

Results of Directional Survey

API number:	30-025-41506	DD
OGRID:		Operator: CONOCOPHILLIPS COMPANY
		Property: RUBY FEDERAL # 34

surface	ULSTR:	G	18	T 17S	R 32E
				1800 FNL	1795 FEL

BH Loc	ULSTR:	G	18	T 17S	R 32E
6873 MD			6830.4 TVD	1676 FNL	2313 FEL

Top Perf/OH	ULSTR:	G	18	T 17S	R 32E
5462 MD			5419.5 TVD	1661 FNL	2300 FEL

Bot Perf/OH	ULSTR:	G	18	T 17S	R 32E
6600 MD			6557.4 TVD	1674 FNL	2312 FEL

	MD	N/S	E/W	VD
	5455	139.12	-504.94	5412.5
TOP PERFS/OH	5462	139.03	-505.02	5419.50
	5544	137.95	-505.96	5501.48
	6529	126.74	-516.05	6486.36
BOT PERFS/OH	6600	126.29	-516.64	6557.36
	6618	126.18	-516.79	6575.36

NEXT TO LAST	6797	125.06	-517.74	6754.35
LAST READING	6873	124.49	-518.09	6830.35
TD	6873	124.49	-518.09	6830.35

Surface Location	1800 FN	1795 FE
Projected BHL	1676 FN	2313 FE
Location of		
Top Perfs/OH	1661 FN	2300 FE
Bottom Perfs/OH	1674 FN	2312 FE

SUMMARY of Subsurface Locations

Surface Location	G-18-17S-32E	1800 FN	1795 FE	Vert. Depth
Top Perfs/OH	G-18-17S-32E	1661 FN	2300 FE	5419.50
Bottom Perfs/OH	G-18-17S-32E	1674 FN	2312 FE	6557.36
Projected TD	G-18-17S-32E	1676 FN	2313 FE	6830.35

AUG 11 2014



HOBBS OCD
AUG 05 2014
RECEIVED

ConocoPhillips

Lea County, New Mexico

Ruby Federal

Ruby Federal 34

Original Hole

Design: Surveys Original Hole

Standard Survey Report

21 February, 2014



Company:	ConocoPhillips	Local Co-ordinate Reference:	Well Ruby Federal 34
Project:	Lea County New Mexico	TVD Reference:	RKB=3969+13 @ 3982.00usft (PD 822)
Site:	Ruby Federal	MD Reference:	RKB=3969+13 @ 3982.00usft (PD 822)
Well:	Ruby Federal 34	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	EDM 5000.1 Ddatabase

Project	Lea County, New Mexico		
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	Ruby Federal		
Site Position:		Northing:	665,437.81 usft
From:	Map	Easting:	666,996.38 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/8 "
		Latitude:	32° 49' 41.50037426 N
		Longitude:	103° 47' 22.87078135 W
		Grid Convergence:	0.29 °

Well	Ruby Federal 34		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 50' 12.75130839 N
		Longitude:	103° 48' 9.18741552 W
		Ground Level:	3,969.00 usft

Wellbore	Original Hole		
Magnetics	Model Name	Sample Date	Declination
	User Defined	12/31/2013	7.55
			Dip Angle
			60.64
			Field Strength
			48,743

Design	Surveys Original Hole		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			285.22

Survey Program	Date 2/21/2014		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
754.00	6,873.00	MWD (Original Hole)	MWD
			Description
			MWD - Standard

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
754.00	0.00	0.00	754.00	0.00	0.00	0.00	0.00	0.00	0.00
Casing/MWD surveys									
809.00	0.30	190.90	809.00	-0.14	-0.03	-0.01	0.55	0.55	0.00
898.00	0.30	166.00	898.00	-0.60	-0.01	-0.14	0.15	0.00	-27.98
987.00	0.20	145.30	987.00	-0.95	0.13	-0.37	0.15	-0.11	-23.26
1,076.00	0.00	287.00	1,076.00	-1.08	0.22	-0.49	0.22	-0.22	0.00
1,166.00	0.30	82.60	1,166.00	-1.05	0.45	-0.71	0.33	0.33	0.00
1,255.00	0.50	73.90	1,254.99	-0.91	1.06	-1.26	0.23	0.22	-9.78
1,344.00	0.60	74.50	1,343.99	-0.68	1.88	-1.99	0.11	0.11	0.67
1,433.00	0.80	66.60	1,432.98	-0.31	2.90	-2.88	0.25	0.22	-8.88

