

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

RECEIVED

DEC 19 2019

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018**SUNDRY NOTICES AND REPORTS ON WELLS**
Do not use this form for proposals to drill or recomplete an abandoned well. Use form 3160-3 (APD) for such proposals.5. Lease Serial No.
NMNM132062

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.
BLACK RIVER 25 FED COM 1H9. API Well No.
30-015-43373-00-X110. Field and Pool or Exploratory Area
WILDCAT11. County or Parish, State
EDDY COUNTY, NM**SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

CIMAREX ENERGY COMPANY

Contact: FATIMA VASQUEZ

E-Mail: fvasquez@cimarex.com

3a. Address

600 N MARIENFELD STE 600
MIDLAND, TX 79701

3b. Phone No. (include area code)

Ph: 432.620.1933

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 25 T24S R26E SESW 192FSL 2127FWL

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- ☒
- Notice of Intent
-
- ☐
- Subsequent Report
-
- ☐
- Final Abandonment Notice

TYPE OF ACTION

- | | | | |
|---|---|--|---|
| ☐ Acidize | ☐ Deepen | ☐ Production (Start/Resume) | ☐ Water Shut-Off |
| ☐ Alter Casing | ☐ Hydraulic Fracturing | ☐ Reclamation | ☐ Well Integrity |
| ☐ Casing Repair | ☐ New Construction | ☐ Recomplete | ☒ Other |
| ☐ Change Plans | ☐ Plug and Abandon | ☐ Temporarily Abandon | Change to Original A |
| ☐ Convert to Injection | ☐ Plug Back | ☐ Water Disposal | PD |

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Cimarex respectfully requests the following changes:

Change BHL to:
330' FNL & 2090' FWL of Section 24, 24S, 26E.

No new surface disturbance.

See attached Wellsite Layout, updated C102, updated Drilling Plan; and updated Directional Survey.

Carlsbad Field Office
OCD Artesia

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #494402 verified by the BLM Well Information System

For CIMAREX ENERGY COMPANY, sent to the Carlsbad

Committed to AFMSS for processing by PRISCILLA PEREZ on 12/04/2019 (20PP0568SE)

Name (Printed/Typed) FATIMA VASQUEZ

Title REGULATORY ANALYST

Signature (Electronic Submission)

Date 12/03/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By JEROMY PORTER

Title PETROLEUM ENGINEER

Date 12/10/2019

Conditions of approval, if any, are attached. Approval of this notice 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.

Office Carlsbad

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.

(Instructions on page 2)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

427/20 47

Revisions to Operator-Submitted EC Data for Sundry Notice #494402

	Operator Submitted	BLM Revised (AFMSS)
Sundry Type:	APDCH NOI	APDCH NOI
Lease:	NMNM132062	NMNM132062
Agreement:		
Operator:	CIMAREX ENERGY COMPANY 600 N MARIENFELD ST SUITE 600 MIDLAND, TX 79701 Ph: 432-571-7800	CIMAREX ENERGY COMPANY 600 N MARIENFELD STE 600 MIDLAND, TX 79701 Ph: 432.620.1936 Fx: 918.749.8059
Admin Contact:	FATIMA VASQUEZ REGULATORY ANALYST E-Mail: fvasquez@cimarex.com Ph: 432.620.1933	FATIMA VASQUEZ REGULATORY ANALYST E-Mail: fvasquez@cimarex.com Ph: 432.620.1933
Tech Contact:	FATIMA VASQUEZ REGULATORY ANALYST E-Mail: fvasquez@cimarex.com Ph: 432.620.1933	FATIMA VASQUEZ REGULATORY ANALYST E-Mail: fvasquez@cimarex.com Ph: 432.620.1933
Location:		
State:	NM	NM
County:	EDDY	EDDY
Field/Pool:	PURPLE SAGE;WOLFCAMP(GAS)	WILDCAT
Well/Facility:	BLACK RIVER 25 FEDERAL COM 1H Sec 25 T24S R26E SESW 192FSL 2127FWL 32.181411 N Lat, 104.248247 W Lon	BLACK RIVER 25 FED COM 1H Sec 25 T24S R26E SESW 192FSL 2127FWL

District I
1625 N. French Dr., Hobbs, NM 88210
Phone: (505) 393-6161 Fax: (505) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (505) 748-1283 Fax: (505) 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

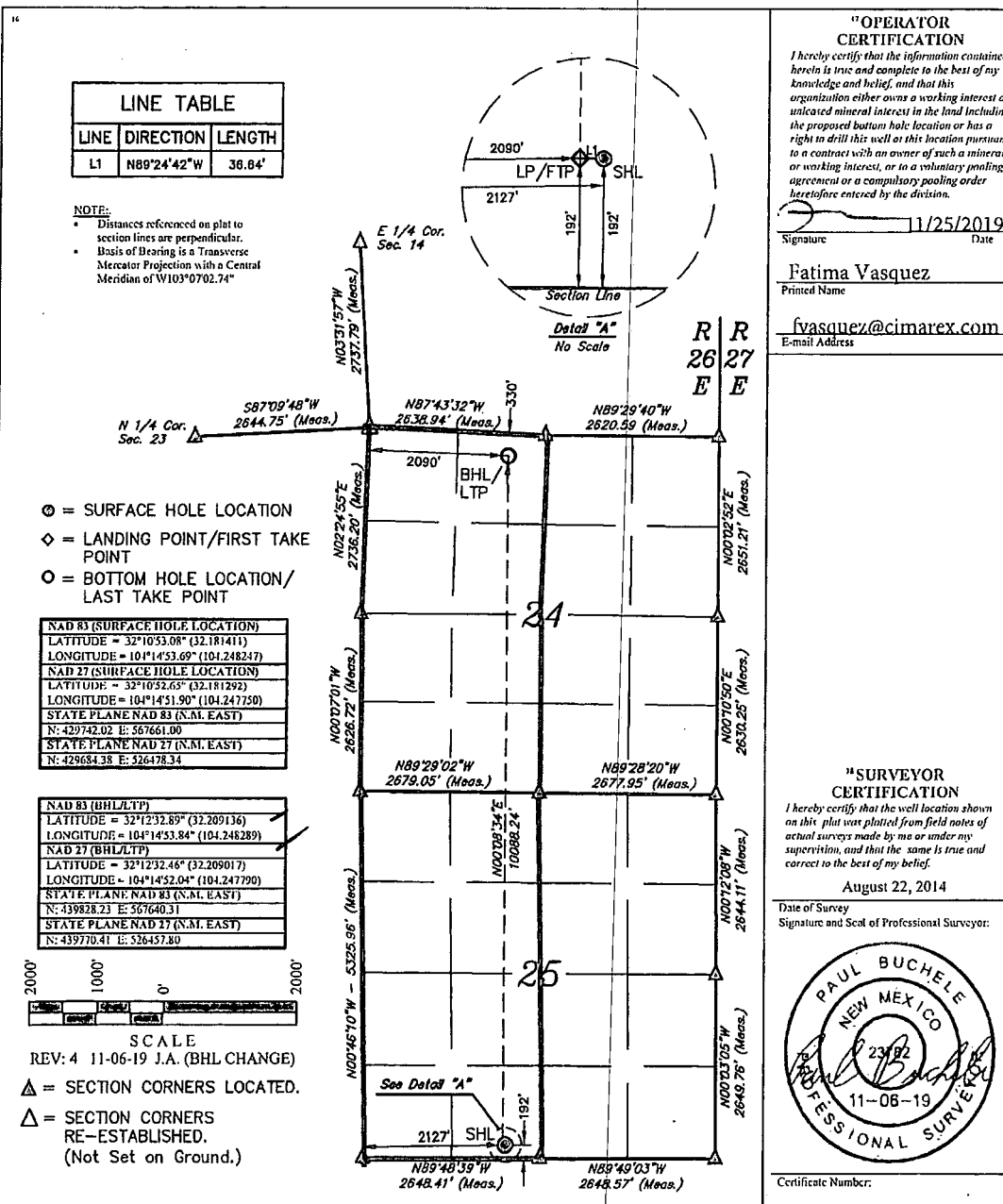
WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-015-43373		2 Pool Code 98220		3 Property Name Purple Sage; Wolfcamp (Gas)	
4 Property Code 315262		5 Well Number III		6 Well Name BLACK RIVER 25 FEDERAL COM	
7 OGRID No. 215099		8 Operator Name CIMAREX ENERGY CO.		9 Elevation 3312.9'	

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
N	25	24 S	26 E		192	SOUTH	2127	WEST	EDDY

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
C	24	24 S	26 E		330	NORTH	2090	WEST	EDDY
12 Dedicated Acres 640		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.



Prelim Cimarex Black River 25 Federal Com 1H Rev6 RM 21Nov19 Anti-Collision Summary Report

Analysis Date-24hr Time: November 21, 2019 - 14:12

Client: Cimarex

Field: NM Eddy County (NAD 83)

Structure: Cimarex Black River 25 Federal Com 1H

Slot: Cimarex Black River 25 Federal Com 1H

Well: Cimarex Black River 25 Federal Com 1H

Borehole: Original Borehole

Scan MD Range: 0.00ft ~ 18552.34ft

Analysis Method:

3D Least Distance

Reference Trajectory:

Plan)

Depth Interval:

Every 10.00 Measured Depth (ft)

Rule Set:

D&M AntiCollision Standard S002 v5.1/5.2

Min Pts:

All local minima indicated.

Version / Patch:

2.10.782.0

Database \ Project:

US1153APP452.dir,slb.com\drilling-NM Eddy County 2.10

Trajectory Error Model: ISCWSA0 3-D 95.000% Confidence 2.7955 sigma, for subject well. For offset wells, error model version is specified with each well respectively.

