

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs

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.

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

5. Lease Serial No.
NMNM0392082A

6. If Indian, Allottee or Tribe Name

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

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

CIMAREX ENERGY COMPANY OF CO

Contact: DEYSI FAVELA
E-Mail: dfavela@cimarex.com

3a. Address

600 NORTH MARIENFELD STREET, SUITE 600
MIDLAND, TX 79701

3b. Phone No. (include area code)

Ph: 432-620-1964

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

Sec 4 T26S R32E NWNE 0330FNL 2570FEL
32.044348 N Lat, 103.404722 W Lon

8. Well Name and No.
HALLERTAU 4 FEDERAL 9H

9. API Well No.
30-025-41878-00-X1

10. Field and Pool, or Exploratory
JENNINGS

11. County or Parish, and State

LEA COUNTY, NM

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 APD
	☐ 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 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 Company respectfully requests to make the following changes:

Surface Casing

13-3/8" 48# H-40 Surface casing to Hybrid 13-3/8" 48# J-55

Designed for tension with a 1.8 design factor with effects of buoyancy in 8.30 ppg fluid

Designed for collapse with a 1.125 design factor with full internal evacuation and a collapse force equal to a 8.30 ppg mud gradient.

Designed for Burst with a 1.125 design factor with a surface pressure equal to the fracture gradient at a setting depth less a gas gradient to surface.

Longstring cement *Production string*

Lead: 650 sks Tuned Light system @ 10.8 ppg Yield, 2.77 Yield, 17.08 gal/sack

*Keep 9-5/8" casing fluid filled
per original COAs.*

Original COAs still stand.

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

Electronic Submission #251252 verified by the BLM Well Information System

For CIMAREX ENERGY COMPANY OF CO, sent to the Hobbs

Committed to AFMSS for processing by CHRISTOPHER WALLS on 07/08/2014 (14CRW0189SE)

Name (Printed/Typed) DEYSI FAVELA

Title DRILLING TECHNICIAN

Signature

(Electronic Submission)

Date 06/30/2014

APPROVED

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

BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD 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.

** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED **

JUL 15 2014

Additional data for EC transaction #251252 that would not fit on the form

32. Additional remarks, continued

Tail: 1300 sks VersaCem System @ 14.5 ppg Yield, 1.2 cuft/sk, 5.3 Water gal/sack
Excess: 31%

BHL and TVD

Approved

BHL 330' FSL and 2570' FEL

KOP 8653'

EOC 9395'

MD 13599'

TVD 9102'

Proposed

BHL 330' FSL and 2467' FEL

KOP 8796'

EOC 9821'

MD 13866'

TVD 9440'

HOBBS OCD

JUL 14 2014

DISTRICT I

1025 N. French Dr., Hobbs, NM 88240
Phone (505) 393-6101 Fax (505) 393-6720

DISTRICT II

611 S. First St., Artesia, NM 88210
Phone (505) 718-1623 Fax (505) 748-9720

DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 891-6178 Fax (505) 891-6170

DISTRICT IV

1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3400 Fax (505) 476-3402State of New Mexico
Energy, Minerals and Natural Resources DepartmentForm C-102
Revised August 1, 2011Submit one copy to appropriate
District OfficeOIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

AMENDED REPORT

API Number 30-025-41878	Pool Code	Pool Name Jennings; BS Upper Shale
Property Code	Property Name HALLERTAU 4 FEDERAL	Well Number 9H
GRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 3304'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
LOT 2	4	26 S	32 E		330	NORTH	2570	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
N	4	26 S	32 E		330	SOUTH	2467	EAST	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

