

**OCD - HOBBS**  
**10/26/2020**  
**RECEIVED**

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**

1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No.
1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		6. If Indian, Allottee or Tribe Name
1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		7. If Unit or CA Agreement, Name and No.
		8. Lease Name and Well No.  [326534]
2. Name of Operator <b>COG OPERATING LLC [229137]</b> <b>See BLM Form 3160-5</b>		9. API Well No. <b>30-025-47933</b>
3a. Address	3b. Phone No. (include area code)	10. Field and Pool, or Exploratory  [17980]
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface At proposed prod. zone		11. Sec., T. R. M. or Blk. and Survey or Area
14. Distance in miles and direction from nearest town or post office*		12. County or Parish
		13. State
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No of acres in lease	17. Spacing Unit dedicated to this well
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth	20. BLM/BIA Bond No. in file
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	22. Approximate date work will start*	23. Estimated duration
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.   | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan.  | 5. Operator certification.  |
| 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). | 6. Such other site specific information and/or plans as may be requested by the BLM.            |

25. Signature	Name (Printed/Typed)	Date
Title		
Approved by (Signature)	Name (Printed/Typed)	Date
Title		
Office		

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.

**GCP Rec 10/26/2020**

**SL**

(Continued on page 2)

**APPROVED WITH CONDITIONS**  
**Approval Date: 07/11/2019**

**KZ**  
**10/27/2020**

\*(Instructions on page 2)

# PECOS DISTRICT

## DRILLING CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	ENERGEN RESOURCES CORPORATION
<b>LEASE NO.:</b>	NMNM136223
<b>WELL NAME &amp; NO.:</b>	604H – PITCHBLENDE FED 24-25
<b>SURFACE HOLE FOOTAGE:</b>	250'/N & 665'/E
<b>BOTTOM HOLE FOOTAGE:</b>	100'/S & 990'/E
<b>LOCATION:</b>	SECTION 24, T25S, R34E, NMPM
<b>COUNTY:</b>	LEA

COA

H2S	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
Potash	<input checked="" type="radio"/> None	<input type="radio"/> Secretary	<input type="radio"/> R-111-P
Cave/Karst Potential	<input checked="" type="radio"/> Low	<input type="radio"/> Medium	<input type="radio"/> High
Variance	<input type="radio"/> None	<input checked="" type="radio"/> Flex Hose	<input type="radio"/> Other
Wellhead	<input type="radio"/> Conventional	<input type="radio"/> Multibowl	<input checked="" type="radio"/> Both
Other	<input type="checkbox"/> 4 String Area	<input type="checkbox"/> Capitan Reef	<input type="checkbox"/> WIPP
Other	<input type="checkbox"/> Fluid Filled	<input type="checkbox"/> Cement Squeeze	<input type="checkbox"/> Pilot Hole
Special Requirements	<input type="checkbox"/> Water Disposal	<input type="checkbox"/> COM	<input type="checkbox"/> Unit

### A. HYDROGEN SULFIDE

A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Wolfcamp** 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 \_ feet (a minimum of **25 feet (Lea County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

- b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **10-3/4** inch intermediate casing is:

**Option 1 (Single Stage):**

- Cement to surface. If cement does not circulate see B.1.a, c-d above.  
**Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash. Excess cement calculates**

**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.**
3. The minimum required fill of cement behind the **7-5/8** inch 2<sup>nd</sup> intermediate casing is:

**Option 1 (Single Stage):**

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

**Option 2:**

Operator has proposed 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. **Excess calculates to negative 1% - additional cement might be required.**
  - b. Second stage above DV tool:
    - 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.**
4. The minimum required fill of cement behind the **5 1/2 X 4 1/2** inch production casing is:
- Cement should tie-back **200 feet** into the previous casing. Operator shall provide method of verification.

### **C. PRESSURE CONTROL**

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

#### **Option 1:**

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

#### **Option 2:**

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 **10,000 (10M) psi. Variance is**

**approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.**

- a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
- b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- c. Manufacturer representative shall install the test plug for the initial BOP test.
- d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

## GENERAL REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

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

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

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

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
  - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
  - b. When the operator proposes to set surface casing with Spudder Rig
    - Notify the BLM when moving in and removing the Spudder Rig.
    - Notify the BLM when moving in the 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
    - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

A. CASING

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

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

**B. PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
  - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the



plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.
- c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

C. DRILLING MUD

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

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

**NMK722019**



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

# Operator Certification Data Report

06/29/2020

## Operator Certification

*I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.*

**NAME:** Jenifer Sorley

**Signed on:** 06/07/2018

**Title:** Regulatory Analyst

**Street Address:** 1101 17th Street, Suite 1800

**City:** Denver

**State:** CO

**Zip:** 80202

**Phone:** (432)315-0138

**Email address:** Jenifer.Sorley@cdevinc.com

## Field Representative

**Representative Name:**

**Street Address:** 3510 N A St Bldgs A & B

**City:** Midland

**State:** TX

**Zip:** 79705

**Phone:** (432)818-1732

**Email address:** jsorley@diamondbackenergy.com



APD ID: 10400036150

Submission Date: 11/15/2018

Highlighted data  
reflects the most  
recent changes

Operator Name: ENERGEN RESOURCES CORPORATION

Well Name: PITCHBLEND FED 24-25

Well Number: 604H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

## Section 1 - General

APD ID: 10400036150

Tie to previous NOS? Y

Submission Date: 11/15/2018

BLM Office: CARLSBAD

User: Jenifer Sorley

Title: Regulatory Analyst

Federal/Indian APD: FED

Is the first lease penetrated for production Federal or Indian? FED

Lease number: NMNM136223

Lease Acres: 2160.08

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? NO

Permitting Agent? NO

APD Operator: ENERGEN RESOURCES CORPORATION

Operator letter of designation:

## Operator Info

Operator Organization Name: ENERGEN RESOURCES CORPORATION

Operator Address: 3510 North A Street Bldg A & B

Zip: 79705

Operator PO Box:

Operator City: Midland

State: TX

Operator Phone: (432)687-1155

Operator Internet Address: midlandrrc@energen.com

## Section 2 - Well Information

Well in Master Development Plan? NO

Master Development Plan name:

Well in Master SUPO? NO

Master SUPO name:

Well in Master Drilling Plan? NO

Master Drilling Plan name:

Well Name: PITCHBLEND FED 24-25

Well Number: 604H

Well API Number:

Field/Pool or Exploratory? Exploratory

Field Name: MALAGA

Pool Name: WC-025 G-09  
S243516D

Is the proposed well in an area containing other mineral resources? NATURAL GAS,OIL

**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLENDE FED 24-25

**Well Number:** 604H

**Is the proposed well in an area containing other mineral resources?** NATURAL GAS,OIL

**Is the proposed well in a Helium production area?** N **Use Existing Well Pad?** NO **New surface disturbance?**

**Type of Well Pad:** MULTIPLE WELL

**Multiple Well Pad Name:** PAD **Number:** 4  
#4

**Well Class:** HORIZONTAL

**Number of Legs:** 1

**Well Work Type:** Drill

**Well Type:** OIL WELL

**Describe Well Type:**

**Well sub-Type:** EXPLORATORY (WILDCAT)

**Describe sub-type:**

**Distance to town:** 8.6 Miles

**Distance to nearest well:** 50 FT

**Distance to lease line:** 100 FT

**Reservoir well spacing assigned acres Measurement:** 320 Acres

**Well plat:** Google\_Map\_from\_Jal\_to\_Pitchblende\_location\_entrance\_20180530131723.pdf  
Pitchblende\_Fed\_24\_25\_\_604H\_Revised\_5\_7\_19\_20190508070032.pdf

**Well work start Date:** 01/01/2019

**Duration:** 60 DAYS

### Section 3 - Well Location Table

**Survey Type:** RECTANGULAR

**Describe Survey Type:**

**Datum:** NAD83

**Vertical Datum:** NAVD88

**Survey number:**

**Reference Datum:**

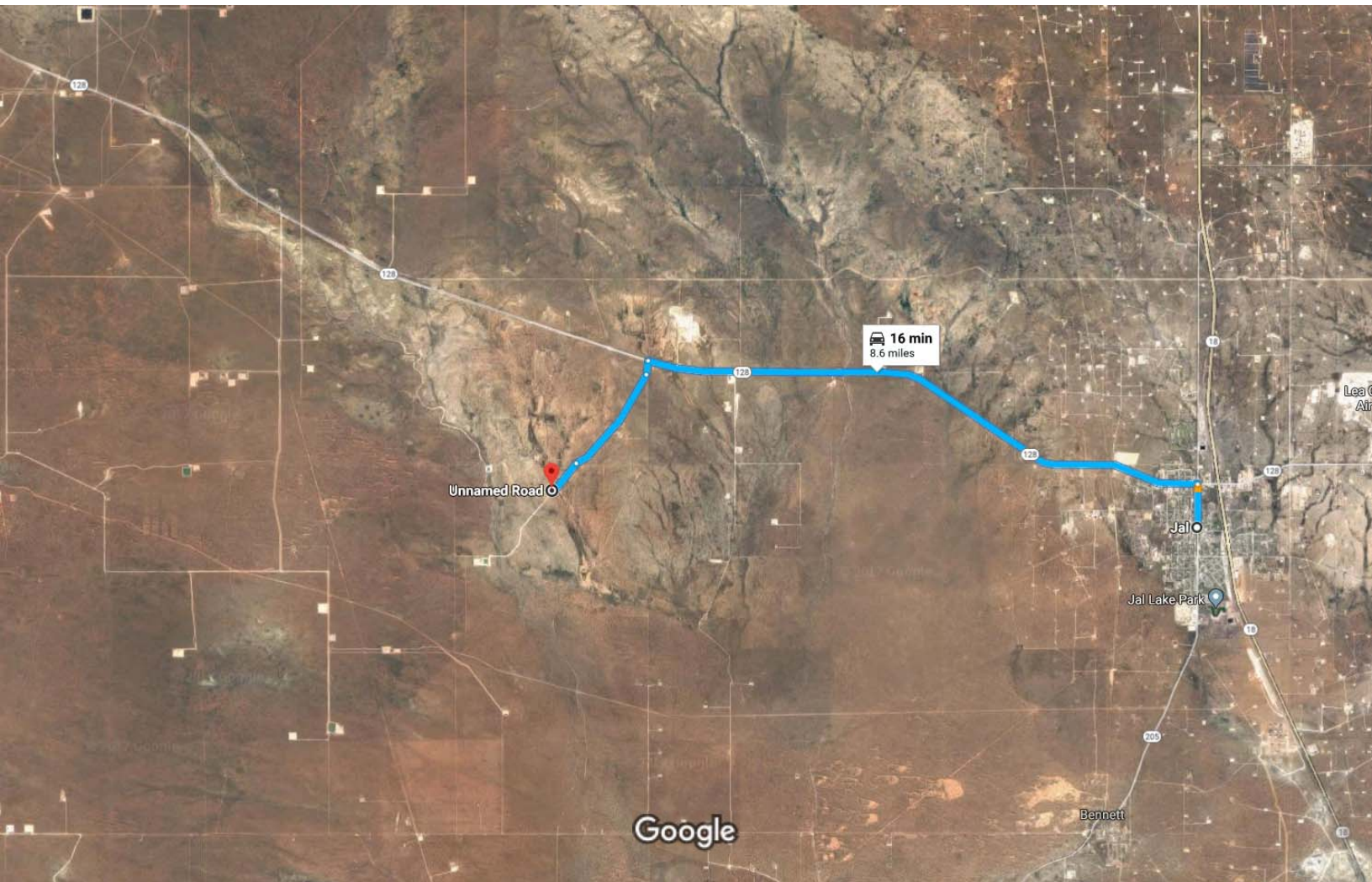
Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
SHL Leg #1	250	FNL	685	FEL	25S	34E	24	Lot A	32.122503	-103.4173494	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 136223	3349	0	0	
KOP Leg #1	250	FNL	685	FEL	25S	34E	24	Lot A	32.122503	-103.4173494	LEA	NEW MEXICO	FIRST PRIN	F	NMNM 136223	-5866	9215	9215	

**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLENDE FED 24-25

**Well Number:** 604H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
PPP Leg #1-1	100	FNL	990	FEL	25S	34E	24	Lot A	32.1220461	- 103.2853081	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 136223	- 9346	13035	12695	
EXIT Leg #1	100	FSL	990	FEL	25S	34E	25	Lot P	32.0944296	- 103.4183411	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 136223	- 9346	22907	12695	
BHL Leg #1	100	FSL	990	FEL	25S	34E	25	Lot P	32.0944296	- 103.4183411	LEA	NEW MEXICO	NEW MEXICO	F	NMNM 136223	- 9346	22907	12695	



Imagery ©2018 Google, Map data ©2018 Google 1 mi

Jal  
New Mexico 88252

- ↑ 1. Head east toward S 3rd St 46 ft
- ↶ 2. Turn left onto S 3rd St 0.5 mi
- ↶ 3. Turn left onto NM-128 W/W Kansas Ave  
Continue to follow NM-128 W 6.3 mi
- ↶ 4. Turn left 0.2 mi
- ↷ 5. Slight right 1.2 mi
- ↶ 6. Slight left  
Destination will be on the right 0.4 mi

Unnamed Road  
Jal, NM 88252





**APD ID:** 10400036150

**Submission Date:** 11/15/2018

Highlighted data  
reflects the most  
recent changes

**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLEND FED 24-25

**Well Number:** 604H

[Show Final Text](#)

**Well Type:** OIL WELL

**Well Work Type:** Drill

## Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
340491	QUATERNARY	3348	0	0	SANDSTONE	NONE	N
340492	RUSTLER	2428	920	920	LIMESTONE, SANDSTONE, SHALE	NONE	N
340493	BASE OF SALT	-1752	5100	5100	ANHYDRITE	NONE	N
340494	BELL CANYON	-2037	5385	5385	LIMESTONE, SANDSTONE, SHALE	NONE	N
340495	CHERRY CANYON	-3027	6375	6375	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
340496	BRUSHY CANYON	-4712	8060	8060	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
340497	BONE SPRING	-5942	9290	9290	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
340498	AVALON SAND	-5977	9325	9325	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
340499	BONE SPRING 1ST	-6142	9490	9490	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
340500	BONE SPRING 2ND	-7262	10610	10610	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
340501	BONE SPRING 3RD	-8102	11450	11450	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	N
340502	WOLFCAMP	-9112	12460	12460	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	Y

## Section 2 - Blowout Prevention

**Pressure Rating (PSI):** 10M

**Rating Depth:** 15000

**Equipment:** A BOP consisting of 3 rams with 2 pipe rams, 1 blind ram and one annular preventer. The BOP will be utilized below surface casing to TD. Also present will be an accumulator that meets the requirements of Onshore Order #2 for the pressure rating on the BOP stack. A rotating head will also be installed as needed. BOP will be inspected and operated as recommended in Onshore Order #2. A Kelly cock and sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position.

**Requesting Variance?** YES

**Variance request:** Energen requests a variance to have the option of running a speed head for the setting of intermediate 1 and 2 strings. If running speed head with landing mandrel for the 10-3/4" and 7-5/8" casing, then a minimum 5M BOPE



**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLENDE FED 24-25

**Well Number:** 604H

system will be installed after surface casing is set. BOP test pressures will be 250 psi low and 5000 psi high. Annular will be tested to 250 psi low and 3500 psi high before drilling below the surface shoe. After 7-5/8" casing is set in the speed head, the BOP will then be lifted to install another casing head section for the production casing. Energen will nipple up the casing head and BOP and a minimum 10M BOPE system will be installed. Pressure tests will be made to 250 psi low and 8500 psi high. Energen requests a variance to have a 5M Annular on top of a 10M BOP and will be tested to 250 psi low and 3500 psi high. A diagram of the speed head and BOP is attached. Energen requests a variance to drill this well using a co-flex line between the BOP and Choke manifold. Certification for the proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. If the specific hose is not available, then one of equal or higher rating will be used.