Offset Selection Criteria

Wellhead distance scan:

Selection filters:

Not performed!

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 Trajectories Summary

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

Final Surveys - Cimarex Black River 25 Federal Com 2H Off-18644ft (Surcon Corrected) (Def Survey)													
40.00	32.27	38.71	7.73	N/A	MAS = 9.84 (m)	0.00	0.00	CtCt<=15m<15.00				Enter Alert	
40.02	32.27	38.72	7.75	5477.06	MAS = 9.84 (m)	26.00	26.00					WRP	
40.09	32.27	38.70	7.82	354.43	MAS = 9.84 (m)	60.00	60.00					MINPT-O-EOU	
49.06	32.27	44.75	16.79	15.06	MAS = 9.84 (m)	740.00	740.00	CtCt<=15m>15.00				Exit Alert	
59.95	32.27	53.07	27.68	10.23	MAS = 9.84 (m)	1320.00	1320.00					MINPT-O-EOU	
74.10	32.27	64.59	41.83	8.71	MAS = 9.84 (m)	1890.00	1890.00					MinPt-O-SF	
848.63	41.57	820.57	807.05	31.35	OSF1.50	5690.00	5690.00					MinPt-O-SF	
1029.60	59.85	989.36	969.75	26.23	OSF1.50	8280.00	8279.30					MinPt-O-SF	
1080.96	67.06	1035.92	1013.90	24.53	OSF1.50	9340.00	8699.20					MinPt-CtCt	
1081.04	67.30	1035.83	1013.74	24.44	OSF1.50	9370.00	8699.02					MINPT-O-EOU	
1081.10	67.38	1035.85	1013.73	24.42	OSF1.50	9380.00	8698.96					MinPt-O-ADP	
1093.08	75.12	1042.66	1017.96	22.11	OSF1.50	10130.00	8694.55					MINPT-O-EOU	
1092.93	77.99	1040.60	1014.95	21.28	OSF1.50	10380.00	8693.08					MinPt-CtCt	
1093.07	78.44	1040.44	1014.64	21.16	OSF1.50	10420.00	8692.84					MINPT-O-EOU	
1093.26	78.66	1040.48	1014.60	21.10	OSF1.50	10440.00	8692.73					MinPt-O-ADP	
1094.92	84.23	1038.42	1010.68	19.72	OSF1.50	10870.00	8690.20					MinPt-CtCt	
1093.57	96.07	1029.19	997.51	17.24	OSF1.50	11710.00	8685.26					MinPt-CtCt	
1093.33	101.48	1025.33	991.85	16.31	OSF1.50	12070.00	8683.14					MinPt-CtCt	
1093.60	102.33	1025.04	991.27	16.18	OSF1.50	12130.00	8682.78					MINPT-O-EOU	
1094.35	103.21	1025.20	991.14	16.05	OSF1.50	12190.00	8682.43					MinPt-O-ADP	
1099.21	108.75	1026.37	990.47	15.29	OSF1.50	12540.00	8680.37					MINPT-O-EOU	

Warning/Alert

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		
1099.84	109.50	1026.49	990.33	15.19	OSF1.50	12590.00	8680.08					MinPt-O-ADP	
1103.60	114.07	1027.21	989.52	14.63	OSF1.50	12870.00	8678.43					MINPT-O-EOU	
1104.26	114.87	1027.34	989.39	14.54	OSF1.50	12920.00	8678.14					MinPt-O-ADP	
1110.25	121.38	1028.99	988.87	13.82	OSF1.50	13310.00	8675.84					MINPT-O-EOU	
1110.79	122.02	1029.10	988.77	13.76	OSF1.50	13350.00	8675.61					MinPt-O-ADP	
1113.60	125.93	1029.31	987.67	13.36	OSF1.50	13580.00	8674.25					MINPT-O-EOU	
1114.02	126.40	1029.41	987.62	13.32	OSF1.50	13610.00	8674.08					MinPt-O-ADP	
1118.92	134.74	1028.75	984.17	12.54	OSF1.50	14090.00	8671.25					MinPt-CtCt	
1119.67	141.26	1025.16	978.41	11.97	OSF1.50	14460.00	8669.08					MinPt-CtCt	
1117.55	147.65	1018.77	969.90	11.42	OSF1.50	14820.00	8666.96					MinPt-CtCt	
1117.90	148.68	1018.44	969.22	11.35	OSF1.50	14880.00	8666.61					MINPT-O-EOU	
1117.82	151.05	1016.78	966.77	11.17	OSF1.50	15010.00	8665.84					MinPt-CtCt	
1118.37	159.62	1011.62	958.75	10.57	OSF1.50	15480.00	8663.08					MinPt-CtCt	
1118.58	163.43	1009.28	955.14	10.32	OSF1.50	15690.00	8661.84					MinPt-CtCt	
1117.10	167.11	1005.36	950.00	10.08	OSF1.50	15890.00	8660.66					MinPt-CtCt	
1115.84	176.92	997.55	938.92	9.51	OSF1.50	16430.00	8657.49					MinPt-CtCt	
1115.22	180.88	994.29	934.34	9.29	OSF1.50	16650.00	8656.19					MinPt-CtCt	
1114.41	185.66	990.30	928.75	9.05	OSF1.50	16910.00	8654.66					MinPt-CtCt	
1112.65	191.48	984.66	921.17	8.75	OSF1.50	17220.00	8652.84					MinPt-CtCt	
1111.57	195.06	981.19	916.51	8.59	OSF1.50	17410.00	8651.72					MinPt-CtCt	
1112.27	205.13	975.18	907.14	8.17	OSF1.50	17970.00	8648.43					MinPt-CtCt	
1112.90	206.86	974.66	906.04	8.10	OSF1.50	18070.00	8647.84					MINPT-O-EOU	
1115.60	215.50	971.59	900.10	7.80	OSF1.50	18530.00	8645.13					MinPt-CtCt	
1115.66	215.65	971.56	900.01	7.79	OSF1.50	18540.00	8645.07					MinPts	
1115.87	215.81	971.65	900.05	7.79	OSF1.50	18552.34	8645.00					MinPt-O-SF	

Chesapeake Bounds 25 Federal Com #1 (Offset) Plugged Gas Inc. Only (0ft-12000ft) (Def Survey)													Warning Alert
4407.83	32.81	4405.85	4375.02	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
4407.26	32.81	4405.19	4374.45	51588.89	MAS = 10.00 (m)	26.00	26.00					MinPt-O-SF	
4405.31	32.81	4393.70	4372.50	457.14	MAS = 10.00 (m)	430.00	430.00					MinPts	
4408.49	64.75	4364.66	4343.74	105.30	OSF1.50	1360.00	1360.00					MinPt-CtCt	
4411.14	71.25	4362.98	4339.89	95.48	OSF1.50	1580.00	1580.00					MINPT-O-EOU	
4408.66	93.85	4345.43	4314.81	71.95	OSF1.50	1920.00	1920.00					MinPt-CtCt	
4409.55	96.61	4344.48	4312.94	69.87	OSF1.50	2040.00	2040.00					MINPT-O-EOU	
4410.68	98.02	4344.68	4312.67	68.86	OSF1.50	2100.00	2100.00					MinPt-O-ADP	
4406.67	135.87	4315.43	4270.80	49.35	OSF1.50	2730.00	2730.00					MinPt-CtCt	
4403.49	194.40	4273.23	4209.09	34.31	OSF1.50	3850.00	3850.00					MinPt-CtCt	
4400.82	265.97	4222.84	4134.84	24.99	OSF1.50	5220.00	5220.00					MinPt-CtCt	
4393.10	324.39	4176.17	4068.71	20.43	OSF1.50	6320.00	6320.00					MinPt-CtCt	
4391.56	396.95	4126.26	3994.61	16.67	OSF1.50	7710.00	7710.00					MinPt-CtCt	
1505.49	453.79	1202.09	1051.71	5.00	OSF1.50	12400.00	8681.20	OSF<5.00				Enter Alert	
1495.50	453.96	1192.16	1041.54	4.96	OSF1.50	12570.00	8680.20					MinPts	
1495.59	453.97	1192.27	1041.62	4.96	OSF1.50	12590.00	8680.08					MinPt-O-SF	
1509.71	454.55	1206.01	1055.15	5.00	OSF1.50	12780.00	8678.96	OSF>5.00				Exit Alert	
6161.76	455.77	5857.25	5705.98	20.36	OSF1.50	18552.34	8645.00					TD	

Enron Bowden 25 Federal Com #1 (Offset) Plugged Gas Inc. Only (0ft-12125ft) (Def Survey)													Pass
3067.51	32.81	3065.14	3034.70	7893.10	MAS = 10.00 (m)	0.00	0.00					MinPts	
3067.52	32.81	3064.71	3034.71	3713.45	MAS = 10.00 (m)	26.00	26.00					WRP	

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		
	3062.11	80.77	3007.60	2981.34	58.26	OSF1.50	1520.00	1520.00				MinPt-CICt	
	3065.15	142.18	2969.71	2922.97	32.77	OSF1.50	2710.00	2710.00				MinPt-CICt	
	3065.09	227.09	2913.04	2838.00	20.41	OSF1.50	4340.00	4340.00				MinPt-CICt	
	3063.25	333.61	2840.18	2729.64	13.85	OSF1.50	6380.00	6380.00				MinPt-CICt	
	3070.36	426.37	2785.47	2644.01	10.85	OSF1.50	8160.00	8160.00				MinPt-CICt	
	2548.03	456.38	2243.12	2091.65	8.40	OSF1.50	10260.00	8693.79				MinPt-CICt	
	2548.05	456.41	2243.12	2091.64	8.40	OSF1.50	10270.00	8693.73				MinPts	
	2548.33	456.48	2243.35	2091.85	8.40	OSF1.50	10300.00	8693.55				MinPt-O-SF	
	8672.82	464.13	8362.74	8208.69	28.14	OSF1.50	18552.34	8645.00				TD	

