

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources

Form C-102
Revised October 12, 2005

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

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

¹ API Number 30-045-34666		² Pool Code 71599		³ Pool Name Basin Dakota	
⁴ Property Code 21360		⁵ Property Name Phillips			⁶ Well Number # 3F
⁷ OGRID No. 162928		⁸ Operator Name Energen Resources Corporation			⁹ Elevation 6379

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
O	32	28N	08W		425	South	1640	East	San Juan

¹¹ Bottom Hole Location If Different From Surface

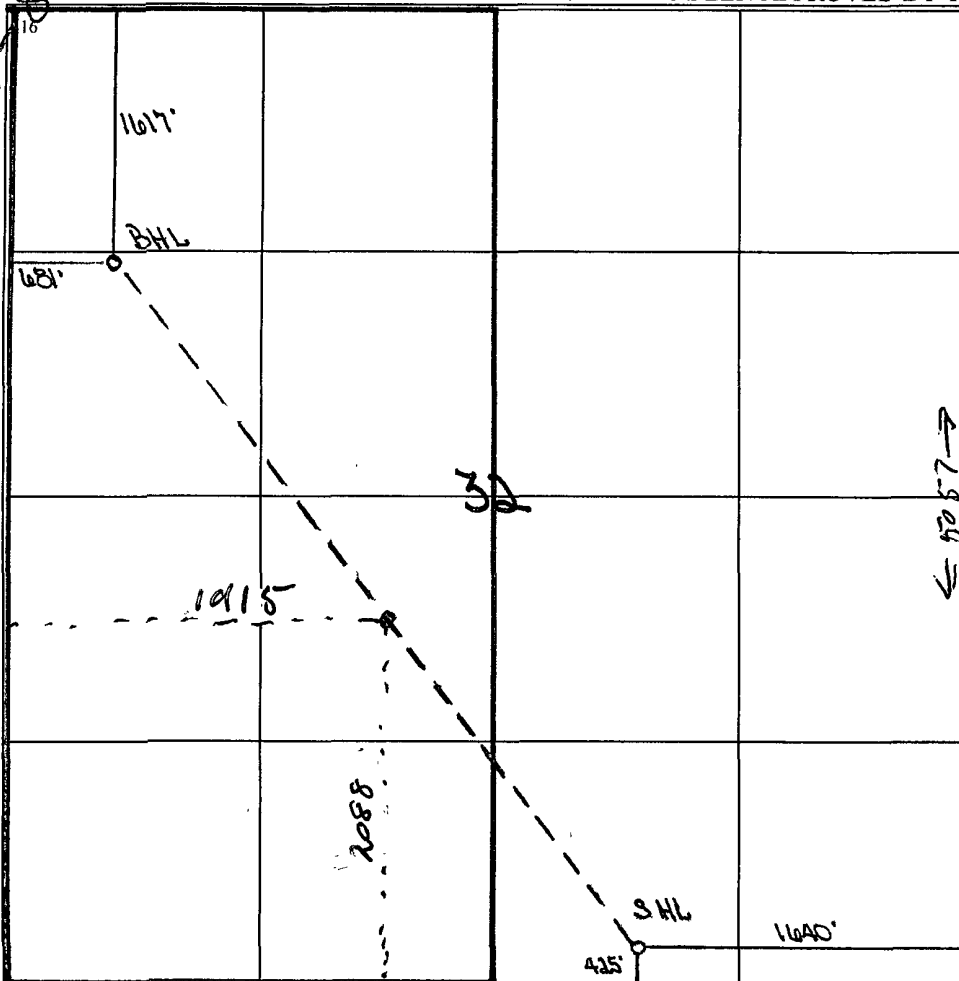
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	32	28N	08W		1617	north	681	West	San Juan

¹² Dedicated Acres 305.87	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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RCVD JAN 8 '09
OIL CONS. DIV.

DIST. 3

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



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 entered by the division

Vicki Donaghey 01/06/08
Signature Date
Vicki Donaghey
Printed Name

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

August 6, 2007
Date of Survey
Signature and Seal of Professional Surveyer
original survey conducted and recorded by: W. Benally
11952
Certificate Number



RCVD JAN 8 '09

OIL CONS. DIV.

