

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

HOBBS OCD

APR 05 2018

RECEIVED

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

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM122622
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator EOG RESOURCES INCORPORATED (7377)		7. If Unit or CA Agreement, Name and No.
3a. Address 1111 Bagby Sky Lobby2 Houston TX 77002		8. Lease Name and Well No. OPHELIA 22 FED COM 712H (319569)
3b. Phone No. (include area code) (713)651-7000		9. API Well No. 20-025-44669
4. Location of Well (Report location clearly and in accordance with any State requirements.)* At surface NWNW / 200 FNL / 1269 FWL / LAT 32.0356684 / LONG -103.564622 At proposed prod. zone SENW / 2411 FNL / 1985 FWL / LAT 32.0150734 / LONG -103.5623125		10. Field and Pool, or Exploratory RED HILLS / WC-025 S263327G (98097)
14. Distance in miles and direction from nearest town or post office* 22.5 miles		11. Sec., T. R. M. or Blk. and Survey or Area SEC 22 / T26S / R33E / NMP
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 240 feet	16. No. of acres in lease 1640	17. Spacing Unit dedicated to this well 240
18. Distance from proposed location* to nearest well, drilling, completed, 660 feet applied for, on this lease, ft.	19. Proposed Depth 12377 feet / 19843 feet	20. BLM/BIA Bond No. on file FED: NM2308
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3308 feet	22. Approximate date work will start* 01/01/2018	23. Estimated duration 25 days
24. Attachments		

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

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

25. Signature (Electronic Submission)	Name (Printed/Typed) Stan Wagner / Ph: (432)686-3689	Date 09/21/2017
Title Regulatory Specialist		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959	Date 03/22/2018
Title Supervisor Multiple Resources	Office CARLSBAD	

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

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

(Continued on page 2)

GCP Rec 04/09/18

APPROVED WITH CONDITIONS
Approval Date: 03/22/2018

KZ
04/09/18
*(Instructions on page 2)

9 Double
- seed

INSTRUCTIONS

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

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

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

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

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

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

NOTICES

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

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

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

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

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

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

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

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

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.

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Additional Operator Remarks

Location of Well

1. SHL: NWNW / 200 FNL / 1269 FWL / TWSP: 26S / RANGE: 33E / SECTION: 22 / LAT: 32.0356684 / LONG: -103.564622 (TVD: 0 feet, MD: 0 feet)
PPP: NENW / 330 FNL / 1985 FWL / TWSP: 26S / RANGE: 33E / SECTION: 22 / LAT: 32.0353082 / LONG: -103.5623105 (TVD: 12333 feet, MD: 12475 feet)
BHL: SENW / 2411 FNL / 1985 FWL / TWSP: 26S / RANGE: 33E / SECTION: 27 / LAT: 32.0150734 / LONG: -103.5623125 (TVD: 12377 feet, MD: 19843 feet)

BLM Point of Contact

Name: Judith Yeager

Title: Legal Instruments Examiner

Phone: 5752345936

Email: jyeager@blm.gov

CONFIDENTIAL



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

Application Data Report

03/27/2018

APD ID: 10400020388

Submission Date: 09/21/2017

Highlighted data
reflects the most
recent changes

Operator Name: EOG RESOURCES INCORPORATED

Well Name: OPHELIA 22 FED COM

Well Number: 712H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - General

APD ID: 10400020388

Tie to previous NOS?

Submission Date: 09/21/2017

BLM Office: CARLSBAD

User: Stan Wagner

Title: Regulatory Specialsit

Federal/Indian APD: FED

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

Lease number: NMNM122622

Lease Acres: 1640

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: OPHELIA 22 FED COM

Well Number: 712H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: RED HILLS

Pool Name: WC-025 S263327G

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

Operator Name: EOG RESOURCES INCORPORATED

Well Name: OPHELIA 22 FED COM

Well Number: 712H

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:

Number: 710H/711H/712H

Well Class: HORIZONTAL

OPHELIA 22 FED COM

Number of Legs: 1

Well Work Type: Drill

Well Type: OIL WELL

Describe Well Type:

Well sub-Type: INFILL

Describe sub-type:

Distance to town: 22.5 Miles

Distance to nearest well: 660 FT

Distance to lease line: 240 FT

Reservoir well spacing assigned acres Measurement: 240 Acres

Well plat: Ophelia_22_Fed_Com_712H_signed_C_102_20170921143455.pdf

Well work start Date: 01/01/2018

Duration: 25 DAYS

Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number:

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
SHL Leg #1	200	FNL	126 9	FWL	26S	33E	22	Aliquot NWN W	32.03566 84	- 103.5646 22	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 122622	330 8	0	0
KOP Leg #1	48	FNL	194 1	FWL	26S	33E	22	Aliquot NENW	32.03607 01	- 103.5624 462	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 122622	- 858 4	119 23	118 92
PPP Leg #1	330	FNL	198 5	FWL	26S	33E	22	Aliquot NENW	32.03530 82	- 103.5623 105	LEA	NEW MEXI CO	NEW MEXI CO	F	NMNM 122622	- 902 5	124 75	123 33

Operator Name: EOG RESOURCES INCORPORATED

Well Name: OPHELIA 22 FED COM

Well Number: 712H

Pressure Rating (PSI): 10M

Rating Depth: 12377

Equipment: The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a single ram, mud cross and double ram-type (10,000 psi WP) preventer and an annular preventer (10,000-psi WP). Both units will be hydraulically operated and the ram-type will be equipped with blind rams on bottom and drill pipe rams on top. All BOPE will be tested in accordance with Onshore Oil and Gas order No. 2.

Requesting Variance? YES

Variance request: Variance is requested to use a co-flex line between the BOP and choke manifold (instead of using a 4" OD steel line). Variance is requested to wave the centralizer requirements for the 7-5/8" FJ casing in the 8-3/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 8-3/4" hole interval to maximize cement bond and zonal isolation. Variance is also requested to wave any centralizer requirements for the 5-1/2" FJ casing in the 6-3/4" hole size. An expansion additive will be utilized, in the cement slurry, for the entire length of the 6-3/4" hole interval to maximize cement bond and zonal isolation.

Testing Procedure: Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 5000/ 250 psig and the annular preventer to 5000/ 250 psig. The surface casing will be tested to 1500 psi for 30 minutes. Before drilling out of the intermediate casing, the ram-type BOP and accessory equipment will be tested to 5000/ 250 psig and the annular preventer to 5000/ 250 psig. The intermediate casing will be tested to 2000 psi for 30 minutes. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. A hydraulically operated choke will be installed prior to drilling out of the intermediate casing shoe.

