

Extraction Oil & Gas

Well Name: **Diamond Valley East #5**

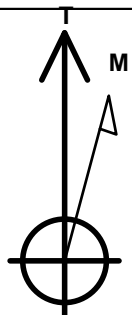
Surface Location: Diamond Valley East Pad Sec.23-T6N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4769.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1413802.79	3175338.00	40.467580	-104.869810	

Frontier 10 RKB - 22' WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 864'FSL, 155'FWL, SEC.23	1.0	0.0	0.0	Point
BHL 825'FSL, 460'FWL, SEC.21	6972.5	9.4	-10075.2	Point
T2 825'FSL, 460'FEL, SEC.22	6972.5	-40.1	-614.9	Point



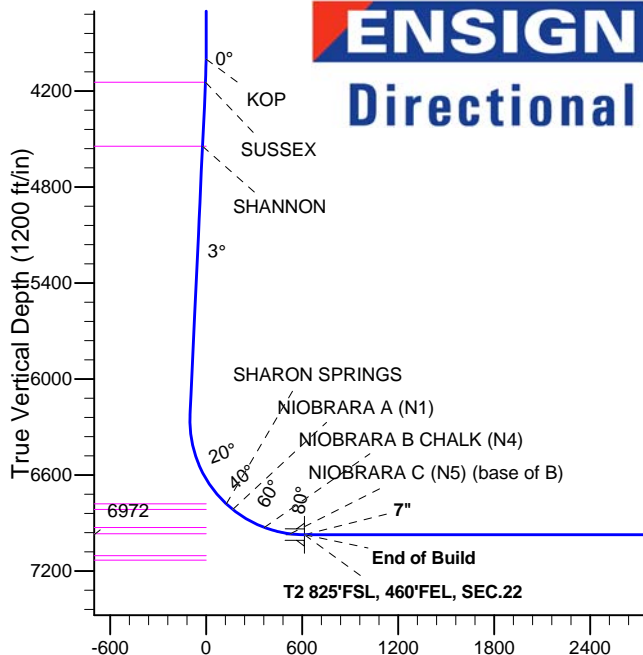
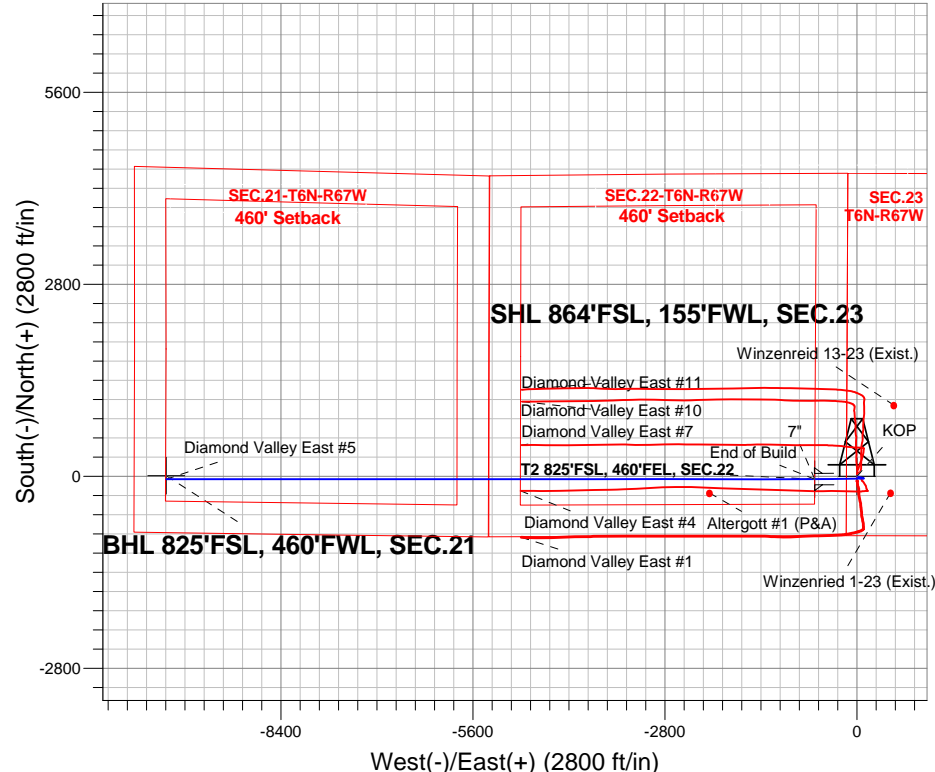
Azimuths to True North
Magnetic North: 8.52°

