

Well Name: COTTON DRAW UNIT	Well Location: T24S / R31E / SEC 26 / NWNE /	County or Parish/State:
Well Number: 609H	Type of Well: OIL WELL	Allottee or Tribe Name:
Lease Number: NMNM012121	Unit or CA Name: COTTON DRAW UNIT	Unit or CA Number: NMNM70928X
US Well Number: 3001548571	Well Status: Approved Application for Permit to Drill	Operator: DEVON ENERGY PRODUCTION COMPANY LP

Notice of Intent

Sundry ID: 2752602

Type of Submission: Notice of Intent	Type of Action: APD Change
Date Sundry Submitted: 09/21/2023	Time Sundry Submitted: 11:12
Date proposed operation will begin: 09/21/2023	

Procedure Description: Devon Energy Production Company L.P. respectfully requests the following changes to the approved APD: SHL change from 180 FNL & 1415 FEL to 385 FNL & 2625 FEL, both 26-24S-31E BHL change from 2620 FNL & 1650 FEL, 35-24S-31E to 20 FSL & 1980 FEL, 2-25S-31E. Dedicated acreage revision. New leases have been added since approved APD and notification has been given. TVD/MD change from 11,955'/19,685' to 11,995'/27,582' Casing program change: Surface, Intermediate, & Production casing changes. Cement volume changes to accommodate casing change. Please see attached revised C-102, spec sheets, and drilling & directional plans.

NOI Attachments

Procedure Description

- MB_Wellhd_10M_13.375_8.625_5.5_20230921110908.PDF
- COTTON_DRAW_UNIT_609H_C_102_BHL_NOI_20230921110905.pdf
- 5.5in_17lb_P110EC_DWC_C_IS_PLUS_20230921110905.pdf
- COTTON_DRAW_UNIT_609H_Directional_Plan_09_19_23_20230921110905.pdf
- 8.625in_32lb_P110EC_SPRINT_FJ_20230921110905.pdf
- COTTON_DRAW_UNIT_609H_20230921110904.pdf
- 10.750_45.5_J55_20230921110904.pdf

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Conditions of Approval

Additional

MB_Wellhd_10M_10.75_8.625_5.5_20230929084757.pdf

26_24_31_B_Sundry_ID_2752602_Cotton_Draw_Unit_609H_20230929084757.pdf

Cotton_Draw_Unit_609H_Dr_COA_Sundry_ID_2752602_20230929084757.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: REBECCA DEAL

Signed on: SEP 21, 2023 11:10 AM

Name: DEVON ENERGY PRODUCTION COMPANY LP

Title: Regulatory Analyst

Street Address: 333 W SHERIDAN AVE

City: OKLAHOMA CITYState: OK

Phone: (303) 299-1406

Email address: REBECCA.DEAL@DVN.COM

Field

Representative Name:

Street Address:

City:State:Zip:

Phone:

Email address:

BLM Point of Contact

BLM POC Name: CHRISTOPHER WALLS

BLM POC Title: Petroleum Engineer

BLM POC Phone: 5752342234

BLM POC Email Address: cwalls@blm.gov

Disposition: Approved

Disposition Date: 09/29/2023

Signature: Chris Walls

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.
1. Type of Well <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
2. Name of Operator		7. If Unit of CA/Agreement, Name and/or No.
3a. Address	3b. Phone No. (include area code)	8. Well Name and No.
4. Location of Well (Footage, Sec., T.,R.,M., or Survey Description)		9. API Well No.
		10. Field and Pool or Exploratory Area
		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				
<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off	
	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Hydraulic Fracturing	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity	
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input type="checkbox"/> Other	
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon		
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal		

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

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

THE SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by	Title	Date
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office	

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

(Instructions on page 2)

GENERAL INSTRUCTIONS

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

SPECIFIC INSTRUCTIONS

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

Item 13: Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment. If the proposal will involve **hydraulic fracturing operations**, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

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

AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

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

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

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

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

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

Response to this request is mandatory.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

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

Additional Information

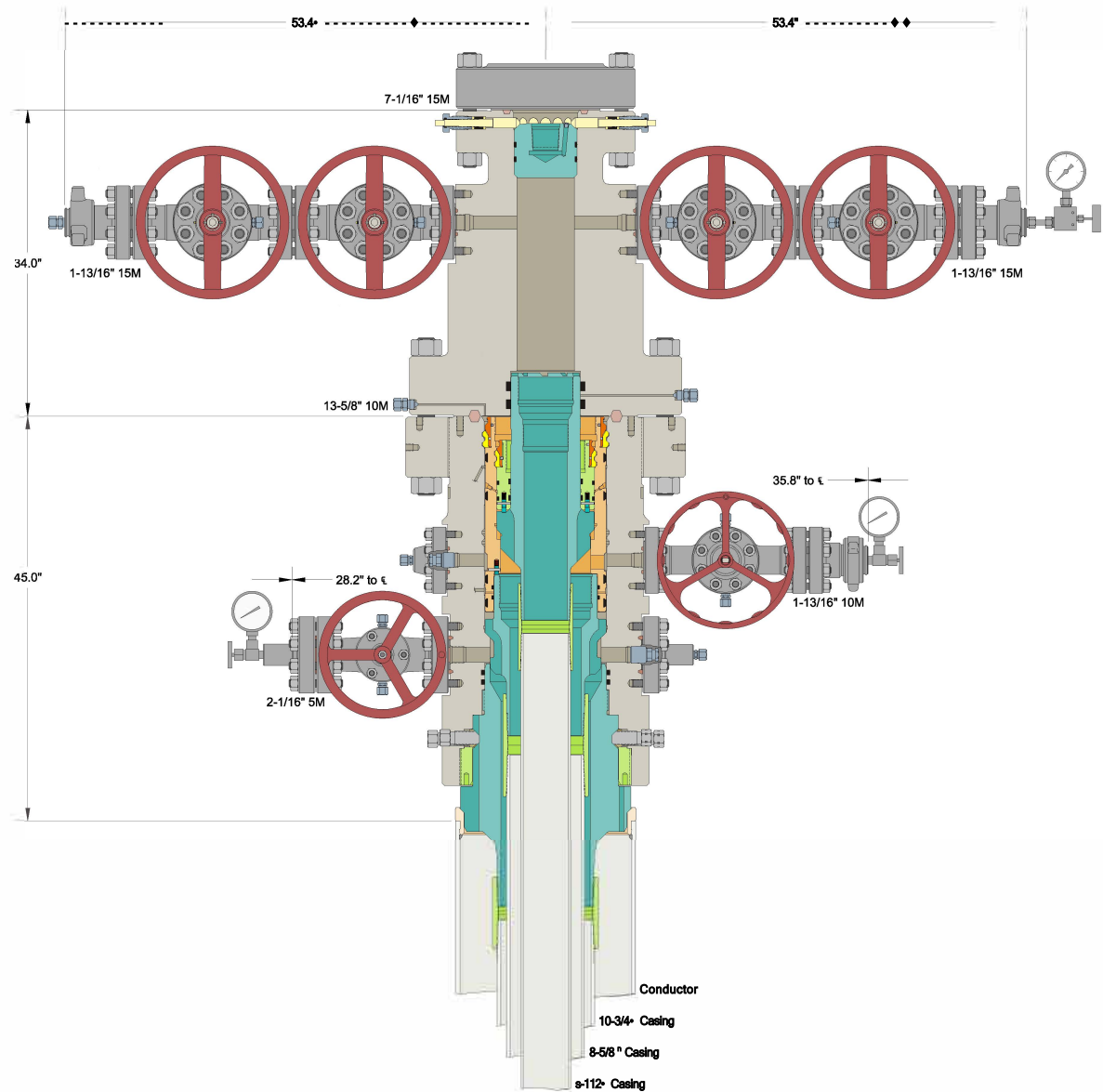
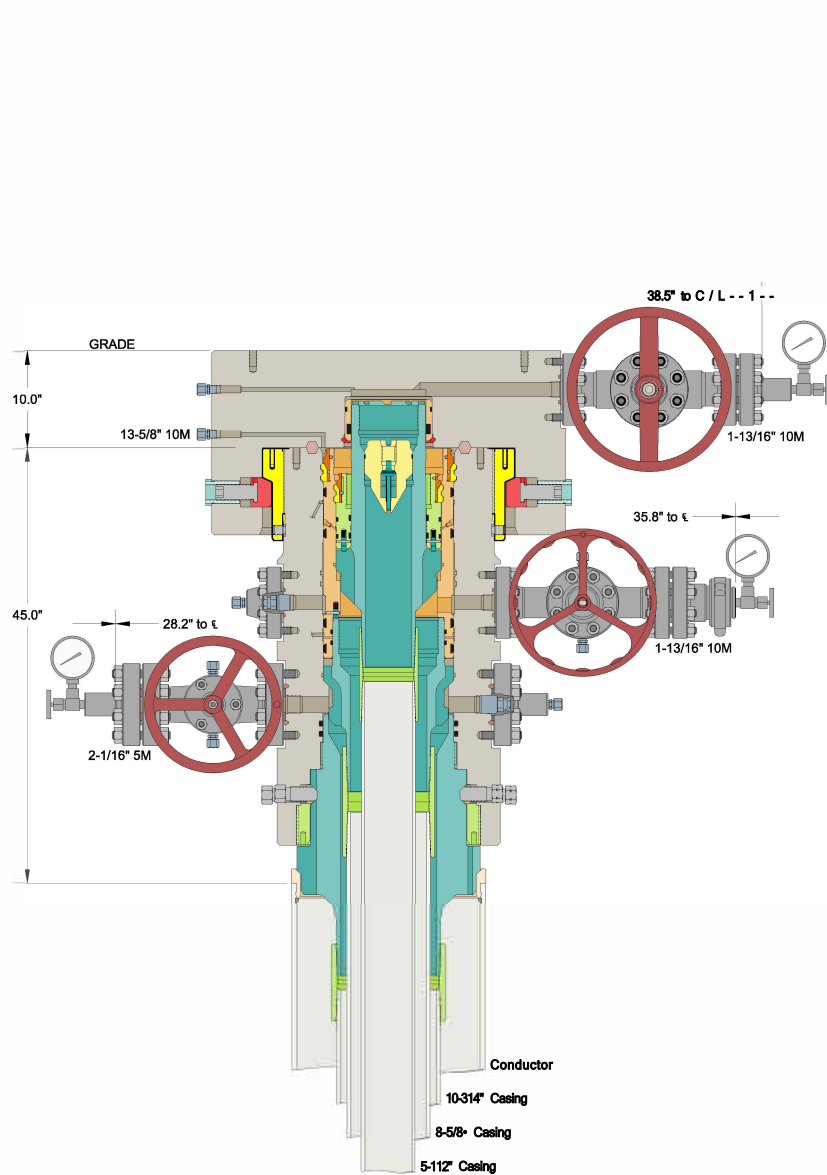
Location of Well

