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

Sundry Print Report

06/10/2024

Well Name: SPUD MUFFIN 31-30 FED COM

Well Location: T23S / R29E / SEC 31 / SESW / 32.2555618 / -104.0245821

County or Parish/State: EDDY / NM

Well Number: 820H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM82886

Unit or CA Name:

Unit or CA Number:

US Well Number:

Operator: DEVON ENERGY PRODUCTION COMPANY LP

Notice of Intent

Sundry ID: 2794223

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 06/07/2024

Time Sundry Submitted: 01:38

Date proposed operation will begin: 06/07/2024

Procedure Description: Devon Energy Production Co., L.P. (Devon) respectfully requests to move BHL on the subject well. Please see attached revised C102, drill plan (break test variance included), and directional plan. Permitted BHL: Lot 1 20 FNL, 850 FWL, 30-23S-29E Proposed BHL: Lot 1 20 FNL, 330 FWL, 30-23S-29E No new leases have been added since approved APD. APD ID: 10400086512

NOI Attachments

Procedure Description

WA018532791_SPUD_MUFFIN_31_30_FED_COM_820H_R1_20240607133755.pdf

5.5_20lb_P110EC_DWC_C_IS_PLUS___5_23_2023_20240607133746.pdf

SPUD_MUFFIN_31_30_FED_COM_820H_Directional_Plan_03_20_24_20240607133747.pdf

SPUD_MUFFIN_31_30_FED_COM_820H_20240607133746.pdf

8.625_32lb_P110_MOFXL_20240607133747.pdf

10.75_45.50_J55_BTC_SC_BLP_Devon_20240607133746.pdf

break_test_variance_BOP_1_15_24_20240607133747.pdf

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County or Parish/State: EDDY / NM

Well Number: 820H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM82886

Unit or CA Name:

Unit or CA Number:

US Well Number:

Operator: DEVON ENERGY PRODUCTION COMPANY LP

Conditions of Approval

Specialist Review

Spud_Muffin_31_30_Fed_Com_820H_Sundry_ID_2794223_20240610095233.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: JUN 07, 2024 01:38 PM

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: 06/10/2024

Signature: Long Vo

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

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*

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

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

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

8. Well Name and No.

2. Name of Operator

9. API Well No.

3a. Address

3b. Phone No. *(include area code)*

10. Field and Pool or Exploratory Area

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

11. Country or Parish, State

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
	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ 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 recomplete 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 OFICE 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 ofthis form to U.S. Department ofthe Interior, Bureau ofLand 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: SESW / 475 FSL / 2400 FWL / TWSP: 23S / RANGE: 29E / SECTION: 31 / LAT: 32.2555618 / LONG: -104.0245821 (TVD: 0 feet, MD: 0 feet)

PPP: LOT 4 / 100 FSL / 850 FWL / TWSP: 23S / RANGE: 29E / SECTION: 31 / LAT: 32.254734 / LONG: -104.0295996 (TVD: 9759 feet, MD: 9962 feet)

BHL: LOT 1 / 20 FNL / 850 FWL / TWSP: 23S / RANGE: 29E / SECTION: 30 / LAT: 32.2834759 / LONG: -104.0294972 (TVD: 10495 feet, MD: 20976 feet)

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	[2] Pool Code	[3] Pool Name
	98220	PURPLE SAGE; WOLFCAMP (GAS)

[4] Property Code	[5] Property Name	[6] Well Number
	SPUD MUFFIN 31 30 FED COM	820H

[7] OGRID No.	[8] Operator Name	[9] Elevation
6137	DEVON ENERGY PRODUCTION COMPANY, L.P.	2961.4

[10] Surface Location

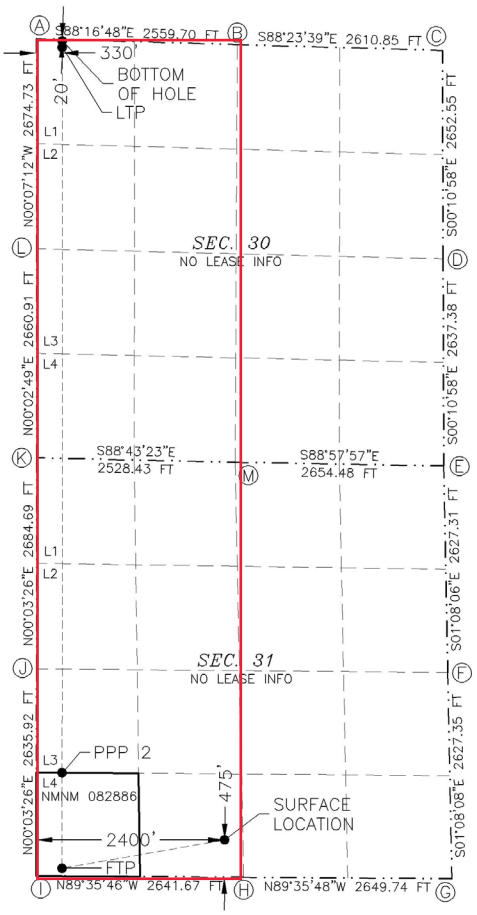
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	31	23 S	29 E		475	SOUTH	2400	WEST	EDDY

[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
1	30	23 S	29 E		20	NORTH	330	WEST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
632.38			

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.



SPUD MUFFIN 31 30 FED COM 820H
EL. = 2961.4

GEODETIC COORDINATES
NAD 83 NMSP EAST
SURFACE LOCATION
N.= 456843.87
E.= 636780.48
LAT. = 32.2555618°N
LONG. = 104.0245821°W

KICK OFF POINT
CALLS 45' FSL, 329' FWL
N.= 456428
E.= 634709
LAT. = 32.25434124
LONG. = -104.03136942

FIRST TAKE POINT (PPP 1)
100' FSL, 330' FWL
N.= 456483.55
E.= 634710.56
LAT. = 32.2545875°N
LONG. = 104.0312813°W

LAST TAKE POINT
100' FNL, 330' FWL
N.= 466929.86
E.= 634712.59
LAT. = 32.2833028°N
LONG. = 104.0311796°W

BOTTOM OF HOLE
20' FNL, 330' FWL
N.= 467009.89
E.= 634712.43
LAT. = 32.2835228°N
LONG. = 104.0311794°W

PPP 2
1318' FSL, 329' FWL
N.= 457700.95
E.= 634710.80
LAT. = 32.2579340°N
LONG. = 104.0312695°W

CORNER COORDINATES TABLE
NAD 83 NMSP EAST

A –	N.= 467039.80	E.= 634382.44
B –	N.= 466963.00	E.= 636940.42
C –	N.= 466889.85	E.= 639549.68
D –	N.= 464237.89	E.= 639558.14
E –	N.= 461601.10	E.= 639566.56
F –	N.= 458974.88	E.= 639618.59
G –	N.= 456348.63	E.= 639670.65
H –	N.= 456367.27	E.= 637021.56
I –	N.= 456385.89	E.= 634380.54
J –	N.= 459021.23	E.= 634383.17
K –	N.= 461705.34	E.= 634385.85
L –	N.= 464365.66	E.= 634388.03
M –	N.= 461649.00	E.= 636913.10

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.

Shayda Omoumi 3/20/2024
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 20, 2024
Date of Survey

Signature and Seal of Professional Surveyor:
EDMUND F. JARAMILLO NEW MEXICO 12797 REGISTERED PROFESSIONAL SURVEYOR

Certificate Number: EDMUND F. JARAMILLO, LS 12797
SURVEY NO. 9413A

Intent [X] As Drilled [ ]

API #

Operator Name:	Property Name:	Well Number
DEVON ENERGY PRODUCTION COMPANY, L.P.	SPUD MUFFIN 31 30 FED COM	820H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
4	31	23S	29E		45	SOUTH	329	WEST	EDDY

Latitude	Longitude	NAD
32.25434124	-104.03136942	83

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
4	31	23S	29E		100	SOUTH	330	WEST	EDDY

Latitude	Longitude	NAD
32.2545875	104.0312813	83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
1	30	23S	29E		100	NORTH	330	WEST	EDDY

Latitude	Longitude	NAD
32.2833028	104.0311796	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 #
30-015-45266

Operator Name:	Property Name:	Well Number
DEVON ENERGY PRODUCTION COMPANY, L.P.	SPUD MUFFIN 31 30 COM	622H

KZ 06/29/2018

DWC/C-IS PLUS

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).

05/23/2023 4:11 PM

VAM USA

VAM USA
2107 CityWest Boulevard Suite 1300
Houston, TX 77042
Phone: 713-479-3200
Fax: 713-479-3234
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.

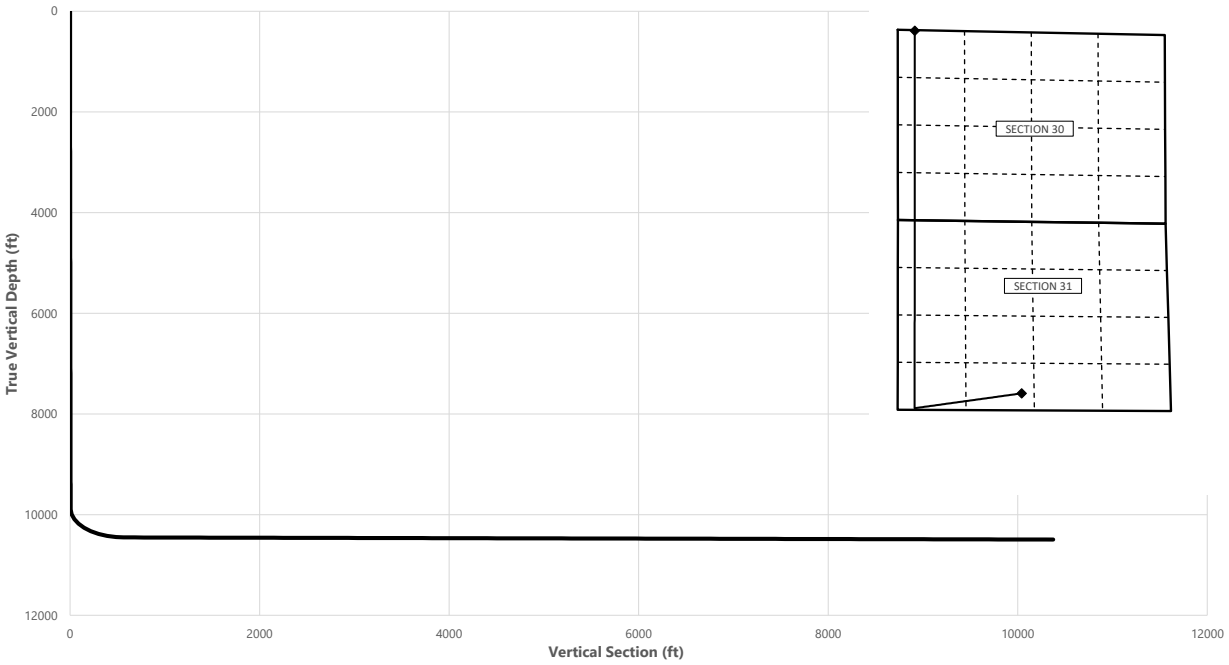
05/23/2023 4:11 PM

devon

Well: SPUD MUFFIN 31-30 FED COM 820H
County: Eddy
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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
2000.00	0.00	258.65	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2850.00	17.00	258.65	2837.58	-24.64	-122.73	0.32	2.00	Hold Tangent
9221.05	17.00	258.65	8930.25	-391.22	-1949.01	5.15	0.00	Drop to Vertical
10071.05	0.00	258.65	9767.83	-415.86	-2071.74	5.48	2.00	Hold Vertical
10183.26	0.00	0.02	9880.05	-415.86	-2071.74	5.48	0.00	KOP
11080.86	89.76	0.02	10453.00	154.70	-2071.55	564.54	10.00	Landing Point
21092.27	89.76	0.02	10495.00	10166.02	-2068.05	10374.24	0.00	BHL