Magnetic Field
Strength: 52834.7nT
Dip Angle: 66.98°
Date: 7/3/2014
Model: IGRF2010

Diamond Valley East Pad Sec.23-T6N-R67W
Diamond Valley East #5
Plan #2 (6-23-14)
9:15, July 07 2014

ANNOTATIONS

TVD	MD	Annotation
4000.0	4000.0	KOP
6972.5	7383.9	End of Build



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	4000.0	0.00	0.00	4000.0	0.0	0.0	0.00	0.00	0.0	
3	4139.3	2.79	106.47	4139.3	-1.0	3.2	2.00	106.47	-3.2	
4	6225.5	2.79	106.47	6223.0	-29.7	100.5	0.00	0.00	-100.4	
5	7383.9	90.00	270.00	6972.5	-40.1	-614.9	8.00	163.51	615.1	T2 825'FSL, 460'FEL, SEC.22
6	16844.0	90.00	270.00	6972.5	-40.1	-10075.0	0.00	0.00	10075.1	BHL 825'FSL, 460'FWL, SEC.21

BHL 825'FSL, 460'FWL, SEC.21

Vertical Section at 269.77° (1200 ft/in)



Extraction Oil & Gas

SEC.23-T6N-R67W

Diamond Valley East Pad Sec.23-T6N-R67W

Diamond Valley East #5

Wellbore #1

Plan: Plan #2 (6-23-14)

Standard Planning Report

07 July, 2014



Database:	landmark	Local Co-ordinate Reference:	Well Diamond Valley East #5
Company:	Extraction Oil & Gas	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Project:	SEC.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site:	Diamond Valley East Pad Sec.23-T6N-R67W	North Reference:	True
Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (6-23-14)		

Project	SEC.23-T6N-R67W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		Diamond Valley East Pad Sec.23-T6N-R67W			
Site Position:		Northing:	1,413,770.02 ft	Latitude:	40.467490
From:	Lat/Long	Easting:	3,175,338.24 ft	Longitude:	-104.869810
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.41 °

Well	Diamond Valley East #5					
Well Position	+N/-S	32.8 ft	Northing:	1,413,802.79 ft	Latitude:	40.467580
	+E/-W	0.0 ft	Easting:	3,175,338.00 ft	Longitude:	-104.869810
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,769.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/3/2014	8.52	66.98	52,835

Design	Plan #2 (6-23-14)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	269.77

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,139.3	2.79	106.47	4,139.3	-1.0	3.2	2.00	2.00	0.00	106.47	
6,225.5	2.79	106.47	6,223.0	-29.7	100.5	0.00	0.00	0.00	0.00	
7,383.9	90.00	270.00	6,972.5	-40.1	-614.9	8.00	7.53	14.12	163.51	T2 825'FSL, 460°F
16,844.0	90.00	270.00	6,972.5	-40.1	-10,075.0	0.00	0.00	0.00	0.00	BHL 825'FSL, 460°F

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Project:	SEC.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site:	Diamond Valley East Pad Sec.23-T6N-R67W	North Reference:	True
Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (6-23-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,472.0	0.00	0.00	3,472.0	0.0	0.0	0.0	0.00	0.00	0.00
PARKMAN									
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP									
4,100.0	2.00	106.47	4,100.0	-0.5	1.7	-1.7	2.00	2.00	0.00
4,139.3	2.79	106.47	4,139.3	-1.0	3.2	-3.2	2.00	2.00	0.00
4,144.1	2.79	106.47	4,144.0	-1.0	3.5	-3.5	0.00	0.00	0.00
SUSSEX									
4,200.0	2.79	106.47	4,199.9	-1.8	6.1	-6.1	0.00	0.00	0.00
4,300.0	2.79	106.47	4,299.8	-3.2	10.7	-10.7	0.00	0.00	0.00
4,400.0	2.79	106.47	4,399.6	-4.6	15.4	-15.4	0.00	0.00	0.00
4,500.0	2.79	106.47	4,499.5	-5.9	20.1	-20.0	0.00	0.00	0.00
4,544.5	2.79	106.47	4,544.0	-6.5	22.1	-22.1	0.00	0.00	0.00
SHANNON									

