,100.0	7,091.9	7,110.2	7,100.1	9.5	9.5	-100.20	92.2	32.2	104.0	168.0	10.40	11.207		
7,200.0	7,191.8	7,210.1	7,205.8	9.4	9.6	-167.89	98.4	36.3	183.3	166.7	16.65	11.012		
7,300.0	7,291.6	7,310.1	7,305.5	9.5	9.8	-167.49	104.5	40.5	182.2		16.84	10.823		
7,400.0	7,391.4	7,410.1	7,405.3	9.6	9.9	-167.08	110.7	44.6	181.1		17.03	10.639		
7,500.0	7,491.2	7,510.1	7,505.0	9.8	10.0	-166.67	116.8	48.8	180.1			10.460		
7,600.0	7,591.0	7,610.1	7,604.7	9.9	10.1	-166.26	123.0	52.9	179.0		17.40	10.286		
,	,													
7,700.0	7,690.9	7,710.1	7,704.4	10.0	10.2	-165.84	129.1	57.0	177.9	160.3	17.58	10.118		
7,800.0	7,790.7	7,810.1	7,804.1	10.1	10.3	-165.41	135.2	61.2	176.9	159.1	17.77	9.954		
7,900.0	7,890.5	7,910.0	7,903.8	10.2	10.4	-164.98	141.4	65.3	175.8	157.9	17.95	9.794		
8,000.0	7,990.3	8,010.0	8,003.5	10.4	10.6	-164.55	147.5	69.4	174.8	156.6	18.13	9.640		
8,100.0	8,090.2	8,110.0	8,103.2	10.5	10.7	-164.11	153.7	73.6	173.7	155.4	18.31	9.489		
8,200.0	8,190.0	8,210.0	8,202.9	10.6	10.8	-163.66	159.8	77.7	172.7			9.343		
8,300.0	8,289.8	8,310.0	8,302.7	10.7	10.9	-163.21	166.0	81.8	171.7			9.201		
8,400.0	8,389.6	8,410.0	8,402.4	10.8	11.0	-162.75	172.1	86.0	170.7		18.84	9.062		
8,500.0	8,489.4	8,510.0	8,502.1	11.0	11.1	-162.29	178.3	90.1	169.7		19.01	8.928		
8,600.0	8,589.3	8,609.9	8,601.8	11.1	11.3	-161.83	184.4	94.2	168.8	149.6	19.18	8.797		
8,700.0	8,689.1	8,709.9	8,701.5	11.2	11.4	-161.35	190.5	98.4	167.8	148.4	19.35	8.670		
8,800.0	8,788.9	8,809.9	8,801.2	11.2	11.5	-160.88	196.7	102.5	166.8			8.547		
8,800.0	8,888.7	8,809.9	8,900.9	11.5	11.5	-160.88	202.8	102.5	165.9			8.427		
9,000.0	8,988.5	9,009.9	9,000.9	11.5	11.0	-159.90	202.8	110.7	165.0		19.09	8.311		
9,000.0 9,100.0		9,009.9 9,109.9	9,000.8 9,100.3	11.0	11.7	-159.90	209.0	110.8	165.0		20.01	8.197		
0,100.0	0,000.4	0,100.0	0,100.0	11.7	11.3	100.41	210.1	114.5	104.1		20.01	5.157		
9,200.0	9,188.2	9,209.9	9,200.1	11.8	12.0	-158.91	221.3	119.1	163.1	143.0	20.17	8.087		
9,300.0		9,309.8	9,299.8	12.0	12.1	-158.40	227.4	123.2	162.3		20.33	7.980		
9,400.0		9,409.8	9,399.5	12.1	12.2	-157.89	233.6	127.3	161.4		20.49	7.876		
9,500.0		9,509.8	9,499.2	12.2	12.3	-157.38	239.7	131.5	160.5		20.64	7.775		
9,600.0		9,609.8	9,598.9	12.3	12.5	-156.86	245.8	135.6	159.7		20.80	7.677		
9,700.0		9,709.8	9,698.6	12.5	12.6	-156.33	252.0	139.7	158.8		20.95	7.582		
9,800.0		9,809.8	9,798.3	12.6	12.7	-155.80	258.1	143.9	158.0		21.10	7.489		
9,900.0		9,909.8	9,898.0	12.7	12.8	-155.26	264.3	148.0	157.2		21.24	7.399		
10,000.0	9,986.7	10,009.7	9,997.7	12.8	12.9	-154.71	270.4	152.2	156.4	135.0	21.39	7.312		
10,100.0	10,086.6	10,109.7	10,097.5	13.0	13.1	-154.16	276.6	156.3	155.6	134.1	21.53	7.227		
40.000 -	40.400.5	40.000 -	40 407 6	10.1	10.0	450.04		100 1		100 -	o			
10,200.0	10,186.4	10,209.7	10,197.2	13.1	13.2	-153.61	282.7	160.4	154.8	133.2	21.67	7.145		

