Form 3160-3
(March 2012)

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

**APPLICATION FOR PERMIT TO DRILL OR REENTER**

Carlsbad Field Office
OCD Hobbs
HOBBS OCD
MAY 16 2018
RECEIVED

| | |
|---|---|
| 1a. Type of work: ☑ DRILL ☐ REENTER | 5. Lease Serial No. NMNM 140838 |
| | 6. If Indian, Allotee or Tribe Name |
| | 7. If Unit or CA Agreement, Name and No. |
| 1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone | 8. Lease Name and Well No. 322220 AUDACIOUS 19 FEDERAL 601H |
| 2. Name of Operator EOG RESOURCES INCORPORATED (7377) | 9. API Well No. 30-025-45039 |
| 3a. Address 1111 Bagby Sky Lobby2 Houston TX 77002 | 3b. Phone No. (include area code) (713)651-7000 |
| | 10. Field and Pool, or Exploratory (97903) RED HILLS / WC-025 S253235G LWR B |
| 4. Location of Well (Report location clearly and in accordance with any State requirements.*) At surface LOT 3 / 2186 FSL / 879 FWL / LAT 32.1148363 / LONG -103.6170665 At proposed prod. zone LOT 4 / 230 FSL / 550 FWL / LAT 32.0949461 / LONG -103.618142 | 11. Sec., T. R. M. or Blk. and Survey or Area SEC 19 / T25S / R33E / NMP |
| 14. Distance in miles and direction from nearest town or post office* 40 miles | 12. County or Parish LEA / 13. State NM |
| 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. unit line, if any) 230 feet | 16. No. of acres in lease 1761.04 / 17. Spacing Unit dedicated to this well 240 |
| 18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 880 feet | 19. Proposed Depth 12125 feet / 19572 feet / 20. BLM/BIA Bond No. on file FED: NM2308 |
| 21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3464 feet | 22. Approximate date work will start* 08/01/2018 / 23. Estimated duration 25 days |

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

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 required by the BLM.

| | | |
|---|---|---|
| 25. Signature (Electronic Submission) | Name (Printed/Typed) Stan Wagner / Ph: (432)686-3689 | Date 02/28/2018 |
| Title Regulatory Specialsit | | |
| Approved by (Signature) (Electronic Submission) | Name (Printed/Typed) Cody Layton / Ph: (575)234-5959 | Date 06/22/2018 |
| Title Assistant Field Manager Lands & Minerals | 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.

(Continued on page 2)

*(Instructions on page 2)

GL Rea 05/06/18

APPROVED WITH CONDITIONS

Approval Date: 06/22/2018

KZ 05/08/18

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

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

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

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

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

## NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160
PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.
ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.
EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM collects this information to allow 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 Collection 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: LOT 3 / 2186 FSL / 879 FWL / TWSP: 25S / RANGE: 33E / SECTION: 19 / LAT: 32.1148363 / LONG: -103.6170665 ( TVD: 0 feet, MD: 0 feet )
   PPP: LOT 3 / 2312 FSL / 550 FWL / TWSP: 25S / RANGE: 33E / SECTION: 19 / LAT: 32.1151812 / LONG: -103.6181307 ( TVD: 12081 feet, MD: 12205 feet )
   BHL: LOT 4 / 230 FSL / 550 FWL / TWSP: 25S / RANGE: 33E / SECTION: 30 / LAT: 32.0949461 / LONG: -103.618142 ( TVD: 12125 feet, MD: 19572 feet )

## BLM Point of Contact

Name: Katrina Ponder
Title: Geologist
Phone: 5752345969
Email: kponder@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.

AFMSS

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

# Operator Certification Data Report

07/20/2018

## Operator Certification

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

**NAME:** Stan Wagner **Signed on:** 02/28/2018

**Title:** Regulatory Specialsit

**Street Address:** 5509 Champions Drive

**City:** Midland **State:** TX **Zip:** 79702

**Phone:** (432)686-3689

**Email address:** Stan_Wagner@eogresources.com

## Field Representative

**Representative Name:** James Barwis

**Street Address:** 5509 Champions Drive

**City:** Midland **State:** TX **Zip:** 79706

**Phone:** (432)425-1204

**Email address:** james_barwis@eogresources.com

AFMSS

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

# Application Data Report

07/20/2018

**APD ID:** 10400027341

**Submission Date:** 02/28/2018

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** AUDACIOUS 19 FEDERAL

**Well Number:** 601H

**Well Type:** OIL WELL

**Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

## Section 1 - General

**APD ID:** 10400027341

**Tie to previous NOS?**

**Submission Date:** 02/28/2018

**BLM Office:** CARLSBAD

**User:** Stan Wagner

**Title:** Regulatory Specialsit

**Federal/Indian APD:** FED

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

**Lease number:** NMNM110838

**Lease Acres:** 1761.04

**Surface access agreement in place?**

**Allotted?**

**Reservation:**

**Agreement in place?** NO

**Federal or Indian agreement:**

**Agreement number:**

**Agreement name:**

**Keep application confidential?** YES

**Permitting Agent?** NO

**APD Operator:** EOG RESOURCES INCORPORATED

**Operator letter of designation:**

## Operator Info

**Operator Organization Name:** EOG RESOURCES INCORPORATED

**Operator Address:** 1111 Bagby Sky Lobby2

**Zip:** 77002

**Operator PO Box:**

**Operator City:** Houston

**State:** TX

**Operator Phone:** (713)651-7000

**Operator Internet Address:**

## Section 2 - Well Information

**Well in Master Development Plan?** NO

**Mater Development Plan name:**

**Well in Master SUPO?** NO

**Master SUPO name:**

**Well in Master Drilling Plan?** NO

**Master Drilling Plan name:**

**Well Name:** AUDACIOUS 19 FEDERAL

**Well Number:** 601H

**Well API Number:**

**Field/Pool or Exploratory?** Field and Pool

**Field Name:** RED HILLS

**Pool Name:** WC-025 S253235G LWR BS

**Is the proposed well in an area containing other mineral resources?** NATURAL GAS,OIL

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** AUDACIOUS 19 FEDERAL **Well Number:** 601H

**Describe other minerals:**

**Is the proposed well in a Helium production area?** N **Use Existing Well Pad?** NO **New surface disturbance?**

**Type of Well Pad:** MULTIPLE WELL **Multiple Well Pad Name:** AUDACIOUS 19 FEDERAL **Number:** 601H/710H/711H

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

**Well Work Type:** Drill

**Well Type:** OIL WELL

**Describe Well Type:**

**Well sub-Type:** INFILL

**Describe sub-type:**

**Distance to town:** 40 Miles **Distance to nearest well:** 880 FT **Distance to lease line:** 230 FT

**Reservoir well spacing assigned acres Measurement:** 240 Acres

**Well plat:** Audacious_19_Federal_601H_signed_C_102_20180228101051.pdf

**Well work start Date:** 08/01/2018 **Duration:** 25 DAYS

## Section 3 - Well Location Table

**Survey Type:** RECTANGULAR

**Describe Survey Type:**

**Datum:** NAD83 **Vertical Datum:** NAVD88

**Survey number:**

| | NS-Foot | NS Indicator | EW-Foot | EW Indicator | Twsp | Range | Section | Aliquot/Lot/Tract | Latitude | Longitude | County | State | Meridian | Lease Type | Lease Number | Elevation | MD | TVD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SHL Leg #1 | 2186 | FSL | 879 | FWL | 25S | 33E | 19 | Lot 3 | 32.1148363 | -103.6170665 | LEA | NEW MEXICO | NEW MEXICO | F | NMNM 110838 | 3464 | 0 | 0 |
| KOP Leg #1 | 2586 | FSL | 564 | FWL | 25S | 33E | 19 | Lot 3 | 32.1159437 | -103.6180765 | LEA | NEW MEXICO | NEW MEXICO | F | NMNM 110838 | -8163 | 11641 | 11627 |
| PPP Leg #1 | 2312 | FSL | 550 | FWL | 25S | 33E | 19 | Lot 3 | 32.1151812 | -103.6181307 | LEA | NEW MEXICO | NEW MEXICO | F | NMNM 110838 | -8617 | 12205 | 12081 |

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** AUDACIOUS 19 FEDERAL **Well Number:** 601H

| | NS-Foot | NS Indicator | EW-Foot | EW Indicator | Twsp | Range | Section | Aliquot/Lot/Tract | Latitude | Longitude | County | State | Meridian | Lease Type | Lease Number | Elevation | MD | TVD |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EXIT Leg #1 | 330 | FSL | 550 | FWL | 25S | 33E | 30 | Lot 4 | 32.095221 | -103.6181419 | LEA | NEW MEXICO | NEW MEXICO | F | NMNM 110838 | -8661 | 19472 | 12125 |
| BHL Leg #1 | 230 | FSL | 550 | FWL | 25S | 33E | 30 | Lot 4 | 32.094961 | -103.618142 | LEA | NEW MEXICO | NEW MEXICO | F | NMNM 110838 | -8661 | 19572 | 12125 |

bond and zonal isolation. Centralizers will be placed in the 9-7/8" hole interval at least one every third joint. Variance is also requested to wave 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. **Testing Procedure:** Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 5000/ 250 psig and the annular preventer to 3500/ 250 psig. The surface casing will be tested to 1500 psi for 30 minutes. Before drilling out of the intermediate casing, the ram-type BOP and accessory equipment will be tested to 5000/ 250 psig and the annular preventer to 3500/ 250 psig. The intermediate casing will be tested to 2000 psi for 30 minutes. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. A hydraulically operated choke will be installed prior to drilling out of the intermediate casing shoe.

**Choke Diagram Attachment:**

Audacious_19_Fed_601H_10_M_Choke_Manifold_20180215101659.pdf

Audacious_19_Fed_601H_Co_Flex_Hose_Certification_20180215101700.PDF

Audacious_19_Fed_601H_Co_Flex_Hose_Test_Chart_20180215101700.pdf

**BOP Diagram Attachment:**

Audacious_19_Fed_601H_10_M_BOP_Diagram_20180215101721.pdf

Audacious_19_Fed_601H_EOG_BLM_10M_Annular_Variance___4_String_20180215101722.pdf

## Section 3 - Casing

| Casing ID | String Type | Hole Size | Csg Size | Condition | Standard | Tapered String | Top Set MD | Bottom Set MD | Top Set TVD | Bottom Set TVD | Top Set MSL | Bottom Set MSL | Calculated casing length MD | Grade | Weight | Joint Type | Collapse SF | Burst SF | Joint SF Type | Joint SF | Body SF Type | Body SF |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SURFACE | 17.5 | 13.375 | NEW | API | N | 0 | 1110 | 0 | 1110 | 3464 | 2354 | 1110 | J-55 | 54.5 | STC | 1.125 | 1.25 | BUOY | 1.6 | BUOY | 1.6 |
| 2 | INTERMEDIATE | 12.25 | 9.625 | NEW | API | N | 0 | 4000 | 0 | 4000 | 3464 | -536 | 4000 | J-55 | 40 | LTC | 1.125 | 1.25 | BUOY | 1.6 | BUOY | 1.6 |
| 3 | INTERMEDIATE | 12.25 | 9.625 | NEW | API | N | 4000 | 4800 | 4000 | 4800 | -536 | -1336 | 800 | HCK-55 | 40 | LTC | 1.125 | 1.25 | BUOY | 1.6 | BUOY | 1.6 |
| 4 | PRODUCTION | 6.75 | 5.5 | NEW | API | N | 0 | 10800 | 0 | 10800 | 3464 | -7336 | 10800 | OTHER | 20 | OTHER - DWC/C-IS MS | 1.125 | 1.25 | BUOY | 1.6 | BUOY | 1.6 |
| 5 | INTERMEDIATE | 8.75 | 7.625 | NEW | API | N | 0 | 11300 | 0 | 11300 | 3464 | -7836 | 11300 | HCP-110 | 29.7 | OTHER - FXL | 1.125 | 1.25 | BUOY | 1.6 | BUOY | 1.6 |
| 6 | PRODUCTION | 6.75 | 5.5 | NEW | API | N | 10800 | 19572 | 10800 | 12125 | -7336 | -8661 | 8772 | OTHER | 20 | OTHER - VAM SFC | 1.125 | 1.25 | BUOY | 1.6 | BUOY | 1.6 |