Choke Diagram Attachment:

Ophelia_22_FC_712H_10_M_Choke_Manifold_08-22-2017.pdf

Ophelia_22_FC_712H_Co_Flex_Hose_Certification_08-22-2017.PDF

Ophelia_22_FC_712H_Co_Flex_Hose_Test_Chart_08-22-2017.pdf

BOP Diagram Attachment:

Ophelia_22_FC_712H_10_M_BOP_Diagram_08-22-2017.pdf

Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	14.75	10.75	NEW	API	N	0	840	0	840	-9069	-9909	840	J-55	40.5	STC	1.125	1.25	BUOY	1.6	BUOY	1.6
2	INTERMEDIATE	9.875	7.625	NEW	API	Y	0	1000	0	1000	-9069	-10069	1000	HCP-110	29.7	LTC	1.125	1.25	BUOY	1.6	BUOY	1.6
3	PRODUCTION	6.75	5.5	NEW	API	Y	0	10900	0	10900	-9069	-19969	10900	OTHER	20	OTHER - DW/C-15 MS	1.125	1.25	BUOY	1.6	BUOY	1.6



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

Drilling Plan Data Report

03/27/2018

APD ID: 10400020388

Submission Date: 09/21/2017

Highlighted data
reflects the most
recent changes

Operator Name: EOG RESOURCES INCORPORATED

Well Name: OPHELIA 22 FED COM

Well Number: 712H

[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	PERMIAN	3308	0	0		NONE	No
2	RUSTLER	2494	814	814	ANHYDRITE	NONE	No
3	TOP SALT	2161	1147	1147	SALT	NONE	No
4	BASE OF SALT	-1462	4770	4770	SALT	NONE	No
5	LAMAR	-1712	5020	5020	LIMESTONE	NONE	No
6	BELL CANYON	-1742	5050	5050	SANDSTONE	NATURAL GAS,OIL	No
7	CHERRY CANYON	-2792	6100	6100	SANDSTONE	NATURAL GAS,OIL	No
8	BRUSHY CANYON	-4350	7658	7658	SANDSTONE	NATURAL GAS,OIL	No
9	BONE SPRING LIME	-5920	9228	9228	LIMESTONE	NONE	No
10	FIRST BONE SPRING SAND	-6861	10169	10169	SANDSTONE	NATURAL GAS,OIL	No
11	BONE SPRING 2ND	-7366	10674	10674	SANDSTONE	NATURAL GAS,OIL	No
12	BONE SPRING 3RD	-8442	11750	11750	SANDSTONE	NATURAL GAS,OIL	No
13	WOLFCAMP	-8912	12220	12220	SHALE	NATURAL GAS,OIL	Yes

Section 2 - Blowout Prevention

Operator Name: EOG RESOURCES INCORPORATED

Well Name: OPHELIA 22 FED COM

Well Number: 712H

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	840	325	1.73	13.5	562	25	Class C	Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% CaCl ₂ + 0.25 lb/sk Cello-Flake (TOC @ Surface)
SURFACE	Tail		840	840	200	1.34	14.8	268	25	Class C	Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate
INTERMEDIATE	Lead		0	1140 0	2250	1.38	14.8	3105	25	Class C	Class C + 5% Gypsum + 3% CaCl ₂ pumped via bradenhead (TOC@surface)
INTERMEDIATE	Tail		1140 0	1140 0	550	1.2	14.4	660	25	Class H	50:50 Class H:Poz + 0.25% CPT20A + 0.40% CPT49 + 0.20% CPT35 + 0.80% CPT16A + 0.25% CPT503P pumped conventionally
PRODUCTION	Lead		1090 0	1984 3	850	1.26	14.1	1071	25	Class H	Class H + 0.1% C-20 + 0.05% CSA-1000 + 0.20% C-49 + 0.40% C-17 (TOC @ 10900')

Section 5 - Circulating Medium

Mud System Type: Closed

Will an air or gas system be Used? NO

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

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

Describe what will be on location to control well or mitigate other conditions: (A) A Kelly cock will be kept in the drill string at all times. (B) A full opening drill pipe-stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times. (C) H₂S monitoring and detection equipment will be utilized from surface casing point to TD.

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

Operator Name: EOG RESOURCES INCORPORATED

Well Name: OPHELIA 22 FED COM

Well Number: 712H

Casing Attachments

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

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Ophelia_22_FC_712H_BLM_Plan_08-22-2017.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

Ophelia_22_FC_712H_7.625in_29.7_P110EC_VAM_SLIJ_II_08-22-2017.pdf

See_previously_attached_Drill_Plan_08-22-2017.pdf

Ophelia_22_FC_712H_7.625in_29.70_P_110_FlushMax_III_08-22-2017.pdf

Casing Design Assumptions and Worksheet(s):

See_previously_attached_Drill_Plan_08-22-2017.pdf

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

Inspection Document:

Spec Document:

Tapered String Spec:

See_previously_attached_Drill_Plan_08-22-2017.pdf

Ophelia_22_FC_712H_5.500in_20.00_VST_P110EC_DWC_C_IS_MS_08-22-2017.pdf

Ophelia_22_FC_712H_5.500in_20.00_VST_P110EC_VAM_SFC_08-22-2017.pdf

Casing Design Assumptions and Worksheet(s):

See_previously_attached_Drill_Plan_08-22-2017.pdf

Operator Name: EOG RESOURCES INCORPORATED

Well Name: OPHELIA 22 FED COM

Well Number: 712H

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
840	1140 0	SALT SATURATED	8.8	10							
1140 0	1237 7	OIL-BASED MUD	10	14							
0	840	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 are not planned for this well.

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

DS

Coring operation description for the well:

None

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 7401

Anticipated Surface Pressure: 7401

Anticipated Bottom Hole Temperature(F): 181

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

Describe:

Contingency Plans geohazards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Ophelia_22_FC_712H_H2S_Plan_Summary_08-22-2017.pdf

Operator Name: EOG RESOURCES INCORPORATED

Well Name: OPHELIA 22 FED COM

Well Number: 712H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Ophelia_22_Fed_Com_712H_Planning_Report_08-22-2017.pdf

Ophelia_22_Fed_Com_712H_Wall_Plot_08-22-2017.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Ophelia_22_FC_712H_Proposed_Wellbore_08-22-2017.pdf

Ophelia_22_FC_712H_Rig_Layout_08-22-2017.pdf

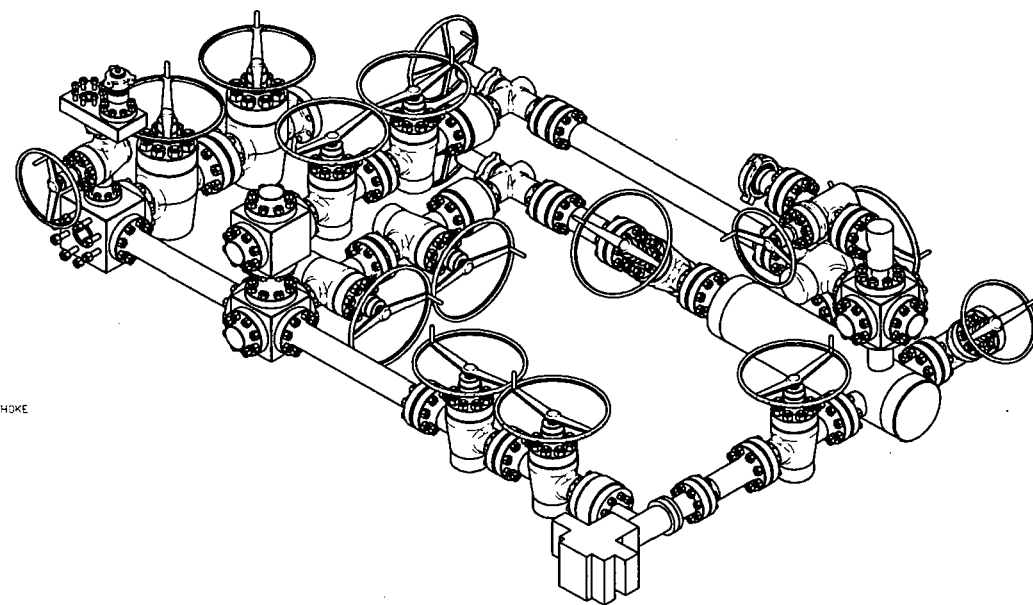
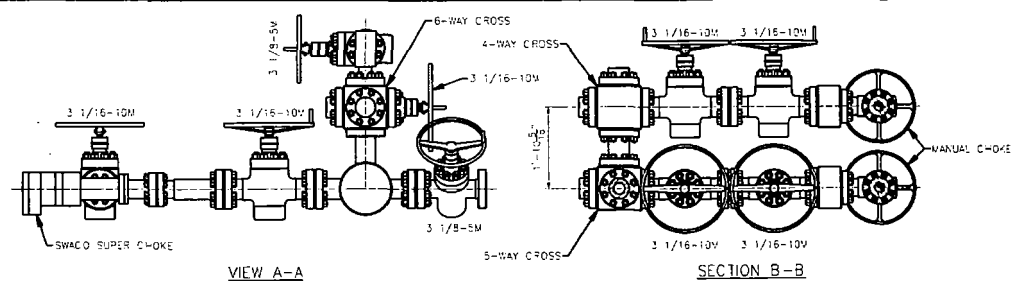
Ophelia_22_FC_712H_Wellhead_Cap_08-22-2017.pdf