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Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Reference Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	GREEN BERET FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Survey Pro	ogram: 0-S	tandard Keen	er 104, 123	78-MWD+IFR	1+FDIR								Offset Well Error:	3.0 us
-	rence	Offs		Semi Majo					Dist	ance			Oliset well Enor.	5.0 us
	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbo	re Centre	Between	Between	Minimum		Warning	
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	(usft)	(usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Centres (usft)	Ellipses (usft)	Separation (usft)	Factor		
10,300.0	10,286.2	10,309.7	10,296.9	13.2	13.3	-153.05	288.9	164.6	154.1	132.3	21.81	7.065		
10,300.0	-	10,409.7	10,396.6	13.2	13.4	-152.48	295.0	164.0	153.3			6.987		
10,500.0		10,403.7	10,330.0	13.5	13.4	-151.91	301.1	172.8	152.6			6.912		
10,600.0		10,609.7	10,596.0	13.6	13.7	-151.33	307.3	172.0	152.0		22.00	6.839		
10,000.0		10,709.6	10,695.7	13.0	13.7	-150.75	313.4	181.1	151.9		22.21	6.768		
10,800.0		10,809.6	10,795.4	13.8	13.9	-150.16	319.6	185.2	150.5		22.47	6.699		
10,000.0	10,700.0	10,000.0	10,100.4	10.0	10.0	100.10	010.0	100.2	100.0	120.1	22.47	0.000		
10,900.0	10,885.1	10,909.6	10,895.1	14.0	14.0	-149.57	325.7	189.4	149.9	127.3	22.60	6.633		
11,000.0	10,984.9	11,009.6	10,994.9	14.1	14.2	-148.97	331.9	193.5	149.2	126.5	22.72	6.568		
11,100.0	11,084.8	11,109.6	11,094.6	14.2	14.3	-148.37	338.0	197.6	148.6	125.8	22.84	6.505		
11,200.0	11,184.6	11,209.6	11,194.3	14.3	14.4	-147.76	344.2	201.8	148.0	125.0	22.96	6.445		
11,300.0	11,284.4	11,309.6	11,294.0	14.5	14.5	-147.15	350.3	205.9	147.4	124.3	23.08	6.386		
11,400.0		11,409.5	11,393.7	14.6	14.7	-146.53	356.4	210.1	146.8		23.20	6.329		
11,500.0		11,509.5	11,493.4	14.7	14.8	-145.91	362.6	214.2	146.3		23.31	6.274		
11,600.0		11,609.5	11,593.1	14.8	14.9	-145.28	368.7	218.3	145.7		23.43	6.220		
11,700.0		11,709.5	11,692.8	15.0	15.0	-144.65	374.9	222.5	145.2		23.54	6.168		
11,800.0	11,783.5	11,809.5	11,792.5	15.1	15.2	-144.01	381.0	226.6	144.7	121.0	23.65	6.118		
11,879.4	11,862.8	11,888.9	11,871.7	15.2	15.3	-143.50	385.9	229.9	144.3	120.6	23.73	6.079		
11,900.0		11,909.5	11,892.2	15.2	15.3	170.94	387.2	230.7	144.1		23.71	6.077		
11,925.0		11,934.4	11,917.1	15.2	15.3	118.40	388.7	231.8	143.7	120.1	23.59	6.091		
11,950.0		11,959.1	11,941.8	15.2	15.3	102.85	390.2	232.8	143.1		23.37	6.122		
11,975.0	11,958.0	11,983.7	11,966.2	15.2	15.4	98.01	391.7	233.8	142.4	119.3	23.07	6.174		
12,000.0	11,982.5	12,007.9	11,990.4	15.2	15.4	96.90	393.2	234.8	141.8	119.1	22.68	6.252		
12,025.0		12,031.8	12,014.3	15.2	15.4	97.61	394.7	235.8	141.4			6.363		
12,037.5		12,043.6	12,026.0	15.2	15.5	98.40	395.4	236.3	141.3		21.97	6.432		
12,050.0		12,055.3	12,037.7	15.2	15.5	99.42	396.1	236.8	141.4		21.72	6.511		
12,075.0		12,078.4	12,060.7	15.2	15.5	101.94	397.6	237.7	142.0		21.20	6.698		
	,		,											
12,100.0	12,077.4	12,100.8	12,083.1	15.2	15.5	104.92	398.9	238.6	143.5	122.8	20.74	6.922		
12,125.0	12,100.0	12,122.7	12,104.9	15.2	15.6	108.15	400.3	239.6	146.2	125.8	20.37	7.175		
12,150.0	12,122.0	12,143.9	12,126.1	15.2	15.6	111.47	401.6	240.4	150.1	129.9	20.16	7.445		
12,175.0	12,143.3	12,164.4	12,146.5	15.3	15.6	114.74	402.8	241.3	155.5	135.4	20.14	7.721		
12,200.0	12,163.9	12,184.1	12,166.2	15.3	15.6	117.83	404.1	242.1	162.6	142.2	20.32	8.000		
12,225.0		12,203.0	12,185.0	15.3	15.7	120.66	405.2	242.9	171.2		20.67	8.284		
12,250.0		12,221.0	12,203.0	15.3	15.7	123.17	406.3	243.6	181.6		21.16	8.585		
12,275.0		12,238.1	12,220.0	15.3	15.7	125.31	407.4	244.3	193.6		21.72	8.914		
12,300.0		12,254.2	12,236.0	15.3	15.7	127.05	408.4	245.0	207.2		22.33	9.280		
12,325.0	12,254.3	12,269.3	12,251.1	15.4	15.7	128.36	409.3	245.6	222.2	199.3	22.93	9.690		
12,350.0	12,269.5	12,283.3	12,265.0	15.4	15.8	129.24	410.1	246.2	238.6	215.0	23.52	10.145		
12,330.0		12,205.5	12,203.0	15.4	15.8	129.24	410.9	240.2	256.0		23.32	10.145		
	12,203.7	12,290.2	12,277.9	15.4	15.8	129.05	410.9	240.7	250.1		24.00	11.187		
12,400.0			12,209.0	15.4	15.8	129.50	411.7	247.2	274.8			11.769		
	12,308.7	12,318.5	12,300.2	15.4	15.8	128.93	412.3	247.7 248.0	294.5 315.0		25.02	12.386		
12,400.0	12,010.0	12,021.0	12,000.0	10.0	10.0	121.00	712.9	240.0	515.0	203.0	20.40	12.000		
12,475.0	12,329.1	12,336.1	12,317.7	15.5	15.8	125.75	413.4	248.4	336.3	310.5	25.80	13.034		
12,500.0		12,343.0	12,324.6	15.5	15.8	122.97	413.8	248.7	358.3		26.13	13.711		
12,525.0		12,348.6	12,330.2	15.5	15.8	119.21	414.2	248.9	380.8			14.411		
12,550.0		12,353.0	12,334.6	15.5	15.8	114.27	414.4	249.1	403.7		26.68	15.131		
12,575.0		12,356.1	12,337.6	15.6	15.8	107.96	414.6	249.2	427.1			15.869		
12,600.0		12,357.9	12,339.4	15.6	15.8	100.18	414.7	249.3	450.7		27.11	16.621		
12,625.0		12,358.3	12,339.9	15.6	15.8	91.02	414.8	249.3	474.5			17.384		
12,648.0		12,357.6	12,339.2	15.6	15.8	81.75	414.7	249.3	496.5			18.093		
12,700.0	12,361.3	13,203.5	12,863.3	15.7	16.2	166.54	-109.6	276.0	514.8	460.3	54.55	9.438		
12,800.0	12,361.8	13,303.5	12,863.8	15.8	16.3	166.54	-209.6	276.9	514.8	460.1	54.77	9.400		
40.000 -	40.000	40 400 -	40.004.0		10.0	400 54				150 -		0.05		
12,900.0	12,362.4	13,403.5	12,864.3	15.9	16.3	166.54	-309.6	277.9	514.8	459.8	55.04	9.354		

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COMPASS 5000.15 Build 91E

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Reference Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	GREEN BERET FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

