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Form 3160-3
(June 2015)

FEB 1 4 2019

DISTRICT II-ARTESIA O.C.D.

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.
NMNM051828

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.
GRASSY KEY FEDERAL COM
1H
324995

2. Name of Operator
EOG RESOURCES INCORPORATED
7377

9. API Well No.
30-015-45741

3a. Address
1111 Bagby Sky Lobby2 Houston TX 77002

3b. Phone No. *(include area code)*
(713)651-7000

10. Field and Pool, or Exploratory
N. SEVEN RIVERS; GLORIETA-YESO / \

4. Location of Well *(Report location clearly and in accordance with any State requirements. *)*
At surface SWSW / 665 FSL / 175 FWL / LAT 32.612074 / LONG -104.566724
At proposed prod. zone SESE / 350 FSL / 230 FEL / LAT 32.611201 / LONG -104.550984

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 35 / T19S / R24E / NMP
324995

14. Distance in miles and direction from nearest town or post office*

12. County or Parish
EDDY

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
350 feet

16. No of acres in lease
80

17. Spacing Unit dedicated to this well
160

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
0 feet

19. Proposed Depth
2110 feet / 6711 feet

20. BLM/BIA Bond No. in file
FED: NM2308

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3680 feet

22. Approximate date work will start*
03/31/2018

23. Estimated duration
60 days

24. Attachments

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

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

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Tina Huerta / Ph: (575)748-4168	03/01/2018

Title
Regulatory Specialist

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Ty Allen / Ph: (575)234-5978	12/21/2018

Title	Office
Wildlife Biologist	CARLSBAD

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

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

APPROVED WITH CONDITIONS

Approval Date: 12/21/2018

(Continued on page 2)

*(Instructions on page 2)

RP 2-18-19

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 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.

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Additional Operator Remarks

Location of Well

1. SHL: SWSW / 665 FSL / 175 FWL / TWSP: 19S / RANGE: 24E / SECTION: 35 / LAT: 32.612074 / LONG: -104.566724 (TVD: 2110 feet, MD: 6967 feet)
   PPP: SWSW / 350 FSL / 330 FWL / TWSP: 19S / RANGE: 24E / SECTION: 35 / LAT: 32.611208 / LONG: -104.566225 (TVD: 2110 feet, MD: 2538 feet)
   BHL: SESE / 350 FSL / 230 FEL / TWSP: 19S / RANGE: 24E / SECTION: 35 / LAT: 32.611201 / LONG: -104.550984 (TVD: 2110 feet, MD: 6711 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.

PECOS DISTRICT DRILLING
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**EOG Resources, Inc.**
LEASE NO.:	**NMNM-051828**
WELL NAME & NO.:	**Grassy Key Federal Com 1H**
SURFACE HOLE FOOTAGE:	**0665' FSL & 0175' FWL**
BOTTOM HOLE FOOTAGE	**0350' FSL & 0230' FEL**
LOCATION:	**Section 35, T. 19 S., R 24 E., NMPM**
COUNTY:	**County, New Mexico**

Operator to submit anti-collision report to the BLM due to the Clifford ADD 1 (30-015-26226) and the Nopal AFP F 1 (30-015-26259).

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.

A. DRILLING OPERATIONS REQUIREMENTS

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

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

☐ **Eddy County**

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

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.

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Option – Setting surface casing with Surface Rig

   a. Notify the BLM when removing the Surface Rig.

   b. Notify the BLM when moving in the H&P Flex Rig. Rig to be moved in within 60 days of notification that Surface Rig has left the location. Failure to notify or have rig on location within 60 days will result in an Incident of Non-Compliance.

   c. Once the H&P Flex Rig is on location, it shall not be removed from over the hole without prior approval unless the production casing has been run and cemented or the well has been properly plugged. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

   d. BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as H&P Flex Rig is rigged up on well. CIT for the surface casing shall be performed and results recorded on subsequent sundry – pressure to be 1200 psi.

4. 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 is located, this does not include the dog house or stairway area.

5. **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.**

B. **CASING**

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.

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

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.

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.

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

Medium Cave/Karst
Possible of water flows in the San Andres and Capitan Reef.
Possible lost circulation in the Artesia Group, San Andres, and Capitan Reef.

1. The **9-5/8** inch surface casing shall be set at approximately **1250** feet and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**

    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 is to include the lead cement slurry.**

    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.

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

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

   ☐ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

3. 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.

C. 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 53.

2. Variance approved to use flex line from BOP to choke manifold. 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.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

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 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.**

4. The appropriate BLM office shall be notified a minimum of 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).

a. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

b. 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.

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

d. 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.**

e. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes 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.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. 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.

JAM 121218

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	EOG Resources Incorporated
LEASE NO.:	NMNM51828
WELL NAME & NO.:	Grassy Key Federal Com 1H
SURFACE HOLE FOOTAGE:	665'/S & 175'/W
BOTTOM HOLE FOOTAGE	350'/S & 230'/E
LOCATION:	Section 35, T.19 S., R.24 E., NMPM
COUNTY:	Eddy County, New Mexico

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)

Hope Study Area

No yuccas or trees over 5 feet in height will be damaged, to protect nesting structures.

All active raptor nests will be avoided by a minimum of 400 meters by all activities or curtail activities until fledging is complete. All inactive raptor nests will be avoided by a minimum of 200 meters by all activities.

Cave/Karst

Cave/Karst Surface Mitigation
The following stipulations will be applied to minimize impacts during construction, drilling and production:
Construction:
In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:
No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:
- The entire perimeter of the well pad 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 high with impermeable mineral material (e.g., caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The 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 access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)
- Following a rain event, all fluids will vacuumed off of the pad and hauled off-site and disposed at a proper disposal facility.

Tank Battery Liners and Berms:
Tank battery locations and all facilities will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing, or equivalent, to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:
A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:

Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation
The following stipulations will be applied to protect cave/karst and ground water concerns:
Rotary Drilling with Fresh Water:
Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:
Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.
Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:
Upon well abandonment in cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:
The operator will perform annual pressure monitoring on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

FLOWLINES (SURFACE):
- Flowlines will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize the possibility of leaks and spills from entering karst systems.
- If a void is encountered alignments may be rerouted to avoid the karst feature and lessen; the potential of subsidence or collapse of karst features, buildup of toxic or combustible gas, or other possible impacts to cave and karst resources from the buried pipeline.
- Regular monitoring is required to quickly identify leaks for their immediate and proper treatment.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

Hydrology

The entire well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. 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 berm shall be maintained through the life of the well and 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.

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.

A leak detection plan will be submitted to the BLM Carlsbad Field Office for approval prior to pipeline installation. The method 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.

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.

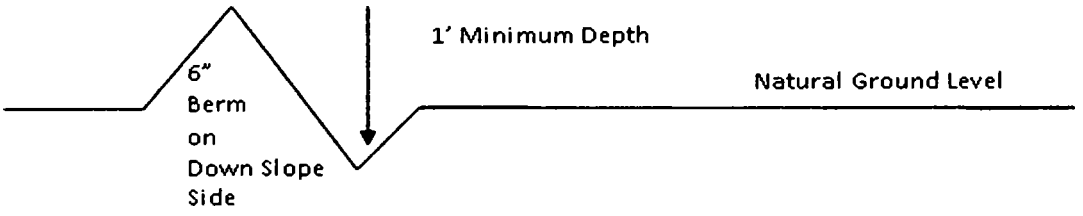
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

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

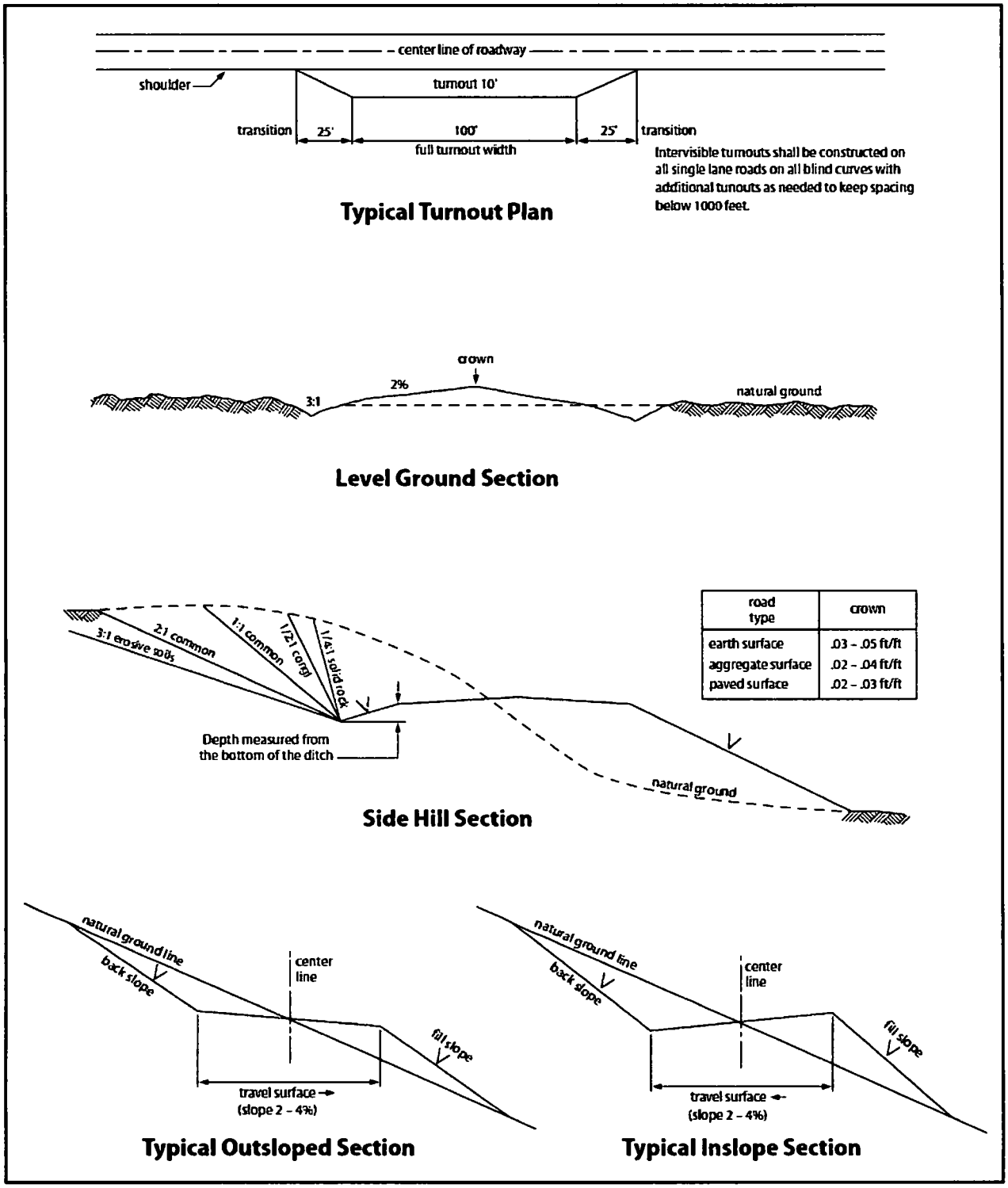


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

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).

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 2, for Sandy Sites

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

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

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

Species	lb/acre
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

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

Approval Date: 12/21/2018

AFMSS

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

Operator Certification Data Report

01/30/2019

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: Tina Huerta **Signed on:** 03/01/2018

Title: Regulatory Specialist

Street Address: 104 SOUTH FOURTH STREET

City: Artesia **State:** NM **Zip:** 88210

Phone: (575)748-4168

Email address: tina_huerta@eogresources.com

Field Representative

Representative Name:

Street Address:

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

Phone:

Email address:

AFMSS

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

Application Data Report

01/30/2019

APD ID: 10400027844 **Submission Date:** 03/01/2018

Operator Name: EOG RESOURCES INCORPORATED

Well Name: GRASSY KEY FEDERAL COM **Well Number:** 1H

Show Final Text

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

Section 1 - General

APD ID: 10400027844 **Tie to previous NOS?** **Submission Date:** 03/01/2018

BLM Office: CARLSBAD **User:** Tina Huerta **Title:** Regulatory Specialist

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

Lease number: NMNM051828 **Lease Acres:** 80

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: GRASSY KEY FEDERAL COM **Well Number:** 1H **Well API Number:**

Field/Pool or Exploratory? Field and Pool **Field Name:** N. SEVEN RIVERS; **Pool Name:** YESO GLORIETA-YESO

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

Operator Name: EOG RESOURCES INCORPORATED

Well Name: GRASSY KEY FEDERAL COM **Well Number:** 1H

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:** GRASSY KEY FEDERAL COM **Number:** 1H

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

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

[redacted]

Describe sub-type:

Distance to town: **Distance to nearest well:** 0 FT **Distance to lease line:** 350 FT

Reservoir well spacing assigned acres Measurement: 160 Acres

Well plat: GrassyKeyFederalCom1HC102_20180823130610.pdf

Well work start Date: 03/31/2018 **Duration:** 60 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	665	FSL	175	FWL	19S	24E	35	Aliquot SWSW	[redacted]		EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 051828	3680	6967	2110
KOP Leg #1	665	FSL	175	FWL	19S	24E	35	Aliquot SWSW			EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 051828	2257	1423	1423
PPP Leg #1	350	FSL	330	FWL	19S	24E	35	Aliquot SWSW			EDDY	NEW MEXICO	NEW MEXICO	F	NMNM 051828	1570	2538	2110

APD ID: 10400027844 **Submission Date:** 03/01/2018

Operator Name: EOG RESOURCES INCORPORATED

Well Name: GRASSY KEY FEDERAL COM **Well Number:** 1H

Show Final Text

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

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
1	SAN ANDRES	4070	390	390		USEABLE WATER,OIL	No
2	YESO	2288	1782	1797		OIL	Yes

Section 2 - Blowout Prevention

Pressure Rating (PSI): 3M **Rating Depth:** 1250

Requesting Variance? YES

Testing Procedure: The minimum blowout preventer equipment (BOPE) attached will consist of mud cross and double ram-type (3000 psi WP) preventer and an annular preventer (3000 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 Order No. 2. Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 3000/250 psig and the annular preventer to 1500/250 psig. The surface casing will be tested to 1500 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 surface casing shoe.