Key Depths	MD (ft)	TVD (ft)
Rustler	114.00	114.00
Salt	469.00	469.00
Base of Salt	2547.32	2544.00
Delaware	2794.13	2784.00
Cherry Canyon	3724.63	3674.00
Brushy Canyon	5345.46	5224.00
1st Bone Spring Lime	6663.03	6484.00
Bone Spring 1st	7693.03	7469.00
Bone Spring 2nd	8529.59	8269.00
3rd Bone Spring Lime	8926.95	8649.00
Bone Spring 3rd	9655.76	9354.00
Wolfcamp / Point of Penetration	10062.22	9759.00
exit	21012.27	10494.68

	MD (ft)	TVD (ft)	Lat (°)	Long (°)	Section Footages
SHL	0.00	0.00	32.2555	-104.0247	475' FSL, 2400' FWL of Sec 31 in T23S, R29E
KOP	10183.26	9880.05	32.2543	-104.0314	45' FSL, 329' FWL of Sec 31 in T23S, R29E
Point of Penetration	10062.22	9759.00	32.2546	-104.0313	100' FSL, 330' FWL of Sec 31 in T23S, R29E
Exit	21012.27	10494.68	32.2833	-104.0312	100' FNL , 330' FWL of Sec 30 in T23S, R29E
BHL	21092.27	10495.00	32.2834	-104.0313	20' FNL, 330' FWL of Sec 30 in T23S, R29E

	Y	X	MD
KOP	**456428**	**634709**	**10183.26**

devon

Well: SPUD MUFFIN 31-30 FED COM 820H
County: Eddy
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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
100.00	0.00	258.65	100.00	0.00	0.00	0.00	0.00	
114.00	0.00	258.65	114.00	0.00	0.00	0.00	0.00	Rustler
200.00	0.00	258.65	200.00	0.00	0.00	0.00	0.00	
300.00	0.00	258.65	300.00	0.00	0.00	0.00	0.00	
400.00	0.00	258.65	400.00	0.00	0.00	0.00	0.00	
469.00	0.00	258.65	469.00	0.00	0.00	0.00	0.00	Salt
500.00	0.00	258.65	500.00	0.00	0.00	0.00	0.00	
600.00	0.00	258.65	600.00	0.00	0.00	0.00	0.00	
700.00	0.00	258.65	700.00	0.00	0.00	0.00	0.00	
800.00	0.00	258.65	800.00	0.00	0.00	0.00	0.00	
900.00	0.00	258.65	900.00	0.00	0.00	0.00	0.00	
1000.00	0.00	258.65	1000.00	0.00	0.00	0.00	0.00	
1100.00	0.00	258.65	1100.00	0.00	0.00	0.00	0.00	
1200.00	0.00	258.65	1200.00	0.00	0.00	0.00	0.00	
1300.00	0.00	258.65	1300.00	0.00	0.00	0.00	0.00	
1400.00	0.00	258.65	1400.00	0.00	0.00	0.00	0.00	
1500.00	0.00	258.65	1500.00	0.00	0.00	0.00	0.00	
1600.00	0.00	258.65	1600.00	0.00	0.00	0.00	0.00	
1700.00	0.00	258.65	1700.00	0.00	0.00	0.00	0.00	
1800.00	0.00	258.65	1800.00	0.00	0.00	0.00	0.00	
1900.00	0.00	258.65	1900.00	0.00	0.00	0.00	0.00	
2000.00	0.00	258.65	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2100.00	2.00	258.65	2099.98	-0.34	-1.71	0.00	2.00	
2200.00	4.00	258.65	2199.84	-1.37	-6.84	0.02	2.00	
2300.00	6.00	258.65	2299.45	-3.09	-15.39	0.04	2.00	
2400.00	8.00	258.65	2398.70	-5.49	-27.33	0.07	2.00	
2500.00	10.00	258.65	2497.47	-8.57	-42.67	0.11	2.00	
2547.32	10.95	258.65	2544.00	-10.26	-51.11	0.14	2.00	Base of Salt
2600.00	12.00	258.65	2595.62	-12.32	-61.38	0.16	2.00	
2700.00	14.00	258.65	2693.06	-16.75	-83.43	0.22	2.00	
2794.13	15.88	258.65	2784.00	-21.52	-107.23	0.28	2.00	Delaware
2800.00	16.00	258.65	2789.64	-21.84	-108.81	0.29	2.00	
2850.00	17.00	258.65	2837.58	-24.64	-122.73	0.32	2.00	Hold Tangent
2900.00	17.00	258.65	2885.40	-27.51	-137.06	0.36	0.00	
3000.00	17.00	258.65	2981.03	-33.27	-165.73	0.44	0.00	
3100.00	17.00	258.65	3076.66	-39.02	-194.39	0.51	0.00	
3200.00	17.00	258.65	3172.29	-44.77	-223.06	0.59	0.00	
3300.00	17.00	258.65	3267.92	-50.53	-251.72	0.67	0.00	
3400.00	17.00	258.65	3363.55	-56.28	-280.39	0.74	0.00	
3500.00	17.00	258.65	3459.18	-62.04	-309.05	0.82	0.00	
3600.00	17.00	258.65	3554.81	-67.79	-337.72	0.89	0.00	
3700.00	17.00	258.65	3650.44	-73.54	-366.39	0.97	0.00	
3724.63	17.00	258.65	3674.00	-74.96	-373.45	0.99	0.00	Cherry Canyon
3800.00	17.00	258.65	3746.07	-79.30	-395.05	1.04	0.00	
3900.00	17.00	258.65	3841.70	-85.05	-423.72	1.12	0.00	
4000.00	17.00	258.65	3937.33	-90.81	-452.38	1.20	0.00	
4100.00	17.00	258.65	4032.96	-96.56	-481.05	1.27	0.00	
4200.00	17.00	258.65	4128.59	-102.31	-509.71	1.35	0.00	
4300.00	17.00	258.65	4224.23	-108.07	-538.38	1.42	0.00	
4400.00	17.00	258.65	4319.86	-113.82	-567.04	1.50	0.00	
4500.00	17.00	258.65	4415.49	-119.58	-595.71	1.58	0.00	
4600.00	17.00	258.65	4511.12	-125.33	-624.37	1.65	0.00	
4700.00	17.00	258.65	4606.75	-131.08	-653.04	1.73	0.00	
4800.00	17.00	258.65	4702.38	-136.84	-681.70	1.80	0.00	
4900.00	17.00	258.65	4798.01	-142.59	-710.37	1.88	0.00	
5000.00	17.00	258.65	4893.64	-148.35	-739.03	1.95	0.00	
5100.00	17.00	258.65	4989.27	-154.10	-767.70	2.03	0.00	
5200.00	17.00	258.65	5084.90	-159.85	-796.37	2.11	0.00	
5300.00	17.00	258.65	5180.53	-165.61	-825.03	2.18	0.00	
5345.46	17.00	258.65	5224.00	-168.22	-838.06	2.22	0.00	Brushy Canyon
5400.00	17.00	258.65	5276.16	-171.36	-853.70	2.26	0.00	
5500.00	17.00	258.65	5371.79	-177.12	-882.36	2.33	0.00	
5600.00	17.00	258.65	5467.42	-182.87	-911.03	2.41	0.00	
5700.00	17.00	258.65	5563.05	-188.63	-939.69	2.48	0.00	
5800.00	17.00	258.65	5658.68	-194.38	-968.36	2.56	0.00	
5900.00	17.00	258.65	5754.31	-200.13	-997.02	2.64	0.00	
6000.00	17.00	258.65	5849.94	-205.89	-1025.69	2.71	0.00	
6100.00	17.00	258.65	5945.57	-211.64	-1054.35	2.79	0.00	
6200.00	17.00	258.65	6041.20	-217.40	-1083.02	2.86	0.00	