Pre-Ongard Crawford ET AL #1 (Offset) Plugged Oil Blind (On- 2100ft) (Def Survey)													Pass
	10091.92	32.81	10089.95	10059.12	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	10091.70	32.81	10089.69	10058.89	303506.29	MAS = 10.00 (m)	26.00	26.00				MinPt-O-SF	
	10091.43	643.58	9661.72	9447.85	23.59	OSF1.50	2190.00	2190.00				MinPt-CICt	
	10091.43	646.69	9659.64	9444.74	23.47	OSF1.50	2200.00	2200.00				MinPts	
	10091.44	646.69	9659.65	9444.74	23.47	OSF1.50	2210.00	2210.00				MinPt-O-SF	
	8869.47	450.41	8568.54	8419.06	29.66	OSF1.50	12530.00	8680.43				MinPt-O-SF	
	6502.70	235.30	6345.17	6267.39	41.79	OSF1.50	18552.34	8645.00				MinPts	

Pre-Ongard Crawford Smith #1 (Offset) Plugged Oil Blind (On- 2005ft) (Def Survey)													Pass
	7657.54	32.81	7655.56	7624.73	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	7657.21	32.81	7655.18	7624.40	150315.55	MAS = 10.00 (m)	26.00	26.00				MinPt-O-SF	
	7656.73	614.66	7246.29	7042.07	18.74	OSF1.50	2110.00	2110.00				MinPt-CICt	
	7656.73	616.83	7244.85	7039.90	18.67	OSF1.50	2120.00	2120.00				MinPts	
	9174.49	433.46	8884.86	8741.03	31.89	OSF1.50	9760.00	8696.73				MinPt-O-SF	
	6785.12	230.08	6631.07	6555.04	44.61	OSF1.50	15940.00	8660.37				MinPt-CICt	
	6785.53	231.17	6630.76	6554.37	44.40	OSF1.50	16010.00	8659.96				MinPt-O-EQU	
	6786.27	232.03	6630.92	6554.23	44.23	OSF1.50	16060.00	8659.66				MinPt-O-ADP	
	7272.35	335.82	7047.81	6936.53	32.67	OSF1.50	18552.34	8645.00				MinPt-O-SF	

Pre-Ongard Bradley #1 (Offset) Plugged Oil Blind (On-1986) (Def Survey)													Pass
	10231.53	32.81	10229.55	10198.72	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	10231.37	32.81	10229.37	10198.56	462010.03	MAS = 10.00 (m)	26.00	26.00				WRP	
	10231.25	610.25	9823.75	9620.99	25.23	OSF1.50	2060.00	2060.00				MinPt-CICt	
	10231.25	610.85	9823.36	9620.40	25.20	OSF1.50	2070.00	2070.00				MinPts	
	8988.85	423.60	8705.79	8565.25	31.97	OSF1.50	12710.00	8679.37				MinPt-O-SF	
	6810.36	268.11	6630.96	6542.25	38.37	OSF1.50	18552.34	8645.00				MinPts	

Prelim Cimarex Black River 25 Federal Com 1H Rev6 RM 21Nov19 Proposal

Geodetic Report

(Non-Def Plan)



Report Date:	November 21, 2019 - 02:12 PM	Survey / DLS Computation:	Minimum Curvature / Lubinski
Client:	Cimarex	Vertical Section Azimuth:	0.163 ° (Grid North)
Field:	NM Eddy County (NAD 83)	Vertical Section Origin:	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Black River 25 Federal Com 1H / Cimarex Black River 25 Federal Com 1H	TVD Reference Datum:	RKB
Well:	Cimarex Black River 25 Federal Com 1H	TVD Reference Elevation:	3338.900 ft above MSL
Borehole:	Original Borehole	Seabed / Ground Elevation:	3312.900 ft above MSL
UWI / API#:	Unknown / Unknown	Magnetic Declination:	7.234 °
Survey Name:	Prelim Cimarex Black River 25 Federal Com 1H Rev6 RM 21Nov19	Total Gravity Field Strength:	998.4396mgn (9.80665 Based)
Survey Date:	June 19, 2019	Gravity Model:	GARM
Tort / AHD / DDI / ERD Ratio:	91.995 ° / 10091.994 ft / 6.297 / 1.160	Total Magnetic Field Strength:	47763.389 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Magnetic Dip Angle:	59.812 °
Location Lat / Long:	N 32° 10' 53.07568", W 104° 14' 53.69139"	Declination Date:	November 21, 2019
Location Grid N/E Y/X:	N 429742.020 ftUS, E 567661.000 ftUS	Magnetic Declination Model:	HDGM 2019
CRS Grid Convergence Angle:	0.0453 °	North Reference:	Grid North
Grid Scale Factor:	0.99990988	Grid Convergence Used:	0.0453 °
Version / Patch:	2.10.782.0	Total Corr Mag North->Grid North:	7.1890 °
		Local Coord Referenced To:	Structure Reference Point

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 [192' FSL, 2127' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
KOP - Build 12"/100' DLS	8181.54	0.00	345.15	8181.54	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
Build & Turn 12"/100' DLS	8473.21	35.00	345.15	8455.40	83.40	83.46	-22.14	12.00	429825.47	567638.86	N 32 10 53.90	W 104 14 53.95
Build 4"/100' DLS	8820.36	75.00	0.16	8651.22	359.49	359.63	-48.35	12.00	430101.62	567612.65	N 32 10 56.63	W 104 14 54.25
Landing Point	9203.79	90.34	0.16	8700.00	738.65	738.79	-47.27	4.00	430480.74	567613.73	N 32 11 0.39	W 104 14 54.23
Cimarex Black River 25 Federal Com 1H - PBHL [330' FSL, 2090' FWL]	18552.34	90.34	0.16	8645.00	10087.04	10087.14	-20.69	0.00	439828.23	567640.31	N 32 12 32.89	W 104 14 53.84

Survey Type: Non-Def Plan

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

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 ° ' ")
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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	17.500	13.375		NAL_MWD_IFR1+MS-Depth Only	Original Borehole / Prelim Cimarex Black River 25 Federal Com 1H Rev6 RM 21Nov19
	1	26.000	18552.339	1/100.000	17.500	13.375		NAL_MWD_IFR1+MS	Original Borehole / Prelim Cimarex Black River 25 Federal Com 1H

Prelim Cimarex Black River 25 Federal Com 1H Rev6 RM 21Nov19 Proposal

Geodetic Report

(Non-Def Plan)



Report Date:	November 21, 2019 - 02:12 PM	Survey / DLS Computation:	Minimum Curvature / Lubinski
Client:	Cimarex	Vertical Section Azimuth:	0.163 ° (Grid North)
Field:	NM Eddy County (NAD 83)	Vertical Section Origin:	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex Black River 25 Federal Com 1H / Cimarex Black River 25 Federal Com 1H	TVD Reference Datum:	RKB
Well:	Cimarex Black River 25 Federal Com 1H	TVD Reference Elevation:	3338.900 ft above MSL
Borehole:	Original Borehole	Seabed / Ground Elevation:	3312.900 ft above MSL
UWI / API#:	Unknown / Unknown	Magnetic Declination:	7.234 °
Survey Name:	Prelim Cimarex Black River 25 Federal Com 1H Rev6 RM 21Nov19	Total Gravity Field Strength:	998.4396mgn (9.80665 Based)
Survey Date:	June 19, 2019	Gravity Model:	GARM
Tort / AHD / DDI / ERD Ratio:	91.995 ° / 10091.994 ft / 6.297 / 1.160	Total Magnetic Field Strength:	47763.389 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Magnetic Dip Angle:	59.812 °
Location Lat / Long:	N 32° 10' 53.07568", W 104° 14' 53.69139"	Declination Date:	November 21, 2019
Location Grid N/E Y/X:	N 429742.020 ftUS, E 567661.000 ftUS	Magnetic Declination Model:	HDGM 2019
CRS Grid Convergence Angle:	0.0453 °	North Reference:	Grid North
Grid Scale Factor:	0.99990988	Grid Convergence Used:	0.0453 °
Version / Patch:	2.10.782.0	Total Corr Mag North->Grid North:	7.1890 °
		Local Coord Referenced To:	Structure Reference Point

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 [192' FSL, 2127' FWL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	100.00	0.00	345.15	100.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	200.00	0.00	345.15	200.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	300.00	0.00	345.15	300.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	400.00	0.00	345.15	400.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	500.00	0.00	345.15	500.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	600.00	0.00	345.15	600.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	700.00	0.00	345.15	700.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	800.00	0.00	345.15	800.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	900.00	0.00	345.15	900.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	1000.00	0.00	345.15	1000.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	1100.00	0.00	345.15	1100.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	1200.00	0.00	345.15	1200.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
Top Salt (Salado)	1255.00	0.00	345.15	1255.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	1300.00	0.00	345.15	1300.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	1400.00	0.00	345.15	1400.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	1500.00	0.00	345.15	1500.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	1600.00	0.00	345.15	1600.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	1700.00	0.00	345.15	1700.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	1800.00	0.00	345.15	1800.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69

