



Tap Rock Resources, LLC

Eddy County, NM (NAD 83 NME)

(Cypress) Sec-3_T-24-S_R-29-E

Cypress 34 Federal #242H

API# 30-015-46699

OWB

Design: AWB

Standard Survey Report

28 August, 2020





Operator: Taprock Resources LLC
Well Name: Cypress 34 Federal #242H
County: Eddy
State: New Mexico
Rig Name: H&P 388
API Number: 30-015-46699

Intrepid Directional Drilling Specialists certifies that the surveys performed on the above referenced well are true and correct MWD surveys, data provided as follows:

Surveyor: Intrepid Directional Drilling Specialists
Survey Depths: 180' MD – 16046' MD
Projection to Bit: 16115' MD
Dates Performed: 08/02/2020 – 08/28/2020
Type of Survey: MWD

Sincerely,

A handwritten signature in blue ink, appearing to read "JB", with a stylized flourish at the end.

James Burleson
Vice President of MWD Operations
Intrepid Directional Drilling Specialists



Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Cypress 34 Federal #242H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3070.0usft (H&P 388)
Site:	(Cypress) Sec-3_T-24-S_R-29-E	MD Reference:	KB @ 3070.0usft (H&P 388)
Well:	Cypress 34 Federal #242H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Project	Eddy County, NM (NAD 83 NME)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	(Cypress) Sec-3_T-24-S_R-29-E		
Site Position:		Northing:	456,089.00 usft
From:	Map	Easting:	654,400.00 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 15' 12.005 N
		Longitude:	103° 58' 3.336 W
		Grid Convergence:	0.20 °

Well	Cypress 34 Federal #242H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 16' 1.276 N
		Longitude:	103° 58' 20.435 W
		Ground Level:	3,044.0 usft

Wellbore	OWB		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	08/07/20	6.85	59.96	47,806.35238051

Design	AWB		
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Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	179.09

Survey Program		Date	08/28/20	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
180.0	16,115.0	Intrepid MWD (OWB)	MWD	OWSG MWD - Standard

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)
	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
	180.0	0.75	101.14	180.0	-0.2	1.2	0.2	0.42	0.42	0.00
	241.0	1.36	116.00	241.0	-0.6	2.2	0.7	1.09	1.00	24.36
	323.0	1.45	103.69	323.0	-1.3	4.1	1.4	0.38	0.11	-15.01
	412.0	1.45	72.14	411.9	-1.2	6.2	1.3	0.89	0.00	-35.45
	500.0	1.80	70.56	499.9	-0.4	8.6	0.6	0.40	0.40	-1.80
	594.0	1.49	74.95	593.9	0.4	11.2	-0.2	0.36	-0.33	4.67
	686.0	1.10	65.72	685.8	1.1	13.1	-0.9	0.48	-0.42	-10.03
	777.0	1.10	80.84	776.8	1.6	14.8	-1.3	0.32	0.00	16.62
	868.0	0.84	79.70	867.8	1.8	16.3	-1.6	0.29	-0.29	-1.25

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Design:	AWB	Database:	EDM 5000.15 Single User Db

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)	
960.0	0.66	59.39	959.8	2.2	17.4	-1.9	0.35	-0.20	-22.08	
1,055.0	0.66	341.52	1,054.8	3.0	17.7	-2.7	0.87	0.00	-81.97	
1,149.0	2.73	298.19	1,148.7	4.6	15.6	-4.3	2.44	2.20	-46.10	
1,244.0	5.80	293.01	1,243.5	7.5	9.2	-7.4	3.25	3.23	-5.45	
1,339.0	8.13	298.11	1,337.8	12.6	-1.2	-12.6	2.54	2.45	5.37	
1,434.0	7.08	298.02	1,431.9	18.5	-12.3	-18.7	1.11	-1.11	-0.09	
1,528.0	6.73	299.34	1,525.2	23.9	-22.2	-24.3	0.41	-0.37	1.40	
1,623.0	6.33	302.06	1,619.6	29.4	-31.5	-29.9	0.53	-0.42	2.86	
1,717.0	5.76	304.70	1,713.1	34.9	-39.7	-35.5	0.67	-0.61	2.81	
1,812.0	5.05	303.47	1,807.7	39.9	-47.1	-40.6	0.76	-0.75	-1.29	
1,907.0	6.02	303.64	1,902.2	44.9	-54.8	-45.8	1.02	1.02	0.18	
2,001.0	6.46	302.85	1,995.7	50.5	-63.3	-51.5	0.48	0.47	-0.84	
2,096.0	5.58	303.29	2,090.2	56.0	-71.7	-57.1	0.93	-0.93	0.46	
2,191.0	5.14	306.54	2,184.7	61.0	-79.0	-62.3	0.56	-0.46	3.42	
2,285.0	5.54	301.09	2,278.3	65.9	-86.2	-67.3	0.69	0.43	-5.80	
2,380.0	4.70	298.19	2,373.0	70.1	-93.6	-71.6	0.92	-0.88	-3.05	
2,475.0	2.86	281.23	2,467.8	72.4	-99.3	-74.0	2.25	-1.94	-17.85	
2,502.3	3.28	286.57	2,495.0	72.8	-100.8	-74.3	1.86	1.54	19.56	
Top Salt										
2,570.0	4.40	295.20	2,562.6	74.4	-105.0	-76.1	1.86	1.66	12.75	
2,664.0	5.05	296.44	2,656.2	77.8	-111.9	-79.6	0.70	0.69	1.32	
2,759.0	5.89	300.48	2,750.8	82.1	-119.9	-84.0	0.97	0.88	4.25	
2,854.0	5.80	298.54	2,845.3	86.9	-128.3	-88.9	0.23	-0.09	-2.04	
2,863.7	5.74	298.42	2,855.0	87.4	-129.2	-89.4	0.66	-0.65	-1.26	
Rustler Anhydrite										
2,868.8	5.70	298.35	2,860.0	87.6	-129.6	-89.6	0.66	-0.65	-1.28	
Base Salt										
2,948.0	5.19	297.23	2,938.9	91.1	-136.2	-93.3	0.66	-0.65	-1.42	
3,043.0	4.62	300.57	3,033.5	95.0	-143.4	-97.3	0.67	-0.60	3.52	
3,074.6	4.52	301.04	3,065.0	96.3	-145.5	-98.6	0.35	-0.33	1.50	
Delaware Mountain Gp										
3,089.6	4.47	301.28	3,080.0	96.9	-146.5	-99.2	0.35	-0.33	1.55	
Lamar										
3,124.7	4.35	301.84	3,115.0	98.3	-148.8	-100.7	0.35	-0.33	1.61	
Bell Canyon										
3,134.7	4.32	302.01	3,125.0	98.7	-149.5	-101.1	0.35	-0.32	1.66	
Ramsey Sand										
3,138.0	4.31	302.06	3,128.2	98.9	-149.7	-101.2	0.35	-0.32	1.68	
3,309.0	4.40	304.79	3,298.7	106.0	-160.5	-108.5	0.13	0.05	1.60	
3,404.0	5.23	303.38	3,393.4	110.5	-167.1	-113.1	0.88	0.87	-1.48	
3,499.0	7.69	311.82	3,487.8	117.1	-175.5	-119.9	2.77	2.59	8.88	
3,593.0	9.98	311.11	3,580.7	126.6	-186.3	-129.6	2.44	2.44	-0.76	
3,688.0	11.69	310.85	3,674.0	138.3	-199.8	-141.5	1.80	1.80	-0.27	
3,783.0	12.62	309.62	3,766.9	151.3	-215.1	-154.7	1.02	0.98	-1.29	
3,878.0	12.84	309.97	3,859.5	164.7	-231.1	-168.3	0.25	0.23	0.37	

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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)
3,970.6	11.80	310.15	3,950.0	177.4	-246.3	-181.3	1.13	-1.13	0.19
Cherry Canyon									
3,972.0	11.78	310.15	3,951.4	177.6	-246.5	-181.5	1.13	-1.13	0.21
4,067.0	10.46	307.95	4,044.6	189.1	-260.7	-193.2	1.46	-1.39	-2.32
4,162.0	10.15	308.39	4,138.0	199.6	-274.1	-203.9	0.34	-0.33	0.46
4,257.0	9.49	308.04	4,231.6	209.6	-286.8	-214.2	0.70	-0.69	-0.37
4,351.0	10.15	308.56	4,324.3	219.6	-299.4	-224.3	0.71	0.70	0.55
4,446.0	10.81	312.52	4,417.7	230.8	-312.5	-235.8	1.03	0.69	4.17
4,541.0	9.98	312.26	4,511.1	242.4	-325.1	-247.5	0.88	-0.87	-0.27
4,635.0	10.20	311.55	4,603.7	253.4	-337.4	-258.7	0.27	0.23	-0.76
4,730.0	11.43	310.15	4,697.0	265.0	-350.9	-270.6	1.32	1.29	-1.47
4,825.0	11.16	311.29	4,790.1	277.2	-365.0	-282.9	0.37	-0.28	1.20
4,919.0	11.38	312.52	4,882.3	289.4	-378.7	-295.4	0.35	0.23	1.31
5,014.0	11.78	312.78	4,975.4	302.4	-392.7	-308.5	0.42	0.42	0.27
5,109.0	11.69	313.75	5,068.4	315.6	-406.7	-322.0	0.23	-0.09	1.02
5,187.2	11.58	313.09	5,145.0	326.4	-418.2	-333.0	0.22	-0.14	-0.84
Brushy Canyon									
5,203.0	11.56	312.96	5,160.5	328.6	-420.5	-335.2	0.22	-0.14	-0.85
5,298.0	10.95	311.82	5,253.7	341.1	-434.2	-348.0	0.68	-0.64	-1.20
5,393.0	10.68	312.43	5,347.0	353.1	-447.4	-360.1	0.31	-0.28	0.64
5,488.0	10.81	310.85	5,440.3	364.8	-460.7	-372.1	0.34	0.14	-1.66
5,582.0	10.73	309.00	5,532.6	376.1	-474.1	-383.6	0.38	-0.09	-1.97
5,677.0	9.10	306.28	5,626.2	386.1	-487.1	-393.8	1.78	-1.72	-2.86
5,772.0	10.24	308.21	5,719.9	395.8	-499.8	-403.7	1.25	1.20	2.03
5,867.0	11.52	310.15	5,813.2	407.1	-513.6	-415.2	1.40	1.35	2.04
5,962.0	9.76	309.53	5,906.5	418.4	-527.1	-426.7	1.86	-1.85	-0.65
6,056.0	10.15	307.95	5,999.1	428.5	-539.8	-437.0	0.51	0.41	-1.68
6,151.0	12.22	309.00	6,092.3	440.0	-554.2	-448.7	2.19	2.18	1.11
6,246.0	13.67	310.23	6,184.9	453.6	-570.6	-462.6	1.55	1.53	1.29
6,341.0	12.40	309.88	6,277.4	467.4	-587.0	-476.6	1.34	-1.34	-0.37
6,435.0	10.64	309.09	6,369.5	479.3	-601.5	-488.8	1.88	-1.87	-0.84
6,530.0	10.55	307.69	6,462.9	490.2	-615.2	-499.9	0.29	-0.09	-1.47
6,625.0	8.66	308.56	6,556.6	499.9	-627.6	-509.8	2.00	-1.99	0.92
6,719.0	7.25	306.45	6,649.7	507.9	-637.9	-517.9	1.53	-1.50	-2.24
6,814.0	5.23	309.79	6,744.1	514.2	-646.1	-524.4	2.16	-2.13	3.52
6,875.1	3.79	310.68	6,805.0	517.3	-649.8	-527.6	2.36	-2.36	1.46
Bone Spring Lime									
6,909.0	2.99	311.55	6,838.9	518.6	-651.3	-528.9	2.36	-2.36	2.56
6,950.2	3.14	306.01	6,880.0	520.0	-653.0	-530.3	0.81	0.37	-13.45
Upper Avalon									
7,004.0	3.38	299.60	6,933.7	521.6	-655.6	-532.0	0.81	0.44	-11.91
7,098.0	2.81	308.83	7,027.6	524.5	-659.8	-534.9	0.80	-0.61	9.82
7,193.0	2.95	309.27	7,122.5	527.5	-663.5	-537.9	0.15	0.15	0.46
7,288.0	1.85	309.88	7,217.4	530.0	-666.5	-540.5	1.16	-1.16	0.64

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7,330.6	1.72	319.07	7,260.0	530.9	-667.5	-541.5	0.74	-0.31	21.55
Middle Avalon									
7,382.0	1.63	331.68	7,311.3	532.1	-668.3	-542.7	0.74	-0.17	24.55
7,477.0	2.07	326.41	7,406.3	534.8	-669.9	-545.3	0.50	0.46	-5.55
7,572.0	1.76	319.11	7,501.2	537.3	-671.8	-547.9	0.41	-0.33	-7.68
7,666.0	2.64	277.45	7,595.2	538.7	-674.9	-549.3	1.88	0.94	-44.32
7,710.9	2.30	266.01	7,640.0	538.7	-676.8	-549.4	1.33	-0.75	-25.50
Lower Avalon									
7,761.0	2.07	249.59	7,690.1	538.4	-678.7	-549.1	1.33	-0.47	-32.75
7,856.0	1.32	75.65	7,785.1	538.0	-679.2	-548.7	3.56	-0.79	-183.09
7,885.9	1.29	75.86	7,815.0	538.2	-678.6	-548.9	0.10	-0.09	0.71
1st Bone Spring Sand									
7,951.0	1.23	76.36	7,880.0	538.5	-677.2	-549.2	0.10	-0.09	0.76
8,045.0	1.19	58.43	7,974.0	539.3	-675.4	-549.9	0.40	-0.04	-19.07
8,140.0	1.45	47.62	8,069.0	540.6	-673.7	-551.2	0.38	0.27	-11.38
8,235.0	1.10	352.42	8,164.0	542.3	-672.9	-552.9	1.29	-0.37	-58.11
8,241.0	1.19	349.90	8,170.0	542.4	-672.9	-553.1	1.65	1.42	-41.89
2nd Bone Spring Carb									
8,329.0	2.55	333.79	8,257.9	545.1	-673.9	-555.7	1.65	1.55	-18.31
8,424.0	0.66	238.60	8,352.9	546.7	-675.3	-557.4	2.83	-1.99	-100.20
8,519.0	1.14	224.89	8,447.9	545.8	-676.5	-556.4	0.55	0.51	-14.43
8,614.0	1.76	201.34	8,542.9	543.7	-677.7	-554.4	0.89	0.65	-24.79
8,708.0	3.25	211.97	8,636.8	540.1	-679.6	-550.8	1.65	1.59	11.31
8,746.3	3.02	204.96	8,675.0	538.3	-680.6	-549.0	1.17	-0.61	-18.31
2nd Bone Spring Sand									
8,803.0	2.77	192.72	8,731.6	535.6	-681.5	-546.4	1.17	-0.44	-21.58
8,897.0	1.36	149.75	8,825.6	532.4	-681.5	-543.2	2.13	-1.50	-45.71
8,992.0	1.63	121.88	8,920.5	530.7	-679.8	-541.5	0.81	0.28	-29.34
9,026.5	1.67	128.31	8,955.0	530.2	-678.9	-540.9	0.55	0.13	18.67
3rd Bone Spring Carb									
9,087.0	1.80	138.58	9,015.5	528.9	-677.6	-539.6	0.55	0.21	16.96
9,181.0	2.29	199.05	9,109.5	526.0	-677.3	-536.7	2.24	0.52	64.33
9,276.0	2.64	228.94	9,204.4	522.8	-679.5	-533.5	1.38	0.37	31.46
9,371.0	0.18	92.44	9,299.3	521.3	-681.0	-532.1	2.92	-2.59	-143.68
9,466.0	1.49	44.98	9,394.3	522.2	-680.0	-532.9	1.45	1.38	-49.96
9,561.0	1.32	37.07	9,489.3	524.0	-678.5	-534.7	0.27	-0.18	-8.33
9,655.0	0.75	11.85	9,583.3	525.4	-677.7	-536.1	0.76	-0.61	-26.83
9,750.0	0.88	2.18	9,678.3	526.8	-677.5	-537.5	0.20	0.14	-10.18
9,831.7	0.91	349.84	9,760.0	528.0	-677.6	-538.7	0.24	0.04	-15.10
3rd Bone Spring Sand									
9,845.0	0.92	347.94	9,773.3	528.2	-677.7	-538.9	0.24	0.07	-14.33
9,939.0	0.88	23.89	9,867.2	529.6	-677.5	-540.3	0.59	-0.04	38.24
10,034.0	1.05	9.30	9,962.2	531.2	-677.1	-541.8	0.31	0.18	-15.36
10,101.8	0.90	8.01	10,030.0	532.3	-676.9	-543.0	0.22	-0.22	-1.91
3rd BS W Sand									

Company:	Tap Rock Resources, LLC	Local Co-ordinate Reference:	Well Cypress 34 Federal #242H
Project:	Eddy County, NM (NAD 83 NME)	TVD Reference:	KB @ 3070.0usft (H&P 388)
Site:	(Cypress) Sec-3_T-24-S_R-29-E	MD Reference:	KB @ 3070.0usft (H&P 388)
Well:	Cypress 34 Federal #242H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

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)
10,129.0	0.84	7.36	10,057.2	532.7	-676.9	-543.4	0.22	-0.22	-2.38
10,151.8	0.75	0.38	10,080.0	533.0	-676.8	-543.7	0.59	-0.41	-30.65
Wolfcamp A X Sand									
10,223.0	0.57	326.32	10,151.2	533.8	-677.0	-544.5	0.59	-0.25	-47.82
10,261.8	0.75	327.29	10,190.0	534.2	-677.3	-544.8	0.46	0.46	2.50
Wolfcamp A Y Sand									
10,318.0	1.01	328.08	10,246.2	534.9	-677.7	-545.6	0.46	0.46	1.41
10,369.0	0.48	336.07	10,297.2	535.5	-678.1	-546.2	1.06	-1.04	15.67
10,386.8	0.54	334.60	10,315.0	535.6	-678.1	-546.3	0.34	0.34	-8.24
Wolfcamp A Lower									
10,475.0	0.84	330.45	10,403.2	536.5	-678.6	-547.3	0.34	0.34	-4.71
10,491.8	0.44	308.21	10,420.0	536.7	-678.7	-547.4	2.74	-2.36	-132.35
Wolfcamp B									
10,570.0	1.85	181.30	10,498.2	535.6	-679.0	-546.3	2.74	1.80	-162.30
10,665.0	16.88	185.52	10,591.6	520.3	-680.4	-531.0	15.83	15.82	4.44
10,760.0	34.11	189.56	10,677.1	480.0	-686.2	-490.8	18.22	18.14	4.25
10,779.5	34.86	189.97	10,693.2	469.1	-688.0	-480.0	4.01	3.83	2.09
FTP @ 10779.5'MD, 100'FNL & 606.9'FEL									
10,824.9	36.60	190.86	10,730.0	443.0	-692.8	-454.0	4.01	3.84	1.96
Wolfcamp B1									
10,855.0	37.76	191.41	10,754.0	425.2	-696.4	-436.2	4.01	3.85	1.83
10,950.0	46.68	189.91	10,824.3	362.5	-708.1	-373.7	9.45	9.39	-1.58
11,045.0	51.69	187.19	10,886.4	291.4	-718.7	-302.8	5.70	5.27	-2.86
11,126.0	54.55	182.18	10,935.0	226.8	-723.9	-238.3	6.08	3.53	-6.18
Wolfcamp C									
11,138.0	54.99	181.47	10,941.9	217.1	-724.2	-228.5	6.08	3.67	-5.92
11,232.0	56.70	178.31	10,994.7	139.3	-724.1	-150.8	3.32	1.82	-3.36
11,325.0	63.78	176.38	11,040.8	58.7	-720.3	-70.1	7.82	7.61	-2.08
11,421.0	72.62	177.43	11,076.4	-30.2	-715.5	18.8	9.26	9.21	1.09
11,499.0	81.49	178.75	11,093.9	-106.1	-713.0	94.8	11.49	11.37	1.69
11,572.0	90.29	181.65	11,099.1	-178.8	-713.3	167.5	12.69	12.05	3.97
11,667.0	90.11	180.77	11,098.8	-273.8	-715.3	262.4	0.95	-0.19	-0.93
11,763.0	90.24	179.19	11,098.5	-369.8	-715.2	358.4	1.65	0.14	-1.65
11,858.0	92.40	177.52	11,096.3	-464.7	-712.5	453.4	2.87	2.27	-1.76
11,952.0	95.43	177.96	11,089.9	-558.4	-708.8	547.1	3.26	3.22	0.47
12,047.0	89.32	176.55	11,086.0	-653.2	-704.3	641.9	6.60	-6.43	-1.48
12,143.0	91.52	178.49	11,085.3	-749.1	-700.1	737.9	3.06	2.29	2.02
12,238.0	89.01	180.07	11,084.8	-844.1	-698.9	832.9	3.12	-2.64	1.66
12,334.0	93.98	182.00	11,082.3	-940.0	-700.6	928.7	5.55	5.18	2.01
12,429.0	93.71	181.21	11,075.9	-1,034.7	-703.3	1,023.4	0.88	-0.28	-0.83
12,524.0	90.99	179.98	11,072.0	-1,129.6	-704.3	1,118.3	3.14	-2.86	-1.29
12,619.0	90.86	176.46	11,070.5	-1,224.6	-701.3	1,213.3	3.71	-0.14	-3.71
12,714.0	88.79	171.63	11,070.8	-1,319.0	-691.5	1,307.9	5.53	-2.18	-5.08
12,809.0	88.79	172.16	11,072.8	-1,413.0	-678.1	1,402.1	0.56	0.00	0.56

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Site:	(Cypress) Sec-3_T-24-S_R-29-E	MD Reference:	KB @ 3070.0usft (H&P 388)
Well:	Cypress 34 Federal #242H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

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)
12,904.0	89.23	172.69	11,074.4	-1,507.2	-665.6	1,496.4	0.73	0.46	0.56
12,999.0	90.59	176.11	11,074.6	-1,601.7	-656.3	1,591.1	3.87	1.43	3.60
13,094.0	91.43	179.45	11,072.9	-1,696.6	-652.6	1,686.1	3.62	0.88	3.52
13,189.0	88.44	181.56	11,073.0	-1,791.6	-653.5	1,781.0	3.85	-3.15	2.22
13,284.0	88.26	182.70	11,075.8	-1,886.5	-657.0	1,875.8	1.21	-0.19	1.20
13,379.0	89.10	184.11	11,078.0	-1,981.3	-662.6	1,970.5	1.73	0.88	1.48
13,474.0	87.74	183.84	11,080.6	-2,076.0	-669.2	2,065.2	1.46	-1.43	-0.28
13,569.0	89.23	183.23	11,083.1	-2,170.8	-675.1	2,159.8	1.69	1.57	-0.64
13,663.0	90.51	183.67	11,083.3	-2,264.7	-680.7	2,253.6	1.44	1.36	0.47
13,753.0	93.23	183.67	11,080.4	-2,354.4	-686.5	2,343.2	3.02	3.02	0.00
13,848.0	94.20	182.53	11,074.2	-2,449.1	-691.6	2,437.8	1.57	1.02	-1.20
13,943.0	92.13	180.24	11,069.0	-2,543.9	-693.9	2,532.5	3.25	-2.18	-2.41
14,038.0	90.11	178.75	11,067.1	-2,638.9	-693.1	2,627.5	2.64	-2.13	-1.57
14,132.0	90.73	178.31	11,066.4	-2,732.8	-690.7	2,721.5	0.81	0.66	-0.47
14,227.0	90.77	177.87	11,065.2	-2,827.8	-687.5	2,816.5	0.47	0.04	-0.46
14,323.0	92.57	177.61	11,062.4	-2,923.6	-683.7	2,912.4	1.89	1.88	-0.27
14,413.0	88.18	176.90	11,061.8	-3,013.5	-679.4	3,002.3	4.94	-4.88	-0.79
14,508.0	87.38	177.34	11,065.5	-3,108.3	-674.6	3,097.2	0.96	-0.84	0.46
14,604.0	87.91	177.96	11,069.4	-3,204.2	-670.7	3,193.1	0.85	0.55	0.65
14,699.0	87.78	177.70	11,073.0	-3,299.0	-667.1	3,288.0	0.31	-0.14	-0.27
14,794.0	92.40	181.30	11,072.8	-3,394.0	-666.3	3,383.0	6.16	4.86	3.79
14,889.0	90.68	183.23	11,070.3	-3,488.9	-670.0	3,477.8	2.72	-1.81	2.03
14,982.0	89.05	182.70	11,070.5	-3,581.7	-674.8	3,570.6	1.84	-1.75	-0.57
15,077.0	89.49	181.56	11,071.7	-3,676.7	-678.4	3,665.4	1.29	0.46	-1.20
15,172.0	90.64	180.16	11,071.6	-3,771.6	-679.8	3,760.4	1.91	1.21	-1.47
15,265.0	89.14	178.66	11,071.8	-3,864.6	-678.8	3,853.4	2.28	-1.61	-1.61
15,360.0	91.43	178.40	11,071.3	-3,959.6	-676.4	3,948.4	2.43	2.41	-0.27
15,456.0	91.08	177.96	11,069.2	-4,055.5	-673.3	4,044.3	0.59	-0.36	-0.46
15,551.0	89.71	177.78	11,068.5	-4,150.5	-669.8	4,139.3	1.45	-1.44	-0.19
15,644.0	92.75	177.78	11,066.6	-4,243.4	-666.2	4,232.2	3.27	3.27	0.00
15,738.0	87.52	177.08	11,066.3	-4,337.2	-662.0	4,326.2	5.61	-5.56	-0.74
15,833.0	89.49	176.38	11,068.8	-4,432.0	-656.6	4,421.0	2.20	2.07	-0.74
15,929.0	90.81	175.23	11,068.6	-4,527.8	-649.6	4,516.9	1.82	1.38	-1.20
16,024.0	92.00	177.43	11,066.2	-4,622.5	-643.5	4,611.7	2.63	1.25	2.32
16,034.2	92.02	177.18	11,065.9	-4,632.7	-643.0	4,621.9	2.41	0.18	-2.41
LTP @ 16034.2'MD, 100'FSL & 628.7'FEL									
16,046.0	92.04	176.90	11,065.5	-4,644.5	-642.4	4,633.7	2.41	0.18	-2.41
LAST SVY									
16,115.0	92.04	176.90	11,063.0	-4,713.4	-638.7	4,702.6	0.00	0.00	0.00
Projection to TD @ 16115'MD, 19.4'FSL & 625.5'FEL									

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Well:	Cypress 34 Federal #242H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Design Targets

Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
LTP (Cypress 34 Fed	- actual wellpath misses target center by 2.1usft at 16034.5usft MD (11065.9 TVD, -4633.0 N, -643.0 E)	0.00	0.00	11,064.0	-4,633.0	-644.0	456,430.00	652,271.00	32° 15' 15.450 N	103° 58' 28.116 W
PBHL (Cypress 34 Fe	- actual wellpath misses target center by 3.9usft at 16105.4usft MD (11063.3 TVD, -4703.8 N, -639.2 E)	-0.10	179.09	11,064.0	-4,704.0	-643.0	456,359.00	652,272.00	32° 15' 14.748 N	103° 58' 28.107 W
FTP (Cypress 34 Fed	- actual wellpath misses target center by 255.5usft at 11033.5usft MD (10879.2 TVD, 300.3 N, -717.6 E)	0.00	0.00	11,071.0	469.0	-725.0	461,532.00	652,190.00	32° 16' 5.941 N	103° 58' 28.861 W

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,502.3	2,495.0	Top Salt			
2,863.7	2,855.0	Rustler Anhydrite			
2,868.8	2,860.0	Base Salt		0.00	
3,074.6	3,065.0	Delaware Mountain Gp			
3,089.6	3,080.0	Lamar			
3,124.7	3,115.0	Bell Canyon			
3,134.7	3,125.0	Ramsey Sand			
3,970.6	3,950.0	Cherry Canyon			
5,187.2	5,145.0	Brushy Canyon			
6,875.1	6,805.0	Bone Spring Lime			
6,950.2	6,880.0	Upper Avalon			
7,330.6	7,260.0	Middle Avalon			
7,710.9	7,640.0	Lower Avalon			
7,885.9	7,815.0	1st Bone Spring Sand			
8,241.0	8,170.0	2nd Bone Spring Carb			
8,746.3	8,675.0	2nd Bone Spring Sand			
9,026.5	8,955.0	3rd Bone Spring Carb			
9,831.7	9,760.0	3rd Bone Spring Sand			
10,101.8	10,030.0	3rd BS W Sand			
10,151.8	10,080.0	Wolfcamp A X Sand			
10,261.8	10,190.0	Wolfcamp A Y Sand			
10,386.8	10,315.0	Wolfcamp A Lower			
10,491.8	10,420.0	Wolfcamp B			
10,824.9	10,730.0	Wolfcamp B1			
11,126.0	10,935.0	Wolfcamp C			



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Well:	Cypress 34 Federal #242H	North Reference:	Grid
Wellbore:	OWB	Survey Calculation Method:	Minimum Curvature
Design:	AWB	Database:	EDM 5000.15 Single User Db

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
10,779.5	10,693.2	469.1	-688.0	FTP @ 10779.5'MD, 100'FNL & 606.9'FEL
16,034.2	11,065.9	-4,632.7	-643.0	LTP @ 16034.2'MD, 100'FSL & 628.7'FEL
16,046.0	11,065.5	-4,644.5	-642.4	LAST SVY
16,115.0	11,063.0	-4,713.4	-638.7	Projection to TD @ 16115'MD, 19.4'FSL & 625.5'FEL

Checked By: _____ Approved By: _____ Date: _____