

AAPD

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs

FORM 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. **HOBBS OCD****SUBMIT IN TRIPLICATE - Other instructions on reverse side.**

DEC 02 2013

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		8. Well Name and No. CASCADE 29 FEDERAL 5H
2. Name of Operator CIMAREX ENERGY COMPANY		9. API Well No. 30-025-41243
3a. Address 600 N MARIENFELD STE 600 MIDLAND, TX 79701		10. Field and Pool, or Exploratory BONE SPRING WILDCAT
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 NWNW 330FNL 500FWL		

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, and pilot hole for the Cascade 29 Federal 5H well as follows:

Approved
BHL: 330 FSL & 970 FWL, Sec 29-25S-33E
TD: 15122 MD, 10664 TVD
Pilot Hole TD: 12294
Target: 2nd Bone Spring

Proposed
BHL: 330 FSL & 1210 FWL, Sec 29-25S-33E
TD: 14312 MD, 9875 TVD

**UNORTHODOX
LOCATION****SUBJECT TO LIKE
APPROVAL BY STATE**

KR
**CAN NOT PRODUCE
UNTIL NSL APPROVED
REQUIRES ADMINISTRATIVE
APPROVAL NSL FROM
SANTA FE**

14. I hereby certify that the foregoing is true and correct.	
Electronic Submission #224732 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

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By _____	Title _____	APPROVED NOV 26 2013 /s/ Chris Walls BUREAU OF LAND MANAGEMENT CARLSBAD FIELD OFFICE
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 #224732 that would not fit on the form

32. Additional remarks, continued

Pilot Hole TD: We no longer plan to drill a pilot hole on this well.
Target: Avalon

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

DISTRICT I
1825 N. French Dr., Hobbs, NM 88240

DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

HOBBS OCD

DEC 02 2013

RECEIVED

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised October 15, 2009

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 30-025-41243	Pool Code	Pool Name Wildcat Bone Spring
Property Code	Property Name CASCADE 29 FEDERAL	Well Number 5H
OGRID No. 215099	Operator Name CIMAREX ENERGY CO.	Elevation 3423'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	29	25 S	33 E		330	NORTH	500	WEST	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
M	29	25 S	33 E		330	SOUTH	1210	WEST	LEA
Dedicated Acres 160	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

