

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010**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.*OCD Hobbs
HOBBS OCD

DEC 02 2013

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		8. Well Name and No. CASCADE 29 FEDERAL 4H
2. Name of Operator CIMAREX ENERGY COMPANY		9. API Well No. 30-025-41242
3a. Address 600 N MARIENFELD STE 600 MIDLAND, TX 79701		10. Field and Pool, or Exploratory WILDCAT BONE SPRING
3b. Phone No. (include area code) Ph: 432-571-7848		11. County or Parish, and State LEA COUNTY, NM
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 29 T25S R33E NENE 330FNL 735FEL		

12. CHECK 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	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	PD

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall 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 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

Cimarex Energy respectfully requests approval to change the BHL & TD for the Cascade 29 Federal 4H well as follows:

Approved
BHL: 330 FSL & 380 FEL, Sec 29-25S-33E
TD: 15131 MD, 10666 TVD
Target: 2nd Bone Spring

Proposed
BHL: 330 FSL & 330 FEL, Sec 29-25S-33E
TD: 14312 MD, 9875 TVD
Target: Avalon

14. I hereby certify that the foregoing is true and correct. Electronic Submission #224730 verified by the BLM Well Information System For CIMAREX ENERGY COMPANY, sent to the Hobbs Committed to AFMSS for processing by DEBORAH HAM on 10/30/2013 ()		
Name (Printed/Typed) PAULA BRUNSON	Title REGULATORY ANALYST	
Signature (Electronic Submission)	Date 10/29/2013	APPROVED NOV 26 2013 /s/ Chris Walls BUREAU OF LAND MANAGEMENT
THIS SPACE FOR FEDERAL OR STATE OFFICE USE		
Approved By _____	Title _____	
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.		

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

DEC 02 2013

Additional data for EC transaction #224730 that would not fit on the form

32. Additional remarks, continued

A revised C102 and directional plan are attached for review and approval.

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone (505) 393-6181 Fax: (505) 393-0720

DISTRICT II
811 S. First St., Artesia, NM 88210
Phone (505) 748-1283 Fax: (505) 748-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 834-6178 Fax: (505) 834-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax: (505) 476-3462

HOBBS OCD

DEC 02 2013

RECEIVED

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025-41242	Pool Code	Pool Name Wildcat Bone Spring
Property Code	Property Name CASCADE 29 FEDERAL	Well Number 4H
GRID No. 215099	Operator Name CIMAREX ENERGY CO.	Elevation 3397'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	29	25 S	33 E		330	NORTH	735	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	29	25 S	33 E		330	SOUTH	330	EAST	LEA

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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

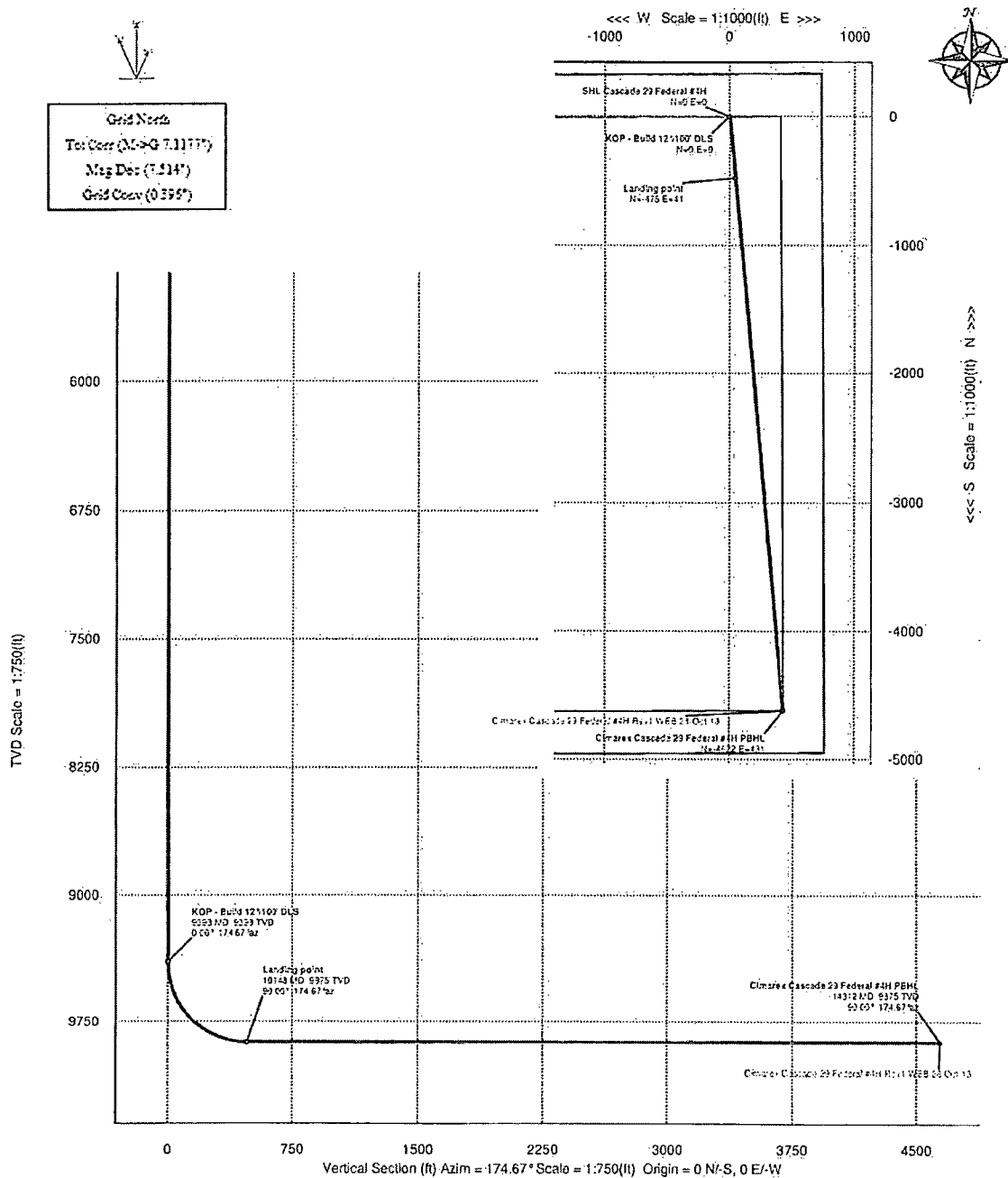
N 401096.2 E 767514.7 (NAD 83)	SURFACE LOCATION Lat - N 32°06'28.51" Long - W 103°35'17.31" NMSPC - N 403795.1 E 772070.0 (NAD-83)	3397.1' 3394.0' S.L. 735' 3397.0' 3395.4' N 404126.7 E 772802.7 (NAD 83)	OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete 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. <i>Paula Brunson</i> 10/28/2013 Signature Date Paula Brunson Printed Name pbrunson@cimarex.com Email Address
N 401457.3 E 767531.1 (NAD 83)		NMNM026394	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. 2012 Seal of Professional Surveyor 26258
N 393017.5 E 767548.3 (NAD 83)	PROPOSED BOTTOM HOLE LOCATION Lat - N 32°05'42.75" Long - W 103°35'12.67" NMSPC - N 399173.6 E 772500.8 (NAD-83)	B.H. 330' 330' N 393045.4 E 772832.4 (NAD 83)	Certificate No. Gary L. Jones 7977 BASIN SURVEYS 26258



Cimarex

PATHFINDER
A Schlumberger Company

Well: Cascade 29 Federal #4H				FIELD: NM Lea County				STRUCTURE: TBD			
Operator: Pathfinder	Company: 80090073	Co: 405021	City: 405021	State: NM	County: Lea	Field: NM Lea County	Well: Cascade 29 Federal #4H	Structure: TBD	Operator: Pathfinder	Company: 80090073	Co: 405021



Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL Cascade 29 Federal #4H	0.00	0.00	174.67	0.00	0.00	0.00	0.00	
KOP - Build 12 1/2:100 DLS	9397.50	0.00	174.67	9397.50	0.00	0.00	0.00	0.00
Landing point	10147.56	90.00	174.67	9875.00	477.50	-475.44	44.31	12.00
Cimarex Cascade 29 Federal #4H PBHL	14311.74	90.00	174.67	9875.00	4641.68	-4621.65	430.81	0.00



Cimarex Cascade 29 Federal #4H Rev1 WEB 28-Oct-13 Proposal Report 100'



Interpolated

(Non-Def Plan)

HOBBS OCD

DEC 02 2013

RECEIVED

Report Date: October 28, 2013 - 11:47 AM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: TBD / Cimarex Cascade 29 Federal #4H
Well: Cimarex Cascade 29 Federal #4H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Cascade 29 Federal #4H Rev1 WEB 28-Oct-13
Survey Date: November 08, 2012
Tort / AHD / DDI / ERD Ratio: 90.001 * / 4641.684 ft / 5.782 / 0.470
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 6' 28.51040", W 103° 35' 17.30879"
Location Grid N/E/Y/X: N 403795.100 ftUS, E 772070.000 ftUS
CRS Grid Convergence Angle: 0.3961 *
Grid Scale Factor: 0.99997007

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 174.674 * (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: Ground Level
TVD Reference Elevation: 3397.000 ft above MSL
Seabed / Ground Elevation: 3397.000 ft above MSL
Magnetic Declination: 7.514 *
Total Gravity Field Strength: 998.4783mgm (9.80665 Based)
Total Magnetic Field Strength: 48391.408 nT
Magnetic Dip Angle: 60.000 *
Declination Date: November 08, 2012
Magnetic Declination Model: BGGM 2012
North Reference: Grid North
Grid Convergence Used: 0.3961 *
Total Corr Mag North->Grid North: 7.1177 *
Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Closure (ft)	Closure Azimuth (°)	DLS (*/100ft)
SHL Cascade 29 Federal #4H	0.00	0.00	174.67	0.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	N/A
	100.00	0.00	174.67	100.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	200.00	0.00	174.67	200.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	300.00	0.00	174.67	300.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	400.00	0.00	174.67	400.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	500.00	0.00	174.67	500.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	600.00	0.00	174.67	600.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	700.00	0.00	174.67	700.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	800.00	0.00	174.67	800.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	900.00	0.00	174.67	900.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	1000.00	0.00	174.67	1000.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	1100.00	0.00	174.67	1100.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	1200.00	0.00	174.67	1200.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	1300.00	0.00	174.67	1300.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	1400.00	0.00	174.67	1400.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	1500.00	0.00	174.67	1500.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	1600.00	0.00	174.67	1600.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	1700.00	0.00	174.67	1700.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	1800.00	0.00	174.67	1800.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	1900.00	0.00	174.67	1900.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	2000.00	0.00	174.67	2000.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	2100.00	0.00	174.67	2100.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	2200.00	0.00	174.67	2200.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	2300.00	0.00	174.67	2300.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	2400.00	0.00	174.67	2400.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	2500.00	0.00	174.67	2500.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	2600.00	0.00	174.67	2600.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	2700.00	0.00	174.67	2700.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00
	2800.00	0.00	174.67	2800.00	0.00	0.00	0.00	403795.10	772070.00	N 32° 6' 28.51"	W 103° 35' 17.31"	0.00	0.00	0.00