urvev Pro	ogram: 0-S	tandard Keer	er 104. 123	78-MWD+IFR	1+FDIR								Offset Well Error:	3.0 u
Refer	-	Offs		Semi Majo					Dist	ance			Oliset well Ellor.	5.0 u
easured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbo +N/-S	re Centre +E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
13,000.0	12,362.9	13,503.5	12,864.9	16.1	16.4	166.54	-409.6	278.8	514.8	459.5	55.35	9.301		
13,100.0	12,363.5	13,603.5	12,865.4	16.3	16.5	166.54	-509.6	279.7	514.8	459.1	55.70	9.242		
13,200.0	12,364.0	13,703.5	12,866.0	16.6	16.6	166.54	-609.6	280.6	514.8	458.7	56.10	9.177		
13,300.0	12,364.5	13,803.5	12,866.5	16.9	16.7	166.54	-709.5	281.6	514.8	458.3	56.54	9.106		
13,400.0	12,365.1	13,903.5	12,867.1	17.2	16.9	166.54	-809.5	282.5	514.8	457.8	57.02	9.029		
13,500.0	12,365.6	14,003.5	12,867.6	17.6	17.2	166.54	-909.5	283.4	514.8	457.3	57.54	8.948		
13,600.0	12,366.2	14,103.5	12,868.2	18.1	17.6	166.54	-1,009.5	284.3	514.8	456.7	58.09	8.862		
13,700.0	12,366.7	14,203.5	12,868.7	18.6	18.0	166.54	-1,109.5	285.3	514.8	456.1	58.69	8.773		
13,800.0	12,367.3	14,303.5	12,869.2	19.2	18.5	166.54	-1,209.5	286.2	514.8	455.5	59.32	8.680		
13,900.0	12,367.8	14,403.5	12,869.8	19.8	19.1	166.54	-1,309.5	287.1	514.8	454.9	59.98	8.583		
14,000.0	12,368.4	14,503.5	12,870.3	20.4	19.7	166.54	-1,409.5	288.0	514.8	454.2	60.68	8.485		
14,100.0		14,603.5	12,870.9	21.0	20.3	166.53	-1,509.5	289.0	514.8		61.41	8.383		
14,200.0		14,703.5	12,871.4	21.7	21.0	166.53	-1,609.5	289.9	514.8		62.17	8.281		
14,300.0		14,803.5	12,872.0	22.4	21.7	166.53	-1,709.5	290.8	514.8			8.176		
14,400.0		14,903.5	12,872.5	23.1	22.4	166.53	-1,809.5	291.7	514.8	451.0		8.071		
14,500.0	12,371.1	15,003.5	12,873.1	23.8	23.2	166.53	-1,909.5	292.6	514.8	450.2	64.64	7.965		
14 600 0	10 074 0	15 400 5	10 070 0	04 5	00.0	166 50	2 000 5	202.0	E44 0	440.0	65 F0	7 050		
14,600.0		15,103.5	12,873.6	24.5	23.9	166.53	-2,009.5	293.6	514.8			7.858		
14,700.0		15,203.5	12,874.2	25.3	24.7	166.53	-2,109.5	294.5	514.8			7.751		
14,800.0		15,303.5	12,874.7	26.0	25.5	166.53	-2,209.5	295.4	514.8			7.644		
14,900.0		15,403.5	12,875.2	26.8	26.2	166.53	-2,309.5	296.3	514.8			7.538		
15,000.0	12,373.8	15,503.5	12,875.8	27.5	27.0	166.53	-2,409.4	297.3	514.8	445.6	69.28	7.432		
1 - 100 0	10 074 4	15 CO2 F	10.076.0	20.2	27.0	100 50	2 500 4	200.2	514.0	444.0	70.07	7 226		
15,100.0		15,603.5	12,876.3	28.3	27.8	166.53	-2,509.4	298.2	514.8			7.326		
15,200.0		15,703.5	12,876.9	29.1	28.6	166.53	-2,609.4	299.1	514.8	443.6		7.222		
15,300.0		15,803.5	12,877.4	29.9	29.4	166.53	-2,709.4	300.0	514.8	442.5		7.118		
15,400.0		15,903.5	12,878.0	30.6	30.2	166.53	-2,809.4	301.0	514.8			7.015		
15,500.0	12,376.5	16,003.5	12,878.5	31.4	31.0	166.53	-2,909.4	301.9	514.8	440.4	74.46	6.914		
15 600 0	10 077 1	16 100 F	10 070 1	22.2	31.8	100 50	2 000 4	202.0	514.0	439.3	75 50	6.814		
15,600.0		16,103.5	12,879.1	32.2		166.53	-3,009.4	302.8	514.8					
15,700.0		16,203.5	12,879.6	33.0	32.6	166.53	-3,109.4	303.7	514.8			6.715		
15,800.0		16,303.5	12,880.1	33.8	33.4	166.53	-3,209.4	304.7	514.8		77.80	6.618		
15,900.0		16,403.5	12,880.7	34.6	34.2	166.53	-3,309.4	305.6	514.8			6.522		
16,000.0	12,379.3	16,503.5	12,881.2	35.4	35.1	166.53	-3,409.4	306.5	514.8	434.8	80.10	6.428		
16 100 0	10 270 0	16,603.5	10 001 0	36.3	35.9	166.53	-3,509.4	307.4	514.8	433.6	81.27	6.335		
16,100.0			12,881.8											
16,200.0		16,703.5	12,882.3	37.1	36.7	166.53	-3,609.4	308.3	514.8	432.4	82.45	6.244		
16,300.0		16,803.5	12,882.9	37.9	37.5	166.53	-3,709.4	309.3	514.8			6.155		
16,400.0		16,903.5	12,883.4	38.7	38.3	166.53	-3,809.4	310.2	514.9	430.0		6.067		
16,500.0	12,382.0	17,003.5	12,884.0	39.5	39.2	166.53	-3,909.4	311.1	514.9	428.8	86.08	5.981		
16 600 0	10 202 5	17,103.5	10 901 F	40.3	40.0	166 52	-4.009.4	312.0	514.9	427.5	87.32	5.896		
16,600.0			12,884.5			166.53	1							
16,700.0		17,203.5	12,885.0	41.2	40.8	166.53	-4,109.4	313.0	514.9			5.813		
	12,383.6		12,885.6	42.0	41.7	166.53	-4,209.3	313.9	514.9			5.732		
16,900.0		17,403.5		42.8	42.5	166.53	-4,309.3	314.8	514.9			5.653		
17,000.0	12,384.7	17,503.5	12,886.7	43.7	43.3	166.53	-4,409.3	315.7	514.9	422.5	92.36	5.575		
17 100 0	12,385.2	17,603.5	12,887.2	44.5	44.2	166.53	-4,509.3	316.7	514.9	421.2	93.64	5.498		
17,200.0		17,703.5	12,887.8	45.3	45.0	166.53	-4,609.3	317.6	514.9			5.423		
17,300.0		17,803.5	12,888.3	46.1	45.9	166.53	-4,709.3	318.5	514.9			5.350		
17,400.0		17,903.5	12,888.9	47.0	46.7	166.53	-4,809.3	319.4	514.9			5.278		
17,500.0	12,387.4	18,003.5	12,889.4	47.8	47.5	166.53	-4,909.3	320.4	514.9	416.0	98.87	5.208		
17 600 0	12,388.0	18,103.5	12,890.0	48.7	48.4	166.53	-5,009.3	321.3	514.9	414.7	100.19	5.139		
		18,103.5												
17,700.0		,	12,890.5	49.5	49.2	166.53	-5,109.3	322.2	514.9			5.071		
17,800.0			12,891.0	50.3	50.1	166.53	-5,209.3	323.1	514.9			5.005		
17,900.0		18,403.5	12,891.6	51.2	50.9	166.53	-5,309.3	324.0	514.9			4.941		
18,000.0	12,390.1	18,503.5	12,892.1	52.0	51.7	166.53	-5,409.3	325.0	514.9	409.3	105.56	4.877		
18 100 0	12,390.7	18 602 5	10 800 7	E0 0	E0 6	166 52	-5,509.3	205.0	E14 0	107.0	106.00	A 01F		
10,100.0	12.390.7	18,603.5	12,892.7	52.8	52.6	166.53	-5.509.3	325.9	514.9	407.9	106.92	4.815		

