Form 3160-3
(June 2015)

HOBBS OCD
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FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.	NMNM015317
6. If Indian, Allotee or Tribe Name	
1a. Type of work:	☑ DRILL ☐ REENTER
1b. Type of Well:	☑ Oil Well ☐ Gas Well ☐ Other
1c. Type of Completion:	☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone
7. If Unit or CA Agreement, Name and No.	
8. Lease Name and Well No.	VALIANT 24 FED COM 704H (325949)
2. Name of Operator	EOG RESOURCES INCORPORATED (7377)
9. API Well No.	30-025-46571
3a. Address	1111 Bagby Sky Lobby2 Houston TX 77002
3b. Phone No. *(include area code)*	(713)651-7000
10. Field and Pool, or Exploratory	PERMIAN / RED HILLS; BONE SPRING I 98180
4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*	At surface NESW / 2147 FSL / 2247 FWL / LAT 32.1146857 / LONG -103.6298209 At proposed prod. zone SESW / 100 FSL / 1890 FWL / LAT 32.0945364 / LONG -103.6309749
11. Sec., T. R. M. or Blk. and Survey or Area	SEC 24 / T25S / R32E / NMP
14. Distance in miles and direction from nearest town or post office*	
12. County or Parish	LEA
13. State	NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	100 feet
16. No of acres in lease	1160.84
17. Spacing Unit dedicated to this well	480
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	33 feet
19. Proposed Depth	12231 feet / 19816 feet
20. BLM/BIA Bond No. in file	FED: NM2308
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	3457 feet
22. Approximate date work will start*	01/15/2020
23. Estimated duration	25 days

24. Attachments

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

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

25. Signature (Electronic Submission)	Name *(Printed/Typed)* Jayna K. Hobby / Ph: (432)686-6997	Date 06/18/2019
Title Regulatory Specialist		
Approved by *(Signature)* (Electronic Submission)	Name *(Printed/Typed)* Christopher Walls / Ph: (575)234-2234	Date 11/26/2019
Title Petroleum Engineer	Office CARLSBAD	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

GCP Rec 12/03/19

KZ 12/05/19

(Continued on page 2)

APPROVED WITH CONDITIONS

Approval Date: 11/25/2019

*(Instructions on page 2)

Double sided

INSTRUCTIONS

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

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

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

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

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

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

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

NOTICES

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

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

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

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

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

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

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

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

(Continued on page 3)

Additional Operator Remarks

Location of Well

1. SHL: NESW / 2147 FSL / 2247 FWL / TWSP: 25S / RANGE: 32E / SECTION: 24 / LAT: 32.1146857 / LONG: -103.6298209 (TVD: 0 feet, MD: 0 feet)
   PPP: NESW / 2540 FSL / 1890 FWL / TWSP: 25S / RANGE: 32E / SECTION: 24 / LAT: 32.1157592 / LONG: -103.6309781 (TVD: 11966 feet, MD: 11993 feet)
   BHL: SESW / 100 FSL / 1890 FWL / TWSP: 25S / RANGE: 32E / SECTION: 25 / LAT: 32.0945364 / LONG: -103.6309749 (TVD: 12231 feet, MD: 19816 feet)

BLM Point of Contact

Name: Pamella Hernandez
Title:
Phone: 5752345954
Email: phermandez@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
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**EOG RESOURCES, INC.**
LEASE NO.:	**NMNM015317**
WELL NAME & NO.:	**Valiant 24 FED COM 704H**
SURFACE HOLE FOOTAGE:	**2147' FSL & 2247' FWL**
BOTTOM HOLE FOOTAGE	**100' FSL & 1890' FWL**
LOCATION:	**Section 24, T. 25 S., R 32 E., NMPM**
COUNTY:	**Lea County, New Mexico**

COA

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

A. Hydrogen Sulfide

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

Primary Casing Design

1. The **9-5/8** inch surface casing shall be set at approximately **1045** feet (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

2. The minimum required fill of cement behind the **7-5/8** inch intermediate casing is:

Operator has proposed to cement in two stages by conventionally cementing the first stage and performing a bradenhead squeeze on the second stage.

First Stage

- Operator will cement to **7,521** feet with intent to reach the top of Brushy Canyon.

Second Stage

- Operator will perform bradenhead squeeze. Cement to surface. If cement does not circulate see B.1.a, c-d above.

Operator has proposed to pump down 9-5/8" X 7-5/8" annulus. Operator must run Echo-meter to verify fluid top and the volume of displacement fluid above the cement slurry in the annulus.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

Alternate Casing Design

4. The **13-3/8** inch surface casing shall be set at approximately **1045** feet (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.

a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
d. If cement falls back, remedial cementing will be done prior to drilling out that string.

5. The minimum required fill of cement behind the **9-5/8** inch first intermediate casing is:

- Cement to surface. If cement does not circulate see B.1.a, c-d above.

Intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

6. The minimum required fill of cement behind the **7-5/8** inch second intermediate casing is:

Operator has proposed to cement in two stages by conventionally cementing the first stage and performing a bradenhead squeeze on the second stage.

First Stage

- Operator will cement to **7,521** feet with intent to reach the top of Brushy Canyon.

Second Stage

- Operator will perform bradenhead squeeze. Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

Operator has proposed to pump down 9-5/8" X 7-5/8" annulus. Operator must run Echo-meter to verify fluid top and the volume of displacement fluid above the cement slurry in the annulus.

7. The minimum required fill of cement behind the **5-1/2** inch production casing is:

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'

2. **BOP Break Testing is not permitted.**

3. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M)** psi. **Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.**

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
    e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

JJP11192019

GENERAL REQUIREMENTS

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

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

☒ Chaves and Roosevelt Counties
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)

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

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.

   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

    a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
    b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
    c. Manufacturer representative shall install the test plug for the initial BOP test.
    d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
    e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the

plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

e. The results of the test shall be reported to the appropriate BLM office.

f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

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

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

Valiant 24 Fed Com 501H:
Surface Hole Location: 2107' FSL & 497' FWL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 550' FWL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 502H:
Surface Hole Location: 2098' FSL & 1277' FWL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 1430' FWL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 503H:
Surface Hole Location: 2087' FSL & 2187' FWL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 2310' FWL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 504H:
Surface Hole Location: 2053' FSL & 2236' FEL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 2090' FEL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 505H:
Surface Hole Location: 2108' FSL & 1483' FEL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 1210' FEL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 506H:
Surface Hole Location: 1773' FSL & 582' FEL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 330' FEL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 601H:
Surface Hole Location: 2167' FSL & 590' FWL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 590' FWL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 602H:
Surface Hole Location: 2158' FSL & 1403' FWL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 1630' FWL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 603H:
Surface Hole Location: 2147' FSL & 2346' FWL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 2613' FWL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 604H:
Surface Hole Location: 2048' FSL & 1423' FEL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 1630' FEL, Section 25, T. 25 S., R. 32 E.
Valiant 24 Fed Com 605H:

Approval Date: 11/25/2019

Surface Hole Location: 1833' FSL & 489' FEL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 590' FEL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 701H:
Surface Hole Location: 2167' FSL & 623' FWL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 330' FWL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 702H:
Surface Hole Location: 2167' FSL & 623' FWL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 850' FWL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 703H:
Surface Hole Location: 2158' FSL & 1370' FWL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 1370' FWL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 704H:
Surface Hole Location: 2147' FSL & 2247' FWL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 1890' FWL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 705H:
Surface Hole Location: 2147' FSL & 2313' FWL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 2410' FWL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 706H:
Surface Hole Location: 2115' FSL & 2178' FWL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 2410' FWL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 707H:
Surface Hole Location: 2117' FSL & 2112' FEL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 1890' FEL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 708H:
Surface Hole Location: 2015' FSL & 1423' FEL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 1370' FEL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 709H:
Surface Hole Location: 1833' FSL & 522' FEL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 850' FEL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 710H:
Surface Hole Location: 1833' FSL & 456' FEL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 330' FEL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 721H:
Surface Hole Location: 2158' FSL & 1337' FWL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 1110' FWL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 722H:

Surface Hole Location: 2147' FSL & 2280' FWL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 2150' FWL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 723H:

Surface Hole Location: 2116' FSL & 2145' FEL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 2150' FWL, Section 25, T. 25 S., R. 32 E.