Company:	ConocoPhillips	Local Co-ordinate Reference:	Well Ruby Federal 34
Project:	Lea County, New Mexico	TVD Reference:	RKB=3969+13 @ 3982.00usft (PD 822)
Site:	Ruby Federal	MD Reference:	RKB=3969+13 @ 3982.00usft (PD 822)
Well:	Ruby Federal 34	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	EDM 5000.1 Ddatabase

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)
1,523.00	0.90	333.30	1,522.98	0.57	3.16	-2.89	1.38	0.11	-103.67
1,612.00	1.90	318.50	1,611.95	2.30	1.86	-1.19	1.19	1.12	-16.63
1,701.00	1.80	293.00	1,700.91	3.96	-0.40	1.42	0.92	-0.11	-28.65
1,791.00	2.80	283.20	1,790.83	5.01	-3.84	5.02	1.19	1.11	-10.89
1,880.00	3.70	293.20	1,879.69	6.64	-8.60	10.04	1.19	1.01	11.24
1,969.00	5.20	291.20	1,968.42	9.23	-15.00	16.89	1.69	1.69	-2.25
2,059.00	6.40	288.40	2,057.96	12.29	-23.56	25.96	1.37	1.33	-3.11
2,148.00	8.40	291.10	2,146.21	16.19	-34.33	37.38	2.28	2.25	3.03
2,237.00	8.80	285.90	2,234.21	20.40	-46.94	50.65	0.98	0.45	-5.84
2,327.00	9.40	285.40	2,323.08	24.24	-60.65	64.89	0.67	0.67	-0.56
2,417.00	9.40	283.90	2,411.87	27.95	-74.87	79.58	0.27	0.00	-1.67
2,506.00	11.00	283.10	2,499.46	31.62	-90.20	95.34	1.80	1.80	-0.90
2,596.00	10.40	281.70	2,587.89	35.22	-106.52	112.02	0.73	-0.67	-1.56
2,685.00	9.50	280.00	2,675.56	38.12	-121.62	127.36	1.06	-1.01	-1.91
2,774.00	9.70	280.20	2,763.31	40.72	-136.23	142.14	0.23	0.22	0.22
2,863.00	9.20	279.50	2,851.10	43.23	-150.62	156.69	0.58	-0.56	-0.79
2,953.00	9.00	279.40	2,939.97	45.56	-164.67	170.85	0.22	-0.22	-0.11
3,042.00	8.80	280.90	3,027.90	47.99	-178.22	184.57	0.34	-0.22	1.69
3,132.00	8.70	281.80	3,116.85	50.68	-191.64	198.22	0.19	-0.11	1.00
3,221.00	8.80	287.00	3,204.81	54.05	-204.74	211.75	0.90	0.11	5.84
3,310.00	10.10	287.00	3,292.61	58.32	-218.71	226.35	1.46	1.46	0.00
3,400.00	11.50	288.90	3,381.01	63.53	-234.75	243.20	1.60	1.56	2.11
3,489.00	10.80	289.00	3,468.33	69.12	-251.03	260.37	0.79	-0.79	0.11
3,578.00	10.50	288.00	3,555.80	74.34	-266.62	276.79	0.40	-0.34	-1.12
3,668.00	10.30	288.30	3,644.32	79.40	-282.06	293.02	0.23	-0.22	0.33
3,757.00	10.20	288.60	3,731.90	84.42	-297.09	308.83	0.13	-0.11	0.34
3,846.00	10.20	287.90	3,819.49	89.35	-312.05	324.57	0.14	0.00	-0.79
3,936.00	10.10	287.50	3,908.08	94.17	-327.16	340.41	0.14	-0.11	-0.44
4,025.00	10.00	286.10	3,995.72	98.66	-342.03	355.93	0.30	-0.11	-1.57
4,115.00	9.80	286.00	4,084.38	102.94	-356.90	371.41	0.22	-0.22	-0.11
4,204.00	9.90	285.70	4,172.06	107.10	-371.55	386.63	0.13	0.11	-0.34
4,294.00	10.00	286.10	4,260.71	111.36	-386.50	402.18	0.14	0.11	0.44
4,383.00	10.20	285.60	4,348.33	115.62	-401.52	417.79	0.25	0.22	-0.56
4,472.00	10.60	285.70	4,435.87	119.96	-416.99	433.85	0.45	0.45	0.11
4,561.00	10.80	286.60	4,523.32	124.55	-432.86	450.37	0.29	0.22	1.01
4,650.00	10.40	287.30	4,610.80	129.33	-448.52	466.74	0.47	-0.45	0.79
4,740.00	8.80	286.00	4,699.54	133.64	-462.89	481.74	1.79	-1.78	-1.44
4,829.00	7.10	287.10	4,787.68	137.13	-474.70	494.05	1.92	-1.91	1.24
4,919.00	5.60	285.60	4,877.13	139.95	-484.24	504.00	1.68	-1.67	-1.67
5,008.00	4.30	283.20	4,965.79	141.88	-491.67	511.67	1.48	-1.46	-2.70
5,097.00	2.70	273.70	5,054.62	142.78	-497.01	517.06	1.91	-1.80	-10.67
5,187.00	1.70	247.60	5,144.56	142.40	-500.36	520.20	1.55	-1.11	-29.00
5,276.00	1.00	235.70	5,233.53	141.46	-502.23	521.75	0.84	-0.79	-13.37