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Site:	Diamond Valley East Pad Sec.23-T6N-R67W	North Reference:	True
Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (6-23-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,600.0	2.79	106.47	4,599.4	-7.3	24.7	-24.7	0.00	0.00	0.00
4,700.0	2.79	106.47	4,699.3	-8.7	29.4	-29.4	0.00	0.00	0.00
4,800.0	2.79	106.47	4,799.2	-10.1	34.0	-34.0	0.00	0.00	0.00
4,900.0	2.79	106.47	4,899.0	-11.4	38.7	-38.7	0.00	0.00	0.00
5,000.0	2.79	106.47	4,998.9	-12.8	43.4	-43.3	0.00	0.00	0.00
5,100.0	2.79	106.47	5,098.8	-14.2	48.0	-48.0	0.00	0.00	0.00
5,200.0	2.79	106.47	5,198.7	-15.6	52.7	-52.6	0.00	0.00	0.00
5,300.0	2.79	106.47	5,298.6	-17.0	57.4	-57.3	0.00	0.00	0.00
5,400.0	2.79	106.47	5,398.5	-18.3	62.0	-61.9	0.00	0.00	0.00
5,500.0	2.79	106.47	5,498.3	-19.7	66.7	-66.6	0.00	0.00	0.00
5,600.0	2.79	106.47	5,598.2	-21.1	71.3	-71.3	0.00	0.00	0.00
5,700.0	2.79	106.47	5,698.1	-22.5	76.0	-75.9	0.00	0.00	0.00
5,800.0	2.79	106.47	5,798.0	-23.8	80.7	-80.6	0.00	0.00	0.00
5,900.0	2.79	106.47	5,897.9	-25.2	85.3	-85.2	0.00	0.00	0.00
6,000.0	2.79	106.47	5,997.7	-26.6	90.0	-89.9	0.00	0.00	0.00
6,100.0	2.79	106.47	6,097.6	-28.0	94.7	-94.5	0.00	0.00	0.00
6,200.0	2.79	106.47	6,197.5	-29.4	99.3	-99.2	0.00	0.00	0.00
6,225.5	2.79	106.47	6,223.0	-29.7	100.5	-100.4	0.00	0.00	0.00
6,300.0	3.38	256.49	6,297.4	-30.7	100.1	-100.0	8.00	0.80	201.40
6,400.0	11.31	266.05	6,396.5	-32.1	87.4	-87.3	8.00	7.93	9.55
6,500.0	19.30	267.74	6,492.9	-33.4	61.1	-60.9	8.00	7.99	1.70
6,600.0	27.30	268.47	6,584.7	-34.7	21.6	-21.4	8.00	7.99	0.73
6,700.0	35.30	268.88	6,670.1	-35.9	-30.3	30.5	8.00	8.00	0.42
6,800.0	43.29	269.16	6,747.4	-36.9	-93.6	93.7	8.00	8.00	0.28
6,846.2	46.99	269.26	6,780.0	-37.4	-126.3	126.5	8.00	8.00	0.22
SHARON SPRINGS									
6,899.7	51.27	269.37	6,815.0	-37.9	-166.8	166.9	8.00	8.00	0.19
NIOBRARA A (N1)									
6,900.0	51.29	269.37	6,815.2	-37.9	-167.0	167.1	8.00	8.00	0.18
7,000.0	59.29	269.53	6,872.1	-38.7	-249.1	249.3	8.00	8.00	0.16
7,100.0	67.29	269.67	6,917.0	-39.3	-338.4	338.5	8.00	8.00	0.14
7,127.2	69.47	269.70	6,927.0	-39.4	-363.7	363.9	8.00	8.00	0.13
NIOBRARA B CHALK (N4)									
7,200.0	75.29	269.79	6,949.0	-39.7	-433.0	433.2	8.00	8.00	0.12
7,295.1	82.90	269.90	6,967.0	-40.0	-526.3	526.5	8.00	8.00	0.11
NIOBRARA C (N5) (base of B)									
7,300.0	83.29	269.91	6,967.6	-40.0	-531.2	531.4	8.00	8.00	0.11
7,383.9	90.00	270.00	6,972.5	-40.1	-614.9	615.1	8.00	8.00	0.11
End of Build - 7"									
7,400.0	90.00	270.00	6,972.5	-40.1	-631.0	631.2	0.00	0.00	0.00
7,500.0	90.00	270.00	6,972.5	-40.1	-731.0	731.2	0.00	0.00	0.00
7,600.0	90.00	270.00	6,972.5	-40.1	-831.0	831.2	0.00	0.00	0.00
7,700.0	90.00	270.00	6,972.5	-40.1	-931.0	931.2	0.00	0.00	0.00
7,800.0	90.00	270.00	6,972.5	-40.1	-1,031.0	1,031.2	0.00	0.00	0.00
7,900.0	90.00	270.00	6,972.5	-40.1	-1,131.0	1,131.2	0.00	0.00	0.00
8,000.0	90.00	270.00	6,972.5	-40.1	-1,231.0	1,231.2	0.00	0.00	0.00
8,100.0	90.00	270.00	6,972.5	-40.1	-1,331.0	1,331.2	0.00	0.00	0.00
8,200.0	90.00	270.00	6,972.5	-40.1	-1,431.0	1,431.2	0.00	0.00	0.00
8,300.0	90.00	270.00	6,972.5	-40.1	-1,531.0	1,531.2	0.00	0.00	0.00
8,400.0	90.00	270.00	6,972.5	-40.1	-1,631.0	1,631.2	0.00	0.00	0.00
8,500.0	90.00	270.00	6,972.5	-40.1	-1,731.0	1,731.2	0.00	0.00	0.00
8,600.0	90.00	270.00	6,972.5	-40.1	-1,831.0	1,831.2	0.00	0.00	0.00
8,700.0	90.00	270.00	6,972.5	-40.1	-1,931.0	1,931.2	0.00	0.00	0.00