Valiant 24 Fed Com 724H:

Surface Hole Location: 1982' FSL & 1423' FEL, Section 24, T. 25 S., R. 32 E.
Bottom Hole Location: 100' FSL & 1110' FEL, Section 25, T. 25 S., R. 32 E.

TABLE OF CONTENTS

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.

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)

Rangeland Management:

Damage to structures that provide water to livestock must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

Watershed Management:

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.

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 ½ 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.

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.

Wildlife Management:

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.

Timing Limitation Exceptions:
The Carlsbad Field Office will publish an annual map of where the LPC timing and noise stipulations and conditions of approval (Limitations) will apply for the identified year (between March 1 and June 15) based on the latest survey information. The LPC Timing Area map will identify areas which are Habitat Areas (HA), Isolated Population Area (IPA), and Primary Population Area (PPA). The LPC Timing Area map will also have an area in red crosshatch. The red crosshatch area is the only area where an operator is required to submit a request for exception to the LPC Limitations. If an operator is operating outside the red crosshatch area, the LPC Limitations do not apply for that year and an exception to LPC Limitations is not required.

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.

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.)

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.

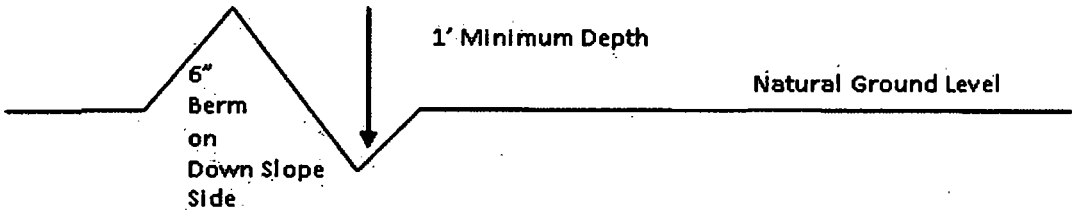
Ditching
Ditching shall be required on both sides of the road.

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: $\frac{400'}{4\%} + 100' = 200'$ 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.

Construction Steps 1. Salvage topsoil 2. Construct road 3. Redistribute topsoil 4. Revegetate slopes

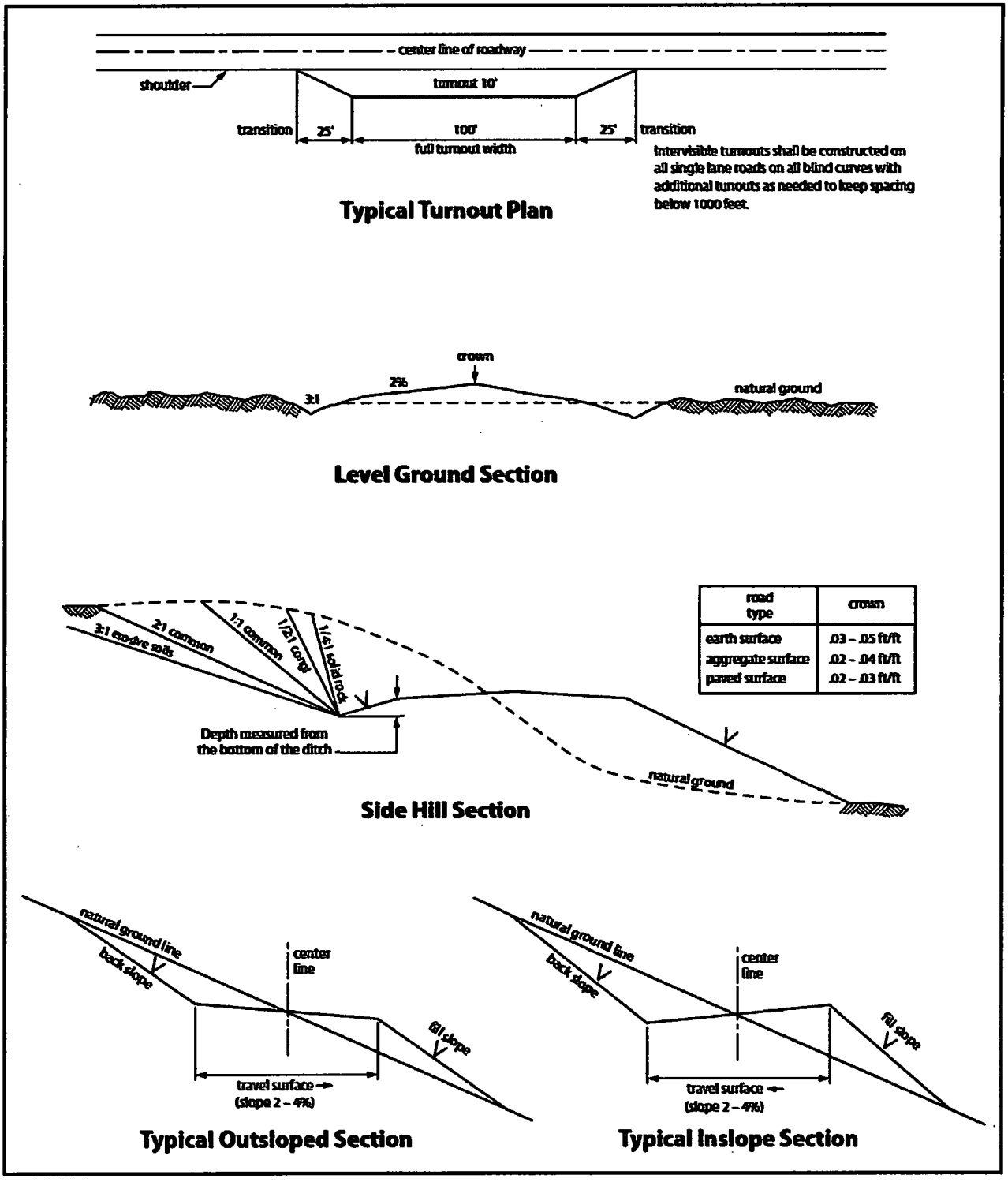


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

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 et seq. (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, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C.6901, et seq.) 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 **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:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed **30** 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 **30** 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 6 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
( ) seed mixture 2	( ) seed mixture 4
(X) 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 and/or paleontological resources (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. 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 proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

17. 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.

18. Escape Ramps - 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.

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 et seq. (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, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) 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 and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. 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 proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. 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.

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).

Seed Mixture for LPC Sand/Shinnery Sites

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 no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed shall be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall 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). 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. Seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may 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	lb/acre
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

EOG RESOURCES, INC.
VALIANT 24 FED COM #704H

1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	936'
Tamasrisk Anydrite	1,010'
Top of Salt	1,248'
Base of Salt	4,674'
Lamar	4,908'
Bell Canyon	4,921'
Cherry Canyon	5,866'
Brushy Canyon	7,521'
Bone Spring Lime	9,061'
Leonard Shale	9,097'
1st Bone Spring Sand	10,011'
2nd Bone Spring Shale	10,236'
2nd Bone Spring Sand	10,577'
3rd Bone Spring Carb	11,069'
3rd Bone Spring Sand	11,728'
Wolfcamp	12,178'
TD	12,231'

3. ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:

Upper Permian Sands	0- 400'	Fresh Water
Cherry Canyon	5,866'	Oil
Brushy Canyon	7,521'	Oil
Leonard Shale	9,097'	Oil
1st Bone Spring Sand	10,011'	Oil
2nd Bone Spring Shale	10,236'	Oil
2nd Bone Spring Sand	10,577'	Oil
3rd Bone Spring Carb	11,069'	Oil
3rd Bone Spring Sand	11,728'	Oil
Wolfcamp	12,178'	Oil

No other Formations are expected to give up oil, gas or fresh water in measurable quantities. Surface fresh water sands will be protected by setting 9.625" casing at 1,045' and circulating cement back to surface.