devon

Well: SPUD MUFFIN 31-30 FED COM 820H
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Geodetic System: US State Plane 1983
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Zone: 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
6300.00	17.00	258.65	6136.83	-223.15	-1111.68	2.94	0.00	
6400.00	17.00	258.65	6232.47	-228.90	-1140.35	3.01	0.00	
6500.00	17.00	258.65	6328.10	-234.66	-1169.01	3.09	0.00	
6600.00	17.00	258.65	6423.73	-240.41	-1197.68	3.17	0.00	
6663.03	17.00	258.65	6484.00	-244.04	-1215.75	3.21	0.00	1st Bone Spring Lime
6700.00	17.00	258.65	6519.36	-246.17	-1226.35	3.24	0.00	
6800.00	17.00	258.65	6614.99	-251.92	-1255.01	3.32	0.00	
6900.00	17.00	258.65	6710.62	-257.67	-1283.68	3.39	0.00	
7000.00	17.00	258.65	6806.25	-263.43	-1312.34	3.47	0.00	
7100.00	17.00	258.65	6901.88	-269.18	-1341.01	3.55	0.00	
7200.00	17.00	258.65	6997.51	-274.94	-1369.67	3.62	0.00	
7300.00	17.00	258.65	7093.14	-280.69	-1398.34	3.70	0.00	
7400.00	17.00	258.65	7188.77	-286.44	-1427.00	3.77	0.00	
7500.00	17.00	258.65	7284.40	-292.20	-1455.67	3.85	0.00	
7600.00	17.00	258.65	7380.03	-297.95	-1484.33	3.92	0.00	
7693.03	17.00	258.65	7469.00	-303.30	-1511.00	3.99	0.00	Bone Spring 1st
7700.00	17.00	258.65	7475.66	-303.71	-1513.00	4.00	0.00	
7800.00	17.00	258.65	7571.29	-309.46	-1541.66	4.08	0.00	
7900.00	17.00	258.65	7666.92	-315.21	-1570.33	4.15	0.00	
8000.00	17.00	258.65	7762.55	-320.97	-1598.99	4.23	0.00	
8100.00	17.00	258.65	7858.18	-326.72	-1627.66	4.30	0.00	
8200.00	17.00	258.65	7953.81	-332.48	-1656.33	4.38	0.00	
8300.00	17.00	258.65	8049.44	-338.23	-1684.99	4.45	0.00	
8400.00	17.00	258.65	8145.08	-343.98	-1713.66	4.53	0.00	
8500.00	17.00	258.65	8240.71	-349.74	-1742.32	4.61	0.00	
8529.59	17.00	258.65	8269.00	-351.44	-1750.80	4.63	0.00	Bone Spring 2nd
8600.00	17.00	258.65	8336.34	-355.49	-1770.99	4.68	0.00	
8700.00	17.00	258.65	8431.97	-361.25	-1799.65	4.76	0.00	
8800.00	17.00	258.65	8527.60	-367.00	-1828.32	4.83	0.00	
8900.00	17.00	258.65	8623.23	-372.75	-1856.98	4.91	0.00	
8926.95	17.00	258.65	8649.00	-374.30	-1864.71	4.93	0.00	3rd Bone Spring Lime
9000.00	17.00	258.65	8718.86	-378.51	-1885.65	4.99	0.00	
9100.00	17.00	258.65	8814.49	-384.26	-1914.31	5.06	0.00	
9200.00	17.00	258.65	8910.12	-390.02	-1942.98	5.14	0.00	
9221.05	17.00	258.65	8930.25	-391.22	-1949.01	5.15	0.00	Drop to Vertical
9300.00	15.42	258.65	9006.06	-395.56	-1970.62	5.22	2.00	
9400.00	13.42	258.65	9102.90	-400.46	-1995.04	5.28	2.00	
9500.00	11.42	258.65	9200.56	-404.69	-2016.13	5.34	2.00	
9600.00	9.42	258.65	9298.90	-408.25	-2033.86	5.38	2.00	
9655.76	8.31	258.65	9354.00	-409.94	-2042.28	5.41	2.00	Bone Spring 3rd
9700.00	7.42	258.65	9397.82	-411.13	-2048.22	5.42	2.00	
9800.00	5.42	258.65	9497.19	-413.33	-2059.18	5.45	2.00	
9900.00	3.42	258.65	9596.88	-414.85	-2066.74	5.47	2.00	
10000.00	1.42	258.65	9696.79	-415.68	-2070.88	5.48	2.00	
10062.22	0.18	258.65	9759.00	-415.85	-2071.73	5.48	2.00	Wolfcamp / Point of Penetration
10071.05	0.00	258.65	9767.83	-415.86	-2071.74	5.48	2.00	Hold Vertical
10100.00	0.00	0.02	9796.78	-415.86	-2071.74	5.48	0.00	
10183.26	0.00	0.02	9880.05	-415.86	-2071.74	5.48	0.00	KOP
10200.00	1.67	0.02	9896.78	-415.61	-2071.74	5.72	10.00	
10300.00	11.67	0.02	9995.98	-404.01	-2071.74	17.10	10.00	
10400.00	21.67	0.02	10091.65	-375.35	-2071.73	45.17	10.00	
10500.00	31.67	0.02	10180.89	-330.52	-2071.71	89.11	10.00	
10600.00	41.67	0.02	10261.00	-270.87	-2071.69	147.55	10.00	
10700.00	51.67	0.02	10329.53	-198.21	-2071.67	218.74	10.00	
10800.00	61.67	0.02	10384.40	-114.76	-2071.64	300.51	10.00	
10900.00	71.67	0.02	10423.94	-23.05	-2071.61	390.38	10.00	
11000.00	81.67	0.02	10446.97	74.13	-2071.57	485.60	10.00	
11080.86	89.76	0.02	10453.00	154.70	-2071.55	564.54	10.00	Landing Point
11100.00	89.76	0.02	10453.08	173.84	-2071.54	583.30	0.00	
11200.00	89.76	0.02	10453.50	273.84	-2071.50	681.29	0.00	
11300.00	89.76	0.02	10453.92	373.84	-2071.47	779.27	0.00	
11400.00	89.76	0.02	10454.34	473.83	-2071.43	877.26	0.00	
11500.00	89.76	0.02	10454.76	573.83	-2071.40	975.24	0.00	
11600.00	89.76	0.02	10455.18	673.83	-2071.36	1073.23	0.00	
11700.00	89.76	0.02	10455.60	773.83	-2071.33	1171.21	0.00	
11800.00	89.76	0.02	10456.02	873.83	-2071.29	1269.20	0.00	
11900.00	89.76	0.02	10456.44	973.83	-2071.26	1367.18	0.00	
12000.00	89.76	0.02	10456.86	1073.83	-2071.22	1465.17	0.00	
12100.00	89.76	0.02	10457.28	1173.83	-2071.19	1563.15	0.00	
12200.00	89.76	0.02	10457.70	1273.83	-2071.15	1661.14	0.00	

devon

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Zone: 3001 - NM East (NAD83)

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
12300.00	89.76	0.02	10458.12	1373.83	-2071.12	1759.12	0.00	
12400.00	89.76	0.02	10458.54	1473.83	-2071.08	1857.11	0.00	
12500.00	89.76	0.02	10458.96	1573.82	-2071.05	1955.09	0.00	
12600.00	89.76	0.02	10459.38	1673.82	-2071.01	2053.08	0.00	
12700.00	89.76	0.02	10459.79	1773.82	-2070.98	2151.06	0.00	
12800.00	89.76	0.02	10460.21	1873.82	-2070.95	2249.05	0.00	
12900.00	89.76	0.02	10460.63	1973.82	-2070.91	2347.03	0.00	
13000.00	89.76	0.02	10461.05	2073.82	-2070.88	2445.02	0.00	
13100.00	89.76	0.02	10461.47	2173.82	-2070.84	2543.00	0.00	
13200.00	89.76	0.02	10461.89	2273.82	-2070.81	2640.99	0.00	
13300.00	89.76	0.02	10462.31	2373.82	-2070.77	2738.97	0.00	
13400.00	89.76	0.02	10462.73	2473.82	-2070.74	2836.96	0.00	
13500.00	89.76	0.02	10463.15	2573.82	-2070.70	2934.94	0.00	
13600.00	89.76	0.02	10463.57	2673.81	-2070.67	3032.93	0.00	
13700.00	89.76	0.02	10463.99	2773.81	-2070.63	3130.91	0.00	
13800.00	89.76	0.02	10464.41	2873.81	-2070.60	3228.90	0.00	
13900.00	89.76	0.02	10464.83	2973.81	-2070.56	3326.88	0.00	
14000.00	89.76	0.02	10465.25	3073.81	-2070.53	3424.87	0.00	
14100.00	89.76	0.02	10465.67	3173.81	-2070.49	3522.85	0.00	
14200.00	89.76	0.02	10466.09	3273.81	-2070.46	3620.84	0.00	
14300.00	89.76	0.02	10466.51	3373.81	-2070.42	3718.82	0.00	
14400.00	89.76	0.02	10466.93	3473.81	-2070.39	3816.81	0.00	
14500.00	89.76	0.02	10467.35	3573.81	-2070.35	3914.79	0.00	
14600.00	89.76	0.02	10467.77	3673.81	-2070.32	4012.78	0.00	
14700.00	89.76	0.02	10468.19	3773.81	-2070.28	4110.76	0.00	
14800.00	89.76	0.02	10468.61	3873.80	-2070.25	4208.75	0.00	
14900.00	89.76	0.02	10469.03	3973.80	-2070.21	4306.73	0.00	
15000.00	89.76	0.02	10469.45	4073.80	-2070.18	4404.72	0.00	
15100.00	89.76	0.02	10469.87	4173.80	-2070.14	4502.70	0.00	
15200.00	89.76	0.02	10470.29	4273.80	-2070.11	4600.69	0.00	
15300.00	89.76	0.02	10470.71	4373.80	-2070.07	4698.67	0.00	
15400.00	89.76	0.02	10471.13	4473.80	-2070.04	4796.66	0.00	
15500.00	89.76	0.02	10471.55	4573.80	-2070.00	4894.64	0.00	
15600.00	89.76	0.02	10471.96	4673.80	-2069.97	4992.63	0.00	
15700.00	89.76	0.02	10472.38	4773.80	-2069.93	5090.61	0.00	
15800.00	89.76	0.02	10472.80	4873.80	-2069.90	5188.60	0.00	
15900.00	89.76	0.02	10473.22	4973.79	-2069.86	5286.59	0.00	
16000.00	89.76	0.02	10473.64	5073.79	-2069.83	5384.57	0.00	
16100.00	89.76	0.02	10474.06	5173.79	-2069.79	5482.56	0.00	
16200.00	89.76	0.02	10474.48	5273.79	-2069.76	5580.54	0.00	
16300.00	89.76	0.02	10474.90	5373.79	-2069.72	5678.53	0.00	
16400.00	89.76	0.02	10475.32	5473.79	-2069.69	5776.51	0.00	
16500.00	89.76	0.02	10475.74	5573.79	-2069.65	5874.50	0.00	
16600.00	89.76	0.02	10476.16	5673.79	-2069.62	5972.48	0.00	
16700.00	89.76	0.02	10476.58	5773.79	-2069.58	6070.47	0.00	
16800.00	89.76	0.02	10477.00	5873.79	-2069.55	6168.45	0.00	
16900.00	89.76	0.02	10477.42	5973.79	-2069.51	6266.44	0.00	
17000.00	89.76	0.02	10477.84	6073.78	-2069.48	6364.42	0.00	
17100.00	89.76	0.02	10478.26	6173.78	-2069.44	6462.41	0.00	
17200.00	89.76	0.02	10478.68	6273.78	-2069.41	6560.39	0.00	
17300.00	89.76	0.02	10479.10	6373.78	-2069.37	6658.38	0.00	
17400.00	89.76	0.02	10479.52	6473.78	-2069.34	6756.36	0.00	
17500.00	89.76	0.02	10479.94	6573.78	-2069.30	6854.35	0.00	
17600.00	89.76	0.02	10480.36	6673.78	-2069.27	6952.33	0.00	
17700.00	89.76	0.02	10480.78	6773.78	-2069.23	7050.32	0.00	
17800.00	89.76	0.02	10481.20	6873.78	-2069.20	7148.30	0.00	
17900.00	89.76	0.02	10481.62	6973.78	-2069.16	7246.29	0.00	
18000.00	89.76	0.02	10482.04	7073.78	-2069.13	7344.27	0.00	
18100.00	89.76	0.02	10482.46	7173.77	-2069.10	7442.26	0.00	
18200.00	89.76	0.02	10482.88	7273.77	-2069.06	7540.24	0.00	
18300.00	89.76	0.02	10483.30	7373.77	-2069.03	7638.23	0.00	
18400.00	89.76	0.02	10483.72	7473.77	-2068.99	7736.21	0.00	
18500.00	89.76	0.02	10484.13	7573.77	-2068.96	7834.20	0.00	
18600.00	89.76	0.02	10484.55	7673.77	-2068.92	7932.18	0.00	
18700.00	89.76	0.02	10484.97	7773.77	-2068.89	8030.17	0.00	
18800.00	89.76	0.02	10485.39	7873.77	-2068.85	8128.15	0.00	
18900.00	89.76	0.02	10485.81	7973.77	-2068.82	8226.14	0.00	
19000.00	89.76	0.02	10486.23	8073.77	-2068.78	8324.12	0.00	
19100.00	89.76	0.02	10486.65	8173.77	-2068.75	8422.11	0.00	
19200.00	89.76	0.02	10487.07	8273.77	-2068.71	8520.09	0.00	

