

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM 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 to re-enter 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 ☐ Other2. Name of Operator
CIMAREX ENERGY COMPANYContact: TERRI STATHEM
E-Mail: tstatthem@cimarex.com3a. Address
600 N MARIENFELD STE 600
MIDLAND, TX 797013b. Phone No. (include area code)
Ph: 432-620-19364. Location of Well (Footage, Sec., T., R., M., or Survey Description)
Sec 25 T24S R26E SESW 192FSL 2127FWL**Carlsbad Field Office**
OCD Artesia**12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION

TYPE OF ACTION

☒ Notice of Intent☐ Subsequent Report☐ Final Abandonment Notice☐ Acidize☐ Alter Casing☐ Casing Repair☐ Change Plans☐ Convert to Injection☐ Deepen☐ Hydraulic Fracturing☐ New Construction☐ Plug and Abandon☐ Plug Back☐ Production (Start/Resume)☐ Reclamation☐ Recomplete☐ Temporarily Abandon☐ Water Disposal☐ Water Shut-Off☐ Well Integrity☒ Other
Change to Original A
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 Energy respectfully requests approval to change the BHL for the Black River 25 Federal Com #1H well as follows:

BHL: 2310' FSL & 2090' FWL, Sec. 24, 24S, 26E
TD: 15900' MD; 8645' TVD'

Casing & Cmt Program Change:

Casing:

Tapered string: 7", 26#, L80, LTC csg set @ 0 - 8135'
5-1/2", 17#, L80, BTC set @ 8135-15900'

Cement: Lead: 326 sx Class H, 10.30 ppg, 3.64 yld; tail w/ 1123 sx Class H, 14.2 ppg, 1.30 yld.

RECEIVED

JUL 23 2019

DISTRICT II-ARTESIA O.C.D.

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

Electronic Submission #470171 verified by the BLM Well Information System

For CIMAREX ENERGY COMPANY, sent to the Carlsbad

Committed to AFMSS for processing by PRISCILLA PEREZ on 06/24/2019 (19PP2548SE)

Name (Printed/Typed) TERRI STATHEM

Title MANAGER REGULATORY COMPLIANCE

Signature (Electronic Submission)

Date 06/23/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By ZOTA STEVENS

Title PETROLEUM ENGINEER

Date 06/25/2019

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 ****

RUP 10-29-19

Additional data for EC transaction #470171 that would not fit on the form

32. Additional remarks, continued

TOC @ 1800'.

Please see attached C102, Directional Plan & AC, & Drilling Plan.

1. Geological Formations

TVD of target 8,645

Pilot Hole TD N/A

MD at TD 15,900

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	15900	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	# Sk	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	326	10.30	3.64	22.18		Lead: Tuned Light + LCM
	1123	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

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 15900'	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	H2S is present
X	H2S 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.

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.