EOG RESOURCES, INC.
VALIANT 24 FED COM #704H

4. CASING PROGRAM - NEW

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF_{min} Collapse	DF_{min} Burst	DF_{min} Tension
12.25"	0' – 1,045'	9.625"	40#	J-55	LTC	1.125	1.25	1.60
8.75"	0' – 11,180'	7.625"	26.4#	HCP-110	Ultra SFC	1.125	1.25	1.60
6.75"	0' – 10,680'	5.5"	20#	P-110EC	LTC	1.125	1.25	1.60
6.75"	10,680'–11,180'	5.5"	20#	P-110EC	VAM SFC	1.125	1.25	1.60
6.75"	11,180' – 19,816'	5.5"	20#	P-110EC	LTC	1.125	1.25	1.60

Variance is requested to waive the centralizer requirements for the 7-5/8" FJ casing in the 8-3/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 8-3/4" hole interval to maximize cement bond and zonal isolation.

Variance is also requested to waive any centralizer requirements for the 5-1/2" FJ casing in the 6-3/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 6-3/4" hole interval to maximize cement bond and zonal isolation.

Variance is also requested to waive the annular clearance requirements for the 5-1/2" casing by 7-5/8" casing annulus to the proposed top of cement.

EOG requests permission to allow deviation from the 0.422'' annulus clearance requirement from Onshore Order #2 under the following conditions:

- Annular clearance to meet or exceed 0.422'' between intermediate casing ID and production casing coupling only on the first 500' overlap between both casing strings.
- Annular clearance less than 0.422'' is acceptable for the curve and lateral portions of the production open hole section.

EOG Resources also requests approval to implement Casing Design B (pg. 8-9). BLM will be notified of elected design at spud.

Cementing Program:

Depth	No. Sacks	Wt. ppg	Yld Ft^3/sk	Slurry Description
1,045' 9-5/8"	960	13.5	1.73	Lead: Class C + 4.0% Bentonite + 0.5% $CaCl_2$ + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	80	14.8	1.34	Tail: Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate (TOC @ 845')
11,180' 7-5/8"	430	14.2	1.11	1st Stage (Tail): Class C + 0.6% Halad-9 + 0.45% HR-601 + 3% Microbond (TOC @ 7,500')
	1,000	12.7	2.30	2nd Stage (Bradenhead squeeze): Class C + 3% Salt + 1% PreMag-M + 6% Bentonite Gel (TOC @ surface)
19,816' 5-1/2"	740	14.2	1.31	Lead: Class H + 0.4% Halad-344 + 0.35% HR-601 + 3% Microbond (TOC @ 10,680')

Additive	Purpose
Bentonite	Lightweight/Lost circulation prevention
Calcium Chloride	Accelerator
Cello-flake	Lost circulation prevention
Sodium Metasilicate	Accelerator
PreMag-M	Expansive agent
Sodium Chloride	Accelerator
FL-62	Fluid loss control
Halad-344	Fluid loss control
Halad-9	Fluid loss control
HR-601	Retarder
Microbond	Expansive Agent

EOG requests to pump a two stage cement job on the 7-5/8'' intermediate casing string with the first stage being pumped conventionally with the calculated top of cement at the Brushy Canyon (7,521') and the second stage performed as a bradenhead squeeze with planned cement from the Brushy Canyon to surface. If necessary, a top out consisting of 1,000 sacks of Class C cement + 3% Salt + 1% PreMag-M + 6% Bentonite Gel (2.30 yld, 12.91 ppg) will be executed as a contingency. The final cement top will be verified by Echo-meter.

EOG will include the Echo-meter verified fluid top and the volume of displacement fluid above the cement slurry in the annulus in all post-drill sundries on wells utilizing this cement program.

EOG will report to the BLM the volume of fluid (limited to 5 bbls) used to flush intermediate casing valves following backside cementing procedures.

Note: Cement volumes based on bit size plus at least 25% excess in the open hole plus 10% excess in the cased-hole overlap section.

5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL:

Variance is requested to use a co-flex line between the BOP and choke manifold (instead of using a 4" OD steel line).

The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a single ram, mud cross and double ram-type (10,000 psi WP) preventer and an annular preventer (5,000-psi WP). Both units will be hydraulically operated and the ram-type will be equipped with blind rams on bottom and drill pipe rams on top.

Variance is requested to use a 5,000 psi annular BOP with the 10,000 psi BOP stack.

Pipe rams and blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets.

A hydraulically operated choke will be installed prior to drilling out of the intermediate casing shoe.

6. TYPES AND CHARACTERISTICS OF THE PROPOSED MUD SYSTEM:

During this procedure we plan to use a Closed-Loop System and haul contents to the required disposal.

The applicable depths and properties of the drilling fluid systems are as follows.

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 1,045'	Fresh - Gel	8.6-8.8	28-34	N/c
1,045' – 11,180'	Oil Base	10.0-10.2	28-34	N/c
11,180' – 11,772'	Oil Base	8.7-9.4	58-68	N/c - 6
11,772' – 19,816' Lateral	Oil Base	10.0-14.0	58-68	3 - 6

The highest mud weight needed to balance formation is expected to be 11.5 ppg. In order to maintain hole stability, mud weights up to 14.0 ppg may be utilized.

An electronic pit volume totalizer (PVT) will be utilized on the circulating system, to monitor pit volume, flow rate, pump pressure and stroke rate.

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

7. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:

(A) A kelly cock will be kept in the drill string at all times.

(B) A full opening drill pipe-stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times.

(C) H_2S monitoring and detection equipment will be utilized from surface casing point to TD.

8. LOGGING, TESTING AND CORING PROGRAM:

Open-hole logs are not planned for this well.

GR–CCL Will be run in cased hole during completions phase of operations.

9. ABNORMAL CONDITIONS, PRESSURES, TEMPERATURES AND POTENTIAL HAZARDS:

The estimated bottom-hole temperature (BHT) at TD is 181 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 8,894 psig and a maximum anticipated surface pressure of 6,204 psig (based on 14.0 ppg MW). No hydrogen sulfide or other hazardous gases or fluids have been encountered, reported or are known to exist at this depth in this area. Severe loss circulation is expected from 7,300' to Intermediate casing point.

10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

The drilling operation should be finished in approximately one month. If the well is productive, an additional 60-90 days will be required for completion and testing before a decision is made to install permanent facilities.

(A) EOG Resources requests the option to contract a Surface Rig to drill, set surface casing, and cement on the subject well. After WOC 8 hours or 500 psi compressive strength (whichever is greater), the Surface Rig will move off so the wellhead can be installed. A welder will cut the casing to the proper height and weld on the wellhead (both "A" and "B" sections). The weld will be tested to 1000 psi. All valves will be closed and a wellhead cap will be installed (diagram attached). If the timing between rigs is such that EOG Resources would not be able to preset the surface, the Primary Rig will MIRU and drill the well in its entirety per the APD.

11. WELLHEAD:

A multi-bowl wellhead system will be utilized.

After running the 9-5/8" surface casing, a 9-5/8" BOP/BOPE system with a minimum working pressure of 10,000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 10,000 psi pressure test. This pressure test will be repeated at least every 30 days, as per Onshore Order No. 2

The minimum working pressure of the BOP and related BOPE required for drilling below the surface casing shoe shall be 10,000 psi.