devon

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19300.00	89.76	0.02	10487.49	8373.76	-2068.68	8618.08	0.00	
19400.00	89.76	0.02	10487.91	8473.76	-2068.64	8716.06	0.00	
19500.00	89.76	0.02	10488.33	8573.76	-2068.61	8814.05	0.00	
19600.00	89.76	0.02	10488.75	8673.76	-2068.57	8912.03	0.00	
19700.00	89.76	0.02	10489.17	8773.76	-2068.54	9010.02	0.00	
19800.00	89.76	0.02	10489.59	8873.76	-2068.50	9108.00	0.00	
19900.00	89.76	0.02	10490.01	8973.76	-2068.47	9205.99	0.00	
20000.00	89.76	0.02	10490.43	9073.76	-2068.43	9303.97	0.00	
20100.00	89.76	0.02	10490.85	9173.76	-2068.40	9401.96	0.00	
20200.00	89.76	0.02	10491.27	9273.76	-2068.36	9499.94	0.00	
20300.00	89.76	0.02	10491.69	9373.76	-2068.33	9597.93	0.00	
20400.00	89.76	0.02	10492.11	9473.75	-2068.29	9695.91	0.00	
20500.00	89.76	0.02	10492.53	9573.75	-2068.26	9793.90	0.00	
20600.00	89.76	0.02	10492.95	9673.75	-2068.22	9891.88	0.00	
20700.00	89.76	0.02	10493.37	9773.75	-2068.19	9989.87	0.00	
20800.00	89.76	0.02	10493.79	9873.75	-2068.15	10087.85	0.00	
20900.00	89.76	0.02	10494.21	9973.75	-2068.12	10185.84	0.00	
21000.00	89.76	0.02	10494.63	10073.75	-2068.08	10283.82	0.00	
21012.27	89.76	0.02	10494.68	10086.02	-2068.08	10295.85	0.00	exit
21092.27	89.76	0.02	10495.00	10166.02	-2068.05	10374.24	0.00	BHL

SPUD MUFFIN 31-30 FED COM 820H

1. Geologic Formations

TVD of target	10495	Pilot hole depth	N/A
MD at TD:	21092	Deepest expected fresh water	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	114		
Salt	469		
Base of Salt	2544		
Delaware	2784		
Cherry Canyon	3674		
Brushy Canyon	5224		
1st Bone Spring Lime	6484		
Bone Spring 1st	7469		
Bone Spring 2nd	8269		
3rd Bone Spring Lime	8649		
Bone Spring 3rd	9354		
Wolfcamp	9759		

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

SPUD MUFFIN 31-30 FED COM 820H

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	139	0	139
9 7/8	8 5/8	32	P110HSCY	MOFXL	0	10083	0	10083
7 7/8	5 1/2	20	P110	DWC/C-IS+	0	21092	0	10495

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

3. Cementing Program (Primary Design)

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.
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	# Sks	TOC	Wt. ppg	Yld (ft3/sack)	Slurry Description
Surface	104	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	379	Surf	13.0	2.3	2nd State: Bradenhead Squeeze - Lead: Class C Cement + additives
	549	5345	13.2	1.44	Tail: Class H / C + additives
Production	117	8183	9	3.27	Lead: Class H /C + additives
	1444	10183	13.2	1.44	Tail: Class H / C + additives

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

SPUD MUFFIN 31-30 FED COM 820H

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

SPUD MUFFIN 31-30 FED COM 820H

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 Rpeort and sbumitted 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	Specfiy what type and where?
BH pressure at deepest TVD	5730
Abnormal temperature	No

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

Hydrogren 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	H2S is present
Y	H2S plan attached.

SPUD MUFFIN 31-30 FED COM 820H

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 nippled 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.

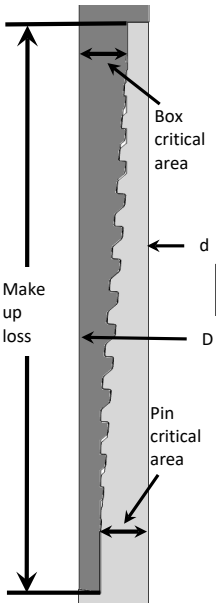
Attachments

X Directional Plan
_____ Other, describe

Metal One Corp.	MO-FXL *1 Pipe Body: BMP P110HSCY MinYS125ksi Special Drift 7.875" Connection Data Sheet	CDS#	MO-FXL 8-5/8 32.0 P110HSCY MinYS125ksi SD7.875
		Date	27-Nov-23

Geometry

MO-FXL



Pipe Body

	Imperial		S.I.	
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

SeAH

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**

Performance Properties

Collapse		**2090**	**psi**
Internal Yield Pressure at Minimum Yield			
	PE	**3580**	**psi**
	STC	**3580**	**psi**
	BTC	**3580**	**psi**
Yield Strength, Pipe Body		**715**	**1000 lbs**
Joint Strength			
	STC	**493**	**1000 lbs**
	BTC	**796**	**1000 lbs**
	BTC Special Clearance (11.25" OD Cplg)	**506**	**1000 lbs**

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:

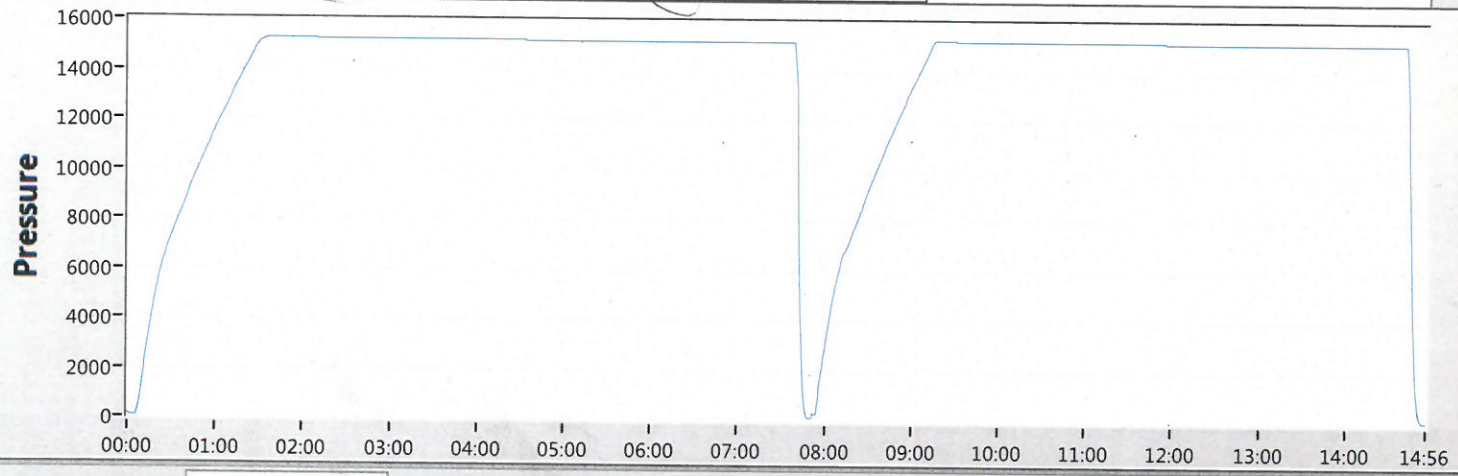
1. Primary barrier remains fluid
2. In the event of an influx due to being underbalanced and after a realized gain or flow, the order of closing BOPE is as follows:
   a) Annular first
   b) If annular were to not hold, Upper pipe rams second (which were tested on the skid BOP test)
   c) If the Upper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

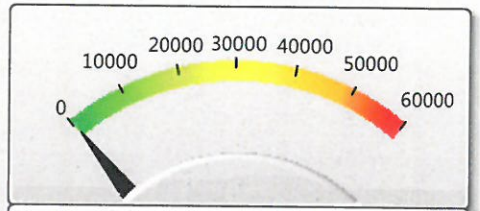
Cactus Wellhead

2-9-17 EBell

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					

Start | Stop | Zero | Config | Save | Print | EXIT

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

Sundry Print Report

06/10/2024

Well Name: SPUD MUFFIN 31-30 FED COM	**Well Location:** T23S / R29E / SEC 31 / SESW / 32.2555618 / -104.0245821	**County or Parish/State:** EDDY / NM
Well Number: 820H	**Type of Well:** OIL WELL	**Allottee or Tribe Name:**
Lease Number: NMNM82886	**Unit or CA Name:**	**Unit or CA Number:**
US Well Number:	**Operator:** DEVON ENERGY PRODUCTION COMPANY LP	

Notice of Intent

Sundry ID: 2794223

Type of Submission: Notice of Intent

Type of Action: APD Change

Date Sundry Submitted: 06/07/2024

Time Sundry Submitted: 01:38

Date proposed operation will begin: 06/07/2024

Procedure Description: Devon Energy Production Co., L.P. (Devon) respectfully requests to move BHL on the subject well. Please see attached revised C102, drill plan (break test variance included), and directional plan. Permitted BHL: Lot 1 20 FNL, 850 FWL, 30-23S-29E Proposed BHL: Lot 1 20 FNL, 330 FWL, 30-23S-29E No new leases have been added since approved APD. APD ID: 10400086512

NOI Attachments

Procedure Description

WA018532791_SPUD_MUFFIN_31_30_FED_COM_820H_R1_20240607133755.pdf

5.5_20lb_P110EC_DWC_C_IS_PLUS___5_23_2023_20240607133746.pdf

SPUD_MUFFIN_31_30_FED_COM_820H_Directional_Plan_03_20_24_20240607133747.pdf

SPUD_MUFFIN_31_30_FED_COM_820H_20240607133746.pdf

8.625_32lb_P110_MOFXL_20240607133747.pdf

10.75_45.50_J55_BTC_SC_BLP_Devon_20240607133746.pdf

break_test_variance_BOP_1_15_24_20240607133747.pdf

Well Name: SPUD MUFFIN 31-30 FED COM

Well Location: T23S / R29E / SEC 31 / SESW / 32.2555618 / -104.0245821

County or Parish/State: EDDY / NM

Well Number: 820H

Type of Well: OIL WELL

Allottee or Tribe Name:

Lease Number: NMNM82886

Unit or CA Name:

Unit or CA Number:

US Well Number:

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: JUN 07, 2024 01:38 PM

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:	**Devon Energy Production Company LP**
LEASE NO.:	**NMNM082886**
LOCATION:	Section 31, T.23 S., R.29 E., NMPM
COUNTY:	Eddy County, New Mexico

WELL NAME & NO.:	**Spud Muffin 31-30 Fed Com 820H**
SURFACE HOLE FOOTAGE:	475'/S & 2400'/W
BOTTOM HOLE FOOTAGE	20'/N & 330'/W
ATS/API ID:	**ATS-22-1534**
APD ID:	**10400086512**
Sundry ID:	**N/a**

COA

H2S	No		
Potash	None		
Cave/Karst Potential	Medium		
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: None	Primary Cement Squeeze: Int 1
Special Requirements	☐ Water Disposal/Injection	☑ COM	☐ Unit
Special Requirements	☐ Batch Sundry		
Special Requirements Variance	☑ Break Testing	☐ Offline Cementing	☐ Casing Clearance

A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet **43 CFR part 3170 Subpart 3176**, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

1. The **10-3/4** inch surface casing shall be set at approximately **300 feet** (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite, above the salt, 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.