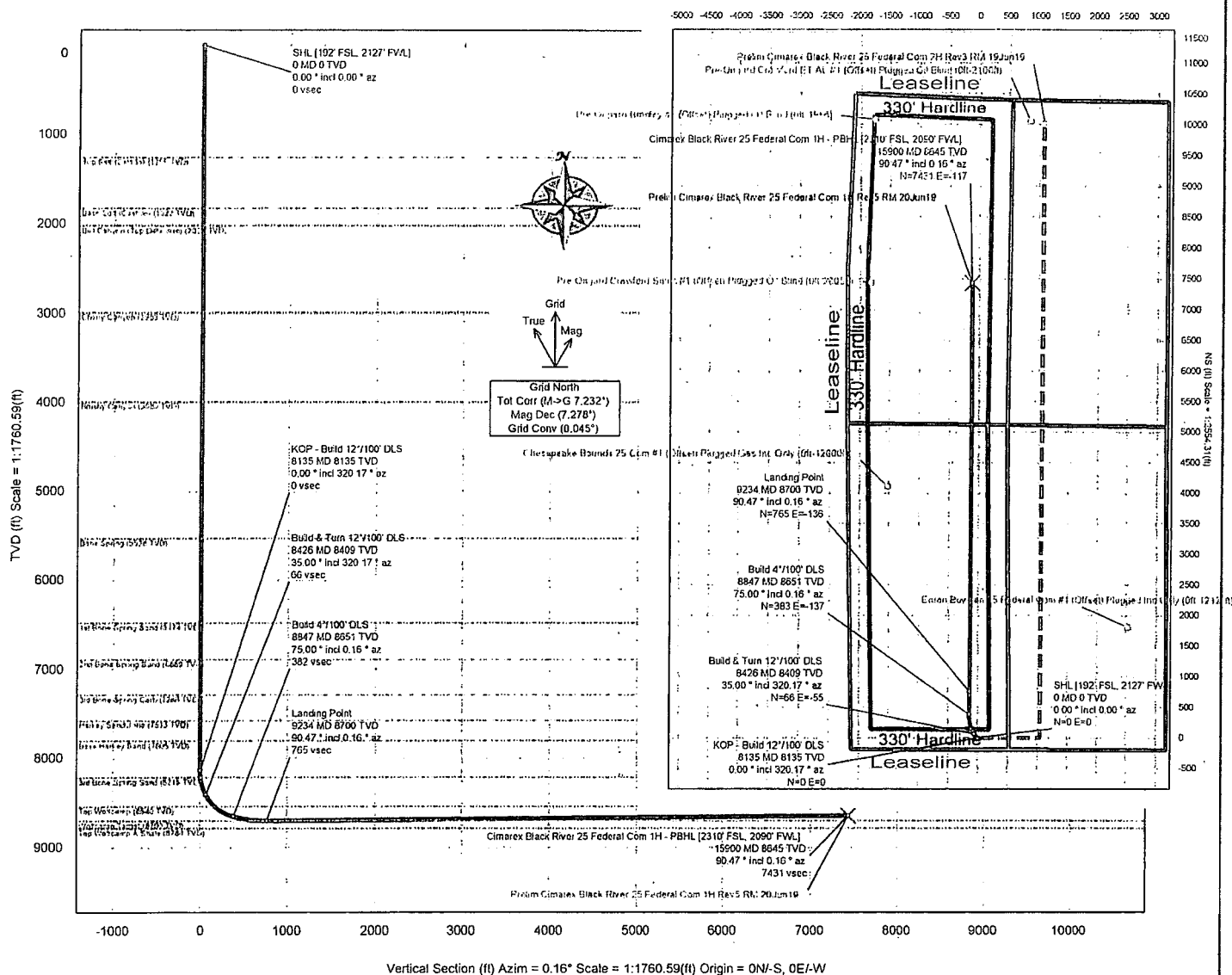


Cimarex Rev 5



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: MOGII 2019 Dip: 69.829° Date: 20-Jun-2019	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Cimarex Black
MagDec: 7.278° FS: 47008.951m Gravity FS: 938.41mgals (9.80665 Based)	Lat: 31 32 10 N 103 63 W	River 25
	Long: 104 14 63 W	Federal Com 1H
		EW (H) Scale = 1:2554 31(II)



Critical Points							
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)
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	320.17	1255.00	0.00	0.00	0.00
Base Salt (Castile)	1822.00	0.00	320.17	1822.00	0.00	0.00	0.00
Bell Canyon (Top Delaware)	2020.00	0.00	320.17	2020.00	0.00	0.00	0.00
Cherry Canyon	2983.00	0.00	320.17	2983.00	0.00	0.00	0.00
Brushy Canyon	3989.00	0.00	320.17	3989.00	0.00	0.00	0.00
Bone Spring	5528.00	0.00	320.17	5528.00	0.00	0.00	0.00
1st Bone Spring Sand	6474.00	0.00	320.17	6474.00	0.00	0.00	0.00
2nd Bone Spring Sand	6889.00	0.00	320.17	6889.00	0.00	0.00	0.00
3rd Bone Spring Carb	7286.00	0.00	320.17	7286.00	0.00	0.00	0.00
Harkey Sandstone	7573.00	0.00	320.17	7573.00	0.00	0.00	0.00
Base Harkey Sand	7805.00	0.00	320.17	7805.00	0.00	0.00	0.00
KOP - Build 12°/100' DLS	8134.79	0.00	320.17	8134.79	0.00	0.00	0.00
3rd Bone Spring Sand	8215.38	9.67	320.17	8215.00	5.20	5.21	-4.35
Build & Turn 12°/100' DLS	8426.46	35.00	320.17	8408.66	66.15	66.31	-55.31
Top Wolfcamp	8604.54	50.30	342.58	8540.00	171.81	172.13	-109.16
Build 4°/100' DLS	8847.05	75.00	0.16	8651.24	382.41	382.81	-137.36
Wolfcamp Target	9210.23	89.53	0.16	8700.00	741.33	741.72	-136.34
Wolfcamp Target	9233.87	90.47	0.16	8700.00	764.96	765.35	-136.28
Landing Point	9233.87	90.47	0.16	8700.00	764.96	765.35	-136.28
Cimarex Black River 25 Federal Com 1H - PBHL	15695.66	90.47	0.16	8645.00	7430.53	7430.89	-117.33
2310' FSL, 2090' FWL							
Top Wolfcamp A Shale	NaN			8784.00			

Prelim Cimarex Black River 25 Federal Com 1H Rev5 RM 20Jun19 Proposal

Geodetic Report

(Non-Def Plan)