Choke Diagram Attachment:

3MChokeManifoldDiagram_20180301090155.pdf

BOP Diagram Attachment:

3000BOPEXHIBIT1_20180301085156.pdf

Operator Name: EOG RESOURCES INCORPORATED

Well Name: GRASSY KEY FEDERAL COM **Well Number:** 1H

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	12.25	9.625	NEW	API	N	0	1250	0	1250	0	1250	1250	J-55	36	LTC	1.125	1.25	BUOY	1.8	BUOY	1.6
2	PRODUCTION	8.75	7.0	NEW	API	N	0	2164	0	2012	0		2164	L-80	29	BUTT	1.125	1.25	BUOY	1.8	BUOY	1.6
3	PRODUCTION	8.75	5.5	NEW	API	N	2164	6711	2012	2110			4547	L-80	17	BUTT	1.125	1.25	BUOY	1.8	BUOY	1.6

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

GrassyKeyFedCom1HBLMPlan_20180301152720.pdf

Operator Name: EOG RESOURCES INCORPORATED

Well Name: GRASSY KEY FEDERAL COM **Well Number:** 1H

Casing Attachments

Casing ID: 2 **String Type:** PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

GrassyKeyFedCom1HBLMPlan_20180301152734.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

GrassyKeyFedCom1HBLMPlan_20180301152747.pdf

Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	800	250	1.97	12.9	493	100	Class C	Gel, Calcium Chloride
SURFACE	Tail		800	1250	210	1.34	14.8	281	100	Class C	Calcium Chloride
PRODUCTION	Lead		0	2164	180	2.47	11.9	445	35	Class 50/50 Poz	Bentonite Gel, Salt, Kolseal, Celloflake Defoamer
PRODUCTION	Lead		2164	6711	1050	1.48	13	1554	35	Class PVL	Salt, PF 174, PF 606, PF 153, Defoamer

Operator Name: EOG RESOURCES INCORPORATED

Well Name: GRASSY KEY FEDERAL COM **Well Number:** 1H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives

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: Adequate Barite to raise mud weight in system to 10 ppg

Describe the mud monitoring system utilized: Pason Flow Sensors and PVT Monitor Systems

Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1250	WATER-BASED MUD	8.6	8.8							
1250	6711	WATER-BASED MUD	8.6	8.8							

Section 6 - Test, Logging, Coring

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

Open hole logs not planned for this well

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

DS,GR

Coring operation description for the well:

No coring planned

Operator Name: EOG RESOURCES INCORPORATED

Well Name: GRASSY KEY FEDERAL COM **Well Number:** 1H

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 966 **Anticipated Surface Pressure:** 501.8

Anticipated Bottom Hole Temperature(F): 107

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:

GrassyKeyH2SPlan_20180228150104.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

GrassyKeyFedCom1HPlot_20180301141002.pdf
GrassyKeyFedCom1HSurveys_20180301141022.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

WellheadSystemSurfProd_20180301094022.pdf
WellheadSystemProd_20180301094035.pdf
GrassyKeyFederalCom1HGasCapturePlan_20180301105118.pdf
GrassyKeyWaterSourcePlat_20180301140627.pdf
WellSiteDiagram_20180301141550.pdf
GrassyKeyFedCom1HProposed_Wellbore_20180301153056.pdf
GrassyKeyFedCom1HInterimReclamation_20180301154404.docx
GrassyKeyFedCom1HDirections_20180301154417.pdf
FlexHoseAtt_20180820095129.pdf

Other Variance attachment:

EXIBIT 1a
EOG Resources, Inc.
3M Choke Manifold Equipment

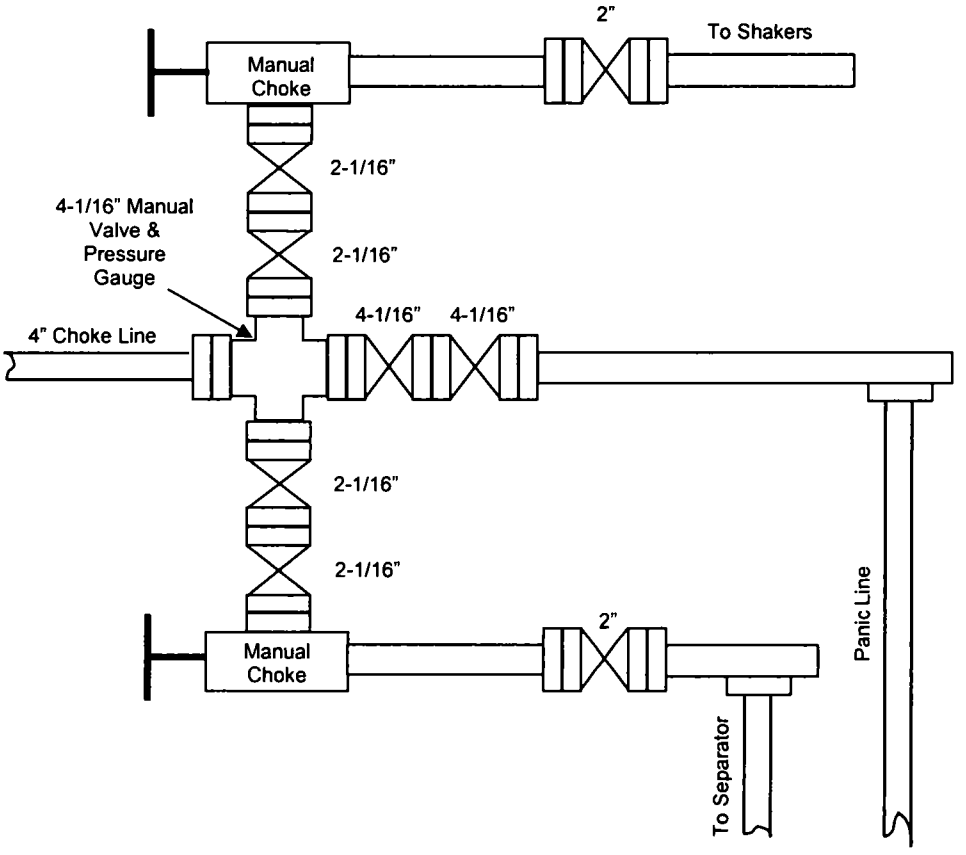
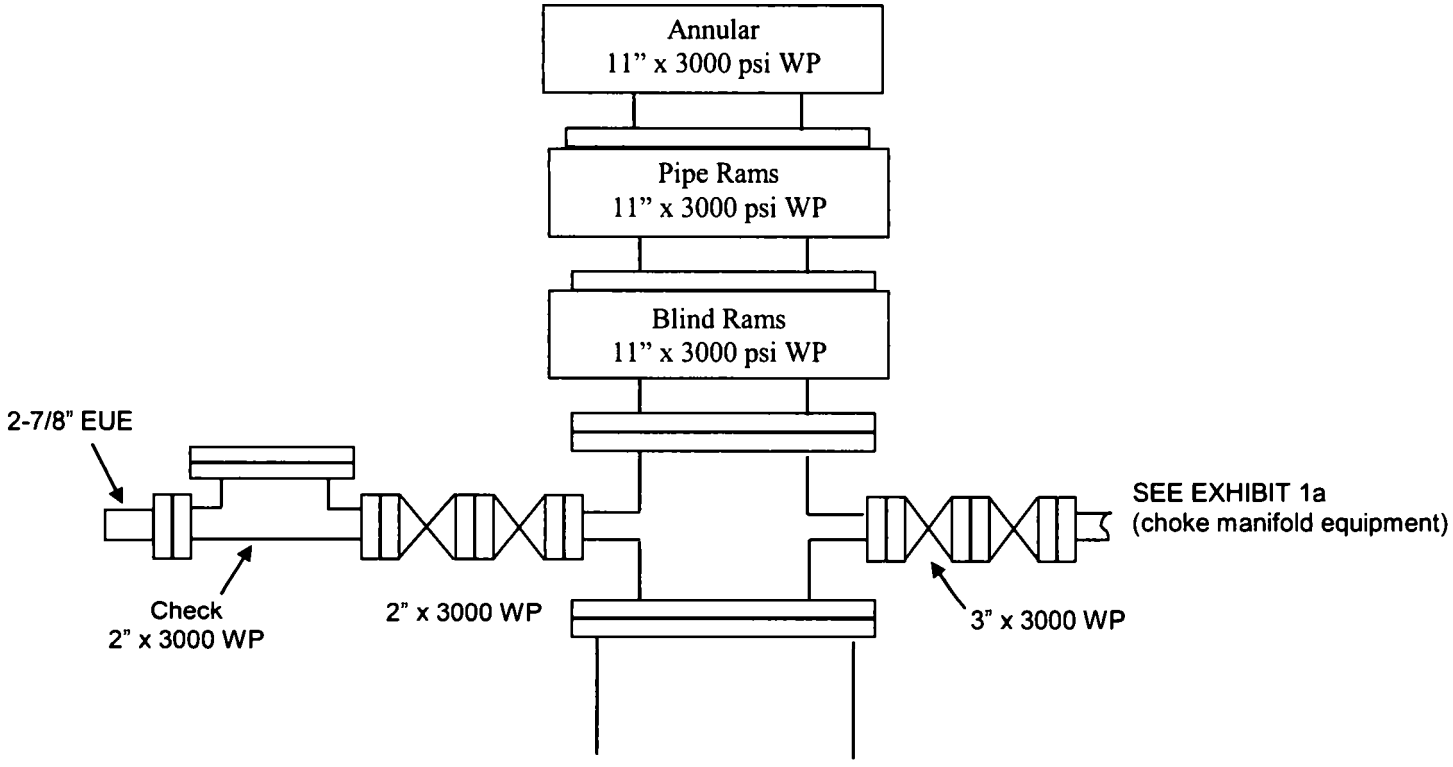


EXHIBIT 1

EOG Resources
3000 PSI BOPE



EOG RESOURCES, INC.
GRASSY KEY FEDERAL COM NO. 1H

1. GEOLOGIC NAME OF SURFACE FORMATION:
Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

San Andres	390'
Top of Salt	1,782'
TD	6,711'

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

San Andres	390'	Fresh Water, Oil
Yeso	1,782'	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 1,250' and circulating cement back to surface.

4. CASING PROGRAM - NEW

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF_{min} Collapse	DF_{min} Burst	DF_{min} Tension
12.25"	0'-1250'	9.625"	36#	J-55	LTC	1.125	1.25	1.60
8.75"	0 –2164 '	7"	29#	L-80	BTC	1.125	1.25	1.60
8.75"	2164'-6711'	5 ½"	17#	L-80	BTC	1.125	1.25	1.60

Cementing Program:
Note: Cement volumes based on bit size plus at least 100% excess on surface and 35% excess in production string.

Depth	No. Sacks	Wt. lb/gal	Yld Ft^3/ft	Slurry Description
1250'	250	12.9	1.97	Lead: Class 'C' + 4%PF20(Bentonite Gel) + 2%PF1(Calcium Chloride) + 0.125#/skPF29(Celloflake) + 0.4#/skPF45 (Defoamer) 100% Excess (TOC @ Surface)
	210	1.34	1.34	Tail: Class 'C' + 2%PF1(Calcium Chloride)
6711'	180	11.9	2.47	Lead: Class 50/50 PozC + 5%PF44(BWOW)(Salt) + 10% PF20(Bentonite Gel) +.2%PF153(Anti Settling Agent(+ 3#/sk OF42(Kolseal) + 0.125#/sk PF29 (celloflake) + 0.4#/sk PF45 (Defoamer) (TOC @ Surface) 35% Excess
	1050	13	1.48	Tail: Class PVL + 1.3% PF44(BWOW)(Salt) + 5% PF174 (Expanding Cement) + 0.5% PF606 (Fluid Loss) + 0.1% PF153 (Anti Settling Agent) + 0.4#/sk PF45 (Defoamer) 35% Excess

5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL:

The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a double rams with blind rams & pipe rams preventer (3,000 psi WP) and an annular preventer (3,000-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.

Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 3,000/ 250 psig and the annular preventer to 1,500/ 250 psig. The surface casing will be tested to 1200 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 surface 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 – 1250'	Fresh Water	8.6-8.8	28-32	N/c
1,250' – 6711' Vertical/Curve/Lateral	Fresh Water	8.6-8.8	28-32	N/c

The highest mud weight needed to balance formation is expected to be 8.6 ppg. In order to maintain hole stability, mud weights up to 8.8 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–Directional surveys will be run in open hole during drilling phase of operations.

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

The estimated bottom-hole temperature (BHT) at TD is 107 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 966 psig (based on 8.8 ppg MW). Hydrogen sulfide has been encountered, reported or are known to exist at this depth in this area. Severe loss circulation is expected from spud to surface 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 3,000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 3,000 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 3,000 psi.

The multi-bowl wellhead will be installed by vendor's representative(s). A copy of the installation instructions for the Stream Flo HES 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.

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.

EOG RESOURCES, INC.
GRASSY KEY FEDERAL COM NO. 1H

1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

San Andres	390'
Top of Salt	1,782'
TD	6,711'

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

San Andres	390'	Fresh Water, Oil
Yeso	1,782'	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 1,250' and circulating cement back to surface.

4. CASING PROGRAM - NEW

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF_{min} Collapse	DF_{min} Burst	DF_{min} Tension
12.25"	0'-1250'	9.625"	36#	J-55	LTC	1.125	1.25	1.60
8.75"	0 –2164 '	7"	29#	L-80	BTC	1.125	1.25	1.60
8.75"	2164'-6711'	5 ½"	17#	L-80	BTC	1.125	1.25	1.60

Cementing Program:

Note: Cement volumes based on bit size plus at least 100% excess on surface and 35% excess in production string.

Depth	No. Sacks	Wt. lb/gal	Yld Ft^3/ft	Slurry Description
1250'	250	12.9	1.97	Lead: Class 'C' + 4%PF20(Bentonite Gel) + 2%PF1(Calcium Chloride) + 0.125#/skPF29(Celloflake) + 0.4#/skPF45 (Defoamer) 100% Excess (TOC @ Surface)
	210	1.34	1.34	Tail: Class 'C' + 2%PF1(Calcium Chloride)
6711'	180	11.9	2.47	Lead: Class 50/50 PozC + 5%PF44(BWOW)(Salt) + 10% PF20(Bentonite Gel) +.2%PF153(Anti Settling Agent(+ 3#/sk OF42(Kolseal) + 0.125#/sk PF29 (celloflake) + 0.4#/sk PF45 (Defoamer) (TOC @ Surface) 35% Excess
	1050	13	1.48	Tail: Class PVL + 1.3% PF44(BWOW)(Salt) + 5% PF174 (Expanding Cement) + 0.5% PF606 (Fluid Loss) + 0.1% PF153 (Anti Settling Agent) + 0.4#/sk PF45 (Defoamer) 35% Excess

5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL:

The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a double rams with blind rams & pipe rams preventer (3,000 psi WP) and an annular preventer (3,000-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.

Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 3,000/ 250 psig and the annular preventer to 1,500/ 250 psig. The surface casing will be tested to 1200 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 surface 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 – 1250'	Fresh Water	8.6-8.8	28-32	N/c
1,250' – 6711' Vertical/Curve/Lateral	Fresh Water	8.6-8.8	28-32	N/c

The highest mud weight needed to balance formation is expected to be 8.6 ppg. In order to maintain hole stability, mud weights up to 8.8 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–Directional surveys will be run in open hole during drilling phase of operations.

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

The estimated bottom-hole temperature (BHT) at TD is 107 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 966 psig (based on 8.8 ppg MW). Hydrogen sulfide has been encountered, reported or are known to exist at this depth in this area. Severe loss circulation is expected from spud to surface 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.

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EOG RESOURCES, INC.
GRASSY KEY FEDERAL COM NO. 1H

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EOG RESOURCES, INC.
GRASSY KEY FEDERAL COM NO. 1H

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EOG RESOURCES, INC.
GRASSY KEY FEDERAL COM 1H

Hydrogen Sulfide Plan Summary

A. All personnel shall receive proper H2S training in accordance with Onshore Order III.C.3.a.

B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.

C. Required Emergency Equipment:

- Well control equipment
  a. Flare line 150' from wellhead to be ignited by flare gun.
  b. Choke manifold with a remotely operated choke.
  c. Mud/gas separator

- Protective equipment for essential personnel.

  Breathing apparatus:
  a. Rescue Packs (SCBA) — 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
  b. Work/Escape packs —4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.
  c. Emergency Escape Packs —4 packs shall be stored in the doghouse for emergency evacuation.

  Auxiliary Rescue Equipment:
  a. Stretcher
  b. Two OSHA full body harness
  c. 100 ft 5/8 inch OSHA approved rope
  d. 1-20# class ABC fire extinguisher

- H2S detection and monitoring equipment:
  The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: Rig floor / Bell nipple / End of flow line or where well bore fluid is being discharged.
  (Gas sample tubes will be stored in the safety trailer)

- Visual warning systems.
  a. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
  b. A colored condition flag will be on display, reflecting the current condition at the site at the time.
  c. Two wind socks will be placed in strategic locations, visible from all angles.

EOG RESOURCES, INC.
GRASSY KEY FEDERAL COM 1H

- Mud program:
  The mud program has been designed to minimize the volume of H2S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H2S bearing zones.

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

- Communication:
  Communication will be via cell phones and land lines where available.

EOG RESOURCES, INC.
GRASSY KEY FEDERAL COM 1H

Emergency Assistance Telephone List

PUBLIC SAFETY:	**911 or**
Eddy County Sheriff's Department	(575) 887-7551
Fire Department:	
Carlsbad	(575) 885-3125
Artesia	(575) 746-5050
Hospitals:	
Carlsbad	(575) 887-4121
Artesia	(575) 748-3333
Hobbs	(575) 392-1979
Dept. of Public Safety/Carlsbad	(575) 748-9718
Highway Department	(575) 885-3281
New Mexico Oil Conservation	(575) 476-3440
U.S. Dept. of Labor	(575) 887-1174

EOG Resources, Inc.	
EOG / Artesia	Office (575) 748-1471
Company Drilling Consultants:	
Brent Patterson	Cell (575) 365-7032
Drilling Engineer	
Jeremiah Mullen	Office (575) 748-4378
	Cell (575) 703-5467
Drilling Manager	
Tim Bussell	Office (575) 748-4221
	Cell (575) 365-5695
Safety	
Brian Chandler (HSE Manager)	Office (432) 686-3695
	Cell (817) 239-0251

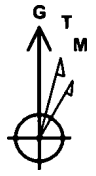
Project: Eddy County (NAD83)
Site: Grassy Key
Well: Grassy Key Federal Com #1H
Wellbore: Lateral
Design: Plan #1
Ground Elevation 3680.000
Northing 586402.67
Easting 469491.21
KB @ 3700.000usft (Training Rig)

PROJECT DETAILS: Eddy County (NAD83)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

eog resources



Azimuths to Grid North
True North: 0.13°
Magnetic North: 7.49°

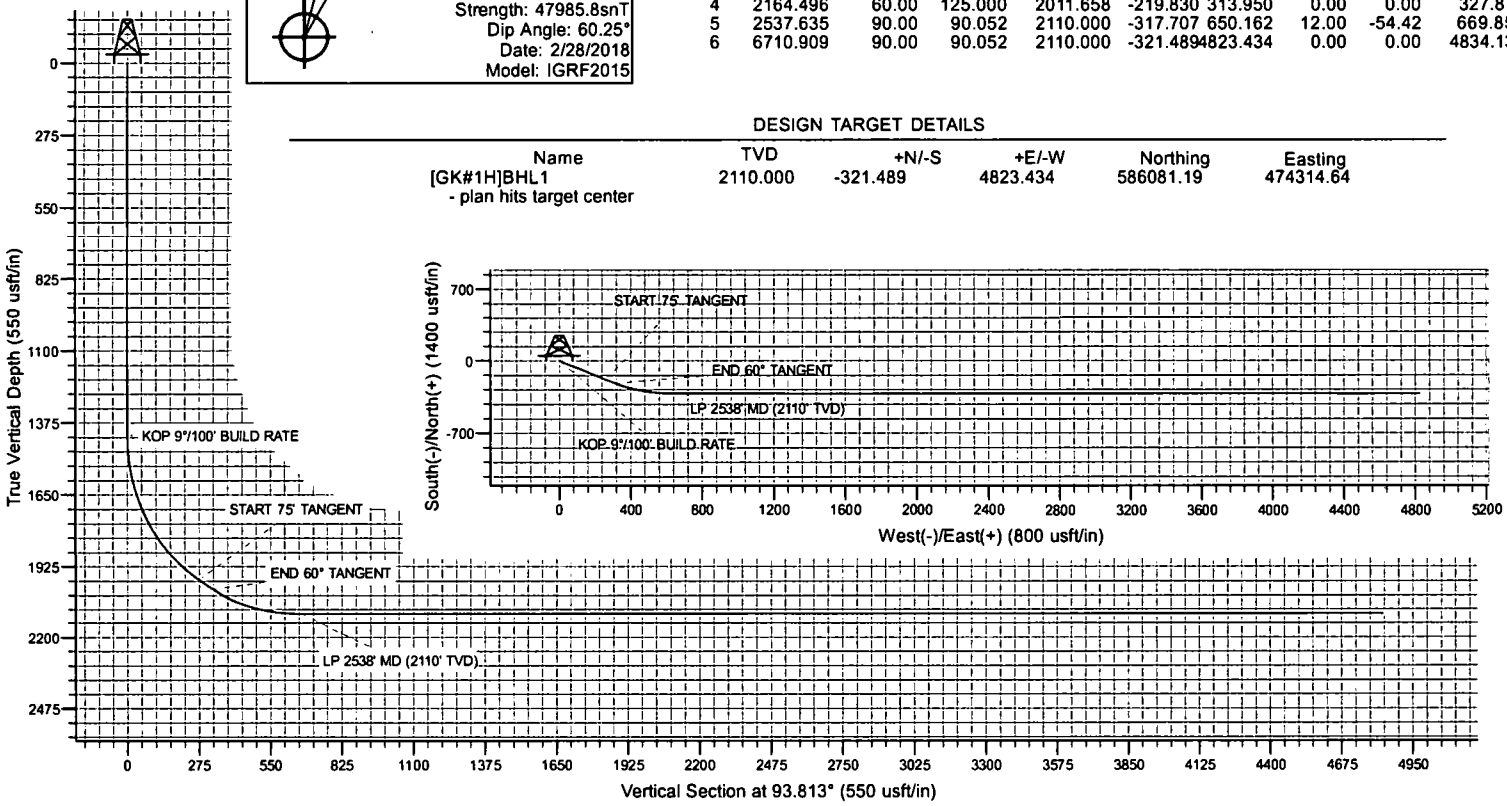
Magnetic Field
Strength: 47985.8snT
Dip Angle: 60.25°
Date: 2/28/2018
Model: IGRF2015

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
1	0.000	0.00	0.000	0.000	0.000	0.000	0.00	0.00	0.000
2	1422.829	0.00	0.000	1422.829	0.000	0.000	0.00	0.00	0.000
3	2089.496	60.00	125.000	1974.158	-182.575	260.744	9.00	125.00	272.309
4	2164.496	60.00	125.000	2011.658	-219.830	313.950	0.00	0.00	327.874
5	2537.635	90.00	90.052	2110.000	-317.707	650.162	12.00	-54.42	669.851
6	6710.909	90.00	90.052	2110.000	-321.489	4823.434	0.00	0.00	4834.136

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
[GK#1H]BHL1 - plan hits target center	2110.000	-321.489	4823.434	586081.19	474314.64



EOG Resources - Artesia

Eddy County (NAD83)
Grassy Key
Grassy Key Federal Com #1H

Lateral

Plan: Plan #1

Standard Planning Report

28 February, 2018

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well Grassy Key Federal Com #1H
Company:	EOG Resources - Artesia	**TVD Reference:**	KB @ 3700.000usft (Training Rig)
Project:	Eddy County (NAD83)	**MD Reference:**	KB @ 3700.000usft (Training Rig)
Site:	Grassy Key	**North Reference:**	Grid
Well:	Grassy Key Federal Com #1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

Project	Eddy County (NAD83)		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Grassy Key				
Site Position:		**Northing:**	586,402.68 usft	**Latitude:**	32.612
From:	Lat/Long	**Easting:**	469,491.21 usft	**Longitude:**	-104.567
Position Uncertainty:	0.000 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-0.13 °

Well	Grassy Key Federal Com #1H				
Well Position	**+N/-S**	0.000 usft	**Northing:**	586,402.68 usft	**Latitude:**	32.612
	+E/-W	0.000 usft	**Easting:**	469,491.21 usft	**Longitude:**	-104.567
Position Uncertainty		0.000 usft	**Wellhead Elevation:**	3,700.000 usft	**Ground Level:**	3,680.000 usft

Wellbore	Lateral			
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	2/28/2018	7.37	60.25	47,985.76918610

Design	Plan #1				
Audit Notes:					
Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.000
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**	
	0.000	0.000	0.000	93.813	

Plan Survey Tool Program **Date** 2/28/2018

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.000	6,710.417	Plan #1 (Lateral)	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
0.000	0.00	0.000	0.000	0.000	0.000	0.00	0.00	0.00	0.00	
1,422.829	0.00	0.000	1,422.829	0.000	0.000	0.00	0.00	0.00	0.00	
2,089.496	60.00	125.000	1,974.158	-182.575	260.744	9.00	9.00	0.00	125.00	
2,164.496	60.00	125.000	2,011.658	-219.830	313.950	0.00	0.00	0.00	0.00	
2,537.635	90.00	90.052	2,110.000	-317.707	650.162	12.00	8.04	-9.37	-54.42	
6,710.909	90.00	90.052	2,110.000	-321.489	4,823.434	0.00	0.00	0.00	0.00	[GK#1H]BHL1

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Wellbore:	Lateral		
Design:	Plan #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)
0.000	0.00	0.000	0.000	0.000	0.000	0.000	0.00	0.00	0.00
100.000	0.00	0.000	100.000	0.000	0.000	0.000	0.00	0.00	0.00
200.000	0.00	0.000	200.000	0.000	0.000	0.000	0.00	0.00	0.00
300.000	0.00	0.000	300.000	0.000	0.000	0.000	0.00	0.00	0.00
400.000	0.00	0.000	400.000	0.000	0.000	0.000	0.00	0.00	0.00
500.000	0.00	0.000	500.000	0.000	0.000	0.000	0.00	0.00	0.00
600.000	0.00	0.000	600.000	0.000	0.000	0.000	0.00	0.00	0.00
700.000	0.00	0.000	700.000	0.000	0.000	0.000	0.00	0.00	0.00
800.000	0.00	0.000	800.000	0.000	0.000	0.000	0.00	0.00	0.00
900.000	0.00	0.000	900.000	0.000	0.000	0.000	0.00	0.00	0.00
1,000.000	0.00	0.000	1,000.000	0.000	0.000	0.000	0.00	0.00	0.00
1,100.000	0.00	0.000	1,100.000	0.000	0.000	0.000	0.00	0.00	0.00
1,200.000	0.00	0.000	1,200.000	0.000	0.000	0.000	0.00	0.00	0.00
1,300.000	0.00	0.000	1,300.000	0.000	0.000	0.000	0.00	0.00	0.00
1,400.000	0.00	0.000	1,400.000	0.000	0.000	0.000	0.00	0.00	0.00
1,422.829	0.00	0.000	1,422.829	0.000	0.000	0.000	0.00	0.00	0.00
1,450.000	2.45	125.000	1,449.992	-0.333	0.475	0.496	9.00	9.00	0.00
1,500.000	6.95	125.000	1,499.811	-2.680	3.827	3.996	9.00	9.00	0.00
1,550.000	11.45	125.000	1,549.156	-7.261	10.370	10.830	9.00	9.00	0.00
1,600.000	15.95	125.000	1,597.722	-14.050	20.065	20.955	9.00	9.00	0.00
1,650.000	20.45	125.000	1,645.209	-23.002	32.851	34.308	9.00	9.00	0.00
1,700.000	24.95	125.000	1,691.326	-34.065	48.650	50.807	9.00	9.00	0.00
1,750.000	29.45	125.000	1,735.787	-47.168	67.363	70.351	9.00	9.00	0.00
1,800.000	33.95	125.000	1,778.319	-62.232	88.877	92.819	9.00	9.00	0.00
1,850.000	38.45	125.000	1,818.659	-79.164	113.058	118.073	9.00	9.00	0.00
1,900.000	42.95	125.000	1,856.559	-97.859	139.757	145.956	9.00	9.00	0.00
1,950.000	47.45	125.000	1,891.784	-118.202	168.810	176.297	9.00	9.00	0.00
2,000.000	51.95	125.000	1,924.118	-140.067	200.037	208.909	9.00	9.00	0.00
2,050.000	56.45	125.000	1,953.362	-163.320	233.245	243.590	9.00	9.00	0.00
2,089.496	60.00	125.000	1,974.158	-182.575	260.744	272.309	9.00	9.00	0.00
2,100.000	60.00	125.000	1,979.410	-187.793	268.196	280.091	0.00	0.00	0.00
2,164.496	60.00	125.000	2,011.658	-219.830	313.950	327.874	0.00	0.00	0.00
2,175.000	60.74	123.825	2,016.851	-224.990	321.482	335.733	12.00	7.03	-11.19
2,200.000	62.54	121.095	2,028.729	-236.791	340.043	355.038	12.00	7.19	-10.92
2,225.000	64.39	118.455	2,039.900	-247.892	359.455	375.145	12.00	7.40	-10.56
2,250.000	66.28	115.896	2,050.334	-258.263	379.665	396.000	12.00	7.58	-10.24
2,275.000	68.22	113.411	2,060.003	-267.875	400.617	417.545	12.00	7.75	-9.94
2,300.000	70.19	110.993	2,068.880	-276.702	422.253	439.720	12.00	7.89	-9.67
2,325.000	72.19	108.634	2,076.940	-284.720	444.515	462.466	12.00	8.02	-9.43
2,350.000	74.23	106.328	2,084.162	-291.906	467.342	485.720	12.00	8.13	-9.22
2,375.000	76.28	104.069	2,090.526	-298.242	490.671	509.419	12.00	8.22	-9.04
2,400.000	78.36	101.848	2,096.015	-303.709	514.437	533.496	12.00	8.30	-8.88
2,425.000	80.45	99.661	2,100.612	-308.292	538.577	557.887	12.00	8.37	-8.75
2,450.000	82.56	97.501	2,104.306	-311.980	563.023	582.524	12.00	8.42	-8.64
2,475.000	84.67	95.361	2,107.087	-314.761	587.708	607.340	12.00	8.47	-8.56
2,500.000	86.80	93.236	2,108.947	-316.629	612.566	632.267	12.00	8.49	-8.50
2,525.000	88.92	91.120	2,109.881	-317.578	637.528	657.237	12.00	8.51	-8.46
2,537.635	90.00	90.052	2,110.000	-317.707	650.162	669.851	12.00	8.52	-8.45
2,600.000	90.00	90.052	2,110.000	-317.764	712.526	732.081	0.00	0.00	0.00
2,700.000	90.00	90.052	2,110.000	-317.854	812.526	831.866	0.00	0.00	0.00
2,800.000	90.00	90.052	2,110.000	-317.945	912.526	931.651	0.00	0.00	0.00
2,900.000	90.00	90.052	2,110.000	-318.036	1,012.526	1,031.435	0.00	0.00	0.00
3,000.000	90.00	90.052	2,110.000	-318.126	1,112.526	1,131.220	0.00	0.00	0.00
3,100.000	90.00	90.052	2,110.000	-318.217	1,212.526	1,231.004	0.00	0.00	0.00

