

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTNM OIL CONSERVATION
ARTESIA DISTRICTFORM 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.

OCT 02 2018

SUBMIT IN TRIPLICATE - Other instructions on page 2

RECEIVED

1. Type of Well ☐ Oil Well ☒ Gas Well ☐ Other		5. Lease Serial No. NMNM100332
2. Name of Operator CIMAREX ENERGY CO.		6. If Indian, Allottee or Tribe Name
Contact: AMITHY E CRAWFORD E-Mail: acrawford@cimarex.com		7. If Unit or CA/Agreement, Name and/or No.
3a. Address 600 N. MARIENFELD SUITE 600 MIDLAND, TX 79701	3b. Phone No. (include area code) Ph: 432-620-1909	8. Well Name and No. SCOTER 6-31 FEDERAL COM 44H
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 6 T25S R27E 365FSL 320FEL		9. API Well No. 30-015-45264
		10. Field and Pool or Exploratory Area PURPLE SAGE WC
		11. County or Parish, State EDDY COUNTY, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change to Original A PD
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

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 recomplete 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 recompletion 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 and BHL for the Scoter 6-31 Federal Com 44H. There will be no new surface disturbance.

Original:

SHL- 365' FSL & 300' FEL Sec 6, 25S, 27E Eddy Co. NM
BHL- 330' FNL & 1090' FEL Sec 31, 24S, 27E Eddy Co. NM

Proposed:

SHL- 365' FSL & 320' FEL Sec 6, 25S, 27E Eddy Co NM
BHL- 330' FNL & 380' FEL Sec 31, 24S, 27E Eddy Co NM

See below changes to the casing and cement program:

Pending BLM approvals will
subsequently be reviewed
and scanned

MS
10-4-18

14. I hereby certify that the foregoing is true and correct. Electronic Submission #437930 verified by the BLM Well Information System For CIMAREX ENERGY CO., sent to the Carlsbad	
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 _____	Title _____	Date _____
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 ****

RW 10-2-18

Additional data for EC transaction #437930 that would not fit on the form

32. Additional remarks, continued

13.375" Surface csg 48# H-40/J55 hybrid STC 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# J-55 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.

7" Production Csg 26# L80/N80, LTC/BTC set at 9275'. Cement with Lead: 326 sks, 10.3 ppg, 3.64 yield. Tuned Light + LCM. Tail: 134 sks, 14.2 ppg, 1.3 yield, 50:50 (Poz H) + salt + bentonite + Fluid Loss + dispersant + SMS.

4.5" Liner 11.6 #, P-110, BTC set at 18404'. TOL at 8226'. Cement with 664 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, Drilling plan and Directional Survey.

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. ARTESIA DISTRICT
Santa Fe, NM 87505

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

OCT 02 2018

☒ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

RECEIVED

¹ API Number 30-015-45264		² Pool Code 98220		³ Pool Name Purple Sage Wolfcamp	
⁴ Property Code 321000		⁵ Property Name SCOTER 6-31 FEDERAL COM			⁶ Well Number 44H
⁷ OGRID No. 215099		⁸ Operator Name CIMAREX ENERGY CO.			⁹ Elevation 3333.2'

¹⁰ 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 320	East/West line EAST	County EDDY
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¹¹ Bottom Hole Location If Different From Surface

UL or lot no. A	Section 31	Township 24S	Range 27E	Lot Idn	Feet from the 330	North/South line NORTH	Feet from the 380	East/West line EAST	County EDDY
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¹² Dedicated Acres 638.44	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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.

- ¹⁶ NOTE:
- Distances referenced on plat to section lines are perpendicular.
 - Basis of Bearing is a Transverse Mercator Projection with a Central Meridian of W103°53'00"

NAD 83 (SURFACE HOLE LOCATION)
LATITUDE = 32°09'10.39" (32.152886)
LONGITUDE = 104°13'19.27" (104.222019)
NAD 27 (SURFACE HOLE LOCATION)
LATITUDE = 32°09'09.95" (32.152764)
LONGITUDE = 104°13'17.48" (104.221522)
STATE PLANE NAD 83 (N.M. EAST)
N: 419372.80 E: 575786.39
STATE PLANE NAD 27 (N.M. EAST)
N: 419315.25 E: 534603.39

NAD 83 (BHL/LTP)
LATITUDE = 32°10'48.07" (32.180019)
LONGITUDE = 104°13'20.75" (104.222431)
NAD 27 (BHL/LTP)
LATITUDE = 32°10'47.64" (32.179899)
LONGITUDE = 104°13'18.96" (104.221934)
STATE PLANE NAD 83 (N.M. EAST)
N: 429243.15 E: 575648.43
STATE PLANE NAD 27 (N.M. EAST)
N: 429185.42 E: 534465.60

LINE TABLE

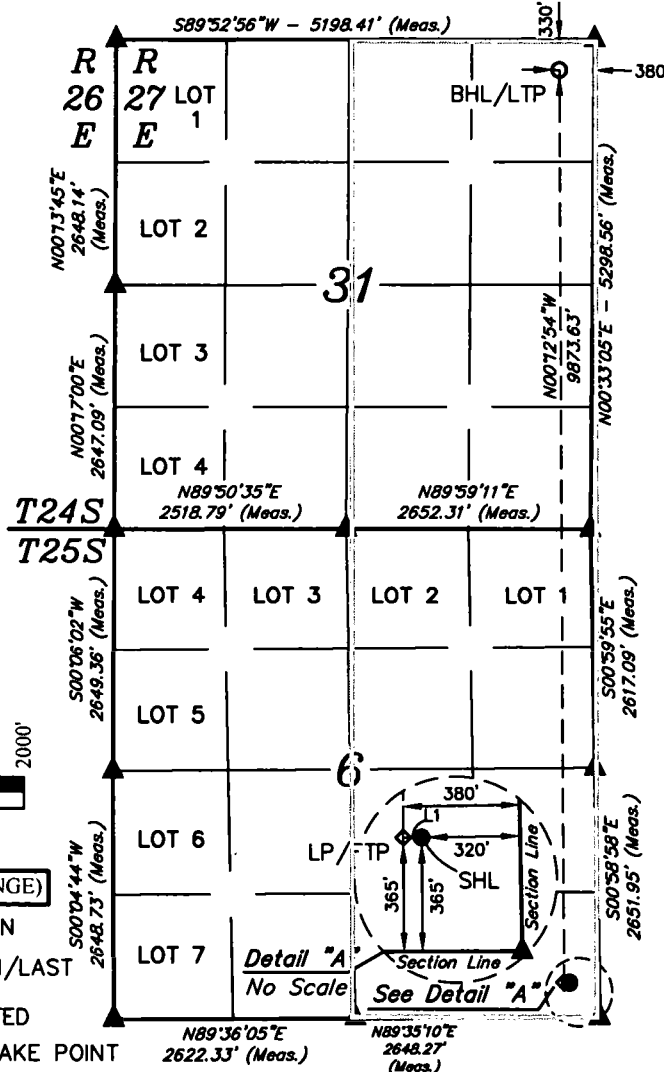
LINE	DIRECTION	LENGTH
L1	S89°36'56"W	59.68'



SCALE
DRAWN BY: S.F. 05-20-17

REV: 2 09-27-18 C.M.T. (SHL CHANGE)

- = SURFACE HOLE LOCATION
- = BOTTOM HOLE LOCATION/LAST TAKE POINT
- ▲ = SECTION CORNER LOCATED
- ◇ = LANDING POINT/FIRST TAKE POINT