10/28/2013 1:18 PM Page 2 of 4

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')	Closure (ft)	Closure Azimuth (°)	DLS (*/100ft)
	8400.00	0.00	174.67	8400.00	0.00	0.00	0.00	403795.10	772070.00	N 32 6 28.51	W 103 35 17.31	0.00	0.00	0.00
	8500.00	0.00	174.67	8500.00	0.00	0.00	0.00	403795.10	772070.00	N 32 6 28.51	W 103 35 17.31	0.00	0.00	0.00
	8600.00	0.00	174.67	8600.00	0.00	0.00	0.00	403795.10	772070.00	N 32 6 28.51	W 103 35 17.31	0.00	0.00	0.00
	8700.00	0.00	174.67	8700.00	0.00	0.00	0.00	403795.10	772070.00	N 32 6 28.51	W 103 35 17.31	0.00	0.00	0.00
	8800.00	0.00	174.67	8800.00	0.00	0.00	0.00	403795.10	772070.00	N 32 6 28.51	W 103 35 17.31	0.00	0.00	0.00
	8900.00	0.00	174.67	8900.00	0.00	0.00	0.00	403795.10	772070.00	N 32 6 28.51	W 103 35 17.31	0.00	0.00	0.00
	9000.00	0.00	174.67	9000.00	0.00	0.00	0.00	403795.10	772070.00	N 32 6 28.51	W 103 35 17.31	0.00	0.00	0.00
	9100.00	0.00	174.67	9100.00	0.00	0.00	0.00	403795.10	772070.00	N 32 6 28.51	W 103 35 17.31	0.00	0.00	0.00
	9200.00	0.00	174.67	9200.00	0.00	0.00	0.00	403795.10	772070.00	N 32 6 28.51	W 103 35 17.31	0.00	0.00	0.00
	9300.00	0.00	174.67	9300.00	0.00	0.00	0.00	403795.10	772070.00	N 32 6 28.51	W 103 35 17.31	0.00	0.00	0.00
KOP - Build 12"/100' DLS	9397.50	0.00	174.67	9397.50	0.00	0.00	0.00	403795.10	772070.00	N 32 6 28.51	W 103 35 17.31	0.00	0.00	0.00
	9400.00	0.30	174.67	9400.00	0.01	-0.01	0.00	403795.09	772070.00	N 32 6 28.51	W 103 35 17.31	0.01	174.67	12.00
	9500.00	12.30	174.67	9499.21	10.96	-10.91	1.02	403784.19	772071.02	N 32 6 28.40	W 103 35 17.30	10.96	174.67	12.00
	9600.00	24.30	174.67	9593.98	42.30	-42.12	3.93	403752.99	772073.93	N 32 6 28.09	W 103 35 17.27	42.30	174.67	12.00
	9700.00	36.30	174.67	9680.17	92.66	-92.26	8.60	403702.85	772078.60	N 32 6 27.60	W 103 35 17.22	92.66	174.67	12.00
	9800.00	48.30	174.67	9754.00	159.83	-159.14	14.83	403635.96	772084.83	N 32 6 26.93	W 103 35 17.15	159.83	174.67	12.00
	9900.00	60.30	174.67	9812.25	240.89	-239.85	22.36	403555.26	772092.35	N 32 6 26.14	W 103 35 17.07	240.89	174.67	12.00
	10000.00	72.29	174.67	9852.38	332.28	-330.85	30.84	403464.26	772100.84	N 32 6 25.23	W 103 35 16.98	332.28	174.67	12.00
	10100.00	84.29	174.67	9872.63	430.02	-428.17	39.91	403366.95	772109.91	N 32 6 24.27	W 103 35 16.88	430.02	174.67	12.00
	10147.56	90.00	174.67	9875.00	477.50	-475.44	44.31	403319.68	772114.31	N 32 6 23.80	W 103 35 16.83	477.50	174.67	12.00
	10200.00	90.00	174.67	9875.00	529.94	-527.66	49.18	403267.46	772119.18	N 32 6 23.29	W 103 35 16.78	529.94	174.67	0.00
	10300.00	90.00	174.67	9875.00	629.94	-627.23	58.46	403167.89	772128.46	N 32 6 22.30	W 103 35 16.68	629.94	174.67	0.00
	10400.00	90.00	174.67	9875.00	729.94	-726.79	67.74	403068.33	772137.74	N 32 6 21.31	W 103 35 16.58	729.94	174.67	0.00
	10500.00	90.00	174.67	9875.00	829.94	-826.36	77.02	402968.76	772147.02	N 32 6 20.33	W 103 35 16.48	829.94	174.67	0.00
	10600.00	90.00	174.67	9875.00	929.94	-925.93	86.30	402869.20	772156.30	N 32 6 19.34	W 103 35 16.38	929.94	174.67	0.00
	10700.00	90.00	174.67	9875.00	1029.94	-1025.50	95.58	402769.63	772165.58	N 32 6 18.36	W 103 35 16.28	1029.94	174.67	0.00
	10800.00	90.00	174.67	9875.00	1129.94	-1125.07	104.87	402670.07	772174.86	N 32 6 17.37	W 103 35 16.18	1129.94	174.67	0.00