0. SHL: NWN / 180 FNL / 1415 FEL / TWSP: 24S / RANGE: 31E / SECTION: 26 / LAT: 32.1951045 / LONG: -103.7446191 (TVD: 0 feet, MD: 0 feet)

PPP: NWN / 100 FNL / 1650 FEL / TWSP: 24S / RANGE: 31E / SECTION: 26 / LAT: 32.1953242 / LONG: -103.7453787 (TVD: 11700 feet, MD: 11732 feet)

BHL: SWNE / 2620 FNL / 1650 FEL / TWSP: 24S / RANGE: 31E / SECTION: 35 / LAT: 32.1738795 / LONG: -103.7453919 (TVD: 11995 feet, MD: 19685 feet)

CONFIDENTIAL



INFORMATION CONTAINED HEREIN IS THE PROPERTY OF CACTUS WELLHEAD, LLC. REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PERMISSIBLE ONLY AS PROVIDED BY CONTRACT OR AS EXPRESSLY AUTHORIZED BY CACTUS WELLHEAD, LLC.

ALL DIMENSIONS APPROXIMATE

CACTUS WELLHEAD LLC

DEVON ENERGY CORPORATION
DELAWARE BASIN

10-3/4" x 8-5/8" x 5-1/2" 10M MBU-3T-CFL-R-DBLO Wellhead Sys.
With 8-5/8" And 5-1/2" Mandrel Casing Hangers
And 13-5/8" 10M x 7-1/16" 15M CTH-DBLHPS Tubing Head

DRAWN OLE 16SEP21

APPRV

DRAWING NO. HBE0000595

26-24-31-B Sundry ID 2752602 Cotton Draw Unit 609H.xlsm

Cotton Draw Unit 609H

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	20.29	5.77	0.58	775	10	0.97	10.89	35,263	
"B"					btc				0				0	
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,500							Tail Cmt	does not	circ to sfc.	Totals:	775		35,263	
Comparison of Proposed to Minimum Required Cement Volumes														
Hole	Annular	1 Stage		1 Stage	Min	1 Stage	Drilling	Calc				Min Dist		
Size	Volume	Cmt Sx		CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	Req'd BOPE			Hole-Cplg		
14 3/4	0.5563	421		606	431	41	9.00	3708	5M			1.50		
Burst Frac Gradient(s) for Segment(s) A, B = , b All > 0.70, OK.														
Site plot (pipe racks 3 or 4) as per O.D. 1.31/0.31 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	vam sprint fj	2.04	0.64	1.09	11,392	1	1.83	1.08	364,544
"B"								0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: 34								Totals:	11,392			364,544
The cement volume(s) are intended to achieve a top of 0						ft from surface or a		775				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	539	776	1443	-46	10.50	3904	5M				0.61
r D V Tool(s):			6680				sum of sx	Σ CuFt				Σ%excess
t by stage % :			31	29			1014	1869				29
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+	3.04	1.85	2.19	27,582	2	3.68	3.10	551,640
"B"								0				0
"C"								0				0
"D"				0				0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: 2,639												
								Totals:	27,582			551,640
		The cement volume(s) are intended to achieve a top of				11192	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	2244	3445	2840	21	10.50						1.19
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.											

PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Devon Energy Production Company LP
LEASE NO.:	NMNM012121
LOCATION:	Section 26, T.24 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

WELL NAME & NO.:	Cotton Draw Unit 609H
SURFACE HOLE FOOTAGE:	385'/N & 2625'/E
BOTTOM HOLE FOOTAGE:	20'/S & 1980'/E
ATS/API ID:	3001548571
APD ID:	10400065461
Sundry ID:	2752602

COA

H2S	Yes <input type="button" value="v"/>		
Potash	None <input type="button" value="v"/>		
Cave/Karst Potential	Low <input type="button" value="v"/>		
Cave/Karst Potential	<input type="checkbox"/> Critical		
Variance	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> Flex Hose	<input checked="" type="checkbox"/> Other
Wellhead	Conventional and Multibowl <input type="button" value="v"/>		
Other	<input type="checkbox"/> 4 String	Capitan Reef <div style="border: 1px solid black; padding: 2px;">None <input type="button" value="v"/></div>	<input type="checkbox"/> WIPP
Other	Pilot Hole <div style="border: 1px solid black; padding: 2px;">None <input type="button" value="v"/></div>	<input type="checkbox"/> Open Annulus	
Cementing	Contingency Squeeze <div style="border: 1px solid black; padding: 2px;">None <input type="button" value="v"/></div>	Echo-Meter <div style="border: 1px solid black; padding: 2px;">Int 1 <input type="button" value="v"/></div>	Primary Cement Squeeze <div style="border: 1px solid black; padding: 2px;">None <input type="button" value="v"/></div>
Special Requirements	<input type="checkbox"/> Water Disposal/Injection	<input type="checkbox"/> COM	<input checked="" type="checkbox"/> Unit
Special Requirements	<input type="checkbox"/> Batch Sundry		
Special Requirements Variance	<input type="checkbox"/> Break Testing	<input type="checkbox"/> Offline Cementing	<input type="checkbox"/> Casing Clearance

A. HYDROGEN SULFIDE

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

B. CASING

1. The **10-3/4 inch** surface casing shall be set at approximately **775 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.

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

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

Option 1 (Single Stage):

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

Option 2:

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

- a. First stage: Operator will cement with intent to reach the top of the **Brushy Canyon at 6680' (539 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 475 sxs Class C)**

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

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

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

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

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

C. PRESSURE CONTROL

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

Option 1:

- a. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M) psi**.
- 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 **10,000 (10M) psi. Variance is approved to use a 5000 (5M) Annular which shall be tested to 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 **10,000 (10M) psi. Variance is approved to use a 5000 (5M) Annular which shall be tested to 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)

Unit Wells

The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers. If a participating area has not been established, the operator can use the general unit designation, but will replace the unit number with the participating area number when the sign is replaced.

