

Form 3160-3
(June 2015)FORM APPROVED
OMB No. 1004-0137
Expires: January 31, 2018

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER 1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		5. Lease Serial No. 6. If Indian, Allottee or Tribe Name 7. If Unit or CA Agreement, Name and No. 8. Lease Name and Well No. <div style="text-align: center; font-weight: bold;">[40338]</div>
2. Name of Operator <div style="text-align: center; font-weight: bold;">[215099]</div>		9. API Well No. 30-025-50175
3a. Address	3b. Phone No. (include area code)	10. Field and Pool, or Exploratory [37580] XXXXXX
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.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM. |
|---|---|

25. Signature	Name (Printed/Typed)	Date
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.

NGMP Rec 04/28/2022

SL

(Continued on page 2)



Approval Date: 06/04/2021

 KZ
 05/27/2022

*(Instructions on page 2)

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-025 50175	² Pool Code 37580	³ Pool Name Lea, Bone Spring, South
⁴ Property Code 40338	⁵ Property Name PERRY 22 FEDERAL COM	⁶ Well Number 16H
⁷ OGRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 3653.5'

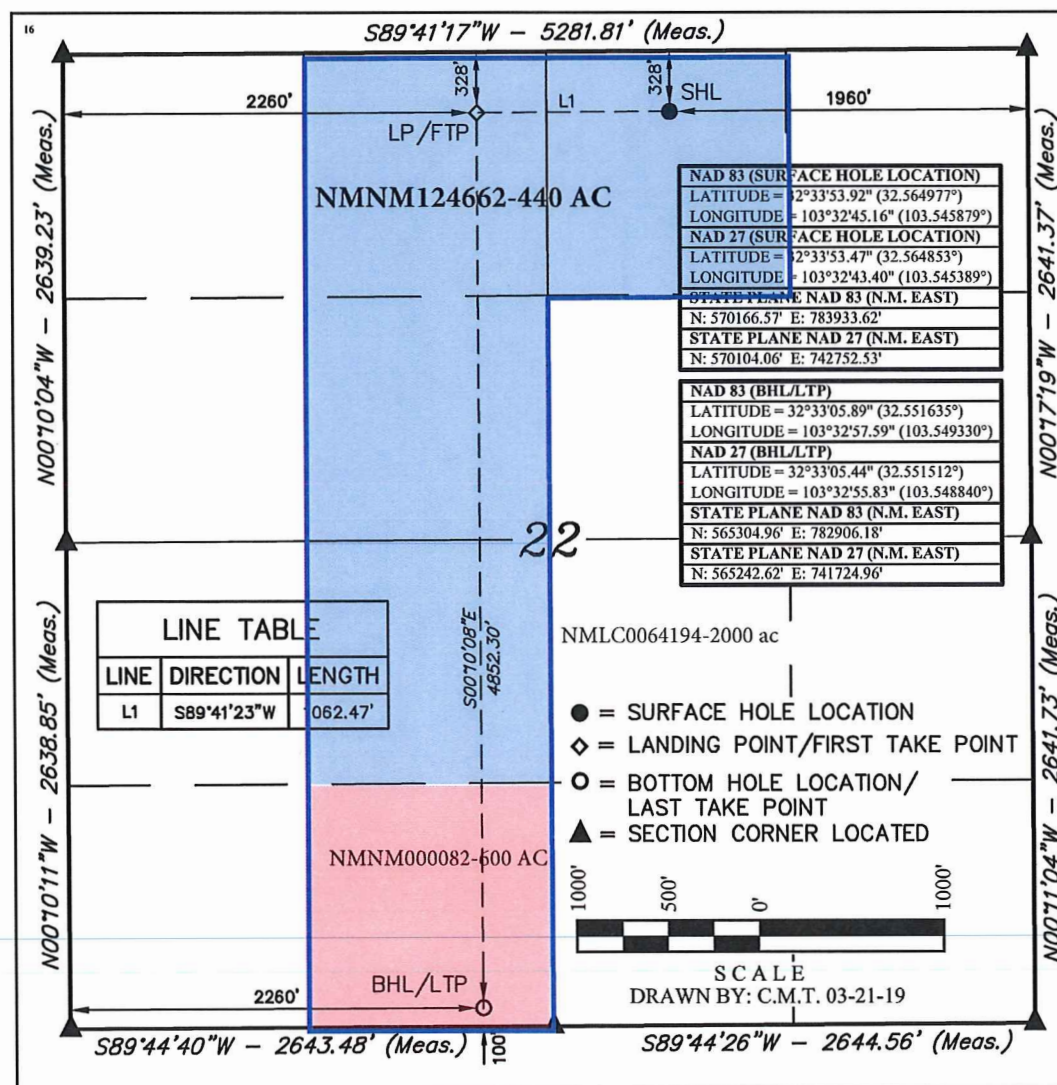
¹⁰ Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	22	20S	34E		328	NORTH	1960	EAST	LEA

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	22	20S	34E		100	SOUTH	2260	WEST	LEA
¹² Dedicated Acres 160	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



**¹⁷ 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 a compulsory pooling order heretofore entered by the division.

Signature: Hope Knauls Date: 7-25-19

Printed Name

hknauls@cimarex.com

E-mail Address

**¹⁸ 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.

March 15, 2019

Date of Survey

Signature and Seal of Professional Surveyor:



Certificate Number:

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⁷ OGRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 3653.5'

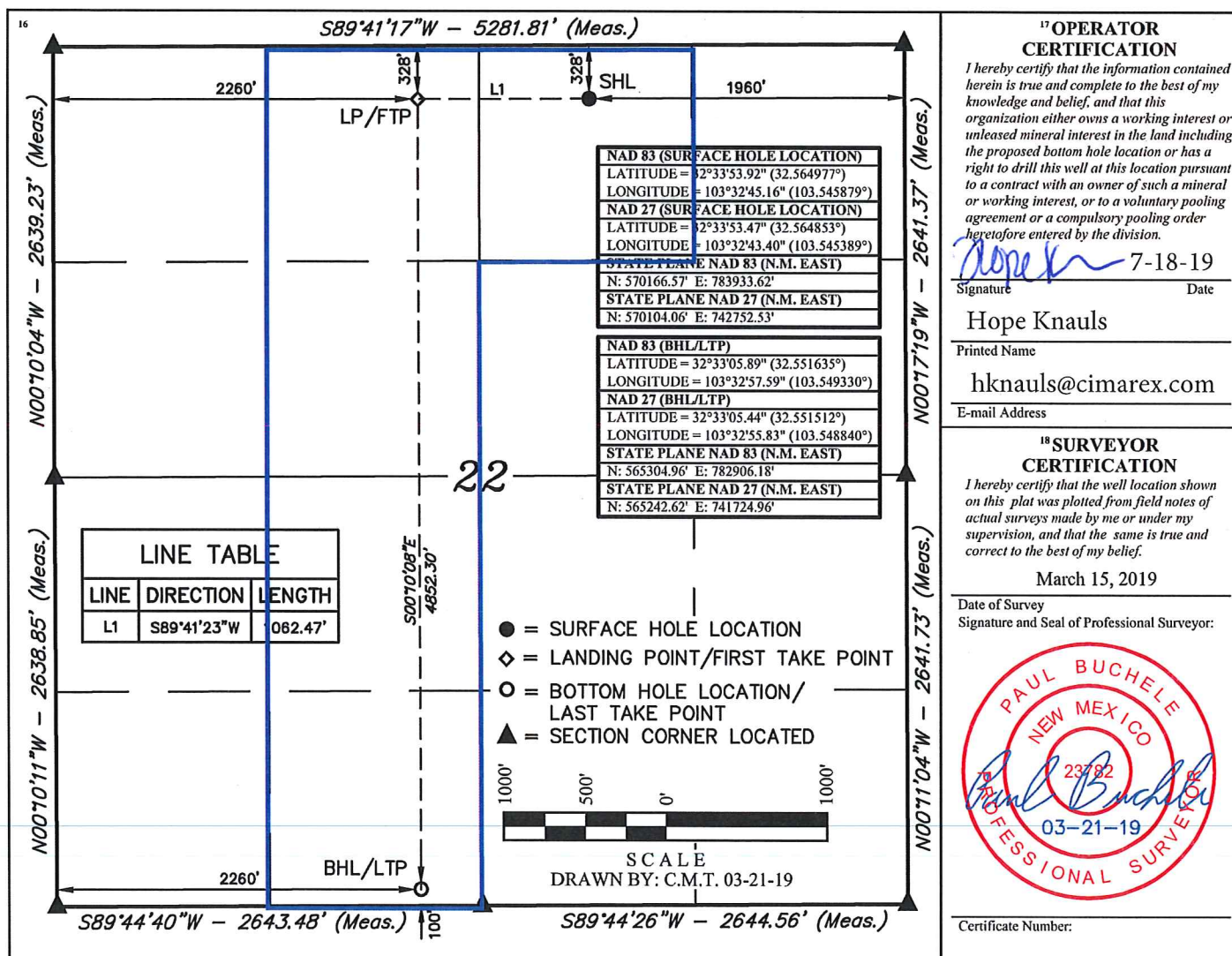
" Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	22	20S	34E		328	NORTH	1960	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
N	22	20S	34E		100	SOUTH	2260	WEST	LEA
¹² Dedicated Acres 160	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.						

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.





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

Operator Certification Data Report

06/07/2021

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: Amithy Crawford

Signed on: 07/31/2019

Title: Regulatory Analyst

Street Address: 600 N MARIENFELD STE 600

City: MIDLAND

State: TX

Zip: 79701

Phone: (432)620-1909

Email address: acrawford@cimarex.com

Field Representative

Representative Name:

Street Address:

City:

State:

Zip:

Phone:

Email address:



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

Application Data Report

06/07/2021

APD ID: 10400042302

Submission Date: 07/31/2019

Highlighted data
reflects the most
recent changes

Operator Name: CIMAREX ENERGY COMPANY

Well Name: PERRY 22 FEDERAL COM

Well Number: 16H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - General

APD ID: 10400042302

Tie to previous NOS? Y

Submission Date: 07/31/2019

BLM Office: CARLSBAD

User: Amithy Crawford

Title: Regulatory Analyst

Federal/Indian APD: FED

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

Lease number: NMNM124662

Lease Acres:

Surface access agreement in place?

Allotted?

Reservation:

Agreement in place? NO

Federal or Indian agreement:

Agreement number:

Agreement name:

Keep application confidential? YES

Permitting Agent? NO

APD Operator: CIMAREX ENERGY COMPANY

Operator letter of designation:

Operator Info

Operator Organization Name: CIMAREX ENERGY COMPANY

Operator Address: 600 N MARIENFELD STREET ST SUITE 600

Zip: 79701

Operator PO Box:

Operator City: MIDLAND

State: TX

Operator Phone: (432)571-7800

Operator Internet Address: tstathem@cimarex.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: PERRY 22 FEDERAL COM

Well Number: 16H

Well API Number:

Field/Pool or Exploratory? Field and Pool

Field Name: JENNINGS

Pool Name: LEA; BONE
SPRING

Is the proposed well in an area containing other mineral resources? USEABLE WATER,POTASH

Operator Name: CIMAREX ENERGY COMPANY**Well Name:** PERRY 22 FEDERAL COM**Well Number:** 16H**Is the proposed well in an area containing other mineral resources?** USEABLE WATER,POTASH**Is the proposed well in a Helium production area?** N**Use Existing Well Pad?** YES**New surface disturbance?** N**Type of Well Pad:** MULTIPLE WELL**Multiple Well Pad Name:****Number:** 15 & 16H W2E2 PAD**Well Class:** HORIZONTAL

PERRY 22 FED COM

Number of Legs: 1**Well Work Type:** Drill**Well Type:** OIL WELL**Describe Well Type:****Well sub-Type:** INFILL**Describe sub-type:****Distance to town:** 26 Miles**Distance to nearest well:** 40 FT**Distance to lease line:** 328 FT**Reservoir well spacing assigned acres Measurement:** 200 Acres**Well plat:** Perry_22_Fed_Com_16H_C102_BLM_Lease_Plat_20190731124414.pdf

Perry_22_Fed_Com_16H_C102_20190731124424.pdf

Well work start Date: 11/01/2019**Duration:** 30 DAYS**Section 3 - Well Location Table****Survey Type:** RECTANGULAR**Describe Survey Type:****Datum:** NAD83**Vertical Datum:** NAVD88**Survey number:** 23782**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	328	FNL	1960	FEL	20S	34E	22	Aliquot NWNE	32.564977	-103.545879	LEA	NEW MEXICO	FIRST PRIN	F	NMNM 124662	3653	0	0	
KOP Leg #1	328	FNL	2258	FWL	20S	34E	22	Aliquot NENW	32.564969	-103.549331	LEA	NEW MEXICO	FIRST PRIN	F	NMNM 124662	-6839	10580	10492	

Operator Name: CIMAREX ENERGY COMPANY**Well Name:** PERRY 22 FEDERAL COM**Well Number:** 16H

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	328	FNL	2258	FWL	20S	34E	22	Aliquot NENW	32.564969	- 103.549331	LEA	NEW MEXICO	FIRST PRIN	F	NMNM 124662	- 6839	10580	10492	
EXIT Leg #1	1320	FSL	2259	FWL	20S	34E	22	Aliquot SESW	32.554989	- 103.549331	LEA	NEW MEXICO	FIRST PRIN	F	NMNM 082	- 7371	14485	11024	
BHL Leg #1	100	FSL	2260	FWL	20S	34E	22	Aliquot SESW	32.551636	- 103.549331	LEA	NEW MEXICO	FIRST PRIN	F	NMNM 082	- 7392	15705	11045	



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

Drilling Plan Data Report

06/07/2021

APD ID: 10400042302

Submission Date: 07/31/2019

Highlighted data
reflects the most
recent changes

Operator Name: CIMAREX ENERGY COMPANY

Well Name: PERRY 22 FEDERAL COM

Well Number: 16H

[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
503976	RUSTLER	3653	1636	1636		USEABLE WATER	N
503977	TOP SALT	-1824	1824	1824		NONE	N
503978	BASE OF SALT	-2148	2148	2148		NONE	N
503979	YATES	-3654	3654	3654		NONE	N
503980	CAPITAN REEF	-4583	4583	4583		NONE	N
503981	DELAWARE SAND	-5561	5561	5561		NONE	N
503982	BRUSHY CANYON	-8107	8107	8107		NATURAL GAS, OIL	N
503983	BONE SPRING	-8390	8390	8390		NATURAL GAS, OIL	N
503984	BONE SPRING 1ST	-9557	9557	9557		NATURAL GAS, OIL	N
503985	BONE SPRING 2ND	-10075	10075	10075		NATURAL GAS, OIL	N
503986	BONE SPRING 3RD	-10970	10970	10970		NATURAL GAS, OIL	Y
503987	WOLFCAMP	-11005	11005	11005		NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Pressure Rating (PSI): 2M

Rating Depth: 5541

Equipment: A BOP consisting of three rams, including one blind ram and two pipe rams and one annular preventer. An accumulator that meets the requirements in Onshore Order #2 for the pressure rating of the BOP stack. A rotating head may be installed as needed. A Kelly clock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

Requesting Variance? YES

Variance request: Co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used. Variance to include Hammer Union connections on lines downstream of the buffer tank only.

Operator Name: CIMAREX ENERGY COMPANY**Well Name:** PERRY 22 FEDERAL COM**Well Number:** 16H

Testing Procedure: A multi-bowl wellhead system will be utilized. After running the 13-3/8" surface casing, a 13 5/8" BOP/BOPE system with a minimum working pressure of 3000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 3000 psi test. Annular will be tested to 100% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2. The multi-bowl wellhead will be installed by vendor's representative. A copy of the installation instructions has been sent to the BLM field office. The wellhead will be installed by a third-party welder while being monitored by the wellhead vendor representative. All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type. A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 3000 psi. The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater. The casing string utilizing steel body pack-off will be tested to 70% of casing burst. If well conditions dictate conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

Choke Diagram Attachment:

Perry_22_Fed_Com_16H_Choke_2M3M_20190726092706.pdf

BOP Diagram Attachment:

Perry_22_Fed_Com_16H_BOP_2M_20190726092722.pdf

Pressure Rating (PSI): 3M**Rating Depth:** 15706

Equipment: A BOP consisting of three rams, including one blind ram and two pipe rams and one annular preventer. An accumulator that meets the requirements in Onshore Order #2 for the pressure rating of the BOP stack. A rotating head may be installed as needed. A Kelly clock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

Requesting Variance? YES

Variance request: Co-flex line between the BOP and choke manifold. Certification for proposed co-flex hose is attached. The hose is not required by the manufacturer to be anchored. In the event the specific hose is not available, one of equal or higher rating will be used. Variance to include Hammer Union connections on lines downstream of the buffer tank only.