DIST. 3

Energen Resources

SJ BR - NW S32, T28N, R8W

Fresno Canyon

Phillips #3F

OH

Survey: ST02

End of Well Survey

01 October, 2008

PATHFINDER
ENERGY SERVICES

Company: Energen Resources
 Project: SJ BR - NW S32, T28N, R8W
 Site: Fresno Canyon
 Well: Phillips #3F
 Wellbore: OH
 Design: OH

Local Co-ordinate Reference: Well Phillips #3F
 TVD Reference: AWS 222 (RKB=13') @ 6392.00ft (AWS 222 (RKE
 MD Reference: AWS 222 (RKB=13') @ 6392.00ft (AWS 222 (RKE
 North Reference: True
 Survey Calculation Method: Minimum Curvature
 Database: EDM 2003.16 Single User Db

Project SJ BR - NW S32, T28N, R8W

Map System: US State Plane 1983
 Geo Datum: North American Datum 1983
 Map Zone: New Mexico Western Zone

System Datum: Mean Sea Level

Site Fresno Canyon

Site Position:		Northing:	2,042,243.930 ft	Latitude:	36° 36' 44.568 N
From: Map		Easting:	2,761,964.570 ft	Longitude:	107° 42' 3.168 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	0.08 °

Well Phillips #3F

Well Position	+N/-S	0.00 ft	Northing:	2,042,243.930 ft	Latitude:	36° 36' 44.568 N
	+E/-W	0.00 ft	Easting:	2,761,964.570 ft	Longitude:	107° 42' 3.168 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	6,379.00 ft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	2008/06/02	10.21	63.44	50,995

Design OH

Audit Notes:

Version: 1.0 Phase: ACTUAL Tie On Depth: 0.00

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	314.39

Survey Program Date 2008/10/01

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
2,054.00	7,454.00	OH (OH)	MWD	MWD - Standard

Company: Energen Resources
Project: SJ BR - NW S32, T28N, R8W
Site: Fresno Canyon
Well: Phillips #3F
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Phillips #3F
TVD Reference: AWS 222 (RKB=13') @ 6392.00ft (AWS 222 (RKE
MD Reference: AWS 222 (RKB=13') @ 6392.00ft (AWS 222 (RKE
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	DLeg (°/100ft)	V. Sec (ft)
1,954.00	0.00	0.00	1,954.00	0.00	0.00	0.00	0.00
2,054.00	0.26	157.07	2,054.00	-0.21	0.09	0.26	-0.21
2,555.00	0.79	186.07	2,554.98	-4.69	0.17	0.12	-3.40
3,040.00	0.70	209.89	3,039.94	-10.58	-1.66	0.07	-6.21
3,500.00	0.70	217.27	3,499.90	-15.26	-4.77	0.02	-7.27
3,523.00	0.62	207.16	3,522.90	-15.48	-4.91	0.61	-7.32
3,552.00	0.62	230.45	3,551.90	-15.72	-5.10	0.86	-7.35
3,583.00	0.79	269.13	3,582.90	-15.83	-5.44	1.59	-7.18
3,613.00	1.49	296.46	3,612.89	-15.66	-6.00	2.89	-6.67
3,643.00	2.20	307.01	3,642.88	-15.14	-6.81	2.61	-5.72
3,674.00	2.99	314.04	3,673.84	-14.22	-7.86	2.74	-4.33
3,704.00	4.04	317.29	3,703.79	-12.90	-9.14	3.56	-2.49
3,734.00	5.10	320.63	3,733.69	-11.09	-10.71	3.64	-0.11
3,764.00	6.16	321.68	3,763.55	-8.80	-12.55	3.55	2.82
3,794.00	7.39	320.89	3,793.34	-6.04	-14.77	4.11	6.33
3,824.00	8.79	320.45	3,823.04	-2.77	-17.44	4.67	10.53
3,856.00	10.46	319.31	3,854.59	1.32	-20.89	5.25	15.85
3,887.00	12.22	319.40	3,884.98	5.94	-24.86	5.68	21.92
3,919.00	13.81	321.16	3,916.16	11.49	-29.46	5.12	29.09
3,951.00	15.12	320.80	3,947.14	17.70	-34.50	4.10	37.03
3,983.00	16.18	318.87	3,977.95	24.29	-40.07	3.69	45.62
4,015.00	17.50	316.94	4,008.58	31.17	-46.28	4.48	54.88
4,078.00	18.99	312.37	4,068.42	45.00	-60.33	3.28	74.58
4,110.00	20.14	311.40	4,098.57	52.15	-68.31	3.73	85.29
4,142.00	20.66	312.28	4,128.56	59.59	-76.61	1.89	96.43
4,174.00	21.02	314.30	4,158.47	67.39	-84.90	2.51	107.81
4,206.00	21.72	316.76	4,188.27	75.72	-93.06	3.55	119.47