¹⁷ OPERATOR CERTIFICATION

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

Amithy Crawford 10/1/2018
Signature Date

Amithy Crawford

Printed Name

acrawford@cimarex.com

E-mail Address

¹⁸ SURVEYOR CERTIFICATION

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

May 10, 2017

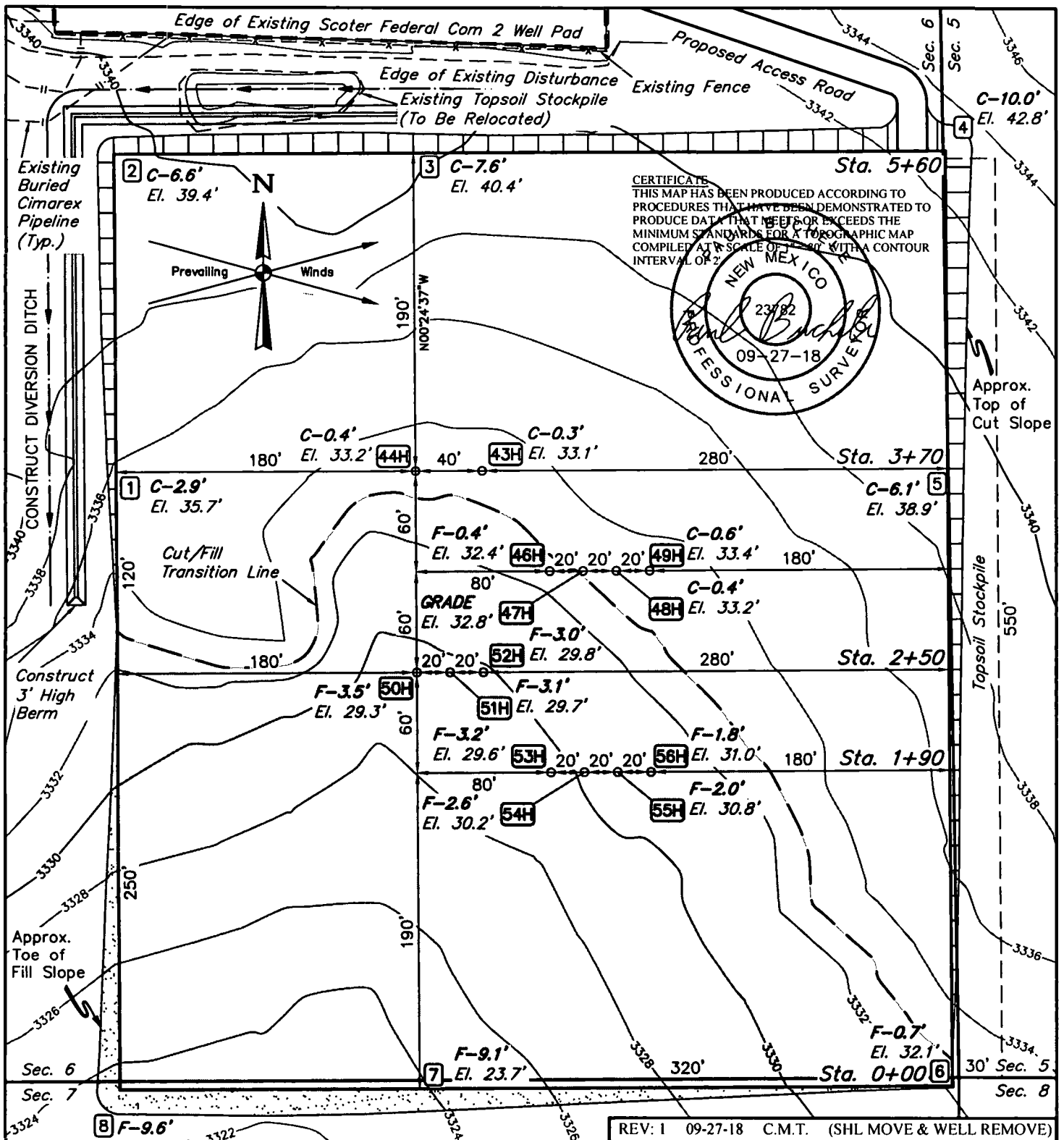
Date of Survey

Signature and Seal of Professional Surveyor:



Certificate Number:

Ref 10-2-18



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.



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

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

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

1. Geological Formations

TVD of target 8,770
MD at TD 18,404

Pilot Hole TD N/A
Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Salado	1394	N/A	
Castille	1908	N/A	
Bell Canyon	2116	N/A	
Cherry Canyon	3088	N/A	
Brushy Canyon	4066	Hydrocarbons	
Bone Spring	5605	Hydrocarbons	
1st Bone Spring Ss	6542	Hydrocarbons	
2nd Bone Spring Ss	7010	Hydrocarbons	
3rd Bone Spring Ss	8360	Hydrocarbons	
Wolfcamp A	8684	Hydrocarbons	
Wolfcamp Y Ss Target	8767	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	8226	7"	26.00	L-80	LT&C	1.41	1.88	2.24
8 3/4	8226	9275	7"	26.00	N-80	BT&C	1.32	1.76	42.70
6	8226	18404	4-1/2"	11.60	P-110	BT&C	1.58	2.24	58.16
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations.

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

Cimarex Energy Co., Scoter 6-31 Federal Com 44H

	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	326	10.30	3.64	22.18		Lead: Tuned Light + LCM
	134	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS
Completion System	664	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	23
Completion System	9275	10

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		
6	13 5/8	5M	Annular	X	50% of working pressure
			Blind Ram		5M
			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.

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 2096'	Brine Water	9.70 - 10.20	30-32	N/C
2096' to 9275'	FW/Cut Brine	8.50 - 9.00	30-32	N/C
9275' to 18404'	Oil Based Mud	10.00 - 10.50	50-70	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	
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
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7. Drilling Conditions

Condition	
BH Pressure at deepest TVD	4788 psi
Abnormal Temperature	No

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

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

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

A multi-bowl wellhead system will be utilized.

After running the 13-3/8" surface casing, a 13 5/8" BOP/BOPE system with a minimum working pressure of 5000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5000 psi test. Annular will be tested to 50% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2.

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

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

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

A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi.

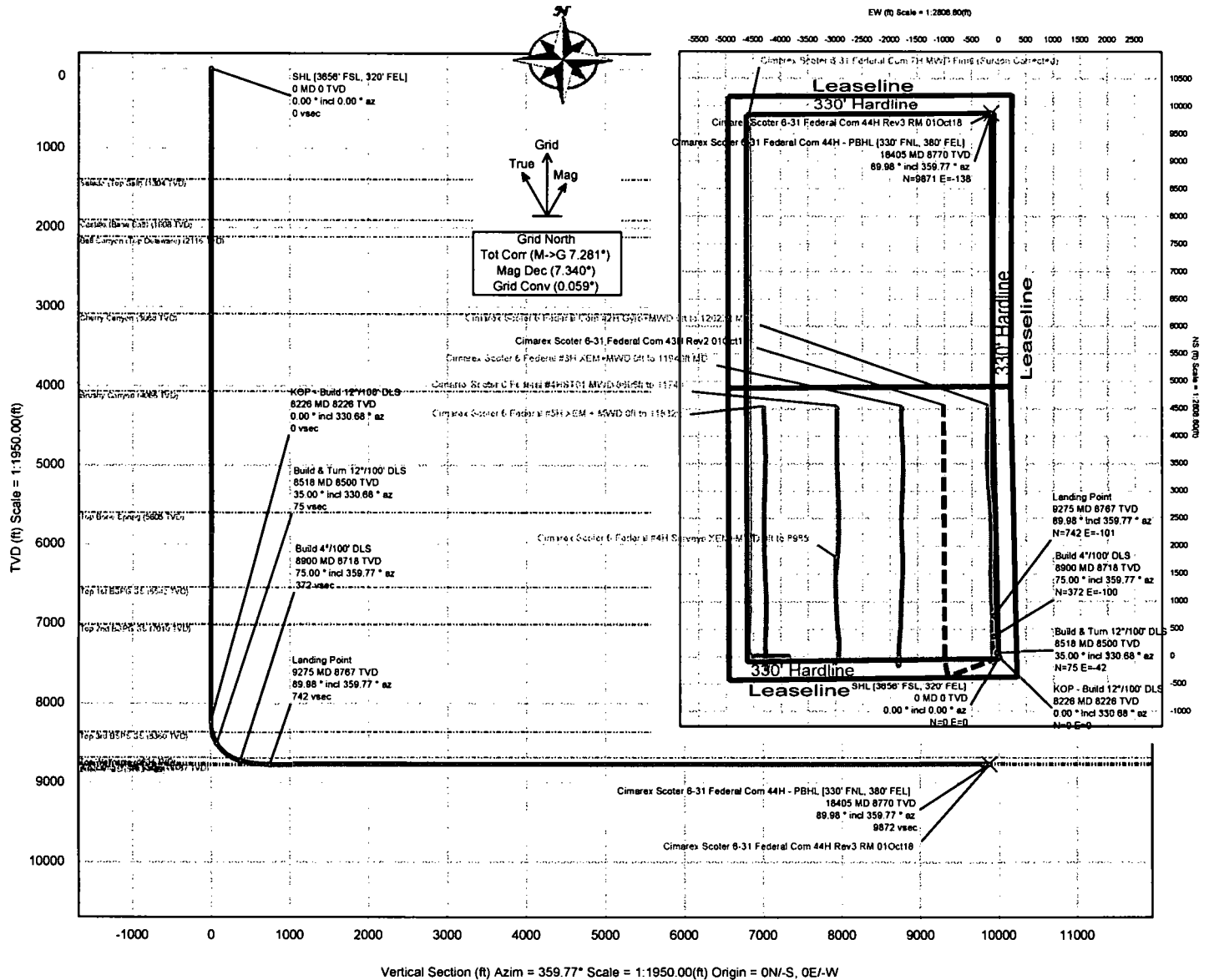
A solid steel body pack-off will be utilized after running and cementing the production casing. After installation the pack-off and lower flange will be pressure tested to 5000 psi.

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.

