

Well Name: GRUMPY CAT 15 27 FED COM	Well Location: T23S / R32E / SEC 15 / NWNW /	County or Parish/State:
Well Number: 531H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM95642	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002548531	Well Status: Approved Application for Permit to Drill	Operator: DEVON ENERGY PRODUCTION COMPANY LP

Notice of Intent

Sundry ID: 2774169

Type of Submission: Notice of Intent	Type of Action: APD Change
Date Sundry Submitted: 02/08/2024	Time Sundry Submitted: 12:25
Date proposed operation will begin: 02/08/2024	

Procedure Description: Devon Energy Production Co., L.P. (Devon) respectfully requests to change the well name, BHL, and dedicated spacing on the subject well. Please see attached revised C102, drill plan (break test & offline cement variance included), and directional plan. Permitted Well name: GRUMPY CAT 15-22 FED COM 531H Proposed Well name: GRUMPY CAT 15 27 FED COM 531H Permitted BHL: SWSW 20 FSL, 990 FWL, 22-23S-32E Proposed BHL: SWSW 20 FSL, 990 FWL, 27-23S-32E New leases have been added since approved APD and notification has been given.

NOI Attachments

Procedure Description

- WA018161965_GRUMPY_CAT_15_27_FED_COM_531H_WL_R1_20240208100448.pdf
- 8.625_32lb_P110_MOFXL_20240208100442.pdf
- break_test_variance_BOP_1_15_24_20240208100442.pdf
- GRUMPY_CAT_15_22_FED_COM_531H_Directional_Plan_02_07_24_20240208100442.pdf
- GRUMPY_CAT_15_22_FED_COM_531H_20240208100442.pdf
- 5.5in_x_20.00lb_P110EC_DWC_C_IS_PLUS___5_23_2023_20240208100442.pdf
- 10.750_45.5_J55_SEAH_20240208100442.pdf

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Conditions of Approval

Specialist Review

Grumpy_Cat_15_27_Fed_Com_531H_Sundry_ID_2774169_20240216155401.pdf

Operator

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: SHAYDA OMOUMI	Signed on: FEB 08, 2024 10:06 AM
Name: DEVON ENERGY PRODUCTION COMPANY LP	
Title: Regulatory Compliance Associate 3	
Street Address: 333 W SHERIDAN AVE	
City: OKLAHOMA CITY	State: OK
Phone: (405) 235-3611	
Email address: SHAYDA.OMOUMI@DVN.COM	

Field

Representative Name:		
Street Address:		
City:	State:	Zip:
Phone:		
Email address:		

BLM Point of Contact

BLM POC Name: LONG VO	BLM POC Title: Petroleum Engineer
BLM POC Phone: 5759885402	BLM POC Email Address: LVO@BLM.GOV
Disposition: Approved	Disposition Date: 02/16/2024
Signature: Long Vo	

Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2021

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

7. If Unit of CA/Agreement, Name and/or No.

8. Well Name and No.

9. API Well No.

10. Field and Pool or Exploratory Area

11. Country or Parish, State

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well

☐ Oil Well☐ Gas Well☐ Other

2. Name of Operator

3a. Address

3b. Phone No. (include area code)

4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description)

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION
☐ Notice of Intent	☐ Acidize ☐ Deepen ☐ Production (Start/Resume) ☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing ☐ Hydraulic Fracturing ☐ Reclamation ☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair ☐ New Construction ☐ Recomplete ☐ Other
	☐ Change Plans ☐ Temporarily Abandon
	☐ Convert to Injection ☐ Plug Back ☐ Water Disposal

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be perfonned or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)

Title

Signature

Date

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Date

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

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.

(Instructions on page 2)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law 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, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. 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 the 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., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c) and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

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

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

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 St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

Additional Information

Location of Well

0. SHL: NWNW / 476 FNL / 1024 FWL / TWSP: 23S / RANGE: 32E / SECTION: 15 / LAT: 32.3105987 / LONG: -103.6677544 (TVD: 0 feet, MD: 0 feet)

PPP: NWNW / 100 FNL / 990 FWL / TWSP: 23S / RANGE: 32E / SECTION: 15 / LAT: 32.3116317 / LONG: -103.6678646 (TVD: 8977 feet, MD: 8985 feet)

PPP: NWNW / 1 FNL / 990 FWL / TWSP: 23S / RANGE: 32E / SECTION: 22 / LAT: 32.297234 / LONG: -103.667853 (TVD: 9550 feet, MD: 14400 feet)

BHL: SWSW / 20 FSL / 990 FWL / TWSP: 23S / RANGE: 32E / SECTION: 22 / LAT: 32.2829197 / LONG: -103.6678444 (TVD: 9550 feet, MD: 19608 feet)

CONFIDENTIAL

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-48531	² Pool Code 17644	³ Pool Name DIAMONDTAIL; BONE SPRING
⁴ Property Code 325133	⁵ Property Name GRUMPY CAT 15 27 FED COM	⁶ Well Number 531H
⁷ OGRID No. 6137	⁸ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	⁹ Elevation 3702.3

¹⁰ Surface Location

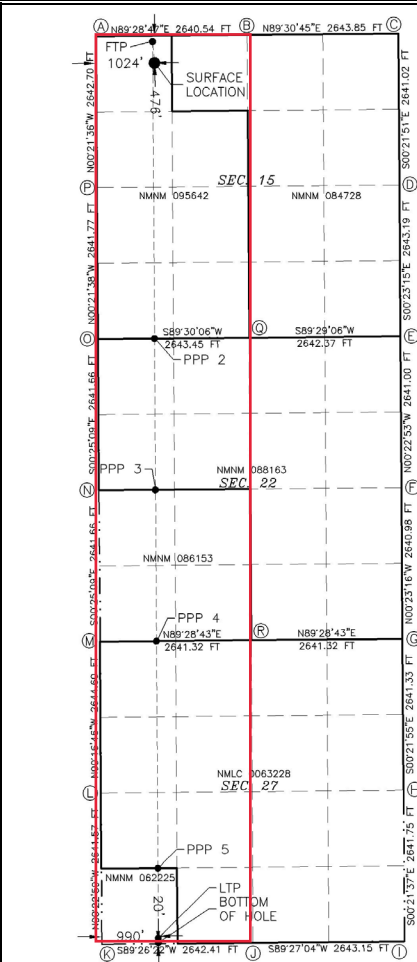
UL or lot no. D	Section 15	Township 23 S	Range 32 E	Lot Idn	Feet from the 476	North/South line NORTH	Feet from the 1024	East/West line WEST	County LEA
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¹¹ Bottom Hole Location If Different From Surface

UL or lot no. M	Section 27	Township 23 S	Range 32 E	Lot Idn	Feet from the 20	North/South line SOUTH	Feet from the 990	East/West line WEST	County LEA
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¹² Dedicated Acres 960	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

	GRUMPY CAT 15 27 FED COM 531H EL. = 3702.3 GEODETIC COORDINATES NAD 83 NMSP EAST SURFACE LOCATION N. = 477366.58 E. = 746962.46 LAT. = 32.3105987°N LONG. = 103.6677544°W KICK OFF POINT CALLS 57 FNL 991' FWL N. = 477785 E. = 746926 LAT. = 32.31165497 LONG. = 103.66794699 LAST TAKE POINT 100' FSL 990' FWL N. = 462092.65 E. = 747027.20 LAT. = 32.2686142°N LONG. = 103.6678516°W FIRST TAKE POINT (PPP 1) 100' FNL 990' FWL N. = 477742.18 E. = 746926.09 LAT. = 32.3116317°N LONG. = 103.6678646°W BOTTOM OF HOLE 20' FSL 990' FWL N. = 462012.68 E. = 747027.73 LAT. = 32.2683944°N LONG. = 103.6678515°W PPP 2 0' FSL 991' FWL N. = 472558.56 E. = 746959.58 LAT. = 32.2973830°N LONG. = 103.6678604°W PPP 3 2641' FNL 989' FWL N. = 469917.80 E. = 746976.64 LAT. = 32.2901241°N LONG. = 103.6678582°W PPP 4 0' FSL 986' FWL N. = 467276.89 E. = 746993.70 LAT. = 32.2828647°N LONG. = 103.6678560°W PPP 5 1321' FNL 990' FWL N. = 463313.07 E. = 747019.31 LAT. = 32.2719689°N LONG. = 103.6678527°W CORNER COORDINATES TABLE NAD 83 NMSP EAST A - N. = 477833.18 E. = 745935.72 B - N. = 477857.15 E. = 748575.58 C - N. = 477879.64 E. = 751218.76 D - N. = 475239.25 E. = 751235.54 E - N. = 472596.69 E. = 751253.41 F - N. = 469956.33 E. = 751270.98 G - N. = 467315.98 E. = 751288.86 H - N. = 464675.28 E. = 751305.69 I - N. = 462034.16 E. = 751322.29 J - N. = 462008.84 E. = 748679.83 K - N. = 461983.00 E. = 748038.12 L - N. = 464623.93 E. = 746020.47 M - N. = 467267.93 E. = 746007.58 N - N. = 469908.94 E. = 745988.26 O - N. = 472549.96 E. = 745968.95 P - N. = 475191.11 E. = 745952.33 Q - N. = 472572.95 E. = 748611.72 R - N. = 467291.95 E. = 748648.21 LEGEND --- SECTION LINE --- QUARTER LINE --- LEASE LINE --- WELL PATH	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.  2/6/2024 Signature Date Shayda Omoumi Printed Name shayda.omoumi@dvn.com E-mail Address
		¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. FEBRUARY 2, 2024 Date of Survey  Signature and Seal of Professional Surveyor: Certificate Number: F. JARAMELO, PLS 12797 SURVEY NO. 8331A

Intent ☒ As Drilled ☐

API #		
Operator Name: DEVON ENERGY PRODUCTION COMPANY, L.P.	Property Name: GRUMPY CAT 15 27 FED COM	Well Number 531H

Kick Off Point (KOP)

UL D	Section 15	Township 23S	Range 32E	Lot	Feet 57	From N/S NORTH	Feet 991	From E/W WEST	County LEA
Latitude 32.31165497					Longitude -103.66794699			NAD 83	

First Take Point (FTP)

UL D	Section 12	Township 23S	Range 32E	Lot	Feet 100	From N/S NORTH	Feet 990	From E/W WEST	County LEA
Latitude 32.3116317					Longitude 103.6678646			NAD 83	

Last Take Point (LTP)

UL M	Section 27	Township 23S	Range 32E	Lot	Feet 100	From N/S SOUTH	Feet 990	From E/W WEST	County LEA
Latitude 32.2686142					Longitude 103.6678516			NAD 83	

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

☐ N

Is this well an infill well?

☐ Y

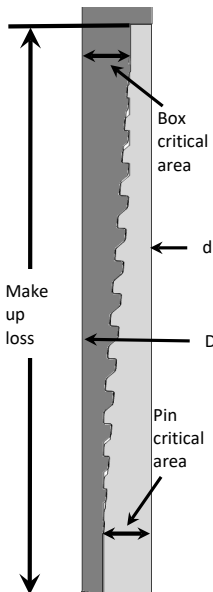
If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API # 30-025-48538		
Operator Name: DEVON ENERGY PRODUCTION COMPANY, L.P.	Property Name: GRUMPY CAT 15 27 FED COM	Well Number 522H

KZ 06/29/2018

Metal One Corp. Metal One	MO-FXL *1 Pipe Body: BMP P110HSCY MinYS125ksi Special Drift 7.875" Connection Data Sheet	<table border="1"> <tr> <td rowspan="3">CDS#</td> <td>MO-FXL 8-5/8 32.0</td> </tr> <tr> <td>P110HSCY</td> </tr> <tr> <td>MinYS125ksi</td> </tr> <tr> <td rowspan="2">Date</td> <td>SD7.875</td> </tr> <tr> <td>27-Nov-23</td> </tr> </table>	CDS#	MO-FXL 8-5/8 32.0	P110HSCY	MinYS125ksi	Date	SD7.875	27-Nov-23
CDS#	MO-FXL 8-5/8 32.0								
	P110HSCY								
	MinYS125ksi								
Date	SD7.875								
	27-Nov-23								

MO-FXL



Geometry	Imperial		S.I.	
Pipe Body				
Grade *1	P110HSCY		P110HSCY	
MinYS *1	125	ksi	125	ksi
Pipe OD (D)	8 5/8	in	219.08	mm
Weight	32.00	lb/ft	47.68	kg/m
Actual weight	31.10		46.34	kg/m
Wall Thickness (t)	0.352	in	8.94	mm
Pipe ID (d)	7.921	in	201.19	mm
Pipe body cross section	9.149	in ²	5,902	mm ²
Special Drift Dia. *1	7.875	in	200.03	mm
-	-	-	-	-

Connection				
Box OD (W)	8.625	in	219.08	mm
PIN ID	7.921	in	201.19	mm
Make up Loss	3.847	in	97.71	mm
Box Critical Area	5.853	in ²	3686	mm ²
Joint load efficiency	69	%	69	%
Thread Taper	1 / 10 (1.2" per ft)			
Number of Threads	5 TPI			

Performance				
Performance Properties for Pipe Body				
S.M.Y.S. *1	1,144	kips	5,087	kN
M.I.Y.P. *1	8,930	psi	61.59	MPa
Collapse Strength *1	4,300	psi	29.66	MPa
Note S.M.Y.S.= Specified Minimum YIELD Strength of Pipe body M.I.Y.P. = Minimum Internal Yield Pressure of Pipe body *1: BMP P110HSCY: MinYS125ksi, SD7.875, Collapse Strength 4,300psi				
Performance Properties for Connection				
Tensile Yield load	789 kips (69% of S.M.Y.S.)			
Min. Compression Yield	789 kips (69% of S.M.Y.S.)			
Internal Pressure	6,250 psi (70% of M.I.Y.P.)			
External Pressure	100% of Collapse Strength			
Max. DLS (deg. /100ft)	29			

Recommended Torque				
Min.	13,600	ft-lb	18,400	N-m
Opti.	14,900	ft-lb	20,200	N-m
Max.	16,200	ft-lb	21,900	N-m
Operational Max.	28,400	ft-lb	38,500	N-m
Note : Operational Max. torque can be applied for high torque application				

Legal Notice

The use of this information is at the reader/user's risk and no warranty is implied or expressed by Metal One Corporation or its parents, subsidiaries or affiliates (herein collectively referred to as "Metal One") with respect to the use of information contained herein. The information provided on this Connection Data Sheet is for informational purposes only, and was prepared by reference to engineering information that is specific to the subject products, without regard to safety-related factors, all of which are the sole responsibility of the operators and users of the subject connectors. Metal One assumes no responsibility for any errors with respect to this information.

Statements regarding the suitability of products for certain types of applications are based on Metal One's knowledge of typical requirements that are often placed on Metal One products in standard well configurations. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application.

The products described in this Connection Data Sheet are not recommended for use in deep water offshore applications. For more information, please refer to http://www.mtlo.co.jp/mo-con/_images/top/WebsiteTerms_Active_20333287_1.pdf the contents of which are incorporated by reference into this Connection Data Sheet.

Section 2 - Blowout Preventer Testing Procedure

Variance Request

Devon Energy requests to only test BOP connection breaks after drilling out of surface casing and while skidding between wells which conforms to API Standard 53 and industry standards. This test will include the Top Pipe Rams, HCR, Kill Line Check Valve, QDC (quick disconnect to wellhead) and Shell of the 10M BOPE to 5M for 10 minutes. If a break to the flex hose that runs to the choke manifold is required due to repositioning from a skid, the HCR will remain open during the shell test to include that additional break. The variance only pertains to intermediate hole-sections and no deeper than the Bone Springs Formation where 5M BOP tests are required. The initial BOP test will follow 43 CFR 3172, and subsequent tests following a skid will only test connections that are broken. The annular preventer will be tested to 100% working pressure. This variance will meet or exceed 43 CFR 3172 per the following: Devon Energy will perform a full BOP test per 43 CFR 3172 before drilling out of the intermediate casing string(s) and starting the production hole, before starting any hole section that requires a 10M test, before the expiration of the allotted 14-days for 5M intermediate batch drilling or when the drilling rig is fully mobilized to a new well pad, whichever is sooner. We will utilize a 200' TVD tolerance between intermediate shoes as the cutoff for a full BOP test. The BLM will be contacted 4hrs prior to a BOPE test. The BLM will be notified if and when a well control event is encountered. Break test will be a 14 day interval and not a 30 day full BOPE test interval. If in the event break testing is not utilized, then a full BOPE test would be conducted.