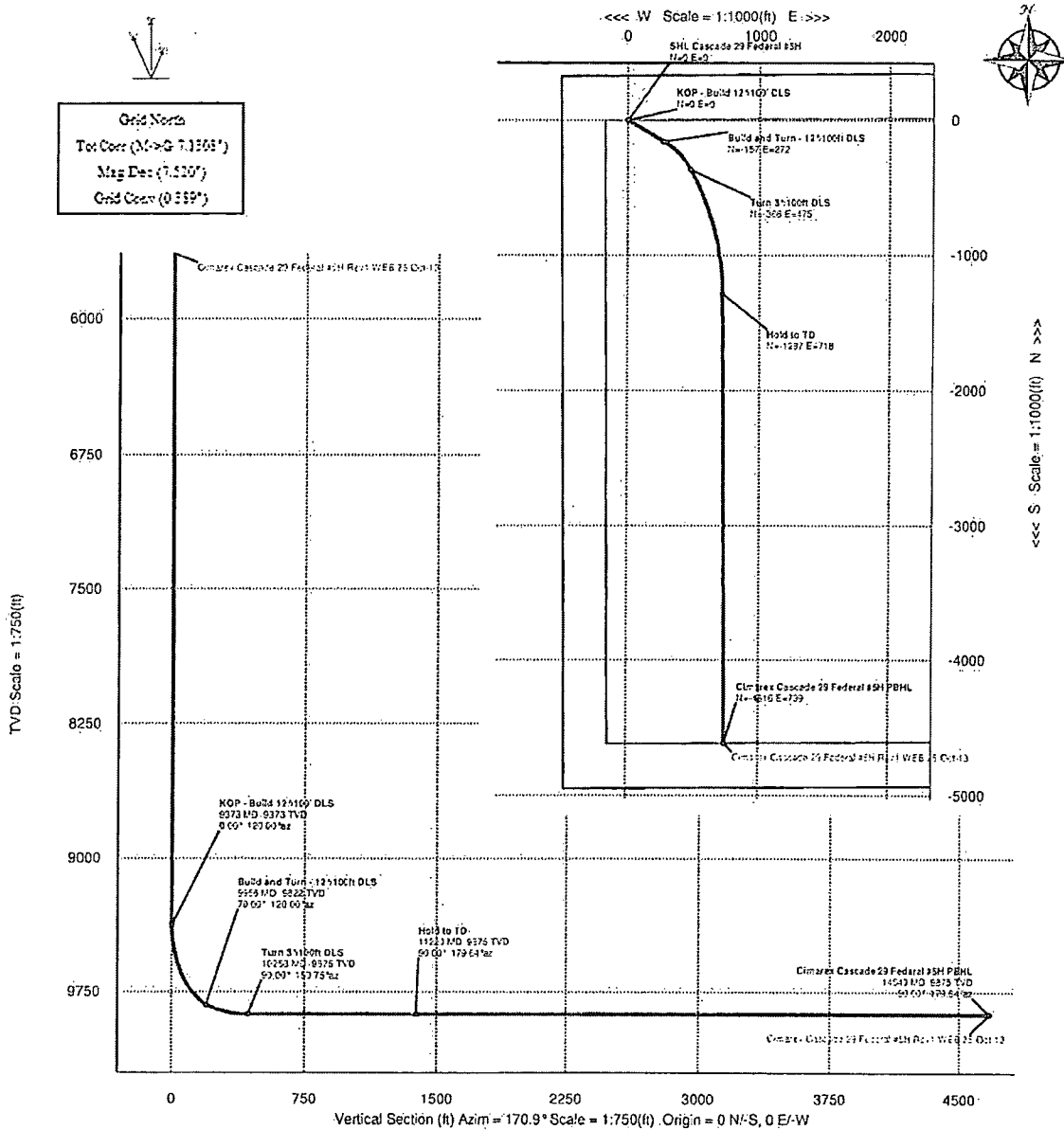
SURFACE LOCATION Lot - N 32°06'28.53" Long - W 103°36'04.43" NMSPCE - N 403769.7 E 768016.7 (NAD-83) PROPOSED BOTTOM HOLE LOCATION Lot - N 32°05'42.81" Long - W 103°35'56.20" NMSPCE - N 399153.9 E 768756.1 (NAD-83)	OPERATOR CERTIFICATION I hereby certify that the information contained herein is true 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> Paula Brunson 10/28/2013 Signature Date pbrunson@cimarex.com Printed Name 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. Date Surveyed 10/22/2011 Signature and Seal of Professional Surveyor Certificate No. Gary L. Jones 7977 BASIN SURVEYS
--	--



Cimarex

PATHFINDER
 A Schlumberger Company

WELL	Cascade 29 Federal #5H	FIELD	NM Lea County	STATUS	TBD
Top of Formation	1500'	Top of Formation	1500'	Top of Formation	1500'
1500'	1500'	1500'	1500'	1500'	1500'



Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+) / S(-)	E(+) / W(-)	DLS
SHL Cascade 29 Federal #5H	0.00	0.00	120.00	0.00	0.00	0.00	0.00	
KOP - Build 12°/100' DLS	9373.04	0.00	120.00	9373.04	0.00	0.00	0.00	0.00
Build and Turn - 12°/100' DLS	9821.71	70.00	120.00	9821.71	198.14	-157.08	272.07	12.00
Turn 3°/100' DLS	10257.59	90.00	150.75	9875.00	436.75	-366.23	475.00	12.00
Hold to TD	11220.43	90.00	179.64	9875.00	1384.71	-1287.27	718.48	3.00
Cimarex Cascade 29 Federal #5H PBHL	14549.19	90.00	179.64	9875.00	4674.81	-4615.96	739.43	0.00



Cimarex Cascade 29 Federal #5H Rev1 WEB 25-Oct-13 Proposal Report 100'
Interpolated
(Non-Def Plan)