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Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Reference Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	GREEN BERET FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Offset D	esign	GREE	N BERET	FED COM	/ PROJI	ECT - GR	EEN BERET	FED CON	I #801H -	OWB - F	WP1		Offset Site Error:	3.0 usft
Survey Pro	gram: 0-S	tandard Keep	er 104, 123	78-MWD+IFR	1+FDIR								Offset Well Error:	3.0 usft
Refer	ence	Offs	et	Semi Majo	r Axis				Dist	ance				
Measured	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbo		Between	Between		Separation	Warning	
Depth (usft)	Depth (usft)	Depth (usft)	Depth (usft)	(usft)	(usft)	Toolface (°)	+N/-S (usft)	+E/-W (usft)	Centres (usft)	Ellipses (usft)	Separation (usft)	Factor		
18,200.0	12,391.2	18,703.5	12,893.2	53.7	53.4	166.53	-5,609.3	326.8	514.9	406.6	108.29	4.755		
18,300.0	12,391.8	18,803.5	12,893.8	54.5	54.3	166.53	-5,709.3	327.7	514.9	405.2	109.66	4.695		
18,400.0	12,392.3	18,903.5	12,894.3	55.4	55.1	166.53	-5,809.3	328.7	514.9	403.8	111.03	4.637		
18,500.0	12,392.9	19,003.5	12,894.9	56.2	56.0	166.53	-5,909.2	329.6	514.9	402.4	112.42	4.580		
18,600.0	12,393.4	19,103.5	12,895.4	57.1	56.8	166.53	-6,009.2	330.5	514.9	401.1	113.80	4.524		
18,700.0	12,394.0	19,203.5	12,895.9	57.9	57.7	166.52	-6,109.2	331.4	514.9	399.7	115.19	4.470		
18,800.0	12,394.5	19,303.5	12,896.5	58.8	58.5	166.52	-6,209.2	332.4	514.9	398.3	116.59	4.416		
18,900.0	12,395.0	19,403.5	12,897.0	59.6	59.4	166.52	-6,309.2	333.3	514.9	396.9	117.99	4.364		
19,000.0	12,395.6	19,503.5	12,897.6	60.4	60.2	166.52	-6,409.2	334.2	514.9	395.5	119.40	4.312		
19,100.0	12,396.1	19,603.5	12,898.1	61.3	61.1	166.52	-6,509.2	335.1	514.9	394.1	120.81	4.262		
19,200.0	12,396.7	19,703.5	12,898.7	62.1	61.9	166.52	-6,609.2	336.1	514.9	392.6	122.22	4.213		
19,300.0	12,397.2	19,803.5	12,899.2	63.0	62.8	166.52	-6,709.2	337.0	514.9	391.2	123.64	4.164		
19,400.0	12,397.8	19,903.5	12,899.8	63.8	63.6	166.52	-6,809.2	337.9	514.9	389.8	125.06	4.117		
19,500.0	12,398.3	20,003.5	12,900.3	64.7	64.5	166.52	-6,909.2	338.8	514.9	388.4	126.49	4.071		
19,600.0	12,398.9	20,103.5	12,900.8	65.5	65.3	166.52	-7,009.2	339.8	514.9	387.0	127.92	4.025		
19,700.0	12,399.4	20,203.5	12,901.4	66.4	66.2	166.52	-7,109.2	340.7	514.9	385.5	129.35	3.980		
19,800.0	12,400.0	20,303.5	12,901.9	67.2	67.0	166.52	-7,209.2	341.6	514.9		130.79	3.937		
19,900.0	12,400.5	20,403.5	12,902.5	68.1	67.9	166.52	-7,309.2	342.5	514.9	382.6		3.894		
19,992.7	12,401.0	20,496.2	12,903.0	68.9	68.7	166.52	-7,401.9	343.4	514.9	381.3	133.56	3.855 \$	SF	

Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Reference Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	GREEN BERET FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB=26' @ 3306.2usft (MCVAY 8) Offset Depths are relative to Offset Datum Central Meridian is 104° 20' 0.000 W Coordinates are relative to: GREEN BERET FED COM #602H Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30 Grid Convergence at Surface is: 0.50°



Anticollision Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Reference Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site Error:	3.0 usft	North Reference:	Grid
Reference Well:	GREEN BERET FED COM #602H	Survey Calculation Method:	Minimum Curvature
Well Error:	3.0 usft	Output errors are at	2.00 sigma
<b>Reference Wellbore</b>	OWB	Database:	edm
Reference Design:	PWP1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB=26' @ 3306.2usft (MCVAY 8) Offset Depths are relative to Offset Datum Central Meridian is 104° 20' 0.000 W Coordinates are relative to: GREEN BERET FED COM #602H Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30 Grid Convergence at Surface is: 0.50°



# **NORTHERN DELAWARE BASIN**

LEA COUNTY, NM GREEN BERET FED COM PROJECT GREEN BERET FED COM #602H

OWB

Plan: PWP1

# **Standard Survey Report**

17 February, 2020

Survey Report

Project: Site: Well: Wellbore:	LEA COUN GREEN BE	TY, NM	AWARE BASI M FED COM PRO FED COM #60	OJECT	TVD Ref MD Refe North R Survey	Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference: Survey Calculation Method: Database:			Well GREEN BERET FED COM #602H KB=26' @ 3306.2usft (MCVAY 8) KB=26' @ 3306.2usft (MCVAY 8) Grid Minimum Curvature edm			
Project	LEA C	OUNT	Y, NM									
Map System: Geo Datum: Map Zone:	NAD 19	27 (NA	e 1927 (Exact \DCON CONU ast 3001		Syster	m Datum:		Mean Sea Le	vel			
Well	GREEI	N BERI	ET FED COM	#602H								
Well Position	+N/-S		0.0 usft	Northing:		409,294.		Latitude:		32° 7' 18		
Position Uncerta	+E/-W ainty		0.0 usft 3.0 usft	Easting: Wellhead El	evation:	792,936.		Longitude: Ground Leve	l:	103° 23' 13 3,280	.662 W 0.2 usft	
Wellbore	OWB											
Magnetics	Mo	del Nai	me S	ample Date	Dec	lination (°)	Di	p Angle (°)		Strength (nT)		
		IGRF	F2015	2/17/2020		6.57		59.96	6 47,	623.08107453		
Design	PWP1											
Audit Notes: Version:				Phase:	PLAN		Tie On Dept	h:			0.0	
Vertical Section	:		Depth Fro (us		+N/- (usf	-	+E/-W (usft)	l	Direction (°)			
Survey Tool Pro			Date 2/17/2	0.0		0.0	0.0		17	6.42		
From (usft)	To (usft	) 5	Survey (Wellb			Tool Name		Description				
0 11,880			PWP1 (OWB) PWP1 (OWB)			Standard Kee MWD+IFR1+	•		eline Keeper v ) + IFR1 + FDI			
Planned Survey												
Measured Depth (usft)	d Inclina (°)		Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)		
	.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00		
100		0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00		
200	.0	0.00	0.00	200.0	0.0 0.0	0.0 0.0	0.0 0.0	0.00	0.00	0.00		
300		0.00	0.00		0.0	0.0	00	0.00	0.00	0.00		
400	.0	0.00 0.00	0.00 0.00	300.0 400.0	0.0	0.0	0.0	0.00	0.00	0.00		
	.0 .0	0.00	0.00	400.0	0.0	0.0	0.0		0.00			
400. 500. 600.	.0 .0 .0							0.00 0.00 0.00		0.00 0.00 0.00		
500	.0 .0 .0 .0	0.00	0.00 0.00	400.0 500.0	0.0 0.0	0.0 0.0	0.0 0.0	0.00	0.00 0.00	0.00		
500. 600. 700. 800.	.0 .0 .0 .0 .0 .0	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	400.0 500.0 600.0 700.0 800.0	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00		
500 600 700	.0 .0 .0 .0 .0 .0	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00	400.0 500.0 600.0 700.0	0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0	0.00 0.00 0.00	0.00 0.00 0.00 0.00	0.00 0.00 0.00		
500. 600. 700. 800. 900.	.0 .0 .0 .0 .0 .0 .0 .0	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00	400.0 500.0 600.0 700.0 800.0 900.0 1,000.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00		
500. 600. 700. 800. 900. 1,000. 1,100.	.0 .0 .0 .0 .0 .0 .0 .0 .0	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	400.0 500.0 600.0 700.0 800.0 900.0 1,000.0 1,100.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00		
500, 600, 700, 800, 900, 1,000, 1,100, 1,200,	.0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	400.0 500.0 600.0 700.0 800.0 900.0 1,000.0 1,100.0 1,200.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0		
500. 600. 700. 800. 900. 1,000. 1,100.	.0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0 .0	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	400.0 500.0 600.0 700.0 800.0 900.0 1,000.0 1,100.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00		