Borehole:		Well:	Field:	Structure:
Original		Cimarex Scoter 6-31 Federal Com 44H	NM Eddy County (NAD 83)	Cimarex Scoter 6-31 Federal Com 44H
Gravity & Magnetic Parameters		Surface Location NAD83 New Mexico State Plane, Eastern Zone, US Feet		Miscellaneous
Model: HDGM 2018	Dip: 69.841°	Date: 01-Oct-2018	Lat: N 32 9 10.39	Cimarex Scoter 6-31 Federal Com 44H
MagDec: 7.34°	FS: 47581.891nT	Gravity FS: 998.432mgal (9.80665 Based)	North: 419372.8NUS	TVD Ref: RKB(3598.2ft above MSL)
			Lon: W 104 13 19.27	Plan: Cimarex Scoter 6-31 Federal Com 44H Rev3 RM 01Oct18
			East: 678788.39NUS	
			Scale Fact: 0.99991048	



Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL (3656' FSL, 320' FEL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Salado (Top Salt)	1394.00	0.00	330.68	1394.00	0.00	0.00	0.00	0.00
Cestile (Base Salt)	1908.00	0.00	330.68	1908.00	0.00	0.00	0.00	0.00
Bell Canyon (Top Delaware)	2116.00	0.00	330.68	2116.00	0.00	0.00	0.00	0.00
Cherry Canyon	3088.00	0.00	330.68	3088.00	0.00	0.00	0.00	0.00
Brushy Canyon	4066.00	0.00	330.68	4066.00	0.00	0.00	0.00	0.00
Top Bone Spring	5605.00	0.00	330.68	5605.00	0.00	0.00	0.00	0.00
Top 1st BSPG SS	6542.00	0.00	330.68	6542.00	0.00	0.00	0.00	0.00
Top 2nd BSPG SS	7010.00	0.00	330.68	7010.00	0.00	0.00	0.00	0.00
KOP - Build 12' 100' DLS	8226.48	0.00	330.68	8226.48	0.00	0.00	0.00	0.00
Top 3rd BSPG SS	8361.60	16.24	330.68	8360.00	16.61	16.61	-9.33	12.00
Build & Turn 12' 100' DLS	8518.15	35.00	330.68	8500.35	75.29	75.29	-42.29	12.00
Top Wolfcamp	8802.30	64.21	354.72	8684.00	279.78	279.78	-95.58	12.00
Build 4' 100' DLS	8900.50	75.00	359.77	8716.19	371.55	371.55	-99.83	12.00
Wolfcamp "Y" SS	9068.02	81.70	359.77	8752.00	535.52	535.52	-100.49	4.00
Landing Point	9275.02	89.98	359.77	8767.00	741.81	741.81	-101.32	4.00
Wolfcamp "Y" SS Target	9275.07	89.98	359.77	8767.00	741.86	741.86	-101.32	0.00
Cimarex Scoter 6-31 Federal Com 44H - PBHL (330' FNL, 380' FEL)	18404.55	89.98	359.77	8770.00	9871.25	9871.25	-137.97	0.00
Base "Y" SS	NaN			8782.00				

Cimarex Scoter 6-31 Federal Com 44H Rev3 RM 01Oct18 Anti-Collision Summary Report

Analysis Date-24hr Time: October 01, 2018 - 14:05

Client: Cimarex

Field: NM Eddy County (NAD 83)

Structure: Cimarex Scoter 6-31 Federal Com 44H

Slot: Cimarex Scoter 6-31 Federal Com 44H

Well: Cimarex Scoter 6-31 Federal Com 44H

Borehole: Original

Scan MD Range: 0 00ft - 18404.55ft

Analysis Method: 3D Least Distance

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

Depth Interval: Every 10.00 Measured Depth (ft)

Rule Set: NAL Procedure: D&M AntiCollision Standard S002

Min Pts: All local minima indicated.

Version / Patch: 2.10.740.0

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:

Selection filters:

Not performed!

Definitive Surveys - Definitive Plans - Definitive surveys exclude definitive plans

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

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

Results highlighted: Sep-Factor separation <= 1.50 ft

Cimarex Scoter 6-31 Federal
Com 44H Rev2 01Oct18 (Def Plan)

40.01	32.51	37.51	7.50	N/A	MAS = 9.91 (m)	0.00	0.00	Ct-Ct <= 15m < 15.00				Enter Alert	Fail Major
40.01	32.51	37.51	7.50	N/A	MAS = 9.91 (m)	26.00	26.00					WRP	
32.07	32.51	19.83	-0.43	3.04	MAS = 9.91 (m)	1720.00	1720.00					Enter Major	
17.20	32.51	4.46	-15.31	1.44	MAS = 9.91 (m)	1890.00	1890.00			OSF < 1.50	StcRuh < 9.91	Enter Minor	
13.23	32.51	0.22	-19.27	1.02	MAS = 9.91 (m)	1960.00	1960.00					MinPts	
13.26	32.51	0.21	-19.24	1.02	MAS = 9.91 (m)	1970.00	1970.00					MinPts	
17.51	32.51	4.30	-15.00	1.40	MAS = 9.91 (m)	2030.00	2030.00			OSF > 1.50		Exit Minor	
31.84	32.51	18.37	-0.67	2.68	MAS = 9.91 (m)	2120.00	2120.00				StcRuh > 9.91	Exit Major	
60.00	32.51	45.93	27.49	4.97	MAS = 9.91 (m)	2270.00	2270.00			OSF > 5.00		Exit Alert	
994.63	63.54	951.43	931.06	24.36	OSF1.50	7050.00	7050.00					MinPt-O-SF	
994.05	64.33	950.33	929.73	24.06	OSF1.50	7210.00	7210.00					MinPt-CICI	
994.08	64.42	950.30	929.66	24.02	OSF1.50	7220.00	7220.00					MINPT-O-EQU	
994.17	64.52	950.32	929.65	23.99	OSF1.50	7230.00	7230.00					MinPt-O-ADP	
1001.52	65.65	956.92	935.87	23.73	OSF1.50	7360.00	7360.00					MinPt-O-SF	
1696.63	53.67	1662.02	1644.96	49.72	OSF1.50	8900.00	8718.06					MinPt-O-SF	
1802.89	167.01	1890.71	1835.87	16.42	OSF1.50	13130.00	8768.27					MINPT-O-EQU	
1803.05	167.20	1890.74	1835.84	16.40	OSF1.50	13140.00	8768.27					MinPt-O-ADP	
1809.24	168.38	1896.15	1840.65	16.34	OSF1.50	13260.00	8768.31					MinPt-O-SF	
5566.05	104.50	5525.55	5491.55	62.26	OSF1.50	18404.55	8770.00					TD	

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

445.85	32.81	443.35	413.05	N/A	MAS = 10.00 (m)	0.00	0.00					MinPts	Warning Alert
445.86	32.81	443.34	413.05	17500.10	MAS = 10.00 (m)	26.00	26.00					WRP	
443.47	32.81	436.47	410.67	97.86	MAS = 10.00 (m)	1050.00	1050.00					MinPts	
443.57	32.81	434.79	410.76	70.17	MAS = 10.00 (m)	1480.00	1460.00					MinPts	
443.54	32.81	432.26	410.74	50.33	MAS = 10.00 (m)	2020.00	2020.00					MinPts	
443.42	32.81	431.67	410.61	47.70	MAS = 10.00 (m)	2130.00	2130.00					MinPts	
122.03	38.68	95.32	83.35	4.98	OSF1.50	5010.00	5010.00			OSF < 5.00		Enter Alert	
84.86	46.05	53.32	38.81	2.84	OSF1.50	5600.00	5600.00					MinPt-CICI	
84.93	46.24	53.28	38.70	2.83	OSF1.50	5620.00	5620.00					MINPT-O-EQU	
85.01	46.33	53.30	38.63	2.82	OSF1.50	5630.00	5630.00					MinPt-O-ADP	
85.25	46.50	53.42	38.75	2.82	OSF1.50	5650.00	5650.00					MinPt-O-SF	
163.01	50.76	126.34	112.25	4.99	OSF1.50	6680.00	6680.00			OSF > 5.00		Exit Alert	
159.56	50.70	124.93	108.86	4.89	OSF1.50	7140.00	7140.00			OSF < 5.00		Enter Alert	
114.94	56.16	78.63	58.77	3.14	OSF1.50	7320.00	7320.00			OSF > 5.00		MinPts	
153.12	48.23	120.13	104.89	4.94	OSF1.50	7450.00	7450.00					Exit Alert	
1266.10	32.81	1249.61	1233.25	90.31	MAS = 10.00 (m)	8900.00	8718.06					MinPt-O-SF	
1343.93	35.94	1318.47	1306.99	58.43	OSF1.50	9510.00	8767.08					MINPT-O-EQU	
1347.33	54.93	1309.87	1292.40	38.47	OSF1.50	10150.00	8767.29					MinPt-CICI	
1347.70	55.96	1309.55	1291.74	37.74	OSF1.50	10200.00	8767.30					MINPT-O-EQU	
1348.05	56.37	1309.64	1291.68	37.46	OSF1.50	10220.00	8767.31					MinPt-O-ADP	
1390.87	139.79	1295.84	1251.08	15.17	OSF1.50	13010.00	8768.23					MinPt-CICI	
1391.17	142.97	1295.02	1248.20	14.83	OSF1.50	13110.00	8768.26					MINPT-O-EQU	
1391.25	143.06	1295.05	1248.18	14.82	OSF1.50	13120.00	8768.26					MinPt-O-ADP	
1392.72	143.39	1296.29	1249.33	14.80	OSF1.50	13170.00	8768.28					MinPt-O-SF	
5479.86	79.15	5426.27	5400.72	107.18	OSF1.50	18404.55	8770.00					TD	

Cimarex Scoter 6 Federal #3H
NEM-MWD Off to 11940ft MD
(Def Survey)