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 ° ' ")
Base Salt (Castille)	1822.00	0.00	345.15	1822.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	1900.00	0.00	345.15	1900.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	2000.00	0.00	345.15	2000.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
Bell Canyon (Top Delaware)	2020.00	0.00	345.15	2020.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	2100.00	0.00	345.15	2100.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	2200.00	0.00	345.15	2200.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	2300.00	0.00	345.15	2300.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	2400.00	0.00	345.15	2400.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	2500.00	0.00	345.15	2500.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	2600.00	0.00	345.15	2600.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	2700.00	0.00	345.15	2700.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	2800.00	0.00	345.15	2800.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	2900.00	0.00	345.15	2900.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
Cherry Canyon	2983.00	0.00	345.15	2983.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	3000.00	0.00	345.15	3000.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	3100.00	0.00	345.15	3100.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	3200.00	0.00	345.15	3200.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	3300.00	0.00	345.15	3300.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	3400.00	0.00	345.15	3400.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	3500.00	0.00	345.15	3500.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	3600.00	0.00	345.15	3600.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	3700.00	0.00	345.15	3700.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	3800.00	0.00	345.15	3800.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
Brushy Canyon	3900.00	0.00	345.15	3900.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	3989.00	0.00	345.15	3989.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	4000.00	0.00	345.15	4000.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	4100.00	0.00	345.15	4100.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	4200.00	0.00	345.15	4200.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	4300.00	0.00	345.15	4300.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	4400.00	0.00	345.15	4400.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	4500.00	0.00	345.15	4500.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	4600.00	0.00	345.15	4600.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	4700.00	0.00	345.15	4700.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
Bone Spring	4800.00	0.00	345.15	4800.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	4900.00	0.00	345.15	4900.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	5000.00	0.00	345.15	5000.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	5100.00	0.00	345.15	5100.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	5200.00	0.00	345.15	5200.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	5300.00	0.00	345.15	5300.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	5400.00	0.00	345.15	5400.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	5500.00	0.00	345.15	5500.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	5528.00	0.00	345.15	5528.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	5600.00	0.00	345.15	5600.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
Bone Spring	5700.00	0.00	345.15	5700.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	5800.00	0.00	345.15	5800.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	5900.00	0.00	345.15	5900.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	6000.00	0.00	345.15	6000.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	6100.00	0.00	345.15	6100.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	6200.00	0.00	345.15	6200.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	6300.00	0.00	345.15	6300.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	6400.00	0.00	345.15	6400.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69

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 ° ' ")
1st Bone Spring Sand	6474.00	0.00	345.15	6474.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	6500.00	0.00	345.15	6500.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	6600.00	0.00	345.15	6600.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	6700.00	0.00	345.15	6700.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	6800.00	0.00	345.15	6800.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
2nd Bone Spring Sand	6889.00	0.00	345.15	6889.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	6900.00	0.00	345.15	6900.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	7000.00	0.00	345.15	7000.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	7100.00	0.00	345.15	7100.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	7200.00	0.00	345.15	7200.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
3rd Bone Spring Carb	7286.00	0.00	345.15	7286.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	7300.00	0.00	345.15	7300.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	7400.00	0.00	345.15	7400.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	7500.00	0.00	345.15	7500.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
Harkey Sandstone	7573.00	0.00	345.15	7573.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	7600.00	0.00	345.15	7600.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	7700.00	0.00	345.15	7700.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	7800.00	0.00	345.15	7800.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
Base Harkey Sand	7805.00	0.00	345.15	7805.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	7900.00	0.00	345.15	7900.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	8000.00	0.00	345.15	8000.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	8100.00	0.00	345.15	8100.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
KOP - Build 12"/100' DLS	8181.54	0.00	345.15	8181.54	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	8200.00	2.22	345.15	8200.00	0.34	0.34	-0.09	12.00	429742.36	567660.91	N 32 10 53.08	W 104 14 53.69
3rd Bone Spring Sand	8215.03	4.02	345.15	8215.00	1.13	1.13	-0.30	12.00	429743.15	567660.70	N 32 10 53.09	W 104 14 53.69
	8300.00	14.22	345.15	8298.79	14.12	14.13	-3.75	12.00	429756.15	567657.25	N 32 10 53.22	W 104 14 53.73
	8400.00	26.22	345.15	8392.46	47.43	47.47	-12.59	12.00	429789.49	567648.41	N 32 10 53.55	W 104 14 53.84
Build & Turn 12"/100' DLS	8473.21	35.00	345.15	8455.40	83.40	83.46	-22.14	12.00	429825.47	567638.86	N 32 10 53.90	W 104 14 53.95
	8500.00	38.00	347.11	8476.94	98.86	98.93	-25.95	12.00	429840.94	567635.05	N 32 10 54.05	W 104 14 53.99
Top Wolfcamp	8586.16	47.79	351.99	8540.00	156.43	156.54	-36.34	12.00	429898.54	567624.66	N 32 10 54.62	W 104 14 54.11
	8600.00	49.38	352.63	8549.16	166.72	166.83	-37.73	12.00	429908.83	567623.27	N 32 10 54.73	W 104 14 54.13
	8700.00	60.96	356.51	8606.19	248.27	248.40	-45.29	12.00	429990.39	567615.71	N 32 10 55.53	W 104 14 54.22
	8800.00	72.62	359.59	8645.54	339.94	340.08	-48.31	12.00	430082.07	567612.70	N 32 10 56.44	W 104 14 54.25
Build 4"/100' DLS	8820.36	75.00	0.16	8651.22	359.49	359.63	-48.35	12.00	430101.62	567612.65	N 32 10 56.63	W 104 14 54.25
	8900.00	78.19	0.16	8669.68	436.95	437.09	-48.13	4.00	430179.07	567612.87	N 32 10 57.40	W 104 14 54.25
	9000.00	82.19	0.16	8686.72	535.47	535.61	-47.85	4.00	430277.58	567613.15	N 32 10 58.38	W 104 14 54.24
	9100.00	86.19	0.16	8696.85	634.93	635.07	-47.57	4.00	430377.03	567613.44	N 32 10 59.36	W 104 14 54.24
Wolfcamp Target	9186.93	89.66	0.16	8700.00	721.80	721.93	-47.32	4.00	430463.89	567613.68	N 32 11 0.22	W 104 14 54.24
	9200.00	90.19	0.16	8700.02	734.86	735.00	-47.28	4.00	430476.95	567613.72	N 32 11 0.35	W 104 14 54.23
Wolfcamp Target Landing Point	9203.79	90.34	0.16	8700.00	738.65	738.79	-47.27	4.00	430480.74	567613.73	N 32 11 0.39	W 104 14 54.23
	9300.00	90.34	0.16	8699.43	834.86	835.00	-47.00	0.00	430576.94	567614.01	N 32 11 1.34	W 104 14 54.23
	9400.00	90.34	0.16	8698.85	934.86	935.00	-46.71	0.00	430676.93	567614.29	N 32 11 2.33	W 104 14 54.23