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Site:	Diamond Valley East Pad Sec.23-T6N-R67W	North Reference:	True
Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (6-23-14)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
8,800.0	90.00	270.00	6,972.5	-40.1	-2,031.0	2,031.2	0.00	0.00	0.00	
8,900.0	90.00	270.00	6,972.5	-40.1	-2,131.0	2,131.2	0.00	0.00	0.00	
9,000.0	90.00	270.00	6,972.5	-40.1	-2,231.0	2,231.2	0.00	0.00	0.00	
9,100.0	90.00	270.00	6,972.5	-40.1	-2,331.0	2,331.2	0.00	0.00	0.00	
9,200.0	90.00	270.00	6,972.5	-40.1	-2,431.0	2,431.2	0.00	0.00	0.00	
9,300.0	90.00	270.00	6,972.5	-40.1	-2,531.0	2,531.1	0.00	0.00	0.00	
9,400.0	90.00	270.00	6,972.5	-40.1	-2,631.0	2,631.1	0.00	0.00	0.00	
9,500.0	90.00	270.00	6,972.5	-40.1	-2,731.0	2,731.1	0.00	0.00	0.00	
9,600.0	90.00	270.00	6,972.5	-40.1	-2,831.0	2,831.1	0.00	0.00	0.00	
9,700.0	90.00	270.00	6,972.5	-40.1	-2,931.0	2,931.1	0.00	0.00	0.00	
9,800.0	90.00	270.00	6,972.5	-40.1	-3,031.0	3,031.1	0.00	0.00	0.00	
9,900.0	90.00	270.00	6,972.5	-40.1	-3,131.0	3,131.1	0.00	0.00	0.00	
10,000.0	90.00	270.00	6,972.5	-40.1	-3,231.0	3,231.1	0.00	0.00	0.00	
10,100.0	90.00	270.00	6,972.5	-40.1	-3,331.0	3,331.1	0.00	0.00	0.00	
10,200.0	90.00	270.00	6,972.5	-40.1	-3,431.0	3,431.1	0.00	0.00	0.00	
10,300.0	90.00	270.00	6,972.5	-40.1	-3,531.0	3,531.1	0.00	0.00	0.00	
10,400.0	90.00	270.00	6,972.5	-40.1	-3,631.0	3,631.1	0.00	0.00	0.00	
10,500.0	90.00	270.00	6,972.5	-40.1	-3,731.0	3,731.1	0.00	0.00	0.00	
10,600.0	90.00	270.00	6,972.5	-40.1	-3,831.0	3,831.1	0.00	0.00	0.00	
10,700.0	90.00	270.00	6,972.5	-40.1	-3,931.0	3,931.1	0.00	0.00	0.00	
10,800.0	90.00	270.00	6,972.5	-40.1	-4,031.0	4,031.1	0.00	0.00	0.00	
10,900.0	90.00	270.00	6,972.5	-40.1	-4,131.0	4,131.1	0.00	0.00	0.00	
11,000.0	90.00	270.00	6,972.5	-40.1	-4,231.0	4,231.1	0.00	0.00	0.00	
11,100.0	90.00	270.00	6,972.5	-40.1	-4,331.0	4,331.1	0.00	0.00	0.00	
11,200.0	90.00	270.00	6,972.5	-40.1	-4,431.0	4,431.1	0.00	0.00	0.00	