Report Date: June 20, 2019 - 10:08 PM
Client: Cimarex
Field: NM Eddy County (NAD 83)
Structure / Slot: Cimarex Black River 25 Federal Com 1H / Cimarex Black River 25 Federal Com 1H
Well: Cimarex Black River 25 Federal Com 1H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Prelim Cimarex Black River 25 Federal Com 1H Rev5 RM 20Jun19
Survey Date: June 19, 2019
Tort / AHD / DDI / ERD Ratio: 100.944 ° / 7467.300 ft / 6.139 / 0.858
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 10' 53.07568", W 104° 14' 53.69139"
Location Grid N/E Y/X: N 429742.020 ftUS, E 567661.000 ftUS
CRS Grid Convergence Angle: 0.0453 °
Grid Scale Factor: 0.99990988
Version / Patch: 2.10.760.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 0.163 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3338.900 ft above MSL
Seabed / Ground Elevation: 3312.900 ft above MSL
Magnetic Declination: 7.278 °
Total Gravity Field Strength: 998.4396mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47808.991 nT
Magnetic Dip Angle: 59.829 °
Declination Date: June 20, 2019
Magnetic Declination Model: HDGM 2019
North Reference: Grid North
Grid Convergence Used: 0.0453 °
Total Corr Mag North->Grid North: 7.2323 °
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	8134.79	0.00	320.17	8134.79	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	8426.46	35.00	320.17	8408.66	66.15	66.31	-55.31	12.00	429808.33	567605.70	N 32 10 53.73	W 104 14 54.33
Build 4"/100' DLS	8847.05	75.00	0.16	8651.24	382.41	382.81	-137.36	12.00	430124.79	567523.65	N 32 10 56.86	W 104 14 55.29
Landing Point	9233.87	90.47	0.16	8700.00	764.96	765.35	-136.28	4.00	430507.30	567524.74	N 32 11 0.65	W 104 14 55.27
Cimarex Black River 25 Federal Com 1H - PBHL [2310' FSL, 2090' FWL]	15899.66	90.47	0.16	8645.00	7430.53	7430.89	-117.33	0.00	437172.23	567543.68	N 32 12 6.61	W 104 14 54.99

Survey Type: Non-Def Plan

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

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 ° ' ")
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 Rev5 RM 20Jun19			
	1	26.000	15899.664	1/100.000	17.500	13.375		NAL_MWD_IFR1+MS	Original Borehole / Prelim Cimarex Black River 25 Federal			

Prelim Cimarex Black River 25 Federal Com 1H Rev5 RM 20Jun19 Proposal

Geodetic Report

(Non-Def Plan)