**Testing Procedure:** Pressure tests will be conducted before drilling out from under all casing strings. BOP will be inspected and operated as required by Onshore Order #2. Kelly cock sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position. A third-party company will test the BOP's. After setting the surface casing, and before drilling the surface casing shoe, a minimum of 5M BOPE system will be installed. It will be tested to 250 psi low and 5000 psi high. Annular will be tested to 250 psi low and 3500 psi high. After setting intermediate 1 casing, a minimum 5M BOPE system will be installed and tested to 250 psi low and 5000 psi high. Annular will be tested to 250 psi low and 3500 psi high. After setting intermediate 2 casing, a 10M system will be installed and tested to 250 psi low and 8500 psi high with the annular being tested to 250 psi low and 3500 psi high. The 13-3/8" 10M flange on the wellhead will also be tested to 8500 psi at this time.

**Choke Diagram Attachment:**

CHOKE\_HOSE\_M12395\_20180504085600.pdf

3rd\_Choke\_Drawing\_20180504071345.PDF

Well\_Control\_Plan\_20190619074611.pdf

**BOP Diagram Attachment:**

ENERGEN\_STACK\_UP\_02\_20180504071451.pdf

BOP\_drawing\_20180504071415.pdf

## Section 3 - Casing

Casing ID	String Type	Hole Size	Csg Size	Condition	Standard	Tapered String	Top Set MD	Bottom Set MD	Top Set TVD	Bottom Set TVD	Top Set MSL	Bottom Set MSL	Calculated casing length MD	Grade	Weight	Joint Type	Collapse SF	Burst SF	Joint SF Type	Joint SF	Body SF Type	Body SF
1	SURFACE	17.5	13.375	NEW	API	N	0	1010	0	1010	3329	1229	1010	J-55	61	BUTT	3.491	7.004	DRY	16.637	DRY	15.614
2	INTERMEDIATE	12.25	10.75	NEW	API	N	0	5300	0	5300			5300	HCN-80	45.5	OTHER - SpCL BTC	1.139	1.949	DRY	4.549	DRY	4.313
3	PRODUCTION	6.75	5.5	NEW	API	N	0	12034	0	12022			12034	OTHER	23	OTHER - DQXHT	1.971	1.97	DRY	2.504	DRY	2.634
4	INTERMEDIATE	9.875	7.625	NEW	API	N	0	12134	0	12122			12134	HCP-110	29.7	BUTT	1.181	1.668	DRY	2.664	DRY	2.608
5	PRODUCTION	6.75	4.5	NEW	API	N	12034	22907	12022	12695			10873	OTHER	15.1	OTHER - DQXHT	1.841	1.851	DRY	2.669	DRY	2.669

**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLENDE FED 24-25

**Well Number:** 604H

## Casing Attachments

---

**Casing ID:** 1      **String Type:** SURFACE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Pipe\_Body\_and\_API\_Connections\_Performance\_Data\_13.3750\_61.0000\_0.4300\_\_J...\_20180504133807.pdf

Casing\_1\_20190330124429.pdf

---

**Casing ID:** 2      **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Pipe\_Body\_and\_API\_Connections\_Performance\_Data\_10.7500\_45.5000\_0.4000\_\_N...\_20180504133910.pdf

Casing\_1\_20190330124516.pdf

10.75\_Coupling\_Spec\_Sheet\_20190330124533.pdf

---

**Casing ID:** 3      **String Type:** PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Technical\_Data\_Sheet\_TMK\_UP\_DQXHT\_5.5\_x\_23\_P110\_CY\_20180511095501.PDF

Casing\_1\_20190330124558.pdf

**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLEND FED 24-25

**Well Number:** 604H

## Casing Attachments

**Casing ID:** 4      **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

Technical\_Data\_Sheet\_TMK\_UP\_DQXHT\_5.5\_x\_23\_P110\_CY\_20180504134716.PDF

Technical\_Data\_Sheet\_TMK\_UP\_DQXHT\_4.5\_x\_15.1\_P110\_CY\_20180504134758.PDF

**Casing Design Assumptions and Worksheet(s):**

Pipe\_Body\_and\_API\_Connections\_Performance\_Data\_7.6250\_29.7000\_0.3750\_P1...\_20180604100302.pdf

Casing\_1\_20190330124624.pdf

**Casing ID:** 5      **String Type:** PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Technical\_Data\_Sheet\_TMK\_UP\_DQXHT\_4.5\_x\_15.1\_P110\_CY\_20180604100414.PDF

Casing\_1\_20190330124638.pdf

## Section 4 - Cement

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	610	605	1.75	13.5	1059	150	100% Class C	4% gel, + 2% CaCl2 + .25 #/sx cello flake + .75 Gal/100sxs CF-41L
SURFACE	Tail		610	1010	518	1.34	14.8	694	150	100% Class C	2% CaCl2 + .75 Gal/100 sx CF-41L

**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLEND FED 24-25

**Well Number:** 604H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
INTERMEDIATE	Lead		0	4100	748	2.47	11.8	1440	100	50% Class C + 50% Poz	10% Gel + .25# cello flake + 3#/sx kolseal + Salt + .75 Gal/100 sxs CR-41L
INTERMEDIATE	Tail		4100	5300	200	1.33	14.8	249	25	50% Class C + 50% Poz	.15% O-Tx20 + .75 gal/100-sxs Cf-41
INTERMEDIATE	Lead	5350	0	4350	385	2.92	11.3	1112	20	50% Class C + 50% Poz	10% gel + .6% SMS + .2% O-TX20 + .2 % C-40P + 5% Salt + .75 Gal/100-sx CF41L
INTERMEDIATE	Tail		4350	5350	210	1.33	14.8	278	20	100 % Class C	.15% O-TX20 + .75%-Gal/100-CR-41L
INTERMEDIATE	Lead	5350	5350	1100 0	655	2.98	11.3	1930	100	50% class H + 50% Poz	10% Gel + .6% SMS + .6% O-TX20 + .25 #/sx Cello Flake + 5 #/sx Kolseal + + 5% salt + .75-Gal/100 SX CF-41L
INTERMEDIATE	Tail		1100 0	1213 4	655	1.19	15.6	773	50	100% Class H	.5% FL-17 + .05% C-51 +.2% O-TX20 + .75 - Gal/100-SX CF-41L
PRODUCTION	Lead		8000	2290 7	1550	1.2	14.5	2050	15	50% Class H + 50% Poz	2% Gel + .5% FL-17 + .75 - Gal/100 sx CF-41L + .1 GPS C-20L

PRODUCTION	Lead		8000	2290 7	1550	1.33	14.5	2050	15	50% Class H + 50% Poz	2% Gel + .5% FL-17 + .75 - Gal/100 sx CF-41L + .1 GPS C-20L
------------	------	--	------	-----------	------	------	------	------	----	-----------------------	---

**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLENDE FED 24-25

**Well Number:** 604H

## Section 5 - Circulating Medium

**Mud System Type:** Closed

**Will an air or gas system be Used?** NO

**Description of the equipment for the circulating system in accordance with Onshore Order #2:**

**Diagram of the equipment for the circulating system in accordance with Onshore Order #2:**

**Describe what will be on location to control well or mitigate other conditions:** All necessary mud products (barite, bentonite, LCM) for weight addition and fluid loss control will be on location at all times. Mud program is subject to change due to hole conditions.

**Describe the mud monitoring system utilized:** An Electronic MD Totco mud monitoring system complying with Onshore Order 1 will be used.

## Circulating Medium Table

Top Depth	Bottom Depth	Mud Type	Min Weight (lbs/gal)	Max Weight (lbs/gal)	Density (lbs/cu ft)	Gel Strength (lbs/100 sqft)	PH	Viscosity (CP)	Salinity (ppm)	Filtration (cc)	Additional Characteristics
0	1010	OTHER : Fresh Water Spud	8.4	8.4			8				
1010	5300	OTHER : Brine	9.7	10			10				
1212 2	1269 5	OIL-BASED MUD	11.8	12							
5300	1100 0	OTHER : Fresh water & cut brine	9	9.3			10				Loss circulation control.
1100 0	1213 4	OTHER : Cut Brine	9.5	9.8			10				Loss circulation control.

**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLENDE FED 24-25

**Well Number:** 604H

## Section 6 - Test, Logging, Coring

**List of production tests including testing procedures, equipment and safety measures:**

No production test will take place.

**List of open and cased hole logs run in the well:**

CALIPER,CBL,DS,GR,MWD,MUDLOG

**Coring operation description for the well:**

NONE

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 7921

**Anticipated Surface Pressure:** 5128.1

**Anticipated Bottom Hole Temperature(F):** 160

**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO

**Describe:**

**Contingency Plans geohazards description:**

**Contingency Plans geohazards attachment:**

**Hydrogen Sulfide drilling operations plan required?** YES

**Hydrogen sulfide drilling operations plan:**

Location\_Drawing\_Pad\_1\_20180601130828.pdf

Hydrogen\_Sulfide\_Drilling\_Operations\_Plan\_20180511084355.pdf

Contacts\_20180511084412.pdf

## Section 8 - Other Information

**Proposed horizontal/directional/multi-lateral plan submission:**

Energen\_\_\_Pitchblende\_Fed\_24\_25\_604H\_Lateral\_Wall\_p2\_20181112132051.pdf

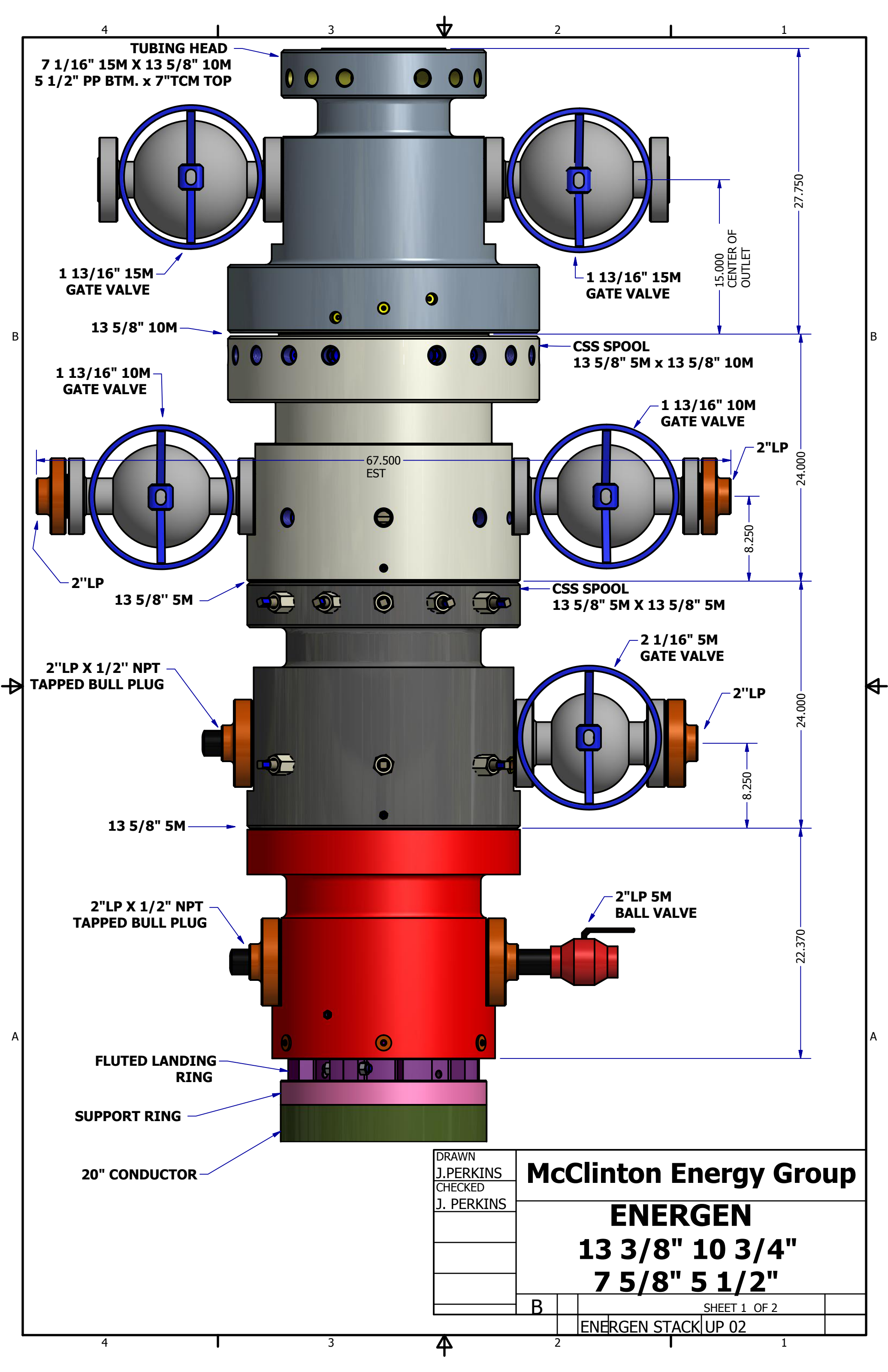
Energen\_\_\_Pitchblende\_Fed\_24\_25\_604H\_Lateral\_Plan\_Data\_p2\_20181112132111.pdf