**Casing Attachments**

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** AUDACIOUS 19 FEDERAL **Well Number:** 601H

**Casing Attachments**

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Audacious_19_Fed_601H_BLM_Plan_20180215102836.pdf

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

See_previously_attached_Drill_Plan_20180215102850.pdf

**Casing ID:** 3 **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

See_previously_attached_Drill_Plan_20180215102904.pdf

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** AUDACIOUS 19 FEDERAL **Well Number:** 601H

**Casing Attachments**

**Casing ID:** 4 **String Type:** PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Audacious_19_Fed_601H_5.500in_20.00_VST_P110EC_DWC_C_IS_MS_20180215102933.pdf

See_previously_attached_Drill_Plan_20180215102934.pdf

**Casing ID:** 5 **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Audacious_19_Fed_601H_7.625in_29.70_P110HC_FXL_20180215103002.pdf

See_previously_attached_Drill_Plan_20180215103002.pdf

**Casing ID:** 6 **String Type:** PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Audacious_19_Fed_601H_5.500in_20.00_VST_P110EC_VAM_SFC_20180215103028.pdf

See_previously_attached_Drill_Plan_20180215103029.pdf

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** AUDACIOUS 19 FEDERAL **Well Number:** 601H

## Section 4 - Cement

| String Type | Lead/Tail | Stage Tool Depth | Top MD | Bottom MD | Quantity(sx) | Yield | Density | Cu Ft | Excess% | Cement type | Additives |
|---|---|---|---|---|---|---|---|---|---|---|---|
| INTERMEDIATE | Lead | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PRODUCTION | Lead | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| SURFACE | Lead | | 0 | 1110 | 600 | 1.73 | 13.5 | 1038 | 25 | Class C | Lead: Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% CaCl2 + 0.25 lb/sk Cello-Flake (TOC @ Surface) |
| SURFACE | Tail | | 1110 | 1110 | 200 | 1.34 | 14.8 | 268 | 25 | Class C | Tail: Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate |
| INTERMEDIATE | Lead | | 0 | 4800 | 1780 | 2.2 | 12.7 | 3916 | 25 | Class C | Lead: Class C + 0.15% C-20 + 11.63 pps Salt + 0.1% C-51 + 0.75% C-41P (TOC @ Surface) |
| INTERMEDIATE | Tail | | 4800 | 4800 | 200 | 1.12 | 16 | 224 | 25 | Class C | Tail: Class C + 0.13% C-20 |
| INTERMEDIATE | Lead | | 4300 | 11300 | 340 | 2.72 | 11.5 | 924 | 25 | Class C | Lead: Class C + 0.40% D013 + 0.20% D046 + 0.10% D065 + 0.20% D167 (TOC @ 4,300') |
| INTERMEDIATE | Tail | | 11300 | 11300 | 210 | 1.12 | 16 | 235 | 25 | Class H | Tail: Class H + 94.0 pps D909 + 0.25% D065 + 0.30% D167 + 0.02% D208 + 0.15% D800 |
| PRODUCTION | Lead | | 10800 | 19572 | 950 | 1.26 | 14.1 | 1197 | 25 | Class H | Class H + 0.1% C-20 + 0.05% CSA-1000 + 0.20% C-49 + 0.40% C-17 (TOC @ 10,800') |

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** AUDACIOUS 19 FEDERAL **Well Number:** 601H

## Section 5 - Circulating Medium

**Mud System Type:** Closed

**Will an air or gas system be Used?** NO

**Description of the equipment for the circulating system in accordance with Onshore Order #2:**

**Diagram of the equipment for the circulating system in accordance with Onshore Order #2:**

**Describe what will be on location to control well or mitigate other conditions:** (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) H2S monitoring and detection equipment will be utilized from surface casing point to TD.
**Describe the mud monitoring system 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.

## Circulating Medium Table

| Top Depth | Bottom Depth | Mud Type | Min Weight (lbs/gal) | Max Weight (lbs/gal) | Density (lbs/cu ft) | Gel Strength (lbs/100 sqft) | PH | Viscosity (CP) | Salinity (ppm) | Filtration (cc) | Additional Characteristics |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1110 | 4800 | SALT SATURATED | 10 | 10.02 | | | | | | | |
| 4800 | 11300 | OIL-BASED MUD | 8.7 | 9.4 | | | | | | | |
| 0 | 1110 | WATER-BASED MUD | 8.6 | 8.8 | | | | | | | |
| 11300 | 12125 | OIL-BASED MUD | 10 | 14 | | | | | | | |

## Section 6 - Test, Logging, Coring

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

Open-hole logs are not planned for this well.

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

DS

**Coring operation description for the well:**

None

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** AUDACIOUS 19 FEDERAL **Well Number:** 601H

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 8827 **Anticipated Surface Pressure:** 8827

**Anticipated Bottom Hole Temperature(F):** 181

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

**Describe:**

**Contingency Plans geoharzards description:**

**Contingency Plans geohazards attachment:**

**Hydrogen Sulfide drilling operations plan required?** YES

**Hydrogen sulfide drilling operations plan:**

Audacious_19_Fed_601H_H2S_Plan_Summary_20180215104929.pdf

## Section 8 - Other Information

**Proposed horizontal/directional/multi-lateral plan submission:**

Audacious_19_Federal_601H_Planning_Report_20180215104951.pdf
Audacious_19_Federal_601H_Wall_Plot_20180215104952.pdf

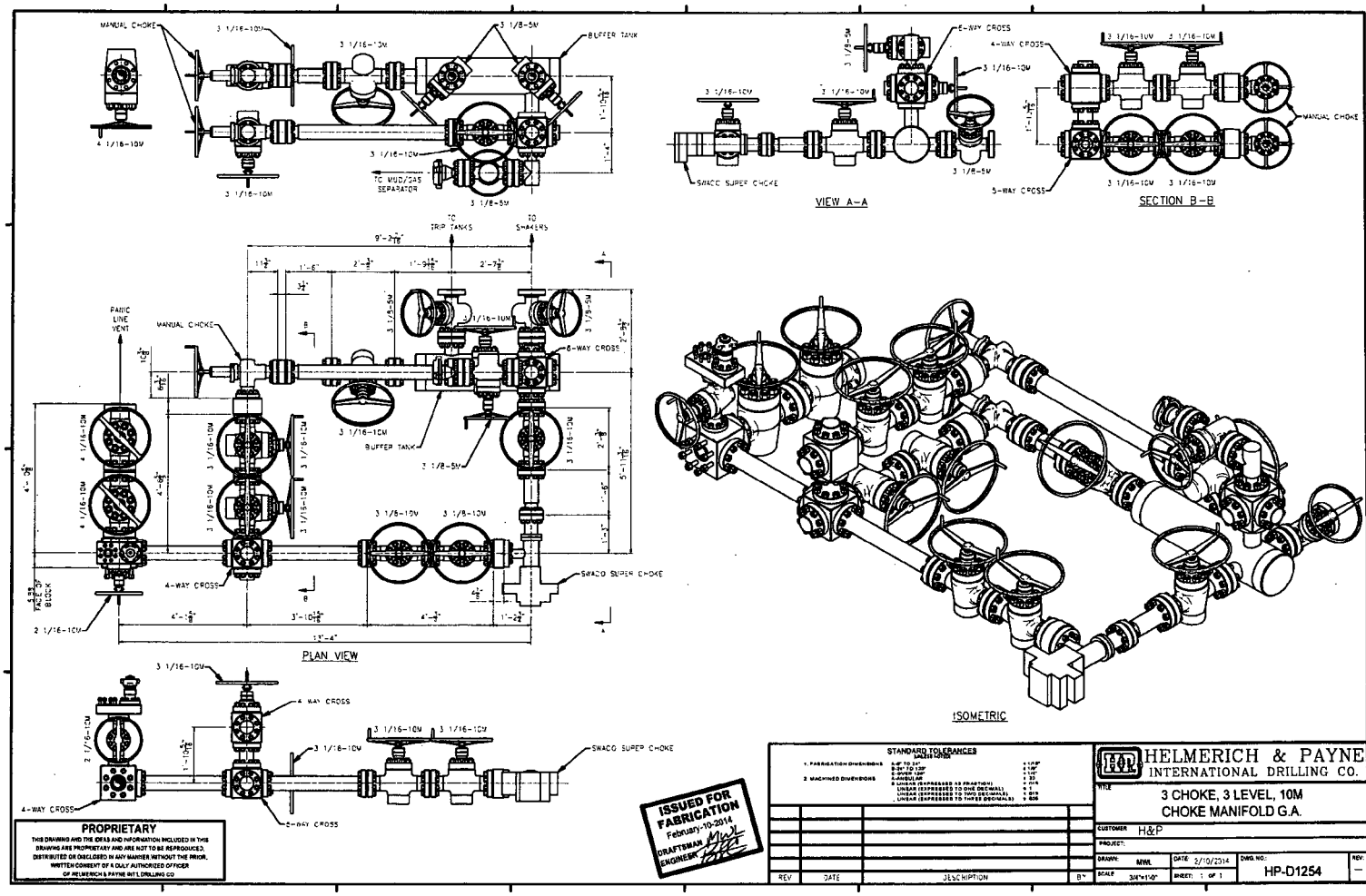
**Other proposed operations facets description:**

**Other proposed operations facets attachment:**

Audacious_19_Fed_601H_Proposed_Wellbore_20180215105014.pdf
Audacious_19_Fed_601H_Rig_Layout_20180215105014.pdf
Audacious_19_Fed_601H_Wellhead_Cap_20180215105015.pdf
Audacious_19_Federal_GCP_20180226153217.pdf

**Other Variance attachment:**

Audacious_19_Fed_601H_EOG_BLM_10M_Annular_Variance___4_String_20180215105026.pdf


MANUAL CHOKE
3 1/16-10M
3 1/8-5M
BUFFER TANK
4 1/16-10M
TO MUD/GAS SEPARATOR
VIEW A-A
4-WAY CROSS
5-WAY CROSS
SWACO SUPER CHOKE
SECTION B-B
TO TRIP TANKS
TO SHAKERS
PANIC LINE VENT
6-WAY CROSS
PLAN VIEW
ISOMETRIC
2 1/16-10M
PROPRIETARY
THIS DRAWING AND THE IDEAS AND INFORMATION INCLUDED IN THIS DRAWING ARE PROPRIETARY AND ARE NOT TO BE REPRODUCED, DISTRIBUTED OR DISCLOSED IN ANY MANNER WITHOUT THE PRIOR, WRITTEN CONSENT OF A DULY AUTHORIZED OFFICER OF HELMERICH & PAYNE INT'L DRILLING CO
ISSUED FOR FABRICATION
Febuary-10-2014
DRAFTSMAN
ENGINEER
STANDARD TOLERANCES
UNLESS NOTED
1. FABRICATION DIMENSIONS
0-6" TO 24"
6-24" TO 120"
2. MACHINED DIVENSIONS
0-6" TO 24"
6-24" TO 120"
REV
DATE
DESCRIPTION
BY
HELMERICH & PAYNE
INTERNATIONAL DRILLING CO.
TITLE
3 CHOKE, 3 LEVEL, 10M
CHOKE MANIFOLD G.A.
CUSTOMER H&P
PROJECT:
DRAWN: MWL
DATE: 2/10/2014
SCALE: 3/4"=1'-0"
SHEET: 1 OF 1
DWG. NO.: HP-D1254
REV.

