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DEC 26 2019

DISTRICT II-ARTESIA O.C.D.

Form 3160-3
(June 2015)

FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NMNM105557

6. If Indian, Allotee or Tribe Name

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other

1c. Type of Completion: ☐ Hydraulic Fracturing ☑ Single Zone ☐ Multiple Zone

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

8. Lease Name and Well No.
PAPA FRITAS 27-22 FED COM
331H 326778

2. Name of Operator
DEVON ENERGY PRODUCTION COMPANY LP

9. API Well No.
30-015-46580

3a. Address
333 West Sheridan Avenue Oklahoma City OK 73102

3b. Phone No. *(include area code)*
(800)583-3866

10. Field and Pool, or Exploratory
~~PURPLE SAGE WOLFCAMP / PURPLE~~ Dual BSPG Pools 96721 96857

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface NWNW / 102 FNL / 943 FWL / LAT 32.268311 / LONG -103.978136
At proposed prod. zone NWNW / 20 FNL / 330 FWL / LAT 32.29779 / LONG -103.980129

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 34 / T23S / R29E / NMP

14. Distance in miles and direction from nearest town or post office*

12. County or Parish
EDDY

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
102 feet

16. No of acres in lease
640

17. Spacing Unit dedicated to this well
320

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
3000 feet

19. Proposed Depth
9900 feet / 20255 feet

20. BLM/BIA Bond No. in file
FED: NMB000801

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3022 feet

22. Approximate date work will start*
07/02/2020

23. Estimated duration
45 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM.

25. Signature	Name *(Printed/Typed)*	Date
(Electronic Submission)	Erin Workman / Ph: (405)552-7970	06/23/2019

Title
Regulatory Compliance Professional

Approved by *(Signature)*	Name *(Printed/Typed)*	Date
(Electronic Submission)	Cody Layton / Ph: (575)234-5959	12/20/2019

Title	Office
Assistant Field Manager Lands & Minerals	CARLSBAD

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.
Conditions of approval, if any, are attached.

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.

APPROVED WITH CONDITIONS

Approval Date: 12/20/2019

(Continued on page 2)

*(Instructions on page 2)

RM 1-10-2020

INSTRUCTIONS

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

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the wen, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionany drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.
AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160
PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service wen or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.
ROUTINE USE: Information from the record and/or the record win be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.
EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:
The BLM conects this information to anow evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

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

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Additional Operator Remarks

Location of Well

1. SHL: NWNW /102 FNL /943 FWL /TWSP: 23S /RANGE: 29E /SECTION: 34 /LAT: 32.268311 /LONG: -103.978136 (TVD: 0 feet, MD: 0 feet)
   PPP: SWSW /100 FSL /330 FWL /TWSP: 23S /RANGE: 29E /SECTION: 27 /LAT: 32.268866 /LONG: -103.980124 (TVD: 9561 feet, MD: 9599 feet)
   BHL: NWNW /20 FNL /330 FWL /TWSP: 23S /RANGE: 29E /SECTION: 22 /LAT: 32.29779 /LONG: -103.980129 (TVD: 9900 feet, MD: 20255 feet)

BLM Point of Contact

Name: Candy Vigil

Title: LIE

Phone: 5752345982

Email: cvigil@blm.gov

Review and Appeal Rights

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Devon Energy Production Company LP**
LEASE NO.:	**NMNM105557**
WELL NAME & NO.:	Papa Fritas 27-22 Fed Com 331H
SURFACE HOLE FOOTAGE:	102'/N & 943'/W
BOTTOM HOLE FOOTAGE	20'/N & 330'/W
LOCATION:	Section 34, T.23 S., R.29 E., NMPM
COUNTY:	Eddy County, New Mexico

COA

H2S	◉ Yes	○ No	
Potash	○ None	○ Secretary	◉ R-111-P
Cave/Karst Potential	○ Low	◉ Medium	○ High
Cave/Karst Potential	○ Critical		
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	○ Multibowl	◉ Both
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP
Other	☑ Fluid Filled	☑ Cement Squeeze	☐ Pilot Hole
Special Requirements	☐ Water Disposal	☑ COM	☐ Unit

A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Bone Springs** formation. As a result, the Hydrogen Sulfide area must meet Onshore Order 6 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

Primary Casing Design:

1. The **13-3/8** inch surface casing shall be set at approximately **500 feet** (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.

   Not enough cement to reach surface for the intermediate casing, more sacks shall be required.

   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 **24 hours in the Potash Area** 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 **7-5/8** inch intermediate casing shall be set at approximately **8542 feet** is:

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash. Cement excess is less than 25%, more cement might be required.**

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

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. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash. Cement excess is less than 25%, more cement might be required.**

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

- ❖ In R111 Potash Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

Operator has proposed to pump down 13-3/8" X 7-5/8" annulus. Operator must run a CBL from TD of the 7-5/8" casing to surface. Submit results to BLM.

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

    - Cement to surface. If cement does not circulate, contact the appropriate BLM office.
      Cement excess is less than 25%, more cement might be required.

Alternate Casing Design:

4. The **13-3/8** inch surface casing shall be set at approximately **500 feet** (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.

    e. 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.
    f. Wait on cement (WOC) time for a primary cement job will be a minimum of **24 hours in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

    g. 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.
    h. If cement falls back, remedial cementing will be done prior to drilling out that string.

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

5. The minimum required fill of cement behind the **8-5/8** inch intermediate casing shall be set at approximately **8542 feet** is:

    Option 1 (Single Stage):

    - Cement to surface. If cement does not circulate see B.1.a, c-d above.
      Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.
      Cement excess is less than 25%, more cement might be required.

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

c. 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.

d. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.
  Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.
  Cement excess is less than 25%, more cement might be required.

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

❖ In R111 Potash Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

Operator has proposed to pump down 13-3/8" X 8-5/8" annulus. Operator must run a CBL from TD of the 8-5/8" casing to surface. Submit results to BLM.

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

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.
  Cement excess is less than 25%, more cement might 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:

a. 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.

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

Option 2:

1. 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. 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 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.

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
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. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in 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: 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 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, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

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.

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

Papa Fritas 27-22 Fed Com 331H (Well Pad 4)
102 FNL, 943 FWL Section 34, T.23., R. 29E.
20 FNL, 330 FWL Section 22, T.23., R. 29E.
Papa Fritas 27-22 Fed Com 333H (Well Pad 3)
150 FSL, 822 FWL Section 27, T.23., R. 29E.
20 FNL, 1254 FEL Section 22, T.23., R. 29E.
Papa Fritas 27-22 Fed Com 332H (Well Pad 2)
152 FSL, 1822 FEL Section 27, T.23., R. 29E.
20 FNL, 2178 FEL Section 22, T.23., R. 29E.
Papa Fritas 27-22 Fed Com 621H (Well Pad 4)
102 FNL, 993 FWL Section 34, T.23., R. 29E.
20 FNL, 1254 FWL Section 22, T.23., R. 29E.
Papa Fritas 27-22 Fed Com 332H (Well Pad 2)
152 FSL, 1762 FEL Section 27, T.23., R. 29E.
20 FNL, 2178 FEL Section 22, T.23., R. 29E.
Papa Fritas 27-22 Fed Com 333H (Well Pad 3)
150 FSL, 762 FEL Section 27, T.23., R. 29E.
20 FNL, 330 FEL Section 22, T.23., R. 29E.
Papa Fritas 27-22 Fed Com 621H (Well Pad 4)
102 FNL, 968 FWL Section 34, T.23., R. 29E.
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☐ **Archaeology, Paleontology, and Historical Sites**
☐ **Noxious Weeds**
☒ **Special Requirements**
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- Cave/Karst
- Hydrology
- Potash
- Wildlife

☐ **Construction**
- Notification

Topsoil
Closed Loop System
Federal Mineral Material Pits
Well Pads
Roads

☐ **Road Section Diagram**

☒ **Production (Post Drilling)**

Well Structures & Facilities
Pipelines
Electric Lines

☐ **Interim Reclamation**

☐ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production:

Construction:

General Construction:

- No blasting
- The BLM, Carlsbad Field Office, will be informed immediately if any subsurface drainage channels, cave passages, or voids are penetrated during construction, and no additional construction shall occur until clearance has been issued by the Authorized Officer.
- All linear surface disturbance activities will avoid sinkholes and other karst features to lessen the possibility of encountering near surface voids during construction, minimize changes to runoff, and prevent untimely leaks and spills from entering the karst drainage system.
- All spills or leaks will be reported to the BLM immediately for their immediate and proper treatment.

Pad Construction:

- The pad will be constructed and leveled by adding the necessary fill and caliche – no blasting.
- The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.
- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g., caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised (i.e. an access road crossing the berm cannot be lower than the berm height).

- Following a rain event, all fluids will vacuumed off of the pad and hauled off-site and disposed at a proper disposal facility.

Tank Battery Construction:

- The pad will be constructed and leveled by adding the necessary fill and caliche – no blasting.
- All tank battery locations and facilities will be lined and bermed.
- The liner should be at least 20 mil in thickness and installed with a 4 oz. felt backing, or equivalent, to prevent tears or punctures.
- Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Road Construction:

- Turnout ditches and drainage leadoffs will not be constructed in such a manner as to alter the natural flow of water into or out of cave or karst features.
- Special restoration stipulations or realignment may be required if subsurface features are discovered during construction.