**Other proposed operations facets description:**

**Other proposed operations facets attachment:**

Gas\_Capture\_604H\_20181115061553.pdf

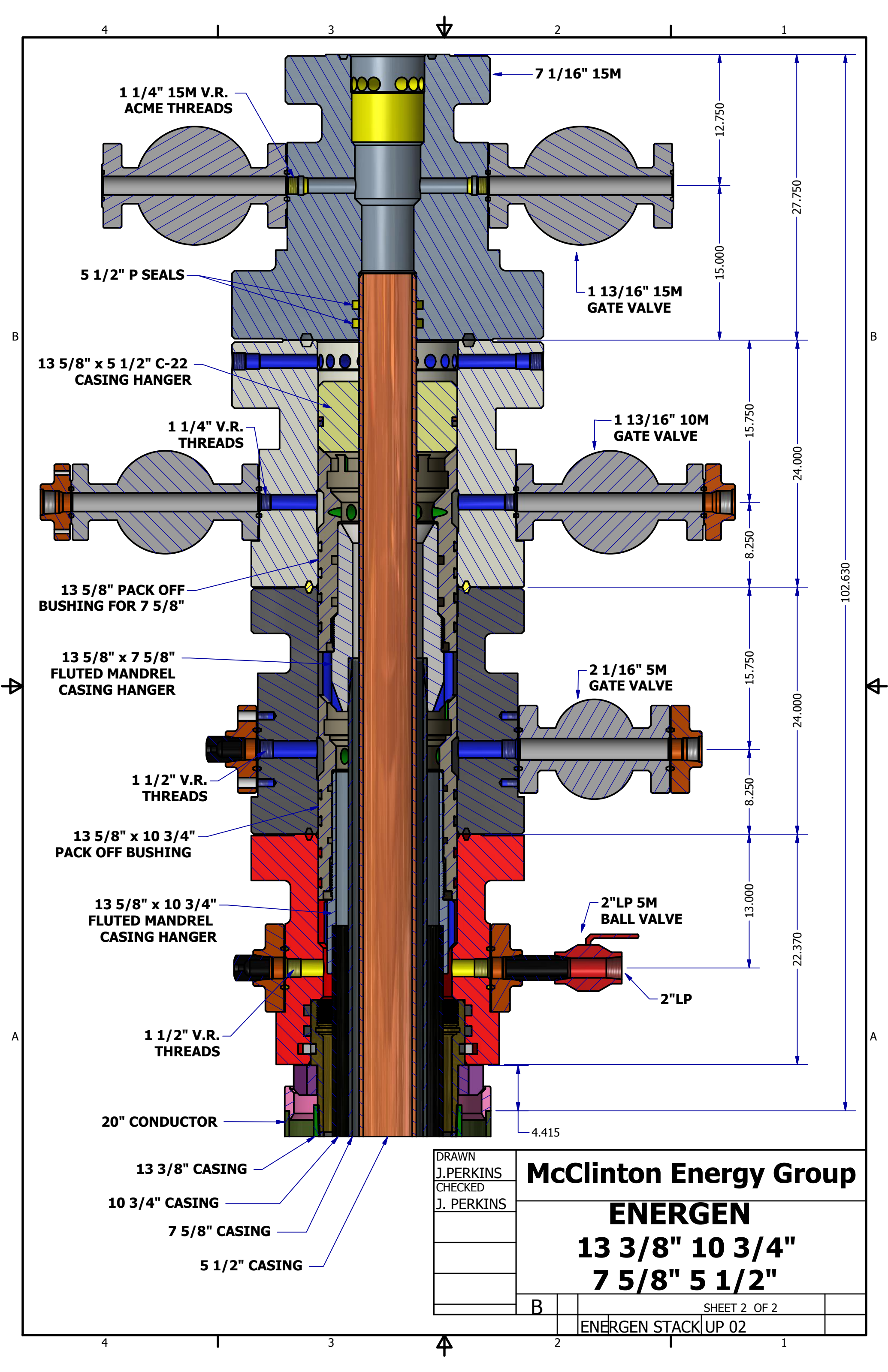
**Other Variance attachment:**



DRAWN	J.PERKINS
CHECKED	J. PERKINS

McClinton Energy Group			
ENERGEN			
13 3/8" 10 3/4"			
7 5/8" 5 1/2"			
B		SHEET 1 OF 2	
	ENERGEN STACK UP 02		





DRAWN	J.PERKINS
CHECKED	J. PERKINS

<b>McClinton Energy Group</b>		
<b>ENERGEN</b>		
<b>13 3/8" 10 3/4"</b>		
<b>7 5/8" 5 1/2"</b>		
B	SHEET 2 OF 2	
ENERGEN STACK UP 02		





## **Hydrogen Sulfide Drilling Operations Plan**

### **1. Hydrogen Sulfide 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:

- The hazards and characteristics of hydrogen sulfide (H<sub>2</sub>S).
- The proper use and maintenance of personal protective equipment and life support systems.
- The proper use of H<sub>2</sub>S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
- The proper techniques for first aid and rescue procedures.

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

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

There will be an initial training session just prior to encountering a known or probable H<sub>2</sub>S zone (within 3 days or 500') and weekly H<sub>2</sub>S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H<sub>2</sub>S Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

### **2. H<sub>2</sub>S Safety Equipment and systems**

Note: All H<sub>2</sub>S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500' above, or three days prior to penetrating the first zone containing or reasonably expected to contain H<sub>2</sub>S. If H<sub>2</sub>S greater than 100 ppm is encountered in the gas stream, we will shut in the well and install H<sub>2</sub>S equipment.

- Well Control Equipment:
  - Flare Line.

- Choke manifold with remotely operated choke.
  - Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
  - Auxiliary equipment to include: annular preventer, mud-gas, separator, rotating head.
- Protective equipment for essential personnel:
  - Mark II Surviveair 30 minute units located in the dog house and at briefing areas.
- H2S detection and monitoring equipment:
  - 2 portable H2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 ppm are reached.
- Visual warning systems:
  - Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate.
- Mud program:
  - The mud program has been designed to minimize the volume of H2S circulated to the surface.

Energen has conducted a review to determine if an H2S contingency plan is required for the above referenced well. We were able to conclude that any potential hazardous volume would be minimal.

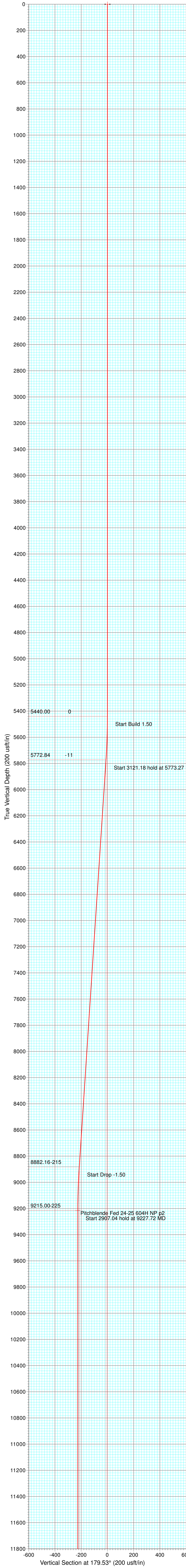


### Contact Information

In at this time the supervising person determines the release of H2S cannot be contained to the site location and the general public is in harm's way he will take the necessary steps to protect the workers and the public.

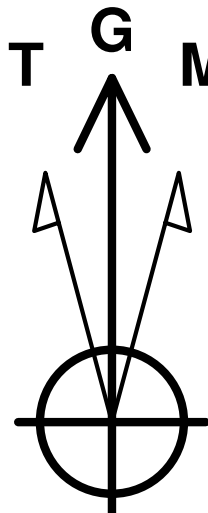
Key Personnel	Title	Office	Mobile
Richard Adams	Drilling Manager	432-818-1747	432-557-1864
Manny Heald	Drilling Supt.	432-688-3330	432-967-5016
Santos Moroles	Drilling Supt.	432-818-1722	432-238-0031
Andy Cobb	Dir EH&S	432-686-3599	432-557-3145
Callie Marsh	Sr. Cood E&S	432-688-3337	432-634-3752
Lea County			Contact
Ambulance			911
Nor Lea General Hospital (Hobbs)			575-397-0560
State Police (Hobbs)			575-392-5580
City Police (Hobbs)			575-397-9625
Sheriff's Office (Lovington)			575-396-3611
Fire Marshall (Lovington)			575-391-2983
Volunteer Fire Dept. (Jal)			575-395-2221
Emergency Management (Lovington)			575-391-2983
New Mexico Oil Conservation Division (Hobbs)			575-393-6161
BLM (Hobbs)			575-393-3612
Hobbs Animal Clinic			575-392-5563
Dal Paso Animal Hospital (Hobbs)			575-397-2286
Mountain States Equine (Hobbs)			575-392-7488
Carlsbad			
BLM			575-234-5972
Santa Fe			
New Mexico Emergency Response Commission			505-476-9600
New Mexico Emergency Response Commission (24 hrs)			505-827-9126
New Mexico State Emergency Operations Center			505-476-9635
National			
National Emergency Response Center (Washington, D.C.)			800-424-8802
Medical			
Flight for Life - 4000 24th Lubbock, Tx			806-743-9911
Aerocare - R3, Box 49F; Lubbock, Tx			806-747-8923
Med Flight Air Amb - 2301 Yale Blvd SE, D3; Albuquerque, NM			505-842-4433
SB Air Med Service - 2505 Clark Carr Loop SE; Albuquerque, NM			505-842-4949
Other			
Boots & Coots IWC			800-256-9688
Cudd Pressure Control			432-699-0139
NM Dept. of Transportation (Roswell)			575-637-7200





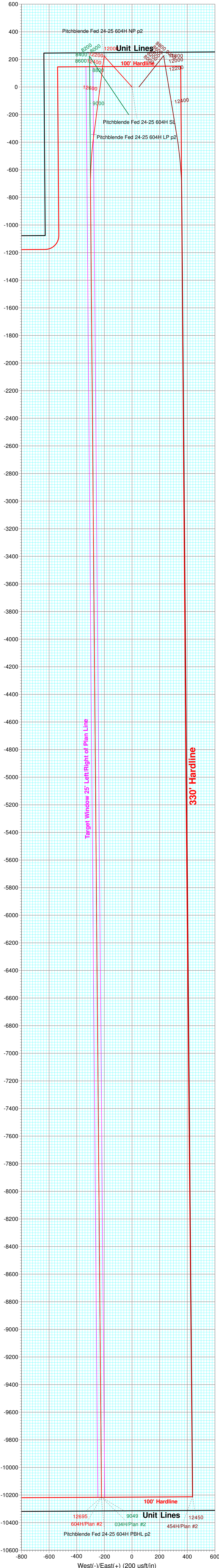
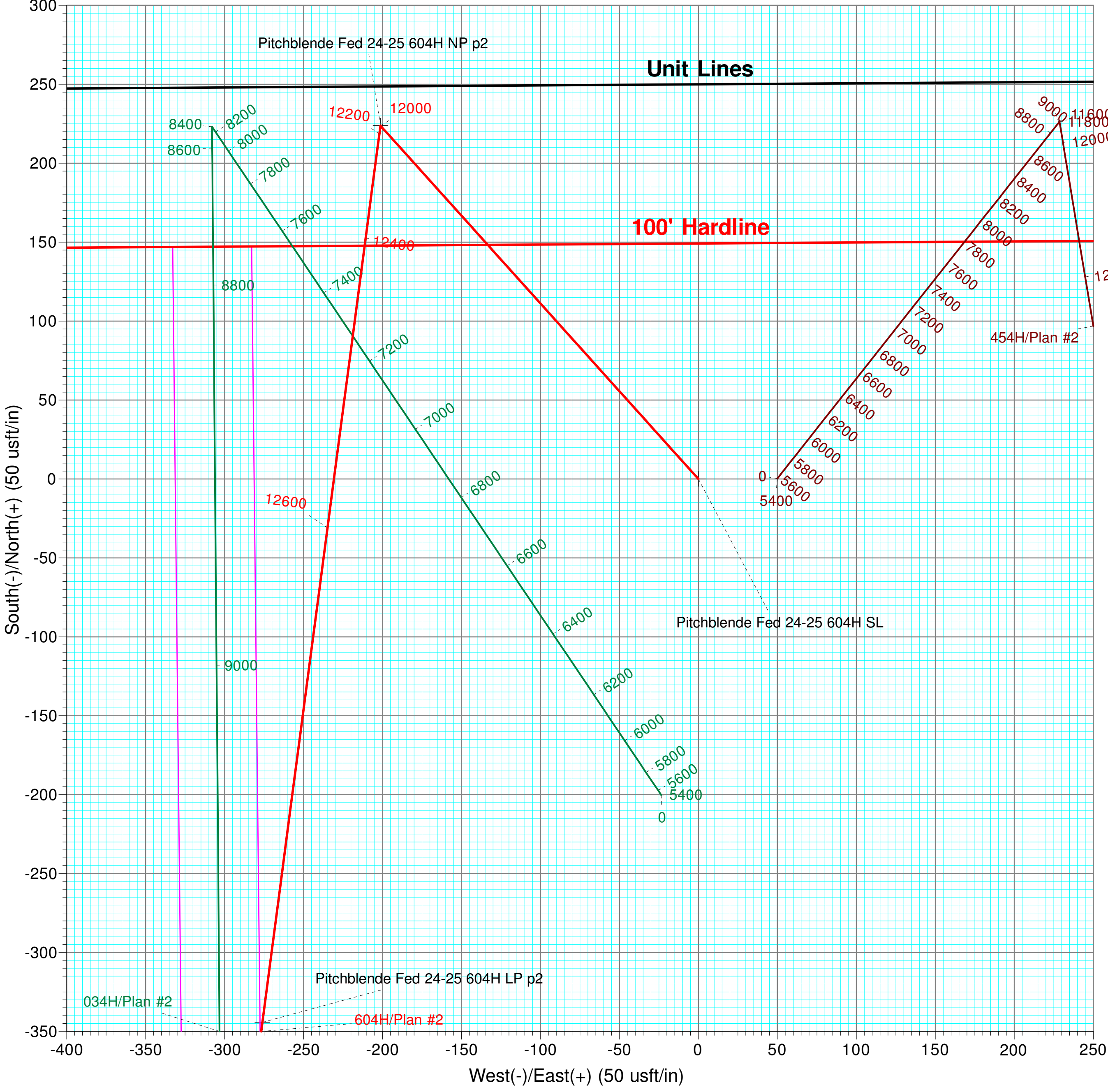
ENERGEN RESOURCES CORPORATION

Project: Lea County, NM  
Site: Pitchblende Fed 24-25 034H,454H,604H  
Well: 604H  
Wellbore: Lateral  
Design: Plan #2  
Rig: XXXXXX  
Job: M18XXX



Azimuths to Grid North  
True North: -0.49°  
Magnetic North: 6.18°  
Magnetic Field  
Strength: 47809.2snT  
Dip Angle: 59.80°  
Date: 11/6/2018  
Model: HDGM

Project Details: Lea County, NM  
Geodetic System: US State Plane 1927 (Exact solution)  
Geodetic Datum: NAD 1927 (NADCON CONUS)  
Geodetic Ellipsoid: Clarke 1866  
Geodetic Zone: New Mexico East 3001  
System Datum: Mean Sea Level



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	5440.00	0.00	0.00	5440.00	0.00	0.00	0.00	0.00	0.00	
3	5773.27	5.00	318.03	5772.84	10.80	-9.72	1.50	318.03	-10.88	
4	8894.45	5.00	318.03	8882.16	213.03	-191.58	0.00	0.00	-214.59	
5	9227.72	0.00	0.00	9215.00	223.83	-201.30	1.50	180.00	-225.47	Pitchblende Fed 24-25 604H NP p2
6	12134.76	0.00	0.00	12122.04	223.83	-201.30	0.00	0.00	-225.47	
7	13034.76	90.00	187.50	12695.00	-344.22	-276.09	10.00	187.50	341.95	
8	13433.85	90.00	179.52	12695.00	-742.25	-300.49	2.00	-90.00	739.76	
9	22907.24	90.00	179.52	12695.00	-10215.30	-220.80	0.00	0.00	10213.15	Pitchblende Fed 24-25 604H PBHL p2