1869.39	32.81	1868.89	1836.58	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	Pass
1869.14	32.81	1868.62	1836.33	75690.40	MAS = 10.00 (m)	20.00	20.00					MinPt-O-SF	
1869.11	32.81	1868.59	1836.30	106739.13	MAS = 10.00 (m)	26.00	26.00					WRP	
1869.10	32.81	1868.57	1836.29	59747.77	MAS = 10.00 (m)	40.00	40.00					MinPts	
1869.13	32.81	1868.55	1836.32	240223.63	MAS = 10.00 (m)	60.00	60.00					MINPT-O-EQU	
1876.05	32.81	1870.82	1843.24	698.58	MAS = 10.00 (m)	670.00	670.00					MinPts	
1876.09	32.81	1870.78	1843.26	667.07	MAS = 10.00 (m)	690.00	690.00					MINPT-O-EQU	
1885.09	32.81	1873.22	1852.26	200.93	MAS = 10.00 (m)	2060.00	2060.00					MinPts	
1885.11	32.81	1873.20	1852.30	200.01	MAS = 10.00 (m)	2070.00	2070.00					MINPT-O-EQU	
1861.26	36.35	1836.19	1824.91	82.40	OSF1.50	5090.00	5090.00					MinPt-CICI	
1861.29	40.08	1833.73	1821.21	74.23	OSF1.50	5640.00	5640.00					MinPt-CICI	
1861.53	40.74	1833.53	1820.78	72.95	OSF1.50	5740.00	5740.00					MINPT-O-EQU	
1861.86	41.14	1833.60	1820.73	72.21	OSF1.50	5800.00	5800.00					MinPt-O-ADP	
1862.79	42.33	1833.73	1820.46	70.08	OSF1.50	5980.00	5980.00					MinPt-CICI	
1862.88	42.60	1833.65	1820.29	69.62	OSF1.50	6020.00	6020.00					MINPT-O-EQU	
1862.94	42.66	1833.66	1820.28	69.51	OSF1.50	6030.00	6030.00					MinPt-O-ADP	
1849.84	48.70	1816.52	1801.13	60.02	OSF1.50	6920.00	6920.00					MinPt-O-SF	
1835.02	50.34	1800.60	1784.68	57.53	OSF1.50	7190.00	7190.00					MinPt-CICI	
1836.04	50.41	1800.58	1784.64	57.46	OSF1.50	7200.00	7200.00					MinPts	
1845.55	52.78	1809.52	1792.77	55.01	OSF1.50	7440.00	7440.00					MinPts	
1872.72	55.31	1835.01	1817.40	53.12	OSF1.50	7730.00	7730.00					MinPt-O-SF	
2146.88	56.79	2108.65	2091.03	60.36	OSF1.50	8620.00	8691.43					MinPt-O-ADP	
2180.27	64.04	2136.74	2116.23	53.08	OSF1.50	9300.00	8767.01					MINPT-O-EQU	

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Cl-Cl (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
2181.50	65.53	2136.96	2115.98	51.86		OSF1.50	9360.00	8767.03				MinPl-O-ADP	
2173.64	85.09	2116.08	2088.55	39.43		OSF1.50	9880.00	8767.20				MinPl-CICI	
2175.01	90.40	2113.91	2084.60	37.07		OSF1.50	10050.00	8767.25				MINPT-O-EQU	
2175.87	91.44	2114.09	2084.43	36.66		OSF1.50	10090.00	8767.27				MinPl-O-ADP	
2179.77	108.62	2105.52	2071.15	30.78		OSF1.50	10480.00	8767.39				MinPl-CICI	
2182.78	116.44	2104.32	2066.34	28.70		OSF1.50	10680.00	8767.46				MINPT-O-EQU	
2156.24	171.40	2041.14	1984.84	19.13		OSF1.50	11890.00	8767.86				MinPl-CICI	
2162.63	187.62	2036.53	1974.61	17.48		OSF1.50	12310.00	8768.00				MINPT-O-EQU	
2162.89	188.17	2036.61	1974.72	17.45		OSF1.50	12320.00	8768.00				MinPl-O-ADP	
2188.22	257.32	2015.83	1930.89	12.87		OSF1.50	13090.00	8768.25				MinPl-CICI	
2188.22	257.36	2015.82	1930.87	12.86		OSF1.50	13100.00	8768.26				MinPl	
2188.53	257.42	2016.08	1931.10	12.85		OSF1.50	13130.00	8768.27				MinPl-O-SF	
5744.71	126.93	5669.28	5617.78	69.22		OSF1.50	18404.55	8770.00				TD	

Cimarex Scoter 6 Federal #4H
Surveys XEM-MAYD Off to
8985 (Def Survey)

3043.84	32.81	3041.34	3011.03	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	Pass
3043.63	32.81	3041.10	3010.82	119394.70		MAS = 10.00 (m)	20.00	20.00				MinPl-O-SF	
3043.59	32.81	3041.07	3010.78	125854.53		MAS = 10.00 (m)	26.00	26.00				WRP	
2992.14	32.81	2977.30	2959.13	242.58		MAS = 10.00 (m)	2620.00	2620.00				MinPl	
2992.62	32.81	2976.65	2959.82	222.70		MAS = 10.00 (m)	3070.00	3070.00				MINPT-O-EQU	
2993.31	32.81	2976.65	2960.50	211.70		MAS = 10.00 (m)	3230.00	3230.00				MINPT-O-EQU	
2993.84	32.81	2976.67	2961.03	204.10		MAS = 10.00 (m)	3350.00	3350.00				MINPT-O-EQU	
3002.73	32.89	2979.96	2969.64	148.11		OSF1.50	4610.00	4610.00				MinPl-O-ADP	
3015.54	41.72	2986.89	2973.82	115.23		OSF1.50	5920.00	5920.00				MinPl-CICI	
3015.68	42.26	2986.67	2973.42	113.67		OSF1.50	6000.00	6000.00				MINPT-O-EQU	
3015.80	42.40	2986.70	2973.40	113.29		OSF1.50	6020.00	6020.00				MinPl-O-ADP	
3013.32	45.70	2982.03	2967.63	104.55		OSF1.50	6510.00	6510.00				MinPl-O-SF	
2937.89	51.21	2902.88	2886.68	90.60		OSF1.50	7210.00	7210.00				MinPl-CICI	
2937.93	51.37	2902.82	2886.56	90.31		OSF1.50	7230.00	7230.00				MINPT-O-EQU	
2938.00	51.44	2902.83	2886.56	90.17		OSF1.50	7240.00	7240.00				MinPl-O-ADP	
3036.52	56.68	2997.90	2979.84	84.00		OSF1.50	8020.00	8020.00				MinPl-O-SF	
3207.43	64.54	3163.57	3142.85	77.49		OSF1.50	9230.00	9230.00				MinPl	
3210.67	71.41	3162.23	3139.26	69.83		OSF1.50	9330.00	9330.00				MINPT-O-EQU	
3211.61	72.55	3162.41	3139.06	68.72		OSF1.50	9380.00	9380.00				MinPl-O-ADP	
3214.38	79.40	3161.28	3135.98	63.48		OSF1.50	9520.00	9520.00				MINPT-O-EQU	
3215.14	79.32	3161.43	3135.82	62.73		OSF1.50	9560.00	9560.00				MinPl-O-ADP	
3221.07	85.85	3163.00	3135.21	57.92		OSF1.50	9750.00	9750.00				MinPl	
3221.84	85.38	3157.42	3126.46	51.89		OSF1.50	9900.00	9900.00				MinPl-CICI	
3221.24	101.90	3152.48	3119.34	48.57		OSF1.50	10060.00	10060.00				MinPl-CICI	
3221.87	107.64	3149.27	3114.23	45.93		OSF1.50	10180.00	10180.00				MinPl-CICI	
3221.93	113.13	3145.66	3108.78	43.85		OSF1.50	10300.00	10300.00				MinPl-CICI	
3222.44	115.64	3144.51	3108.82	42.89		OSF1.50	10380.00	10380.00				MinPl	
3263.98	119.08	3183.78	3144.90	41.97		OSF1.50	10870.00	10870.00				MinPl-O-SF	
8675.78	107.05	8603.58	8568.74	124.44		OSF1.50	18404.55	8770.00				TD	

Cimarex Scoter 6 Federal
#4HSTD1 MAYD 8608ft to
11740 (Def Survey)