Ophelia_22_Fed_Com_712_gas_capture_20170829131504.pdf

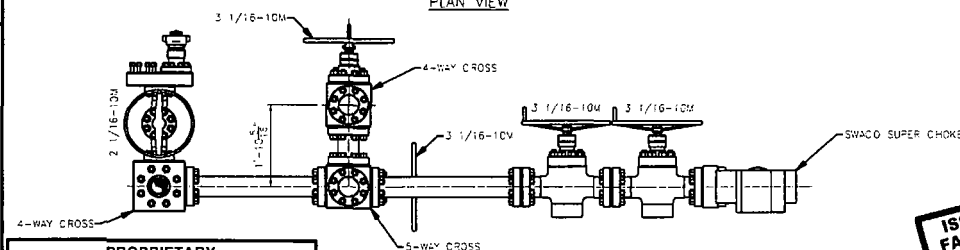
Ophelia22FC712_gas_capture_11_29_20171129130347.pdf

Ophelia22FC712H_deficiency_response_11_29_20171129130503.pdf

Other Variance attachment:



ISOMETRIC



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OF HELMERICH & PAYNE INTL DRILLING CO

ISSUED FOR FABRICATION
February-10-2014
DRAFTSMAN *MW*
ENGINEER *ML*

<p>STANDARD TOLERANCES</p> <p>DIMENSIONS</p> <p>1. FABRICATION DIMENSIONS ± 0.10 TO ± 0.25 $\pm 1/16"$</p> <p> 0.25 TO 1.00 $\pm 1/8"$</p> <p> 1.00 TO 2.00 $\pm 3/16"$</p> <p>2. MACHINED DIMENSIONS ± 0.005 TO ± 0.010 ± 0.005</p> <p> 0.010 TO 0.030 ± 0.005</p> <p> 0.030 TO 0.060 ± 0.005</p> <p> 0.060 TO 0.125 ± 0.005</p> <p> 0.125 TO 0.250 ± 0.005</p> <p> 0.250 TO 0.500 ± 0.005</p> <p> 0.500 TO 1.000 ± 0.005</p> <p> 1.000 TO 2.000 ± 0.005</p> <p> 2.000 TO 5.000 ± 0.005</p> <p> 5.000 TO 10.000 ± 0.005</p> <p> 10.000 TO 25.000 ± 0.005</p> <p> 25.000 TO 50.000 ± 0.005</p> <p> 50.000 TO 100.000 ± 0.005</p> <p> 100.000 TO 250.000 ± 0.005</p> <p> 250.000 TO 500.000 ± 0.005</p> <p> 500.000 TO 1000.000 ± 0.005</p> <p> 1000.000 TO 2500.000 ± 0.005</p> <p> 2500.000 TO 5000.000 ± 0.005</p> <p> 5000.000 TO 10000.000 ± 0.005</p> <p> 10000.000 TO 25000.000 ± 0.005</p> <p> 25000.000 TO 50000.000 ± 0.005</p> <p> 50000.000 TO 100000.000 ± 0.005</p> <p> 100000.000 TO 250000.000 ± 0.005</p> <p> 250000.000 TO 500000.000 ± 0.005</p> <p> 500000.000 TO 1000000.000 ± 0.005</p> <p> 1000000.000 TO 2500000.000 ± 0.005</p> <p> 2500000.000 TO 5000000.000 ± 0.005</p> <p> 5000000.000 TO 10000000.000 ± 0.005</p> <p> 10000000.000 TO 25000000.000 ± 0.005</p> <p> 25000000.000 TO 50000000.000 ± 0.005</p> <p> 50000000.000 TO 100000000.000 ± 0.005</p> <p> 100000000.000 TO 250000000.000 ± 0.005</p> <p> 250000000.000 TO 500000000.000 ± 0.005</p> <p> 500000000.000 TO 1000000000.000 ± 0.005</p> <p> 1000000000.000 TO 2500000000.000 ± 0.005</p> <p> 2500000000.000 TO 5000000000.000 ± 0.005</p> <p> 5000000000.000 TO 10000000000.000 ± 0.005</p> <p> 10000000000.000 TO 25000000000.000 ± 0.005</p> <p> 25000000000.000 TO 50000000000.000 ± 0.005</p> <p> 50000000000.000 TO 100000000000.000 ± 0.005</p> <p> 100000000000.000 TO 250000000000.000 ± 0.005</p> <p> 250000000000.000 TO 500000000000.000 ± 0.005</p> <p> 500000000000.000 TO 1000000000000.000 ± 0.005</p> <p> 1000000000000.000 TO 2500000000000.000 ± 0.005</p> <p> 2500000000000.000 TO 5000000000000.000 ± 0.005</p> <p> 5000000000000.000 TO 10000000000000.000 ± 0.005</p> <p> 10000000000000.000 TO 25000000000000.000 ± 0.005</p> <p> 25000000000000.000 TO 50000000000000.000 ± 0.005</p> <p> 50000000000000.000 TO 100000000000000.000 ± 0.005</p> <p> 100000000000000.000 TO 250000000000000.000 ± 0.005</p> <p> 250000000000000.000 TO 500000000000000.000 ± 0.005</p> <p> 500000000000000.000 TO 1000000000000000.000 ± 0.005</p> <p> 1000000000000000.000 TO 2500000000000000.000 ± 0.005</p> <p> 2500000000000000.000 TO 5000000000000000.000 ± 0.005</p> <p> 5000000000000000.000 TO 10000000000000000.000 ± 0.005</p> <p> 10000000000000000.000 TO 25000000000000000.000 ± 0.005</p> <p> 25000000000000000.000 TO 50000000000000000.000 ± 0.005</p> <p> 50000000000000000.000 TO 100000000000000000.000 ± 0.005</p> <p> 100000000000000000.000 TO 250000000000000000.000 ± 0.005</p> <p> 250000000000000000.000 TO 500000000000000000.000 ± 0.005</p> <p> 500000000000000000.000 TO 1000000000000000000.00</p>			
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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 manufacturer: No

M I D W E S T
HOSE AND SPECIALTY INC.