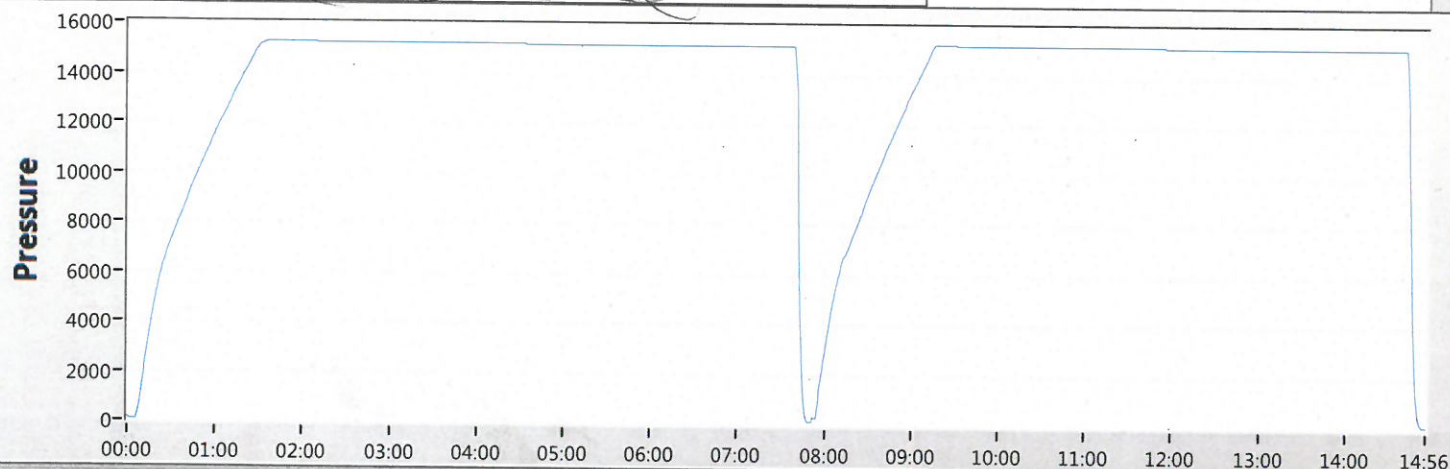
1. Well Control Response:
 1. Primary barrier remains fluid
 2. In the event of an influx due to being underbalanced and after a realized gain or flow, the order of closing BOPE is as follows:
 - a) Annular first
 - b) If annular were to not hold, Upper pipe rams second (which were tested on the skid BOP test)
 - c) If the Upper Pipe Rams were to not hold, Lower Pipe Rams would be third

Cactus
Wellhead

2-9-17
E Bell

80.7 °F

15:49



50

Date 02-09-17

Tested By E.BELL

Transducer bay2

Transducer Serial 181504

Calibration Date 9/6/15

	Job#	Part#	Serial#	Description	Test Pressure
1	TRJ0006341-0007	116966	TRJ6341-7-1	ADPT,DRLG,CW,MBU-3T,13-5/8 10M	15000
2					
3					
4					
5				TRANSDUCER CALIBRATION DUE 03/13/2017	
6					
7					
8					

TRANSDUCER CALIBRATION DUE 03/13/2017

Start

Stop

Zero

Config

Save

Print

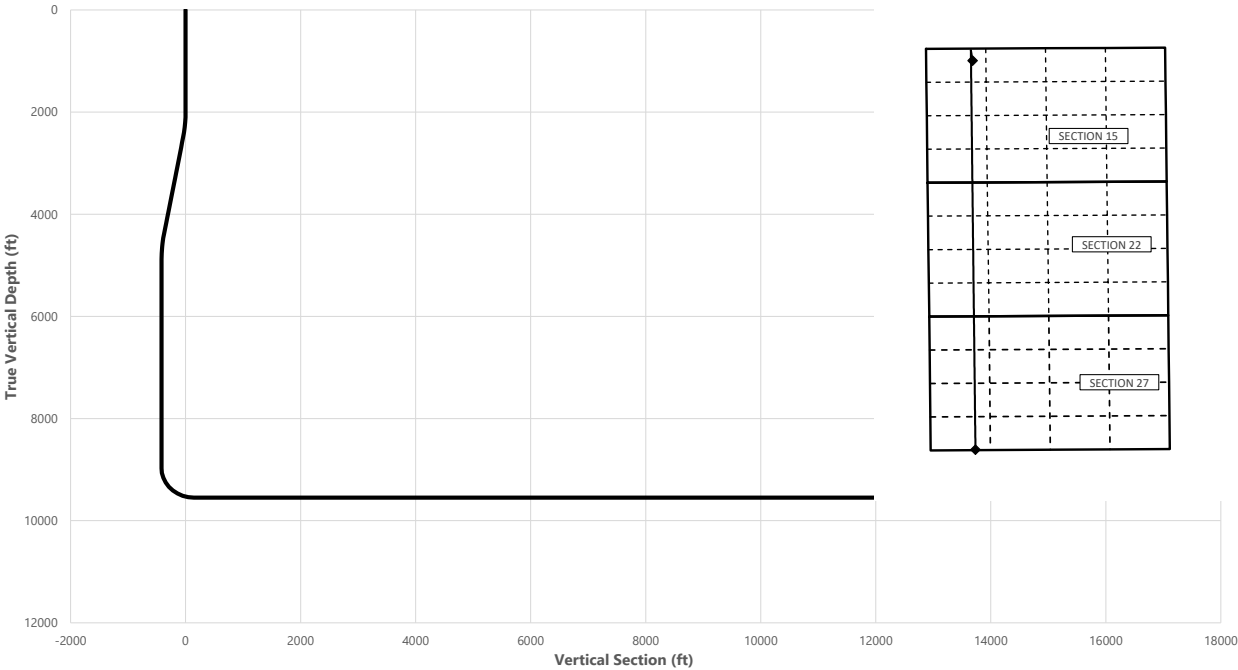
EXIT



Well: GRUMPY CAT 15-22 FED COM 531H
County: Lea
Wellbore: Permit Plan
Design: Permit Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1927
Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

MD	INC	AZI	TVD	NS	EW	VS	DLS	Comment
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
2000.00	0.00	355.00	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2500.00	10.00	355.00	2497.47	43.36	-3.79	-43.37	2.00	Hold Tangent
4415.87	10.00	355.00	4384.23	374.78	-32.79	-374.91	0.00	Drop to Vertical
4915.87	0.00	355.00	4881.69	418.14	-36.58	-418.29	2.00	Hold Vertical
9011.22	0.00	179.63	8977.04	418.14	-36.58	-418.29	0.00	KOP
9911.22	90.00	179.63	9550.00	-154.81	-32.88	154.67	10.00	Landing Point
25110.62	90.00	179.63	9550.00	-15353.90	65.27	15354.04	0.00	BHL



Key Depths	MD	TVD
	(ft)	(ft)
Rustler	1199.00	1199.00
Salt	1615.00	1615.00
Base of Salt	4659.83	4626.00
Delaware	4899.18	4865.00
Cherry Canyon	5813.18	5779.00
Brushy Canyon	7061.18	7027.00
Bone Spring 1st / Point of Penetratio	8748.18	8714.00
exit	25030.62	9550.02

SHL
KOP
Point of Penetration
Exit
BHL

MD	TVD	Lat	Long	Section Footages
(ft)	(ft)	(°)	(°)	
0.00	0.00	32.3105	-103.6678	476' FNL, 1024' FWL of Sec 15 in T23S, R32E
9011.22	8977.04	32.3117	-103.6679	57' FNL, 991' FWL of Sec 15 in T23S, R32E
8748.18	8714.00	32.3116	-103.6679	100' FNL, 990' FWL of Sec 15 in T23S, R32E
25030.62	9550.02	32.2686	-103.6679	100' FSL, 990' FWL of Sec 27 in T23S, R32E
25110.62	9550.00	32.2683	-103.6679	20' FSL, 990' FWL of Sec 27 in T23S, R32E

	Y	X	MD
KOP	477785	746926	9011.22

GRUMPY CAT 15-22 FED COM 531H



Well: GRUMPY CAT 15-22 FED COM 531H
County: Lea
Wellbore: Permit Plan
Design: Permit Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1927
Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

MD	INC	AZI	TVD	NS	EW	VS	DLS	Comment
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
100.00	0.00	355.00	100.00	0.00	0.00	0.00	0.00	
200.00	0.00	355.00	200.00	0.00	0.00	0.00	0.00	
300.00	0.00	355.00	300.00	0.00	0.00	0.00	0.00	
400.00	0.00	355.00	400.00	0.00	0.00	0.00	0.00	
500.00	0.00	355.00	500.00	0.00	0.00	0.00	0.00	
600.00	0.00	355.00	600.00	0.00	0.00	0.00	0.00	
700.00	0.00	355.00	700.00	0.00	0.00	0.00	0.00	
800.00	0.00	355.00	800.00	0.00	0.00	0.00	0.00	
900.00	0.00	355.00	900.00	0.00	0.00	0.00	0.00	
1000.00	0.00	355.00	1000.00	0.00	0.00	0.00	0.00	
1100.00	0.00	355.00	1100.00	0.00	0.00	0.00	0.00	
1199.00	0.00	355.00	1199.00	0.00	0.00	0.00	0.00	Rustler
1200.00	0.00	355.00	1200.00	0.00	0.00	0.00	0.00	
1300.00	0.00	355.00	1300.00	0.00	0.00	0.00	0.00	
1400.00	0.00	355.00	1400.00	0.00	0.00	0.00	0.00	
1500.00	0.00	355.00	1500.00	0.00	0.00	0.00	0.00	
1600.00	0.00	355.00	1600.00	0.00	0.00	0.00	0.00	
1615.00	0.00	355.00	1615.00	0.00	0.00	0.00	0.00	Salt
1700.00	0.00	355.00	1700.00	0.00	0.00	0.00	0.00	
1800.00	0.00	355.00	1800.00	0.00	0.00	0.00	0.00	
1900.00	0.00	355.00	1900.00	0.00	0.00	0.00	0.00	
2000.00	0.00	355.00	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2100.00	2.00	355.00	2099.98	1.74	-0.15	-1.74	2.00	
2200.00	4.00	355.00	2199.84	6.95	-0.61	-6.95	2.00	
2300.00	6.00	355.00	2299.45	15.63	-1.37	-15.64	2.00	
2400.00	8.00	355.00	2398.70	27.77	-2.43	-27.78	2.00	
2500.00	10.00	355.00	2497.47	43.36	-3.79	-43.37	2.00	Hold Tangent
2600.00	10.00	355.00	2595.95	60.66	-5.31	-60.68	0.00	
2700.00	10.00	355.00	2694.43	77.95	-6.82	-77.98	0.00	
2800.00	10.00	355.00	2792.91	95.25	-8.33	-95.29	0.00	
2900.00	10.00	355.00	2891.39	112.55	-9.85	-112.59	0.00	
3000.00	10.00	355.00	2989.87	129.85	-11.36	-129.90	0.00	
3100.00	10.00	355.00	3088.35	147.15	-12.87	-147.20	0.00	
3200.00	10.00	355.00	3186.83	164.45	-14.39	-164.51	0.00	
3300.00	10.00	355.00	3285.31	181.75	-15.90	-181.81	0.00	
3400.00	10.00	355.00	3383.79	199.05	-17.42	-199.12	0.00	
3500.00	10.00	355.00	3482.27	216.34	-18.93	-216.42	0.00	
3600.00	10.00	355.00	3580.75	233.64	-20.44	-233.73	0.00	
3700.00	10.00	355.00	3679.23	250.94	-21.96	-251.03	0.00	
3800.00	10.00	355.00	3777.72	268.24	-23.47	-268.34	0.00	
3900.00	10.00	355.00	3876.20	285.54	-24.98	-285.64	0.00	
4000.00	10.00	355.00	3974.68	302.84	-26.50	-302.95	0.00	
4100.00	10.00	355.00	4073.16	320.14	-28.01	-320.25	0.00	
4200.00	10.00	355.00	4171.64	337.44	-29.52	-337.56	0.00	
4300.00	10.00	355.00	4270.12	354.73	-31.04	-354.86	0.00	
4400.00	10.00	355.00	4368.60	372.03	-32.55	-372.17	0.00	
4415.87	10.00	355.00	4384.23	374.78	-32.79	-374.91	0.00	Drop to Vertical
4500.00	8.32	355.00	4467.28	388.12	-33.96	-388.26	2.00	
4600.00	6.32	355.00	4566.46	400.81	-35.07	-400.95	2.00	
4659.83	5.12	355.00	4626.00	406.74	-35.59	-406.89	2.00	Base of Salt
4700.00	4.32	355.00	4666.03	410.04	-35.87	-410.19	2.00	
4800.00	2.32	355.00	4765.86	415.80	-36.38	-415.95	2.00	
4899.18	0.33	355.00	4865.00	418.09	-36.58	-418.24	2.00	Delaware
4900.00	0.32	355.00	4865.82	418.09	-36.58	-418.24	2.00	
4915.87	0.00	355.00	4881.69	418.14	-36.58	-418.29	2.00	Hold Vertical
5000.00	0.00	179.63	4965.82	418.14	-36.58	-418.29	0.00	
5100.00	0.00	179.63	5065.82	418.14	-36.58	-418.29	0.00	
5200.00	0.00	179.63	5165.82	418.14	-36.58	-418.29	0.00	
5300.00	0.00	179.63	5265.82	418.14	-36.58	-418.29	0.00	
5400.00	0.00	179.63	5365.82	418.14	-36.58	-418.29	0.00	
5500.00	0.00	179.63	5465.82	418.14	-36.58	-418.29	0.00	
5600.00	0.00	179.63	5565.82	418.14	-36.58	-418.29	0.00	
5700.00	0.00	179.63	5665.82	418.14	-36.58	-418.29	0.00	
5800.00	0.00	179.63	5765.82	418.14	-36.58	-418.29	0.00	
5813.18	0.00	179.63	5779.00	418.14	-36.58	-418.29	0.00	Cherry Canyon
5900.00	0.00	179.63	5865.82	418.14	-36.58	-418.29	0.00	
6000.00	0.00	179.63	5965.82	418.14	-36.58	-418.29	0.00	
6100.00	0.00	179.63	6065.82	418.14	-36.58	-418.29	0.00	
6200.00	0.00	179.63	6165.82	418.14	-36.58	-418.29	0.00	

GRUMPY CAT 15-22 FED COM 531H



Well: GRUMPY CAT 15-22 FED COM 531H
County: Lea
Wellbore: Permit Plan
Design: Permit Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1927
Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