N: 393301.8 E: 741002.0 NAD83 SURFACE LOCATION Lat - N 32°04'43.48" Long - W 103°40'47.22" NMSPEC - N 392895.1 E 743769.7 (NAD-83) LOT 4	N: 393324.8 E: 743888.8 NAD83 LOT 3	N: 393348.4 E: 746328.0 NAD83 LOT 2	N: 393371.8 E: 746351.0 NAD83 LOT 1	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 undivided 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. Signature: <u>Deysi Favela</u> Date: <u>6/30/2014</u> Printed Name: <u>Deysi Favela</u> Email Address: <u>dfavela@cimarex.com</u>	
N: 390628.0 E: 741022.8 NAD83	NMNM1114978			N: 390676.8 E: 746351.0 NAD83	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: <u>NOV 2013</u> Signature of Professional Surveyor: <u>[Signature]</u> Certificate No. <u>7977</u> BASIN SURVEY
N: 387857.8 E: 741044.8 NAD83	PROPOSED BOTTOM HOLE LOCATION Lat - N 32°03'57.11" Long - W 103°40'45.84" NMSPEC - N 388313.1 E 743906.0 (NAD-83)			N: 388004.8 E: 746378.0 NAD83	SCALE: 1" = 1000' WD Num.: 29504



Cimarex Hallertau 4 Federal #9H Rev1 PCG 26-June-14 Proposal Geodetic Report - 100ft Interpolated (Non-Def Plan)



Report Date: June 26, 2014 - 02:10 PM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Hallertau 4 Federal #9H / Cimarex Hallertau 4 Federal #9H
Well: Cimarex Hallertau 4 Federal #9H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Hallertau 4 Federal #9H Rev1 PCG 26-June-14
Survey Date: June 24, 2014
Tort / AHD / DDI / ERD Ratio: 92.453 ° / 4705.410 ft / 5.806 / 0.498
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 4' 43.45559", W 103° 40' 47.20963"
Location Grid N/E Y/X: N 392995.100 ftUS, E 743759.700 ftUS
CRS Grid Convergence Angle: 0.3471 °
Grid Scale Factor: 0.99995602
Version / Patch: 2.7.1043.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 171.531 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3324.000 ft above MSL
Seabed / Ground Elevation: 3304.000 ft above MSL
Magnetic Declination: 7.409 °
Total Gravity Field Strength: 998.4271mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 48179.829 nT
Magnetic Dip Angle: 59.950 °
Declination Date: June 24, 2014
Magnetic Declination Model: BGGM 2014
North Reference: Grid North
Grid Convergence Used: 0.3471 °
Total Corr Mag North->Grid North: 7.0619 °
Local Coord Referenced To: Structure Reference Point

HOBBS OCD
JUL 14 2014
RECEIVED

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 - Cimarex Hallertau 4 Federal #9H KOP - Build 9°/100ft to 60° Inc	0.00	0.00	167.03	0.00	0.00	0.00	0.00	N/A	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
Build and Turn 9°/100ft	8796.55	0.00	167.03	8796.55	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
Landing Point - 2467' FEL Cimarex Hallertau 4 Federal #9H - Ref Point	9463.22	60.00	167.03	9347.88	317.33	-310.19	71.45	9.00	392684.93	743831.14	N 32 4 40.38	W 103 40 46.40
	9821.91	90.00	179.55	9440.00	658.84	-649.92	108.71	9.00	392345.21	743868.40	N 32 4 37.02	W 103 40 45.99
	9906.52	90.00	179.55	9440.00	742.62	-734.52	109.38	0.00	392260.61	743869.07	N 32 4 36.18	W 103 40 45.99
Cimarex Hallertau 4 Federal #9H - PBHL - 2467' FEL	13866.58	90.00	179.38	9440.00	4664.79	-4694.42	146.43	0.00	388300.90	743906.12	N 32 3 56.99	W 103 40 45.84

Survey Type: Non-Def Plan

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 ° ' '')
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)	Survey Tool Type	Borehole / Survey
	1	0.000	20.000	1/100.000	30.000	30.000	SLB_MWD-POOR-Depth Only	Original Borehole / Cimarex Hallertau 4 Federal #9H Rev1
	1	20.000	8796.550	1/100.000	30.000	30.000	SLB_MWD-POOR	Original Borehole / Cimarex Hallertau 4 Federal #9H Rev1
	1	8796.550	13866.583	1/100.000	30.000	30.000	SLB_MWD-STD	Original Borehole / Cimarex Hallertau 4 Federal #9H Rev1



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SHL - Cimarex Hallertau 4 Federal #9H	0.00	0.00	167.03	0.00	0.00	0.00	0.00	N/A	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	100.00	0.00	167.03	100.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	200.00	0.00	167.03	200.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	300.00	0.00	167.03	300.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	400.00	0.00	167.03	400.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	500.00	0.00	167.03	500.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	600.00	0.00	167.03	600.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	700.00	0.00	167.03	700.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	800.00	0.00	167.03	800.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	900.00	0.00	167.03	900.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	1000.00	0.00	167.03	1000.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	1100.00	0.00	167.03	1100.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	1200.00	0.00	167.03	1200.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	1300.00	0.00	167.03	1300.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	1400.00	0.00	167.03	1400.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	1500.00	0.00	167.03	1500.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	1600.00	0.00	167.03	1600.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	1700.00	0.00	167.03	1700.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	1800.00	0.00	167.03	1800.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	1900.00	0.00	167.03	1900.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	2000.00	0.00	167.03	2000.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	2100.00	0.00	167.03	2100.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	2200.00	0.00	167.03	2200.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	2300.00	0.00	167.03	2300.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	2400.00	0.00	167.03	2400.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	2500.00	0.00	167.03	2500.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	2600.00	0.00	167.03	2600.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	2700.00	0.00	167.03	2700.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	2800.00	0.00	167.03	2800.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	2900.00	0.00	167.03	2900.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	3000.00	0.00	167.03	3000.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	3100.00	0.00	167.03	3100.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	3200.00	0.00	167.03	3200.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	3300.00	0.00	167.03	3300.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	3400.00	0.00	167.03	3400.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	3500.00	0.00	167.03	3500.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	3600.00	0.00	167.03	3600.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	3700.00	0.00	167.03	3700.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	3800.00	0.00	167.03	3800.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	3900.00	0.00	167.03	3900.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	4000.00	0.00	167.03	4000.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	4100.00	0.00	167.03	4100.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	4200.00	0.00	167.03	4200.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	4300.00	0.00	167.03	4300.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	4400.00	0.00	167.03	4400.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	4500.00	0.00	167.03	4500.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	4600.00	0.00	167.03	4600.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	4700.00	0.00	167.03	4700.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	4800.00	0.00	167.03	4800.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	4900.00	0.00	167.03	4900.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	5000.00	0.00	167.03	5000.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	5100.00	0.00	167.03	5100.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	5200.00	0.00	167.03	5200.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	5300.00	0.00	167.03	5300.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	5400.00	0.00	167.03	5400.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	5500.00	0.00	167.03	5500.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	5600.00	0.00	167.03	5600.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	5700.00	0.00	167.03	5700.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	5800.00	0.00	167.03	5800.