INTERNAL HYDROSTATIC TEST REPORT			
Customer: CACTUS		P.O. Number: RIG #123 Asset # M10761	
HOSE SPECIFICATIONS			
Type: CHOKER 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			
<i>Hose assembly pressure tested with water at ambient temperature.</i>			
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 wrapped 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

C & K

I.D.

4"

Length

35'

O.D.

8"

Working Pressure

10000 PSI

Burst Pressure

Standard Safety Multiplier Applies

Verification

Type of Fitting

4 1/16 10K

Die Size

6.62"

Hose Serial #

Coupling Method

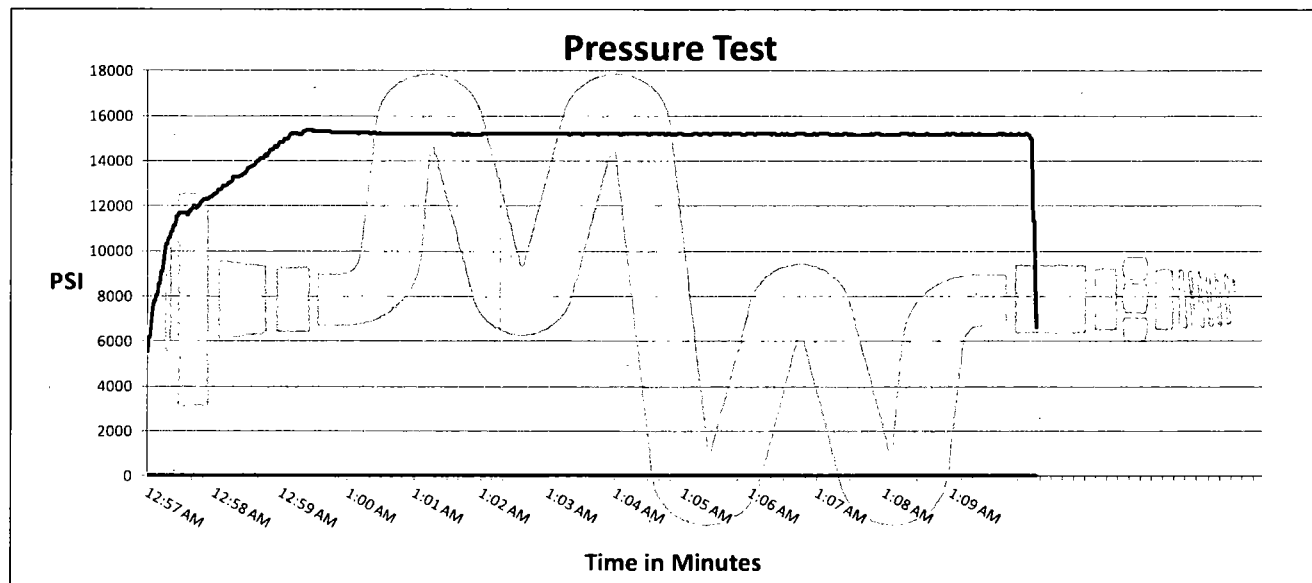
Swage

Final O.D.

6.68"

Hose Assembly Serial #

90067



Test Pressure

15000 PSI

Time Held at Test Pressure

11 1/4 Minutes

Actual Burst Pressure

Peak Pressure

15439 PSI

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

Tested By: Bobby Fink

Bobby Fink

Approved By: Mendi Jackson

Mendi Jackson

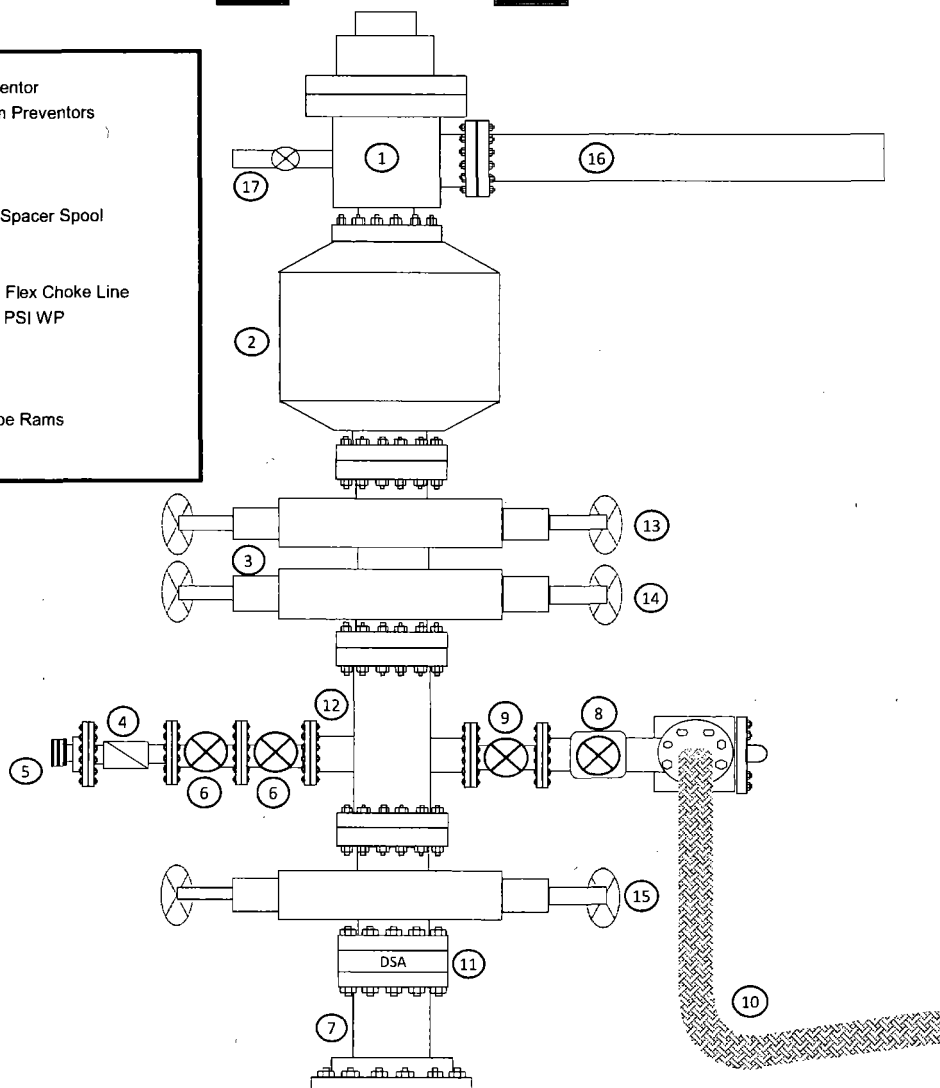
Exhibit 1

EOG Resources

10M BOPE

Rig Floor

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



OD	Weight	Wall Th.	Grade	API Drift	Connection
7 5/8 in.	29.70 lb/ft	0.375 in.	VM 110 HC	6.750 in.	VAM® SLIJ-II