Commercial Well Determination

A commercial well determination shall be submitted after production has been established for at least six months.

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

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240,

(575) 689-5981

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

digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

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

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in **43 CFR part 3170 Subpart 3172** and **API STD 53 Sec. 5.3**.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
 - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
 - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
 - c. Manufacturer representative shall install the test plug for the initial BOP test.
 - d. Whenever any seal subject to test pressure is broken, all the tests in 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

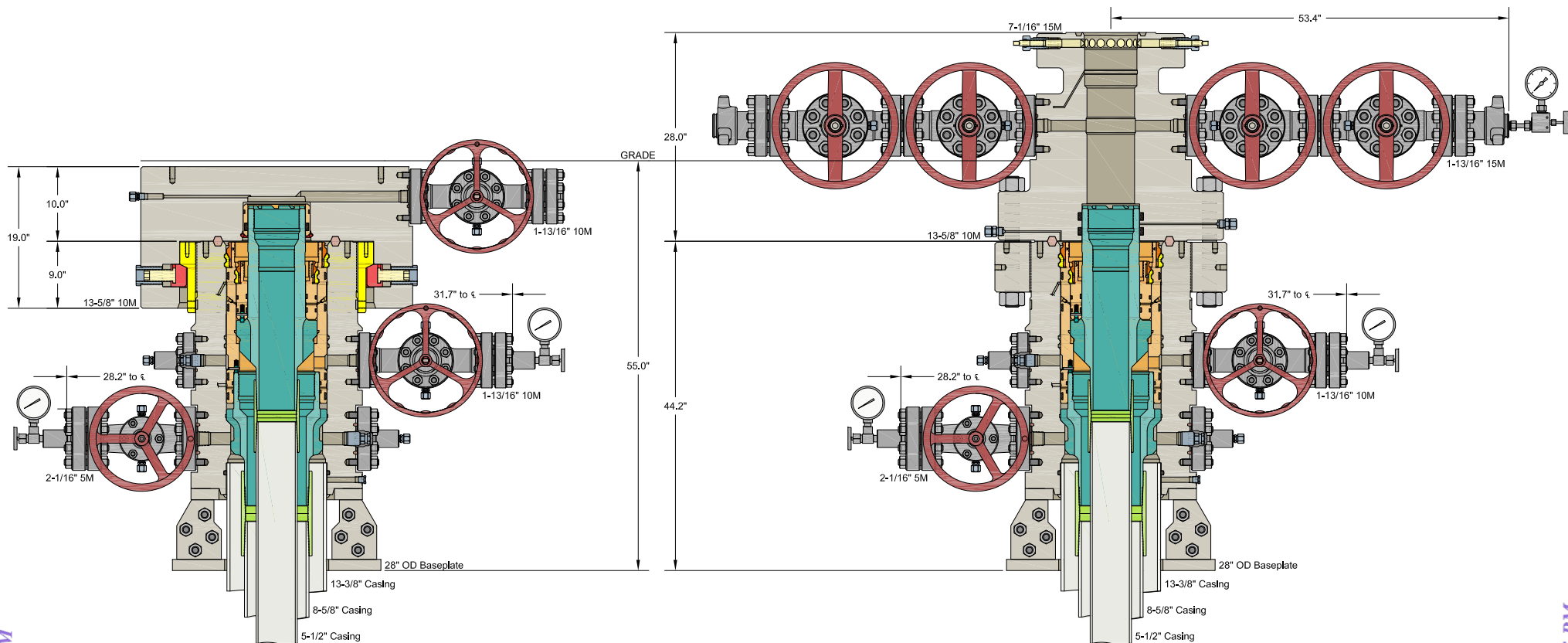
Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

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 9/29/2023



INFORMATION CONTAINED HEREIN IS THE PROPERTY OF CACTUS WELLHEAD, LLC. REPRODUCTION, DISCLOSURE, OR USE THEREOF IS PERMISSIBLE ONLY AS PROVIDED BY CONTRACT OR AS EXPRESSLY AUTHORIZED BY CACTUS WELLHEAD, LLC.

CACTUS WELLHEAD LLC		DEVON ENERGY CORPORATION	
13-3/8" x 8-5/8" x 5-1/2" 5M MBU-3T Wellhead System With 8-5/8" & 5-1/2" Pin Down Rotating Mandrel Hangers And 13-5/8" 10M x 7-1/16" 15M CTH-P-DBLHPS Tubing Head		DRAWN	DLE
		APPRV	10MAY18
		DRAWING NO.	ODE0002309

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

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

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

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-48571	² Pool Code 98220	³ Pool Name PURPLE SAGE; WOLFCAMP
⁴ Property Code 300635	⁵ Property Name COTTON DRAW UNIT	⁶ Well Number 609H
⁷ OGRID No. 6137	⁸ Operator Name DEVON ENERGY PRODUCTION COMPANY, L.P.	⁹ Elevation 3539.4

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
B	26	24 S	31 E		385	NORTH	2625	EAST	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
O	2	25 S	31 E		20	SOUTH	1980	EAST	EDDY
¹² Dedicated Acres 1,913.48	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

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.

	<p>COTTON DRAW UNIT 609H EL. = 3539.4</p> <p>GEODETTIC COORDINATES NAD 83 NMSP EAST SURFACE LOCATION N. = 434999.98 E. = 722236.77 LAT. = 32.1945401°N LONG. = 103.7485311°W</p> <p>KICK OFF POINT CALLS 46' FNL, 1979' FEL N. = 435342 E. = 722881 LAT. = 32.1954 LONG. = 103.7465</p> <p>FIRST TAKE POINT (PPP 1) 100' FNL, 1980' FEL N. = 435288.64 E. = 722880.47 LAT. = 32.1953239°N LONG. = 103.7464452°W</p> <p>LAST TAKE POINT 100' FSL, 1980' FEL N. = 419676.27 E. = 722949.01 LAT. = 32.1524079°N LONG. = 103.7464989°W</p> <p>BOTTOM OF HOLE 20' FSL, 1980' FEL N. = 419596.28 E. = 722949.40 LAT. = 32.1521880°N LONG. = 103.7464991°W</p> <p>PPP 2 2642' FNL, 1984' FEL N. = 427465.14 E. = 722914.81 LAT. = 32.1738183°N LONG. = 103.7464722°W</p> <p>PPP 3 0' FSL, 1980' FEL N. = 424872.89 E. = 722926.19 LAT. = 32.1666926°N LONG. = 103.7464811°W</p> <p>CORNER COORDINATES TABLE NAD 83 NMSP EAST</p> <table border="1"> <tr><td>A</td><td>N. = 435400.01</td><td>E. = 724859.42</td></tr> <tr><td>B</td><td>N. = 435384.79</td><td>E. = 722216.85</td></tr> <tr><td>C</td><td>N. = 430102.29</td><td>E. = 722249.33</td></tr> <tr><td>D</td><td>N. = 424873.17</td><td>E. = 722262.79</td></tr> <tr><td>E</td><td>N. = 419578.11</td><td>E. = 722271.47</td></tr> <tr><td>F</td><td>N. = 419570.97</td><td>E. = 724929.11</td></tr> <tr><td>G</td><td>N. = 422205.54</td><td>E. = 724916.21</td></tr> <tr><td>H</td><td>N. = 424872.06</td><td>E. = 724905.29</td></tr> <tr><td>I</td><td>N. = 427478.46</td><td>E. = 724898.60</td></tr> <tr><td>J</td><td>N. = 430119.23</td><td>E. = 724890.89</td></tr> <tr><td>K</td><td>N. = 432760.11</td><td>E. = 724874.69</td></tr> </table> <p>LEGEND --- SECTION LINE --- QUARTER LINE --- LEASE LINE --- WELL PATH</p>	A	N. = 435400.01	E. = 724859.42	B	N. = 435384.79	E. = 722216.85	C	N. = 430102.29	E. = 722249.33	D	N. = 424873.17	E. = 722262.79	E	N. = 419578.11	E. = 722271.47	F	N. = 419570.97	E. = 724929.11	G	N. = 422205.54	E. = 724916.21	H	N. = 424872.06	E. = 724905.29	I	N. = 427478.46	E. = 724898.60	J	N. = 430119.23	E. = 724890.89	K	N. = 432760.11	E. = 724874.69	<p>¹⁷ OPERATOR CERTIFICATION</p> <p>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.</p> <p><i>Rebecca Deal</i> 9/19/2023 Signature Date</p> <p>Rebecca Deal, Regulatory Analyst Printed Name</p> <p>rebecca.deal@dv.com E-mail Address</p> <p>¹⁸ SURVEYOR CERTIFICATION</p> <p>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.</p> <p>SEPTEMBER 18, 2023 Date of Survey</p> <p><i>James F. Jaramillo</i> Signature and Seal of Professional Surveyor</p> <p>Certificate Number: 12797 SURV. NO. 8561B</p>
A	N. = 435400.01	E. = 724859.42																																	
B	N. = 435384.79	E. = 722216.85																																	
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K	N. = 432760.11	E. = 724874.69																																	