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Choke Diagram Attachment:

Perry_22_Fed_Com_16H_Choke_2M3M_20190726092823.pdf

BOP Diagram Attachment:

Perry_22_Fed_Com_16H_BOP_3M_20190726092833.pdf

Operator Name: CIMAREX ENERGY COMPANY

Well Name: PERRY 22 FEDERAL COM

Well Number: 16H

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	1686	0	1686			1686	J-55	54.5	BUTT	1.46	3.55	BUOY	9.28	BUOY	9.28
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	5541	0	5541			5541	J-55	40	LT&C	1.32	1.34	BUOY	2.35	BUOY	2.35
3	PRODUCTION	8.75	7.0	NEW	API	N	0	10581	0	10581			10581	L-80	29	BUTT	1.42	1.65	BUOY	3.13	BUOY	3.13
4	PRODUCTION	8.75	5.5	NEW	API	N	10581	15706	10581	11045			5125	L-80	17	BUTT	1.22	1.5	BUOY	50.336	BUOY	50.33

Casing Attachments

Casing ID: 1 String Type: SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Perry_22_Fed_Com_16H_Casing_Assumptions_20190726093635.pdf

Operator Name: CIMAREX ENERGY COMPANY**Well Name:** PERRY 22 FEDERAL COM**Well Number:** 16H**Casing Attachments**

Casing ID: 2 **String Type:** INTERMEDIATE**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**Perry_22_Fed_Com_16H_Casing_Assumptions_20190726093845.pdf

Casing ID: 3 **String Type:** PRODUCTION**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**Perry_22_Fed_Com_16H_Casing_Assumptions_20190726094025.pdf

Casing ID: 4 **String Type:** PRODUCTION**Inspection Document:****Spec Document:****Tapered String Spec:****Casing Design Assumptions and Worksheet(s):**Perry_22_Fed_Com_16H_Casing_Assumptions_20190726095019.pdf

Section 4 - Cement

Operator Name: CIMAREX ENERGY COMPANY**Well Name:** PERRY 22 FEDERAL COM**Well Number:** 16H

String Type	Lead/Tail	Stage Tool Depth	Top MD	Bottom MD	Quantity(sx)	Yield	Density	Cu Ft	Excess%	Cement type	Additives
SURFACE	Lead		0	1606	817	1.72	13.5	1404	50	Class C	Bentonite
SURFACE	Tail		0	1606	219	1.34	14.8	293	25	Class C	LCM
INTERMEDIATE	Lead	3450	0	3450	767	1.88	12.9	1441	50	35;65 (PozC)	Salt + Bentonite

INTERMEDIATE	Lead	3450	3450	5541	273	1.88	12.9	513	50	35:65 (Poz:C)	Salt & Bentonite
INTERMEDIATE	Tail		3450	5541	292	1.34	14.8	391	25	Class C	LCM
PRODUCTION	Lead		0	1570 6	328	3.64	10.3	1192	25	Tuned Light	LCM
PRODUCTION	Tail		0	1570 6	741	1.3	14.2	963	25	50:50 (PozH)	salt, bentonite, fluid loss, dispersant, sms
PRODUCTION	Lead		0	1570 6	328	3.64	10.3	1192	25	Tuned Light	LCM
PRODUCTION	Tail		0	1570 6	741	1.3	14.2	963	25	50:50 PozH	Salt, bentonite, fluid loss, dispersant, sms

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: Sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks. In order to run DSTs, open hole logs, and casing, the viscosity and water loss may have to be adjusted in order to meet these needs.

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: PVT/Pason/Visual Monitoring

Describe the mud monitoring system utilized: Spud mud for Surface casing, Salt Saturated for Intermediate, Other-FW/Cut brine for Production Casing

Circulating Medium Table

Operator Name: CIMAREX ENERGY COMPANY**Well Name:** PERRY 22 FEDERAL COM**Well Number:** 16H

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	1686	SPUD MUD	8.3	8.8							
1686	5541	OTHER : Brine Water	9.7	10.2							
5541	15706	OIL-BASED MUD	8.5	9							

Section 6 - Test, Logging, Coring

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

No DST Planned

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

CDL,DS,GR

Coring operation description for the well:

N/A

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 5169

Anticipated Surface Pressure: 5169

Anticipated Bottom Hole Temperature(F): 126

Anticipated abnormal pressures, temperatures, or potential geologic hazards? YES

Describe:

Lost circulation may be encountered in the Delaware mountain and the Capitan Reef group. Abnormal pressure as well as hole stability issues may be encountered in the Wolfcamp.

Contingency Plans geohazards description:

Lost circulation material will be available, as well as additional drilling fluid along with the fluid volume in the drilling rig pit system. Drilling fluid can be mixed on location or mixed in vendor mud plant and trucked to location if needed. Sufficient barite will be available to maintain appropriate mud weight for the Wolfcamp interval.

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Perry_22_Fed_Com_16H_H2S_Plan_20190729092838.pdf

Operator Name: CIMAREX ENERGY COMPANY

Well Name: PERRY 22 FEDERAL COM

Well Number: 16H

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Perry_22_Fed_Com_16H_Directional_Prelim_20190729101233.pdf

Perry_22_Fed_Com_16H_AC_Report_20190729101247.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

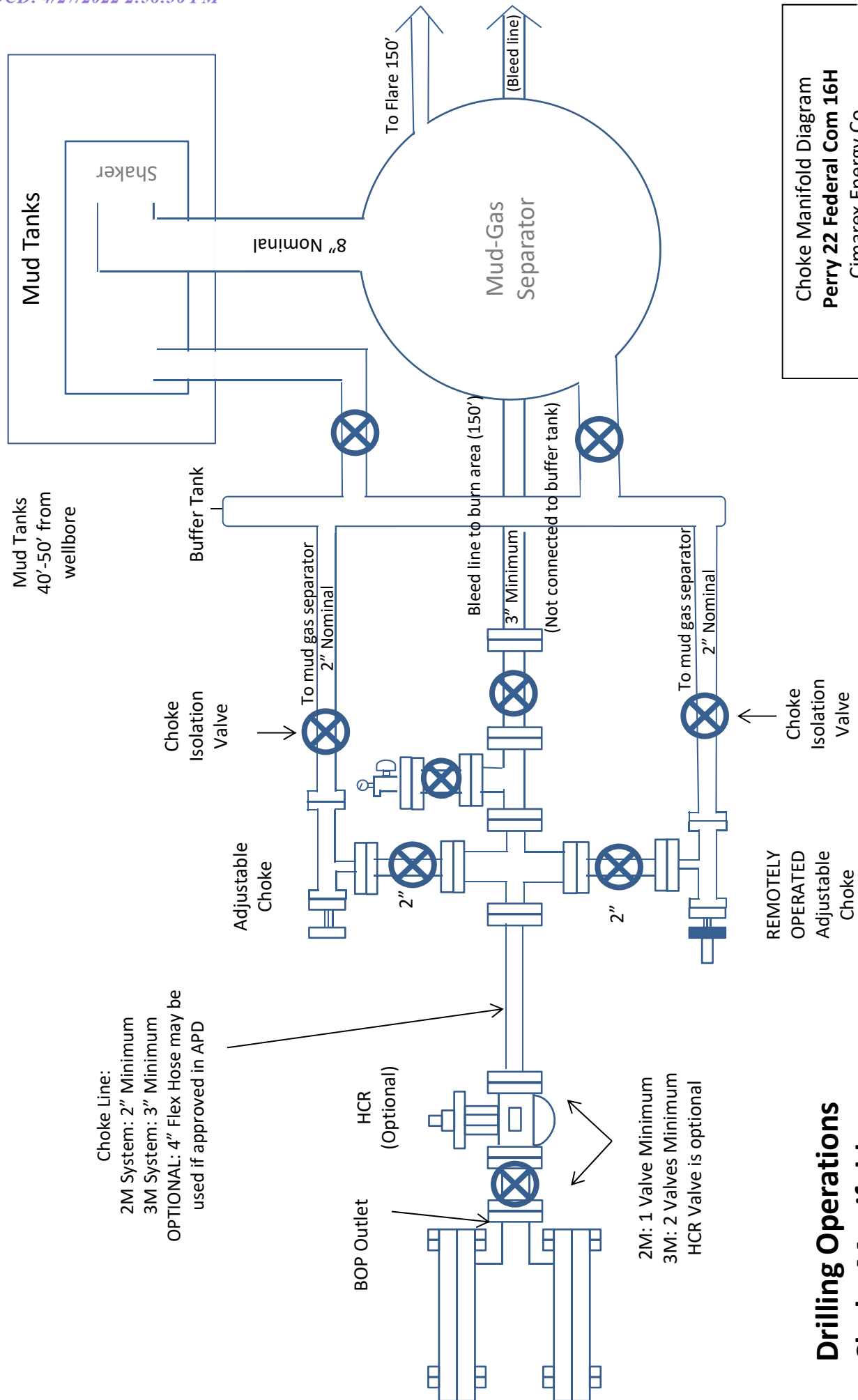
Perry_22_Fed_Com_16H_Flex_Hose_20190729102120.pdf

Perry_22_Fed_Com_16H_Gas_Capture_Plan_20190729102122.pdf

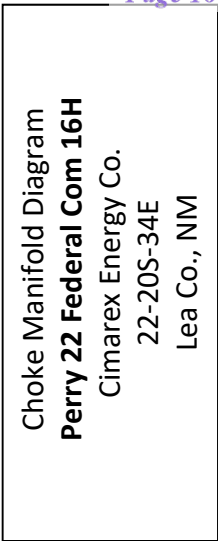
Perry_22_Fed_Com_16H_Drilling_Plan_20210412151454.pdf

Other Variance attachment:

Perry_22_Fed_Com_16H_Multibowl_Wellhead_20200219074012.pdf

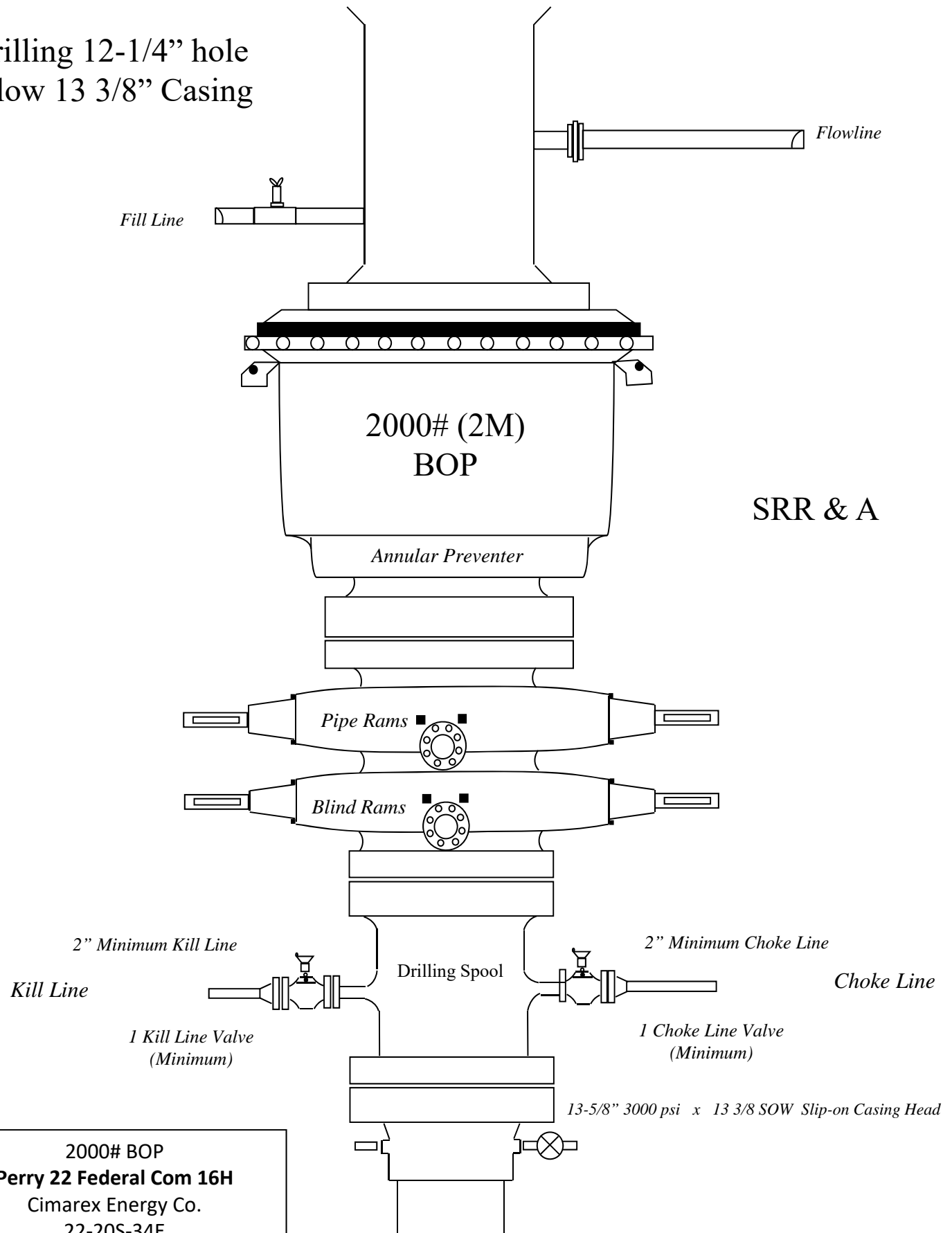


Choke Manifold Diagram
Perry 22 Federal Com 16H
Cimarex Energy Co.
22-20S-34E
Lea Co., NM



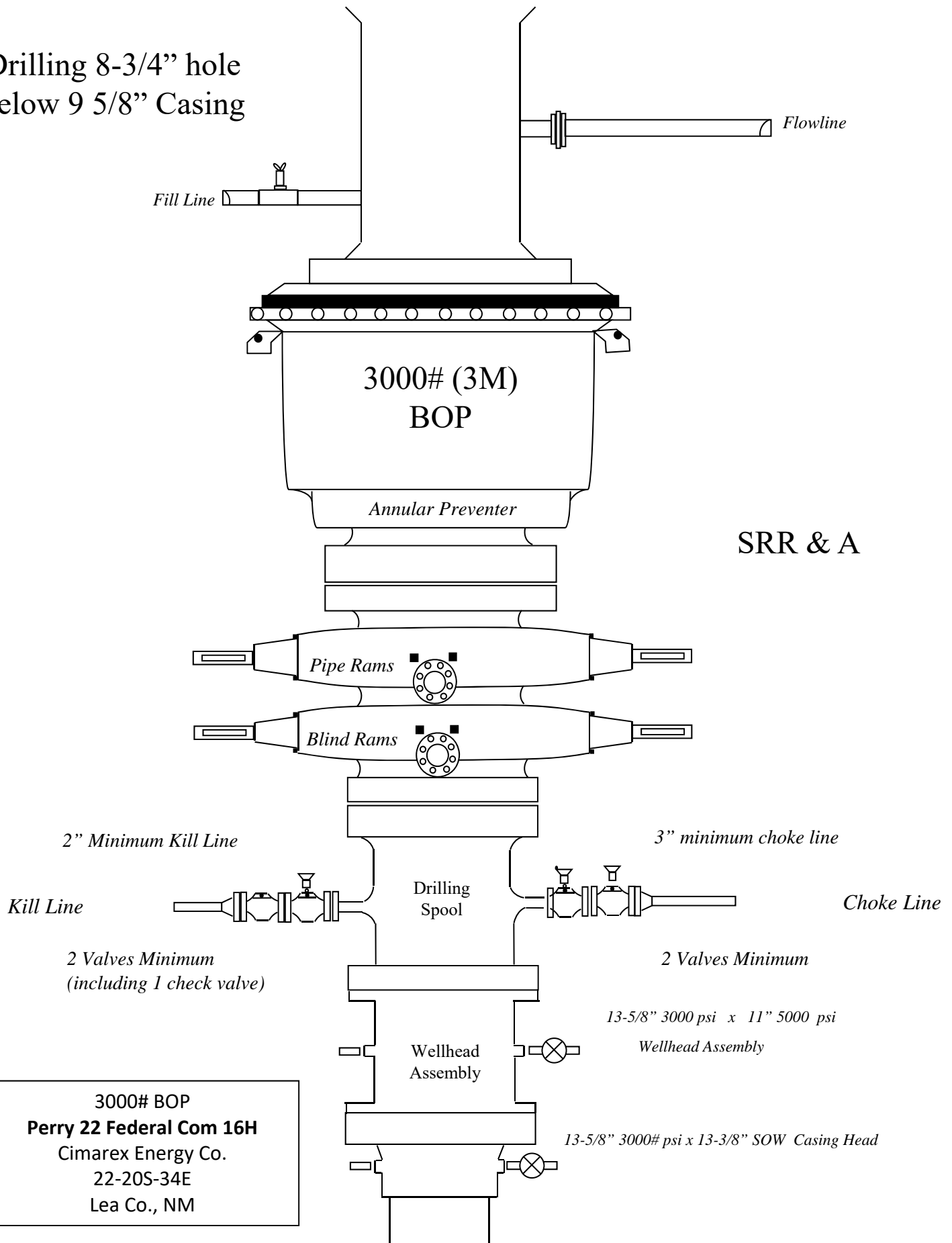
Drilling Operations Choke Manifold 2M/3M Service

Drilling 12-1/4" hole
below 13 3/8" Casing



2000# BOP
Perry 22 Federal Com 16H
Cimarex Energy Co.
22-20S-34E
Lea Co., NM

Drilling 8-3/4" hole
below 9 5/8" Casing



3000# BOP
Perry 22 Federal Com 16H
Cimarex Energy Co.
22-20S-34E
Lea Co., NM

Perry 22 Federal Com 16H

Casing Assumptions

2. Casing Program

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	1686	1686	13-3/8"	54.50	J-55	BT&C	1.46	3.55	9.28
12 1/4	0	5541	5541	9-5/8"	40.00	J-55	LT&C	1.32	1.34	2.35
8 3/4	0	10581	10581	7"	29.00	L-80	LT&C	1.42	1.65	3.13
8 3/4	10581	15706	11045	5-1/2"	17.00	L-80	BT&C	1.22	1.50	50.33
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations.