11,300.0	90.00	270.00	6,972.5	-40.1	-4,531.0	4,531.1	0.00	0.00	0.00	
11,400.0	90.00	270.00	6,972.5	-40.1	-4,631.0	4,631.1	0.00	0.00	0.00	
11,500.0	90.00	270.00	6,972.5	-40.1	-4,731.0	4,731.1	0.00	0.00	0.00	
11,600.0	90.00	270.00	6,972.5	-40.1	-4,831.0	4,831.1	0.00	0.00	0.00	
11,700.0	90.00	270.00	6,972.5	-40.1	-4,931.0	4,931.1	0.00	0.00	0.00	
11,800.0	90.00	270.00	6,972.5	-40.1	-5,031.0	5,031.1	0.00	0.00	0.00	
11,900.0	90.00	270.00	6,972.5	-40.1	-5,131.0	5,131.1	0.00	0.00	0.00	
12,000.0	90.00	270.00	6,972.5	-40.1	-5,231.0	5,231.1	0.00	0.00	0.00	
12,100.0	90.00	270.00	6,972.5	-40.1	-5,331.0	5,331.1	0.00	0.00	0.00	
12,200.0	90.00	270.00	6,972.5	-40.1	-5,431.0	5,431.1	0.00	0.00	0.00	
12,300.0	90.00	270.00	6,972.5	-40.1	-5,531.0	5,531.1	0.00	0.00	0.00	
12,400.0	90.00	270.00	6,972.5	-40.1	-5,631.0	5,631.1	0.00	0.00	0.00	
12,500.0	90.00	270.00	6,972.5	-40.1	-5,731.0	5,731.1	0.00	0.00	0.00	
12,600.0	90.00	270.00	6,972.5	-40.1	-5,831.0	5,831.1	0.00	0.00	0.00	
12,700.0	90.00	270.00	6,972.5	-40.1	-5,931.0	5,931.1	0.00	0.00	0.00	
12,800.0	90.00	270.00	6,972.5	-40.1	-6,031.0	6,031.1	0.00	0.00	0.00	
12,900.0	90.00	270.00	6,972.5	-40.1	-6,131.0	6,131.1	0.00	0.00	0.00	
13,000.0	90.00	270.00	6,972.5	-40.1	-6,231.0	6,231.1	0.00	0.00	0.00	
13,100.0	90.00	270.00	6,972.5	-40.1	-6,331.0	6,331.1	0.00	0.00	0.00	
13,200.0	90.00	270.00	6,972.5	-40.1	-6,431.0	6,431.1	0.00	0.00	0.00	
13,300.0	90.00	270.00	6,972.5	-40.1	-6,531.0	6,531.1	0.00	0.00	0.00	
13,400.0	90.00	270.00	6,972.5	-40.1	-6,631.0	6,631.1	0.00	0.00	0.00	
13,500.0	90.00	270.00	6,972.5	-40.1	-6,731.0	6,731.1	0.00	0.00	0.00	
13,600.0	90.00	270.00	6,972.5	-40.1	-6,831.0	6,831.1	0.00	0.00	0.00	
13,700.0	90.00	270.00	6,972.5	-40.1	-6,931.0	6,931.1	0.00	0.00	0.00	
13,800.0	90.00	270.00	6,972.5	-40.1	-7,031.0	7,031.1	0.00	0.00	0.00	
13,900.0	90.00	270.00	6,972.5	-40.1	-7,131.0	7,131.1	0.00	0.00	0.00	
14,000.0	90.00	270.00	6,972.5	-40.1	-7,231.0	7,231.1	0.00	0.00	0.00	
14,100.0	90.00	270.00	6,972.5	-40.1	-7,331.0	7,331.1	0.00	0.00	0.00	