MD (ft)	INC (")	AZI (")	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
6300.00	0.00	179.63	6265.82	418.14	-36.58	-418.29	0.00	
6400.00	0.00	179.63	6365.82	418.14	-36.58	-418.29	0.00	
6500.00	0.00	179.63	6465.82	418.14	-36.58	-418.29	0.00	
6600.00	0.00	179.63	6565.82	418.14	-36.58	-418.29	0.00	
6700.00	0.00	179.63	6665.82	418.14	-36.58	-418.29	0.00	
6800.00	0.00	179.63	6765.82	418.14	-36.58	-418.29	0.00	
6900.00	0.00	179.63	6865.82	418.14	-36.58	-418.29	0.00	
7000.00	0.00	179.63	6965.82	418.14	-36.58	-418.29	0.00	
7061.18	0.00	179.63	7027.00	418.14	-36.58	-418.29	0.00	Brushy Canyon
7100.00	0.00	179.63	7065.82	418.14	-36.58	-418.29	0.00	
7200.00	0.00	179.63	7165.82	418.14	-36.58	-418.29	0.00	
7300.00	0.00	179.63	7265.82	418.14	-36.58	-418.29	0.00	
7400.00	0.00	179.63	7365.82	418.14	-36.58	-418.29	0.00	
7500.00	0.00	179.63	7465.82	418.14	-36.58	-418.29	0.00	
7600.00	0.00	179.63	7565.82	418.14	-36.58	-418.29	0.00	
7700.00	0.00	179.63	7665.82	418.14	-36.58	-418.29	0.00	
7800.00	0.00	179.63	7765.82	418.14	-36.58	-418.29	0.00	
7900.00	0.00	179.63	7865.82	418.14	-36.58	-418.29	0.00	
8000.00	0.00	179.63	7965.82	418.14	-36.58	-418.29	0.00	
8100.00	0.00	179.63	8065.82	418.14	-36.58	-418.29	0.00	
8200.00	0.00	179.63	8165.82	418.14	-36.58	-418.29	0.00	
8300.00	0.00	179.63	8265.82	418.14	-36.58	-418.29	0.00	
8400.00	0.00	179.63	8365.82	418.14	-36.58	-418.29	0.00	
8500.00	0.00	179.63	8465.82	418.14	-36.58	-418.29	0.00	
8600.00	0.00	179.63	8565.82	418.14	-36.58	-418.29	0.00	
8700.00	0.00	179.63	8665.82	418.14	-36.58	-418.29	0.00	
8748.18	0.00	179.63	8714.00	418.14	-36.58	-418.29	0.00	Bone Spring 1st / Point of Penetration
8800.00	0.00	179.63	8765.82	418.14	-36.58	-418.29	0.00	
8900.00	0.00	179.63	8865.82	418.14	-36.58	-418.29	0.00	
9000.00	0.00	179.63	8965.82	418.14	-36.58	-418.29	0.00	
9011.22	0.00	179.63	8977.04	418.14	-36.58	-418.29	0.00	KOP
9100.00	8.88	179.63	9065.47	411.27	-36.54	-411.42	10.00	
9200.00	18.88	179.63	9162.43	387.32	-36.38	-387.47	10.00	
9300.00	28.88	179.63	9253.75	346.89	-36.12	-347.04	10.00	
9400.00	38.88	179.63	9336.67	291.22	-35.76	-291.37	10.00	
9500.00	48.88	179.63	9408.66	221.99	-35.31	-222.14	10.00	
9600.00	58.88	179.63	9467.53	141.32	-34.79	-141.47	10.00	
9700.00	68.88	179.63	9511.51	51.65	-34.21	-51.80	10.00	
9800.00	78.88	179.63	9539.24	-44.29	-33.59	44.15	10.00	
9900.00	88.88	179.63	9549.89	-143.59	-32.95	143.45	10.00	
9911.22	90.00	179.63	9550.00	-154.81	-32.88	154.67	10.00	Landing Point
10000.00	90.00	179.63	9550.00	-243.59	-32.31	243.45	0.00	
10100.00	90.00	179.63	9550.00	-343.59	-31.66	343.45	0.00	
10200.00	90.00	179.63	9550.00	-443.59	-31.02	443.45	0.00	
10300.00	90.00	179.63	9550.00	-543.59	-30.37	543.45	0.00	
10400.00	90.00	179.63	9550.00	-643.58	-29.72	643.45	0.00	
10500.00	90.00	179.63	9550.00	-743.58	-29.08	743.45	0.00	
10600.00	90.00	179.63	9550.00	-843.58	-28.43	843.45	0.00	
10700.00	90.00	179.63	9550.00	-943.58	-27.79	943.45	0.00	
10800.00	90.00	179.63	9550.00	-1043.57	-27.14	1043.45	0.00	
10900.00	90.00	179.63	9550.00	-1143.57	-26.49	1143.45	0.00	
11000.00	90.00	179.63	9550.00	-1243.57	-25.85	1243.45	0.00	
11100.00	90.00	179.63	9550.00	-1343.57	-25.20	1343.45	0.00	
11200.00	90.00	179.63	9550.00	-1443.57	-24.56	1443.45	0.00	
11300.00	90.00	179.63	9550.00	-1543.56	-23.91	1543.45	0.00	
11400.00	90.00	179.63	9550.00	-1643.56	-23.26	1643.45	0.00	
11500.00	90.00	179.63	9550.00	-1743.56	-22.62	1743.45	0.00	
11600.00	90.00	179.63	9550.00	-1843.56	-21.97	1843.45	0.00	
11700.00	90.00	179.63	9550.00	-1943.56	-21.33	1943.45	0.00	
11800.00	90.00	179.63	9550.00	-2043.55	-20.68	2043.45	0.00	
11900.00	90.00	179.63	9550.00	-2143.55	-20.03	2143.45	0.00	
12000.00	90.00	179.63	9550.00	-2243.55	-19.39	2243.45	0.00	
12100.00	90.00	179.63	9550.00	-2343.55	-18.74	2343.45	0.00	
12200.00	90.00	179.63	9550.00	-2443.55	-18.10	2443.45	0.00	
12300.00	90.00	179.63	9550.00	-2543.54	-17.45	2543.45	0.00	
12400.00	90.00	179.63	9550.00	-2643.54	-16.80	2643.45	0.00	
12500.00	90.00	179.63	9550.00	-2743.54	-16.16	2743.45	0.00	
12600.00	90.00	179.63	9550.00	-2843.54	-15.51	2843.45	0.00	
12700.00	90.00	179.63	9550.00	-2943.54	-14.87	2943.45	0.00	
12800.00	90.00	179.63	9550.00	-3043.53	-14.22	3043.45	0.00	

GRUMPY CAT 15-22 FED COM 531H



Well: GRUMPY CAT 15-22 FED COM 531H
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Design: Permit Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1927
Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

MD (ft)	INC (")	AZI (")	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
12900.00	90.00	179.63	9550.00	-3143.53	-13.57	3143.44	0.00	
13000.00	90.00	179.63	9550.00	-3243.53	-12.93	3243.44	0.00	
13100.00	90.00	179.63	9550.00	-3343.53	-12.28	3343.44	0.00	
13200.00	90.00	179.63	9550.00	-3443.52	-11.64	3443.44	0.00	
13300.00	90.00	179.63	9550.00	-3543.52	-10.99	3543.44	0.00	
13400.00	90.00	179.63	9550.00	-3643.52	-10.34	3643.44	0.00	
13500.00	90.00	179.63	9550.00	-3743.52	-9.70	3743.44	0.00	
13600.00	90.00	179.63	9550.00	-3843.52	-9.05	3843.44	0.00	
13700.00	90.00	179.63	9550.01	-3943.51	-8.41	3943.44	0.00	
13800.00	90.00	179.63	9550.01	-4043.51	-7.76	4043.44	0.00	
13900.00	90.00	179.63	9550.01	-4143.51	-7.11	4143.44	0.00	
14000.00	90.00	179.63	9550.01	-4243.51	-6.47	4243.44	0.00	
14100.00	90.00	179.63	9550.01	-4343.51	-5.82	4343.44	0.00	
14200.00	90.00	179.63	9550.01	-4443.50	-5.18	4443.44	0.00	
14300.00	90.00	179.63	9550.01	-4543.50	-4.53	4543.44	0.00	
14400.00	90.00	179.63	9550.01	-4643.50	-3.88	4643.44	0.00	
14500.00	90.00	179.63	9550.01	-4743.50	-3.24	4743.44	0.00	
14600.00	90.00	179.63	9550.01	-4843.50	-2.59	4843.44	0.00	
14700.00	90.00	179.63	9550.01	-4943.49	-1.95	4943.44	0.00	
14800.00	90.00	179.63	9550.01	-5043.49	-1.30	5043.44	0.00	
14900.00	90.00	179.63	9550.01	-5143.49	-0.65	5143.44	0.00	
15000.00	90.00	179.63	9550.01	-5243.49	-0.01	5243.44	0.00	
15100.00	90.00	179.63	9550.01	-5343.49	0.64	5343.44	0.00	
15200.00	90.00	179.63	9550.01	-5443.48	1.29	5443.44	0.00	
15300.00	90.00	179.63	9550.01	-5543.48	1.93	5543.44	0.00	
15400.00	90.00	179.63	9550.01	-5643.48	2.58	5643.44	0.00	
15500.00	90.00	179.63	9550.01	-5743.48	3.22	5743.44	0.00	
15600.00	90.00	179.63	9550.01	-5843.47	3.87	5843.44	0.00	
15700.00	90.00	179.63	9550.01	-5943.47	4.52	5943.44	0.00	
15800.00	90.00	179.63	9550.01	-6043.47	5.16	6043.44	0.00	
15900.00	90.00	179.63	9550.01	-6143.47	5.81	6143.44	0.00	
16000.00	90.00	179.63	9550.01	-6243.47	6.45	6243.44	0.00	
16100.00	90.00	179.63	9550.01	-6343.46	7.10	6343.44	0.00	
16200.00	90.00	179.63	9550.01	-6443.46	7.75	6443.44	0.00	
16300.00	90.00	179.63	9550.01	-6543.46	8.39	6543.44	0.00	
16400.00	90.00	179.63	9550.01	-6643.46	9.04	6643.44	0.00	
16500.00	90.00	179.63	9550.01	-6743.46	9.68	6743.44	0.00	
16600.00	90.00	179.63	9550.01	-6843.45	10.33	6843.44	0.00	
16700.00	90.00	179.63	9550.01	-6943.45	10.98	6943.44	0.00	
16800.00	90.00	179.63	9550.01	-7043.45	11.62	7043.44	0.00	
16900.00	90.00	179.63	9550.01	-7143.45	12.27	7143.44	0.00	
17000.00	90.00	179.63	9550.01	-7243.45	12.91	7243.43	0.00	
17100.00	90.00	179.63	9550.01	-7343.44	13.56	7343.43	0.00	
17200.00	90.00	179.63	9550.01	-7443.44	14.21	7443.43	0.00	
17300.00	90.00	179.63	9550.01	-7543.44	14.85	7543.43	0.00	
17400.00	90.00	179.63	9550.01	-7643.44	15.50	7643.43	0.00	
17500.00	90.00	179.63	9550.01	-7743.44	16.14	7743.43	0.00	
17600.00	90.00	179.63	9550.01	-7843.43	16.79	7843.43	0.00	
17700.00	90.00	179.63	9550.01	-7943.43	17.44	7943.43	0.00	
17800.00	90.00	179.63	9550.01	-8043.43	18.08	8043.43	0.00	
17900.00	90.00	179.63	9550.01	-8143.43	18.73	8143.43	0.00	
18000.00	90.00	179.63	9550.01	-8243.42	19.37	8243.43	0.00	
18100.00	90.00	179.63	9550.01	-8343.42	20.02	8343.43	0.00	
18200.00	90.00	179.63	9550.01	-8443.42	20.67	8443.43	0.00	
18300.00	90.00	179.63	9550.01	-8543.42	21.31	8543.43	0.00	
18400.00	90.00	179.63	9550.01	-8643.42	21.96	8643.43	0.00	
18500.00	90.00	179.63	9550.01	-8743.41	22.60	8743.43	0.00	
18600.00	90.00	179.63	9550.01	-8843.41	23.25	8843.43	0.00	
18700.00	90.00	179.63	9550.01	-8943.41	23.90	8943.43	0.00	
18800.00	90.00	179.63	9550.01	-9043.41	24.54	9043.43	0.00	
18900.00	90.00	179.63	9550.01	-9143.41	25.19	9143.43	0.00	
19000.00	90.00	179.63	9550.01	-9243.40	25.83	9243.43	0.00	
19100.00	90.00	179.63	9550.01	-9343.40	26.48	9343.43	0.00	
19200.00	90.00	179.63	9550.01	-9443.40	27.13	9443.43	0.00	
19300.00	90.00	179.63	9550.01	-9543.40	27.77	9543.43	0.00	
19400.00	90.00	179.63	9550.01	-9643.40	28.42	9643.43	0.00	
19500.00	90.00	179.63	9550.01	-9743.39	29.06	9743.43	0.00	
19600.00	90.00	179.63	9550.01	-9843.39	29.71	9843.43	0.00	
19700.00	90.00	179.63	9550.01	-9943.39	30.36	9943.43	0.00	
19800.00	90.00	179.63	9550.01	-10043.39	31.00	10043.43	0.00	

GRUMPY CAT 15-22 FED COM 531H



Well: GRUMPY CAT 15-22 FED COM 531H
County: Lea
Wellbore: Permit Plan
Design: Permit Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1927
Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
19900.00	90.00	179.63	9550.01	-10143.38	31.65	10143.43	0.00	
20000.00	90.00	179.63	9550.01	-10243.38	32.29	10243.43	0.00	
20100.00	90.00	179.63	9550.01	-10343.38	32.94	10343.43	0.00	
20200.00	90.00	179.63	9550.01	-10443.38	33.59	10443.43	0.00	
20300.00	90.00	179.63	9550.01	-10543.38	34.23	10543.43	0.00	
20400.00	90.00	179.63	9550.01	-10643.37	34.88	10643.43	0.00	
20500.00	90.00	179.63	9550.01	-10743.37	35.52	10743.43	0.00	
20600.00	90.00	179.63	9550.01	-10843.37	36.17	10843.43	0.00	
20700.00	90.00	179.63	9550.01	-10943.37	36.82	10943.43	0.00	
20800.00	90.00	179.63	9550.01	-11043.37	37.46	11043.43	0.00	
20900.00	90.00	179.63	9550.01	-11143.36	38.11	11143.43	0.00	
21000.00	90.00	179.63	9550.01	-11243.36	38.75	11243.43	0.00	
21100.00	90.00	179.63	9550.01	-11343.36	39.40	11343.42	0.00	
21200.00	90.00	179.63	9550.01	-11443.36	40.05	11443.42	0.00	
21300.00	90.00	179.63	9550.02	-11543.36	40.69	11543.42	0.00	
21400.00	90.00	179.63	9550.02	-11643.35	41.34	11643.42	0.00	
21500.00	90.00	179.63	9550.02	-11743.35	41.99	11743.42	0.00	
21600.00	90.00	179.63	9550.02	-11843.35	42.63	11843.42	0.00	
21700.00	90.00	179.63	9550.02	-11943.35	43.28	11943.42	0.00	
21800.00	90.00	179.63	9550.02	-12043.35	43.92	12043.42	0.00	
21900.00	90.00	179.63	9550.02	-12143.34	44.57	12143.42	0.00	
22000.00	90.00	179.63	9550.02	-12243.34	45.22	12243.42	0.00	
22100.00	90.00	179.63	9550.02	-12343.34	45.86	12343.42	0.00	
22200.00	90.00	179.63	9550.02	-12443.34	46.51	12443.42	0.00	
22300.00	90.00	179.63	9550.02	-12543.33	47.15	12543.42	0.00	
22400.00	90.00	179.63	9550.02	-12643.33	47.80	12643.42	0.00	
22500.00	90.00	179.63	9550.02	-12743.33	48.45	12743.42	0.00	
22600.00	90.00	179.63	9550.02	-12843.33	49.09	12843.42	0.00	
22700.00	90.00	179.63	9550.02	-12943.33	49.74	12943.42	0.00	
22800.00	90.00	179.63	9550.02	-13043.32	50.38	13043.42	0.00	
22900.00	90.00	179.63	9550.02	-13143.32	51.03	13143.42	0.00	
23000.00	90.00	179.63	9550.02	-13243.32	51.68	13243.42	0.00	
23100.00	90.00	179.63	9550.02	-13343.32	52.32	13343.42	0.00	
23200.00	90.00	179.63	9550.02	-13443.32	52.97	13443.42	0.00	
23300.00	90.00	179.63	9550.02	-13543.31	53.61	13543.42	0.00	
23400.00	90.00	179.63	9550.02	-13643.31	54.26	13643.42	0.00	
23500.00	90.00	179.63	9550.02	-13743.31	54.91	13743.42	0.00	
23600.00	90.00	179.63	9550.02	-13843.31	55.55	13843.42	0.00	
23700.00	90.00	179.63	9550.02	-13943.31	56.20	13943.42	0.00	
23800.00	90.00	179.63	9550.02	-14043.30	56.84	14043.42	0.00	
23900.00	90.00	179.63	9550.02	-14143.30	57.49	14143.42	0.00	
24000.00	90.00	179.63	9550.02	-14243.30	58.14	14243.42	0.00	
24100.00	90.00	179.63	9550.02	-14343.30	58.78	14343.42	0.00	
24200.00	90.00	179.63	9550.02	-14443.30	59.43	14443.42	0.00	
24300.00	90.00	179.63	9550.02	-14543.29	60.07	14543.42	0.00	
24400.00	90.00	179.63	9550.02	-14643.29	60.72	14643.42	0.00	
24500.00	90.00	179.63	9550.02	-14743.29	61.37	14743.42	0.00	
24600.00	90.00	179.63	9550.02	-14843.29	62.01	14843.42	0.00	
24700.00	90.00	179.63	9550.02	-14943.28	62.66	14943.42	0.00	
24800.00	90.00	179.63	9550.02	-15043.28	63.30	15043.42	0.00	
24900.00	90.00	179.63	9550.02	-15143.28	63.95	15143.42	0.00	
25000.00	90.00	179.63	9550.02	-15243.28	64.60	15243.42	0.00	
25030.62	90.00	179.63	9550.02	-15273.90	64.79	15274.04	0.00	exit
25100.00	90.00	179.63	9550.02	-15343.28	65.24	15343.42	0.00	
25110.62	90.00	179.63	9550.00	-15353.90	65.27	15354.04	0.00	BHL

1. Geologic Formations

TVD of target	9550	Pilot hole depth	N/A
MD at TD:	25111	Deepest expected fresh water	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	1199		
Salt	1615		
Base of Salt	4626		
Delaware	4865		
Cherry Canyon	5779		
Brushy Canyon	7027		
Bone Spring 1st	8714		

*H2S, water flows, loss of circulation, abnormal pressures, etc.