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

Perry 22 Federal Com 16H

Casing Assumptions

2. Casing Program

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
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8 3/4	0	10581	10581	7"	29.00	L-80	LT&C	1.42	1.65	3.13
8 3/4	10581	15706	11045	5-1/2"	17.00	L-80	BT&C	1.22	1.50	50.33
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations.

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Perry 22 Federal Com 16H

Casing Assumptions

2. Casing Program

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
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TVD was used on all calculations.

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

Perry 22 Federal Com 16H

Casing Assumptions

2. Casing Program

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
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BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations.

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

Perry 22 Federal Com 16H

Cimarex Energy Co.

UL: B, Sec. 22, 20S, 34E

Lea Co., NM

- 1 All Company and Contract personnel admitted on location must be trained by a qualified H₂S safety instructor to the following:
 - A. Characteristics of H₂S
 - B. Physical effects and hazards
 - C. Principal and operation of H₂S detectors, warning system and briefing areas.
 - D. Evacuation procedure, routes and first aid.
 - E. Proper use of safety equipment & life support systems
 - F. Essential personnel meeting Medical Evaluation criteria will receive additional training on the proper use of 30 minute pressure demand air packs.

H₂S Detection and Alarm Systems:

 - A. H₂S sensors/detectors to be located on the drilling rig floor, in the base of the sub structure/cellar area, on the mud pits in the shale shaker area. Additional H₂S detectors may be placed as deemed necessary.
 - B. An audio alarm system will be installed on the derrick floor and in the top doghouse.
- 3 Windsock and/or wind streamers:
 - A. Windsock at mudpit area should be high enough to be visible.
 - B. Windsock on the rig floor and / or top doghouse should be high enough to be visible.
- 4 Condition Flags and Signs
 - A. Warning sign on access road to location.
 - B. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger (H₂S present in dangerous concentration). Only H₂S trained and certified personnel admitted to location.
- 5 Well control equipment:
 - A. See exhibit "E-1"
- 6 Communication:
 - A. While working under masks chalkboards will be used for communication.
 - B. Hand signals will be used where chalk board is inappropriate.
 - C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.
- 7 Drillstem Testing:

No DSTs or cores are planned at this time.
- 8 Drilling contractor supervisor will be required to be familiar with the effects H₂S has on tubular goods and other mechanical equipment.
- 9 If H₂S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H₂S scavengers if necessary.

H₂S Contingency Plan
Perry 22 Federal Com 16H
Cimarex Energy Co.
UL: B, Sec. 22, 20S, 34E
Lea Co., NM

Emergency Procedures

In the event of a release of gas containing H₂S, the first responder(s) must:

- « Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- « Evacuate any public places encompassed by the 100 ppm ROE.
- « Be equipped with H₂S monitors and air packs in order to control the release.
- « Use the "buddy system" to ensure no injuries occur during the 432-620-1975
- « Take precautions to avoid personal injury during this operation.
- « Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- « Have received training in the:
 - Detection of H₂S, and
 - Measures for protection against the gas,
 - Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

Characteristics of H₂S and SO₂

Please see attached International Chemical Safety Cards.

Contacting Authorities

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

H₂S Contingency Plan Emergency Contact
s Perry 22 Federal Com 16H
 Cimarex Energy Co.
 UL: B, Sec. 22, 20S, 34E
 Lea Co., NM

Company Office

Cimarex Energy Co. of Colorado	800-969-4789
Co. Office and After-Hours Menu	

Key Personnel

Name	Title	Office	Mobile
Larry Seigrist	Drilling Manager	432-620-1934	580-243-8485
Charlie Pritchard	Drilling Superintendent	432-620-1975	432-238-7084
Roy Shirley	Construction Superintendent		432-634-2136

Artesia

Ambulance	911
State Police	575-746-2703
City Police	575-746-2703
Sheriff's Office	575-746-9888
Fire Department	575-746-2701
Local Emergency Planning Committee	575-746-2122
New Mexico Oil Conservation Division	575-748-1283

Carlsbad

Ambulance	911
State Police	575-885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-887-3798
Local Emergency Planning Committee	575-887-6544
US Bureau of Land Management	575-887-6544

Santa Fe

New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
New Mexico Emergency Response Commission (Santa Fe) 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
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Medical

Flight for Life - 4000 24th St.; Lubbock, TX	806-743-9911
Aerocare - R3, Box 49F; Lubbock, TX	806-747-8923
Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM	505-842-4433
SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM	505-842-4949

Other

Boots & Coots IWC	800-256-9688	or	281-931-8884
Cudd Pressure Control	432-699-0139	or	432-563-3356
Halliburton	575-746-2757		
B.J. Services	575-746-3569		



Cimarex Perry 22 Federal Com 16H Rev0 RM 28May19 Proposal Geodetic Report

(Non-Def Plan)



Report Date: May 28, 2019 - 04:19 PM
Client: Cimarex Energy
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Perry 22 Federal Com 16H / New Slot
Well: Perry 22 Federal Com 16H
Borehole: Perry 22 Federal Com 16H
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Perry 22 Federal Com 16H Rev0 RM 28May19
Survey Date: May 28, 2019
Tort / AHD / DDI / ERD Ratio: 108.497 ° / 5915.088 ft / 5.960 / 0.536
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 33' 53.91625", W 103° 32' 45.16320"
Location Grid N/E Y/X: N 570166.570 ftUS, E 783933.620 ftUS
CRS Grid Convergence Angle: 0.4239 °
Grid Scale Factor: 0.99997649
Version / Patch: 2.10.760.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 179.575 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3679.500 ft above MSL
Seabed / Ground Elevation: 3653.500 ft above MSL
Magnetic Declination: 6.561 °
Total Gravity Field Strength: 998.5014mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48111.931 nT
Magnetic Dip Angle: 60.453 °
Declination Date: May 28, 2019
Magnetic Declination Model: HDGM 2019
North Reference: Grid North
Grid Convergence Used: 0.4239 °
Total Corr Mag North->Grid North: 6.1374 °
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL [328' FNL, 1960' FEL]	0.00	0.00	191.93	0.00	0.00	0.00	0.00	N/A	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	100.00	0.00	269.45	100.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	200.00	0.00	269.45	200.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	300.00	0.00	269.45	300.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	400.00	0.00	269.45	400.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	500.00	0.00	269.45	500.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	600.00	0.00	269.45	600.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	700.00	0.00	269.45	700.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	800.00	0.00	269.45	800.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	900.00	0.00	269.45	900.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	1000.00	0.00	269.45	1000.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	1100.00	0.00	269.45	1100.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	1200.00	0.00	269.45	1200.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	1300.00	0.00	269.45	1300.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	1400.00	0.00	269.45	1400.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	1500.00	0.00	269.45	1500.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	1600.00	0.00	269.45	1600.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
Rustler	1636.00	0.00	269.45	1636.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	1700.00	0.00	269.45	1700.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	1800.00	0.00	269.45	1800.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
Top Salt	1824.00	0.00	269.45	1824.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	1900.00	0.00	269.45	1900.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	2000.00	0.00	269.45	2000.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	2100.00	0.00	269.45	2100.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
Base Salt (Tansil)	2148.00	0.00	269.45	2148.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
	2200.00	0.00	269.45	2200.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Nudge 2°/100'	2300.00	0.00	269.45	2300.00	0.00	0.00	0.00	0.00	570166.57	783933.62	N 32 33 53.92	W 103 32 45.16
DLS	2400.00	2.00	269.45	2399.98	0.00	-0.02	-1.75	2.00	570166.55	783931.87	N 32 33 53.92	W 103 32 45.18
	2500.00	4.00	269.45	2499.84	0.02	-0.07	-6.98	2.00	570166.50	783926.64	N 32 33 53.92	W 103 32 45.24
	2600.00	6.00	269.45	2599.45	0.04	-0.15	-15.69	2.00	570166.42	783917.93	N 32 33 53.92	W 103 32 45.35
	2700.00	8.00	269.45	2698.70	0.06	-0.27	-27.88	2.00	570166.30	783905.74	N 32 33 53.92	W 103 32 45.49
Hold Nudge	2786.94	9.74	269.45	2784.60	0.09	-0.40	-41.28	2.00	570166.17	783892.34	N 32 33 53.92	W 103 32 45.65
	2800.00	9.74	269.45	2797.47	0.10	-0.42	-43.49	0.00	570166.15	783890.13	N 32 33 53.92	W 103 32 45.67
	2900.00	9.74	269.45	2896.03	0.14	-0.58	-60.41	0.00	570165.99	783873.22	N 32 33 53.91	W 103 32 45.87
	3000.00	9.74	269.45	2994.59	0.17	-0.75	-77.32	0.00	570165.82	783856.30	N 32 33 53.91	W 103 32 46.07
	3100.00	9.74	269.45	3093.15	0.21	-0.91	-94.24	0.00	570165.66	783839.39	N 32 33 53.91	W 103 32 46.26
	3200.00	9.74	269.45	3191.71	0.25	-1.07	-111.15	0.00	570165.50	783822.47	N 32 33 53.91	W 103 32 46.46
	3300.00	9.74	269.45	3290.27	0.29	-1.24	-128.07	0.00	570165.33	783805.56	N 32 33 53.91	W 103 32 46.66
	3400.00	9.74	269.45	3388.82	0.33	-1.40	-144.98	0.00	570165.17	783788.64	N 32 33 53.91	W 103 32 46.86
	3500.00	9.74	269.45	3487.38	0.36	-1.57	-161.90	0.00	570165.00	783771.73	N 32 33 53.91	W 103 32 47.05
	3600.00	9.74	269.45	3585.94	0.40	-1.73	-178.81	0.00	570164.84	783754.81	N 32 33 53.91	W 103 32 47.25
Yates	3669.05	9.74	269.45	3654.00	0.43	-1.84	-190.49	0.00	570164.73	783743.13	N 32 33 53.91	W 103 32 47.39
	3700.00	9.74	269.45	3684.50	0.44	-1.89	-195.73	0.00	570164.68	783737.90	N 32 33 53.91	W 103 32 47.45
	3800.00	9.74	269.45	3783.06	0.48	-2.06	-212.64	0.00	570164.51	783720.99	N 32 33 53.91	W 103 32 47.65
	3900.00	9.74	269.45	3881.62	0.52	-2.22	-229.56	0.00	570164.35	783704.07	N 32 33 53.91	W 103 32 47.85
	4000.00	9.74	269.45	3980.18	0.55	-2.38	-246.47	0.00	570164.19	783687.16	N 32 33 53.91	W 103 32 48.04
	4100.00	9.74	269.45	4078.74	0.59	-2.55	-263.38	0.00	570164.02	783670.24	N 32 33 53.91	W 103 32 48.24
	4200.00	9.74	269.45	4177.30	0.63	-2.71	-280.30	0.00	570163.86	783653.33	N 32 33 53.91	W 103 32 48.44
	4300.00	9.74	269.45	4275.85	0.67	-2.87	-297.21	0.00	570163.70	783636.41	N 32 33 53.91	W 103 32 48.64
	4400.00	9.74	269.45	4374.41	0.71	-3.04	-314.13	0.00	570163.53	783619.50	N 32 33 53.91	W 103 32 48.83
	4500.00	9.74	269.45	4472.97	0.75	-3.20	-331.04	0.00	570163.37	783602.58	N 32 33 53.91	W 103 32 49.03
Capitan	4600.00	9.74	269.45	4571.53	0.78	-3.36	-347.96	0.00	570163.21	783585.67	N 32 33 53.91	W 103 32 49.23
	4611.64	9.74	269.45	4583.00	0.79	-3.38	-349.93	0.00	570163.19	783583.70	N 32 33 53.91	W 103 32 49.25
	4700.00	9.74	269.45	4670.09	0.82	-3.53	-364.87	0.00	570163.04	783568.76	N 32 33 53.91	W 103 32 49.43
	4800.00	9.74	269.45	4768.65	0.86	-3.69	-381.79	0.00	570162.88	783551.84	N 32 33 53.91	W 103 32 49.62
	4900.00	9.74	269.45	4867.21	0.90	-3.86	-398.70	0.00	570162.71	783534.93	N 32 33 53.91	W 103 32 49.82
	5000.00	9.74	269.45	4965.77	0.94	-4.02	-415.62	0.00	570162.55	783518.01	N 32 33 53.91	W 103 32 50.02
	5100.00	9.74	269.45	5064.33	0.97	-4.18	-432.53	0.00	570162.39	783501.10	N 32 33 53.91	W 103 32 50.22
	5200.00	9.74	269.45	5162.88	1.01	-4.35	-449.45	0.00	570162.22	783484.18	N 32 33 53.91	W 103 32 50.42
	5300.00	9.74	269.45	5261.44	1.05	-4.51	-466.36	0.00	570162.06	783467.27	N 32 33 53.91	W 103 32 50.61
	5400.00	9.74	269.45	5360.00	1.09	-4.67	-483.28	0.00	570161.90	783450.35	N 32 33 53.91	W 103 32 50.81
	5500.00	9.74	269.45	5458.56	1.13	-4.84	-500.19	0.00	570161.73	783433.44	N 32 33 53.90	W 103 32 51.01
Delaware Sands	5600.00	9.74	269.45	5557.12	1.16	-5.00	-517.11	0.00	570161.57	783416.52	N 32 33 53.90	W 103 32 51.21
	5603.94	9.74	269.45	5561.00	1.17	-5.01	-517.77	0.00	570161.56	783415.86	N 32 33 53.90	W 103 32 51.21
	5700.00	9.74	269.45	5655.68	1.20	-5.16	-534.02	0.00	570161.41	783399.61	N 32 33 53.90	W 103 32 51.40
	5800.00	9.74	269.45	5754.24	1.24	-5.33	-550.94	0.00	570161.24	783382.70	N 32 33 53.90	W 103 32 51.60
	5900.00	9.74	269.45	5852.80	1.28	-5.49	-567.85	0.00	570161.08	783365.78	N 32 33 53.90	W 103 32 51.80
	6000.00	9.74	269.45	5951.36	1.32	-5.65	-584.77	0.00	570160.92	783348.87	N 32 33 53.90	W 103 32 52.00
	6100.00	9.74	269.45	6049.91	1.35	-5.82	-601.68	0.00	570160.75	783331.95	N 32 33 53.90	W 103 32 52.19
	6200.00	9.74	269.45	6148.47	1.39	-5.98	-618.60	0.00	570160.59	783315.04	N 32 33 53.90	W 103 32 52.39
	6300.00	9.74	269.45	6247.03	1.43	-6.15	-635.51	0.00	570160.43	783298.12	N 32 33 53.90	W 103 32 52.59
	6400.00	9.74	269.45	6345.59	1.47	-6.31	-652.43	0.00	570160.26	783281.21	N 32 33 53.90	W 103 32 52.79
	6500.00	9.74	269.45	6444.15	1.51	-6.47	-669.34	0.00	570160.10	783264.29	N 32 33 53.90	W 103 32 52.98
	6600.00	9.74	269.45	6542.71	1.55	-6.64	-686.26	0.00	570159.93	783247.38	N 32 33 53.90	W 103 32 53.18
	6700.00	9.74	269.45	6641.27	1.58	-6.80	-703.17	0.00	570159.77	783230.47	N 32 33 53.90	W 103 32 53.38
	6800.00	9.74	269.45	6739.83	1.62	-6.96	-720.09	0.00	570159.61	783213.55	N 32 33 53.90	W 103 32 53.58
	6900.00	9.74	269.45	6838.39	1.66	-7.13	-737.00	0.00	570159.44	783196.64	N 32 33 53.90	W 103 32 53.78
	7000.00	9.74	269.45	6936.94	1.70	-7.29	-753.92	0.00	570159.28	783179.72	N 32 33 53.90	W 103 32 53.97
	7100.00	9.74	269.45	7035.50	1.74	-7.45	-770.83	0.00	570159.12	783162.81	N 32 33 53.90	W 103 32 54.17
	7200.00	9.74	269.45	7134.06	1.77	-7.62	-787.75	0.00	570158.95	783145.89	N 32 33 53.90	W 103 32 54.37
	7300.00	9.74	269.45	7232.62	1.81	-7.78	-804.66	0.00	570158.79	783128.98	N 32 33 53.90	W 103 32 54.57
	7400.00	9.74	269.45	7331.18	1.85	-7.94	-821.58	0.00	570158.63	783112.06	N 32 33 53.90	W 103 32 54.76
	7500.00	9.74	269.45	7429.74	1.89	-8.11	-838.49	0.00	570158.46	783095.15	N 32 33 53.90	W 103 32 54.96