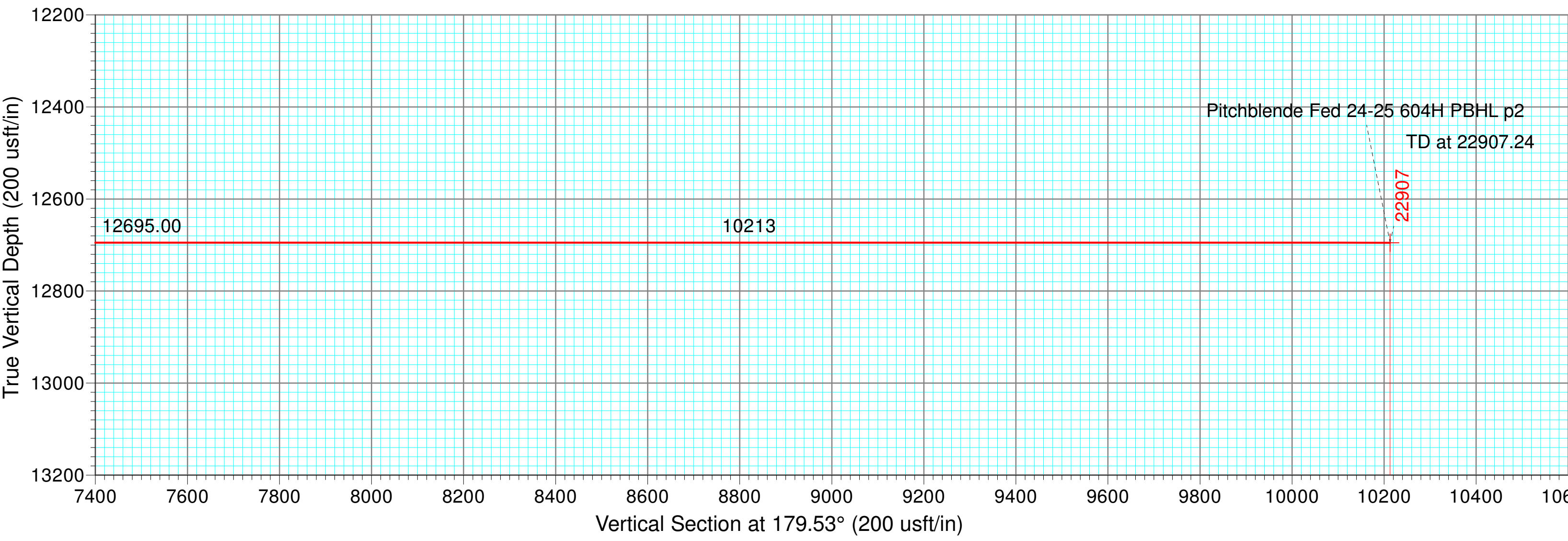
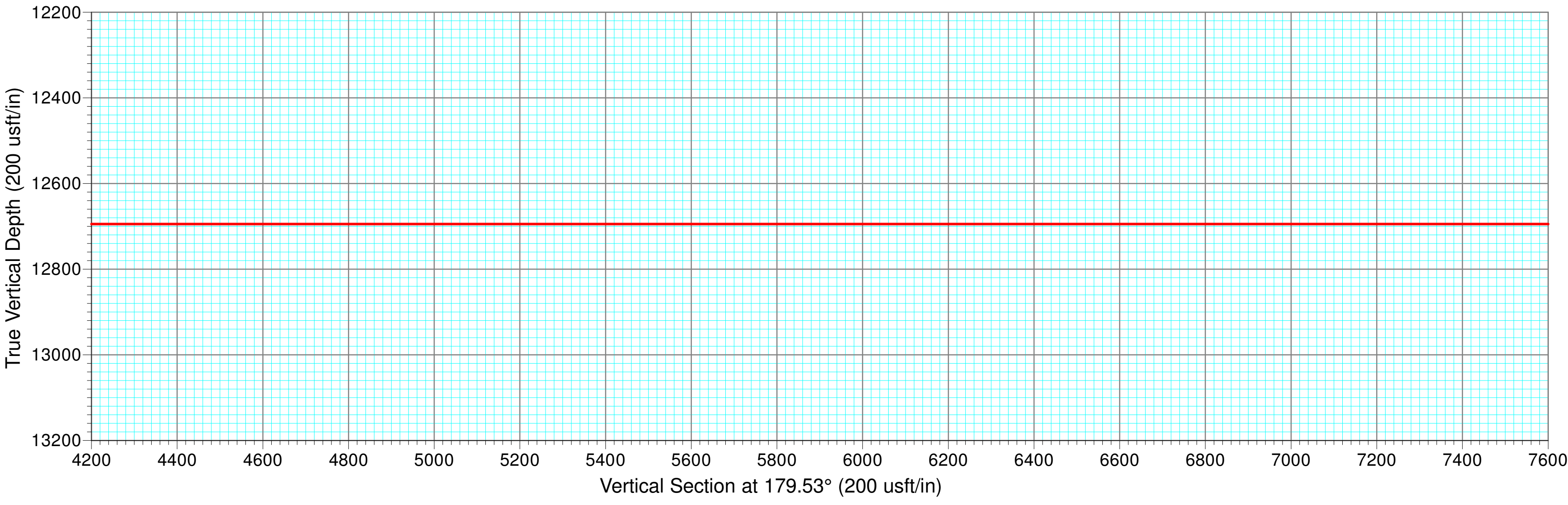
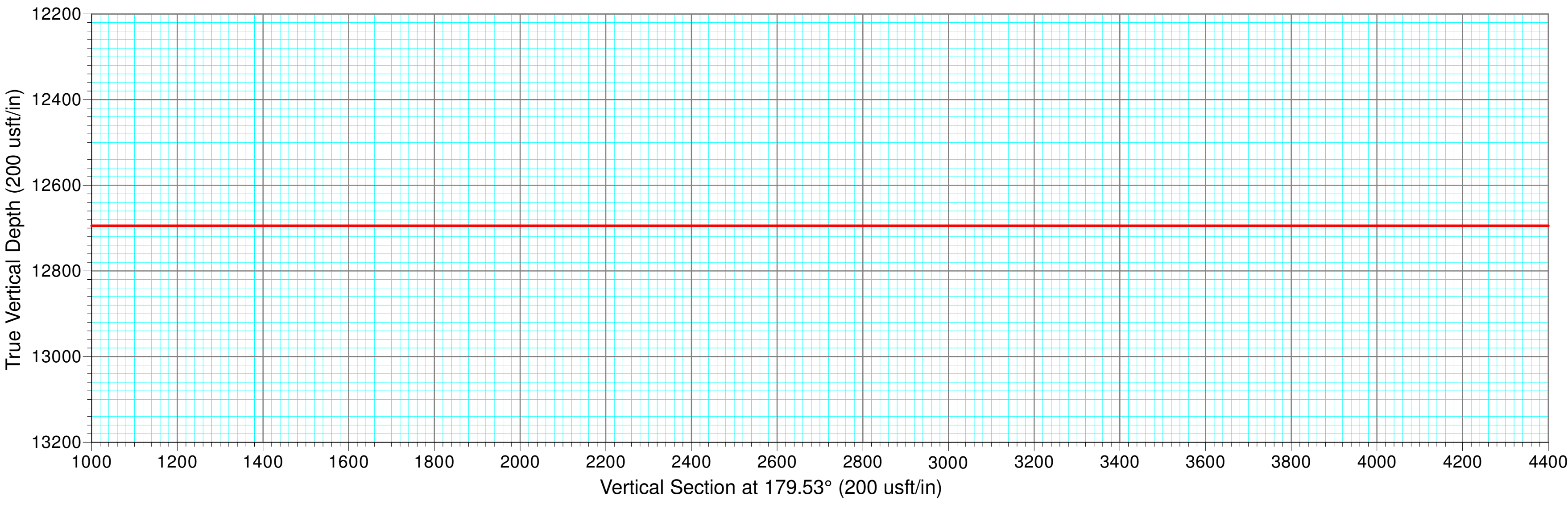
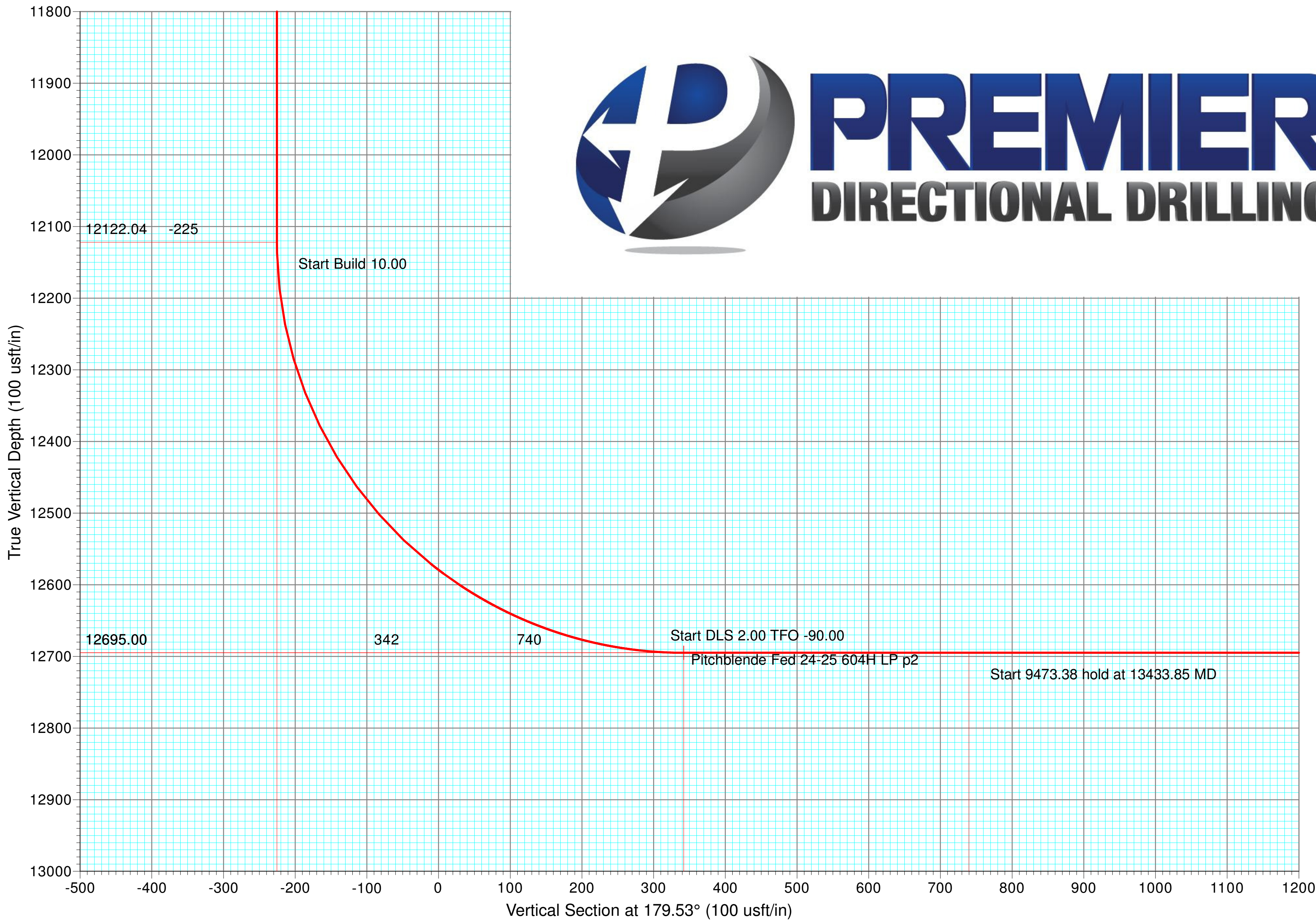
TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	32° 7' 20.56 N	103° 25' 0.78 W
Pitchblende Fed 24-25 604H SL	0.00	0.00	0.00	409449.95	783722.09	32° 7' 20.56 N	103° 25' 0.78 W
Pitchblende Fed 24-25 604H NP p2	9215.00	223.83	-201.30	409673.78	783520.79	32° 7' 22.79 N	103° 25' 3.10 W
Pitchblende Fed 24-25 604H LP p2	12695.00	-344.22	-276.09	409105.72	783446.00	32° 7' 17.18 N	103° 25' 4.02 W
Pitchblende Fed 24-25 604H PBHL p2	12695.00	-10215.30	-220.80	399234.65	783501.29	32° 5' 39.49 N	103° 25' 4.35 W

SLOTS

Slot Name	+N/-S	+E/-W	Northing	Easting
034H	-200.18	-23.57	409249.77	783698.52
454H	0.32	50.01	409450.27	783772.10
604H	0.00	0.00	409449.95	783722.09

Target Centerline at 12695' KB TVD





# **ENERGEN RESOURCES CORPORATION**

**Lea County, NM**

**Pitchblende Fed 24-25 034H,454H,604H**

**604H - Slot 604H**

**Lateral**

**Plan: Plan #2**

## **Standard Planning Report**

**07 November, 2018**

## Planning Report

<b>Database:</b>	EDM 5000.14 Multi User	<b>Local Co-ordinate Reference:</b>	Well 604H - Slot 604H
<b>Company:</b>	ENERGEN RESOURCES CORPORATION	<b>TVD Reference:</b>	3349+25 @ 3374.00usft (EST)
<b>Project:</b>	Lea County, NM	<b>MD Reference:</b>	3349+25 @ 3374.00usft (EST)
<b>Site:</b>	Pitchblende Fed 24-25 034H,454H,604H	<b>North Reference:</b>	Grid
<b>Well:</b>	604H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral		
<b>Design:</b>	Plan #2		

<b>Project</b>	Lea County, NM		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	New Mexico East 3001		

Site		Pitchblende Fed 24-25 034H,454H,604H, centered on 034H			
Site Position:		Northing:	409,249.77 usft	Latitude:	32° 7' 18.58 N
From:	Map	Easting:	783,698.52 usft	Longitude:	103° 25' 1.07 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.49 °

Well	604H - Slot 604H					
Well Position	+N/-S	200.18 usft	Northing:	409,449.95 usft	Latitude:	32° 7' 20.56 N
	+E/-W	23.57 usft	Easting:	783,722.09 usft	Longitude:	103° 25' 0.78 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	3,349.00 usft

<b>Wellbore</b>	Lateral				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	11/6/2018	6.67	59.80	47,809

<b>Design</b>	Plan #2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	179.53

<b>Plan Survey Tool Program</b>	<b>Date</b>	11/7/2018		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	22,906.87	Plan #2 (Lateral)	MWD+HRGM
				OWSG MWD + HRGM

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,440.00	0.00	0.00	5,440.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,773.27	5.00	318.03	5,772.84	10.80	-9.72	1.50	1.50	0.00	318.03	
8,894.45	5.00	318.03	8,882.16	213.03	-191.58	0.00	0.00	0.00	0.00	
9,227.72	0.00	0.00	9,215.00	223.83	-201.30	1.50	-1.50	0.00	180.00	Pitchblende Fed 24-2:
12,134.76	0.00	0.00	12,122.04	223.83	-201.30	0.00	0.00	0.00	0.00	
13,034.76	90.00	187.50	12,695.00	-344.22	-276.09	10.00	10.00	0.00	187.50	
13,433.85	90.00	179.52	12,695.00	-742.25	-300.49	2.00	0.00	-2.00	-90.00	
22,907.24	90.00	179.52	12,695.00	-10,215.30	-220.80	0.00	0.00	0.00	0.00	Pitchblende Fed 24-2:

## Planning Report

<b>Database:</b>	EDM 5000.14 Multi User	<b>Local Co-ordinate Reference:</b>	Well 604H - Slot 604H
<b>Company:</b>	ENERGEN RESOURCES CORPORATION	<b>TVD Reference:</b>	3349+25 @ 3374.00usft (EST)
<b>Project:</b>	Lea County, NM	<b>MD Reference:</b>	3349+25 @ 3374.00usft (EST)
<b>Site:</b>	Pitchblende Fed 24-25 034H,454H,604H	<b>North Reference:</b>	Grid
<b>Well:</b>	604H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral		
<b>Design:</b>	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	EDM 5000.14 Multi User	<b>Local Co-ordinate Reference:</b>	Well 604H - Slot 604H
<b>Company:</b>	ENERGEN RESOURCES CORPORATION	<b>TVD Reference:</b>	3349+25 @ 3374.00usft (EST)
<b>Project:</b>	Lea County, NM	<b>MD Reference:</b>	3349+25 @ 3374.00usft (EST)
<b>Site:</b>	Pitchblende Fed 24-25 034H,454H,604H	<b>North Reference:</b>	Grid
<b>Well:</b>	604H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral		
<b>Design:</b>	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,440.00	0.00	0.00	5,440.00	0.00	0.00	0.00	0.00	0.00	0.00
5,500.00	0.90	318.03	5,500.00	0.35	-0.32	-0.35	1.50	1.50	0.00
5,600.00	2.40	318.03	5,599.95	2.49	-2.24	-2.51	1.50	1.50	0.00
5,700.00	3.90	318.03	5,699.80	6.58	-5.91	-6.63	1.50	1.50	0.00
5,773.27	5.00	318.03	5,772.84	10.80	-9.72	-10.88	1.50	1.50	0.00
5,800.00	5.00	318.03	5,799.48	12.54	-11.27	-12.63	0.00	0.00	0.00
5,900.00	5.00	318.03	5,899.10	19.01	-17.10	-19.15	0.00	0.00	0.00
6,000.00	5.00	318.03	5,998.72	25.49	-22.93	-25.68	0.00	0.00	0.00
6,100.00	5.00	318.03	6,098.33	31.97	-28.75	-32.21	0.00	0.00	0.00
6,200.00	5.00	318.03	6,197.95	38.45	-34.58	-38.73	0.00	0.00	0.00
6,300.00	5.00	318.03	6,297.57	44.93	-40.41	-45.26	0.00	0.00	0.00
6,400.00	5.00	318.03	6,397.19	51.41	-46.23	-51.79	0.00	0.00	0.00
6,500.00	5.00	318.03	6,496.81	57.89	-52.06	-58.31	0.00	0.00	0.00
6,600.00	5.00	318.03	6,596.43	64.37	-57.89	-64.84	0.00	0.00	0.00
6,700.00	5.00	318.03	6,696.05	70.85	-63.72	-71.37	0.00	0.00	0.00
6,800.00	5.00	318.03	6,795.67	77.33	-69.54	-77.89	0.00	0.00	0.00
6,900.00	5.00	318.03	6,895.29	83.80	-75.37	-84.42	0.00	0.00	0.00
7,000.00	5.00	318.03	6,994.91	90.28	-81.20	-90.95	0.00	0.00	0.00
7,100.00	5.00	318.03	7,094.53	96.76	-87.02	-97.47	0.00	0.00	0.00
7,200.00	5.00	318.03	7,194.15	103.24	-92.85	-104.00	0.00	0.00	0.00
7,300.00	5.00	318.03	7,293.77	109.72	-98.68	-110.53	0.00	0.00	0.00
7,400.00	5.00	318.03	7,393.39	116.20	-104.50	-117.05	0.00	0.00	0.00
7,500.00	5.00	318.03	7,493.01	122.68	-110.33	-123.58	0.00	0.00	0.00
7,600.00	5.00	318.03	7,592.63	129.16	-116.16	-130.11	0.00	0.00	0.00
7,700.00	5.00	318.03	7,692.25	135.64	-121.98	-136.63	0.00	0.00	0.00
7,800.00	5.00	318.03	7,791.87	142.12	-127.81	-143.16	0.00	0.00	0.00
7,900.00	5.00	318.03	7,891.49	148.60	-133.64	-149.69	0.00	0.00	0.00
8,000.00	5.00	318.03	7,991.11	155.07	-139.47	-156.21	0.00	0.00	0.00
8,100.00	5.00	318.03	8,090.73	161.55	-145.29	-162.74	0.00	0.00	0.00
8,200.00	5.00	318.03	8,190.35	168.03	-151.12	-169.27	0.00	0.00	0.00
8,300.00	5.00	318.03	8,289.97	174.51	-156.95	-175.79	0.00	0.00	0.00
8,400.00	5.00	318.03	8,389.59	180.99	-162.77	-182.32	0.00	0.00	0.00
8,500.00	5.00	318.03	8,489.21	187.47	-168.60	-188.85	0.00	0.00	0.00
8,600.00	5.00	318.03	8,588.83	193.95	-174.43	-195.37	0.00	0.00	0.00
8,700.00	5.00	318.03	8,688.44	200.43	-180.25	-201.90	0.00	0.00	0.00
8,800.00	5.00	318.03	8,788.06	206.91	-186.08	-208.43	0.00	0.00	0.00
8,894.45	5.00	318.03	8,882.16	213.03	-191.58	-214.59	0.00	0.00	0.00
8,900.00	4.92	318.03	8,887.68	213.38	-191.90	-214.95	1.50	-1.50	0.00
9,000.00	3.42	318.03	8,987.42	218.78	-196.76	-220.39	1.50	-1.50	0.00
9,100.00	1.92	318.03	9,087.31	222.24	-199.87	-223.87	1.50	-1.50	0.00
9,200.00	0.42	318.03	9,187.28	223.76	-201.23	-225.40	1.50	-1.50	0.00
9,227.72	0.00	0.00	9,215.00	223.83	-201.30	-225.47	1.50	-1.50	0.00
9,300.00	0.00	0.00	9,287.28	223.83	-201.30	-225.47	0.00	0.00	0.00
9,400.00	0.00	0.00	9,387.28	223.83	-201.30	-225.47	0.00	0.00	0.00
9,500.00	0.00	0.00	9,487.28	223.83	-201.30	-225.47	0.00	0.00	0.00
9,600.00	0.00	0.00	9,587.28	223.83	-201.30	-225.47	0.00	0.00	0.00
9,700.00	0.00	0.00	9,687.28	223.83	-201.30	-225.47	0.00	0.00	0.00
9,800.00	0.00	0.00	9,787.28	223.83	-201.30	-225.47	0.00	0.00	0.00
9,900.00	0.00	0.00	9,887.28	223.83	-201.30	-225.47	0.00	0.00	0.00
10,000.00	0.00	0.00	9,987.28	223.83	-201.30	-225.47	0.00	0.00	0.00
10,100.00	0.00	0.00	10,087.28	223.83	-201.30	-225.47	0.00	0.00	0.00
10,200.00	0.00	0.00	10,187.28	223.83	-201.30	-225.47	0.00	0.00	0.00
10,300.00	0.00	0.00	10,287.28	223.83	-201.30	-225.47	0.00	0.00	0.00



## Planning Report

<b>Database:</b>	EDM 5000.14 Multi User	<b>Local Co-ordinate Reference:</b>	Well 604H - Slot 604H
<b>Company:</b>	ENERGEN RESOURCES CORPORATION	<b>TVD Reference:</b>	3349+25 @ 3374.00usft (EST)
<b>Project:</b>	Lea County, NM	<b>MD Reference:</b>	3349+25 @ 3374.00usft (EST)
<b>Site:</b>	Pitchblende Fed 24-25 034H,454H,604H	<b>North Reference:</b>	Grid
<b>Well:</b>	604H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral		
<b>Design:</b>	Plan #2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
10,400.00	0.00	0.00	10,387.28	223.83	-201.30	-225.47	0.00	0.00	0.00	
10,500.00	0.00	0.00	10,487.28	223.83	-201.30	-225.47	0.00	0.00	0.00	
10,600.00	0.00	0.00	10,587.28	223.83	-201.30	-225.47	0.00	0.00	0.00	
10,700.00	0.00	0.00	10,687.28	223.83	-201.30	-225.47	0.00	0.00	0.00	
10,800.00	0.00	0.00	10,787.28	223.83	-201.30	-225.47	0.00	0.00	0.00	
10,900.00	0.00	0.00	10,887.28	223.83	-201.30	-225.47	0.00	0.00	0.00	
11,000.00	0.00	0.00	10,987.28	223.83	-201.30	-225.47	0.00	0.00	0.00	
11,100.00	0.00	0.00	11,087.28	223.83	-201.30	-225.47	0.00	0.00	0.00	
11,200.00	0.00	0.00	11,187.28	223.83	-201.30	-225.47	0.00	0.00	0.00	
11,300.00	0.00	0.00	11,287.28	223.83	-201.30	-225.47	0.00	0.00	0.00	
11,400.00	0.00	0.00	11,387.28	223.83	-201.30	-225.47	0.00	0.00	0.00	
11,500.00	0.00	0.00	11,487.28	223.83	-201.30	-225.47	0.00	0.00	0.00	
11,600.00	0.00	0.00	11,587.28	223.83	-201.30	-225.47	0.00	0.00	0.00	
11,700.00	0.00	0.00	11,687.28	223.83	-201.30	-225.47	0.00	0.00	0.00	
11,800.00	0.00	0.00	11,787.28	223.83	-201.30	-225.47	0.00	0.00	0.00	
11,900.00	0.00	0.00	11,887.28	223.83	-201.30	-225.47	0.00	0.00	0.00	
12,000.00	0.00	0.00	11,987.28	223.83	-201.30	-225.47	0.00	0.00	0.00	
12,100.00	0.00	0.00	12,087.28	223.83	-201.30	-225.47	0.00	0.00	0.00	
12,134.76	0.00	0.00	12,122.04	223.83	-201.30	-225.47	0.00	0.00	0.00	
12,150.00	1.52	187.50	12,137.28	223.63	-201.33	-225.27	10.00	10.00	0.00	
12,200.00	6.52	187.50	12,187.14	220.15	-201.78	-221.80	10.00	10.00	0.00	
12,250.00	11.52	187.50	12,236.51	212.38	-202.81	-214.03	10.00	10.00	0.00	
12,300.00	16.52	187.50	12,285.00	200.37	-204.39	-202.04	10.00	10.00	0.00	
12,350.00	21.52	187.50	12,332.26	184.22	-206.52	-185.90	10.00	10.00	0.00	
12,400.00	26.52	187.50	12,377.91	164.04	-209.17	-165.75	10.00	10.00	0.00	
12,450.00	31.52	187.50	12,421.62	140.00	-212.34	-141.73	10.00	10.00	0.00	
12,500.00	36.52	187.50	12,463.04	112.27	-215.99	-114.03	10.00	10.00	0.00	
12,550.00	41.52	187.50	12,501.87	81.06	-220.10	-82.87	10.00	10.00	0.00	
12,600.00	46.52	187.50	12,537.82	46.62	-224.63	-48.46	10.00	10.00	0.00	
12,650.00	51.52	187.50	12,570.59	9.21	-229.56	-11.09	10.00	10.00	0.00	
12,700.00	56.52	187.50	12,599.96	-30.90	-234.84	28.97	10.00	10.00	0.00	
12,750.00	61.52	187.50	12,625.68	-73.38	-240.43	71.41	10.00	10.00	0.00	
12,800.00	66.52	187.50	12,647.57	-117.94	-246.29	115.91	10.00	10.00	0.00	
12,850.00	71.52	187.50	12,665.47	-164.21	-252.39	162.13	10.00	10.00	0.00	
12,900.00	76.52	187.50	12,679.22	-211.85	-258.66	209.72	10.00	10.00	0.00	
12,950.00	81.52	187.50	12,688.74	-260.50	-265.06	258.32	10.00	10.00	0.00	
13,000.00	86.52	187.50	12,693.94	-309.79	-271.55	307.55	10.00	10.00	0.00	
13,034.76	90.00	187.50	12,695.00	-344.22	-276.09	341.95	10.00	10.00	0.00	
13,100.00	90.00	186.20	12,695.00	-409.00	-283.86	406.66	2.00	0.00	-2.00	
13,200.00	90.00	184.20	12,695.00	-508.59	-292.92	506.17	2.00	0.00	-2.00	
13,300.00	90.00	182.20	12,695.00	-608.43	-298.49	605.96	2.00	0.00	-2.00	
13,400.00	90.00	180.20	12,695.00	-708.40	-300.58	705.91	2.00	0.00	-2.00	
13,433.85	90.00	179.52	12,695.00	-742.25	-300.49	739.76	2.00	0.00	-2.00	
13,500.00	90.00	179.52	12,695.00	-808.40	-299.94	805.91	0.00	0.00	0.00	
13,600.00	90.00	179.52	12,695.00	-908.39	-299.10	905.91	0.00	0.00	0.00	
13,700.00	90.00	179.52	12,695.00	-1,008.39	-298.25	1,005.91	0.00	0.00	0.00	
13,800.00	90.00	179.52	12,695.00	-1,108.39	-297.41	1,105.91	0.00	0.00	0.00	
13,900.00	90.00	179.52	12,695.00	-1,208.38	-296.57	1,205.91	0.00	0.00	0.00	
14,000.00	90.00	179.52	12,695.00	-1,308.38	-295.73	1,305.91	0.00	0.00	0.00	
14,100.00	90.00	179.52	12,695.00	-1,408.38	-294.89	1,405.91	0.00	0.00	0.00	
14,200.00	90.00	179.52	12,695.00	-1,508.37	-294.05	1,505.91	0.00	0.00	0.00	
14,300.00	90.00	179.52	12,695.00	-1,608.37	-293.21	1,605.91	0.00	0.00	0.00	
14,400.00	90.00	179.52	12,695.00	-1,708.36	-292.37	1,705.91	0.00	0.00	0.00	
14,500.00	90.00	179.52	12,695.00	-1,808.36	-291.52	1,805.91	0.00	0.00	0.00	