PIPE PROPERTIES	
Nominal OD	7.625 in.
Nominal ID	6.875 in.
Nominal Cross Section Area	8.541 sqin.
Grade Type	High Collapse
Min. Yield Strength	110 ksi
Max. Yield Strength	140 ksi
Min. Ultimate Tensile Strength	125 ksi

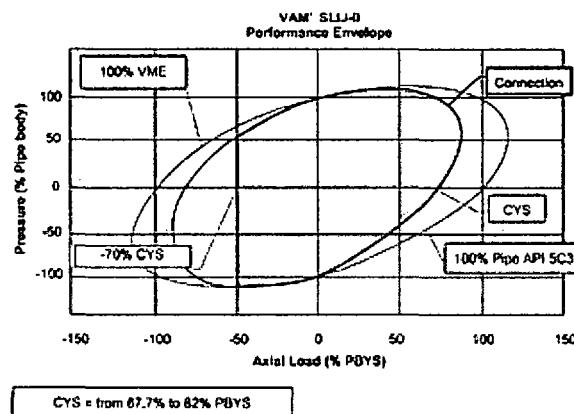
CONNECTION PROPERTIES	
Connection Type	Premium integral semi-flush
Connection OD (nom)	7.711 in.
Connection ID (nom)	6.820 in.
Make-up Loss	4.822 in.
Critical Cross Section	5.912 sqin.
Tension Efficiency	69.2 % of pipe
Compression Efficiency	48.5 % of pipe
Internal Pressure Efficiency	100 % of pipe
External Pressure Efficiency	100 % of pipe

CONNECTION PERFORMANCES	
Tensile Yield Strength	651 klb
Compression Resistance	455 klb
Internal Yield Pressure	9470 psi
Uniaxial Collapse Pressure	7890 psi
Max. Bending Capacity	TDB
Max Bending with Sealability	20 °/100 ft

FIELD TORQUE VALUES	
Min. Make-up torque	11300 ft.lb
Opti. Make-up torque	12600 ft.lb
Max. Make-up torque	13900 ft.lb

VAM® SLIJ-II is a semi-flush integral premium connection for all casing applications. It combines a near flush design with high performances in tension, compression and gas sealability.

VAM® SLIJ-II has been validated according to the most stringent tests protocols, and has an excellent performance history in the world's most prolific HPHT wells.



Do you need help on this product? - Remember no one knows VAM® like VAM

canada@vamfieldservice.com
usa@vamfieldservice.com
mexico@vamfieldservice.com
brazil@vamfieldservice.com

uk@vamfieldservice.com
dubai@vamfieldservice.com
nigeria@vamfieldservice.com
angola@vamfieldservice.com

china@vamfieldservice.com
baku@vamfieldservice.com
singapore@vamfieldservice.com
australia@vamfieldservice.com

Over 140 VAM® Specialists available worldwide 24/7 for Rig Site Assistance

Other Connection Data Sheets are available at www.vamservices.com

Vallourec Group



Metal One Metal One Corp	FLUSHMAX-III Connection Data Sheet		Page	44-U
			Date	1-Oct-15
			Rev.	N-0

The diagram illustrates a pipe connection. A horizontal pipe is shown with a wavy line representing the thread. Above the pipe, a double-headed arrow indicates the 'Make up loss' length. Below the pipe, two arrows point to specific areas: 'Pin critical area' at the pin end and 'Box critical area' at the box end. The pipe is labeled with 'D' for outer diameter and 'd' for inner diameter.

Pipe Body	Imperial		S.I.	
Grade	P110		P110	
Pipe OD (D)	7 5/8	in	193.68	mm
Weight	29.7	lb/ft	44.25	kg/m
Actual weight	29.0	lb/ft	43.26	kg/m
Wall thickness (t)	0.375	in	9.53	mm
Pipe ID (d)	6.875	in	174.63	mm
Pipe body cross section	8.537	in ²	5,508	mm ²
Drift Dia.	6.750	in	171.45	mm

Connection				
Box OD (W)	7.625	in	193.68	mm
PIN ID	6.875	in	174.63	mm
Pin critical area	4.420	in ²	2,852	mm ²
Box critical area	4.424	in ²	2,854	mm ²
Joint load efficiency	60	%	60	%
Make up loss	3.040	in	77.22	mm
Thread taper	1/16 (3/4 in per ft)			
Number of threads	5 thread per in.			

Connection Performance Properties				
Tensile Yield load	563.4	kips	2,506	kN
M.I.Y.P.	7,574	psi	52.2	MPa
Collapse strength	5,350	psi	36.9	MPa

Note
M.I.Y.P. = Minimum Internal Yield Pressure of the connection

Torque Recommended				
Min.	8,700	ft-lb	11,700	N-m
Opti.	9,700	ft-lb	13,100	N-m
Max.	10,700	ft-lb	14,500	N-m
Operational Max.	23,600	ft-lb	32,000	N-m

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

EOG RESOURCES, INC.
OPHELIA 22 FED COM NO. 712H

1. GEOLOGIC NAME OF SURFACE FORMATION:

Permian

2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

Rustler	814'
Top of Salt	1,147'
Base of Salt / Top Anhydrite	4,770'
Base Anhydrite	5,020'
Lamar	5,020'
Bell Canyon	5,050'
Cherry Canyon	6,100'
Brushy Canyon	7,658'
Bone Spring Lime	9,228'
1 st Bone Spring Sand	10,169'
2 nd Bone Spring Shale	10,358'
2 nd Bone Spring Sand	10,674'
3 rd Bone Spring Carb	11,249'
3 rd Bone Spring Sand	11,750'
Wolfcamp	12,220'
TD	12,377'

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

Upper Permian Sands	0- 400'	Fresh Water
Cherry Canyon	6,100'	Oil
Brushy Canyon	7,658'	Oil
1 st Bone Spring Sand	10,169'	Oil
2 nd Bone Spring Shale	10,358'	Oil
2 nd Bone Spring Sand	10,674'	Oil
3 rd Bone Spring Carb	11,249'	Oil
3 rd Bone Spring Sand	11,750'	Oil
Wolfcamp	12,220'	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 10.75" casing at 840' and circulating cement back to surface.

EOG RESOURCES, INC.
OPHELIA 22 FED COM NO. 712H

4. CASING PROGRAM - NEW

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF _{min} Collapse	DF _{min} Burst	DF _{min} Tension
14.75"	0 – 840'	10.75"	40.5#	J55	STC	1.125	1.25	1.60
9.875"	0 – 1,000'	7.625"	29.7#	HCP-110	LTC	1.125	1.25	1.60
9.875"	1,000' – 3,000'	7.625"	29.7#	P-110EC	SLIJ II	1.125	1.25	1.60
8.75"	3,000' – 11,400'	7.625"	29.7#	HCP-110	FlushMax III	1.125	1.25	1.60
6.75"	0' – 10,900'	5.5"	20#	P-110EC	DWC/C-IS MS	1.125	1.25	1.60
6.75"	10,900'-19,843'	5.5"	20#	P-110EC	VAM SFC	1.125	1.25	1.60

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

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

Cementing Program:

Depth	No. Sacks	Wt. ppg	Yld Ft ³ /ft	Mix Water Gal/sk	Slurry Description
10-3/4" 840'	325	13.5	1.73	9.13	Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% CaCl ₂ + 0.25 lb/sk Cello-Flake (TOC @ Surface)
	200	14.8	1.34	6.34	Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate
7-5/8" 11,400'	250	14.8	1.38	6.48	Class C + 5% Gypsum + 3% CaCl ₂ pumped via Bradenhead (TOC @ Surface)
	2000	14.8	1.38	6.48	Class C + 5% Gypsum + 3% CaCl ₂ pumped via Bradenhead
	550	14.4	1.20	4.81	50:50 Class H:Poz + 0.25% CPT20A + 0.40% CPT49 + 0.20% CPT35 + 0.80% CPT16A + 0.25% CPT503P pumped Conventionally
5-1/2" 19,843'	850	14.1	1.26	5.80	Class H + 0.1% C-20 + 0.05% CSA-1000 + 0.20% C-49 + 0.40% C-17 (TOC @ 10,900')

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

EOG RESOURCES, INC.
OPHELIA 22 FED COM NO. 712H

5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL:

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

The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a single ram, mud cross and double ram-type (10,000 psi WP) preventer and an annular preventer (10,000-psi WP). Both units will be hydraulically operated and the ram-type will be equipped with blind rams on bottom and drill pipe rams on top. All BOPE will be tested in accordance with Onshore Oil & Gas order No. 2.

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

Before drilling out of the intermediate casing, the ram-type BOP and accessory equipment will be tested to 10,000/ 250 psig and the annular preventer to 5,000/ 250 psig. The intermediate casing will be tested to 2000 psi for 30 minutes.

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

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

6. TYPES AND CHARACTERISTICS OF THE PROPOSED MUD SYSTEM:

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

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

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 840'	Fresh - Gel	8.6-8.8	28-34	N/c
840' – 11,400'	Brine	8.8-10.0	28-34	N/c
11,400' – 19,843' Lateral	Oil Base	10.0-14.0	58-68	3 - 6

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

EOG RESOURCES, INC.
OPHELIA 22 FED COM NO. 712H

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) H₂S monitoring and detection equipment will be utilized from surface casing point to TD.

8. LOGGING, TESTING AND CORING PROGRAM:

Open-hole logs are not planned for this well.

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

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

The estimated bottom-hole temperature (BHT) at TD is 181 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 7401 psig (based on 11.5 ppg MW). No hydrogen sulfide or other hazardous gases or fluids have been encountered, reported or are known to exist at this depth in this area. Severe loss circulation is expected from 7,300' to Intermediate casing point.

10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

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

- (A) EOG Resources requests the option to contract a Surface Rig to drill, set surface casing, and cement on the subject well. 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.

EOG RESOURCES, INC.
OPHELIA 22 FED COM NO. 712H

11. WELLHEAD:

A multi-bowl wellhead system will be utilized.

After running the 10-3/4" surface casing, a 13-5/8" BOP/BOPE system with a minimum working pressure of 10,000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 10,000 psi pressure test. This pressure test will be repeated at least every 30 days, as per Onshore Order No. 2

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

The multi-bowl wellhead will be installed by vendor's representative(s). A copy of the installation instructions for the Stream Flo FBD100 Multi-Bowl WH system has been sent to the NM BLM office in Carlsbad, NM.

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

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

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

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



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

620 E. GREENE ST.
CARLSBAD, NM 88220
BLM_NM_CFO_APD@BLM.GOV

In Reply To:
3160 (Office Code)
[NMNM122622]

11/28/2017

Attn: STAN WAGNER
EOG RESOURCES INCORPORATED
1111 BAGBY SKY LOBBY2
HOUSTON, TX 77002

Re: Receipt and Acceptability of Application for Permit to Drill (APD)

FEDERAL - NMNM122622

Well Name / Number: **OPHELIA 22 FED COM / 712H**
Legal Description: T26S, R33E, SEC 22, NWNW
County, State: LEA, NM
Date APD Received: 09/21/2017

Dear Operator:

The BLM received your Application for Permit to Drill (APD), for the referenced well, on 09/21/2017. The BLM reviewed the APD package pursuant to part III.D of Onshore Oil and Gas Order No.1 and it is:

1. ☒ Incomplete/Deficient (*The BLM cannot process the APD until you submit the identified items within 45 calendar days of the date of this notice or the BLM will return your APD.*)

- ☐ Well Plat
- ☒ Drilling Plan
- ☐ Surface Use Plan of Operations (SUPO)
- ☐ Certification of Private Surface Owner Access Agreement
- ☐ Bonding
- ☐ Onsite (The BLM has scheduled the onsite to be on)
This requirement is exempt of the 45-day timeframe to submit deficiencies. This requirement will be satisfied on the date of the onsite.
- ☐ Other

[Please See Addendum for further clarification of deficiencies]

2. ☐ Missing Necessary Information (*The BLM can start, but cannot complete the analysis until you submit the identified items. This is an early notice and the BLM will restate this in a 30-day deferral letter, if you have not submitted the information at that time. You will have two (2) years from the date of the deferral to submit this information or the BLM will deny your APD.*)

[Please See Addendum for further clarification of deficiencies]

NOTE: The BLM will return your APD package to you, unless you correct all deficiencies identified above (item 1) within 45 calendar days.

- The BLM will not refund an APD processing fee or apply it to another APD for any returned APD.

Extension Requests:

- If you know you will not be able to meet the 45-day timeframe for reasons beyond your control, you must submit a written request through email/standard mail for extension prior to the 45th calendar day from this notice, **01/12/2018**.
- The BLM will consider the extension request if you can demonstrate your diligence (providing reasons and examples of why the delay is occurring beyond your control) in attempting to correct the deficiencies and can provide a date by which you will correct the deficiencies. If the BLM determines that the request does not warrant an extension, the BLM will return the APD as incomplete after the 45 calendar days have elapsed.
 - The BLM will determine whether to grant an extension beyond the required 45 calendar days and will document this request in the well file. If you fail to submit deficiencies by the date defined in the extension request, the BLM will return the APD.

APDs remaining Incomplete:

- If the APD is still not complete, the BLM will notify you and allow 10 additional business days to submit a written request to the BLM for an extension. The request must describe how you will address all outstanding deficiencies and the timeframe you request to complete the deficiencies.
 - The BLM will consider the extension request if you can prove your diligence (providing reasons and examples of why the delay is occurring) in attempting to correct the deficiencies and you can provide a date by which you will correct the deficiencies. If the BLM determines that the request does not warrant an additional extension, the BLM will return the APD as incomplete.

If you have any questions, please contact Deborah McKinney at (575) 234-5931.

Sincerely,

Cody Layton
Assistant Field Manager

cc: Official File

ADDENDUM - Deficient

Engineering Comments

- Engineering Review: Other identified drilling plan deficiencies
Not a deficiency but cannot approve APD without a waste minimization plan. Please attach state submitted gas capture plan (this will be a sufficient substitute for waste minimization plan).