3043.84	32.81	3041.34	3011.03	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	Pass
3043.63	32.81	3041.10	3010.82	119394.70		MAS = 10.00 (m)	20.00	20.00				MinPl-O-SF	
3043.59	32.81	3041.07	3010.78	125854.53		MAS = 10.00 (m)	26.00	26.00				WRP	
2992.14	32.81	2977.30	2959.13	242.58		MAS = 10.00 (m)	2620.00	2620.00				MinPl	
2992.62	32.81	2976.65	2959.82	222.70		MAS = 10.00 (m)	3070.00	3070.00				MINPT-O-EQU	
2993.31	32.81	2976.65	2960.50	211.69		MAS = 10.00 (m)	3230.00	3230.00				MINPT-O-EQU	
2993.84	32.81	2976.67	2961.03	204.10		MAS = 10.00 (m)	3350.00	3350.00				MINPT-O-EQU	
3002.73	32.89	2979.96	2969.64	148.11		OSF1.50	4610.00	4610.00				MinPl-O-ADP	
3015.54	41.72	2986.89	2973.82	115.23		OSF1.50	5920.00	5920.00				MinPl-CICI	
3015.68	42.26	2986.67	2973.42	113.67		OSF1.50	6000.00	6000.00				MINPT-O-EQU	
3015.80	42.40	2986.70	2973.40	113.29		OSF1.50	6020.00	6020.00				MinPl-O-ADP	
3013.32	45.70	2982.03	2967.63	104.55		OSF1.50	6510.00	6510.00				MinPl-O-SF	
2937.89	51.21	2902.88	2886.68	90.60		OSF1.50	7210.00	7210.00				MinPl-CICI	
2937.93	51.37	2902.82	2886.56	89.74		OSF1.50	7230.00	7230.00				MINPT-O-EQU	
2938.00	51.75	2902.62	2886.24	89.60		OSF1.50	7240.00	7240.00				MinPl-O-ADP	
3036.52	57.05	2997.85	2979.47	83.43		OSF1.50	8020.00	8020.00				MinPl-O-SF	
3207.43	64.95	3163.30	3142.48	78.98		OSF1.50	9230.00	9230.00				MINPT-O-EQU	
3210.67	71.97	3161.86	3138.70	69.27		OSF1.50	9330.00	9330.00				MinPl-O-ADP	
3211.61	73.11	3162.04	3138.50	68.17		OSF1.50	9380.00	9380.00				MINPT-O-EQU	
3214.38	79.02	3160.87	3135.36	62.97		OSF1.50	9520.00	9520.00				MinPl-O-ADP	
3215.37	80.16	3161.09	3135.20	62.06		OSF1.50	9570.00	9570.00				MinPl	
3221.07	86.50	3162.56	3134.56	57.47		OSF1.50	9750.00	9750.00				MinPl-CICI	
3158.57	143.20	3060.27	3013.37	33.62		OSF1.50	10890.00	10890.00				MINPT-O-EQU	
3162.86	156.35	3057.76	3006.47	30.80		OSF1.50	11270.00	11270.00				MINPT-O-EQU	
3163.43	157.25	3057.76	3006.16	30.64		OSF1.50	11290.00	11290.00				MINPT-O-EQU	
3168.52	161.77	3057.83	3004.74	29.80		OSF1.50	11390.00	11390.00				MINPT-O-EQU	
3171.95	172.38	3056.20	2999.57	27.99		OSF1.50	11590.00	11590.00				MINPT-O-EQU	
3174.38	175.20	3058.74	2999.18	27.55		OSF1.50	11670.00	11670.00				MinPl-O-ADP	
3181.27	185.15	3057.01	2996.12	26.11		OSF1.50	11860.00	11860.00				MINPT-O-EQU	
3187.18	238.87	3027.10	2948.31	20.21		OSF1.50	12860.00	12860.00				MinPl-CICI	
3190.23	263.95	2993.40	2996.24	16.40		OSF1.50	13160.00	13160.00				MinPl	
3192.30	294.32	2995.25	2997.98	16.40		OSF1.50	13230.00	13230.00				MinPl-O-SF	
6189.30	188.61	6062.73	6000.70	49.86		OSF1.50	18404.55	8770.00				TD	

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

3853.08	32.81	3851.28	3820.28	N/A		MAS = 10.00 (m)	0.00	0.00				Surface	Pass
3852.81	32.81	3850.97	3820.00	118846.82		MAS = 10.00 (m)	26.00	26.00				MinPl-O-SF	
3852.71	32.81	3850.83	3819.91	50875.08		MAS = 10.00 (m)	60.00	60.00				MinPl	
3853.41	32.81	3850.32	3820.60	3011.23		MAS = 10.00 (m)	310.00	310.00				MINPT-O-EQU	
3854.20	32.81	3850.51	3821.39	2049.30		MAS = 10.00 (m)	470.00	470.00				MINPT-O-EQU	
3850.85	32.81	3844.57	3818.04	832.24		MAS = 10.00 (m)	1050.00	1050.00				MinPl	
3850.91	32.81	3844.50	3818.10	808.16		MAS = 10.00 (m)	1090.00	1090.00				MINPT-O-EQU	
3844.92	32.81	3836.20	3812.11	544.48		MAS = 10.00 (m)	1600.00	1600.00				MinPl	
3840.22	32.81	3830.09	3807.41	453.39		MAS = 10.00 (m)	1910.00	1910.00				MinPl	
3840.27	32.81	3830.02	3807.46	446.61		MAS = 10.00 (m)	1940.00	1940.00				MINPT-O-EQU	
4453.15	61.17	4411.85	4391.87	111.98		OSF1.50	8800.00	8800.00				MinPl	
4453.20	61.25	4411.86	4391.86	111.84		OSF1.50	8810.00	8810.00				MinPl-O-ADP	
4520.85	71.25	4472.87	4449.59	97.10		OSF1.50	9630.00	9630.00				MinPl-CICI	
4517.57	77.47	4465.44	4440.10	89.09		OSF1.50	9870.00	9870.00				MinPl-CICI	
4515.18	85.01	4458.03	4430.17	81.01		OSF1.50	10330.00	10330.00				MinPl-CICI	
4515.40	89.54	4456.22	4425.85	76.85		OSF1.50	10530.00	10530.00				MinPl-CICI	

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	CI-CI (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
4514.74	89.18	4448.14	4415.56	69.26		OSF1.50	10930.00	8767.54				MinPt-CICI	
4515.31	100.96	4447.52	4414.34	68.03		OSF1.50	11020.00	8767.57				MINPT-O-EQU	
4516.12	101.96	4447.67	4414.17	67.37		OSF1.50	11070.00	8767.59				MinPt-O-ADP	
4514.64	123.97	4431.51	4390.66	55.25		OSF1.50	11890.00	8767.86				MinPt-CICI	
4514.60	131.36	4426.54	4383.23	52.10		OSF1.50	12160.00	8767.95				MinPt-CICI	
4515.24	133.28	4425.90	4381.95	51.35		OSF1.50	12250.00	8767.98				MINPT-O-EQU	
4516.11	134.36	4426.06	4381.73	50.95		OSF1.50	12300.00	8767.99				MinPt-O-ADP	
4517.41	139.73	4423.77	4377.68	48.98		OSF1.50	12480.00	8768.05				MinPt-CICI	
4516.90	155.44	4412.79	4361.46	43.98		OSF1.50	13020.00	8768.23				MinPt-CICI	
4517.92	159.03	4411.42	4358.89	42.99		OSF1.50	13170.00	8768.28				MINPT-O-EQU	
4518.87	160.16	4411.62	4358.71	42.69		OSF1.50	13220.00	8768.30				MinPt-O-ADP	
4502.08	201.10	4367.54	4300.99	33.81		OSF1.50	14600.00	8768.75				MinPt-CICI	
4499.13	216.05	4354.62	4283.08	31.43		OSF1.50	15110.00	8768.92				MinPt-CICI	
4500.23	219.41	4353.47	4280.81	30.96		OSF1.50	15260.00	8768.98				MINPT-O-EQU	
4501.63	221.08	4353.77	4280.53	30.73		OSF1.50	15320.00	8768.99				MinPt-O-ADP	
4497.68	273.18	4315.08	4224.50	24.82		OSF1.50	17040.00	8769.55				MinPt-CICI	
4497.76	285.05	4307.27	4212.73	23.78		OSF1.50	17440.00	8769.68				MinPt-CICI	
4498.94	288.46	4305.15	4210.48	23.50		OSF1.50	17580.00	8769.73				MINPT-O-EQU	
4499.23	291.68	4304.30	4207.56	23.25		OSF1.50	17660.00	8769.76				MinPt-CICI	
4498.91	301.68	4297.31	4197.23	22.47		OSF1.50	17990.00	8769.86				MinPt-CICI	
4495.25	313.81	4285.58	4181.44	21.58		OSF1.50	18390.00	8770.00				MinPt-CICI	
4495.26	314.10	4285.38	4181.16	21.53		OSF1.50	18404.55	8770.00				MinPts	

Cimarex Scoter 6 Federal #5H
XEM + MWD OR to 11932ft
(Def Survey)