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.

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. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**

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 5224' (549 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 379 sxs Class C)**
  Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

Operator has proposed to pump down 10-3/4" X 8-5/8" annulus after primary cementing stage. Operator must run a CBL from TD of the 8-5/8" casing to surface. Submit results to the BLM.

If cement does not tie-back into the previous casing shoe, a third stage remediation BH may be performed. The appropriate BLM office shall be notified.

❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

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.
  Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.

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 OOGO2.III.A.2.i 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 **(575-361-2822 Eddy 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 Onshore Oil and Gas Order No. 2.
- If in the event break testing is not utilized, then a full BOPE test would be conducted.

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)

☒ Eddy County
EMAIL or call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,
BLM_NM_CFO_DrillingNotifications@BLM.GOV
(575) 361-2822

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.

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 intergrity 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 intergrity 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 OOGO2.III.A.2.i must be followed.
    e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

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

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead 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 6/10/2024

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

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*

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

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

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

8. Well Name and No.

2. Name of Operator

9. API Well No.

3a. Address

3b. Phone No. *(include area code)*

10. Field and Pool or Exploratory Area

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

11. Country or Parish, State

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
	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☐ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ 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 recomplete 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 OFICE 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 ofthis form to U.S. Department ofthe Interior, Bureau ofLand 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: SESW / 475 FSL / 2400 FWL / TWSP: 23S / RANGE: 29E / SECTION: 31 / LAT: 32.2555618 / LONG: -104.0245821 (TVD: 0 feet, MD: 0 feet)

PPP: LOT 4 / 100 FSL / 850 FWL / TWSP: 23S / RANGE: 29E / SECTION: 31 / LAT: 32.254734 / LONG: -104.0295996 (TVD: 9759 feet, MD: 9962 feet)

BHL: LOT 1 / 20 FNL / 850 FWL / TWSP: 23S / RANGE: 29E / SECTION: 30 / LAT: 32.2834759 / LONG: -104.0294972 (TVD: 10495 feet, MD: 20976 feet)

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	[2] Pool Code	[3] Pool Name
	98220	PURPLE SAGE; WOLFCAMP (GAS)

[4] Property Code	[5] Property Name	[6] Well Number
	SPUD MUFFIN 31 30 FED COM	820H

[7] OGRID No.	[8] Operator Name	[9] Elevation
6137	DEVON ENERGY PRODUCTION COMPANY, L.P.	2961.4

[10] Surface Location

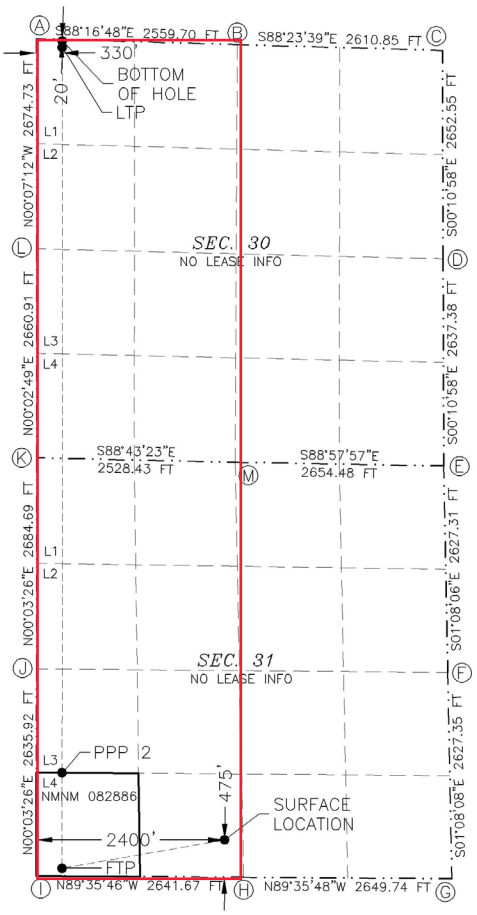
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	31	23 S	29 E		475	SOUTH	2400	WEST	EDDY

[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
1	30	23 S	29 E		20	NORTH	330	WEST	EDDY

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
632.38			

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.



SPUD MUFFIN 31 30 FED COM 820H
EL. = 2961.4

GEODETIC COORDINATES
NAD 83 NMSP EAST
SURFACE LOCATION
N.= 456843.87
E.= 636780.48
LAT. = 32.2555618°N
LONG. = 104.0245821°W

KICK OFF POINT
CALLS 45' FSL, 329' FWL
N.= 456428
E.= 634709
LAT. = 32.25434124
LONG. = -104.03136942

FIRST TAKE POINT (PPP 1)
100' FSL, 330' FWL
N.= 456483.55
E.= 634710.56
LAT. = 32.2545875°N
LONG. = 104.0312813°W

LAST TAKE POINT
100' FNL, 330' FWL
N.= 466929.86
E.= 634712.59
LAT. = 32.2833028°N
LONG. = 104.0311796°W

BOTTOM OF HOLE
20' FNL, 330' FWL
N.= 467009.89
E.= 634712.43
LAT. = 32.2835228°N
LONG. = 104.0311794°W

PPP 2
1318' FSL, 329' FWL
N.= 457700.95
E.= 634710.80
LAT. = 32.2579340°N
LONG. = 104.0312695°W

CORNER COORDINATES TABLE
NAD 83 NMSP EAST

A –	N.= 467039.80	E.= 634382.44
B –	N.= 466963.00	E.= 636940.42
C –	N.= 466889.85	E.= 639549.68
D –	N.= 464237.89	E.= 639558.14
E –	N.= 461601.10	E.= 639566.56
F –	N.= 458974.88	E.= 639618.59
G –	N.= 456348.63	E.= 639670.65
H –	N.= 456367.27	E.= 637021.56
I –	N.= 456385.89	E.= 634380.54
J –	N.= 459021.23	E.= 634383.17
K –	N.= 461705.34	E.= 634385.85
L –	N.= 464365.66	E.= 634388.03
M –	N.= 461649.00	E.= 636913.10

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.

Shayda Omoumi 3/20/2024
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 20, 2024
Date of Survey

Signature and Seal of Professional Surveyor:
EDMUND F. JARAMILLO, LS 12797
Certificate Number: SURVEY NO. 9413A

Intent [X] As Drilled [ ]

API #

Operator Name:	Property Name:	Well Number
DEVON ENERGY PRODUCTION COMPANY, L.P.	SPUD MUFFIN 31 30 FED COM	820H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
4	31	23S	29E		45	SOUTH	329	WEST	EDDY

Latitude	Longitude	NAD
32.25434124	-104.03136942	83

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
4	31	23S	29E		100	SOUTH	330	WEST	EDDY

Latitude	Longitude	NAD
32.2545875	104.0312813	83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
1	30	23S	29E		100	NORTH	330	WEST	EDDY

Latitude	Longitude	NAD
32.2833028	104.0311796	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 #
30-015-45266

Operator Name:	Property Name:	Well Number
DEVON ENERGY PRODUCTION COMPANY, L.P.	SPUD MUFFIN 31 30 COM	622H

KZ 06/29/2018

DWC/C-IS PLUS

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).

05/23/2023 4:11 PM

VAM USA

VAM USA
2107 CityWest Boulevard Suite 1300
Houston, TX 77042
Phone: 713-479-3200
Fax: 713-479-3234
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.

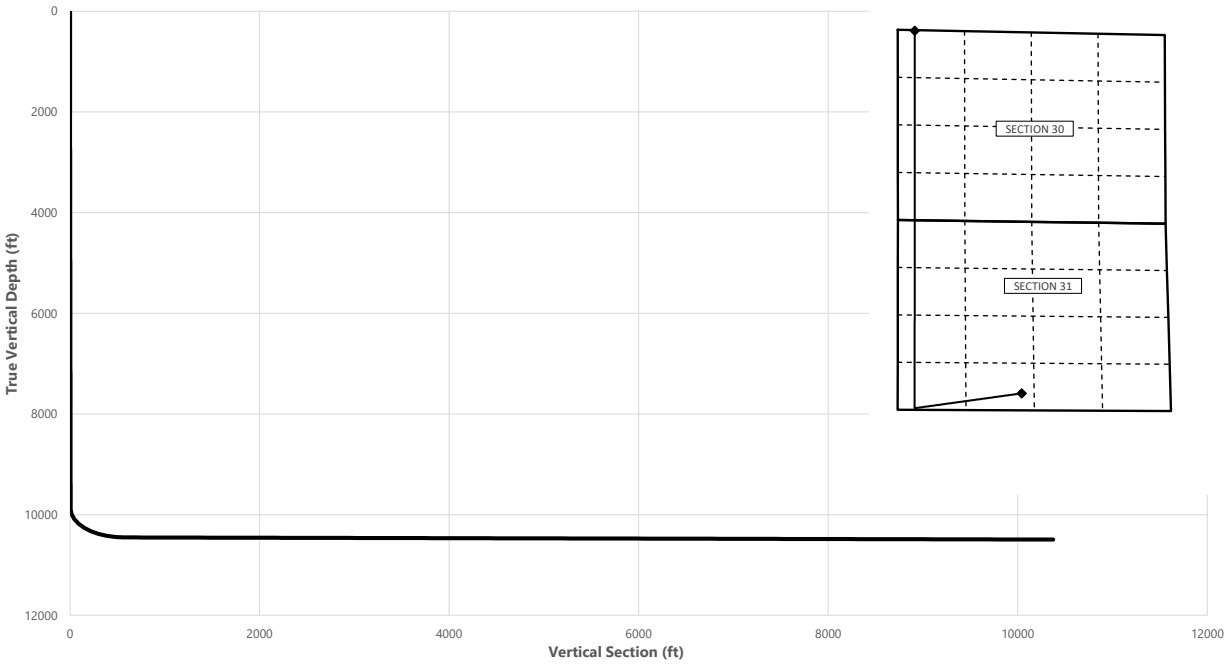
05/23/2023 4:11 PM

devon

Well: SPUD MUFFIN 31-30 FED COM 820H
County: Eddy
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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
2000.00	0.00	258.65	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2850.00	17.00	258.65	2837.58	-24.64	-122.73	0.32	2.00	Hold Tangent
9221.05	17.00	258.65	8930.25	-391.22	-1949.01	5.15	0.00	Drop to Vertical
10071.05	0.00	258.65	9767.83	-415.86	-2071.74	5.48	2.00	Hold Vertical
10183.26	0.00	0.02	9880.05	-415.86	-2071.74	5.48	0.00	KOP
11080.86	89.76	0.02	10453.00	154.70	-2071.55	564.54	10.00	Landing Point
21092.27	89.76	0.02	10495.00	10166.02	-2068.05	10374.24	0.00	BHL



