

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
Carlsbad Field Office
ArtesiaFORM 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.
NMNM100332

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.
SCOTER 6-31 FEDERAL COM 43H9. API Well No.
30-015-4526510. Field and Pool or Exploratory Area
COTTONWOOD DRAW; BS11. 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 CO.

Contact: AMITHY E CRAWFORD

E-Mail: acrawford@cimarex.com

3a. Address

600 N. MARIENFELD SUITE 600
MIDLAND, TX 79701

3b. Phone No. (include area code)

Ph: 432-620-1909

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

Sec 6 T25S R27E 365FSL 280FEL

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 Respectfully requests to change the SHL of the Scoter 6-31 Federal Com 43H. There will be no new surface disturbance.

Original:

SHL- 365' FSL & 320' FEL Sec 6, 25S, 27E Eddy Co NM

Proposed:

SHL- 365' FSL & 280' FEL Sec 6, 25S, 27E Eddy Co NM ✓

See below changes to casing and cement program:

RECEIVED

OCT 16 2018

DISTRICT II-ARTESIA O.C.D.

Same Coar as before
no new disturbance
covered under DOI- BLM- Nm. P. 2018-2019
Surface gas B7B 10/11/2018

Engineering Good. All previous COA sh/apply 25 10-9-18

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

Electronic Submission #437883 verified by the BLM Well Information System

For CIMAREX ENERGY CO., sent to the Carlsbad

Committed to AFMSS for processing by PRISCILLA PEREZ on 10/04/2018 ()

Name (Printed/Typed) AMITHY E CRAWFORD

Title REGULATORY ANALYST

Signature

(Electronic Submission)

Date 10/02/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By

Bob Ballard

Title Supervisor

NRS

Date 10-11-2018

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

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)

**** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ****

RNP 10-23-18.

Additional data for EC transaction #437883 that would not fit on the form

32. Additional remarks, continued

13.375" Surface csg 48# H40/J55 Hybrid, ST&C Set at 400'. Cement with Lead: 61 Sks, 13.5 ppg, 1.72 yield, Class C + Bentonite. TAIL: 195 sks, 14.8 ppg, 1.34 yield, Class C + LCM.

9.625" Intermediate Csg 36#, J55, LTC set at 2096'. Cement with Lead: 400 sks, 12.9 ppg, 1.88 yield, 35:65 (POZ C) + Salt + Bentonite. Tail: 123 sks, 14.8 ppg, 1.34 yield, Class C + LCM.

5.5" Production casing 17# L80 LTC/BTC Set at 12101'. Cement with Lead: 430 sks, 10.3# ppg, 3.64 yield, Tuned Light + LCM. Tail: 1117 sks, 14.2 ppg, 1.3 yield, 50"50 (POZ H) + salt + Bentonite + Fluid Loss + Dispersant + SMS.

Please see attached New C-102, Well Pad diagram, Directional Survey and Drilling Plan.

1. Geological Formations

TVD of target 7,208

Pilot Hole TD N/A

MD at TD 12,101

Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Salado	1305	N/A	
Castille	1923	N/A	
Bell Canyon	2120	N/A	
Cherry Canyon	3052	N/A	
Brushy Canyon	4109	Hydrocarbons	
Brushy Canyon Lower	5345	Hydrocarbons	
Bone Spring	5659	Hydrocarbons	
Bone Spring "A" Shale	5787	Hydrocarbons	
Bone Spring "C" Shale	6103	Hydrocarbons	
1st Bone Spring Ss	6627	Hydrocarbons	
2nd Bone Spring Ss	7132	Hydrocarbons	
2nd BS Ss Lower	7882	Hydrocarbons	
3rd Bone Spring Ss	8450	Hydrocarbons	

2. Casing Program

Hole Size	Casing Depth From	Casing Depth To	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	400	13-3/8"	48.00	H-40/J-55 Hybrid	ST&C	4.04	9.45	16.77
12 1/4	0	2096	9-5/8"	36.00	J-55	LT&C	1.82	3.17	6.00
8 3/4	0	6881	5-1/2"	17.00	L-80	LT&C	1.95	2.40	2.76
8 3/4	6881	12101	5-1/2"	17.00	L-80	BT&C	1.86	2.29	71.42
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.	N
Is premium or uncommon casing planned? If yes attach casing specification sheet.	Y
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	61	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	195	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	400	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	123	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	430	10.30	3.64	22.18		Lead: Tuned Light + LCM
	1117	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	1896	17

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	3M	Annular	X	50% of working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	X	
			Other		

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

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

	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.				
X	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.				
N	Are anchors required by manufacturer?				

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 400'	FW Spud Mud	8.30 - 8.80	30-32	N/C
400' to 2096'	Brine Water	9.70 - 10.20	30-32	N/C
2096' to 12101'	FW/Cut Brine	8.50 - 9.00	30-32	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	
X	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	3373 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 3000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 3000 psi test. Annular will be tested to 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 3000 psi.

The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater.

The casing string utilizing steel body pack-off will be tested to 70% of casing burst.

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

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-45265	² Pool Code 97494	³ Pool Name Cottonwood Draw; Bone Spring
⁴ Property Code 321000	⁵ Property Name SCOTER 6-31 FEDERAL COM	⁶ Well Number 43H
⁷ OGRID No. 215099	⁸ Operator Name CIMAREX ENERGY CO.	⁹ Elevation 3333.1'

"Surface Location

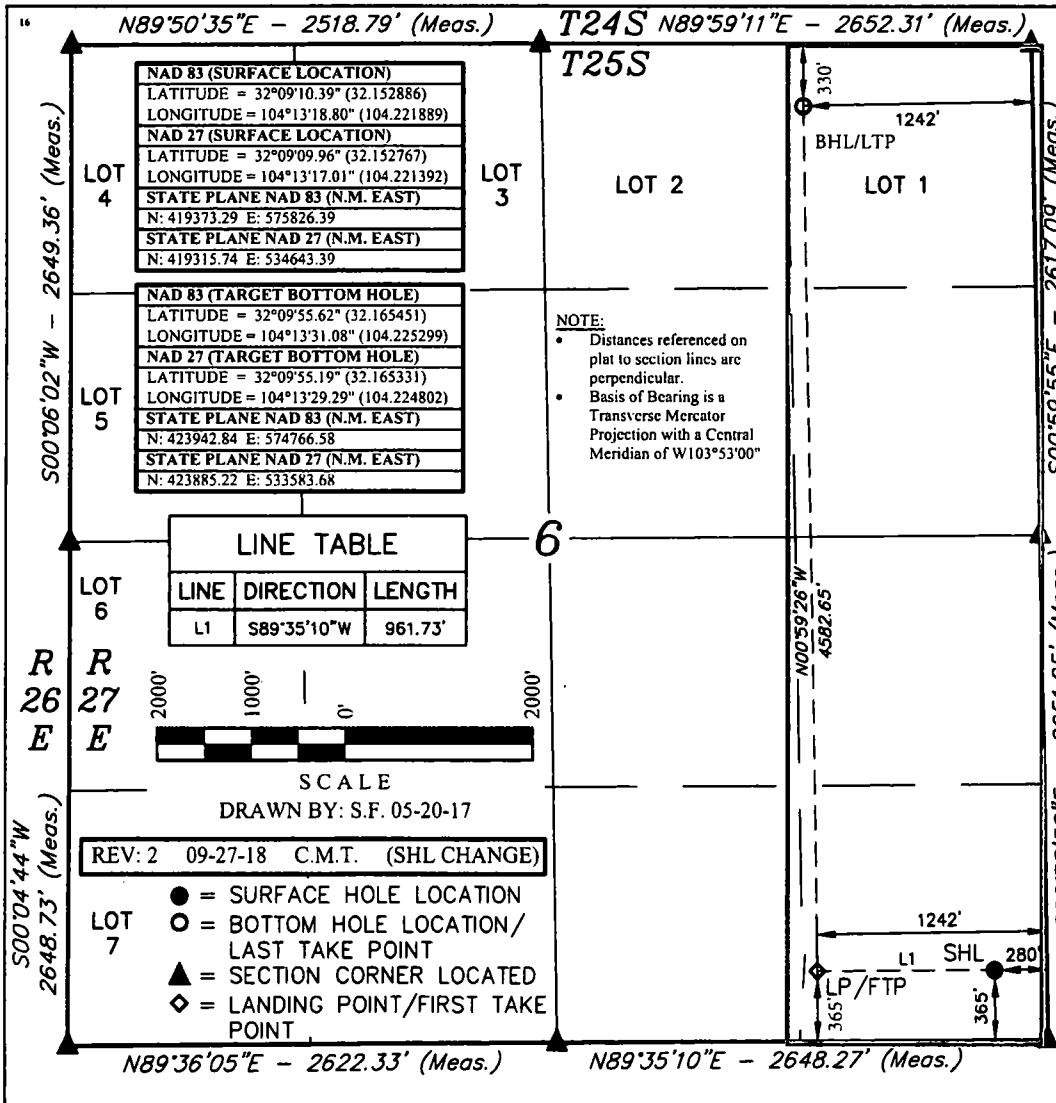
UL or lot no. P	Section 6	Township 25S	Range 27E	Lot Idn	Feet from the 365	North/South line SOUTH	Feet from the 280	East/West line EAST	County EDDY
--------------------	--------------	-----------------	--------------	---------	----------------------	---------------------------	----------------------	------------------------	----------------