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 ° ' ")
	9500.00	90.34	0.16	8698.26	1034.86	1034.99	-46.43	0.00	430776.92	567614.57	N 32 11 3.32	W 104 14 54.22
	9600.00	90.34	0.16	8697.67	1134.85	1134.99	-46.15	0.00	430876.91	567614.86	N 32 11 4.31	W 104 14 54.22
	9700.00	90.34	0.16	8697.08	1234.85	1234.99	-45.86	0.00	430976.89	567615.14	N 32 11 5.30	W 104 14 54.21
	9800.00	90.34	0.16	8696.49	1334.85	1334.99	-45.58	0.00	431076.88	567615.43	N 32 11 6.29	W 104 14 54.21
	9900.00	90.34	0.16	8695.90	1434.85	1434.98	-45.29	0.00	431176.87	567615.71	N 32 11 7.28	W 104 14 54.21
	10000.00	90.34	0.16	8695.32	1534.85	1534.98	-45.01	0.00	431276.86	567616.00	N 32 11 8.26	W 104 14 54.20
	10100.00	90.34	0.16	8694.73	1634.85	1634.98	-44.72	0.00	431376.85	567616.28	N 32 11 9.25	W 104 14 54.20
	10200.00	90.34	0.16	8694.14	1734.84	1734.98	-44.44	0.00	431476.84	567616.56	N 32 11 10.24	W 104 14 54.19
	10300.00	90.34	0.16	8693.55	1834.84	1834.98	-44.16	0.00	431576.83	567616.85	N 32 11 11.23	W 104 14 54.19
	10400.00	90.34	0.16	8692.96	1934.84	1934.97	-43.87	0.00	431676.82	567617.13	N 32 11 12.22	W 104 14 54.18
	10500.00	90.34	0.16	8692.37	2034.84	2034.97	-43.59	0.00	431776.80	567617.42	N 32 11 13.21	W 104 14 54.18
	10600.00	90.34	0.16	8691.79	2134.84	2134.97	-43.30	0.00	431876.79	567617.70	N 32 11 14.20	W 104 14 54.18
	10700.00	90.34	0.16	8691.20	2234.84	2234.97	-43.02	0.00	431976.78	567617.99	N 32 11 15.19	W 104 14 54.17
	10800.00	90.34	0.16	8690.61	2334.83	2334.97	-42.73	0.00	432076.77	567618.27	N 32 11 16.18	W 104 14 54.17
	10900.00	90.34	0.16	8690.02	2434.83	2434.96	-42.45	0.00	432176.76	567618.55	N 32 11 17.17	W 104 14 54.16
	11000.00	90.34	0.16	8689.43	2534.83	2534.96	-42.17	0.00	432276.75	567618.84	N 32 11 18.16	W 104 14 54.16
	11100.00	90.34	0.16	8688.84	2634.83	2634.96	-41.88	0.00	432376.74	567619.12	N 32 11 19.15	W 104 14 54.15
	11200.00	90.34	0.16	8688.26	2734.83	2734.96	-41.60	0.00	432476.72	567619.41	N 32 11 20.14	W 104 14 54.15
	11300.00	90.34	0.16	8687.67	2834.83	2834.95	-41.31	0.00	432576.71	567619.69	N 32 11 21.13	W 104 14 54.15
	11400.00	90.34	0.16	8687.08	2934.82	2934.95	-41.03	0.00	432676.70	567619.98	N 32 11 22.12	W 104 14 54.14
	11500.00	90.34	0.16	8686.49	3034.82	3034.95	-40.74	0.00	432776.69	567620.26	N 32 11 23.11	W 104 14 54.14
	11600.00	90.34	0.16	8685.90	3134.82	3134.95	-40.46	0.00	432876.68	567620.54	N 32 11 24.10	W 104 14 54.13
	11700.00	90.34	0.16	8685.31	3234.82	3234.95	-40.17	0.00	432976.67	567620.83	N 32 11 25.09	W 104 14 54.13
	11800.00	90.34	0.16	8684.73	3334.82	3334.94	-39.89	0.00	433076.66	567621.11	N 32 11 26.08	W 104 14 54.12
	11900.00	90.34	0.16	8684.14	3434.82	3434.94	-39.61	0.00	433176.65	567621.40	N 32 11 27.07	W 104 14 54.12
	12000.00	90.34	0.16	8683.55	3534.81	3534.94	-39.32	0.00	433276.63	567621.68	N 32 11 28.05	W 104 14 54.12
	12100.00	90.34	0.16	8682.96	3634.81	3634.94	-39.04	0.00	433376.62	567621.97	N 32 11 29.04	W 104 14 54.11
	12200.00	90.34	0.16	8682.37	3734.81	3734.94	-38.75	0.00	433476.61	567622.25	N 32 11 30.03	W 104 14 54.11
	12300.00	90.34	0.16	8681.78	3834.81	3834.93	-38.47	0.00	433576.60	567622.53	N 32 11 31.02	W 104 14 54.10
	12400.00	90.34	0.16	8681.20	3934.81	3934.93	-38.18	0.00	433676.59	567622.82	N 32 11 32.01	W 104 14 54.10
	12500.00	90.34	0.16	8680.61	4034.80	4034.93	-37.90	0.00	433776.58	567623.10	N 32 11 33.00	W 104 14 54.10
	12600.00	90.34	0.16	8680.02	4134.80	4134.93	-37.62	0.00	433876.57	567623.39	N 32 11 33.99	W 104 14 54.09
	12700.00	90.34	0.16	8679.43	4234.80	4234.92	-37.33	0.00	433976.55	567623.67	N 32 11 34.98	W 104 14 54.09
	12800.00	90.34	0.16	8678.84	4334.80	4334.92	-37.05	0.00	434076.54	567623.96	N 32 11 35.97	W 104 14 54.08
	12900.00	90.34	0.16	8678.25	4434.80	4434.92	-36.76	0.00	434176.53	567624.24	N 32 11 36.96	W 104 14 54.08
	13000.00	90.34	0.16	8677.67	4534.80	4534.92	-36.48	0.00	434276.52	567624.52	N 32 11 37.95	W 104 14 54.07
	13100.00	90.34	0.16	8677.08	4634.79	4634.92	-36.19	0.00	434376.51	567624.81	N 32 11 38.94	W 104 14 54.07
	13200.00	90.34	0.16	8676.49	4734.79	4734.91	-35.91	0.00	434476.50	567625.09	N 32 11 39.93	W 104 14 54.07
	13300.00	90.34	0.16	8675.90	4834.79	4834.91	-35.63	0.00	434576.49	567625.38	N 32 11 40.92	W 104 14 54.06
	13400.00	90.34	0.16	8675.31	4934.79	4934.91	-35.34	0.00	434676.48	567625.66	N 32 11 41.91	W 104 14 54.06
	13500.00	90.34	0.16	8674.72	5034.79	5034.91	-35.06	0.00	434776.46	567625.95	N 32 11 42.90	W 104 14 54.05
	13600.00	90.34	0.16	8674.14	5134.79	5134.91	-34.77	0.00	434876.45	567626.23	N 32 11 43.89	W 104 14 54.05
	13700.00	90.34	0.16	8673.55	5234.78	5234.90	-34.49	0.00	434976.44	567626.51	N 32 11 44.88	W 104 14 54.04
	13800.00	90.34	0.16	8672.96	5334.78	5334.90	-34.20	0.00	435076.43	567626.80	N 32 11 45.87	W 104 14 54.04
	13900.00	90.34	0.16	8672.37	5434.78	5434.90	-33.92	0.00	435176.42	567627.08	N 32 11 46.86	W 104 14 54.04
	14000.00	90.34	0.16	8671.78	5534.78	5534.90	-33.64	0.00	435276.41	567627.37	N 32 11 47.84	W 104 14 54.03
	14100.00	90.34	0.16	8671.19	5634.78	5634.89	-33.35	0.00	435376.40	567627.65	N 32 11 48.83	W 104 14 54.03
	14200.00	90.34	0.16	8670.61	5734.78	5734.89	-33.07	0.00	435476.38	567627.94	N 32 11 49.82	W 104 14 54.02
	14300.00	90.34	0.16	8670.02	5834.77	5834.89	-32.78	0.00	435576.37	567628.22	N 32 11 50.81	W 104 14 54.02
	14400.00	90.34	0.16	8669.43	5934.77	5934.89	-32.50	0.00	435676.36	567628.50	N 32 11 51.80	W 104 14 54.01
	14500.00	90.34	0.16	8668.84	6034.77	6034.89	-32.21	0.00	435776.35	567628.79	N 32 11 52.79	W 104 14 54.01
	14600.00	90.34	0.16	8668.25	6134.77	6134.88	-31.93	0.00	435876.34	567629.07	N 32 11 53.78	W 104 14 54.01
	14700.00	90.34	0.16	8667.66	6234.77	6234.88	-31.65	0.00	435976.33	567629.36	N 32 11 54.77	W 104 14 54.00
	14800.00	90.34	0.16	8667.08	6334.76	6334.88	-31.36	0.00	436076.32	567629.64	N 32 11 55.76	W 104 14 54.00

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 ° ' ")
	14900.00	90.34	0.16	8666.49	6434.76	6434.88	-31.08	0.00	436176.30	567629.93	N 32 11 56.75	W 104 14 53.99
	15000.00	90.34	0.16	8665.90	6534.76	6534.88	-30.79	0.00	436276.29	567630.21	N 32 11 57.74	W 104 14 53.99
	15100.00	90.34	0.16	8665.31	6634.76	6634.87	-30.51	0.00	436376.28	567630.50	N 32 11 58.73	W 104 14 53.99
	15200.00	90.34	0.16	8664.72	6734.76	6734.87	-30.22	0.00	436476.27	567630.78	N 32 11 59.72	W 104 14 53.98
	15300.00	90.34	0.16	8664.13	6834.76	6834.87	-29.94	0.00	436576.26	567631.06	N 32 12 0.71	W 104 14 53.98
	15400.00	90.34	0.16	8663.55	6934.75	6934.87	-29.65	0.00	436676.25	567631.35	N 32 12 1.70	W 104 14 53.97
	15500.00	90.34	0.16	8662.96	7034.75	7034.86	-29.37	0.00	436776.24	567631.63	N 32 12 2.69	W 104 14 53.97
	15600.00	90.34	0.16	8662.37	7134.75	7134.86	-29.09	0.00	436876.23	567631.92	N 32 12 3.68	W 104 14 53.96
	15700.00	90.34	0.16	8661.78	7234.75	7234.86	-28.80	0.00	436976.21	567632.20	N 32 12 4.67	W 104 14 53.96
	15800.00	90.34	0.16	8661.19	7334.75	7334.86	-28.52	0.00	437076.20	567632.49	N 32 12 5.66	W 104 14 53.96
	15900.00	90.34	0.16	8660.60	7434.75	7434.86	-28.23	0.00	437176.19	567632.77	N 32 12 6.65	W 104 14 53.95
	16000.00	90.34	0.16	8660.02	7534.74	7534.85	-27.95	0.00	437276.18	567633.05	N 32 12 7.63	W 104 14 53.95
	16100.00	90.34	0.16	8659.43	7634.74	7634.85	-27.66	0.00	437376.17	567633.34	N 32 12 8.62	W 104 14 53.94
	16200.00	90.34	0.16	8658.84	7734.74	7734.85	-27.38	0.00	437476.16	567633.62	N 32 12 9.61	W 104 14 53.94
	16300.00	90.34	0.16	8658.25	7834.74	7834.85	-27.10	0.00	437576.15	567633.91	N 32 12 10.60	W 104 14 53.93
	16400.00	90.34	0.16	8657.66	7934.74	7934.85	-26.81	0.00	437676.13	567634.19	N 32 12 11.59	W 104 14 53.93
	16500.00	90.34	0.16	8657.07	8034.74	8034.84	-26.53	0.00	437776.12	567634.48	N 32 12 12.58	W 104 14 53.93
	16600.00	90.34	0.16	8656.49	8134.73	8134.84	-26.24	0.00	437876.11	567634.76	N 32 12 13.57	W 104 14 53.92
	16700.00	90.34	0.16	8655.90	8234.73	8234.84	-25.96	0.00	437976.10	567635.04	N 32 12 14.56	W 104 14 53.92
	16800.00	90.34	0.16	8655.31	8334.73	8334.84	-25.67	0.00	438076.09	567635.33	N 32 12 15.55	W 104 14 53.91
	16900.00	90.34	0.16	8654.72	8434.73	8434.83	-25.39	0.00	438176.08	567635.61	N 32 12 16.54	W 104 14 53.91
	17000.00	90.34	0.16	8654.13	8534.73	8534.83	-25.11	0.00	438276.07	567635.90	N 32 12 17.53	W 104 14 53.90
	17100.00	90.34	0.16	8653.54	8634.73	8634.83	-24.82	0.00	438376.06	567636.18	N 32 12 18.52	W 104 14 53.90
	17200.00	90.34	0.16	8652.96	8734.72	8734.83	-24.54	0.00	438476.04	567636.47	N 32 12 19.51	W 104 14 53.90
	17300.00	90.34	0.16	8652.37	8834.72	8834.83	-24.25	0.00	438576.03	567636.75	N 32 12 20.50	W 104 14 53.89
	17400.00	90.34	0.16	8651.78	8934.72	8934.82	-23.97	0.00	438676.02	567637.03	N 32 12 21.49	W 104 14 53.89
	17500.00	90.34	0.16	8651.19	9034.72	9034.82	-23.68	0.00	438776.01	567637.32	N 32 12 22.48	W 104 14 53.88
	17600.00	90.34	0.16	8650.60	9134.72	9134.82	-23.40	0.00	438876.00	567637.60	N 32 12 23.47	W 104 14 53.88
	17700.00	90.34	0.16	8650.01	9234.71	9234.82	-23.12	0.00	438975.99	567637.89	N 32 12 24.46	W 104 14 53.88
	17800.00	90.34	0.16	8649.43	9334.71	9334.82	-22.83	0.00	439075.98	567638.17	N 32 12 25.45	W 104 14 53.87
	17900.00	90.34	0.16	8648.84	9434.71	9434.81	-22.55	0.00	439175.96	567638.46	N 32 12 26.44	W 104 14 53.87
	18000.00	90.34	0.16	8648.25	9534.71	9534.81	-22.26	0.00	439275.95	567638.74	N 32 12 27.42	W 104 14 53.86
	18100.00	90.34	0.16	8647.66	9634.71	9634.81	-21.98	0.00	439375.94	567639.02	N 32 12 28.41	W 104 14 53.86
	18200.00	90.34	0.16	8647.07	9734.71	9734.81	-21.69	0.00	439475.93	567639.31	N 32 12 29.40	W 104 14 53.85
	18300.00	90.34	0.16	8646.48	9834.70	9834.81	-21.41	0.00	439575.92	567639.59	N 32 12 30.39	W 104 14 53.85
	18400.00	90.34	0.16	8645.90	9934.70	9934.80	-21.13	0.00	439675.91	567639.88	N 32 12 31.38	W 104 14 53.85
	18500.00	90.34	0.16	8645.31	10034.70	10034.80	-20.84	0.00	439775.90	567640.16	N 32 12 32.37	W 104 14 53.84

