

Submit 1 Copy To Appropriate District Office
District I - (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II - (575) 748-1283
811 S. First St., Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV - (505) 476-3460
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources

Form C-103
Revised July 18, 2013

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. 30-025-42059
1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐		5. Indicate Type of Lease STATE ☐ FEE ☒
2. Name of Operator CHEVRON USA INC		6. State Oil & Gas Lease No.
3. Address of Operator 1616 W. BENDER BLVD, HOBBS, NM 88240		7. Lease Name or Unit Agreement Name GRAMMA RIDGE 14 24 34
4. Well Location Unit Letter <u>C</u> : <u>330'</u> feet from the <u>NORTH</u> line and <u>2310'</u> feet from the <u>WEST</u> line Section <u>14</u> Township <u>24S</u> Range <u>34E</u> NMPM County <u>LEA</u>		8. Well Number <u>5H</u>
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3500' GL		9. OGRID Number 4323
		10. Pool name or Wildcat RED HILLS/BONE SPRING

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☐	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	P AND A ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL ☐	CASING/CEMENT JOB ☐	
DOWNHOLE COMMINGLE ☐			
CLOSED-LOOP SYSTEM ☐			
OTHER: ☐		OTHER: CHANGES TO ORIGINAL APD ☒	

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

CHEVRON USA INC INTENDS TO MAKE CHANGES TO THE DRILLING PLAN AND CASING/CEMENTING FOR THE ABOVE WELL. PLEASE FIND ATTACHED A NEW DRILLING PLAN ALONG WITH A CASING/CEMENTING PLAN.

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

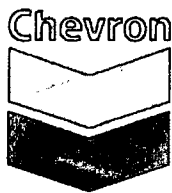
SIGNATURE Cindy Herrera-Murillo TITLE PERMITTING SPECIALIST DATE 12/16/2014

Type or print name CINDY HERRERA-MURILLO E-mail address: Cherreramurillo@chevron.com PHONE: 575-263-0431

For State Use Only

APPROVED BY: [Signature] TITLE Petroleum Engineer DATE 12/18/14
Conditions of Approval (if any):

DEC 19 2014



Chevron

Lea County, NM (NAD27 NME)

Gamma Ridge 14 24 34

5H

WB1

Plan: Plan 4 12-11-14

Standard Planning Report

11 December, 2014

HOBBSOCD

DEC 17 2014

RECEIVED



PHOENIX
TECHNOLOGY SERVICES



Planning Report



Database: Compass 5000 GCR
Company: Chevron
Project: Lea County, NM (NAD27 NME)
Site: Gramma Ridge 14 24 34
Well: 5H
Wellbore: WB1
Design: Plan 4 12-11-14

Local Co-ordinate Reference: Well 5H
TVD Reference: RKB @ 3524.50usft (Ensign 153)
MD Reference: RKB @ 3524.50usft (Ensign 153)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Lea County, NM (NAD27 NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Gramma Ridge 14 24 34				
Site Position:		Northing:	446,243.20 usft	Latitude:	32° 13' 25.45288 N
From:	Map	Easting:	773,870.90 usft	Longitude:	103° 26' 51.79837 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.47 °

Well	5H					
Well Position	+N/-S	16.80 usft	Northing:	446,260.00 usft	Latitude:	32° 13' 25.45786 N
	+E/-W	1,970.10 usft	Easting:	775,841.00 usft	Longitude:	103° 26' 28.86469 W
Position Uncertainty	0.00 usft		Wellhead Elevation:		Ground Level:	3,500.00 usft

Wellbore	WB1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	12/11/2014	7.26	60.11	48,237

Design	Plan 4 12-11-14				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	183.55	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
8,922.54	0.00	0.00	8,922.54	0.00	0.00	0.00	0.00	0.00	0.00	
9,672.54	90.00	183.55	9,400.00	-476.55	-29.61	12.00	12.00	0.00	183.55	
13,872.07	90.00	183.55	9,400.00	-4,668.00	-290.00	0.00	0.00	0.00	0.00	BHL v4 GR 14 24 34 !



Planning Report



Database: Compass 5000 GCR
Company: Chevron
Project: Lea County, NM (NAD27 NME)
Site: Gramma Ridge 14 24 34
Well: 5H
Wellbore: WB1
Design: Plan 4 12-11-14

Local Co-ordinate Reference: Well 5H
TVD Reference: RKB @ 3524.50usft (Ensign 153)
MD Reference: RKB @ 3524.50usft (Ensign 153)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,068.50	0.00	0.00	1,068.50	0.00	0.00	0.00	0.00	0.00	0.00
Aluvium / Rustler									
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,147.50	0.00	0.00	1,147.50	0.00	0.00	0.00	0.00	0.00	0.00
Magenta Dolomite									
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,605.50	0.00	0.00	1,605.50	0.00	0.00	0.00	0.00	0.00	0.00
Salado									
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,784.50	0.00	0.00	3,784.50	0.00	0.00	0.00	0.00	0.00	0.00
Castille									
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00



Planning Report



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Company: Chevron
Project: Lea County, NM (NAD27 NME)
Site: Gramma Ridge 14 24 34
Well: 5H
Wellbore: WB1
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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00
5,300.00	0.00	0.00	5,300.00	0.00	0.00	0.00	0.00	0.00	0.00
5,400.00	0.00	0.00	5,400.00	0.00	0.00	0.00	0.00	0.00	0.00
5,472.50	0.00	0.00	5,472.50	0.00	0.00	0.00	0.00	0.00	0.00
Lamar LS									
5,500.00	0.00	0.00	5,500.00	0.00	0.00	0.00	0.00	0.00	0.00
5,521.50	0.00	0.00	5,521.50	0.00	0.00	0.00	0.00	0.00	0.00
Bell Canyon									
5,600.00	0.00	0.00	5,600.00	0.00	0.00	0.00	0.00	0.00	0.00
5,700.00	0.00	0.00	5,700.00	0.00	0.00	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,800.00	0.00	0.00	0.00	0.00	0.00	0.00
5,900.00	0.00	0.00	5,900.00	0.00	0.00	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	6,000.00	0.00	0.00	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,100.00	0.00	0.00	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,200.00	0.00	0.00	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,300.00	0.00	0.00	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,400.00	0.00	0.00	0.00	0.00	0.00	0.00
6,405.50	0.00	0.00	6,405.50	0.00	0.00	0.00	0.00	0.00	0.00
Cherry Canyon									
6,500.00	0.00	0.00	6,500.00	0.00	0.00	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,600.00	0.00	0.00	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,700.00	0.00	0.00	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,800.00	0.00	0.00	0.00	0.00	0.00	0.00
6,900.00	0.00	0.00	6,900.00	0.00	0.00	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	7,000.00	0.00	0.00	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,100.00	0.00	0.00	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,200.00	0.00	0.00	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,300.00	0.00	0.00	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,400.00	0.00	0.00	0.00	0.00	0.00	0.00
7,500.00	0.00	0.00	7,500.00	0.00	0.00	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,600.00	0.00	0.00	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,700.00	0.00	0.00	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,800.00	0.00	0.00	0.00	0.00	0.00	0.00
7,854.50	0.00	0.00	7,854.50	0.00	0.00	0.00	0.00	0.00	0.00
Brushy Canyon									
7,900.00	0.00	0.00	7,900.00	0.00	0.00	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	8,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,100.00	0.00	0.00	0.00	0.00	0.00	0.00
8,200.00	0.00	0.00	8,200.00	0.00	0.00	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,300.00	0.00	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,400.00	0.00	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,500.00	0.00	0.00	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,600.00	0.00	0.00	0.00	0.00	0.00	0.00
8,700.00	0.00	0.00	8,700.00	0.00	0.00	0.00	0.00	0.00	0.00
8,800.00	0.00	0.00	8,800.00	0.00	0.00	0.00	0.00	0.00	0.00
8,900.00	0.00	0.00	8,900.00	0.00	0.00	0.00	0.00	0.00	0.00
8,922.54	0.00	0.00	8,922.54	0.00	0.00	0.00	0.00	0.00	0.00



Planning Report



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 Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
KOP: 12°/100° Build									
8,925.00	0.30	183.55	8,925.00	-0.01	0.00	0.01	12.02	12.02	0.00
8,950.00	3.30	183.55	8,949.99	-0.79	-0.05	0.79	12.00	12.00	0.00
8,975.00	6.30	183.55	8,974.89	-2.87	-0.18	2.88	12.00	12.00	0.00
9,000.00	9.30	183.55	8,999.66	-6.26	-0.39	6.27	12.00	12.00	0.00
9,025.00	12.30	183.55	9,024.22	-10.93	-0.68	10.95	12.00	12.00	0.00
9,050.00	15.30	183.55	9,048.49	-16.88	-1.05	16.91	12.00	12.00	0.00
9,075.00	18.30	183.55	9,072.42	-24.09	-1.50	24.14	12.00	12.00	0.00
9,100.00	21.30	183.55	9,095.94	-32.54	-2.02	32.60	12.00	12.00	0.00
9,125.00	24.30	183.55	9,118.99	-42.21	-2.62	42.29	12.00	12.00	0.00
9,150.00	27.30	183.55	9,141.49	-53.06	-3.30	53.17	12.00	12.00	0.00
9,175.00	30.30	183.55	9,163.40	-65.08	-4.04	65.21	12.00	12.00	0.00
9,200.00	33.30	183.55	9,184.65	-78.23	-4.86	78.38	12.00	12.00	0.00
9,225.00	36.30	183.55	9,205.17	-92.46	-5.74	92.64	12.00	12.00	0.00
9,250.00	39.30	183.55	9,224.93	-107.75	-6.69	107.96	12.00	12.00	0.00
9,267.82	41.43	183.55	9,238.50	-119.27	-7.41	119.50	12.00	12.00	0.00
Top of Bone Spring									
9,275.00	42.30	183.55	9,243.85	-124.05	-7.71	124.29	12.00	12.00	0.00
9,300.00	45.30	183.55	9,261.89	-141.32	-8.78	141.59	12.00	12.00	0.00
9,310.94	46.61	183.55	9,269.50	-149.17	-9.27	149.46	12.00	12.00	0.00
Avalon									
9,325.00	48.30	183.55	9,279.01	-159.51	-9.91	159.81	12.00	12.00	0.00
9,350.00	51.30	183.55	9,295.14	-178.56	-11.09	178.91	12.00	12.00	0.00
9,375.00	54.30	183.55	9,310.26	-198.43	-12.33	198.82	12.00	12.00	0.00
9,400.00	57.30	183.55	9,324.31	-219.07	-13.61	219.49	12.00	12.00	0.00
9,425.00	60.30	183.55	9,337.26	-240.41	-14.94	240.87	12.00	12.00	0.00
9,450.00	63.30	183.55	9,349.07	-262.39	-16.30	262.90	12.00	12.00	0.00
9,475.00	66.30	183.55	9,359.72	-284.97	-17.70	285.52	12.00	12.00	0.00
9,500.00	69.30	183.55	9,369.16	-308.07	-19.14	308.66	12.00	12.00	0.00
9,525.00	72.30	183.55	9,377.39	-331.63	-20.60	332.27	12.00	12.00	0.00
9,550.00	75.30	183.55	9,384.36	-355.58	-22.09	356.27	12.00	12.00	0.00
9,575.00	78.30	183.55	9,390.07	-379.87	-23.60	380.61	12.00	12.00	0.00
9,600.00	81.30	183.55	9,394.50	-404.43	-25.13	405.21	12.00	12.00	0.00
9,625.00	84.30	183.55	9,397.64	-429.18	-26.66	430.01	12.00	12.00	0.00
9,650.00	87.30	183.55	9,399.47	-454.06	-28.21	454.94	12.00	12.00	0.00
9,672.54	90.00	183.55	9,400.00	-476.55	-29.61	477.46	12.00	12.00	0.00
LP: Hold 90° Inc at 183.55° Azm - Target: TVD @ 0' VS w/90° Inc									
9,700.00	90.00	183.55	9,400.00	-503.96	-31.31	504.93	0.00	0.00	0.00
9,800.00	90.00	183.55	9,400.00	-603.77	-37.51	604.93	0.00	0.00	0.00
9,900.00	90.00	183.55	9,400.00	-703.57	-43.71	704.93	0.00	0.00	0.00
10,000.00	90.00	183.55	9,400.00	-803.38	-49.91	804.93	0.00	0.00	0.00
10,100.00	90.00	183.55	9,400.00	-903.19	-56.11	904.93	0.00	0.00	0.00
10,200.00	90.00	183.55	9,400.00	-1,003.00	-62.31	1,004.93	0.00	0.00	0.00
10,300.00	90.00	183.55	9,400.00	-1,102.80	-68.51	1,104.93	0.00	0.00	0.00
10,400.00	90.00	183.55	9,400.00	-1,202.61	-74.71	1,204.93	0.00	0.00	0.00
10,500.00	90.00	183.55	9,400.00	-1,302.42	-80.91	1,304.93	0.00	0.00	0.00
10,600.00	90.00	183.55	9,400.00	-1,402.23	-87.11	1,404.93	0.00	0.00	0.00
10,700.00	90.00	183.55	9,400.00	-1,502.03	-93.31	1,504.93	0.00	0.00	0.00
10,800.00	90.00	183.55	9,400.00	-1,601.84	-99.51	1,604.93	0.00	0.00	0.00
10,900.00	90.00	183.55	9,400.00	-1,701.65	-105.72	1,704.93	0.00	0.00	0.00
11,000.00	90.00	183.55	9,400.00	-1,801.46	-111.92	1,804.93	0.00	0.00	0.00
11,100.00	90.00	183.55	9,400.00	-1,901.26	-118.12	1,904.93	0.00	0.00	0.00
11,200.00	90.00	183.55	9,400.00	-2,001.07	-124.32	2,004.93	0.00	0.00	0.00



Planning Report



Database: Compass 5000 GCR
Company: Chevron
Project: Lea County, NM (NAD27 NME)
Site: Gramma Ridge 14 24 34
Well: 5H
Wellbore: WB1
Design: Plan 4 12-11-14

Local Co-ordinate Reference: Well 5H
TVD Reference: RKB @ 3524.50usft (Ensign 153)
MD Reference: RKB @ 3524.50usft (Ensign 153)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,300.00	90.00	183.55	9,400.00	-2,100.88	-130.52	2,104.93	0.00	0.00	0.00
11,400.00	90.00	183.55	9,400.00	-2,200.69	-136.72	2,204.93	0.00	0.00	0.00
11,500.00	90.00	183.55	9,400.00	-2,300.49	-142.92	2,304.93	0.00	0.00	0.00
11,600.00	90.00	183.55	9,400.00	-2,400.30	-149.12	2,404.93	0.00	0.00	0.00
11,700.00	90.00	183.55	9,400.00	-2,500.11	-155.32	2,504.93	0.00	0.00	0.00
11,800.00	90.00	183.55	9,400.00	-2,599.92	-161.52	2,604.93	0.00	0.00	0.00
11,900.00	90.00	183.55	9,400.00	-2,699.72	-167.72	2,704.93	0.00	0.00	0.00
12,000.00	90.00	183.55	9,400.00	-2,799.53	-173.92	2,804.93	0.00	0.00	0.00
12,100.00	90.00	183.55	9,400.00	-2,899.34	-180.12	2,904.93	0.00	0.00	0.00
12,200.00	90.00	183.55	9,400.00	-2,999.15	-186.32	3,004.93	0.00	0.00	0.00
12,300.00	90.00	183.55	9,400.00	-3,098.96	-192.52	3,104.93	0.00	0.00	0.00
12,400.00	90.00	183.55	9,400.00	-3,198.76	-198.72	3,204.93	0.00	0.00	0.00
12,500.00	90.00	183.55	9,400.00	-3,298.57	-204.92	3,304.93	0.00	0.00	0.00
12,600.00	90.00	183.55	9,400.00	-3,398.38	-211.12	3,404.93	0.00	0.00	0.00
12,700.00	90.00	183.55	9,400.00	-3,498.19	-217.33	3,504.93	0.00	0.00	0.00
12,800.00	90.00	183.55	9,400.00	-3,597.99	-223.53	3,604.93	0.00	0.00	0.00
12,900.00	90.00	183.55	9,400.00	-3,697.80	-229.73	3,704.93	0.00	0.00	0.00
13,000.00	90.00	183.55	9,400.00	-3,797.61	-235.93	3,804.93	0.00	0.00	0.00
13,100.00	90.00	183.55	9,400.00	-3,897.42	-242.13	3,904.93	0.00	0.00	0.00
13,200.00	90.00	183.55	9,400.00	-3,997.22	-248.33	4,004.93	0.00	0.00	0.00
13,300.00	90.00	183.55	9,400.00	-4,097.03	-254.53	4,104.93	0.00	0.00	0.00
13,400.00	90.00	183.55	9,400.00	-4,196.84	-260.73	4,204.93	0.00	0.00	0.00
13,500.00	90.00	183.55	9,400.00	-4,296.65	-266.93	4,304.93	0.00	0.00	0.00
13,600.00	90.00	183.55	9,400.00	-4,396.45	-273.13	4,404.93	0.00	0.00	0.00
13,700.00	90.00	183.55	9,400.00	-4,496.26	-279.33	4,504.93	0.00	0.00	0.00
13,800.00	90.00	183.55	9,400.00	-4,596.07	-285.53	4,604.93	0.00	0.00	0.00
13,872.07	90.00	183.55	9,400.00	-4,668.00	-290.00	4,677.00	0.00	0.00	0.00
TD at 13872.07									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
BHL v4 GR 14 24 34 5H	0.00	183.55	9,400.00	-4,668.00	-290.00	441,592.00	775,551.00	32° 12' 39.29091 N	103° 26' 32.69077 W
- plan hits target center									
- Rectangle (sides W100.00 H4,200.00 D40.00)									



Planning Report



Database: Compass 5000 GCR
Company: Chevron
Project: Lea County, NM (NAD27 NME)
Site: Gramma Ridge 14 24 34
Well: 5H
Wellbore: WB1
Design: Plan 4 12-11-14

Local Co-ordinate Reference: Well 5H
TVD Reference: RKB @ 3524.50usft (Ensign 153)
MD Reference: RKB @ 3524.50usft (Ensign 153)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,068.50	1,068.50	Aluvium / Rustler		0.00	183.55
1,147.50	1,147.50	Magenta Dolomite		0.00	183.55
1,605.50	1,605.50	Salado		0.00	183.55
3,784.50	3,784.50	Castille		0.00	183.55
5,472.50	5,472.50	Lamar LS		0.00	183.55
5,521.50	5,521.50	Bell Canyon		0.00	183.55
6,405.50	6,405.50	Cherry Canyon		0.00	183.55
7,854.50	7,854.50	Brushy Canyon		0.00	183.55
9,267.82	9,238.50	Top of Bone Spring		0.00	183.55
9,310.94	9,269.50	Avalon		0.00	183.55
9,672.54	9,400.00	Target: TVD @ 0' VS w/90° Inc		0.00	183.55

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
8,922.54	8,922.54	0.00	0.00	KOP: 12°/100' Build
9,672.54	9,400.00	-476.55	-29.61	LP: Hold 90° Inc at 183.55° Azm
13,872.07	9,400.00	-4,668.00	-290.00	TD at 13872.07

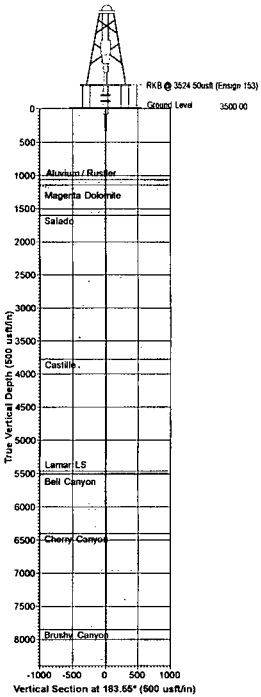
Type	Hole Size (in)	Casing Size (in)	Casing Weight (#s)	Setting Depth (ft)	Estimated TOC (ft)	Bottom of Cemented Interval (ft)	Sacks of Cement (sx)
Surface	17.5	13.375	54.5	1180	0 (Surface)	1180	1267
Intermediate	12.25	9.625	43.5	5280	0 (Surface)	5280	1721
Production	8.5	5.5	17	13852	4780	13852	1776



Project: Lea County, NM (NAD27 NME)
Site: Gramma Ridge 14 24 34
Well: 5H
Wellbore: WB1
Design: Plan 4 12-11-14
Rig: Ensign 153



Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001
Local Origin: Well SH, Grid North
Latitude: 32° 12' 25.45786 N
Longitude: 103° 26' 28.86468 W
Grid East: 775841.00
Grid North: 446260.00
Scale Factor: 1.000
Geomagnetic Model: BGM2014
Sample Date: 11-Dec-14
Magnetic Declination: 7.29°
Dip Angle from Horizontal: 60.11°
Magnetic Field Strength: 48237



WELL DETAILS									
+N-S	+E-W	North	East	Latitude	Longitude				
0.00	0.00	446260.00	775841.00	32° 12' 25.45786 N	103° 26' 28.86468 W				

SECTION DETAILS									
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	Deg	TFace	VSec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	8922.54	0.00	0.00	8922.54	0.00	0.00	0.00	0.00	0.00
3	9672.54	90.00	183.55	9400.00	-476.55	-29.81	12.00	183.55	477.46
4	13872.07	90.00	183.55	9400.00	-4668.00	-290.00	0.00	0.00	4677.00

DESIGN TARGET DETAILS									
Name	TVD	+N-S	+E-W	North	East	Latitude	Longitude		
BHL v4 GR 14 24 34 SH	9400.00	-4668.00	-290.00	441592.00	775551.00	32° 12' 39.29091 N	103° 26' 32.69677 W		

FORMATION TOP DETAILS									
TVDPath	MDPath	Formation	DipAngle	DipDir					
1068.50	1068.50	Albion / Rustler	0.00	183.55					
1147.50	1147.50	Magenta Dolomite	0.00	183.55					
1685.50	1685.50	Salado	0.00	183.55					
3784.50	3784.50	Castile	0.00	183.55					
5472.50	5472.50	Lamar LS	0.00	183.55					
5521.50	5521.50	Bell Canyon	0.00	183.55					
6405.50	6405.50	Cherry Canyon	0.00	183.55					
7854.50	7854.50	Brushy Canyon	0.00	183.55					
9285.50	9285.50	Top of Bone Spring	0.00	183.55					
9289.50	9310.04	Avalon	0.00	183.55					
9400.00	9672.04	Target TVD @ 0° VS w/90° inc	0.00	183.55					

Map System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001
Local Origin: Well SH, Grid North
Latitude: 32° 12' 25.45786 N
Longitude: 103° 26' 28.86468 W
Grid East: 775841.00
Grid North: 446260.00
Scale Factor: 1.000
Geomagnetic Model: BGM2014
Sample Date: 11-Dec-14
Magnetic Declination: 7.29°
Dip Angle from Horizontal: 60.11°
Magnetic Field Strength: 48237
To convert a Magnetic Direction to a Grid Direction, Add 6.78°
To convert a Magnetic Direction to a True Direction, Add 7.29° East
To convert a True Direction to a Grid Direction, Subtract 0.48°

LEGEND
Plan 4 12-11-14