The multi-bowl wellhead will be installed by vendor's representative(s). A copy of the installation instructions for the Cactus Multi-Bowl WH system has been sent to the NM BLM office in Carlsbad, NM.

The wellhead will be installed by a third party welder while being monitored by WH vendor's representative.

EOG RESOURCES, INC.
VALIANT 24 FED COM #704H

All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type.

A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi.

Casing strings will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater.

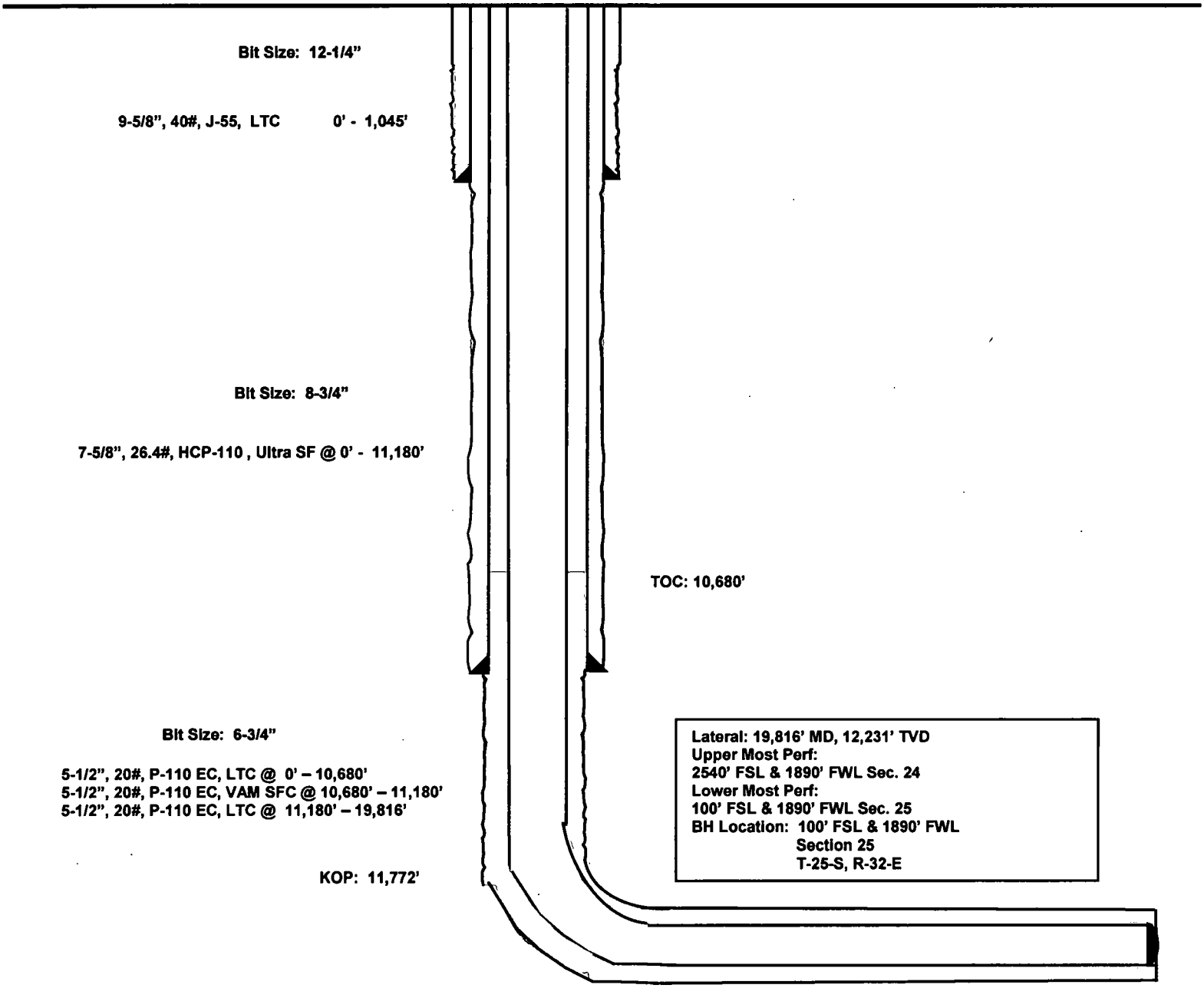
EOG RESOURCES, INC.
VALIANT 24 FED COM #704H

2147' FSL
2247' FWL
Section 24
T-25-S, R-32-E

Proposed Wellbore
Design A

API: 30-025-*****

KB: 3,482'
GL: 3,457'



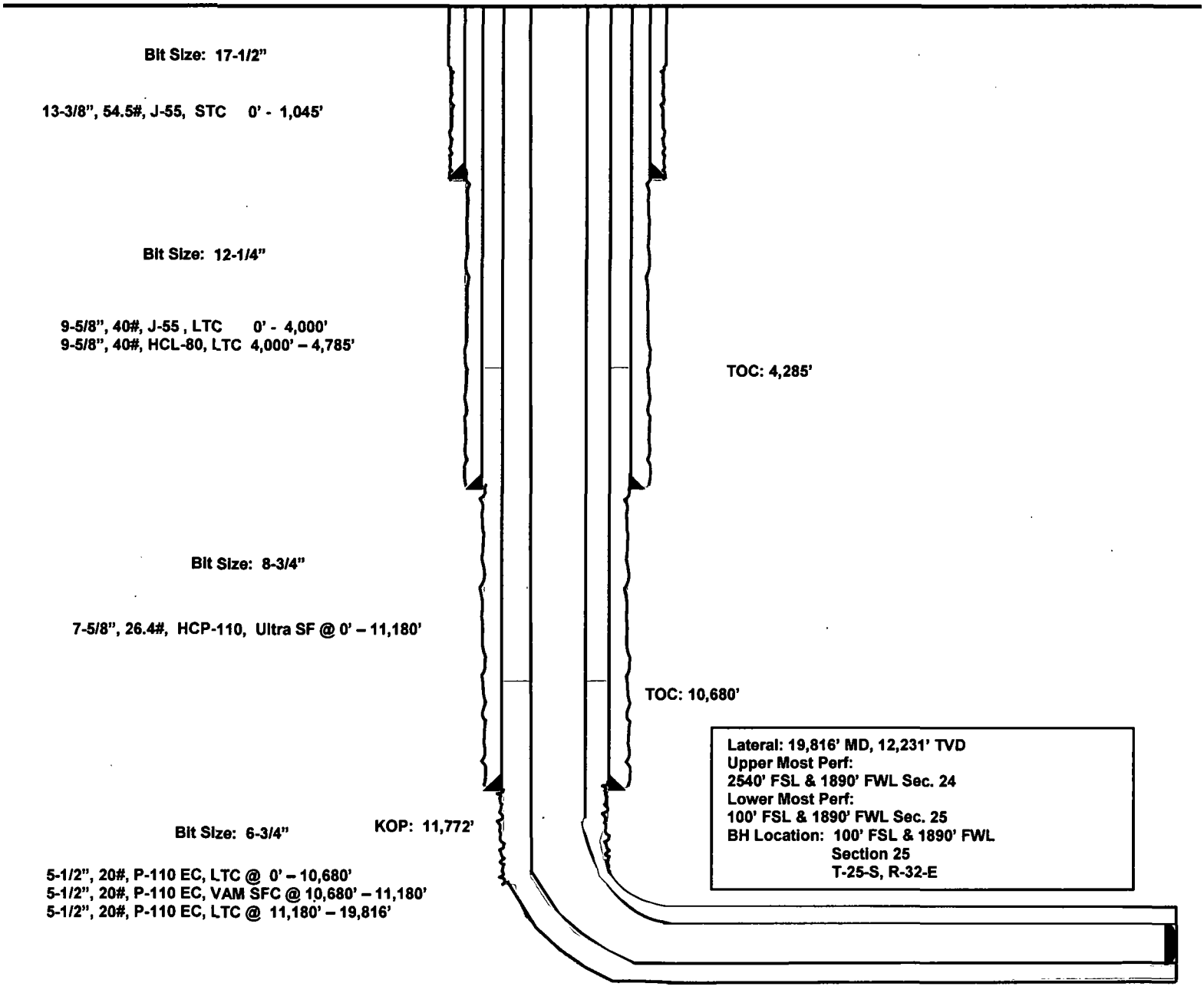
EOG RESOURCES, INC.
VALIANT 24 FED COM #704H