Buried Pipeline/Cable Construction:

- Rerouting of the buried line(s) may be required if a subsurface void is encountered during construction to minimize the potential subsidence/collapse of the feature(s) as well as the possibility of leaks/spills entering the karst drainage system.

Powerline Construction:

- Smaller powerlines will be routed around sinkholes and other karst features to avoid or lessen the possibility of encountering near surface voids and to minimize changes to runoff or possible leaks and spills from entering karst systems.
- Larger powerlines will adjust their pole spacing to avoid cave and karst features.
- Special restoration stipulations or realignment may be required if subsurface voids are encountered.

Surface Flowlines Installation:

- Flowlines will be routed around sinkholes and other karst features to minimize the possibility of leaks/spills from entering the karst drainage system.

Leak Detection System:

- A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present.
- A leak detection plan will be submitted to BLM that incorporates an automatic shut off system (see below) to minimize the effects of an undesirable event that could negatively sensitive cave/karst resources.

- Well heads, pipelines (surface and buried), storage tanks, and all supporting equipment should be monitored regularly after installation to promptly identify and fix leaks.

Automatic Shut-off Systems:

- Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and groundwater concerns:

Closed Loop System:

- A closed loop system using steel tanks will be utilized during drilling – no pits
- All fluids and cuttings will be hauled off-site and disposed of properly at an authorized site

Rotary Drilling with Fresh Water:

- Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:

- The kick off point for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:

- ALL lost circulation zones between surface and the base of the cave occurrence zone will be logged and reported in the drilling report.
- If a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, regardless of the type of drilling machinery used, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:

- Additional plugging conditions of approval may be required upon well abandonment in high and medium karst potential occurrence zones.
- The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:

- The operator will perform annual pressure monitoring on all casing annuli and reported in a sundry notice.

- If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

Hydrology:

The entire well pad(s) will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad. The compacted berm shall be constructed at a minimum of 12 inches with impermeable mineral material (e.g. caliche). Topsoil shall not be used to construct the berm. No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad. The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed. Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion. Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control. If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank or 24 hour production, whichever is greater. Automatic shut off, check valves, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

When crossing ephemeral drainages the pipeline(s) will be buried to a minimum depth of 48 inches from the top of pipe to ground level. Erosion control methods such as gabions and/or rock aprons should be placed on both up and downstream sides of the pipeline crossing. In addition, curled (weed free) wood/straw fiber wattles/logs and/or silt fences should be placed on the downstream side for sediment control during construction and maintained until soils and vegetation have stabilized. Water bars should be placed within the ROW to divert and dissipate surface runoff. A pipeline access road is not permitted to cross these ephemeral drainages. Traffic should be diverted to a preexisting route. Additional seeding may be required in floodplains and drainages to restore energy dissipating vegetation.

Prior to pipeline installation/construction a leak detection plan will be developed. The method(s) could incorporate gauges to detect pressure drops, situating valves and lines so they can be visually inspected periodically or installing electronic sensors to alarm when a leak is present. The leak detection plan will incorporate an automatic shut off system that will be installed for proposed pipelines to minimize the effects of an undesirable event.

Any water erosion that may occur due to the construction of overhead electric line and during the life of the power line will be quickly corrected and proper measures will be

taken to prevent future erosion. A power pole should not be placed in drainages, playas, wetlands, riparian areas, or floodplains and must span across the features at a distance away that would not promote further erosion.

Livestock Watering Requirement
Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

Fence Requirement
Where entry is granted across a fence line, the fence must be braced and tied off on both sides of the passageway with H-braces prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

The operator must contact the allotment holder prior to construction to identify the location of the pipeline. The operator must take measures to protect the pipeline from compression or other damages. If the pipeline is damaged or compromised in any way near the proposed project as a result of oil and gas activity, the operator is responsible for repairing the pipeline immediately. The operator must notify the BLM office (575-234-5972) and the private surface landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

During construction, the proponent shall minimize disturbance to existing fences, water lines, troughs, windmills, and other improvements on public lands. The proponent is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the grazing permittee/allottee prior to disturbing any range improvement projects. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

In May 2008, the Pecos District Special Status Species Resource Management Plan Amendment (RMPA) was approved and is being implemented. In addition to the standard practices that minimize impacts, as listed above, the following COA will apply:

- **Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all power line structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. The holder without liability or expense shall make such modifications and/or additions to the United States.**

Lessees must comply with the 2012 Secretarial Potash Order. The Order is designed to manage the efficient development of oil, gas, and potash resources. Section 6 of the Order provides general provisions which must be followed to minimize conflict between the industries and ensure the safety of operations.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching
Ditching shall be required on both sides of the road.

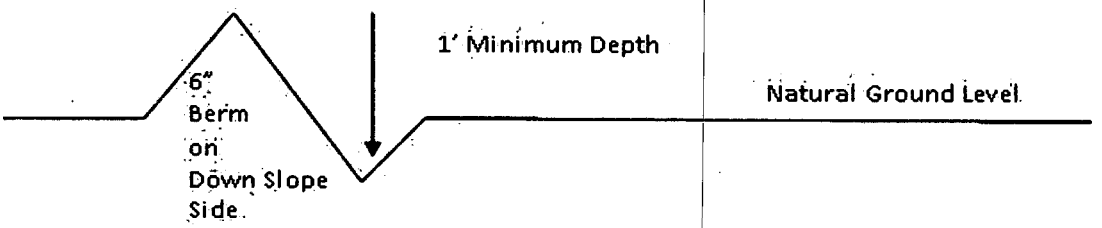
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Livestock Watering Requirement

Any damage to structures that provide water to livestock throughout the life of the well, caused by operations from the well site, must be immediately corrected by the operator. The operator must notify the BLM office (575-234-5972) and the private surface

landowner or the grazing allotment holder if any damage occurs to structures that provide water to livestock.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

devon

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

Hydrogen Sulfide (H_2S) Contingency Plan

For

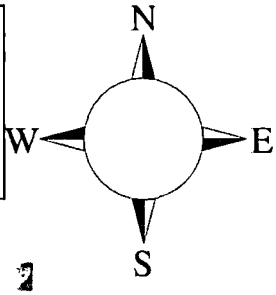
Papas Fritas 27-22 Fed Com 331H

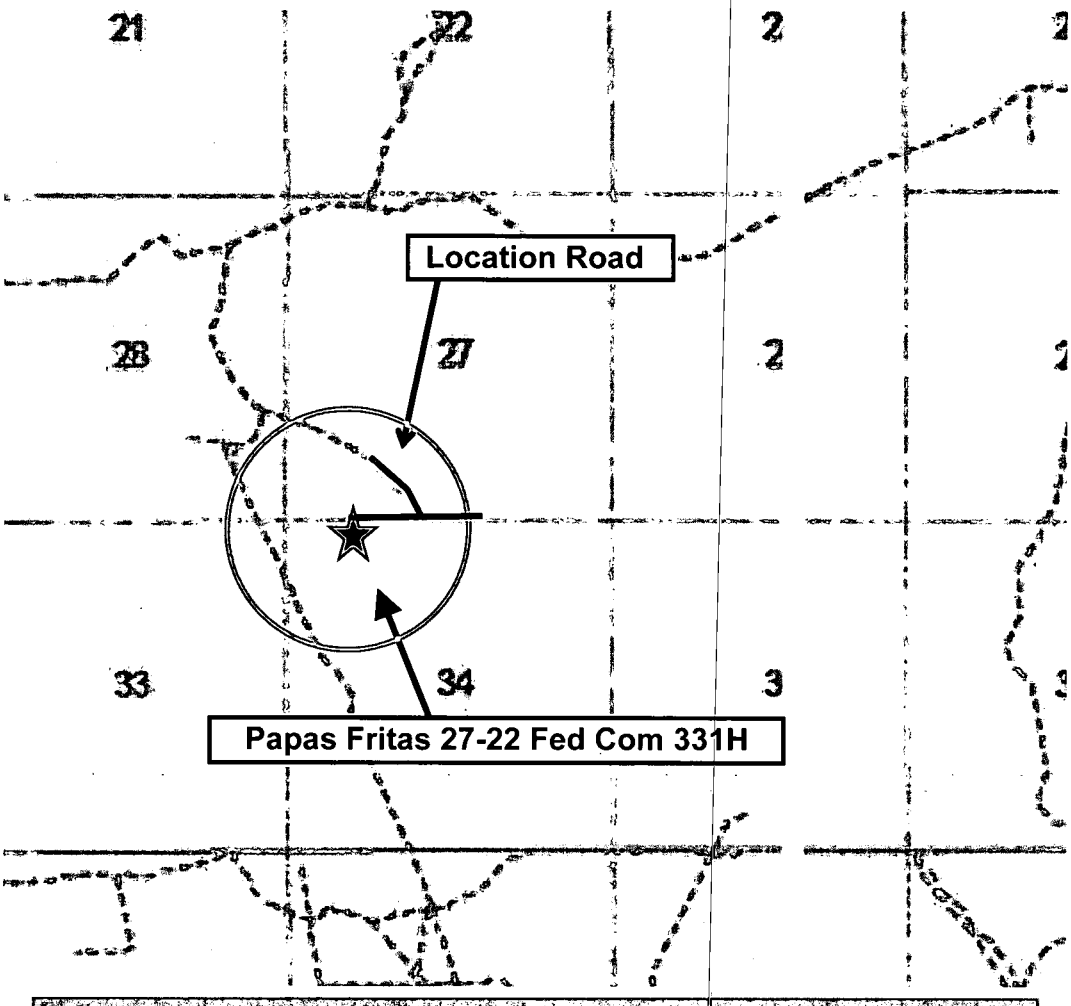
Sec-34 T-23S R-29E
102' FNL & 943' FWL
LAT. = 32.268311' N (NAD83)
LONG = 103.978136' W

Eddy County NM

Papas Fritas 27-22 Fed Com 331H

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.