Report Date: June 20, 2019 - 10:08 PM Client: Cimarex Field: NM Eddy County (NAD 83) Structure / Slot: Cimarex Black River 25 Federal Com 1H / Cimarex Black River 25 Federal Com 1H Well: Cimarex Black River 25 Federal Com 1H Borehole: Original Borehole UWI / API#: Unknown / Unknown Survey Name: Prelim Cimarex Black River 25 Federal Com 1H Rev5 RM 20Jun19 Survey Date: June 19, 2019 Tort / AHD / DDI / ERD Ratio: 100.944 ° / 7467.300 ft / 6.139 / 0.858 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet Location Lat / Long: N 32° 10' 53.07568", W 104° 14' 53.69139" Location Grid N/E Y/X: N 429742.020 ftUS, E 567661.000 ftUS CRS Grid Convergence Angle: 0.0453 ° Grid Scale Factor: 0.99990988 Version / Patch: 2.10.760.0	Survey / DLS Computation: Minimum Curvature / Lubinski Vertical Section Azimuth: 0.163 ° (Grid North) Vertical Section Origin: 0.000 ft, 0.000 ft TVD Reference Datum: RKB TVD Reference Elevation: 3338.900 ft above MSL Seabed / Ground Elevation: 3312.900 ft above MSL Magnetic Declination: 7.278 ° Total Gravity Field Strength: 998.4396mgn (9.80665 Based) Gravity Model: GARM Total Magnetic Field Strength: 47808.991 nT Magnetic Dip Angle: 59.829 ° Declination Date: June 20, 2019 Magnetic Declination Model: HDGM 2019 North Reference: Grid North Grid Convergence Used: 0.0453 ° Total Corr Mag North->Grid North: 7.2323 ° 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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	1800.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
Base Salt (Castille)	1822.00	0.00	320.17	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	320.17	1900.00	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 ° ' ")
	2000.00	0.00	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	2800.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
Cherry Canyon	2900.00	0.00	320.17	2900.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	2983.00	0.00	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	4700.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	4800.00	0.00	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	5500.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
Bone Spring	5528.00	0.00	320.17	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	320.17	5600.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	5700.00	0.00	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	6400.00	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
1st Bone Spring Sand	6474.00	0.00	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	6889.00	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 (°/100R)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	6900.00	0.00	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	320.17	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	8134.79	0.00	320.17	8134.79	0.00	0.00	0.00	0.00	429742.02	567661.00	N 32 10 53.08	W 104 14 53.69
	8200.00	7.82	320.17	8199.80	3.41	3.41	-2.85	12.00	429745.43	567658.15	N 32 10 53.11	W 104 14 53.72
3rd Bone Spring Sand	8215.38	9.67	320.17	8215.00	5.20	5.21	-4.35	12.00	429747.23	567656.65	N 32 10 53.13	W 104 14 53.74
	8300.00	19.82	320.17	8296.72	21.68	21.73	-18.12	12.00	429763.75	567642.88	N 32 10 53.29	W 104 14 53.90
	8400.00	31.82	320.17	8386.57	54.99	55.12	-45.98	12.00	429797.14	567615.03	N 32 10 53.62	W 104 14 54.23
Build & Turn 12°/100' DLS	8426.46	35.00	320.17	8408.66	66.15	66.31	-55.31	12.00	429808.33	567605.70	N 32 10 53.73	W 104 14 54.33
	8500.00	40.78	331.07	8466.73	103.37	103.60	-80.48	12.00	429845.61	567580.52	N 32 10 54.10	W 104 14 54.63
	8600.00	49.86	342.15	8537.08	168.50	168.80	-108.10	12.00	429910.81	567552.91	N 32 10 54.75	W 104 14 54.95
Top Wolfcamp	8604.54	50.30	342.58	8540.00	171.81	172.13	-109.16	12.00	429914.13	567551.85	N 32 10 54.78	W 104 14 54.96
	8700.00	59.75	350.51	8594.72	247.72	248.08	-127.01	12.00	429990.08	567534.00	N 32 10 55.53	W 104 14 55.17
	8800.00	70.06	357.30	8637.12	337.57	337.96	-136.39	12.00	430079.94	567524.63	N 32 10 56.42	W 104 14 55.28
Build 4°/100' DLS	8847.05	75.00	0.16	8651.24	382.41	382.81	-137.36	12.00	430124.79	567523.65	N 32 10 56.86	W 104 14 55.29
	8900.00	77.12	0.16	8664.00	433.80	434.19	-137.22	4.00	430176.17	567523.79	N 32 10 57.37	W 104 14 55.28
	9000.00	81.12	0.16	8682.87	531.98	532.37	-136.94	4.00	430274.34	567524.07	N 32 10 58.34	W 104 14 55.28
	9100.00	85.12	0.16	8694.85	631.24	631.63	-136.66	4.00	430373.59	567524.36	N 32 10 59.33	W 104 14 55.28
	9200.00	89.12	0.16	8699.88	731.09	731.49	-136.37	4.00	430473.44	567524.64	N 32 11 0.31	W 104 14 55.27
Wolfcamp Target	9210.23	89.53	0.16	8700.00	741.33	741.72	-136.34	4.00	430483.67	567524.67	N 32 11 0.42	W 104 14 55.27
Wolfcamp Target												
Landing Point	9233.87	90.47	0.16	8700.00	764.96	765.35	-136.28	4.00	430507.30	567524.74	N 32 11 0.65	W 104 14 55.27
	9300.00	90.47	0.16	8699.45	831.09	831.48	-136.09	0.00	430573.43	567524.92	N 32 11 1.30	W 104 14 55.27
	9400.00	90.47	0.16	8698.63	931.09	931.48	-135.80	0.00	430673.41	567525.21	N 32 11 2.29	W 104 14 55.26
	9500.00	90.47	0.16	8697.80	1031.08	1031.47	-135.52	0.00	430773.40	567525.49	N 32 11 3.28	W 104 14 55.26
	9600.00	90.47	0.16	8696.98	1131.08	1131.47	-135.24	0.00	430873.39	567525.78	N 32 11 4.27	W 104 14 55.25
	9700.00	90.47	0.16	8696.15	1231.08	1231.47	-134.95	0.00	430973.37	567526.06	N 32 11 5.26	W 104 14 55.25
	9800.00	90.47	0.16	8695.33	1331.07	1331.46	-134.67	0.00	431073.36	567526.34	N 32 11 6.25	W 104 14 55.25
	9900.00	90.47	0.16	8694.50	1431.07	1431.46	-134.38	0.00	431173.35	567526.63	N 32 11 7.24	W 104 14 55.24
	10000.00	90.47	0.16	8693.68	1531.07	1531.46	-134.10	0.00	431273.33	567526.91	N 32 11 8.23	W 104 14 55.24
	10100.00	90.47	0.16	8692.85	1631.06	1631.45	-133.82	0.00	431373.32	567527.20	N 32 11 9.22	W 104 14 55.23
	10200.00	90.47	0.16	8692.03	1731.06	1731.45	-133.53	0.00	431473.31	567527.48	N 32 11 10.21	W 104 14 55.23
	10300.00	90.47	0.16	8691.20	1831.06	1831.44	-133.25	0.00	431573.30	567527.77	N 32 11 11.20	W 104 14 55.22
	10400.00	90.47	0.16	8690.38	1931.05	1931.44	-132.96	0.00	431673.28	567528.05	N 32 11 12.19	W 104 14 55.22
	10500.00	90.47	0.16	8689.55	2031.05	2031.44	-132.68	0.00	431773.27	567528.33	N 32 11 13.18	W 104 14 55.22
	10600.00	90.47	0.16	8688.73	2131.05	2131.43	-132.39	0.00	431873.26	567528.62	N 32 11 14.17	W 104 14 55.21