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well Grassy Key Federal Com #1H
Company:	EOG Resources - Artesia	**TVD Reference:**	KB @ 3700.000usft (Training Rig)
Project:	Eddy County (NAD83)	**MD Reference:**	KB @ 3700.000usft (Training Rig)
Site:	Grassy Key	**North Reference:**	Grid
Well:	Grassy Key Federal Com #1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #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)
3,200.000	90.00	90.052	2,110.000	-318.307	1,312.526	1,330.789	0.00	0.00	0.00
3,300.000	90.00	90.052	2,110.000	-318.398	1,412.526	1,430.574	0.00	0.00	0.00
3,400.000	90.00	90.052	2,110.000	-318.489	1,512.526	1,530.358	0.00	0.00	0.00
3,500.000	90.00	90.052	2,110.000	-318.579	1,612.526	1,630.143	0.00	0.00	0.00
3,600.000	90.00	90.052	2,110.000	-318.670	1,712.526	1,729.927	0.00	0.00	0.00
3,700.000	90.00	90.052	2,110.000	-318.761	1,812.526	1,829.712	0.00	0.00	0.00
3,800.000	90.00	90.052	2,110.000	-318.851	1,912.526	1,929.497	0.00	0.00	0.00
3,900.000	90.00	90.052	2,110.000	-318.942	2,012.526	2,029.281	0.00	0.00	0.00
4,000.000	90.00	90.052	2,110.000	-319.032	2,112.526	2,129.066	0.00	0.00	0.00
4,100.000	90.00	90.052	2,110.000	-319.123	2,212.526	2,228.850	0.00	0.00	0.00
4,200.000	90.00	90.052	2,110.000	-319.214	2,312.526	2,328.635	0.00	0.00	0.00
4,300.000	90.00	90.052	2,110.000	-319.304	2,412.526	2,428.420	0.00	0.00	0.00
4,400.000	90.00	90.052	2,110.000	-319.395	2,512.525	2,528.204	0.00	0.00	0.00
4,500.000	90.00	90.052	2,110.000	-319.485	2,612.525	2,627.989	0.00	0.00	0.00
4,600.000	90.00	90.052	2,110.000	-319.576	2,712.525	2,727.773	0.00	0.00	0.00
4,700.000	90.00	90.052	2,110.000	-319.667	2,812.525	2,827.558	0.00	0.00	0.00
4,800.000	90.00	90.052	2,110.000	-319.757	2,912.525	2,927.343	0.00	0.00	0.00
4,900.000	90.00	90.052	2,110.000	-319.848	3,012.525	3,027.127	0.00	0.00	0.00
5,000.000	90.00	90.052	2,110.000	-319.939	3,112.525	3,126.912	0.00	0.00	0.00
5,100.000	90.00	90.052	2,110.000	-320.029	3,212.525	3,226.696	0.00	0.00	0.00
5,200.000	90.00	90.052	2,110.000	-320.120	3,312.525	3,326.481	0.00	0.00	0.00
5,300.000	90.00	90.052	2,110.000	-320.210	3,412.525	3,426.266	0.00	0.00	0.00
5,400.000	90.00	90.052	2,110.000	-320.301	3,512.525	3,526.050	0.00	0.00	0.00
5,500.000	90.00	90.052	2,110.000	-320.392	3,612.525	3,625.835	0.00	0.00	0.00
5,600.000	90.00	90.052	2,110.000	-320.482	3,712.525	3,725.619	0.00	0.00	0.00
5,700.000	90.00	90.052	2,110.000	-320.573	3,812.525	3,825.404	0.00	0.00	0.00
5,800.000	90.00	90.052	2,110.000	-320.664	3,912.525	3,925.189	0.00	0.00	0.00
5,900.000	90.00	90.052	2,110.000	-320.754	4,012.525	4,024.973	0.00	0.00	0.00
6,000.000	90.00	90.052	2,110.000	-320.845	4,112.525	4,124.758	0.00	0.00	0.00
6,100.000	90.00	90.052	2,110.000	-320.935	4,212.525	4,224.542	0.00	0.00	0.00
6,200.000	90.00	90.052	2,110.000	-321.026	4,312.525	4,324.327	0.00	0.00	0.00
6,300.000	90.00	90.052	2,110.000	-321.117	4,412.525	4,424.112	0.00	0.00	0.00
6,400.000	90.00	90.052	2,110.000	-321.207	4,512.525	4,523.896	0.00	0.00	0.00
6,500.000	90.00	90.052	2,110.000	-321.298	4,612.525	4,623.681	0.00	0.00	0.00
6,600.000	90.00	90.052	2,110.000	-321.389	4,712.524	4,723.465	0.00	0.00	0.00
6,700.000	90.00	90.052	2,110.000	-321.479	4,812.524	4,823.250	0.00	0.00	0.00
6,710.909	90.00	90.052	2,110.000	-321.489	4,823.434	4,834.136	0.00	0.00	0.00

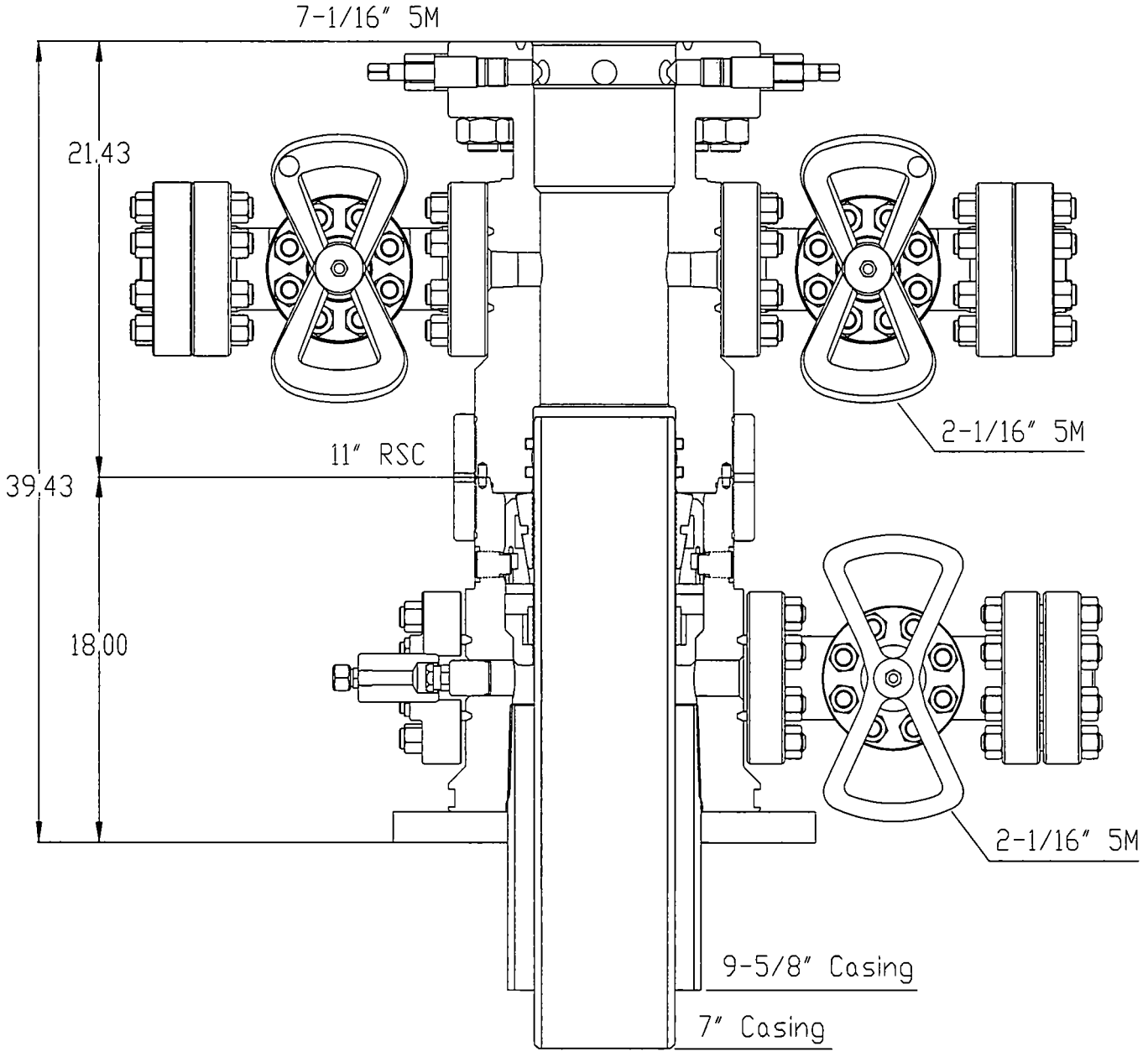
Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
[GK#1H]BHL1 - plan hits target center - Point	0.00	0.000	2,110.000	-321.489	4,823.434	586,081.19	474,314.65	32.611	-104.551

Database:	EDM 5000.14	**Local Co-ordinate Reference:**	Well Grassy Key Federal Com #1H
Company:	EOG Resources - Artesia	**TVD Reference:**	KB @ 3700.000usft (Training Rig)
Project:	Eddy County (NAD83)	**MD Reference:**	KB @ 3700.000usft (Training Rig)
Site:	Grassy Key	**North Reference:**	Grid
Well:	Grassy Key Federal Com #1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Lateral		
Design:	Plan #1		

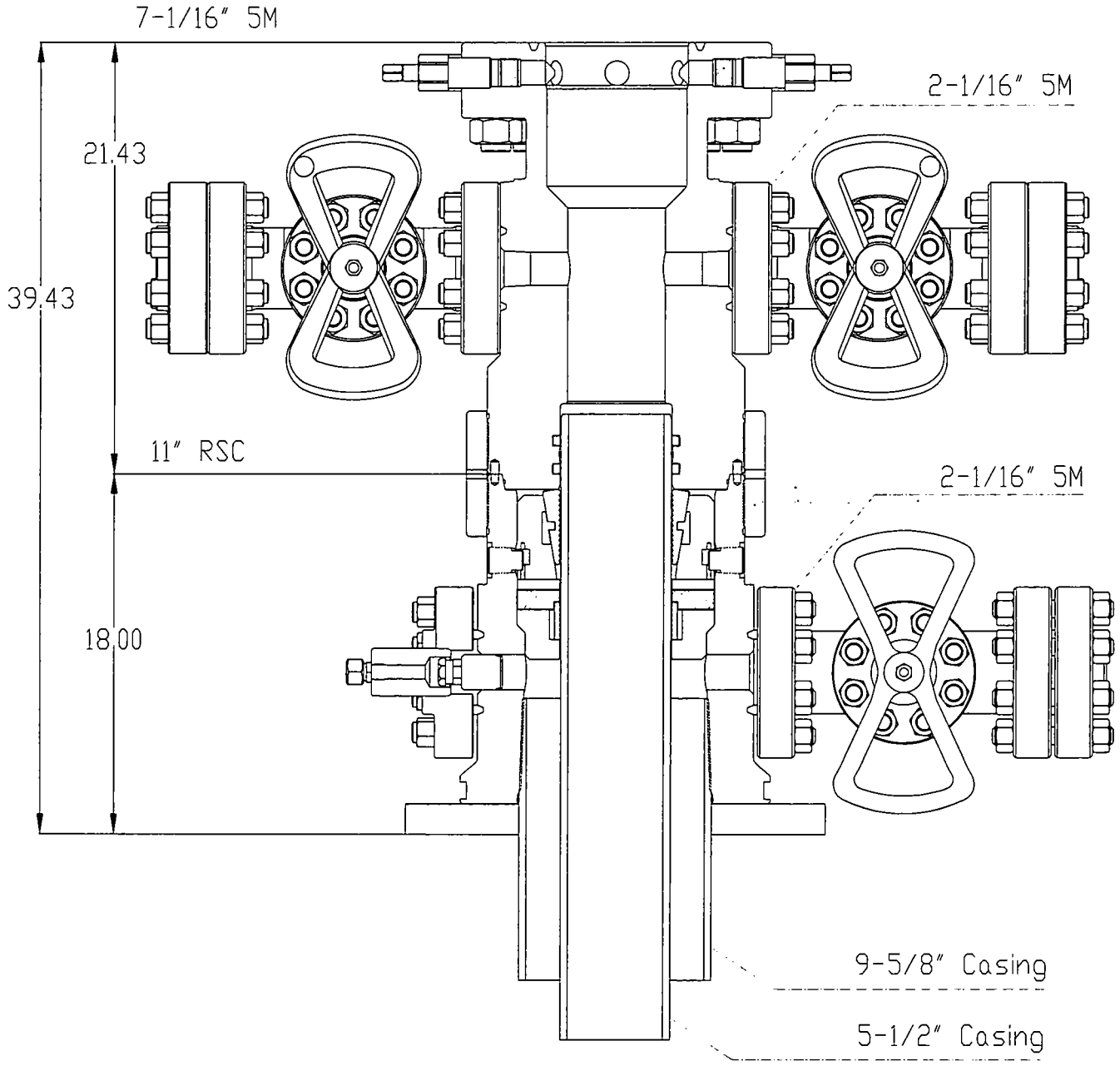
Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
1,422.829	1,422.829	0.000	0.000	KOP 9°/100' BUILD RATE
2,089.496	1,974.158	-182.575	260.744	START 75' TANGENT
2,164.496	2,011.658	-219.830	313.950	END 60° TANGENT
2,537.635	2,110.000	-317.707	650.162	LP 2538' MD (2110' TVD)
6,710.909	2,110.000	-321.489	4,823.434	TD 6711' MD (2110' TVD)



*CONCEPT QUOTE DRAWING

EOG RESOURCES INC. 9-5/8" X 7" 5M HES WELLHEAD SYSTEM QUOTE: HOU - 119274	DWN	CB	1/25/18	Stream Flo Worldwide Expertise - Global Strength	DRAWING NO WH-17830
	CHK				
	APP				
		BY	DATE		



*CONCEPT QUOTE DRAWING

EOG RESOURCES INC.

