PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Devon Energy Production Company LP
LEASE NO.:	NMNM19142
WELL NAME & NO.:	Rio Blanco 4-33 Fed Com 5H
SURFACE HOLE FOOTAGE:	2567'/N & 1343'/E
BOTTOM HOLE FOOTAGE	330'/N & 380'/E
LOCATION:	Section 4, T.23 S., R.34 E., NMPM
COUNTY:	Lea County, New Mexico

Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

A. Hydrogen Sulfide

1. Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

B. CASING

Primary Design

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

1. The **16** inch surface casing shall be set at approximately **2395** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.

    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.

2. The minimum required fill of cement behind the **11 7/8** inch first intermediate casing is:

   - Cement to surface. If cement does not circulate see B.1.a, c-d above. **Excess calculates to 6% - additional cement might be required.**

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

   Option 1:

   - Cement to surface. Operator shall provide method of verification. **Excess calculates to 13% - additional cement might be required.**

   Option 2:

   Operator has proposed DV tool at depth of 3550', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

   a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job. **Excess calculates to 16% - additional cement might be required.**

   b. Second stage above DV tool:

      - Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Excess calculates to 3% - additional cement might be required.**

4. The minimum required fill of cement behind the **5 1/2** inch production casing is:

- Cement as proposed. Operator shall provide method of verification. **Excess calculates to negative 13% - additional cement will be required.**

Alternate Design

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

5. The **20** inch surface casing shall be set at approximately **2395** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.

    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.

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

6. The minimum required fill of cement behind the **13 3/8** inch first intermediate casing is:

    Option1:

    - Cement to surface. If cement does not circulate see B.5.a, c-d above. **Excess calculates to 16% - additional cement might be required.**

    Option 2:

    Operator has proposed DV tool at depth of 2368', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry

if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Excess calculates to negative 48% - additional cement will be required.**

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

7. The minimum required fill of cement behind the **9 5/8** inch second intermediate casing is:

Option 1:

- Cement to surface. Operator shall provide method of verification. **Excess calculates to 16% - additional cement might be required.**

Option 2:

Operator has proposed DV tool at depth of 3450', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Excess calculates to negative 38% - additional cement might be required.**

8. The minimum required fill of cement behind the **5 1/2** inch production casing is:

- Cement as proposed. Operator shall provide method of verification. **Excess calculates to negative 14% - additional cement will be required.**

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:

i. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi **Annular**.

ii. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the first intermediate casing shoe shall be **3000 (3M)** psi.

Option 2:

i. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** 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. 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.

D. SPECIAL REQUIREMENT(S)

Communitization Agreement

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, 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.
- 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.

Waste Minimization Plan (WMP)

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

MHH 05022018

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)

☒ Chaves and Roosevelt Counties
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)

☒ Eddy County
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

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 Onshore Oil and Gas Order No. 2 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.

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.

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 Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: 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 when specified), 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 plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 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 Onshore Order No. 2.

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.

Database:	WellPlanner1	**Local Co-ordinate Reference:**	Well 5H
Company:	Devon Energy Corp.	**TVD Reference:**	GL 3397'+KB 24' @ 3421.00usft (Cactus 168)
Project:	Lea County, NM (NAD83)	**MD Reference:**	GL 3397'+KB 24' @ 3421.00usft (Cactus 168)
Site:	Rio Blanco 4-33 Fed Com	**North Reference:**	Grid
Well:	5H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Prelim Plan		

Project	Lea County, NM (NAD83)		
Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Rio Blanco 4-33 Fed Com				
Site Position:		**Northing:**	486,260.96 usft	**Latitude:**	32° 20' 1.8807 N
From:	Map	**Easting:**	807,694.93 usft	**Longitude:**	103° 28' 15.4463 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.46 °

Well	5H					
Well Position	**+N/-S**	0.26 usft	**Northing:**	486,261.22 usft	**Latitude:**	32° 20' 1.8808 N
	+E/-W	30.00 usft	**Easting:**	807,724.93 usft	**Longitude:**	103° 28' 15.0966 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**		**Ground Level:**	3,397.00 usft

Wellbore	OH				
Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	HDGM	12/20/2017	6.80	60.18	48,166.20

Design	Prelim Plan				
Audit Notes:					
Version:		**Phase:**	PLAN	**Tie On Depth:**	0.00
Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**	
	0.00	0.00	0.00	359.60	

Plan Survey Tool Program **Date** 12/14/2017

	Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	17,524.19	Prelim Plan (OH)	MWD+HDGM	
				OWSG MWD + HDGM	

HOBBS OCD
JUL 11 2018
RECEIVED

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Site:	Rio Blanco 4-33 Fed Com	**North Reference:**	Grid
Well:	5H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Prelim Plan		

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,100.00	6.00	90.00	3,098.90	0.00	31.39	1.00	1.00	0.00	90.00	
5,112.12	6.00	90.00	5,100.00	0.00	241.71	0.00	0.00	0.00	0.00	
5,365.39	11.07	90.00	5,350.39	0.00	279.28	2.00	2.00	0.00	0.00	
8,650.23	11.07	90.00	8,574.16	0.00	909.74	0.00	0.00	0.00	0.00	
9,203.51	0.00	0.00	9,124.00	0.00	963.00	2.00	-2.00	0.00	180.00	
9,703.51	0.00	0.00	9,624.00	0.00	963.00	0.00	0.00	0.00	0.00	
10,521.31	89.96	359.60	10,144.87	520.48	959.37	11.00	11.00	-0.05	359.60	
17,524.19	89.96	359.60	10,150.00	7,523.19	910.46	0.00	0.00	0.00	0.00	BHL - Rio Blanco 5H

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Project:	Lea County, NM (NAD83)	**MD Reference:**	GL 3397'+KB 24' @ 3421.00usft (Cactus 168)
Site:	Rio Blanco 4-33 Fed Com	**North Reference:**	Grid
Well:	5H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Prelim Plan		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,221.00	0.00	0.00	2,221.00	0.00	0.00	0.00	0.00	0.00	0.00
Rustler									
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 1.00									
2,521.00	0.21	90.00	2,521.00	0.00	0.04	0.00	1.00	1.00	0.00
Top of Salt									
2,600.00	1.00	90.00	2,599.99	0.00	0.87	-0.01	1.00	1.00	0.00
2,700.00	2.00	90.00	2,699.96	0.00	3.49	-0.02	1.00	1.00	0.00
2,800.00	3.00	90.00	2,799.86	0.00	7.85	-0.05	1.00	1.00	0.00
2,900.00	4.00	90.00	2,899.68	0.00	13.96	-0.10	1.00	1.00	0.00
3,000.00	5.00	90.00	2,999.37	0.00	21.80	-0.15	1.00	1.00	0.00
3,100.00	6.00	90.00	3,098.90	0.00	31.39	-0.22	1.00	1.00	0.00
Start 2012.12 hold at 3100.00 MD									
3,200.00	6.00	90.00	3,198.36	0.00	41.84	-0.29	0.00	0.00	0.00
3,300.00	6.00	90.00	3,297.81	0.00	52.29	-0.37	0.00	0.00	0.00
3,400.00	6.00	90.00	3,397.26	0.00	62.75	-0.44	0.00	0.00	0.00
3,500.00	6.00	90.00	3,496.71	0.00	73.20	-0.51	0.00	0.00	0.00
3,600.00	6.00	90.00	3,596.17	0.00	83.65	-0.58	0.00	0.00	0.00
3,700.00	6.00	90.00	3,695.62	0.00	94.10	-0.66	0.00	0.00	0.00
3,800.00	6.00	90.00	3,795.07	0.00	104.56	-0.73	0.00	0.00	0.00
3,900.00	6.00	90.00	3,894.52	0.00	115.01	-0.80	0.00	0.00	0.00
4,000.00	6.00	90.00	3,993.97	0.00	125.46	-0.88	0.00	0.00	0.00
4,100.00	6.00	90.00	4,093.43	0.00	135.92	-0.95	0.00	0.00	0.00
4,200.00	6.00	90.00	4,192.88	0.00	146.37	-1.02	0.00	0.00	0.00
4,300.00	6.00	90.00	4,292.33	0.00	156.82	-1.09	0.00	0.00	0.00
4,400.00	6.00	90.00	4,391.78	0.00	167.27	-1.17	0.00	0.00	0.00
4,500.00	6.00	90.00	4,491.23	0.00	177.73	-1.24	0.00	0.00	0.00
4,600.00	6.00	90.00	4,590.69	0.00	188.18	-1.31	0.00	0.00	0.00
4,700.00	6.00	90.00	4,690.14	0.00	198.63	-1.39	0.00	0.00	0.00

Database:	WellPlanner1	**Local Co-ordinate Reference:**	Well 5H
Company:	Devon Energy Corp.	**TVD Reference:**	GL 3397'+KB 24' @ 3421.00usft (Cactus 168)
Project:	Lea County, NM (NAD83)	**MD Reference:**	GL 3397'+KB 24' @ 3421.00usft (Cactus 168)
Site:	Rio Blanco 4-33 Fed Com	**North Reference:**	Grid
Well:	5H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Prelim Plan		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,800.00	6.00	90.00	4,789.59	0.00	209.09	-1.46	0.00	0.00	0.00
4,900.00	6.00	90.00	4,889.04	0.00	219.54	-1.53	0.00	0.00	0.00
4,968.33	6.00	90.00	4,957.00	0.00	226.68	-1.58	0.00	0.00	0.00
Base of Salt									
5,000.00	6.00	90.00	4,988.50	0.00	229.99	-1.61	0.00	0.00	0.00
5,100.00	6.00	90.00	5,087.95	0.00	240.44	-1.68	0.00	0.00	0.00
5,112.12	6.00	90.00	5,100.00	0.00	241.71	-1.69	0.00	0.00	0.00
Start DLS 2.00 TFO 0.00									
5,119.16	6.14	90.00	5,107.00	0.00	242.46	-1.69	2.00	2.00	0.00
Delaware									
5,200.00	7.76	90.00	5,187.25	0.00	252.24	-1.76	2.00	2.00	0.00
5,300.00	9.76	90.00	5,286.07	0.00	267.46	-1.87	2.00	2.00	0.00
5,365.39	11.07	90.00	5,350.39	0.00	279.28	-1.95	2.00	2.00	0.00
Start 3284.84 hold at 5365.39 MD									
5,400.00	11.07	90.00	5,384.35	0.00	285.92	-2.00	0.00	0.00	0.00
5,500.00	11.07	90.00	5,482.49	0.00	305.11	-2.13	0.00	0.00	0.00
5,600.00	11.07	90.00	5,580.63	0.00	324.31	-2.26	0.00	0.00	0.00
5,700.00	11.07	90.00	5,678.78	0.00	343.50	-2.40	0.00	0.00	0.00
5,800.00	11.07	90.00	5,776.92	0.00	362.69	-2.53	0.00	0.00	0.00
5,900.00	11.07	90.00	5,875.06	0.00	381.89	-2.67	0.00	0.00	0.00
6,000.00	11.07	90.00	5,973.20	0.00	401.08	-2.80	0.00	0.00	0.00
6,100.00	11.07	90.00	6,071.34	0.00	420.27	-2.93	0.00	0.00	0.00
6,200.00	11.07	90.00	6,169.48	0.00	439.46	-3.07	0.00	0.00	0.00
6,300.00	11.07	90.00	6,267.62	0.00	458.66	-3.20	0.00	0.00	0.00
6,400.00	11.07	90.00	6,365.76	0.00	477.85	-3.34	0.00	0.00	0.00
6,500.00	11.07	90.00	6,463.90	0.00	497.04	-3.47	0.00	0.00	0.00
6,600.00	11.07	90.00	6,562.04	0.00	516.24	-3.60	0.00	0.00	0.00
6,700.00	11.07	90.00	6,660.18	0.00	535.43	-3.74	0.00	0.00	0.00
6,800.00	11.07	90.00	6,758.33	0.00	554.62	-3.87	0.00	0.00	0.00
6,900.00	11.07	90.00	6,856.47	0.00	573.82	-4.01	0.00	0.00	0.00
7,000.00	11.07	90.00	6,954.61	0.00	593.01	-4.14	0.00	0.00	0.00
7,100.00	11.07	90.00	7,052.75	0.00	612.20	-4.27	0.00	0.00	0.00
7,200.00	11.07	90.00	7,150.89	0.00	631.40	-4.41	0.00	0.00	0.00
7,300.00	11.07	90.00	7,249.03	0.00	650.59	-4.54	0.00	0.00	0.00
7,400.00	11.07	90.00	7,347.17	0.00	669.78	-4.68	0.00	0.00	0.00
7,500.00	11.07	90.00	7,445.31	0.00	688.97	-4.81	0.00	0.00	0.00
7,600.00	11.07	90.00	7,543.45	0.00	708.17	-4.94	0.00	0.00	0.00
7,700.00	11.07	90.00	7,641.59	0.00	727.36	-5.08	0.00	0.00	0.00
7,800.00	11.07	90.00	7,739.73	0.00	746.55	-5.21	0.00	0.00	0.00
7,900.00	11.07	90.00	7,837.87	0.00	765.75	-5.35	0.00	0.00	0.00
8,000.00	11.07	90.00	7,936.02	0.00	784.94	-5.48	0.00	0.00	0.00
8,100.00	11.07	90.00	8,034.16	0.00	804.13	-5.61	0.00	0.00	0.00
8,200.00	11.07	90.00	8,132.30	0.00	823.33	-5.75	0.00	0.00	0.00
8,300.00	11.07	90.00	8,230.44	0.00	842.52	-5.88	0.00	0.00	0.00
8,400.00	11.07	90.00	8,328.58	0.00	861.71	-6.02	0.00	0.00	0.00
8,494.17	11.07	90.00	8,421.00	0.00	879.79	-6.14	0.00	0.00	0.00
1st BSPG Lime									
8,500.00	11.07	90.00	8,426.72	0.00	880.90	-6.15	0.00	0.00	0.00
8,562.44	11.07	90.00	8,488.00	0.00	892.89	-6.23	0.00	0.00	0.00
1st BSPG Sand									
8,600.00	11.07	90.00	8,524.86	0.00	900.10	-6.28	0.00	0.00	0.00
8,650.23	11.07	90.00	8,574.16	0.00	909.74	-6.35	0.00	0.00	0.00
Start Drop -2.00									

Database:	WellPlanner1	**Local Co-ordinate Reference:**	Well 5H
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Project:	Lea County, NM (NAD83)	**MD Reference:**	GL 3397'+KB 24' @ 3421.00usft (Cactus 168)
Site:	Rio Blanco 4-33 Fed Com	**North Reference:**	Grid
Well:	5H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Prelim Plan		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,700.00	10.07	90.00	8,623.08	0.00	918.87	-6.41	2.00	-2.00	0.00
8,800.00	8.07	90.00	8,721.83	0.00	934.63	-6.52	2.00	-2.00	0.00
8,900.00	6.07	90.00	8,821.06	0.00	946.94	-6.61	2.00	-2.00	0.00
9,000.00	4.07	90.00	8,920.66	0.00	955.77	-6.67	2.00	-2.00	0.00
9,100.00	2.07	90.00	9,020.52	0.00	961.13	-6.71	2.00	-2.00	0.00
9,203.51	0.00	0.00	9,124.00	0.00	963.00	-6.72	2.00	-2.00	0.00
Start 500.00 hold at 9203.51 MD									
9,300.00	0.00	0.00	9,220.49	0.00	963.00	-6.72	0.00	0.00	0.00
9,400.00	0.00	0.00	9,320.49	0.00	963.00	-6.72	0.00	0.00	0.00
9,500.00	0.00	0.00	9,420.49	0.00	963.00	-6.72	0.00	0.00	0.00
9,600.00	0.00	0.00	9,520.49	0.00	963.00	-6.72	0.00	0.00	0.00
9,703.51	0.00	0.00	9,624.00	0.00	963.00	-6.72	0.00	0.00	0.00
Start DLS 11.00 TFO 359.60									
9,750.00	5.11	359.60	9,670.43	2.07	962.99	-4.65	11.00	11.00	0.00
9,795.99	10.17	359.60	9,716.00	8.19	962.94	1.47	11.00	11.00	0.00
2nd BSPG Lime									
9,800.00	10.61	359.60	9,719.94	8.91	962.94	2.19	11.00	11.00	0.00
9,850.00	16.11	359.60	9,768.57	20.46	962.86	13.74	11.00	11.00	0.00
9,900.00	21.61	359.60	9,815.87	36.62	962.74	29.90	11.00	11.00	0.00
9,950.00	27.11	359.60	9,861.40	57.24	962.60	50.52	11.00	11.00	0.00
10,000.00	32.61	359.60	9,904.74	82.13	962.43	75.41	11.00	11.00	0.00
10,050.00	38.11	359.60	9,945.50	111.06	962.22	104.34	11.00	11.00	0.00
10,100.00	43.61	359.60	9,983.30	143.76	962.00	137.04	11.00	11.00	0.00
10,113.57	45.11	359.60	9,993.00	153.25	961.93	146.53	11.00	11.00	0.00
2nd BSPG Sand									
10,150.00	49.11	359.60	10,017.79	179.93	961.74	173.21	11.00	11.00	0.00
10,200.00	54.61	359.60	10,048.65	219.24	961.47	212.52	11.00	11.00	0.00
10,250.00	60.11	359.60	10,075.61	261.33	961.17	254.61	11.00	11.00	0.00
10,300.00	65.61	359.60	10,098.40	305.81	960.86	299.09	11.00	11.00	0.00
10,350.00	71.11	359.60	10,116.83	352.27	960.54	345.55	11.00	11.00	0.00
10,400.00	76.61	359.60	10,130.72	400.28	960.20	393.56	11.00	11.00	0.00
10,450.00	82.11	359.60	10,139.95	449.40	959.86	442.69	11.00	11.00	0.00
10,500.00	87.61	359.60	10,144.42	499.18	959.51	492.47	11.00	11.00	0.00
10,521.31	89.96	359.60	10,144.87	520.48	959.37	513.77	11.00	11.00	0.00
Start 7002.89 hold at 10521.31 MD									
10,600.00	89.96	359.60	10,144.93	599.17	958.82	592.46	0.00	0.00	0.00
10,700.00	89.96	359.60	10,145.00	699.17	958.12	692.46	0.00	0.00	0.00
10,800.00	89.96	359.60	10,145.07	799.16	957.42	792.46	0.00	0.00	0.00
10,900.00	89.96	359.60	10,145.15	899.16	956.72	892.46	0.00	0.00	0.00
11,000.00	89.96	359.60	10,145.22	999.16	956.02	992.46	0.00	0.00	0.00
11,100.00	89.96	359.60	10,145.29	1,099.16	955.32	1,092.46	0.00	0.00	0.00
11,200.00	89.96	359.60	10,145.37	1,199.15	954.63	1,192.46	0.00	0.00	0.00
11,300.00	89.96	359.60	10,145.44	1,299.15	953.93	1,292.46	0.00	0.00	0.00
11,400.00	89.96	359.60	10,145.51	1,399.15	953.23	1,392.46	0.00	0.00	0.00
11,500.00	89.96	359.60	10,145.59	1,499.15	952.53	1,492.46	0.00	0.00	0.00
11,600.00	89.96	359.60	10,145.66	1,599.14	951.83	1,592.46	0.00	0.00	0.00
11,700.00	89.96	359.60	10,145.73	1,699.14	951.13	1,692.46	0.00	0.00	0.00
11,800.00	89.96	359.60	10,145.81	1,799.14	950.44	1,792.46	0.00	0.00	0.00
11,900.00	89.96	359.60	10,145.88	1,899.14	949.74	1,892.46	0.00	0.00	0.00
12,000.00	89.96	359.60	10,145.95	1,999.13	949.04	1,992.46	0.00	0.00	0.00
12,100.00	89.96	359.60	10,146.03	2,099.13	948.34	2,092.46	0.00	0.00	0.00
12,200.00	89.96	359.60	10,146.10	2,199.13	947.64	2,192.46	0.00	0.00	0.00
12,300.00	89.96	359.60	10,146.17	2,299.13	946.94	2,292.46	0.00	0.00	0.00
12,400.00	89.96	359.60	10,146.25	2,399.12	946.25	2,392.46	0.00	0.00	0.00

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Site:	Rio Blanco 4-33 Fed Com	**North Reference:**	Grid
Well:	5H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
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Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,500.00	89.96	359.60	10,146.32	2,499.12	945.55	2,492.46	0.00	0.00	0.00
12,600.00	89.96	359.60	10,146.39	2,599.12	944.85	2,592.46	0.00	0.00	0.00
12,700.00	89.96	359.60	10,146.47	2,699.12	944.15	2,692.46	0.00	0.00	0.00
12,800.00	89.96	359.60	10,146.54	2,799.11	943.45	2,792.46	0.00	0.00	0.00
12,900.00	89.96	359.60	10,146.61	2,899.11	942.75	2,892.46	0.00	0.00	0.00
13,000.00	89.96	359.60	10,146.69	2,999.11	942.06	2,992.46	0.00	0.00	0.00
13,100.00	89.96	359.60	10,146.76	3,099.11	941.36	3,092.46	0.00	0.00	0.00
13,200.00	89.96	359.60	10,146.83	3,199.10	940.66	3,192.46	0.00	0.00	0.00
13,300.00	89.96	359.60	10,146.91	3,299.10	939.96	3,292.46	0.00	0.00	0.00
13,400.00	89.96	359.60	10,146.98	3,399.10	939.26	3,392.46	0.00	0.00	0.00
13,500.00	89.96	359.60	10,147.05	3,499.10	938.56	3,492.46	0.00	0.00	0.00
13,600.00	89.96	359.60	10,147.13	3,599.09	937.86	3,592.46	0.00	0.00	0.00
13,700.00	89.96	359.60	10,147.20	3,699.09	937.17	3,692.46	0.00	0.00	0.00
13,800.00	89.96	359.60	10,147.27	3,799.09	936.47	3,792.46	0.00	0.00	0.00
13,900.00	89.96	359.60	10,147.35	3,899.09	935.77	3,892.46	0.00	0.00	0.00
14,000.00	89.96	359.60	10,147.42	3,999.08	935.07	3,992.46	0.00	0.00	0.00
14,100.00	89.96	359.60	10,147.49	4,099.08	934.37	4,092.46	0.00	0.00	0.00
14,200.00	89.96	359.60	10,147.57	4,199.08	933.67	4,192.46	0.00	0.00	0.00
14,300.00	89.96	359.60	10,147.64	4,299.08	932.98	4,292.46	0.00	0.00	0.00
14,400.00	89.96	359.60	10,147.71	4,399.07	932.28	4,392.46	0.00	0.00	0.00
14,500.00	89.96	359.60	10,147.79	4,499.07	931.58	4,492.46	0.00	0.00	0.00
14,600.00	89.96	359.60	10,147.86	4,599.07	930.88	4,592.46	0.00	0.00	0.00
14,700.00	89.96	359.60	10,147.93	4,699.07	930.18	4,692.46	0.00	0.00	0.00
14,800.00	89.96	359.60	10,148.00	4,799.06	929.48	4,792.46	0.00	0.00	0.00
14,900.00	89.96	359.60	10,148.08	4,899.06	928.79	4,892.46	0.00	0.00	0.00
15,000.00	89.96	359.60	10,148.15	4,999.06	928.09	4,992.46	0.00	0.00	0.00
15,100.00	89.96	359.60	10,148.22	5,099.06	927.39	5,092.46	0.00	0.00	0.00
15,200.00	89.96	359.60	10,148.30	5,199.05	926.69	5,192.46	0.00	0.00	0.00
15,300.00	89.96	359.60	10,148.37	5,299.05	925.99	5,292.46	0.00	0.00	0.00
15,400.00	89.96	359.60	10,148.44	5,399.05	925.29	5,392.46	0.00	0.00	0.00
15,500.00	89.96	359.60	10,148.52	5,499.05	924.60	5,492.46	0.00	0.00	0.00
15,600.00	89.96	359.60	10,148.59	5,599.04	923.90	5,592.46	0.00	0.00	0.00
15,700.00	89.96	359.60	10,148.66	5,699.04	923.20	5,692.46	0.00	0.00	0.00
15,800.00	89.96	359.60	10,148.74	5,799.04	922.50	5,792.46	0.00	0.00	0.00
15,900.00	89.96	359.60	10,148.81	5,899.04	921.80	5,892.46	0.00	0.00	0.00
16,000.00	89.96	359.60	10,148.88	5,999.03	921.10	5,992.46	0.00	0.00	0.00
16,100.00	89.96	359.60	10,148.96	6,099.03	920.41	6,092.46	0.00	0.00	0.00
16,200.00	89.96	359.60	10,149.03	6,199.03	919.71	6,192.46	0.00	0.00	0.00
16,300.00	89.96	359.60	10,149.10	6,299.03	919.01	6,292.46	0.00	0.00	0.00
16,400.00	89.96	359.60	10,149.18	6,399.02	918.31	6,392.46	0.00	0.00	0.00
16,500.00	89.96	359.60	10,149.25	6,499.02	917.61	6,492.46	0.00	0.00	0.00
16,600.00	89.96	359.60	10,149.32	6,599.02	916.91	6,592.46	0.00	0.00	0.00
16,700.00	89.96	359.60	10,149.40	6,699.02	916.22	6,692.46	0.00	0.00	0.00
16,800.00	89.96	359.60	10,149.47	6,799.01	915.52	6,792.46	0.00	0.00	0.00
16,900.00	89.96	359.60	10,149.54	6,899.01	914.82	6,892.46	0.00	0.00	0.00
17,000.00	89.96	359.60	10,149.62	6,999.01	914.12	6,992.46	0.00	0.00	0.00
17,100.00	89.96	359.60	10,149.69	7,099.01	913.42	7,092.46	0.00	0.00	0.00
17,200.00	89.96	359.60	10,149.76	7,199.00	912.72	7,192.46	0.00	0.00	0.00
17,300.00	89.96	359.60	10,149.84	7,299.00	912.03	7,292.46	0.00	0.00	0.00
17,400.00	89.96	359.60	10,149.91	7,399.00	911.33	7,392.46	0.00	0.00	0.00
17,500.00	89.96	359.60	10,149.98	7,499.00	910.63	7,492.46	0.00	0.00	0.00
17,524.19	89.96	359.60	10,150.00	7,523.19	910.46	7,516.65	0.00	0.00	0.00
TD at 17524.19									

Database:	WellPlanner1	**Local Co-ordinate Reference:**	Well 5H
Company:	Devon Energy Corp.	**TVD Reference:**	GL 3397'+KB 24' @ 3421.00usft (Cactus 168)
Project:	Lea County, NM (NAD83)	**MD Reference:**	GL 3397'+KB 24' @ 3421.00usft (Cactus 168)
Site:	Rio Blanco 4-33 Fed Com	**North Reference:**	Grid
Well:	5H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Prelim Plan		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,221.00	2,221.00	Rustler		0.04	359.60
2,521.00	2,521.00	Top of Salt		0.04	359.60
4,968.33	4,957.00	Base of Salt		0.04	359.60
5,119.16	5,107.00	Delaware		0.04	359.60
8,494.17	8,421.00	1st BSPG Lime		0.04	359.60
8,562.44	8,488.00	1st BSPG Sand		0.04	359.60
9,795.99	9,716.00	2nd BSPG Lime		0.04	359.60
10,113.57	9,993.00	2nd BSPG Sand		0.04	359.60

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
2,500.00	2,500.00	0.00	0.00	Start Build 1.00
3,100.00	3,098.90	0.00	31.39	Start 2012.12 hold at 3100.00 MD
5,112.12	5,100.00	0.00	241.71	Start DLS 2.00 TFO 0.00
5,365.39	5,350.39	0.00	279.28	Start 3284.84 hold at 5365.39 MD
8,650.23	8,574.16	0.00	909.74	Start Drop -2.00
9,203.51	9,124.00	0.00	963.00	Start 500.00 hold at 9203.51 MD
9,703.51	9,624.00	0.00	963.00	Start DLS 11.00 TFO 359.60
10,521.31	10,144.87	520.48	959.37	Start 7002.89 hold at 10521.31 MD
17,524.19	10,150.00	7,523.19	910.46	TD at 17524.19

Devon Energy, Rio Blanco 4-33 Fed Com 5H

1. Geologic Formations

TVD of target	10,150'	Pilot hole depth	N/A
MD at TD:	17,524'	Deepest expected fresh water:	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Rustler	2221		
Top of Salt	2521		
Base of Salt	4957		
Delaware	5107		
1st BSPG Lime	8421		
1st BSPG Sand	9488		
2nd BSPG Lime	9716		
2nd BSPG Sand	9993		

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

2. Casing Program (Primary Design)

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn	Min SF Collapse	Min SF Burst	Min SF Tension
	From	To							
20"	0	2,270'	16"	75	J-55	BTC	1.125	1.00	1.6 Dry 1.8 Wet
13.5"	0	3,500'	11.875"	71.8	Q-125 HC	Vam HD-L	1.125	1.00	1.6 Dry 1.8 Wet
10.625"	0	5,150'	8.625"	32	K55 HC	LTC	1.125	1.00	1.6 Dry 1.8 Wet
7.875"	0	TD	5.5"	17	P110	BTC	1.125	1.00	1.6 Dry 1.8 Wet
				BLM Minimum Safety Factor			1.125	1.00	1.6 Dry 1.8 Wet

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

Casing Program (Alternate Design)

Hole Size	Casing Interval		Csg. Size	Weight (lbs)	Grade	Conn	Min SF Collapse	Min SF Burst	Min SF Tension
	From	To							
26"	0	2,270'	20"	106.5	J-55	BTC	1.125	1.00	1.6 Dry 1.8 Wet
17.5"	0	3,500'	13.375"	54.5	J-55	BTC	1.125	1.00	1.6 Dry 1.8 Wet
12.25"	0	5,150'	9.625"	40	J-55	BTC	1.125	1.00	1.6 Dry 1.8 Wet
8.75"	0	TD	5.5"	17	P110	BTC	1.125	1.00	1.6 Dry 1.8 Wet
				BLM Minimum Safety Factor			1.125	1.00	1.6 Dry 1.8 Wet

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

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	N
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	
Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program (Primary Design)

Casing	# Sks	Wt. lb/ gal	H_20 gal/sk	Yld ft3/ sac k	500# Comp. Strength (hours)	Slurry Description
16" Surface	1692	13.5	9.22	1.73	12	Lead: 100% Class C Cement: 4% BWOC Bentonite + 0.125 lbs/sack Poly-E-Flake
	328	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
16" Surface Top Out	1200	14.8	6.32	1.33	6	Primary: Neat Class C Cement
11.875" Int 1	696	12.9	9.81	1.87	14	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	157	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
11.875" Int 1 Top Out	2235	13.5	9.22	1.73	12	Lead: 100% Class C Cement: 4% BWOC Bentonite + 0.125 lbs/sack Poly-E-Flake
8.625" Int 2	587	12.5	10.89	1.96	20	Lead: (65:35) Class H Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	112	15.6	5.28	1.18	7.5	Tail: Class H Cement + 0.125 lbs/sack Poly-E-Flake
8.625" Int 2 Two Stage	390	12.9	9.81	1.87	14	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	55	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
	135	12.5	10.89	1.96	20	Lead: (65:35) Class H Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	120	15.6	5.28	1.18	7.5	Tail: Class H Cement + 0.125 lbs/sack Poly-E-Flake
5.5" Prod	338	11	17.38	2.81	20	Lead: NeoCem®
	678	13.2	7.46	1.47	6	Tail: NeoCem®

DV tool depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. If cement is not returned to surface during the primary cement job on the surface casing string, a planned top job will be conducted immediately after completion of the primary job.

Casing String	TOC	% Excess
16" Surface	0ft	75%
11.875" Intermediate 1	0ft	50%
8.625" Intermediate 2	0ft	25%
8.625" Intermediate 2 (Two Stage)	1st Stage = 3550ft / 2nd Stage = 0ft	25%
5.5" Prod	4650'	10%

Devon Energy, Rio Blanco 4-33 Fed Com 5H

Cementing Program (Alternate Design)

Casing	# Sks	Wt. lb/ gal	H_20 gal/sk	Yld ft3/ sack	500# Comp. Strength (hours)	Slurry Description
20" Surface	2920	13.7	8.89	1.73	7	Lead: Class C Cement + 2% Bentonite + 5lb/sk Salt
	5460	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
20" Surface Top Out	1200	14.8	6.32	1.33	6	Primary: Neat Class C Cement
13.375" Int 1	1440	12.9	9.81	1.87	14	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	745	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
13.375" Int 1 Two Stage	1020	12.9	9.81	1.87	14	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	390	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
	DV Tool = 2368ft					
	915	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
9.625" Int 2	805	12.9	9.81	1.87	14	Lead: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	440	14.8	6.32	1.33	6	Tail: Class C Cement + 0.125 lbs/sack Poly-E-Flake
9.625" Int 2 Two Stage	575	12.9	9.81	1.87	14	Lead Stage 1: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	145	14.8	6.32	1.33	6	Tail Stage 1: Class C Cement + 0.125 lbs/sack Poly-E-Flake
	290	12.9	9.81	1.87	14	Lead Stage 2: (65:35) Class C Cement: Poz (Fly Ash): 6% BWOC Bentonite + 5% BWOW Sodium Chloride + 0.125 lbs/sack Poly-E-Flake
	180	14.8	6.32	1.33	6	Tail Stage 2: Class C Cement + 0.125 lbs/sack Poly-E-Flake
5.5" Prod	495	11	17.38	2.811	20	Lead: NeoCem®
	1575	13.2	7.46	1.468	6	Tail: NeoCem®

DV tool depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. DV tool will be set a minimum of 50 feet below previous casing and a minimum of 200 feet above current shoe. If cement is not returned to surface during the primary cement job on the surface casing string, a planned top job will be conducted immediately after completion of the primary job.

Casing String	TOC	% Excess
20" Surface	0ft	100%
13.375" Intermediate	0ft	75%
13.375" Intermediate (Two Stage)	1st Stage = 2320ft / 2nd Stage = 0ft	75%
9.625" Intermediate	0ft	50%
9.625" Intermediate (Two Stage)	1st Stage = 3450ft / 2nd Stage = 0ft	50%
5.5" Prod	4650'	10%

4. Pressure Control Equipment (Primary Casing Design)

BOP installed and tested before drilling which hole?	Size	Min Required WP	Type	✓	Tested to:
13-1/2"	13-5/8"	2M	Annular	x	50% testing pressure
			Blind Ram		2M
			Pipe Ram		
			Double Ram		
			Other*		
10-5/8"	13-5/8"	3M	Annular	x	50% testing pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other*		
7-5/8"	13-5/8"	3M	Annular	x	50% testing pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other*		

*Specify if additional ram is utilized.

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

Devon Energy, Rio Blanco 4-33 Fed Com 5H

Pressure Control Equipment (Alternate Casing Design)

BOP installed and tested before drilling which hole?	Size	Min Required WP	Type	✓	Tested to:
17-1/2"	21-1/4"	2M	Annular	x	50% of working pressure
			Blind Ram		2M
			Pipe Ram		
			Double Ram		
			Other*		
12-1/4"	13-5/8"	3M	Annular	x	50% testing pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other*		
8-3/4"	13-5/8"	3M	Annular	x	50% testing pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	x	
			Other*		

*Specify if additional ram is utilized.

N	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0	2,270'	FW Gel	8.4-8.6	28-34	N/C
2,270'	3,500'	Saturated Brine	10.0	28-34	N/C
3,500'	5,150'	Cut brine/brine	8.8-10	28-34	N/C
5,150'	TD	Cut brine	8.6-9.2	28-34	N/C

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

Condition	New	Standard	API	Tapered String?	No

Safety Factors

Collapse Design Safety Factor	1.125	Burst Design Safety Factor	1
Body Tensile Design Safety Factor	Buoyant	Body Tensile Design Safety Factor	1.6
Joint Tensile Design Safety Factor	Buoyant	Joint Tensile Design Safety Factor	1.6

String Cement Data (Drilling Section 1)

Stage Tool Depth		Additional string data needed If yes additonal string data box at the bottom of the page	

Lead

Top MD of Segment	0	Btm MD of Segment	1770	Cement Type	Class C
Additives	100% Class C Cement: 4% BWOC	Quanity (sks)	1692	Yield (cu.ft./sk)	1.73
Density (lbs/gal)	13.5	Volume (cu.ft.)	2,927	Percent Excess	75

Tail

Top MD of Segment	1770	Btm MD of Segment	2270	Cement Type	Class C
Additives	0.125 lbs/sack Poly-E-Flake	Quanity (sks)	328	Yield (cu.ft./sk)	1.33
Density (lbs/gal)	14.8	Volume (cu.ft.)	436	Percent Excess	75

Top Out

Top MD of Segment	0	Btm MD of Segment	As needed	Cement Type	Class C
Additives	Neat Class C Cement	Quanity (sks)	1200	Yield (cu.ft./sk)	1.33
Density (lbs/gal)	14.8	Volume (cu.ft.)	1,596	Percent Excess	75

If cement is not returned to surface during the primary cement job on the surface casing string, a planned top job will be conducted immediately after completion of the primary job.

devon

Devon Energy Center
333 West Sheridan Avenue
Oklahoma City, Oklahoma 73102-5015

Hydrogen Sulfide (H_2S) Contingency Plan

For

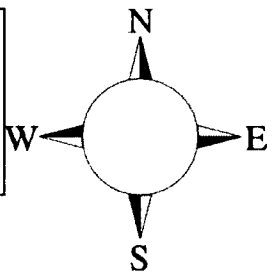
Rio Blanco 4-33 Fed Com 5H

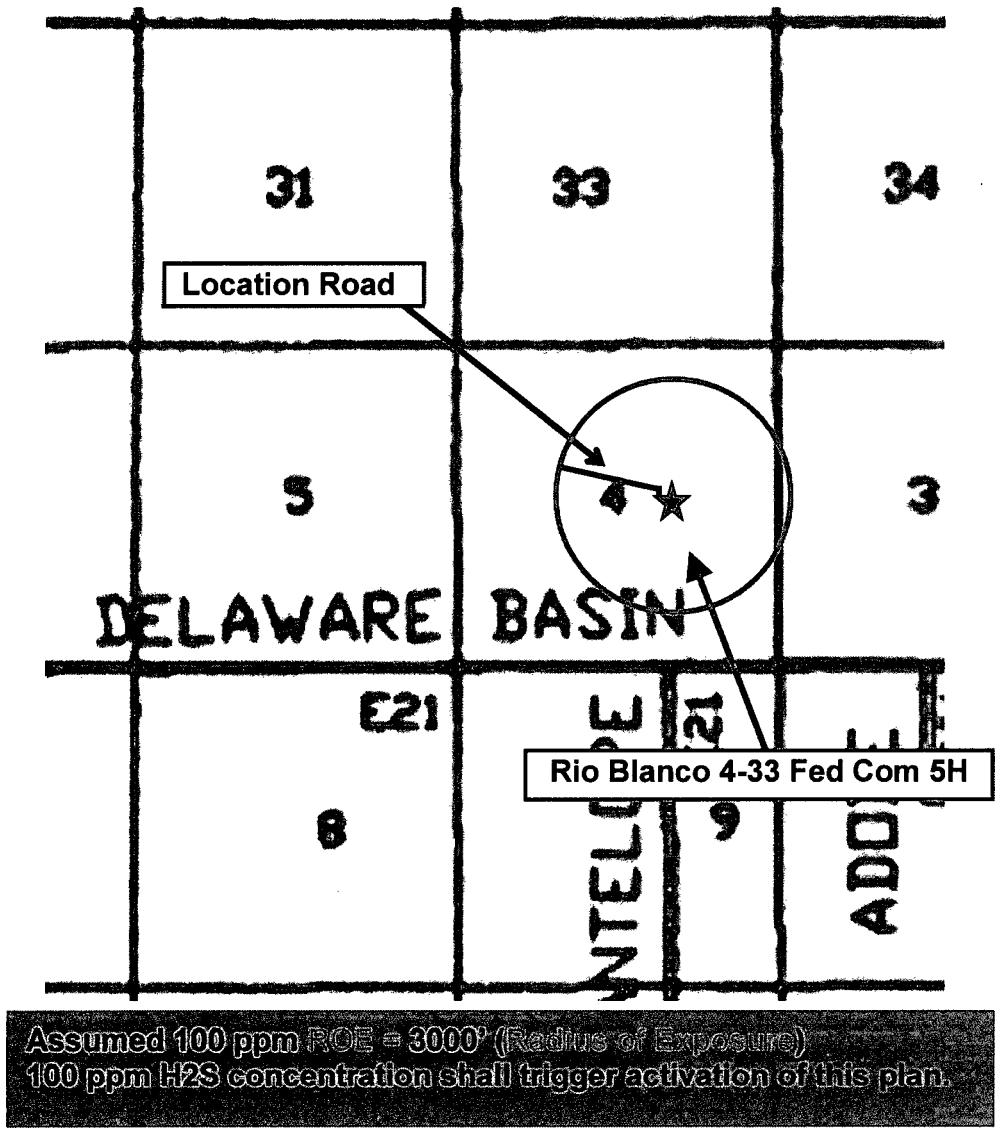
Sec-4 T-23S R-34E
2567' FNL & 1343' FEL
LAT. = 32.3338557' N (NAD83)
LONG = 103.4708602' W

Lea County NM

Rio Blanco 4-33 Fed Com 5H

This is an open drilling site. H_2S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H_2S, including warning signs, wind indicators and H_2S monitor.





Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road. Crews should then block the entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'

100 ppm H_2S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H_2S, the first responder(s) must

- **Isolate the area and prevent entry by other persons into the 100 ppm ROE.**
- **Evacuate any public places encompassed by the 100 ppm ROE.**
- **Be equipped with H_2S monitors and air packs in order to control the release.**
- **Use the "buddy system" to ensure no injuries occur during the response**
- **Take precautions to avoid personal injury during this operation.**
- **Contact operator and/or local officials to aid in operation. See list of phone numbers attached.**
- **Have received training in the**
  - **Detection of H_2S, and**
  - **Measures for protection against the gas,**
  - **Equipment used for protection and emergency response.**

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO_2). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas

Characteristics of H_2S and SO_2

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H_2S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO_2	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

Devon Energy Corp. personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available. The following call list of essential and potential responders has been prepared for use during a release. Devon Energy Corp. Company response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE (H_2S) TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H_2S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H_2S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H_2S metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H_2S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H_2S zone (within 3 days or 500 feet) and weekly H_2S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H_2S Drilling Operations Plan and the Public Protection Plan.

II. HYDROGEN SULFIDE TRAINING

Note: All H_2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H_2S.

1. **Well Control Equipment**

   A. Flare line

   B. Choke manifold – Remotely Operated

   C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit

   D. Auxiliary equipment may include if applicable: annular preventer and rotating head.

   E. Mud/Gas Separator

2. **Protective equipment for essential personnel:**

   30-minute SCBA units located at briefing areas, as indicated on well site diagram, with escape units available in the top doghouse. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

3. **H_2S detection and monitoring equipment:**

   Portable H_2S monitors positioned on location for best coverage and response. These units have warning lights which activate when H_2S levels reach 10 ppm and audible sirens which activate at 15 ppm. Sensor locations:

   - **Bell nipple**
   - **Rig floor**
   - **Cellar**
   - **Possum Belly/Shale shaker**
   - **Choke manifold**

   Visual warning systems:

   A. Wind direction indicators as shown on well site diagram

   B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

4. **Mud program:**

   The mud program has been designed to minimize the volume of H_2S circulated to surface. Proper mud weight, safe drilling practices and the use of H_2S scavengers will minimize hazards when penetrating H_2S bearing zones.

5. **Metallurgy:**

   A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H_2S trim.

   B. All elastomers used for packing and seals shall be H_2S trim.

6. **Communication:**

   A. Company personnel have/use cellular telephones in the field.

   B. Land line (telephone) communications at Office

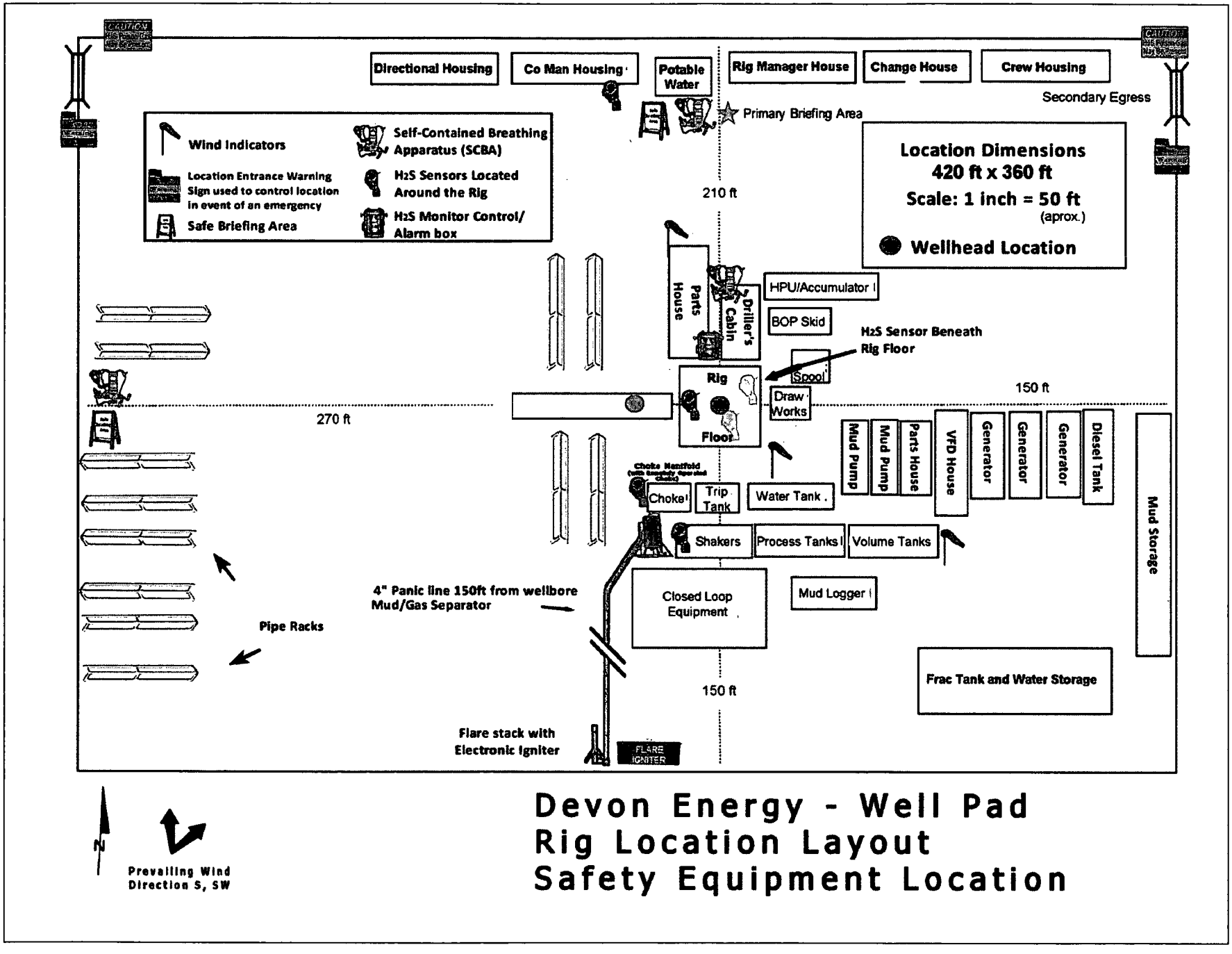
7. **Well testing:**

   A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H_2S environment will use the closed chamber method of testing.

   B. There will be no drill stem testing.

Devon Energy Corp. Company Call List		
Drilling Supervisor – Basin – Mark Kramer		405-823-4796
EHS Professional – Laura Wright		405-439-8129
Agency Call List		
Lea County (575)	**Hobbs**	
	Lea County Communication Authority	393-3981
	State Police	392-5588
	City Police	397-9265
	Sheriff's Office	393-2515
	Ambulance	**911**
	Fire Department	397-9308
	LEPC (Local Emergency Planning Committee)	393-2870
	NMOCD	393-6161
	US Bureau of Land Management	393-3612
Eddy County (575)	**Carlsbad**	
	State Police	885-3137
	City Police	885-2111
	Sheriff's Office	887-7551
	Ambulance	**911**
	Fire Department	885-3125
	LEPC (Local Emergency Planning Committee)	887-3798
	US Bureau of Land Management	887-6544
	NM Emergency Response Commission (Santa Fe)	(505) 476-9600
	24 HR	(505) 827-9126
	National Emergency Response Center	(800) 424-8802
	National Pollution Control Center: Direct	(703) 872-6000
	For Oil Spills	(800) 280-7118
	Emergency Services	
	Wild Well Control	(281) 784-4700
	Cudd Pressure Control (915) 699-0139	(915) 563-3356
	Halliburton	(575) 746-2757
	B. J. Services	(575) 746-3569
Give GPS position:	Native Air – Emergency Helicopter – Hobbs	(575) 392-6429
	Flight For Life - Lubbock, TX	(806) 743-9911
	Aerocare - Lubbock, TX	(806) 747-8923
	Med Flight Air Amb - Albuquerque, NM	(575) 842-4433
	Lifeguard Air Med Svc. Albuquerque, NM	(800) 222-1222
	Poison Control (24/7)	(575) 272-3115
	Oil & Gas Pipeline 24 Hour Service	(800) 364-4366
	NOAA – Website - www.nhc.noaa.gov	

Prepared in conjunction with
Dave Small SHARP COMMUNICATIONS & CONSULTING, LLC



Devon Energy - Well Pad
Rig Location Layout
Safety Equipment Location