

Well Name	Well Number	US Well Number	Lease Number	Case Number	Operator
VAN DOO DAH	714H	3002549517	NMNM0359295A	NMNM0359295A	DEVON
VAN DOO DAH	624H	3002549519	NMNM0359295A	NMNM0359295A	DEVON
VAN DOO DAH	734H	3002549520	NMNM0359295A	NMNM0359295A	DEVON

Notice of Intent

LONG VO

Digitally signed by LONG VO

Date: 2023.08.30 09:27:29 -05'00'

Sundry ID: 2747852

Type of Submission: Notice of Intent

Date Sundry Submitted: 08/27/2023

Date proposed operation will begin: 08/24/2023

Type of Action: APD Change

Time Sundry Submitted: 02:50

**Procedure Description:** ENGINEERING ONLY Devon Energy Production Co., L.P. (Devon) respectfully requests to change the drilling plan with casing and cement changes to each string. Please see attached plan for each well along with new spec sheets for each string.

NOI Attachments

Procedure Description

- Van\_Doo\_Dah\_33\_28\_Fed\_Com\_624H\_20230827144919.pdf
- Van\_Doo\_Dah\_33\_28\_Fed\_Com\_714H\_20230827144918.pdf
- Van\_Doo\_Dah\_33\_28\_Fed\_Com\_734H\_20230827144918.pdf
- 5.500in\_20.00\_\_\_0.361in\_Wall\_\_VST\_P110EC\_DWC\_C\_IS\_CDS\_AB\_20230827144900.pdf
- 5.5in\_20lbf\_P110EC\_VAM\_SPRINT\_SF\_20230827144900.pdf
- 7.625\_29.7lb\_P110EC\_SPRINT\_FJ\_20230824124912.pdf
- 9.625\_40lb\_J\_55\_20230824124851.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:** CHELSEY GREEN

**Signed on:** AUG 24, 2023 12:32 PM

**Name:** DEVON ENERGY PRODUCTION COMPANY LP

**Title:** Regulatory Compliance Professional

**Street Address:** 333 West Sheridan Avenue

**City:** Oklahoma City                      **State:** OK

**Phone:** (405) 228-8595

**Email address:** Chelsey.Green@dvn.com

Field

**Representative Name:**

**Street Address:**

**City:**    **State:**    **Zip:**

**Phone:**

**Email address:**

**PECOS DISTRICT  
DRILLING CONDITIONS OF APPROVAL**

<b>OPERATOR'S NAME:</b>	<b>Devon Energy Production Company LP</b>
<b>LEASE NO.:</b>	<b>NMNM0359295A</b>
<b>LOCATION:</b>	Section 33, T.25 S., R.32 E., NMPM
<b>COUNTY:</b>	Lea County, New Mexico

<b>WELL NAME &amp; NO.:</b>	<b>Van Doo Dah 33-28 Fed Com 624H</b>
<b>SURFACE HOLE FOOTAGE:</b>	180'/S & 2246'/E
<b>BOTTOM HOLE FOOTAGE:</b>	20'/N & 1890'/E
<b>ATS/API ID:</b>	<b>3002549519</b>
<b>APD ID:</b>	
<b>Sundry ID:</b>	<b>2747852</b>

<b>WELL NAME &amp; NO.:</b>	<b>Van Doo Dah 33-28 Fed Com 714H</b>
<b>SURFACE HOLE FOOTAGE:</b>	180'/S & 2276'/E
<b>BOTTOM HOLE FOOTAGE:</b>	20'/N & 2310'/E
<b>ATS/API ID:</b>	<b>3002549517</b>
<b>APD ID:</b>	
<b>Sundry ID:</b>	<b>2747852</b>

<b>WELL NAME &amp; NO.:</b>	<b>Van Doo Dah 33-28 Fed Com 734H</b>
<b>SURFACE HOLE FOOTAGE:</b>	180'/S & 2216'/E
<b>BOTTOM HOLE FOOTAGE:</b>	20'/N & 1650'/E
<b>ATS/API ID:</b>	<b>3002549520</b>
<b>APD ID:</b>	
<b>Sundry ID:</b>	<b>2747852</b>