9-5/8" X 5-1/2" 5M
HES WELLHEAD SYSTEM
QUOTE: HOU - 119274

DWN	CB	3/01/18
CHK		
APP		
	BY	DATE

Woldwide Expertise - Global Strength

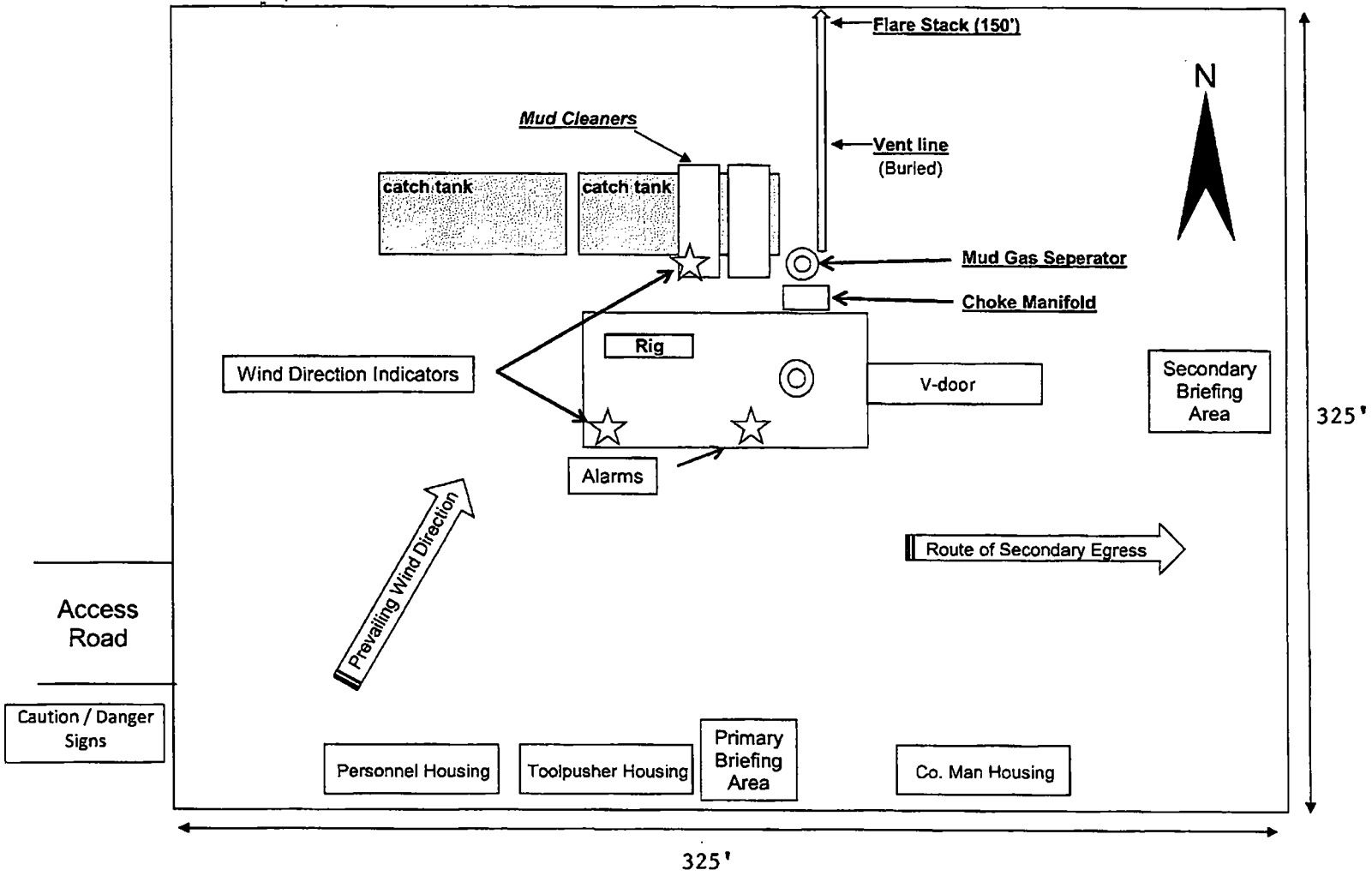
DRAWING NO
WH-17830
PG 2

Exhibit 4

EOG Resources

Grassy Key Federal Com 1H

Well Site Diagram



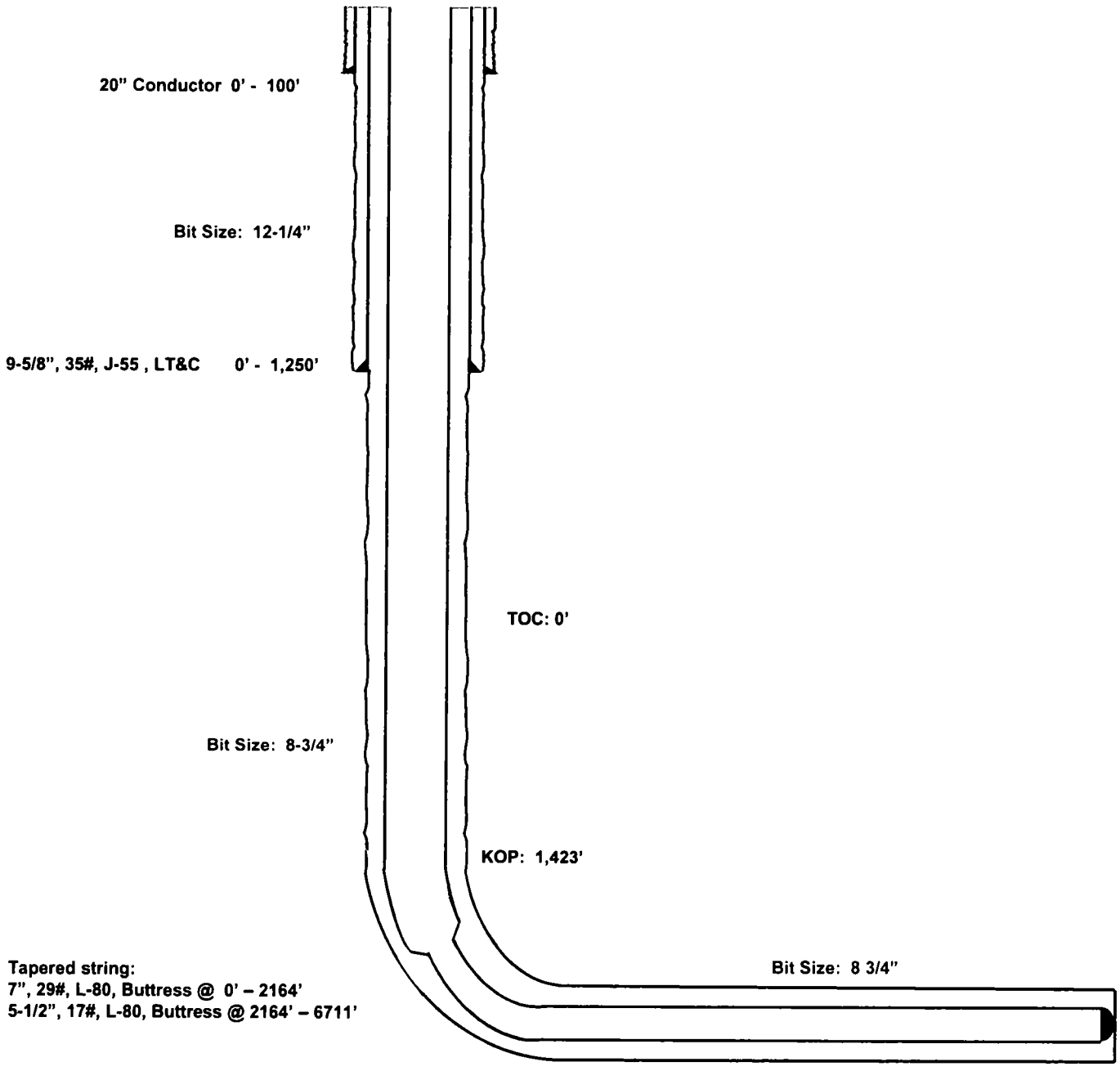
Grassy Key Federal Com #1H
Eddy County, New Mexico

665' FSL
175' FWL
Section 35
T-19-S, R-24-E

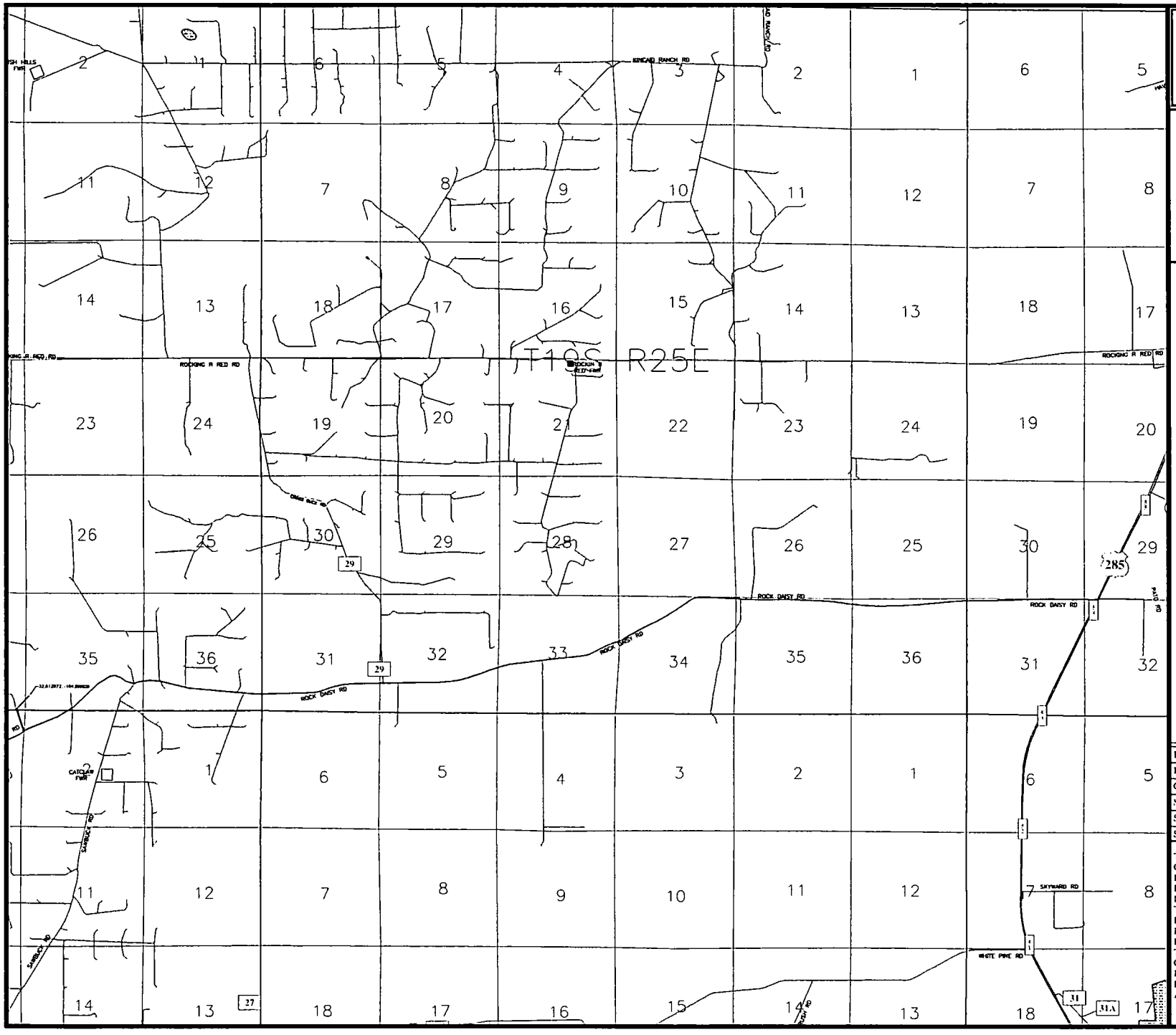
Proposed Wellbore

API: 30-015-*****

KB: 3,700'
GL: 3,680'



Lateral: 6711' MD, 2110' TVD
Upper Most Perf:
350' FSL & 330' FWL Sec. 35
Lower Most Perf:
350' FSL & 330' FEL Sec. 35
BH Location: 350' FSL & 230' FEL
Section 35
T-19-S, R-24-E



eog resources
Artesia Division
104 SOUTH FOURTH (575) 748-1471
ARTESIA, NEW MEXICO 88210