Intent ☒ As Drilled ☐

API #		
Operator Name: DEVON ENERGY PRODUCTION COMPANY, L.P.	Property Name: COTTON DRAW UNIT	Well Number 609H

Kick Off Point (KOP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
	26	24S	31E		46	FNL	1979	FEL	LEA
Latitude 32.1954					Longitude -103.7465				NAD 83

First Take Point (FTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
B	26	24S	31E		100	NORTH	1980	EAST	EDDY
Latitude 32.1953239					Longitude 103.7464452				NAD 83

Last Take Point (LTP)

UL	Section	Township	Range	Lot	Feet	From N/S	Feet	From E/W	County
O	2	25S	31E		20	SOUTH	1980	EAST	EDDY
Latitude 32.1524079					Longitude 103.7464989				NAD 83

Is this well the defining well for the Horizontal Spacing Unit? ☒Is this well an infill well? ☒

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

API #		
Operator Name: DEVON ENERGY PRODUCTION COMPANY, L.P.	Property Name: COTTON DRAW UNIT	Well Number 607H

KZ 06/29/2018

Connection Data Sheet

OD (in.)	WEIGHT (lbs./ft.)	WALL (in.)	GRADE	DRIFT (in.)	RBW%	CONNECTION
5.500	Nominal: 17.00 Plain End: 16.89	0.304	VST P110 EC	4.767	87.5	DWC/C-IS PLUS

PIPE PROPERTIES

Nominal OD	5.500	in.
Nominal ID	4.892	in.
Nominal Area	4.962	sq.in.
Grade Type	API 5CT	
Min. Yield Strength	125	ksi
Max. Yield Strength	140	ksi
Min. Tensile Strength	135	ksi
Yield Strength	620	klb
Ultimate Strength	670	klb
Min. Internal Yield	12,090	psi
High Collapse	8,840	psi

CONNECTION PROPERTIES

Connection Type	Semi-Premium T&C
Connection OD (nom)	6.300 in.
Connection ID (nom)	4.892 in.
Make-Up Loss	4.125 in.
Coupling Length	9.250 in.
Critical Cross Section	4.962 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	620	klb
Parting Load	670	klb
Compression Rating	620	klb
Min. Internal Yield	12,090	psi
High Collapse	8,840	psi
Maximum Uniaxial Bend Rating	104.2	°/100 ft
Ref String Length w 1.4 Design Factor	26,050	ft

FIELD TORQUE VALUES

Min. Make-up Torque	13,400	ft.lbs
Opti. Make-up Torque	14,350	ft.lbs
Max. Make-up Torque	15,300	ft.lbs
Min. Shoulder Torque	1,340	ft.lbs
Max. Shoulder Torque	10,720	ft.lbs
Max. Delta Turn	0.200	Turns
Max Operational Torque	17,200	ft.lbs
Maximum Torsional Value (MTV)	18,920	ft.lbs

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

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

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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.

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

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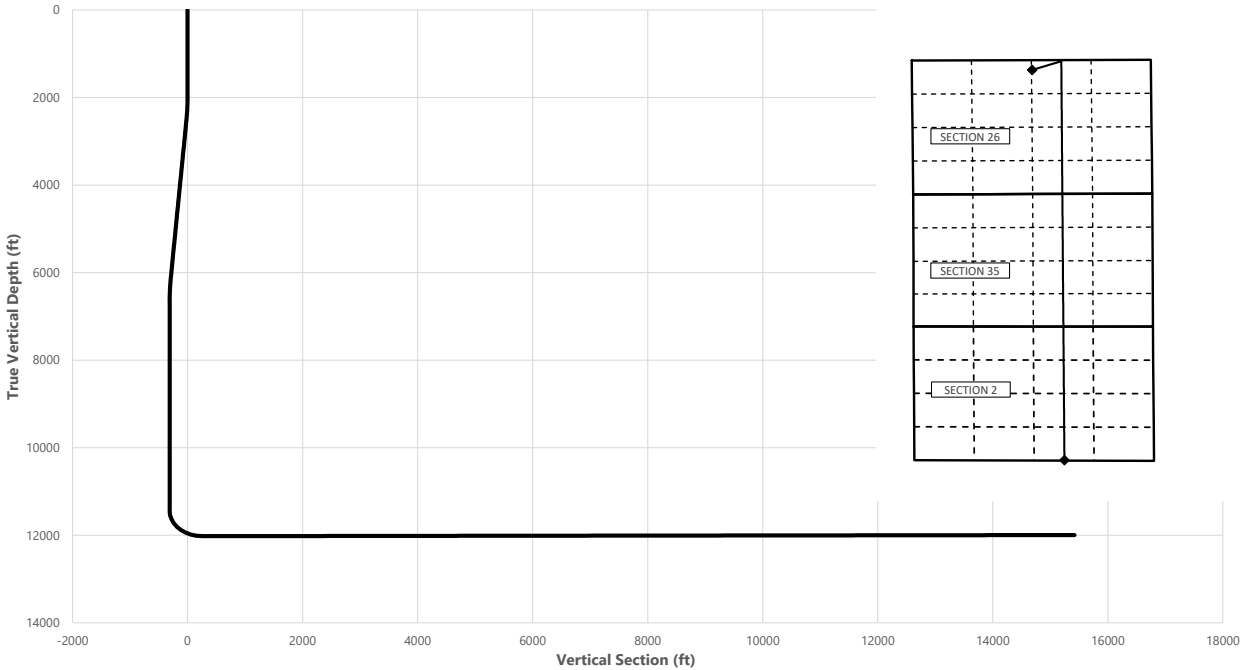
COTTON DRAW UNIT 609H



Well: COTTON DRAW UNIT 609H
County: Lea
Wellbore: Permit Plan
Design: Permit Plan #1

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

MD	INC	AZI	TVD	NS	EW	VS	DLS	Comment
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
2000.00	0.00	62.00	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2500.00	10.00	62.00	2497.47	20.43	38.43	-18.63	2.00	Hold Tangent
6198.54	10.00	62.00	6139.81	321.95	605.50	-293.62	0.00	Drop to Vertical
6698.54	0.00	62.00	6637.28	342.38	643.92	-312.26	2.00	Hold Vertical
11508.30	0.00	179.75	11447.04	342.38	643.92	-312.26	0.00	KOP
12409.25	90.09	179.75	12020.00	-231.52	646.43	261.14	10.00	Landing Point
27581.59	90.09	179.75	11995.00	-15403.70	712.63	15420.18	0.00	BHL



Key Depths	MD (ft)	TVD (ft)
Rustler	660.00	660.00
Salt	1010.00	1010.00
Base of Salt	4431.88	4400.00
Delaware	4431.88	4400.00
Cherry Canyon	5406.69	5360.00
Brushy Canyon	6741.26	6680.00
1st Bone Spring Lime	8351.26	8290.00
Bone Spring 1st	9361.26	9300.00
Bone Spring 2nd	9981.26	9920.00
3rd Bone Spring Lime	10501.26	10440.00
Bone Spring 3rd	11276.26	11215.00
Wolfcamp / Point of Penetration	11770.29	11700.00
exit	27501.59	11995.15

SHL
KOP
Point of Penetration
Exit
BHL

MD	TVD	Lat	Long	Section Footages
(ft)	(ft)	(°)	(°)	
0.00	0.00	32.1944	-103.7486	385' FNL, 2625' FWL of Sec 26 in T24S, R31E
11508.30	11447.04	32.1954	-103.7465	46' FNL, 1979' FEL of Sec 26 in T24S, R31E
11770.29	11700.00	32.1953	-103.7464	100' FNL, 1980' FEL of Sec 26 in T24S, R31E
27501.59	11995.15	32.1524	-103.7465	100' FSL, 1980' FEL of Sec 2 in T25S, R31E
27581.59	11995.00	32.1521	-103.7466	20' FSL, 1980' FEL of Sec 2 in T25S, R31E