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7600.00	9.74	269.45	7528.30	1.93	-8.27	-855.41	0.00	570158.30	783078.24	N 32 33 53.90	W 103 32 55.16
	7700.00	9.74	269.45	7626.86	1.96	-8.43	-872.32	0.00	570158.14	783061.32	N 32 33 53.90	W 103 32 55.36
	7800.00	9.74	269.45	7725.42	2.00	-8.60	-889.24	0.00	570157.97	783044.41	N 32 33 53.90	W 103 32 55.55
	7900.00	9.74	269.45	7823.98	2.04	-8.76	-906.15	0.00	570157.81	783027.49	N 32 33 53.90	W 103 32 55.75
	8000.00	9.74	269.45	7922.53	2.08	-8.93	-923.07	0.00	570157.64	783010.58	N 32 33 53.90	W 103 32 55.95
	8100.00	9.74	269.45	8021.09	2.12	-9.09	-939.98	0.00	570157.48	782993.66	N 32 33 53.89	W 103 32 56.15
Brushy Canyon	8187.16	9.74	269.45	8107.00	2.15	-9.23	-954.72	0.00	570157.34	782978.92	N 32 33 53.89	W 103 32 56.32
	8200.00	9.74	269.45	8119.65	2.15	-9.25	-956.90	0.00	570157.32	782976.75	N 32 33 53.89	W 103 32 56.34
	8300.00	9.74	269.45	8218.21	2.19	-9.42	-973.81	0.00	570157.15	782959.83	N 32 33 53.89	W 103 32 56.54
	8400.00	9.74	269.45	8316.77	2.23	-9.58	-990.73	0.00	570156.99	782942.92	N 32 33 53.89	W 103 32 56.74
Bone Springs	8474.30	9.74	269.45	8390.00	2.26	-9.70	-1003.29	0.00	570156.87	782930.35	N 32 33 53.89	W 103 32 56.89
	8500.00	9.74	269.45	8415.33	2.27	-9.74	-1007.64	0.00	570156.83	782926.01	N 32 33 53.89	W 103 32 56.94
Drop to Vertical 2°/100' DLS	8585.91	9.74	269.45	8500.00	2.30	-9.88	-1022.17	0.00	570156.69	782911.47	N 32 33 53.89	W 103 32 57.11
	8600.00	9.46	269.45	8513.89	2.31	-9.91	-1024.52	2.00	570156.66	782909.13	N 32 33 53.89	W 103 32 57.13
	8700.00	7.46	269.45	8612.80	2.34	-10.05	-1039.23	2.00	570156.52	782894.42	N 32 33 53.89	W 103 32 57.31
	8800.00	5.46	269.45	8712.16	2.37	-10.16	-1050.47	2.00	570156.41	782883.18	N 32 33 53.89	W 103 32 57.44
	8900.00	3.46	269.45	8811.85	2.38	-10.23	-1058.24	2.00	570156.34	782875.41	N 32 33 53.89	W 103 32 57.53
	9000.00	1.46	269.45	8911.76	2.39	-10.27	-1062.53	2.00	570156.30	782871.12	N 32 33 53.89	W 103 32 57.58
Hold Vertical	9072.85	0.00	269.45	8984.60	2.39	-10.28	-1063.45	2.00	570156.29	782870.19	N 32 33 53.89	W 103 32 57.59
	9100.00	0.00	269.45	9011.75	2.39	-10.28	-1063.45	0.00	570156.29	782870.19	N 32 33 53.89	W 103 32 57.59
	9200.00	0.00	269.45	9111.75	2.39	-10.28	-1063.45	0.00	570156.29	782870.19	N 32 33 53.89	W 103 32 57.59
	9300.00	0.00	269.45	9211.75	2.39	-10.28	-1063.45	0.00	570156.29	782870.19	N 32 33 53.89	W 103 32 57.59
	9400.00	0.00	269.45	9311.75	2.39	-10.28	-1063.45	0.00	570156.29	782870.19	N 32 33 53.89	W 103 32 57.59
	9500.00	0.00	269.45	9411.75	2.39	-10.28	-1063.45	0.00	570156.29	782870.19	N 32 33 53.89	W 103 32 57.59
	9600.00	0.00	269.45	9511.75	2.39	-10.28	-1063.45	0.00	570156.29	782870.19	N 32 33 53.89	W 103 32 57.59
1st BS Sand	9645.25	0.00	269.45	9557.00	2.39	-10.28	-1063.45	0.00	570156.29	782870.19	N 32 33 53.89	W 103 32 57.59
	9700.00	0.00	269.45	9611.75	2.39	-10.28	-1063.45	0.00	570156.29	782870.19	N 32 33 53.89	W 103 32 57.59
	9800.00	0.00	269.45	9711.75	2.39	-10.28	-1063.45	0.00	570156.29	782870.19	N 32 33 53.89	W 103 32 57.59
	9900.00	0.00	269.45	9811.75	2.39	-10.28	-1063.45	0.00	570156.29	782870.19	N 32 33 53.89	W 103 32 57.59
	10000.00	0.00	269.45	9911.75	2.39	-10.28	-1063.45	0.00	570156.29	782870.19	N 32 33 53.89	W 103 32 57.59
	10100.00	0.00	269.45	10011.75	2.39	-10.28	-1063.45	0.00	570156.29	782870.19	N 32 33 53.89	W 103 32 57.59
2nd BS Sand	10163.25	0.00	269.45	10075.00	2.39	-10.28	-1063.45	0.00	570156.29	782870.19	N 32 33 53.89	W 103 32 57.59
	10200.00	0.00	269.45	10111.75	2.39	-10.28	-1063.45	0.00	570156.29	782870.19	N 32 33 53.89	W 103 32 57.59
	10300.00	0.00	269.45	10211.75	2.39	-10.28	-1063.45	0.00	570156.29	782870.19	N 32 33 53.89	W 103 32 57.59
	10400.00	0.00	269.45	10311.75	2.39	-10.28	-1063.45	0.00	570156.29	782870.19	N 32 33 53.89	W 103 32 57.59
	10500.00	0.00	269.45	10411.75	2.39	-10.28	-1063.45	0.00	570156.29	782870.19	N 32 33 53.89	W 103 32 57.59
KOP - Build 12°/100' DLS	10580.86	0.00	269.45	10492.61	2.39	-10.28	-1063.45	0.00	570156.29	782870.19	N 32 33 53.89	W 103 32 57.59
	10600.00	2.30	179.57	10511.74	2.78	-10.67	-1063.45	12.00	570155.90	782870.20	N 32 33 53.89	W 103 32 57.59
	10700.00	14.30	179.57	10610.52	17.18	-25.07	-1063.34	12.00	570141.50	782870.30	N 32 33 53.75	W 103 32 57.59
	10800.00	26.30	179.57	10704.14	51.81	-59.70	-1063.09	12.00	570106.88	782870.56	N 32 33 53.40	W 103 32 57.59
3rd BS Sand	10889.25	37.01	179.57	10780.00	98.58	-106.46	-1062.74	12.00	570060.11	782870.91	N 32 33 52.94	W 103 32 57.59
	10900.00	38.30	179.57	10788.51	105.14	-113.03	-1062.69	12.00	570053.54	782870.96	N 32 33 52.88	W 103 32 57.59
	11000.00	50.30	179.57	10859.95	174.85	-182.74	-1062.17	12.00	569983.84	782871.47	N 32 33 52.19	W 103 32 57.59
	11100.00	62.30	179.57	10915.34	257.89	-265.78	-1061.56	12.00	569900.80	782872.09	N 32 33 51.36	W 103 32 57.59
	11200.00	74.30	179.57	10952.25	350.64	-358.51	-1060.87	12.00	569808.06	782872.78	N 32 33 50.45	W 103 32 57.59
	11300.00	86.30	179.57	10969.07	449.02	-456.90	-1060.14	12.00	569709.68	782873.51	N 32 33 49.47	W 103 32 57.59
Landing Point	11322.69	89.02	179.57	10970.00	471.69	-479.56	-1059.97	12.00	569687.02	782873.67	N 32 33 49.25	W 103 32 57.59
	11400.00	89.02	179.57	10971.32	548.99	-556.87	-1059.40	0.00	569609.72	782874.25	N 32 33 48.48	W 103 32 57.59
	11500.00	89.02	179.57	10973.03	648.98	-656.85	-1058.66	0.00	569509.74	782874.99	N 32 33 47.49	W 103 32 57.59
	11600.00	89.02	179.57	10974.75	748.96	-756.83	-1057.92	0.00	569409.76	782875.73	N 32 33 46.51	W 103 32 57.59
	11700.00	89.02	179.57	10976.46	848.95	-856.81	-1057.17	0.00	569309.78	782876.47	N 32 33 45.52	W 103 32 57.59
	11800.00	89.02	179.57	10978.17	948.93	-956.80	-1056.43	0.00	569209.80	782877.21	N 32 33 44.53	W 103 32 57.59
	11900.00	89.02	179.57	10979.88	1048.92	-1056.78	-1055.69	0.00	569109.82	782877.96	N 32 33 43.54	W 103 32 57.59
	12000.00	89.02	179.57	10981.59	1148.90	-1156.76	-1054.95	0.00	569009.84	782878.70	N 32 33 42.55	W 103 32 57.59
	12100.00	89.02	179.57	10983.30	1248.89	-1256.74	-1054.21	0.00	568909.86	782879.44	N 32 33 41.56	W 103 32 57.59
	12200.00	89.02	179.57	10985.01	1348.88	-1356.73	-1053.47	0.00	568809.88	782880.18	N 32 33 40.57	W 103 32 57.59
	12300.00	89.02	179.57	10986.72	1448.86	-1456.71	-1052.72	0.00	568709.90	782880.92	N 32 33 39.58	W 103 32 57.59

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	12400.00	89.02	179.57	10988.43	1548.85	-1556.69	-1051.98	0.00	568609.92	782881.66	N 32 33 38.59	W 103 32 57.59
	12500.00	89.02	179.57	10990.15	1648.83	-1656.67	-1051.24	0.00	568509.94	782882.41	N 32 33 37.60	W 103 32 57.59
	12600.00	89.02	179.57	10991.86	1748.82	-1756.66	-1050.50	0.00	568409.96	782883.15	N 32 33 36.61	W 103 32 57.59
	12700.00	89.02	179.57	10993.57	1848.80	-1856.64	-1049.76	0.00	568309.98	782883.89	N 32 33 35.62	W 103 32 57.59
	12800.00	89.02	179.57	10995.28	1948.79	-1956.62	-1049.02	0.00	568210.00	782884.63	N 32 33 34.63	W 103 32 57.59
	12900.00	89.02	179.57	10996.99	2048.77	-2056.61	-1048.27	0.00	568110.02	782885.37	N 32 33 33.64	W 103 32 57.59
	13000.00	89.02	179.57	10998.70	2148.76	-2156.59	-1047.53	0.00	568010.04	782886.11	N 32 33 32.65	W 103 32 57.59
	13100.00	89.02	179.57	11000.41	2248.74	-2256.57	-1046.79	0.00	567910.06	782886.86	N 32 33 31.67	W 103 32 57.59
	13200.00	89.02	179.57	11002.12	2348.73	-2356.55	-1046.05	0.00	567810.08	782887.60	N 32 33 30.68	W 103 32 57.59
	13300.00	89.02	179.57	11003.84	2448.71	-2456.54	-1045.31	0.00	567710.10	782888.34	N 32 33 29.69	W 103 32 57.59
Wolfcamp	13368.05	89.02	179.57	11005.00	2516.76	-2524.58	-1044.80	0.00	567642.06	782888.84	N 32 33 29.01	W 103 32 57.59
	13400.00	89.02	179.57	11005.55	2548.70	-2556.52	-1044.57	0.00	567610.12	782889.08	N 32 33 28.70	W 103 32 57.59
	13500.00	89.02	179.57	11007.26	2648.69	-2656.50	-1043.82	0.00	567510.14	782889.82	N 32 33 27.71	W 103 32 57.59
	13600.00	89.02	179.57	11008.97	2748.67	-2756.48	-1043.08	0.00	567410.16	782890.56	N 32 33 26.72	W 103 32 57.59
	13700.00	89.02	179.57	11010.68	2848.66	-2856.47	-1042.34	0.00	567310.18	782891.31	N 32 33 25.73	W 103 32 57.59
	13800.00	89.02	179.57	11012.39	2948.64	-2956.45	-1041.60	0.00	567210.20	782892.05	N 32 33 24.74	W 103 32 57.59
	13900.00	89.02	179.57	11014.10	3048.63	-3056.43	-1040.86	0.00	567110.22	782892.79	N 32 33 23.75	W 103 32 57.59
	14000.00	89.02	179.57	11015.81	3148.61	-3156.41	-1040.12	0.00	567010.24	782893.53	N 32 33 22.76	W 103 32 57.59
	14100.00	89.02	179.57	11017.52	3248.60	-3256.40	-1039.37	0.00	566910.26	782894.27	N 32 33 21.77	W 103 32 57.59
	14200.00	89.02	179.57	11019.24	3348.58	-3356.38	-1038.63	0.00	566810.28	782895.01	N 32 33 20.78	W 103 32 57.59
	14300.00	89.02	179.57	11020.95	3448.57	-3456.36	-1037.89	0.00	566710.30	782895.76	N 32 33 19.79	W 103 32 57.59
	14400.00	89.02	179.57	11022.66	3548.55	-3556.34	-1037.15	0.00	566610.32	782896.50	N 32 33 18.80	W 103 32 57.59
Lease 124662 and 0000082 Crossing	14485.50	89.02	179.57	11024.12	3634.04	-3641.83	-1036.52	0.00	566524.83	782897.13	N 32 33 17.96	W 103 32 57.59
	14500.00	89.02	179.57	11024.37	3648.54	-3656.33	-1036.41	0.00	566510.34	782897.24	N 32 33 17.81	W 103 32 57.59
	14600.00	89.02	179.57	11026.08	3748.52	-3756.31	-1035.67	0.00	566410.36	782897.98	N 32 33 16.83	W 103 32 57.59
	14700.00	89.02	179.57	11027.79	3848.51	-3856.29	-1034.92	0.00	566310.38	782898.72	N 32 33 15.84	W 103 32 57.59
	14800.00	89.02	179.57	11029.50	3948.49	-3956.27	-1034.18	0.00	566210.40	782899.46	N 32 33 14.85	W 103 32 57.59
	14900.00	89.02	179.57	11031.21	4048.48	-4056.26	-1033.44	0.00	566110.42	782900.21	N 32 33 13.86	W 103 32 57.59
	15000.00	89.02	179.57	11032.93	4148.47	-4156.24	-1032.70	0.00	566010.44	782900.95	N 32 33 12.87	W 103 32 57.59
	15100.00	89.02	179.57	11034.64	4248.45	-4256.22	-1031.96	0.00	565910.46	782901.69	N 32 33 11.88	W 103 32 57.59
	15200.00	89.02	179.57	11036.35	4348.44	-4356.21	-1031.22	0.00	565810.48	782902.43	N 32 33 10.89	W 103 32 57.59
	15300.00	89.02	179.57	11038.06	4448.42	-4456.19	-1030.47	0.00	565710.50	782903.17	N 32 33 9.90	W 103 32 57.59
	15400.00	89.02	179.57	11039.77	4548.41	-4556.17	-1029.73	0.00	565610.52	782903.91	N 32 33 8.91	W 103 32 57.59
	15500.00	89.02	179.57	11041.48	4648.39	-4656.15	-1028.99	0.00	565510.54	782904.66	N 32 33 7.92	W 103 32 57.59
	15600.00	89.02	179.57	11043.19	4748.38	-4756.14	-1028.25	0.00	565410.56	782905.40	N 32 33 6.93	W 103 32 57.59
	15700.00	89.02	179.57	11044.90	4848.36	-4856.12	-1027.51	0.00	565310.58	782906.14	N 32 33 5.94	W 103 32 57.59
Cimarex Perry 22 Federal Com 16H - PBHL [100' FSL, 2260' FWL]	15705.62	89.02	179.57	11045.00	4853.98	-4861.73	-1027.47	0.00	565304.96	782906.18	N 32 33 5.89	W 103 32 57.59

Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	26.000	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS-Depth Only	Perry 22 Federal Com 16H / Cimarex Perry 22 Federal Com 16H Rev0 RM 28May19