Report Date: October 28, 2013 - 01:53 PM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: TBD / Cimarex Cascade 29 Federal #5H
Well: Cimarex Cascade 29 Federal #5H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Cascade 29 Federal #5H Rev1 WEB 25-Oct-13
Survey Date: November 08, 2012
Tort / AHD / DDI / ERD Ratio: 135.034 * / 4900.655 ft / 5.989 / 0.496
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 6' 28.53391", W 103° 36' 4.43456"
Location Grid N/E Y/X: N 403769.700 RUS, E 768016.700 RUS
CRS Grid Convergence Angle: 0.3891 *
Grid Scale Factor: 0.99996794

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 170.899 * (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: Ground Level
TVD Reference Elevation: 3423.000 ft above MSL
Seabed / Ground Elevation: 3423.000 ft above MSL
Magnetic Declination: 7.520 *
Total Gravity Field Strength: 998.4758mgn (9.80665 Based)
Total Magnetic Field Strength: 48389.634 nT
Magnetic Dip Angle: 59.998 *
Declination Date: November 08, 2012
Magnetic Declination Model: BGGM 2012
North Reference: Grid North
Grid Convergence Used: 0.3891 *
Total Corr Mag North->Grid North: 7.1308 *
Local Coord Referenced To: Structure Reference Point