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 ° ' ")
	10700.00	90.47	0.16	8687.90	2231.04	2231.43	-132.11	0.00	431973.24	567528.90	N 32 11 15.16	W 104 14 55.21
	10800.00	90.47	0.16	8687.08	2331.04	2331.42	-131.83	0.00	432073.23	567529.19	N 32 11 16.15	W 104 14 55.20
	10900.00	90.47	0.16	8686.25	2431.04	2431.42	-131.54	0.00	432173.22	567529.47	N 32 11 17.14	W 104 14 55.20
	11000.00	90.47	0.16	8685.43	2531.03	2531.42	-131.26	0.00	432273.20	567529.75	N 32 11 18.13	W 104 14 55.20
	11100.00	90.47	0.16	8684.60	2631.03	2631.41	-130.97	0.00	432373.19	567530.04	N 32 11 19.12	W 104 14 55.19
	11200.00	90.47	0.16	8683.78	2731.03	2731.41	-130.69	0.00	432473.18	567530.32	N 32 11 20.10	W 104 14 55.19
	11300.00	90.47	0.16	8682.95	2831.02	2831.41	-130.40	0.00	432573.16	567530.61	N 32 11 21.09	W 104 14 55.18
	11400.00	90.47	0.16	8682.13	2931.02	2931.40	-130.12	0.00	432673.15	567530.89	N 32 11 22.08	W 104 14 55.18
	11500.00	90.47	0.16	8681.30	3031.02	3031.40	-129.84	0.00	432773.14	567531.18	N 32 11 23.07	W 104 14 55.17
	11600.00	90.47	0.16	8680.48	3131.01	3131.39	-129.55	0.00	432873.13	567531.46	N 32 11 24.06	W 104 14 55.17
	11700.00	90.47	0.16	8679.65	3231.01	3231.39	-129.27	0.00	432973.11	567531.74	N 32 11 25.05	W 104 14 55.17
	11800.00	90.47	0.16	8678.83	3331.01	3331.39	-128.98	0.00	433073.10	567532.03	N 32 11 26.04	W 104 14 55.16
	11900.00	90.47	0.16	8678.00	3431.00	3431.38	-128.70	0.00	433173.09	567532.31	N 32 11 27.03	W 104 14 55.16
	12000.00	90.47	0.16	8677.18	3531.00	3531.38	-128.41	0.00	433273.07	567532.60	N 32 11 28.02	W 104 14 55.15
	12100.00	90.47	0.16	8676.35	3631.00	3631.38	-128.13	0.00	433373.06	567532.88	N 32 11 29.01	W 104 14 55.15
	12200.00	90.47	0.16	8675.53	3730.99	3731.37	-127.85	0.00	433473.05	567533.17	N 32 11 30.00	W 104 14 55.14
	12300.00	90.47	0.16	8674.70	3830.99	3831.37	-127.56	0.00	433573.03	567533.45	N 32 11 30.99	W 104 14 55.14
	12400.00	90.47	0.16	8673.88	3930.99	3931.36	-127.28	0.00	433673.02	567533.73	N 32 11 31.98	W 104 14 55.14
	12500.00	90.47	0.16	8673.05	4030.98	4031.36	-126.99	0.00	433773.01	567534.02	N 32 11 32.97	W 104 14 55.13
	12600.00	90.47	0.16	8672.23	4130.98	4131.36	-126.71	0.00	433873.00	567534.30	N 32 11 33.96	W 104 14 55.13
	12700.00	90.47	0.16	8671.40	4230.98	4231.35	-126.43	0.00	433972.98	567534.59	N 32 11 34.95	W 104 14 55.12
	12800.00	90.47	0.16	8670.58	4330.97	4331.35	-126.14	0.00	434072.97	567534.87	N 32 11 35.94	W 104 14 55.12
	12900.00	90.47	0.16	8669.75	4430.97	4431.34	-125.86	0.00	434172.96	567535.15	N 32 11 36.93	W 104 14 55.12
	13000.00	90.47	0.16	8668.93	4530.97	4531.34	-125.57	0.00	434272.94	567535.44	N 32 11 37.92	W 104 14 55.11
	13100.00	90.47	0.16	8668.10	4630.96	4631.34	-125.29	0.00	434372.93	567535.72	N 32 11 38.90	W 104 14 55.11
	13200.00	90.47	0.16	8667.28	4730.96	4731.33	-125.00	0.00	434472.92	567536.01	N 32 11 39.89	W 104 14 55.10
	13300.00	90.47	0.16	8666.45	4830.96	4831.33	-124.72	0.00	434572.90	567536.29	N 32 11 40.88	W 104 14 55.10
	13400.00	90.47	0.16	8665.62	4930.95	4931.33	-124.44	0.00	434672.89	567536.58	N 32 11 41.87	W 104 14 55.09
	13500.00	90.47	0.16	8664.80	5030.95	5031.32	-124.15	0.00	434772.88	567536.86	N 32 11 42.86	W 104 14 55.09
	13600.00	90.47	0.16	8663.97	5130.94	5131.32	-123.87	0.00	434872.87	567537.14	N 32 11 43.85	W 104 14 55.09
	13700.00	90.47	0.16	8663.15	5230.94	5231.31	-123.58	0.00	434972.85	567537.43	N 32 11 44.84	W 104 14 55.08
	13800.00	90.47	0.16	8662.32	5330.94	5331.31	-123.30	0.00	435072.84	567537.71	N 32 11 45.83	W 104 14 55.08
	13900.00	90.47	0.16	8661.50	5430.93	5431.31	-123.01	0.00	435172.83	567538.00	N 32 11 46.82	W 104 14 55.07
	14000.00	90.47	0.16	8660.67	5530.93	5531.30	-122.73	0.00	435272.81	567538.28	N 32 11 47.81	W 104 14 55.07
	14100.00	90.47	0.16	8659.85	5630.93	5631.30	-122.45	0.00	435372.80	567538.57	N 32 11 48.80	W 104 14 55.06
	14200.00	90.47	0.16	8659.02	5730.92	5731.30	-122.16	0.00	435472.79	567538.85	N 32 11 49.79	W 104 14 55.06
	14300.00	90.47	0.16	8658.20	5830.92	5831.29	-121.88	0.00	435572.77	567539.13	N 32 11 50.78	W 104 14 55.06
	14400.00	90.47	0.16	8657.37	5930.92	5931.29	-121.59	0.00	435672.76	567539.42	N 32 11 51.77	W 104 14 55.05
	14500.00	90.47	0.16	8656.55	6030.91	6031.28	-121.31	0.00	435772.75	567539.70	N 32 11 52.76	W 104 14 55.05
	14600.00	90.47	0.16	8655.72	6130.91	6131.28	-121.02	0.00	435872.74	567539.99	N 32 11 53.75	W 104 14 55.04
	14700.00	90.47	0.16	8654.90	6230.91	6231.28	-120.74	0.00	435972.72	567540.27	N 32 11 54.74	W 104 14 55.04
	14800.00	90.47	0.16	8654.07	6330.90	6331.27	-120.46	0.00	436072.71	567540.55	N 32 11 55.73	W 104 14 55.03
	14900.00	90.47	0.16	8653.25	6430.90	6431.27	-120.17	0.00	436172.70	567540.84	N 32 11 56.72	W 104 14 55.03
	15000.00	90.47	0.16	8652.42	6530.90	6531.26	-119.89	0.00	436272.68	567541.12	N 32 11 57.70	W 104 14 55.03
	15100.00	90.47	0.16	8651.60	6630.89	6631.26	-119.60	0.00	436372.67	567541.41	N 32 11 58.69	W 104 14 55.02
	15200.00	90.47	0.16	8650.77	6730.89	6731.26	-119.32	0.00	436472.66	567541.69	N 32 11 59.68	W 104 14 55.02
	15300.00	90.47	0.16	8649.95	6830.89	6831.25	-119.04	0.00	436572.64	567541.98	N 32 12 0.67	W 104 14 55.01
	15400.00	90.47	0.16	8649.12	6930.88	6931.25	-118.75	0.00	436672.63	567542.26	N 32 12 1.66	W 104 14 55.01
	15500.00	90.47	0.16	8648.30	7030.88	7031.25	-118.47	0.00	436772.62	567542.54	N 32 12 2.65	W 104 14 55.01
	15600.00	90.47	0.16	8647.47	7130.88	7131.24	-118.18	0.00	436872.61	567542.83	N 32 12 3.64	W 104 14 55.00
	15700.00	90.47	0.16	8646.65	7230.87	7231.24	-117.90	0.00	436972.59	567543.11	N 32 12 4.63	W 104 14 55.00
	15800.00	90.47	0.16	8645.82	7330.87	7331.23	-117.61	0.00	437072.58	567543.40	N 32 12 5.62	W 104 14 54.99
Cimarex Black River 25 Federal Com 1H - PBHL [2310' FSL, 2090' FWL]	15899.66	90.47	0.16	8645.00	7430.53	7430.89	-117.33	0.00	437172.23	567543.68	N 32 12 6.61	W 104 14 54.99