GRUMPY CAT 15-22 FED COM 531H

2. Casing Program (Primary Design)

Hole Size	Csg. Size	Wt (PPF)	Grade	Conn	Casing Interval		Casing Interval	
					From (MD)	To (MD)	From (TVD)	To (TVD)
14 3/4	10 3/4	45 1/2	J-55	BTC	0	1224	0	1224
9 7/8	8 5/8	32	P110HSCY	MOFXL	0	8911	0	8911
7 7/8	5 1/2	20	P110	DWC/C-IS PLUS	0	25111	0	9550

•All casing strings will be tested in accordance with 43 CFR 3172. Must have table for contingency casing.

3. Cementing Program

Casing	# Sks	TOC	Wt. ppg	Yld (ft3/sack)	Slurry Description
Surface	733	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	493	Surf	13.0	2.3	2nd State: Bradenhead Squeeze - Lead: Class C Cement + additives
	220	7061	13.2	1.44	Tail: Class H / C + additives
Production	117	7011	9	3.27	Lead: Class H / C + additives
	2131	9011	13.2	1.44	Tail: Class H / C + additives

Assuming no returns are established while drilling, Devon requests to pump a two stage cement job on the intermediate casing string with the first stage being pumped conventionally with the calculated top of cement at the Brushy Canyon and the second stage performed as a bradenhead squeeze with planned cement from the Brushy Canyon to surface. The final cement top will be verified by Echo-meter. Devon will include the Echo-meter verified fluid top and the volume of displacement fluid above the cement slurry in the annulus in all post-drill sundries on wells utilizing this cement program. Devon will report to the BLM the volume of fluid (limited to 1 bbls) used to flush intermediate casing valves following backside cementing procedures.

Casing String	% Excess
Surface	50%
Intermediate 1	30%
Prod	10%

Devon Energy requests to offline cement on intermediate strings that are set in formations shallower than the Wolfcamp. Prior to commencing offline cementing operations, the well will be monitored for any abnormal pressures and confirmed to be static. A dual manifold system (equipped with chokes) for the returns will also be utilized as a redundancy. All equipment used for offline cementing will have a minimum 5M rating to match intermediate sections' 5M BOPE requirements.

4. Pressure Control Equipment (Three String Design)

BOP installed and tested before drilling which hole?		Size?	Min. Required WP	Type	✓	Tested to:
Int 1	13-5/8"	5M	Annular		X	50% of rated working pressure
			Blind Ram		X	5M
			Pipe Ram			
			Double Ram		X	
			Other*			
Production	13-5/8"	5M	Annular (5M)		X	50% of rated working pressure
			Blind Ram		X	5M
			Pipe Ram			
			Double Ram		X	
			Other*			
			Annular (5M)			
			Blind Ram			
			Pipe Ram			
			Double Ram			
			Other*			
N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.					
Y	A variance is requested to run a 5 M annular on a 10M system					

GRUMPY CAT 15-22 FED COM 531H

5. Mud Program (Three String Design)

Section	Type	Weight (ppg)
Surface	FW Gel	8.5-9
Intermediate	DBE / Cut Brine	10-10.5
Production	OBM	10-10.5

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

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

6. Logging and Testing Procedures

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

Additional logs planned		Interval
	Resistivity	Int. shoe to KOP
	Density	Int. shoe to KOP
X	CBL	Production casing
X	Mud log	Intermediate shoe to TD
	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH pressure at deepest TVD	5214
Abnormal temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogen Sulfide (H₂S) monitors will be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of 43 CFR 3176. If Hydrogen Sulfide is encountered measured values and formations will be provided to the BLM.

N	H ₂ S is present
Y	H ₂ S plan attached.

GRUMPY CAT 15-22 FED COM 531H

8. Other facets of operation

Is this a walking operation? Potentially

- 1 If operator elects, drilling rig will batch drill the surface holes and run/cement surface casing; walking the rig to next wells on the pad.
- 2 The drilling rig will then batch drill the intermediate sections and run/cement intermediate casing; the wellbore will be isolated with a blind flange and pressure gauge installed for monitoring the well before walking to the next well.
- 3 The drilling rig will then batch drill the production hole sections on the wells with OBM, run/cement production casing, and install TA caps or tubing heads for completions.

NOTE: During batch operations the drilling rig will be moved from well to well however, it will not be removed from the pad until all wells have production casing run/cemented.

Will be pre-setting casing? Potentially

- 1 Spudder rig will move in and batch drill surface hole.
 - a. Rig will utilize fresh water based mud to drill surface hole to TD. Solids control will be handled entirely on a closed loop basis.,
- 2 After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (43 CFR 3172, all COAs and NMOCD regulations).
- 3 The wellhead will be installed and tested once the surface casing is cut off and the WOC time has been reached.
- 4 A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
- 5 Spudder rig operations is expected to take 4-5 days per well on a multi-well pad.
- 6 The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
- 7 Drilling operations will be performed with drilling rig. At that time an approved BOP stack will be nipped up and tested on the wellhead before drilling operations commence on each well.
 - a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

Attachments

X Directional Plan
Other, describe

Connection Data Sheet

OD (in.)	WEIGHT (lbs./ft.)	WALL (in.)	GRADE	DRIFT (in.)	RBW%	CONNECTION
5.500	Nominal: 20.00 Plain End: 19.83	0.361	VST P110 EC	4.653	87.5	DWC/C-IS PLUS

PIPE PROPERTIES

Nominal OD	5.500	in.
Nominal ID	4.778	in.
Nominal Area	5.828	sq.in.
Grade Type	API 5CT; Vallourec Sourced Material Only	
Min. Yield Strength	125	ksi
Max. Yield Strength	140	ksi
Min. Tensile Strength	135	ksi
Yield Strength	729	klb
Ultimate Strength	787	klb
Min. Internal Yield	14,360	psi
High Collapse	12,090	psi

CONNECTION PROPERTIES

Connection Type	Semi-Premium T&C	
Connection OD (nom)	6.300	in.
Connection ID (nom)	4.778	in.
Make-Up Loss	4.125	in.
Coupling Length	9.250	in.
Critical Cross Section	5.828	sq.in.
Tension Efficiency	100.0%	of pipe
Compression Efficiency	100.0%	of pipe
Internal Pressure Efficiency	100.0%	of pipe
External Pressure Efficiency	100.0%	of pipe

CONNECTION PERFORMANCES

Yield Strength	729	klb
Parting Load	787	klb
Compression Rating	729	klb
Min. Internal Yield	14,360	psi
High Collapse	12,090	psi
Maximum Uniaxial Bend Rating	104.2	°/100 ft
Ref String Length w 1.4 Design Factor	26,040	ft

FIELD TORQUE VALUES

Min. Make-up Torque	16,600	ft.lbs
Opti. Make-up Torque	17,850	ft.lbs
Max. Make-up Torque	19,100	ft.lbs
Min. Shoulder Torque	1,660	ft.lbs
Max. Shoulder Torque	13,280	ft.lbs
Max. Delta Turn	0.200	Turns
†Max Operational Torque	24,300	ft.lbs
†Maximum Torsional Value (MTV)	26,730	ft.lbs

†Maximum Operational Torque and Maximum Torsional Value Only Valid with Vallourec P110EC Material

For detailed information on performance properties, refer to DWC Connection Data Notes on following page(s).

Connection specifications within the control of VAM USA were correct as of the date printed. Specifications are subject to change without notice. Certain connection specifications are dependent on the mechanical properties of the pipe. Mechanical properties of mill proprietary pipe grades were obtained from mill publications and are subject to change. Properties of mill proprietary grades should be confirmed with the mill. Users are advised to obtain current connection specifications and verify pipe mechanical properties for each application.

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05/23/2023 4:11 PM



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VAM USA Sales E-mail: VAMUSAsales@vam-usa.com
Tech Support E-mail: tech.support@vam-usa.com

DWC Connection Data Notes:

1. DWC connections are available with a seal ring (SR) option.
2. All standard DWC/C connections are interchangeable for a given pipe OD. DWC connections are interchangeable with DWC/C-SR connections of the same OD and wall.
3. Connection performance properties are based on nominal pipe body and connection dimensions.
4. DWC connection internal and external pressure resistance is calculated using the API rating for buttress connections. API Internal pressure resistance is calculated from formulas 31, 32, and 35 in the API Bulletin 5C3.
5. DWC joint strength is the minimum pipe body yield strength multiplied by the connection critical area.
6. API joint strength is for reference only. It is calculated from formulas 42 and 43 in the API Bulletin 5C3.
7. Bending efficiency is equal to the compression efficiency.
8. The torque values listed are recommended. The actual torque required may be affected by field conditions such as temperature, thread compound, speed of make-up, weather conditions, etc.
9. Connection yield torque is not to be exceeded.
10. Reference string length is calculated by dividing the joint strength by both the nominal weight in air and a design factor (DF) of 1.4. These values are offered for reference only and do not include load factors such as bending, buoyancy, temperature, load dynamics, etc.
11. DWC connections will accommodate API standard drift diameters.
12. DWC/C family of connections are compatible with API Buttress BTC connections. Please contact tech.support@vam-usa.com for details on connection ratings and make-up.

Connection specifications within the control of VAM USA were correct as of the date printed. Specifications are subject to change without notice. Certain connection specifications are dependent on the mechanical properties of the pipe. Mechanical properties of mill proprietary pipe grades were obtained from mill publications and are subject to change. Properties of mill proprietary grades should be confirmed with the mill. Users are advised to obtain current connection specifications and verify pipe mechanical properties for each application.

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05/23/2023 4:11 PM





10-3/4" 45.50# 0.400" J-55

Dimensions (Nominal)

Outside Diameter	10.750	in.
Wall	0.400	in.
Inside Diameter	9.950	in.
Drift	9.875	in.
Weight, T&C	45.500	lbs/ft
Weight, PE	44.260	lbs/ft

Internal Yield Pressure at Minimum Yield

Collapse	2090	psi
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Internal Yields Pressure

PE	3580	psi
STC	3580	psi
BTC	3580	psi

Yield Strength, Pipe Body	715	1000 lbs
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Joint Strength, STC

STC	493	1000 lbs
BTC	796	1000 lbs

Note: SeAH Steel has produced this specification sheet for general information only. SeAH does not assume liability or responsibility for any loss or injury resulting from the use of information or data contained herein. All applications for the material described are at the customer's own risk and responsibility.

Well Name: GRUMPY CAT 15-22 FED COM	Well Location: T23S / R32E / SEC 15 / NWNW /	County or Parish/State:
Well Number: 531H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM95642	Unit or CA Name:	Unit or CA Number:
US Well Number: 3002548531	Well Status: Approved Application for Permit to Drill	Operator: DEVON ENERGY PRODUCTION COMPANY LP

Notice of Intent

Sundry ID: 2774169

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 02/08/2024

Time Sundry Submitted: 12:25

Date proposed operation will begin: 02/08/2024

Procedure Description: Devon Energy Production Co., L.P. (Devon) respectfully requests to change the well name, BHL, and dedicated spacing on the subject well. Please see attached revised C102, drill plan (break test & offline cement variance included), and directional plan. Permitted Well name: GRUMPY CAT 15-22 FED COM 531H Proposed Well name: GRUMPY CAT 15 27 FED COM 531H Permitted BHL: SWSW 20 FSL, 990 FWL, 22-23S-32E Proposed BHL: SWSW 20 FSL, 990 FWL, 27-23S-32E New leases have been added since approved APD and notification has been given.

NOI Attachments

Procedure Description

WA018161965_GRUMPY_CAT_15_27_FED_COM_531H_WL_R1_20240208100448.pdf

8.625_32lb_P110_MOFXL_20240208100442.pdf

break_test_variance_BOP_1_15_24_20240208100442.pdf

GRUMPY_CAT_15_22_FED_COM_531H_Directional_Plan_02_07_24_20240208100442.pdf

GRUMPY_CAT_15_22_FED_COM_531H_20240208100442.pdf

5.5in_x_20.00lb_P110EC_DWC_C_IS_PLUS__5_23_2023_20240208100442.pdf

10.750_45.5_J55_SEAH_20240208100442.pdf

Well Name: SRUMY-CA1	15-22 FED COM	Well Location: T23S / R32E / SEC 15 / NWNW /	County or Parish/State:
Well Number: 531H	Type of Well: OIL WELL	Allottee or Tribe Name:	
Lease Number: NMNM95642	Unit or CA Name:	Unit or CA Number:	
US Well Number: 3002548531	Well Status: Approved Application for Permit to Drill	Operator: DEVON ENERGY PRODUCTION COMPANY LP	

Operator

I certify that the foregoing is true and correct. 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. Electronic submission of Sundry Notices through this system satisfies regulations requiring a

Operator Electronic Signature: SHAYDA OMOUMI Signed on: FEB 08, 2024 10:06 AM
Name: DEVON ENERGY PRODUCTION COMPANY LP
Title: Regulatory Compliance Associate 3
Street Address: 333 W SHERIDAN AVE
City: OKLAHOMA CITY State: OK
Phone: (405) 235-3611
Email address: SHAYDA.OMOUMI@DVN.COM

Field

Representative Name:
Street Address:
City: State: Zip:
Phone:
Email address:

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME: LEASE NO.: LOCATION: COUNTY:	Devon Energy Production Company LP NMNM95642 Section 15, T.23 S., R.32 E., NMPM Lea County, New Mexico ▼
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WELL NAME & NO.: SURFACE HOLE FOOTAGE: BOTTOM HOLE FOOTAGE: ATS/API ID: APD ID: Sundry ID:	Grumpy Cat 15 27 Fed Com 531H 476'/N & 1024'/W 20'/S & 990'/W 3002548531 10400061363 2774169
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COA

H2S	Yes ▼		
Potash	None ▼		
Cave/Karst Potential	Low ▼		
Cave/Karst Potential	☐ Critical		
Variance	☒ None	☒ Flex Hose	☒ Other
Wellhead	Conventional and Multibowl ▼		
Other	☐ 4 String	Capitan Reef None ▼	☐ WIPP
Other	Pilot Hole None ▼	☐ Open Annulus	
Cementing	Contingency Squeeze None ▼	Echo-Meter Int 1 ▼	Primary Cement Squeeze None ▼
Special Requirements	☐ Water Disposal/Injection	☒ COM	☐ Unit
Special Requirements	☐ Batch Sundry		
Special Requirements Variance	☒ Break Testing	☒ Offline Cementing	☐ Casing Clearance

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H₂S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. As a result, the Hydrogen Sulfide area must meet **43 CFR part 3170 Subpart 3176** requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.

B. CASING

1. The **10-3/4 inch** surface casing shall be set at approximately **1291 feet** (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt when present, and below usable fresh water) and cemented to the surface. The surface hole shall be **14 3/4 inch** in diameter.
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

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

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

Option 1 (Single Stage):

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

Option 2:

Operator has proposed to cement in two stages by conventionally cementing the first stage and performing a bradenhead squeeze on the second stage, contingent upon no returns to surface.