Company: Energen Resources
Project: SJ BR - NW S32, T28N, R8W
Site: Fresno Canyon
Well: Phillips #3F
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Phillips #3F
TVD Reference: AWS 222 (RKB=13') @ 6392.00ft (AWS 222 (RKE
MD Reference: AWS 222 (RKB=13') @ 6392.00ft (AWS 222 (RKE
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	DLeg (°/100ft)	V. Sec (ft)
4,238.00	22.25	319.57	4,217.94	84.64	-101.05	3.68	131.42
4,269.00	22.25	320.72	4,246.63	93.65	-108.57	1.40	143.10
4,301.00	23.04	322.30	4,276.17	103.30	-116.24	3.12	155.32
4,333.00	23.30	322.39	4,305.59	113.27	-123.93	0.82	167.79
4,365.00	22.77	320.72	4,335.03	123.07	-131.71	2.63	180.21
4,397.00	22.25	319.75	4,364.60	132.49	-139.55	2.00	192.40
4,429.00	21.37	317.82	4,394.31	141.43	-147.38	3.55	204.25
4,461.00	21.63	317.20	4,424.08	150.08	-155.30	1.08	215.96
4,492.00	22.42	317.64	4,452.82	158.64	-163.16	2.60	227.57
4,524.00	23.48	317.82	4,482.28	167.88	-171.55	3.32	240.03
4,556.00	24.71	318.96	4,511.50	177.65	-180.23	4.11	253.06
4,588.00	26.29	319.31	4,540.38	188.06	-189.24	4.96	266.79
4,620.00	28.75	318.96	4,568.75	199.24	-198.91	7.70	281.52
4,652.00	30.95	317.73	4,596.51	211.14	-209.50	7.14	297.41
4,683.00	32.80	317.20	4,622.83	223.20	-220.57	6.04	313.76
4,715.00	32.89	317.29	4,649.72	235.94	-232.35	0.32	331.09
4,747.00	32.27	317.29	4,676.68	248.60	-244.04	1.94	348.30
4,779.00	31.66	316.68	4,703.83	260.99	-255.60	2.16	365.22
4,810.00	31.51	315.09	4,730.24	272.65	-266.90	2.73	381.45
4,842.00	29.63	314.57	4,757.79	284.12	-278.44	5.93	397.73
4,874.00	28.84	314.39	4,785.71	295.07	-289.59	2.48	413.35
4,906.00	29.02	314.83	4,813.72	305.94	-300.61	0.87	428.83
4,936.00	29.55	315.44	4,839.88	316.35	-310.96	2.03	443.51
4,968.00	30.34	315.88	4,867.61	327.77	-322.12	2.56	459.48
5,000.00	30.78	315.36	4,895.17	339.40	-333.50	1.60	475.74
5,062.00	30.42	315.27	4,948.53	361.84	-355.70	0.59	507.30
5,095.00	29.11	314.83	4,977.18	373.43	-367.27	4.02	523.68

Company: Energen Resources
Project: SJ BR - NW S32, T28N, R8W
Site: Fresno Canyon
Well: Phillips #3F
Wellbore: OH
Design: OH