Company:	ConocoPhillips	Local Co-ordinate Reference:	Well Ruby Federal 34
Project:	Lea County, New Mexico	TVD Reference:	RKB=3969+13 @ 3982.00usft (PD 822)
Site:	Ruby Federal	MD Reference:	RKB=3969+13 @ 3982.00usft (PD 822)
Well:	Ruby Federal 34	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	EDM 5000.1 Ddatabase

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)
5,365.00	1.30	227.90	5,322.52	140.35	-503.62	522.80	0.38	0.34	-8.76
5,455.00	1.00	225.70	5,412.50	139.12	-504.94	523.75	0.34	-0.33	-2.44
5,544.00	1.00	216.90	5,501.48	137.95	-505.96	524.43	0.17	0.00	-9.89
5,634.00	0.90	219.70	5,591.47	136.78	-506.88	525.01	0.12	-0.11	3.11
5,723.00	1.10	225.90	5,680.46	135.65	-507.94	525.74	0.26	0.22	6.97
5,813.00	1.00	230.20	5,770.44	134.54	-509.16	526.63	0.14	-0.11	4.78
5,902.00	1.00	214.40	5,859.43	133.41	-510.20	527.33	0.31	0.00	-17.75
5,992.00	1.00	217.70	5,949.42	132.14	-511.12	527.89	0.06	0.00	3.67
6,082.00	0.90	228.70	6,039.40	131.05	-512.14	528.58	0.23	-0.11	12.22
6,171.00	0.80	226.10	6,128.39	130.16	-513.11	529.28	0.12	-0.11	-2.92
6,261.00	0.70	222.80	6,218.39	129.32	-513.93	529.86	0.12	-0.11	-3.67
6,350.00	0.80	218.50	6,307.38	128.43	-514.69	530.36	0.13	0.11	-4.83
6,440.00	0.70	213.30	6,397.37	127.48	-515.38	530.77	0.13	-0.11	-5.78
6,529.00	0.60	232.50	6,486.36	126.74	-516.05	531.22	0.27	-0.11	21.57
6,618.00	0.60	232.50	6,575.36	126.18	-516.79	531.79	0.00	0.00	0.00
6,708.00	0.40	216.00	6,665.36	125.64	-517.35	532.19	0.27	-0.22	-18.33
6,797.00	0.50	212.10	6,754.35	125.06	-517.74	532.41	0.12	0.11	-4.38
6,873.00	0.50	212.10	6,830.35	124.49	-518.09	532.60	0.00	0.00	0.00
Survey projected to 6873.00 MD									