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Well:	GREEN BERET FED COM #602H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	edm

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build									
2,600.0	2.00	41.80	2,600.0	1.3	1.2	-1.2	2.00	2.00	0.00
2,671.7 Start 9207.	3.43 7 hold at 2671	41.80 <b>.7 MD</b>	2,671.6	3.8	3.4	-3.6	2.00	2.00	0.00
2,700.0	3.43	41.80	2,699.8	5.1	4.6	-4.8	0.00	0.00	0.00
2,800.0	3.43	41.80	2,799.7	9.6	8.5	-9.0	0.00	0.00	0.00
2,900.0	3.43	41.80	2,899.5	14.0	12.5	-13.2	0.00	0.00	0.00
3,000.0	3.43	41.80	2,999.3	18.5	16.5	-17.4	0.00	0.00	0.00
3,100.0	3.43	41.80	3,099.1	23.0	20.5	-21.6	0.00	0.00	0.00
3,200.0	3.43	41.80	3,198.9	27.4	24.5	-25.8	0.00	0.00	0.00
3,300.0	3.43	41.80	3,298.8	31.9	28.5	-30.0	0.00	0.00	0.00
3,400.0	3.43	41.80	3,398.6	36.4	32.5	-34.3	0.00	0.00	0.00
3,500.0	3.43	41.80	3,498.4	40.8	36.5	-38.5	0.00	0.00	0.00
3,600.0	3.43	41.80	3,598.2	45.3	40.5	-42.7	0.00	0.00	0.00
3,700.0	3.43	41.80	3,698.1	49.8	44.5	-46.9	0.00	0.00	0.00
3,800.0	3.43	41.80	3,797.9	54.2	48.5	-51.1	0.00	0.00	0.00
3,900.0	3.43	41.80	3,897.7	58.7	52.5	-55.3	0.00	0.00	0.00
4,000.0	3.43	41.80	3,997.5	63.1	56.5	-59.5	0.00	0.00	0.00
4,100.0	3.43	41.80	4,097.3	67.6	60.4	-63.7	0.00	0.00	0.00
4,200.0	3.43	41.80	4,197.2	72.1	64.4	-67.9	0.00	0.00	0.00
4,300.0	3.43	41.80	4,297.0	76.5	68.4	-72.1	0.00	0.00	0.00
4,400.0	3.43	41.80	4,396.8	81.0	72.4	-76.3	0.00	0.00	0.00
4,500.0	3.43	41.80	4,496.6	85.5	76.4	-80.5	0.00	0.00	0.00
4,600.0	3.43	41.80	4,596.4	89.9	80.4	-84.7	0.00	0.00	0.00
4,700.0	3.43	41.80	4,696.3	94.4	84.4	-89.0	0.00	0.00	0.00
4,800.0	3.43	41.80	4,796.1	98.9	88.4	-93.2	0.00	0.00	0.00
4,900.0	3.43	41.80	4,895.9	103.3	92.4	-97.4	0.00	0.00	0.00
5,000.0	3.43	41.80	4,995.7	107.8	96.4	-101.6	0.00	0.00	0.00
5,100.0	3.43	41.80	5,095.5	112.3	100.4	-105.8	0.00	0.00	0.00
5,200.0	3.43	41.80	5,195.4	116.7	104.4	-110.0	0.00	0.00	0.00
5,300.0	3.43	41.80	5,295.2	121.2	108.3	-114.2	0.00	0.00	0.00
5,400.0	3.43	41.80	5,395.0	125.7	112.3	-118.4	0.00	0.00	0.00

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Well:	GREEN BERET FED COM #602H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	edm

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,500.0	3.43	41.80	5,494.8	130.1	116.3	-122.6	0.00	0.00	0.00
5,600.0	3.43	41.80	5,594.6	134.6	120.3	-126.8	0.00	0.00	0.00
5,700.0	3.43	41.80	5,694.5	139.1	124.3	-131.0	0.00	0.00	0.00
5,800.0	3.43	41.80	5,794.3	143.5	128.3	-135.2	0.00	0.00	0.00
0,000.0	0.10	11.00							
5,900.0	3.43	41.80	5,894.1	148.0	132.3	-139.4	0.00	0.00	0.00
6,000.0	3.43	41.80	5,993.9	152.5	136.3	-143.6	0.00	0.00	0.00
6,100.0	3.43	41.80	6,093.7	156.9	140.3	-147.9	0.00	0.00	0.00
6,200.0	3.43	41.80	6,193.6	161.4	144.3	-152.1	0.00	0.00	0.00
6,300.0	3.43	41.80	6,293.4	165.9	148.3	-156.3	0.00	0.00	0.00
6,400.0	3.43	41.80	6,393.2	170.3	152.3	-160.5	0.00	0.00	0.00
6,500.0	3.43	41.80	6,493.0	174.8	156.3	-164.7	0.00	0.00	0.00
6,600.0	3.43	41.80	6,592.8	179.3	160.2	-168.9	0.00	0.00	0.00
6,700.0	3.43	41.80	6,692.7	183.7	164.2	-173.1	0.00	0.00	0.00
6,800.0	3.43	41.80	6,792.5	188.2	168.2	-177.3	0.00	0.00	0.00
6,900.0	3.43	41.80	6,892.3	192.6	172.2	-181.5	0.00	0.00	0.00
7,000.0	3.43	41.80	6,992.1	197.1	176.2	-185.7	0.00	0.00	0.00
7,100.0	3.43	41.80	7,091.9	201.6	180.2	-189.9	0.00	0.00	0.00
7,200.0	3.43	41.80	7,191.8	206.0	184.2	-194.1	0.00	0.00	0.00
7,300.0	3.43	41.80	7,291.6	210.5	188.2	-198.3	0.00	0.00	0.00
7,400.0	3.43	41.80	7,391.4	215.0	192.2	-202.5	0.00	0.00	0.00
7,500.0	3.43	41.80	7,491.2	219.4	196.2	-206.8	0.00	0.00	0.00
7,600.0	3.43	41.80	7,591.0	223.9	200.2	-211.0	0.00	0.00	0.00
7,700.0	3.43	41.80	7,690.9	228.4	204.2	-215.2	0.00	0.00	0.00
7,800.0	3.43	41.80	7,790.7	232.8	208.1	-219.4	0.00	0.00	0.00
7,900.0	3.43	41.80	7,890.5	237.3	212.1	-223.6	0.00	0.00	0.00
8,000.0	3.43	41.80	7,990.3	241.8	216.1	-227.8	0.00	0.00	0.00
8,100.0	3.43	41.80	8,090.2	246.2	220.1	-232.0	0.00	0.00	0.00
8,200.0	3.43	41.80	8,190.0	250.7	224.1	-236.2	0.00	0.00	0.00
8,300.0	3.43	41.80	8,289.8	255.2	228.1	-240.4	0.00	0.00	0.00
8,400.0	3.43	41.80	8,389.6	259.6	232.1	-244.6	0.00	0.00	0.00
8,500.0	3.43	41.80	8,489.4	264.1	236.1	-248.8	0.00	0.00	0.00
8,600.0	3.43	41.80	8,589.3	268.6	240.1	-253.0	0.00	0.00	0.00
8,700.0	3.43	41.80	8,689.1	273.0	244.1	-257.2	0.00	0.00	0.00
8,800.0	3.43	41.80	8,788.9	277.5	248.1	-261.5	0.00	0.00	0.00
8 000 0	2 4 2	44.90	0 000 7	202.0	050.4	06E 7	0.00	0.00	0.00
8,900.0 9,000.0	3.43 3.43	41.80 41.80	8,888.7 8,988.5	282.0 286.4	252.1 256.1	-265.7 -269.9	0.00 0.00	0.00 0.00	0.00 0.00
9,100.0	3.43	41.80 41.80	9,088.4	290.9	260.0	-274.1	0.00	0.00	0.00
9,200.0	3.43 3.43	41.80 41.80	9,188.2	295.4 299.8	264.0 268.0	-278.3	0.00 0.00	0.00	0.00
9,300.0	3.43	41.80	9,288.0	299.8	208.0	-282.5	0.00	0.00	0.00
9,400.0	3.43	41.80	9,387.8	304.3	272.0	-286.7	0.00	0.00	0.00
9,500.0	3.43	41.80	9,487.6	308.7	276.0	-290.9	0.00	0.00	0.00
9,600.0	3.43	41.80	9,587.5	313.2	280.0	-295.1	0.00	0.00	0.00
9,700.0	3.43	41.80	9,687.3	317.7	284.0	-299.3	0.00	0.00	0.00
9,800.0	3.43	41.80	9,787.1	322.1	288.0	-303.5	0.00	0.00	0.00