	Y	X	MD
KOP	435342	722881	11508.30

COTTON DRAW UNIT 609H



Well: COTTON DRAW UNIT 609H
 County: Lea
 Wellbore: Permit Plan
 Design: Permit Plan #1

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

MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL
100.00	0.00	62.00	100.00	0.00	0.00	0.00	0.00	
200.00	0.00	62.00	200.00	0.00	0.00	0.00	0.00	
300.00	0.00	62.00	300.00	0.00	0.00	0.00	0.00	
400.00	0.00	62.00	400.00	0.00	0.00	0.00	0.00	
500.00	0.00	62.00	500.00	0.00	0.00	0.00	0.00	
600.00	0.00	62.00	600.00	0.00	0.00	0.00	0.00	
660.00	0.00	62.00	660.00	0.00	0.00	0.00	0.00	Rustler
700.00	0.00	62.00	700.00	0.00	0.00	0.00	0.00	
800.00	0.00	62.00	800.00	0.00	0.00	0.00	0.00	
900.00	0.00	62.00	900.00	0.00	0.00	0.00	0.00	
1000.00	0.00	62.00	1000.00	0.00	0.00	0.00	0.00	
1010.00	0.00	62.00	1010.00	0.00	0.00	0.00	0.00	Salt
1100.00	0.00	62.00	1100.00	0.00	0.00	0.00	0.00	
1200.00	0.00	62.00	1200.00	0.00	0.00	0.00	0.00	
1300.00	0.00	62.00	1300.00	0.00	0.00	0.00	0.00	
1400.00	0.00	62.00	1400.00	0.00	0.00	0.00	0.00	
1500.00	0.00	62.00	1500.00	0.00	0.00	0.00	0.00	
1600.00	0.00	62.00	1600.00	0.00	0.00	0.00	0.00	
1700.00	0.00	62.00	1700.00	0.00	0.00	0.00	0.00	
1800.00	0.00	62.00	1800.00	0.00	0.00	0.00	0.00	
1900.00	0.00	62.00	1900.00	0.00	0.00	0.00	0.00	
2000.00	0.00	62.00	2000.00	0.00	0.00	0.00	0.00	Start Tangent
2100.00	2.00	62.00	2099.98	0.82	1.54	-0.75	2.00	
2200.00	4.00	62.00	2199.84	3.28	6.16	-2.99	2.00	
2300.00	6.00	62.00	2299.45	7.37	13.86	-6.72	2.00	
2400.00	8.00	62.00	2398.70	13.09	24.62	-11.94	2.00	
2500.00	10.00	62.00	2497.47	20.43	38.43	-18.63	2.00	Hold Tangent
2600.00	10.00	62.00	2595.95	28.58	53.76	-26.07	0.00	
2700.00	10.00	62.00	2694.43	36.74	69.09	-33.50	0.00	
2800.00	10.00	62.00	2792.91	44.89	84.42	-40.94	0.00	
2900.00	10.00	62.00	2891.39	53.04	99.76	-48.37	0.00	
3000.00	10.00	62.00	2989.87	61.19	115.09	-55.81	0.00	
3100.00	10.00	62.00	3088.35	69.35	130.42	-63.24	0.00	
3200.00	10.00	62.00	3186.83	77.50	145.75	-70.68	0.00	
3300.00	10.00	62.00	3285.31	85.65	161.09	-78.11	0.00	
3400.00	10.00	62.00	3383.79	93.80	176.42	-85.55	0.00	
3500.00	10.00	62.00	3482.27	101.96	191.75	-92.98	0.00	
3600.00	10.00	62.00	3580.75	110.11	207.08	-100.42	0.00	
3700.00	10.00	62.00	3679.23	118.26	222.41	-107.85	0.00	
3800.00	10.00	62.00	3777.72	126.41	237.75	-115.29	0.00	
3900.00	10.00	62.00	3876.20	134.56	253.08	-122.72	0.00	
4000.00	10.00	62.00	3974.68	142.72	268.41	-130.16	0.00	
4100.00	10.00	62.00	4073.16	150.87	283.74	-137.59	0.00	
4200.00	10.00	62.00	4171.64	159.02	299.08	-145.03	0.00	
4300.00	10.00	62.00	4270.12	167.17	314.41	-152.46	0.00	
4400.00	10.00	62.00	4368.60	175.33	329.74	-159.90	0.00	
4431.88	10.00	62.00	4400.00	177.93	334.63	-162.27	0.00	Base of Salt, Delaware
4500.00	10.00	62.00	4467.08	183.48	345.07	-167.33	0.00	
4600.00	10.00	62.00	4565.56	191.63	360.40	-174.77	0.00	
4700.00	10.00	62.00	4664.04	199.78	375.74	-182.20	0.00	
4800.00	10.00	62.00	4762.52	207.94	391.07	-189.64	0.00	
4900.00	10.00	62.00	4861.00	216.09	406.40	-197.07	0.00	
5000.00	10.00	62.00	4959.48	224.24	421.73	-204.51	0.00	
5100.00	10.00	62.00	5057.97	232.39	437.07	-211.94	0.00	
5200.00	10.00	62.00	5156.45	240.54	452.40	-219.38	0.00	
5300.00	10.00	62.00	5254.93	248.70	467.73	-226.81	0.00	
5400.00	10.00	62.00	5353.41	256.85	483.06	-234.25	0.00	
5406.69	10.00	62.00	5360.00	257.39	484.09	-234.75	0.00	Cherry Canyon
5500.00	10.00	62.00	5451.89	265.00	498.39	-241.68	0.00	
5600.00	10.00	62.00	5550.37	273.15	513.73	-249.12	0.00	
5700.00	10.00	62.00	5648.85	281.31	529.06	-256.55	0.00	
5800.00	10.00	62.00	5747.33	289.46	544.39	-263.99	0.00	
5900.00	10.00	62.00	5845.81	297.61	559.72	-271.42	0.00	
6000.00	10.00	62.00	5944.29	305.76	575.06	-278.86	0.00	
6100.00	10.00	62.00	6042.77	313.92	590.39	-286.29	0.00	
6198.54	10.00	62.00	6139.81	321.95	605.50	-293.62	0.00	Drop to Vertical
6200.00	9.97	62.00	6141.25	322.07	605.72	-293.73	2.00	
6300.00	7.97	62.00	6240.03	329.39	619.49	-300.41	2.00	
6400.00	5.97	62.00	6339.28	335.08	630.20	-305.60	2.00	