## Planning Report

<b>Database:</b>	EDM 5000.14 Multi User	<b>Local Co-ordinate Reference:</b>	Well 604H - Slot 604H
<b>Company:</b>	ENERGEN RESOURCES CORPORATION	<b>TVD Reference:</b>	3349+25 @ 3374.00usft (EST)
<b>Project:</b>	Lea County, NM	<b>MD Reference:</b>	3349+25 @ 3374.00usft (EST)
<b>Site:</b>	Pitchblende Fed 24-25 034H,454H,604H	<b>North Reference:</b>	Grid
<b>Well:</b>	604H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral		
<b>Design:</b>	Plan #2		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
14,600.00	90.00	179.52	12,695.00	-1,908.36	-290.68	1,905.91	0.00	0.00	0.00
14,700.00	90.00	179.52	12,695.00	-2,008.35	-289.84	2,005.91	0.00	0.00	0.00
14,800.00	90.00	179.52	12,695.00	-2,108.35	-289.00	2,105.91	0.00	0.00	0.00
14,900.00	90.00	179.52	12,695.00	-2,208.35	-288.16	2,205.91	0.00	0.00	0.00
15,000.00	90.00	179.52	12,695.00	-2,308.34	-287.32	2,305.91	0.00	0.00	0.00
15,100.00	90.00	179.52	12,695.00	-2,408.34	-286.48	2,405.91	0.00	0.00	0.00
15,200.00	90.00	179.52	12,695.00	-2,508.34	-285.64	2,505.91	0.00	0.00	0.00
15,300.00	90.00	179.52	12,695.00	-2,608.33	-284.79	2,605.91	0.00	0.00	0.00
15,400.00	90.00	179.52	12,695.00	-2,708.33	-283.95	2,705.91	0.00	0.00	0.00
15,500.00	90.00	179.52	12,695.00	-2,808.33	-283.11	2,805.91	0.00	0.00	0.00
15,600.00	90.00	179.52	12,695.00	-2,908.32	-282.27	2,905.91	0.00	0.00	0.00
15,700.00	90.00	179.52	12,695.00	-3,008.32	-281.43	3,005.91	0.00	0.00	0.00
15,800.00	90.00	179.52	12,695.00	-3,108.32	-280.59	3,105.91	0.00	0.00	0.00
15,900.00	90.00	179.52	12,695.00	-3,208.31	-279.75	3,205.91	0.00	0.00	0.00
16,000.00	90.00	179.52	12,695.00	-3,308.31	-278.91	3,305.91	0.00	0.00	0.00
16,100.00	90.00	179.52	12,695.00	-3,408.30	-278.06	3,405.91	0.00	0.00	0.00
16,200.00	90.00	179.52	12,695.00	-3,508.30	-277.22	3,505.91	0.00	0.00	0.00
16,300.00	90.00	179.52	12,695.00	-3,608.30	-276.38	3,605.91	0.00	0.00	0.00
16,400.00	90.00	179.52	12,695.00	-3,708.29	-275.54	3,705.91	0.00	0.00	0.00
16,500.00	90.00	179.52	12,695.00	-3,808.29	-274.70	3,805.91	0.00	0.00	0.00
16,600.00	90.00	179.52	12,695.00	-3,908.29	-273.86	3,905.91	0.00	0.00	0.00
16,700.00	90.00	179.52	12,695.00	-4,008.28	-273.02	4,005.91	0.00	0.00	0.00
16,800.00	90.00	179.52	12,695.00	-4,108.28	-272.18	4,105.91	0.00	0.00	0.00
16,900.00	90.00	179.52	12,695.00	-4,208.28	-271.34	4,205.91	0.00	0.00	0.00
17,000.00	90.00	179.52	12,695.00	-4,308.27	-270.49	4,305.91	0.00	0.00	0.00
17,100.00	90.00	179.52	12,695.00	-4,408.27	-269.65	4,405.91	0.00	0.00	0.00
17,200.00	90.00	179.52	12,695.00	-4,508.27	-268.81	4,505.91	0.00	0.00	0.00
17,300.00	90.00	179.52	12,695.00	-4,608.26	-267.97	4,605.91	0.00	0.00	0.00
17,400.00	90.00	179.52	12,695.00	-4,708.26	-267.13	4,705.91	0.00	0.00	0.00
17,500.00	90.00	179.52	12,695.00	-4,808.25	-266.29	4,805.91	0.00	0.00	0.00
17,600.00	90.00	179.52	12,695.00	-4,908.25	-265.45	4,905.91	0.00	0.00	0.00
17,700.00	90.00	179.52	12,695.00	-5,008.25	-264.61	5,005.91	0.00	0.00	0.00
17,800.00	90.00	179.52	12,695.00	-5,108.24	-263.76	5,105.91	0.00	0.00	0.00
17,900.00	90.00	179.52	12,695.00	-5,208.24	-262.92	5,205.91	0.00	0.00	0.00
18,000.00	90.00	179.52	12,695.00	-5,308.24	-262.08	5,305.91	0.00	0.00	0.00
18,100.00	90.00	179.52	12,695.00	-5,408.23	-261.24	5,405.91	0.00	0.00	0.00
18,200.00	90.00	179.52	12,695.00	-5,508.23	-260.40	5,505.91	0.00	0.00	0.00
18,300.00	90.00	179.52	12,695.00	-5,608.23	-259.56	5,605.91	0.00	0.00	0.00
18,400.00	90.00	179.52	12,695.00	-5,708.22	-258.72	5,705.91	0.00	0.00	0.00
18,500.00	90.00	179.52	12,695.00	-5,808.22	-257.88	5,805.91	0.00	0.00	0.00
18,600.00	90.00	179.52	12,695.00	-5,908.22	-257.03	5,905.91	0.00	0.00	0.00
18,700.00	90.00	179.52	12,695.00	-6,008.21	-256.19	6,005.91	0.00	0.00	0.00
18,800.00	90.00	179.52	12,695.00	-6,108.21	-255.35	6,105.91	0.00	0.00	0.00
18,900.00	90.00	179.52	12,695.00	-6,208.21	-254.51	6,205.91	0.00	0.00	0.00
19,000.00	90.00	179.52	12,695.00	-6,308.20	-253.67	6,305.91	0.00	0.00	0.00
19,100.00	90.00	179.52	12,695.00	-6,408.20	-252.83	6,405.91	0.00	0.00	0.00
19,200.00	90.00	179.52	12,695.00	-6,508.19	-251.99	6,505.91	0.00	0.00	0.00
19,300.00	90.00	179.52	12,695.00	-6,608.19	-251.15	6,605.91	0.00	0.00	0.00
19,400.00	90.00	179.52	12,695.00	-6,708.19	-250.30	6,705.91	0.00	0.00	0.00
19,500.00	90.00	179.52	12,695.00	-6,808.18	-249.46	6,805.91	0.00	0.00	0.00
19,600.00	90.00	179.52	12,695.00	-6,908.18	-248.62	6,905.91	0.00	0.00	0.00
19,700.00	90.00	179.52	12,695.00	-7,008.18	-247.78	7,005.91	0.00	0.00	0.00
19,800.00	90.00	179.52	12,695.00	-7,108.17	-246.94	7,105.91	0.00	0.00	0.00
19,900.00	90.00	179.52	12,695.00	-7,208.17	-246.10	7,205.91	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	EDM 5000.14 Multi User	<b>Local Co-ordinate Reference:</b>	Well 604H - Slot 604H
<b>Company:</b>	ENERGEN RESOURCES CORPORATION	<b>TVD Reference:</b>	3349+25 @ 3374.00usft (EST)
<b>Project:</b>	Lea County, NM	<b>MD Reference:</b>	3349+25 @ 3374.00usft (EST)
<b>Site:</b>	Pitchblende Fed 24-25 034H,454H,604H	<b>North Reference:</b>	Grid
<b>Well:</b>	604H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral		
<b>Design:</b>	Plan #2		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
20,000.00	90.00	179.52	12,695.00	-7,308.17	-245.26	7,305.91	0.00	0.00	0.00	
20,100.00	90.00	179.52	12,695.00	-7,408.16	-244.42	7,405.91	0.00	0.00	0.00	
20,200.00	90.00	179.52	12,695.00	-7,508.16	-243.57	7,505.91	0.00	0.00	0.00	
20,300.00	90.00	179.52	12,695.00	-7,608.16	-242.73	7,605.91	0.00	0.00	0.00	
20,400.00	90.00	179.52	12,695.00	-7,708.15	-241.89	7,705.91	0.00	0.00	0.00	
20,500.00	90.00	179.52	12,695.00	-7,808.15	-241.05	7,805.91	0.00	0.00	0.00	
20,600.00	90.00	179.52	12,695.00	-7,908.15	-240.21	7,905.91	0.00	0.00	0.00	
20,700.00	90.00	179.52	12,695.00	-8,008.14	-239.37	8,005.91	0.00	0.00	0.00	
20,800.00	90.00	179.52	12,695.00	-8,108.14	-238.53	8,105.91	0.00	0.00	0.00	
20,900.00	90.00	179.52	12,695.00	-8,208.13	-237.69	8,205.91	0.00	0.00	0.00	
21,000.00	90.00	179.52	12,695.00	-8,308.13	-236.84	8,305.91	0.00	0.00	0.00	
21,100.00	90.00	179.52	12,695.00	-8,408.13	-236.00	8,405.91	0.00	0.00	0.00	
21,200.00	90.00	179.52	12,695.00	-8,508.12	-235.16	8,505.91	0.00	0.00	0.00	
21,300.00	90.00	179.52	12,695.00	-8,608.12	-234.32	8,605.91	0.00	0.00	0.00	
21,400.00	90.00	179.52	12,695.00	-8,708.12	-233.48	8,705.91	0.00	0.00	0.00	
21,500.00	90.00	179.52	12,695.00	-8,808.11	-232.64	8,805.91	0.00	0.00	0.00	
21,600.00	90.00	179.52	12,695.00	-8,908.11	-231.80	8,905.91	0.00	0.00	0.00	
21,700.00	90.00	179.52	12,695.00	-9,008.11	-230.96	9,005.91	0.00	0.00	0.00	
21,800.00	90.00	179.52	12,695.00	-9,108.10	-230.12	9,105.91	0.00	0.00	0.00	
21,900.00	90.00	179.52	12,695.00	-9,208.10	-229.27	9,205.91	0.00	0.00	0.00	
22,000.00	90.00	179.52	12,695.00	-9,308.10	-228.43	9,305.91	0.00	0.00	0.00	
22,100.00	90.00	179.52	12,695.00	-9,408.09	-227.59	9,405.91	0.00	0.00	0.00	
22,200.00	90.00	179.52	12,695.00	-9,508.09	-226.75	9,505.91	0.00	0.00	0.00	
22,300.00	90.00	179.52	12,695.00	-9,608.09	-225.91	9,605.91	0.00	0.00	0.00	
22,400.00	90.00	179.52	12,695.00	-9,708.08	-225.07	9,705.91	0.00	0.00	0.00	
22,500.00	90.00	179.52	12,695.00	-9,808.08	-224.23	9,805.91	0.00	0.00	0.00	
22,600.00	90.00	179.52	12,695.00	-9,908.07	-223.39	9,905.91	0.00	0.00	0.00	
22,700.00	90.00	179.52	12,695.00	-10,008.07	-222.54	10,005.91	0.00	0.00	0.00	
22,800.00	90.00	179.52	12,695.00	-10,108.07	-221.70	10,105.91	0.00	0.00	0.00	
22,907.24	90.00	179.52	12,695.00	-10,215.30	-220.80	10,213.15	0.00	0.00	0.00	

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude Longitude		
Pitchblende Fed 24-25 6 - plan hits target center - Point	0.00	0.00	0.00	0.00	0.00	409,449.95	783,722.09	32° 7' 20.56 N 103° 25' 0.78 W		
Pitchblende Fed 24-25 6 - plan hits target center - Point	0.00	0.00	9,215.00	223.83	-201.30	409,673.78	783,520.79	32° 7' 22.79 N 103° 25' 3.10 W		
Pitchblende Fed 24-25 6 - plan hits target center - Point	0.00	0.00	12,695.00	-344.23	-276.09	409,105.72	783,446.00	32° 7' 17.18 N 103° 25' 4.02 W		
Pitchblende Fed 24-25 6 - plan hits target center - Point	0.00	0.00	12,695.00	-10,215.30	-220.80	399,234.65	783,501.29	32° 5' 39.49 N 103° 25' 4.35 W		

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

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

Submit Original  
to Appropriate  
District Office

## GAS CAPTURE PLAN

Date: 10/30/18

☒ Original

Operator & OGRID No.: **Energen Resources Corporation 162928**

☐ Amended - Reason for Amendment:

*Brenda F. Rathjen Energen Regulatory Analyst 432-688-3323 brathjen@energen.com*

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

*Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).*

### Well(s)/Production Facility – Name of facility – Central Tank Battery on Pad #3 of the Pitchblende Fed lease

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location	Footages	Expected MCF/D	Flared or Vented	Comments
SEE ATTACHED FOR WELLS ON LEASE						

### Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to **Lucid Energy Delaware, LLC** and will be connected to **Lucid Energy Delaware, LLC** low/high pressure gathering system located in **Lea County**, New Mexico. It will require **~12,290'** of pipeline to connect the facility to low/high pressure gathering system. **Energen Resources Corporation** provides (periodically) to **Lucid Energy Delaware, LLC** (Gas Transporter) a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, **Energen Resources Corporation** (Operator) and **Lucid Energy Delaware, LLC** (Gas Transporter) have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at **Lucid's Red Hills Processing Plant** located in **Sec.13, Twn. 24S, Rng.33E, Lea County, New Mexico**. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

### Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on Gas Transporter system at that time. Based on current information, it is Operator's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

### Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines



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District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
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Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Submit Original  
to Appropriate  
District Office

GAS CAPTURE PLAN page 3

**Energen Resources Corporation 162928**

**Well(s)/Production Facility – Pitchblende Fed CTB facility on Pad #3, Lea County NM**

*The well(s) that will be located at the production facility are shown in the table below.*

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or vented	Comments
Pitchblended Fed 24-25 #202H	30-025-	K, 24-25S-34E	2192 FSL 1980 FWL	1,900	As needed	<i>pad 2</i>
Pitchblended Fed 24-25 #352H	30-025-	K, 24-25S-34E	2192 FSL 2030 FWL	1,900	As needed	<i>pad 2</i>
Pitchblended Fed 24-25 #203H	30-025-	G, 24-25S-34E	1772 FNL 1980 FEL	2,200	As needed	<i>pad 3</i>
Pitchblended Fed 24-25 #353H	30-025-	G, 24-25S-34E	1772 FNL 1930 FEL	2,200	As needed	<i>pad 3</i>
Pitchblended Fed 24-25 #034H	30-025-	A, 24-25S-34E	450 FNL 710 FEL	2,500	As needed	<i>pad 4</i>
Pitchblended Fed 24-25 #204H	30-025-	A, 24-25S-34E	450 FNL 660 FEL	2,500	As needed	<i>pad 4</i>
Pitchblended Fed 24-25 #354H	30-025-	A, 24-25S-34E	450 FNL 610 FEL	2,500	As needed	<i>pad 4</i>
Pitchblended Fed 24-25 #454H	30-025-	A, 24-25S-34E	250 FNL 635 FEL	2,500	As needed	<i>pad 4</i>
Pitchblended Fed 24-25 #604H	30-025-	A, 24-25S-34E	250 FNL 685 FEL	2,500	As needed	<i>pad 4</i>
Pitchblended Fed 19-30 #035H	30-025-	D, 19-25S-35E	450 FNL 610 FWL	2,500	As needed	<i>pad 5</i>
Pitchblended Fed 19-30 #205H	30-025-	D, 19-25S-35E	450 FNL 660 FWL	2,500	As needed	<i>pad 5</i>
Pitchblended Fed 19-30 #355H	30-025-	D, 19-25S-35E	450 FNL 710 FWL	2,500	As needed	<i>pad 5</i>
Pitchblended Fed 19-30 #455H	30-025-	D, 19-25S-35E	250 FNL 685 FWL	2,500	As needed	<i>pad 5</i>
Pitchblended Fed 19-30 #605H	30-025-	D, 19-25S-35E	250 FNL 635 FWL	2,500	As needed	<i>pad 5</i>
Pitchblended Fed 19-30 #036H	30-025-	C, 19-25S-35E	450 FNL 1930 FWL	2,200	As needed	<i>pad 6</i>
Pitchblended Fed 19-30 #206H	30-025-	C, 19-25S-35E	450 FNL 1980 FWL	2,200	As needed	<i>pad 6</i>
Pitchblended Fed 19-30 #356H	30-025-	C, 19-25S-35E	450 FNL 2030 FWL	2,200	As needed	<i>pad 6</i>
Pitchblended Fed 19-30 #456H	30-025-	C, 19-25S-35E	250 FNL 2005 FWL	2,200	As needed	<i>pad 6</i>
Pitchblended Fed 19-30 #606H	30-025-	C, 19-25S-35E	250 FNL 1955 FWL	2,200	As needed	<i>pad 6</i>



APD ID: 10400036150

Submission Date: 11/15/2018

Highlighted data  
reflects the most  
recent changes

Operator Name: ENERGEN RESOURCES CORPORATION

Well Name: PITCHBLEND FED 24-25

Well Number: 604H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

## Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

PITCHBLEND ROAD\_SKETCH\_EXISTING\_REVISD\_20181029123351.pdf

Existing Road Purpose: ACCESS

Row(s) Exist? NO

ROW ID(s)

ID:

Do the existing roads need to be improved? YES

Existing Road Improvement Description: Existing road will be improved/re-routed in certain areas per BLM specifications as outlined during onsite conducted on 3/29/18.

Existing Road Improvement Attachment:

## Section 2 - New or Reconstructed Access Roads

Will new roads be needed? YES

New Road Map:

PITCHBLEND ROAD\_SKETCH\_STAKED\_REVISD\_20181029123406.pdf

PITCHBLEND ROAD\_SKETCH\_TOTAL\_REVISD\_20181029123413.pdf

New road type: LOCAL

Length: 1334.69

Feet

Width (ft.): 25

Max slope (%): 2

Max grade (%): 4

Army Corp of Engineers (ACOE) permit required? NO

ACOE Permit Number(s):

New road travel width: 14

New road access erosion control: Roads will be constructed with compacted caliche to prevent erosion.