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Well:	GREEN BERET FED COM #602H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	edm

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,900.0	3.43	41.80	9.886.9	326.6	292.0	-307.7	0.00	0.00	0.00
10,000.0	3.43	41.80	9,986.7	331.1	296.0	-311.9	0.00	0.00	0.00
10,000.0	3.43	41.80	10,086.6	335.5	300.0	-316.1	0.00	0.00	0.00
10,100.0	3.43	41.80	10,000.0	340.0	304.0	-320.4	0.00	0.00	0.00
10,200.0	3.43	41.80	10,180.4	344.5	307.9	-320.4	0.00	0.00	0.00
10,300.0	3.43	41.00	10,200.2	344.3	307.9	-324.0	0.00	0.00	0.00
10,400.0	3.43	41.80	10,386.0	348.9	311.9	-328.8	0.00	0.00	0.00
10,500.0	3.43	41.80	10,485.8	353.4	315.9	-333.0	0.00	0.00	0.00
10,600.0	3.43	41.80	10,585.7	357.9	319.9	-337.2	0.00	0.00	0.00
10,700.0	3.43	41.80	10,685.5	362.3	323.9	-341.4	0.00	0.00	0.00
10,800.0	3.43	41.80	10,785.3	366.8	327.9	-345.6	0.00	0.00	0.00
10,900.0	3.43	41.80	10,885.1	371.3	331.9	-349.8	0.00	0.00	0.00
11,000.0	3.43	41.80	10,984.9	375.7	335.9	-354.0	0.00	0.00	0.00
11,100.0	3.43	41.80	11,084.8	380.2	339.9	-358.2	0.00	0.00	0.00
11,200.0	3.43	41.80	11,084.8	384.7	343.9	-358.2 -362.4	0.00	0.00	0.00
11,300.0	3.43	41.80	11,284.4	389.1	347.9	-366.6	0.00	0.00	0.00
11,400.0	3.43	41.80	11,384.2	393.6	351.9	-370.8	0.00	0.00	0.00
11,500.0	3.43	41.80	11,484.0	398.1	355.9	-375.0	0.00	0.00	0.00
11,600.0	3.43	41.80	11,583.9	402.5	359.8	-379.3	0.00	0.00	0.00
11,700.0	3.43	41.80	11,683.7	407.0	363.8	-383.5	0.00	0.00	0.00
11,800.0	3.43	41.80	11,783.5	411.5	367.8	-387.7	0.00	0.00	0.00
11,879.4	3.43	41.80	11,862.8	415.0	371.0	-391.0	0.00	0.00	0.00
	12.00 TFO 137								
11,900.0	2.31	87.73	11,883.3	415.5	371.8	-391.4	12.00	-5.44	223.36
12,000.0	12.15	168.67	11,982.5	405.2	375.9	-380.9	12.00	9.83	80.94
12,100.0	24.03	174.29	12,077.4	374.5	380.0	-350.0	12.00	11.89	5.62
12,200.0	35.99	176.29	12,163.9	324.7	384.0	-300.1	12.00	11.96	2.01
12,300.0	47.97	177.40	12,238.1	258.1	387.6	-233.4	12.00	11.98	1.10
12,400.0	59.96	178.14	12,296.8	177.4	390.7	-152.7	12.00	11.98	0.75
12,500.0	71.94	178.73	12,337.5	86.3	393.1	-61.6	12.00	11.99	0.58
12,600.0	83.93	179.24	12,358.3	-11.3	394.9	35.9	12.00	11.99	0.51
12,648.0	89.69	179.47	12,361.0	-59.2	395.4	83.8	12.00	11.99	0.49
	.7 hold at 1264		12,001.0	-00.2	000.4	00.0	12.00	11.00	0.45
12,700.0	89.69	179.47	12,361.3	-111.2	395.9	135.7	0.00	0.00	0.00
12,800.0	89.69	179.47	12,361.8	-211.2	396.8	235.6	0.00	0.00	0.00
12,900.0	89.69	179.47	12,362.4	-311.2	397.7	335.4	0.00	0.00	0.00
13,000.0	89.69	179.47	12,362.9	-411.2	398.7	435.3	0.00	0.00	0.00
13,100.0	89.69	179.47	12,363.5	-511.2	399.6	535.1	0.00	0.00	0.00
13,200.0	89.69	179.47	12,364.0	-611.2	400.5	635.0	0.00	0.00	0.00
13,300.0	89.69	179.47	12,364.5	-711.2	401.4	734.9	0.00	0.00	0.00
13,400.0	89.69	179.47	12,365.1	-811.2	402.4	834.7	0.00	0.00	0.00
13,500.0	89.69	179.47	12,365.6	-911.2	402.4	934.6	0.00	0.00	0.00
13,600.0	89.69	179.47	12,365.0	-1,011.2	403.3	1,034.4	0.00	0.00	0.00
13,700.0	89.69	179.47	12,366.7	-1,111.1	405.1	1,134.3	0.00	0.00	0.00

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Well:	GREEN BERET FED COM #602H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	edm