HOBBES OCD

DEC 02 2013

RECEIVED

Comments	MD (ft)	Incl (°)	Azlm 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 #5H	0.00	0.00	120.00	0.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	N/A
	100.00	0.00	120.00	100.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	200.00	0.00	120.00	200.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	300.00	0.00	120.00	300.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	400.00	0.00	120.00	400.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	500.00	0.00	120.00	500.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	600.00	0.00	120.00	600.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	700.00	0.00	120.00	700.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	800.00	0.00	120.00	800.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	900.00	0.00	120.00	900.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	1000.00	0.00	120.00	1000.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	1100.00	0.00	120.00	1100.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	1200.00	0.00	120.00	1200.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	1300.00	0.00	120.00	1300.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	1400.00	0.00	120.00	1400.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	1500.00	0.00	120.00	1500.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	1600.00	0.00	120.00	1600.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	1700.00	0.00	120.00	1700.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	1800.00	0.00	120.00	1800.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	1900.00	0.00	120.00	1900.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	2000.00	0.00	120.00	2000.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	2100.00	0.00	120.00	2100.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	2200.00	0.00	120.00	2200.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	2300.00	0.00	120.00	2300.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	2400.00	0.00	120.00	2400.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	2500.00	0.00	120.00	2500.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	2600.00	0.00	120.00	2600.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	2700.00	0.00	120.00	2700.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	2800.00	0.00	120.00	2800.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	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 (ft/100ft)
	2900.00	0.00	120.00	2900.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	3000.00	0.00	120.00	3000.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	3100.00	0.00	120.00	3100.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	3200.00	0.00	120.00	3200.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	3300.00	0.00	120.00	3300.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	3400.00	0.00	120.00	3400.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	3500.00	0.00	120.00	3500.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	3600.00	0.00	120.00	3600.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	3700.00	0.00	120.00	3700.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	3800.00	0.00	120.00	3800.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	3900.00	0.00	120.00	3900.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	4000.00	0.00	120.00	4000.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	4100.00	0.00	120.00	4100.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	4200.00	0.00	120.00	4200.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	4300.00	0.00	120.00	4300.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	4400.00	0.00	120.00	4400.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	4500.00	0.00	120.00	4500.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	4600.00	0.00	120.00	4600.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	4700.00	0.00	120.00	4700.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	4800.00	0.00	120.00	4800.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	4900.00	0.00	120.00	4900.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	5000.00	0.00	120.00	5000.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	5100.00	0.00	120.00	5100.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	5200.00	0.00	120.00	5200.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	5300.00	0.00	120.00	5300.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	5400.00	0.00	120.00	5400.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	5500.00	0.00	120.00	5500.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	5600.00	0.00	120.00	5600.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	5700.00	0.00	120.00	5700.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	5800.00	0.00	120.00	5800.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	5900.00	0.00	120.00	5900.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	6000.00	0.00	120.00	6000.