Manufacturer: Midwest Hose & Specialty

Serial Number: SN#90067

Length: 35'

Size: OD = 8" ID = 4"

Ends: Flanges Size: 4-1/16"

WP Rating: 10,000 psi Anchors required by manfacturer: No

# MIDWEST

## HOSE AND SPECIALTY INC.

| INTERNAL HYDROSTATIC TEST REPORT | | |
|---|---|---|
| **Customer:** CACTUS | | **P.O. Number:** RIG #123 |
| | | Asset # M10761 |
| **HOSE SPECIFICATIONS** | | |
| **Type:** CHOKE LINE | | **Length:** 35' |
| **I.D.** 4" *INCHES* | | **O.D.** 8" *INCHES* |
| **WORKING PRESSURE** 10,000 *PSI* | **TEST PRESSURE** 15,000 *PSI* | **BURST PRESSURE** *PSI* |
| **COUPLINGS** | | |
| **Type of End Fitting** 4 1/16 10K FLANGE | | |
| **Type of Coupling:** SWEDGED | **MANUFACTURED BY** MIDWEST HOSE & SPECIALTY | |
| **PROCEDURE** | | |
| *Hose assembly pressure tested with water at ambient temperature.* | | |
| **TIME HELD AT TEST PRESSURE** 1 *MIN.* | **ACTUAL BURST PRESSURE:** 0 *PSI* | |
| **COMMENTS:** SN#90067 M10761<br>Hose is covered with stainless steel armour cover and wraped with fire resistant vermiculite coated fiberglass insulation rated for 1500 degrees complete with lifting eyes | | |
| **Date:** 6/6/2011 | **Tested By:** BOBBY FINK | **Approved:** MENDI JACKSON |

Midwest Hose & Specialty, Inc.

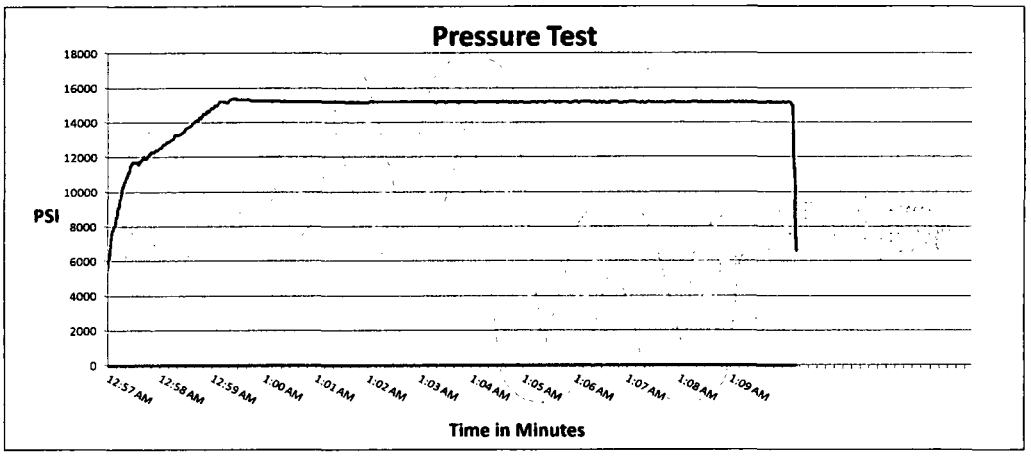
# Internal Hydrostatic Test Graph

**Customer:** CACTUS

**SALES ORDER#** 90067

**Hose Specifications**

| Hose Type | Length | Type of Fitting | Coupling Method |
|---|---|---|---|
| C & K | 35' | 4 1/16 10K | Swage |
| **I.D.** | **O.D.** | **Die Size** | **Final O.D.** |
| 4" | 8" | 6.62" | 6.68" |
| **Working Pressure** | **Burst Pressure** | **Hose Serial #** | **Hose Assembly Serial #** |
| 10000 PSI | *Standard Safety Multiplier Applies* | | 90067 |




| Test Pressure | Time Held at Test Pressure | Actual Burst Pressure | Peak Pressure |
|---|---|---|---|
| 15000 PSI | 11 1/4 Minutes | | 15439 PSI |

**Comments:** Hose assembly pressure tested with water at ambient temperature.

**Tested By:** *Bobby Fink*

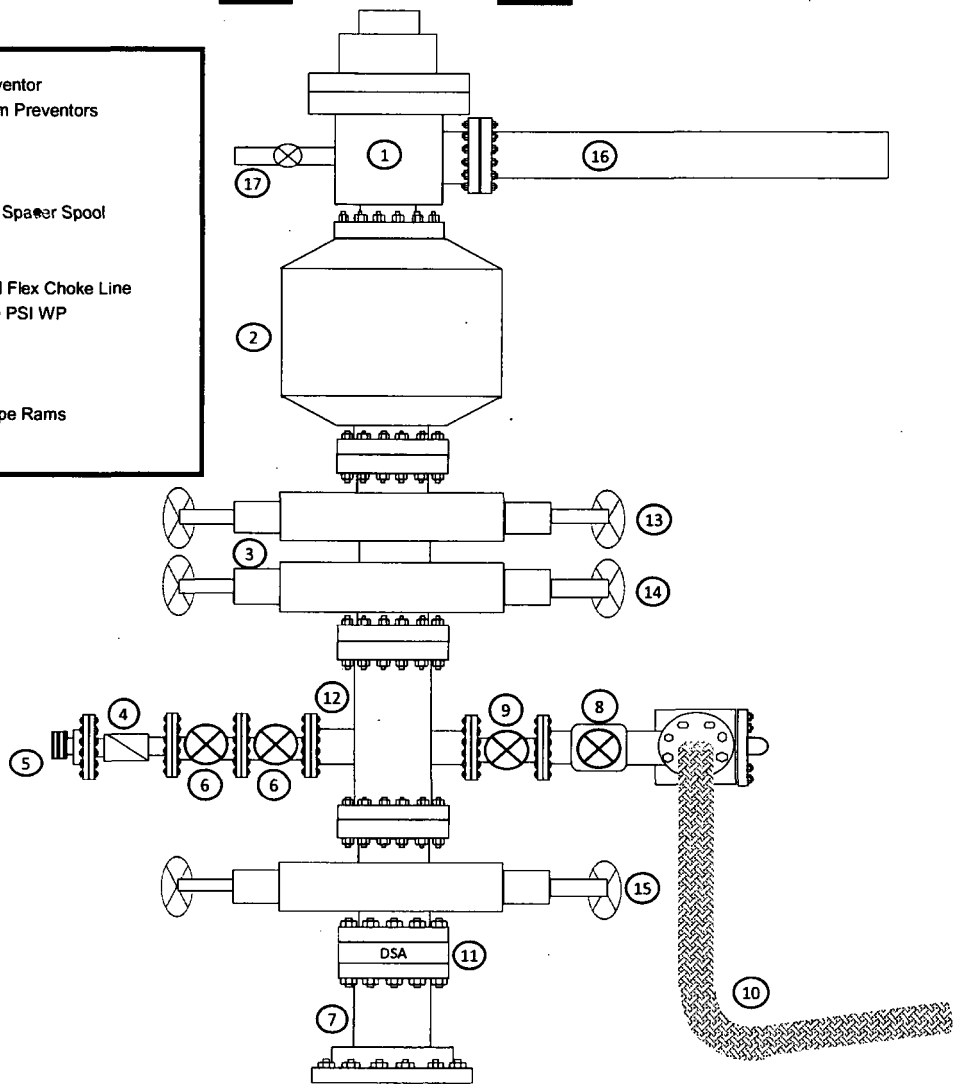
**Approved By:** *Mendi Jackson*

Mendi Jackson

# Exhibit 1
# EOG Resources
## 10M BOPE

Rig Floor

1. 13 5/8" Rotating Head
2. Hydril 13 5/8" 10,000 PSI WP GK Annular Preventor
3. 13 5/8" Cameron Type "U" 10,000 PSI WP Ram Preventors
4. 2 1/16" - 10,000 PSI WP Check Valve
5. 10,000 PSI WP - 1502 Union to kill line
6. 2 1/16" - 10,000 PSI WP Manual Valves
7. 13 5/8" 3,000 PSI WP x 13 5/8" 5,000 PSI WP Spacer Spool
8. 4 1/16" 10,000 PSI WP HCR Valve
9. 4 1/16" 10,000 PSI WP Manual Valve
10. 6" OD x 3" ID 10,000 PSI WP Steel Armoured Flex Choke Line
11. DSA - 13 5/8" 10,000 PSI WP x 13 5/8" 5,000 PSI WP
12. Mud Cross - 13 5/8" 10,000 PSI WP
13. Blind Rams
14. Pipe Rams
15. 13 5/8" Cameron Type "U" 10,000 PSI WP Pipe Rams
16. Flow Line
17. 2" Fill Line



# 10,000 PSI BOP Annular
# Variance Request

EOG Resources request a variance to use a 5000 psi annular BOP with a 10,000 psi BOP stack. The component and compatibility tables along with the general well control plans demonstrate how the 5000 psi annular BOP will be protected from pressures that exceed its rated working pressure (RWP). The pressure at which the control of the wellbore is transferred from the annular preventer to another available preventer will not exceed 3500 psi (70% of the RWP of the 5000 psi annular BOP).

## 1. Component and Preventer Compatibility Tables

The tables below outlines the tubulars and the compatible preventers in use. This table, combined with the drilling fluid, documents that two barriers to flow will be maintained at all times.