Local Co-ordinate Reference:	Well Phillips #3F
TVD Reference:	AWS 222 (RKB=13') @ 6392.00ft (AWS 222 (RKB=13') @ 6392.00ft)
MD Reference:	AWS 222 (RKB=13') @ 6392.00ft (AWS 222 (RKB=13') @ 6392.00ft)
North Reference:	True
Survey Calculation Method:	Minimum Curvature
Database:	EDM 2003.16 Single User Db

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	DLeg (°/100ft)	V. Sec (ft)
5,127.00	27.00	315.27	5,005.42	384.08	-377.90	6.63	538.73
5,159.00	26.73	315.44	5,033.96	394.37	-388.06	0.88	553.19
5,191.00	26.82	316.06	5,062.53	404.70	-398.12	0.92	567.60
5,221.00	26.29	316.06	5,089.37	414.35	-407.43	1.77	581.00
5,253.00	25.85	316.94	5,118.11	424.55	-417.11	1.83	595.06
5,285.00	27.08	317.20	5,146.76	435.00	-426.82	3.86	609.30
5,317.00	28.05	317.20	5,175.13	445.86	-436.88	3.03	624.09
5,349.00	28.31	317.20	5,203.33	456.95	-447.15	0.81	639.19
5,380.00	29.19	317.03	5,230.51	467.87	-457.30	2.85	654.08
5,412.00	29.63	316.68	5,258.39	479.34	-468.05	1.48	669.78
5,444.00	29.90	315.62	5,286.16	490.79	-479.05	1.85	685.66
5,476.00	29.46	314.57	5,313.97	502.02	-490.24	2.13	701.50
5,508.00	29.02	313.86	5,341.89	512.92	-501.44	1.75	717.13
5,540.00	28.14	313.42	5,369.99	523.48	-512.52	2.83	732.44
5,572.00	28.49	314.57	5,398.16	534.03	-523.43	2.03	747.61
5,603.00	28.58	315.44	5,425.40	544.50	-533.90	1.37	762.42
5,635.00	29.28	316.06	5,453.40	555.59	-544.70	2.38	777.90
5,666.00	29.28	316.50	5,480.44	566.54	-555.18	0.69	793.05
5,698.00	29.46	316.41	5,508.33	577.92	-565.99	0.58	808.73
5,730.00	30.07	316.32	5,536.11	589.42	-576.96	1.91	824.61
5,762.00	30.95	315.53	5,563.68	601.09	-588.26	3.02	840.85
5,793.00	31.57	315.62	5,590.18	612.58	-599.52	2.01	856.93
5,825.00	30.95	315.80	5,617.53	624.46	-611.11	1.96	873.53
5,857.00	29.99	316.41	5,645.11	636.15	-622.37	3.15	889.75
5,889.00	28.93	317.03	5,672.97	647.61	-633.16	3.45	905.48
5,920.00	28.05	317.20	5,700.22	658.44	-643.22	2.85	920.25
5,952.00	27.96	316.32	5,728.47	669.39	-653.51	1.32	935.26

Company: Energen Resources
Project: SJ BR - NW S32, T28N, R8W
Site: Fresno Canyon
Well: Phillips #3F
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Phillips #3F
TVD Reference: AWS 222 (RKB=13') @ 6392.00ft (AWS 222 (RKE
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Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	DLeg (°/100ft)	V. Sec (ft)
5,982.00	27.70	315.97	5,755.00	679.49	-663.22	1.02	949.26
6,014.00	27.79	316.50	5,783.32	690.25	-673.52	0.82	964.15
6,043.00	28.05	312.64	5,808.95	699.77	-683.19	6.30	977.72
6,074.00	28.58	306.49	5,836.25	709.12	-694.52	9.56	992.35
6,105.00	29.37	303.54	5,863.37	717.73	-706.81	5.27	1,007.17
6,138.00	29.90	301.76	5,892.05	726.53	-720.55	3.11	1,023.14
6,169.00	30.42	299.00	5,918.85	734.40	-733.99	4.78	1,038.25
6,201.00	30.42	295.57	5,946.45	741.83	-748.38	5.43	1,053.73
6,233.00	29.81	294.00	5,974.13	748.56	-762.96	3.11	1,068.85
6,265.00	29.19	293.71	6,001.98	754.93	-777.37	1.99	1,083.61
6,296.00	29.11	293.25	6,029.06	760.95	-791.22	0.77	1,097.71
6,328.00	29.63	293.89	6,056.94	767.23	-805.60	1.90	1,112.38
6,360.00	29.55	294.30	6,084.77	773.68	-820.03	0.68	1,127.20
6,392.00	28.93	294.10	6,112.69	780.08	-834.28	1.96	1,141.87
6,424.00	29.28	294.14	6,140.65	786.45	-848.49	1.10	1,156.48
6,456.00	29.99	296.39	6,168.47	793.20	-862.80	4.12	1,171.42
6,488.00	30.78	298.99	6,196.07	800.72	-877.12	4.79	1,186.92
6,520.00	31.39	301.21	6,223.48	809.01	-891.41	4.06	1,202.93
6,551.00	32.62	302.82	6,249.77	817.72	-905.34	4.83	1,218.98
6,583.00	33.85	302.81	6,276.53	827.23	-920.08	3.84	1,236.16
6,615.00	36.32	303.47	6,302.72	837.29	-935.48	7.81	1,254.20
6,647.00	38.87	303.64	6,328.07	848.08	-951.74	7.98	1,273.37
6,679.00	40.27	303.86	6,352.74	859.40	-968.69	4.40	1,293.41
6,710.00	40.89	304.95	6,376.28	870.80	-985.33	3.04	1,313.27
6,742.00	41.42	305.02	6,400.37	882.87	-1,002.58	1.66	1,334.04
6,774.00	42.21	305.77	6,424.22	895.23	-1,019.97	2.92	1,355.12
6,806.00	43.44	307.60	6,447.69	908.23	-1,037.41	5.47	1,376.67

Company: Energen Resources
Project: SJ BR - NW S32, T28N, R8W
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Wellbore: OH
Design: OH

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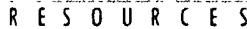
Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	DLeg (°/100ft)	V. Sec (ft)
6,838.00	44.32	309.12	6,470.76	921.99	-1,054.80	4.29	1,398.73
6,870.00	44.93	310.45	6,493.53	936.38	-1,072.08	3.49	1,421.13
6,902.00	45.64	311.61	6,516.05	951.31	-1,089.23	3.40	1,443.83
6,933.00	46.96	312.20	6,537.47	966.27	-1,105.91	4.47	1,466.22
6,965.00	49.42	312.50	6,558.80	982.34	-1,123.53	7.72	1,490.06
6,997.00	51.35	312.74	6,579.20	999.03	-1,141.67	6.06	1,514.69
7,029.00	52.23	313.15	6,598.99	1,016.16	-1,160.08	2.93	1,539.83
7,061.00	52.85	313.55	6,618.46	1,033.60	-1,178.55	2.18	1,565.23
7,092.00	53.38	313.87	6,637.06	1,050.73	-1,196.47	1.90	1,590.02
7,124.00	53.90	313.88	6,656.04	1,068.60	-1,215.05	1.63	1,615.79
7,156.00	55.57	315.07	6,674.51	1,086.90	-1,233.69	6.04	1,641.92
7,188.00	58.21	316.45	6,691.99	1,106.11	-1,252.38	9.01	1,668.71
7,220.00	60.23	318.17	6,708.37	1,126.31	-1,271.02	7.82	1,696.16
7,252.00	60.06	319.59	6,724.30	1,147.22	-1,289.27	3.89	1,723.83
7,315.00	59.71	320.98	6,755.91	1,189.14	-1,324.09	1.99	1,778.03
7,378.00	58.74	320.63	6,788.14	1,231.09	-1,358.29	1.61	1,831.82
7,409.00	59.69	320.88	6,804.01	1,251.71	-1,375.14	3.14	1,858.29
TOW @ 7409' MD							
7,418.00	59.96	320.95	6,808.53	1,257.75	-1,380.05	3.07	1,866.02
7,444.00	60.76	321.14	6,821.39	1,275.32	-1,394.25	3.14	1,888.47
7,476.00	61.11	321.65	6,836.93	1,297.18	-1,411.71	1.77	1,916.23
7,508.00	61.64	321.50	6,852.27	1,319.19	-1,429.16	1.71	1,944.10
7,539.00	61.82	321.35	6,866.95	1,340.53	-1,446.19	0.72	1,971.19
7,571.00	63.05	321.25	6,881.76	1,362.67	-1,463.92	3.85	1,999.35
7,603.00	64.28	321.10	6,895.95	1,385.01	-1,481.90	3.87	2,027.83
7,635.00	64.46	320.90	6,909.79	1,407.43	-1,500.06	0.80	2,056.49
7,667.00	66.04	321.21	6,923.19	1,430.04	-1,518.33	5.02	2,085.35