Database:	landmark	Local Co-ordinate Reference:	Well Diamond Valley East #5
Company:	Extraction Oil & Gas	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Project:	SEC.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site:	Diamond Valley East Pad Sec.23-T6N-R67W	North Reference:	True
Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (6-23-14)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
14,200.0	90.00	270.00	6,972.5	-40.1	-7,431.0	7,431.1	0.00	0.00	0.00	
14,300.0	90.00	270.00	6,972.5	-40.1	-7,531.0	7,531.1	0.00	0.00	0.00	
14,400.0	90.00	270.00	6,972.5	-40.1	-7,631.0	7,631.1	0.00	0.00	0.00	
14,500.0	90.00	270.00	6,972.5	-40.1	-7,731.0	7,731.1	0.00	0.00	0.00	
14,600.0	90.00	270.00	6,972.5	-40.1	-7,831.0	7,831.1	0.00	0.00	0.00	
14,700.0	90.00	270.00	6,972.5	-40.1	-7,931.0	7,931.1	0.00	0.00	0.00	
14,800.0	90.00	270.00	6,972.5	-40.1	-8,031.0	8,031.1	0.00	0.00	0.00	
14,900.0	90.00	270.00	6,972.5	-40.1	-8,131.0	8,131.1	0.00	0.00	0.00	
15,000.0	90.00	270.00	6,972.5	-40.1	-8,231.0	8,231.1	0.00	0.00	0.00	
15,100.0	90.00	270.00	6,972.5	-40.1	-8,331.0	8,331.1	0.00	0.00	0.00	
15,200.0	90.00	270.00	6,972.5	-40.1	-8,431.0	8,431.1	0.00	0.00	0.00	
15,300.0	90.00	270.00	6,972.5	-40.1	-8,531.0	8,531.1	0.00	0.00	0.00	
15,400.0	90.00	270.00	6,972.5	-40.1	-8,631.0	8,631.1	0.00	0.00	0.00	
15,500.0	90.00	270.00	6,972.5	-40.1	-8,731.0	8,731.1	0.00	0.00	0.00	
15,600.0	90.00	270.00	6,972.5	-40.1	-8,831.0	8,831.1	0.00	0.00	0.00	
15,700.0	90.00	270.00	6,972.5	-40.1	-8,931.0	8,931.1	0.00	0.00	0.00	
15,800.0	90.00	270.00	6,972.5	-40.1	-9,031.0	9,031.1	0.00	0.00	0.00	
15,900.0	90.00	270.00	6,972.5	-40.1	-9,131.0	9,131.1	0.00	0.00	0.00	
16,000.0	90.00	270.00	6,972.5	-40.1	-9,231.0	9,231.1	0.00	0.00	0.00	
16,100.0	90.00	270.00	6,972.5	-40.1	-9,331.0	9,331.1	0.00	0.00	0.00	
16,200.0	90.00	270.00	6,972.5	-40.1	-9,431.0	9,431.1	0.00	0.00	0.00	
16,300.0	90.00	270.00	6,972.5	-40.1	-9,531.0	9,531.1	0.00	0.00	0.00	
16,400.0	90.00	270.00	6,972.5	-40.1	-9,631.0	9,631.1	0.00	0.00	0.00	
16,500.0	90.00	270.00	6,972.5	-40.1	-9,731.0	9,731.1	0.00	0.00	0.00	
16,600.0	90.00	270.00	6,972.5	-40.1	-9,831.0	9,831.1	0.00	0.00	0.00	
16,700.0	90.00	270.00	6,972.5	-40.1	-9,931.0	9,931.1	0.00	0.00	0.00	
16,800.0	90.00	270.00	6,972.5	-40.1	-10,031.0	10,031.1	0.00	0.00	0.00	
16,844.0	90.00	270.00	6,972.5	-40.1	-10,075.0	10,075.1	0.00	0.00	0.00	

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,383.9	6,972.5	7"	7	7-1/2	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,472.0	3,472.0	PARKMAN				
4,144.1	4,144.0	SUSSEX				
4,544.5	4,544.0	SHANNON				
6,846.2	6,780.0	SHARON SPRINGS				
6,899.7	6,815.0	NIOBRARA A (N1)				
7,127.2	6,927.0	NIOBRARA B CHALK (N4)				
7,295.1	6,967.0	NIOBRARA C (N5) (base of B)				
	7,104.0	FT HAYS LIMESTONE				
	7,131.0	CODELL SANDSTONE				

Database:	landmark	Local Co-ordinate Reference:	Well Diamond Valley East #5
Company:	Extraction Oil & Gas	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Project:	SEC.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site:	Diamond Valley East Pad Sec.23-T6N-R67W	North Reference:	True
Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (6-23-14)		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
4,000.0	4,000.0	0.0	0.0	KOP	
7,383.9	6,972.5	-40.1	-614.9	End of Build	



Extraction Oil & Gas

SEC.23-T6N-R67W

Diamond Valley East Pad Sec.23-T6N-R67W

Diamond Valley East #5

Wellbore #1

Plan #2 (6-23-14)

Anticollision Report

07 July, 2014



Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

Reference	Plan #2 (6-23-14)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 7/2/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	16,843.8	Plan #2 (6-23-14) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Diamond Valley East Pad Sec.23-T6N-R67W						
Altergott #1 (P&A) - Wellbore #1 - Wellbore #1	8,921.5	6,973.0	202.8	1.8	1.009	Level 2, CC, ES, SF
Diamond Valley East #1 - Wellbore #1 - Wellbore #1	365.8	366.3	65.2	63.9	49.827	CC
Diamond Valley East #1 - Wellbore #1 - Wellbore #1	500.0	500.2	65.6	63.7	34.701	ES
Diamond Valley East #1 - Wellbore #1 - Wellbore #1	11,700.0	11,874.0	872.0	602.8	3.240	SF
Diamond Valley East #10 - Wellbore #1 - Wellbore #1	517.8	518.3	93.6	91.6	47.772	CC, ES
Diamond Valley East #10 - Wellbore #1 - Wellbore #1	1,100.0	1,083.8	129.7	125.2	28.448	SF
Diamond Valley East #11 - Wellbore #1 - Wellbore #1	114.9	115.9	47.4	47.1	171.445	CC
Diamond Valley East #11 - Wellbore #1 - Wellbore #1	200.0	200.5	47.7	47.0	74.662	ES
Diamond Valley East #11 - Wellbore #1 - Wellbore #1	700.0	696.1	64.4	61.5	22.412	SF
Diamond Valley East #12 - Wellbore #1 - Plan #1 (6-23-14)	400.0	400.0	109.3	107.8	69.488	CC, ES
Diamond Valley East #12 - Wellbore #1 - Plan #1 (6-23-14)	4,000.0	3,880.4	870.1	845.6	35.513	SF
Diamond Valley East #13 - Wellbore #1 - Plan #1 (10-03)	200.0	200.0	127.5	126.9	189.152	CC, ES
Diamond Valley East #13 - Wellbore #1 - Plan #1 (10-03)	4,000.0	3,861.4	963.7	938.1	37.687	SF
Diamond Valley East #2 - Wellbore #1 - Plan #1 (6-23-14)	1,200.0	1,200.0	51.0	45.8	9.867	CC, ES
Diamond Valley East #2 - Wellbore #1 - Plan #1 (6-23-14)	16,844.0	16,881.6	613.7	48.6	1.086	Level 2, SF
Diamond Valley East #3 - Wellbore #1 - Plan #2 (6-23-14)	1,500.0	1,500.0	32.8	26.3	5.030	CC
Diamond Valley East #3 - Wellbore #1 - Plan #2 (6-23-14)	16,844.0	16,855.2	282.1	-282.9	0.499	Level 1, ES, SF
Diamond Valley East #4 - Wellbore #1 - Wellbore #1	0.0	0.5	18.2	18.2	10,000.000	CC
Diamond Valley East #4 - Wellbore #1 - Wellbore #1	200.0	200.5	18.3	17.6	29.191	ES
Diamond Valley East #4 - Wellbore #1 - Wellbore #1	11,666.6	11,910.2	256.4	64.5	1.336	Level 3, SF
Diamond Valley East #6 - Wellbore #1 - Plan #1 (6-23-14)	1,966.5	1,967.0	14.6	6.0	1.692	CC
Diamond Valley East #6 - Wellbore #1 - Plan #1 (6-23-14)	16,844.0	16,854.3	377.3	-187.4	0.668	Level 1, ES, SF
Diamond Valley East #7 - Wellbore #1 - Wellbore #1	0.0	1.0	29.1	29.1	10,000.000	CC
Diamond Valley East #7 - Wellbore #1 - Wellbore #1	100.0	100.9	29.3	29.0	129.578	ES
Diamond Valley East #7 - Wellbore #1 - Wellbore #1	11,700.0	11,873.0	528.6	269.6	2.041	SF
Diamond Valley East #8 - Wellbore #1 - Plan #1 (6-23-14)	1,166.5	1,167.0	61.9	56.9	12.339	CC
Diamond Valley East #8 - Wellbore #1 - Plan #1 (6-23-14)	1,200.0	1,200.0	61.9	56.8	11.983	ES
Diamond Valley East #8 - Wellbore #1 - Plan #1 (6-23-14)	16,844.0	16,872.2	708.8	144.3	1.256	Level 3, SF
Diamond Valley East #9 - Wellbore #1 - Plan #1 (6-23-14)	1,000.0	1,000.0	76.6	72.3	17.929	CC, ES
Diamond Valley East #9 - Wellbore #1 - Plan #1 (6-23-14)	9,800.0	9,866.3	999.8	827.9	5.818	SF
Winzenreid 13-23 (Exist.) - Wellbore #1 - Wellbore #1						Out of range
Winzenreid 1-23 (Exist.) - Wellbore #1 - Wellbore #1	6,300.0	6,273.4	443.2	304.3	3.192	CC, ES, SF