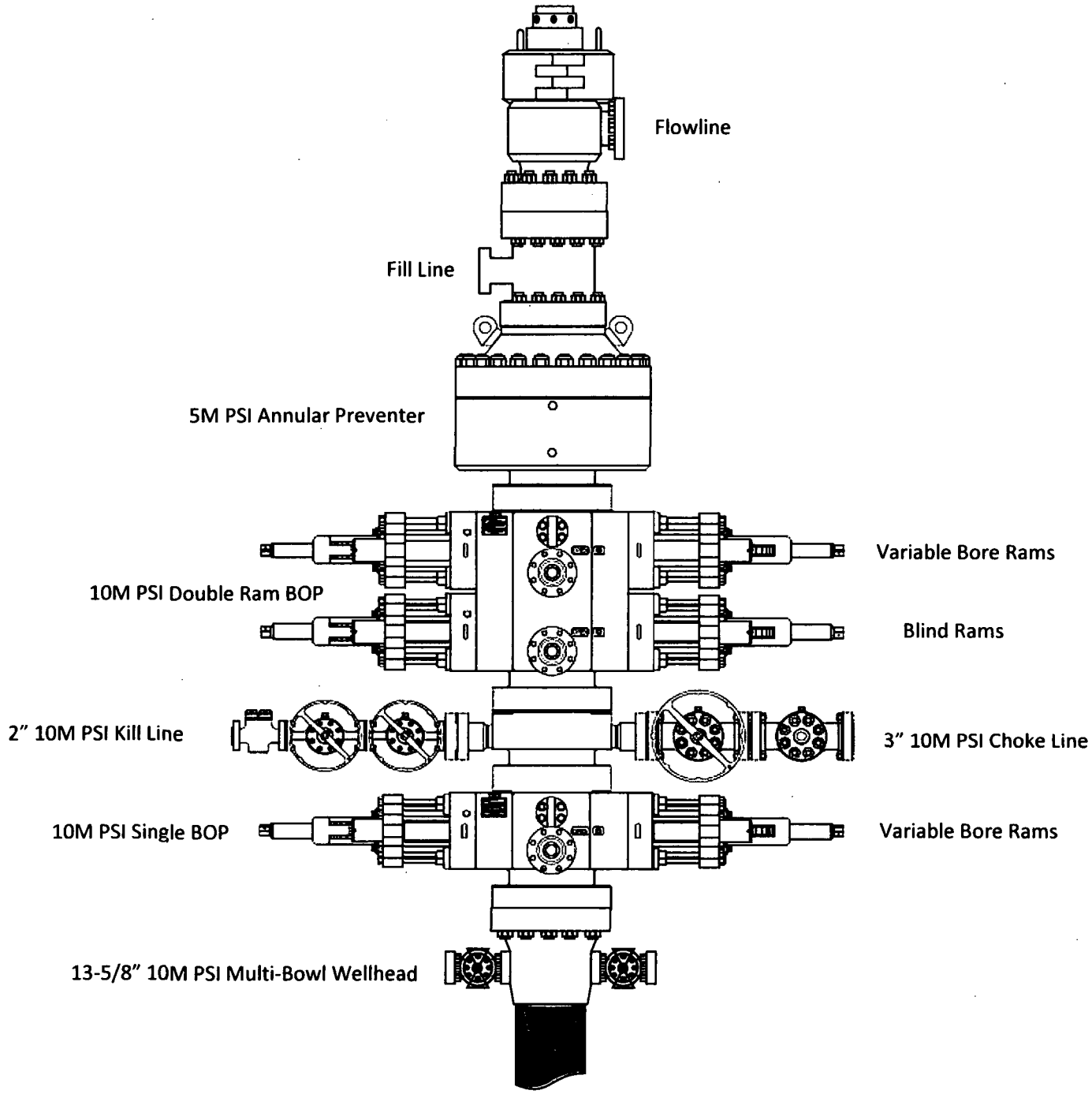
| **12-1/4" Intermediate Hole Section<br>10M psi requirement** | | | | | |
|---|---|---|---|---|---|
| **Component** | **OD** | **Primary Preventer** | **RWP** | **Alternate Preventer(s)** | **RWP** |
| Drillpipe | 5.000" or<br>4.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| HWDP | 5.000" or<br>4.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| Jars | 6.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| DCs and MWD tools | 6.500" – 8.000" | Annular | 5M | - | - |
| Mud Motor | 8.000" – 9.625" | Annular | 5M | - | - |
| 1st Intermediate casing | 9.625" | Annular | 5M | - | - |
| Open-hole | - | Blind Rams | 10M | - | - |

| **8-3/4" Intermediate Hole Section<br>10M psi requirement** | | | | | |
|---|---|---|---|---|---|
| **Component** | **OD** | **Primary Preventer** | **RWP** | **Alternate Preventer(s)** | **RWP** |
| Drillpipe | 5.000" or<br>4.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| HWDP | 5.000" or<br>4.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| Jars | 6.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| DCs and MWD tools | 6.500" – 8.000" | Annular | 5M | - | - |
| Mud Motor | 6.750" – 8.000" | Annular | 5M | - | - |
| 2nd Intermediate casing | 7.625" | Annular | 5M | - | - |
| Open-hole | - | Blind Rams | 10M | - | - |

| 6-3/4" Production Hole Section<br>10M psi requirement | | | | | |
|---|---|---|---|---|---|
| **Component** | **OD** | **Primary Preventer** | **RWP** | **Alternate Preventer(s)** | **RWP** |
| Drillpipe | 4.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| HWDP | 4.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| DCs and MWD tools | 4.750" – 5.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| Mud Motor | 4.750" – 5.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| Mud Motor | 5.500" – 5.750" | Annular | 5M | - | - |
| Production casing | 5.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| Open-hole | - | Blind Rams | 10M | - | - |

VBR = Variable Bore Ram

# EOG Resources
# 13-5/8" 10M PSI BOP Stack



## 2. Well Control Procedures

Below are the minimal high-level tasks prescribed to assure a proper shut-in while drilling, tripping, running casing, pipe out of the hole (open hole), and moving the BHA through the BOPs. At least one well control drill will be performed weekly per crew to demonstrate compliance with the procedure and well control plan. The well control drill will be recorded in the daily drilling log. The type of drill will be determined by the ongoing operations, but reasonable attempts will be made to vary the type of drill conducted (pit, trip, open hole, choke, etc.). This well control plan will be available for review by rig personnel in the EOG Resources drilling supervisor's office on location, and on the rig floor. All BOP equipment will be tested as per Onshore O&G Order No. 2 with the exception of the 5000 psi annular which will be tested to 70% of its RWP.

General Procedure While Drilling

1. Sound alarm (alert crew)
2. Space out drill string
3. Shut down pumps (stop pumps and rotary)
4. Shut-in Well (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
    a. SIDPP and SICP
    b. Pit gain
    c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

General Procedure While Tripping

1. Sound alarm (alert crew)
2. Stab full opening safety valve and close
3. Space out drill string
4. Shut-in (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
    a. SIDPP and SICP
    b. Pit gain
    c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

General Procedure While Running Production Casing

1. Sound alarm (alert crew)
2. Stab crossover and full opening safety valve and close
3. Space out string

4. Shut-in (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
    a. SIDPP and SICP
    b. Pit gain
    c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

General Procedure With No Pipe In Hole (Open Hole)

1. Sound alarm (alert crew)
2. Shut-in with blind rams. (HCR and choke will already be in the closed position.)
3. Confirm shut-in
4. Notify toolpusher/company representative
5. Read and record the following:
    a. SICP
    b. Pit gain
    c. Time
6. Regroup and identify forward plan

General Procedures While Pulling BHA thru Stack

1. PRIOR to pulling last joint of drillpipe thru the stack.
    a. Perform flowcheck, if flowing:
    b. Sound alarm (alert crew)
    c. Stab full opening safety valve and close
    d. Space out drill string with tool joint just beneath the upper variable bore rams.
    e. Shut-in using upper variable bore rams. (HCR and choke will already be in the closed position.)
    f. Confirm shut-in
    g. Notify toolpusher/company representative
    h. Read and record the following:
        i. SIDPP and SICP
        ii. Pit gain
        iii. Time
    i. Regroup and identify forward plan

2. With BHA in the stack and compatible ram preventer and pipe combo immediately available.
    a. Sound alarm (alert crew)
    b. Stab crossover and full opening safety valve and close
    c. Space out drill string with upset just beneath the upper variable bore rams.
    d. Shut-in using upper variable bore rams. (HCR and choke will already be in the closed position.)
    e. Confirm shut-in
    f. Notify toolpusher/company representative
    g. Read and record the following:
        i. SIDPP and SICP

ii. Pit gain
iii. Time

h. Regroup and identify forward plan

3. With BHA in the stack and NO compatible ram preventer and pipe combo immediately available.
   a. Sound alarm (alert crew)
   b. If possible to pick up high enough, pull string clear of the stack and follow "Open Hole" scenario.
   c. If impossible to pick up high enough to pull the string clear of the stack:
   d. Stab crossover, make up one joint/stand of drillpipe, and full opening safety valve and close
   e. Space out drill string with tooljoint just beneath the upper variable bore ram.
   f. Shut-in using upper variable bore ram. (HCR and choke will already be in the closed position.)
   g. Confirm shut-in
   h. Notify toolpusher/company representative
   i. Read and record the following:
      i. SIDPP and SICP
      ii. Pit gain
      iii. Time
   j. Regroup and identify forward plan

**EOG RESOURCES, INC.**
**AUDACIOUS 19 FED NO. 601H**

**1. GEOLOGIC NAME OF SURFACE FORMATION:**

Permian

**2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:**

| | |
|---|---|
| Rustler | 998' |
| Top of Salt | 1,336' |
| Base of Salt | 4,691' |
| Base Anhydrite | 4,932' |
| Lamar | 4,932' |
| Bell Canyon | 4,954' |
| Cherry Canyon | 5,982' |
| Brushy Canyon | 7,528' |
| Bone Spring Lime | 9,062' |
| 1st Bone Spring Sand | 10,030' |
| 2nd Bone Spring Shale | 10,204' |
| 2nd Bone Spring Sand | 10,481' |
| 3rd Bone Spring Carb | 11,014' |
| 3rd Bone Spring Sand | 11,718' |
| TD | 12,125' |

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

| | | |
|---|---|---|
| Upper Permian Sands | 0- 400' | Fresh Water |
| Cherry Canyon | 5,982' | Oil |
| Brushy Canyon | 7,528' | Oil |
| 1st Bone Spring Sand | 10,030' | Oil |
| 2nd Bone Spring Shale | 10,204' | Oil |
| 2nd Bone Spring Sand | 10,481' | Oil |
| 3rd Bone Spring Carb | 11,014' | Oil |
| 3rd Bone Spring Sand | 11,718' | 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 13.375" casing at 1,110' and circulating cement back to surface.

**EOG RESOURCES, INC.**
**AUDACIOUS 19 FED NO. 601H**

## 4. CASING PROGRAM - NEW

| Hole Size | Interval | Csg OD | Weight | Grade | Conn | $DF_{min}$ Collapse | $DF_{min}$ Burst | $DF_{min}$ Tension |
|---|---|---|---|---|---|---|---|---|
| 17.5" | 0 – 1,110' | 13.375" | 54.5# | J55 | LTC | 1.125 | 1.25 | 1.60 |
| 12.25" | 0 – 4,000' | 9.625" | 40# | J55 | LTC | 1.125 | 1.25 | 1.60 |
| 12.25" | 4,000' – 4,800' | 9.625" | 40# | HCK55 | LTC | 1.125 | 1.25 | 1.60 |
| 8.75" | 0 – 11,300' | 7.625" | 29.7# | HCP-110 | FXL | 1.125 | 1.25 | 1.60 |
| 6.75" | 0' – 10,800' | 5.5" | 20# | P-110EC | DWC/C-IS MS | 1.125 | 1.25 | 1.60 |
| 6.75" | 10,800'-19,572' | 5.5" | 20# | P-110EC | VAM SFC | 1.125 | 1.25 | 1.60 |

Variance is requested to wave 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 wave 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.

**Cementing Program:**

| Depth | No. Sacks | Wt. ppg | Yld $Ft^3/ft$ | Mix Water Gal/sk | Slurry Description |
|---|---|---|---|---|---|
| 13-3/8" 1,110' | 600 | 13.5 | 1.73 | 9.13 | Lead: Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% $CaCl_2$ + 0.25 lb/sk Cello-Flake (TOC @ Surface) |
| | 200 | 14.8 | 1.34 | 6.34 | Tail: Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate |
| 9-5/8" 4,800' | 1780 | 12.7 | 2.20 | 11.64 | Lead: Class C + 0.15% C-20 + 11.63 pps Salt + 0.1% C-51 + 0.75% C-41P (TOC @ Surface) |
| | 200 | 16.0 | 1.12 | 4.75 | Tail: Class C + 0.13% C-20 |
| 7-5/8" 11,300' | 340 | 11.5 | 2.72 | 15.70 | Lead: Class C + 0.40% D013 + 0.20% D046 + 0.10% D065 + 0.20% D167 (TOC @ 4,300') |
| | 210 | 16.0 | 1.12 | 4.74 | Tail: Class H + 94.0 pps D909 + 0.25% D065 + 0.30% D167 + 0.02% D208 + 0.15% D800 |
| 5-1/2" 19,572' | 950 | 14.1 | 1.26 | 5.80 | Class H + 0.1% C-20 + 0.05% CSA-1000 + 0.20% C-49 + 0.40% C-17 (TOC @ 10,800') |

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 (10,000-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. All BOPE will be tested in accordance with Onshore Oil & Gas order No. 2.