Assumed 100 ppm ROE = 3000' (Radius of Exposure)
100 ppm H2S concentration shall trigger activation of this plan.

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

   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.

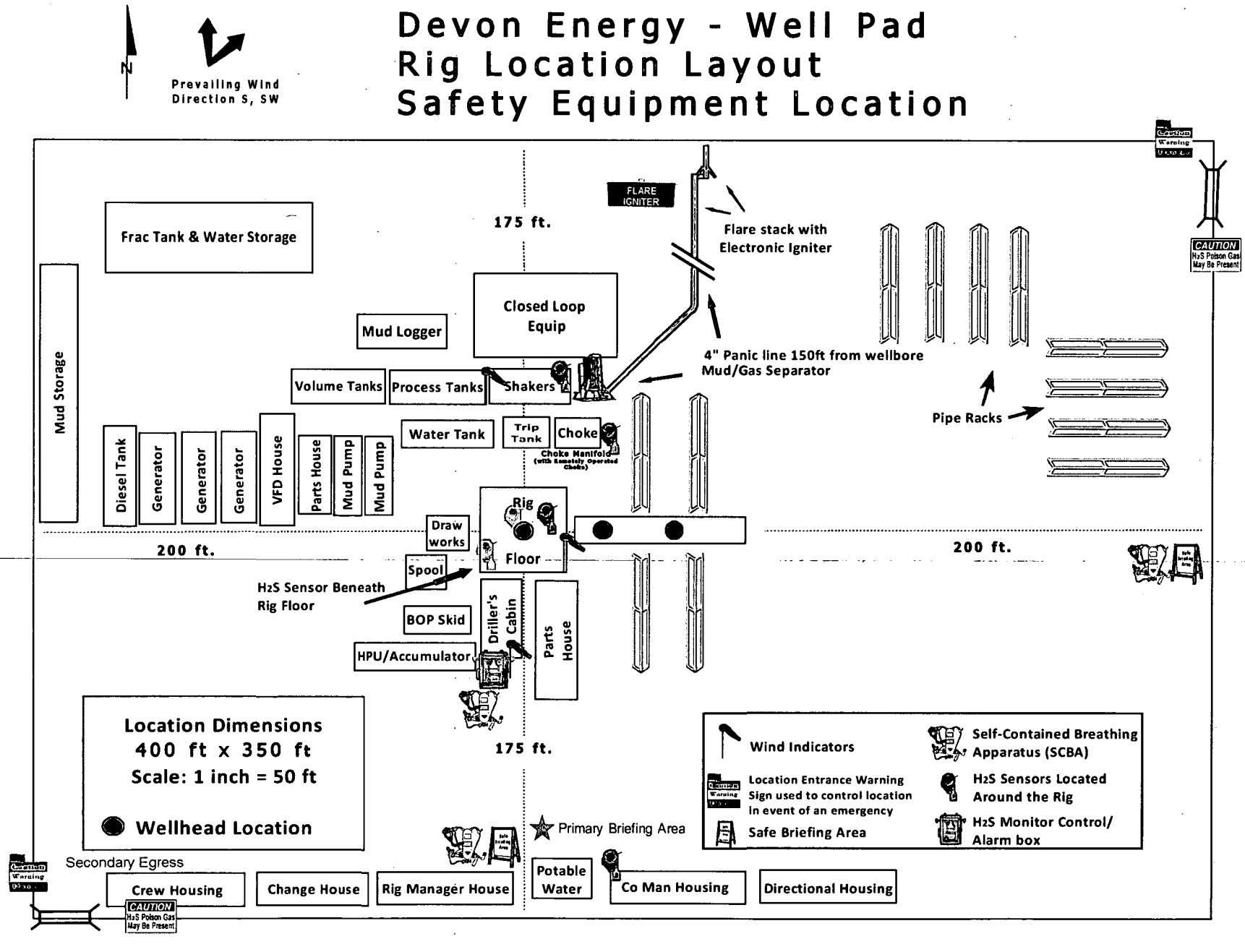
   B. There will be no drill stem testing.

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 (TX & NM)	(800) 642-7828
	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 and consulting

Devon Energy - Well Pad
Rig Location Layout
Safety Equipment Location



WCDSC Permian NM

Eddy County (NAD 83 NM Eastern)
Sec 27-T23S-R29E
Papas Fritas 27-22 Fed Com 331H

Wellbore #1

Plan: Permit Plan 1

Standard Planning Report - Geographic

03 June, 2019

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference**	Well Papas Fritas 27-22 Fed Com 331H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3046.60ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3046.60ft
Site:	Sec 27-T23S-R29E	**North Reference:**	Grid
Well:	Papas Fritas 27-22 Fed Com 331H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Project Eddy County (NAD 83 NM Eastern)

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site Sec 27-T23S-R29E

Site Position:		**Northing:**	466,951.23 usft	**Latitude:**	32.283232
From:	Map	**Easting:**	650,153.88 usft	**Longitude:**	-103.981214
Position Uncertainty:	0.00 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.19 °

Well Papas Fritas 27-22 Fed Com 331H

Well Position	**+N/-S**	0.00 ft	**Northing:**	461,526.32 usft	**Latitude:**	32.268311
	+E/-W	0.00 ft	**Easting:**	651,122.74 usft	**Longitude:**	-103.978137
Position Uncertainty		0.50 ft	**Wellhead Elevation:**		**Ground Level:**	3,021.60 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	5/29/2019	6.94	60.01	47,724.13929528

Design Permit Plan 1

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	356.52

Plan Survey Tool Program **Date** 6/3/2019

	Depth From (ft)	Depth To (ft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	20,254.79	Permit Plan 1 (Wellbore #1)	MWD+HDGM OWSG MWD + HDGM	

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	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	
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,772.51	5.73	283.93	2,771.56	6.88	-27.74	1.00	1.00	0.00	283.93	
8,626.11	5.73	283.93	8,595.96	147.41	-594.51	0.00	0.00	0.00	0.00	
9,007.79	0.00	0.00	8,977.00	152.00	-613.00	1.50	-1.50	0.00	180.00	
9,357.83	0.00	0.00	9,327.04	152.00	-613.00	0.00	0.00	0.00	0.00	
10,257.83	90.00	359.79	9,900.00	724.96	-615.08	10.00	10.00	0.00	359.79	PBHL - Papas Fritas 2
20,254.79	90.00	359.79	9,900.00	10,721.85	-651.29	0.00	0.00	0.00	0.00	PBHL - Papas Fritas 2