Pass

4284.04	32.81	4281.54	4251.24	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	
4283.74	32.81	4281.20	4250.93	108597.13	MAS = 10.00 (m)	26.00	26.00					MinPt-O-SF	
4282.73	32.81	4278.26	4249.52	2172.18	MAS = 10.00 (m)	490.00	490.00					MinPts	
4230.27	32.81	4211.72	4197.46	263.98	MAS = 10.00 (m)	3570.00	3570.00					MinPts	
4230.62	32.81	4210.30	4197.81	237.61	MAS = 10.00 (m)	3960.00	3960.00					MinPts	
4231.39	32.81	4209.79	4198.58	221.69	MAS = 10.00 (m)	4230.00	4230.00					MINPT-O-EQU	
4254.48	45.07	4223.60	4209.41	149.82	OSF1.50	6290.00	6290.00					MinPt-CICI	
4254.62	45.56	4223.42	4209.06	148.11	OSF1.50	6360.00	6360.00					MINPT-O-EQU	
4254.86	45.84	4223.46	4209.01	147.16	OSF1.50	6400.00	6400.00					MinPt-O-ADP	
4268.64	49.25	4234.98	4219.38	136.68	OSF1.50	6900.00	6900.00					MinPt-O-SF	
4266.56	50.14	4232.30	4216.42	134.27	OSF1.50	7060.00	7060.00					MinPt-CICI	
4266.61	50.26	4232.27	4216.35	133.91	OSF1.50	7080.00	7080.00					MINPT-O-EQU	
4266.67	50.33	4232.28	4216.34	133.74	OSF1.50	7090.00	7090.00					MinPt-O-ADP	
4401.45	62.18	4359.16	4339.27	110.57	OSF1.50	8680.00	8618.62					MinPt-CICI	
4401.63	62.65	4359.02	4338.97	109.70	OSF1.50	8710.00	8636.81					MINPT-O-EQU	
4401.75	62.81	4359.05	4338.94	109.41	OSF1.50	8720.00	8642.58					MinPt-O-ADP	
4415.03	71.48	4366.54	4343.55	95.96	OSF1.50	9020.00	8744.27					MINPT-O-EQU	
4414.18	80.71	4359.54	4333.47	84.61	OSF1.50	9420.00	8767.05					MinPt-CICI	
4415.62	85.18	4358.00	4330.44	80.06	OSF1.50	9590.00	8767.10					MINPT-O-EQU	
4417.58	87.57	4358.37	4330.01	77.85	OSF1.50	9680.00	8767.13					MinPt-O-ADP	
4418.71	88.72	4358.73	4330.00	76.83	OSF1.50	9720.00	8767.15					MinPt-O-ADP	
4444.38	110.02	4370.19	4334.35	61.97	OSF1.50	10260.00	8767.32					MINPT-O-EQU	
4446.57	113.43	4370.12	4333.15	60.10	OSF1.50	10310.00	8767.34					MINPT-O-EQU	
4450.52	118.13	4370.94	4332.35	57.70	OSF1.50	10410.00	8767.37					MinPt-O-ADP	
4435.14	213.29	4292.11	4221.85	31.54	OSF1.50	12190.00	8767.98					MinPt-CICI	
4443.93	234.75	4285.55	4209.17	28.88	OSF1.50	12700.00	8768.13					MINPT-O-EQU	
4446.03	237.36	4285.95	4208.67	28.38	OSF1.50	12770.00	8768.15					MinPt-O-ADP	
4455.88	251.14	4287.42	4204.54	26.87	OSF1.50	13000.00	8768.22					MINPT-O-EQU	
4462.10	303.85	4258.70	4158.25	22.20	OSF1.50	13220.00	8768.30					MinPts	
4471.91	305.07	4267.69	4166.83	22.16	OSF1.50	13420.00	8768.36					MinPt-O-SF	
6930.04	241.82	6768.00	6686.23	43.42	OSF1.50	18404.55	8770.00					TD	

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

Report Date:

October 01, 2018 - 02:05 PM

Client:

Cimarex

Field:

NM Eddy County (NAD 83)

Structure / Slot:

Cimarex Scoter 6-31 Federal Com 44H / Cimarex Scoter 6-31 Federal Com 44H

Well:

Cimarex Scoter 6-31 Federal Com 44H

Borehole:

Original

UWI / API#:

Unknown / Unknown

Survey Date:

October 01, 2018

Tort / AHD / DDH / ERD Ratio:

95.862' / 1850.768 ft / 6.299 / 1.128

Coordinate Reference System:

NAD83 New Mexico State Plane, Eastern Zone, US Feet

Location Lat / Long:

N 32° 9' 10.39706"; W 104° 13' 19.28571"

CRS Grid Convergence Angle:

N 419372.800 RUS; E 575786.390 RUS

Grid Scale Factor:

0.0592 °

Version / Patch:

0.99991045

2.10.740.0

Survey / DLS Computation:

Minimum Curvature / Lubinski

Vertical Section Azimuth:

0.000 ° (Grid North)

TVD Reference Datum:

RKB

TVD Reference Elevation:

3359.200 ft above MSL

Seabed / Ground Elevation:

3333.200 ft above MSL

Magnetic Declination:

7.340 °

Total Gravity Field Strength:

998.4320mgn (9.80665 Based)

Gravity Model:

GARM

Total Magnetic Field Strength:

47881.991 nT

Magnetic Dip Angle:

59.841 °

Declination Date:

October 01, 2018

Magnetic Declination Model:

HOGM 2018

North Reference:

Grid North

Grid Convergence Used:

0.0592 °

Total Corr Mag North->Grid North:

7.2806 °

Local Coord Referenced To:

Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS C/100ft	Northing (RUS)	Easting (RUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL 3556 FSL, 320' FELI	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	100.00	0.00	330.68	100.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	200.00	0.00	330.68	200.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	300.00	0.00	330.68	300.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	400.00	0.00	330.68	400.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	500.00	0.00	330.68	500.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	600.00	0.00	330.68	600.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	700.00	0.00	330.68	700.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	800.00	0.00	330.68	800.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	900.00	0.00	330.68	900.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
Saliado (Top Salt)	1000.00	0.00	330.68	1000.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	1100.00	0.00	330.68	1100.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	1200.00	0.00	330.68	1200.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	1300.00	0.00	330.68	1300.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	1394.00	0.00	330.68	1394.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	1400.00	0.00	330.68	1400.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	1500.00	0.00	330.68	1500.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	1600.00	0.00	330.68	1600.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	1700.00	0.00	330.68	1700.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	1800.00	0.00	330.68	1800.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
Castille (Base Salt)	1900.00	0.00	330.68	1900.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	1908.00	0.00	330.68	1908.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	2000.00	0.00	330.68	2000.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	2100.00	0.00	330.68	2100.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	2116.00	0.00	330.68	2116.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	2200.00	0.00	330.68	2200.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	2300.00	0.00	330.68	2300.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	2400.00	0.00	330.68	2400.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	2500.00	0.00	330.68	2500.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	2600.00	0.00	330.68	2600.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
Cherry Canyon	2700.00	0.00	330.68	2700.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	2800.00	0.00	330.68	2800.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	2808.00	0.00	330.68	2808.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	2900.00	0.00	330.68	2900.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	3000.00	0.00	330.68	3000.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	3088.00	0.00	330.68	3088.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	3100.00	0.00	330.68	3100.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	3200.00	0.00	330.68	3200.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	3300.00	0.00	330.68	3300.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	3400.00	0.00	330.68	3400.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
Brushy Canyon	3500.00	0.00	330.68	3500.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	3600.00	0.00	330.68	3600.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	3700.00	0.00	330.68	3700.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	3800.00	0.00	330.68	3800.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	3900.00	0.00	330.68	3900.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	4000.00	0.00	330.68	4000.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	4066.00	0.00	330.68	4066.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	4100.00	0.00	330.68	4100.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	4200.00	0.00	330.68	4200.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	4300.00	0.00	330.68	4300.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
Top Bone Spring	4400.00	0.00	330.68	4400.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	4500.00	0.00	330.68	4500.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	4600.00	0.00	330.68	4600.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	4700.00	0.00	330.68	4700.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	4800.00	0.00	330.68	4800.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	4900.00	0.00	330.68	4900.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	5000.00	0.00	330.68	5000.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	5100.00	0.00	330.68	5100.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	5200.00	0.00	330.68	5200.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	5300.00	0.00	330.68	5300.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"