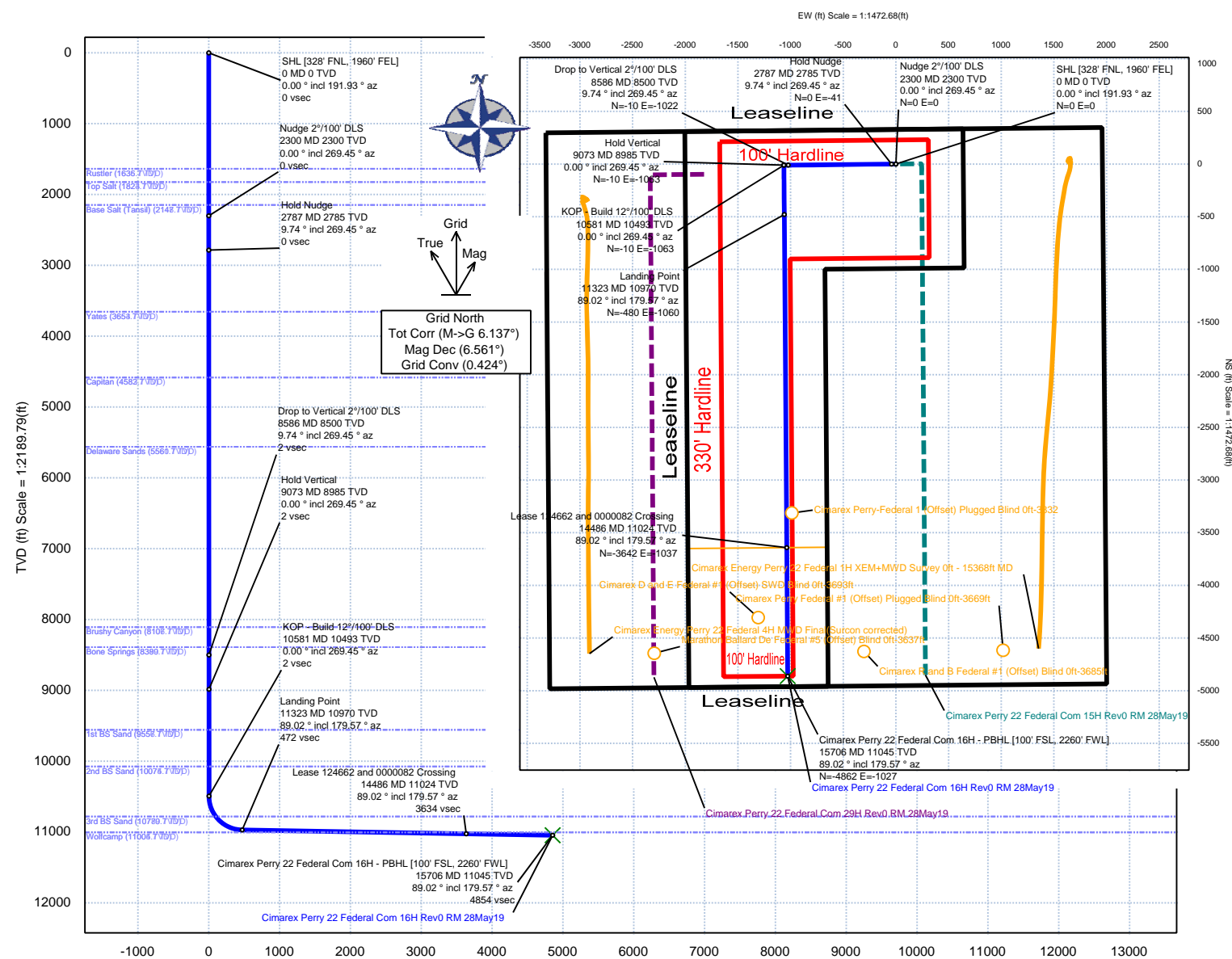
Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
		1	26.000	15705.617	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS		Perry 22 Federal Com 16H / Cimarex Perry 22 Federal Com	



Cimarex Energy Rev 0



Borehole: Perry 22 Federal Com 16H	Well: Perry 22 Federal Com 16H	Field: NM Lea County (NAD 83)	Structure: Cimarex Perry 22 Federal Com 16H
Gravity & Magnetic Parameters			
Model: HDGM 2019 Dip: 60.453° Date: 28-May-2019	Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet		Miscellaneous
MagDec: 6.561° FS: 48111.931nT Gravity FS: 998.501mgN (9.80665 Based)	Lat: N 32 33 53.92 Lon: W 103 32 45.16	North: 570166.577NUS Easting: 783933.627NUS	Slot: New Slot TVD Ref: RKB(3679.5ft above MSL) Plan: Cimarex Perry 22 Federal Com 16H Rev0 RM 28May19
		Grid Conv: 0.4239° Scale Fact: 0.99997649	



Vertical Section (ft) Azim = 179.58° Scale = 1:2189.79(ft) Origin = 0N/-S, 0E/-W

Critical Points									
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS	
SHL [328' FNL, 1960' FEL]	0.00	0.00	191.93	0.00	0.00	0.00	0.00	0.00	
Rustler	1636.00	0.00	269.45	1636.00	0.00	0.00	0.00	0.00	
Top Salt	1824.00	0.00	269.45	1824.00	0.00	0.00	0.00	0.00	
Base Salt (Tansil)	2148.00	0.00	269.45	2148.00	0.00	0.00	0.00	0.00	
Nudge 2°/100' DLS	2300.00	0.00	269.45	2300.00	0.00	0.00	0.00	0.00	
Hold Nudge	2786.94	9.74	269.45	2784.60	0.09	-0.40	-41.28	2.00	
Yates	3669.05	9.74	269.45	3654.00	0.43	-1.84	-190.49	0.00	
Capitan	4611.64	9.74	269.45	4583.00	0.79	-3.38	-349.93	0.00	
Delaware Sands	5603.94	9.74	269.45	5561.00	1.17	-5.01	-517.77	0.00	
Brushy Canyon	8187.16	9.74	269.45	8107.00	2.15	-9.23	-954.72	0.00	
Bone Springs	8474.30	9.74	269.45	8390.00	2.26	-9.70	-1003.29	0.00	
Drop to Vertical 2°/100' DLS	8585.91	9.74	269.45	8500.00	2.30	-9.88	-1022.17	0.00	
Hold Vertical	9072.85	0.00	269.45	8984.60	2.39	-10.28	-1063.45	2.00	
1st BS Sand	9645.25	0.00	269.45	9557.00	2.39	-10.28	-1063.45	0.00	
2nd BS Sand	10163.25	0.00	269.45	10075.00	2.39	-10.28	-1063.45	0.00	
KOP - Build 12°/100' DLS	10580.86	0.00	269.45	10492.61	2.39	-10.28	-1063.45	0.00	
3rd BS Sand	10889.25	37.01	179.57	10780.00	98.58	-106.46	-1062.74	12.00	
Landing Point	11322.69	89.02	179.57	10970.00	471.69	-479.56	-1059.97	12.00	
Wolfcamp	13368.05	89.02	179.57	11005.00	2516.76	-2524.58	-1044.80	0.00	
Lease 124662 and 0000082 Crossing	14485.50	89.02	179.57	11024.12	3634.04	-3641.83	-1036.52	0.00	
Cimarex Perry 22 Federal Com 16H - PBHL [100' FSL, 2260' FWL]	15705.62	89.02	179.57	11045.00	4853.98	-4861.73	-1027.47	0.00	

**Cimarex Perry 22 Federal Com 16H Rev0 RM 28May19 Anti-Collision Summary Report****Analysis Date-24hr Time:** May 28, 2019 - 16:19**Client:** Cimarex Energy**Field:** NM Lea County (NAD 83)**Structure:** Cimarex Perry 22 Federal Com 16H**Slot:** New Slot**Well:** Perry 22 Federal Com 16H**Borehole:** Perry 22 Federal Com 16H**Scan MD Range:** 0.00ft ~ 15705.62ft**Analysis Method:** 3D Least Distance**Reference Trajectory:** Cimarex Perry 22 Federal Com 16H Rev0 RM 28May19 (Non-Def Plan)**Depth Interval:** Every 10.00 Measured Depth (ft)**Rule Set:** NAL Procedure: D&M AntiCollision Standard S002**Min Pts:** All local minima indicated.**Version / Patch:** 2.10.760.0**Database \ Project:** US1153APP452.dir.slb.com/drilling-NM Lea County 2.10**Trajectory Error Model:** ISCSA0 3-D 95.000% Confidence 2.7955 sigma, for subject well. For offset wells, error model version is specified with each well respectively.**Offset Trajectories Summary****Offset Selection Criteria**

Wellhead distance scan: Restricted within 56716.12 ft

Selection filters: Definitive Surveys - Definitive Plans - Definitive surveys exclude definitive plans

- All Non-Def Surveys when no Def-Survey is set in a borehole - All Non-Def Plans when no Def-Plan is set in a borehole

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		

Results highlighted: Sep-Factor separation <= 1.50 ft

Cimarex Perry 22 Federal Com
15H Rev0 RM 28May19 (Non-
Def Plan)

Warning Alert

39.99	32.49	37.49	7.50	N/A	MAS = 9.90 (m)	0.00	0.00	CtCt<=15m<15.00				Enter Alert	
39.99	32.49	37.49	7.50	56249.27	MAS = 9.90 (m)	26.00	26.00					WRP	
39.99	32.49	23.43	7.50	2.67	MAS = 9.90 (m)	2300.00	2300.00					MinPts	
40.01	32.49	23.40	7.52	2.66	MAS = 9.90 (m)	2310.00	2310.00					MINPT-O-EQU	
40.27	32.49	23.52	7.78	2.65	MAS = 9.90 (m)	2340.00	2340.00					MinPt-O-SF	
76.21	32.49	58.94	43.71	4.99	MAS = 9.90 (m)	2670.00	2668.97	OSF>5.00				Exit Alert	
1266.54	67.09	1220.98	1199.45	29.35	OSF1.50	8585.91	8500.00					MinPt-O-SF	
1307.82	77.46	1255.35	1230.36	26.12	OSF1.50	10580.86	10492.61					MinPts	
1307.82	73.97	1257.67	1233.85	27.39	OSF1.50	11270.00	10966.20					MinPt-CtCt	
1307.82	160.53	1199.97	1147.30	12.39	OSF1.50	15705.62	11045.00					MinPts	

Cimarex Perry-Federal 1
(Offset) Plugged Blind 0ft-3832
(Def Survey)

Warning Alert

3456.63	32.81	3454.13	3423.82	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
3456.57	32.81	3454.06	3423.76	432774.80	MAS = 10.00 (m)	10.00	10.00					MinPt-O-SF	
3456.54	32.81	3454.02	3423.73	164846.26	MAS = 10.00 (m)	26.00	26.00					WRP	
3418.75	1028.70	2732.10	2390.05	4.99	OSF1.50	3350.00	3339.54	OSF<5.00				Enter Alert	
3394.92	1191.41	2599.80	2203.51	4.28	OSF1.50	3940.00	3921.04					MinPt-O-SF	
3394.33	1191.08	2599.43	2203.25	4.28	OSF1.50	3980.00	3960.47					MinPt-O-ADP	
3394.26	1190.97	2599.43	2203.29	4.28	OSF1.50	3990.00	3970.32					MINPT-O-EQU	
3394.20	1190.72	2599.53	2203.48	4.28	OSF1.50	4010.00	3990.03					MinPt-CtCt	
3641.77	1095.77	2910.42	2546.00	4.99	OSF1.50	5330.00	5291.01	OSF>5.00				Exit Alert	
7241.40	207.30	7102.36	7034.09	53.02	OSF1.50	12950.00	10997.85					MinPt-O-ADP	
7190.53	146.06	7092.33	7044.47	75.10	OSF1.50	13370.00	11005.03					MINPT-O-EQU	
7159.83	80.36	7105.42	7079.47	137.90	OSF1.50	14030.00	11016.33					MinPt-CtCt	
7185.44	121.34	7103.71	7064.10	90.66	OSF1.50	14640.00	11026.77					MINPT-O-EQU	
7238.77	185.45	7114.30	7053.32	59.33	OSF1.50	15100.00	11034.64					MinPt-O-ADP	
7352.41	275.63	7167.82	7076.78	40.39	OSF1.50	15705.62	11045.00					MinPt-O-SF	

Cimarex Perry 22 Federal Com
29H Rev0 RM 28May19 (Non-
Def Plan)

Pass

1824.12	32.81	1821.62	1791.31	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
1824.11	32.81	1821.61	1791.30	N/A	MAS = 10.00 (m)	26.00	26.00					WRP	
1610.24	51.99	1574.66	1558.25	48.99	OSF1.50	6800.00	6739.83					MinPt-O-SF	
1272.50	73.11	1222.60	1199.39	27.34	OSF1.50	10600.00	10511.74					MinPts	
1272.34	72.95	1222.55	1199.39	27.40	OSF1.50	10680.00	10591.04					MinPts	
1270.05	70.64	1221.79	1199.40	28.29	OSF1.50	11190.00	10949.44					MinPt-O-ADP	
1269.96	70.56	1221.76	1199.40	28.32	OSF1.50	11220.00	10957.26					MinPt-O-ADP	
1269.90	70.50	1221.74	1199.40	28.35	OSF1.50	11250.00	10963.24					MinPt-O-ADP	
1269.86	70.46	1221.73	1199.40	28.36	OSF1.50	11270.00	10966.20					MINPT-O-EQU	
1269.82	70.35	1221.76	1199.47	28.41	OSF1.50	11330.00	10970.13					MinPt-CtCt	
1269.84	161.16	1161.24	1108.67	12.05	OSF1.50	15705.62	11045.00					MinPts	

Cimarex Energy Perry 22
Federal 1H XEM-MWD Survey
0ft - 15368ft MD (Def Survey)

Pass

1629.75	32.81	1627.25	1596.94	N/A	MAS = 10.00 (m)	0.00	0.00					MinPts	
1629.75	32.81	1627.25	1596.95	452386.19	MAS = 10.00 (m)	26.00	26.00					WRP	
1629.97	32.81	1625.47	1597.16	813.10	MAS = 10.00 (m)	510.00	510.00					MinPts	
1629.07	32.81	1621.88	1596.26	346.40	MAS = 10.00 (m)	1080.00	1080.00					MinPts	
1627.16	32.81	1615.95	1594.35	186.44	MAS = 10.00 (m)	2000.00	2000.00					MinPts	
1627.64	32.81	1615.13	1594.83	162.35	MAS = 10.00 (m)	2290.00	2290.00					MinPts	
1627.64	32.81	1615.09	1594.84	161.65	MAS = 10.00 (m)	2300.00	2300.00					MINPT-O-EQU	
1629.69	32.81	1616.93	1596.88	158.63	MAS = 10.00 (m)	2400.00	2399.98					MinPt-O-SF	
1636.20	32.81	1623.44	1603.39	159.34	MAS = 10.00 (m)	2510.00	2509.81					MinPt-O-SF	
1673.56	32.81	1660.63	1640.75	160.31	MAS = 10.00 (m)	2800.00	2797.47					MinPt-O-SF	
2654.21	51.32	2619.16	2602.88	81.47	OSF1.50	8585.91	8500.00					MinPt-O-SF	
2724.77	52.86	2688.73	2671.97	81.18	OSF1.50	10370.00	10281.75					MINPT-O-EQU	
2724.86	52.91	2688.75	2671.95	81.01	OSF1.50	10410.00	10321.75					MinPt-O-ADP	
2384.70	304.70	2180.73	2079.99	11.82	OSF1.50	15420.00	11040.11					MinPt-O-SF	
2384.36	304.61	2180.45	2079.74	11.83	OSF1.50	15450.00	11040.63					MinPt-O-ADP	
2384.33	304.57	2180.45	2079.76	11.83	OSF1.50	15460.00	11040.80					MinPts	
2396.73	301.98	2194.58	2094.75	11.99	OSF1.50	15705.62	11045.00					TD	

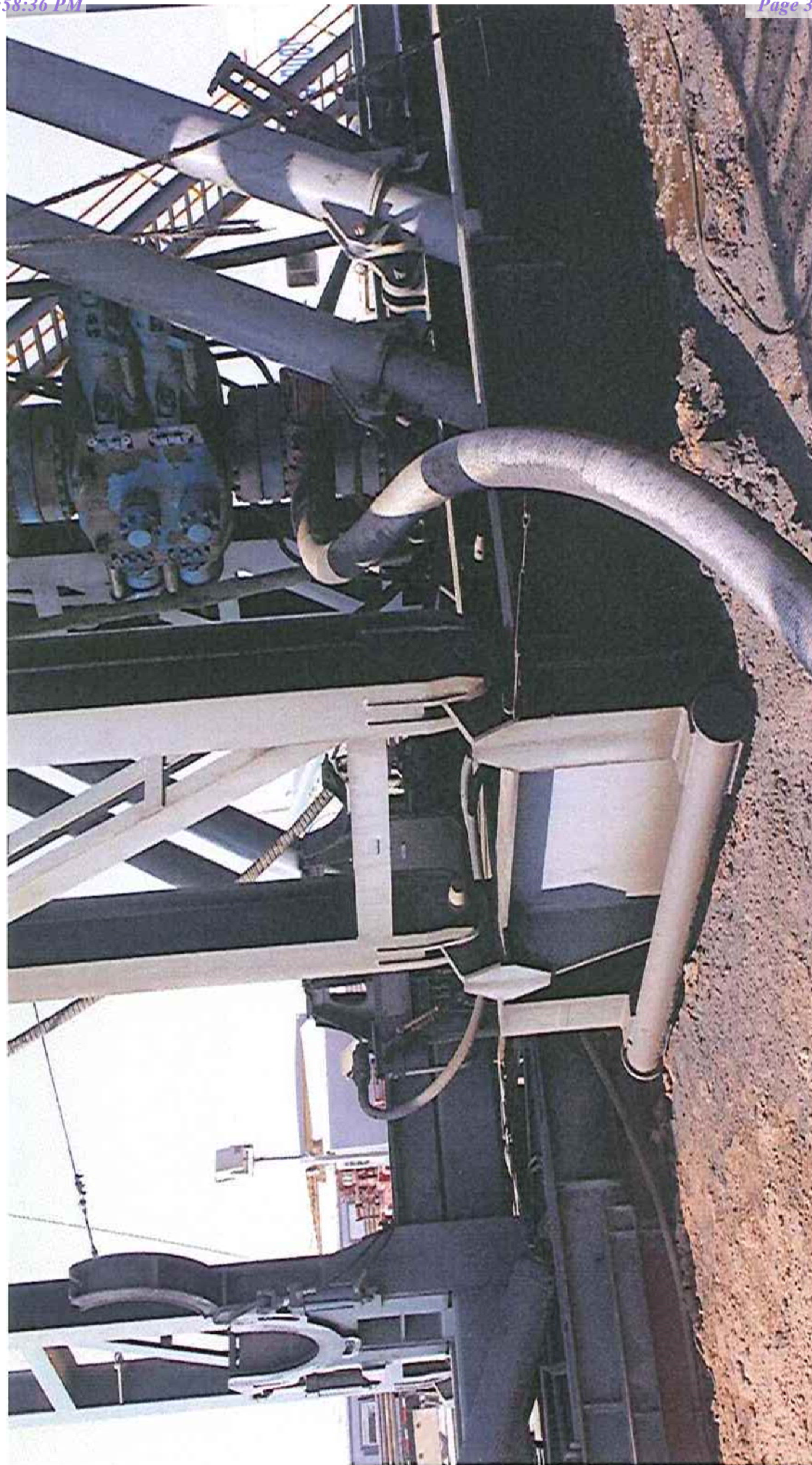
Cimarex Energy Perry 22
Federal 4H MWD Final(Surcon
corrected) (Def Survey)