	10900.00	90.00	174.67	9875.00	1229.94	-1224.64	114.15	402570.50	772184.14	N 32 6 16.38	W 103 35 16.08	1229.94	174.67	0.00
	11000.00	90.00	174.67	9875.00	1329.94	-1324.20	123.43	402470.94	772193.42	N 32 6 15.40	W 103 35 15.98	1329.94	174.67	0.00
	11100.00	90.00	174.67	9875.00	1429.94	-1423.77	132.71	402371.37	772202.70	N 32 6 14.41	W 103 35 15.88	1429.94	174.67	0.00
	11200.00	90.00	174.67	9875.00	1529.94	-1523.34	141.99	402271.81	772211.98	N 32 6 13.43	W 103 35 15.78	1529.94	174.67	0.00
	11300.00	90.00	174.67	9875.00	1629.94	-1622.91	151.27	402172.24	772221.27	N 32 6 12.44	W 103 35 15.68	1629.94	174.67	0.00
	11400.00	90.00	174.67	9875.00	1729.94	-1722.48	160.55	402072.68	772230.55	N 32 6 11.46	W 103 35 15.58	1729.94	174.67	0.00
	11500.00	90.00	174.67	9875.00	1829.94	-1822.05	169.83	401973.11	772239.83	N 32 6 10.47	W 103 35 15.48	1829.94	174.67	0.00
	11600.00	90.00	174.67	9875.00	1929.94	-1921.62	179.11	401873.55	772249.11	N 32 6 9.48	W 103 35 15.38	1929.94	174.67	0.00
	11700.00	90.00	174.67	9875.00	2029.94	-2021.18	188.39	401773.98	772258.39	N 32 6 8.50	W 103 35 15.28	2029.94	174.67	0.00
	11800.00	90.00	174.67	9875.00	2129.94	-2120.75	197.68	401674.42	772267.67	N 32 6 7.51	W 103 35 15.18	2129.94	174.67	0.00
	11900.00	90.00	174.67	9875.00	2229.94	-2220.32	206.96	401574.85	772276.95	N 32 6 6.53	W 103 35 15.08	2229.94	174.67	0.00
	12000.00	90.00	174.67	9875.00	2329.94	-2319.89	216.24	401475.28	772286.23	N 32 6 5.54	W 103 35 14.98	2329.94	174.67	0.00
	12100.00	90.00	174.67	9875.00	2429.94	-2419.46	225.52	401375.72	772295.51	N 32 6 4.55	W 103 35 14.88	2429.94	174.67	0.00
	12200.00	90.00	174.67	9875.00	2529.94	-2519.03	234.80	401276.16	772304.79	N 32 6 3.57	W 103 35 14.78	2529.94	174.67	0.00
	12300.00	90.00	174.67	9875.00	2629.94	-2618.59	244.08	401176.59	772314.08	N 32 6 2.58	W 103 35 14.68	2629.94	174.67	0.00
	12400.00	90.00	174.67	9875.00	2729.94	-2718.16	253.36	401077.02	772323.36	N 32 6 1.60	W 103 35 14.58	2729.94	174.67	0.00
	12500.00	90.00	174.67	9875.00	2829.94	-2817.73	262.65	400977.46	772332.64	N 32 6 0.61	W 103 35 14.48	2829.94	174.67	0.00
	12600.00	90.00	174.67	9875.00	2929.94	-2917.30	271.93	400877.89	772341.92	N 32 5 59.62	W 103 35 14.38	2929.94	174.67	0.00
	12700.00	90.00	174.67	9875.00	3029.94	-3016.87	281.21	400778.33	772351.20	N 32 5 58.64	W 103 35 14.28	3029.94	174.67	0.00
	12800.00	90.00	174.67	9875.00	3129.94	-3116.44	290.49	400678.76	772360.48	N 32 5 57.65	W 103 35 14.18	3129.94	174.67	0.00
	12900.00	90.00	174.67	9875.00	3229.94	-3216.00	299.77	400579.20	772369.76	N 32 5 56.67	W 103 35 14.08	3229.94	174.67	0.00
	13000.00	90.00	174.67	9875.00	3329.94	-3315.57	309.06	400479.63	772379.06	N 32 5 55.68	W 103 35 13.98	3329.94	174.67	0.00
	13100.00	90.00	174.67	9875.00	3429.94	-3415.14	318.34	400380.07	772388.33	N 32 5 54.70	W 103 35 13.88	3429.94	174.67	0.00
	13200.00	90.00	174.67	9875.00	3529.94	-3514.71	327.62	400280.50	772397.61	N 32 5 53.71	W 103 35 13.78	3529.94	174.67	0.00
	13300.00	90.00	174.67	9875.00	3629.94	-3614.28	336.90	400180.94	772406.89	N 32 5 52.72	W 103 35 13.68	3629.94	174.67	0.00
	13400.00	90.00	174.67	9875.00	3729.94	-3713.85	346.18	400081.37	772416.17	N 32 5 51.74	W 103 35 13.58	3729.94	174.67	0.00
	13500.00	90.00	174.67	9875.00	3829.94	-3813.41	355.47	399981.81	772425.45	N 32 5 50.75	W 103 35 13.48	3829.94	174.67	0.00