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

Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 10,000/ 250 psig and the annular preventer to 5,000/ 250 psig. The surface casing will be tested to 1500 psi for 30 minutes.

Before drilling out of the intermediate casing, the ram-type BOP and accessory equipment will be tested to 10,000/ 250 psig and the annular preventer to 5000/ 250 psig. The intermediate casing will be tested to 2000 psi for 30 minutes.

Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets.

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 – 1,110' | Fresh - Gel | 8.6-8.8 | 28-34 | N/c |
| 1,110' – 4,800' | Brine | 10.0-10.2 | 28-34 | N/c |
| 4,800' – 11,300' | Oil Base | 8.7-9.4 | 58-68 | N/c - 6 |
| 11,300' – 19,572' 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 8827 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 13-3/8" surface casing, a 13-5/8" 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 Stream Flo FBD100 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.

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.

Both the surface and intermediate casing strings will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater.

| Metal One Corp. *Metal One* | MO-FXL Connection Data Sheet | Page | MCTP |
|---|---|---|---|
| | | Date | 3-Nov-16 |
| | | | |
| | | Rev. | 0 |

**MO-FXL**

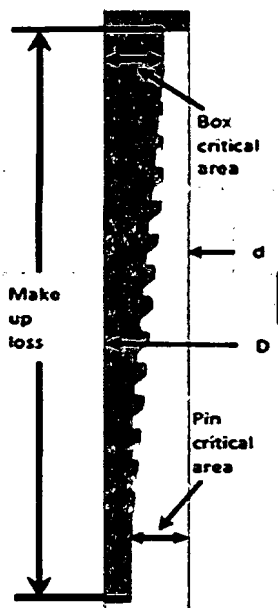
## Geometry

**Pipe Body**

| | Imperial | | S.I. | |
|---|---|---|---|---|
| Grade | P110HC *1 | | P110HC *1 | |
| Pipe OD ( D ) | 7 5/8 | in | 193.68 | mm |
| Weight | 29.70 | lb/ft | 44.25 *1 | kg/m |
| Actual weight | 29.04 | | 43.26 | kg/m |
| Wall Thickness ( t ) | 0.375 | in | 9.53 | mm |
| Pipe ID ( d ) | 6.875 | in | 174.63 | mm |
| Pipe body cross section | 8.537 | in² | 5,508 | mm² |
| Drift Dia. | 6.750 | in | 171.45 | mm |

**Connection**

| | | | | |
|---|---|---|---|---|
| Box OD ( W ) | 7.625 | in | 193.68 | mm |
| PIN ID | 6.875 | in | 174.63 | mm |
| Make up Loss | 4.219 | in | 107.16 | mm |
| Box Critical Area | 5.714 | in² | 3686 | mm² |
| Joint load efficiency | 70 | % | 70 | % |
| Thread Taper | 1 / 10 ( 1.2" per ft ) | | | |
| Number of Threads | 5 TPI | | | |




## Performance

**Performance Properties for Pipe Body**

| | | | | |
|---|---|---|---|---|
| S.M.Y.S. *1 | 140ksi | ksi | 965 | MPa |
| M.I.Y.P. *1 | 10,760 | psi | 74.21 | MPa |
| Collapse Strength *1 | 7,350 | psi | 50.70 | MPa |

Note S.M.Y.S.= Specified Minimum YIELD Strength of Pipe body
M.I.Y.P. = Minimum Internal Yield Pressure of Pipe body
*1 Based on VSB P110HC (YS=125~140ksi)

**Performance Properties for Connection**

| | |
|---|---|
| Tensile Yield load | 747 kips ( 70% of S.M.Y.S. ) |
| Min. Compression Yield | 747 kips ( 70% of S.M.Y.S. ) |
| Internal Pressure | 10,760 psi ( 100% of M.I.Y.P. ) |
| External Pressure | 100% of Collapse Strength |
| Max. DLS (deg/100ft) | 40 |

**Recommended Torque**

| | | | | |
|---|---|---|---|---|
| Min. | 15,500 | ft-lb | 21,000 | N-m |
| Opti. | 17,200 | ft-lb | 23,300 | N-m |
| Max. | 19,900 | ft-lb | 27,000 | N-m |
| Operational Max. | 23,600 | ft-lb | 32,000 | N-m |

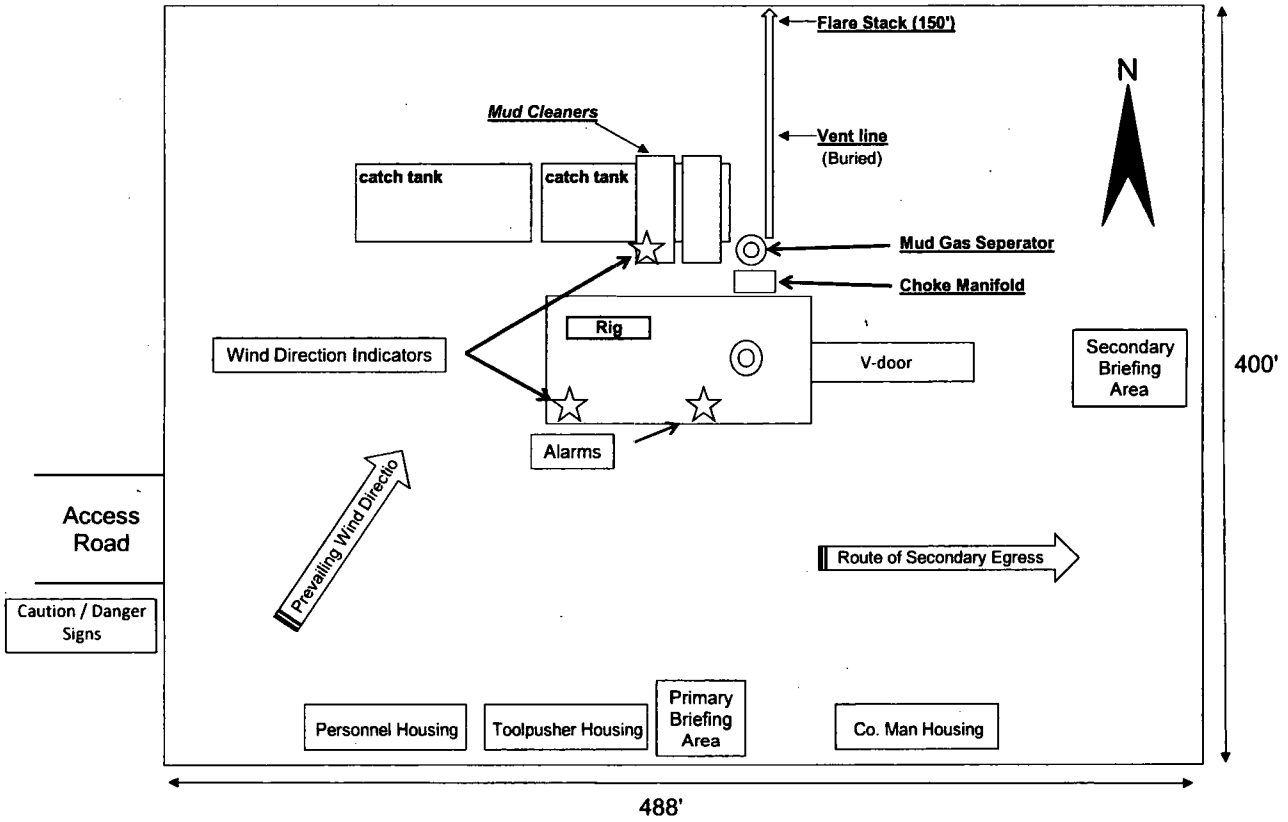
Note : Operational Max. torque can be applied for high torque application

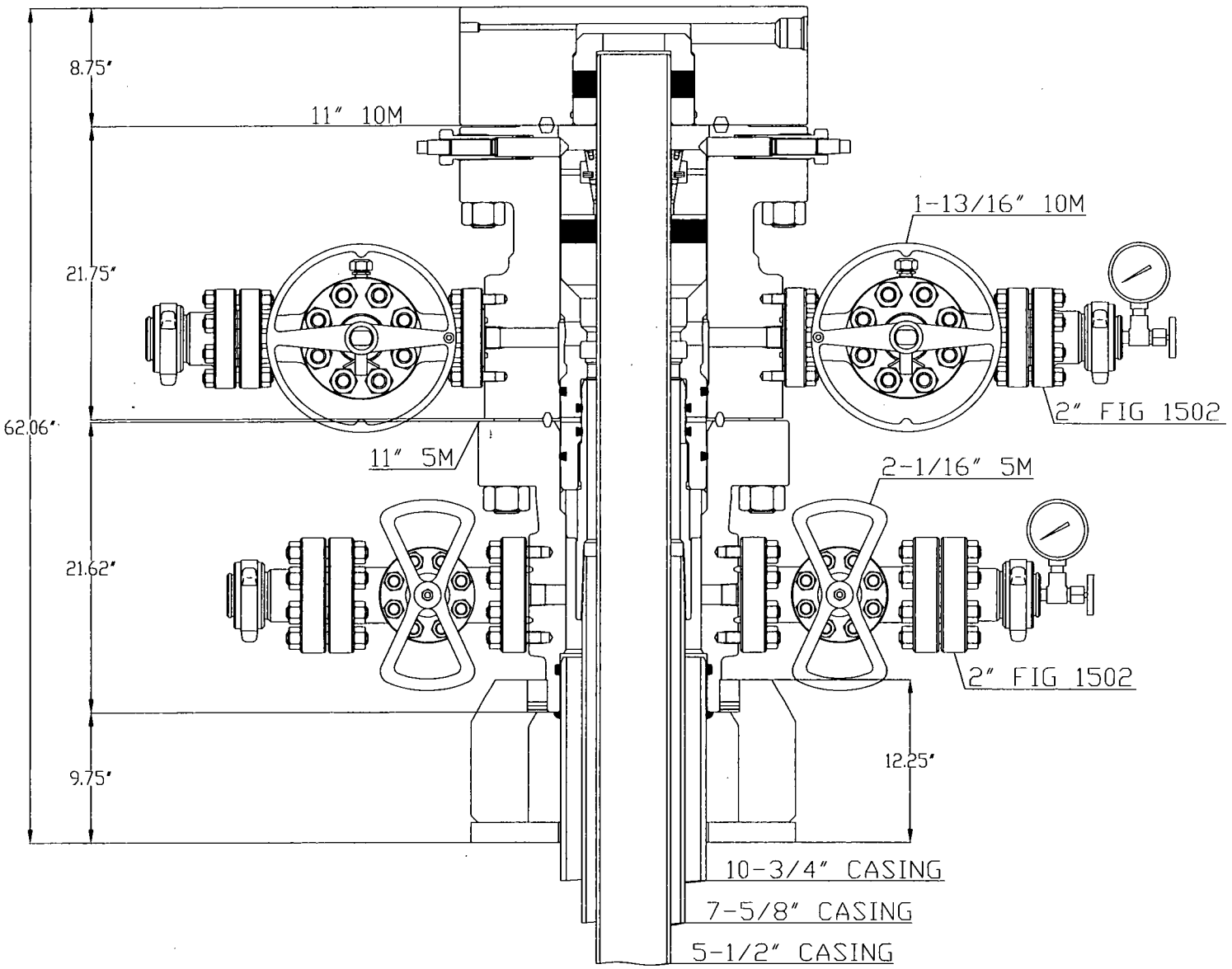
Exhibit 4

EOG Resources

Audacious 19 Fed #601H

Well Site Diagram






*CONCEPT QUOTE DRAWING
*DIMENSIONS ARE APPROXIMATE

# EOG RESOURCES

10-3/4" X 7-5/8" X 5-1/2"
FBD-100 WELLHEAD SYSTEM
QUOTE: HOU - 102101

| | | |
|---|---|---|
| DWN | BAY | 2/22/17 |
| CHK | | |
| APP | | |
| | BY | DATE |

Worldwide Expertise - Global Strength

DRAWING NO
WH-16618

# 10,000 PSI BOP Annular
# Variance Request

EOG Resources request a variance to use a 5000 psi annular BOP with a 10,000 psi BOP stack. The component and compatibility tables along with the general well control plans demonstrate how the 5000 psi annular BOP will be protected from pressures that exceed its rated working pressure (RWP). The pressure at which the control of the wellbore is transferred from the annular preventer to another available preventer will not exceed 3500 psi (70% of the RWP of the 5000 psi annular BOP).