2147' FSL
2247' FWL
Section 24
T-25-S, R-32-E

Proposed Wellbore
Design B

API: 30-025-*****

KB: 3,482'
GL: 3,457'



EOG RESOURCES, INC.
VALIANT 24 FED COM #704H

Design B

Casing Program:

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF_{min} Collapse	DF_{min} Burst	DF_{min} Tension
17.5"	0 – 1,045'	13.375"	54.5#	J-55	STC	1.125	1.25	1.60
12.25"	0 – 4,000'	9.625"	40#	J-55	LTC	1.125	1.25	1.60
12.25"	4,000' – 4,785'	9.625"	40#	HCL-80	LTC	1.125	1.25	1.60
8.75"	0 – 11,180'	7.625"	26.4#	HCP-110	Ultra SF	1.125	1.25	1.60
6.75"	0' – 10,680'	5.5"	20#	P-110EC	LTC	1.125	1.25	1.60
6.75"	10,680'–11,180'	5.5"	20#	P-110EC	VAM SFC	1.125	1.25	1.60
6.75"	11,180' – 19,816'	5.5"	20#	P-110EC	LTC	1.125	1.25	1.60

Cement Program:

Depth	No. Sacks	Wt. lb/gal	Yld Ft^3/sk	Slurry Description
1,045' 13-3/8"	610	13.5	1.74	Lead: Class C + 4.0% Bentonite Gel + 0.5% $CaCl_2$ + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	160	14.8	1.35	Tail: Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate (TOC @ 845')
4,785' 9-5/8"	760	12.7	2.22	Lead: Class C + 10% NaCl + 6% Bentonite Gel + 3% MagOx (TOC @ Surface)
	310	14.8	1.32	Tail: Class C + 10% NaCl + 3% MagOx (TOC @ 3,820')
11,180' 7-5/8"	200	10.8	3.67	Lead: Class C + 3% CaCl2 + 3% Microbond (TOC @ 4,285')
	90	14.8	2.38	Tail: Class H + 0.6% Halad-9 + 0.45% HR-601 + 3% Microbond (TOC @ 9,680')
19,816' 5-1/2"	740	14.8	1.31	Class H + 0.4% Halad-344 + 0.35% HR-601 + 3% (TOC @ 10,680')

As a contingency, EOG requests the option to pump a two stage cement job on the 7-5/8'' intermediate casing string with the first stage being pumped conventionally with the calculated top of cement at the Brushy Canyon (7,521') and the second stage performed as a bradenhead squeeze with planned cement from the Brushy Canyon to surface. If necessary, a top out consisting of 1,000 sacks of Class C cement + 3% Salt + 1% PreMag-M + 6% Bentonite Gel (2.30 yld, 12.91 ppg) will be executed as a contingency. The final cement top will be verified by Echo-meter.

Mud Program:

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 1,045'	Fresh - Gel	8.6-8.8	28-34	N/c
1,045' – 4,785'	Brine	10.0-10.2	28-34	N/c
4,785'– 11,180'	Oil Base	8.7-9.4	58-68	N/c - 6
11,180'– 19,816' Lateral	Oil Base	10.0-11.5	58-68	3 - 6

eog resources

EOG Resources - Midland

Lea County, NM (NAD 83 NME)
Valiant 24 Fed Com
#704H

OH

Plan: Plan #0.1

Standard Planning Report

22 January, 2019

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well #704H
Company:	EOG Resources - Midland	**TVD Reference:**	KB = 25 @ 3482.0usft
Project:	Lea County, NM (NAD 83 NME)	**MD Reference:**	KB = 25 @ 3482.0usft
Site:	Valiant 24 Fed Com	**North Reference:**	Grid
Well:	#704H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

Project	Lea County, NM (NAD 83 NME)		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Valiant 24 Fed Com				
Site Position:		**Northing:**	406,151.00 usft	**Latitude:**	32° 6' 52.620 N
From:	Map	**Easting:**	760,107.00 usft	**Longitude:**	103° 37' 36.212 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.38 °

Well	#704H				
Well Position	**+N/-S**	19.0 usft	**Northing:**	406,170.00 usft	**Latitude:**	32° 6' 52.870 N
	+E/-W	-959.0 usft	**Easting:**	759,148.00 usft	**Longitude:**	103° 37' 47.361 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**		**Ground Level:**	3,457.0 usft

Wellbore	OH			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	1/22/2019	6.80	59.93	47,702.53491552

Design	Plan #0.1			
Audit Notes:				
Version:	**Phase:**	PLAN	**Tie On Depth:**	0.0
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
	0.0	0.0	0.0	182.41

Plan Survey Tool Program **Date** 1/22/2019

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.0	19,815.8	Plan #0.1 (OH)	MWD	
				OWSG MWD - Standard	

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,189.4	3.79	320.58	3,189.2	4.8	-4.0	2.00	2.00	0.00	320.58	
11,582.7	3.79	320.58	11,564.3	433.2	-356.0	0.00	0.00	0.00	0.00	
11,772.1	0.00	0.00	11,753.5	438.0	-360.0	2.00	-2.00	0.00	180.00	KOP(VAL 24 FC #704
12,522.1	90.00	179.62	12,231.0	-39.5	-356.9	12.00	12.00	23.95	179.62	
19,815.8	90.00	179.62	12,231.0	-7,333.0	-309.0	0.00	0.00	0.00	0.00	PBHL(VAL 24 FC #70

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well #704H
Company:	EOG Resources - Midland	**TVD Reference:**	KB = 25 @ 3482.0usft
Project:	Lea County, NM (NAD 83 NME)	**MD Reference:**	KB = 25 @ 3482.0usft
Site:	Valiant 24 Fed Com	**North Reference:**	Grid
Well:	#704H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	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	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
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
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	2.00	320.58	3,100.0	1.3	-1.1	-1.3	2.00	2.00	0.00
3,189.4	3.79	320.58	3,189.2	4.8	-4.0	-4.7	2.00	2.00	0.00
3,200.0	3.79	320.58	3,199.8	5.4	-4.4	-5.2	0.00	0.00	0.00
3,300.0	3.79	320.58	3,299.6	10.5	-8.6	-10.1	0.00	0.00	0.00
3,400.0	3.79	320.58	3,399.4	15.6	-12.8	-15.0	0.00	0.00	0.00
3,500.0	3.79	320.58	3,499.2	20.7	-17.0	-20.0	0.00	0.00	0.00
3,600.0	3.79	320.58	3,599.0	25.8	-21.2	-24.9	0.00	0.00	0.00
3,700.0	3.79	320.58	3,698.7	30.9	-25.4	-29.8	0.00	0.00	0.00
3,800.0	3.79	320.58	3,798.5	36.0	-29.6	-34.7	0.00	0.00	0.00
3,900.0	3.79	320.58	3,898.3	41.1	-33.8	-39.6	0.00	0.00	0.00
4,000.0	3.79	320.58	3,998.1	46.2	-38.0	-44.6	0.00	0.00	0.00
4,100.0	3.79	320.58	4,097.9	51.3	-42.2	-49.5	0.00	0.00	0.00
4,200.0	3.79	320.58	4,197.7	56.4	-46.4	-54.4	0.00	0.00	0.00
4,300.0	3.79	320.58	4,297.4	61.5	-50.6	-59.3	0.00	0.00	0.00
4,400.0	3.79	320.58	4,397.2	66.6	-54.8	-64.3	0.00	0.00	0.00
4,500.0	3.79	320.58	4,497.0	71.7	-58.9	-69.2	0.00	0.00	0.00
4,600.0	3.79	320.58	4,596.8	76.8	-63.1	-74.1	0.00	0.00	0.00
4,700.0	3.79	320.58	4,696.6	81.9	-67.3	-79.0	0.00	0.00	0.00
4,800.0	3.79	320.58	4,796.3	87.0	-71.5	-83.9	0.00	0.00	0.00
4,900.0	3.79	320.58	4,896.1	92.1	-75.7	-88.9	0.00	0.00	0.00
5,000.0	3.79	320.58	4,995.9	97.2	-79.9	-93.8	0.00	0.00	0.00
5,100.0	3.79	320.58	5,095.7	102.3	-84.1	-98.7	0.00	0.00	0.00
5,200.0	3.79	320.58	5,195.5	107.4	-88.3	-103.6	0.00	0.00	0.00