Pass

2958.26	32.81	2955.76	2925.45	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
2958.25	32.81	2955.75	2925.44	N/A	MAS = 10.00 (m)	26.00	26.00					WRP	
2955.05	32.81	2947.56	2922.24	591.47	MAS = 10.00 (m)	1140.00	1140.00					MinPts	
2956.22	32.81	2946.62	2923.41	416.04	MAS = 10.00 (m)	1570.00	1570.00					MINPT-O-EQU	
2440.74	33.56	2417.35	2407.18	119.89	OSF1.50	5890.00	5842.94					MinPt-O-SF	
1949.72	53.00	1913.06	1896.73	59.55	OSF1.50	8600.00	8513.89					MinPt-O-SF	
1913.49	50.85	1878.23	1862.63	61.23	OSF1.50	9070.00	8981.75					MinPts	
1913.48	50.85	1878.22	1862.63	61.23	OSF1.50	9080.00	8991.75					MinPt-CtCt	

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
	1913.48	50.86	1878.22	1862.62	61.22	OSF1.50	9090.00	9001.75				MinPts	
	1913.52	50.90	1878.22	1862.62	61.17	OSF1.50	9110.00	9021.75				MinPt-O-ADP	
	1941.82	55.09	1903.76	1886.73	56.89	OSF1.50	10600.00	10511.74				MinPt-O-SF	
	1929.31	53.96	1892.00	1875.35	57.84	OSF1.50	10810.00	10713.05				MinPt-O-SF	
	1920.48	53.71	1883.32	1866.77	57.86	OSF1.50	10880.00	10772.56				MinPt-O-SF	
	1868.50	54.46	1830.81	1814.04	55.58	OSF1.50	11430.00	10971.84				MinPt-CtCt	
	1868.51	54.51	1830.79	1814.00	55.52	OSF1.50	11440.00	10972.01				MINPT-O-EQU	
	1868.56	54.56	1830.81	1814.00	55.46	OSF1.50	11450.00	10972.18				MinPt-O-ADP	
	1881.74	84.29	1824.18	1797.45	35.12	OSF1.50	12730.00	10994.08				MinPt-CtCt	
	1884.29	94.58	1819.87	1789.71	31.16	OSF1.50	13070.00	10999.90				MinPt-CtCt	
	1882.17	117.24	1802.65	1764.93	24.90	OSF1.50	13730.00	11011.19				MinPt-CtCt	
	1882.90	119.39	1801.94	1763.51	24.44	OSF1.50	13810.00	11012.56				MINPT-O-EQU	
	1883.57	120.19	1802.08	1763.38	24.28	OSF1.50	13840.00	11013.08				MinPt-O-ADP	
	1890.98	139.01	1796.94	1751.97	20.98	OSF1.50	14390.00	11022.49				MinPt-CtCt	
	1891.87	141.88	1795.92	1749.99	20.55	OSF1.50	14490.00	11024.20				MINPT-O-EQU	
	1894.51	163.40	1784.23	1731.12	17.80	OSF1.50	15080.00	11034.29				MinPt-CtCt	
	1894.08	177.69	1774.27	1716.39	16.33	OSF1.50	15480.00	11041.14				MinPt-CtCt	
	1894.29	178.33	1774.05	1715.96	16.27	OSF1.50	15510.00	11041.65				MINPT-O-EQU	
	1894.46	178.54	1774.09	1715.92	16.25	OSF1.50	15520.00	11041.82				MinPt-O-ADP	
	1907.27	181.61	1784.87	1725.66	16.07	OSF1.50	15705.62	11045.00				MinPt-O-SF	
Cimarex D and E Federal #1 (Offset) SWD Blind Off-3693ft (Def Survey)													
	4499.78	32.81	4497.28	4466.97	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	4499.78	32.81	4495.03	4466.97	1996.61	MAS = 10.00 (m)	26.00	26.00				WRP	
	4441.27	1147.66	3675.31	3293.60	5.81	OSF1.50	3810.00	3792.92				MinPt-O-SF	
	4440.35	1147.24	3674.66	3293.11	5.82	OSF1.50	3870.00	3852.05				MinPt-O-ADP	
	4440.28	1147.15	3674.66	3293.13	5.82	OSF1.50	3880.00	3861.91				MINPT-O-EQU	
	4440.19	1146.84	3674.78	3293.35	5.82	OSF1.50	3910.00	3891.47				MinPt-CtCt	
	7399.70	186.72	7274.39	7212.98	60.23	OSF1.50	14100.00	11017.52				MinPt-O-ADP	
	7354.74	132.91	7265.30	7221.83	84.57	OSF1.50	14590.00	11025.91				MINPT-O-EQU	
	7342.05	110.33	7267.67	7231.72	102.10	OSF1.50	15020.00	11033.27				MinPt-CtCt	
	7373.82	150.11	7272.92	7223.71	74.91	OSF1.50	15705.62	11045.00				MinPts	
Cimarex R and B Federal #1 (Offset) Blind Off-3685ft (Def Survey)													
	4637.19	32.81	4634.69	4604.39	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	4637.19	32.81	4632.44	4604.38	2057.62	MAS = 10.00 (m)	26.00	26.00				WRP	
	4626.53	1145.36	3862.12	3481.17	6.07	OSF1.50	3720.00	3704.21				MinPt-O-SF	
	4626.52	1145.35	3862.12	3481.17	6.07	OSF1.50	3730.00	3714.07				MinPts	
	7414.86	187.28	7289.17	7227.58	60.17	OSF1.50	14700.00	11027.79				MinPt-O-ADP	
	7387.24	155.74	7282.58	7231.50	72.29	OSF1.50	15230.00	11036.86				MINPT-O-EQU	
	7386.25	153.90	7282.82	7232.35	73.15	OSF1.50	15350.00	11038.91				MinPt-CtCt	
	7394.77	161.64	7286.18	7233.14	69.68	OSF1.50	15705.62	11045.00				MinPt-O-SF	
Cimarex Perry Federal #1 (Offset) Plugged Blind Off-3669ft (Def Survey)													
	4726.97	32.81	4724.47	4694.16	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	4726.97	32.81	4721.91	4694.16	1840.64	MAS = 10.00 (m)	26.00	26.00				WRP	
	4726.97	709.60	4253.07	4017.37	10.02	OSF1.50	2300.00	2300.00				MinPt-CtCt	
	4770.70	1140.33	4009.65	3630.37	6.23	OSF1.50	3690.00	3674.64				MinPts	
	7648.60	322.07	7433.09	7326.54	35.89	OSF1.50	15310.00	11038.23				MinPt-O-ADP	
	7648.53	321.98	7433.04	7326.55	35.90	OSF1.50	15330.00	11038.57				MINPT-O-EQU	
	7648.50	321.91	7433.06	7326.59	35.91	OSF1.50	15350.00	11038.91				MinPt-CtCt	
	7856.81	325.13	7439.23	7331.69	35.59	OSF1.50	15705.62	11045.00				MinPt-O-SF	
Marathon Ballard De Federal #5 (Offset) Blind Off-3637ft (Def Survey)													
	5180.59	32.81	5178.09	5147.78	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
	5180.56	32.81	5177.07	5147.76	5202.67	MAS = 10.00 (m)	26.00	26.00				WRP	
	5087.69	1129.66	4333.73	3958.03	6.77	OSF1.50	3850.00	3832.34				MinPt-O-SF	
	5084.81	1128.44	4331.66	3956.37	6.77	OSF1.50	3970.00	3950.61				MinPt-O-ADP	
	5084.61	1128.17	4331.64	3956.43	6.77	OSF1.50	3990.00	3970.32				MINPT-O-EQU	
	5084.43	1127.59	4331.85	3956.84	6.78	OSF1.50	4030.00	4009.75				MinPt-CtCt	
	7494.42	222.57	7345.20	7271.84	51.06	OSF1.50	15290.00	11037.89				MinPt-O-ADP	
	7494.19	222.32	7345.14	7271.87	51.12	OSF1.50	15330.00	11038.57				MINPT-O-EQU	
	7494.16	222.25	7345.15	7271.90	51.14	OSF1.50	15350.00	11038.91				MinPt-CtCt	
	7502.46	227.79	7349.77	7274.67	49.94	OSF1.50	15705.62	11045.00				MinPt-O-SF	

Co-Flex Hose
Perry 22 Federal Com 16H
Cimarex Energy Co.
22-20S-34E
Lea Co., NM



Co-Flex Hose Hydrostatic Test
Perry 22 Federal Com 16H
 Cimarex Energy Co.
 22-20S-34E
 Lea Co., NM



Midwest Hose & Specialty, Inc.

INTERNAL HYDROSTATIC TEST REPORT			
Customer:		P.O. Number:	
Oderco Inc		odyd-271	
HOSE SPECIFICATIONS			
Type: Stainless Steel Armor Choke & Kill Hose		Hose Length: 45'ft.	
I.D. 4 INCHES		O.D. 9 INCHES	
WORKING PRESSURE	TEST PRESSURE	BURST PRESSURE	
10,000 PSI	15,000 PSI	0 PSI	
COUPLINGS			
Stem Part No.		Ferrule No.	
OKC OKC		OKC OKC	
Type of Coupling: Swage-It			
PROCEDURE			
<u>Hose assembly pressure tested with water at ambient temperature.</u>			
TIME HELD AT TEST PRESSURE		ACTUAL BURST PRESSURE:	
15 MIN.		0 PSI	
Hose Assembly Serial Number: 79793		Hose Serial Number: OKC	
Comments:			
Date:	Tested:	Approved:	
3/8/2011	<i>A. Joins</i>	<i>Kevin</i>	

Co-Flex Hose Hydrostatic Test
Perry 22 Federal Com 16H
 Cimarex Energy Co.
 22-20S-34E
 Lea Co., NM

March 3, 2011

Internal Hydrostatic Test Graph

Customer: Houston

Pick Ticket #: 94260



Midwest Hose
& Specialty, Inc.

Hose Specifications

Hose Type

C & K

Length

45'

I.D.

4"

O.D.

6.09"

Working Pressure

10000 PSI

Verification

Type of Fitting

4 1/16 10K

Coupling Method

Swage

Die Size

6.38"

Final O.D.

6.25"

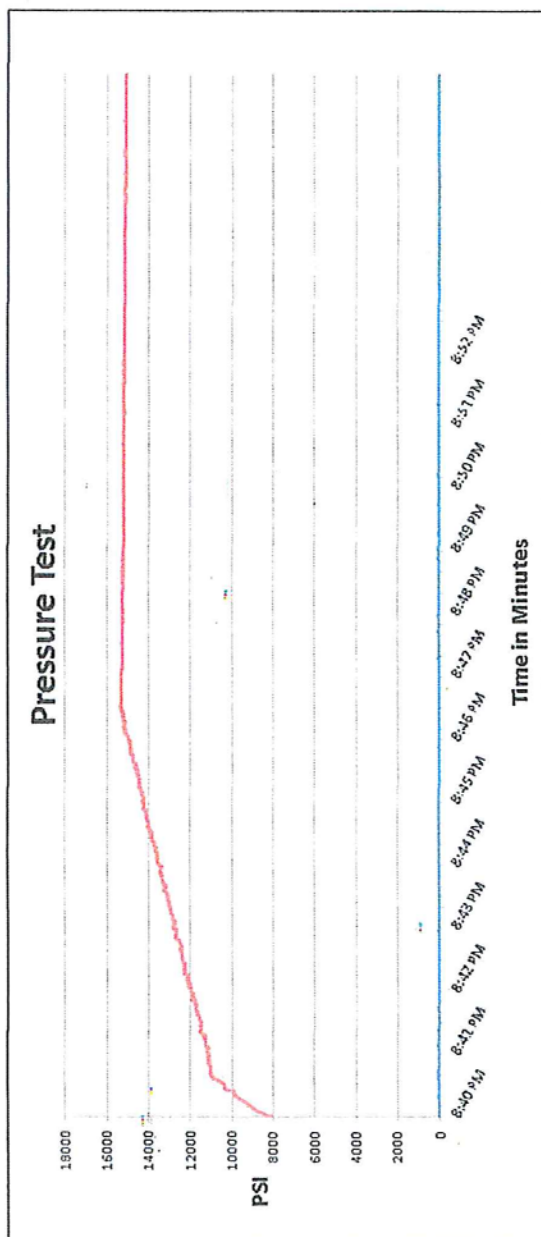
Hose Serial #

5544

Hose Assembly Serial #

79793

Standard Safety Multiplier Applies

Test Pressure
15000 PSITime Held at Test Pressure
11 Minutes

Actual Burst Pressure

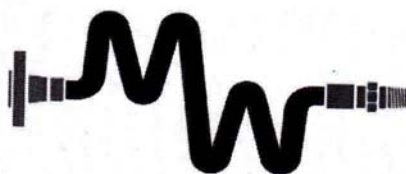
Peak Pressure
15483 PSI

Comments: Hose assembly pressure tested with water at ambient temperature.

Tested By: Zac McConnell

Approved By: Kim Thomas

Co-Flex Hose
Perry 22 Federal Com
16H Cimarex Energy Co.
22-20S-34E
Lea Co., NM



Midwest Hose & Specialty, Inc.

Certificate of Conformity

Customer:

DEM

PO

ODYD-271

SPECIFICATIONS

Sales Order

79793

Dated:

3/8/2011

We hereby certify that the material supplied
for the referenced purchase order to be true
according to the requirements of the purchase
order and current industry standards

Supplier:
Midwest Hose & Specialty, Inc.
10640 Tanner Road
Houston, Texas 77041

Comments:

Approved:

Samuel Garcia

Date:

3/8/2011



Co-Flex Hose
Perry 22 Federal Com 16H
Cimarex Energy Co.
22-20S-34E
Lea Co., NM

Specification Sheet Choke & Kill Hose

The Midwest Hose & Specialty Choke & Kill hose is manufactured with only premium components. The reinforcement cables, inner liner and cover are made of the highest quality material to handle the tough drilling applications of today's industry. The end connections are available with API flanges, API male threads, hubs, hammer unions or other special fittings upon request. Hose assembly is manufactured to API 7K. This assembly is wrapped with fire resistant vermiculite coated fiberglass insulation, rated at 2000 degrees with stainless steel armor cover.