Attached to page 8 of the drilling plan



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

SUPO Data Report

03/27/2018

APD ID: 10400020388

Submission Date: 09/21/2017

Highlighted data
reflects the most
recent changes

Operator Name: EOG RESOURCES INCORPORATED

Well Name: OPHELIA 22 FED COM

Well Number: 712H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

OPHELIA22FEDCOM712H_vicinity_20170829122901.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:

OPHELIA22FEDCOM_infrastructure_20170829122935.pdf

OPHELIA22FEDCOM712H_padsite_20170829122936.pdf

OPHELIA22FEDCOM712H_wellsite_20170829122937.pdf

New road type: RESOURCE

Length: 172

Feet

Width (ft.): 24

Max slope (%): 2

Max grade (%): 20

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 24

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

New road access plan or profile prepared? NO

Operator Name: EOG RESOURCES INCORPORATED

Well Name: OPHELIA 22 FED COM

Well Number: 712H

New road access plan attachment:

Access road engineering design? NO

Access road engineering design attachment:

Access surfacing type: OTHER

Access topsoil source: ONSITE

Access surfacing type description: 6" of Compacted Caliche

Access onsite topsoil source depth: 6

Offsite topsoil source description:

Onsite topsoil removal process: An adequate amount of topsoil/root zone will be stripped by dozer from the proposed well location and stockpiled along the side of the 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:

OPHELIA22FEDCOM712H_radius_20170829123011.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: Ophelia 22 Fed Com central tank battery is located in the NW/4 of section 22

Production Facilities map:

Operator Name: EOG RESOURCES INCORPORATED

Well Name: OPHELIA 22 FED COM

Well Number: 712H

OPHELIA22FEDCOM_infrastructure_20170829123024.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source use type: OTHER

Water source type: RECYCLED

Describe type:

Source latitude:

Source longitude:

Source datum:

Water source permit type: WATER RIGHT

Source land ownership: FEDERAL

Water source transport method: PIPELINE,TRUCKING

Source transportation land ownership: FEDERAL

Water source volume (barrels): 0

Source volume (acre-feet): 0

Source volume (gal): 0

Water source and transportation map:

Ophelia_22_Fed_Com_Water_Source_and_Caliche_Map_20170829123219.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:

Operator Name: EOG RESOURCES INCORPORATED

Well Name: OPHELIA 22 FED COM

Well Number: 712H

State appropriation permit:

Additional information attachment:

Section 6 - Construction Materials

Construction Materials description: Caliche will be supplied from pits shown on the attached caliche source map. Caliche utilized for the drilling pad will be obtained either from an existing approved mineral pit, or by benching into a hill, which will allow the pad to be level with existing caliche from the cut, or extracted by "Flipping" the well location. A mineral material permit will be obtained from BLM prior to excavating any caliche on Federal Lands. Amount will vary for each pad. The procedure for "Flipping" a well location is as follows: * -An adequate amount of topsoil/root zone (usually top 6 inches of soil) will be stripped from the proposed well location and stockpiled along the side of the well location as depicted on the well site diagram/survey plat. -An area will be used within the proposed well site dimensions to excavate caliche. Subsoil will be removed and stockpiled within the surveyed well pad dimensions. -Once caliche/surfacing mineral is found, the mineral material will be excavated and stock piled within the approved drilling pad dimensions. -Then, subsoil will be pushed back in the excavated hole and caliche will be spread accordingly across the entire well pad and road (if available). -Neither caliche, nor subsoil will be stock piled outside of the well pad dimensions. Topsoil will be stockpiled along the edge of the pad as depicted in the Well Site Layout or survey plat. * In the event that no caliche is found onsite, caliche will be hauled in from a BLM approved caliche pit or other established mineral pit. A BLM mineral material permit will be acquired prior to obtaining any mineral material from BLM pits or federal land.

Construction Materials source location attachment:

Ophelia_22_Fed_Com_Water_Source_and_Caliche_Map_20170829123234.pdf

Section 7 - Methods for Handling Waste

Waste type: DRILLING

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

Amount of waste: 0 barrels

Waste disposal frequency : Daily

Safe containment description: Steel Tanks

Safe containmant attachment:

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

Disposal type description:

Disposal location description: Trucked to NMOCD approved disposal facility

Reserve Pit

Reserve Pit being used? NO

Temporary disposal of produced water into reserve pit?

Reserve pit length (ft.)

Reserve pit width (ft.)

Reserve pit depth (ft.)

Reserve pit volume (cu. yd.)

Operator Name: EOG RESOURCES INCORPORATED

Well Name: OPHELIA 22 FED COM

Well Number: 712H

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? YES

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

Cuttings area length (ft.)

Cuttings area width (ft.)

Cuttings area depth (ft.)

Cuttings area volume (cu. yd.)

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

WCuttings area liner

Cuttings area liner specifications and installation description

Section 8 - Ancillary Facilities

Are you requesting any Ancillary Facilities?: NO

Ancillary Facilities attachment:

Comments:

Section 9 - Well Site Layout

Well Site Layout Diagram:

Ophelia_22_FC_712H_Rig_Layout_08-22-2017.pdf

OPHELIA22FEDCOM712H_padsite_20170829123253.pdf

OPHELIA22FEDCOM712H_wellsite_20170829123254.pdf

Comments: Exhibit 2A-Wellsite & Exhibit 2B-Padsite Rig Layout Exhibit 4

Operator Name: EOG RESOURCES INCORPORATED

Well Name: OPHELIA 22 FED COM

Well Number: 712H

Section 10 - Plans for Surface Reclamation

Type of disturbance: New Surface Disturbance

Multiple Well Pad Name: OPHELIA 22 FED COM

Multiple Well Pad Number: 710H/711H/712H

Recontouring attachment:

OPHELIA22FEDCOM712H_reclamation_20170829123406.pdf

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

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

Wellpad long term disturbance (acres): 3.133609

Wellpad short term disturbance (acres): 4.499541

Access road long term disturbance (acres): 0.094766

Access road short term disturbance (acres): 0.094766

Pipeline long term disturbance (acres): 1.0743802

Pipeline short term disturbance (acres): 1.7906336

Other long term disturbance (acres): 0

Other short term disturbance (acres): 0

Total long term disturbance: 4.3027554

Total short term disturbance: 6.3849406

Reconstruction method: In areas planned for interim reclamation, all the surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads. Areas planned for interim reclamation will be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be recontoured to the above ratios during interim reclamation.

Topsoil redistribution: Topsoil will be evenly respread and aggressively revegetated over the entire disturbed area not needed for all-weather operations including cuts and fills. To seed the area, the proper BLM seed mixture, free of noxious weeds, will be used. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.

Soil treatment: Re-seed according to BLM standards. All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not redisturbed, and that erosion is controlled.