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well #704H
Company:	EOG Resources - Midland	**TVD Reference:**	KB = 25 @ 3482.0usft
Project:	Lea County, NM (NAD 83 NME)	**MD Reference:**	KB = 25 @ 3482.0usft
Site:	Valiant 24 Fed Com	**North Reference:**	Grid
Well:	#704H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

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)
5,300.0	3.79	320.58	5,295.3	112.5	-92.5	-108.5	0.00	0.00	0.00
5,400.0	3.79	320.58	5,395.0	117.6	-96.7	-113.5	0.00	0.00	0.00
5,500.0	3.79	320.58	5,494.8	122.8	-100.9	-118.4	0.00	0.00	0.00
5,600.0	3.79	320.58	5,594.6	127.9	-105.1	-123.3	0.00	0.00	0.00
5,700.0	3.79	320.58	5,694.4	133.0	-109.3	-128.2	0.00	0.00	0.00
5,800.0	3.79	320.58	5,794.2	138.1	-113.5	-133.2	0.00	0.00	0.00
5,900.0	3.79	320.58	5,893.9	143.2	-117.7	-138.1	0.00	0.00	0.00
6,000.0	3.79	320.58	5,993.7	148.3	-121.9	-143.0	0.00	0.00	0.00
6,100.0	3.79	320.58	6,093.5	153.4	-126.1	-147.9	0.00	0.00	0.00
6,200.0	3.79	320.58	6,193.3	158.5	-130.3	-152.8	0.00	0.00	0.00
6,300.0	3.79	320.58	6,293.1	163.6	-134.4	-157.8	0.00	0.00	0.00
6,400.0	3.79	320.58	6,392.8	168.7	-138.6	-162.7	0.00	0.00	0.00
6,500.0	3.79	320.58	6,492.6	173.8	-142.8	-167.6	0.00	0.00	0.00
6,600.0	3.79	320.58	6,592.4	178.9	-147.0	-172.5	0.00	0.00	0.00
6,700.0	3.79	320.58	6,692.2	184.0	-151.2	-177.5	0.00	0.00	0.00
6,800.0	3.79	320.58	6,792.0	189.1	-155.4	-182.4	0.00	0.00	0.00
6,900.0	3.79	320.58	6,891.8	194.2	-159.6	-187.3	0.00	0.00	0.00
7,000.0	3.79	320.58	6,991.5	199.3	-163.8	-192.2	0.00	0.00	0.00
7,100.0	3.79	320.58	7,091.3	204.4	-168.0	-197.1	0.00	0.00	0.00
7,200.0	3.79	320.58	7,191.1	209.5	-172.2	-202.1	0.00	0.00	0.00
7,300.0	3.79	320.58	7,290.9	214.6	-176.4	-207.0	0.00	0.00	0.00
7,400.0	3.79	320.58	7,390.7	219.7	-180.6	-211.9	0.00	0.00	0.00
7,500.0	3.79	320.58	7,490.4	224.8	-184.8	-216.8	0.00	0.00	0.00
7,600.0	3.79	320.58	7,590.2	229.9	-189.0	-221.8	0.00	0.00	0.00
7,700.0	3.79	320.58	7,690.0	235.0	-193.2	-226.7	0.00	0.00	0.00
7,800.0	3.79	320.58	7,789.8	240.1	-197.4	-231.6	0.00	0.00	0.00
7,900.0	3.79	320.58	7,889.6	245.2	-201.6	-236.5	0.00	0.00	0.00
8,000.0	3.79	320.58	7,989.4	250.3	-205.8	-241.4	0.00	0.00	0.00
8,100.0	3.79	320.58	8,089.1	255.4	-209.9	-246.4	0.00	0.00	0.00
8,200.0	3.79	320.58	8,188.9	260.5	-214.1	-251.3	0.00	0.00	0.00
8,300.0	3.79	320.58	8,288.7	265.6	-218.3	-256.2	0.00	0.00	0.00
8,400.0	3.79	320.58	8,388.5	270.7	-222.5	-261.1	0.00	0.00	0.00
8,500.0	3.79	320.58	8,488.3	275.8	-226.7	-266.1	0.00	0.00	0.00
8,600.0	3.79	320.58	8,588.0	281.0	-230.9	-271.0	0.00	0.00	0.00
8,700.0	3.79	320.58	8,687.8	286.1	-235.1	-275.9	0.00	0.00	0.00
8,800.0	3.79	320.58	8,787.6	291.2	-239.3	-280.8	0.00	0.00	0.00
8,900.0	3.79	320.58	8,887.4	296.3	-243.5	-285.7	0.00	0.00	0.00
9,000.0	3.79	320.58	8,987.2	301.4	-247.7	-290.7	0.00	0.00	0.00
9,100.0	3.79	320.58	9,087.0	306.5	-251.9	-295.6	0.00	0.00	0.00
9,200.0	3.79	320.58	9,186.7	311.6	-256.1	-300.5	0.00	0.00	0.00
9,300.0	3.79	320.58	9,286.5	316.7	-260.3	-305.4	0.00	0.00	0.00
9,400.0	3.79	320.58	9,386.3	321.8	-264.5	-310.4	0.00	0.00	0.00
9,500.0	3.79	320.58	9,486.1	326.9	-268.7	-315.3	0.00	0.00	0.00
9,600.0	3.79	320.58	9,585.9	332.0	-272.9	-320.2	0.00	0.00	0.00
9,700.0	3.79	320.58	9,685.6	337.1	-277.1	-325.1	0.00	0.00	0.00
9,800.0	3.79	320.58	9,785.4	342.2	-281.3	-330.0	0.00	0.00	0.00
9,900.0	3.79	320.58	9,885.2	347.3	-285.4	-335.0	0.00	0.00	0.00
10,000.0	3.79	320.58	9,985.0	352.4	-289.6	-339.9	0.00	0.00	0.00
10,100.0	3.79	320.58	10,084.8	357.5	-293.8	-344.8	0.00	0.00	0.00
10,200.0	3.79	320.58	10,184.5	362.6	-298.0	-349.7	0.00	0.00	0.00
10,300.0	3.79	320.58	10,284.3	367.7	-302.2	-354.7	0.00	0.00	0.00
10,400.0	3.79	320.58	10,384.1	372.8	-306.4	-359.6	0.00	0.00	0.00
10,500.0	3.79	320.58	10,483.9	377.9	-310.6	-364.5	0.00	0.00	0.00
10,600.0	3.79	320.58	10,583.7	383.0	-314.8	-369.4	0.00	0.00	0.00

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well #704H
Company:	EOG Resources - Midland	**TVD Reference:**	KB = 25 @ 3482.0usft
Project:	Lea County, NM (NAD 83 NME)	**MD Reference:**	KB = 25 @ 3482.0usft
Site:	Valiant 24 Fed Com	**North Reference:**	Grid
Well:	#704H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

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)
10,700.0	3.79	320.58	10,683.5	388.1	-319.0	-374.3	0.00	0.00	0.00
10,800.0	3.79	320.58	10,783.2	393.2	-323.2	-379.3	0.00	0.00	0.00
10,900.0	3.79	320.58	10,883.0	398.3	-327.4	-384.2	0.00	0.00	0.00
11,000.0	3.79	320.58	10,982.8	403.4	-331.6	-389.1	0.00	0.00	0.00
11,100.0	3.79	320.58	11,082.6	408.5	-335.8	-394.0	0.00	0.00	0.00
11,200.0	3.79	320.58	11,182.4	413.6	-340.0	-399.0	0.00	0.00	0.00
11,300.0	3.79	320.58	11,282.1	418.7	-344.2	-403.9	0.00	0.00	0.00
11,400.0	3.79	320.58	11,381.9	423.8	-348.4	-408.8	0.00	0.00	0.00
11,500.0	3.79	320.58	11,481.7	428.9	-352.6	-413.7	0.00	0.00	0.00
11,582.7	3.79	320.58	11,564.3	433.2	-356.0	-417.8	0.00	0.00	0.00
11,600.0	3.44	320.58	11,581.5	434.0	-356.7	-418.6	2.00	-2.00	0.00
11,700.0	1.44	320.58	11,681.4	437.3	-359.4	-421.8	2.00	-2.00	0.00
11,772.1	0.00	0.00	11,753.5	438.0	-360.0	-422.5	2.00	-2.00	0.00
KOP(VAL 24 FC #704H)									
11,775.0	0.35	179.62	11,756.4	438.0	-360.0	-422.4	12.00	12.00	0.00
11,800.0	3.35	179.62	11,781.4	437.2	-360.0	-421.6	12.00	12.00	0.00
11,825.0	6.35	179.62	11,806.3	435.1	-360.0	-419.5	12.00	12.00	0.00
11,850.0	9.35	179.62	11,831.0	431.7	-360.0	-416.1	12.00	12.00	0.00
11,875.0	12.35	179.62	11,855.6	427.0	-359.9	-411.4	12.00	12.00	0.00
11,900.0	15.35	179.62	11,879.9	421.0	-359.9	-405.4	12.00	12.00	0.00
11,925.0	18.35	179.62	11,903.8	413.7	-359.8	-398.2	12.00	12.00	0.00
11,950.0	21.35	179.62	11,927.3	405.2	-359.8	-389.7	12.00	12.00	0.00
11,975.0	24.35	179.62	11,950.3	395.5	-359.7	-380.0	12.00	12.00	0.00
12,000.0	27.35	179.62	11,972.8	384.6	-359.6	-369.2	12.00	12.00	0.00
12,025.0	30.35	179.62	11,994.7	372.6	-359.6	-357.1	12.00	12.00	0.00
12,050.0	33.35	179.62	12,016.0	359.4	-359.5	-343.9	12.00	12.00	0.00
12,075.0	36.35	179.62	12,036.5	345.1	-359.4	-329.7	12.00	12.00	0.00
12,100.0	39.35	179.62	12,056.2	329.8	-359.3	-314.4	12.00	12.00	0.00
12,125.0	42.35	179.62	12,075.1	313.4	-359.2	-298.0	12.00	12.00	0.00
12,150.0	45.35	179.62	12,093.2	296.1	-359.1	-280.7	12.00	12.00	0.00
12,175.0	48.35	179.62	12,110.3	277.9	-358.9	-262.5	12.00	12.00	0.00
FTP(VAL 24 FC #704H)									
12,200.0	51.35	179.62	12,126.4	258.8	-358.8	-243.4	12.00	12.00	0.00
12,225.0	54.35	179.62	12,141.5	238.8	-358.7	-223.5	12.00	12.00	0.00
12,250.0	57.35	179.62	12,155.5	218.2	-358.6	-202.9	12.00	12.00	0.00
12,275.0	60.35	179.62	12,168.4	196.8	-358.4	-181.5	12.00	12.00	0.00
12,300.0	63.35	179.62	12,180.2	174.7	-358.3	-159.5	12.00	12.00	0.00
12,325.0	66.35	179.62	12,190.9	152.1	-358.1	-136.9	12.00	12.00	0.00
12,350.0	69.35	179.62	12,200.3	128.9	-358.0	-113.8	12.00	12.00	0.00
12,375.0	72.35	179.62	12,208.5	105.3	-357.8	-90.2	12.00	12.00	0.00
12,400.0	75.35	179.62	12,215.4	81.3	-357.7	-66.2	12.00	12.00	0.00
12,425.0	78.35	179.62	12,221.1	57.0	-357.5	-41.9	12.00	12.00	0.00
12,450.0	81.35	179.62	12,225.5	32.4	-357.3	-17.3	12.00	12.00	0.00
12,475.0	84.35	179.62	12,228.6	7.6	-357.2	7.5	12.00	12.00	0.00
12,500.0	87.35	179.62	12,230.5	-17.4	-357.0	32.4	12.00	12.00	0.00
12,522.1	90.00	179.62	12,231.0	-39.5	-356.9	54.4	12.00	12.00	0.00
12,600.0	90.00	179.62	12,231.0	-117.3	-356.4	132.2	0.00	0.00	0.00
12,700.0	90.00	179.62	12,231.0	-217.3	-355.7	232.1	0.00	0.00	0.00
12,800.0	90.00	179.62	12,231.0	-317.3	-355.0	332.0	0.00	0.00	0.00
12,900.0	90.00	179.62	12,231.0	-417.3	-354.4	431.9	0.00	0.00	0.00
13,000.0	90.00	179.62	12,231.0	-517.3	-353.7	531.8	0.00	0.00	0.00
13,100.0	90.00	179.62	12,231.0	-617.3	-353.1	631.7	0.00	0.00	0.00
13,200.0	90.00	179.62	12,231.0	-717.3	-352.4	731.5	0.00	0.00	0.00
13,300.0	90.00	179.62	12,231.0	-817.3	-351.8	831.4	0.00	0.00	0.00

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well #704H
Company:	EOG Resources - Midland	**TVD Reference:**	KB = 25 @ 3482.0usft
Project:	Lea County, NM (NAD 83 NME)	**MD Reference:**	KB = 25 @ 3482.0usft
Site:	Valiant 24 Fed Com	**North Reference:**	Grid
Well:	#704H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