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,800.0	89.69	179.47	12,367.3	-1,211.1	406.1	1,234.1	0.00	0.00	0.00
13,900.0	89.69	179.47	12,367.8	-1,311.1	407.0	1,334.0	0.00	0.00	0.00
14,000.0	89.69	179.47	12,368.4	-1,411.1	407.9	1,433.9	0.00	0.00	0.00
14,100.0	89.69	179.47	12,368.9	-1,511.1	408.9	1,533.7	0.00	0.00	0.00
1,100.0	00.00		12,000.0	1,01111	100.0	1,000.1	0.00	0.00	0.00
14,200.0	89.69	179.47	12,369.5	-1,611.1	409.8	1,633.6	0.00	0.00	0.00
14,300.0	89.69	179.47	12,370.0	-1,711.1	410.7	1,733.4	0.00	0.00	0.00
14,400.0	89.69	179.47	12,370.5	-1,811.1	411.6	1,833.3	0.00	0.00	0.00
14,500.0	89.69	179.47	12,371.1	-1,911.1	412.6	1,933.1	0.00	0.00	0.00
14,600.0	89.69	179.47	12,371.6	-2,011.1	413.5	2,033.0	0.00	0.00	0.00
14,700.0	89.69	179.47	12,372.2	-2,111.1	414.4	2,132.9	0.00	0.00	0.00
14,800.0	89.69	179.47	12,372.7	-2,211.1	415.3	2,232.7	0.00	0.00	0.00
14,900.0	89.69	179.47	12,373.3	-2,311.1	416.3	2,332.6	0.00	0.00	0.00
15,000.0	89.69	179.47	12,373.8	-2,411.1	417.2	2,432.4	0.00	0.00	0.00
15,100.0	89.69	179.47	12,374.4	-2,511.1	418.1	2,532.3	0.00	0.00	0.00
15,200.0	89.69	179.47	12,374.9	-2,611.1	419.0	2,632.1	0.00	0.00	0.00
15,300.0	89.69	179.47	12,375.4	-2,711.1	420.0	2,732.0	0.00	0.00	0.00
15,400.0	89.69	179.47	12,376.0	-2,811.0	420.9	2,831.8	0.00	0.00	0.00
15,500.0	89.69	179.47	12,376.5	-2,911.0	421.8	2,931.7	0.00	0.00	0.00
15,600.0	89.69	179.47	12,377.1	-3,011.0	422.7	3,031.6	0.00	0.00	0.00
10,00010	00100		,	0,01110		0,00110	0.00	0100	0.00
15,700.0	89.69	179.47	12,377.6	-3,111.0	423.7	3,131.4	0.00	0.00	0.00
15,800.0	89.69	179.47	12,378.2	-3,211.0	424.6	3,231.3	0.00	0.00	0.00
15,900.0	89.69	179.47	12,378.7	-3,311.0	425.5	3,331.1	0.00	0.00	0.00
16,000.0	89.69	179.47	12,379.3	-3,411.0	426.4	3,431.0	0.00	0.00	0.00
16,100.0	89.69	179.47	12,379.8	-3,511.0	427.4	3,530.8	0.00	0.00	0.00
16,200.0	89.69	179.47	12,380.3	-3,611.0	428.3	3,630.7	0.00	0.00	0.00
16,300.0	89.69	179.47	12,380.9	-3,711.0	429.2	3,730.6	0.00	0.00	0.00
16,400.0	89.69	179.47	12,381.4	-3,811.0	430.1	3,830.4	0.00	0.00	0.00
16,500.0	89.69	179.47	12,382.0	-3,911.0	431.1	3,930.3	0.00	0.00	0.00
16,600.0	89.69	179.47	12,382.5	-4,011.0	432.0	4,030.1	0.00	0.00	0.00
16,700.0	89.69	179.47	12,383.1	-4,111.0	432.9	4,130.0	0.00	0.00	0.00
16,800.0	89.69	179.47	12,383.6	-4,211.0	433.8	4,130.0	0.00	0.00	0.00
16,900.0	89.69	179.47	12,384.2	-4,311.0	434.8	4,329.7	0.00	0.00	0.00
17,000.0	89.69	179.47	12,384.7	-4,411.0	435.7	4,429.6	0.00	0.00	0.00
17,100.0	89.69	179.47	12,385.2	-4,510.9	436.6	4,529.4	0.00	0.00	0.00
17,200.0	89.69	179.47	12,385.8	-4,610.9	437.5	4,629.3	0.00	0.00	0.00
17,300.0	89.69	179.47	12,386.3	-4,710.9	438.5	4,729.1	0.00	0.00	0.00
17,400.0	89.69	179.47	12,386.9	-4,810.9	439.4	4,829.0	0.00	0.00	0.00
17,500.0	89.69	179.47	12,387.4	-4,910.9	440.3	4,928.8	0.00	0.00	0.00
17,600.0	89.69	179.47	12,388.0	-5,010.9	441.3	5,028.7	0.00	0.00	0.00
17,700.0	89.69	179.47	12,388.5	-5,110.9	442.2	5,128.6	0.00	0.00	0.00
17,800.0	89.69	179.47	12,389.1	-5,210.9	443.1	5,228.4	0.00	0.00	0.00
17,900.0	89.69	179.47	12,389.6	-5,310.9	444.0	5,328.3	0.00	0.00	0.00
18,000.0	89.69	179.47	12,390.1	-5,410.9	445.0	5,428.1	0.00	0.00	0.00
18,100.0	89.69	179.47	12,390.7	-5,510.9	445.9	5,528.0	0.00	0.00	0.00

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Well:	GREEN BERET FED COM #602H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	edm

#### Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
40.000.0	~~~~								
18,200.0	89.69	179.47	12,391.2	-5,610.9	446.8	5,627.8	0.00	0.00	0.00
18,300.0	89.69	179.47	12,391.8	-5,710.9	447.7	5,727.7	0.00	0.00	0.00
18,400.0	89.69	179.47	12,392.3	-5,810.9	448.7	5,827.6	0.00	0.00	0.00
18,500.0	89.69	179.47	12,392.9	-5,910.9	449.6	5,927.4	0.00	0.00	0.00
18,600.0	89.69	179.47	12,393.4	-6,010.9	450.5	6,027.3	0.00	0.00	0.00
18,700.0	89.69	179.47	12,394.0	-6,110.9	451.4	6,127.1	0.00	0.00	0.00
18,800.0	89.69	179.47	12,394.5	-6,210.9	452.4	6,227.0	0.00	0.00	0.00
18,900.0	89.69	179.47	12,395.0	-6,310.8	453.3	6,326.8	0.00	0.00	0.00
19,000.0	89.69	179.47	12,395.6	-6,410.8	454.2	6,426.7	0.00	0.00	0.00
19,100.0	89.69	179.47	12,396.1	-6,510.8	455.1	6,526.5	0.00	0.00	0.00
19,200.0	89.69	179.47	12,396.7	-6,610.8	456.1	6,626.4	0.00	0.00	0.00
19,300.0	89.69	179.47	12.397.2	-6.710.8	457.0	6,726.3	0.00	0.00	0.00
19.400.0	89.69	179.47	12.397.8	-6.810.8	457.9	6.826.1	0.00	0.00	0.00
19.500.0	89.69	179.47	12.398.3	-6.910.8	458.8	6.926.0	0.00	0.00	0.00
19,600.0	89.69	179.47	12,398.9	-7,010.8	459.8	7,025.8	0.00	0.00	0.00
19.700.0	89.69	179.47	12.399.4	-7,110.8	460.7	7,125.7	0.00	0.00	0.00
19.800.0	89.69	179.47	12,400.0	-7,210.8	461.6	7,225.5	0.00	0.00	0.00
19,900.0	89.69	179.47	12,400.5	-7,310.8	462.5	7,325.4	0.00	0.00	0.00
19,992.7	89.69	179.47	12,400.0	-7,403.5	463.4	7,418.0	0.00	0.00	0.00
TD at 1999		119.41	12,401.0	-1,+00.0	405.4	7,410.0	0.00	0.00	0.00