Comments	MD	Incl	Azim Gnd	TVD	VSEC	NS	EW	DLS	Northng	Easting	Latitude	Longitude
Top 1st BSPG	6542.00	0.00	330.68	6542.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32	9 10.39 W 104 13 19.27
SS												
Top 2nd BSPG	7010.00	0.00	330.68	7010.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32	9 10.39 W 104 13 19.27
SS												
KOP - Build	8200.00	0.00	330.68	8200.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32	9 10.39 W 104 13 19.27
127100' DLS	8300.00	8.82	330.68	8226.48	0.00	0.00	4.92	0.00	419372.80	575786.39	N 32	9 10.39 W 104 13 19.27
Top 3rd BSPS	8300.00	16.24	330.68	8299.71	0.00	0.00	4.92	0.00	419373.72	575783.62	N 32	9 10.44 W 104 13 19.30
SS												
Build & Turn	8500.00	32.82	330.68	8485.28	0.00	66.46	-37.33	12.00	419439.25	575749.07	N 32	9 11.05 W 104 13 19.44
127100' DLS	8518.15	35.00	330.68	8500.35	75.29	75.29	-42.29	12.00	419448.08	575744.11	N 32	9 11.13 W 104 13 19.76
Top Wolcamp	8600.00	42.85	330.68	8564.03	122.04	83.01	-122.04	12.00	419494.83	575722.10	N 32	9 11.60 W 104 13 20.20
8600.00	42.85	330.68	8630.89	8630.89	139.43	-83.01	-139.43	12.00	419566.27	575703.39	N 32	9 12.30 W 104 13 20.33
8800.00	63.96	334.59	8683.00	8683.00	279.78	-95.56	-279.78	12.00	419650.50	575691.03	N 32	9 13.14 W 104 13 20.37
8802.30	64.21	334.72	8684.00	8684.00	279.78	-95.56	-279.78	12.00	419652.56	575690.84	N 32	9 13.16 W 104 13 20.37
8900.00	74.99	339.75	8718.06	8718.06	371.07	-99.83	-371.07	12.00	419743.84	575688.57	N 32	9 14.06 W 104 13 20.42
Build 47110'	8900.50	75.00	339.77	8718.19	371.55	-99.83	-371.55	12.00	419744.31	575688.56	N 32	9 14.06 W 104 13 20.42
DLS	8900.00	78.98	339.77	8740.59	468.48	-100.22	-468.48	4.00	419841.24	575688.18	N 32	9 15.02 W 104 13 20.43
Wolcamp V' SS	9068.02	81.70	339.77	8752.00	535.52	-100.49	-535.52	4.00	419908.28	575685.91	N 32	9 15.68 W 104 13 20.43
Wolcamp V' SS	9100.00	82.98	339.77	8756.26	567.22	-100.62	-567.22	4.00	419958.78	575685.78	N 32	9 16.00 W 104 13 20.43
Landng Point	9200.00	86.88	339.77	8765.01	666.82	-101.02	-666.82	4.00	420039.56	575685.38	N 32	9 16.99 W 104 13 20.43
Wolcamp V' SS	9275.02	89.98	339.77	8767.00	741.81	-101.32	-741.81	4.00	420114.58	575685.08	N 32	9 17.73 W 104 13 20.44
Target												
9300.00	89.98	339.77	8767.01	766.78	766.78	-101.42	-766.78	0.00	420139.51	575684.98	N 32	9 17.98 W 104 13 20.44
9500.00	89.98	339.77	8767.04	866.78	966.78	-102.22	-966.78	0.00	420239.50	575684.58	N 32	9 18.97 W 104 13 20.44
9600.00	89.98	339.77	8767.11	1066.78	1066.78	-102.63	-1066.78	0.00	420439.48	575683.77	N 32	9 20.94 W 104 13 20.45
9700.00	89.98	339.77	8767.14	1166.78	1166.78	-103.03	-1166.78	0.00	420539.47	575683.47	N 32	9 21.93 W 104 13 20.45
9800.00	89.98	339.77	8767.17	1266.78	1266.78	-103.43	-1266.78	0.00	420639.46	575682.97	N 32	9 22.92 W 104 13 20.46
9900.00	89.98	339.77	8767.21	1366.78	1366.78	-103.83	-1366.78	0.00	420739.45	575682.57	N 32	9 23.91 W 104 13 20.46
10000.00	89.98	339.77	8767.24	1466.78	1466.78	-104.23	-1466.78	0.00	420839.44	575682.17	N 32	9 24.90 W 104 13 20.46
10100.00	89.98	339.77	8767.27	1566.77	1566.77	-104.63	-1566.77	0.00	420939.43	575681.77	N 32	9 25.89 W 104 13 20.46
10200.00	89.98	339.77	8767.30	1666.77	1666.77	-105.03	-1666.77	0.00	421039.42	575681.37	N 32	9 26.88 W 104 13 20.47
10300.00	89.98	339.77	8767.34	1766.77	1766.77	-105.44	-1766.77	0.00	421139.41	575680.96	N 32	9 27.87 W 104 13 20.47
10400.00	89.98	339.77	8767.37	1866.77	1866.77	-105.84	-1866.77	0.00	421239.40	575680.56	N 32	9 28.86 W 104 13 20.47
10500.00	89.98	339.77	8767.40	1966.77	1966.77	-106.24	-1966.77	0.00	421339.39	575680.16	N 32	9 29.85 W 104 13 20.48
10600.00	89.98	339.77	8767.44	2066.77	2066.77	-106.64	-2066.77	0.00	421439.38	575679.76	N 32	9 30.84 W 104 13 20.48
10700.00	89.98	339.77	8767.47	2166.77	2166.77	-107.04	-2166.77	0.00	421539.37	575679.36	N 32	9 31.83 W 104 13 20.48
10800.00	89.98	339.77	8767.53	2266.77	2266.77	-107.44	-2266.77	0.00	421639.36	575678.96	N 32	9 32.82 W 104 13 20.49
10900.00	89.98	339.77	8767.55	2366.77	2366.77	-107.84	-2366.77	0.00	421739.35	575678.56	N 32	9 33.81 W 104 13 20.49
11000.00	89.98	339.77	8767.57	2466.77	2466.77	-108.25	-2466.77	0.00	421839.34	575678.15	N 32	9 34.80 W 104 13 20.50
11100.00	89.98	339.77	8767.60	2566.77	2566.77	-108.65	-2566.77	0.00	421939.33	575677.75	N 32	9 35.79 W 104 13 20.50
11200.00	89.98	339.77	8767.63	2666.77	2666.77	-109.05	-2666.77	0.00	422039.32	575677.35	N 32	9 36.78 W 104 13 20.51
11300.00	89.98	339.77	8767.67	2766.77	2766.77	-109.45	-2766.77	0.00	422139.31	575676.95	N 32	9 37.77 W 104 13 20.51
11400.00	89.98	339.77	8767.70	2866.76	2866.76	-109.85	-2866.76	0.00	422239.30	575676.55	N 32	9 38.76 W 104 13 20.51
11500.00	89.98	339.77	8767.73	2966.76	2966.76	-110.25	-2966.76	0.00	422339.29	575676.15	N 32	9 39.75 W 104 13 20.51
11600.00	89.98	339.77	8767.76	3066.76	3066.76	-110.65	-3066.76	0.00	422439.28	575675.75	N 32	9 40.73 W 104 13 20.52
11700.00	89.98	339.77	8767.80	3166.76	3166.76	-111.06	-3166.76	0.00	422539.27	575675.34	N 32	9 41.72 W 104 13 20.52
11800.00	89.98	339.77	8767.83	3266.76	3266.76	-111.46	-3266.76	0.00	422639.26	575674.94	N 32	9 42.71 W 104 13 20.52
11900.00	89.98	339.77	8767.86	3366.76	3366.76	-111.86	-3366.76	0.00	422739.25	575674.54	N 32	9 43.70 W 104 13 20.53
12000.00	89.98	339.77	8767.89	3466.76	3466.76	-112.26	-3466.76	0.00	422839.24	575674.14	N 32	9 44.69 W 104 13 20.53
12100.00	89.98	339.77	8767.93	3566.76	3566.76	-112.66	-3566.76	0.00	422939.23	575673.74	N 32	9 45.68 W 104 13 20.53
12200.00	89.98	339.77	8767.96	3666.76	3666.76	-113.06	-3666.76	0.00	423039.22	575673.34	N 32	9 46.67 W 104 13 20.54
12300.00	89.98	339.77	8767.99	3766.76	3766.76	-113.47	-3766.76	0.00	423139.21	575672.94	N 32	9 47.66 W 104 13 20.54
12400.00	89.98	339.77	8768.02	3866.76	3866.76	-113.87	-3866.76	0.00	423239.20	575672.53	N 32	9 48.65 W 104 13 20.54
12500.00	89.98	339.77	8768.06	3966.76	3966.76	-114.27	-3966.76	0.00	423339.19	575672.13	N 32	9 49.64 W 104 13 20.55
12600.00	89.98	339.77	8768.09	4066.75	4066.75	-114.67	-4066.75	0.00	423439.18	575671.73	N 32	9 50.63 W 104 13 20.55
12700.00	89.98	339.77	8768.13	4166.75	4166.75	-115.07	-4166.75	0.00	423539.17	575671.33	N 32	9 51.62 W 104 13 20.56
12800.00	89.98	339.77	8768.16	4266.75	4266.75	-115.47	-4266.75	0.00	423639.16	575670.93	N 32	9 52.61 W 104 13 20.56
12900.00	89.98	339.77	8768.22	4366.75	4366.75	-115.87	-4366.75	0.00	423739.15	575670.53	N 32	9 53.60 W 104 13 20.56
13000.00	89.98	339.77	8768.26	4466.75	4466.75	-116.28	-4466.75	0.00	423839.14	575670.13	N 32	9 54.59 W 104 13 20.57
13100.00	89.98	339.77	8768.29	4566.75	4566.75	-116.68	-4566.75	0.00	423939.13	575669.73	N 32	9 55.58 W 104 13 20.57
13200.00	89.98	339.77	8768.36	4666.75	4666.75	-117.08	-4666.75	0.00	424039.12	575669.32	N 32	9 56.57 W 104 13 20.57
13300.00	89.98	339.77	8768.39	4766.75	4766.75	-117.48	-4766.75	0.00	424139.11	575668.92	N 32	9 57.56 W 104 13 20.57
13400.00	89.98	339.77	8768.39	4866.75	4866.75	-117.88	-4866.75	0.00	424239.10	575668.52	N 32	9 58.55 W 104 13 20.58
13500.00	89.98	339.77	8768.42	4966.75	4966.75	-118.28	-4966.75	0.00	424339.09	575668.12	N 32	9 59.54 W 104 13 20.58
13600.00	89.98	339.77	8768.45	5066.75	5066.75	-118.68	-5066.75	0.00	424439.08	575667.72	N 32	9 10.52 W 104 13 20.59
13700.00	89.98	339.77	8768.48	5166.75	5166.75	-119.09	-5166.75	0.00	424539.07	575667.32	N 32	9 11.51 W 104 13 20.59
13800.00	89.98	339.77	8768.49	5266.74	5266.74	-119.49	-5266.74	0.00	424639.06	575666.91	N 32	9 12.50 W 104 13 20.59
13900.00	89.98	339.77	8768.52	5366.74	5366.74	-119.89	-5366.74	0.00	424739.05	575666.51	N 32	9 13.49 W 104 13 20.59
14000.00	89.98	339.77	8768.55	5466.74	5466.74	-120.29	-5466.74	0.00	424839.04	575666.11	N 32	9 14.48 W 104 13 20.60
14100.00	89.98	339.77	8768.58	5566.74	5566.74	-120.69	-5566.74	0.00	424939.03	575665.71	N 32	9 15.47 W 104 13 20.60
14200.00	89.98	339.77	8768.62	5666.74	5666.74	-121.09	-5666.74	0.00	425039.02	575665.31	N 32	9 16.46 W 104 13 20.61
14300.00	89.98	339.77	8768.65	5766.74	5766.74	-121.49	-5766.74	0.00	425139.01	575664.91	N 32	9 17.45 W 104 13 20.61
14400.00	89.98	339.77	8768.68	5866.74	5866.74	-121.90	-5866.74	0.00	425239.00	575664.51	N 32	9 18.44 W 104 13 20.61
14500.00	89.98	339.77	8768.72	5966.74	5966.74	-122.30	-5966.74	0.00	425339.99	575664.10	N 32	9 19.43 W 104 13 20.62
14600.00	89.98	339.77	8768.75	6066.74	6066.74	-122.70	-6066.74	0.00	425439.98	575663.70	N 32	9 20.42 W 104 13 20.62
14700.00	89.98	339.77	8768.78	6166.74	6166.74	-123.10	-6166.74	0.00	425539.97	575663		