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)
13,400.0	90.00	179.62	12,231.0	-917.3	-351.1	931.3	0.00	0.00	0.00
13,500.0	90.00	179.62	12,231.0	-1,017.3	-350.4	1,031.2	0.00	0.00	0.00
13,600.0	90.00	179.62	12,231.0	-1,117.3	-349.8	1,131.1	0.00	0.00	0.00
13,700.0	90.00	179.62	12,231.0	-1,217.3	-349.1	1,230.9	0.00	0.00	0.00
13,800.0	90.00	179.62	12,231.0	-1,317.3	-348.5	1,330.8	0.00	0.00	0.00
13,900.0	90.00	179.62	12,231.0	-1,417.3	-347.8	1,430.7	0.00	0.00	0.00
14,000.0	90.00	179.62	12,231.0	-1,517.3	-347.2	1,530.6	0.00	0.00	0.00
14,100.0	90.00	179.62	12,231.0	-1,617.3	-346.5	1,630.5	0.00	0.00	0.00
14,200.0	90.00	179.62	12,231.0	-1,717.3	-345.9	1,730.3	0.00	0.00	0.00
14,300.0	90.00	179.62	12,231.0	-1,817.3	-345.2	1,830.2	0.00	0.00	0.00
14,400.0	90.00	179.62	12,231.0	-1,917.3	-344.5	1,930.1	0.00	0.00	0.00
14,500.0	90.00	179.62	12,231.0	-2,017.3	-343.9	2,030.0	0.00	0.00	0.00
14,600.0	90.00	179.62	12,231.0	-2,117.3	-343.2	2,129.9	0.00	0.00	0.00
14,700.0	90.00	179.62	12,231.0	-2,217.3	-342.6	2,229.8	0.00	0.00	0.00
14,800.0	90.00	179.62	12,231.0	-2,317.3	-341.9	2,329.6	0.00	0.00	0.00
14,900.0	90.00	179.62	12,231.0	-2,417.3	-341.3	2,429.5	0.00	0.00	0.00
15,000.0	90.00	179.62	12,231.0	-2,517.3	-340.6	2,529.4	0.00	0.00	0.00
15,100.0	90.00	179.62	12,231.0	-2,617.3	-339.9	2,629.3	0.00	0.00	0.00
15,200.0	90.00	179.62	12,231.0	-2,717.3	-339.3	2,729.2	0.00	0.00	0.00
15,300.0	90.00	179.62	12,231.0	-2,817.3	-338.6	2,829.0	0.00	0.00	0.00
15,400.0	90.00	179.62	12,231.0	-2,917.3	-338.0	2,928.9	0.00	0.00	0.00
15,500.0	90.00	179.62	12,231.0	-3,017.3	-337.3	3,028.8	0.00	0.00	0.00
15,600.0	90.00	179.62	12,231.0	-3,117.3	-336.7	3,128.7	0.00	0.00	0.00
15,700.0	90.00	179.62	12,231.0	-3,217.3	-336.0	3,228.6	0.00	0.00	0.00
15,800.0	90.00	179.62	12,231.0	-3,317.3	-335.4	3,328.5	0.00	0.00	0.00
15,900.0	90.00	179.62	12,231.0	-3,417.3	-334.7	3,428.3	0.00	0.00	0.00
16,000.0	90.00	179.62	12,231.0	-3,517.3	-334.0	3,528.2	0.00	0.00	0.00
16,100.0	90.00	179.62	12,231.0	-3,617.3	-333.4	3,628.1	0.00	0.00	0.00
16,200.0	90.00	179.62	12,231.0	-3,717.3	-332.7	3,728.0	0.00	0.00	0.00
16,300.0	90.00	179.62	12,231.0	-3,817.3	-332.1	3,827.9	0.00	0.00	0.00
16,400.0	90.00	179.62	12,231.0	-3,917.3	-331.4	3,927.7	0.00	0.00	0.00
16,500.0	90.00	179.62	12,231.0	-4,017.3	-330.8	4,027.6	0.00	0.00	0.00
16,600.0	90.00	179.62	12,231.0	-4,117.3	-330.1	4,127.5	0.00	0.00	0.00
16,700.0	90.00	179.62	12,231.0	-4,217.3	-329.4	4,227.4	0.00	0.00	0.00
16,800.0	90.00	179.62	12,231.0	-4,317.3	-328.8	4,327.3	0.00	0.00	0.00
16,900.0	90.00	179.62	12,231.0	-4,417.3	-328.1	4,427.1	0.00	0.00	0.00
17,000.0	90.00	179.62	12,231.0	-4,517.2	-327.5	4,527.0	0.00	0.00	0.00
17,100.0	90.00	179.62	12,231.0	-4,617.2	-326.8	4,626.9	0.00	0.00	0.00
17,200.0	90.00	179.62	12,231.0	-4,717.2	-326.2	4,726.8	0.00	0.00	0.00
17,300.0	90.00	179.62	12,231.0	-4,817.2	-325.5	4,826.7	0.00	0.00	0.00
17,400.0	90.00	179.62	12,231.0	-4,917.2	-324.9	4,926.6	0.00	0.00	0.00
17,500.0	90.00	179.62	12,231.0	-5,017.2	-324.2	5,026.4	0.00	0.00	0.00
17,600.0	90.00	179.62	12,231.0	-5,117.2	-323.5	5,126.3	0.00	0.00	0.00
17,700.0	90.00	179.62	12,231.0	-5,217.2	-322.9	5,226.2	0.00	0.00	0.00
17,800.0	90.00	179.62	12,231.0	-5,317.2	-322.2	5,326.1	0.00	0.00	0.00
17,900.0	90.00	179.62	12,231.0	-5,417.2	-321.6	5,426.0	0.00	0.00	0.00
18,000.0	90.00	179.62	12,231.0	-5,517.2	-320.9	5,525.8	0.00	0.00	0.00
18,100.0	90.00	179.62	12,231.0	-5,617.2	-320.3	5,625.7	0.00	0.00	0.00
18,200.0	90.00	179.62	12,231.0	-5,717.2	-319.6	5,725.6	0.00	0.00	0.00
18,300.0	90.00	179.62	12,231.0	-5,817.2	-318.9	5,825.5	0.00	0.00	0.00
18,400.0	90.00	179.62	12,231.0	-5,917.2	-318.3	5,925.4	0.00	0.00	0.00
18,500.0	90.00	179.62	12,231.0	-6,017.2	-317.6	6,025.3	0.00	0.00	0.00
18,600.0	90.00	179.62	12,231.0	-6,117.2	-317.0	6,125.1	0.00	0.00	0.00
18,700.0	90.00	179.62	12,231.0	-6,217.2	-316.3	6,225.0	0.00	0.00	0.00

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well #704H
Company:	EOG Resources - Midland	**TVD Reference:**	KB = 25 @ 3482.0usft
Project:	Lea County, NM (NAD 83 NME)	**MD Reference:**	KB = 25 @ 3482.0usft
Site:	Valiant 24 Fed Com	**North Reference:**	Grid
Well:	#704H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

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)
18,800.0	90.00	179.62	12,231.0	-6,317.2	-315.7	6,324.9	0.00	0.00	0.00
18,900.0	90.00	179.62	12,231.0	-6,417.2	-315.0	6,424.8	0.00	0.00	0.00
19,000.0	90.00	179.62	12,231.0	-6,517.2	-314.4	6,524.7	0.00	0.00	0.00
19,100.0	90.00	179.62	12,231.0	-6,617.2	-313.7	6,624.5	0.00	0.00	0.00
19,200.0	90.00	179.62	12,231.0	-6,717.2	-313.0	6,724.4	0.00	0.00	0.00
19,300.0	90.00	179.62	12,231.0	-6,817.2	-312.4	6,824.3	0.00	0.00	0.00
19,400.0	90.00	179.62	12,231.0	-6,917.2	-311.7	6,924.2	0.00	0.00	0.00
19,500.0	90.00	179.62	12,231.0	-7,017.2	-311.1	7,024.1	0.00	0.00	0.00
19,600.0	90.00	179.62	12,231.0	-7,117.2	-310.4	7,124.0	0.00	0.00	0.00
19,700.0	90.00	179.62	12,231.0	-7,217.2	-309.8	7,223.8	0.00	0.00	0.00
19,800.0	90.00	179.62	12,231.0	-7,317.2	-309.1	7,323.7	0.00	0.00	0.00
19,815.8	90.00	179.62	12,231.0	-7,333.0	-309.0	7,339.5	0.00	0.00	0.00
PBHL(VAL 24 FC #704H)									

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
KOP(VAL 24 FC #704H) - plan hits target center - Point	0.00	0.00	11,753.5	438.0	-360.0	406,608.00	758,788.00	32° 6' 57.228 N	103° 37' 51.513 W
PBHL(VAL 24 FC #704H - plan hits target center - Point	0.00	0.00	12,231.0	-7,333.0	-309.0	398,837.00	758,839.00	32° 5' 40.327 N	103° 37' 51.509 W
FTP(VAL 24 FC #704H) - plan misses target center by 163.4usft at 12175.0usft MD (12110.3 TVD, 277.9 N, -358.9 E) - Point	0.00	0.00	12,231.0	388.0	-360.0	406,558.00	758,788.00	32° 6' 56.733 N	103° 37' 51.517 W