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	6100.00	0.00	120.00	6100.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	6200.00	0.00	120.00	6200.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	6300.00	0.00	120.00	6300.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	6400.00	0.00	120.00	6400.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	6500.00	0.00	120.00	6500.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	6600.00	0.00	120.00	6600.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	6700.00	0.00	120.00	6700.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	6800.00	0.00	120.00	6800.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	6900.00	0.00	120.00	6900.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	7000.00	0.00	120.00	7000.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	7100.00	0.00	120.00	7100.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	7200.00	0.00	120.00	7200.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	7300.00	0.00	120.00	7300.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	7400.00	0.00	120.00	7400.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	7500.00	0.00	120.00	7500.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	7600.00	0.00	120.00	7600.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	7700.00	0.00	120.00	7700.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	7800.00	0.00	120.00	7800.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	7900.00	0.00	120.00	7900.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	8000.00	0.00	120.00	8000.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	8100.00	0.00	120.00	8100.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	8200.00	0.00	120.00	8200.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	8300.00	0.00	120.00	8300.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	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)
	8400.00	0.00	120.00	8400.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	8500.00	0.00	120.00	8500.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	8600.00	0.00	120.00	8600.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	8700.00	0.00	120.00	8700.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	8800.00	0.00	120.00	8800.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	8900.00	0.00	120.00	8900.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	9000.00	0.00	120.00	9000.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	9100.00	0.00	120.00	9100.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	9200.00	0.00	120.00	9200.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	9300.00	0.00	120.00	9300.00	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
KOP - Build 12"/100' DLS	9373.04	0.00	120.00	9373.04	0.00	0.00	0.00	403769.70	768016.70	N 32 6 28.53	W 103 36 4.43	0.00	0.00	0.00
	9400.00	3.24	120.00	9399.99	0.48	-0.38	0.66	403769.32	768017.36	N 32 6 28.53	W 103 36 4.43	0.76	120.00	12.00
	9500.00	15.24	120.00	9498.51	10.58	-8.39	14.53	403761.31	768031.23	N 32 6 28.45	W 103 36 4.27	16.78	120.00	12.00
	9600.00	27.24	120.00	9591.55	33.38	-26.47	45.84	403743.23	768062.54	N 32 6 28.27	W 103 36 3.90	52.93	120.00	12.00
	9700.00	39.24	120.00	9675.04	67.89	-53.82	93.22	403715.88	768109.92	N 32 6 28.00	W 103 36 3.36	107.64	120.00	12.00
	9800.00	51.24	120.00	9745.33	112.59	-89.26	154.60	403680.45	768171.29	N 32 6 27.64	W 103 36 2.64	178.51	120.00	12.00
	9900.00	63.24	120.00	9799.35	165.52	-131.22	227.29	403638.48	768243.98	N 32 6 27.22	W 103 36 1.80	262.45	120.00	12.00
Build and Turn - 12"/100ft DLS	9956.37	70.00	120.00	9821.71	198.14	-157.08	272.07	403612.62	768288.76	N 32 6 26.96	W 103 36 1.28	314.16	120.00	12.00
	10000.00	72.67	124.75	9835.88	225.51	-179.22	306.98	403590.49	768323.65	N 32 6 26.74	W 103 36 0.88	355.44	120.28	12.00
	10100.00	79.17	135.16	9860.06	298.71	-241.47	381.07	403528.24	768397.76	N 32 6 26.12	W 103 36 0.02	451.14	122.36	12.00
	10200.00	86.00	145.11	9872.99	383.79	-317.49	444.46	403452.23	768461.15	N 32 6 25.36	W 103 35 59.29	546.21	125.54	12.00
Turn 3"/100ft DLS	10257.59	90.00	150.75	9875.00	436.75	-366.23	475.00	403403.48	768491.68	N 32 6 24.88	W 103 35 58.94	599.79	127.63	12.00
	10300.00	90.00	152.02	9875.00	476.72	-403.46	495.31	403366.25	768511.99	N 32 6 24.51	W 103 35 58.71	638.84	129.16	3.00
	10400.00	90.00	155.02	9875.00	572.15	-492.96	539.89	403276.76	768556.57	N 32 6 23.62	W 103 35 58.20	731.09	132.40	3.00
	10500.00	90.00	158.02	9875.00	669.01	-584.67	579.73	403165.05	768596.41	N 32 6 22.71	W 103 35 57.74	823.36	135.24	3.00
	10600.00	90.00	161.02	9875.00	767.03	-678.34	614.71	403091.38	768631.38	N 32 6 21.78	W 103 35 57.34	915.43	137.62	3.00
	10700.00	90.00	164.02	9875.00	865.95	-773.71	644.74	402996.01	768661.41	N 32 6 20.83	W 103 35 57.00	1007.13	140.20	3.00
	10800.00	90.00	167.02	9875.00	965.50	-870.53	669.73	402899.20	768696.41	N 32 6 19.87	W 103 35 56.72	1098.34	142.43	3.00
	10900.00	90.00	170.02	9875.00	1065.40	-968.52	689.63	402801.22	768706.31	N 32 6 18.90	W 103 35 56.49	1188.95	144.55	3.00