Prelim Cimarex Black River 25 Federal Com 1H Rev5 RM 20Jun19 Anti-Collision Summary Report

Analysis Date-24hr Time: June 20, 2019 - 22:09

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 ~ 15899.66ft

Analysis Method: 3D Least Distance

Reference Trajectory: Prelim Cimarex Black River 25 Federal Com 1H Rev5 RM 20Jun19 (Non-Def)

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: 2.10.760.0

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 Trajectories Summary

Offset Selection Criteria

Wellhead distance scan: Not performed!

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	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

Prelim Cimarex Black River 25
Federal Com 2H Rev3 RM
19Jun19 (Def Plan)

40.00	32.39	38.02	7.60	N/A	MAS = 9.87 (m)	0.00	0.00	CtCt<=15m<15.00				Warning/Alert	
40.00	32.39	38.02	7.60	N/A	MAS = 9.87 (m)	26.00	26.00					Enter Alert	
40.00	32.39	25.85	7.60	3.12	MAS = 9.87 (m)	2000.00	2000.00					WRP	
40.01	32.39	25.82	7.62	3.11	MAS = 9.87 (m)	2010.00	2010.00					MinPts	
40.27	32.39	25.93	7.88	3.10	MAS = 9.87 (m)	2040.00	2040.00					MINPT-O-EQU	
70.19	32.39	54.53	37.79	4.98	MAS = 9.87 (m)	2420.00	2420.00	OSF>5.00				Exit Alert	
1043.21	68.27	997.04	974.94	23.56	OSF1.50	8140.00	8140.00					MinPts	
1047.00	68.74	1000.51	978.26	23.48	OSF1.50	8210.00	8209.69					MinPts-O-SF	
1185.06	75.48	1134.08	1109.58	24.14	OSF1.50	9233.87	8700.00					MinPt-CtCt	
1185.06	191.90	1056.47	993.16	9.34	OSF1.50	15899.66	8645.00					MinPts	

Chesapeake Bounds 25 Com
#1 (Offset) Plugged Gas Inc
Only (On-12000ft) (Def Survey)