COA

H2S	Yes		
Potash	None		
Cave/Karst Potential	Low		
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		
Other	<input type="checkbox"/> 4 String	Capitan Reef None	<input type="checkbox"/> WIPP
Other	Pilot Hole None	<input type="checkbox"/> Open Annulus	
Cementing	Contingency Squeeze None	Echo-Meter Int 1	Primary Cement Squeeze None
Special Requirements	<input type="checkbox"/> Water Disposal/Injection	<input checked="" type="checkbox"/> COM	<input type="checkbox"/> Unit
Special Requirements	<input checked="" type="checkbox"/> Batch Sundry		
Special Requirements Variance	<input type="checkbox"/> Break Testing	<input type="checkbox"/> Offline Cementing	<input checked="" type="checkbox"/> Casing Clearance

## A. HYDROGEN SULFIDE

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

## B. CASING

1. The **9-5/8** inch surface casing shall be set at approximately **1075 feet** (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite, above the salt, and below usable fresh water) and cemented to the surface. The surface hole shall be **13 1/2** 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.**

2. The minimum required fill of cement behind the 7-5/8 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 7170' (392 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 400 sxs Class C)**

**Operator has proposed to pump down 9-5/8" X 7-5/8" 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 7-5/8" 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.

### **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 **7-5/8** inch surface 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 **9-5/8** 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.

### **Batch Sundry:**

- Approval shall be for wells with surface, intermediate, and production section within 200' TVD tolerance between shoes above the deepest well shoes set depth.
- Approval shall be for wells with same drill plan design. (Casing depth may vary and cement volumes may vary per Condition of Approval.)
- Approval shall be for wells within the same drill pad.
- Cement excess shall be a minimum of 25%, adjust cement volume and excess based on a fluid caliper or similar method that reflects the as-drilled size of the wellbore.

### **Casing Clearance:**

Operator casing variance is approved for the utilization of 5-1/2 inch Sprint Flush Joint **from** base of curve and a minimum of 500 feet or the minimum tie-back back requirement above whichever is greater into the previous casing shoe. **All** other 5-1/2 inch casing will run DWC/C IS.

Operator shall clean up cycles until wellbore is clear of cuttings and any large debris, ensure cutting sizes are adequate "coffee ground or less" before cementing.

## 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](mailto: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 2<sup>nd</sup> 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 8/30/2023

Van Doo Dah 33-28 Fed Com 714H

**1. Geologic Formations**

TVD of target	12031	Pilot hole depth	N/A
MD at TD:	22377	Deepest expected fresh water	

**Basin**

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	995		
Salt	1380		
Base of Salt	4625		
Delaware	4625		
Cherry Canyon	5580		
Brushy Canyon	7170		
1st Bone Spring Lime	8680		
Bone Spring 1st	9665		
Bone Spring 2nd	10310		
3rd Bone Spring Lime	10805		
Bone Spring 3rd	11415		
Wolfcamp	11910		

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

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**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)
12 1/4	9 5/8	40	J-55	BTC	0	1075	0	1075
8 3/4	7 5/8	29.70	P110	Sprint FJ	0	11415	0	11415
6 3/4	5 1/2	20	P110	DWC/C-IS & Sprint FJ	0	22377	0	12031

• All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 IILB.1.h Must have table for contingency casing.

•Variance Approval

o 5-1/2" Production Casing will include Sprint Flush Joint connection (5.783") from base of curve and 500ft into 7-5/8" casing shoe

o All other 5-1/2" Production Casing will run DWC/C IS (6.05")

**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

Casing	# Sks	TOC	Wt. ppg	Yld (ft3/sack)	Slurry Description
Surface	369	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	397	Surf	13.0	2.3	2nd State: Bradenhead Squeeze - Lead: Class C Cement + additives
	392	7179	13.2	1.44	Tail: Class H / C + additives
Production	62	9561	9	3.27	Lead: Class H /C + additives
	690	11561	13.2	1.44	Tail: Class H / C + additives

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

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**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"	10M	Annular (5M)	X	100% of rated working pressure
				Blind Ram	X	10M
				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					

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**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
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**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	6569
Abnormal temperature	No

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

Hydrogen Sulfide (H<sub>2</sub>S) monitors will be installed prior to drilling out the surface shoe. If H<sub>2</sub>S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered measured values and formations will be provided to the BLM.

N	H <sub>2</sub> S is present
Y	H <sub>2</sub> S plan attached.