## 1. Component and Preventer Compatibility Tables

The tables below outlines the tubulars and the compatible preventers in use. This table, combined with the drilling fluid, documents that two barriers to flow will be maintained at all times.

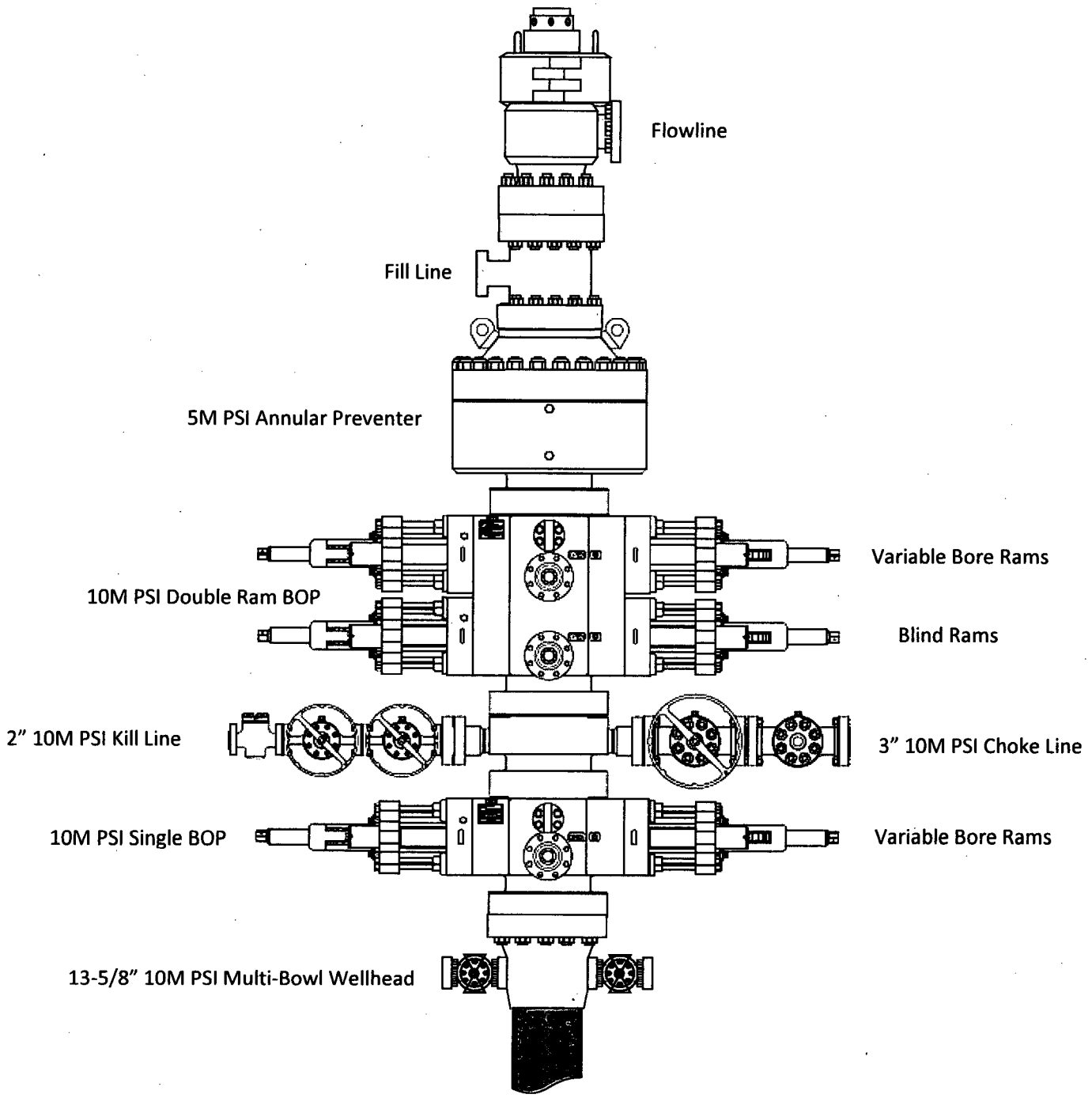
| 12-1/4" Intermediate Hole Section<br>10M psi requirement | | | | | |
|---|---|---|---|---|---|
| **Component** | **OD** | **Primary Preventer** | **RWP** | **Alternate Preventer(s)** | **RWP** |
| Drillpipe | 5.000" or<br>4.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| HWDP | 5.000" or<br>4.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| Jars | 6.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| DCs and MWD tools | 6.500" – 8.000" | Annular | 5M | - | - |
| Mud Motor | 8.000" – 9.625" | Annular | 5M | - | - |
| 1st Intermediate casing | 9.625" | Annular | 5M | - | - |
| Open-hole | - | Blind Rams | 10M | - | - |

| 8-3/4" Intermediate Hole Section<br>10M psi requirement | | | | | |
|---|---|---|---|---|---|
| **Component** | **OD** | **Primary Preventer** | **RWP** | **Alternate Preventer(s)** | **RWP** |
| Drillpipe | 5.000" or<br>4.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| HWDP | 5.000" or<br>4.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| Jars | 6.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| DCs and MWD tools | 6.500" – 8.000" | Annular | 5M | - | - |
| Mud Motor | 6.750" – 8.000" | Annular | 5M | - | - |
| 2nd Intermediate casing | 7.625" | Annular | 5M | - | - |
| Open-hole | - | Blind Rams | 10M | - | - |

| 6-3/4" Production Hole Section<br>10M psi requirement | | | | | |
|---|---|---|---|---|---|
| **Component** | **OD** | **Primary Preventer** | **RWP** | **Alternate Preventer(s)** | **RWP** |
| Drillpipe | 4.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| HWDP | 4.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| DCs and MWD tools | 4.750" – 5.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| Mud Motor | 4.750" – 5.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| Mud Motor | 5.500" – 5.750" | Annular | 5M | - | - |
| Production casing | 5.500" | Annular | 5M | Upper 3.5 - 5.5" VBR<br>Lower 3.5 - 5.5" VBR | 10M<br>10M |
| Open-hole | - | Blind Rams | 10M | - | - |

VBR = Variable Bore Ram

# EOG Resources
# 13-5/8" 10M PSI BOP Stack



## 2. Well Control Procedures

Below are the minimal high-level tasks prescribed to assure a proper shut-in while drilling, tripping, running casing, pipe out of the hole (open hole), and moving the BHA through the BOPs. At least one well control drill will be performed weekly per crew to demonstrate compliance with the procedure and well control plan. The well control drill will be recorded in the daily drilling log. The type of drill will be determined by the ongoing operations, but reasonable attempts will be made to vary the type of drill conducted (pit, trip, open hole, choke, etc.). This well control plan will be available for review by rig personnel in the EOG Resources drilling supervisor's office on location, and on the rig floor. All BOP equipment will be tested as per Onshore O&G Order No. 2 with the exception of the 5000 psi annular which will be tested to 70% of its RWP.

General Procedure While Drilling

1. Sound alarm (alert crew)
2. Space out drill string
3. Shut down pumps (stop pumps and rotary)
4. Shut-in Well (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
    a. SIDPP and SICP
    b. Pit gain
    c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

General Procedure While Tripping

1. Sound alarm (alert crew)
2. Stab full opening safety valve and close
3. Space out drill string
4. Shut-in (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
    a. SIDPP and SICP
    b. Pit gain
    c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

General Procedure While Running Production Casing

1. Sound alarm (alert crew)
2. Stab crossover and full opening safety valve and close
3. Space out string

4. Shut-in (uppermost applicable BOP, typically annular preventer first. HCR and choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
    a. SIDPP and SICP
    b. Pit gain
    c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

General Procedure With No Pipe In Hole (Open Hole)

1. Sound alarm (alert crew)
2. Shut-in with blind rams. (HCR and choke will already be in the closed position.)
3. Confirm shut-in
4. Notify toolpusher/company representative
5. Read and record the following:
    a. SICP
    b. Pit gain
    c. Time
6. Regroup and identify forward plan

General Procedures While Pulling BHA thru Stack

1. PRIOR to pulling last joint of drillpipe thru the stack.
    a. Perform flowcheck, if flowing:
    b. Sound alarm (alert crew)
    c. Stab full opening safety valve and close
    d. Space out drill string with tool joint just beneath the upper variable bore rams.
    e. Shut-in using upper variable bore rams. (HCR and choke will already be in the closed position.)
    f. Confirm shut-in
    g. Notify toolpusher/company representative
    h. Read and record the following:
        i. SIDPP and SICP
        ii. Pit gain
        iii. Time
    i. Regroup and identify forward plan

2. With BHA in the stack and compatible ram preventer and pipe combo immediately available.
    a. Sound alarm (alert crew)
    b. Stab crossover and full opening safety valve and close
    c. Space out drill string with upset just beneath the upper variable bore rams.
    d. Shut-in using upper variable bore rams. (HCR and choke will already be in the closed position.)
    e. Confirm shut-in
    f. Notify toolpusher/company representative
    g. Read and record the following:
        i. SIDPP and SICP

ii. Pit gain
iii. Time

h. Regroup and identify forward plan

3. With BHA in the stack and NO compatible ram preventer and pipe combo immediately available.
   a. Sound alarm (alert crew)
   b. If possible to pick up high enough, pull string clear of the stack and follow "Open Hole" scenario.
   c. If impossible to pick up high enough to pull the string clear of the stack:
   d. Stab crossover, make up one joint/stand of drillpipe, and full opening safety valve and close
   e. Space out drill string with tooljoint just beneath the upper variable bore ram.
   f. Shut-in using upper variable bore ram. (HCR and choke will already be in the closed position.)
   g. Confirm shut-in
   h. Notify toolpusher/company representative
   i. Read and record the following:
      i. SIDPP and SICP
      ii. Pit gain
      iii. Time
   j. Regroup and identify forward plan

**APD ID:** 10400027341 **Submission Date:** 02/28/2018

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** AUDACIOUS 19 FEDERAL **Well Number:** 601H

**Well Type:** OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

## Section 1 - Existing Roads

**Will existing roads be used?** YES

**Existing Road Map:**

AUDACIOUS19FED601H_vicinity_20180226094419.pdf

**Existing Road Purpose:** ACCESS,FLUID TRANSPORT **Row(s) Exist?** NO

### ROW ID(s)

**ID:**

**Do the existing roads need to be improved?** NO

**Existing Road Improvement Description:**

**Existing Road Improvement Attachment:**

## Section 2 - New or Reconstructed Access Roads

**Will new roads be needed?** YES

**New Road Map:**

AUDACIOUS19FED601H_padsite_20180226094450.pdf
AUDACIOUS19FED601H_wellsite_20180226094451.pdf
AUDACIOUS19FEDCOM_infrastructure_20180226094452.PDF

**New road type:** RESOURCE

**Length:** 453 Feet **Width (ft.):** 24

**Max slope (%):** 2 **Max grade (%):** 20

**Army Corp of Engineers (ACOE) permit required?** NO

**ACOE Permit Number(s):**

**New road travel width:** 24

**New road access erosion control:** Newly constructed or reconstructed roads will be constructed as outlined in the BLM "Gold Book" and to meet the standards of the anticipated traffic flow and all anticipated weather requirements as needed. Construction will include ditching, draining, crowning and capping or sloping and dipping the roadbed as necessary to provide a well-constructed and safe road. We plan to grade and water twice a year.