COTTON DRAW UNIT 609H



Well: COTTON DRAW UNIT 609H
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 Wellbore: Permit Plan
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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
6500.00	3.97	62.00	6438.90	339.15	637.85	-309.31	2.00	
6600.00	1.97	62.00	6538.76	341.59	642.43	-311.53	2.00	
6698.54	0.00	62.00	6637.28	342.38	643.92	-312.26	2.00	Hold Vertical
6700.00	0.00	179.75	6638.74	342.38	643.92	-312.26	0.00	
6741.26	0.00	179.75	6680.00	342.38	643.92	-312.26	0.00	Brushy Canyon
6800.00	0.00	179.75	6738.74	342.38	643.92	-312.26	0.00	
6900.00	0.00	179.75	6838.74	342.38	643.92	-312.26	0.00	
7000.00	0.00	179.75	6938.74	342.38	643.92	-312.26	0.00	
7100.00	0.00	179.75	7038.74	342.38	643.92	-312.26	0.00	
7200.00	0.00	179.75	7138.74	342.38	643.92	-312.26	0.00	
7300.00	0.00	179.75	7238.74	342.38	643.92	-312.26	0.00	
7400.00	0.00	179.75	7338.74	342.38	643.92	-312.26	0.00	
7500.00	0.00	179.75	7438.74	342.38	643.92	-312.26	0.00	
7600.00	0.00	179.75	7538.74	342.38	643.92	-312.26	0.00	
7700.00	0.00	179.75	7638.74	342.38	643.92	-312.26	0.00	
7800.00	0.00	179.75	7738.74	342.38	643.92	-312.26	0.00	
7900.00	0.00	179.75	7838.74	342.38	643.92	-312.26	0.00	
8000.00	0.00	179.75	7938.74	342.38	643.92	-312.26	0.00	
8100.00	0.00	179.75	8038.74	342.38	643.92	-312.26	0.00	
8200.00	0.00	179.75	8138.74	342.38	643.92	-312.26	0.00	
8300.00	0.00	179.75	8238.74	342.38	643.92	-312.26	0.00	
8351.26	0.00	179.75	8290.00	342.38	643.92	-312.26	0.00	1st Bone Spring Lime
8400.00	0.00	179.75	8338.74	342.38	643.92	-312.26	0.00	
8500.00	0.00	179.75	8438.74	342.38	643.92	-312.26	0.00	
8600.00	0.00	179.75	8538.74	342.38	643.92	-312.26	0.00	
8700.00	0.00	179.75	8638.74	342.38	643.92	-312.26	0.00	
8800.00	0.00	179.75	8738.74	342.38	643.92	-312.26	0.00	
8900.00	0.00	179.75	8838.74	342.38	643.92	-312.26	0.00	
9000.00	0.00	179.75	8938.74	342.38	643.92	-312.26	0.00	
9100.00	0.00	179.75	9038.74	342.38	643.92	-312.26	0.00	
9200.00	0.00	179.75	9138.74	342.38	643.92	-312.26	0.00	
9300.00	0.00	179.75	9238.74	342.38	643.92	-312.26	0.00	
9361.26	0.00	179.75	9300.00	342.38	643.92	-312.26	0.00	Bone Spring 1st
9400.00	0.00	179.75	9338.74	342.38	643.92	-312.26	0.00	
9500.00	0.00	179.75	9438.74	342.38	643.92	-312.26	0.00	
9600.00	0.00	179.75	9538.74	342.38	643.92	-312.26	0.00	
9700.00	0.00	179.75	9638.74	342.38	643.92	-312.26	0.00	
9800.00	0.00	179.75	9738.74	342.38	643.92	-312.26	0.00	
9900.00	0.00	179.75	9838.74	342.38	643.92	-312.26	0.00	
9981.26	0.00	179.75	9920.00	342.38	643.92	-312.26	0.00	Bone Spring 2nd
10000.00	0.00	179.75	9938.74	342.38	643.92	-312.26	0.00	
10100.00	0.00	179.75	10038.74	342.38	643.92	-312.26	0.00	
10200.00	0.00	179.75	10138.74	342.38	643.92	-312.26	0.00	
10300.00	0.00	179.75	10238.74	342.38	643.92	-312.26	0.00	
10400.00	0.00	179.75	10338.74	342.38	643.92	-312.26	0.00	
10500.00	0.00	179.75	10438.74	342.38	643.92	-312.26	0.00	
10501.26	0.00	179.75	10440.00	342.38	643.92	-312.26	0.00	3rd Bone Spring Lime
10600.00	0.00	179.75	10538.74	342.38	643.92	-312.26	0.00	
10700.00	0.00	179.75	10638.74	342.38	643.92	-312.26	0.00	
10800.00	0.00	179.75	10738.74	342.38	643.92	-312.26	0.00	
10900.00	0.00	179.75	10838.74	342.38	643.92	-312.26	0.00	
11000.00	0.00	179.75	10938.74	342.38	643.92	-312.26	0.00	
11100.00	0.00	179.75	11038.74	342.38	643.92	-312.26	0.00	
11200.00	0.00	179.75	11138.74	342.38	643.92	-312.26	0.00	
11276.26	0.00	179.75	11215.00	342.38	643.92	-312.26	0.00	Bone Spring 3rd
11300.00	0.00	179.75	11238.74	342.38	643.92	-312.26	0.00	
11400.00	0.00	179.75	11338.74	342.38	643.92	-312.26	0.00	
11500.00	0.00	179.75	11438.74	342.38	643.92	-312.26	0.00	
11508.30	0.00	179.75	11447.04	342.38	643.92	-312.26	0.00	KOP
11600.00	9.17	179.75	11538.35	335.06	643.96	-304.94	10.00	
11700.00	19.17	179.75	11635.19	310.61	644.06	-280.51	10.00	
11770.29	26.20	179.75	11700.00	283.52	644.18	-253.44	10.00	Wolfcamp / Point of Penetration
11800.00	29.17	179.75	11726.30	269.72	644.24	-239.66	10.00	
11900.00	39.17	179.75	11808.94	213.62	644.49	-183.61	10.00	
12000.00	49.17	179.75	11880.57	144.04	644.79	-114.08	10.00	
12100.00	59.17	179.75	11939.04	63.06	645.14	-33.18	10.00	
12200.00	69.17	179.75	11982.55	-26.83	645.54	56.64	10.00	
12300.00	79.17	179.75	12009.80	-122.92	645.96	152.64	10.00	
12400.00	89.17	179.75	12019.94	-222.27	646.39	251.91	10.00	
12409.25	90.09	179.75	12020.00	-231.52	646.43	261.14	10.00	Landing Point

COTTON DRAW UNIT 609H



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MD (ft)	INC (°)	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
12500.00	90.09	179.75	12019.85	-322.27	646.82	351.82	0.00	
12600.00	90.09	179.75	12019.69	-422.27	647.26	451.73	0.00	
12700.00	90.09	179.75	12019.52	-522.27	647.70	551.64	0.00	
12800.00	90.09	179.75	12019.36	-622.27	648.13	651.56	0.00	
12900.00	90.09	179.75	12019.19	-722.27	648.57	751.47	0.00	
13000.00	90.09	179.75	12019.03	-822.26	649.01	851.38	0.00	
13100.00	90.09	179.75	12018.86	-922.26	649.44	951.29	0.00	
13200.00	90.09	179.75	12018.70	-1022.26	649.88	1051.20	0.00	
13300.00	90.09	179.75	12018.53	-1122.26	650.32	1151.12	0.00	
13400.00	90.09	179.75	12018.37	-1222.26	650.75	1251.03	0.00	
13500.00	90.09	179.75	12018.20	-1322.26	651.19	1350.94	0.00	
13600.00	90.09	179.75	12018.04	-1422.26	651.63	1450.85	0.00	
13700.00	90.09	179.75	12017.87	-1522.26	652.06	1550.77	0.00	
13800.00	90.09	179.75	12017.71	-1622.26	652.50	1650.68	0.00	
13900.00	90.09	179.75	12017.55	-1722.25	652.94	1750.59	0.00	
14000.00	90.09	179.75	12017.38	-1822.25	653.37	1850.50	0.00	
14100.00	90.09	179.75	12017.22	-1922.25	653.81	1950.41	0.00	
14200.00	90.09	179.75	12017.05	-2022.25	654.25	2050.33	0.00	
14300.00	90.09	179.75	12016.89	-2122.25	654.68	2150.24	0.00	
14400.00	90.09	179.75	12016.72	-2222.25	655.12	2250.15	0.00	
14500.00	90.09	179.75	12016.56	-2322.25	655.56	2350.06	0.00	
14600.00	90.09	179.75	12016.39	-2422.25	655.99	2449.98	0.00	
14700.00	90.09	179.75	12016.23	-2522.25	656.43	2549.89	0.00	
14800.00	90.09	179.75	12016.06	-2622.24	656.87	2649.80	0.00	
14900.00	90.09	179.75	12015.90	-2722.24	657.30	2749.71	0.00	
15000.00	90.09	179.75	12015.73	-2822.24	657.74	2849.62	0.00	
15100.00	90.09	179.75	12015.57	-2922.24	658.18	2949.54	0.00	
15200.00	90.09	179.75	12015.41	-3022.24	658.61	3049.45	0.00	
15300.00	90.09	179.75	12015.24	-3122.24	659.05	3149.36	0.00	
15400.00	90.09	179.75	12015.08	-3222.24	659.49	3249.27	0.00	
15500.00	90.09	179.75	12014.91	-3322.24	659.92	3349.19	0.00	
15600.00	90.09	179.75	12014.75	-3422.24	660.36	3449.10	0.00	
15700.00	90.09	179.75	12014.58	-3522.23	660.80	3549.01	0.00	
15800.00	90.09	179.75	12014.42	-3622.23	661.23	3648.92	0.00	
15900.00	90.09	179.75	12014.25	-3722.23	661.67	3748.83	0.00	
16000.00	90.09	179.75	12014.09	-3822.23	662.11	3848.75	0.00	
16100.00	90.09	179.75	12013.92	-3922.23	662.54	3948.66	0.00	
16200.00	90.09	179.75	12013.76	-4022.23	662.98	4048.57	0.00	
16300.00	90.09	179.75	12013.59	-4122.23	663.42	4148.48	0.00	
16400.00	90.09	179.75	12013.43	-4222.23	663.85	4248.40	0.00	
16500.00	90.09	179.75	12013.26	-4322.23	664.29	4348.31	0.00	
16600.00	90.09	179.75	12013.10	-4422.23	664.73	4448.22	0.00	
16700.00	90.09	179.75	12012.94	-4522.22	665.16	4548.13	0.00	
16800.00	90.09	179.75	12012.77	-4622.22	665.60	4648.04	0.00	
16900.00	90.09	179.75	12012.61	-4722.22	666.04	4747.96	0.00	
17000.00	90.09	179.75	12012.44	-4822.22	666.47	4847.87	0.00	
17100.00	90.09	179.75	12012.28	-4922.22	666.91	4947.78	0.00	
17200.00	90.09	179.75	12012.11	-5022.22	667.34	5047.69	0.00	
17300.00	90.09	179.75	12011.95	-5122.22	667.78	5147.61	0.00	
17400.00	90.09	179.75	12011.78	-5222.22	668.22	5247.52	0.00	
17500.00	90.09	179.75	12011.62	-5322.22	668.65	5347.43	0.00	
17600.00	90.09	179.75	12011.45	-5422.21	669.09	5447.34	0.00	
17700.00	90.09	179.75	12011.29	-5522.21	669.53	5547.26	0.00	
17800.00	90.09	179.75	12011.12	-5622.21	669.96	5647.17	0.00	
17900.00	90.09	179.75	12010.96	-5722.21	670.40	5747.08	0.00	
18000.00	90.09	179.75	12010.80	-5822.21	670.84	5846.99	0.00	
18100.00	90.09	179.75	12010.63	-5922.21	671.27	5946.90	0.00	
18200.00	90.09	179.75	12010.47	-6022.21	671.71	6046.82	0.00	
18300.00	90.09	179.75	12010.30	-6122.21	672.15	6146.73	0.00	
18400.00	90.09	179.75	12010.14	-6222.21	672.58	6246.64	0.00	
18500.00	90.09	179.75	12009.97	-6322.20	673.02	6346.55	0.00	
18600.00	90.09	179.75	12009.81	-6422.20	673.46	6446.47	0.00	
18700.00	90.09	179.75	12009.64	-6522.20	673.89	6546.38	0.00	
18800.00	90.09	179.75	12009.48	-6622.20	674.33	6646.29	0.00	
18900.00	90.09	179.75	12009.31	-6722.20	674.77	6746.20	0.00	
19000.00	90.09	179.75	12009.15	-6822.20	675.20	6846.11	0.00	
19100.00	90.09	179.75	12008.98	-6922.20	675.64	6946.03	0.00	
19200.00	90.09	179.75	12008.82	-7022.20	676.08	7045.94	0.00	
19300.00	90.09	179.75	12008.65	-7122.20	676.51	7145.85	0.00	
19400.00	90.09	179.75	12008.49	-7222.19	676.95	7245.76	0.00	