- a. First stage: Operator will cement with intent to reach the top of the **Brushy Canyon at 7027' (220 sxs Class H/C+ additives)**.
- b. Second stage:
 - Operator will perform bradenhead squeeze and top-out. Cement to surface. If cement does not reach surface, the appropriate BLM office shall be notified. **(Squeeze 493 sxs Class C)**

Operator has proposed to pump down 10-3/4" X 8-5/8" annulus after primary cementing stage. Operator must run Echo-meter to verify Cement Slurry/Fluid top in the annulus Or operator shall run a CBL from TD of the 8-5/8" casing to surface after the second stage BH to verify TOC.

Submit results to the BLM. No displacement fluid/wash out shall be utilized at the top of the cement slurry between second stage BH and top out. Operator must run one CBL per Well Pad.

If cement does not reach surface, the next casing string must come to surface.

Operator must use a limited flush fluid volume of 1 bbl following backside cementing procedures.

3. The minimum required fill of cement behind the 5-1/2 inch production casing is:
 - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.
Cement excess is less than 25%, more cement is required if washout occurs. Adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.

C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).'
- 2.

Option 1:

- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M) psi. Annular which shall be tested to 3500 (70% Working Pressure) psi.**

- b. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **8-5/8** inch intermediate casing shoe shall be **5000 (5M)** psi.

Option 2:

Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the **10-3/4** inch surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** psi.

- a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
- b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- c. Manufacturer representative shall install the test plug for the initial BOP test.
- d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- e. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.

D. SPECIAL REQUIREMENT (S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Santa Fe Office, 301 Dinosaur Trail Santa Fe, New Mexico 87508, 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.
- The operator will submit an as-drilled survey well plat of the well completion, but are not limited to, those specified in **43 CFR part 3170 Subpart 3171**
- 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.

BOPE Break Testing Variance (Approved)

- BOPE Break Testing is ONLY permitted for 5M BOPE or less. (**Annular preventer must be tested to a minimum of 70% of BOPE working pressure and shall be higher than the MASP**)
- BOPE Break Testing is NOT permitted to drilling the production hole section.
- Variance only pertains to the intermediate hole-sections and no deeper than the Bone Springs formation.
- While in transfer between wells, the BOPE shall be secured by the hydraulic carrier or cradle.
- Any well control event while drilling require notification to the BLM Petroleum Engineer (**575-706-2779**) prior to the commencement of any BOPE Break Testing operations.
- A full BOPE test is required prior to drilling the first deep intermediate hole section. If any subsequent hole interval is deeper than the first, a full BOPE test will be required. (200' TVD tolerance between intermediate shoes is allowable).
- The BLM is to be contacted (**575-689-5981 Lea County**) 4 hours prior to BOPE tests.
- As a minimum, a full BOPE test shall be performed at **21-day** intervals.
- In the event any repairs or replacement of the BOPE is required, the BOPE shall test as per **43 CFR part 3170 Subpart 3172**.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

Offline Cementing

Operator has been (**Approved**) to pump the proposed cement program offline in the **Intermediate(s) interval**.

Offline cementing should commence within 24 hours of landing the casing for the interval.

Notify the BLM 4hrs prior to cementing offline at **Lea County: 575-689-5981**.

GENERAL REQUIREMENTS

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

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

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,
(575) 689-5981

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
 - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
 - b. When the operator proposes to set surface casing with Spudder Rig
 - Notify the BLM when moving in and removing the Spudder Rig.
 - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
 - BOP/BOPE test to be conducted per **43 CFR part 3170 Subpart 3172** as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report when present.

A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR part 3170 Subpart 3172** and **API STD 53 Sec. 5.3**.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in 43 CFR 3172.6(b)(9) must be followed.
 - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead cement), whichever is greater. However, if the float does not hold, cut-

off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the cement plug. The BOPE test can be initiated after bumping the cement plug with the casing valve open. (only applies to single stage cement jobs, prior to the cement setting up.)
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer and can be initiated immediately with the casing valve open. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to **43 CFR part 3170 Subpart 3172** with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per **43 CFR part 3170 Subpart 3172**.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

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

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

LVO 2/16/2024

Form 3160-5
(June 2019)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: October 31, 2021

5. Lease Serial No. NMNM95642

6. If Indian, Allottee or Tribe Name

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator DEVON ENERGY PRODUCTION COMPANY LP

3a. Address 333 WEST SHERIDAN AVE, OKLAHOMA CITY, 3b. Phone No. (include area code) (405) 235-3611

4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description) SEC 15/T23S/R32E/NMP

7. If Unit of CA/Agreement, Name and/or No.

8. Well Name and No. GRUMPY CAT 15-22 FED COM/531

9. API Well No. 3002548531

10. Field and Pool or Exploratory Area DIAMONDTAIL;BONE SPRING/BONESPRING

11. Country or Parish, State LEA/NM

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION				
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off	
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity	
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other	
	☒ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon		
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal		

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be perfonned or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has detennined that the site is ready for final inspection.)

Devon Energy Production Co., L.P. (Devon) respectfully requests to change the well name, BHL, and dedicated spacing on the subject well.

Please see attached revised C102, drill plan (break test & offline cement variance included), and directional plan.

Permitted Well name: GRUMPY CAT 15-22 FED COM 531H

Proposed Well name: GRUMPY CAT 15 27 FED COM 531H

Permitted BHL: SWSW 20 FSL, 990 FWL, 22-23S-32E

Proposed BHL: SWSW 20 FSL, 990 FWL, 27-23S-32E

New leases have been added since approved APD and notification has been given.

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed) SHAYDA OMOUMI / Ph: (405) 235-3611

Title Regulatory Compliance Associate 3

Signature (Electronic Submission)

Date 02/08/2024

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Date

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

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.

(Instructions on page 2)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law 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, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. 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 the 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., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and granting approval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c) and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

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

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

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 St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

Additional Information

Location of Well

0. SHL: NWNW / 476 FNL / 1024 FWL / TWSP: 23S / RANGE: 32E / SECTION: 15 / LAT: 32.3105987 / LONG: -103.6677544 (TVD: 0 feet, MD: 0 feet)
PPP: NWNW / 100 FNL / 990 FWL / TWSP: 23S / RANGE: 32E / SECTION: 15 / LAT: 32.3116317 / LONG: -103.6678646 (TVD: 8977 feet, MD: 8985 feet)
PPP: NWNW / 1 FNL / 990 FWL / TWSP: 23S / RANGE: 32E / SECTION: 22 / LAT: 32.297234 / LONG: -103.667853 (TVD: 9550 feet, MD: 14400 feet)
BHL: SWSW / 20 FSL / 990 FWL / TWSP: 23S / RANGE: 32E / SECTION: 22 / LAT: 32.2829197 / LONG: -103.6678444 (TVD: 9550 feet, MD: 19608 feet)

CONFIDENTIAL

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office
☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025-48531	² Pool Code 17644	³ Pool Name DIAMONDTAIL; BONE SPRING
⁴ Property Code 325133	⁵ Property Name GRUMPY CAT 15 27 FED COM	⁶ Well Number 531H
⁷ OGRID No. 6137	⁸ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	⁹ Elevation 3702.3

¹⁰ Surface Location

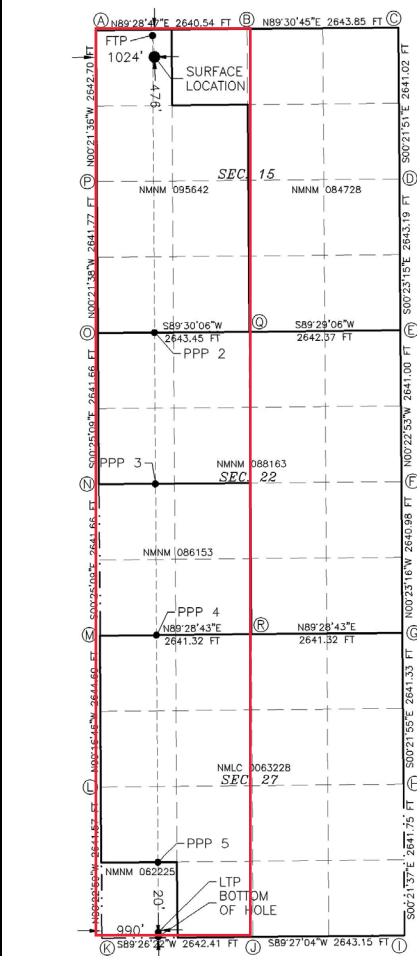
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	15	23 S	32 E		476	NORTH	1024	WEST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	27	23 S	32 E		20	SOUTH	990	WEST	LEA

¹² Dedicated Acres 960	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowance will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

	GRUMPY CAT 15 27 FED COM 531H EL. = 3702.3 GEODETIC COORDINATES NAD 83 NMSP EAST SURFACE LOCATION N. = 477366.58 E. = 746962.46 LAT. = 32.3105987°N LONG. = 103.6677544°W KICK OFF POINT CALLS 57 FNL, 991' FWL N. = 477785 E. = 746926 LAT. = 32.31165497 LONG. = 103.66794699 LAST TAKE POINT 100' FSL, 990' FWL N. = 462092.65 E. = 747027.20 LAT. = 32.2686142°N LONG. = 103.6678516°W FIRST TAKE POINT (PPP 1) 100' FNL, 990' FWL N. = 477742.18 E. = 746926.09 LAT. = 32.3116317°N LONG. = 103.6678646°W BOTTOM OF HOLE 20' FSL, 990' FWL N. = 462012.68 E. = 747027.73 LAT. = 32.2683944°N LONG. = 103.6678515°W PPP 2 0' FSL, 991' FWL N. = 472558.56 E. = 746959.58 LAT. = 32.2973830°N LONG. = 103.6678604°W PPP 3 2641' FNL, 989' FWL N. = 469917.80 E. = 746976.64 LAT. = 32.2901241°N LONG. = 103.6678582°W PPP 4 0' FSL, 986' FWL N. = 467276.89 E. = 746993.70 LAT. = 32.2828647°N LONG. = 103.6678560°W PPP 5 1321' FNL, 990' FWL N. = 463313.07 E. = 747019.31 LAT. = 32.2719689°N LONG. = 103.6678527°W CORNER COORDINATES TABLE NAD 83 NMSP EAST A - N. = 477833.18 E. = 745935.72 B - N. = 477857.15 E. = 748575.58 C - N. = 477879.64 E. = 751218.76 D - N. = 475239.25 E. = 751235.54 E - N. = 472596.69 E. = 751253.41 F - N. = 469956.33 E. = 751270.98 G - N. = 467315.98 E. = 751288.86 H - N. = 464675.28 E. = 751305.69 I - N. = 462034.16 E. = 751322.29 J - N. = 462008.84 E. = 748679.83 K - N. = 461983.00 E. = 748038.12 L - N. = 464623.93 E. = 746020.47 M - N. = 467267.93 E. = 746007.58 N - N. = 469908.94 E. = 745988.26 O - N. = 472549.96 E. = 745968.95 P - N. = 475191.11 E. = 745952.33 Q - N. = 472572.95 E. = 748611.72 R - N. = 467291.95 E. = 748648.21 LEGEND --- SECTION LINE --- QUARTER LINE --- LEASE LINE --- WELL PATH	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Shayda Omoumi</i> 2/6/2024 Signature Date Shayda Omoumi Printed Name shayda.omoumi@dvn.com E-mail Address
		¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. FEBRUARY 2, 2024 Date of Survey <i>PHILIP MONTE JARAMILLO</i> Signature and Seal of Professional Surveyor Certificate Number: PHILIP MONTE JARAMILLO PLS 12797 Professional Surveyor No. 8331A

Intent ☒ As Drilled ☐

API #		
Operator Name: DEVON ENERGY PRODUCTION COMPANY, L.P.	Property Name: GRUMPY CAT 15 27 FED COM	Well Number 531H

Kick Off Point (KOP)

UL D	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
	15	23S	32E		57	NORTH	991	WEST	LEA
Latitude					Longitude				NAD
32.31165497					-103.66794699				83

First Take Point (FTP)

UL D	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
	12	23S	32E		100	NORTH	990	WEST	LEA
Latitude					Longitude				NAD
32.3116317					103.6678646				83

Last Take Point (LTP)

UL M	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
	27	23S	32E		100	SOUTH	990	WEST	LEA
Latitude					Longitude				NAD
32.2686142					103.6678516				83

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

☐ N

Is this well an infill well?

☐ Y

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

API # 30-025-48538		
Operator Name: DEVON ENERGY PRODUCTION COMPANY, L.P.	Property Name: GRUMPY CAT 15 27 FED COM	Well Number 522H

KZ 06/29/2018

Metal One Corp.	MO-FXL	CDS#	MO-FXL 8-5/8 32.0	
			P110HSCY	
			MinYS125ksi	
		Date	SD7.875	
Connection Data Sheet		27-Nov-23		

MO-FXL

Geometry

	Imperial	S.I.
Pipe Body		
Grade *1	P110HSCY	P110HSCY
MinYS *1	125 ksi	125 ksi
Pipe OD (D)	8 5/8 in	219.08 mm
Weight	32.00 lb/ft	47.68 kg/m
Actual weight	31.10	46.34 kg/m
Wall Thickness (t)	0.352 in	8.94 mm
Pipe ID (d)	7.921 in	201.19 mm
Pipe body cross section	9.149 in ²	5,902 mm ²
Special Drift Dia. *1	7.875 in	200.03 mm
-	-	-

Connection

Box OD (W)	8.625 in	219.08 mm
PIN ID	7.921 in	201.19 mm
Make up Loss	3.847 in	97.71 mm
Box Critical Area	5.853 in ²	3686 mm ²
Joint load efficiency	69 %	69 %
Thread Taper	1 / 10 (1.2" per ft)	
Number of Threads	5 TPI	

Performance

Performance Properties for Pipe Body				
S.M.Y.S. *1	1,144	kips	5,087	kN
M.I.Y.P. *1	8,930	psi	61.59	MPa
Collapse Strength *1	4,300	psi	29.66	MPa

Note S.M.Y.S.= Specified Minimum YIELD Strength of Pipe body
M.I.Y.P. = Minimum Internal Yield Pressure of Pipe body

*1: BMP P110HSCY: MinYS125ksi, SD7.875, Collapse Strength 4,300psi

Performance Properties for Connection				
Tensile Yield load	789 kips (69% of S.M.Y.S.)			
Min. Compression Yield	789 kips (69% of S.M.Y.S.)			
Internal Pressure	6,250 psi (70% of M.I.Y.P.)			
External Pressure	100% of Collapse Strength			
Max. DLS (deg. /100ft)	29			

Recommended Torque

Min.	13,600	ft-lb	18,400	N-m
Opti.	14,900	ft-lb	20,200	N-m
Max.	16,200	ft-lb	21,900	N-m
Operational Max.	28,400	ft-lb	38,500	N-m

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

Legal Notice

The use of this information is at the reader/user's risk and no warranty is implied or expressed by Metal One Corporation or its parents, subsidiaries or affiliates (herein collectively referred to as "Metal One") with respect to the use of information contained herein. The information provided on this Connection Data Sheet is for informational purposes only, and was prepared by reference to engineering information that is specific to the subject products, without regard to safety-related factors, all of which are the sole responsibility of the operators and users of the subject connectors. Metal One assumes no responsibility for any errors with respect to this information.

Statements regarding the suitability of products for certain types of applications are based on Metal One's knowledge of typical requirements that are often placed on Metal One products in standard well configurations. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application

The products described in this Connection Data Sheet are not recommended for use in deep water offshore applications. For more information, please refer to http://www.mtlo.co.jp/mo-con/images/top/WebsiteTerms_Active_20333287_1.pdf the contents of which are incorporated by reference into this Connection Data Sheet.