Cimarex Black
River 25 Federal
Com 1H - PBHL
[330' FSL, 2090'
FWL]

18552.34 90.34 0.16 8645.00 10087.04 10087.14 -20.69 0.00 439828.23 567640.31 N 32 12 32.89 W 104 14 53.84

Survey Type: Non-Def Plan

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

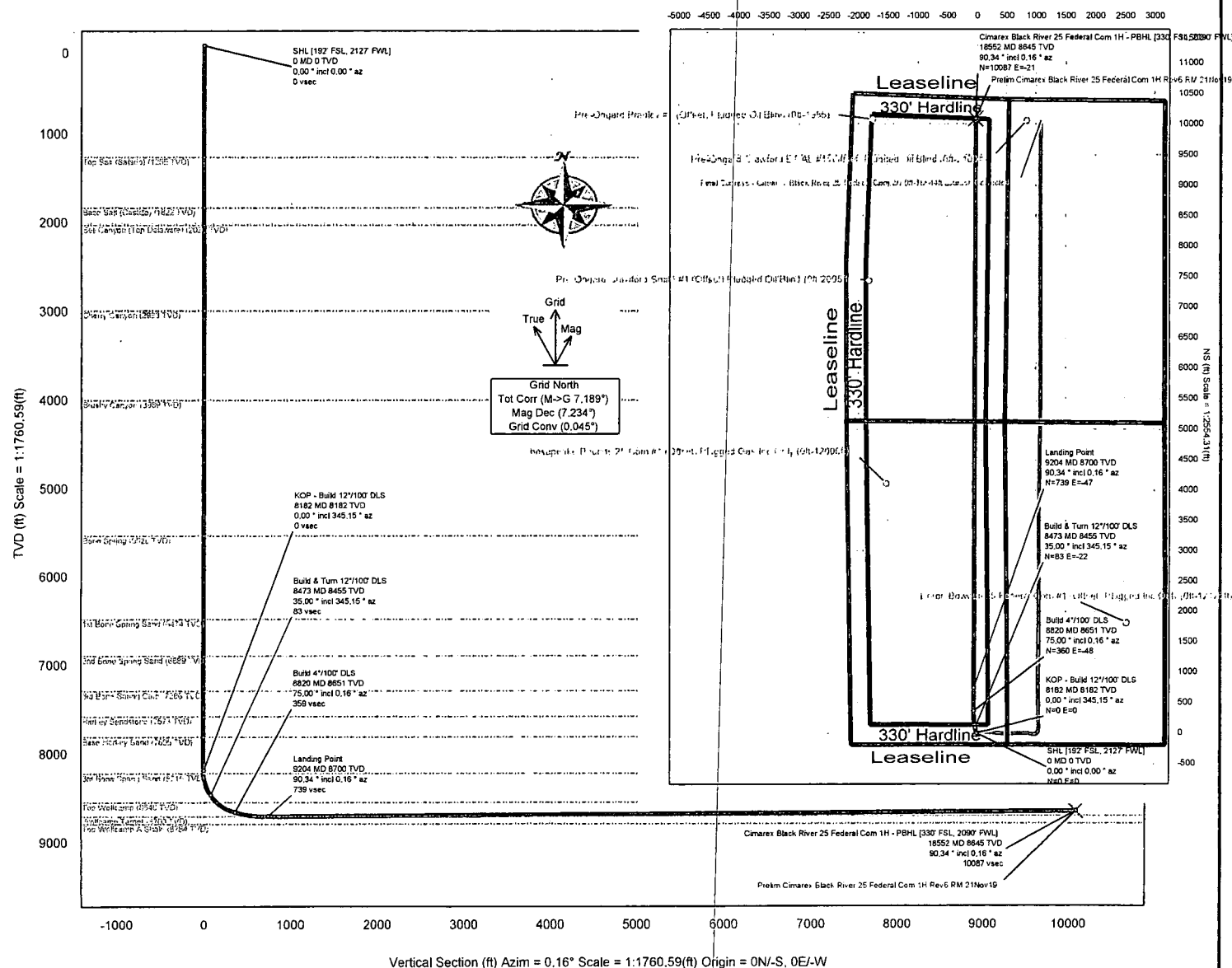
Survey Program:

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
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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	0.000	26.000	1/100.000	17.500	13.375		NAL_MWD_IFR1+MS-Depth Only		Original Borehole / Prelim Cimarex Black River 25 Federal Com 1H Rev6 RM 21Nov19	
		1	26.000	18552.339	1/100.000	17.500	13.375		NAL_MWD_IFR1+MS		Original Borehole / Prelim Cimarex Black River 25 Federal Com 1H	

Borehole:	Well:	Field:	Structure:
Original Borehole	Cimarex Black River 25 Federal Com 1H	NM Eddy County (NAD 83)	Cimarex Black River 25 Federal Com 1H

Gravity & Magnetic Parameters	Surface Location	Miscellaneous
Model: HDGM 2019 Dip: 59.812° Date: 21-Nov-2019	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Cimarex Black River 25 Federal Com 1H
MagDec: 7.234° FS: 47763.395mT Gravity FS: 998.44mgm (9.80665 Based)	Lat: N 32 10 53.08 Northing: 429742.021US Grid Conv: 0.0453	TVD Ref: RKB(3338.81 above MSL)
	Lon: W 104 14 53.69 Easting: 5676611US	EVV (ft) Scale = 1:2554.31 (ft)



Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL (192' FSL, 2127' FWL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Top Salt (Salado)	1255.00	0.00	345.15	1255.00	0.00	0.00	0.00	0.00
Base Salt (Castille)	1822.00	0.00	345.15	1822.00	0.00	0.00	0.00	0.00
Bell Canyon (Top Delaware)	2020.00	0.00	345.15	2020.00	0.00	0.00	0.00	0.00
Cherry Canyon	2983.00	0.00	345.15	2983.00	0.00	0.00	0.00	0.00
Brushy Canyon	3989.00	0.00	345.15	3989.00	0.00	0.00	0.00	0.00
Bone Spring	5528.00	0.00	345.15	5528.00	0.00	0.00	0.00	0.00
1st Bone Spring Sand	6474.00	0.00	345.15	6474.00	0.00	0.00	0.00	0.00
2nd Bone Spring Sand	6889.00	0.00	345.15	6889.00	0.00	0.00	0.00	0.00
3rd Bone Spring Carb	7286.00	0.00	345.15	7286.00	0.00	0.00	0.00	0.00
Harkey Sandstone	7573.00	0.00	345.15	7573.00	0.00	0.00	0.00	0.00
Base Harkey Sand	7805.00	0.00	345.15	7805.00	0.00	0.00	0.00	0.00
KOP - Build 12°/100' DLS	8181.54	0.00	345.15	8181.54	0.00	0.00	0.00	0.00
3rd Bone Spring Sand	8215.03	4.02	345.15	8215.00	1.13	1.13	-0.30	12.00
Build & Turn 12°/100' DLS	8473.21	35.00	345.15	8455.40	83.40	83.46	-22.14	12.00
Top Wolfcamp	8586.16	47.79	351.99	8540.00	156.43	156.54	-36.34	12.00
Build 4°/100' DLS	8820.36	75.00	0.16	8651.22	359.49	359.63	-48.35	12.00
Wolfcamp Target	9186.93	89.66	0.16	8700.00	721.80	721.93	-47.32	4.00
Wolfcamp Target	9203.79	90.34	0.16	8700.00	738.65	738.79	-47.27	4.00
Landing Point	9203.79	90.34	0.16	8700.00	738.65	738.79	-47.27	4.00
Cimarex Black River 25 Federal Com 1H - PBHL (330' FSL, 2090' FWL)	18552.34	90.34	0.16	8845.00	10087.04	10087.14	-20.69	0.00
Top Wolfcamp A Shale	NaN			8784.00				