Key Depths	MD (ft)	TVD (ft)
Rustler	114.00	114.00
Salt	469.00	469.00
Base of Salt	2547.32	2544.00
Delaware	2794.13	2784.00
Cherry Canyon	3724.63	3674.00
Brushy Canyon	5345.46	5224.00
1st Bone Spring Lime	6663.03	6484.00
Bone Spring 1st	7693.03	7469.00
Bone Spring 2nd	8529.59	8269.00
3rd Bone Spring Lime	8926.95	8649.00
Bone Spring 3rd	9655.76	9354.00
Wolfcamp / Point of Penetration	10062.22	9759.00
exit	21012.27	10494.68

	MD (ft)	TVD (ft)	Lat (°)	Long (°)	Section Footages
SHL	0.00	0.00	32.2555	-104.0247	475' FSL, 2400' FWL of Sec 31 in T23S, R29E
KOP	10183.26	9880.05	32.2543	-104.0314	45' FSL, 329' FWL of Sec 31 in T23S, R29E
Point of Penetration	10062.22	9759.00	32.2546	-104.0313	100' FSL, 330' FWL of Sec 31 in T23S, R29E
Exit	21012.27	10494.68	32.2833	-104.0312	100' FNL , 330' FWL of Sec 30 in T23S, R29E
BHL	21092.27	10495.00	32.2834	-104.0313	20' FNL, 330' FWL of Sec 30 in T23S, R29E

	Y	X	MD
KOP	**456428**	**634709**	**10183.26**

devon

Well: SPUD MUFFIN 31-30 FED COM 820H
County: Eddy
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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
100.00	0.00	258.65	100.00	0.00	0.00	0.00	0.00	
114.00	0.00	258.65	114.00	0.00	0.00	0.00	0.00	Rustler
200.00	0.00	258.65	200.00	0.00	0.00	0.00	0.00	
300.00	0.00	258.65	300.00	0.00	0.00	0.00	0.00	
400.00	0.00	258.65	400.00	0.00	0.00	0.00	0.00	
469.00	0.00	258.65	469.00	0.00	0.00	0.00	0.00	Salt
500.00	0.00	258.65	500.00	0.00	0.00	0.00	0.00	
600.00	0.00	258.65	600.00	0.00	0.00	0.00	0.00	
700.00	0.00	258.65	700.00	0.00	0.00	0.00	0.00	
800.00	0.00	258.65	800.00	0.00	0.00	0.00	0.00	
900.00	0.00	258.65	900.00	0.00	0.00	0.00	0.00	
1000.00	0.00	258.65	1000.00	0.00	0.00	0.00	0.00	
1100.00	0.00	258.65	1100.00	0.00	0.00	0.00	0.00	
1200.00	0.00	258.65	1200.00	0.00	0.00	0.00	0.00	
1300.00	0.00	258.65	1300.00	0.00	0.00	0.00	0.00	
1400.00	0.00	258.65	1400.00	0.00	0.00	0.00	0.00	
1500.00	0.00	258.65	1500.00	0.00	0.00	0.00	0.00	
1600.00	0.00	258.65	1600.00	0.00	0.00	0.00	0.00	
1700.00	0.00	258.65	1700.00	0.00	0.00	0.00	0.00	
1800.00	0.00	258.65	1800.00	0.00	0.00	0.00	0.00	
1900.00	0.00	258.65	1900.00	0.00	0.00	0.00	0.00	
2000.00	0.00	258.65	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2100.00	2.00	258.65	2099.98	-0.34	-1.71	0.00	2.00	
2200.00	4.00	258.65	2199.84	-1.37	-6.84	0.02	2.00	
2300.00	6.00	258.65	2299.45	-3.09	-15.39	0.04	2.00	
2400.00	8.00	258.65	2398.70	-5.49	-27.33	0.07	2.00	
2500.00	10.00	258.65	2497.47	-8.57	-42.67	0.11	2.00	
2547.32	10.95	258.65	2544.00	-10.26	-51.11	0.14	2.00	Base of Salt
2600.00	12.00	258.65	2595.62	-12.32	-61.38	0.16	2.00	
2700.00	14.00	258.65	2693.06	-16.75	-83.43	0.22	2.00	
2794.13	15.88	258.65	2784.00	-21.52	-107.23	0.28	2.00	Delaware
2800.00	16.00	258.65	2789.64	-21.84	-108.81	0.29	2.00	
2850.00	17.00	258.65	2837.58	-24.64	-122.73	0.32	2.00	Hold Tangent
2900.00	17.00	258.65	2885.40	-27.51	-137.06	0.36	0.00	
3000.00	17.00	258.65	2981.03	-33.27	-165.73	0.44	0.00	
3100.00	17.00	258.65	3076.66	-39.02	-194.39	0.51	0.00	
3200.00	17.00	258.65	3172.29	-44.77	-223.06	0.59	0.00	
3300.00	17.00	258.65	3267.92	-50.53	-251.72	0.67	0.00	
3400.00	17.00	258.65	3363.55	-56.28	-280.39	0.74	0.00	
3500.00	17.00	258.65	3459.18	-62.04	-309.05	0.82	0.00	
3600.00	17.00	258.65	3554.81	-67.79	-337.72	0.89	0.00	
3700.00	17.00	258.65	3650.44	-73.54	-366.39	0.97	0.00	
3724.63	17.00	258.65	3674.00	-74.96	-373.45	0.99	0.00	Cherry Canyon
3800.00	17.00	258.65	3746.07	-79.30	-395.05	1.04	0.00	
3900.00	17.00	258.65	3841.70	-85.05	-423.72	1.12	0.00	
4000.00	17.00	258.65	3937.33	-90.81	-452.38	1.20	0.00	
4100.00	17.00	258.65	4032.96	-96.56	-481.05	1.27	0.00	
4200.00	17.00	258.65	4128.59	-102.31	-509.71	1.35	0.00	
4300.00	17.00	258.65	4224.23	-108.07	-538.38	1.42	0.00	
4400.00	17.00	258.65	4319.86	-113.82	-567.04	1.50	0.00	
4500.00	17.00	258.65	4415.49	-119.58	-595.71	1.58	0.00	
4600.00	17.00	258.65	4511.12	-125.33	-624.37	1.65	0.00	
4700.00	17.00	258.65	4606.75	-131.08	-653.04	1.73	0.00	
4800.00	17.00	258.65	4702.38	-136.84	-681.70	1.80	0.00	
4900.00	17.00	258.65	4798.01	-142.59	-710.37	1.88	0.00	
5000.00	17.00	258.65	4893.64	-148.35	-739.03	1.95	0.00	
5100.00	17.00	258.65	4989.27	-154.10	-767.70	2.03	0.00	
5200.00	17.00	258.65	5084.90	-159.85	-796.37	2.11	0.00	
5300.00	17.00	258.65	5180.53	-165.61	-825.03	2.18	0.00	
5345.46	17.00	258.65	5224.00	-168.22	-838.06	2.22	0.00	Brushy Canyon
5400.00	17.00	258.65	5276.16	-171.36	-853.70	2.26	0.00	
5500.00	17.00	258.65	5371.79	-177.12	-882.36	2.33	0.00	
5600.00	17.00	258.65	5467.42	-182.87	-911.03	2.41	0.00	
5700.00	17.00	258.65	5563.05	-188.63	-939.69	2.48	0.00	
5800.00	17.00	258.65	5658.68	-194.38	-968.36	2.56	0.00	
5900.00	17.00	258.65	5754.31	-200.13	-997.02	2.64	0.00	
6000.00	17.00	258.65	5849.94	-205.89	-1025.69	2.71	0.00	
6100.00	17.00	258.65	5945.57	-211.64	-1054.35	2.79	0.00	
6200.00	17.00	258.65	6041.20	-217.40	-1083.02	2.86	0.00	