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	5900.00	0.00	167.03	5900.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	6000.00	0.00	167.03	6000.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	6100.00	0.00	167.03	6100.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	6200.00	0.00	167.03	6200.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	6300.00	0.00	167.03	6300.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	6400.00	0.00	167.03	6400.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	6500.00	0.00	167.03	6500.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	6600.00	0.00	167.03	6600.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	6700.00	0.00	167.03	6700.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	6800.00	0.00	167.03	6800.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	6900.00	0.00	167.03	6900.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	7000.00	0.00	167.03	7000.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	7100.00	0.00	167.03	7100.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	7200.00	0.00	167.03	7200.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	7300.00	0.00	167.03	7300.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	7400.00	0.00	167.03	7400.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	7500.00	0.00	167.03	7500.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	7600.00	0.00	167.03	7600.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	7700.00	0.00	167.03	7700.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	7800.00	0.00	167.03	7800.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	7900.00	0.00	167.03	7900.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	8000.00	0.00	167.03	8000.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	8100.00	0.00	167.03	8100.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	8200.00	0.00	167.03	8200.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	8300.00	0.00	167.03	8300.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	8400.00	0.00	167.03	8400.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	8500.00	0.00	167.03	8500.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	8600.00	0.00	167.03	8600.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	8700.00	0.00	167.03	8700.00	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
KOP - Build 9°/100ft to 60° Inc	8796.55	0.00	167.03	8796.55	0.00	0.00	0.00	0.00	392995.10	743759.70	N 32 4 43.46	W 103 40 47.21
	8800.00	0.31	167.03	8800.00	0.01	-0.01	0.00	9.00	392995.09	743759.70	N 32 4 43.46	W 103 40 47.21
	8900.00	9.31	167.03	8899.55	8.36	-8.17	1.88	9.00	392986.93	743761.58	N 32 4 43.37	W 103 40 47.19
	9000.00	18.31	167.03	8996.55	32.13	-31.41	7.24	9.00	392963.69	743766.93	N 32 4 43.14	W 103 40 47.13
	9100.00	27.31	167.03	9088.64	70.74	-69.15	15.93	9.00	392925.95	743775.63	N 32 4 42.77	W 103 40 47.03
	9200.00	36.31	167.03	9173.53	123.24	-120.46	27.75	9.00	392874.64	743787.45	N 32 4 42.26	W 103 40 46.90
	9300.00	45.31	167.03	9249.14	188.32	-184.09	42.40	9.00	392811.02	743802.10	N 32 4 41.63	W 103 40 46.73
	9400.00	54.31	167.03	9313.61	264.40	-258.45	59.53	9.00	392736.66	743819.23	N 32 4 40.89	W 103 40 46.54
Build and Turn 9°/100ft	9463.22	60.00	167.03	9347.88	317.33	-310.19	71.45	9.00	392684.93	743831.14	N 32 4 40.38	W 103 40 46.40
	9500.00	63.03	168.54	9365.42	349.59	-341.78	78.28	9.00	392653.33	743837.98	N 32 4 40.07	W 103 40 46.32
	9600.00	71.35	172.27	9404.16	441.65	-432.59	93.54	9.00	392562.53	743853.24	N 32 4 39.17	W 103 40 46.15
	9700.00	79.74	175.65	9429.11	538.29	-528.79	103.67	9.00	392466.33	743863.36	N 32 4 38.22	W 103 40 46.04
	9800.00	88.15	178.86	9439.65	637.13	-628.02	108.40	9.00	392367.11	743868.10	N 32 4 37.23	W 103 40 45.99
Landing Point - 2467' FEL.	9821.91	90.00	179.55	9440.00	658.84	-649.92	108.71	9.00	392345.21	743868.40	N 32 4 37.02	W 103 40 45.99
	9900.00	90.00	179.55	9440.00	736.17	-728.01	109.32	0.00	392267.13	743869.02	N 32 4 36.25	W 103 40 45.99
Cimarex Hallertau 4 Federal #9H - Ref Point	9906.52	90.00	179.55	9440.00	742.62	-734.52	109.38	0.00	392260.61	743869.07	N 32 4 36.18	W 103 40 45.99
	10000.00	90.00	179.54	9440.00	835.19	-828.00	110.12	0.00	392167.13	743869.81	N 32 4 35.26	W 103 40 45.99
	10100.00	90.00	179.54	9439.99	934.22	-928.00	110.92	0.00	392067.14	743870.61	N 32 4 34.27	W 103 40 45.99
	10200.00	90.00	179.54	9439.99	1033.24	-1028.00	111.72	0.00	391967.15	743871.42	N 32 4 33.28	W 103 40 45.98
	10300.00	90.00	179.53	9439.99	1132.27	-1127.99	112.54	0.00	391867.16	743872.23	N 32 4 32.29	W 103 40 45.98
	10400.00	90.00	179.53	9439.98	1231.30	-1227.99	113.36	0.00	391767.17	743873.05	N 32 4 31.30	W 103 40 45.98
	10500.00	90.00	179.52	9439.98	1330.32	-1327.99	114.19	0.00	391667.17	743873.88	N 32 4 30.31	W 103 40 45.98

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 ° ' ")
	10600.00	90.00	179.52	9439.98	1429.35	-1427.98	115.03	0.00	391567.18	743874.72	N 32 4 29.32	W 103 40 45.97
	10700.00	90.00	179.51	9439.98	1528.38	-1527.98	115.87	0.00	391467.19	743875.56	N 32 4 28.33	W 103 40 45.97
	10800.00	90.00	179.51	9439.97	1627.41	-1627.98	116.72	0.00	391367.20	743876.42	N 32 4 27.34	W 103 40 45.97
	10900.00	90.00	179.51	9439.97	1726.45	-1727.97	117.58	0.00	391267.21	743877.27	N 32 4 26.35	W 103 40 45.96
	11000.00	90.00	179.50	9439.97	1825.48	-1827.97	118.45	0.00	391167.21	743878.14	N 32 4 25.36	W 103 40 45.96
	11100.00	90.00	179.50	9439.97	1924.51	-1927.97	119.32	0.00	391067.22	743879.01	N 32 4 24.37	W 103 40 45.96
	11200.00	90.00	179.49	9439.97	2023.55	-2027.96	120.20	0.00	390967.23	743879.90	N 32 4 23.38	W 103 40 45.96
	11300.00	90.00	179.49	9439.97	2122.59	-2127.96	121.09	0.00	390867.24	743880.78	N 32 4 22.39	W 103 40 45.95
	11400.00	90.00	179.48	9439.97	2221.62	-2227.95	121.99	0.00	390767.25	743881.68	N 32 4 21.40	W 103 40 45.95
	11500.00	90.00	179.48	9439.97	2320.66	-2327.95	122.89	0.00	390667.26	743882.58	N 32 4 20.41	W 103 40 45.95
	11600.00	90.00	179.48	9439.96	2419.70	-2427.95	123.80	0.00	390567.27	743883.49	N 32 4 19.42	W 103 40 45.94
	11700.00	90.00	179.47	9439.96	2518.74	-2527.94	124.72	0.00	390467.27	743884.41	N 32 4 18.43	W 103 40 45.94
	11800.00	90.00	179.47	9439.96	2617.78	-2627.94	125.64	0.00	390367.28	743885.34	N 32 4 17.44	W 103 40 45.93
	11900.00	90.00	179.46	9439.96	2716.83	-2727.93	126.58	0.00	390267.29	743886.27	N 32 4 16.45	W 103 40 45.93
	12000.00	90.00	179.46	9439.96	2815.87	-2827.93	127.52	0.00	390167.30	743887.21	N 32 4 15.47	W 103 40 45.93
	12100.00	90.00	179.45	9439.96	2914.91	-2927.92	128.46	0.00	390067.31	743888.16	N 32 4 14.48	W 103 40 45.92
	12200.00	90.00	179.45	9439.96	3013.96	-3027.92	129.42	0.00	389967.32	743889.11	N 32 4 13.49	W 103 40 45.92
	12300.00	90.00	179.45	9439.97	3113.01	-3127.91	130.38	0.00	389867.33	743890.08	N 32 4 12.50	W 103 40 45.91
	12400.00	90.00	179.44	9439.97	3212.05	-3227.91	131.35	0.00	389767.34	743891.05	N 32 4 11.51	W 103 40 45.91
	12500.00	90.00	179.44	9439.97	3311.10	-3327.91	132.33	0.00	389667.35	743892.02	N 32 4 10.52	W 103 40 45.91
	12600.00	90.00	179.43	9439.97	3410.15	-3427.90	133.31	0.00	389567.36	743893.01	N 32 4 9.53	W 103 40 45.90
	12700.00	90.00	179.43	9439.97	3509.20	-3527.90	134.31	0.00	389467.37	743894.00	N 32 4 8.54	W 103 40 45.90
	12800.00	90.00	179.43	9439.97	3608.25	-3627.89	135.31	0.00	389367.38	743895.00	N 32 4 7.55	W 103 40 45.89
	12900.00	90.00	179.42	9439.97	3707.31	-3727.89	136.31	0.00	389267.39	743896.01	N 32 4 6.56	W 103 40 45.89
	13000.00	90.00	179.42	9439.98	3806.36	-3827.88	137.33	0.00	389167.40	743897.02	N 32 4 5.57	W 103 40 45.88
	13100.00	90.00	179.41	9439.98	3905.42	-3927.88	138.35	0.00	389067.41	743898.04	N 32 4 4.58	W 103 40 45.88
	13200.00	90.00	179.41	9439.98	4004.47	-4027.87	139.38	0.00	388967.42	743899.07	N 32 4 3.59	W 103 40 45.87
	13300.00	90.00	179.40	9439.98	4103.53	-4127.86	140.41	0.00	388867.43	743900.11	N 32 4 2.60	W 103 40 45.87
	13400.00	90.00	179.40	9439.99	4202.59	-4227.86	141.46	0.00	388767.44	743901.15	N 32 4 1.61	W 103 40 45.86
	13500.00	90.00	179.40	9439.99	4301.65	-4327.85	142.51	0.00	388667.45	743902.20	N 32 4 0.62	W 103 40 45.86
	13600.00	90.00	179.39	9439.99	4400.71	-4427.85	143.57	0.00	388567.46	743903.26	N 32 3 59.63	W 103 40 45.85
	13700.00	90.00	179.39	9439.99	4499.77	-4527.84	144.63	0.00	388467.47	743904.33	N 32 3 58.64	W 103 40 45.85
	13800.00	90.00	179.38	9440.00	4598.83	-4627.84	145.71	0.00	388367.48	743905.40	N 32 3 57.65	W 103 40 45.84
Cimarex Hallertau 4 Federal #9H - PBHL - 2467' FEL	13866.58	90.00	179.38	9440.00	4664.79	-4694.42	146.43	0.00	388300.90	743906.12	N 32 3 56.99	W 103 40 45.84