1. Geological Formations

TVD of target 8,645

Pilot Hole TD N/A

MD at TD 18,552

Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Salado (Top Salt)	1255	N/A	
Castille (Base Salt)	1822	N/A	
Bell Canyon (Top Delaware)	2020	Hydrocarbons	
Cherry Canyon	2983	Hydrocarbons	
Brushy Canyon	3989	Hydrocarbons	
Bone Spring	5528	Hydrocarbons	
1st Bone Spring Sand	6474	Hydrocarbons	
2nd Bone Spring Sand	6889	Hydrocarbons	
3rd Bone Spring Carb	7286	Hydrocarbons	
Harkey Sandstone	7573	Hydrocarbons	
Base Harkey Sandstone	7805	Hydrocarbons	
3rd Bone Spring Sand	8215	Hydrocarbons	
Top Wolfcamp	8540	Hydrocarbons	
Wolfcamp Target	8645	Hydrocarbons	
Top Wolfcamp A Shale	8784	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	400	400	13-3/8"	48.00	H-40/J-55 Hybrid	ST&C	4.04	9.45	16.77
12 1/4	0	2000	2000	9-5/8"	36.00	J-55	LT&C	1.90	3.32	6.29
8 3/4	0	8135	8135	7"	26.00	L-80	LT&C	1.28	1.71	3.48
8 3/4	8135	18552	8645	5-1/2"	17.00	L-80	BT&C	1.40	1.72	45.79
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

	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?	N
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	# Sks	Wt. lb/gal	Yld ft ³ /sack	H ₂ O gal/sk	500# Comp. Strength (hours)	Slurry Description	
Surface	78	14.80	1.34	6.32	9.5	Lead: Class C + LCM	
	195	14.80	1.34	6.32	9.5	Tail: Class C + LCM	
Intermediate	381	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite	
	117	14.80	1.34	6.32	9.5	Tail: Class C + LCM	
Production	329	10.30	3.64	22.18		Lead: Tuned Light + LCM	
	1500	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS	

Casing String	TOC	% Excess
Surface		0 31
Intermediate		0 49
Production		1800 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	50% of working pressure
			Blind Ram		2M
			Pipe Ram		
			Double Ram	X	
			Other		
8 3/4	13 5/8	5M	Annular	X	50% of working pressure
			Blind Ram		5M
			Pipe Ram	X	
			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.

X	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 400'	FW Spud Mud	8.30 - 8.80	30-32	N/C
400' to 2000'	Brine Water	9.70 - 10.20	30-32	N/C
2000' to 18552'	Cut Brine or OBM	9.50 - 10.00	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	4495 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 5000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5000 psi test. Annular will be tested to 50% 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.

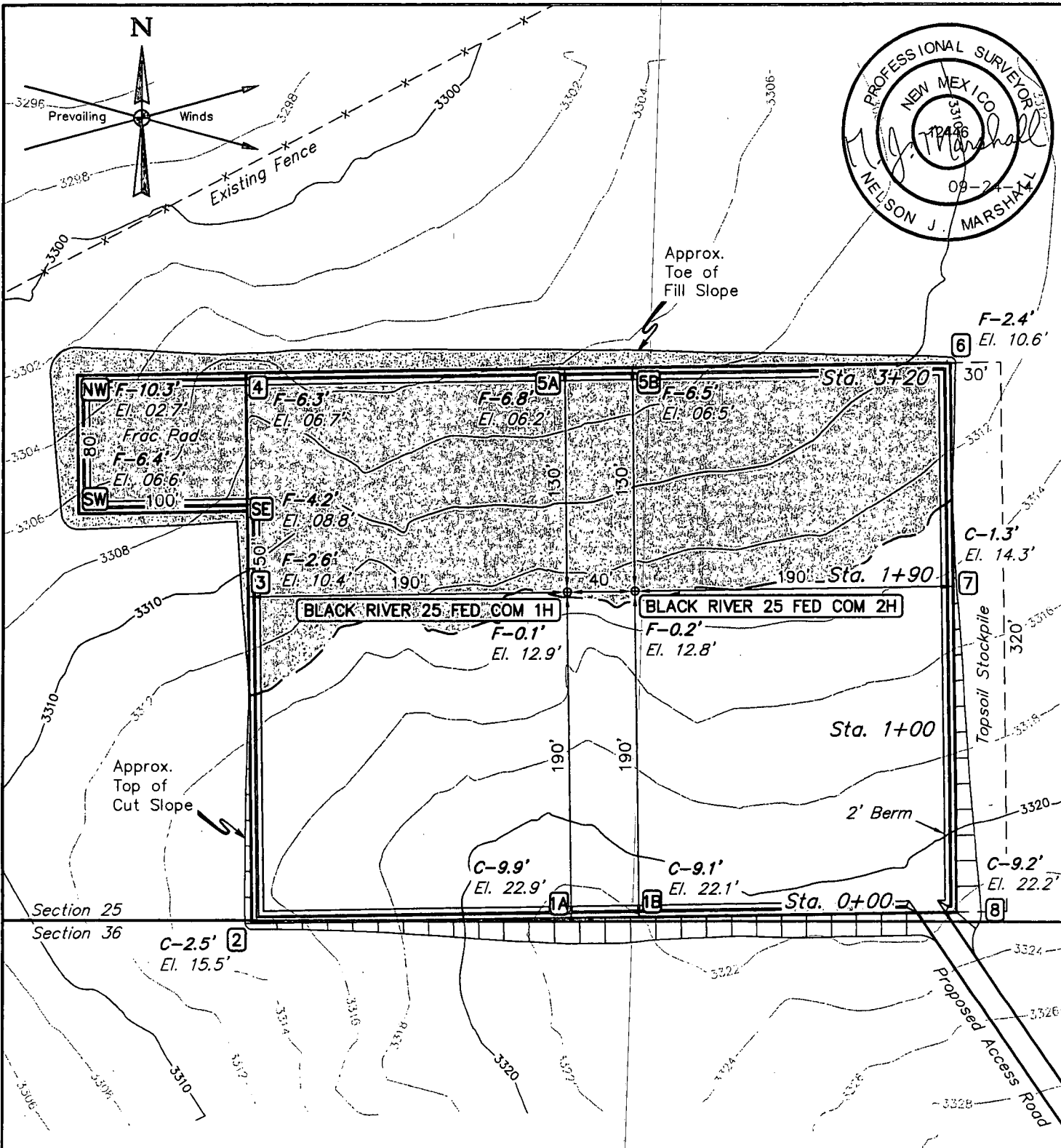
The wellhead will be installed by a third-party welder while being monitored by the wellhead vendor representative.

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 5000 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.



NOTE: Earthwork Calculations Require a Fill @ the Location Stakes For Balance. All Fill is to be Compacted to a Minimum of 95% of the Maximum Dry Density Obtained by AASHTO Method t-99.

FINISHED GRADE ELEVATION = 3313.0'

- NOTES:**
- Flare pit is to be located a min. of 100' from the wellhead.
 - Construct 2' high berm around pad location.
 - Construct diversion ditches as needed.
 - Contours shown at 2' intervals.
 - Underground utilities shown on this sheet are for visualization purposes only, actual locations to be determined prior to construction.

CIMAREX ENERGY CO.