devon

Well: SPUD MUFFIN 31-30 FED COM 820H
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Geodetic System: US State Plane 1983
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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	17.00	258.65	6136.83	-223.15	-1111.68	2.94	0.00	
6400.00	17.00	258.65	6232.47	-228.90	-1140.35	3.01	0.00	
6500.00	17.00	258.65	6328.10	-234.66	-1169.01	3.09	0.00	
6600.00	17.00	258.65	6423.73	-240.41	-1197.68	3.17	0.00	
6663.03	17.00	258.65	6484.00	-244.04	-1215.75	3.21	0.00	1st Bone Spring Lime
6700.00	17.00	258.65	6519.36	-246.17	-1226.35	3.24	0.00	
6800.00	17.00	258.65	6614.99	-251.92	-1255.01	3.32	0.00	
6900.00	17.00	258.65	6710.62	-257.67	-1283.68	3.39	0.00	
7000.00	17.00	258.65	6806.25	-263.43	-1312.34	3.47	0.00	
7100.00	17.00	258.65	6901.88	-269.18	-1341.01	3.55	0.00	
7200.00	17.00	258.65	6997.51	-274.94	-1369.67	3.62	0.00	
7300.00	17.00	258.65	7093.14	-280.69	-1398.34	3.70	0.00	
7400.00	17.00	258.65	7188.77	-286.44	-1427.00	3.77	0.00	
7500.00	17.00	258.65	7284.40	-292.20	-1455.67	3.85	0.00	
7600.00	17.00	258.65	7380.03	-297.95	-1484.33	3.92	0.00	
7693.03	17.00	258.65	7469.00	-303.30	-1511.00	3.99	0.00	Bone Spring 1st
7700.00	17.00	258.65	7475.66	-303.71	-1513.00	4.00	0.00	
7800.00	17.00	258.65	7571.29	-309.46	-1541.66	4.08	0.00	
7900.00	17.00	258.65	7666.92	-315.21	-1570.33	4.15	0.00	
8000.00	17.00	258.65	7762.55	-320.97	-1598.99	4.23	0.00	
8100.00	17.00	258.65	7858.18	-326.72	-1627.66	4.30	0.00	
8200.00	17.00	258.65	7953.81	-332.48	-1656.33	4.38	0.00	
8300.00	17.00	258.65	8049.44	-338.23	-1684.99	4.45	0.00	
8400.00	17.00	258.65	8145.08	-343.98	-1713.66	4.53	0.00	
8500.00	17.00	258.65	8240.71	-349.74	-1742.32	4.61	0.00	
8529.59	17.00	258.65	8269.00	-351.44	-1750.80	4.63	0.00	Bone Spring 2nd
8600.00	17.00	258.65	8336.34	-355.49	-1770.99	4.68	0.00	
8700.00	17.00	258.65	8431.97	-361.25	-1799.65	4.76	0.00	
8800.00	17.00	258.65	8527.60	-367.00	-1828.32	4.83	0.00	
8900.00	17.00	258.65	8623.23	-372.75	-1856.98	4.91	0.00	
8926.95	17.00	258.65	8649.00	-374.30	-1864.71	4.93	0.00	3rd Bone Spring Lime
9000.00	17.00	258.65	8718.86	-378.51	-1885.65	4.99	0.00	
9100.00	17.00	258.65	8814.49	-384.26	-1914.31	5.06	0.00	
9200.00	17.00	258.65	8910.12	-390.02	-1942.98	5.14	0.00	
9221.05	17.00	258.65	8930.25	-391.22	-1949.01	5.15	0.00	Drop to Vertical
9300.00	15.42	258.65	9006.06	-395.56	-1970.62	5.22	2.00	
9400.00	13.42	258.65	9102.90	-400.46	-1995.04	5.28	2.00	
9500.00	11.42	258.65	9200.56	-404.69	-2016.13	5.34	2.00	
9600.00	9.42	258.65	9298.90	-408.25	-2033.86	5.38	2.00	
9655.76	8.31	258.65	9354.00	-409.94	-2042.28	5.41	2.00	Bone Spring 3rd
9700.00	7.42	258.65	9397.82	-411.13	-2048.22	5.42	2.00	
9800.00	5.42	258.65	9497.19	-413.33	-2059.18	5.45	2.00	
9900.00	3.42	258.65	9596.88	-414.85	-2066.74	5.47	2.00	
10000.00	1.42	258.65	9696.79	-415.68	-2070.88	5.48	2.00	
10062.22	0.18	258.65	9759.00	-415.85	-2071.73	5.48	2.00	Wolfcamp / Point of Penetration
10071.05	0.00	258.65	9767.83	-415.86	-2071.74	5.48	2.00	Hold Vertical
10100.00	0.00	0.02	9796.78	-415.86	-2071.74	5.48	0.00	
10183.26	0.00	0.02	9880.05	-415.86	-2071.74	5.48	0.00	KOP
10200.00	1.67	0.02	9896.78	-415.61	-2071.74	5.72	10.00	
10300.00	11.67	0.02	9995.98	-404.01	-2071.74	17.10	10.00	
10400.00	21.67	0.02	10091.65	-375.35	-2071.73	45.17	10.00	
10500.00	31.67	0.02	10180.89	-330.52	-2071.71	89.11	10.00	
10600.00	41.67	0.02	10261.00	-270.87	-2071.69	147.55	10.00	
10700.00	51.67	0.02	10329.53	-198.21	-2071.67	218.74	10.00	
10800.00	61.67	0.02	10384.40	-114.76	-2071.64	300.51	10.00	
10900.00	71.67	0.02	10423.94	-23.05	-2071.61	390.38	10.00	
11000.00	81.67	0.02	10446.97	74.13	-2071.57	485.60	10.00	
11080.86	89.76	0.02	10453.00	154.70	-2071.55	564.54	10.00	Landing Point
11100.00	89.76	0.02	10453.08	173.84	-2071.54	583.30	0.00	
11200.00	89.76	0.02	10453.50	273.84	-2071.50	681.29	0.00	
11300.00	89.76	0.02	10453.92	373.84	-2071.47	779.27	0.00	
11400.00	89.76	0.02	10454.34	473.83	-2071.43	877.26	0.00	
11500.00	89.76	0.02	10454.76	573.83	-2071.40	975.24	0.00	
11600.00	89.76	0.02	10455.18	673.83	-2071.36	1073.23	0.00	
11700.00	89.76	0.02	10455.60	773.83	-2071.33	1171.21	0.00	
11800.00	89.76	0.02	10456.02	873.83	-2071.29	1269.20	0.00	
11900.00	89.76	0.02	10456.44	973.83	-2071.26	1367.18	0.00	
12000.00	89.76	0.02	10456.86	1073.83	-2071.22	1465.17	0.00	
12100.00	89.76	0.02	10457.28	1173.83	-2071.19	1563.15	0.00	
12200.00	89.76	0.02	10457.70	1273.83	-2071.15	1661.14	0.00	

devon

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MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
12300.00	89.76	0.02	10458.12	1373.83	-2071.12	1759.12	0.00	
12400.00	89.76	0.02	10458.54	1473.83	-2071.08	1857.11	0.00	
12500.00	89.76	0.02	10458.96	1573.82	-2071.05	1955.09	0.00	
12600.00	89.76	0.02	10459.38	1673.82	-2071.01	2053.08	0.00	
12700.00	89.76	0.02	10459.79	1773.82	-2070.98	2151.06	0.00	
12800.00	89.76	0.02	10460.21	1873.82	-2070.95	2249.05	0.00	
12900.00	89.76	0.02	10460.63	1973.82	-2070.91	2347.03	0.00	
13000.00	89.76	0.02	10461.05	2073.82	-2070.88	2445.02	0.00	
13100.00	89.76	0.02	10461.47	2173.82	-2070.84	2543.00	0.00	
13200.00	89.76	0.02	10461.89	2273.82	-2070.81	2640.99	0.00	
13300.00	89.76	0.02	10462.31	2373.82	-2070.77	2738.97	0.00	
13400.00	89.76	0.02	10462.73	2473.82	-2070.74	2836.96	0.00	
13500.00	89.76	0.02	10463.15	2573.82	-2070.70	2934.94	0.00	
13600.00	89.76	0.02	10463.57	2673.81	-2070.67	3032.93	0.00	
13700.00	89.76	0.02	10463.99	2773.81	-2070.63	3130.91	0.00	
13800.00	89.76	0.02	10464.41	2873.81	-2070.60	3228.90	0.00	
13900.00	89.76	0.02	10464.83	2973.81	-2070.56	3326.88	0.00	
14000.00	89.76	0.02	10465.25	3073.81	-2070.53	3424.87	0.00	
14100.00	89.76	0.02	10465.67	3173.81	-2070.49	3522.85	0.00	
14200.00	89.76	0.02	10466.09	3273.81	-2070.46	3620.84	0.00	
14300.00	89.76	0.02	10466.51	3373.81	-2070.42	3718.82	0.00	
14400.00	89.76	0.02	10466.93	3473.81	-2070.39	3816.81	0.00	
14500.00	89.76	0.02	10467.35	3573.81	-2070.35	3914.79	0.00	
14600.00	89.76	0.02	10467.77	3673.81	-2070.32	4012.78	0.00	
14700.00	89.76	0.02	10468.19	3773.81	-2070.28	4110.76	0.00	
14800.00	89.76	0.02	10468.61	3873.80	-2070.25	4208.75	0.00	
14900.00	89.76	0.02	10469.03	3973.80	-2070.21	4306.73	0.00	
15000.00	89.76	0.02	10469.45	4073.80	-2070.18	4404.72	0.00	
15100.00	89.76	0.02	10469.87	4173.80	-2070.14	4502.70	0.00	
15200.00	89.76	0.02	10470.29	4273.80	-2070.11	4600.69	0.00	
15300.00	89.76	0.02	10470.71	4373.80	-2070.07	4698.67	0.00	
15400.00	89.76	0.02	10471.13	4473.80	-2070.04	4796.66	0.00	
15500.00	89.76	0.02	10471.55	4573.80	-2070.00	4894.64	0.00	
15600.00	89.76	0.02	10471.96	4673.80	-2069.97	4992.63	0.00	
15700.00	89.76	0.02	10472.38	4773.80	-2069.93	5090.61	0.00	
15800.00	89.76	0.02	10472.80	4873.80	-2069.90	5188.60	0.00	
15900.00	89.76	0.02	10473.22	4973.79	-2069.86	5286.59	0.00	
16000.00	89.76	0.02	10473.64	5073.79	-2069.83	5384.57	0.00	
16100.00	89.76	0.02	10474.06	5173.79	-2069.79	5482.56	0.00	
16200.00	89.76	0.02	10474.48	5273.79	-2069.76	5580.54	0.00	
16300.00	89.76	0.02	10474.90	5373.79	-2069.72	5678.53	0.00	
16400.00	89.76	0.02	10475.32	5473.79	-2069.69	5776.51	0.00	
16500.00	89.76	0.02	10475.74	5573.79	-2069.65	5874.50	0.00	
16600.00	89.76	0.02	10476.16	5673.79	-2069.62	5972.48	0.00	
16700.00	89.76	0.02	10476.58	5773.79	-2069.58	6070.47	0.00	
16800.00	89.76	0.02	10477.00	5873.79	-2069.55	6168.45	0.00	
16900.00	89.76	0.02	10477.42	5973.79	-2069.51	6266.44	0.00	
17000.00	89.76	0.02	10477.84	6073.78	-2069.48	6364.42	0.00	
17100.00	89.76	0.02	10478.26	6173.78	-2069.44	6462.41	0.00	
17200.00	89.76	0.02	10478.68	6273.78	-2069.41	6560.39	0.00	
17300.00	89.76	0.02	10479.10	6373.78	-2069.37	6658.38	0.00	
17400.00	89.76	0.02	10479.52	6473.78	-2069.34	6756.36	0.00	
17500.00	89.76	0.02	10479.94	6573.78	-2069.30	6854.35	0.00	
17600.00	89.76	0.02	10480.36	6673.78	-2069.27	6952.33	0.00	
17700.00	89.76	0.02	10480.78	6773.78	-2069.23	7050.32	0.00	
17800.00	89.76	0.02	10481.20	6873.78	-2069.20	7148.30	0.00	
17900.00	89.76	0.02	10481.62	6973.78	-2069.16	7246.29	0.00	
18000.00	89.76	0.02	10482.04	7073.78	-2069.13	7344.27	0.00	
18100.00	89.76	0.02	10482.46	7173.77	-2069.10	7442.26	0.00	
18200.00	89.76	0.02	10482.88	7273.77	-2069.06	7540.24	0.00	
18300.00	89.76	0.02	10483.30	7373.77	-2069.03	7638.23	0.00	
18400.00	89.76	0.02	10483.72	7473.77	-2068.99	7736.21	0.00	
18500.00	89.76	0.02	10484.13	7573.77	-2068.96	7834.20	0.00	
18600.00	89.76	0.02	10484.55	7673.77	-2068.92	7932.18	0.00	
18700.00	89.76	0.02	10484.97	7773.77	-2068.89	8030.17	0.00	
18800.00	89.76	0.02	10485.39	7873.77	-2068.85	8128.15	0.00	
18900.00	89.76	0.02	10485.81	7973.77	-2068.82	8226.14	0.00	
19000.00	89.76	0.02	10486.23	8073.77	-2068.78	8324.12	0.00	
19100.00	89.76	0.02	10486.65	8173.77	-2068.75	8422.11	0.00	
19200.00	89.76	0.02	10487.07	8273.77	-2068.71	8520.09	0.00	