**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 (OnShore Order 2, 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. At 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**

<u>X</u>	Directional Plan
<u>          </u>	Other, describe

Van Doo Dah 33-28 Fed Com 734H

**1. Geologic Formations**

TVD of target	12276	Pilot hole depth	N/A
MD at TD:	22624	Deepest expected fresh water	

**Basin**

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	995		
Salt	1380		
Base of Salt	4625		
Delaware	4625		
Cherry Canyon	5580		
Brushy Canyon	7170		
1st Bone Spring Lime	8680		
Bone Spring 1st	9665		
Bone Spring 2nd	10310		
3rd Bone Spring Lime	10805		
Bone Spring 3rd	11415		
Wolfcamp	11910		

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

Van Doo Dah 33-28 Fed Com 734H

**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)
12 1/4	9 5/8	40	J-55	BTC	0	1075	0	1075
8 3/4	7 5/8	29.7	P110	Sprint FJ	0	11415	0	11415
6 3/4	5 1/2	20	P110	DWC/C-IS & Sprint FJ	0	22624	0	12276

• All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 IILB.1.h Must have table for contingency casing.

Variance Approval -

- o 5-1/2" Production Casing will include Sprint Flush Joint connection (5.783") from base of curve and 500ft into 7-5/8" casing shoe
- o All other 5-1/2" Production Casing will run DWC/C IS (6.05")

**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

Casing	# Sks	TOC	Wt. ppg	Yld (ft3/sack)	Slurry Description
Surface	369	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	400	Surf	13.0	2.3	2nd State: Bradenhead Squeeze - Lead: Class C Cement + additives
	388	7217	13.2	1.44	Tail: Class H / C + additives
Production	61	9820	9	3.27	Lead: Class H / C + additives
	689	11820	13.2	1.44	Tail: Class H / C + additives

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

Van Doo Dah 33-28 Fed Com 734H

**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"	10M	Annular (5M)		X	100% of rated working pressure
			Blind Ram		X	10M
			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					

Van Doo Dah 33-28 Fed Com 734H

**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	6702
Abnormal temperature	No

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

Hydrogen Sulfide (H <sub>2</sub> S) monitors will be installed prior to drilling out the surface shoe. If H <sub>2</sub> S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered measured values and formations will be provided to the BLM.	
N	H <sub>2</sub> S is present
Y	H <sub>2</sub> S plan attached.

**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 (OnShore Order 2, 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. At 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

Van Doo Dah 33-28 Fed Com 624H

**1. Geologic Formations**

TVD of target	11911	Pilot hole depth	N/A
MD at TD:	22292	Deepest expected fresh water	

**Basin**

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	995		
Salt	1380		
Base of Salt	4625		
Delaware	4625		
Cherry Canyon	5580		
Brushy Canyon	7170		
1st Bone Spring Lime	8680		
Bone Spring 1st	9665		
Bone Spring 2nd	10310		
3rd Bone Spring Lime	10805		
Bone Spring 3rd	11415		
Wolfcamp	11910		

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

Van Doo Dah 33-28 Fed Com 624H

**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)
12 1/4	9 5/8	40	J-55	BTC	0	1075	0	1075
8 3/4	7 5/8	29.7	P110	Sprint FJ	0	11000	0	11000
6 3/4	5 1/2	20	P110	DWC/C-IS & Sprint FJ	0	22292	0	11911

• All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 IILB.1.h Must have table for contingency casing.

Variance Approval -

- o 5-1/2" Production Casing will include Sprint Flush Joint connection (5.783") from base of curve and 500ft into 7-5/8" casing shoe
- o All other 5-1/2" Production Casing will run DWC/C IS (6.05")

**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

Casing	# Sks	TOC	Wt. ppg	Yld (ft3/sack)	Slurry Description
Surface	369	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	399	Surf	13.0	2.3	2nd State: Bradenhead Squeeze - Lead: Class C Cement + additives
	352	7200	13.2	1.44	Tail: Class H / C + additives
Production	61	9477	9	3.27	Lead: Class H / C + additives
	690	11477	13.2	1.44	Tail: Class H / C + additives

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



Van Doo Dah 33-28 Fed Com 624H

**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					

Van Doo Dah 33-28 Fed Com 624H

**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	6503
Abnormal temperature	No

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

Hydrogen Sulfide (H<sub>2</sub>S) monitors will be installed prior to drilling out the surface shoe. If H<sub>2</sub>S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered measured values and formations will be provided to the BLM.

N	H <sub>2</sub> S is present
Y	H <sub>2</sub> S plan attached.

**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.
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- 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 (OnShore Order 2, 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.
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- 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



# U. S. Steel Tubular Products

## 9.625" 40.00lbs/ft (0.395" Wall) J55

1/24/2019 2:45:24 PM

MECHANICAL PROPERTIES	Pipe	BTC	LTC	STC	
Minimum Yield Strength	55,000	--	--	--	psi
Maximum Yield Strength	80,000	--	--	--	psi
Minimum Tensile Strength	75,000	--	--	--	psi
DIMENSIONS	Pipe	BTC	LTC	STC	
Outside Diameter	9.625	10.625	10.625	10.625	in.
Wall Thickness	0.395	--	--	--	in.
Inside Diameter	8.835	8.835	8.835	8.835	in.
Standard Drift	8.679	8.679	8.679	8.679	in.
Alternate Drift	8.750	8.750	8.750	8.750	in.
Nominal Linear Weight, T&C	40.00	--	--	--	lbs/ft
Plain End Weight	38.97	--	--	--	lbs/ft
PERFORMANCE	Pipe	BTC	LTC	STC	
Minimum Collapse Pressure	2,570	2,570	2,570	2,570	psi
Minimum Internal Yield Pressure	3,950	3,950	3,950	3,950	psi
Minimum Pipe Body Yield Strength	630	--	--	--	1,000 lbs
Joint Strength	--	714	520	452	1,000 lbs
Reference Length	--	11,898	8,665	7,529	ft
MAKE-UP DATA	Pipe	BTC	LTC	STC	
Make-Up Loss	--	4.81	4.75	3.38	in.
Minimum Make-Up Torque	--	--	3,900	3,390	ft-lbs
Maximum Make-Up Torque	--	--	6,500	5,650	ft-lbs

### Legal Notice

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U. S. Steel Tubular Products  
460 Wildwood Forest Drive, Suite 300S  
Spring, Texas 77380

1-877-893-9461  
connections@uss.com  
www.usstubular.com



## Connection Data Sheet

OD (in.)	WEIGHT (lbs./ft.)	WALL (in.)	GRADE	API DRIFT (in.)	RBW%	CONNECTION
5.500	Nominal: 20.00 Plain End: 19.83	0.361	VST P110EC	4.653	87.5	DWC/C-IS

PIPE PROPERTIES			CONNECTION PROPERTIES		
Outside Diameter	5.500	in.	Connection Type	Semi-Premium T&C	
Inside Diameter	4.778	in.	Connection O.D. (nom)	6.050	in.
Nominal Area	5.828	sq.in.	Connection I.D. (nom)	4.778	in.
Grade Type	API 5CT		Make-Up Loss	4.125	in.
Min. Yield Strength	125	ksi	Coupling Length	9.250	in.
Max. Yield Strength	140	ksi	Critical Cross Section	5.828	sq.in.
Min. Tensile Strength	135	ksi	Tension Efficiency	100.0%	of pipe
Yield Strength	729	klb	Compression Efficiency	100.0%	of pipe
Ultimate Strength	787	klb	Internal Pressure Efficiency	97.8%	of pipe
Min. Internal Yield	14,360	psi	External Pressure Efficiency	100.0%	of pipe
Collapse	12,090	psi			

CONNECTION PERFORMANCES			FIELD END TORQUE VALUES		
Yield Strength	729	klb	Min. Make-up torque	15,800	ft.lb
Parting Load	787	klb	Opti. Make-up torque	17,050	ft.lb
Compression Rating	729	klb	Max. Make-up torque	18,300	ft.lb
Min. Internal Yield	14,050	psi	Min. Shoulder Torque	1,580	ft.lb
External Pressure	12,090	psi	Max. Shoulder Torque	12,640	ft.lb
Maximum Uniaxial Bend Rating	104.2	°/100 ft	Min. Delta Turn	-	Turns
Reference String Length w 1.4 Design Factor	26,040	ft	Max. Delta Turn	0.200	Turns
			Maximum Operational Torque	20,800	ft.lb
			Maximum Torsional Value (MTV)	22,880	ft.lb

Need Help? Contact: [tech.support@vam-usa.com](mailto:tech.support@vam-usa.com)

Reference Drawing: 8087PP Rev.05 & 8087BP Rev.04

Date: 01/06/2020

Time: 10:56:21 AM

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.

All information is provided by VAM USA or its affiliates at user's sole risk, without liability for loss, damage or injury resulting from the use thereof; and on an "AS IS" basis without warranty or representation of any kind, whether express or implied, including without limitation any warranty of merchantability, fitness for purpose or completeness. This document and its contents are subject to change without notice. In no event shall VAM USA or its affiliates be responsible for any indirect, special, incidental, punitive, exemplary or consequential loss or damage (including without limitation, loss of use, loss of bargain, loss of revenue, profit or anticipated profit) however caused or arising, and whether such losses or damages were foreseeable or VAM USA or its affiliates was advised of the possibility of such damages.

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VAM® USA Sales E-mail: [VAMUSAsales@vam-usa.com](mailto:VAMUSAsales@vam-usa.com)Tech Support Email: [tech.support@vam-usa.com](mailto:tech.support@vam-usa.com)**DWC Connection Data Sheet 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](mailto: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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Issued on: 08 Jul. 2020 by Wesley Ott

# VAM® SPRINT-SF

## Connection Data Sheet

OD	Weight	Wall Th.	Grade	API Drift:	Connection
5 1/2 in.	20.00 lb/ft	0.361 in.	P110EC	4.653 in.	VAM® SPRINT-SF

PIPE PROPERTIES		
Nominal OD	5.500	in.
Nominal ID	4.778	in.
Nominal Cross Section Area	5.828	sqin.
Grade Type	High Yield	
Min. Yield Strength	125	ksi
Max. Yield Strength	140	ksi
Min. Ultimate Tensile Strength	135	ksi

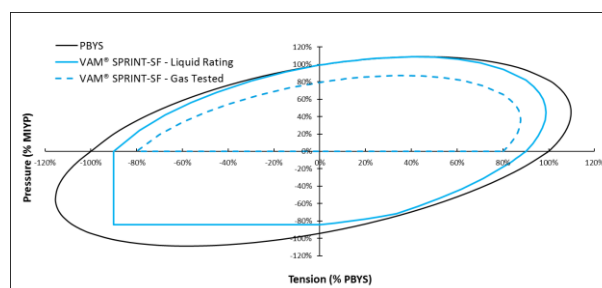
CONNECTION PROPERTIES		
Connection Type	Semi-Premium Integral Semi-Flush	
Connection OD (nom):	5.783	in.
Connection ID (nom):	4.717	in.
Make-Up Loss	5.965	in.
Critical Cross Section	5.244	sqin.
Tension Efficiency	90.0	% of pipe
Compression Efficiency	90.0	% of pipe
Internal Pressure Efficiency	100	% of pipe
External Pressure Efficiency	100	% of pipe

CONNECTION PERFORMANCES		
Tensile Yield Strength	656	klb
Compression Resistance	656	klb
Internal Yield Pressure	14,360	psi
Collapse Resistance	12,080	psi
Max. Structural Bending	89	°/100ft
Max. Bending with ISO/API Sealability	30	°/100ft

TORQUE VALUES		
Min. Make-up torque	20,000	ft.lb
Opt. Make-up torque	22,500	ft.lb
Max. Make-up torque	25,000	ft.lb
Max. Torque with Sealability (MTS)	40,000	ft.lb

\* 87.5% RBW

**VAM® SPRINT-SF** is a semi-flush connection innovatively designed for extreme shale applications. Its high tension rating and ultra high torque capacity make it ideal to run a fill string length as production casing in shale wells with extended horizontal sections and tight clearance requirements.



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

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





Issued on: 09 Dec. 2020 by Logan Van Gorp



Connection Data Sheet

OD 7 5/8 in.	Weight Nominal: 29.70 lb/ft Plain End: 29.06 ft/lb	Wall Th. 0.375 in.	Grade P110EC	API Drift: 6.750 in.	Connection VAM® SPRINT-FJ
-----------------	--	-----------------------	-----------------	-------------------------	------------------------------

PIPE PROPERTIES		
Nominal OD	7.625	in.
Nominal ID	6.875	in.
Nominal Cross Section Area	8.541	sqin.
Grade Type	Enhanced Collapse	
Min. Yield Strength	125	ksi
Max. Yield Strength	140	ksi
Min. Ultimate Tensile Strength	135	ksi

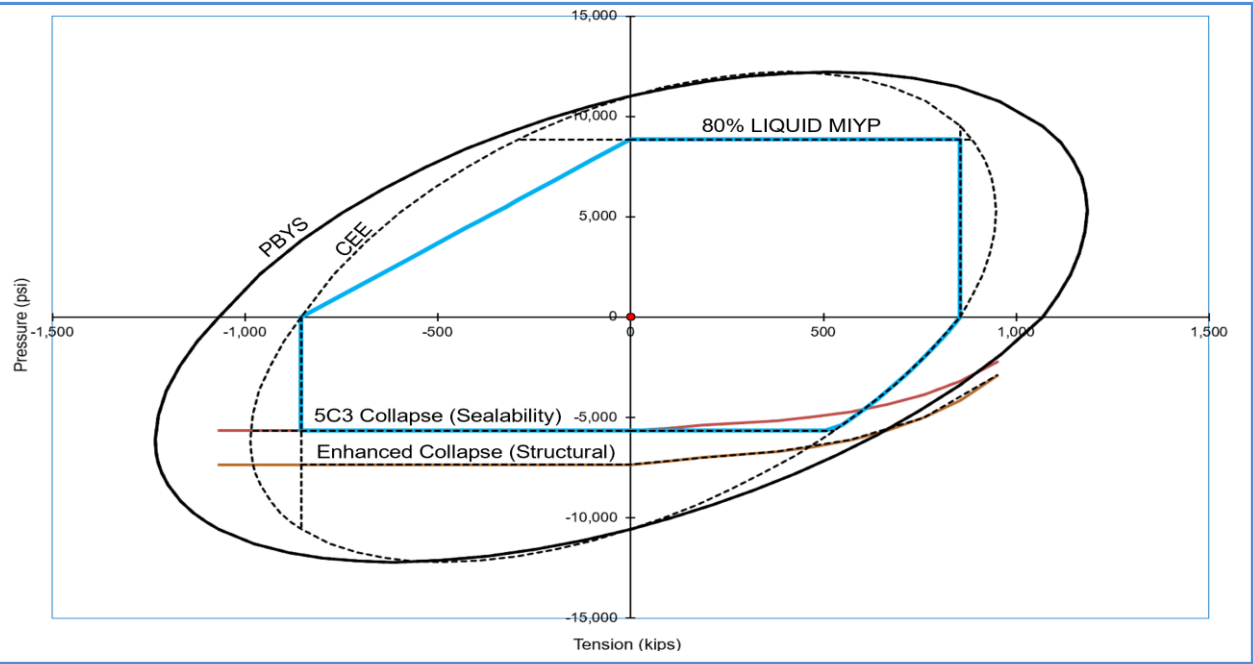
CONNECTION PROPERTIES		
Connection Type	Semi-Premium Integral Flush	
Connection OD (nom):	7.654	in.
Connection ID (nom):	6.827	in.
Make-Up Loss	4.055	in.
Critical Cross Section	6.979	sqin.
Tension Efficiency	80.0	% of pipe
Compression Efficiency	80.0	% of pipe
Internal Pressure Efficiency	80.0	% of pipe
External Pressure Efficiency	100	% of pipe

CONNECTION PERFORMANCES		
Tensile Yield Strength	854	klb
Compression Resistance	854	klb
Max. Internal Pressure	8,610	psi
Structural Collapse Resistance	7,360	psi
Max. Structural Bending	57 °/100ft	
Max. Bending with Sealability	10 °/100ft	

TORQUE VALUES		
Min. Make-up torque	15,000	ft.lb
Opt. Make-up torque	16,500	ft.lb
Max. Make-up torque	18,000	ft.lb
Max. Torque with Sealability (MTS)	32,000	ft.lb

\* 87.5% RBW

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.



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

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





Van Doo Dah 33-28 Fed Com 734H.xlsm

## Van Doo Dah 33-28 Fed Com 734H

9 5/8		surface csg in a		13 1/2	inch hole.		Design Factors			Surface			
Segment	#/ft	Grade			Coupling	Body	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	40.00			j 55	btc	14.65	5.11	0.63	1,075	8	1.06	9.66	43,000
"B"					btc				0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,500					Tail Cmt	does not	circ to sfc.	Totals:	1,075				43,000
Comparison of Proposed to Minimum Required Cement Volumes													
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd					Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE					Hole-Cplg
13 1/2	0.4887	369	531	525	1	9.00	3715	5M					1.44
Burst Frac Gradient(s) for Segment(s) A, B = , b All > 0.70, OK.													
Site plot (pipe racks S or F) as per C.D. 1310.D 3.1 not found.													

7 5/8		casing inside the		9 5/8		Design Factors				Int 1			
Segment	#/ft	Grade		Coupling		Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	29.70	p 110		vam sprint fj		2.52	1.18	1.29	11,415	1	2.16	1.98	339,026
"B"									0				0
w/8.4#/g mud, 30min Sfc Csg Test psig:									Totals:				339,026
The cement volume(s) are intended to achieve a top of									0	ft from surface or a		1075	overlap.
Hole	Annular	1 Stage		1 Stage		Min	1 Stage		Drilling	Calc	Req'd		Min Dist
Size	Volume	Cmt Sx		CuFt Cmt		Cu Ft	% Excess		Mud Wt	MASP	BOPE		Hole-Cplg
8 3/4	0.1005	352		507		1156	-56		10.50	3995	5M		0.55
D V Tool(s):				7170				sum of sx	Σ CuFt				Σ%excess
t by stage % :		19		26				751	1425				23
Class 'C' tail cmt yld > 1.35													

Tail cmt													
5 1/2		casing inside the			7 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	2.97	2.03	2.1	10,915	2	3.52	3.40	218,300
"B"	20.00			p 110	vam sprint sf	23.55	1.80	2.14	1,361	2	3.59	3.02	27,220
"C"	20.00			0 110	dwc/c is	∞	1.81	2.10	10,348	2	3.52	3.03	206,960
"D"					0				0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: 2,401									Totals:	22,624			452,480
The cement volume(s) are intended to achieve a top of 11215									ft from surface or a	200			overlap.
Hole	Annular	1 Stage	1 Stage	Min	1 Stage	Drilling	Calc	Req'd					Min Dist
Size	Volume	Cmt Sx	CuFt Cmt	Cu Ft	% Excess	Mud Wt	MASP	BOPE					Hole-Cplg
6 3/4	0.0835	750	1192	955	25	10.50							0.35
Class 'C' tail cmt yld > 1.35													

#N/A												
0				5 1/2	Design Factors			<Choose Casing>				
Segment	#/ft	Grade		Coupling	#N/A	Collapse	Burst	Length	B@	a-B	a-C	Weight
"A"				0.00				0				0
"B"				0.00				0				0
w/8.4#/g mud, 30min Sfc Csg Test psig:								Totals:	0	0		
Cmt vol calc below includes this csg, TOC intended								#N/A	ft from surface or a		#N/A	overlap.
Hole 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.												

Van Doo Dah 33-28 Fed Com 624H.xlsm

## Van Doo Dah 33-28 Fed Com 624H

9 5/8		surface csg in a		13 1/2		inch hole.		Design Factors				Surface			
Segment	#/ft	Grade		Coupling		Body		Collapse	Burst	Length	B@s	a-B	a-C	Weight	
"A"	40.00			j 55	btc		14.65	5.11	0.66	1,075	8	1.10	9.66	43,000	
"B"					btc					0				0	
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,500				Tail Cmt		does not		circ to sfc.		Totals:	1,075	43,000			
Comparison of Proposed to Minimum Required Cement Volumes															
Hole	Annular	1 Stage		1 Stage		Min		1 Stage		Drilling	Calc	Req'd		Min Dist	
Size	Volume	Cmt Sx		CuFt Cmt		Cu Ft		% Excess		Mud Wt	MASP	BOPE		Hole-Cplg	
13 1/2	0.4887	369		531		525		1		9.00	3580	5M		1.44	
Burst Frac Gradient(s) for Segment(s) A, B = , b All > 0.70, OK.															
Site plat type rocks 5 or B as per O.O.L in D.A.C. not found															

7 5/8		casing inside the		9 5/8		Design Factors					Int 1			
Segment	#/ft	Grade		Coupling		Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight	
"A"	29.70			p 110	vam sprint fj	2.61	1.23	1.33	11,000	1	2.22	2.06	326,700	
"B"									0				0	
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,227									Totals:	11,000				326,700
The cement volume(s) are intended to achieve a top of 0 ft from surface or a 1075 overlap.														
Hole	Annular	1 Stage		1 Stage		Min		1 Stage		Drilling	Calc	Req'd		Min Dist
Size	Volume	Cmt Sx		CuFt Cmt		Cu Ft		% Excess		Mud Wt	MASP	BOPE		Hole-Cplg
8 3/4	0.1005	352		507		1114		-54		10.50	3876	5M		0.55
r D V Tool(s):				7170						sum of sx		Σ CuFt		Σ%excess
t by stage % :				26						751		1425		28
Class 'C' tail cmt yld > 1.35														

Tail cmt														
5 1/2		casing inside the		7 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	3.06	2.11	2.16	10,500	2	3.62	3.54	210,000
"B"	20.00			p 110		vam sprint sf	22.72	1.86	2.21	1,411	2	3.70	3.12	28,220
"C"	20.00			p 110		dwc/c is	∞	1.86	2.16	10,381	2	3.62	3.12	207,620
"D"	0									0	0			
w/8.4#/g mud, 30min Sfc Csg Test psig: 2,310									Totals:	22,292	445,840			
The cement volume(s) are intended to achieve a top of 10800 ft from surface or a 200 overlap.														
Hole	Annular	1 Stage		1 Stage		Min		1 Stage		Drilling	Calc	Req'd		Min Dist
Size	Volume	Cmt Sx		CuFt Cmt		Cu Ft		% Excess		Mud Wt	MASP	BOPE		Hole-Cplg
6 3/4	0.0835	752		1196		962		24		10.50				0.35
Class 'C' tail cmt yld > 1.35														

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

Van Doo Dah 33-28 Fed Com 714H.xlsm

## Van Doo Dah 33-28 Fed Com 714H

9 5/8		surface csg in a		13 1/2		inch hole.		Design Factors				Surface		
Segment	#/ft	Grade		Coupling		Body		Collapse	Burst	Length	B@s	a-B	a-C	Weight
"A"	40.00	j 55		btc		14.65		5.11	0.63	1,075	8	1.06	9.66	43,000
"B"				btc						0				0
w/8.4#/g mud, 30min Sfc Csg Test psig: 1,500								Tail Cmt	does not	circ to sfc.		Totals: 1,075		43,000
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	
13 1/2	0.4887	369		531		525		1	9.00	3715	5M		1.44	
Burst Frac Gradient(s) for Segment(s) A, B = , b All > 0.70, OK.														
Site plot (page racks S or F) as per O.O. 1-III D-4.1 not found														

7 5/8		casing inside the		9 5/8		Design Factors					Int 1			
Segment	#/ft	Grade		Coupling		Joint	Collapse	Burst	Length	B@s	a-B	a-C	Weight	
"A"	29.70	p 110		vam sprint fj		2.52	1.18	1.31	11,415	1	2.20	1.98	339,026	
"B"									0					0
w/8.4#/g mud, 30min Sfc Csg Test psig:									Totals:	11,415				339,026
The cement volume(s) are intended to achieve a top of 0 ft from surface or a 1075 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	
8 3/4	0.1005	352		507		1156		-56	10.50	3916	5M		0.55	
D V Tool(s):				7170						sum of sx	Σ CuFt		Σ%excess	
t by stage % :		19		26						751	1425		23	
Class 'C' tail cmt yld > 1.35														

Tail cmt		casing inside the		7 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	3.03	2.03	2.14	10,915	2	3.59	3.40	218,300	
"B"	20.00		p 110	vam sprint sf	28.72	1.84	2.19	1,116	2	3.67	3.09	22,320	
"C"	20.00		0 110	dwc/c is	∞	1.84	2.14	10,346	2	3.59	3.09	206,920	
"D"				0				0				0	
w/8.4#/g mud, 30min Sfc Csg Test psig: 2,401								Totals:	22,377				447,540
The cement volume(s) are intended to achieve a top of 11215								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				
6 3/4	0.0835	752	1196	934	28	10.50			0.35				
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.

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**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
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CONDITIONS  
  
Action 259296

CONDITIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 259296
	Action Type: [C-103] NOI Change of Plans (C-103A)

CONDITIONS

Created By	Condition	Condition Date
pkautz	WHEN DETERMINING TOP OF CEMENT MUST RUN CBL.	9/22/2023