4407.83	32.81	4405.85	4375.02	N/A	MAS = 10.00 (m)	0.00	0.00					Warning/Alert	
4407.26	32.81	4405.19	4374.45	51588.89	MAS = 10.00 (m)	26.00	26.00					Surface	
4405.31	32.81	4393.70	4372.50	457.14	MAS = 10.00 (m)	430.00	430.00					MinPt-O-SF	
4408.49	64.75	4364.66	4343.74	105.30	OSF1.50	1360.00	1360.00					MinPts	
4411.14	71.25	4362.98	4339.89	95.48	OSF1.50	1580.00	1580.00					MinPt-CtCt	
4408.66	93.85	4345.43	4314.81	71.95	OSF1.50	1920.00	1920.00					MINPT-O-EQU	
4409.55	96.61	4344.48	4312.94	69.87	OSF1.50	2040.00	2040.00					MinPt-CtCt	
4410.68	98.02	4344.68	4312.67	68.86	OSF1.50	2100.00	2100.00					MINPT-O-EQU	
4406.67	135.87	4315.43	4270.80	49.35	OSF1.50	2730.00	2730.00					MinPt-O-ADP	
												MinPt-CtCt	

Offset Trajectory	Separation			Allow	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
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	
1498.32	452.73	1195.25	1045.60	4.99		OSF1.50	12060.00	8676.68	OSF<5.00			Enter Alert	
1406.33	453.63	1103.17	952.70	4.67		OSF1.50	12580.00	8672.39				MinPts	
1406.39	453.63	1103.24	952.76	4.67		OSF1.50	12590.00	8672.31				MinPt-O-SF	
1507.51	454.49	1203.86	1053.02	4.99		OSF1.50	13120.00	8667.94	OSF>5.00			Exit Alert	
3607.48	454.23	3304.00	3153.25	11.96		OSF1.50	15899.66	8645.00				TD	

Enron Bowden 25 Federal Com
#1 (Offset) Plugged In Only
(Off-12125ft) (Def Survey)

3067.51	32.81	3065.14	3034.70	7893.10	MAS = 10.00 (m)	0.00	0.00		Pass			MinPts	
3067.52	32.81	3064.71	3034.71	3713.45	MAS = 10.00 (m)	26.00	26.00					WRP	
3062.11	80.77	3007.60	2981.34	58.26	OSF1.50	1520.00	1520.00					MinPt-CtCt	
3065.15	142.18	2969.71	2922.97	32.77	OSF1.50	2710.00	2710.00					MinPt-CtCt	
3065.09	227.09	2913.04	2838.00	20.41	OSF1.50	4340.00	4340.00					MinPt-CtCt	
3063.25	333.61	2840.18	2729.64	13.85	OSF1.50	6380.00	6380.00					MinPt-CtCt	
3070.39	425.46	2786.09	2644.93	10.87	OSF1.50	8140.00	8140.00					MinPt-CtCt	
3072.49	431.74	2784.00	2640.75	10.72	OSF1.50	8280.00	8277.77					MINPT-O-EQU	
3074.31	433.90	2784.38	2640.41	10.67	OSF1.50	8330.00	8324.61					MinPt-O-ADP	
2637.11	456.16	2332.34	2180.95	8.70	OSF1.50	10260.00	8691.53					MinPt-CtCt	
2637.11	456.18	2332.32	2180.92	8.70	OSF1.50	10270.00	8691.45					MinPts	
2637.34	456.26	2332.51	2181.08	8.70	OSF1.50	10300.00	8691.20					MinPt-O-SF	
6220.76	462.11	5912.03	5758.65	20.27	OSF1.50	15899.66	8645.00					TD	

Pre-Ongard Crawford-Smith #1
(Offset) Plugged Oil Blind (Off-2005ft) (Def Survey)

7657.54	32.81	7655.56	7624.73	N/A	MAS = 10.00 (m)	0.00	0.00		Pass			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-CtCt	
7656.73	616.83	7244.85	7039.90	18.67	OSF1.50	2120.00	2120.00					MinPts	
9159.25	432.78	8870.07	8726.47	31.88	OSF1.50	9760.00	8695.66					MinPt-O-SF	
6747.10	224.98	6596.45	6522.12	45.37	OSF1.50	15899.66	8645.00					MinPts	

Pre-Ongard Crawford ET AL #1
(Offset) Plugged Oil Blind (Off-2100ft) (Def Survey)

10091.92	32.81	10089.95	10059.12	N/A	MAS = 10.00 (m)	0.00	0.00		Pass			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-CtCt	
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	
8841.58	449.80	8541.19	8391.98	29.62	OSF1.50	12580.00	8672.39					MinPt-O-SF	
7025.14	302.53	6822.79	6722.61	35.05	OSF1.50	15899.66	8645.00					MinPts	

Pre-Ongard Bradley #1 (Offset)
Plugged Oil Blind (Off-1986)
(Def Survey)

10231.53	32.81	10229.55	10198.72	N/A	MAS = 10.00 (m)	0.00	0.00		Pass			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-CtCt	
10231.25	610.85	9823.36	9620.40	25.20	OSF1.50	2070.00	2070.00					MinPts	