	11000.00	90.00	173.02	9875.00	1165.39	-1067.41	704.37	402702.32	768721.05	N 32 6 17.92	W 103 35 56.33	1278.87	146.58	3.00
	11100.00	90.00	176.02	9875.00	1265.18	-1166.94	713.92	402602.80	768730.59	N 32 6 16.94	W 103 35 56.23	1368.00	148.54	3.00
	11200.00	90.00	179.02	9875.00	1364.50	-1266.84	718.24	402502.90	768734.91	N 32 6 15.95	W 103 35 56.18	1456.28	150.45	3.00
Hold to TD	11220.43	90.00	179.64	9875.00	1384.71	-1287.27	718.48	402482.47	768735.15	N 32 6 15.75	W 103 35 56.18	1474.20	150.83	3.00
	11300.00	90.00	179.64	9875.00	1463.35	-1356.84	718.98	402402.91	768735.66	N 32 6 14.96	W 103 35 56.18	1544.40	152.25	0.00
	11400.00	90.00	179.64	9875.00	1562.19	-1466.83	719.62	402302.92	768736.29	N 32 6 13.97	W 103 35 56.18	1633.85	153.87	0.00
	11500.00	90.00	179.64	9875.00	1661.03	-1566.83	720.25	402202.92	768736.93	N 32 6 12.99	W 103 35 56.19	1724.45	155.31	0.00
	11600.00	90.00	179.64	9875.00	1759.87	-1666.83	720.89	402102.93	768737.57	N 32 6 11.99	W 103 35 56.19	1816.04	156.61	0.00
	11700.00	90.00	179.64	9875.00	1858.71	-1766.83	721.52	402002.93	768738.20	N 32 6 11.00	W 103 35 56.19	1908.48	157.79	0.00
	11800.00	90.00	179.64	9875.00	1957.55	-1866.83	722.16	401902.94	768738.83	N 32 6 10.01	W 103 35 56.19	2001.64	158.85	0.00
	11900.00	90.00	179.64	9875.00	2056.39	-1966.82	722.79	401802.94	768739.47	N 32 6 9.02	W 103 35 56.19	2095.43	159.82	0.00
	12000.00	90.00	179.64	9875.00	2155.23	-2066.82	723.43	401702.95	768740.10	N 32 6 8.03	W 103 35 56.19	2189.77	160.71	0.00
	12100.00	90.00	179.64	9875.00	2254.07	-2166.82	724.06	401602.95	768740.73	N 32 6 7.04	W 103 35 56.19	2284.59	161.52	0.00
	12200.00	90.00	179.64	9875.00	2352.91	-2266.82	724.69	401502.95	768741.37	N 32 6 6.05	W 103 35 56.19	2379.84	162.27	0.00
	12300.00	90.00	179.64	9875.00	2451.75	-2366.82	725.32	401402.96	768742.00	N 32 6 5.07	W 103 35 56.19	2475.46	162.96	0.00
	12400.00	90.00	179.64	9875.00	2550.59	-2466.81	725.96	401302.97	768742.63	N 32 6 4.08	W 103 35 56.19	2571.42	163.60	0.00
	12500.00	90.00	179.64	9875.00	2649.43	-2566.81	726.59	401202.98	768743.26	N 32 6 3.09	W 103 35 56.19	2667.67	164.19	0.00
	12600.00	90.00	179.64	9875.00	2748.26	-2666.81	727.22	401102.98	768743.89	N 32 6 2.10	W 103 35 56.19	2764.19	164.75	0.00
	12700.00	90.00	179.64	9875.00	2847.10	-2766.81	727.85	401002.99	768744.52	N 32 6 1.11	W 103 35 56.19	2860.94	165.26	0.00
	12800.00	90.00	179.64	9875.00	2945.94	-2866.81	728.48	400902.99	768745.15	N 32 6 0.12	W 103 35 56.19	2957.91	165.74	0.00
	12900.00	90.00	179.64	9875.00	3044.78	-2966.80	729.11	400803.00	768745.78	N 32 5 59.13	W 103 35 56.19	3055.08	166.19	0.00
	13000.00	90.00	179.64	9875.00	3143.62	-3066.80	729.74	400703.00	768746.41	N 32 5 58.14	W 103 35 56.19	3152.43	166.82	0.00
	13100.00	90.00	179.64	9875.00	3242.46	-3166.80	730.36	400603.01	768747.04	N 32 5 57.15	W 103 35 56.19	3249.83	167.01	0.00
	13200.00	90.00	179.64	9875.00	3341.30	-3266.80	730.99	400503.01	768747.67	N 32 5 56.16	W 103 35 56.20	3347.58	167.39	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)
	13300.00	90.00	179.64	9875.00	3440.14	-3366.80	731.62	400403.02	768748.30	N 32 5 55.17	W 103 35 56.20	3445.37	167.74	0.00
	13400.00	90.00	179.64	9875.00	3538.97	-3466.79	732.25	400303.02	768748.92	N 32 5 54.18	W 103 35 56.20	3543.28	168.07	0.00
	13500.00	90.00	179.64	9875.00	3637.81	-3566.79	732.87	400203.03	768749.55	N 32 5 53.19	W 103 35 56.20	3641.31	168.39	0.00
	13600.00	90.00	179.64	9875.00	3736.65	-3666.79	733.50	400103.03	768750.18	N 32 5 52.20	W 103 35 56.20	3739.43	168.69	0.00
	13700.00	90.00	179.64	9875.00	3835.49	-3766.79	734.13	400003.04	768750.80	N 32 5 51.21	W 103 35 56.20	3837.66	168.97	0.00
	13800.00	90.00	179.64	9875.00	3934.33	-3866.79	734.75	399903.05	768751.43	N 32 5 50.22	W 103 35 56.20	3935.97	169.24	0.00
	13900.00	90.00	179.64	9875.00	4033.16	-3966.78	735.38	399803.05	768752.05	N 32 5 49.23	W 103 35 56.20	4034.37	169.50	0.00
	14000.00	90.00	179.64	9875.00	4132.00	-4066.78	736.00	399703.06	768752.68	N 32 5 48.24	W 103 35 56.20	4132.85	169.74	0.00
	14100.00	90.00	179.64	9875.00	4230.84	-4166.78	736.63	399603.06	768753.30	N 32 5 47.25	W 103 35 56.20	4231.39	169.97	0.00
	14200.00	90.00	179.64	9875.00	4329.68	-4266.78	737.25	399503.07	768753.93	N 32 5 46.26	W 103 35 56.20	4330.00	170.20	0.00
	14300.00	90.00	179.64	9875.00	4428.52	-4366.78	737.87	399403.07	768754.55	N 32 5 45.27	W 103 35 56.20	4428.68	170.41	0.00
	14400.00	90.00	179.64	9875.00	4527.35	-4466.77	738.50	399303.08	768755.17	N 32 5 44.28	W 103 35 56.20	4527.41	170.61	0.00
	14500.00	90.00	179.64	9875.00	4626.19	-4566.77	739.12	399203.08	768755.79	N 32 5 43.30	W 103 35 56.20	4626.20	170.81	0.00
Cimarex Cascade 29 Federal #5H PBHL	14549.19	90.00	179.64	9875.00	4674.81	-4615.96	739.43	399153.90	768756.10	N 32 5 42.81	W 103 35 56.20	4674.81	170.90	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	14549.186	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Cascade 29 Federal #5H Rev1