**New road access plan or profile prepared?** NO

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** AUDACIOUS 19 FEDERAL **Well Number:** 601H

**New road access plan attachment:**

**Access road engineering design?** NO

**Access road engineering design attachment:**

**Access surfacing type:** OTHER

**Access topsoil source:** ONSITE

**Access surfacing type description:** 6" of Compacted Caliche

**Access onsite topsoil source depth:** 6

**Offsite topsoil source description:**

**Onsite topsoil removal process:** An adequate amount of topsoil/root zone will be stripped by dozer from the proposed well location and stockpiled along the side of the welllocation as depicted on the well site diagram / survey plat.

**Access other construction information:**

**Access miscellaneous information:**

**Number of access turnouts:** **Access turnout map:**

## Drainage Control

**New road drainage crossing:** OTHER

**Drainage Control comments:** No drainage crossings

**Road Drainage Control Structures (DCS) description:** N/A

**Road Drainage Control Structures (DCS) attachment:**

## Access Additional Attachments

**Additional Attachment(s):**

## Section 3 - Location of Existing Wells

**Existing Wells Map?** YES

**Attach Well map:**

AUDACIOUS19FED601H_radius_20180226094504.pdf

**Existing Wells description:**

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

**Submit or defer a Proposed Production Facilities plan?** SUBMIT

**Production Facilities description:** Audacious 19 Fed CTB located in NE/4 of section 19

**Production Facilities map:**

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** AUDACIOUS 19 FEDERAL **Well Number:** 601H

AUDACIOUS19FEDCOM_infrastructure_20180226094516.PDF

## Section 5 - Location and Types of Water Supply

### Water Source Table

**Water source use type:** OTHER **Water source type:** RECYCLED

**Describe type:**

**Source latitude:** **Source longitude:**

**Source datum:**

**Water source permit type:** WATER RIGHT

**Source land ownership:** STATE

**Water source transport method:** PIPELINE,TRUCKING

**Source transportation land ownership:** STATE

**Water source volume (barrels):** 720000 **Source volume (acre-feet):** 92.80303

**Source volume (gal):** 30240000

**Water source and transportation map:**

Audacious__BTL_19_Fed_Com_Water_Source_and_Caliche_20180226094640.docx

**Water source comments:**

**New water well?** NO

### New Water Well Info

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

**Well target aquifer:**

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

**Aquifer comments:**

**Aquifer documentation:**

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

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

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

**Drilling method:** **Drill material:**

**Grout material:** **Grout depth:**

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

**Well Production type:** **Completion Method:**

**Water well additional information:**

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** AUDACIOUS 19 FEDERAL **Well Number:** 601H

**State appropriation permit:**

**Additional information attachment:**

## Section 6 - Construction Materials

**Construction Materials description:** Caliche utilized for the drilling pad will be obtained either from an existing approved mineral pit, or by benching into a hill, which will allow the pad to be level with existing caliche from the cut, or extracted by "Flipping" the well location. A mineral material permit will be obtained from BLM prior to excavating any caliche on Federal Lands. Amount will vary for each pad.
**Construction Materials source location attachment:**

Audacious__BTL_19_Fed_Com_Water_Source_and_Caliche_20180226094655.docx

## Section 7 - Methods for Handling Waste

**Waste type:** DRILLING

**Waste content description:** Drill fluids and produced oil and water from the well during drilling and completion operations will be stored safely and disposed of properly in an NMOCD approved disposal facility. Garbage and trash produced during drilling and completion operations will be collected in a trash container and disposed of properly. Human waste and grey water will be properly contained of and disposed of properly. After drilling and completion operations; trash, chemicals, salts, frac sand, and other waste material will be removed and disposed of properly at a state approved disposal facility.
**Amount of waste:** 0 barrels

**Waste disposal frequency :** Daily

**Safe containment description:** Steel Tanks

**Safe containmant attachment:**

**Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL
**Disposal type description:**

**Disposal location description:** Trucked to NMOCD approved disposal facility

## Reserve Pit

**Reserve Pit being used?** NO

**Temporary disposal of produced water into reserve pit?**

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

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

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

**Reserve pit liner**

**Reserve pit liner specifications and installation description**

## Cuttings Area

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** AUDACIOUS 19 FEDERAL **Well Number:** 601H

**Cuttings Area being used?** NO

**Are you storing cuttings on location?** YES

**Description of cuttings location** Closed Loop System. Drill cuttings will be disposed of into steel tanks and taken to an NMOCD approved disposal facility.

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

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

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

**WCuttings area liner**

**Cuttings area liner specifications and installation description**

## Section 8 - Ancillary Facilities

**Are you requesting any Ancillary Facilities?:** NO

**Ancillary Facilities attachment:**

**Comments:**

## Section 9 - Well Site Layout

**Well Site Layout Diagram:**

Audacious_19_Fed_601H_Rig_Layout_20180215130548.pdf
AUDACIOUS19FED601H_padsite_20180226094719.pdf
AUDACIOUS19FED601H_wellsite_20180226094720.pdf
**Comments:** Wellsite, Padsite, Rig Layout

## Section 10 - Plans for Surface Reclamation

**Type of disturbance:** New Surface Disturbance **Multiple Well Pad Name:** AUDACIOUS 19 FEDERAL

**Multiple Well Pad Number:** 601H/710H/711H

**Recontouring attachment:**

AUDACIOUS19FED601H_reclamation_20180226094735.pdf

**Drainage/Erosion control construction:** Proper erosion control methods will be used on the area to control erosion, runoff, and siltation of the surrounding area.

**Drainage/Erosion control reclamation:** The interim reclamation will be monitored periodically to ensure that vegetation has reestablished and that erosion is controlled.

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** AUDACIOUS 19 FEDERAL **Well Number:** 601H

| | | |
|---|---|---|
| **Well pad proposed disturbance (acres):** 4.481175 | **Well pad interim reclamation (acres):** 1.35629 | **Well pad long term disturbance (acres):** 3.124885 |
| **Road proposed disturbance (acres):** 0.249587 | **Road interim reclamation (acres):** 0 | **Road long term disturbance (acres):** 0.249587 |
| **Powerline proposed disturbance (acres):** 0 | **Powerline interim reclamation (acres):** 0 | **Powerline long term disturbance (acres):** 0 |
| **Pipeline proposed disturbance (acres):** 5.003444 | **Pipeline interim reclamation (acres):** 2.001377 | **Pipeline long term disturbance (acres):** 3.002066 |
| **Other proposed disturbance (acres):** 0 | **Other interim reclamation (acres):** 0 | **Other long term disturbance (acres):** 0 |
| **Total proposed disturbance:** 9.734206 | **Total interim reclamation:** 3.357667 | **Total long term disturbance:** 6.376538 |

**Disturbance Comments:** All Interim and Final reclamation is planned to be completed within 6 months. Interim within 6 months of completion and final within 6 months of abandonment plugging. Dual pad operations may alter timing.
**Reconstruction method:** In areas planned for interim reclamation, all the surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads. Areas planned for interim reclamation will be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be recontoured to the above ratios during interim reclamation.
**Topsoil redistribution:** Topsoil will be evenly respread and aggressively revegetated over the entire disturbed area not needed for all-weather operations including cuts and fills. To seed the area, the proper BLM seed mixture, free of noxious weeds, will be used. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.
**Soil treatment:** Re-seed according to BLM standards. All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not redisturbed, and that erosion is controlled.
**Existing Vegetation at the well pad;** Grass, forbs, and small woody vegetation, such as mesquite will be excavated as the topsoil is removed. Large woody vegetation will be stripped and stored separately and respreads evenly on the site following topsoil respreading. Topsoil depth is defined as the top layer of soil that contains 80% of the roots. In areas to be heavily disturbed, the top 6 inches of soil material, will be stripped and stockpiled on the perimeter of the well location and along the perimeter of the access road to control run-on and run-off, to keep topsoil viable, and to make redistribution of topsoil more efficient during interim reclamation. Stockpiled topsoil should include vegetative material. Topsoil will be clearly segregated and stored separately from subsoils.
**Existing Vegetation at the well pad attachment:**

**Existing Vegetation Community at the road:** All disturbed areas, including roads, pipelines, pads, will be recontoured to the contour existing prior to the initial construction or a contour that blends indistinguishably with the surrounding landscape. Topsoil that was spread over the interim reclamation areas will be stockpiled prior to recontouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful revegetation.
**Existing Vegetation Community at the road attachment:**

**Existing Vegetation Community at the pipeline:** All disturbed areas, including roads, pipelines, pads, will be recontoured to the contour existing prior to the initial construction or a contour that blends indistinguishably with the surrounding landscape. Topsoil that was spread over the interim reclamation areas will be stockpiled prior to recontouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful revegetation.
**Existing Vegetation Community at the pipeline attachment:**

**Existing Vegetation Community at other disturbances:** All disturbed areas, including roads, pipelines, pads, will be recontoured to the contour existing prior to the initial construction or a contour that blends indistinguishably with the surrounding landscape. Topsoil that was spread over the interim reclamation areas will be stockpiled prior to recontouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful revegetation.
**Existing Vegetation Community at other disturbances attachment:**

**Non native seed used?** NO

**Non native seed description:**

**Seedling transplant description:**

**Will seedlings be transplanted for this project?** NO

**Seedling transplant description attachment:**

**Will seed be harvested for use in site reclamation?** NO

**Seed harvest description:**

**Seed harvest description attachment:**

## Seed Management

### Seed Table

**Seed type:**

**Seed source:**

**Seed name:**

**Source name:**

**Source address:**

**Source phone:**

**Seed cultivar:**

**Seed use location:**

**PLS pounds per acre:**

**Proposed seeding season:**

| Seed Summary | |
|---|---|
| **Seed Type** | **Pounds/Acre** |

**Total pounds/Acre:**

**Seed reclamation attachment:**

## Operator Contact/Responsible Official Contact Info

**First Name:** Stan

**Last Name:** Wagner

**Phone:** (432)686-3689

**Email:** stan_wagner@eogresources.com

**Seedbed prep:**

**Seed BMP:**

**Seed method:**

**Existing invasive species?** NO

**Existing invasive species treatment description:**

**Existing invasive species treatment attachment:**

**Weed treatment plan description:** All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not redisturbed, erosion is controlled, and free of noxious weeds. Weeds will be treated if found.
**Weed treatment plan attachment:**