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference**	Well Papas Fritas 27-22 Fed Com 331H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3046.60ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3046.60ft
Site:	Sec 27-T23S-R29E	**North Reference:**	Grid
Well:	Papas Fritas 27-22 Fed Com 331H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
100.00	0.00	0.00	100.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
200.00	0.00	0.00	200.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
300.00	0.00	0.00	300.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
400.00	0.00	0.00	400.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
500.00	0.00	0.00	500.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
600.00	0.00	0.00	600.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
700.00	0.00	0.00	700.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
800.00	0.00	0.00	800.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
900.00	0.00	0.00	900.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
1,000.00	0.00	0.00	1,000.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
1,100.00	0.00	0.00	1,100.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
1,200.00	0.00	0.00	1,200.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
1,300.00	0.00	0.00	1,300.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
1,400.00	0.00	0.00	1,400.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
1,500.00	0.00	0.00	1,500.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
1,600.00	0.00	0.00	1,600.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
1,700.00	0.00	0.00	1,700.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
1,800.00	0.00	0.00	1,800.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
1,900.00	0.00	0.00	1,900.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
2,000.00	0.00	0.00	2,000.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
2,100.00	0.00	0.00	2,100.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
2,200.00	0.00	0.00	2,200.00	0.00	0.00	461,526.32	651,122.74	32.268311	-103.978137
2,300.00	1.00	283.93	2,299.99	0.21	-0.85	461,526.53	651,121.90	32.268312	-103.978139
2,400.00	2.00	283.93	2,399.96	0.84	-3.39	461,527.16	651,119.36	32.268314	-103.978148
2,500.00	3.00	283.93	2,499.86	1.89	-7.62	461,528.21	651,115.12	32.268317	-103.978161
2,600.00	4.00	283.93	2,599.68	3.36	-13.55	461,529.68	651,109.20	32.268321	-103.978181
2,700.00	5.00	283.93	2,699.37	5.25	-21.16	461,531.57	651,101.58	32.268326	-103.978205
2,772.51	5.73	283.93	2,771.56	6.88	-27.74	461,533.20	651,095.01	32.268330	-103.978226
2,800.00	5.73	283.93	2,798.91	7.54	-30.40	461,533.86	651,092.34	32.268332	-103.978235
2,900.00	5.73	283.93	2,898.41	9.94	-40.08	461,536.26	651,082.66	32.268339	-103.978266
3,000.00	5.73	283.93	2,997.91	12.34	-49.77	461,538.66	651,072.98	32.268346	-103.978298
3,100.00	5.73	283.93	3,097.41	14.74	-59.45	461,541.06	651,063.30	32.268352	-103.978329
3,200.00	5.73	283.93	3,196.92	17.14	-69.13	461,543.46	651,053.61	32.268359	-103.978360
3,300.00	5.73	283.93	3,296.42	19.54	-78.81	461,545.86	651,043.93	32.268366	-103.978392
3,400.00	5.73	283.93	3,395.92	21.94	-88.50	461,548.26	651,034.25	32.268372	-103.978423
3,500.00	5.73	283.93	3,495.42	24.34	-98.18	461,550.66	651,024.57	32.268379	-103.978454
3,600.00	5.73	283.93	3,594.92	26.75	-107.86	461,553.07	651,014.88	32.268386	-103.978485
3,700.00	5.73	283.93	3,694.42	29.15	-117.54	461,555.47	651,005.20	32.268392	-103.978517
3,800.00	5.73	283.93	3,793.92	31.55	-127.22	461,557.87	650,995.52	32.268399	-103.978548
3,900.00	5.73	283.93	3,893.42	33.95	-136.91	461,560.27	650,985.84	32.268406	-103.978579
4,000.00	5.73	283.93	3,992.93	36.35	-146.59	461,562.67	650,976.16	32.268413	-103.978611
4,100.00	5.73	283.93	4,092.43	38.75	-156.27	461,565.07	650,966.47	32.268419	-103.978642
4,200.00	5.73	283.93	4,191.93	41.15	-165.95	461,567.47	650,956.79	32.268426	-103.978673
4,300.00	5.73	283.93	4,291.43	43.55	-175.64	461,569.87	650,947.11	32.268433	-103.978705
4,400.00	5.73	283.93	4,390.93	45.95	-185.32	461,572.27	650,937.43	32.268439	-103.978736
4,500.00	5.73	283.93	4,490.43	48.35	-195.00	461,574.67	650,927.74	32.268446	-103.978767
4,600.00	5.73	283.93	4,589.93	50.75	-204.68	461,577.07	650,918.06	32.268453	-103.978798
4,700.00	5.73	283.93	4,689.43	53.15	-214.37	461,579.47	650,908.38	32.268459	-103.978830
4,800.00	5.73	283.93	4,788.93	55.56	-224.05	461,581.88	650,898.70	32.268466	-103.978861
4,900.00	5.73	283.93	4,888.44	57.96	-233.73	461,584.28	650,889.01	32.268473	-103.978892
5,000.00	5.73	283.93	4,987.94	60.36	-243.41	461,586.68	650,879.33	32.268479	-103.978924
5,100.00	5.73	283.93	5,087.44	62.76	-253.10	461,589.08	650,869.65	32.268486	-103.978955
5,200.00	5.73	283.93	5,186.94	65.16	-262.78	461,591.48	650,859.97	32.268493	-103.978986

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference**	Well Papas Fritas 27-22 Fed Com 331H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3046.60ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3046.60ft
Site:	Sec 27-T23S-R29E	**North Reference:**	Grid
Well:	Papas Fritas 27-22 Fed Com 331H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,300.00	5.73	283.93	5,286.44	67.56	-272.46	461,593.88	650,850.28	32.268499	-103.979018
5,400.00	5.73	283.93	5,385.94	69.96	-282.14	461,596.28	650,840.60	32.268506	-103.979049
5,500.00	5.73	283.93	5,485.44	72.36	-291.83	461,598.68	650,830.92	32.268513	-103.979080
5,600.00	5.73	283.93	5,584.94	74.76	-301.51	461,601.08	650,821.24	32.268520	-103.979111
5,700.00	5.73	283.93	5,684.45	77.16	-311.19	461,603.48	650,811.56	32.268526	-103.979143
5,800.00	5.73	283.93	5,783.95	79.56	-320.87	461,605.88	650,801.87	32.268533	-103.979174
5,900.00	5.73	283.93	5,883.45	81.96	-330.55	461,608.28	650,792.19	32.268540	-103.979205
6,000.00	5.73	283.93	5,982.95	84.37	-340.24	461,610.69	650,782.51	32.268546	-103.979237
6,100.00	5.73	283.93	6,082.45	86.77	-349.92	461,613.09	650,772.83	32.268553	-103.979268
6,200.00	5.73	283.93	6,181.95	89.17	-359.60	461,615.49	650,763.14	32.268560	-103.979299
6,300.00	5.73	283.93	6,281.45	91.57	-369.28	461,617.89	650,753.46	32.268566	-103.979331
6,400.00	5.73	283.93	6,380.95	93.97	-378.97	461,620.29	650,743.78	32.268573	-103.979362
6,500.00	5.73	283.93	6,480.45	96.37	-388.65	461,622.69	650,734.10	32.268580	-103.979393
6,600.00	5.73	283.93	6,579.96	98.77	-398.33	461,625.09	650,724.41	32.268586	-103.979424
6,700.00	5.73	283.93	6,679.46	101.17	-408.01	461,627.49	650,714.73	32.268593	-103.979456
6,735.00	5.73	283.93	6,714.28	102.01	-411.40	461,628.33	650,711.34	32.268595	-103.979467
Cross Section @ 6735' MD, 0' FSL, 533' FWL									
6,800.00	5.73	283.93	6,778.96	103.57	-417.70	461,629.89	650,705.05	32.268600	-103.979487
6,900.00	5.73	283.93	6,878.46	105.97	-427.38	461,632.29	650,695.37	32.268606	-103.979518
7,000.00	5.73	283.93	6,977.96	108.37	-437.06	461,634.69	650,685.68	32.268613	-103.979550
7,100.00	5.73	283.93	7,077.46	110.77	-446.74	461,637.09	650,676.00	32.268620	-103.979581
7,200.00	5.73	283.93	7,176.96	113.18	-456.43	461,639.50	650,666.32	32.268626	-103.979612
7,300.00	5.73	283.93	7,276.46	115.58	-466.11	461,641.90	650,656.64	32.268633	-103.979644
7,400.00	5.73	283.93	7,375.97	117.98	-475.79	461,644.30	650,646.96	32.268640	-103.979675
7,500.00	5.73	283.93	7,475.47	120.38	-485.47	461,646.70	650,637.27	32.268647	-103.979706
7,600.00	5.73	283.93	7,574.97	122.78	-495.16	461,649.10	650,627.59	32.268653	-103.979737
7,700.00	5.73	283.93	7,674.47	125.18	-504.84	461,651.50	650,617.91	32.268660	-103.979769
7,800.00	5.73	283.93	7,773.97	127.58	-514.52	461,653.90	650,608.23	32.268667	-103.979800
7,900.00	5.73	283.93	7,873.47	129.98	-524.20	461,656.30	650,598.54	32.268673	-103.979831
8,000.00	5.73	283.93	7,972.97	132.38	-533.88	461,658.70	650,588.86	32.268680	-103.979863
8,100.00	5.73	283.93	8,072.47	134.78	-543.57	461,661.10	650,579.18	32.268687	-103.979894
8,200.00	5.73	283.93	8,171.98	137.18	-553.25	461,663.50	650,569.50	32.268693	-103.979925
8,300.00	5.73	283.93	8,271.48	139.59	-562.93	461,665.91	650,559.81	32.268700	-103.979957
8,400.00	5.73	283.93	8,370.98	141.99	-572.61	461,668.31	650,550.13	32.268707	-103.979988
8,500.00	5.73	283.93	8,470.48	144.39	-582.30	461,670.71	650,540.45	32.268713	-103.980019
8,600.00	5.73	283.93	8,569.98	146.79	-591.98	461,673.11	650,530.77	32.268720	-103.980050
8,626.11	5.73	283.93	8,595.96	147.41	-594.51	461,673.73	650,528.24	32.268722	-103.980059
8,700.00	4.62	283.93	8,669.55	149.02	-600.97	461,675.34	650,521.78	32.268726	-103.980079
8,800.00	3.12	283.93	8,769.32	150.64	-607.52	461,676.96	650,515.23	32.268731	-103.980101
8,900.00	1.62	283.93	8,869.23	151.63	-611.52	461,677.95	650,511.22	32.268734	-103.980114
9,000.00	0.12	283.93	8,969.21	152.00	-612.99	461,678.32	650,509.75	32.268735	-103.980118
9,007.79	0.00	0.00	8,977.00	152.00	-613.00	461,678.32	650,509.75	32.268735	-103.980118
9,100.00	0.00	0.00	9,069.21	152.00	-613.00	461,678.32	650,509.75	32.268735	-103.980118
9,200.00	0.00	0.00	9,169.21	152.00	-613.00	461,678.32	650,509.75	32.268735	-103.980118
9,300.00	0.00	0.00	9,269.21	152.00	-613.00	461,678.32	650,509.75	32.268735	-103.980118
9,357.83	0.00	0.00	9,327.04	152.00	-613.00	461,678.32	650,509.75	32.268735	-103.980118
KOP @ 9358' MD, 50' FSL, 330' FWL									
9,400.00	4.22	359.79	9,369.18	153.55	-613.01	461,679.87	650,509.74	32.268739	-103.980118
9,500.00	14.22	359.79	9,467.76	169.55	-613.06	461,695.87	650,509.68	32.268783	-103.980118
9,598.97	24.11	359.79	9,561.13	202.00	-613.18	461,728.32	650,509.56	32.268872	-103.980118
FTP @ 9599' MD, 100' FSL, 330' FWL									
9,600.00	24.22	359.79	9,562.07	202.42	-613.18	461,728.74	650,509.56	32.268873	-103.980118
9,700.00	34.22	359.79	9,649.23	251.17	-613.36	461,777.49	650,509.39	32.269007	-103.980118