"Bottom Hole Location If Different From Surface

UL or lot no. 1	Section 6	Township 25S	Range 27E	Lot Idn	Feet from the 330	North/South line NORTH	Feet from the 1242	East/West line EAST	County EDDY
--------------------	--------------	-----------------	--------------	---------	----------------------	---------------------------	-----------------------	------------------------	----------------

¹² Dedicated Acres 159.09	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.



"OPERATOR CERTIFICATION

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

Amithy Crawford 10/1/2018
Signature Date

Amithy Crawford

Printed Name

acrawford@cimarex.com

E-mail Address

"SURVEYOR CERTIFICATION

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

May 10, 2017

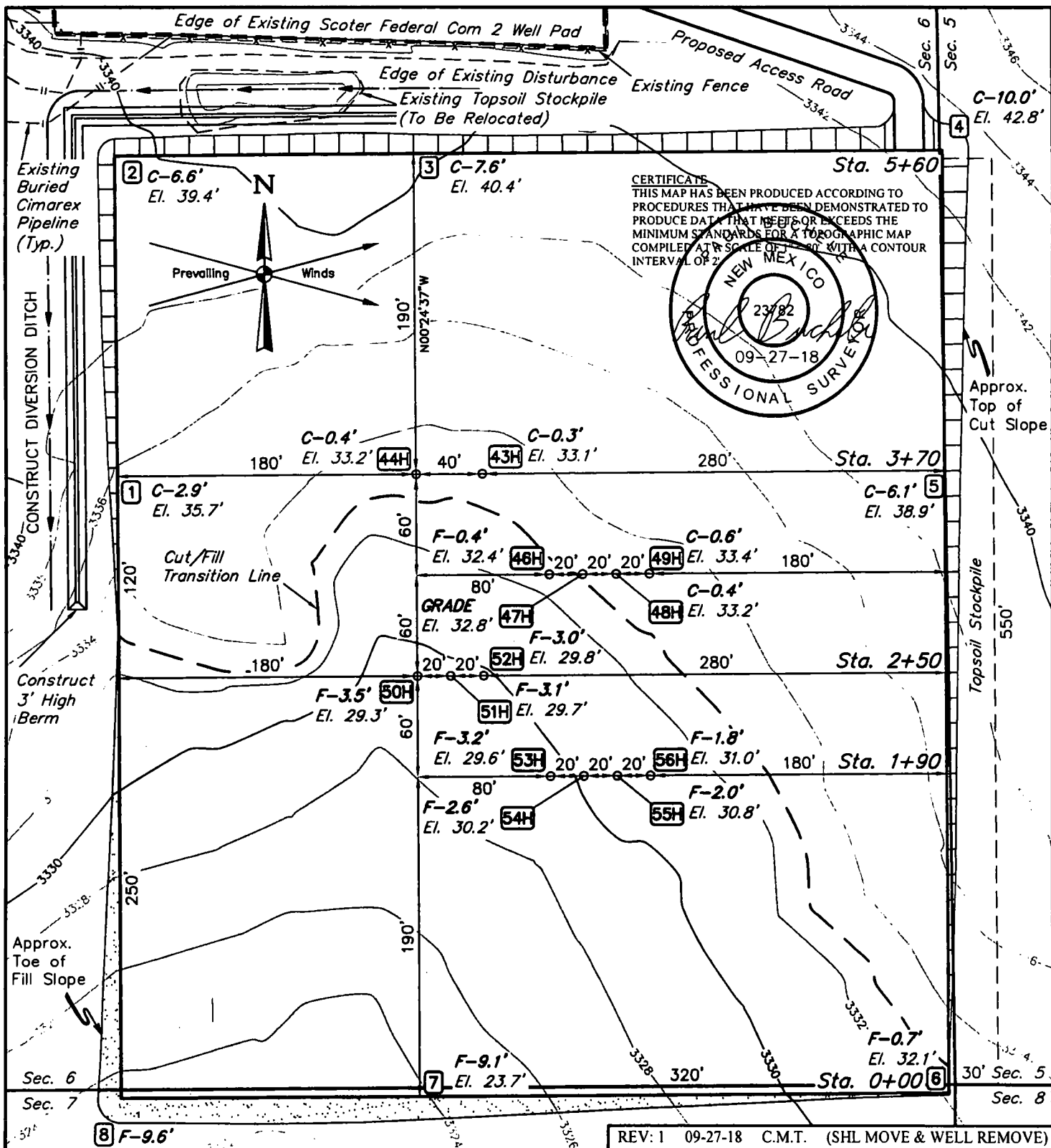
Date of Survey

Signature and Seal of Professional Surveyor:



Certificate Number:

RWP 10-20-18.



REV: 1 09-27-18 C.M.T. (SHL MOVE & WELL REMOVE)

NOTE: Earthwork calculations require fill @ some 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 = 3332.8'

NOTES:

- Contours shown at 2' intervals.
- Cut/Fill slopes 1 1/2:1 (Typ. except where noted)
- Underground utilities shown on this sheet are for visualization purposes only, actual locations to be determined prior to construction.
- Reroute existing utilities as needed.

CIMAREX ENERGY CO.

SCOTER 6-31 FEDERAL COM E2E2
SE 1/4 SE 1/4, SECTION 6, T25S, R27E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

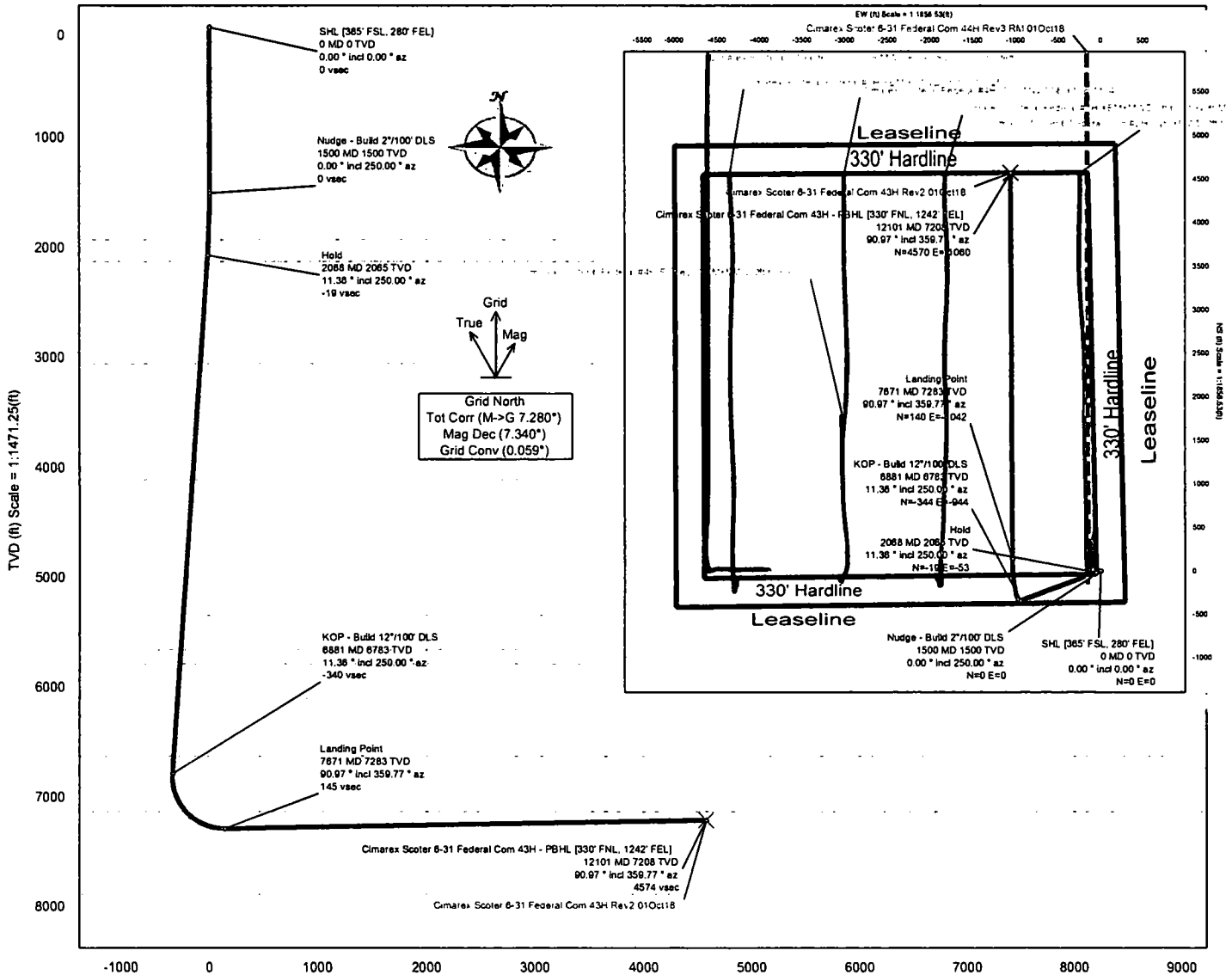


UELS, LLC
 Corporate Office * 85 South 200 East
 Vernal, UT 84078 * (435) 789-1017

SURVEYED BY	M.P., B.D.	05-10-17	SCALE
DRAWN BY	S.F.	05-20-17	1" = 80'
LOCATION LAYOUT		EXHIBIT D	

Borehole:	Well:	Field:	Structure:
Original Borehole	Cimarex Scoter 6-31 Federal Com 43H	NM Eddy County (NAD 83)	Cimarex Scoter 6-31 Federal Com 43H

Gravity & Magnetic Parameters				Surface Location				Miscellaneous			
Model:	HDGM 2018	Dip:	59.841°	Date:	01-Oct-2018	Lat:	N 32 8 10.39	North:	419373.297US	Grid Conv:	0.0583°
MagDec:	7.34°	F8:	47883.053nT	Gravity F8:	938.432mgn (9.80665 Based)	Lon:	W 104 13 18.80	Easting:	575826.397US	Scale Fact:	0.99991045
								Site:	6-31 Federal Com 43H	TVD Rat:	RXB(3359.18 above MSL)
								Plan:	Cimarex Scoter 6-31 Federal Com 43H Rev2 01Oct18		



Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL (365' FSL, 280' FEL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Salado	1305.00	0.00	250.00	1305.00	0.00	0.00	0.00	0.00
Nudge - Build 27'100' DLS	1500.00	0.00	250.00	1500.00	0.00	0.00	0.00	0.00
Castile	1924.55	8.49	250.00	1923.00	-10.74	-10.74	-29.51	2.00
Hold	2068.22	11.38	250.00	2064.50	-19.21	-19.21	-52.78	2.00
Bell Canyon	2124.83	11.38	250.00	2120.00	-23.03	-23.03	-63.26	0.00
Cherry Canyon	3075.47	11.38	250.00	3052.00	-87.09	-87.09	-239.29	0.00
Brushy Canyon	4153.80	11.38	250.00	4109.00	-159.75	-159.75	-438.92	0.00
Brushy Canyon Lower	5414.32	11.38	250.00	5345.00	-244.72	-244.72	-672.38	0.00
Bone Spring	5734.60	11.38	250.00	5659.00	-266.30	-266.30	-731.67	0.00
Bone Spring "A" Shale	5865.16	11.38	250.00	5787.00	-275.10	-275.10	-755.84	0.00
Bone Spring "C" Shale	6187.48	11.38	250.00	6103.00	-296.83	-296.83	-815.52	0.00
1st Bone Spring Sa	6721.96	11.38	250.00	6627.00	-332.85	-332.85	-914.49	0.00
KOP - Build 12'100' DLS	6881.03	11.38	250.00	6782.95	-343.57	-343.57	-943.94	0.00
2nd Bone Spring Sa	7268.31	43.76	348.18	7132.00	-218.60	-218.60	-1010.94	12.00
Landing Point	7870.82	90.97	359.77	7283.00	140.39	140.39	-1042.13	12.00
Cimarex Scoter 6-31 Federal Com 43H - PBHL [330' FNL, 1242' FEL]	12101.08	90.97	359.77	7208.00	4569.97	4569.97	-1059.91	0.00
2nd BS Lower	NaN			7882.00				
3rd Bone Spring Sa	NaN			8450.00				

Cimarex Scoter 6-31 Federal Com 43H Rev2 01Oct18 Anti-Collision Summary Report

Analysis Date-24hr Time: October 01, 2018 - 14:26

Client:

Field: NM Eddy County (NAD 83)

Structure: Cimarex Scoter 6-31 Federal Com 43H

Slot: Cimarex Scoter 6-31 Federal Com 43H

Well: Cimarex Scoter 6-31 Federal Com 43H

Borehole: Original Borehole

Scan MD Range: 0.00ft - 12101.08ft

Analysis Method:

Reference Trajectory:

Depth Interval:

Rule Set:

Min Pts:

Version / Patch:

Database / Project:

3D Least Distance

Cimarex Scoter 6-31 Federal Com 43H Rev2 01Oct18 (Def Plan)

Every 10.00 Measured Depth (ft)

NAL Procedure: D&M Anti-Collision Standard S002

All local minima indicated.

2.10.740.0

US1153APP452.dir.alb.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:

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 Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Cl-Cl (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		

Results Highlighted: Sep-Factor separation <= 1.50 ft

Cimarex Scoter 6-31 Federal
Com 44H Rev3 RM 01Oct18
(Def Plan)

40.01	32.51	37.51	7.50	N/A	MAS = 9.91 (m)	0.00	0.00	Cl-Cl<=15m<15.00				Enter Alert	Fail Major
40.01	32.51	37.51	7.50	168806.75	MAS = 9.91 (m)	26.00	26.00					WRP	
32.16	32.51	19.90	-0.35	3.04	MAS = 9.91 (m)	1720.00	1719.78					Enter Major	
17.36	32.51	4.59	-15.14	1.45	MAS = 9.91 (m)	1890.00	1888.80					Enter Minor	
13.24	32.51	0.20	-19.26	1.03	MAS = 9.91 (m)	1970.00	1967.89					ManPts	
18.53	32.51	5.22	-13.87	1.48	MAS = 9.91 (m)	2040.00	2036.81			OSF<1.50		Exit Minor	
31.52	32.51	17.89	-0.09	2.81	MAS = 9.91 (m)	2120.00	2115.27			OSF>1.50		Exit Major	
59.85	32.51	45.41	27.15	4.87	MAS = 9.91 (m)	2270.00	2262.33			OSF>5.00		Exit Alert	
694.05	64.32	650.34	929.74	24.06	OSF1.50	7390.00	7208.67					ManPi-CICI	
994.06	64.35	650.33	929.71	24.05	OSF1.50	7400.00	7213.69					MINPT-O-EQU	
994.09	64.38	650.34	929.71	24.04	OSF1.50	7407.58	7217.72					ManPi-O-ADP	
995.78	64.85	651.84	931.13	23.97	OSF1.50	7490.00	7252.75					ManPi-O-SF	
996.85	64.71	652.68	931.84	23.97	OSF1.50	7510.00	7259.31					ManPi-O-SF	
1802.74	186.77	1890.73	1835.97	16.44	OSF1.50	12101.08	7208.00					ManPts	

Cimarex Scoter 6 Federal Com
#2H Gyro-MWD 0ft to 12027ft
MD (Def Survey)

448.87	32.81	448.37	416.05	N/A	MAS = 10.00 (m)	0.00	0.00					ManPts	Warning Alert
448.88	32.81	448.35	416.07	17000.83	MAS = 10.00 (m)	26.00	26.00					WRP	
449.48	32.81	448.01	416.86	408.57	MAS = 10.00 (m)	220.00	220.00					MINPT-O-EQU	
451.42	32.81	448.45	418.61	181.57	MAS = 10.00 (m)	500.00	500.00					MINPT-O-EQU	
447.97	32.81	441.01	415.16	99.71	MAS = 10.00 (m)	1050.00	1050.00					ManPts	
448.08	32.81	439.14	415.28	69.20	MAS = 10.00 (m)	1500.00	1500.00					ManPts	
448.10	32.81	439.12	415.29	68.84	MAS = 10.00 (m)	1520.00	1520.00					MINPT-O-EQU	
448.43	32.81	439.33	415.63	67.48	MAS = 10.00 (m)	1600.00	1599.68					ManPi-O-SF	
480.34	32.81	466.83	447.53	43.43	MAS = 10.00 (m)	3440.00	3409.39					ManPts	
480.38	32.81	466.78	447.57	43.08	MAS = 10.00 (m)	3460.00	3428.99					MINPT-O-EQU	
509.27	50.70	774.04	756.56	25.11	OSF1.50	6810.00	6713.31					ManPi-O-SF	
509.29	62.73	812.26	785.52	18.19	OSF1.50	9020.00	7280.16					ManPi-CICI	
509.58	67.06	810.79	782.61	15.38	OSF1.50	9140.00	7258.13					MINPT-O-EQU	
577.67	113.62	801.08	764.04	11.81	OSF1.50	9690.00	7248.33					ManPi-CICI	
511.03	189.87	883.62	821.16	6.47	OSF1.50	11110.00	7224.78					ManPi-CICI	
814.44	199.36	880.70	815.08	8.19	OSF1.50	11320.00	7221.22					MINPT-O-EQU	
834.13	234.01	877.20	800.12	5.39	OSF1.50	11970.00	7210.22					MINPT-O-EQU	
837.85	254.02	867.47	863.83	4.88	OSF1.50	12070.00	7208.53			OSF<5.00		Enter Alert	
838.83	279.02	851.08	859.81	4.54	OSF1.50	12101.08	7208.00					ManPts	

Cimarex Scoter 6 Federal #2H
XEM-MWD 0ft to 11940ft MD
(Def Survey)

1909.38	32.81	1909.88	1876.57	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	Warning Alert
1909.14	32.81	1909.82	1876.33	79599.57	MAS = 10.00 (m)	20.00	20.00					ManPi-O-SF	
1909.11	32.81	1909.59	1876.30	112928.14	MAS = 10.00 (m)	26.00	26.00					WRP	
1909.10	32.81	1909.57	1876.29	61022.71	MAS = 10.00 (m)	40.00	40.00					ManPts	
1909.13	32.81	1909.55	1876.32	24538.35	MAS = 10.00 (m)	60.00	60.00					MINPT-O-EQU	
1916.04	32.81	1910.82	1883.23	703.28	MAS = 10.00 (m)	870.00	870.00					ManPts	
1916.00	32.81	1910.76	1883.28	681.31	MAS = 10.00 (m)	890.00	890.00					MINPT-O-EQU	
1928.01	32.81	1918.84	1895.20	288.06	MAS = 10.00 (m)	1800.00	1599.68					ManPi-O-SF	
974.11	43.20	944.14	930.01	36.69	OSF1.50	6810.00	6713.31					ManPi-O-SF	
907.33	44.51	878.44	862.82	33.18	OSF1.50	7100.00	6993.38					ManPi-O-SF	
841.04	44.06	810.39	796.96	31.17	OSF1.50	7480.00	7248.18					ManPts	
768.13	105.69	696.26	682.24	11.23	OSF1.50	9170.00	7257.62					ManPi-CICI	
773.84	120.61	692.16	653.23	9.89	OSF1.50	9480.00	7252.37					MINPT-O-EQU	
778.57	123.80	692.76	652.77	9.66	OSF1.50	9550.00	7251.19					ManPi-O-ADP	
781.17	207.60	621.50	553.56	5.57	OSF1.50	11130.00	7224.44					ManPi-CICI	
782.85	215.68	617.69	548.87	5.37	OSF1.50	11300.00	7221.58					MINPT-O-EQU	
784.38	217.68	617.68	548.79	5.33	OSF1.50	11340.00	7220.88					ManPi-O-ADP	
786.20	238.86	625.89	547.34	4.99	OSF1.50	11720.00	7214.45			OSF<5.00		Enter Alert	
777.84	305.29	573.15	472.65	3.85	OSF1.50	12080.00	7208.38					ManPi-CICI	
777.84	305.35	573.11	472.59	3.85	OSF1.50	12090.00	7208.19					ManPts	
778.09	305.38	573.25	472.73	3.85	OSF1.50	12101.08	7208.00					TD	

Cimarex Scoter 6 Federal #2H
#4HST01 MWD 8608ft to
11740 (Def Survey)

3083.84	32.81	3081.34	3051.03	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	Pass
3083.63	32.81	3081.11	3050.82	123109.82	MAS = 10.00 (m)	20.00	20.00					ManPi-O-SF	
3083.59	32.81	3081.07	3050.78	120988.38	MAS = 10.00 (m)	28.00	28.00					WRP	
3050.76	32.81	3041.80	3017.06	458.03	MAS = 10.00 (m)	1800.00	1599.68					ManPi-O-SF	
3045.86	32.81	3036.70	3013.05	457.68	MAS = 10.00 (m)	1850.00	1649.93					ManPi-O-SF	
2135.54	42.62	2105.68	2062.62	81.76	OSF1.50	6770.00	6674.10					ManPi-O-SF	
2129.21	42.48	2099.73	2066.75	81.87	OSF1.50	6800.00	6703.51					ManPi-O-SF	
1933.97	48.20	1900.55	1885.77	85.31	OSF1.50	7780.00	7281.15					ManPi-CICI	
1834.13	48.78	1900.32	1885.35	84.46	OSF1.50	7820.00	7280.47					MINPT-O-EQU	
1834.52	49.26	1900.38	1885.26	83.80	OSF1.50	7850.00	7279.97					ManPi-O-ADP	

Offset Trajectory	Separation				Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	CI-CI (ft)	MAS (ft)	FOU (ft)	Dev. (ft)			MD (ft)	TVD (ft)	Alert	Minor	Major		
1978.95	65.55	1931.97	1911.40	47.95		OSF1.50	8340.00	7271.87				MinPts	
1982.59	74.31	1931.77	1908.28	42.11		OSF1.50	8510.00	7288.79				MINPT-O-EQU	
1983.57	75.51	1931.95	1908.06	41.42		OSF1.50	8550.00	7288.12				MinPts	
1990.51	82.89	1933.98	1907.82	37.88		OSF1.50	8730.00	7285.07				MinPts	
1929.55	147.01	1830.26	1782.55	20.18		OSF1.50	9620.00	7244.82				MinPts	
1935.55	181.83	1827.37	1774.72	18.35		OSF1.50	10240.00	7239.51				MINPT-O-EQU	
1947.71	181.42	1825.49	1786.30	18.42		OSF1.50	10800.00	7233.41				MINPT-O-EQU	
1950.89	186.73	1825.12	1784.16	15.97		OSF1.50	10700.00	7231.72				MINPT-O-EQU	
1954.89	193.38	1824.70	1781.53	15.44		OSF1.50	10820.00	7229.89				MINPT-O-EQU	
1957.43	253.42	1787.20	1704.01	11.74		OSF1.50	11880.00	7211.74				MinPts	
1957.35	257.81	1784.20	1696.55	11.54		OSF1.50	11960.00	7210.39				MinPts	
1958.77	301.11	1756.75	1657.66	9.86		OSF1.50	12101.08	7208.00				MinPts	

Cimarex Scoter 6 Federal #541
Surveys XEM-MWD DR to
8985 (Def Survey)

3083.84	32.81	3081.34	3051.03	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	Pass
3083.83	32.81	3081.11	3050.82	123109.62	MAS = 10.00 (m)	20.00	20.00					MinPts	
3083.59	32.81	3081.07	3050.78	120988.38	MAS = 10.00 (m)	26.00	26.00					WRP	
3050.76	32.81	3041.60	3017.06	458.03	MAS = 10.00 (m)	1600.00	1599.88					MinPts	
3045.86	32.81	3038.70	3013.05	457.88	MAS = 10.00 (m)	1650.00	1649.83					MinPts	
2135.54	42.82	2105.96	2092.92	81.76	OSF1.50	6770.00	6674.10					MinPts	
2129.21	42.44	2099.75	2086.78	81.97	OSF1.50	6800.00	6703.51					MinPts	
1933.97	47.89	1900.80	1888.28	69.07	OSF1.50	7780.00	7281.15					MinPts	
1934.13	48.25	1900.68	1885.88	65.24	OSF1.50	7820.00	7280.47					MINPT-O-EQU	
1934.52	48.72	1900.70	1885.81	64.58	OSF1.50	7850.00	7279.87					MinPts	
1978.95	64.78	1932.45	1912.17	48.58	OSF1.50	8340.00	7271.67					MinPts	
1982.59	73.49	1932.32	1909.00	42.60	OSF1.50	8510.00	7288.12					MINPT-O-EQU	
1983.57	74.89	1932.50	1908.87	41.90	OSF1.50	8550.00	7288.12					MinPts	
1990.51	82.07	1934.52	1908.44	38.08	OSF1.50	8730.00	7285.07					MinPts	
1992.87	83.32	1929.38	1899.54	33.33	OSF1.50	8900.00	7282.19					MinPts	
1992.70	102.37	1923.27	1890.41	30.27	OSF1.50	9080.00	7259.14					MinPts	
1992.48	114.11	1915.14	1878.37	27.04	OSF1.50	9310.00	7255.25					MinPts	
1992.70	116.01	1914.09	1878.60	26.58	OSF1.50	9360.00	7254.40					MinPts	
2006.31	118.28	1929.19	1891.03	26.27	OSF1.50	9600.00	7250.34					MinPts	
3403.77	106.45	3331.97	3297.32	49.08	OSF1.50	12101.08	7208.00					TD	

Cimarex Scoter 6 Federal #541
XEM - MWD DR to 11632ft
(Def Survey)

4324.04	32.81	4321.54	4291.24	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	Pass
4323.74	32.81	4321.20	4290.94	110933.86	MAS = 10.00 (m)	26.00	26.00					MinPts	
4322.74	32.81	4318.27	4288.93	2192.47	MAS = 10.00 (m)	490.00	490.00					MinPts	
4301.02	32.81	4291.56	4268.21	618.51	MAS = 10.00 (m)	1600.00	1599.88					MinPts	
4278.82	32.81	4287.55	4244.11	623.21	MAS = 10.00 (m)	1840.00	1839.20					MinPts	
4285.09	32.81	4255.72	4232.28	623.39	MAS = 10.00 (m)	1920.00	1918.50					MinPts	
3332.73	45.12	3301.45	3287.61	120.72	OSF1.50	7040.00	6937.64					MinPts	
3327.03	44.83	3296.08	3282.49	121.53	OSF1.50	7070.00	6905.81					MinPts	
3275.37	44.94	3244.18	3230.43	118.95	OSF1.50	7510.00	7259.31					MinPts	
3273.55	45.14	3242.85	3228.84	116.35	OSF1.50	7590.00	7277.88					MinPts	
3277.12	46.50	3244.89	3230.81	114.70	OSF1.50	7700.00	7282.51					MinPts	
3257.83	73.97	3207.30	3183.88	69.47	OSF1.50	8440.00	7299.98					MinPts	
3260.85	81.92	3204.80	3178.73	62.46	OSF1.50	8670.00	7298.08					MINPT-O-EQU	
3267.87	90.82	3206.12	3177.05	56.14	OSF1.50	8890.00	7262.35					MinPts	
3285.48	112.00	3209.57	3173.48	45.45	OSF1.50	9290.00	7255.58					MINPT-O-EQU	
3291.24	118.97	3210.70	3172.27	42.78	OSF1.50	9450.00	7252.88					MinPts	
3292.53	137.54	3199.61	3154.99	36.85	OSF1.50	9700.00	7248.85					MinPts	
3290.02	214.90	3115.51	3045.12	23.13	OSF1.50	11140.00	7224.27					MinPts	
3284.47	228.01	3111.22	3036.45	21.81	OSF1.50	11450.00	7219.02					MINPT-O-EQU	
3289.72	236.00	3111.11	3033.66	21.08	OSF1.50	11610.00	7218.31					MINPT-O-EQU	
3274.19	241.58	3111.81	3032.62	20.82	OSF1.50	11730.00	7214.28					MinPts	
3287.83	257.30	3115.17	3030.83	19.42	OSF1.50	12000.00	7209.71					MINPT-O-EQU	
3291.84	261.85	3116.05	3029.89	19.10	OSF1.50	12101.08	7208.00					MinPts	

Cimarex Scoter 6-31 Federal
Com 7H MWD Final (Surcon
Corrected) (Def Survey)

3893.08	32.81	3891.28	3860.27	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	Pass
3892.81	32.81	3890.97	3860.00	121770.87	MAS = 10.00 (m)	26.00	26.00					MinPts	
3892.72	32.81	3890.83	3859.91	51504.56	MAS = 10.00 (m)	80.00	80.00					MinPts	
3893.41	32.81	3890.32	3860.00	3043.09	MAS = 10.00 (m)	310.00	310.00					MINPT-O-EQU	
3894.20	32.81	3890.52	3861.39	2070.58	MAS = 10.00 (m)	470.00	470.00					MINPT-O-EQU	
3890.83	32.81	3884.50	3858.04	840.91	MAS = 10.00 (m)	1050.00	1050.00					MinPts	
3890.82	32.81	3884.50	3858.11	816.55	MAS = 10.00 (m)	1080.00	1080.00					MINPT-O-EQU	
3883.28	32.81	3874.85	3850.47	573.00	MAS = 10.00 (m)	1600.00	1599.88					MinPts	
3875.32	32.81	3868.93	3842.51	576.59	MAS = 10.00 (m)	1720.00	1719.78					MinPts	
3844.35	32.81	3836.08	3811.54	581.00	MAS = 10.00 (m)	1970.00	1967.89					MinPts	
3408.44	44.64	3376.01	3363.80	119.85	OSF1.50	7480.00	7249.18					MinPts	
3404.45	44.70	3373.96	3359.75	119.88	OSF1.50	7610.00	7280.23					MinPts	
3404.47	44.74	3373.96	3359.73	119.58	OSF1.50	7620.00	7281.20					MinPts	
4199.54	77.33	4147.47	4122.21	83.08	OSF1.50	10030.00	7243.06					MinPts	
4204.01	77.82	4151.55	4126.09	82.43	OSF1.50	10120.00	7241.54					MINPT-O-EQU	
4215.80	101.26	4147.82	4114.54	83.33	OSF1.50	10940.00	7227.88					MINPT-O-EQU	
4217.22	106.59	4145.68	4110.83	80.14	OSF1.50	11100.00	7224.95					MinPts	
4217.91	108.85	4145.00	4109.26	56.90	OSF1.50	11190.00	7223.42					MINPT-O-EQU	
4218.87	109.56	4145.19	4109.12	56.51	OSF1.50	11230.00	7222.75					MinPts	
4220.87	135.14	4139.30	4094.73	47.44	OSF1.50	12090.00	7208.19					MINPT-O-EQU	
4230.07	135.43	4139.31	4094.64	47.34	OSF1.50	12101.08	7208.00					MinPts	

Schlumberger

Cimarex Scoter 6-31 Federal Com 43H Rev2 01Oct18 Proposal Geodetic Report (Def Plan)



Report Date: October 01, 2018 - 02:25 PM
Client: Cimarex
Field: NM Eddy County (NAD 83)
Structure / Slat: Cimarex Scoter 6-31 Federal Com 43H / Cimarex Scoter 6-31 Federal Com 43H
Well: Cimarex Scoter 6-31 Federal Com 43H
Survey Name: Cimarex Scoter 6-31 Federal Com 43H Rev2 01Oct18
Survey Date: October 01, 2018
Tor / APD / DDI / END Ratio: 106.138 / 7.5947 / 283 ft / 0.021 / 0.817
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 8' 10.39150" W 104° 13' 18.80140"
Location Grid N/E V/X: N 418373.280 RUS, E 575826.380 RUS
CRS Grid Convergence Angle: 0.0593 °
Grid Scale Factor: 0.9991045
Version / Patch: 2.10.740.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 0.000 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3359.100 ft above MSL
Sealbed / Ground Elevation: 3333.100 ft above MSL
Magnetic Declination: 7.340 °
Total Gravity Field Strength: 989.4320mgal (g 80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47882.053 nT
Magnetic Dip Angle: 58.841 °
Declination Date: October 01, 2018
Magnetic Declination Model: HDGM 2018
North Reference: Grid North
Grid Convergence Used: 0.0593 °
Total Corr Mag North->Grid North: 7.2804 °
Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Adm Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (7100ft)	Nothing (ftNS)	Easting (ftUS)	Latitude (N 32 ° 7)	Longitude (E 18 ° 7)
SHL 1365 FSL, 280 FELL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	419373.29	575826.39	N 32 8 10.39	W 104 13 18.80
	100.00	0.00	250.00	100.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 8 10.39	W 104 13 18.80
	200.00	0.00	250.00	200.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 8 10.39	W 104 13 18.80
	300.00	0.00	250.00	300.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 8 10.39	W 104 13 18.80
	400.00	0.00	250.00	400.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 8 10.39	W 104 13 18.80
	500.00	0.00	250.00	500.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 8 10.39	W 104 13 18.80
	600.00	0.00	250.00	600.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 8 10.39	W 104 13 18.80
	700.00	0.00	250.00	700.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 8 10.39	W 104 13 18.80
	800.00	0.00	250.00	800.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 8 10.39	W 104 13 18.80
	900.00	0.00	250.00	900.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 8 10.39	W 104 13 18.80
	1000.00	0.00	250.00	1000.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 8 10.39	W 104 13 18.80
	1100.00	0.00	250.00	1100.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 8 10.39	W 104 13 18.80
	1200.00	0.00	250.00	1200.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 8 10.39	W 104 13 18.80
	1300.00	0.00	250.00	1300.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 8 10.39	W 104 13 18.80
	1305.00	0.00	250.00	1305.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 8 10.39	W 104 13 18.80
	1400.00	0.00	250.00	1400.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 8 10.39	W 104 13 18.80
Salado	1500.00	0.00	250.00	1500.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32 8 10.39	W 104 13 18.80
Nudge - Build 27100 DLS	1600.00	2.00	250.00	1598.88	-0.60	-0.60	-1.64	2.00	419373.68	575824.75	N 32 8 10.37	W 104 13 18.82
	1700.00	4.00	250.00	1698.84	-2.39	-2.39	-0.58	2.00	419370.80	575819.83	N 32 8 10.34	W 104 13 18.85
	1800.00	6.00	250.00	1798.75	-3.37	-3.37	-0.54	2.00	419371.92	575811.64	N 32 8 10.34	W 104 13 18.87
	1900.00	8.00	250.00	1898.70	-4.34	-4.34	-0.54	2.00	419363.78	575800.19	N 32 8 10.30	W 104 13 18.11
Castile	1924.55	6.49	250.00	1922.00	-10.74	-10.74	-29.51	2.00	419362.45	575796.69	N 32 8 10.29	W 104 13 19.14
	2000.00	10.00	250.00	1989.47	-16.89	-16.89	-40.80	2.00	419358.41	575785.00	N 32 8 10.24	W 104 13 18.26
	2008.22	11.38	250.00	2004.50	-18.21	-18.21	-52.78	2.00	419354.08	575773.61	N 32 8 10.20	W 104 13 18.42
Hold	2100.00	11.38	250.00	2006.66	-21.35	-21.35	-58.68	0.00	419351.94	575767.73	N 32 8 10.18	W 104 13 18.46
	2124.63	11.38	250.00	2126.00	-23.03	-23.03	-63.78	0.00	419350.77	575764.13	N 32 8 10.16	W 104 13 18.46
	2200.00	11.38	250.00	2193.70	-28.09	-28.09	-77.18	0.00	419345.20	575748.22	N 32 8 10.11	W 104 13 18.70
	2400.00	11.38	250.00	2289.78	-34.83	-34.83	-95.70	0.00	419338.46	575730.70	N 32 8 10.05	W 104 13 18.91
	2500.00	11.38	250.00	2389.82	-48.31	-48.31	-114.21	0.00	419331.72	575712.19	N 32 8 9 59.58	W 104 13 18.13
	2600.00	11.38	250.00	2489.82	-55.05	-55.05	-132.73	0.00	419324.98	575695.67	N 32 8 9 59.14	W 104 13 20.35
	2700.00	11.38	250.00	2589.86	-61.79	-61.79	-151.25	0.00	419316.25	575678.16	N 32 8 9 58.54	W 104 13 20.56
	2800.00	11.38	250.00	2781.83	-68.53	-68.53	-168.78	0.00	419311.51	575660.64	N 32 8 9 57.94	W 104 13 20.78
	3000.00	11.38	250.00	2879.01	-75.27	-75.27	-186.28	0.00	419304.77	575643.13	N 32 8 9 57.24	W 104 13 20.99
Cherry Canyon	3073.47	11.38	250.00	3052.00	-82.01	-82.01	-225.31	0.00	419298.03	575631.61	N 32 8 9 56.54	W 104 13 21.21
	3100.00	11.38	250.00	3070.05	-87.09	-87.09	-239.82	0.00	419296.20	575627.12	N 32 8 9 55.92	W 104 13 21.42
	3200.00	11.38	250.00	3174.09	-88.75	-88.75	-243.83	0.00	419284.55	575621.00	N 32 8 9 55.24	W 104 13 21.64
	3300.00	11.38	250.00	3272.13	-92.48	-92.48	-262.35	0.00	419277.81	575614.89	N 32 8 9 54.56	W 104 13 21.85
	3400.00	11.38	250.00	3368.21	-102.23	-102.23	-280.88	0.00	419271.07	575608.77	N 32 8 9 53.88	W 104 13 22.07
	3500.00	11.38	250.00	3464.21	-108.97	-108.97	-299.38	0.00	419264.33	575602.64	N 32 8 9 53.20	W 104 13 22.25
	3600.00	11.38	250.00	3560.25	-112.44	-112.44	-317.80	0.00	419257.59	575596.52	N 32 8 9 52.52	W 104 13 22.50
	3700.00	11.38	250.00	3656.29	-115.70	-115.70	-336.41	0.00	419250.84	575590.40	N 32 8 9 51.84	W 104 13 22.72
	3800.00	11.38	250.00	3752.33	-119.06	-119.06	-354.93	0.00	419244.12	575584.28	N 32 8 9 51.16	W 104 13 22.93
	3900.00	11.38	250.00	3848.37	-122.42	-122.42	-373.44	0.00	419237.40	575578.16	N 32 8 9 50.48	W 104 13 23.15
	4000.00	11.38	250.00	3944.41	-125.78	-125.78	-391.88	0.00	419230.68	575572.04	N 32 8 9 49.80	W 104 13 23.36
Brushy Canyon	4100.00	11.38	250.00	4040.45	-129.14	-129.14	-410.48	0.00	419223.90	575565.93	N 32 8 9 49.12	W 104 13 23.58
	4153.60	11.38	250.00	4136.49	-132.50	-132.50	-428.99	0.00	419217.18	575559.81	N 32 8 9 48.44	W 104 13 23.79
	4200.00	11.38	250.00	4232.52	-135.86	-135.86	-447.51	0.00	419210.42	575553.69	N 32 8 9 47.76	W 104 13 24.01
	4300.00	11.38	250.00	4328.56	-139.22	-139.22	-466.03	0.00	419203.68	575547.57	N 32 8 9 47.08	W 104 13 24.22
	4400.00	11.38	250.00	4424.59	-142.58	-142.58	-484.54	0.00	419196.95	575541.46	N 32 8 9 46.40	W 104 13 24.44
	4500.00	11.38	250.00	4520.63	-145.94	-145.94	-503.06	0.00	419190.21	575535.34	N 32 8 9 45.72	W 104 13 24.65
	4600.00	11.38	250.00	4616.67	-149.30	-149.30	-521.58	0.00	419183.47	575529.22	N 32 8 9 45.04	W 104 13 24.87
	4700.00	11.38	250.00	4712.72	-152.66	-152.66	-540.09	0.00	419176.73	575523.10	N 32 8 9 44.36	W 104 13 25.08
	4800.00	11.38	250.00	4808.76	-156.02	-156.02	-558.61	0.00	419170.00	575516.98	N 32 8 9 43.68	W 104 13 25.30
	4900.00	11.38	250.00	4904.80	-159.38	-159.38	-577.13	0.00	419163.25	575510.86	N 32 8 9 43.00	W 104 13 25.52
	5000.00	11.38	250.00	5000.84	-162.74	-162.74	-595.64	0.00	419156.51	575504.74	N 32 8 9 42.32	W 104 13 25.73
	5100.00	11.38	250.00	5096.88	-166.10	-166.10	-614.16	0.00	419149.77	575498.62	N 32 8 9 41.64	W 104 13 25.95
	5200.00	11.38	250.00	5192.92	-169.46	-169.46	-632.68	0.00	419143.04	575492.50	N 32 8 9 40.96	W 104 13 26.16
	5300.00	11.38	250.00	5288.96	-172.82	-172.82	-651.19	0.00	419136.30	575486.38	N 32 8 9 40.28	W 104 13 26.38
	5400.00	11.38	250.00	5385.00	-176.18	-176.18	-669.71	0.00	419129.56	575480.26	N 32 8 9 39.60	W 104 13 26.59
Brushy Canyon Lower	5414.32	11.36	250.00	5345.00	-179.54	-179.54	-688.23	0.00	419122.82	575474.14	N 32 8 9 38.92	W 104 13 26.82
	5500.00	11.36	250.00	5441.04	-182.90	-182.90	-706.75	0.00	419116.08	575468.02	N 32 8 9 38.24	W 104 13 27.02
	5600.00	11.36	250.00	5537.08	-186.26	-186.26	-725.26	0.00	419109.34	575461.90	N 32 8 9 37.56	W 104 13 27.21
Bone Spang	5700.00	11.36	250.00	5633.12	-189.62	-189.62	-743.77	0.00	419102.60	575455.78	N 32 8 9 36.88	W 104 13 27.41
	5734.60	11.36	250.00	5695.00	-193.00	-193.00	-762.29	0.00	419095.86	575449.66	N 32 8 9 36.20	W 104 13 27.67
Bone Spang A-	5800.00	11.36	250.00	5767.12	-196.36	-196.36	-780.81	0.00	419089.13	575443.54	N 32 8 9 35.52	W 104 13 27.88
	5855.16	11.36	250.00	5829.00	-199.72	-199.72	-799.32	0.00	419082.39	575437.42	N 32 8 9 34.84	W 104 13 28.10
Shale	5900.00	11.36	250.00	5891.00	-203.08	-203.08	-817.84	0.00	419075.65	575431.30	N 32 8 9 34.16	W 104 13 28.29
Bone Spang C-	6000.00	11.36	250.00	5953.00	-206.44	-206.44	-836.35	0.00	419068.91	575425.18	N 32 8 9 33.48	W 104 13 28.49
Shale	6100.00	11.36	250.00	6015.00	-209.80	-209.80	-854.87	0.00	419062.17	575419.06	N 32 8 9 32.80	W 104 13 28.69
	6167.48	11.36	250.00	6103.00	-213.16	-213.16	-873.39	0.00	419055.43	575412.94	N 32 8 9 32.12	W 104 13 28.89

Comments	MD (ft)	Ind (°)	Asin QdD (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DL5 (1100ft)	Northng (ft)	Eastng (ft)	Latitude (N/S...)	Longitude (E/W...)
1st Bone Spring Sa	8200.00	11.36	250.00	6115.57	-297.67	-297.67	-817.84	0.00	419075.65	575008.62	N 32 6 7.45	W 104 13 28.32
	8300.00	11.36	250.00	6213.31	-304.41	-304.41	-838.39	0.00	419088.11	574990.11	N 32 6 7.30	W 104 13 28.53
	8400.00	11.36	250.00	6311.35	-311.15	-311.15	-854.87	0.00	419092.17	574971.59	N 32 6 7.32	W 104 13 28.75
	8500.00	11.36	250.00	6409.39	-317.89	-317.89	-871.39	0.00	419095.43	574893.08	N 32 6 7.25	W 104 13 29.06
	8600.00	11.36	250.00	6507.43	-324.63	-324.63	-887.91	0.00	419094.69	574834.57	N 32 6 7.10	W 104 13 29.18
	8700.00	11.36	250.00	6605.47	-331.37	-331.37	-904.42	0.00	419091.95	574816.05	N 32 6 7.12	W 104 13 29.30
	8800.00	11.36	250.00	6692.00	-332.85	-332.85	-914.49	0.00	419090.47	574811.99	N 32 6 7.11	W 104 13 29.44
	8900.00	11.36	250.00	6703.51	-338.11	-338.11	-928.94	0.00	419095.21	574807.54	N 32 6 7.08	W 104 13 29.61
	9000.00	11.36	250.00	6782.95	-343.57	-343.57	-943.94	0.00	419092.75	574802.53	N 32 6 7.00	W 104 13 29.78
	9100.00	10.83	281.52	6801.57	-344.47	-344.47	-947.46	12.00	419028.85	574789.85	N 32 6 6.99	W 104 13 29.83
2nd Bone Spring Sa	9200.00	14.98	314.44	6889.34	-338.79	-338.79	-968.03	12.00	419068.53	574860.45	N 32 6 7.07	W 104 13 30.04
	9300.00	24.79	335.39	6993.38	-308.59	-308.59	-984.04	12.00	419084.72	574842.44	N 32 6 7.35	W 104 13 30.25
	9400.00	35.92	344.43	7079.58	-281.10	-281.10	-1000.71	12.00	419112.22	574825.77	N 32 6 7.82	W 104 13 30.44
	9500.00	43.76	348.18	7132.00	-218.60	-218.60	-1010.94	12.00	419154.71	574815.54	N 32 6 8.24	W 104 13 30.56
	9600.00	47.43	349.57	7154.17	-198.39	-198.39	-1015.30	12.00	419178.92	574811.18	N 32 6 8.48	W 104 13 30.61
	9700.00	59.10	353.08	7213.89	-117.30	-117.30	-1027.80	12.00	419258.01	574799.30	N 32 6 9.24	W 104 13 30.75
	9800.00	70.84	355.81	7256.13	-27.27	-27.27	-1035.83	12.00	419346.02	574790.65	N 32 6 10.13	W 104 13 30.85
	9900.00	82.62	358.18	7279.04	68.75	68.75	-1040.87	12.00	419443.03	574785.62	N 32 6 11.00	W 104 13 30.91
	10000.00	90.97	359.77	7283.00	140.39	140.39	-1042.13	12.00	419513.66	574784.36	N 32 6 11.79	W 104 13 30.92
	10100.00	90.97	359.77	7282.51	169.58	169.58	-1042.65	0.00	419542.83	574783.84	N 32 6 12.08	W 104 13 30.93
Landing Point	10200.00	90.97	359.77	7279.12	208.54	208.54	-1043.05	0.00	419582.81	574783.44	N 32 6 12.08	W 104 13 30.93
	10300.00	90.97	359.77	7275.73	248.51	248.51	-1043.85	0.00	419642.76	574782.76	N 32 6 15.05	W 104 13 30.93
	10400.00	90.97	359.77	7272.35	288.54	288.54	-1043.85	0.00	419694.21	574782.23	N 32 6 17.03	W 104 13 30.94
	10500.00	90.97	359.77	7272.35	328.57	328.57	-1045.05	0.00	420042.69	574781.83	N 32 6 18.02	W 104 13 30.95
	10600.00	90.97	359.77	7268.98	368.45	368.45	-1045.46	0.00	420342.64	574781.03	N 32 6 19.09	W 104 13 30.95
	10700.00	90.97	359.77	7267.57	408.42	408.42	-1045.86	0.00	420642.61	574780.23	N 32 6 20.08	W 104 13 30.95
	10800.00	90.97	359.77	7265.42	448.41	448.41	-1046.29	0.00	420942.57	574779.43	N 32 6 21.07	W 104 13 30.96
	10900.00	90.97	359.77	7262.50	488.38	488.38	-1047.48	0.00	421242.52	574778.62	N 32 6 22.06	W 104 13 30.98
	11000.00	90.97	359.77	7258.81	528.35	528.35	-1047.88	0.00	421542.47	574777.82	N 32 6 23.05	W 104 13 30.97
	11100.00	90.97	359.77	7255.42	568.33	568.33	-1048.27	0.00	421842.44	574777.02	N 32 6 24.04	W 104 13 30.98
Cinmarex Scaler 6-31 Federal Com 43H - PBHL [330' FNL, 1242' FEL]	11200.00	90.97	359.77	7252.03	608.30	608.30	-1048.67	0.00	422142.42	574776.22	N 32 6 25.03	W 104 13 30.98
	11300.00	90.97	359.77	7252.03	648.27	648.27	-1049.07	0.00	422442.37	574775.42	N 32 6 26.02	W 104 13 30.98
	11400.00	90.97	359.77	7248.96	688.20	688.20	-1049.47	0.00	422742.32	574774.62	N 32 6 27.01	W 104 13 30.98
	11500.00	90.97	359.77	7245.58	728.17	728.17	-1049.87	0.00	423042.28	574773.81	N 32 6 28.00	W 104 13 31.01
	11600.00	90.97	359.77	7242.19	768.15	768.15	-1050.28	0.00	423342.23	574773.01	N 32 6 29.00	W 104 13 31.01
	11700.00	90.97	359.77	7238.80	808.12	808.12	-1050.68	0.00	423642.18	574772.21	N 32 6 30.00	W 104 13 31.02
	11800.00	90.97	359.77	7235.42	848.09	848.09	-1051.08	0.00	423942.13	574771.41	N 32 6 31.00	W 104 13 31.02
	11900.00	90.97	359.77	7232.03	888.06	888.06	-1051.48	0.00	424242.08	574770.60	N 32 6 32.00	W 104 13 31.03
	12000.00	90.97	359.77	7228.65	928.03	928.03	-1051.88	0.00	424542.03	574769.80	N 32 6 33.00	W 104 13 31.03
	12100.00	90.97	359.77	7225.26	968.00	968.00	-1052.28	0.00	424841.98	574769.00	N 32 6 34.00	W 104 13 31.04

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7855 sigma

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (feet)	Survey Tool Type	Borehole / Survey
1	1	0.000	26.000	1/100.000	30.000	30.000		NAL_MWD_LFR1+MS-Depth Only	Original Borehole / Cinmarex Rev2 01Oct18 Original Borehole / Cinmarex Scaler 6-31 Federal Com 43H
26.000		12101.075	1/100.000	30.000	30.000			NAL_MWD_LFR1+MS	

Cimarex Scoter 6-31 Federal Com 43H Rev2 01Oct18 Proposal Geodetic Report (Def Plan)



Report Date: October 01, 2018 - 02:28 PM
Client: Cimarex
Field: NM Eddy County (NAD 83)
Structure / Slot: Cimarex Scoter 6-31 Federal Com 43H / Cimarex Scoter 6-31 Federal Com 43H
Well: Cimarex Scoter 6-31 Federal Com 43H
Borehole: Original Borehole
UWI / AP#: Unknown / Unknown
Survey Name: Cimarex Scoter 6-31 Federal Com 43H Rev2 01Oct18
Survey Date: October 01, 2018
Tort / AHD / DDI / ERD Ratio: 106.139' / 5947.263 ft / 6.021 / 0.817
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 8' 10.39150", W 104° 13' 18.80140"
Location Grid N/E Y/X: N 419373.290 ftUS, E 575826.390 ftUS
CRS Grid Convergence Angle: 0.0593°
Grid Scale Factor: 0.99991045
Version / Patch: 2.10.740.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 0.000° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3359.100 ft above MSL
Seabed / Ground Elevation: 3333.100 ft above MSL
Magnetic Declination: 7.340°
Total Gravity Field Strength: 998.4320mgm (9.80885 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47882.053 nT
Magnetic Dip Angle: 59.841°
Declination Date: October 01, 2018
Magnetic Declination Model: HDGM 2018
North Reference: Grid North
Grid Convergence Used: 0.0593°
Total Corr Mag North->Grid North: 7.2804°
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 [365' FSL, 280' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	419373.29	575826.39	N 32° 9' 10.39"	W 104° 13' 18.80"
Nudge - Build 2"/100' DLS	1500.00	0.00	250.00	1500.00	0.00	0.00	0.00	0.00	419373.29	575826.39	N 32° 9' 10.39"	W 104° 13' 18.80"
Hold	2068.22	11.36	250.00	2064.50	-19.21	-19.21	-52.78	2.00	419354.08	575773.61	N 32° 9' 10.20"	W 104° 13' 19.42"
KOP - Build 12"/100' DLS	6881.03	11.36	250.00	6782.95	-343.57	-343.57	-943.94	0.00	419029.75	574682.53	N 32° 9' 7.00"	W 104° 13' 29.78"
Landing Point	7670.82	90.97	359.77	7283.00	140.39	140.39	-1042.13	12.00	419513.68	574784.38	N 32° 9' 11.79"	W 104° 13' 30.92"
Cimarex Scoter 6-31 Federal Com 43H - PBHL [330' FNL, 1242' FEL]	12101.08	90.97	359.77	7208.00	4569.97	4569.97	-1059.91	0.00	423942.84	574786.58	N 32° 9' 55.82"	W 104° 13' 31.08"

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7855 sigma
Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	26.000	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS-Depth Only	Original Borehole / Cimarex Scoter 6-31 Federal Com 43H Rev2 01Oct18
	1	26.000	12101.075	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS	Original Borehole / Cimarex Scoter 6-31 Federal Com 43H

RWP 10-23-18