Section 2 - Blowout Preventer Testing Procedure

Variance Request

Devon Energy requests to only test BOP connection breaks after drilling out of surface casing and while skidding between wells which conforms to API Standard 53 and industry standards. This test will include the Top Pipe Rams, HCR, Kill Line Check Valve, QDC (quick disconnect to wellhead) and Shell of the 10M BOPE to 5M for 10 minutes. If a break to the flex hose that runs to the choke manifold is required due to repositioning from a skid, the HCR will remain open during the shell test to include that additional break. The variance only pertains to intermediate hole-sections and no deeper than the Bone Springs Formation where 5M BOP tests are required. The initial BOP test will follow 43 CFR 3172, and subsequent tests following a skid will only test connections that are broken. The annular preventer will be tested to 100% working pressure. This variance will meet or exceed 43 CFR 3172 per the following: Devon Energy will perform a full BOP test per 43 CFR 3172 before drilling out of the intermediate casing string(s) and starting the production hole, before starting any hole section that requires a 10M test, before the expiration of the allotted 14-days for 5M intermediate batch drilling or when the drilling rig is fully mobilized to a new well pad, whichever is sooner. We will utilize a 200' TVD tolerance between intermediate shoes as the cutoff for a full BOP test. The BLM will be contacted 4hrs prior to a BOPE test. The BLM will be notified if and when a well control event is encountered. Break test will be a 14 day interval and not a 30 day full BOPE test interval. If in the event break testing is not utilized, then a full BOPE test would be conducted.

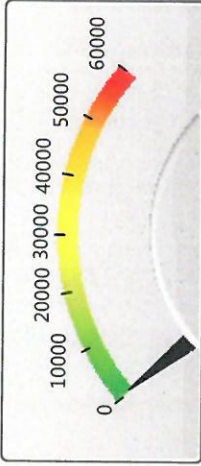
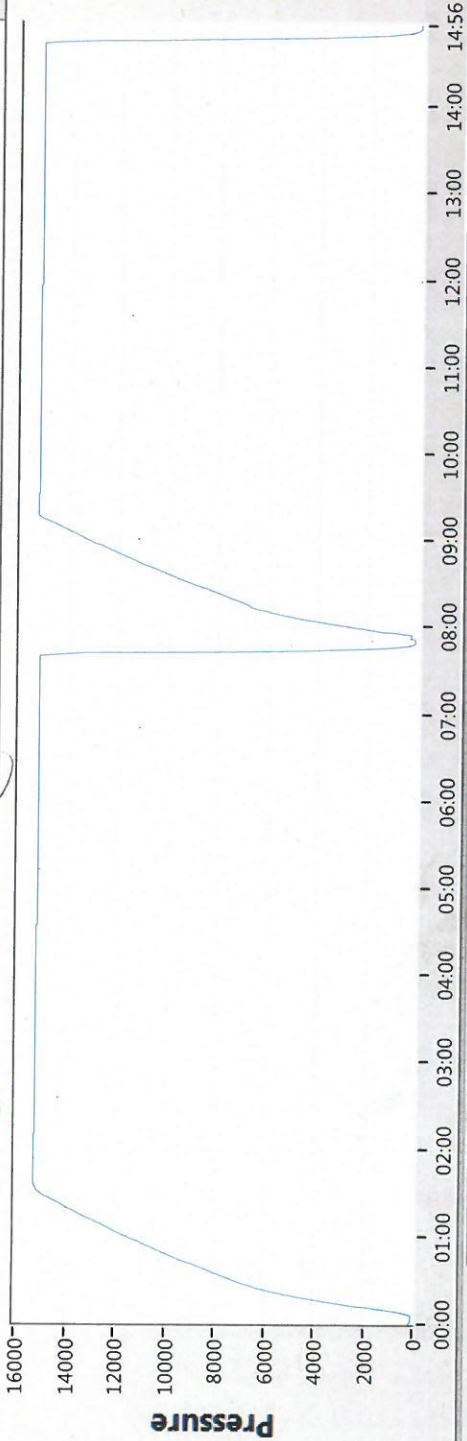
1. Well Control Response:
 1. Primary barrier remains fluid
 2. In the event of an influx due to being underbalanced and after a realized gain or flow, the order of closing BOPE is as follows:
 - a) Annular first
 - b) If annular were to not hold, Upper pipe rams second (which were tested on the skid BOP test)
 - c) If the Upper Pipe Rams were to not hold, Lower Pipe Rams would be third



2-9-17
E.Bell

80.7 °F

15:49



50

Date 02-09-17

Tested By E.BELL

Transducer bay2

Transducer Serial 181504

Calibration Date 9/6/15

Description

Part#

Job#

Serial#

Test Pressure

15000

Job#	Part#	Serial#	Description
1	TRJ0006341-0007	116966	ADPT,DRLG,CW,MBU-3T,13-5/8 10M
2			
3			
4			
5			
6			
7			
8			

TRANSDUCER CALIBRATION DUE 03/13/2017

Start

Stop

Zero

Config

Save

Print

EXIT



Well: GRUMPY CAT 15-22 FED COM 531H

County: Lea

Wellbore: Permit Plan

Design: Permit Plan #1

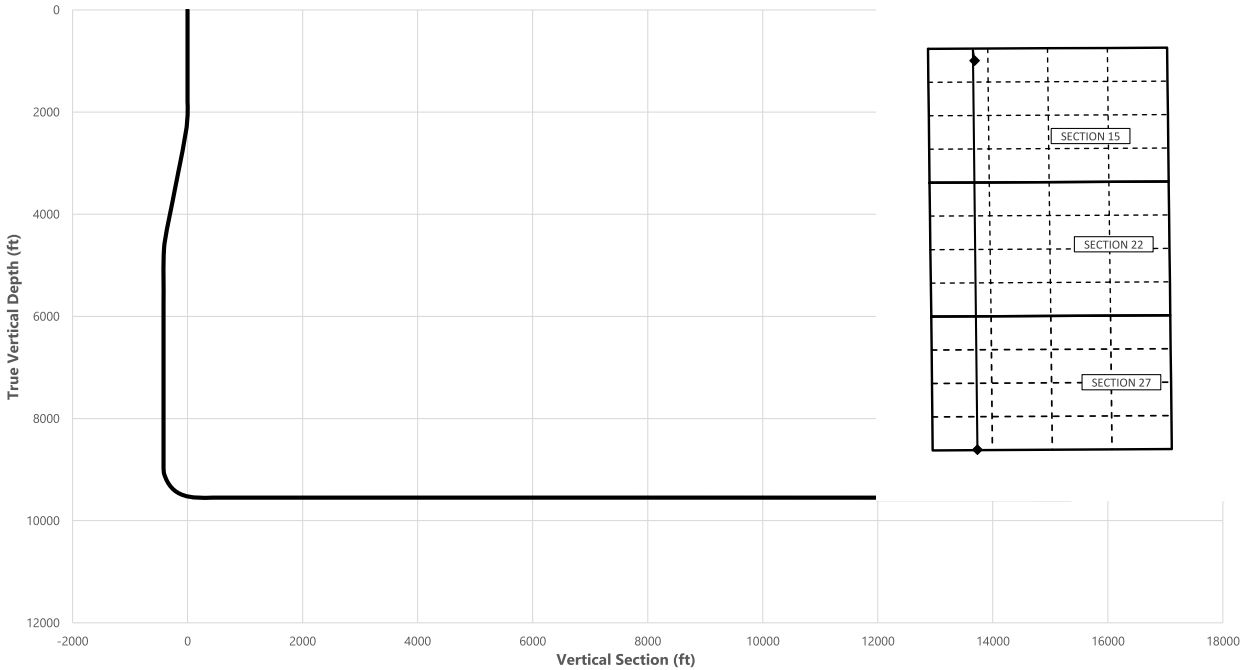
Geodetic System: US State Plane 1983

Datum: North American Datum 1927

Ellipsoid: Clarke 1866

Zone: 3001 - NM East (NAD83)

MD	INC	AZI	TVD	NS	EW	VS	DLS	Comment
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
2000.00	0.00	355.00	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2500.00	10.00	355.00	2497.47	43.36	-3.79	-43.37	2.00	Hold Tangent
4415.87	10.00	355.00	4384.23	374.78	-32.79	-374.91	0.00	Drop to Vertical
4915.87	0.00	355.00	4881.69	418.14	-36.58	-418.29	2.00	Hold Vertical
9011.22	0.00	179.63	8977.04	418.14	-36.58	-418.29	0.00	KOP
9911.22	90.00	179.63	9550.00	-154.81	-32.88	154.67	10.00	Landing Point
25110.62	90.00	179.63	9550.00	-15353.90	65.27	15354.04	0.00	BHL



Key Depths	MD	TVD
	(ft)	(ft)
Rustler	1199.00	1199.00
Salt	1615.00	1615.00
Base of Salt	4659.83	4626.00
Delaware	4899.18	4865.00
Cherry Canyon	5813.18	5779.00
Brushy Canyon	7061.18	7027.00
Bone Spring 1st / Point of Penetratic	8748.18	8714.00
exit	25030.62	9550.02

SHL

KOP

Point of Penetration

Exit

BHL

MD	TVD	Lat	Long	Section Footages
(ft)	(ft)	(°)	(°)	
0.00	0.00	32.3105	-103.6678	476' FNL, 1024' FWL of Sec 15 in T23S, R32E
9011.22	8977.04	32.3117	-103.6679	57' FNL, 991' FWL of Sec 15 in T23S, R32E
8748.18	8714.00	32.3116	-103.6679	100' FNL, 990' FWL of Sec 15 in T23S, R32E
25030.62	9550.02	32.2686	-103.6679	100' FSL, 990' FWL of Sec 27 in T23S, R32E
25110.62	9550.00	32.2683	-103.6679	20' FSL, 990' FWL of Sec 27 in T23S, R32E

	Y	X	MD
KOP	477785	746926	9011.22

GRUMPY CAT 15-22 FED COM 531H



Well: GRUMPY CAT 15-22 FED COM 531H
County: Lea
Wellbore: Permit Plan
Design: Permit Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1927
Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

MD	INC	AZI	TVD	NS	EW	VS	DLS	Comment
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
100.00	0.00	355.00	100.00	0.00	0.00	0.00	0.00	
200.00	0.00	355.00	200.00	0.00	0.00	0.00	0.00	
300.00	0.00	355.00	300.00	0.00	0.00	0.00	0.00	
400.00	0.00	355.00	400.00	0.00	0.00	0.00	0.00	
500.00	0.00	355.00	500.00	0.00	0.00	0.00	0.00	
600.00	0.00	355.00	600.00	0.00	0.00	0.00	0.00	
700.00	0.00	355.00	700.00	0.00	0.00	0.00	0.00	
800.00	0.00	355.00	800.00	0.00	0.00	0.00	0.00	
900.00	0.00	355.00	900.00	0.00	0.00	0.00	0.00	
1000.00	0.00	355.00	1000.00	0.00	0.00	0.00	0.00	
1100.00	0.00	355.00	1100.00	0.00	0.00	0.00	0.00	
1199.00	0.00	355.00	1199.00	0.00	0.00	0.00	0.00	Rustler
1200.00	0.00	355.00	1200.00	0.00	0.00	0.00	0.00	
1300.00	0.00	355.00	1300.00	0.00	0.00	0.00	0.00	
1400.00	0.00	355.00	1400.00	0.00	0.00	0.00	0.00	
1500.00	0.00	355.00	1500.00	0.00	0.00	0.00	0.00	
1600.00	0.00	355.00	1600.00	0.00	0.00	0.00	0.00	
1615.00	0.00	355.00	1615.00	0.00	0.00	0.00	0.00	Salt
1700.00	0.00	355.00	1700.00	0.00	0.00	0.00	0.00	
1800.00	0.00	355.00	1800.00	0.00	0.00	0.00	0.00	
1900.00	0.00	355.00	1900.00	0.00	0.00	0.00	0.00	
2000.00	0.00	355.00	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2100.00	2.00	355.00	2099.98	1.74	-0.15	-1.74	2.00	
2200.00	4.00	355.00	2199.84	6.95	-0.61	-6.95	2.00	
2300.00	6.00	355.00	2299.45	15.63	-1.37	-15.64	2.00	
2400.00	8.00	355.00	2398.70	27.77	-2.43	-27.78	2.00	
2500.00	10.00	355.00	2497.47	43.36	-3.79	-43.37	2.00	Hold Tangent
2600.00	10.00	355.00	2595.95	60.66	-5.31	-60.68	0.00	
2700.00	10.00	355.00	2694.43	77.95	-6.82	-77.98	0.00	
2800.00	10.00	355.00	2792.91	95.25	-8.33	-95.29	0.00	
2900.00	10.00	355.00	2891.39	112.55	-9.85	-112.59	0.00	
3000.00	10.00	355.00	2989.87	129.85	-11.36	-129.90	0.00	
3100.00	10.00	355.00	3088.35	147.15	-12.87	-147.20	0.00	
3200.00	10.00	355.00	3186.83	164.45	-14.39	-164.51	0.00	
3300.00	10.00	355.00	3285.31	181.75	-15.90	-181.81	0.00	
3400.00	10.00	355.00	3383.79	199.05	-17.42	-199.12	0.00	
3500.00	10.00	355.00	3482.27	216.34	-18.93	-216.42	0.00	
3600.00	10.00	355.00	3580.75	233.64	-20.44	-233.73	0.00	
3700.00	10.00	355.00	3679.23	250.94	-21.96	-251.03	0.00	
3800.00	10.00	355.00	3777.72	268.24	-23.47	-268.34	0.00	
3900.00	10.00	355.00	3876.20	285.54	-24.98	-285.64	0.00	
4000.00	10.00	355.00	3974.68	302.84	-26.50	-302.95	0.00	
4100.00	10.00	355.00	4073.16	320.14	-28.01	-320.25	0.00	
4200.00	10.00	355.00	4171.64	337.44	-29.52	-337.56	0.00	
4300.00	10.00	355.00	4270.12	354.73	-31.04	-354.86	0.00	
4400.00	10.00	355.00	4368.60	372.03	-32.55	-372.17	0.00	
4415.87	10.00	355.00	4384.23	374.78	-32.79	-374.91	0.00	Drop to Vertical
4500.00	8.32	355.00	4467.28	388.12	-33.96	-388.26	2.00	
4600.00	6.32	355.00	4566.46	400.81	-35.07	-400.95	2.00	
4659.83	5.12	355.00	4626.00	406.74	-35.59	-406.89	2.00	Base of Salt
4700.00	4.32	355.00	4666.03	410.04	-35.87	-410.19	2.00	
4800.00	2.32	355.00	4765.86	415.80	-36.38	-415.95	2.00	
4899.18	0.33	355.00	4865.00	418.09	-36.58	-418.24	2.00	Delaware
4900.00	0.32	355.00	4865.82	418.09	-36.58	-418.24	2.00	
4915.87	0.00	355.00	4881.69	418.14	-36.58	-418.29	2.00	Hold Vertical
5000.00	0.00	179.63	4965.82	418.14	-36.58	-418.29	0.00	
5100.00	0.00	179.63	5065.82	418.14	-36.58	-418.29	0.00	
5200.00	0.00	179.63	5165.82	418.14	-36.58	-418.29	0.00	
5300.00	0.00	179.63	5265.82	418.14	-36.58	-418.29	0.00	
5400.00	0.00	179.63	5365.82	418.14	-36.58	-418.29	0.00	
5500.00	0.00	179.63	5465.82	418.14	-36.58	-418.29	0.00	
5600.00	0.00	179.63	5565.82	418.14	-36.58	-418.29	0.00	
5700.00	0.00	179.63	5665.82	418.14	-36.58	-418.29	0.00	
5800.00	0.00	179.63	5765.82	418.14	-36.58	-418.29	0.00	
5813.18	0.00	179.63	5779.00	418.14	-36.58	-418.29	0.00	Cherry Canyon
5900.00	0.00	179.63	5865.82	418.14	-36.58	-418.29	0.00	
6000.00	0.00	179.63	5965.82	418.14	-36.58	-418.29	0.00	
6100.00	0.00	179.63	6065.82	418.14	-36.58	-418.29	0.00	
6200.00	0.00	179.63	6165.82	418.14	-36.58	-418.29	0.00	

GRUMPY CAT 15-22 FED COM 531H



Well: GRUMPY CAT 15-22 FED COM 531H
County: Lea
Wellbore: Permit Plan
Design: Permit Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1927
Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