New road access plan or profile prepared? NO

New road access plan attachment:

**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLEND FED 24-25

**Well Number:** 604H

**Access road engineering design?** NO

**Access road engineering design attachment:**

**Turnout?** N

**Access surfacing type:** OTHER

**Access topsoil source:** ONSITE

**Access surfacing type description:** Compacted Caliche

**Access onsite topsoil source depth:** 6

**Offsite topsoil source description:**

**Onsite topsoil removal process:** Topsoil will be staged on the east and west sides of the drilling pad and it will be used for reclamation purposes. This material shall not be used for burms.

**Access other construction information:**

**Access miscellaneous information:**

**Number of access turnouts:**

**Access turnout map:**

### Drainage Control

**New road drainage crossing:** OTHER

**Drainage Control comments:** The compacted caliche access road will have a 3' ditch on each side of it. No turnouts will be constructed on the proposed road. No cattleguards will be installed on the access road. No culverts will be constructed for the access road. No low water crossings will be constructed for the access road. No bridges will be constructed for the access road. Since the road is on level ground, no lead-off ditches will be constructed for the proposed access road.

**Road Drainage Control Structures (DCS) description:** Road construction will include ditching , draining, crowning, capping, and sloping of the roadbed as necessary to provide a well constructed safe road.

**Road Drainage Control Structures (DCS) attachment:**

### Access Additional Attachments

### Section 3 - Location of Existing Wells

**Existing Wells Map?** YES

**Attach Well map:**

1\_mile\_radius\_PAD\_4\_with\_well\_names\_20181115061705.pdf

**Existing Wells description:** New lease no wells drilled yet.

### Section 4 - Location of Existing and/or Proposed Production Facilities

**Submit or defer a Proposed Production Facilities plan?** SUBMIT

**Production Facilities description:** Each well will have a 6' x 15' test separator for the measurement of Natural Gas, Produced Water, and Crude Oil. All Crude Oil, Produced Water, and Natural Gas will be transported in 2 - 12" SDR 7 poly

**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLENDE FED 24-25

**Well Number:** 604H

pipelines to the Pitchblende Facility which is located on Pad 3. The attached plot plan identifies specific equipment that will be installed on pad 3. Note: If hydrogen sulfide occurs and the Natural Gas needs to be treated, an amine skid will be installed as shown. All equipment will be painted Shale Green in accordance to current BLM standards. Each pad will also have a 4" steel high pressure gas line and a 4" SDR 7 instrument airline running to it from the facility. The high pressure gas line is for future gas lift services. The instrument air line is for operating all control valves on each pad in an environmentally friendly manner. The 12" SDR 7 and 4" pipelines will follow the roadways to the facility as shown on the attached map. Pipelines will be buried with a minimum of 36" of cover in the Right of Way. Electric power will be brought to pad 3 from the East as shown on the attached Map.

**Production Facilities map:**

PltPln\_Pitchblend\_BATT\_Layout2\_20181029123502.pdf

PITCHBLENDE\_PIPELINE\_SKETCH\_REVISD\_\_003\_\_20181029123519.pdf

PITCHBLENDE\_ELECTRIC\_LINE\_SKETCH\_REVISD\_20181029123511.pdf

PITCHBLENDE\_UTILITY\_SKETCH\_REVISD\_20181029123452.pdf

Pressure\_data\_from\_Darrell\_20181029123527.pdf

## Section 5 - Location and Types of Water Supply

### Water Source Table

**Water source type:** GW WELL

<b>Water source use type:</b>	SURFACE CASING
	STIMULATION
	DUST CONTROL
	CAMP USE
	INTERMEDIATE/PRODUCTION CASING

**Source latitude:**

**Source longitude:**

**Source datum:**

<b>Water source permit type:</b>	PRIVATE CONTRACT
----------------------------------	------------------

<b>Water source transport method:</b>	TRUCKING
	PIPELINE

**Source land ownership:** PRIVATE

**Source transportation land ownership:** PRIVATE

**Water source volume (barrels):** 25000

**Source volume (acre-feet):** 3.2223275

**Source volume (gal):** 1050000



**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLENDE FED 24-25

**Well Number:** 604H

**Water source and transportation map:**

Pitchblende\_Water\_Source\_Map\_20180517111633.pdf

**Water source comments:** Water will be utilized pursuant to a private contract with a local landowner. The attached map indicates the frac pond we intend to use.

**New water well?** NO

**New Water Well Info**

**Well latitude:**

**Well Longitude:**

**Well datum:**

**Well target aquifer:**

**Est. depth to top of aquifer(ft):**

**Est thickness of aquifer:**

**Aquifer comments:**

**Aquifer documentation:**

**Well depth (ft):**

**Well casing type:**

**Well casing outside diameter (in.):**

**Well casing inside diameter (in.):**

**New water well casing?**

**Used casing source:**

**Drilling method:**

**Drill material:**

**Grout material:**

**Grout depth:**

**Casing length (ft.):**

**Casing top depth (ft.):**

**Well Production type:**

**Completion Method:**

**Water well additional information:**

**State appropriation permit:**

**Additional information attachment:**

**Section 6 - Construction Materials**

**Using any construction materials:** YES

**Construction Materials description:** Caliche will be used from an existing approved mineral pit or by flipping the well location. A mineral permit will be obtained from the BLM prior to excavation any caliche on Federal Lands. Amounts will vary for each pad. The procedure for "flipping" a well location is as follows: An adequate amount of topsoil (usually 6") will be stripped from the location and stockpiled beside each location as shown. An area will be used within the proposed well site to excavate caliche. The subsoil will then be removed and stockpiled within the footages of the well location. Once caliche/surfacing material is found, the material will be excavated and stock piled within the entire well pad/road. The subsoil will then be placed back in the excavated hole. The caliche material will then be placed over the entire pad/road to be compacted. In the event that no caliche is found onsite, or if additional caliche is required, caliche will be hauled from Dinwiddie Cattle Company LLC's pit per the attached map.

**Construction Materials source location attachment:**

Pitchblende\_caliche\_pit\_20181029123619.jpg

**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLENDE FED 24-25

**Well Number:** 604H

## Section 7 - Methods for Handling Waste

**Waste type:** DRILLING

**Waste content description:** Cuttings, mud, salts, and other chemicals.

**Amount of waste:** 3000 barrels

**Waste disposal frequency :** Daily

**Safe containment description:** Steel tanks

**Safe containmant attachment:**

**Waste disposal type:** HAUL TO COMMERCIAL FACILITY      **Disposal location ownership:** PRIVATE

**Disposal type description:**

**Disposal location description:** R360's (NM-01-0006) disposal site at Halfway, NM. Sun Dance Services, 42 Sundance Lane (5 miles east of Eunice, NM) Eunice, NM 88231

### Reserve Pit

**Reserve Pit being used?** NO

**Temporary disposal of produced water into reserve pit?**

**Reserve pit length (ft.)**      **Reserve pit width (ft.)**

**Reserve pit depth (ft.)**      **Reserve pit volume (cu. yd.)**

**Is at least 50% of the reserve pit in cut?**

**Reserve pit liner**

**Reserve pit liner specifications and installation description**

### Cuttings Area

**Cuttings Area being used?** NO

**Are you storing cuttings on location?** NO

**Description of cuttings location**

**Cuttings area length (ft.)**      **Cuttings area width (ft.)**

**Cuttings area depth (ft.)**      **Cuttings area volume (cu. yd.)**

**Is at least 50% of the cuttings area in cut?**

**WCuttings area liner**

**Cuttings area liner specifications and installation description**

**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLENDE FED 24-25

**Well Number:** 604H

## Section 8 - Ancillary Facilities

**Are you requesting any Ancillary Facilities?:** NO

**Ancillary Facilities attachment:**

**Comments:**

## Section 9 - Well Site Layout

**Well Site Layout Diagram:**

Location\_Drawing\_Pad\_4\_20181115061737.pdf

PITCHBLENDE\_PAD\_4\_BNDY\_PLAT\_20181115061743.pdf

**Comments:**

## Section 10 - Plans for Surface Reclamation

**Type of disturbance:** New Surface Disturbance

**Multiple Well Pad Name:** PAD #4

**Multiple Well Pad Number:** 4

**Recontouring attachment:**

PITCHBLENDE\_PAD\_4\_BNDY\_PLAT\_20181115061805.pdf

Pad\_4\_Cut\_and\_Fill\_volumes\_20181115061813.pdf

**Drainage/Erosion control construction:** Crowned and ditched.

**Drainage/Erosion control reclamation:** Harrowed on the contour.

**Well pad proposed disturbance (acres):** 8.264

**Road proposed disturbance (acres):** 0.77

**Powerline proposed disturbance (acres):** 0

**Pipeline proposed disturbance (acres):** 0

**Other proposed disturbance (acres):** 0

**Total proposed disturbance:** 9.034

**Well pad interim reclamation (acres):** 4.131

**Road interim reclamation (acres):** 0.34

**Powerline interim reclamation (acres):** 0

**Pipeline interim reclamation (acres):** 0

**Other interim reclamation (acres):** 0

**Total interim reclamation:** 4.471

**Well pad long term disturbance (acres):** 4.133

**Road long term disturbance (acres):** 0.43

**Powerline long term disturbance (acres):** 0

**Pipeline long term disturbance (acres):** 0

**Other long term disturbance (acres):** 0

**Total long term disturbance:** 4.563

**Disturbance Comments:**

**Reconstruction method:** Interim reclamation will be completed within 6 months of completing the last well on the pad. Interim reclamation will consist of shrinking the pad by 100' on the North, West and East and 50' on the South. On the South end of pad there will be 5 Test Skids (one for each well) measuring 8' wide X 20' long. Disturbed areas will be contoured to match pre-construction grades. Soil and brush will be evenly spread over disturbed areas and harrowed on the contour. Disturbed areas will be seeded in accordance with BLM requirements.

**Topsoil redistribution:** Enough stockpiled topsoil will be retained to cover the remainder of the pad when the last well is plugged. Once the last well is plugged, then the rest of the pad will be similarly reclaimed within 6 months of plugging.

Operator Name: ENERGEN RESOURCES CORPORATION

Well Name: PITCHBLENDE FED 24-25

Well Number: 604H

Noxious weeds will be controlled

Soil treatment: NONE

Existing Vegetation at the well pad:

Existing Vegetation at the well pad attachment:

Existing Vegetation Community at the road:

Existing Vegetation Community at the road attachment:

Existing Vegetation Community at the pipeline:

Existing Vegetation Community at the pipeline attachment:

Existing Vegetation Community at other disturbances:

Existing Vegetation Community at other disturbances attachment:

Non native seed used? NO

Non native seed description:

Seedling transplant description:

Will seedlings be transplanted for this project? NO

Seedling transplant description attachment:

Will seed be harvested for use in site reclamation? NO

Seed harvest description:

Seed harvest description attachment:

Seed Management

Seed Table

Seed Summary

Seed Type

Pounds/Acre

Total pounds/Acre:

Seed reclamation attachment:

Operator Contact/Responsible Official Contact Info

First Name:

Last Name:

**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLENDE FED 24-25

**Well Number:** 604H

**Phone:**

**Email:**

**Seedbed prep:**

**Seed BMP:**

**Seed method:**

**Existing invasive species?** NO

**Existing invasive species treatment description:**

**Existing invasive species treatment attachment:**

**Weed treatment plan description:** To BLM standards

**Weed treatment plan attachment:**

**Monitoring plan description:** To BLM standards.

**Monitoring plan attachment:**

**Success standards:** To BLM satisfaction.

**Pit closure description:** No pit.

**Pit closure attachment:**

## Section 11 - Surface Ownership

**Disturbance type:** WELL PAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:**

**USFS Ranger District:**

**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLENDE FED 24-25

**Well Number:** 604H

**Disturbance type:** EXISTING ACCESS ROAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT,PRIVATE OWNERSHIP

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:**

**USFS Ranger District:**

**Fee Owner:** Rubert F. Madera

**Fee Owner Address:**

**Phone:** (575)631-4444

**Email:**

**Surface use plan certification:** NO

**Surface use plan certification document:**

**Surface access agreement or bond:** Agreement

**Surface Access Agreement Need description:** Mr. Madera owns lands we need to cross in order to access our drillsite location. We are currently negotiating a road ROW agreement with him.

**Surface Access Bond BLM or Forest Service:**

**BLM Surface Access Bond number:**

**USFS Surface access bond number:**

**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLENDE FED 24-25

**Well Number:** 604H

**Fee Owner:** Pitchfork Cattle Company, LLC

**Fee Owner Address:**

**Phone:** (575)631-4444

**Email:**

**Surface use plan certification:** NO

**Surface use plan certification document:**

**Surface access agreement or bond:** Agreement

**Surface Access Agreement Need description:** Pitchfork Cattle Company owns lands we need to cross in order to access our drillsite location. We are currently negotiating a road ROW agreement with them.

**Surface Access Bond BLM or Forest Service:**

**BLM Surface Access Bond number:**

**USFS Surface access bond number:**

**Disturbance type:** PIPELINE

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:**

**USFS Ranger District:**

**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLENDE FED 24-25

**Well Number:** 604H

**Disturbance type:** NEW ACCESS ROAD

**Describe:**

**Surface Owner:** BUREAU OF LAND MANAGEMENT,PRIVATE OWNERSHIP

**Other surface owner description:**

**BIA Local Office:**

**BOR Local Office:**

**COE Local Office:**

**DOD Local Office:**

**NPS Local Office:**

**State Local Office:**

**Military Local Office:**

**USFWS Local Office:**

**Other Local Office:**

**USFS Region:**

**USFS Forest/Grassland:**

**USFS Ranger District:**

**Fee Owner:** Dinwiddie Cattle Company, LLC

**Fee Owner Address:**

**Phone:** (432)218-5400

**Email:** jtdinwiddie@gmail.com

**Surface use plan certification:** NO

**Surface use plan certification document:**

**Surface access agreement or bond:** Agreement

**Surface Access Agreement Need description:** Currently negotiating with surface owner. They have already approved our proposed new road as it pertains to their lands.

**Surface Access Bond BLM or Forest Service:**

**BLM Surface Access Bond number:**

**USFS Surface access bond number:**

## Section 12 - Other Information

**Right of Way needed?** YES

**Use APD as ROW?** YES

**ROW Type(s):** 281001 ROW - ROADS

## ROW Applications



**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLEND FED 24-25

**Well Number:** 604H

**SUPO Additional Information:**

**Use a previously conducted onsite?** YES

**Previous Onsite information:** Onsite inspection was held with Aaron Chastain on 3/29/18. Arc participation in PA.

**Other SUPO Attachment**

PITCHBLEND ROAD SKETCH TOTAL REVISED\_20181029123650.pdf

Landowner\_Letter\_9\_17\_18\_20181029123658.pdf



September 17, 2018

ATTN: Cody Layton – Assistant Field Manager  
Bureau of Land Management  
Carlsbad Field Office  
620 E. Greene St.  
Carlsbad, NM 88220

**Re: Energen Resources Pitchblende Federal Wells, Lea County NM**

Dear Mr. Layton,

This letter is in response to the deficiency letter received by Energen Resources dated September 5, 2018. Energen has been, and remains in, good-faith negotiations with the surface owner of the private tract located in Section 24, Township 25 South, Range 34 East.

In addition to owning this private tract, the same surface owner is the lessee of BLM owned surface also located in Section 24, Township 25 South, Range 34 East and all of Section 19, Township 25 South, Range 35 East. The agreement is quite lengthy and contains numerous development provisions that we are working through with the landowner. It's our anticipation this will be resolved well in advance of the permits being approved.

An email from the surface owner is included supporting our good-faith negotiations. Please let us know if you have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read "Tyler Humphries". The signature is fluid and stylized, with a long horizontal stroke extending to the right.