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference**	Well Papas Fritas 27-22 Fed Com 331H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3046.60ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3046.60ft
Site:	Sec 27-T23S-R29E	**North Reference:**	Grid
Well:	Papas Fritas 27-22 Fed Com 331H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,800.00	44.22	359.79	9,726.61	314.32	-613.59	461,840.64	650,509.16	32.269181	-103.980119
9,900.00	54.22	359.79	9,791.85	389.94	-613.86	461,916.26	650,508.88	32.269389	-103.980119
10,000.00	64.22	359.79	9,842.96	475.74	-614.17	462,002.06	650,508.57	32.269625	-103.980119
10,100.00	74.22	359.79	9,878.40	569.12	-614.51	462,095.44	650,508.23	32.269881	-103.980119
10,200.00	84.22	359.79	9,897.08	667.23	-614.87	462,193.55	650,507.88	32.270151	-103.980119
10,257.83	90.00	359.79	9,900.00	724.96	-615.08	462,251.27	650,507.67	32.270310	-103.980119
10,300.00	90.00	359.79	9,900.00	767.13	-615.23	462,293.45	650,507.52	32.270426	-103.980119
10,400.00	90.00	359.79	9,900.00	867.13	-615.59	462,393.45	650,507.16	32.270700	-103.980119
10,500.00	90.00	359.79	9,900.00	967.13	-615.95	462,493.44	650,506.79	32.270975	-103.980119
10,600.00	90.00	359.79	9,900.00	1,067.13	-616.32	462,593.44	650,506.43	32.271250	-103.980119
10,700.00	90.00	359.79	9,900.00	1,167.13	-616.68	462,693.44	650,506.07	32.271525	-103.980119
10,800.00	90.00	359.79	9,900.00	1,267.12	-617.04	462,793.44	650,505.71	32.271800	-103.980120
10,900.00	90.00	359.79	9,900.00	1,367.12	-617.40	462,893.44	650,505.34	32.272075	-103.980120
11,000.00	90.00	359.79	9,900.00	1,467.12	-617.76	462,993.44	650,504.98	32.272350	-103.980120
11,100.00	90.00	359.79	9,900.00	1,567.12	-618.13	463,093.44	650,504.62	32.272625	-103.980120
11,200.00	90.00	359.79	9,900.00	1,667.12	-618.49	463,193.44	650,504.26	32.272899	-103.980120
11,300.00	90.00	359.79	9,900.00	1,767.12	-618.85	463,293.44	650,503.89	32.273174	-103.980120
11,400.00	90.00	359.79	9,900.00	1,867.12	-619.21	463,393.44	650,503.53	32.273449	-103.980120
11,500.00	90.00	359.79	9,900.00	1,967.12	-619.58	463,493.44	650,503.17	32.273724	-103.980120
11,600.00	90.00	359.79	9,900.00	2,067.12	-619.94	463,593.44	650,502.81	32.273999	-103.980120
11,700.00	90.00	359.79	9,900.00	2,167.12	-620.30	463,693.43	650,502.45	32.274274	-103.980121
11,800.00	90.00	359.79	9,900.00	2,267.12	-620.66	463,793.43	650,502.08	32.274549	-103.980121
11,900.00	90.00	359.79	9,900.00	2,367.12	-621.02	463,893.43	650,501.72	32.274824	-103.980121
12,000.00	90.00	359.79	9,900.00	2,467.12	-621.39	463,993.43	650,501.36	32.275099	-103.980121
12,100.00	90.00	359.79	9,900.00	2,567.12	-621.75	464,093.43	650,501.00	32.275373	-103.980121
12,200.00	90.00	359.79	9,900.00	2,667.12	-622.11	464,193.43	650,500.63	32.275648	-103.980121
12,300.00	90.00	359.79	9,900.00	2,767.11	-622.47	464,293.43	650,500.27	32.275923	-103.980121
12,400.00	90.00	359.79	9,900.00	2,867.11	-622.84	464,393.43	650,499.91	32.276198	-103.980121
12,500.00	90.00	359.79	9,900.00	2,967.11	-623.20	464,493.43	650,499.55	32.276473	-103.980121
12,600.00	90.00	359.79	9,900.00	3,067.11	-623.56	464,593.43	650,499.19	32.276748	-103.980122
12,700.00	90.00	359.79	9,900.00	3,167.11	-623.92	464,693.43	650,498.82	32.277023	-103.980122
12,800.00	90.00	359.79	9,900.00	3,267.11	-624.29	464,793.43	650,498.46	32.277298	-103.980122
12,900.00	90.00	359.79	9,900.00	3,367.11	-624.65	464,893.42	650,498.10	32.277573	-103.980122
13,000.00	90.00	359.79	9,900.00	3,467.11	-625.01	464,993.42	650,497.74	32.277847	-103.980122
13,100.00	90.00	359.79	9,900.00	3,567.11	-625.37	465,093.42	650,497.37	32.278122	-103.980122
13,200.00	90.00	359.79	9,900.00	3,667.11	-625.73	465,193.42	650,497.01	32.278397	-103.980122
13,300.00	90.00	359.79	9,900.00	3,767.11	-626.10	465,293.42	650,496.65	32.278672	-103.980122
13,400.00	90.00	359.79	9,900.00	3,867.11	-626.46	465,393.42	650,496.29	32.278947	-103.980122
13,500.00	90.00	359.79	9,900.00	3,967.11	-626.82	465,493.42	650,495.92	32.279222	-103.980122
13,600.00	90.00	359.79	9,900.00	4,067.11	-627.18	465,593.42	650,495.56	32.279497	-103.980123
13,700.00	90.00	359.79	9,900.00	4,167.11	-627.55	465,693.42	650,495.20	32.279772	-103.980123
13,800.00	90.00	359.79	9,900.00	4,267.10	-627.91	465,793.42	650,494.84	32.280046	-103.980123
13,900.00	90.00	359.79	9,900.00	4,367.10	-628.27	465,893.42	650,494.48	32.280321	-103.980123
14,000.00	90.00	359.79	9,900.00	4,467.10	-628.63	465,993.42	650,494.11	32.280596	-103.980123
14,100.00	90.00	359.79	9,900.00	4,567.10	-628.99	466,093.41	650,493.75	32.280871	-103.980123
14,200.00	90.00	359.79	9,900.00	4,667.10	-629.36	466,193.41	650,493.39	32.281146	-103.980123
14,300.00	90.00	359.79	9,900.00	4,767.10	-629.72	466,293.41	650,493.03	32.281421	-103.980123
14,400.00	90.00	359.79	9,900.00	4,867.10	-630.08	466,393.41	650,492.66	32.281696	-103.980123
14,500.00	90.00	359.79	9,900.00	4,967.10	-630.44	466,493.41	650,492.30	32.281971	-103.980124
14,600.00	90.00	359.79	9,900.00	5,067.10	-630.81	466,593.41	650,491.94	32.282246	-103.980124
14,700.00	90.00	359.79	9,900.00	5,167.10	-631.17	466,693.41	650,491.58	32.282520	-103.980124
14,800.00	90.00	359.79	9,900.00	5,267.10	-631.53	466,793.41	650,491.22	32.282795	-103.980124
14,900.00	90.00	359.79	9,900.00	5,367.10	-631.89	466,893.41	650,490.85	32.283070	-103.980124