devon

Well: SPUD MUFFIN 31-30 FED COM 820H
County: Eddy
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
19300.00	89.76	0.02	10487.49	8373.76	-2068.68	8618.08	0.00	
19400.00	89.76	0.02	10487.91	8473.76	-2068.64	8716.06	0.00	
19500.00	89.76	0.02	10488.33	8573.76	-2068.61	8814.05	0.00	
19600.00	89.76	0.02	10488.75	8673.76	-2068.57	8912.03	0.00	
19700.00	89.76	0.02	10489.17	8773.76	-2068.54	9010.02	0.00	
19800.00	89.76	0.02	10489.59	8873.76	-2068.50	9108.00	0.00	
19900.00	89.76	0.02	10490.01	8973.76	-2068.47	9205.99	0.00	
20000.00	89.76	0.02	10490.43	9073.76	-2068.43	9303.97	0.00	
20100.00	89.76	0.02	10490.85	9173.76	-2068.40	9401.96	0.00	
20200.00	89.76	0.02	10491.27	9273.76	-2068.36	9499.94	0.00	
20300.00	89.76	0.02	10491.69	9373.76	-2068.33	9597.93	0.00	
20400.00	89.76	0.02	10492.11	9473.75	-2068.29	9695.91	0.00	
20500.00	89.76	0.02	10492.53	9573.75	-2068.26	9793.90	0.00	
20600.00	89.76	0.02	10492.95	9673.75	-2068.22	9891.88	0.00	
20700.00	89.76	0.02	10493.37	9773.75	-2068.19	9989.87	0.00	
20800.00	89.76	0.02	10493.79	9873.75	-2068.15	10087.85	0.00	
20900.00	89.76	0.02	10494.21	9973.75	-2068.12	10185.84	0.00	
21000.00	89.76	0.02	10494.63	10073.75	-2068.08	10283.82	0.00	
21012.27	89.76	0.02	10494.68	10086.02	-2068.08	10295.85	0.00	exit
21092.27	89.76	0.02	10495.00	10166.02	-2068.05	10374.24	0.00	BHL

SPUD MUFFIN 31-30 FED COM 820H

1. Geologic Formations

TVD of target	10495	Pilot hole depth	N/A
MD at TD:	21092	Deepest expected fresh water	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	114		
Salt	469		
Base of Salt	2544		
Delaware	2784		
Cherry Canyon	3674		
Brushy Canyon	5224		
1st Bone Spring Lime	6484		
Bone Spring 1st	7469		
Bone Spring 2nd	8269		
3rd Bone Spring Lime	8649		
Bone Spring 3rd	9354		
Wolfcamp	9759		

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

SPUD MUFFIN 31-30 FED COM 820H

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	139	0	139
9 7/8	8 5/8	32	P110HSCY	MOFXL	0	10083	0	10083
7 7/8	5 1/2	20	P110	DWC/C-IS+	0	21092	0	10495

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

3. Cementing Program (Primary Design)

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.
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	# Sks	TOC	Wt. ppg	Yld (ft3/sack)	Slurry Description
Surface	104	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	379	Surf	13.0	2.3	2nd State: Bradenhead Squeeze - Lead: Class C Cement + additives
	549	5345	13.2	1.44	Tail: Class H / C + additives
Production	117	8183	9	3.27	Lead: Class H /C + additives
	1444	10183	13.2	1.44	Tail: Class H / C + additives

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

SPUD MUFFIN 31-30 FED COM 820H

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

SPUD MUFFIN 31-30 FED COM 820H

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 Rpeort and sbumitted 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	Specfiy what type and where?
BH pressure at deepest TVD	5730
Abnormal temperature	No

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

Hydrogren 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	H2S is present
Y	H2S plan attached.

SPUD MUFFIN 31-30 FED COM 820H

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 nippled 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.

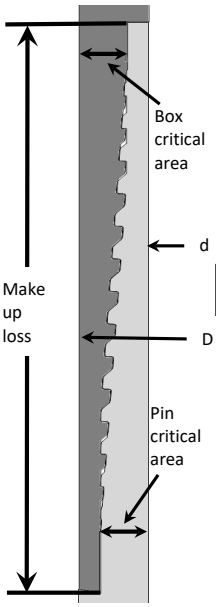
Attachments

X Directional Plan
_____ Other, describe

Metal One Corp.	MO-FXL *1 Pipe Body: BMP P110HSCY MinYS125ksi Special Drift 7.875" Connection Data Sheet	CDS#	MO-FXL 8-5/8 32.0 P110HSCY MinYS125ksi SD7.875
		Date	27-Nov-23

Geometry

MO-FXL



Pipe Body

	Imperial		S.I.	
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

SeAH

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**

Performance Properties

Collapse		**2090**	**psi**
Internal Yield Pressure at Minimum Yield			
	PE	**3580**	**psi**
	STC	**3580**	**psi**
	BTC	**3580**	**psi**
Yield Strength, Pipe Body		**715**	**1000 lbs**
Joint Strength			
	STC	**493**	**1000 lbs**
	BTC	**796**	**1000 lbs**
	BTC Special Clearance (11.25" OD Cplg)	**506**	**1000 lbs**

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:

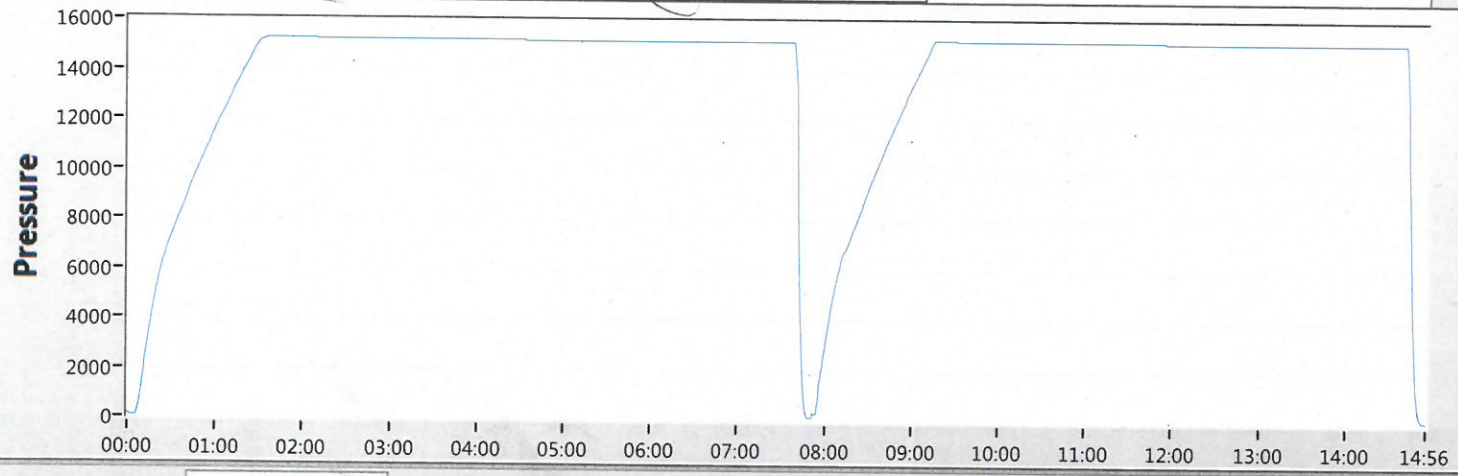
1. Primary barrier remains fluid
2. In the event of an influx due to being underbalanced and after a realized gain or flow, the order of closing BOPE is as follows:
   a) Annular first
   b) If annular were to not hold, Upper pipe rams second (which were tested on the skid BOP test)
   c) If the Upper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

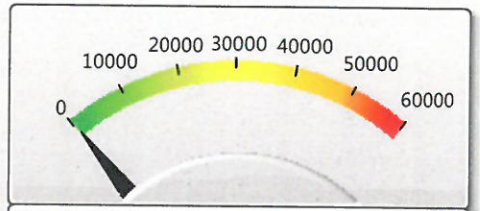
Cactus Wellhead

2-9-17 EBell

80.7 °F

15:49





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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					

Start | Stop | Zero | Config | Save | Print | EXIT

Spud Muffin 31-30 Fed Com 820H

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	52.41	14.9	0.65	300	27	1.09	28.14	13,650
"B"			btc				0				0
	w/8.4#/g mud, 30min Sfc Csg Test psig:	1,500	Tail Cmt	does not	circ to sfc.	Totals:	300				13,650

Comparison of Proposed to Minimum Required Cement Volumes

Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Min Dist Hole-Cplg
14 3/4	0.5563	104	150	167	-10	9.00	3282	5M	1.50

Burst Frac Gradient(s) for Segment(s) A, B = , b All > 0.70, OK.

Site plat (pipe racks S or E) as per O.O.1.III.D.4.i, 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-fxl	2.45	0.78	1.09	10,083	1	1.83	1.31	322,656
"B"							0				0
	w/8.4#/g mud, 30min Sfc Csg Test psig:	-25				Totals:	10,083				322,656
	The cement volume(s) are intended to achieve a top of			0	ft from surface or a		300				overlap.

Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Min Dist Hole-Cplg
9 7/8	0.1261	549	791	1274	-38	10.50	3416	5M	0.63
D V Tool(s):			5224				sum of sx	Σ CuFt	Σ%excess
t by stage % :		29	32				928	1662	30

Class 'C' tail cmt yld > 1.35

Tail cmt

5 1/2	casing inside the	8 5/8			Design Factors			Prod 1				
Segment	#/ft	Grade	Coupling	Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	20.00	p 110	dwc/c is+	3.47	2.11	2.51	21,092	3	4.20	3.54	421,840
"B"							0				0
	w/8.4#/g mud, 30min Sfc Csg Test psig:	2,309				Totals:	21,092				421,840
	The cement volume(s) are intended to achieve a top of			9883	ft from surface or a		200				overlap.

Hole Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Min Dist Hole-Cplg
7 7/8	0.1733	1561	2462	1943	27	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@s	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 Size	Annular Volume	1 Stage Cmt Sx	1 Stage CuFt Cmt	Min Cu Ft	1 Stage % Excess	Drilling Mud Wt	Calc MASP	Req'd BOPE	Min Dist Hole-Cplg
0		#N/A	#N/A	0	#N/A				

#N/A Capitan Reef est top XXXX.

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 Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 352478

CONDITIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 352478
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
ward.rikala	All original COA's still apply. Additionally, if cement is not circulated to surface during cementing operations, then a CBL is required.	6/10/2024