Tyler Humphries  
Land - Permian Development  
Energen Resources Corporation  
3510 North "A" Street, Bldg. B  
Midland, TX 79705  
Office: 432.818.1731  
Email: [tyler.humphries@energen.com](mailto:tyler.humphries@energen.com)

## Tyler Humphries

---

**From:** Tommy Dinwiddie <jtdinwiddie@gmail.com>  
**Sent:** Monday, September 17, 2018 11:05 AM  
**To:** Tyler Humphries  
**Subject:** [EXTERNAL] Re: Energen/Pitchblende SUA

Yes  
We are in negotiations at this time.  
TD

On Sep 17, 2018, at 10:03 AM, Tyler Humphries <[Tyler.Humphries@energen.com](mailto:Tyler.Humphries@energen.com)> wrote:

Mr. Dinwiddie,

As part of our permitting process with the BLM, they have requested a status update on the surface use agreement regarding the wells that will be drilled on your private land. I am going to let them know we have been in good-faith negotiations with you and are working towards a finalized agreement by the time the permits will be approved.

Would you mind replying and confirming such so that I can include this email with my letter?

Best,  
Tyler

Thanks,  
*Tyler Humphries*  
Land - Permian Development  
Energen Resources Corporation  
3510 North "A" Street, Bldg. B  
Midland, TX 79705  
Office: 432.818.1731  
Cell: 432.557.4245  
Email: [tyler.humphries@energen.com](mailto:tyler.humphries@energen.com)

<image001.jpg>



**APD ID:** 10400036150

**Submission Date:** 11/15/2018

**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLEND FED 24-25

**Well Number:** 604H

**Well Type:** OIL WELL

**Well Work Type:** Drill

## Section 1 - General

**Would you like to address long-term produced water disposal?** NO

## Section 2 - Lined Pits

**Would you like to utilize Lined Pit PWD options?** NO

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Lined pit PWD on or off channel:**

**Lined pit PWD discharge volume (bbl/day):**

**Lined pit specifications:**

**Pit liner description:**

**Pit liner manufacturers information:**

**Precipitated solids disposal:**

**Describe precipitated solids disposal:**

**Precipitated solids disposal permit:**

**Lined pit precipitated solids disposal schedule:**

**Lined pit precipitated solids disposal schedule attachment:**

**Lined pit reclamation description:**

**Lined pit reclamation attachment:**

**Leak detection system description:**

**Leak detection system attachment:**

**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLEND FED 24-25

**Well Number:** 604H

**Lined pit Monitor description:**

**Lined pit Monitor attachment:**

**Lined pit: do you have a reclamation bond for the pit?**

**Is the reclamation bond a rider under the BLM bond?**

**Lined pit bond number:**

**Lined pit bond amount:**

**Additional bond information attachment:**

### Section 3 - Unlined Pits

**Would you like to utilize Unlined Pit PWD options?** NO

**Produced Water Disposal (PWD) Location:**

**PWD disturbance (acres):**

**PWD surface owner:**

**Unlined pit PWD on or off channel:**

**Unlined pit PWD discharge volume (bbl/day):**

**Unlined pit specifications:**

**Precipitated solids disposal:**

**Describe precipitated solids disposal:**

**Precipitated solids disposal permit:**

**Unlined pit precipitated solids disposal schedule:**

**Unlined pit precipitated solids disposal schedule attachment:**

**Unlined pit reclamation description:**

**Unlined pit reclamation attachment:**

**Unlined pit Monitor description:**

**Unlined pit Monitor attachment:**

**Do you propose to put the produced water to beneficial use?**

**Beneficial use user confirmation:**

**Estimated depth of the shallowest aquifer (feet):**

**Does the produced water have an annual average Total Dissolved Solids (TDS) concentration equal to or less than that of the existing water to be protected?**

**TDS lab results:**

**Geologic and hydrologic evidence:**

**State authorization:**

**Unlined Produced Water Pit Estimated percolation:**

**Unlined pit: do you have a reclamation bond for the pit?**

**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLENDE FED 24-25

**Well Number:** 604H

**Is the reclamation bond a rider under the BLM bond?**

**Unlined pit bond number:**

**Unlined pit bond amount:**

**Additional bond information attachment:**

#### Section 4 - Injection

**Would you like to utilize Injection PWD options?** NO

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Injection PWD discharge volume (bbl/day):**

**Injection well mineral owner:**

**Injection well type:**

**Injection well number:**

**Injection well name:**

**Assigned injection well API number?**

**Injection well API number:**

**Injection well new surface disturbance (acres):**

**Minerals protection information:**

**Mineral protection attachment:**

**Underground Injection Control (UIC) Permit?**

**UIC Permit attachment:**

#### Section 5 - Surface Discharge

**Would you like to utilize Surface Discharge PWD options?** NO

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Surface discharge PWD discharge volume (bbl/day):**

**Surface Discharge NPDES Permit?**

**Surface Discharge NPDES Permit attachment:**

**Surface Discharge site facilities information:**

**Surface discharge site facilities map:**

#### Section 6 - Other

**Would you like to utilize Other PWD options?** NO

**Produced Water Disposal (PWD) Location:**

**PWD surface owner:**

**PWD disturbance (acres):**

**Other PWD discharge volume (bbl/day):**

**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLEND E FED 24-25

**Well Number:** 604H

**Other PWD type description:**

**Other PWD type attachment:**

**Have other regulatory requirements been met?**

**Other regulatory requirements attachment:**





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

## Bond Info Data Report

06/29/2020

**APD ID:** 10400036150

**Submission Date:** 11/15/2018

Highlighted data  
reflects the most  
recent changes

**Operator Name:** ENERGEN RESOURCES CORPORATION

**Well Name:** PITCHBLENDE FED 24-25

**Well Number:** 604H

[Show Final Text](#)

**Well Type:** OIL WELL

**Well Work Type:** Drill

### Bond Information

**Federal/Indian APD:** FED

**BLM Bond number:** NM2707

**BIA Bond number:**

**Do you have a reclamation bond?** NO

**Is the reclamation bond a rider under the BLM bond?**

**Is the reclamation bond BLM or Forest Service?**

**BLM reclamation bond number:**

**Forest Service reclamation bond number:**

**Forest Service reclamation bond attachment:**

**Reclamation bond number:**

**Reclamation bond amount:**

**Reclamation bond rider amount:**

**Additional reclamation bond information attachment:**

DISTRICT I  
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II  
811 South First, Artesia, NM 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV  
2040 South Pacheco, Santa Fe, NM 87506

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102  
Revised August 1, 2011

Submit one copy to Appropriate  
District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

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☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-025-47933	Pool Code 17980	Pool Name WOLFCAMP A DOGIE DRAW; WOLFCAMP
Property Code 326534 -	Property Name PITCHBLEND FED 24-25	Well Number 604H
OGRID No. 162928	Operator Name ENERGEN RESOURCES CORPORATION	Elevation 3349'

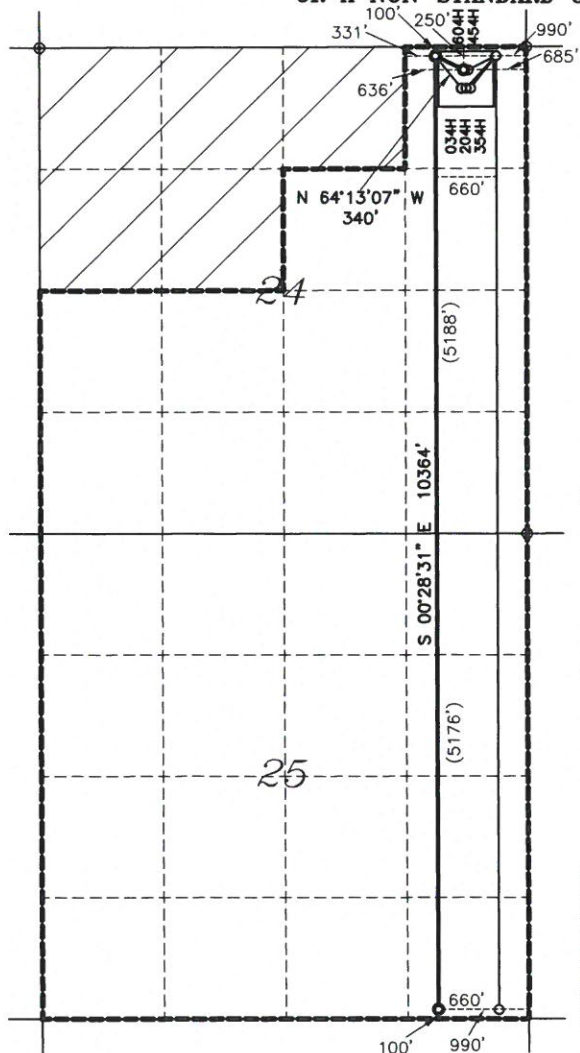
Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	24	25-S	34-E	A	250	NORTH	685	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	25	25-S	34-E	P	100	SOUTH	990	EAST	LEA
Dedicated Acres 320	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



SHL: 250' FNL & 685' FEL  
NAD 27  
N: 409449.95  
E: 783722.09  
LAT: 32.1225030  
LON: 103.4173494  
NAD 83  
N: 409507.99  
E: 824908.71  
LAT: 32.1225030  
LON: 103.4173494

1ST T/P: 100' FNL & 990' FEL  
NAD 27  
N: 409597.91  
E: 783415.78  
LAT: 32.1220461  
LON: 103.2853081  
NAD 83  
N: 409655.95  
E: 824602.39  
LAT: 32.1220461  
LON: 103.2853081

- NOTES:
- COORDINATES AND BEARINGS ARE BASED ON LAMBERT CONICAL PROJECTION OF THE STATE PLANE COORDINATE SYSTEM NAD 83, CORRS 96, NEW MEXICO EAST ZONE WITH A CONVERGENCE ANGLE OF 0.53778259 AND DISTANCES ARE OF GRID VALUE WITH A CENTRAL COMBINED SCALE FACTOR OF 0.99985905. THE POSITIONAL TOLERANCE OF THIS SURVEY EXCEEDS THE REQUIREMENTS FOR A CONSTRUCTION SURVEY.
  - SCALE 1" = 2000'
  - REVISED APRIL 12, 2019 TO CORRECTED LAT & LONG COORDINATES.

LAST T/P & BHL: 100' FSL & 990' FEL  
NAD 27  
N: 399234.65  
E: 783501.29  
LAT: 32.0944296  
LON: 103.4183411  
NAD 83  
N: 399292.42  
E: 824688.37  
LAT: 32.0944296  
LON: 103.4183411

OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or compulsory pooling order heretofore entered by the division.

Signature: *Jenifer Sorby* Date: 5/8/19  
Printed Name: Jenifer Sorby  
Date: 5/8/19

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

DECEMBER 8, 2017  
Date Surveyed  
Signature & Seal of Professional Surveyor

Signature: *WILSON D. WATSON JR.* Date: JULY 12, 2018  
REVISED MAY 7, 2019  
Certificate No. WILSON D. WATSON JR. P.L.S. #3959  
WATSON PROFESSIONAL GROUP INC



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## GAS CAPTURE PLAN

Date: 10/30/18

☒ Original Operator & OGRID No.: **Energen Resources Corporation 162928**  
☐ Amended - Reason for Amendment: Brenda F. Rathjen Energen Regulatory Analyst 432-688-3323 brathjen@energen.com

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

*Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).*

### Well(s)/Production Facility – Name of facility – Central Tank Battery on Pad #3 of the Pitchblende Fed lease

The well(s) that will be located at the production facility are shown in the table below.

Well Name	API	Well Location	Footages	Expected MCF/D	Flared or Vented	Comments
SEE ATTACHED FOR WELLS ON LEASE						

### Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to **Lucid Energy Delaware, LLC** and will be connected to **Lucid Energy Delaware, LLC** low/high pressure gathering system located in **Lea County**, New Mexico. It will require **~12,290'** of pipeline to connect the facility to low/high pressure gathering system. **Energen Resources Corporation** provides (periodically) to **Lucid Energy Delaware, LLC** (Gas Transporter) a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, **Energen Resources Corporation** (Operator) and **Lucid Energy Delaware, LLC** (Gas Transporter) have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at **Lucid's Red Hills Processing Plant** located in **Sec.13, Twn. 24S, Rng.33E, Lea County, New Mexico**. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

### Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on Gas Transporter system at that time. Based on current information, it is Operator's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

### Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines

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GAS CAPTURE PLAN page 3

**Energen Resources Corporation 162928**

**Well(s)/Production Facility – Pitchblende Fed CTB facility on Pad #3, Lea County NM**

*The well(s) that will be located at the production facility are shown in the table below.*

Well Name	API	Well Location (ULSTR)	Footages	Expected MCF/D	Flared or vented	Comments
Pitchblended Fed 24-25 #202H	30-025-	K, 24-25S-34E	2192 FSL 1980 FWL	1,900	As needed	<i>pad 2</i>
Pitchblended Fed 24-25 #352H	30-025-	K, 24-25S-34E	2192 FSL 2030 FWL	1,900	As needed	<i>pad 2</i>
Pitchblended Fed 24-25 #203H	30-025-	G, 24-25S-34E	1772 FNL 1980 FEL	2,200	As needed	<i>pad 3</i>
Pitchblended Fed 24-25 #353H	30-025-	G, 24-25S-34E	1772 FNL 1930 FEL	2,200	As needed	<i>pad 3</i>
Pitchblended Fed 24-25 #034H	30-025-	A, 24-25S-34E	450 FNL 710 FEL	2,500	As needed	<i>pad 4</i>
Pitchblended Fed 24-25 #204H	30-025-	A, 24-25S-34E	450 FNL 660 FEL	2,500	As needed	<i>pad 4</i>
Pitchblended Fed 24-25 #354H	30-025-	A, 24-25S-34E	450 FNL 610 FEL	2,500	As needed	<i>pad 4</i>
Pitchblended Fed 24-25 #454H	30-025-	A, 24-25S-34E	250 FNL 635 FEL	2,500	As needed	<i>pad 4</i>
Pitchblended Fed 24-25 #604H	30-025- <b>30-025-47933</b>	A, 24-25S-34E	250 FNL 685 FEL	2,500	As needed	<i>pad 4</i>
Pitchblended Fed 19-30 #035H	30-025-	D, 19-25S-35E	450 FNL 610 FWL	2,500	As needed	<i>pad 5</i>
Pitchblended Fed 19-30 #205H	30-025-	D, 19-25S-35E	450 FNL 660 FWL	2,500	As needed	<i>pad 5</i>
Pitchblended Fed 19-30 #355H	30-025-	D, 19-25S-35E	450 FNL 710 FWL	2,500	As needed	<i>pad 5</i>
Pitchblended Fed 19-30 #455H	30-025-	D, 19-25S-35E	250 FNL 685 FWL	2,500	As needed	<i>pad 5</i>
Pitchblended Fed 19-30 #605H	30-025-	D, 19-25S-35E	250 FNL 635 FWL	2,500	As needed	<i>pad 5</i>
Pitchblended Fed 19-30 #036H	30-025-	C, 19-25S-35E	450 FNL 1930 FWL	2,200	As needed	<i>pad 6</i>
Pitchblended Fed 19-30 #206H	30-025-	C, 19-25S-35E	450 FNL 1980 FWL	2,200	As needed	<i>pad 6</i>
Pitchblended Fed 19-30 #356H	30-025-	C, 19-25S-35E	450 FNL 2030 FWL	2,200	As needed	<i>pad 6</i>
Pitchblended Fed 19-30 #456H	30-025-	C, 19-25S-35E	250 FNL 2005 FWL	2,200	As needed	<i>pad 6</i>
Pitchblended Fed 19-30 #606H	30-025-	C, 19-25S-35E	250 FNL 1955 FWL	2,200	As needed	<i>pad 6</i>