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 ° ' ")
	15700.00	89.98	359.77	8769.11	7166.73	7166.73	-127.11	0.00	426538.87	575659.29	N 32 10 21.30	W 104 13 20.66
	15800.00	89.98	359.77	8769.14	7266.73	7266.73	-127.52	0.00	426638.86	575658.89	N 32 10 22.29	W 104 13 20.66
	15900.00	89.98	359.77	8769.18	7366.73	7366.73	-127.92	0.00	426738.85	575658.48	N 32 10 23.28	W 104 13 20.67
	16000.00	89.98	359.77	8769.21	7466.73	7466.73	-128.32	0.00	426838.84	575658.08	N 32 10 24.27	W 104 13 20.67
	16100.00	89.98	359.77	8769.24	7566.73	7566.73	-128.72	0.00	426938.83	575657.68	N 32 10 25.26	W 104 13 20.67
	16200.00	89.98	359.77	8769.28	7666.73	7666.73	-129.12	0.00	427038.82	575657.28	N 32 10 26.25	W 104 13 20.68
	16300.00	89.98	359.77	8769.31	7766.72	7766.72	-129.52	0.00	427138.81	575656.88	N 32 10 27.24	W 104 13 20.68
	16400.00	89.98	359.77	8769.34	7866.72	7866.72	-129.93	0.00	427238.80	575656.48	N 32 10 28.23	W 104 13 20.68
	16500.00	89.98	359.77	8769.37	7966.72	7966.72	-130.33	0.00	427338.79	575656.08	N 32 10 29.22	W 104 13 20.69
	16600.00	89.98	359.77	8769.41	8066.72	8066.72	-130.73	0.00	427438.78	575655.67	N 32 10 30.21	W 104 13 20.69
	16700.00	89.98	359.77	8769.44	8166.72	8166.72	-131.13	0.00	427538.77	575655.27	N 32 10 31.20	W 104 13 20.69
	16800.00	89.98	359.77	8769.47	8266.72	8266.72	-131.53	0.00	427638.76	575654.87	N 32 10 32.19	W 104 13 20.70
	16900.00	89.98	359.77	8769.51	8366.72	8366.72	-131.93	0.00	427738.75	575654.47	N 32 10 33.18	W 104 13 20.70
	17000.00	89.98	359.77	8769.54	8466.72	8466.72	-132.33	0.00	427838.74	575654.07	N 32 10 34.17	W 104 13 20.70
	17100.00	89.98	359.77	8769.57	8566.72	8566.72	-132.74	0.00	427938.73	575653.67	N 32 10 35.16	W 104 13 20.71
	17200.00	89.98	359.77	8769.60	8666.72	8666.72	-133.14	0.00	428038.72	575653.27	N 32 10 36.15	W 104 13 20.71
	17300.00	89.98	359.77	8769.64	8766.72	8766.72	-133.54	0.00	428138.71	575652.86	N 32 10 37.14	W 104 13 20.71
	17400.00	89.98	359.77	8769.67	8866.72	8866.72	-133.94	0.00	428238.70	575652.46	N 32 10 38.13	W 104 13 20.72
	17500.00	89.98	359.77	8769.70	8966.71	8966.71	-134.34	0.00	428338.69	575652.06	N 32 10 39.12	W 104 13 20.72
	17600.00	89.98	359.77	8769.74	9066.71	9066.71	-134.74	0.00	428438.68	575651.66	N 32 10 40.11	W 104 13 20.73
	17700.00	89.98	359.77	8769.77	9166.71	9166.71	-135.14	0.00	428538.67	575651.26	N 32 10 41.10	W 104 13 20.73
	17800.00	89.98	359.77	8769.80	9266.71	9266.71	-135.55	0.00	428638.66	575650.86	N 32 10 42.08	W 104 13 20.73
	17900.00	89.98	359.77	8769.83	9366.71	9366.71	-135.95	0.00	428738.65	575650.46	N 32 10 43.07	W 104 13 20.74
	18000.00	89.98	359.77	8769.87	9466.71	9466.71	-136.35	0.00	428838.64	575650.05	N 32 10 44.06	W 104 13 20.74
	18100.00	89.98	359.77	8769.90	9566.71	9566.71	-136.75	0.00	428938.63	575649.65	N 32 10 45.05	W 104 13 20.74
	18200.00	89.98	359.77	8769.93	9666.71	9666.71	-137.15	0.00	429038.62	575649.25	N 32 10 46.04	W 104 13 20.75
	18300.00	89.98	359.77	8769.97	9766.71	9766.71	-137.55	0.00	429138.61	575648.85	N 32 10 47.03	W 104 13 20.75
	18400.00	89.98	359.77	8770.00	9866.71	9866.71	-137.95	0.00	429238.60	575648.45	N 32 10 48.02	W 104 13 20.75
Cimarex Scoter 6-31 Federal Com 44H - PBHL (330' FNL, 380' FEL)	18404.55	89.98	359.77	8770.00	9871.25	9871.25	-137.97	0.00	429243.15	575648.43	N 32 10 48.07	W 104 13 20.75

Survey Type: Def Plan

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

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	26.000	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS-Depth Only	Original / Cimarex Scoter 6-31 Federal Com 44H Rev3 RM 01Oct18
	1	26.000	18404.546	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS	Original / Cimarex Scoter 6-31 Federal Com 44H Rev3 RM

Cimarex Scoter 6-31 Federal Com 44H Rev3 RM 01Oct18 Proposal Geodetic Report

(Def Plan)



Report Date: October 01, 2018 - 02:05 PM
 Client: Cimarex
 Field: NM Eddy County (NAD 83)
 Structure / Slot: Cimarex Scoter 6-31 Federal Com 44H / Cimarex Scoter 6-31 Federal Com 44H
 Well: Cimarex Scoter 6-31 Federal Com 44H
 Borehole: Original
 UWI / API#: Unknown / Unknown
 Survey Name: Cimarex Scoter 6-31 Federal Com 44H Rev3 RM 01Oct18
 Survey Date: October 01, 2018
 Tort / AHD / DDI / ERD Ratio: 95.862' / 8890.768 ft / 6.299 / 1.128
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 9' 10.38706", W 104° 13' 19.26671"
 Location Grid N/E Y/X: N 419372.800 RUS, E 575786.390 RUS
 CRS Grid Convergence Angle: 0.0592°
 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: 3359.200 ft above MSL
 Seabed / Ground Elevation: 3333.200 ft above MSL
 Magnetic Declination: 7.340°
 Total Gravity Field Strength: 998.4320mgn (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 47881.991 nT
 Magnetic Dip Angle: 59.841°
 Declination Date: October 01, 2018
 Magnetic Declination Model: HDGM 2018
 North Reference: Grid North
 Grid Convergence Used: 0.0592°
 Total Corr Mag North→Grid North: 7.2806°
 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 (3656' FSL, 320' FEL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
KOP - Build 12"/100' DLS	8226.48	0.00	330.68	8226.48	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32° 9' 10.39"	W 104° 13' 19.27"
Build & Turn 12"/100' DLS	8518.15	35.00	330.68	8500.35	75.29	75.29	-42.29	12.00	419448.08	575744.11	N 32° 9' 11.13"	W 104° 13' 19.76"
Build 4"/100' DLS	8900.50	75.00	359.77	8718.19	371.55	371.55	-99.83	12.00	419744.31	575686.56	N 32° 9' 14.06"	W 104° 13' 20.42"
Landing Point Cimarex Scoter 6-31 Federal Com 44H - PBHL (330' FNL, 380' FEL)	9275.02	89.98	359.77	8767.00	741.81	741.81	-101.32	4.00	420114.54	575685.08	N 32° 9' 17.73"	W 104° 13' 20.44"
	18404.55	89.98	359.77	8770.00	9871.25	9871.25	-137.97	0.00	429243.15	575648.43	N 32° 10' 48.07"	W 104° 13' 20.75"

Survey Type: Def Plan

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

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	26.000	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS-Depth Only	Original / Cimarex Scoter 6-31 Federal Com 44H Rev3 RM 01Oct18
	1	26.000	18404.546	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS	Original / Cimarex Scoter 6-31 Federal Com 44H Rev3 RM