Local Co-ordinate Reference:	Well Phillips #3F
TVD Reference:	AWS 222 (RKB='13') @ 6392.00ft (AWS 222 (RKB='13'))
MD Reference:	AWS 222 (RKB='13') @ 6392.00ft (AWS 222 (RKB='13'))
North Reference:	True
Survey Calculation Method:	Minimum Curvature
Database:	EDM 2003.16 Single User Db

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	DLeg (°/100ft)	V. Sec (ft)
7,698.00	67.80	321.82	6,935.34	1,452.36	-1,536.07	5.96	2,113.65
7,731.00	70.52	320.87	6,947.08	1,476.44	-1,555.34	8.67	2,144.26
7,763.00	72.37	320.36	6,957.26	1,499.89	-1,574.58	5.98	2,174.42
7,794.00	74.30	319.79	6,966.15	1,522.66	-1,593.64	6.47	2,203.97
7,826.00	75.89	319.09	6,974.38	1,546.15	-1,613.75	5.40	2,234.77
7,858.00	76.59	318.20	6,982.00	1,569.48	-1,634.29	3.48	2,265.77
7,891.00	77.73	318.57	6,989.33	1,593.54	-1,655.66	3.62	2,297.86
7,923.00	78.08	318.87	6,996.03	1,617.05	-1,676.30	1.43	2,329.06
7,955.00	78.35	318.26	7,002.57	1,640.53	-1,697.03	2.05	2,360.30
7,975.00	78.98	318.40	7,006.50	1,655.18	-1,710.07	3.21	2,379.87
Top of Dakota @ 7975'MD							
7,986.00	79.32	318.48	7,008.57	1,663.27	-1,717.23	3.21	2,390.64
8,017.00	79.58	319.57	7,014.25	1,686.27	-1,737.22	3.56	2,421.02
8,049.00	80.20	319.86	7,019.87	1,710.31	-1,757.59	2.13	2,452.39
8,081.00	81.51	320.39	7,024.95	1,734.55	-1,777.84	4.41	2,483.82
8,113.00	83.45	321.13	7,029.14	1,759.12	-1,797.91	6.48	2,515.35
8,144.00	88.55	321.38	7,031.30	1,783.23	-1,817.25	16.47	2,546.04
8,177.00	94.18	320.24	7,030.52	1,808.79	-1,838.09	17.41	2,578.81
8,209.00	95.50	320.93	7,027.82	1,833.43	-1,858.34	4.65	2,610.51
8,240.00	94.35	321.35	7,025.15	1,857.48	-1,877.71	3.95	2,641.18
8,272.00	90.75	321.36	7,023.73	1,882.44	-1,897.67	11.25	2,672.91
8,304.00	92.42	322.08	7,022.85	1,907.55	-1,917.49	5.68	2,704.63
8,336.00	93.47	322.06	7,021.20	1,932.76	-1,937.13	3.28	2,736.30
8,368.00	93.03	321.51	7,019.39	1,957.86	-1,956.90	2.20	2,767.99
8,399.00	93.74	321.40	7,017.56	1,982.06	-1,976.18	2.32	2,798.70
8,431.00	92.07	321.24	7,015.93	2,007.01	-1,996.15	5.24	2,830.42
8,463.00	90.13	320.96	7,015.32	2,031.91	-2,016.24	6.13	2,862.19



End of Well Survey



Company: Energen Resources
Project: SJ BR - NW S32, T28N, R8W
Site: Fresno Canyon
Well: Phillips #3F
Wellbore: OH
Design: OH