N
W E
S

LEGEND

TITLE:

DRAWN BY:	Joel
DATE DRAWN:	03-01-18
COUNTY:	
STATE:	New Mexico
SHEET NUMBER:	1 of 1
SCALE:	None

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#90087 M10761 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

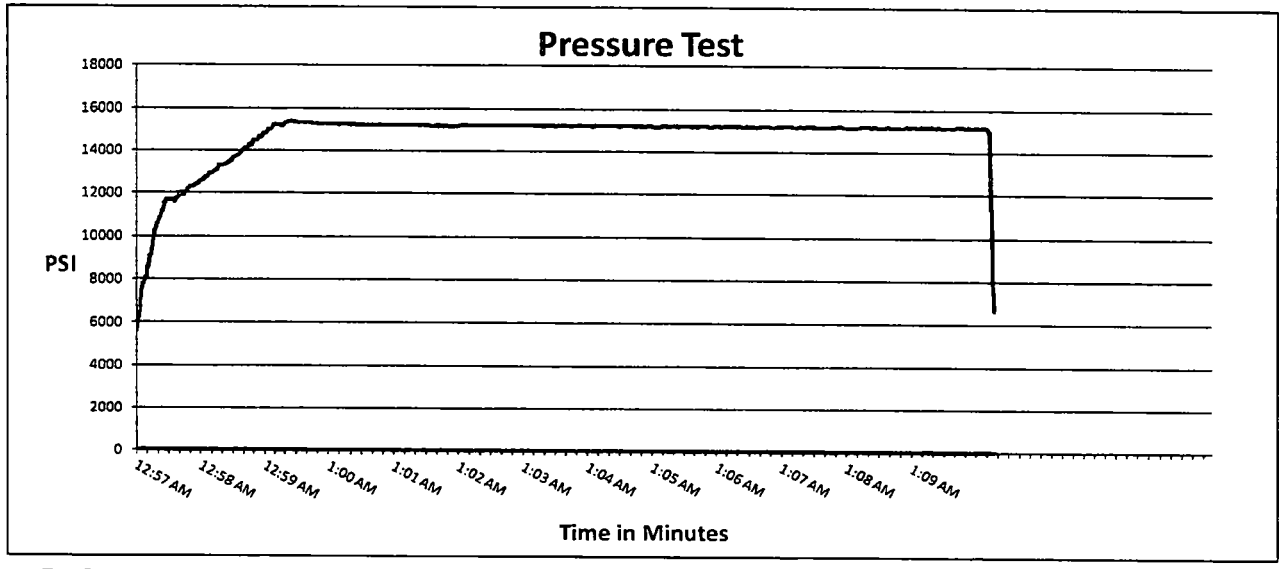
SALES ORDER# 90067

Hose Specifications

Hose Type	Length
C & K	35'
I.D.	**O.D.**
4"	8"
Working Pressure	**Burst Pressure**
10000 PSI	Standard Safety Multiplier Applies

Verification

Type of Fitting	Coupling Method
4 1/16 10K	Swage
Die Size	**Final O.D.**
6.62"	6.68"
Hose Serial #	**Hose Assembly Serial #**
	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

APD ID: 10400027844 **Submission Date:** 03/01/2018

Operator Name: EOG RESOURCES INCORPORATED

Well Name: GRASSY KEY FEDERAL COM **Well Number:** 1H

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:

GrassyKeyFederalComMap_20180228140507.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:

NewRoadMap_20180301143730.pdf

New road type: RESOURCE

Length: 573 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

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: 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 well location 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:

ExistingWellMap_20180301151727.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: Central tank battery will be found in Section 35-19S-24E. Consists of a single pad of 300' x 300' gathering facility with water and gas take away.
Production Facilities map:

ProductionFacilityMap_20180301145033.pdf

Operator Name: EOG RESOURCES INCORPORATED

Well Name: GRASSY KEY FEDERAL COM **Well Number:** 1H

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: DUST CONTROL, INTERMEDIATE/PRODUCTION CASING, STIMULATION, SURFACE CASING

Water source type: GW WELL

Describe type:

Source longitude:

Source latitude:

Source datum:

Water source permit type: PRIVATE CONTRACT

Source land ownership: PRIVATE

Water source transport method: PIPELINE,TRUCKING

Source transportation land ownership: PRIVATE

Water source volume (barrels): 200000

Source volume (acre-feet): 25.77862

Source volume (gal): 8400000

Water source and transportation map:

GrassyKeyWaterSourcePlat_20180301153402.pdf

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:

State appropriation permit:

Operator Name: EOG RESOURCES INCORPORATED

Well Name: GRASSY KEY FEDERAL COM **Well Number:** 1H

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description:

Construction Materials source location attachment:

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 **Disposal location ownership:** COMMERCIAL FACILITY
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

Cuttings Area being used? NO

Are you storing cuttings on location? NO

Description of cuttings location

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

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

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

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

WellSiteDiagram_20180301101917.pdf

Comments:

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance **Multiple Well Pad Name:** GRASSY KEY FEDERAL COM

Multiple Well Pad Number: 1H

Recontouring attachment:

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.

Well pad proposed disturbance (acres): 0	**Well pad interim reclamation (acres):** 0	**Well pad long term disturbance (acres):** 0
Road proposed disturbance (acres): 0	**Road interim reclamation (acres):** 0	**Road long term disturbance (acres):** 0
Powerline proposed disturbance (acres): 0	**Powerline interim reclamation (acres):** 0	**Powerline long term disturbance (acres):** 0
Pipeline proposed disturbance (acres): 0	**Pipeline interim reclamation (acres):** 0	**Pipeline long term disturbance (acres):** 0
Other proposed disturbance (acres): 0	**Other interim reclamation (acres):** 0	**Other long term disturbance (acres):** 0
Total proposed disturbance: 0	**Total interim reclamation:** 0	**Total long term disturbance:** 0

Disturbance Comments: All Interim and Final reclamation is planned to be 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 wood vegetation, such as mesquite will be excavated as the topsoil is removed. Large wood 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:

Operator Name: EOG RESOURCES INCORPORATED

Well Name: GRASSY KEY FEDERAL COM **Well Number:** 1H

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:

Last Name:

Phone:

Email:

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: N/A

Pit closure attachment:

Operator Name: EOG RESOURCES INCORPORATED

Well Name: GRASSY KEY FEDERAL COM **Well Number:** 1H

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: PRIVATE OWNERSHIP

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:**

Section 12 - Other Information

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

ROW Type(s):

ROW Applications

SUPO Additional Information:

Use a previously conducted onsite? NO

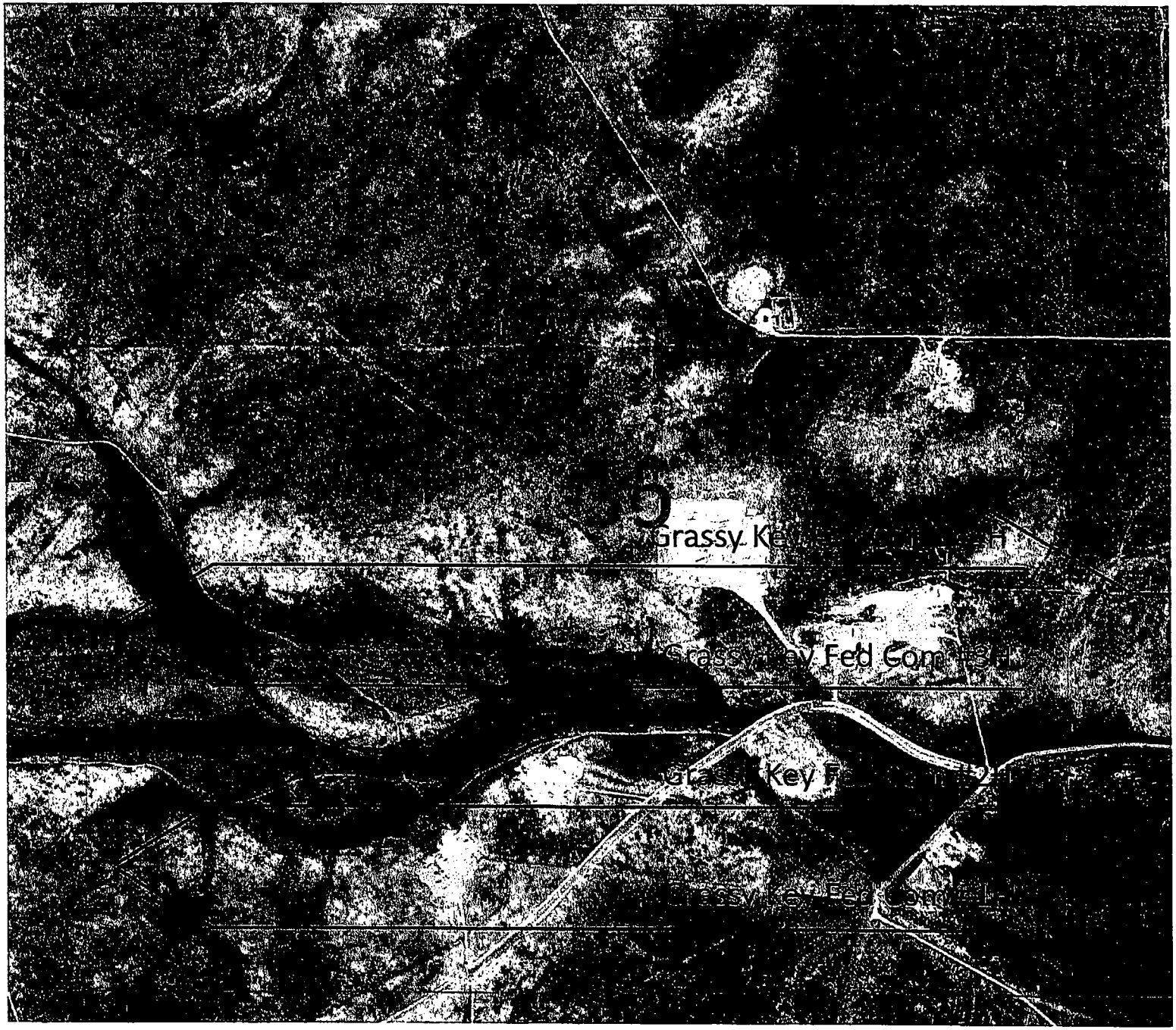
Previous Onsite information:

Other SUPO Attachment

Operator Name: EOG RESOURCES INCORPORATED

Well Name: GRASSY KEY FEDERAL COM **Well Number:** 1H

GrassyKeyFedComSUPO_20180301153300.pdf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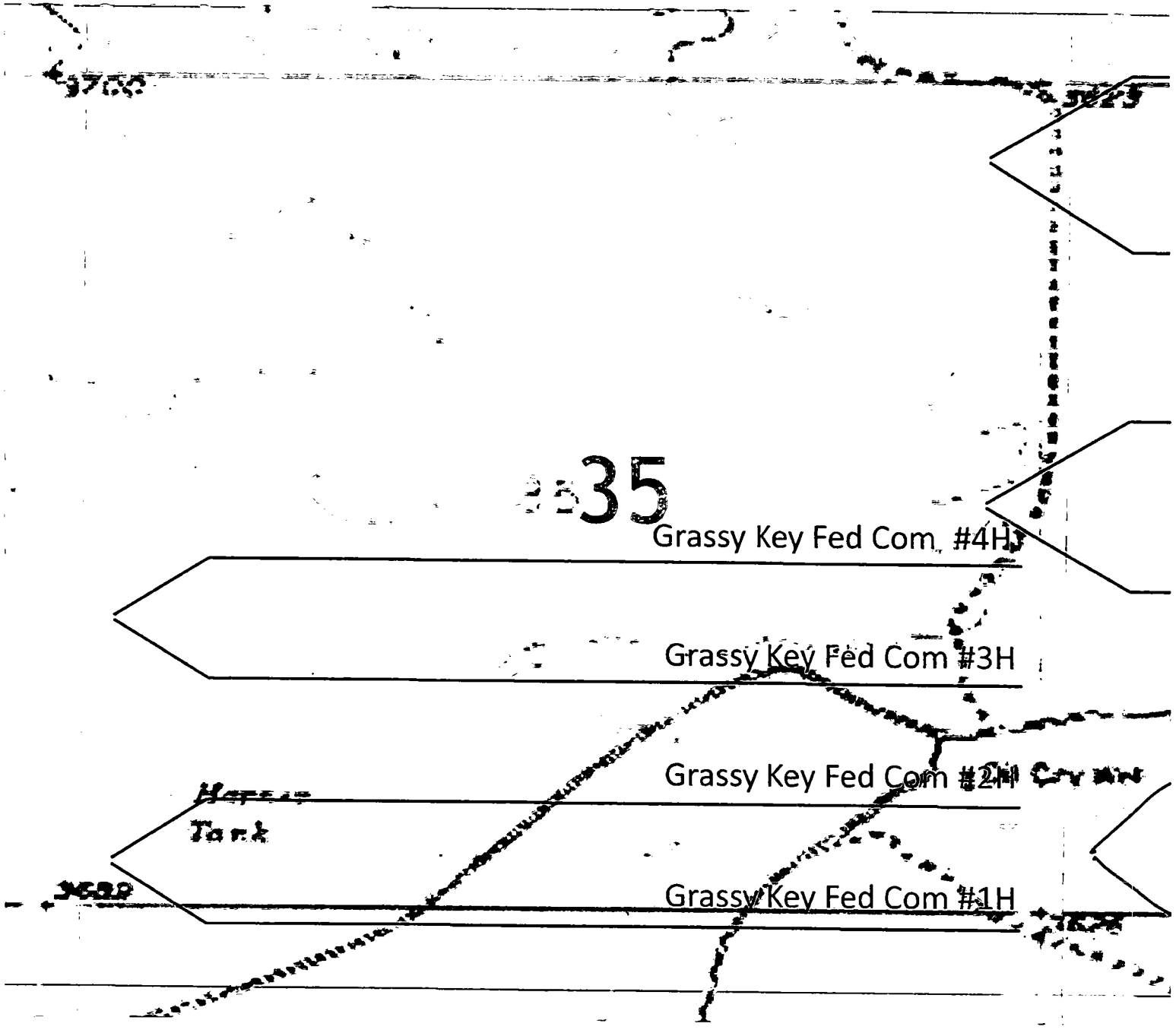
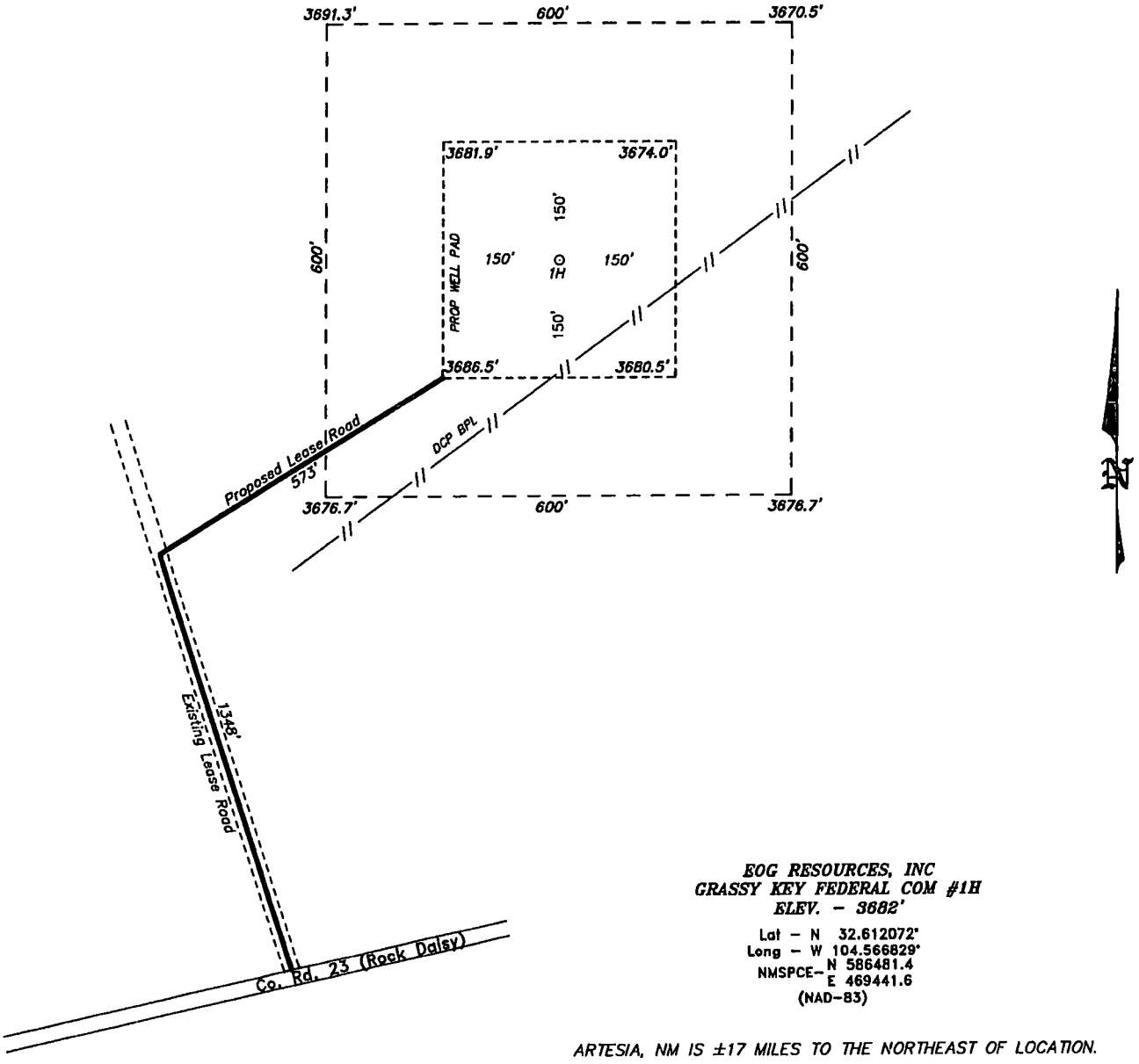
Grassy Key Fed Com
Grassy Key F
Grassy Key Fed Com


35
Grassy Key Fed Com #4H
Grassy Key Fed Com #3H
Grassy Key Fed Com #2H
Grassy Key Fed Com #1H

SECTION 35, TOWNSHIP 19 SOUTH, RANGE 24 EAST. N.M.P.M.,

EDDY COUNTY, NEW MEXICO.



EOG RESOURCES, INC
GRASSY KEY FEDERAL COM #1H
ELEV. - 3682'

Lat - N 32.612072°
Long - W 104.566829°
NMSPCE- N 586481.4
E 469441.6
(NAD-83)

ARTESIA, NM IS ±17 MILES TO THE NORTHEAST OF LOCATION.

200 0 200 400 FEET

SCALE: 1" = 200'

DIRECTIONS TO LOCATIONS:

FROM THE FROM THE INTERSECTION OF CO. RD. 23 AND CO. RD. 28, GO EAST ON CO. RD. 23 FOR 0.5 MILES TO PROPOSED LEASE ROAD.

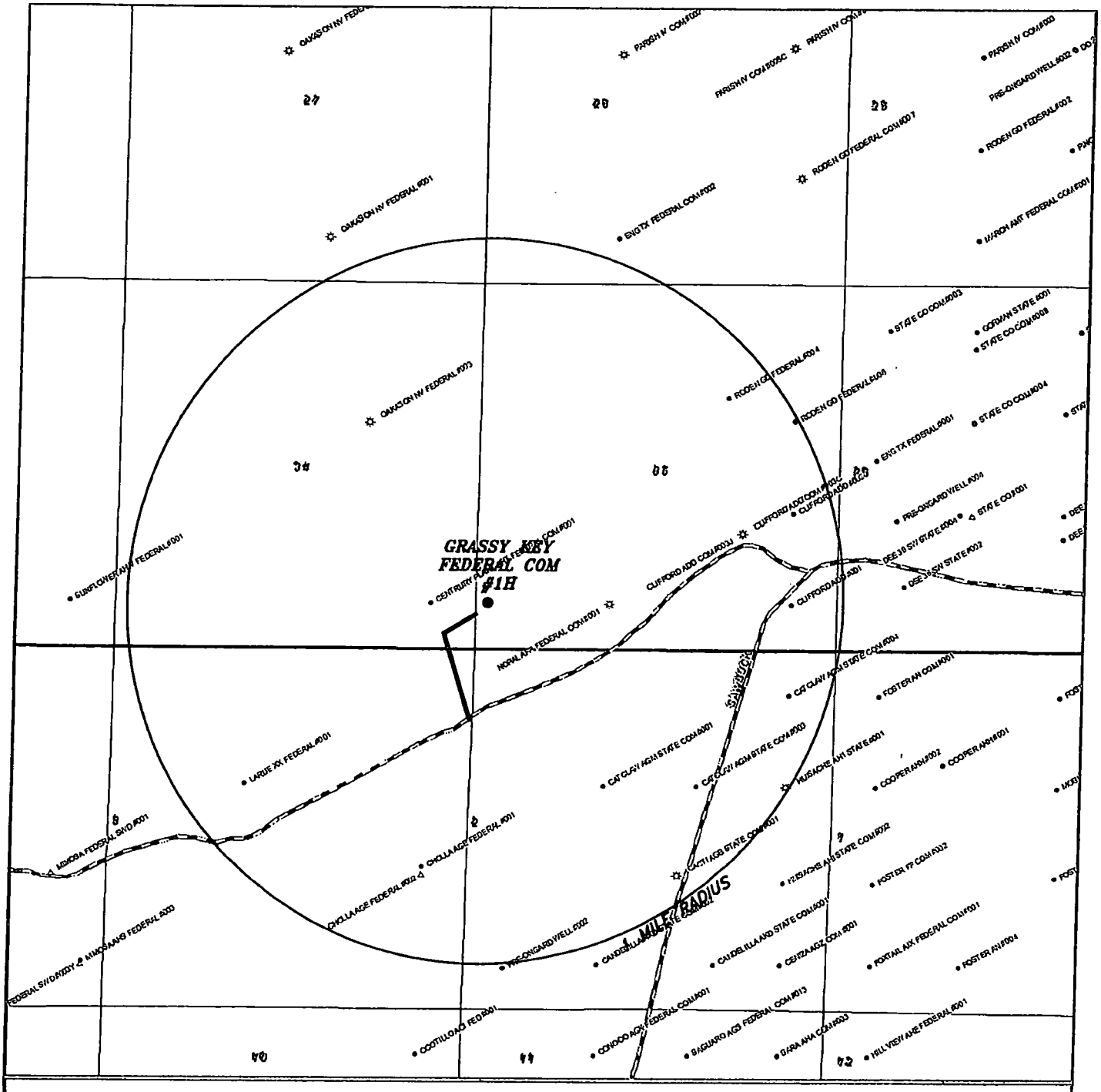
eog resources

REF: GRASSY KEY FEDERAL COM #1H / WELL PAD TOPO

THE GRASSY KEY FEDERAL COM #1H LOCATED 665' FROM THE SOUTH LINE AND 175' FROM THE WEST LINE OF SECTION 35, TOWNSHIP 19 SOUTH, RANGE 24 EAST. N.M.P.M., EDDY COUNTY, NEW MEXICO.

basin surveys
focused on excellence in the oilfield
P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

W.O. Number: 33578	Drawn By: J GOAD	Date: 02-28-2018	Survey Date: 02-28-2018	Sheet 1 of 1 Sheets



GRASSY KEY FEDERAL COM #1H

Located 665' FSL and 175' FWL

Section 35, Township 19 South, Range 24 East, N.M.P.M., EDDY County, New Mexico.

Basin Surveys
focused on excellence in the oilfield

P.O. Box 1786
1120 N. West County Rd.
Hobbs, New Mexico 88241
(575) 393-7316 - Office
(575) 392-2206 - Fax
basinsurveys.com

0' 1000' 2000' 3000' 150'0"

SCALE: 1" = 2000'

W.O. Number: JG 33578

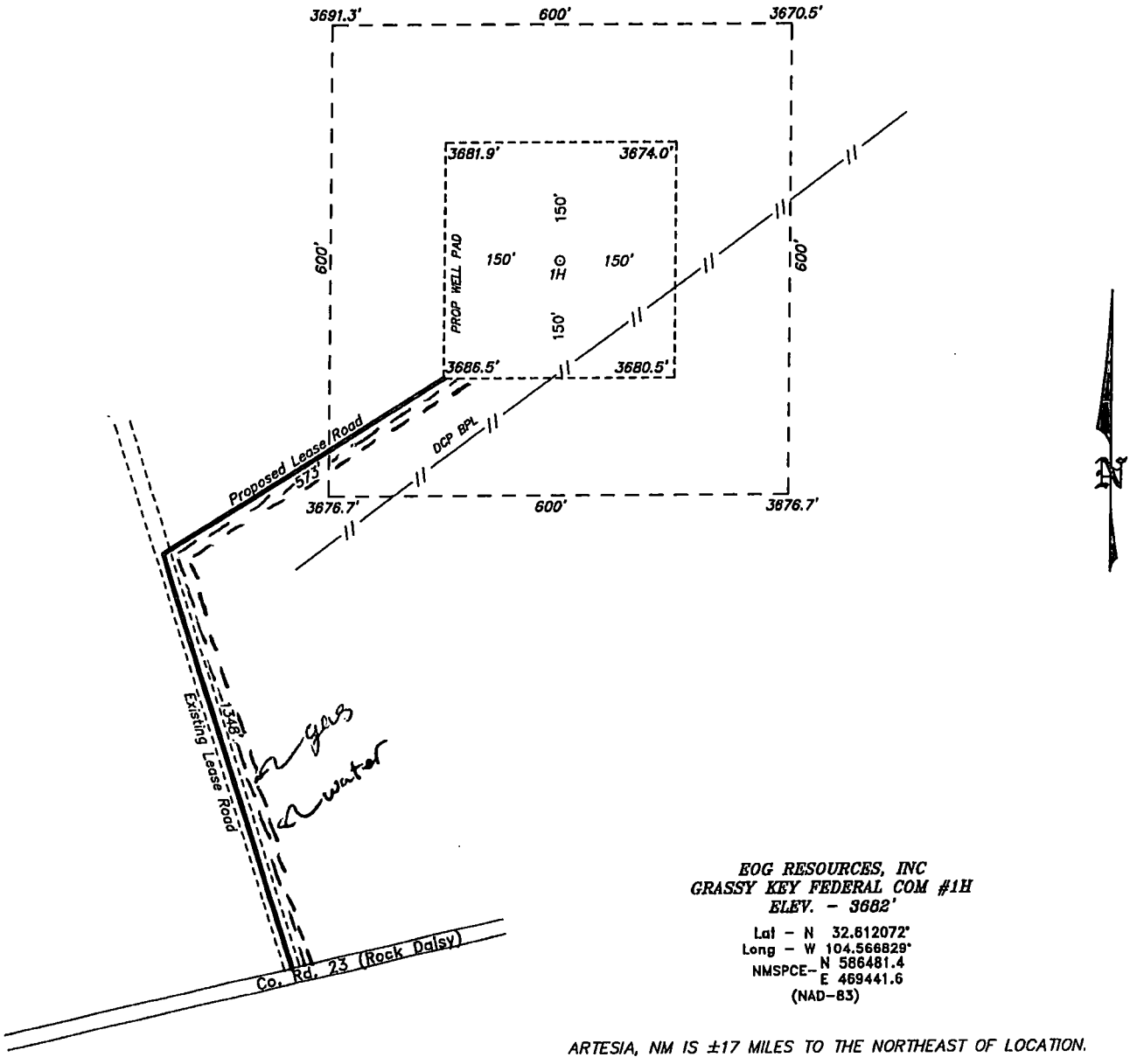
Survey Date: 09-07-2017

YELLOW TINT - USA LAND
BLUE TINT - STATE LAND
NATURAL COLOR - FEE LAND

N

eog resources

SECTION 35, TOWNSHIP 19 SOUTH, RANGE 24 EAST. N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



EOG RESOURCES, INC
GRASSY KEY FEDERAL COM #1H
ELEV. - 3682'

Lat - N 32.612072°
Long - W 104.566829°
NMSPCE- N 586481.4
E 469441.6
(NAD-83)

ARTESIA, NM IS ±17 MILES TO THE NORTHEAST OF LOCATION.