Working Pressure:	5,000 or 10,000 psi working pressure
Test Pressure:	10,000 or 15,000 psi test pressure
Reinforcement:	Multiple steel cables
Cover:	Stainless Steel Armor
Inner Tube:	Petroleum resistant, Abrasion resistant
End Fitting:	API flanges, API male threads, threaded or butt weld hammer unions, unbolt and other special connections
Maximum Length:	110 Feet
ID:	2-1/2", 3", 3-1/2", 4"
Operating Temperature:	-22 deg F to +180 deg F (-30 deg C to +82 deg C)

P.O. Box 96558 - 1421 S.E. 29th St. Oklahoma City, OK 73143 * (405) 670-6718 * Fax: (405) 670-6816

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: 7/11/2019

☒ Original Operator & OGRID No.: Cimarex Energy Co- 215099
☐ Amended - Reason for Amendment: _____

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

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
Perry 22 Fed Com 16H	Pending	B: 22-20S-34E	328'FNL & 1960' FEL	1600		

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 Gas Transporter and will be connected to Gas Transporter low/high pressure gathering system located in Lea County, New Mexico. It will require 1/2 mile of pipeline to connect the facility to low/high pressure gathering system. Operator provides (periodically) to Gas Transporter a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Operator and Gas Transporter have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Targa (Versado) Monument Plant Processing Plant located in Sec 1-20S-36E, 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

1. Geological Formations

TVD of target 11,045

Pilot Hole TD N/A

MD at TD 15,706

Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	1636	Useable Water	
Top Salt	1824	N/A	
Base Salt	2148	N/A	
Yates	3654	N/A	
Capitan	4583	N/A	
Delaware Sands	5561	N/A	
Brushy Canyon	8107	Hydrocarbons	
Bone Spring	8390	Hydrocarbons	
1st BS Sand	9557	Hydrocarbons	
2nd BS Sand	10075	Hydrocarbons	
3rd BS Sand	10780	Hydrocarbons	
Target Zone	10970	Hydrocarbons	
Wolfcamp	11005	Hydrocarbons	

2. Casing Program

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	1686	1686	13-3/8"	54.50	J-55	BT&C	1.46	3.55	9.28
12 1/4	0	5541	5541	9-5/8"	40.00	J-55	LT&C	1.32	1.34	2.35
8 3/4	0	10581	10581	7"	29.00	L-80	LT&C	1.42	1.65	3.13
8 3/4	10581	15706	11045	5-1/2"	17.00	L-80	BT&C	1.22	1.50	50.33
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations.

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

Cimarex Energy Co., Perry 22 Federal Com 16H

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

3. Cementing Program

Casing	# Sk	Wt. lb/gal	Yld ft ³ /sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	817	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	219	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate Stage 1	273	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	292	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate Stage 2	767	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
Production	328	10.30	3.64	22.18		Lead: Tuned Light + LCM
	741	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS

DV tool with possible annular casing packer as needed is proposed at a depth of +/- 3,450'.

Casing String	TOC	% Excess
Surface	0	45
Intermediate Stage 1	3450	39
Intermediate Stage 2	0	24
Production	4000	25

Cimarex request the ability to perform casing integrity tests after plug bump of cement job.

4. Pressure Control Equipment

A variance is requested for the use of a diverter on the surface casing. See attached for schematic.					
BOP installed and tested before drilling which hole?	Size	Min Required WP	Type		Tested To
12 1/4	13 5/8	2M	Annular	X	2M
			Blind Ram		
			Pipe Ram		
			Double Ram	X	
			Other		
8 3/4	13 5/8	3M	Annular	X	3M
			Blind Ram		
			Pipe Ram		
			Double Ram	X	
			Other		

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or 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. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.				
X	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.				
N	Are anchors required by manufacturer?				

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 1686'	FW Spud Mud	8.30 - 8.80	30-32	N/C
1686' to 5541'	Brine Water	9.70 - 10.20	30-32	N/C
5541' to 15706'	Cut Brine or OBM	8.50 - 9.00	27-70	N/C

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

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

6. Logging and Testing Procedures

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

Additional Logs Planned	Interval
-------------------------	----------

7. Drilling Conditions

Condition	
BH Pressure at deepest TVD	5169 psi
Abnormal Temperature	No

Hydrogen Sulfide (H₂S) monitors will be installed prior to drilling out the surface shoe. If H₂S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.

X	H ₂ S is present
X	H ₂ S plan is attached

8. Other Facets of Operation**9. Wellhead**

A multi-bowl wellhead system will be utilized.

After running the 13-3/8" surface casing, a 13 5/8" BOP/BOPE system with a minimum working pressure of 3000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 3000 psi test. Annular will be tested to 100% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2.

The multi-bowl wellhead will be installed by vendor's representative. A copy of the installation instructions has been sent to the BLM field office.

The wellhead will be installed by a third-party welder while being monitored by the wellhead vendor representative.

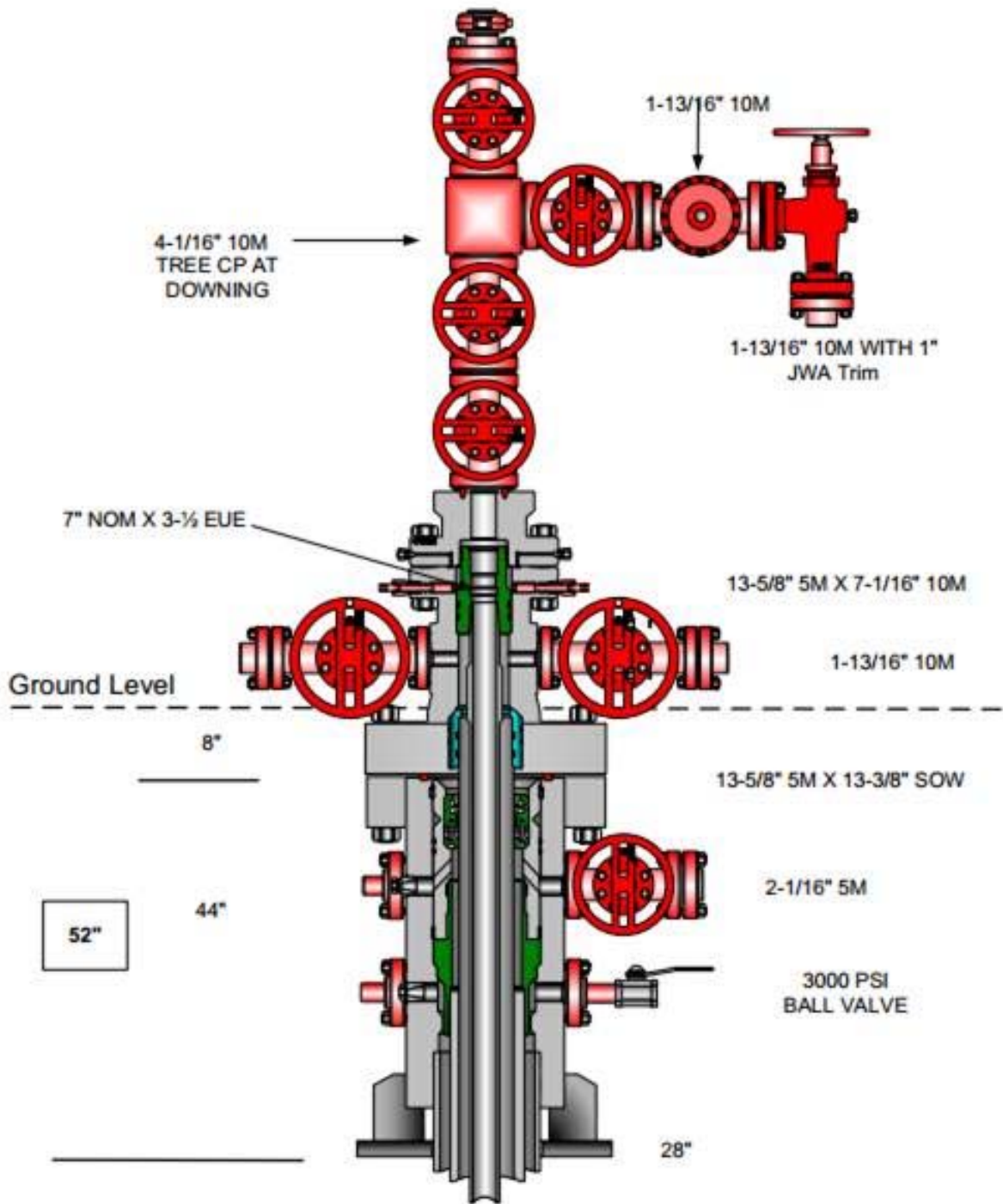
All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type.

A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 3000 psi.

All casing strings will be tested as per Onshore Order No.2 to atleast 0.22 psi/ft or 1,500 whichever is greater and not to exceed 70% of casing burst.

If well conditions dictate conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

Multi-bowl Wellhead Diagram



Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	1686	1686	13-3/8"	54.50	J-55	BT&C	1.46	3.55	9.28
12 1/4	0	5541	5541	9-5/8"	40.00	J-55	LT&C	1.32	1.34	2.35
8 3/4	0	10581	10581	7"	29.00	L-80	LT&C	1.42	1.65	3.13
8 3/4	10581	15706	11045	5-1/2"	17.00	L-80	BT&C	1.22	1.50	50.33
BLM Minimum Safety Factor								1.125	1	1.6 Dry 1.8 Wet

Multi-bowl Wellhead Diagram
Perry 22 Federal Com 16H
Cimarex Energy Co.
22-20S-34E
Lea Co., NM



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

SUPO Data Report

06/07/2021

APD ID: 10400042302

Submission Date: 07/31/2019

Highlighted data
reflects the most
recent changes

Operator Name: CIMAREX ENERGY COMPANY

Well Name: PERRY 22 FEDERAL COM

Well Number: 16H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Section 1 - Existing Roads

Will existing roads be used? YES

Existing Road Map:

Perry_22_Fed_Com_W2E2___E2W2_Existing_Access_Road_20200204094842.pdf

Existing Road Purpose: ACCESS,FLUID TRANSPORT

Row(s) Exist? NO

ROW ID(s)

ID:

Do the existing roads need to be improved? NO

Existing Road Improvement Description:

Existing Road Improvement Attachment:

Section 2 - New or Reconstructed Access Roads

Will new roads be needed? NO

Section 3 - Location of Existing Wells

Existing Wells Map? YES

Attach Well map:

Perry_22_Fed_Com_16H_One_Mile_Radius_Existing_wells_20190731124840.pdf

Operator Name: CIMAREX ENERGY COMPANY**Well Name:** PERRY 22 FEDERAL COM**Well Number:** 16H

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

Submit or defer a Proposed Production Facilities plan? SUBMIT

Production Facilities description: An existing production facility battery will be used located at the Perry 22 Fed Com #1 or Perry 22 Fed Com #4. Road: Existing roads will be used. - Please see Exhibit C Flowline/Gas Lift: 6" buried steel flowline, 6" buried gas lift line. FL/GL will be constructed in the same 60' trench. Please see Attachment M for route. Power: 754' of 3 Phase, 4 Wire, 480V. See Exhibit I for route.

Production Facilities map:

Perry_22_Fed_Com_W2E2_Production_Facility_20190731124859.pdf

Section 5 - Location and Types of Water Supply

Water Source Table

Water source type: MUNICIPAL

Water source use type:	SURFACE CASING
	INTERMEDIATE/PRODUCTION CASING

Source latitude:	Source longitude:
-------------------------	--------------------------

Source datum:

Water source permit type:	WATER RIGHT
----------------------------------	-------------

Permit Number:

Water source transport method:	PIPELINE
	TRUCKING

Source land ownership: FEDERAL**Source transportation land ownership:** FEDERAL**Water source volume (barrels):** 5000**Source volume (acre-feet):** 0.6444655**Source volume (gal):** 210000**Water source and transportation map:**

Perry_22_Fed_Com_16H_Drilling_Water_Route_20190731124923.pdf

Water source comments:**New water well?** NO

Operator Name: CIMAREX ENERGY COMPANY**Well Name:** PERRY 22 FEDERAL COM**Well Number:** 16H**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: The drilling and testing operations will be conducted on a watered and compacted native soil grade. Soft spots will be covered with caliche, free of large rocks (3" diameter). Upon completion as a commercial producer the location will be covered with caliche, free of large rocks (3" dia.) from an existing privately owned gravel pit. The private surface owner surface use agreement requires caliche be obtained from a BLM approved pit located in Sec. 35-20S-34E.

Construction Materials source location attachment:**Section 7 - Methods for Handling Waste****Waste type:** GARBAGE**Waste content description:** Garbage and trash produced during drilling and completion operations**Amount of waste:** 32500 pounds**Waste disposal frequency :** Weekly**Safe containment description:** N/A**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY**Disposal location ownership:** COMMERCIAL**Disposal type description:****Disposal location description:** Windmill Spraying Service hauls trash to Lea County Landfill

Operator Name: CIMAREX ENERGY COMPANY**Well Name:** PERRY 22 FEDERAL COM**Well Number:** 16H**Waste type:** DRILLING**Waste content description:** Drilling Fluids, drill cuttings, water and other waste produced from the well during drilling operations.**Amount of waste:** 15000 barrels**Waste disposal frequency :** Weekly**Safe containment description:** N/A**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** COMMERCIAL**Disposal type description:****Disposal location description:** Haul to R360 commercial Disposal**Waste type:** SEWAGE**Waste content description:** Human Waste**Amount of waste:** 300 gallons**Waste disposal frequency :** Weekly**Safe containment description:** Waste will be properly contained and disposed of properly at a state approved disposal facility.**Safe containmant attachment:****Waste disposal type:** HAUL TO COMMERCIAL FACILITY **Disposal location ownership:** PRIVATE**Disposal type description:****Disposal location description:** A licensed 3rd party contractor will be used to haul and dispose human waste

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

Operator Name: CIMAREX ENERGY COMPANY**Well Name:** PERRY 22 FEDERAL COM**Well Number:** 16H**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****Section 8 - Ancillary Facilities****Are you requesting any Ancillary Facilities?:** NO**Ancillary Facilities attachment:****Comments:****Section 9 - Well Site Layout****Well Site Layout Diagram:**

Perry_22_Fed_Com_16H_Wellsite_Layout_20190731130827.pdf

Comments:**Section 10 - Plans for Surface Reclamation****Type of disturbance:** New Surface Disturbance**Multiple Well Pad Name:** PERRY 22 FED COM**Multiple Well Pad Number:** 15 & 16H W2E2 PAD**Recontouring attachment:**

Perry_22_Fed_Com_W2E2_Interim_Reclamation_20190731131547.pdf

Drainage/Erosion control construction: To control and prevent potentially contaminated precipitation from leaving the pad site, a perimeter berm and settlement pond will be installed. Contaminated water will be removed from pond, stored in waste tanks, and disposed of at a state approved facility. Standing water or puddles will not be allowed. Drainage ditches would be established and maintained on the pad and along access roads to divert water away from operations. Natural drainage areas disturbed during construction would be re-contoured to near original condition prior to construction. Erosion Control Best Management Practices would be used where necessary and consist of seeding, fiber rolls, water bars, silt fences, and temporary diversion dikes. Areas disturbed during construction that are no longer needed for operations would be obliterated, re-contoured to near original condition prior to construction. Erosion Control Best Management Practices would be used where necessary and consist of seeding, fiber rolls, water bars, silt fences, and temporary diversion dikes. Areas disturbed during construction that are no longer needed for operations would be obliterated, re-contoured, and reclaimed to near original condition to re-establish natural drainage.

Drainage/Erosion control reclamation: All disturbed and re-contoured areas would be reseeded according to specifications. Approved seed mixtures would be certified weed free and consist of grasses, forbs, or shrubs similar to the surrounding area. Compacted soil areas may need to be obliterated and reclaimed to near natural conditions by re-contouring all slopes to facilitate and re-establish natural drainage.

Operator Name: CIMAREX ENERGY COMPANY

Well Name: PERRY 22 FEDERAL COM

Well Number: 16H

Well pad proposed disturbance (acres): 5.365	Well pad interim reclamation (acres): 2.5	Well pad long term disturbance (acres): 2.86
Road proposed disturbance (acres): 9.564	Road interim reclamation (acres): 0	Road long term disturbance (acres): 0
Powerline proposed disturbance (acres): 0.519	Powerline interim reclamation (acres): 0	Powerline long term disturbance (acres): 0
Pipeline proposed disturbance (acres): 7.89	Pipeline interim reclamation (acres): 0	Pipeline long term disturbance (acres): 0
Other proposed disturbance (acres): 0	Other interim reclamation (acres): 0	Other long term disturbance (acres): 0
Total proposed disturbance: 23.338	Total interim reclamation: 2.5	Total long term disturbance: 2.86

Disturbance Comments: Flowline= 5728.34'; Powerline= 753.47'

Reconstruction method: After well plugging, all disturbed areas would be returned to the original contour or a contour that blends with the surrounding landform including roads unless the surface owner requests that they be left intact. In consultation with the surface owners it will be determined if any gravel or similar materials used to reinforce an area are to be removed, buried, or left in place during final reclamation. Salvaged topsoil, if any, would be re-spread evenly over the surfaces to be re-vegetated. As necessary, the soil surface would be prepared to provide a seedbed for re-establishment of desirable vegetation. Site preparation may include gouging, scarifying, dozer track-walking, mulching, or fertilizing.

Reclamation, Re-vegetation, and Drainage: All disturbed and re-contoured areas would be reseeded using techniques outlined under Phase I and II of this plan or as specified by the land owner. Approved seed mixtures would be certified weed free and consist of grasses, forbs, or shrubs similar to the surrounding area. Compacted soil areas may need to be obliterated and reclaimed to near natural conditions by re-contouring all slopes to facilitate and re-establish natural drainage.

Topsoil redistribution: Salvaged topsoil, if any, would be re-spread evenly over the surfaces to be re-vegetated.

Soil treatment: As necessary, the soil surface would be prepared to provide a seedbed for re-establishment of desirable vegetation. Site preparation may include gouging, scarifying, dozer track-walking, mulching or fertilizing.