COTTON DRAW UNIT 609H



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 Zone: 3001 - NM East (NAD83)

MD (ft)	INC (")	AZI (°)	TVD (ft)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Comment
19500.00	90.09	179.75	12008.33	-7322.19	677.39	7345.68	0.00	
19600.00	90.09	179.75	12008.16	-7422.19	677.82	7445.59	0.00	
19700.00	90.09	179.75	12008.00	-7522.19	678.26	7545.50	0.00	
19800.00	90.09	179.75	12007.83	-7622.19	678.70	7645.41	0.00	
19900.00	90.09	179.75	12007.67	-7722.19	679.13	7745.32	0.00	
20000.00	90.09	179.75	12007.50	-7822.19	679.57	7845.24	0.00	
20100.00	90.09	179.75	12007.34	-7922.19	680.01	7945.15	0.00	
20200.00	90.09	179.75	12007.17	-8022.19	680.44	8045.06	0.00	
20300.00	90.09	179.75	12007.01	-8122.18	680.88	8144.97	0.00	
20400.00	90.09	179.75	12006.84	-8222.18	681.32	8244.89	0.00	
20500.00	90.09	179.75	12006.68	-8322.18	681.75	8344.80	0.00	
20600.00	90.09	179.75	12006.51	-8422.18	682.19	8444.71	0.00	
20700.00	90.09	179.75	12006.35	-8522.18	682.63	8544.62	0.00	
20800.00	90.09	179.75	12006.19	-8622.18	683.06	8644.53	0.00	
20900.00	90.09	179.75	12006.02	-8722.18	683.50	8744.45	0.00	
21000.00	90.09	179.75	12005.86	-8822.18	683.94	8844.36	0.00	
21100.00	90.09	179.75	12005.69	-8922.18	684.37	8944.27	0.00	
21200.00	90.09	179.75	12005.53	-9022.18	684.81	9044.18	0.00	
21300.00	90.09	179.75	12005.36	-9122.17	685.25	9144.10	0.00	
21400.00	90.09	179.75	12005.20	-9222.17	685.68	9244.01	0.00	
21500.00	90.09	179.75	12005.03	-9322.17	686.12	9343.92	0.00	
21600.00	90.09	179.75	12004.87	-9422.17	686.55	9443.83	0.00	
21700.00	90.09	179.75	12004.70	-9522.17	686.99	9543.74	0.00	
21800.00	90.09	179.75	12004.54	-9622.17	687.43	9643.66	0.00	
21900.00	90.09	179.75	12004.37	-9722.17	687.86	9743.57	0.00	
22000.00	90.09	179.75	12004.21	-9822.17	688.30	9843.48	0.00	
22100.00	90.09	179.75	12004.05	-9922.17	688.74	9943.39	0.00	
22200.00	90.09	179.75	12003.88	-10022.16	689.17	10043.31	0.00	
22300.00	90.09	179.75	12003.72	-10122.16	689.61	10143.22	0.00	
22400.00	90.09	179.75	12003.55	-10222.16	690.05	10243.13	0.00	
22500.00	90.09	179.75	12003.39	-10322.16	690.48	10343.04	0.00	
22600.00	90.09	179.75	12003.22	-10422.16	690.92	10442.95	0.00	
22700.00	90.09	179.75	12003.06	-10522.16	691.36	10542.87	0.00	
22800.00	90.09	179.75	12002.89	-10622.16	691.79	10642.78	0.00	
22900.00	90.09	179.75	12002.73	-10722.16	692.23	10742.69	0.00	
23000.00	90.09	179.75	12002.56	-10822.16	692.67	10842.60	0.00	
23100.00	90.09	179.75	12002.40	-10922.15	693.10	10942.52	0.00	
23200.00	90.09	179.75	12002.23	-11022.15	693.54	11042.43	0.00	
23300.00	90.09	179.75	12002.07	-11122.15	693.98	11142.34	0.00	
23400.00	90.09	179.75	12001.90	-11222.15	694.41	11242.25	0.00	
23500.00	90.09	179.75	12001.74	-11322.15	694.85	11342.17	0.00	
23600.00	90.09	179.75	12001.58	-11422.15	695.29	11442.08	0.00	
23700.00	90.09	179.75	12001.41	-11522.15	695.72	11541.99	0.00	
23800.00	90.09	179.75	12001.25	-11622.15	696.16	11641.90	0.00	
23900.00	90.09	179.75	12001.08	-11722.15	696.60	11741.81	0.00	
24000.00	90.09	179.75	12000.92	-11822.14	697.03	11841.73	0.00	
24100.00	90.09	179.75	12000.75	-11922.14	697.47	11941.64	0.00	
24200.00	90.09	179.75	12000.59	-12022.14	697.91	12041.55	0.00	
24300.00	90.09	179.75	12000.42	-12122.14	698.34	12141.46	0.00	
24400.00	90.09	179.75	12000.26	-12222.14	698.78	12241.38	0.00	
24500.00	90.09	179.75	12000.09	-12322.14	699.22	12341.29	0.00	
24600.00	90.09	179.75	11999.93	-12422.14	699.65	12441.20	0.00	
24700.00	90.09	179.75	11999.76	-12522.14	700.09	12541.11	0.00	
24800.00	90.09	179.75	11999.60	-12622.14	700.53	12641.02	0.00	
24900.00	90.09	179.75	11999.44	-12722.13	700.96	12740.94	0.00	
25000.00	90.09	179.75	11999.27	-12822.13	701.40	12840.85	0.00	
25100.00	90.09	179.75	11999.11	-12922.13	701.84	12940.76	0.00	
25200.00	90.09	179.75	11998.94	-13022.13	702.27	13040.67	0.00	
25300.00	90.09	179.75	11998.78	-13122.13	702.71	13140.59	0.00	
25400.00	90.09	179.75	11998.61	-13222.13	703.15	13240.50	0.00	
25500.00	90.09	179.75	11998.45	-13322.13	703.58	13340.41	0.00	
25600.00	90.09	179.75	11998.28	-13422.13	704.02	13440.32	0.00	
25700.00	90.09	179.75	11998.12	-13522.13	704.46	13540.23	0.00	
25800.00	90.09	179.75	11997.95	-13622.12	704.89	13640.15	0.00	
25900.00	90.09	179.75	11997.79	-13722.12	705.33	13740.06	0.00	
26000.00	90.09	179.75	11997.62	-13822.12	705.77	13839.97	0.00	
26100.00	90.09	179.75	11997.46	-13922.12	706.20	13939.88	0.00	
26200.00	90.09	179.75	11997.29	-14022.12	706.64	14039.80	0.00	
26300.00	90.09	179.75	11997.13	-14122.12	707.07	14139.71	0.00	
26400.00	90.09	179.75	11996.97	-14222.12	707.51	14239.62	0.00	