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")	Closure (ft)	Closure Azimuth (°)	DLS ("/100ft)
	13600.00	90.00	174.67	9875.00	3929.94	-3912.98	364.75	399882.24	772434.74	N 32 5 49.77	W 103 35 13.38	3929.94	174.67	0.00
	13700.00	90.00	174.67	9875.00	4029.94	-4012.55	374.03	399782.68	772444.02	N 32 5 48.78	W 103 35 13.28	4029.94	174.67	0.00
	13800.00	90.00	174.67	9875.00	4129.94	-4112.12	383.31	399683.11	772453.30	N 32 5 47.79	W 103 35 13.18	4129.94	174.67	0.00
	13900.00	90.00	174.67	9875.00	4229.94	-4211.69	392.59	399583.55	772462.58	N 32 5 46.81	W 103 35 13.08	4229.94	174.67	0.00
	14000.00	90.00	174.67	9875.00	4329.94	-4311.25	401.88	399483.98	772471.86	N 32 5 45.82	W 103 35 12.98	4329.94	174.67	0.00
	14100.00	90.00	174.67	9875.00	4429.94	-4410.82	411.16	399384.42	772481.15	N 32 5 44.84	W 103 35 12.88	4429.94	174.67	0.00
	14200.00	90.00	174.67	9875.00	4529.94	-4510.39	420.44	399284.85	772490.43	N 32 5 43.85	W 103 35 12.78	4529.94	174.67	0.00
	14300.00	90.00	174.67	9875.00	4629.94	-4609.96	429.72	399185.29	772499.71	N 32 5 42.86	W 103 35 12.68	4629.94	174.67	0.00
Cimarex Cascade 29 Federal #4H PBHL	14311.74	90.00	174.67	9875.00	4641.68	-4621.65	430.81	399173.60	772500.80	N 32 5 42.75	W 103 35 12.67	4641.68	174.67	0.00

Survey Type: Non-Def Plan

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

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	14311.739	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Cascade 29 Federal #4H Rev1