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:**

Operator Name: CIMAREX ENERGY COMPANY**Well Name:** PERRY 22 FEDERAL COM**Well Number:** 16H**Will seed be harvested for use in site reclamation?****Seed harvest description:****Seed harvest description attachment:****Seed Management****Seed Table****Seed Summary****Total pounds/Acre:****Seed Type****Pounds/Acre****Seed reclamation attachment:****Operator Contact/Responsible Official Contact Info****First Name:** Amithy**Last Name:** Crawford**Phone:** (432)620-1909**Email:** acrawford@cimarex.com**Seedbed prep:****Seed BMP:****Seed method:****Existing invasive species?** NO**Existing invasive species treatment description:****Existing invasive species treatment attachment:****Weed treatment plan description:** N/A**Weed treatment plan attachment:****Monitoring plan description:** N/A**Monitoring plan attachment:****Success standards:** N/A**Pit closure description:** N/A**Pit closure attachment:****Section 11 - Surface Ownership**

Operator Name: CIMAREX ENERGY COMPANY**Well Name:** PERRY 22 FEDERAL COM**Well Number:** 16H**Disturbance type:** WELL PAD**Describe:****Surface Owner:** 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:****Disturbance type:** PIPELINE**Describe:****Surface Owner:** 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:**

Operator Name: CIMAREX ENERGY COMPANY**Well Name:** PERRY 22 FEDERAL COM**Well Number:** 16H**Disturbance type:** TRANSMISSION LINE**Describe:****Surface Owner:** 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:****Disturbance type:** OTHER**Describe:** temp Frac Line**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:**

Operator Name: CIMAREX ENERGY COMPANY**Well Name:** PERRY 22 FEDERAL COM**Well Number:** 16H**Section 12 - Other Information****Right of Way needed?** YES**Use APD as ROW?** YES**ROW Type(s):** 288100 ROW – O&G Pipeline, 288101 ROW – O&G Facility Sites, 289001 ROW- O&G Well Pad, FLPMA (Powerline)**ROW Applications****SUPO Additional Information:****Use a previously conducted onsite?** YES**Previous Onsite information:** Onsite date 3-12-19. BLM Personnel Jeff Robertson. Cimarex Personnel Barry Hunt.**Other SUPO Attachment**

Perry_22_Fed_Com_16H_Public_Access_20190731133312.pdf

Perry_22_Fed_Com_16H_Road_Description_20190731133314.pdf

Perry_22_Fed_Com_W2E2_Temp_Frac_Water_Route_20190731133350.pdf

Perry_22_Fed_Com_16H_Flowline_ROW_20190731133351.pdf

Perry_22_Fed_Com_W2E2_Powerline_ROW_20190731133353.pdf

Perry_22_Fed_Com_16H_SUPO_20200204095439.pdf



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

PWD Data Report

06/07/2021

APD ID: 10400042302

Submission Date: 07/31/2019

Operator Name: CIMAREX ENERGY COMPANY

Well Name: PERRY 22 FEDERAL COM

Well Number: 16H

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: CIMAREX ENERGY COMPANY

Well Name: PERRY 22 FEDERAL COM

Well Number: 16H

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: CIMAREX ENERGY COMPANY

Well Name: PERRY 22 FEDERAL COM

Well Number: 16H

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: CIMAREX ENERGY COMPANY

Well Name: PERRY 22 FEDERAL COM

Well Number: 16H

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

06/07/2021

APD ID: 10400042302

Submission Date: 07/31/2019

Highlighted data
reflects the most
recent changes

Operator Name: CIMAREX ENERGY COMPANY

Well Name: PERRY 22 FEDERAL COM

Well Number: 16H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

Bond Information

Federal/Indian APD: FED

BLM Bond number: NMB001188

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:

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

Submit Electronically
Via E-permitting

NATURAL GAS MANAGEMENT PLAN

This Natural Gas Management Plan must be submitted with each Application for Permit to Drill (APD) for a new or recompleted well.

Section 1 – Plan Description

Effective May 25, 2021

I. Operator: Cimarex Energy Company **OGRID:** 215099 **Date:** 4 / 27 / 2022

II. Type: ☒ Original ☐ Amendment due to ☐ 19.15.27.9.D(6)(a) NMAC ☐ 19.15.27.9.D(6)(b) NMAC ☐ Other.

If Other, please describe: _____

III. Well(s): Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	ULSTR	Footages	Anticipated Oil BBL/D	Anticipated Gas MCF/D	Anticipated Produced Water BBL/D
Perry 22 Federal Com 16H 30-025-50175		B, Sec 22, T20S, R34E	328 FNL/1960 FBL	700	1000	1500

IV. Central Delivery Point Name: Perry 22 CDP Sales [See 19.15.27.9(D)(1) NMAC]

V. Anticipated Schedule: Provide the following information for each new or recompleted well or set of wells proposed to be drilled or proposed to be recompleted from a single well pad or connected to a central delivery point.

Well Name	API	Spud Date	TD Reached Date	Completion Commencement Date	Initial Flow Back Date	First Production Date
Perry 22 Federal Com 16H 30-025-50175		12/1/2025	12/15/2025	3/1/2026	4/1/2026	4/1/2026

VI. Separation Equipment: ☒ Attach a complete description of how Operator will size separation equipment to optimize gas capture.

VII. Operational Practices: ☒ Attach a complete description of the actions Operator will take to comply with the requirements of Subsection A through F of 19.15.27.8 NMAC.

VIII. Best Management Practices: ☒ Attach a complete description of Operator's best management practices to minimize venting during active and planned maintenance.

Section 2 – Enhanced Plan

EFFECTIVE APRIL 1, 2022

Beginning April 1, 2022, an operator that is not in compliance with its statewide natural gas capture requirement for the applicable reporting area must complete this section.

☒ Operator certifies that it is not required to complete this section because Operator is in compliance with its statewide natural gas capture requirement for the applicable reporting area.

IX. Anticipated Natural Gas Production:

Well	API	Anticipated Average Natural Gas Rate MCF/D	Anticipated Volume of Natural Gas for the First Year MCF

X. Natural Gas Gathering System (NGGS):

Operator	System	ULSTR of Tie-in	Anticipated Gathering Start Date	Available Maximum Daily Capacity of System Segment Tie-in

XI. Map. ☐ Attach an accurate and legible map depicting the location of the well(s), the anticipated pipeline route(s) connecting the production operations to the existing or planned interconnect of the natural gas gathering system(s), and the maximum daily capacity of the segment or portion of the natural gas gathering system(s) to which the well(s) will be connected.

XII. Line Capacity. The natural gas gathering system ☐ will ☐ will not have capacity to gather 100% of the anticipated natural gas production volume from the well prior to the date of first production.

XIII. Line Pressure. Operator ☐ does ☐ does not anticipate that its existing well(s) connected to the same segment, or portion, of the natural gas gathering system(s) described above will continue to meet anticipated increases in line pressure caused by the new well(s).

☐ Attach Operator's plan to manage production in response to the increased line pressure.

XIV. Confidentiality: ☐ Operator asserts confidentiality pursuant to Section 71-2-8 NMSA 1978 for the information provided in Section 2 as provided in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and attaches a full description of the specific information for which confidentiality is asserted and the basis for such assertion.

Section 3 - Certifications

Effective May 25, 2021

Operator certifies that, after reasonable inquiry and based on the available information at the time of submittal:

☒ Operator will be able to connect the well(s) to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system; or

☐ Operator will not be able to connect to a natural gas gathering system in the general area with sufficient capacity to transport one hundred percent of the anticipated volume of natural gas produced from the well(s) commencing on the date of first production, taking into account the current and anticipated volumes of produced natural gas from other wells connected to the pipeline gathering system.

If Operator checks this box, Operator will select one of the following:

Well Shut-In. ☐ Operator will shut-in and not produce the well until it submits the certification required by Paragraph (4) of Subsection D of 19.15.27.9 NMAC; or

Venting and Flaring Plan. ☐ Operator has attached a venting and flaring plan that evaluates and selects one or more of the potential alternative beneficial uses for the natural gas until a natural gas gathering system is available, including:

- (a) power generation on lease;
- (b) power generation for grid;
- (c) compression on lease;
- (d) liquids removal on lease;
- (e) reinjection for underground storage;
- (f) reinjection for temporary storage;
- (g) reinjection for enhanced oil recovery;
- (h) fuel cell production; and
- (i) other alternative beneficial uses approved by the division.

Section 4 - Notices


1. If, at any time after Operator submits this Natural Gas Management Plan and before the well is spud:

(a) Operator becomes aware that the natural gas gathering system it planned to connect the well(s) to has become unavailable or will not have capacity to transport one hundred percent of the production from the well(s), no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised venting and flaring plan containing the information specified in Paragraph (5) of Subsection D of 19.15.27.9 NMAC; or

(b) Operator becomes aware that it has, cumulatively for the year, become out of compliance with its baseline natural gas capture rate or natural gas capture requirement, no later than 20 days after becoming aware of such information, Operator shall submit for OCD's approval a new or revised Natural Gas Management Plan for each well it plans to spud during the next 90 days containing the information specified in Paragraph (2) of Subsection D of 19.15.27.9 NMAC, and shall file an update for each Natural Gas Management Plan until Operator is back in compliance with its baseline natural gas capture rate or natural gas capture requirement.

2. OCD may deny or conditionally approve an APD if Operator does not make a certification, fails to submit an adequate venting and flaring plan which includes alternative beneficial uses for the anticipated volume of natural gas produced, or if OCD determines that Operator will not have adequate natural gas takeaway capacity at the time a well will be spud.

I certify that, after reasonable inquiry, the statements in and attached to this Natural Gas Management Plan are true and correct to the best of my knowledge and acknowledge that a false statement may be subject to civil and criminal penalties under the Oil and Gas Act.

Signature: 
Printed Name: Sarah Jordan
Title: Regulatory Analyst
E-mail Address: sarah.jordan@coterra.com
Date: 4/27/2022
Phone: 432/620-1909
OIL CONSERVATION DIVISION (Only applicable when submitted as a standalone form)
Approved By:
Title:
Approval Date:
Conditions of Approval:

From State of New Mexico, Natural Gas Management Plan

VI. Separation Equipment: Attach a complete description of how Operator will size separation equipment to optimize gas capture.

XEC Standard Response

Standard facility gas process flow begins at the inlet separator. These vessels are designed based off of forecasted rates and residence times in accordance with, and often greater than, API 12J. The separated gas is then routed to an additional separation vessel (ie sales scrubber) in order to extract liquids that may have carried over or developed due to the decrease in pressure. The sales scrubber is sized based on API 521. From the sales scrubber, the gas leaves the facility and enters the gas midstream gathering network.

Cimarex

VII. Operational Practices

Cimarex values the sustainable development of New Mexico's natural resources. Venting and flaring of natural gas is a source of waste in the industry, and Cimarex will ensure that its values are aligned with those of NMOCD. As such, Cimarex plans to take pointed steps to ensure compliance with Subsection A through F of 19.15.27.8 NMAC.

Specifically, below are the steps Cimarex will plan to follow under routine well commissioning and operations.

1. Capture or combust natural gas during drilling operations where technically feasible, using the best industry practices and control technologies.
 - a. All flares during these operations will be a minimum of 100ft away from the nearest surface-hole location.
2. All gas present during post-completion drill-out and flow back will be routed through separation equipment, and, if technically feasible, flare unsellable vapors rather than vent. Lastly, formal sales separator commissioning to process well-stream fluids and send gas to a gas flow line/collection system or use the gas for on-site fuel or beneficial usage, gas as soon as is safe and technically feasible.
3. Cimarex will ensure the flare or combustion equipment is properly sized to handle expected flow rates, ensure this equipment is equipped with an automatic or continuous ignition source, and ensure this equipment is designed for proper combustion efficiency.
4. If Cimarex must flare because gas is not meeting pipeline specifications, Cimarex will limit flaring to <60 days, analyze gas composition at least twice per week, and route gas into a gathering pipeline as soon as pipeline specifications are met.
5. Under routine production operations, Cimarex will not flare/vent unless:
 - a. Venting or flaring occurs due to an emergency or equipment malfunction.
 - b. Venting or flaring occurs as a result of unloading practices, and an operator is onsite (or within 30 minutes of drive time and posts contact information at the wellsite) until the end of unloading practice.
 - c. The venting or flaring occurs during automated plungerlift operations, in which case the Cimarex operator will work to optimize the plungerlift system to minimize venting/flaring.
 - d. The venting or flaring occurs during downhole well maintenance, in which case Cimarex will work to minimize venting or flaring operations to the extent that it does not pose a risk to safe operations.
 - e. The well is an exploratory well, the division has approved the well as an exploratory well, venting or flaring is limited to 12 months, as approved by the division, and venting/flaring does not cause Cimarex to breach its State-wide 98% gas capture requirement.
 - f. Venting or flaring occurs because the stock tanks or other low-pressure vessels are being gauged, sampled, or liquids are being loaded out.
 - g. The venting or flaring occurs because pressurized vessels are being maintained and are being blown-down or depressurized.
 - h. Venting or flaring occurs as a result of normal dehydration unit operations.

- i. Venting or flaring occurs as a result of bradenhead testing.
 - j. Venting or flaring occurs as a result of normal compressor operations, including general compressor operations, compressor engines and turbines.
 - k. Venting or flaring occurs as a result of a packer leakage test.
 - l. Venting or flaring occurs as a result of a production test lasting less than 24 hours unless otherwise approved by the division.
 - m. Venting or flaring occurs as a result of new equipment commissioning and is necessary to purge impurities from the pipeline or production equipment.
6. Cimarex will maintain its equipment in accordance with its Operations and Maintenance Program, to ensure venting or flaring events are minimized and that equipment is properly functioning.
7. Cimarex will install automatic tank gauging equipment on all production facilities constructed after May 25, 2021, to ensure minimal emissions from tank gauging practices.
8. By November 25, 2022, all Cimarex facilities equipped with flares or combustors will be equipped with continuous pilots or automatic igniters, and technology to ensure proper function, i.e. thermocouple, fire-eye, etc...
9. Cimarex will perform AVO (audio, visual, olfactory) facility inspections in accordance with NMOCD requirements. Specifically, Cimarex will:
 - a. Perform weekly inspections during the first year of production, and so long as production is greater than 60 MCFD.
 - b. If production is less than 60 MCFD, Cimarex will perform weekly AVO inspections when an operator is present on location, and inspections at least once per calendar month with at least 20 calendar days between inspections.
10. Cimarex will measure or estimate the volume of vented, flared or beneficially used natural gas, regardless of the reason or authorization for such venting or flaring.
11. On all facilities constructed after May 25, 2021, Cimarex will install metering where feasible and in accordance with available technology and best engineering practices, in an effort to measure how much gas could have been vented or flared.
 - a. In areas where metering is not technically feasible, such as low-pressure/low volume venting or flaring applications, engineering estimates will be used such that the methodology could be independently verified.
12. Cimarex will fulfill the division's requirements for reporting and filing of venting or flaring that exceeds 50 MCF in volume or last eight hours or more cumulatively within any 24-hour period.

VIII. Best Management Practices to minimize venting during active and planned maintenance

Cimarex strives to ensure minimal venting occurs during active and planned maintenance activities. Below is a description of common maintenance practices, and the steps Cimarex takes to limit venting exposure.

- **Workovers:**
 - Always strive to kill well when performing downhole maintenance.
 - If vapors or trapped pressure is present and must be relieved then:
 - Initial blowdown to production facility:
 - Route vapors to LP flare if possible/applicable
 - Blowdown to portable gas buster tank:
 - Vent to existing or portable flare if applicable.
- **Stock tank servicing:**
 - Minimize time spent with thief hatches open.
 - When cleaning or servicing via manway, suck tank bottoms to ensure minimal volatiles exposed to atmosphere.
 - Connect vacuum truck to low pressure flare while cleaning bottoms to limit venting.
 - Isolate the vent lines and overflows on the tank being serviced from other tanks.
- **Pressure vessel/compressor servicing and associated blowdowns:**
 - Route to flare where possible.
 - Blow vessel down to minimum available pressure via pipeline, prior to venting vessel.
 - Preemptively changing anodes to reduce failures and extended corrosion related servicing.
 - When cleaning or servicing via manway, suck vessel bottoms to ensure minimal volatiles exposed to atmosphere.
- **Flare/combustor maintenance:**
 - Minimize downtime by coordinating with vendor and Cimarex staff travel logistics.
 - Utilizing preventative and predictive maintenance programs to replace high wear components before failure.
 - Because the flare/combustor is the primary equipment used to limit venting practices, ensure flare/combustor is properly maintained and fully operational at all times via routine maintenance, temperature telemetry, onsite visual inspections.

The Cimarex expectation is to limit all venting exposure. Equipment that may not be listed on this document is still expected to be maintained and associated venting during such maintenance minimized.

District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 102077

CONDITIONS

Operator: CIMAREX ENERGY CO. 600 N. Marienfeld Street Midland, TX 79701	OGRID: 215099
	Action Number: 102077
	Action Type: [C-101] BLM - Federal/Indian Land Lease (Form 3160-3)

CONDITIONS

Created By	Condition	Condition Date
pkautz	Will require a File As Drilled C-102 and a Directional Survey with the C-104	5/27/2022
pkautz	Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string	5/27/2022
pkautz	Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system	5/27/2022
pkautz	Cement is required to circulate on both surface and intermediate1 strings of casing	5/27/2022