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference**	Well Papas Fritas 27-22 Fed Com 331H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3046.60ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3046.60ft
Site:	Sec 27-T23S-R29E	**North Reference:**	Grid
Well:	Papas Fritas 27-22 Fed Com 331H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,915.00	90.00	359.79	9,900.00	5,382.10	-631.95	466,908.41	650,490.80	32.283111	-103.980124
Cross Section @ 14915' MD, 0' FSL, 330' FWL									
15,000.00	90.00	359.79	9,900.00	5,467.10	-632.25	466,993.41	650,490.49	32.283345	-103.980124
15,100.00	90.00	359.79	9,900.00	5,567.10	-632.62	467,093.41	650,490.13	32.283620	-103.980124
15,200.00	90.00	359.79	9,900.00	5,667.10	-632.98	467,193.40	650,489.77	32.283895	-103.980124
15,300.00	90.00	359.79	9,900.00	5,767.10	-633.34	467,293.40	650,489.40	32.284170	-103.980124
15,400.00	90.00	359.79	9,900.00	5,867.09	-633.70	467,393.40	650,489.04	32.284445	-103.980124
15,500.00	90.00	359.79	9,900.00	5,967.09	-634.07	467,493.40	650,488.68	32.284720	-103.980125
15,600.00	90.00	359.79	9,900.00	6,067.09	-634.43	467,593.40	650,488.32	32.284994	-103.980125
15,700.00	90.00	359.79	9,900.00	6,167.09	-634.79	467,693.40	650,487.95	32.285269	-103.980125
15,800.00	90.00	359.79	9,900.00	6,267.09	-635.15	467,793.40	650,487.59	32.285544	-103.980125
15,900.00	90.00	359.79	9,900.00	6,367.09	-635.52	467,893.40	650,487.23	32.285819	-103.980125
16,000.00	90.00	359.79	9,900.00	6,467.09	-635.88	467,993.40	650,486.87	32.286094	-103.980125
16,100.00	90.00	359.79	9,900.00	6,567.09	-636.24	468,093.40	650,486.51	32.286369	-103.980125
16,200.00	90.00	359.79	9,900.00	6,667.09	-636.60	468,193.40	650,486.14	32.286644	-103.980125
16,300.00	90.00	359.79	9,900.00	6,767.09	-636.96	468,293.40	650,485.78	32.286919	-103.980125
16,400.00	90.00	359.79	9,900.00	6,867.09	-637.33	468,393.39	650,485.42	32.287193	-103.980126
16,500.00	90.00	359.79	9,900.00	6,967.09	-637.69	468,493.39	650,485.06	32.287468	-103.980126
16,600.00	90.00	359.79	9,900.00	7,067.09	-638.05	468,593.39	650,484.69	32.287743	-103.980126
16,700.00	90.00	359.79	9,900.00	7,167.09	-638.41	468,693.39	650,484.33	32.288018	-103.980126
16,800.00	90.00	359.79	9,900.00	7,267.09	-638.78	468,793.39	650,483.97	32.288293	-103.980126
16,900.00	90.00	359.79	9,900.00	7,367.08	-639.14	468,893.39	650,483.61	32.288568	-103.980126
17,000.00	90.00	359.79	9,900.00	7,467.08	-639.50	468,993.39	650,483.25	32.288843	-103.980126
17,100.00	90.00	359.79	9,900.00	7,567.08	-639.86	469,093.39	650,482.88	32.289118	-103.980126
17,200.00	90.00	359.79	9,900.00	7,667.08	-640.22	469,193.39	650,482.52	32.289393	-103.980126
17,300.00	90.00	359.79	9,900.00	7,767.08	-640.59	469,293.39	650,482.16	32.289667	-103.980127
17,400.00	90.00	359.79	9,900.00	7,867.08	-640.95	469,393.39	650,481.80	32.289942	-103.980127
17,500.00	90.00	359.79	9,900.00	7,967.08	-641.31	469,493.39	650,481.43	32.290217	-103.980127
17,600.00	90.00	359.79	9,900.00	8,067.08	-641.67	469,593.38	650,481.07	32.290492	-103.980127
17,700.00	90.00	359.79	9,900.00	8,167.08	-642.04	469,693.38	650,480.71	32.290767	-103.980127
17,800.00	90.00	359.79	9,900.00	8,267.08	-642.40	469,793.38	650,480.35	32.291042	-103.980127
17,900.00	90.00	359.79	9,900.00	8,367.08	-642.76	469,893.38	650,479.99	32.291317	-103.980127
18,000.00	90.00	359.79	9,900.00	8,467.08	-643.12	469,993.38	650,479.62	32.291592	-103.980127
18,100.00	90.00	359.79	9,900.00	8,567.08	-643.49	470,093.38	650,479.26	32.291866	-103.980127
18,200.00	90.00	359.79	9,900.00	8,667.08	-643.85	470,193.38	650,478.90	32.292141	-103.980127
18,300.00	90.00	359.79	9,900.00	8,767.08	-644.21	470,293.38	650,478.54	32.292416	-103.980128
18,400.00	90.00	359.79	9,900.00	8,867.07	-644.57	470,393.38	650,478.17	32.292691	-103.980128
18,500.00	90.00	359.79	9,900.00	8,967.07	-644.93	470,493.38	650,477.81	32.292966	-103.980128
18,600.00	90.00	359.79	9,900.00	9,067.07	-645.30	470,593.38	650,477.45	32.293241	-103.980128
18,700.00	90.00	359.79	9,900.00	9,167.07	-645.66	470,693.37	650,477.09	32.293516	-103.980128
18,800.00	90.00	359.79	9,900.00	9,267.07	-646.02	470,793.37	650,476.72	32.293791	-103.980128
18,900.00	90.00	359.79	9,900.00	9,367.07	-646.38	470,893.37	650,476.36	32.294066	-103.980128
19,000.00	90.00	359.79	9,900.00	9,467.07	-646.75	470,993.37	650,476.00	32.294340	-103.980128
19,100.00	90.00	359.79	9,900.00	9,567.07	-647.11	471,093.37	650,475.64	32.294615	-103.980128
19,200.00	90.00	359.79	9,900.00	9,667.07	-647.47	471,193.37	650,475.28	32.294890	-103.980129
19,300.00	90.00	359.79	9,900.00	9,767.07	-647.83	471,293.37	650,474.91	32.295165	-103.980129
19,400.00	90.00	359.79	9,900.00	9,867.07	-648.19	471,393.37	650,474.55	32.295440	-103.980129
19,500.00	90.00	359.79	9,900.00	9,967.07	-648.56	471,493.37	650,474.19	32.295715	-103.980129
19,600.00	90.00	359.79	9,900.00	10,067.07	-648.92	471,593.37	650,473.83	32.295990	-103.980129
19,700.00	90.00	359.79	9,900.00	10,167.07	-649.28	471,693.37	650,473.46	32.296265	-103.980129
19,800.00	90.00	359.79	9,900.00	10,267.07	-649.64	471,793.37	650,473.10	32.296540	-103.980129
19,900.00	90.00	359.79	9,900.00	10,367.07	-650.01	471,893.36	650,472.74	32.296814	-103.980129
20,000.00	90.00	359.79	9,900.00	10,467.06	-650.37	471,993.36	650,472.38	32.297089	-103.980129
20,100.00	90.00	359.79	9,900.00	10,567.06	-650.73	472,093.36	650,472.02	32.297364	-103.980130

Database:	EDM r5000.141_Prod US	**Local Co-ordinate Reference**	Well Papas Fritas 27-22 Fed Com 331H
Company:	WCDSC Permian NM	**TVD Reference:**	RKB @ 3046.60ft
Project:	Eddy County (NAD 83 NM Eastern)	**MD Reference:**	RKB @ 3046.60ft
Site:	Sec 27-T23S-R29E	**North Reference:**	Grid
Well:	Papas Fritas 27-22 Fed Com 331H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Permit Plan 1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
20,174.79	90.00	359.79	9,900.00	10,641.85	-651.00	472,168.15	650,471.74	32.297570	-103.980130
LTP @ 20175' MD, 100' FNL, 330' FWL									
20,200.00	90.00	359.79	9,900.00	10,667.06	-651.09	472,193.36	650,471.65	32.297639	-103.980130
20,254.78	90.00	359.79	9,900.00	10,721.84	-651.29	472,248.14	650,471.45	32.297790	-103.980130
PBHL; 20' FNL, 330' FWL									
20,254.79	90.00	359.79	9,900.00	10,721.85	-651.29	472,248.15	650,471.45	32.297790	-103.980130

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL - Papas Fritas 27-	0.00	0.00	0.00	10,721.85	-651.29	472,248.15	650,471.45	32.297790	-103.980130
- plan misses target center by 9900.00ft at 20254.79ft MD (9900.00 TVD, 10721.85 N, -651.29 E)									
- Point									

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
6,735.00	6,714.28	102.01	-411.40	Cross Section @ 6735' MD, 0' FSL, 533' FWL
9,357.83	9,327.04	152.00	-613.00	KOP @ 9358' MD, 50' FSL, 330' FWL
9,598.97	9,561.13	202.00	-613.18	FTP @ 9599' MD, 100' FSL, 330' FWL
14,915.00	9,900.00	5,382.10	-631.95	Cross Section @ 14915' MD, 0' FSL, 330' FWL
20,174.79	9,900.00	10,641.85	-651.00	LTP @ 20175' MD, 100' FNL, 330' FWL
20,254.78	9,900.00	10,721.84	-651.29	PBHL; 20' FNL, 330' FWL