Offset Trajectory	Separation			Allow	Sep.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.		MD (ft)	TVD (ft)	Alert	Minor	Major		
	8968.53	423.11	8685.80	8545.42	31.94	OSF1.50	12710.00	8671.32					MinPt-O-SF
	7284.17	306.17	7079.40	6976.00	35.91	OSF1.50	15899.66	8645.00					MinPts

District I
 1625 E. French Dr., H-300, Rm. 88210
 Phone: (505) 931-6161 Fax: (505) 931-0129
 District II
 811 S. First St., Artesia, NM 88210
 Phone: (505) 748-1233 Fax: (505) 748-9729
 District III
 1000 Rio Hondo Road, Arco, 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

API Number 30-015-43373	Pool Code 98220	Pool Name Purple Sage, Wolfcamp (Gas)
Property Code 315262	Property Name BLACK RIVER 25 FEDERAL COM	Well Number 1H
UICUB No. 215099	Operator Name CIMAREX ENERGY CO.	Elevation 3312.9'

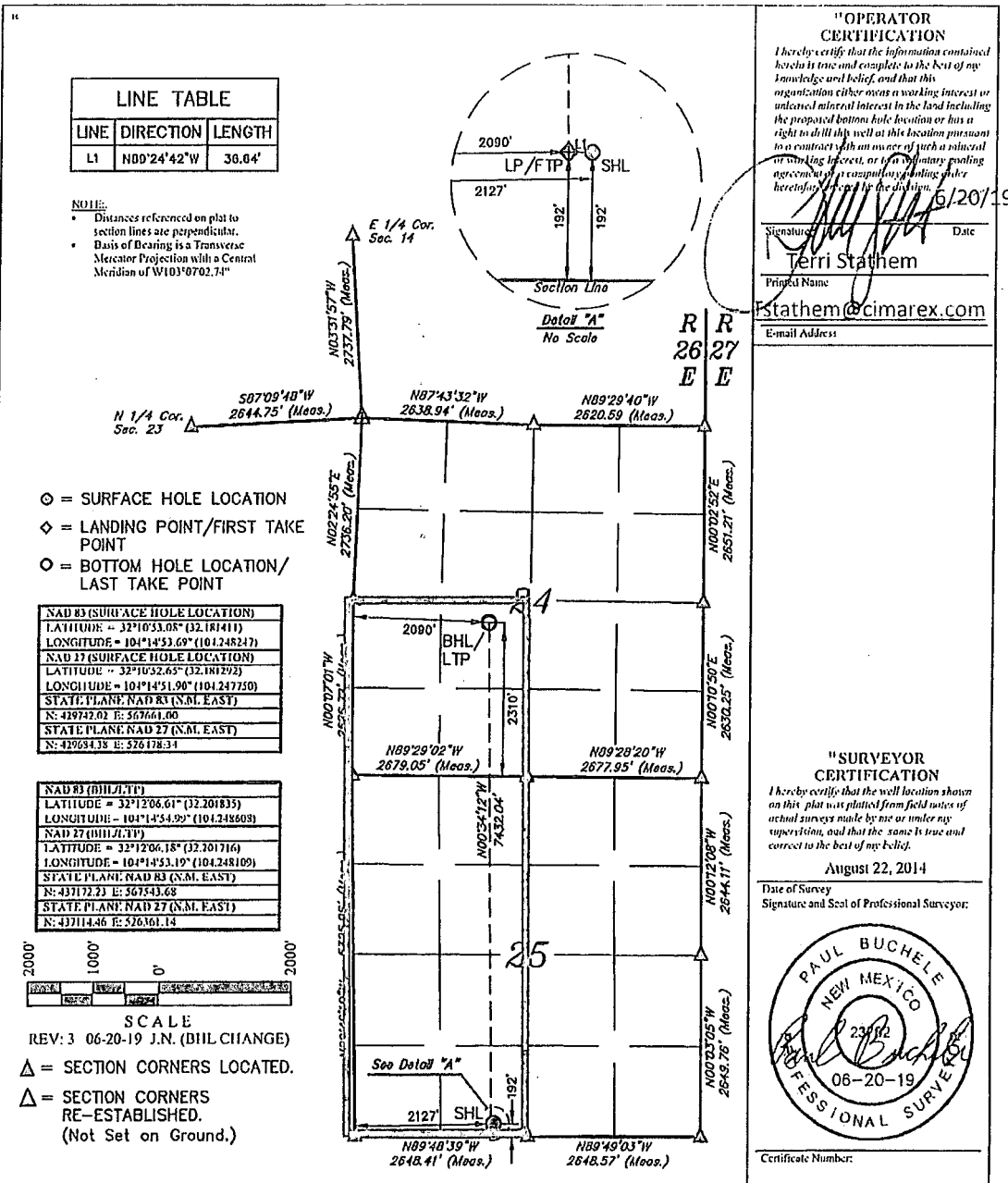
"Surface Location

TL 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

"Bottom Hole Location If Different From Surface

TL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	24	24 S	26 E		2310	SOUTH	2090	WEST	EDDY
Dedicated Acres 480	Joint or Infill	Consolidation Code	Order No.						

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



32.201835
 104.248608

Rev 10-29-19