Local Co-ordinate Reference:	Well Phillips #3F
TVD Reference:	AWS 222 (RKB=13') @ 6392.00ft (AWS 222 (RKB=13') @ 6392.00ft (AWS 222 (RKB=13') @ 6392.00ft
MD Reference:	AWS 222 (RKB=13') @ 6392.00ft (AWS 222 (RKB=13') @ 6392.00ft (AWS 222 (RKB=13') @ 6392.00ft
North Reference:	True
Survey Calculation Method:	Minimum Curvature
Database:	EDM 2003.16 Single User Db

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	DLeg (°/100ft)	V. Sec (ft)
8,495.00	89.08	321.52	7,015.54	2,056.86	-2,036.28	3.72	2,893.96
8,527.00	88.37	321.57	7,016.25	2,081.91	-2,056.17	2.22	2,925.71
8,559.00	87.14	322.44	7,017.51	2,107.11	-2,075.86	4.71	2,957.40
8,591.00	87.14	323.02	7,019.10	2,132.54	-2,095.21	1.81	2,989.02
8,623.00	88.11	323.59	7,020.43	2,158.18	-2,114.32	3.52	3,020.61
8,656.00	88.64	324.29	7,021.37	2,184.84	-2,133.73	2.66	3,053.14
8,686.00	87.67	323.78	7,022.33	2,209.11	-2,151.34	3.65	3,082.70
8,718.00	87.49	323.96	7,023.68	2,234.94	-2,170.19	0.80	3,114.23
8,750.00	87.49	324.35	7,025.08	2,260.85	-2,188.91	1.22	3,145.74
8,782.00	87.49	324.84	7,026.49	2,286.91	-2,207.44	1.53	3,177.20
8,813.00	85.56	325.57	7,028.36	2,312.32	-2,225.09	6.65	3,207.59
8,845.00	85.82	325.33	7,030.77	2,338.60	-2,243.19	1.10	3,238.91
8,877.00	87.58	323.88	7,032.61	2,364.64	-2,261.69	7.12	3,270.35
8,909.00	87.58	322.53	7,033.96	2,390.24	-2,280.84	4.21	3,301.94
8,940.00	87.67	321.95	7,035.25	2,414.73	-2,299.81	1.89	3,332.62
8,972.00	88.72	321.60	7,036.25	2,439.85	-2,319.60	3.46	3,364.34
9,004.00	90.31	321.83	7,036.53	2,464.97	-2,339.42	5.02	3,396.08
9,036.00	89.25	320.91	7,036.65	2,489.97	-2,359.40	4.39	3,427.84
9,067.00	88.90	319.04	7,037.15	2,513.70	-2,379.33	6.14	3,458.69
9,099.00	88.46	318.44	7,037.89	2,537.75	-2,400.43	2.32	3,490.59
9,129.00	90.13	318.44	7,038.26	2,560.19	-2,420.33	5.57	3,520.51
9,161.00	89.52	317.05	7,038.35	2,583.88	-2,441.85	4.74	3,552.45
9,193.00	87.23	315.22	7,039.26	2,606.94	-2,464.01	9.16	3,584.42
9,225.00	89.78	315.74	7,040.10	2,629.74	-2,486.44	8.13	3,616.40
9,257.00	88.99	315.37	7,040.44	2,652.59	-2,508.84	2.73	3,648.39
9,288.00	88.90	314.54	7,041.01	2,674.49	-2,530.78	2.69	3,679.39
9,320.00	88.90	314.32	7,041.62	2,696.89	-2,553.62	0.69	3,711.38