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
754.00	754.00	0.00	0.00	Casing/MWD surveys
6,873.00	6,830.35	124.49	-518.09	Survey projected to 6873.00 MD

Company:	ConocoPhillips	Local Co-ordinate Reference:	Well Ruby Federal 34
Project:	Lea County, New Mexico	TVD Reference:	RKB=3969+13 @ 3982.00usft (PD 822)
Site:	Ruby Federal	MD Reference:	RKB=3969+13 @ 3982.00usft (PD 822)
Well:	Ruby Federal 34	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	EDM 5000.1 Database

Project	Lea County, New Mexico		
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	Ruby Federal		
Site Position:		Northings:	665,437.81 usft
From:	Map	Easting:	666,996.38 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/8 "
		Latitude:	32° 49' 41.50037426 N
		Longitude:	103° 47' 22.87078135 W
		Grid Convergence:	0.29 °

Well	Ruby Federal 34		
Well Position	+N/-S	0.00 usft	Northings:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 50' 12.75130839 N
		Longitude:	103° 48' 9.18741552 W
		Ground Level:	3,969.00 usft

Wellbore	Original Hole		
Magnetics	Model Name	Sample Date	Declination
	User Defined	12/31/2013	(°)
			7.55
			Dip Angle
			(°)
			60.64
			Field Strength
			(nT)
			48,743

Design	Surveys Original Hole		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			285.22

Survey Program	Date 2/21/2014		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
754.00	6,873.00	MWD (Original Hole)	MWD
			Description
			MWD - Standard

Survey										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Map	Map			
Depth	(°)	(°)	Depth	(usft)	(usft)	Northings	Easting	Latitude	Longitude	
(usft)			(usft)			(usft)	(usft)			
0.00	0.00	0.00	0.00	0.00	0.00	668,575.90	663,028.40	2° 50' 12.75130839 N	103° 48' 9.18741552 W	
754.00	0.00	0.00	754.00	0.00	0.00	668,575.90	663,028.40	2° 50' 12.75130839 N	103° 48' 9.18741552 W	
Casing/MWD surveys										
809.00	0.30	190.90	809.00	-0.14	-0.03	668,575.76	663,028.38	2° 50' 12.74991068 N	103° 48' 9.18774297 W	
898.00	0.30	166.00	898.00	-0.60	-0.01	668,575.31	663,028.39	2° 50' 12.74540907 N	103° 48' 9.18762549 W	
987.00	0.20	145.30	987.00	-0.95	0.13	668,574.95	663,028.53	2° 50' 12.74190116 N	103° 48' 9.18594926 W	
1,076.00	0.00	287.00	1,076.00	-1.08	0.22	668,574.83	663,028.62	2° 50' 12.74063311 N	103° 48' 9.18492037 W	
1,166.00	0.30	82.60	1,166.00	-1.05	0.45	668,574.86	663,028.86	2° 50' 12.74092178 N	103° 48' 9.18218006 W	
1,255.00	0.50	73.90	1,254.99	-0.91	1.06	668,575.00	663,029.46	2° 50' 12.74225428 N	103° 48' 9.17509101 W	
1,344.00	0.60	74.50	1,343.99	-0.68	1.88	668,575.23	663,030.28	2° 50' 12.74451124 N	103° 48' 9.16544153 W	
1,433.00	0.80	66.60	1,432.98	-0.31	2.90	668,575.60	663,031.30	2° 50' 12.74813445 N	103° 48' 9.15347359 W	
1,523.00	0.90	333.30	1,522.98	0.57	3.16	668,576.48	663,031.56	2° 50' 12.75683927 N	103° 48' 9.15038567 W	

Company:	ConocoPhillips	Local Co-ordinate Reference:	Well Ruby Federal 34
Project:	Lea County, New Mexico	TVD Reference:	RKB=3969+13 @ 3982.00usft (PD 822)
Site:	Ruby Federal	MD Reference:	RKB=3969+13 @ 3982.00usft (PD 822)
Well:	Ruby Federal 34	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	EDM 5000.1 Ddatabase

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
1,612.00	1.90	318.50	1,611.95	2.30	1.86	668,578.21	663,030.27	2° 50' 12.77401692 N	103° 48' 9.16542333 W	
1,701.00	1.80	293.00	1,700.91	3.96	-0.40	668,579.86	663,028.01	2° 50' 12.79046804 N	103° 48' 9.19186480 W	
1,791.00	2.80	283.20	1,790.83	5.01	-3.84	668,580.91	663,024.56	2° 50' 12.80107131 N	103° 48' 9.23213672 W	
1,880.00	3.70	293.20	1,879.69	6.64	-8.60	668,582.54	663,019.81	2° 50' 12.81741394 N	103° 48' 9.28778248 W	
1,969.00	5.20	291.20	1,968.42	9.23	-15.00	668,585.13	663,013.41	2° 50' 12.84335919 N	103° 48' 9.36264041 W	
2,059.00	6.40	288.40	2,057.96	12.29	-23.56	668,588.19	663,004.85	2° 50' 12.87404677 N	103° 48' 9.46281477 W	
2,148.00	8.40	291.10	2,146.21	16.19	-34.33	668,592.10	662,994.07	2° 50' 12.91323564 N	103° 48' 9.58884468 W	
2,237.00	8.80	285.90	2,234.21	20.40	-46.94	668,596.30	662,981.46	2° 50' 12.95547467 N	103° 48' 9.73641951 W	
2,327.00	9.40	285.40	2,323.08	24.24	-60.65	668,600.14	662,967.75	2° 50' 12.99413093 N	103° 48' 9.89684254 W	
2,417.00	9.40	283.90	2,411.87	27.95	-74.87	668,603.86	662,953.53	2° 50' 13.03162061 N	103° 48' 10.06328946 W	
2,506.00	11.00	283.10	2,499.46	31.62	-90.20	668,607.53	662,938.21	2° 50' 13.06870371 N	103° 48' 10.24270136 W	
2,596.00	10.40	281.70	2,587.89	35.22	-106.52	668,611.12	662,921.89	2° 50' 13.10507168 N	103° 48' 10.43373857 W	
2,685.00	9.50	280.00	2,675.56	38.12	-121.62	668,614.03	662,906.79	2° 50' 13.13456127 N	103° 48' 10.61053947 W	
2,774.00	9.70	280.20	2,763.31	40.72	-136.23	668,616.63	662,892.18	2° 50' 13.16104490 N	103° 48' 10.78164745 W	
2,863.00	9.20	279.50	2,851.10	43.23	-150.62	668,619.13	662,877.78	2° 50' 13.18651737 N	103° 48' 10.95023196 W	
2,953.00	9.00	279.40	2,939.97	45.56	-164.67	668,621.47	662,863.74	2° 50' 13.21034123 N	103° 48' 11.11465972 W	
3,042.00	8.80	280.90	3,027.90	47.99	-178.22	668,623.89	662,850.19	2° 50' 13.23500271 N	103° 48' 11.27336186 W	
3,132.00	8.70	281.80	3,116.85	50.68	-191.64	668,626.59	662,836.76	2° 50' 13.26232383 N	103° 48' 11.43052601 W	
3,221.00	8.80	287.00	3,204.81	54.05	-204.74	668,629.95	662,823.66	2° 50' 13.29629026 N	103° 48' 11.58385800 W	
3,310.00	10.10	287.00	3,292.61	58.32	-218.71	668,634.23	662,809.69	2° 50' 13.33925757 N	103° 48' 11.74738454 W	
3,400.00	11.50	288.90	3,381.01	63.53	-234.75	668,639.44	662,793.66	2° 50' 13.39164174 N	103° 48' 11.93501795 W	
3,489.00	10.80	289.00	3,468.33	69.12	-251.03	668,645.03	662,777.38	2° 50' 13.44774841 N	103° 48' 12.12547203 W	
3,578.00	10.50	288.00	3,555.80	74.34	-266.62	668,650.25	662,761.78	2° 50' 13.50018143 N	103° 48' 12.30796474 W	
3,668.00	10.30	288.30	3,644.32	79.40	-282.06	668,655.31	662,746.34	2° 50' 13.55102154 N	103° 48' 12.48861067 W	
3,757.00	10.20	288.60	3,731.90	84.42	-297.09	668,660.32	662,731.32	2° 50' 13.60135894 N	103° 48' 12.66439029 W	
3,846.00	10.20	287.90	3,819.49	89.35	-312.05	668,665.26	662,716.35	2° 50' 13.65093865 N	103° 48' 12.83952432 W	
3,936.00	10.10	287.50	3,908.08	94.17	-327.16	668,670.08	662,701.24	2° 50' 13.69940470 N	103° 48' 13.01632753 W	
4,025.00	10.00	286.10	3,995.72	98.66	-342.03	668,674.57	662,686.38	2° 50' 13.74456637 N	103° 48' 13.19030919 W	
4,115.00	9.80	286.00	4,084.38	102.94	-356.90	668,678.85	662,671.50	2° 50' 13.78763679 N	103° 48' 13.36434419 W	
4,204.00	9.90	285.70	4,172.06	107.10	-371.55	668,683.00	662,656.86	2° 50' 13.82950743 N	103° 48' 13.53575973 W	
4,294.00	10.00	286.10	4,260.71	111.36	-386.50	668,687.27	662,641.90	2° 50' 13.87240738 N	103° 48' 13.71079723 W	
4,383.00	10.20	285.60	4,348.33	115.62	-401.52	668,691.53	662,626.89	2° 50' 13.91532503 N	103° 48' 13.88651931 W	
4,472.00	10.60	285.70	4,435.87	119.96	-416.99	668,695.86	662,611.42	2° 50' 13.95897962 N	103° 48' 14.06758413 W	
4,561.00	10.80	286.60	4,523.32	124.55	-432.86	668,700.46	662,595.55	2° 50' 14.00525671 N	103° 48' 14.25333254 W	
4,650.00	10.40	287.30	4,610.80	129.33	-448.52	668,705.23	662,579.89	2° 50' 14.05324270 N	103° 48' 14.43660131 W	
4,740.00	8.80	286.00	4,699.54	133.64	-462.89	668,709.54	662,565.51	2° 50' 14.09663779 N	103° 48' 14.60482213 W	
4,829.00	7.10	287.10	4,787.68	137.13	-474.70	668,713.04	662,553.71	2° 50' 14.13179645 N	103° 48' 14.74294215 W	
4,919.00	5.60	285.60	4,877.13	139.95	-484.24	668,715.85	662,544.16	2° 50' 14.16013902 N	103° 48' 14.85466171 W	
5,008.00	4.30	283.20	4,965.79	141.88	-491.67	668,717.78	662,536.73	2° 50' 14.17960223 N	103° 48' 14.94164471 W	
5,097.00	2.70	273.70	5,054.62	142.78	-497.01	668,718.68	662,531.39	2° 50' 14.18874512 N	103° 48' 15.00418643 W	
5,187.00	1.70	247.60	5,144.56	142.40	-500.36	668,718.31	662,528.04	2° 50' 14.18523074 N	103° 48' 15.04346896 W	
5,276.00	1.00	235.70	5,233.53	141.46	-502.23	668,717.37	662,526.18	2° 50' 14.17601446 N	103° 48' 15.06534910 W	
5,365.00	1.30	227.90	5,322.52	140.35	-503.62	668,716.25	662,524.79	2° 50' 14.16505532 N	103° 48' 15.08171363 W	
5,455.00	1.00	225.70	5,412.50	139.12	-504.94	668,715.02	662,523.47	2° 50' 14.15292052 N	103° 48' 15.09725199 W	
5,544.00	1.00	216.90	5,501.48	137.95	-505.96	668,713.86	662,522.45	2° 50' 14.14145862 N	103° 48' 15.10930008 W	
5,634.00	0.90	219.70	5,591.47	136.78	-506.88	668,712.69	662,521.52	2° 50' 14.12990869 N	103° 48' 15.12018728 W	
5,723.00	1.10	225.90	5,680.46	135.65	-507.94	668,711.55	662,520.46	2° 50' 14.11875711 N	103° 48' 15.13267696 W	
5,813.00	1.00	230.20	5,770.44	134.54	-509.16	668,710.45	662,519.24	2° 50' 14.10789464 N	103° 48' 15.14708461 W	
5,902.00	1.00	214.40	5,859.43	133.41	-510.20	668,709.31	662,518.20	2° 50' 14.09668603 N	103° 48' 15.15928721 W	
5,992.00	1.00	217.70	5,949.42	132.14	-511.12	668,708.04	662,517.28	2° 50' 14.08417109 N	103° 48' 15.17019096 W	
6,082.00	0.90	228.70	6,039.40	131.05	-512.14	668,706.95	662,516.27	2° 50' 14.07345641 N	103° 48' 15.18210742 W	
6,171.00	0.80	226.10	6,128.39	130.16	-513.11	668,706.06	662,515.30	2° 50' 14.06467683 N	103° 48' 15.19356141 W	
6,261.00	0.70	222.80	6,218.39	129.32	-513.93	668,705.22	662,514.47	2° 50' 14.05641546 N	103° 48' 15.20329465 W	
6,350.00	0.80	218.50	6,307.38	128.43	-514.69	668,704.34	662,513.71	2° 50' 14.04769443 N	103° 48' 15.21220908 W	
6,440.00	0.70	213.30	6,397.37	127.48	-515.38	668,703.39	662,513.02	2° 50' 14.03831657 N	103° 48' 15.22038663 W	

Company:	ConocoPhillips	Local Co-ordinate Reference:	Well Ruby Federal 34
Project:	Lea County, New Mexico	TVD Reference:	RKB=3969+13 @ 3982.00usft (PD 822)
Site:	Ruby Federal	MD Reference:	RKB=3969+13 @ 3982.00usft (PD 822)
Well:	Ruby Federal 34	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Surveys Original Hole	Database:	EDM 5000.1 Ddatabase

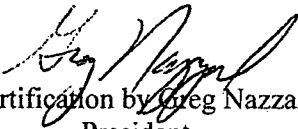
Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,529.00	0.60	232.50	6,486.36	126.74	-516.05	668,702.65	662,512.35	2° 50' 14.03104646 N	03° 48' 15.22826124 W
6,618.00	0.60	232.50	6,575.36	126.18	-516.79	668,702.08	662,511.61	2° 50' 14.02546910 N	03° 48' 15.23696052 W
6,708.00	0.40	216.00	6,665.36	125.64	-517.35	668,701.54	662,511.05	2° 50' 14.02014333 N	03° 48' 15.24353820 W
6,797.00	0.50	212.10	6,754.35	125.06	-517.74	668,700.96	662,510.67	2° 50' 14.01442056 N	03° 48' 15.24813105 W
6,873.00	0.50	212.10	6,830.35	124.49	-518.09	668,700.40	662,510.31	2° 50' 14.00887877 N	03° 48' 15.25229465 W
Survey projected to 6873.00 MD									

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
754.00	754.00	0.00	0.00	Casing/MWD surveys	
6,873.00	6,830.35	124.49	-518.09	Survey projected to 6873.00 MD	



1407 Northpark Dr.
Kingwood, TX 77339
Cell: (281) 851-8112
Efax: (281) 966-1566

BlueStar MWD, LP performed a MWD survey for ConocoPhillips' Ruby Federal 34, located in Lea County, NM. The API number is: 30-025-41506. The surveys were taken from 809 MD to 6797 MD and ranged over the dates from 10-Feb-14 to 14-Feb-14 and are certified as being true and correct.


Certification by Greg Nazzari
President

ConocoPhillips

Well: Ruby Federal 34
 Site: Ruby Federal
 Project: Lea County, New Mexico
 Design: rev0
 Rig: PD 822