Devon Energy

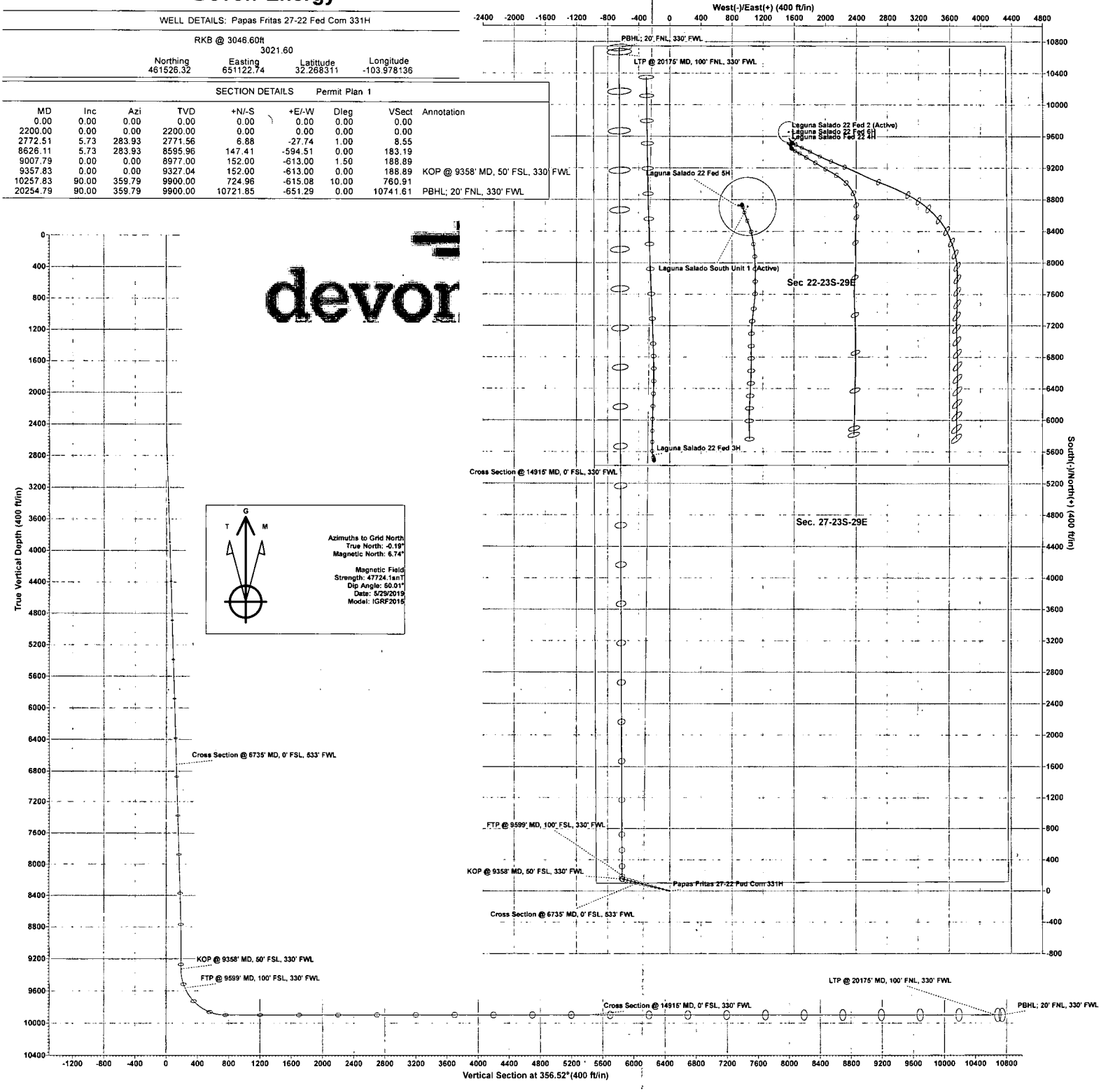
WELL DETAILS: Papas Fritas 27-22 Fed Com 331H

RKB @ 3046.60ft
3021.60

Northing	Easting	Latitude	Longitude
461526.32	651122.74	32.268311	-103.978136

SECTION DETAILS Permit Plan 1

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2200.00	0.00	0.00	2200.00	0.00	0.00	0.00	0.00	
2772.51	5.73	283.93	2771.56	6.88	-27.74	1.00	8.55	
8626.11	5.73	283.93	8595.96	147.41	-594.51	0.00	183.19	
9007.79	0.00	0.00	8977.00	152.00	-613.00	1.50	188.89	
9357.83	0.00	0.00	9327.04	152.00	-613.00	0.00	188.89	KOP @ 9358' MD, 50' FSL, 330' FWL
10257.83	90.00	359.79	9900.00	724.96	-615.08	10.00	760.91	
20254.79	90.00	359.79	9900.00	10721.85	-651.29	0.00	10741.61	PBHL; 20' FNL, 330' FWL



U. S. Steel Tubular Products

5.500" 17.00lbs/ft (0.304" Wall) P110

2/21/2019 8:12:22 AM

MECHANICAL PROPERTIES	Pipe	BTC	LTC	STC	
Minimum Yield Strength	110,000	--	--	--	psi
Maximum Yield Strength	140,000	--	--	--	psi
Minimum Tensile Strength	125,000	--	--	--	psi
DIMENSIONS	**Pipe**	**BTC**	**LTC**	**STC**	
Outside Diameter	5.500	6.050	6.050	--	in.
Wall Thickness	0.304	--	--	--	in.
Inside Diameter	4.892	4.892	4.892	--	in.
Standard Drift	4.767	4.767	4.767	--	in.
Alternate Drift	--	--	--	--	in.
Nominal Linear Weight, T&C	17.00	--	--	--	lbs/ft
Plain End Weight	16.89	--	--	--	lbs/ft
PERFORMANCE	**Pipe**	**BTC**	**LTC**	**STC**	
Minimum Collapse Pressure	7,480	7,480	7,480	--	psi
Minimum Internal Yield Pressure	10,640	10,640	10,640	--	psi
Minimum Pipe Body Yield Strength	546	--	--	--	1,000 lbs
Joint Strength	--	568	445	--	1,000 lbs
Reference Length	--	22,271	17,449	--	ft
MAKE-UP DATA	**Pipe**	**BTC**	**LTC**	**STC**	
Make-Up Loss	--	4.13	3.50	--	in.
Minimum Make-Up Torque	--	--	3,470	--	ft-lbs
Maximum Make-Up Torque	--	--	5,780	--	ft-lbs

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

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

CASING PERFORMANCE Data Sheet

vallourec

O.D.	PE LB/FT	T&C LB/FT	GRADE
8.625	31.13	32.00	P110EC

Grade - Material Properties

Minimum Yield Strength:	125	ksi
Maximum Yield Strength:	140	ksi
Minimum Tensile Strength:	135	ksi

Pipe Body Data (PE)

Geometry

Nominal ID:	7.921	inch
Wall:	0.352	inch
Min. Wall % (API = 87.5%):	87.5	%
API Drift:	7.796	inch
Special Drift*:	7.875	inch

Performance

Pipe Body Yield Strength:	1,144	kips
Collapse Resistance:	3,470	psi
Internal Yield Pressure (*API Historical*):	8,930	psi

API Connection Data

SC Internal Pressure:	8,930	psi
SC Joint Strength:	793	kips
LC Internal Pressure:	8,930	psi
LC Joint Strength:	887	kips
BC Internal Pressure:	8,930	psi
BC Joint Strength:	1,121	kips

SC Torque (ft-lbs)

minimum:	optimum:	maximum:
5,950	7,933	9,916

LC Torque (ft-lbs)

minimum:	optimum:	maximum:
6,651	8,868	11,085

*Special drift must be ordered or API drift will be used for actual drifting of product.

**If above API connections do not suit your needs, VAM® premium connections are available up to 100% of pipe body ratings.

1. Geologic Formations

TVD of target	9900	Pilot hole depth	N/A
MD at TD:	20255	Deepest expected fresh water	

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone?	Hazards*
Rustler	179		
Top of Salt	534		
Base of Salt	3014		
Delaware	3014		
Bone Spring 1st	7689		
Bone Spring 2nd	8517		
Bone Spring 3rd	9634		
Wolfcamp	9962		

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

2. Casing Program (Primary Design)

Hole Size	Casing Interval		Csg. Size	Wt (PPF)	Grade	Conn	Min SF Collapse	Min SF Burst	Min SF Tension
	From	To							
17 1/2	0	204 TVD	13 3/8	48.0	H40	STC	1.125	1.25	1.6
9 7/8	0	8542 TVD	7 5/8	29.7	P110	Flushmax III	1.125	1.25	1.6
6 3/4	0	TD	5 1/2	20.0	P110	Vam SG	1.125	1.25	1.6
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet

• All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 IILB.1.h Must have table for continengcy casing.
• Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.
• A variance is requested for collapse rating on intermediate casing. Operator will keep pipe full while running casing.

• Int casing shoe will be selected based on drilling data/gamma, setting depth with be revised accordingly if needed.

• A variance is requested to wave the centralizer requirement for the Intermediate casing and production casing.

• A variance is requested to set intermediate casing in the curve if hole conditions dictate that a higher shoe strength is required.

Casing Program (Alternative Design)

Hole Size	Casing Interval		Csg. Size	Wt (PPF)	Grade	Conn	Min SF Collapse	Min SF Burst	Min SF Tension
	From	To							
17 1/2	0	204 TVD	13 3/8	48.0	H40	STC	1.125	1.25	1.6
9 7/8	0	8542 TVD	8 5/8	32.0	P110	TLW	1.125	1.25	1.6
7 7/8	0	TD	5 1/2	17.0	P110	BTC	1.125	1.25	1.6
				BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet

• All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 IILB.1.h Must have table for continengcy casing.
• Rustler top will be validated via drilling parameters (i.e. reduction in ROP) and surface casing setting depth revised accordingly if needed.
• A variance is requested for collapse rating on intermediate casing. Operator will keep pipe full while running casing.
• Int casing shoe will be selected based on drilling data/gamma, setting depth with be revised accordingly if needed.
• A variance is requested to wave the centralizer requirement for the Intermediate casing and production casing.
•Variance requested to drill 10.625" hole instead of 9.875" for intermediate 1, the 8.625" connection will change from TLW to BTC.
• A variance is requested to set intermediate casing in the curve if hole conditions dictate that a higher shoe strength is required.