Survey Type: Non-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)	Survey Tool Type	Borehole / Survey
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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 ° ' ")
		1	0.000	20.000	1/100.000	30.000	30.000	SLB_MWD-POOR-Depth Only			Original Borehole / Cimarex Hallertau 4 Federal #9H Rev1	
		1	20.000	8796.550	1/100.000	30.000	30.000	SLB_MWD-POOR			Original Borehole / Cimarex Hallertau 4 Federal #9H Rev1	
		1	8796.550	13866.583	1/100.000	30.000	30.000	SLB_MWD-STD			Original Borehole / Cimarex Hallertau 4 Federal #9H Rev1	



Cactus 104

Cimarex

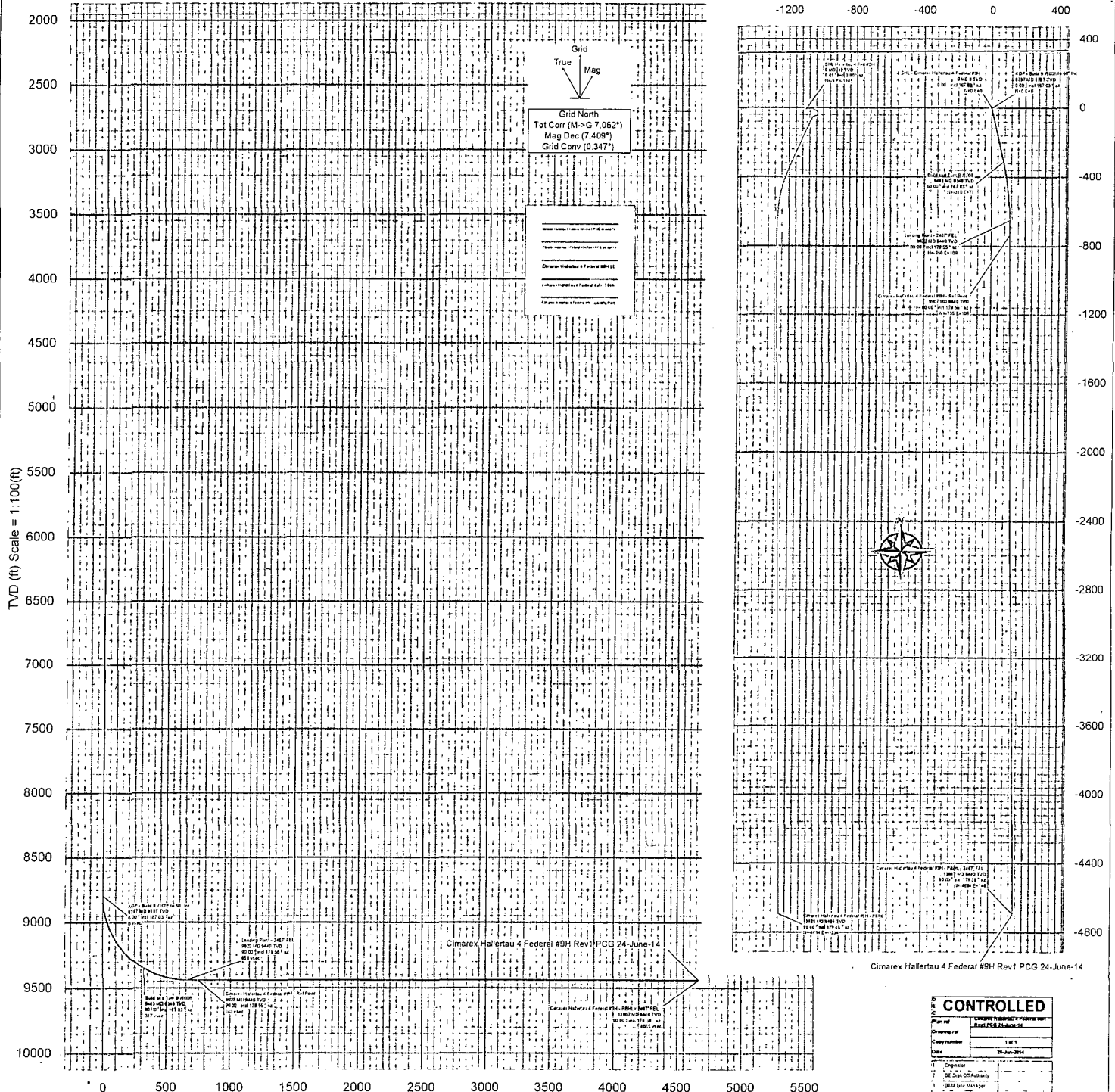
Rev1

PATHFINDER
A Schlumberger Company

Borehole:	Well:	Field:	Structure:
Original Borehole	Hallertau 4 Federal #9H	NM Lea County	Cactus 104
Gravity & Magnetic Parameters			
Model: BGGM 2014	Dip: 58.95°	Date: 24-Jun-2014	Surface Location: NAD83 New Mexico State Plane, Eastern Zone, US Feet
MagDec: 7.409°	FS: 48179.82mT	Gravity FS: 998.427mgm (9.80665 Based)	Lat: N 32 4 43.46 Northings: 392995.18US Grid Conv: 0.3471°
			Lon: W 103 40 47.21 Eastings: 743759.78US Scale Fact: 0.99996602
			Discontinuous: Hallertau 4 Federal #9H
			Slot: Hallertau 4 Federal #9H
			TVD Ref: RKB(3324ft above MSL)
			Plan: Rev1 PCG 24-June-14

Critical Points

Comments	Survey MD(ft)	Inclination(deg)	Azimuth(deg)	TVD(ft)	Sub-Sea TVD	VS(ft)	HS(ft)	EL(ft)	Latitude(deg)	Longitude(deg)	Eastings(ftUS)	Northings(ftUS)	DLSF(100ft)	Tool Face(deg)
SHL - Cimarex Hallertau 4 Federal #9H	0.00	0.00	167.03	0.00	-3324.00	0.00	0.00	0.00	N 32 4 43.456	W 103 40 47.210	743759.70	392995.10		167.03
KOP - Build 9°/100ft to 60° Inc	8796.55	0.00	167.03	8796.55	5472.55	0.00	0.00	0.00	N 32 4 43.456	W 103 40 47.210	743759.70	392995.10	0.00	167.03
Build and Turn 9°/100ft	9463.22	60.00	167.03	9347.88	6023.88	317.33	310.19	71.45	N 32 4 40.382	W 103 40 46.401	743831.14	392684.93	9.00	23.95
Landing Point - 2467 FEL	9821.91	90.00	179.55	9440.00	6116.00	658.84	649.92	108.71	N 32 4 37.018	W 103 40 45.992	743868.40	392345.21	9.00	-45.65
Cimarex Hallertau 4 Federal #9H - Ref Point	9906.52	90.00	179.55	9440.00	6116.00	742.62	734.52	109.38	N 32 4 36.181	W 103 40 45.990	743869.07	392260.61	0.00	-91.42
Cimarex Hallertau 4 Federal #9H - PGHL - 2467 FEL	13865.58	90.00	179.38	9440.00	6116.00	4664.79	4694.42	146.43	N 32 3 56.995	W 103 40 45.839	743906.12	388300.90	0.00	



CONTROLLED	
Plan no.	00000000000000000000
Drawn by	Rev1 PCG 24-June-14
Checked by	1 of 1
Date	24-Jun-2014
1. Computer	
2. Oil Sign Off Authority	
3. OIL Sign Manager	
4. Check	
5. Check number	