200 0 200 400 FEET
SCALE: 1" = 200'

DIRECTIONS TO LOCATIONS:

FROM THE FROM THE INTERSECTION OF CO. RD. 23 AND CO. RD. 26, GO EAST ON CO. RD. 23 FOR 0.5 MILES TO PROPOSED LEASE ROAD.

eog resources

REF: GRASSY KEY FEDERAL COM #1H / WELL PAD TOPO

THE GRASSY KEY FEDERAL COM #1H LOCATED 665' FROM THE SOUTH LINE AND 175' FROM THE WEST LINE OF SECTION 35, TOWNSHIP 19 SOUTH, RANGE 24 EAST. N.M.P.M., EDDY COUNTY, NEW MEXICO.

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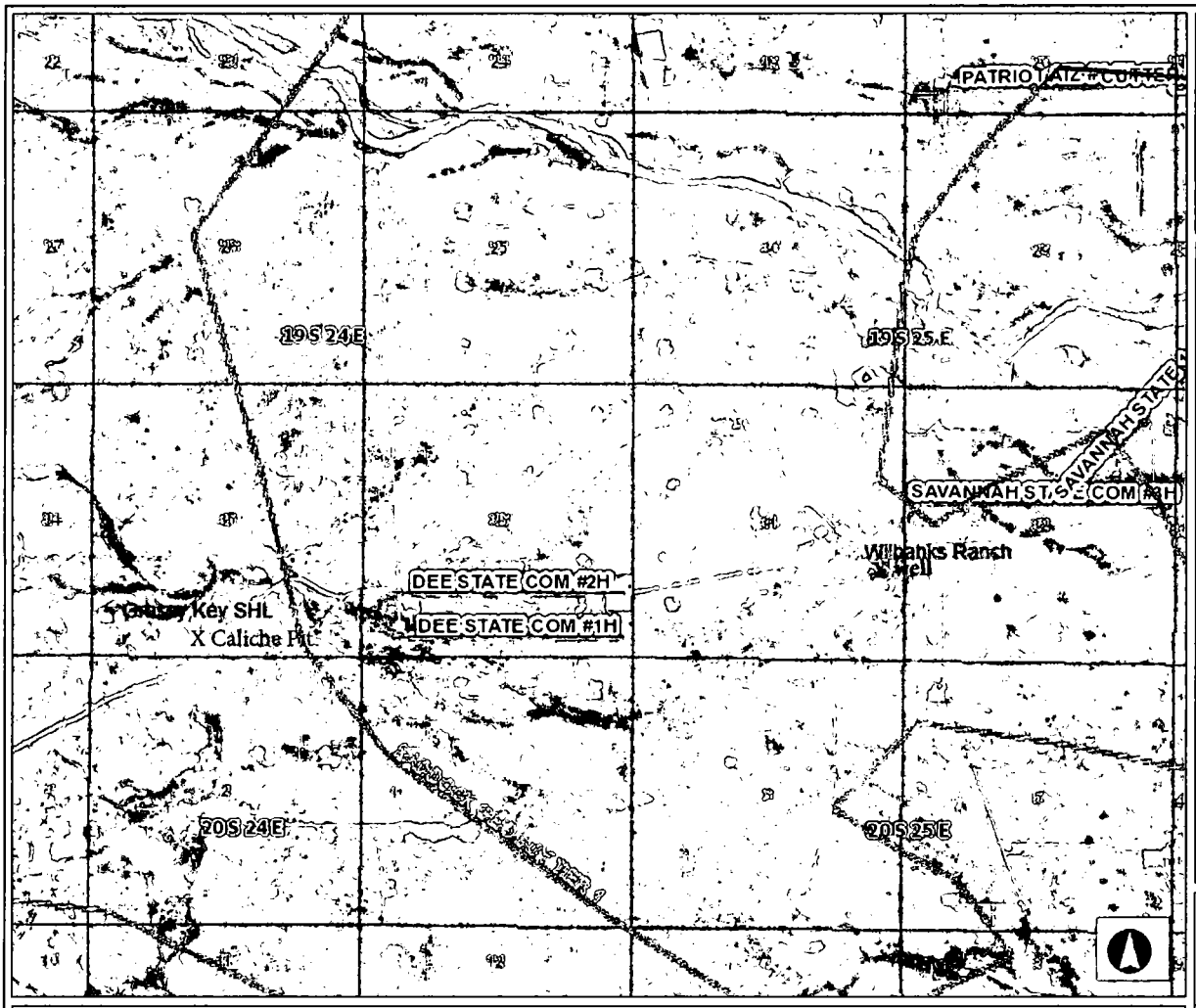
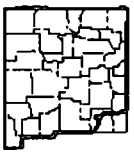
W.O. Number: 33578	Drawn By: J GOAD	Date: 02-28-2018	Survey Date: 02-28-2018	Sheet 1 of 1 Sheets





Legend

Buy Tiers
- PADDOCK GEO BUY TIER 1
- YESO NORTH BUY TIER 1
- YESO NORTH BUY TIER 2
- YESO WEST BUY TIER 2

Jeffersonian Sections
Artesia SHL Directional
Artesia Well Path
Well Pad Areas
Land Calendar Legend
- EXPIRATION
- OBLIGATION
- PAYMENT

6,520.9 0 3,260.46 6,520.9 Feet

1: 39,126

Projection: WGS_1984_Web_Mercator_Auxiliary_Sphere

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

THIS MAP IS NOT TO BE USED FOR NAVIGATION

Date: 3/1/2018

eog resources

ARTESIA DIVISION

Water Source
Grassy Key Fed Com 1H

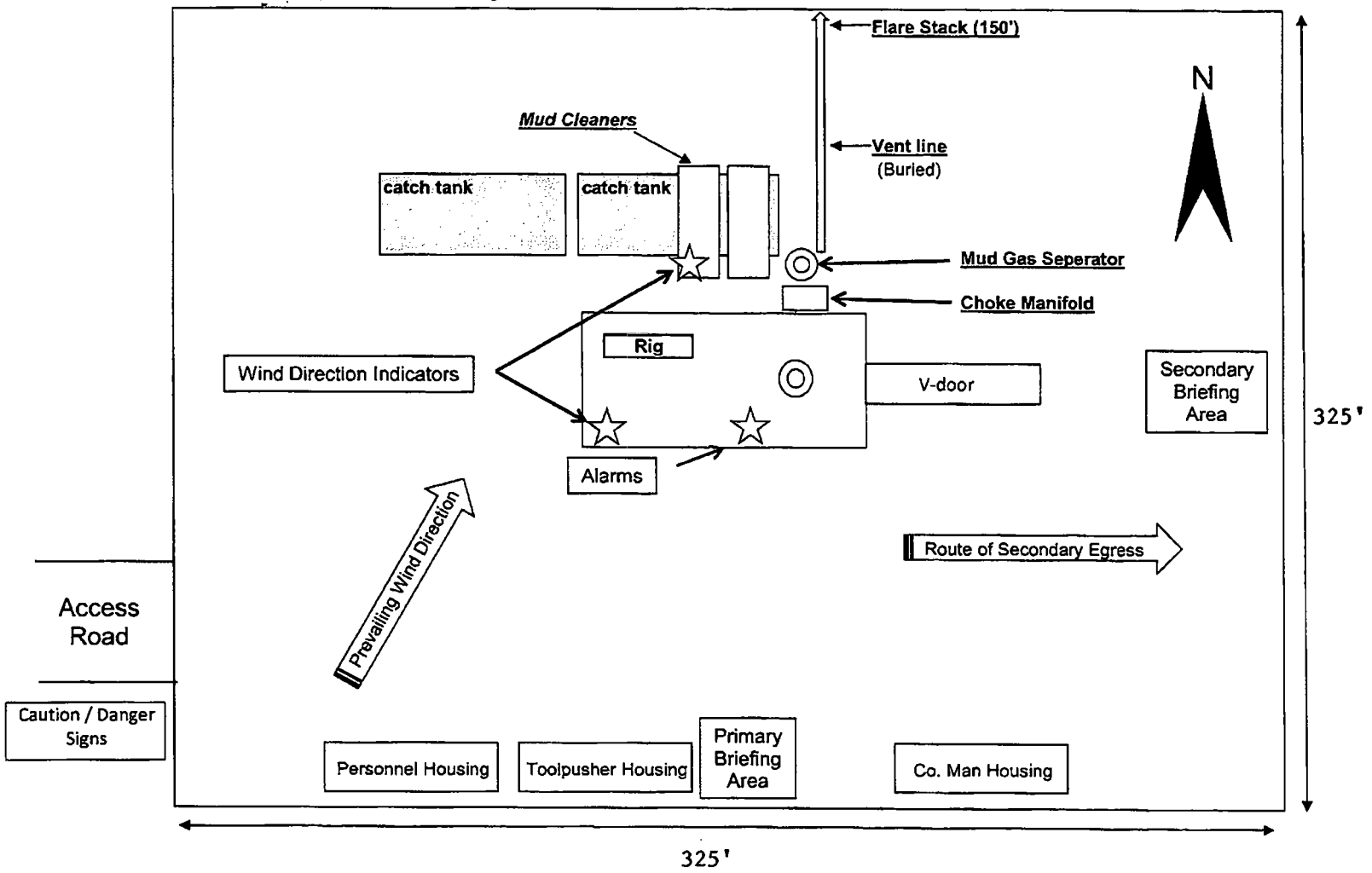
Author: Yolanda Maese

Exhibit 4

EOG Resources

Grassy Key Federal Com 1H

Well Site Diagram



MULTI-POINT SURFACE USE AND OPERATIONS PLAN
EOG Resources, Inc.

Grassy Key Federal Com 1H
665' FSL and 175' FWL - Surface Hole Location
350' FSL and 230' FEL -Bottom Hole Location
Section 35, T19S-R24E
Eddy County, New Mexico

This plan is submitted with Form 3160-3, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved and the procedures to be followed in rehabilitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effect associated with the operations.

1. EXISTING ROADS:

Attached is a portion of the County map showing the well and roads in the vicinity of the proposed location. The proposed well site is located approximately 17 miles southwest of Artesia, New Mexico and the access route to the location is indicated on Exhibit. Operator will maintain existing roads in condition the same or better than before operations begin. Operator will repair pot holes, clear ditches, repair the crown, etc. All existing structures along the entire access route such as cattle guards, other range improvement projects, culverts, etc. will be properly repaired or replaced if they are damaged or have deteriorated beyond practical use. Operator will reasonably prevent and abate fugitive dust as needed when created by vehicular traffic and equipment caused by the operator. The BLM's written approval will be acquired before application of surfactants, binding agents, or other dust suppression chemicals on roadways.

DIRECTIONS:
(See Exhibit A) From Artesia, go South on US-285 for approximately 15.2 miles. Turn right (West) onto CR23 (Rock Daisy Road). Travel West on CR23 for 8.3 miles. Continue West on CR23 (unpaved) for 1.1 miles. Proposed lease road will begin on North side of CR23 and run approximately 1450' North to pad.

2. PLANNED ACCESS ROAD.

A. (See Exhibit) The proposed new access road will go for approximately 573 feet from the point of origin to the Southwest corner of well location. The road will lie in a Northeast direction. The road will be crowned and ditched to a 2% slope from the tip of the crown to the edge of the driving surface.
B. The new road will be 14 feet in width (driving surface) and will be adequately drained to control to control runoff and soil erosion. Ditches will be 3' wide with a 3:1 slopes.
C. The new road will be bladed with drainage on one side. A traffic turnout may be built.
D. Existing roads will be maintained in the same or better condition.
E. The route of road is visible.
F. The proposed new lease road is represented in green in Exhibit A.

3. LOCATION OF EXISTING WELL

A. There is no drilling activity within a one-mile radius of the well site.
B. Exhibits shows existing wells within a one-mile radius of the proposed well site.

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES

   A. There are no production facilities on this lease at the present time.
   B. Central tank battery will be found in Section 35-19S-24E. Consists of a single pad of 300' x 300' gathering facility with water and gas take away.

5. LOCATION AND TYPE OF WATER SUPPLY:

   A. It is planned to drill the proposed well with a fresh water system. The water will be obtained from commercial sources and will be hauled to the location by truck over the existing and proposed roads shown in Exhibit.

6. SOURCE OF CONSTRUCTION MATERIALS:

   Dirt contractor will locate closest pit and obtain any permits and materials needed for construction of the well location.

7. METHODS OF HANDLING WASTE DISPOSAL:

   A. This well will be drilled with a closed loop system
   B. The closed loop system will be constructed, maintained, and closed in compliance with the State of New Mexico, Energy and Natural Resources Department, Oil Conservation Division – the "Pit Rule" 19.15.17 NMAC.
   C. Drilling fluids will be removed after drilling and completions are completed.
   D. Water produced during operations will be collected in tanks until hauled to an approved disposal system, or separate disposal application will be submitted.
   E. Oil produced during operations will be stored in tanks until sold.
   F. Current laws and regulations pertaining to the disposal of human waste will be complied with.
   G. All trash, junk, and other waste materials will be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not approved.

8. ANCILLARY FACILITIES: None.

9. WELLSITE LAYOUT:

   A. Attached exhibit shows the relative location and dimensions of the well pad, the closed loop mud system, location of the drilling equipment. All of the location will be constructed within the 600' x 600' staked area.
   B. A 600' x 600' area has been staked and flagged.

9. PLANS FOR RESTORATION:

   A. After finishing drilling and/or completion operations, all equipment and other material not needed for further operations will be removed. The location will be cleaned of all trash and junk to leave the well site in as aesthetically pleasing a condition as possible. The location will be reduced to a 250' x 250' after completion operations have been conducted. At this point the surfacing material will be removed and topsoil will be redistributed. The area will be contoured as closely as possible to its original state and reseeded. Please note attached Reclamation Plat.

B. If the proposed well is plugged and abandoned, all equipment and other material will be removed. The location will be cleaned of all trash and junk to leave the well site in as aesthetically pleasing a condition as possible. At this point the surfacing material will be removed, topsoil will be redistributed. The area will be contoured as closely as possible to its original location and reseeded. These actions will be completed and accomplished as expeditiously as possible.

C. The reclamation of the pad will be done in sixty days if possible after the well is put in production.

11. SURFACE OWNERSHIP:

Surface Estate:	Kevin and Laurie Wilbanks 634 Rock Daisy Road Artesia, NM 88210
Mineral Estate:	Federal Lease NM-51828 Bureau of Land Management 620 East Greene Street Carlsbad, NM 88220

An agreement has been reached with the surface owners.

12. OTHER INFORMATION:

A. Topography: Refer to the existing archaeological report for a description of the topography, flora, fauna, soil characteristics, dwellings, historical and cultural sites.

B. The primary surface use is for grazing.

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

01/30/2019

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: