

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

RECEIVED

Energy, Minerals and Natural Resources

Form C-103

Revised July 18, 2013

NOV 12 2019

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.

Santa Fe, NM 87505

DISTRICT I-ARTESIA O.C.D.

WELL API NO.
30-015-46135

5. Indicate Type of Lease
STATE ☒ FEE ☐

6. State Oil & Gas Lease No.

7. Lease Name or Unit Agreement Name
HADES 2 SB STATE COM

8. Well Number 3H

9. OGRID Number
372098

10. Pool name or Wildcat
CULEBRA BLUFF; BONE SPRING, SOUTH

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.)

1. Type of Well: Oil Well ☒ Gas Well ☐ Other

2. Name of Operator
Marathon Oil Permian LLC

3. Address of Operator
5555 San Felipe St., Houston, TX 77056

4. Well Location
Unit Letter A : 521 feet from the NORTH line and 1070 feet from the EAST line
Section 2 Township 23S Range 28E NMPM County EDDY

11. Elevation (Show whether DR, RKB, RT, GR, etc.)
3068' GR

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

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐
TEMPORARILY ABANDON ☐ CHANGE PLANS ☒
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐
DOWNHOLE COMMINGLE ☐
CLOSED-LOOP SYSTEM ☐
OTHER: ☐

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐
COMMENCE DRILLING OPNS. ☐ P AND A ☐
CASING/CEMENT JOB ☐
OTHER: ☐

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.

Marathon Oil Permian LLC requests to make the following changes to the approved APD.

-Change SHL
From 521' FNL 1070' FEL
To 521' FNL 1040' FEL

-Change casing from 3 string to 2 string.

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	TOC
Surface	17 1/2	13 3/8	54.5	450	470	0
Production Csg	12 1/4	5 1/2	17	2550	3409	2250
Production Csg	8 3/4			13301		

Spud Date:

10/24/2019

Rig Release Date:

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

SIGNATURE

Adrian Covarrubias

TITLE

CTR - Technician HES

DATE

11/11/2019

Type or print name

E-mail address:

acovarrubias@marathonoil.com

PHONE:

713-296-3368

For State Use Only

APPROVED BY:

TITLE

DATE

Conditions of Approval (if any):

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
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District IV
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Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-015-46135	² Pool Code 15011	³ Pool Name CULEBRA BLUFF; BONE SPRING, SOUTH
⁴ Property Code	⁵ Property Name HADES 2 SB STATE COM	⁶ Well Number 3H
⁷ OGRID No. 372098	⁸ Operator Name MARATHON OIL PERMIAN LLC	⁹ Elevation 3070'

¹⁰ 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	2	23S	28E		521	NORTH	1040	EAST	EDDY

¹¹ 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	2	23S	28E		100	SOUTH	1019	EAST	EDDY

¹² Dedicated Acres 318.97	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

Defining Well SHEET 1 OF 3 JOB No. R3982_001.C REV/2 JCS 10/28/2019	CORNER COORDINATES NAD 83, SPCS NM EAST A - X: 629075.09' / Y: 488269.73' B - X: 629059.56' / Y: 482925.07' C - X: 626359.90' / Y: 482920.26' D - X: 626386.21' / Y: 485587.65' E - X: 626412.61' / Y: 488262.71' CORNER COORDINATES NAD 27, SPCS NM EAST A - X: 587892.62' / Y: 488209.99' B - X: 587876.94' / Y: 482865.46' C - X: 585177.32' / Y: 482860.69' D - X: 585203.71' / Y: 485528.00' E - X: 585230.17' / Y: 488203.01' SURFACE HOLE LOCATION 521' FNL 1040' FEL, SECTION 2 NAD 83, SPCS NM EAST X: 628033.97' / Y: 487746.10' LAT: 32.34057311N / LON: 104.05261441W NAD 27, SPCS NM EAST X: 586851.50' / Y: 487686.39' LAT: 32.34045226N / LON: 104.05211888W KICK OFF POINT / FIRST TAKE POINT 100' FNL 1002' FEL, SECTION 2 NAD 83, SPCS NM EAST X: 628073.22' / Y: 488167.09' LAT: 32.34173004N / LON: 104.05248374W NAD 27, SPCS NM EAST X: 586890.76' / Y: 488107.37' LAT: 32.34160920N / LON: 104.05198817W LAST TAKE POINT/BOTTOM HOLE LOCATION 100' FSL 1019' FEL, SECTION 2 NAD 83, SPCS NM EAST X: 628040.38' / Y: 483023.26' LAT: 32.32759078N / LON: 104.05263374W NAD 27, SPCS NM EAST X: 586857.78' / Y: 482963.66' LAT: 32.32746982N / LON: 104.05213867W	¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore covered by the division. Signature: Date: 11/11/2019 Printed Name: MELISSA SZUDERA E-mail Address:
	¹⁸ SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. NOVEMBER 5, 2019 Date of Survey Signature and Seal of Professional Surveyor: Certificate Number: DAVID W. MYERS 11403	
	Distances/areas relative to NAD 83 Combined Scale Factor: 0.99977221 Convergence: 00°07'02.70001"	
	DAVID W. MYERS NEW MEXICO PROFESSIONAL SURVEYOR 11403	

RWP 11-13-19



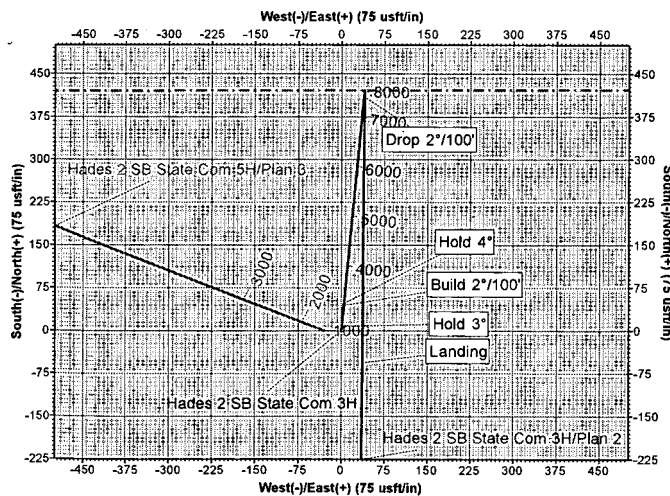
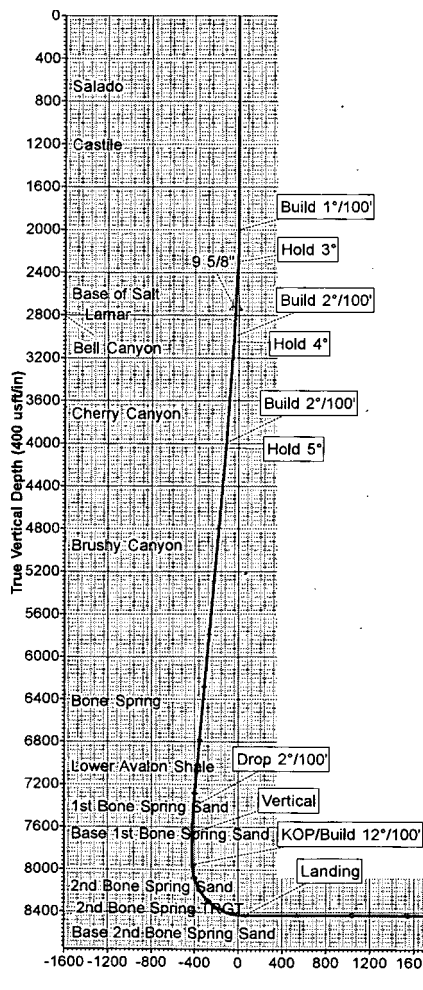
3069.00

Rig:

A diagram of a sphere with a horizontal line passing through its center. A vertical arrow labeled G points upwards from the center. A vertical arrow labeled T points upwards from the center, slightly to the left of G . Two dashed arrows labeled A point upwards from the center, one to the left and one to the right of T .

Azimuths to Grid North
 True North: -0.15°
 Magnetic North: 6.93°
 Magnetic Field
 Strength: 47882.1 nT
 Dip Angle: 60.07°
 Date: 10/18/2019
 Model: HDGM 2019

WELL DETAILS										
3069.00										
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude					
0.00	0.00	487686.39	586851.50	32.34045225	-104.05211887					
SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Annotation	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	Build 1°/100'	
2300.00	3.00	5.34	2299.86	7.82	0.73	1.00	5.34	-7.82	Hold 3°	
3000.00	3.00	5.34	2998.90	44.29	4.14	0.00	0.00	-44.29	Build 2°/100'	
3050.00	4.00	5.34	3048.81	47.33	4.42	2.00	0.00	-47.33	Hold 4°	
4000.00	4.00	5.34	3996.50	113.31	10.59	0.00	0.00	-113.30	Build 2°/100'	
4050.00	5.00	5.34	4046.34	117.22	10.96	2.00	0.00	-117.21	Hold 5°	
7425.00	5.00	5.34	7408.50	410.09	38.33	0.00	0.00	-410.04	Drop 2°/100'	
7675.00	0.00	0.00	7658.18	420.95	39.35	2.00	180.00	-420.90	Vertical	
7969.36	0.00	0.00	7952.54	420.95	39.35	0.00	0.00	-420.90	KOP/Build 12°/100'	
8719.36	90.00	180.37	8430.00	-56.51	36.26	12.00	180.37	56.55	Landing	
13385.68	90.00	180.37	8430.00	-4722.73	6.28	0.00	0.00	4722.73	TD at 13385.68	
DESIGN TARGET DETAILS										
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude				
3H KOP/FTP (100' FNL - 2310' FEL)		420.98	488107.37	586890.76	32.34160921	-104.05198817				
3H LTP/BHL (100' FSL - 2310' FEL)		-4722.73	6.28	482963.66	586857.78	32.32746983	-104.05213867			

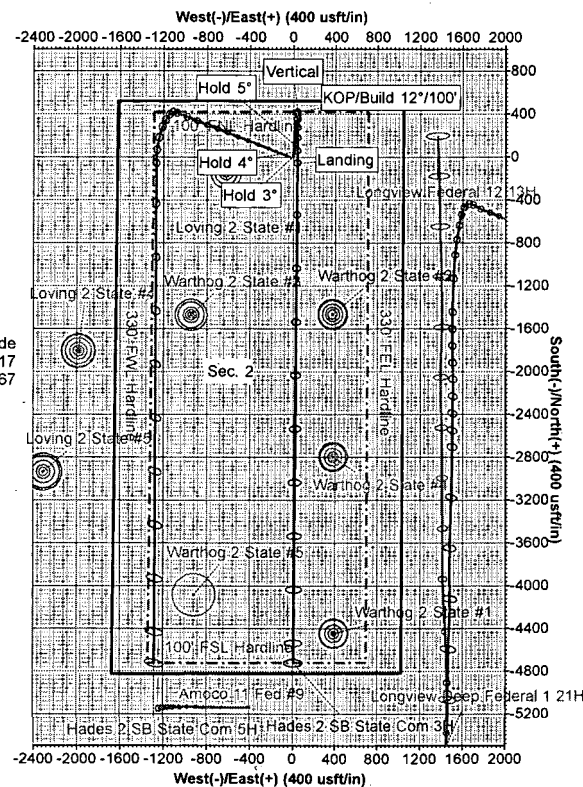


Target Line

8430' TVD @ 0' VS 90'

Hades 2 SB State Com 3H/Plan 2

3H LTP/BHL (100' FSL - 2310' FEL)



HALLIBURTON | Sperry Drilling

Marathon Oil Permian LLC

Eddy County, New Mexico (NAD27) Hades 2 SB State Com Pad (Grid)

API#

Hades 2 SB State Com 3H

SHL: (521' FNL - 1040' FEL)

Wellbore #1

Plan: Plan 2

Please review plan for Magnetic Toolface Switchover.

Highlighted inclination-tangent sections are between 4 and 6°.

Sperry Drilling Services

Combo Report

01 November, 2019

Well Coordinates: 32.34045225
-104.05211887

NAD 1927 (NADCON CONUS)
New Mexico East 3001
487,686.39 N
586,851.50 E

Ground Level: 3,069.00 usft

Local Coordinate Origin:

Centered on Well Hades 2 SB State Com 3H

Viewing Datum:

RKB (Precision 601) 25' + GL(3069') @ 3094.00usft

TVDs to System:

N

North Reference:

Grid

Unit System:

Midcon (2 decimal)

Version: 5000.15 Build: 91

Report Version: Midcon Combo v1.14

HALLIBURTON

Plan Report for Hades 2 SB State Com 3H - Plan 2

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
0.00	0.00	0.00	0.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	
602.00	0.00	0.00	602.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	Salado
700.00	0.00	0.00	700.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	
1,000.00	0.00	0.00	1,000.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	
1,100.00	0.00	0.00	1,100.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	
1,148.00	0.00	0.00	1,148.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	Castile
1,200.00	0.00	0.00	1,200.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	
1,300.00	0.00	0.00	1,300.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	
1,400.00	0.00	0.00	1,400.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	
1,500.00	0.00	0.00	1,500.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	
1,600.00	0.00	0.00	1,600.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	
1,700.00	0.00	0.00	1,700.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	
1,800.00	0.00	0.00	1,800.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	
1,900.00	0.00	0.00	1,900.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00 N	0.00 E	487,686.39	586,851.50	0.00	0.00	0.00	Build 1°/100'
2,100.00	1.00	5.34	2,099.99	0.87 N	0.08 E	487,687.26	586,851.58	1.00	-0.87	5.34	
2,200.00	2.00	5.34	2,199.96	3.48 N	0.32 E	487,689.87	586,851.82	1.00	-3.47	0.00	
2,300.00	3.00	5.34	2,299.86	7.82 N	0.73 E	487,694.21	586,852.23	1.00	-7.82	0.00	Hold 3°
2,400.00	3.00	5.34	2,399.73	13.03 N	1.22 E	487,699.42	586,852.72	0.00	-13.03	0.00	
2,500.00	3.00	5.34	2,499.59	18.24 N	1.70 E	487,704.63	586,853.20	0.00	-18.24	0.00	
2,543.47	3.00	5.34	2,543.00	20.51 N	1.92 E	487,706.90	586,853.42	0.00	-20.50	0.00	Base of Salt
2,600.00	3.00	5.34	2,599.45	23.45 N	2.19 E	487,709.84	586,853.69	0.00	-23.45	0.00	
2,700.00	3.00	5.34	2,699.31	28.66 N	2.68 E	487,715.05	586,854.18	0.00	-28.66	0.00	
2,750.75	3.00	5.34	2,750.00	31.31 N	2.93 E	487,717.70	586,854.43	0.00	-31.30	0.00	9 5/8"
2,779.79	3.00	5.34	2,779.00	32.82 N	3.07 E	487,719.21	586,854.57	0.00	-32.82	0.00	Lamar
2,800.00	3.00	5.34	2,799.18	33.87 N	3.17 E	487,720.26	586,854.67	0.00	-33.87	0.00	
2,807.83	3.00	5.34	2,807.00	34.28 N	3.20 E	487,720.67	586,854.70	0.00	-34.28	0.00	Bell Canyon
2,900.00	3.00	5.34	2,899.04	39.08 N	3.65 E	487,725.47	586,855.15	0.00	-39.08	0.00	

HALLIBURTON

Plan Report for Hades 2 SB State Com 3H - Plan 2

Measured		Grid	Vertical	Local Coordinates		Map Coordinates		Dogleg	Vertical	Toolface	Comments
Depth (usft)	Inclination (°)	Azimuth (°)	Depth (usft)	Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)	Rate (°/100usft)	Section (usft)	Angle (°)	
3,000.00	3.00	5.34	2,998.90	44.29 N	4.14 E	487,730.68	586,855.64	0.00	-44.29	0.00	Build 2°/100'
3,050.00	4.00	5.34	3,048.81	47.33 N	4.42 E	487,733.72	586,855.92	2.00	-47.33	0.00	Hold 4°
3,100.00	4.00	5.34	3,098.69	50.81 N	4.75 E	487,737.20	586,856.25	0.00	-50.80	0.00	
3,200.00	4.00	5.34	3,198.44	57.75 N	5.40 E	487,744.14	586,856.90	0.00	-57.74	0.00	
3,300.00	4.00	5.34	3,298.20	64.70 N	6.05 E	487,751.09	586,857.55	0.00	-64.69	0.00	
3,400.00	4.00	5.34	3,397.96	71.64 N	6.70 E	487,758.03	586,858.20	0.00	-71.63	0.00	
3,500.00	4.00	5.34	3,497.71	78.59 N	7.35 E	487,764.98	586,858.85	0.00	-78.58	0.00	
3,600.00	4.00	5.34	3,597.47	85.53 N	7.99 E	487,771.92	586,859.49	0.00	-85.52	0.00	
3,664.69	4.00	5.34	3,662.00	90.03 N	8.41 E	487,776.42	586,859.91	0.00	-90.01	0.00	Cherry Canyon
3,700.00	4.00	5.34	3,697.23	92.48 N	8.64 E	487,778.87	586,860.14	0.00	-92.47	0.00	
3,800.00	4.00	5.34	3,796.98	99.42 N	9.29 E	487,785.81	586,860.79	0.00	-99.41	0.00	
3,900.00	4.00	5.34	3,896.74	106.37 N	9.94 E	487,792.76	586,861.44	0.00	-106.36	0.00	
4,000.00	4.00	5.34	3,996.50	113.31 N	10.59 E	487,799.70	586,862.09	0.00	-113.30	0.00	Build 2°/100'
4,050.00	5.00	5.34	4,046.34	117.22 N	10.96 E	487,803.61	586,862.46	2.00	-117.21	0.00	Hold 5°
4,100.00	5.00	5.34	4,096.15	121.56 N	11.36 E	487,807.95	586,862.86	0.00	-121.54	0.00	
4,200.00	5.00	5.34	4,195.77	130.24 N	12.17 E	487,816.63	586,863.67	0.00	-130.22	0.00	
4,300.00	5.00	5.34	4,295.39	138.91 N	12.98 E	487,825.30	586,864.48	0.00	-138.90	0.00	
4,400.00	5.00	5.34	4,395.01	147.59 N	13.80 E	487,833.98	586,865.30	0.00	-147.57	0.00	
4,500.00	5.00	5.34	4,494.63	156.27 N	14.61 E	487,842.66	586,866.11	0.00	-156.25	0.00	
4,600.00	5.00	5.34	4,594.25	164.95 N	15.42 E	487,851.34	586,866.92	0.00	-164.93	0.00	
4,700.00	5.00	5.34	4,693.87	173.63 N	16.23 E	487,860.02	586,867.73	0.00	-173.60	0.00	
4,800.00	5.00	5.34	4,793.49	182.30 N	17.04 E	487,868.69	586,868.54	0.00	-182.28	0.00	
4,900.00	5.00	5.34	4,893.11	190.98 N	17.85 E	487,877.37	586,869.35	0.00	-190.96	0.00	
4,903.91	5.00	5.34	4,897.00	191.32 N	17.88 E	487,877.71	586,869.38	0.00	-191.30	0.00	Brushy Canyon
5,000.00	5.00	5.34	4,992.73	199.66 N	18.66 E	487,886.05	586,870.16	0.00	-199.63	0.00	
5,100.00	5.00	5.34	5,092.35	208.34 N	19.47 E	487,894.73	586,870.97	0.00	-208.31	0.00	
5,200.00	5.00	5.34	5,191.96	217.01 N	20.28 E	487,903.40	586,871.78	0.00	-216.99	0.00	
5,300.00	5.00	5.34	5,291.58	225.69 N	21.10 E	487,912.08	586,872.60	0.00	-225.66	0.00	
5,400.00	5.00	5.34	5,391.20	234.37 N	21.91 E	487,920.76	586,873.41	0.00	-234.34	0.00	
5,500.00	5.00	5.34	5,490.82	243.05 N	22.72 E	487,929.44	586,874.22	0.00	-243.02	0.00	
5,600.00	5.00	5.34	5,590.44	251.73 N	23.53 E	487,938.12	586,875.03	0.00	-251.69	0.00	
5,700.00	5.00	5.34	5,690.06	260.40 N	24.34 E	487,946.79	586,875.84	0.00	-260.37	0.00	
5,800.00	5.00	5.34	5,789.68	269.08 N	25.15 E	487,955.47	586,876.65	0.00	-269.05	0.00	
5,900.00	5.00	5.34	5,889.30	277.76 N	25.96 E	487,964.15	586,877.46	0.00	-277.72	0.00	
6,000.00	5.00	5.34	5,988.92	286.44 N	26.77 E	487,972.83	586,878.27	0.00	-286.40	0.00	
6,100.00	5.00	5.34	6,088.54	295.11 N	27.58 E	487,981.50	586,879.08	0.00	-295.08	0.00	
6,200.00	5.00	5.34	6,188.16	303.79 N	28.40 E	487,990.18	586,879.90	0.00	-303.75	0.00	

Plan Report for Hades 2 SB State Com 3H - Plan 2

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
Depth (usft)	Inclination (°)	Azimuth (°)	Depth (usft)	Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)	Rate (°/100usft)	Section (usft)	Angle (°)	
6,300.00	5.00	5.34	6,287.78	312.47 N	29.21 E	487,998.86	586,880.71	0.00	-312.43	0.00	
6,371.49	5.00	5.34	6,359.00	318.67 N	29.79 E	488,005.06	586,881.29	0.00	-318.63	0.00	Bone Spring
6,400.00	5.00	5.34	6,387.40	321.15 N	30.02 E	488,007.54	586,881.52	0.00	-321.11	0.00	
6,500.00	5.00	5.34	6,487.02	329.83 N	30.83 E	488,016.22	586,882.33	0.00	-329.78	0.00	
6,600.00	5.00	5.34	6,586.64	338.50 N	31.64 E	488,024.89	586,883.14	0.00	-338.46	0.00	
6,700.00	5.00	5.34	6,686.26	347.18 N	32.45 E	488,033.57	586,883.95	0.00	-347.14	0.00	
6,800.00	5.00	5.34	6,785.88	355.86 N	33.26 E	488,042.25	586,884.76	0.00	-355.81	0.00	
6,900.00	5.00	5.34	6,885.50	364.54 N	34.07 E	488,050.93	586,885.57	0.00	-364.49	0.00	
6,989.85	5.00	5.34	6,975.00	372.33 N	34.80 E	488,058.72	586,886.30	0.00	-372.29	0.00	Lower Avalon Shale
7,000.00	5.00	5.34	6,985.12	373.21 N	34.88 E	488,059.60	586,886.38	0.00	-373.17	0.00	
7,100.00	5.00	5.34	7,084.73	381.89 N	35.70 E	488,068.28	586,887.20	0.00	-381.84	0.00	
7,200.00	5.00	5.34	7,184.35	390.57 N	36.51 E	488,076.96	586,888.01	0.00	-390.52	0.00	
7,300.00	5.00	5.34	7,283.97	399.25 N	37.32 E	488,085.64	586,888.82	0.00	-399.20	0.00	
7,368.29	5.00	5.34	7,352.00	405.17 N	37.87 E	488,091.56	586,889.37	0.00	-405.12	0.00	1st Bone Spring Sand
7,400.00	5.00	5.34	7,383.59	407.92 N	38.13 E	488,094.31	586,889.63	0.00	-407.87	0.00	
7,425.00	5.00	5.34	7,408.50	410.09 N	38.33 E	488,096.48	586,889.83	0.00	-410.04	0.00	Drop 2°/100'
7,500.00	3.50	5.34	7,483.29	415.63 N	38.85 E	488,102.02	586,890.35	2.00	-415.58	180.00	
7,600.00	1.50	5.34	7,583.19	419.97 N	39.26 E	488,106.36	586,890.76	2.00	-419.92	180.00	
7,622.82	1.04	5.34	7,606.00	420.48 N	39.30 E	488,106.87	586,890.80	2.00	-420.42	180.00	Base 1st Bone Spring Sand
7,675.00	0.00	0.00	7,658.18	420.95 N	39.35 E	488,107.34	586,890.85	2.00	-420.90	-180.00	Vertical
7,700.00	0.00	0.00	7,683.18	420.95 N	39.35 E	488,107.34	586,890.85	0.00	-420.90	0.00	
7,800.00	0.00	0.00	7,783.18	420.95 N	39.35 E	488,107.34	586,890.85	0.00	-420.90	0.00	
7,900.00	0.00	0.00	7,883.18	420.95 N	39.35 E	488,107.34	586,890.85	0.00	-420.90	0.00	
7,969.36	0.00	0.00	7,952.54	420.95 N	39.35 E	488,107.34	586,890.85	0.00	-420.90	0.00	KOP/Build 12°/100'
7,975.00	0.68	180.37	7,958.18	420.92 N	39.35 E	488,107.31	586,890.85	12.00	-420.86	180.37	
8,000.00	3.68	180.37	7,983.16	419.97 N	39.34 E	488,106.36	586,890.84	12.00	-419.91	0.00	
8,025.00	6.68	180.37	8,008.05	417.71 N	39.33 E	488,104.10	586,890.83	12.00	-417.66	0.00	
8,050.00	9.68	180.37	8,032.80	414.15 N	39.30 E	488,100.54	586,890.80	12.00	-414.10	0.00	
8,075.00	12.68	180.37	8,057.32	409.31 N	39.27 E	488,095.70	586,890.77	12.00	-409.26	0.00	
8,100.00	15.68	180.37	8,081.56	403.19 N	39.23 E	488,089.58	586,890.73	12.00	-403.13	0.00	
8,121.37	18.24	180.37	8,102.00	396.95 N	39.19 E	488,083.34	586,890.69	12.00	-396.90	0.00	2nd Bone Spring Sand
8,125.00	18.68	180.37	8,105.44	395.81 N	39.18 E	488,082.20	586,890.68	12.00	-395.75	0.00	
8,150.00	21.68	180.37	8,128.90	387.18 N	39.13 E	488,073.57	586,890.63	12.00	-387.13	0.00	
8,175.00	24.68	180.37	8,151.88	377.35 N	39.07 E	488,063.74	586,890.57	12.00	-377.29	0.00	
8,200.00	27.68	180.37	8,174.32	366.32 N	38.99 E	488,052.71	586,890.49	12.00	-366.27	0.00	
8,225.00	30.68	180.37	8,196.14	354.13 N	38.92 E	488,040.52	586,890.42	12.00	-354.08	0.00	
8,250.00	33.68	180.37	8,217.30	340.82 N	38.83 E	488,027.21	586,890.33	12.00	-340.77	0.00	

HALLIBURTON

Plan Report for Hades 2 SB State Com 3H - Plan 2

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
8,275.00	36.68	180.37	8,237.73	326.42 N	38.74 E	488,012.81	586,890.24	12.00	-326.37	0.00	
8,300.00	39.68	180.37	8,257.38	310.97 N	38.64 E	487,997.36	586,890.14	12.00	-310.92	0.00	
8,325.00	42.68	180.37	8,276.20	294.51 N	38.53 E	487,980.90	586,890.03	12.00	-294.46	0.00	
8,350.00	45.68	180.37	8,294.12	277.09 N	38.42 E	487,963.48	586,889.92	12.00	-277.04	0.00	
8,375.00	48.68	180.37	8,311.12	258.76 N	38.30 E	487,945.15	586,889.80	12.00	-258.71	0.00	
8,400.00	51.68	180.37	8,327.12	239.56 N	38.18 E	487,925.95	586,889.68	12.00	-239.51	0.00	
8,425.00	54.68	180.37	8,342.11	219.55 N	38.05 E	487,905.94	586,889.55	12.00	-219.50	0.00	
8,450.00	57.68	180.37	8,356.02	198.79 N	37.91 E	487,885.18	586,889.41	12.00	-198.73	0.00	
8,475.00	60.68	180.37	8,368.83	177.32 N	37.77 E	487,863.71	586,889.27	12.00	-177.27	0.00	
8,500.00	63.68	180.37	8,380.50	155.21 N	37.63 E	487,841.60	586,889.13	12.00	-155.16	0.00	
8,525.00	66.68	180.37	8,390.99	132.53 N	37.48 E	487,818.92	586,888.98	12.00	-132.48	0.00	
8,550.00	69.68	180.37	8,400.28	109.32 N	37.33 E	487,795.71	586,888.83	12.00	-109.27	0.00	
8,564.15	71.38	180.37	8,405.00	95.98 N	37.25 E	487,782.37	586,888.75	12.00	-95.93	0.00	2nd Bone Spring THL
8,575.00	72.68	180.37	8,408.35	85.66 N	37.18 E	487,772.05	586,888.68	12.00	-85.61	0.00	
8,600.00	75.68	180.37	8,415.16	61.61 N	37.03 E	487,748.00	586,888.53	12.00	-61.56	0.00	
8,625.00	78.68	180.37	8,420.71	37.24 N	36.87 E	487,723.63	586,888.37	12.00	-37.19	0.00	
8,650.00	81.68	180.37	8,424.98	12.61 N	36.71 E	487,699.00	586,888.21	12.00	-12.56	0.00	
8,675.00	84.68	180.37	8,427.95	12.21 S	36.55 E	487,674.18	586,888.05	12.00	12.26	0.00	
8,700.00	87.68	180.37	8,429.61	37.15 S	36.39 E	487,649.24	586,887.89	12.00	37.20	0.00	
8,717.21	89.74	180.37	8,430.00	54.36 S	36.28 E	487,632.03	586,887.78	12.00	54.41	0.00	2nd Bone Spring TRGT
8,719.36	90.00	180.37	8,430.00	56.51 S	36.26 E	487,629.88	586,887.76	12.00	56.55	0.00	Landing
8,800.00	90.00	180.37	8,430.00	137.15 S	35.74 E	487,549.24	586,887.24	0.00	137.19	0.00	
8,900.00	90.00	180.37	8,430.00	237.14 S	35.10 E	487,449.25	586,886.60	0.00	237.19	0.00	
9,000.00	90.00	180.37	8,430.00	337.14 S	34.45 E	487,349.25	586,885.95	0.00	337.19	0.00	
9,100.00	90.00	180.37	8,430.00	437.14 S	33.81 E	487,249.25	586,885.31	0.00	437.18	0.00	
9,200.00	90.00	180.37	8,430.00	537.14 S	33.16 E	487,149.25	586,884.66	0.00	537.18	0.00	
9,300.00	90.00	180.37	8,430.00	637.14 S	32.51 E	487,049.25	586,884.01	0.00	637.18	0.00	
9,400.00	90.00	180.37	8,430.00	737.13 S	31.87 E	486,949.26	586,883.37	0.00	737.17	0.00	
9,500.00	90.00	180.37	8,430.00	837.13 S	31.22 E	486,849.26	586,882.72	0.00	837.17	0.00	
9,600.00	90.00	180.37	8,430.00	937.13 S	30.58 E	486,749.26	586,882.08	0.00	937.17	0.00	
9,700.00	90.00	180.37	8,430.00	1,037.13 S	29.93 E	486,649.26	586,881.43	0.00	1,037.17	0.00	
9,800.00	90.00	180.37	8,430.00	1,137.12 S	29.28 E	486,549.27	586,880.78	0.00	1,137.16	0.00	
9,900.00	90.00	180.37	8,430.00	1,237.12 S	28.64 E	486,449.27	586,880.14	0.00	1,237.16	0.00	
10,000.00	90.00	180.37	8,430.00	1,337.12 S	27.99 E	486,349.27	586,879.49	0.00	1,337.16	0.00	
10,100.00	90.00	180.37	8,430.00	1,437.12 S	27.35 E	486,249.27	586,878.85	0.00	1,437.15	0.00	
10,200.00	90.00	180.37	8,430.00	1,537.12 S	26.70 E	486,149.27	586,878.20	0.00	1,537.15	0.00	

Plan Report for Hades 2 SB State Com 3H - Plan 2

Measured Depth (usft)	Inclination (°)	Grid Azimuth (°)	Vertical Depth (usft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100usft)	Vertical Section (usft)	Toolface Angle (°)	Comments
				Northing (usft)	Easting (usft)	Northing (usft)	Easting (usft)				
10,300.00	90.00	180.37	8,430.00	1,637.11 S	26.06 E	486,049.28	586,877.56	0.00	1,637.15	0.00	
10,400.00	90.00	180.37	8,430.00	1,737.11 S	25.41 E	485,949.28	586,876.91	0.00	1,737.14	0.00	
10,500.00	90.00	180.37	8,430.00	1,837.11 S	24.76 E	485,849.28	586,876.26	0.00	1,837.14	0.00	
10,600.00	90.00	180.37	8,430.00	1,937.11 S	24.12 E	485,749.28	586,875.62	0.00	1,937.14	0.00	
10,700.00	90.00	180.37	8,430.00	2,037.11 S	23.47 E	485,649.28	586,874.97	0.00	2,037.14	0.00	
10,800.00	90.00	180.37	8,430.00	2,137.10 S	22.83 E	485,549.29	586,874.33	0.00	2,137.13	0.00	
10,900.00	90.00	180.37	8,430.00	2,237.10 S	22.18 E	485,449.29	586,873.68	0.00	2,237.13	0.00	
11,000.00	90.00	180.37	8,430.00	2,337.10 S	21.54 E	485,349.29	586,873.04	0.00	2,337.13	0.00	
11,100.00	90.00	180.37	8,430.00	2,437.10 S	20.89 E	485,249.29	586,872.39	0.00	2,437.12	0.00	
11,200.00	90.00	180.37	8,430.00	2,537.10 S	20.24 E	485,149.29	586,871.74	0.00	2,537.12	0.00	
11,300.00	90.00	180.37	8,430.00	2,637.09 S	19.60 E	485,049.30	586,871.10	0.00	2,637.12	0.00	
11,400.00	90.00	180.37	8,430.00	2,737.09 S	18.95 E	484,949.30	586,870.45	0.00	2,737.11	0.00	
11,500.00	90.00	180.37	8,430.00	2,837.09 S	18.31 E	484,849.30	586,869.81	0.00	2,837.11	0.00	
11,600.00	90.00	180.37	8,430.00	2,937.09 S	17.66 E	484,749.30	586,869.16	0.00	2,937.11	0.00	
11,700.00	90.00	180.37	8,430.00	3,037.09 S	17.02 E	484,649.30	586,868.52	0.00	3,037.10	0.00	
11,800.00	90.00	180.37	8,430.00	3,137.08 S	16.37 E	484,549.31	586,867.87	0.00	3,137.10	0.00	
11,900.00	90.00	180.37	8,430.00	3,237.08 S	15.72 E	484,449.31	586,867.22	0.00	3,237.10	0.00	
12,000.00	90.00	180.37	8,430.00	3,337.08 S	15.08 E	484,349.31	586,866.58	0.00	3,337.10	0.00	
12,100.00	90.00	180.37	8,430.00	3,437.08 S	14.43 E	484,249.31	586,865.93	0.00	3,437.09	0.00	
12,200.00	90.00	180.37	8,430.00	3,537.07 S	13.79 E	484,149.32	586,865.29	0.00	3,537.09	0.00	
12,300.00	90.00	180.37	8,430.00	3,637.07 S	13.14 E	484,049.32	586,864.64	0.00	3,637.09	0.00	
12,400.00	90.00	180.37	8,430.00	3,737.07 S	12.49 E	483,949.32	586,863.99	0.00	3,737.08	0.00	
12,500.00	90.00	180.37	8,430.00	3,837.07 S	11.85 E	483,849.32	586,863.35	0.00	3,837.08	0.00	
12,600.00	90.00	180.37	8,430.00	3,937.07 S	11.20 E	483,749.32	586,862.70	0.00	3,937.08	0.00	
12,700.00	90.00	180.37	8,430.00	4,037.06 S	10.56 E	483,649.33	586,862.06	0.00	4,037.07	0.00	
12,800.00	90.00	180.37	8,430.00	4,137.06 S	9.91 E	483,549.33	586,861.41	0.00	4,137.07	0.00	
12,900.00	90.00	180.37	8,430.00	4,237.06 S	9.27 E	483,449.33	586,860.77	0.00	4,237.07	0.00	
13,000.00	90.00	180.37	8,430.00	4,337.06 S	8.62 E	483,349.33	586,860.12	0.00	4,337.07	0.00	
13,100.00	90.00	180.37	8,430.00	4,437.06 S	7.97 E	483,249.33	586,859.47	0.00	4,437.06	0.00	
13,200.00	90.00	180.37	8,430.00	4,537.05 S	7.33 E	483,149.34	586,858.83	0.00	4,537.06	0.00	
13,300.00	90.00	180.37	8,430.00	4,637.05 S	6.68 E	483,049.34	586,858.18	0.00	4,637.06	0.00	
13,385.68	90.00	180.37	8,430.00	4,722.73 S	6.13 E	482,963.66	586,857.63	0.00	4,722.73	0.00	TD at 13385.68 - 5 1/2"

Plan Report for Hades 2 SB State Com 3H - Plan 2

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,000.00	2,000.00	0.00	0.00	Build 1°/100'
2,300.00	2,299.86	7.82	0.73	Hold 3°
3,000.00	2,998.90	44.29	4.14	Build 2°/100'
3,050.00	3,048.81	47.33	4.42	Hold 4°
4,000.00	3,996.50	113.31	10.59	Build 2°/100'
4,050.00	4,046.34	117.22	10.96	Hold 5°
7,425.00	7,408.50	410.09	38.33	Drop 2°/100'
7,675.00	7,658.18	420.95	39.35	Vertical
7,969.36	7,952.54	420.95	39.35	KOP/Build 12°/100'
8,719.36	8,430.00	-56.51	36.26	Landing
13,385.68	8,430.00	-4,722.73	6.28	TD at 13385.68

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
TD	No Target (Freehand)	179.92	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	13,385.14	Plan 2	3_MWD

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
2,750.75	2,750.00	9 5/8"	9-5/8	12-1/4
13,385.68	8,430.00	5 1/2"	5-1/2	8-3/4

Plan Report for Hades 2 SB State Com 3H - Plan 2

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	TVDSS (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
602.00	602.00	-2,492.00	Salado			
1,148.00	1,148.00	-1,946.00	Castile			
2,543.47	2,543.00	-551.00	Base of Salt			
2,779.79	2,779.00	-315.00	Lamar			
2,807.83	2,807.00	-287.00	Bell Canyon			
3,664.69	3,662.00	568.00	Cherry Canyon			
4,903.91	4,897.00	1,803.00	Brushy Canyon			
6,371.49	6,359.00	3,265.00	Bone Spring			
6,989.85	6,975.00	3,881.00	Lower Avalon Shale			
7,368.29	7,352.00	4,258.00	1st Bone Spring Sand			
7,622.82	7,606.00	4,512.00	Base 1st Bone Spring Sand			
8,121.37	8,102.00	5,008.00	2nd Bone Spring Sand			
8,564.15	8,405.00	5,311.00	2nd Bone Spring THL			
8,717.21	8,430.00	5,336.00	2nd Bone Spring TRGT			

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									
3H KOP/FTP (100' FNL - 2310' FEL) ()									
	0.00	0.00	8,386.00	420.98	39.26	488,107.37	586,890.76	32.34160921	-104.05198817
- plan misses target center by 167.47usft at 8324.38usft MD (8275.74 TVD, 294.93 N, 38.53 E)									
- Point									

3H LTP/BHL (100' FSL - 2310' FEL) ()									
	0.00	0.00	8,386.00	-4,722.73	6.28	482,963.66	586,857.78	32.32746983	-104.05213867
- plan misses target center by 44.01usft at 13385.68usft MD (8430.00 TVD, -4722.73 N, 6.13 E)									
- Point									

Directional Difficulty Index

Average Dogleg over Survey:	0.75 °/100usft	Maximum Dogleg over Survey:	12.00 °/100usft at 8,719.36 usft
Net Tortousity applicable to Plans:	0.75 °/100usft	Directional Difficulty Index:	6.150

Plan Report for Hades 2 SB State Com 3H - Plan 2

Audit Info

North Reference Sheet for Hades 2 SB State Com Pad (Grid) - Hades 2 SB State Com 3H - Wellbore #1

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to RKB (Precision 601) 25' + GL(3069') @ 3094.00usft. Northing and Easting are relative to Hades 2 SB State Com 3H

Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 3001 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is -104.33333333°, Longitude Origin:0.00000000°, Latitude Origin:0.00000000°

False Easting: 500,000.00usft, False Northing: 0.00usft, Scale Reduction: 0.99991773

Grid Coordinates of Well: 487,686.39 usft N, 586,851.50 usft E

Geographical Coordinates of Well: 32.34045225, -104.05211887

Grid Convergence at Surface is: 0.15°

Based upon Minimum Curvature type calculations, at a Measured Depth of 13,385.68usft

the Bottom Hole Displacement is 4,722.73usft in the Direction of 179.93° (Grid).

Magnetic Convergence at surface is: -6.93° (18 October 2019, , HDGM_2019)