COTTON DRAW UNIT 609H

Well: COTTON DRAW UNIT 609H**County:** Lea**Wellbore:** Permit Plan**Design:** Permit Plan #1**Geodetic System:** US State Plane 1983**Datum:** North American Datum 1927**Ellipsoid:** Clarke 1866**Zone:** 3001 - NM East (NAD83)

MD	INC	AZI	TVD	NS	EW	VS	DLS	Comment
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	
26500.00	90.09	179.75	11996.80	-14322.12	707.95	14339.53	0.00	
26600.00	90.09	179.75	11996.64	-14422.12	708.38	14439.44	0.00	
26700.00	90.09	179.75	11996.47	-14522.12	708.82	14539.36	0.00	
26800.00	90.09	179.75	11996.31	-14622.11	709.26	14639.27	0.00	
26900.00	90.09	179.75	11996.14	-14722.11	709.69	14739.18	0.00	
27000.00	90.09	179.75	11995.98	-14822.11	710.13	14839.09	0.00	
27100.00	90.09	179.75	11995.81	-14922.11	710.57	14939.01	0.00	
27200.00	90.09	179.75	11995.65	-15022.11	711.00	15038.92	0.00	
27300.00	90.09	179.75	11995.48	-15122.11	711.44	15138.83	0.00	
27400.00	90.09	179.75	11995.32	-15222.11	711.88	15238.74	0.00	
27500.00	90.09	179.75	11995.15	-15322.11	712.31	15338.65	0.00	
27501.59	90.09	179.75	11995.15	-15323.70	712.32	15340.25	0.00	exit
27581.59	90.09	179.75	11995.00	-15403.70	712.63	15420.18	0.00	BHL

Issued on: 16 Sep. 2022 by Logan Van Gorp



Connection Data Sheet

HIGHER TORQUE VERSION

OD	Weight (lb/ft)	Wall Th.	Grade	Alt. Drift:	Connection
8 5/8 in.	Nominal: 32.00 Plain End: 31.13	0.352 in.	P110EC	7.875 in.	VAM® SPRINT-FJ

PIPE PROPERTIES		
Nominal OD	8.625	in.
Nominal ID	7.921	in.
Nominal Cross Section Area	9.149	sqin.
Grade Type	High Yield	
Min. Yield Strength	125	ksi
Max. Yield Strength	140	ksi
Min. Ultimate Tensile Strength	135	ksi

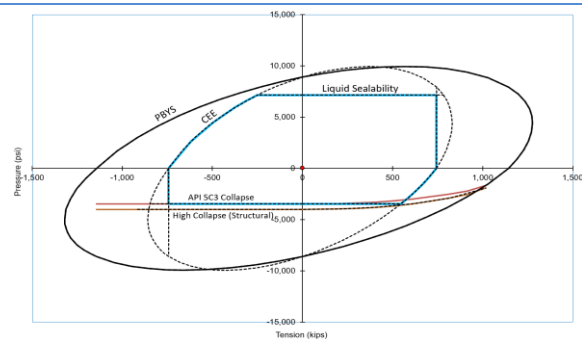
CONNECTION PROPERTIES		
Connection Type	Semi-Premium Integral Flush	
Connection OD (nom):	8.665	in.
Connection ID (nom):	7.954	in.
Make-Up Loss	2.614	in.
Critical Cross Section	5.978	sqin.
Tension Efficiency	65.0	% of pipe
Compression Efficiency	65.0	% of pipe
Internal Pressure Efficiency	80.0	% of pipe
External Pressure Efficiency	100	% of pipe

CONNECTION PERFORMANCES		
Tensile Yield Strength	744	klb
Compression Resistance	744	klb
Max. Internal Pressure	7,150	psi
Structural Collapse Resistance	4,000	psi
Max. Structural Bending	41	°/100ft
Max. Bending with Sealability	10	°/100ft

* 87.5% RBW

TORQUE VALUES		
Min. Make-up torque	23,000	ft.lb
Opt. Make-up torque	25,500	ft.lb
Max. Make-up torque	28,000	ft.lb
Max. Torque with Sealability (MTS)	48,000	ft.lb

VAM® SPRINT-FJ is a semi-premium flush connection designed for shale applications, where maximum clearance and high tension capacity are required for intermediate casing strings.



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



COTTON DRAW UNIT 609H

1. Geologic Formations

TVD of target	11995	Pilot hole depth	N/A
MD at TD:	27582	Deepest expected fresh water	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	660		
Salt	1010		
Base of Salt	4400		
Delaware	4400		
Cherry Canyon	5360		
Brushy Canyon	6680		
1st Bone Spring Lime	8290		
Bone Spring 1st	9300		
Bone Spring 2nd	9920		
3rd Bone Spring Lime	10440		
Bone Spring 3rd	11215		
Wolfcamp	11700		

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

COTTON DRAW UNIT 609H

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	685	0	685
9 7/8	8 5/8	32	P110EC	Sprint FJ	0	11392	0	11392
7 7/8	5 1/2	20	P110EC	DWC / C-IS+	0	27582	0	11995

•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. The final cement top will be verified by Echo-meter. Devon will include the Echo-meter verified fluid top and the volume of displacement fluid above the cement slurry in the annulus in all post-drill sundries on wells utilizing this cement program. Devon will report to the BLM the volume of fluid (limited to 1 bbls) used to flush intermediate casing valves following backside cementing procedures. Operator will run one CBL per well pad.

Casing	# Sks	TOC	Wt. ppg	Yld (ft3/sack)	Slurry Description
Surface	421	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	475	Surf	13.0	2.3	2nd State: Bradenhead Squeeze - Lead: Class C Cement + additives
	539	6741	13.2	1.44	Tail: Class H / C + additives
Production	117	9508	9	3.27	Lead: Class H / C + additives
	2127	11508	13.2	1.44	Tail: Class H / C + additives

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

COTTON DRAW UNIT 609H

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						

COTTON DRAW UNIT 609H

5. Mud Program (Three String Design)

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

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

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

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

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

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

7. Drilling Conditions

Condition	Specify what type and where?
BH pressure at deepest TVD	6549
Abnormal temperature	No

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

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

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

COTTON DRAW UNIT 609H

8. Other facets of operation

Is this a walking operation? Potentially

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

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

Will be pre-setting casing? Potentially

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

Attachments

X Directional Plan
 Other, describe



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

Dimensions (Nominal)

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

Internal Yield Pressure at Minimum Yield

Collapse	2090	psi
----------	------	-----

Internal Yields Pressure

PE	3580	psi
STC	3580	psi
BTC	3580	psi

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

STC	493	1000 lbs
BTC	796	1000 lbs

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

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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 273173

CONDITIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 273173
	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, then a CBL is required.	12/6/2023