MD	INC	AZI	TVD	NS	EW	VS	DLS	Comment
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	
6300.00	0.00	179.63	6265.82	418.14	-36.58	-418.29	0.00	
6400.00	0.00	179.63	6365.82	418.14	-36.58	-418.29	0.00	
6500.00	0.00	179.63	6465.82	418.14	-36.58	-418.29	0.00	
6600.00	0.00	179.63	6565.82	418.14	-36.58	-418.29	0.00	
6700.00	0.00	179.63	6665.82	418.14	-36.58	-418.29	0.00	
6800.00	0.00	179.63	6765.82	418.14	-36.58	-418.29	0.00	
6900.00	0.00	179.63	6865.82	418.14	-36.58	-418.29	0.00	
7000.00	0.00	179.63	6965.82	418.14	-36.58	-418.29	0.00	
7061.18	0.00	179.63	7027.00	418.14	-36.58	-418.29	0.00	Brushy Canyon
7100.00	0.00	179.63	7065.82	418.14	-36.58	-418.29	0.00	
7200.00	0.00	179.63	7165.82	418.14	-36.58	-418.29	0.00	
7300.00	0.00	179.63	7265.82	418.14	-36.58	-418.29	0.00	
7400.00	0.00	179.63	7365.82	418.14	-36.58	-418.29	0.00	
7500.00	0.00	179.63	7465.82	418.14	-36.58	-418.29	0.00	
7600.00	0.00	179.63	7565.82	418.14	-36.58	-418.29	0.00	
7700.00	0.00	179.63	7665.82	418.14	-36.58	-418.29	0.00	
7800.00	0.00	179.63	7765.82	418.14	-36.58	-418.29	0.00	
7900.00	0.00	179.63	7865.82	418.14	-36.58	-418.29	0.00	
8000.00	0.00	179.63	7965.82	418.14	-36.58	-418.29	0.00	
8100.00	0.00	179.63	8065.82	418.14	-36.58	-418.29	0.00	
8200.00	0.00	179.63	8165.82	418.14	-36.58	-418.29	0.00	
8300.00	0.00	179.63	8265.82	418.14	-36.58	-418.29	0.00	
8400.00	0.00	179.63	8365.82	418.14	-36.58	-418.29	0.00	
8500.00	0.00	179.63	8465.82	418.14	-36.58	-418.29	0.00	
8600.00	0.00	179.63	8565.82	418.14	-36.58	-418.29	0.00	
8700.00	0.00	179.63	8665.82	418.14	-36.58	-418.29	0.00	
8748.18	0.00	179.63	8714.00	418.14	-36.58	-418.29	0.00	Bone Spring 1st / Point of Penetration
8800.00	0.00	179.63	8765.82	418.14	-36.58	-418.29	0.00	
8900.00	0.00	179.63	8865.82	418.14	-36.58	-418.29	0.00	
9000.00	0.00	179.63	8965.82	418.14	-36.58	-418.29	0.00	
9011.22	0.00	179.63	8977.04	418.14	-36.58	-418.29	0.00	KOP
9100.00	8.88	179.63	9065.47	411.27	-36.54	-411.42	10.00	
9200.00	18.88	179.63	9162.43	387.32	-36.38	-387.47	10.00	
9300.00	28.88	179.63	9253.75	346.89	-36.12	-347.04	10.00	
9400.00	38.88	179.63	9336.67	291.22	-35.76	-291.37	10.00	
9500.00	48.88	179.63	9408.66	221.99	-35.31	-222.14	10.00	
9600.00	58.88	179.63	9467.53	141.32	-34.79	-141.47	10.00	
9700.00	68.88	179.63	9511.51	51.65	-34.21	-51.80	10.00	
9800.00	78.88	179.63	9539.24	-44.29	-33.59	44.15	10.00	
9900.00	88.88	179.63	9549.89	-143.59	-32.95	143.45	10.00	
9911.22	90.00	179.63	9550.00	-154.81	-32.88	154.67	10.00	Landing Point
10000.00	90.00	179.63	9550.00	-243.59	-32.31	243.45	0.00	
10100.00	90.00	179.63	9550.00	-343.59	-31.66	343.45	0.00	
10200.00	90.00	179.63	9550.00	-443.59	-31.02	443.45	0.00	
10300.00	90.00	179.63	9550.00	-543.59	-30.37	543.45	0.00	
10400.00	90.00	179.63	9550.00	-643.58	-29.72	643.45	0.00	
10500.00	90.00	179.63	9550.00	-743.58	-29.08	743.45	0.00	
10600.00	90.00	179.63	9550.00	-843.58	-28.43	843.45	0.00	
10700.00	90.00	179.63	9550.00	-943.58	-27.79	943.45	0.00	
10800.00	90.00	179.63	9550.00	-1043.57	-27.14	1043.45	0.00	
10900.00	90.00	179.63	9550.00	-1143.57	-26.49	1143.45	0.00	
11000.00	90.00	179.63	9550.00	-1243.57	-25.85	1243.45	0.00	
11100.00	90.00	179.63	9550.00	-1343.57	-25.20	1343.45	0.00	
11200.00	90.00	179.63	9550.00	-1443.57	-24.56	1443.45	0.00	
11300.00	90.00	179.63	9550.00	-1543.56	-23.91	1543.45	0.00	
11400.00	90.00	179.63	9550.00	-1643.56	-23.26	1643.45	0.00	
11500.00	90.00	179.63	9550.00	-1743.56	-22.62	1743.45	0.00	
11600.00	90.00	179.63	9550.00	-1843.56	-21.97	1843.45	0.00	
11700.00	90.00	179.63	9550.00	-1943.56	-21.33	1943.45	0.00	
11800.00	90.00	179.63	9550.00	-2043.55	-20.68	2043.45	0.00	
11900.00	90.00	179.63	9550.00	-2143.55	-20.03	2143.45	0.00	
12000.00	90.00	179.63	9550.00	-2243.55	-19.39	2243.45	0.00	
12100.00	90.00	179.63	9550.00	-2343.55	-18.74	2343.45	0.00	
12200.00	90.00	179.63	9550.00	-2443.55	-18.10	2443.45	0.00	
12300.00	90.00	179.63	9550.00	-2543.54	-17.45	2543.45	0.00	
12400.00	90.00	179.63	9550.00	-2643.54	-16.80	2643.45	0.00	
12500.00	90.00	179.63	9550.00	-2743.54	-16.16	2743.45	0.00	
12600.00	90.00	179.63	9550.00	-2843.54	-15.51	2843.45	0.00	
12700.00	90.00	179.63	9550.00	-2943.54	-14.87	2943.45	0.00	
12800.00	90.00	179.63	9550.00	-3043.53	-14.22	3043.45	0.00	

GRUMPY CAT 15-22 FED COM 531H



Well: GRUMPY CAT 15-22 FED COM 531H
County: Lea
Wellbore: Permit Plan
Design: Permit Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1927
Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

MD	INC	AZI	TVD	NS	EW	VS	DLS	Comment
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	
12900.00	90.00	179.63	9550.00	-3143.53	-13.57	3143.44	0.00	
13000.00	90.00	179.63	9550.00	-3243.53	-12.93	3243.44	0.00	
13100.00	90.00	179.63	9550.00	-3343.53	-12.28	3343.44	0.00	
13200.00	90.00	179.63	9550.00	-3443.52	-11.64	3443.44	0.00	
13300.00	90.00	179.63	9550.00	-3543.52	-10.99	3543.44	0.00	
13400.00	90.00	179.63	9550.00	-3643.52	-10.34	3643.44	0.00	
13500.00	90.00	179.63	9550.00	-3743.52	-9.70	3743.44	0.00	
13600.00	90.00	179.63	9550.00	-3843.52	-9.05	3843.44	0.00	
13700.00	90.00	179.63	9550.01	-3943.51	-8.41	3943.44	0.00	
13800.00	90.00	179.63	9550.01	-4043.51	-7.76	4043.44	0.00	
13900.00	90.00	179.63	9550.01	-4143.51	-7.11	4143.44	0.00	
14000.00	90.00	179.63	9550.01	-4243.51	-6.47	4243.44	0.00	
14100.00	90.00	179.63	9550.01	-4343.51	-5.82	4343.44	0.00	
14200.00	90.00	179.63	9550.01	-4443.50	-5.18	4443.44	0.00	
14300.00	90.00	179.63	9550.01	-4543.50	-4.53	4543.44	0.00	
14400.00	90.00	179.63	9550.01	-4643.50	-3.88	4643.44	0.00	
14500.00	90.00	179.63	9550.01	-4743.50	-3.24	4743.44	0.00	
14600.00	90.00	179.63	9550.01	-4843.50	-2.59	4843.44	0.00	
14700.00	90.00	179.63	9550.01	-4943.49	-1.95	4943.44	0.00	
14800.00	90.00	179.63	9550.01	-5043.49	-1.30	5043.44	0.00	
14900.00	90.00	179.63	9550.01	-5143.49	-0.65	5143.44	0.00	
15000.00	90.00	179.63	9550.01	-5243.49	-0.01	5243.44	0.00	
15100.00	90.00	179.63	9550.01	-5343.49	0.64	5343.44	0.00	
15200.00	90.00	179.63	9550.01	-5443.48	1.29	5443.44	0.00	
15300.00	90.00	179.63	9550.01	-5543.48	1.93	5543.44	0.00	
15400.00	90.00	179.63	9550.01	-5643.48	2.58	5643.44	0.00	
15500.00	90.00	179.63	9550.01	-5743.48	3.22	5743.44	0.00	
15600.00	90.00	179.63	9550.01	-5843.47	3.87	5843.44	0.00	
15700.00	90.00	179.63	9550.01	-5943.47	4.52	5943.44	0.00	
15800.00	90.00	179.63	9550.01	-6043.47	5.16	6043.44	0.00	
15900.00	90.00	179.63	9550.01	-6143.47	5.81	6143.44	0.00	
16000.00	90.00	179.63	9550.01	-6243.47	6.45	6243.44	0.00	
16100.00	90.00	179.63	9550.01	-6343.46	7.10	6343.44	0.00	
16200.00	90.00	179.63	9550.01	-6443.46	7.75	6443.44	0.00	
16300.00	90.00	179.63	9550.01	-6543.46	8.39	6543.44	0.00	
16400.00	90.00	179.63	9550.01	-6643.46	9.04	6643.44	0.00	
16500.00	90.00	179.63	9550.01	-6743.46	9.68	6743.44	0.00	
16600.00	90.00	179.63	9550.01	-6843.45	10.33	6843.44	0.00	
16700.00	90.00	179.63	9550.01	-6943.45	10.98	6943.44	0.00	
16800.00	90.00	179.63	9550.01	-7043.45	11.62	7043.44	0.00	
16900.00	90.00	179.63	9550.01	-7143.45	12.27	7143.44	0.00	
17000.00	90.00	179.63	9550.01	-7243.45	12.91	7243.43	0.00	
17100.00	90.00	179.63	9550.01	-7343.44	13.56	7343.43	0.00	
17200.00	90.00	179.63	9550.01	-7443.44	14.21	7443.43	0.00	
17300.00	90.00	179.63	9550.01	-7543.44	14.85	7543.43	0.00	
17400.00	90.00	179.63	9550.01	-7643.44	15.50	7643.43	0.00	
17500.00	90.00	179.63	9550.01	-7743.44	16.14	7743.43	0.00	
17600.00	90.00	179.63	9550.01	-7843.43	16.79	7843.43	0.00	
17700.00	90.00	179.63	9550.01	-7943.43	17.44	7943.43	0.00	
17800.00	90.00	179.63	9550.01	-8043.43	18.08	8043.43	0.00	
17900.00	90.00	179.63	9550.01	-8143.43	18.73	8143.43	0.00	
18000.00	90.00	179.63	9550.01	-8243.42	19.37	8243.43	0.00	
18100.00	90.00	179.63	9550.01	-8343.42	20.02	8343.43	0.00	
18200.00	90.00	179.63	9550.01	-8443.42	20.67	8443.43	0.00	
18300.00	90.00	179.63	9550.01	-8543.42	21.31	8543.43	0.00	
18400.00	90.00	179.63	9550.01	-8643.42	21.96	8643.43	0.00	
18500.00	90.00	179.63	9550.01	-8743.41	22.60	8743.43	0.00	
18600.00	90.00	179.63	9550.01	-8843.41	23.25	8843.43	0.00	
18700.00	90.00	179.63	9550.01	-8943.41	23.90	8943.43	0.00	
18800.00	90.00	179.63	9550.01	-9043.41	24.54	9043.43	0.00	
18900.00	90.00	179.63	9550.01	-9143.41	25.19	9143.43	0.00	
19000.00	90.00	179.63	9550.01	-9243.40	25.83	9243.43	0.00	
19100.00	90.00	179.63	9550.01	-9343.40	26.48	9343.43	0.00	
19200.00	90.00	179.63	9550.01	-9443.40	27.13	9443.43	0.00	
19300.00	90.00	179.63	9550.01	-9543.40	27.77	9543.43	0.00	
19400.00	90.00	179.63	9550.01	-9643.40	28.42	9643.43	0.00	
19500.00	90.00	179.63	9550.01	-9743.39	29.06	9743.43	0.00	
19600.00	90.00	179.63	9550.01	-9843.39	29.71	9843.43	0.00	
19700.00	90.00	179.63	9550.01	-9943.39	30.36	9943.43	0.00	
19800.00	90.00	179.63	9550.01	-10043.39	31.00	10043.43	0.00	

GRUMPY CAT 15-22 FED COM 531H



Well: GRUMPY CAT 15-22 FED COM 531H
County: Lea
Wellbore: Permit Plan
Design: Permit Plan #1

Geodetic System: US State Plane 1983
Datum: North American Datum 1927
Ellipsoid: Clarke 1866
Zone: 3001 - NM East (NAD83)

MD	INC	AZI	TVD	NS	EW	VS	DLS	Comment
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	
19900.00	90.00	179.63	9550.01	-10143.38	31.65	10143.43	0.00	
20000.00	90.00	179.63	9550.01	-10243.38	32.29	10243.43	0.00	
20100.00	90.00	179.63	9550.01	-10343.38	32.94	10343.43	0.00	
20200.00	90.00	179.63	9550.01	-10443.38	33.59	10443.43	0.00	
20300.00	90.00	179.63	9550.01	-10543.38	34.23	10543.43	0.00	
20400.00	90.00	179.63	9550.01	-10643.37	34.88	10643.43	0.00	
20500.00	90.00	179.63	9550.01	-10743.37	35.52	10743.43	0.00	
20600.00	90.00	179.63	9550.01	-10843.37	36.17	10843.43	0.00	
20700.00	90.00	179.63	9550.01	-10943.37	36.82	10943.43	0.00	
20800.00	90.00	179.63	9550.01	-11043.37	37.46	11043.43	0.00	
20900.00	90.00	179.63	9550.01	-11143.36	38.11	11143.43	0.00	
21000.00	90.00	179.63	9550.01	-11243.36	38.75	11243.43	0.00	
21100.00	90.00	179.63	9550.01	-11343.36	39.40	11343.42	0.00	
21200.00	90.00	179.63	9550.01	-11443.36	40.05	11443.42	0.00	
21300.00	90.00	179.63	9550.02	-11543.36	40.69	11543.42	0.00	
21400.00	90.00	179.63	9550.02	-11643.35	41.34	11643.42	0.00	
21500.00	90.00	179.63	9550.02	-11743.35	41.99	11743.42	0.00	
21600.00	90.00	179.63	9550.02	-11843.35	42.63	11843.42	0.00	
21700.00	90.00	179.63	9550.02	-11943.35	43.28	11943.42	0.00	
21800.00	90.00	179.63	9550.02	-12043.35	43.92	12043.42	0.00	
21900.00	90.00	179.63	9550.02	-12143.34	44.57	12143.42	0.00	
22000.00	90.00	179.63	9550.02	-12243.34	45.22	12243.42	0.00	
22100.00	90.00	179.63	9550.02	-12343.34	45.86	12343.42	0.00	
22200.00	90.00	179.63	9550.02	-12443.34	46.51	12443.42	0.00	
22300.00	90.00	179.63	9550.02	-12543.33	47.15	12543.42	0.00	
22400.00	90.00	179.63	9550.02	-12643.33	47.80	12643.42	0.00	
22500.00	90.00	179.63	9550.02	-12743.33	48.45	12743.42	0.00	
22600.00	90.00	179.63	9550.02	-12843.33	49.09	12843.42	0.00	
22700.00	90.00	179.63	9550.02	-12943.33	49.74	12943.42	0.00	
22800.00	90.00	179.63	9550.02	-13043.32	50.38	13043.42	0.00	
22900.00	90.00	179.63	9550.02	-13143.32	51.03	13143.42	0.00	
23000.00	90.00	179.63	9550.02	-13243.32	51.68	13243.42	0.00	
23100.00	90.00	179.63	9550.02	-13343.32	52.32	13343.42	0.00	
23200.00	90.00	179.63	9550.02	-13443.32	52.97	13443.42	0.00	
23300.00	90.00	179.63	9550.02	-13543.31	53.61	13543.42	0.00	
23400.00	90.00	179.63	9550.02	-13643.31	54.26	13643.42	0.00	
23500.00	90.00	179.63	9550.02	-13743.31	54.91	13743.42	0.00	
23600.00	90.00	179.63	9550.02	-13843.31	55.55	13843.42	0.00	
23700.00	90.00	179.63	9550.02	-13943.31	56.20	13943.42	0.00	
23800.00	90.00	179.63	9550.02	-14043.30	56.84	14043.42	0.00	
23900.00	90.00	179.63	9550.02	-14143.30	57.49	14143.42	0.00	
24000.00	90.00	179.63	9550.02	-14243.30	58.14	14243.42	0.00	
24100.00	90.00	179.63	9550.02	-14343.30	58.78	14343.42	0.00	
24200.00	90.00	179.63	9550.02	-14443.30	59.43	14443.42	0.00	
24300.00	90.00	179.63	9550.02	-14543.29	60.07	14543.42	0.00	
24400.00	90.00	179.63	9550.02	-14643.29	60.72	14643.42	0.00	
24500.00	90.00	179.63	9550.02	-14743.29	61.37	14743.42	0.00	
24600.00	90.00	179.63	9550.02	-14843.29	62.01	14843.42	0.00	
24700.00	90.00	179.63	9550.02	-14943.28	62.66	14943.42	0.00	
24800.00	90.00	179.63	9550.02	-15043.28	63.30	15043.42	0.00	
24900.00	90.00	179.63	9550.02	-15143.28	63.95	15143.42	0.00	
25000.00	90.00	179.63	9550.02	-15243.28	64.60	15243.42	0.00	
25030.62	90.00	179.63	9550.02	-15273.90	64.79	15274.04	0.00	exit
25100.00	90.00	179.63	9550.02	-15343.28	65.24	15343.42	0.00	
25110.62	90.00	179.63	9550.00	-15353.90	65.27	15354.04	0.00	BHL