Company: Energen Resources
Project: SJ BR - NW S32, T28N, R8W
Site: Fresno Canyon
Well: Phillips #3F
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Phillips #3F
TVD Reference: AWS 222 (RKB=13') @ 6392.00ft (AWS 222 (RKE
MD Reference: AWS 222 (RKB=13') @ 6392.00ft (AWS 222 (RKE
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	N/S (ft)	E/W (ft)	DLeg (°/100ft)	V. Sec (ft)
9,353.00	89.34	313.88	7,042.13	2,719.85	-2,577.32	1.89	3,744.38
9,385.00	89.08	312.90	7,042.57	2,741.83	-2,600.57	3.17	3,776.37
9,417.00	89.78	311.37	7,042.89	2,763.29	-2,624.30	5.26	3,808.34
9,449.00	89.87	310.34	7,042.99	2,784.23	-2,648.50	3.23	3,840.28
9,481.00	90.75	310.18	7,042.81	2,804.91	-2,672.92	2.80	3,872.20
9,513.00	90.57	309.43	7,042.45	2,825.39	-2,697.50	2.41	3,904.09
9,544.00	91.98	308.57	7,041.76	2,844.89	-2,721.59	5.33	3,934.95
9,576.00	92.33	307.84	7,040.55	2,864.67	-2,746.71	2.53	3,966.74
9,607.00	91.63	307.35	7,039.48	2,883.57	-2,771.26	2.76	3,997.50
9,639.00	90.92	306.64	7,038.77	2,902.82	-2,796.81	3.14	4,029.23
9,670.00	91.36	306.65	7,038.15	2,921.32	-2,821.68	1.42	4,059.94
9,702.00	91.71	306.15	7,037.30	2,940.30	-2,847.43	1.91	4,091.61
9,734.00	92.51	306.01	7,036.12	2,959.14	-2,873.27	2.54	4,123.26
9,748.00	92.77	305.84	7,035.47	2,967.34	-2,884.60	2.22	4,137.09
9,830.00	92.77	305.84	7,031.51	3,015.30	-2,950.99	0.00	4,218.08

BHL ST02

Company: Energen Resources
Project: SJ BR - NW S32, T28N, R8W
Site: Fresno Canyon
Well: Phillips #3F
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Phillips #3F
TVD Reference: AWS 222 (RKB=13') @ 6392.00ft (AWS 222 (RKE
MD Reference: AWS 222 (RKB=13') @ 6392.00ft (AWS 222 (RKE
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
TD Lateral - survey misses by 104.74ft at 9748.00ft MD (7035.47 TVD, 2967.34 N, -2884.60 E) - Point	0.00	0.00	7,031.00	2,909.50	-2,971.80	2,045,149.330	2,758,988.761	36° 37' 13.338 N	107° 42' 39.625 W
Drill Window - survey misses by 104.74ft at 9748.00ft MD (7035.47 TVD, 2967.34 N, -2884.60 E) - Rectangle (sides W3,737.59 H1,421.27 D0.00)	0.00	0.00	7,031.00	2,909.50	-2,971.80	2,045,149.330	2,758,988.761	36° 37' 13.338 N	107° 42' 39.625 W
KOP - survey misses by 16.67ft at 3569.99ft MD (3569.89 TVD, -15.81 N, -5.28 E) - Point	0.00	0.00	3,570.00	0.00	0.00	2,042,243.930	2,761,964.570	36° 36' 44.568 N	107° 42' 3.168 W
Land Curve - survey misses by 40.99ft at 7918.62ft MD (6995.13 TVD, 1613.82 N, -1673.48 E) - Point	0.00	0.00	7,031.00	1,620.11	-1,654.66	2,043,861.757	2,760,307.678	36° 37' 0.589 N	107° 42' 23.466 W
Hold - survey misses by 81.27ft at 6872.47ft MD (6495.28 TVD, 937.51 N, -1073.40 E) - Point	0.00	0.00	6,500.00	995.54	-1,016.70	2,043,238.067	2,760,946.498	36° 36' 54.413 N	107° 42' 15.640 W
Build to Hold - survey misses by 41.54ft at 4180.62ft MD (4164.64 TVD, 69.07 N, -86.60 E) - Point	0.00	0.00	4,150.00	103.13	-105.32	2,042,346.915	2,761,859.108	36° 36' 45.588 N	107° 42' 4.460 W

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
7,409.00	6,804.01	1,251.71	-1,375.14	TOW @ 7409' MD
7,975.00	7,006.50	1,655.18	-1,710.07	Top of Dakota @ 7975' MD
9,830.00	7,031.51	3,015.30	-2,950.99	BHL ST02

Checked By: _____ Approved By: _____ Date: _____