Existing Vegetation at the well pad: Grass, forbs, and small woody vegetation, such as mesquite will be excavated as the topsoil is removed. Large woody vegetation will be stripped and stored separately and respreads evenly on the site following topsoil resspreading. 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:

Operator Name: EOG RESOURCES INCORPORATED

Well Name: OPHELIA 22 FED COM

Well Number: 712H

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

Existing Vegetation Community at the pipeline attachment:

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

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed type:

Seed source:

Seed name:

Source name:

Source address:

Source phone:

Seed cultivar:

Seed use location:

PLS pounds per acre:

Proposed seeding season:

Seed Summary	
Seed Type	Pounds/Acre

Total pounds/Acre:

Seed reclamation attachment:

Operator Name: EOG RESOURCES INCORPORATED

Well Name: OPHELIA 22 FED COM

Well Number: 712H

Operator Contact/Responsible Official Contact Info

First Name: Stan

Last Name: Wagner

Phone: (432)686-3689

Email: stan_wagner@eogresources.com

Seedbed prep:

Seed BMP:

Seed method:

Existing invasive species? NO

Existing invasive species treatment description:

Existing invasive species treatment attachment:

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

Weed treatment plan attachment:

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

Monitoring plan attachment:

Success standards: N/A

Pit closure description: NA

Pit closure attachment:

Section 11 - Surface Ownership

Disturbance type: WELL PAD

Describe:

Surface Owner: BUREAU OF LAND MANAGEMENT

Other surface owner description:

BIA Local Office:

BOR Local Office:

COE Local Office:

DOD Local Office:

NPS Local Office:

State Local Office:

Military Local Office:

USFWS Local Office:

Other Local Office:

USFS Region:

Operator Name: EOG RESOURCES INCORPORATED

Well Name: OPHELIA 22 FED COM

Well Number: 712H

USFS Forest/Grassland:

USFS Ranger District:

Fee Owner: Oliver Kiehne

Fee Owner Address: P.O. Box 135 Orla, TX 79770

Phone: (575)399-9281

Email:

Surface use plan certification: NO

Surface use plan certification document:

Surface access agreement or bond: Agreement

Surface Access Agreement Need description: surface use agreement

Surface Access Bond BLM or Forest Service:

BLM Surface Access Bond number:

USFS Surface access bond number:

Section 12 - Other Information

Right of Way needed? NO

Use APD as ROW?

ROW Type(s):

ROW Applications

SUPO Additional Information: An onsite meeting was conducted 2/16/17. Poly lines are planned to transport water for operations. Will truck if necessary. See attached SUPO Plan.

Use a previously conducted onsite? NO

Previous Onsite information:

Other SUPO Attachment

OPHELIA22FEDCOM712H_location_20170829123451.pdf

SUPO_Ophelia_22_Fed_Com_712H_20170829123451.pdf

Ophelia_22_Fed_Com_712H_deficiency_response_20171207144344.pdf



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE
620 E. GREENE ST.
CARLSBAD, NM 88220
BLM_NM_CFO_APD@BLM.GOV

In Reply To:
3160 (Office Code)
[NMNM122622]

11/30/2017

Attn: STAN WAGNER
EOG RESOURCES INCORPORATED
1111 BAGBY SKY LOBBY2
HOUSTON, TX 77002

Re: Receipt and Acceptability of Application for Permit to Drill (APD)

FEDERAL - NMNM122622

Well Name / Number: **OPHELIA 22 FED COM / 712H**
Legal Description: T26S, R33E, SEC 22, NWNW
County, State: LEA, NM
Date APD Received: 09/21/2017

Dear Operator:

This is the subsequent deficiency letter pursuant to Onshore Oil and Gas Order, Number 1, Section III.E.2.a.

The BLM received your initial Application for Permit to Drill (APD), for the referenced well, on 11/29/2017. The BLM reviewed the revised APD package pursuant to part III.B.2 of Onshore Oil and Gas Order No.1 and it is:

1. ☒ Incomplete/Deficient (*The BLM cannot process the APD until you submit the identified items within 45 calendar days of the date of the original notice or the BLM will return your APD.*)

- ☐ Well Plat
- ☐ Drilling Plan
- ☒ Surface Use Plan of Operations (SUPO)
- ☐ Certification of Private Surface Owner Access Agreement
- ☐ Bonding
- ☐ Onsite (The BLM has scheduled the onsite to be on _____)
This requirement is exempt of the 45-day timeframe to submit deficiencies. This requirement will be satisfied on the date of the onsite.
- ☐ Other

[Please See Addendum for further clarification of deficiencies]

2. ☐ Missing Necessary Information (*The BLM can start, but cannot complete the analysis until you submit the identified items. This is an early notice and the BLM will restate this in a 30-day deferral letter, if you have not submitted the information at that time. You will have two (2) years from the date of the deferral to submit this information or the BLM will deny your APD.*)

[Please See Addendum for further clarification of deficiencies]

NOTE: The BLM will return your revised APD package to you, unless you correct all deficiencies identified above (item 1) within 45 calendar days of the original deficiency notice.

- The BLM will not refund an APD processing fee or apply it to another APD for any returned APD.

Extension Requests:

- If you know you will not be able to meet the 45-day timeframe for reasons beyond your control, you must submit a written request through email/standard mail for extension before to the 45th calendar day from this original deficiency notice, **01/14/2018**.
- The BLM will consider the extension request if you can demonstrate your diligence (providing reasons and examples of why the delay is occurring beyond your control) in attempting to correct the deficiencies and can provide a date by which you will correct the deficiencies. If the BLM determines that the request does not warrant an extension, the BLM will return the APD as incomplete after the original 45 calendar days have elapsed.
 - The BLM will determine whether to grant an extension beyond the required 45 calendar days and will document this request in the well file. If you fail to submit deficiencies by the date defined in the extension request, the BLM will return the APD.

APDs remaining Incomplete:

- If the APD is still not complete, the BLM will notify you and allow 10 additional business days following the end of the original 45 calendar day period to submit a written request to the BLM for an extension. The request must describe how you will address all outstanding deficiencies and the timeframe you request to complete the deficiencies.
 - The BLM will consider the extension request if you can prove your diligence (providing reasons and examples of why the delay is occurring) in attempting to correct the deficiencies and you can provide a date by which you will correct the deficiencies. If the BLM determines that the request does not warrant an additional extension, the BLM will return the APD as incomplete.

If you have any questions, please contact Deborah McKinney at (575) 234-5931.

Sincerely,

Cody Layton
Assistant Field Manager

cc: Official File

ADDENDUM - Deficient

Surface Comments

- Well Site Layout Deficiency:

Please provide a cut and fill diagram. Second request 11/29/17.

Attached



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

PWD Data Report

03/27/2018

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:

Describe 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:

Describe 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:

Assigned injection well API number?

Injection well new surface disturbance (acres):

Minerals protection information:

Mineral protection attachment:

Underground Injection Control (UIC) Permit?

UIC Permit attachment:

Injection well name:

Injection well API number:

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:



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

Bond Info Data Report

03/27/2018

Bond Information

Federal/Indian APD: FED

BLM Bond number: NM2308

BIA Bond number:

Do you have a reclamation bond? NO

Is the reclamation bond a rider under the BLM bond?

Is the reclamation bond BLM or Forest Service?

BLM reclamation bond number:

Forest Service reclamation bond number:

Forest Service reclamation bond attachment:

Reclamation bond number:

Reclamation bond amount:

Reclamation bond rider amount:

Additional reclamation bond information attachment:

Operator Name: EOG RESOURCES INCORPORATED

Well Name: OPHELIA 22 FED COM

Well Number: 712H

	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD
EXIT Leg #1	231 1	FNL	198 5	FWL	26S	33E	27	Aliquot SENW	32.01534 83	- 103.5623 125	LEA	NEW MEXI CO	NEW MEXI CO	F	FEE	- 906 9	197 43	123 77
BHL Leg #1	241 1	FNL	198 5	FWL	26S	33E	27	Aliquot SENW	32.01507 34	- 103.5623 125	LEA	NEW MEXI CO	NEW MEXI CO	F	FEE	- 906 9	198 43	123 77