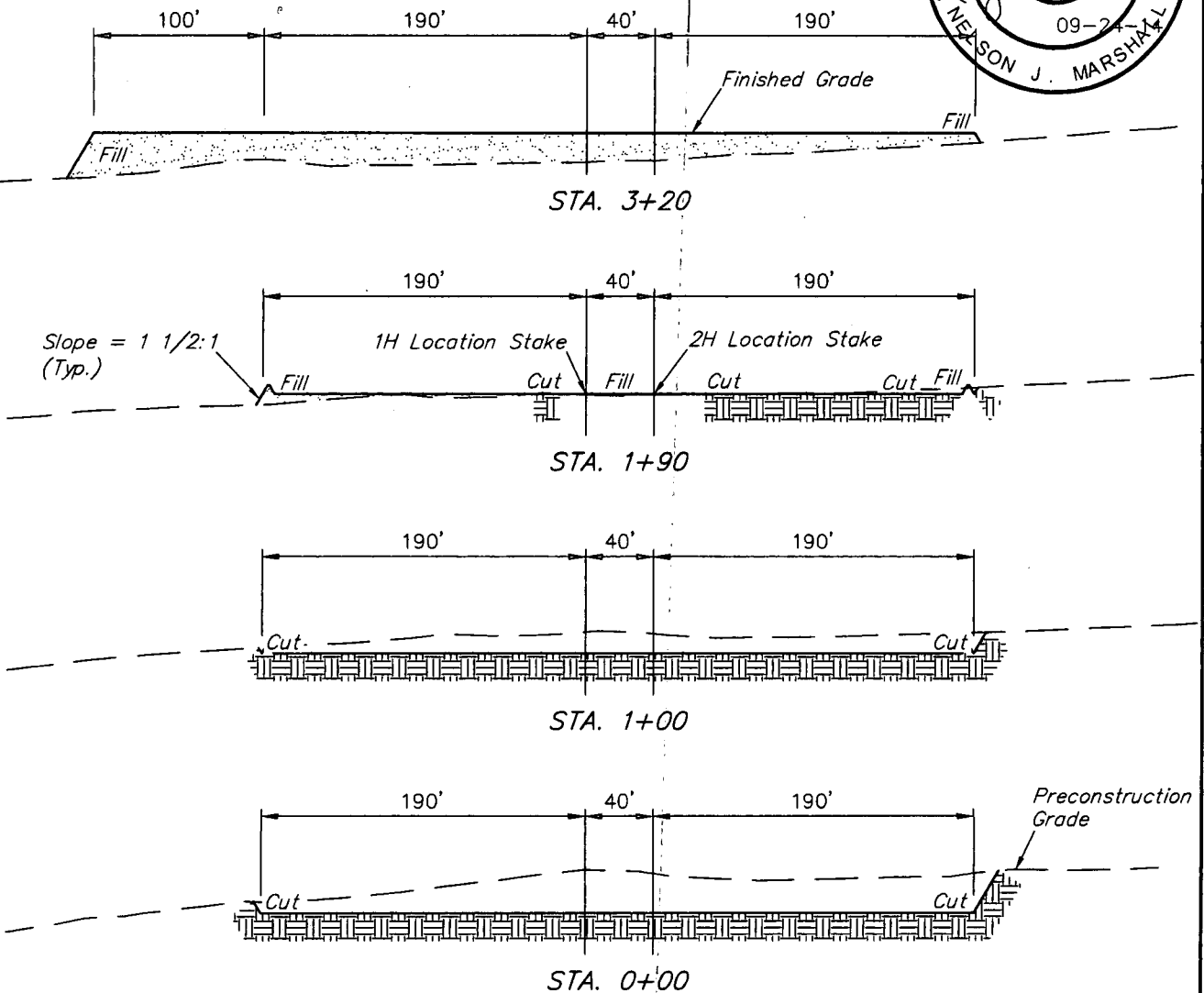
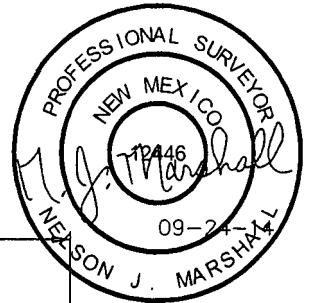
BLACK RIVER 25 FEDERAL COM 1H & 2H
SECTION 25, T24S, R26E, N.M.P.M.
SE 1/4 SW 1/4



UELS, LLC
 Corporate Office * 85 South 200 East
 Vernal, UT 84078 * (435) 789-1017

DRAWN BY: S.F.	DATE DRAWN: 08-29-14
SCALE: 1" = 80'	REVISED: 00-00-00
LOCATION LAYOUT	EXHIBIT D

1" = 40'
X-Section
Scale
1" = 100'



APPROXIMATE EARTHWORK QUANTITIES	
(4") TOPSOIL STRIPPING	1,940 Cu. Yds.
REMAINING LOCATION	11,070 Cu. Yds.
TOTAL CUT	13,010 Cu. Yds.
FILL	11,070 Cu. Yds.
EXCESS MATERIAL	1,940 Cu. Yds.
TOPSOIL	1,940 Cu. Yds.
EXCESS UNBALANCE (After Interim Rehabilitation)	0 Cu. Yds.

APPROXIMATE SURFACE DISTURBANCE AREAS		
	DISTANCE	ACRES
WELL SITE DISTURBANCE	NA	±3.788
30' WIDE ACCESS ROAD R-O-W DISTURBANCE	±1,587.58'	±1.093
30' WIDE PIPELINE R-O-W DISTURBANCE	±1,736.69'	±1.196
TOTAL SURFACE USE AREA		±6.077

NOTES:

- Fill quantity includes 5% for compaction.
- Calculations based on 4" of topsoil stripping.
- Topsoil should not be stripped below finished grade on substructure area.

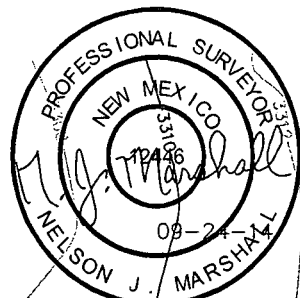
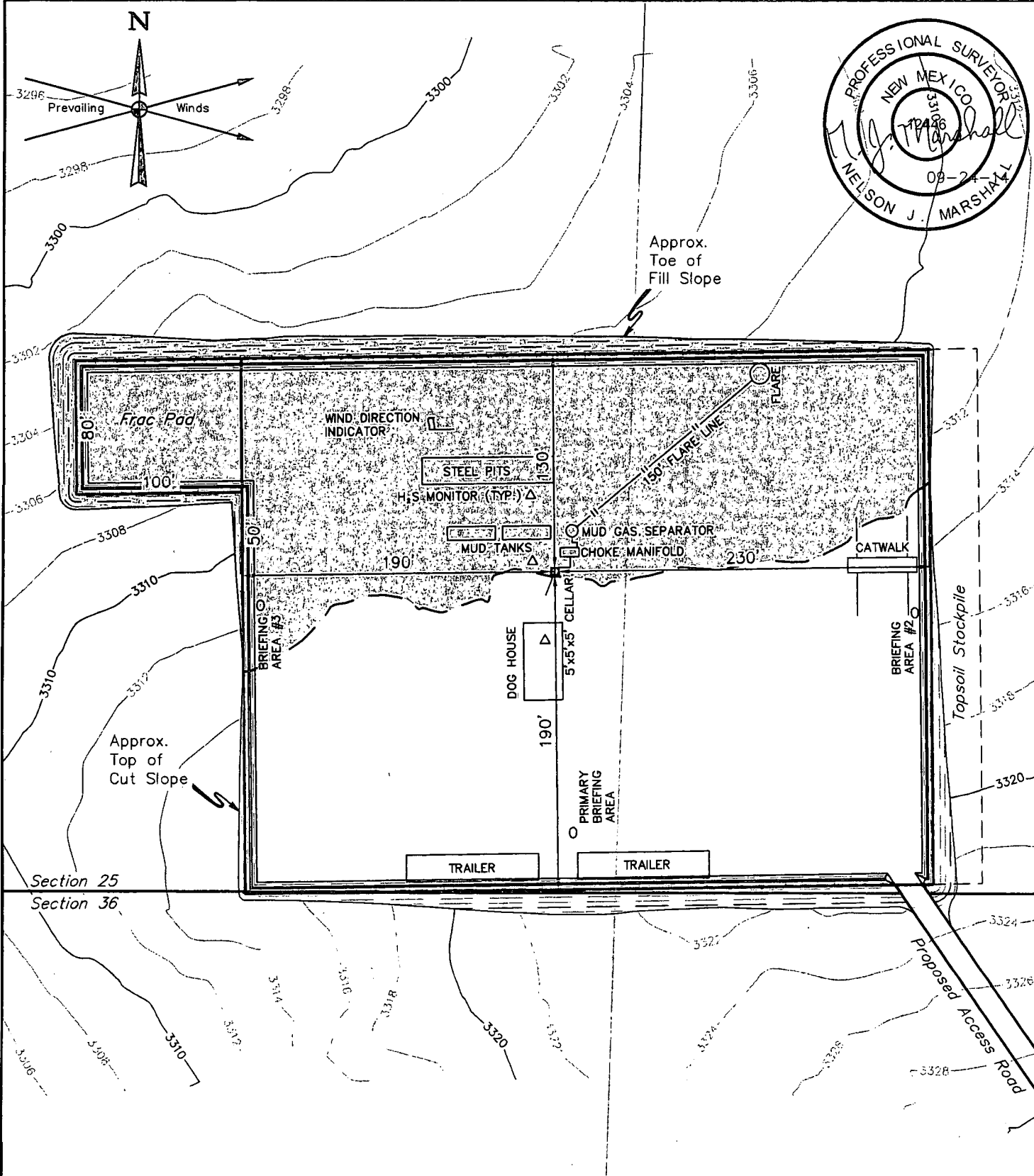
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**BLACK RIVER 25 FED COM 1H & 2H
SECTION 25, T24S, R26E, N.M.P.M.
SE 1/4 SW 1/4**

DRAWN BY: S.F.	DATE DRAWN: 08-29-14
SCALE: AS SHOWN	REVISED: 00-00-00
TYPICAL CROSS SECTIONS	EXHIBIT D



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NOTES:

- Flare pit is to be located a min. of 160' from the wellhead.
- Contours shown at 2' intervals.

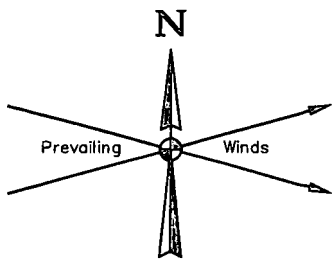
CIMAREX ENERGY CO.

**BLACK RIVER 25 FEDERAL COM 1H
SECTION 25, T24S, R26E, N.M.P.M.
192' FSL 2127' FWL**

DRAWN BY: S.F.	DATE DRAWN: 08-29-14
SCALE: 1" = 80'	REVISED: 00-00-00
TYPICAL RIG LAYOUT	EXHIBIT D



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600' X 730' Archaeological Survey Boundary

Existing Fence

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N27°W	307'

Frac Pad

1H 2H

Topsoil Stockpile

Section 25
Section 36

Proposed Access Road

NOTES:

CIMAREX ENERGY CO.

**BLACK RIVER 25 FEDERAL COM 1H & 2H
SECTION 25, T24S, R26E, N.M.P.M.
SE 1/4 SW 1/4**



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SCALE: 1" = 80'	REVISED: 00-00-00
ARCHAEOLOGICAL SURVEY BOUNDARY	
EXHIBIT D	