GRUMPY CAT 15-22 FED COM 531H

1. Geologic Formations

TVD of target	9550	Pilot hole depth	N/A
MD at TD:	25111	Deepest expected fresh water	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	1199		
Salt	1615		
Base of Salt	4626		
Delaware	4865		
Cherry Canyon	5779		
Brushy Canyon	7027		
Bone Spring 1st	8714		

*H2S, water flows, loss of circulation, abnormal pressures, etc.

GRUMPY CAT 15-22 FED COM 531H

2. Casing Program (Primary Design)

Hole Size	Csg. Size	Wt (PPF)	Grade	Conn	Casing Interval		Casing Interval	
					From (MD)	To (MD)	From (TVD)	To (TVD)
14 3/4	10 3/4	45 1/2	J-55	BTC	0	1224	0	1224
9 7/8	8 5/8	32	P110HSCY	MOFXL	0	8911	0	8911
7 7/8	5 1/2	20	P110	DWC/C-IS PLUS	0	25111	0	9550

•All casing strings will be tested in accordance with 43 CFR 3172. Must have table for contingency casing.

3. Cementing Program

Casing	# Sks	TOC	Wt. ppg	Yld (ft3/sack)	Slurry Description
Surface	733	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	493	Surf	13.0	2.3	2nd State: Bradenhead Squeeze - Lead: Class C Cement + additives
	220	7061	13.2	1.44	Tail: Class H / C + additives
Production	117	7011	9	3.27	Lead: Class H / C + additives
	2131	9011	13.2	1.44	Tail: Class H / C + additives

Assuming no returns are established while drilling, Devon requests to pump a two stage cement job on the intermediate casing string with the first stage being pumped conventionally with the calculated top of cement at the Brushy Canyon and the second stage performed as a bradenhead squeeze with planned cement from the Brushy Canyon to surface. The final cement top will be verified by Echo-meter. Devon will include the Echo-meter verified fluid top and the volume of displacement fluid above the cement slurry in the annulus in all post-drill sundries on wells utilizing this cement program. Devon will report to the BLM the volume of fluid (limited to 1 bbls) used to flush intermediate casing valves following backside cementing procedures.

Casing String	% Excess
Surface	50%
Intermediate 1	30%
Prod	10%

Devon Energy requests to offline cement on intermediate strings that are set in formations shallower than the Wolfcamp. Prior to commencing offline cementing operations, the well will be monitored for any abnormal pressures and confirmed to be static. A dual manifold system (equipped with chokes) for the returns will also be utilized as a redundancy. All equipment used for offline cementing will have a minimum 5M rating to match intermediate sections' 5M BOPE requirements.

GRUMPY CAT 15-22 FED COM 531H

4. Pressure Control Equipment (Three String Design)

BOP installed and tested before drilling which hole?		Size?	Min. Required WP	Type	✓	Tested to:
Int 1	13-5/8"	5M	Annular		X	50% of rated working pressure
			Blind Ram		X	5M
			Pipe Ram			
			Double Ram		X	
			Other*			
Production	13-5/8"	5M	Annular (5M)		X	50% of rated working pressure
			Blind Ram		X	5M
			Pipe Ram			
			Double Ram		X	
			Other*			
			Annular (5M)			
			Blind Ram			
			Pipe Ram			
			Double Ram			
			Other*			
N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.					
Y	A variance is requested to run a 5 M annular on a 10M system					

GRUMPY CAT 15-22 FED COM 531H

5. Mud Program (Three String Design)

Section	Type	Weight (ppg)
Surface	FW Gel	8.5-9
Intermediate	DBE / Cut Brine	10-10.5
Production	OBM	10-10.5

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

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

6. Logging and Testing Procedures**Logging, Coring and Testing**

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

Additional logs planned		Interval
	Resistivity	Int. shoe to KOP
	Density	Int. shoe to KOP
X	CBL	Production casing
X	Mud log	Intermediate shoe to TD
	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH pressure at deepest TVD	5214
Abnormal temperature	No

Mitigation measure for abnormal conditions. Describe. Lost circulation material/sweeps/mud scavengers.

Hydrogen Sulfide (H₂S) monitors will be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of 43 CFR 3176. If Hydrogen Sulfide is encountered measured values and formations will be provided to the BLM.

N	H ₂ S is present
Y	H ₂ S plan attached.

GRUMPY CAT 15-22 FED COM 531H

8. Other facets of operation

Is this a walking operation? Potentially

- 1 If operator elects, drilling rig will batch drill the surface holes and run/cement surface casing; walking the rig to next wells on the pad.
- 2 The drilling rig will then batch drill the intermediate sections and run/cement intermediate casing; the wellbore will be isolated with a blind flange and pressure gauge installed for monitoring the well before walking to the next well.
- 3 The drilling rig will then batch drill the production hole sections on the wells with OBM, run/cement production casing, and install TA caps or tubing heads for completions.

NOTE: During batch operations the drilling rig will be moved from well to well however, it will not be removed from the pad until all wells have production casing run/cemented.

Will be pre-setting casing? Potentially

- 1 Spudder rig will move in and batch drill surface hole.
 - a. Rig will utilize fresh water based mud to drill surface hole to TD. Solids control will be handled entirely on a closed loop basis.,
- 2 After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (43 CFR 3172, all COAs and NMOCD regulations).
- 3 The wellhead will be installed and tested once the surface casing is cut off and the WOC time has been reached.
- 4 A blind flange with the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with a pressure gauge installed on the wellhead.
- 5 Spudder rig operations is expected to take 4-5 days per well on a multi-well pa.
- 6 The NMOCD will be contacted and notified 24 hours prior to commencing spudder rig operations.
- 7 Drilling operations will be performed with drilling rig. A that time an approved BOP stack will be nipped up and tested on the wellhead before drilling operations commences on each well.
 - a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

Attachments

X Directional Plan
Other, describe

Connection Data Sheet

OD (in.)	WEIGHT (lbs./ft.)	WALL (in.)	GRADE	DRIFT (in.)	RBW%	CONNECTION
5.500	Nominal: 20.00 Plain End: 19.83	0.361	VST P110 EC	4.653	87.5	DWC/C-IS PLUS

PIPE PROPERTIES		
Nominal OD	5.500	in.
Nominal ID	4.778	in.
Nominal Area	5.828	sq.in.
Grade Type	API 5CT; Vallourec Sourced Material Only	
Min. Yield Strength	125	ksi
Max. Yield Strength	140	ksi
Min. Tensile Strength	135	ksi
Yield Strength	729	klb
Ultimate Strength	787	klb
Min. Internal Yield	14,360	psi
High Collapse	12,090	psi

CONNECTION PROPERTIES		
Connection Type	Semi-Premium T&C	
Connection OD (nom)	6.300	in.
Connection ID (nom)	4.778	in.
Make-Up Loss	4.125	in.
Coupling Length	9.250	in.
Critical Cross Section	5.828	sq.in.
Tension Efficiency	100.0%	of pipe
Compression Efficiency	100.0%	of pipe
Internal Pressure Efficiency	100.0%	of pipe
External Pressure Efficiency	100.0%	of pipe

CONNECTION PERFORMANCES		
Yield Strength	729	klb
Parting Load	787	klb
Compression Rating	729	klb
Min. Internal Yield	14,360	psi
High Collapse	12,090	psi
Maximum Uniaxial Bend Rating	104.2	°/100 ft
Ref String Length w 1.4 Design Factor	26,040	ft

FIELD TORQUE VALUES		
Min. Make-up Torque	16,600	ft.lbs
Opti. Make-up Torque	17,850	ft.lbs
Max. Make-up Torque	19,100	ft.lbs
Min. Shoulder Torque	1,660	ft.lbs
Max. Shoulder Torque	13,280	ft.lbs
Max. Delta Turn	0.200	Turns
†Max Operational Torque	24,300	ft.lbs
†Maximum Torsional Value (MTV)	26,730	ft.lbs

†Maximum Operational Torque and Maximum Torsional Value Only Valid with Vallourec P110EC Material

For detailed information on performance properties, refer to DWC Connection Data Notes on following page(s).

Connection specifications within the control of VAM USA were correct as of the date printed. Specifications are subject to change without notice. Certain connection specifications are dependent on the mechanical properties of the pipe. Mechanical properties of mill proprietary pipe grades were obtained from mill publications and are subject to change. Properties of mill proprietary grades should be confirmed with the mill. Users are advised to obtain current connection specifications and verify pipe mechanical properties for each application.

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DWC Connection Data Notes:

1. DWC connections are available with a seal ring (SR) option.
2. All standard DWC/C connections are interchangeable for a given pipe OD. DWC connections are interchangeable with DWC/C-SR connections of the same OD and wall.
3. Connection performance properties are based on nominal pipe body and connection dimensions.
4. DWC connection internal and external pressure resistance is calculated using the API rating for buttress connections. API Internal pressure resistance is calculated from formulas 31, 32, and 35 in the API Bulletin 5C3.
5. DWC joint strength is the minimum pipe body yield strength multiplied by the connection critical area.
6. API joint strength is for reference only. It is calculated from formulas 42 and 43 in the API Bulletin 5C3.
7. Bending efficiency is equal to the compression efficiency.
8. The torque values listed are recommended. The actual torque required may be affected by field conditions such as temperature, thread compound, speed of make-up, weather conditions, etc.
9. Connection yield torque is not to be exceeded.
10. Reference string length is calculated by dividing the joint strength by both the nominal weight in air and a design factor (DF) of 1.4. These values are offered for reference only and do not include load factors such as bending, buoyancy, temperature, load dynamics, etc.
11. DWC connections will accommodate API standard drift diameters.
12. DWC/C family of connections are compatible with API Buttress BTC connections. Please contact tech.support@vam-usa.com for details on connection ratings and make-up.

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05/23/2023 4:11 PM





10-3/4" 45.50# 0.400" J-55

Dimensions (Nominal)

Outside Diameter	10.750	in.
Wall	0.400	in.
Inside Diameter	9.950	in.
Drift	9.875	in.
Weight, T&C	45.500	lbs/ft
Weight, PE	44.260	lbs/ft

Internal Yield Pressure at Minimum Yield

Collapse	2090	psi
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Internal Yields Pressure

PE	3580	psi
STC	3580	psi
BTC	3580	psi

Yield Strength, Pipe Body	715	1000 lbs
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Joint Strength, STC

STC	493	1000 lbs
BTC	796	1000 lbs

Note: SeAH Steel has produced this specification sheet for general information only. SeAH does not assume liability or responsibility for any loss or injury resulting from the use of information or data contained herein. All applications for the material described are at the customer's own risk and responsibility.

Grumpy Cat 15-27 Fed Com 531H

Grumpy Cat 15-27 Fed Com 531H

10 3/4	surface csg in a		14 3/4	inch hole.		Design Factors				Surface		
Segment	#/ft	Grade		Coupling	Body	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	45.50		j 55	btc	12.18	3.46	0.74	1,291	6	1.23	6.54	58,741
"B"				btc				0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,500				Tail Cmt	does not	circ to sfc.	Totals:	1,291				58,741
Comparison of Proposed to Minimum Required Cement Volumes												
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd				Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE				Hole-Cplg
14 3/4	0.5563	733	1056	718	47	9.00	2900	3M				1.50
Burst Frac Gradient(s) for Segment(s) A, B = , b All > 0.70, OK.												
Site plat (pipe racks 3 or 4) as per D.D.3 III D.4.1, not found												

8 5/8		casing inside the		10 3/4		Design Factors					Int 1		
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight	
"A"	32.00			p 110	mo-flx	2.77	0.88	1.2	8,911	1	2.01	1.48	285,152
"B"												0	
w/8.4#/g mud, 30min Sfc Csg Test psig: 487								Totals:		8,911		285,152	
The cement volume(s) are intended to achieve a top of								0		ft from surface or a		1291	overlap.
Hole	Annular	1 Stage		1 Stage		Drilling	Calc	Req'd		Min Dist			
Size	Volume	Cmt Sx		CuFt Cmt		Cu Ft	% Excess	Mud Wt	MASP	BOPE		Hole-Cplg	
9 7/8	0.1261	220		317		1134	-72	10.50	3108	5M		0.63	
r D V Tool(s):				7027		sum of sx		713		Σ CuFt		Σ%excess	
t by stage % :				33		26		1451		28			
Class 'C' tail cmt yld > 1.35													

Tail cmt		casing inside the		8 5/8		Design Factors					Prod 1		
5 1/2													
Segment	#/ft	Grade		Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight	
"A"	20.00		p 110	dwc/c is+	3.82	2.32	2.76	25,111	3	4.62	3.89	502,220	
"B"								0				0	
"C"								0				0	
"D"								0				0	
w/8.4#/g mud, 30min Sfc Csg Test psig: 2,101								Totals:	25,111			502,220	
The cement volume(s) are intended to achieve a top of								8711	ft from surface or a	200		overlap.	
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd				Min Dist	
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE				Hole-Cplg	
7 7/8	0.1733	2248	3451	2842	21	10.50						0.79	
Class 'C' tail cmt yld > 1.35													

#N/A											
0				5 1/2	Design Factors			<Choose Casing>			
Segment	#/ft	Grade	Coupling	#N/A	Collapse	Burst	Length	B@	a-B	a-C	Weight
"A"			0.00				0				0
"B"			0.00				0				0
w/8.4#/g mud, 30min Sfc Csg Test psig:							Totals:	0	0		
Cmt vol calc below includes this csg, TOC intended							#N/A	ft from surface or a	#N/A	overlap.	
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd			Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE			Hole-Cplg
0		#N/A	#N/A	0	#N/A						
#N/A Capitan Reef est top XXXX.											

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Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
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CONDITIONS

Action 315946

CONDITIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 315946
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	None	3/1/2024