**Monitoring plan description:** Reclamation will be completed within 6 months of well plugging. All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not redisturbed, erosion is controlled, and free of noxious weeds.
***Monitoring plan attachment:***

**Success standards:** N/A

**Pit closure description:** NA

**Pit closure attachment:**

## Section 11 - Surface Ownership

**Disturbance type:** WELL PAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

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

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** AUDACIOUS 19 FEDERAL **Well Number:** 601H

## Section 12 - Other Information

**Right of Way needed?** NO **Use APD as ROW?**

**ROW Type(s):**

## ROW Applications

**SUPO Additional Information:** OnSite meeting conducted 12/20/17

**Use a previously conducted onsite?** NO

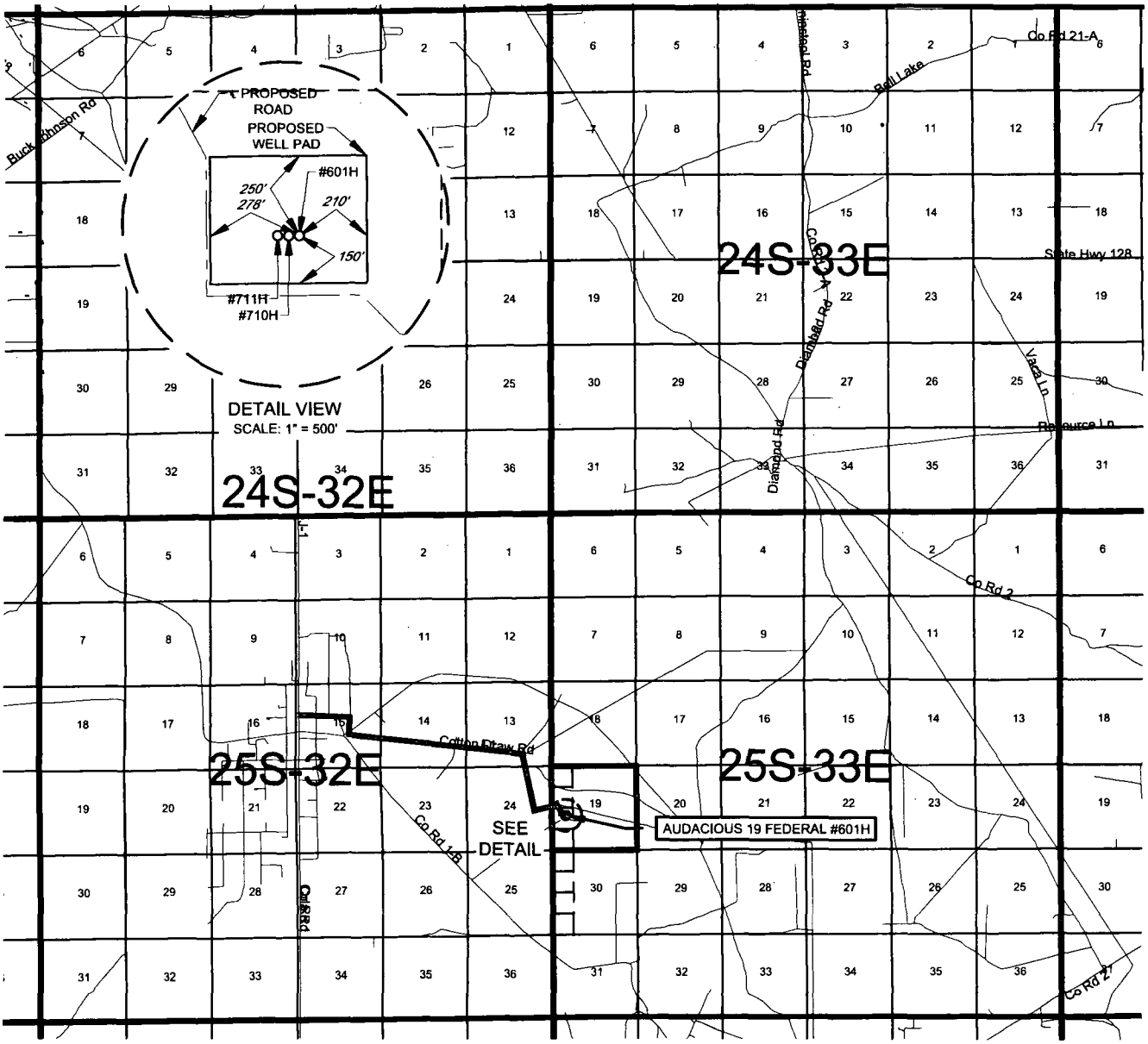
**Previous Onsite information:**

## Other SUPO Attachment

AUDACIOUS19FED601H_location_20180226094843.pdf
SUPO_Audacious_19_Federal_601H_20180226094922.pdf
Audacious_19_Federal_GCP_20180226153231.pdf

EXHIBIT 2

# VICINITY MAP




**eog resources, inc.**

LEASE NAME & WELL NO.: AUDACIOUS 19 FEDERAL #601H

SECTION 19 TWP 25-S RGE 33-E SURVEY N.M.P.M.
COUNTY LEA STATE NM
DESCRIPTION 2186' FSL & 879' FWL

DISTANCE & DIRECTION

FROM INT. OF COTTON DRAW RD., & (J-1) ORLA RD., GO EAST ON COTTON DRAW RD. ±3.9 MILES, THENCE SOUTH (RIGHT) ON A PROPOSED RD. ±0.1 MILES, TO A POINT ±290 FEET WEST OF LOCATION.

-N-

SCALE: 1" = 10000'

0' 5000' 10000'

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY EOG RESOURCES, INC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

*ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO COORDINATE SYSTEM, EAST ZONE OF THE NORTH AMERICAN DATUM 1983, U.S. SURVEY FEET.*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## Section 1 - General

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

## Section 2 - Lined Pits

**Would you like to utilize Lined Pit PWD options?** NO

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Lined pit PWD on or off channel:**

**Lined pit PWD discharge volume (bbl/day):**

**Lined pit specifications:**

**Pit liner description:**

**Pit liner manufacturers information:**

**Precipitated solids disposal:**

**Decribe precipitated solids disposal:**

**Precipitated solids disposal permit:**

**Lined pit precipitated solids disposal schedule:**

**Lined pit precipitated solids disposal schedule attachment:**

**Lined pit reclamation description:**

**Lined pit reclamation attachment:**

**Leak detection system description:**

**Leak detection system attachment:**

**Lined pit Monitor description:**

**Lined pit Monitor attachment:**

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

**Is the reclamation bond a rider under the BLM bond?**

**Lined pit bond number:**

**Lined pit bond amount:**

**Additional bond information attachment:**

## Section 3 - Unlined Pits

**Would you like to utilize Unlined Pit PWD options?** NO

**Produced Water Disposal (PWD) Location:**

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

**Unlined pit PWD on or off channel:**

**Unlined pit PWD discharge volume (bbl/day):**

**Unlined pit specifications:**

**Precipitated solids disposal:**

**Decribe precipitated solids disposal:**

**Precipitated solids disposal permit:**

**Unlined pit precipitated solids disposal schedule:**

**Unlined pit precipitated solids disposal schedule attachment:**

**Unlined pit reclamation description:**

**Unlined pit reclamation attachment:**

**Unlined pit Monitor description:**

**Unlined pit Monitor attachment:**

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

**Beneficial use user confirmation:**

**Estimated depth of the shallowest aquifer (feet):**

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

**TDS lab results:**

**Geologic and hydrologic evidence:**

**State authorization:**

**Unlined Produced Water Pit Estimated percolation:**

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

**Is the reclamation bond a rider under the BLM bond?**

**Unlined pit bond number:**

**Unlined pit bond amount:**

**Additional bond information attachment:**

## Section 4 - Injection

**Would you like to utilize Injection PWD options?** NO

**Produced Water Disposal (PWD) Location:**

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

**Injection PWD discharge volume (bbl/day):**

**Injection well mineral owner:**

**Injection well type:**

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

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

**Injection well new surface disturbance (acres):**

**Minerals protection information:**

**Mineral protection attachment:**

**Underground Injection Control (UIC) Permit?**

**UIC Permit attachment:**

## Section 5 - Surface Discharge

**Would you like to utilize Surface Discharge PWD options?** NO

**Produced Water Disposal (PWD) Location:**

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

**Surface discharge PWD discharge volume (bbl/day):**

**Surface Discharge NPDES Permit?**

**Surface Discharge NPDES Permit attachment:**

**Surface Discharge site facilities information:**

**Surface discharge site facilities map:**

## Section 6 - Other

**Would you like to utilize Other PWD options?** NO

**Produced Water Disposal (PWD) Location:**

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

**Other PWD discharge volume (bbl/day):**

**Other PWD type description:**

**Other PWD type attachment:**

**Have other regulatory requirements been met?**

**Other regulatory requirements attachment:**

AFMSS

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

# Bond Info Data Report

07/20/2018

## Bond Information

**Federal/Indian APD:** FED

**BLM Bond number:** NM2308

**BIA Bond number:**

**Do you have a reclamation bond?** NO

**Is the reclamation bond a rider under the BLM bond?**

**Is the reclamation bond BLM or Forest Service?**

**BLM reclamation bond number:**

**Forest Service reclamation bond number:**

**Forest Service reclamation bond attachment:**

**Reclamation bond number:**

**Reclamation bond amount:**

**Reclamation bond rider amount:**

**Additional reclamation bond information attachment:**

**APD ID:** 10400027341 **Submission Date:** 02/28/2018

**Operator Name:** EOG RESOURCES INCORPORATED

**Well Name:** AUDACIOUS 19 FEDERAL **Well Number:** 601H

**Well Type:** OIL WELL **Well Work Type:** Drill

Highlighted data reflects the most recent changes

Show Final Text

## Section 1 - Geologic Formations

| Formation ID | Formation Name | Elevation | True Vertical Depth | Measured Depth | Lithologies | Mineral Resources | Producing Formation |
|---|---|---|---|---|---|---|---|
| 1 | PERMIAN | 3464 | 0 | 0 | ALLUVIUM | NONE | No |
| 2 | RUSTLER | 2466 | 998 | 998 | ANHYDRITE | NONE | No |
| 3 | TOP OF SALT | 2128 | 1336 | 1336 | SALT | NONE | No |
| 4 | BASE OF SALT | -1227 | 4691 | 4691 | SALT | NONE | No |
| 5 | LAMAR | -1468 | 4932 | 4932 | LIMESTONE | NONE | No |
| 6 | BELL CANYON | -1490 | 4954 | 4954 | SANDSTONE | USEABLE WATER | No |
| 7 | CHERRY CANYON | -2518 | 5982 | 5982 | SANDSTONE | NATURAL GAS,OIL | No |
| 8 | BRUSHY CANYON | -4064 | 7528 | 7528 | SANDSTONE | NATURAL GAS,OIL | No |
| 9 | BONE SPRING LIME | -5598 | 9062 | 9062 | LIMESTONE | NONE | No |
| 10 | BONE SPRING 1ST | -6566 | 10030 | 10030 | SANDSTONE | NATURAL GAS,OIL | No |
| 11 | BONE SPRING 2ND | -7017 | 10481 | 10481 | SANDSTONE | NATURAL GAS,OIL | No |
| 12 | BONE SPRING 3RD | -8254 | 11718 | 11718 | SANDSTONE | NATURAL GAS,OIL | Yes |

## Section 2 - Blowout Prevention

**Pressure Rating (PSI):** 5M **Rating Depth:** 12125

**Equipment:** 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 (5000-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. All BOPE will be tested in accordance with Onshore Oil & Gas order No. 2.
**Requesting Variance?** YES

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