TD at 19992.7

# 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
FTP (GREEN BERET - plan misses targ - Circle (radius 50	et center by		12,361.0 it 12300.0u	367.3 sft MD (1223	391.6 8.1 TVD, 25	409,661.40 8.1 N, 387.6 E)	793,327.80	32° 7' 21.829 N	103° 23' 9.071 W
PBHL (GREEN BERE - plan hits target o - Rectangle (sides	enter	359.47 ,771.1 D20	12,401.0 .0)	-7,403.5	463.4	401,890.60	793,399.60	32° 6' 4.929 N	103° 23' 9.031 W
LTP (GREEN BERET - plan misses targ - Point			12,401.0 19900.0usf	-7,353.5 t MD (12400	463.0 .5 TVD, -73 <sup>-</sup>	401,940.60 10.8 N, 462.5 E)	793,399.20	32° 6' 5.424 N	103° 23' 9.030 W

#### Plan Annotations

Measured	Vertical	Local Cool	rdinates	
Depth (usft)	Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
2500	2500	0	0	Start Build 2.00
2672	2672	4	3	Start 9207.7 hold at 2671.7 MD
11,879	11,863	415	371	Start DLS 12.00 TFO 137.64
12,648	12,361	-59	395	Start 7344.7 hold at 12648.0 MD
19,993	12,401	-7403	463	TD at 19992.7

Survey Report

Company:	NORTHERN DELAWARE BASIN	Local Co-ordinate Reference:	Well GREEN BERET FED COM #602H
Project:	LEA COUNTY, NM	TVD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Site:	GREEN BERET FED COM PROJECT	MD Reference:	KB=26' @ 3306.2usft (MCVAY 8)
Well:	GREEN BERET FED COM #602H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	PWP1	Database:	edm
Checked By:		ed By:	Date:

COG Operating LLC H<sub>2</sub>S Equipment Schematic Terrain: Shinnery sand hills.



# COG OPERATING LLC HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

# 1. HYDROGEN SULFIDE TRAINING

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

- a. The hazards and characteristics of hydrogen sulfide (H<sub>2</sub>S).
- b. The proper use and maintenance of personal protective equipment and life support systems.
- c. The proper use of H<sub>2</sub>S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
- d. The proper techniques for first aid and rescue procedures.

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

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

There will be an initial training session just prior to encountering a known or probable H2S zone (within 3 days or 500 feet) and weekly H2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H2S Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

# 2. <u>H<sub>2</sub>S SAFETY EQUIPMENT AND SYSTEMS</u>

Note: All H<sub>2</sub>S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H2S. If H2S greater than 100 ppm is encountered in the gas stream we will shut in and install H2S equipment.

a. Well Control Equipment: Flare line.
Choke manifold with remotely operated choke.
Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head.

- b. Protective equipment for essential personnel: Mark II Surviveair 30-minute units located in the dog house and at briefing areas.
- c. H2S detection and monitoring equipment:
  - 2 portable H2S monitor positioned on location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 ppm are reached.
- d. Visual warning systems: Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.
- e. Mud Program: The mud program has been designed to minimize the volume of H2S circulated to the surface.
- f. Metallurgy:

All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.

g. Communication:

Company vehicles equipped with cellular telephone.

COG OPERATING LLC has conducted a review to determine if an H2S contingency plan is required for the above referenced well. We were able to conclude that any potential hazardous volume would be minimal. H2S concentrations of wells in this area from surface to TD are low enough; therefore, we do not believe that an H2S contingency plan is necessary.



# **EMERGENCY CALL LIST**

	<u>OFFICE</u>	MOBILE
COG OPERATING LLC OFFICE	575-748-6940	
SETH WILD	432-683-7443	432-528-3633
WALTER ROYE	575-748-6940	432-934-1886

# **EMERGENCY RESPONSE NUMBERS**

	<u>OFFICE</u>
STATE POLICE	575-748-9718
EDDY COUNTY SHERIFF	575-746-2701
EMERGENCY MEDICAL SERVICES (AMBULANCE)	911 or 575-746-2701
EDDY COUNTY EMERGENCY MANAGEMENT (HARRY BURGESS)	575-887-9511
STATE EMERGENCY RESPONSE CENTER (SERC)	575-476-9620
CARLSBAD POLICE DEPARTMENT	575-885-2111
CARLSBAD FIRE DEPARTMENT	575-885-3125
NEW MEXICO OIL CONSERVATION DIVISION	575-748-1283
INDIAN FIRE & SAFETY	800-530-8693
HALLIBURTON SERVICES	800-844-8451





Intent X As Drilled API # <b>30-025-47879</b> 30-025-		
Operator Name:	Property Name:	Well Number
COG Operating LLC	Green Beret Federal Com	602H

Kick Off Point (KOP)

UL B	Section 20	Township 25S	Range 35E	Lot	Feet	From N/S	Feet	From E/W	County Lea
Latitu	de				Longitude				NAD
									83

#### First Take Point (FTP)

UL B	Section 20	Township 25S	Range 35E	Lot	Feet 100	From N/S North	Feet 1640	From E/W East	County Lea	
Latitu 32.1	<sup>ide</sup> 122856	5			Longitude -103.386	6318			NAD NAD 83	

### Last Take Point (LTP)

UL G	Section	Township 25S	Range 35E	Lot	Feet 2540	From N/S North	Feet 1640	From E/W East	County Lea
	Latitude 32.101633			0	Longitude -103.386306			NAD NAD 83	

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

Yes

Is this well an infill well?

No

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

API #		
Operator Name:	Property Name:	Well Number
		KZ 00 /20 /2010

KZ 06/29/2018

State of New Mexico Energy, Minerals and Natural Resources Department OCD - HOBBS

**Oil Conservation Division** 1220 South St. Francis Dr. Santa Fe, NM 87505

10/20/2020

GAS CAPTURE PLAN

Date: 2/12/20

 $\boxtimes$  Original

Operator & OGRID No.: COG Operating LLC, (229137)

 $\Box$  Amended - Reason for Amendment:

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

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

#### Well(s)/Production Facility – Name of facility

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

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or Vented	Comments
Green Beret Federal Com 501H	30-025-	B-20-25S-35E	465' FNL & 2095' FEL	±2830	None Planned	APD Submission Plan Subject to change
Green Beret Federal Com 601H	30-025-	A-20-25S-35E	370' FNL & 760' FEL	±1500	None Planned	APD Submission Plan Subject to change
Green Beret Federal Com 602H <b>30-</b>	30-025- <b>025-47879</b>	B-20-25S-35E	465' FNL & 2035' FEL	±1500	None Planned	APD Submission Plan Subject to change
Green Beret Federal Com 701H	30-025-	A-20-25S-35E	370' FNL & 790' FEL	±1500	None Planned	APD Submission Plan Subject to change
Green Beret Federal Com 702H	30-025-	B-20-25S-35E	465' FNL & 2125' FEL	±1500	None Planned	APD Submission Plan Subject to change
Green Beret Federal Com 801H	30-025-	B-20-25S-35E	465' FNL & 2065' FEL	±3350	None Planned	APD Submission Plan Subject to change

#### **Gathering System and Pipeline Notification**

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to Versado Gas Processors and will be connected to Eunice low pressure gathering system located in Lea County, New Mexico. COG Operating LLC provides (periodically) to Versado Gas Processors a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, COG Operating LLC and Versado Gas Processors have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Versado Gas Processors Processing Plant located in Sec. 3, Twn. 22S, Rng 37E, Lea County, New Mexico. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

#### **Flowback Strategy**

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

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

#### **Alternatives to Reduce Flaring**

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

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