	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 specficition 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	TOC	Wt. (lb/gal)	Yld (ft3/sack)	Slurry Description
Surface	186	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	704	Surf	9	3.27	Lead: Class C Cement + additives
	104	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Int 1 Two Stage w/ DV @ TVD of Delaware	660	Surf	9	3.27	1st stage Lead: Class C Cement + additives
	93	500' above shoe	13.2	1.44	1st stage Tail: Class H / C + additives
	225	Surf	9	3.27	2nd stage Lead: Class C Cement + additives
	93	500' above DV	13.2	1.44	2nd stage Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	9	1.44	Squeeze Lead: Class C Cement + additives
	704	Surf	9	3.27	Lead: Class C Cement + additives
	104	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Production	290	0	9.0	3.3	Lead: Class H /C + additives
	695	9358	13.2	1.4	Tail: Class H / C + additives

If a DV tool is ran the depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Slurry weights will be adjusted based on estimated fracture gradient of the formation. 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	% Excess
Surface	50%
Intermediate 1	30%
Intermediate 1 (Two Stage)	25%
Prod	10%

3. Cementing Program (Alternative Design)

Casing	# Sks	TOC	Wt. ppg	Yld (ft3/sack)	Slurry Description
Surface	186	Surf	13.2	1.44	Lead: Class C Cement + additives
Int 1	423	Surf	9	3.27	Lead: Class C Cement + additives
	67	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Int 1 Two Stage w DV @ ~4500	388	Surf	9	3.27	1st stage Lead: Class C Cement + additives
	55	500' above shoe	13.2	1.44	1st stage Tail: Class H / C + additives
	141	Surf	9	3.27	2nd stage Lead: Class C Cement + additives
	55	500' above DV	13.2	1.44	2nd stage Tail: Class H / C + additives
Int 1 Intermediate Squeeze	As Needed	Surf	13.2	1.44	Squeeze Lead: Class C Cement + additives
	423	Surf	9	3.27	Lead: Class C Cement + additives
	67	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Int 1 (10.625" Hole Size)	684	Surf	9	3.27	Lead: Class C Cement + additives
	105	4000' above shoe	13.2	1.44	Tail: Class H / C + additives
Production	545	0	9.0	3.3	Lead: Class H /C + additives
	1442	9358	13.2	1.4	Tail: Class H / C + additives

If a DV tool is ran the depth(s) will be adjusted based on hole conditions and cement volumes will be adjusted proportionally. Slurry weights will be adjusted based on estimated fracture gradient of the formation. 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	% Excess
Surface	50%
Intermediate 1	30%
Intermediate 1 (Two Stage)	25%
Prod	10%

4. Pressure Control Equipment (Three String Design)

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
Int 1	13-58"	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

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	8.5-9

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

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

6. Logging and Testing Procedures

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

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

7. Drilling Conditions

Condition	Specfiy what type and where?
BH pressure at deepest TVD	4633
Abnormal temperature	No

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

Hydrogren Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S 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. A that time an approved BOP stack will be nippled up and tested on the wellhead before drilling operations commences on each well.
    a. The NMOCD will be contacted / notified 24 hours before the drilling rig moves back on to the pad with the pre-set surface casing.

Attachments

X Directional Plan
_____ Other, describe

Continental CONTITECH

Fluid Technology

ContiTech Beattie Corp.
Website: www.contitechbeattie.com

Monday, June 14, 2010

RE: Drilling & Production Hoses
Lifting & Safety Equipment

To Helmerich & Payne,

A Continental ContiTech hose assembly can perform as intended and suitable for the application regardless of whether the hose is secured or unsecured in its configuration. As a manufacturer of High Pressure Hose Assemblies for use in Drilling & Production, we do offer the corresponding lifting and safety equipment, this has the added benefit of easing the lifting and handling of each hose assembly whilst affording hose longevity by ensuring correct handling methods and procedures as well as securing the hose in the unlikely event of a failure; but in no way does the lifting and safety equipment affect the performance of the hoses providing the hoses have been handled and installed correctly it is good practice to use lifting & safety equipment but not mandatory

Should you have any questions or require any additional information/clarifications then please do not hesitate to contact us.

ContiTech Beattie is part of the Continental AG Corporation and can offer the full support resources associated with a global organization.

Best regards,

Robin Hodgson
Sales Manager
ContiTech Beattie Corp

ContiTech Beattie Corp,
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Houston, TX 77041
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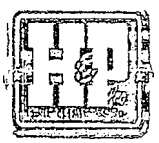


RIG 212

PHOENIX

QUALITY DOCUMENT

PHOENIX RUBBER INDUSTRIAL LTD.

6728 Szeged, Budapesti út 10. Hungary • H–6701 Szeged, P. O. Box 152
Phone: (3662) 566-737 • Fax: (3662) 566-738

SALES & MARKETING: H–1092 Budapest, Ráday u. 42-44. Hungary • H–1440 Budapest, P. O. Box 26
Phone: (361) 456-4200 · Fax: (361) 217-2972, 456-4273 · www.taurusemerge.hu

QUALITY CONTROL INSPECTION AND TEST CERTIFICATE				CERT. N°: 552	
PURCHASER: Phoenix Beattie Co.				P.O. N°: 1519FA-871	
PHOENIX RUBBER order N°: 170466		HOSE TYPE: 3" ID		Choke and Kill Hose	
HOSE SERIAL N°: 34128		NOMINAL / ACTUAL LENGTH:		11,43 m	
W.P. 68,96 MPa	10000 psi	T.P. 103,4 MPa	15000 psi	Duration: 60	min.

Pressure test with water at ambient temperature

See attachment. (1 page)

↑ 10 mm = 10 Min.

→ 10 mm = 25 MPa

COUPLINGS

Type	Serial N°	Quality	Heat N°
3" coupling with	720 719	AISI 4130	C7626
4 1/16" Flange end		AISI 4130	47357

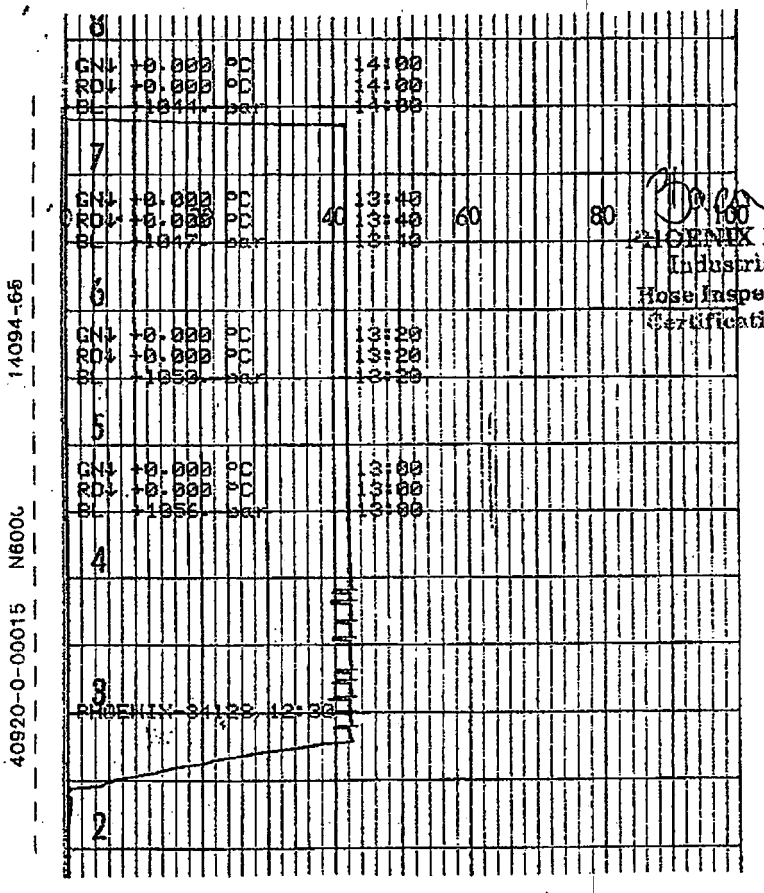
API Spec 16 C
Temperature rate:"B"

All metal parts are flawless

WE CERTIFY THAT THE ABOVE HOSE HAS BEEN MANUFACTURED IN ACCORDANCE WITH THE TERMS OF THE ORDER AND PRESSURE TESTED AS ABOVE WITH SATISFACTORY RESULT.

Date:	Inspector	Quality Control
29. April. 2002.		PHOENIX RUBBER Industrial Ltd. Hose Inspection and Certification Dept.

CERTIFIED TRUE COPY
PHOENIX RUBBER Q.C.



PHOENIX RUBBER
Industrial Ltd.
Hose Inspection and
Certification Dept.

VERIFIED TRUE CO
PHOENIX RUBBER LTD.