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

Offset Design Diamond Valley East Pad Sec.23-T6N-R67W - Altergott #1 (P&A) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7713-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,000.0	6,972.5	6,973.0	6,973.0	37.1	139.5	-90.00	-242.9	-2,152.5	943.6	767.0	176.59	5.343		
8,100.0	6,972.5	6,973.0	6,973.0	39.7	139.5	-90.00	-242.9	-2,152.5	846.2	667.0	179.16	4.723		
8,200.0	6,972.5	6,973.0	6,973.0	42.3	139.5	-90.00	-242.9	-2,152.5	749.5	567.7	181.76	4.123		
8,300.0	6,972.5	6,973.0	6,973.0	44.9	139.5	-90.00	-242.9	-2,152.5	653.8	469.4	184.38	3.546		
8,400.0	6,972.5	6,973.0	6,973.0	47.6	139.5	-90.00	-242.9	-2,152.5	559.6	372.5	187.03	2.992		
8,500.0	6,972.5	6,973.0	6,973.0	50.2	139.5	-90.00	-242.9	-2,152.5	467.8	278.1	189.69	2.466		
8,600.0	6,972.5	6,973.0	6,973.0	52.9	139.5	-90.00	-242.9	-2,152.5	380.1	187.8	192.37	1.976		
8,700.0	6,972.5	6,973.0	6,973.0	55.6	139.5	-90.00	-242.9	-2,152.5	300.3	105.3	195.06	1.540		
8,800.0	6,972.5	6,973.0	6,973.0	58.3	139.5	-90.00	-242.9	-2,152.5	236.4	38.7	197.76	1.196	Level 2	
8,900.0	6,972.5	6,973.0	6,973.0	61.0	139.5	-90.00	-242.9	-2,152.5	204.0	3.5	200.47	1.018	Level 2	
8,921.5	6,972.5	6,973.0	6,973.0	61.6	139.5	-90.00	-242.9	-2,152.5	202.8	1.8	201.05	1.009	Level 2, CC, ES, SF	
9,000.0	6,972.5	6,973.0	6,973.0	63.7	139.5	-90.00	-242.9	-2,152.5	217.5	14.3	203.19	1.070	Level 2	
9,100.0	6,972.5	6,973.0	6,973.0	66.5	139.5	-90.00	-242.9	-2,152.5	270.2	64.3	205.92	1.312	Level 3	
9,200.0	6,972.5	6,973.0	6,973.0	69.2	139.5	-90.00	-242.9	-2,152.5	344.5	135.9	208.65	1.651		
9,300.0	6,972.5	6,973.0	6,973.0	71.9	139.5	-90.00	-242.9	-2,152.5	429.4	218.0	211.39	2.031		
9,400.0	6,972.5	6,973.0	6,973.0	74.7	139.5	-90.00	-242.9	-2,152.5	519.7	305.6	214.13	2.427		
9,500.0	6,972.5	6,973.0	6,973.0	77.4	139.5	-90.00	-242.9	-2,152.5	613.0	396.1	216.88	2.827		
9,600.0	6,972.5	6,973.0	6,973.0	80.2	139.5	-90.00	-242.9	-2,152.5	708.2	488.5	219.64	3.224		
9,700.0	6,972.5	6,973.0	6,973.0	82.9	139.5	-90.00	-242.9	-2,152.5	804.5	582.1	222.39	3.617		
9,800.0	6,972.5	6,973.0	6,973.0	85.7	139.5	-90.00	-242.9	-2,152.5	901.6	676.5	225.15	4.004		
9,900.0	6,972.5	6,973.0	6,973.0	88.5	139.5	-90.00	-242.9	-2,152.5	999.3	771.4	227.92	4.384		

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 162-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.0	0.0	0.5	0.5	0.0	0.0	180.00	-65.6	0.0	65.6	65.6	0.00	N/A	
100.0	100.0	100.6	100.6	0.1	0.1	179.92	-65.5	0.1	65.5	65.3	0.23	290.503	
200.0	200.0	200.6	200.6	0.3	0.3	179.72	-65.3	0.3	65.3	64.7	0.60	109.065	
300.0	300.0	300.5	300.5	0.6	0.5	179.74	-65.3	0.3	65.3	64.3	1.03	63.536	
365.8	365.8	366.3	366.3	0.7	0.6	-179.99	-65.2	0.0	65.2	63.9	1.31	49.827 CC	
400.0	400.0	400.4	400.4	0.8	0.7	-179.78	-65.3	-0.3	65.3	63.8	1.46	44.802	
500.0	500.0	500.2	500.2	1.0	0.9	-179.04	-65.6	-1.1	65.6	63.7	1.89	34.701 ES	
600.0	600.0	599.6	599.6	1.2	1.1	-178.55	-66.4	-1.7	66.4	64.1	2.33	28.538	
700.0	700.0	699.3	699.3	1.5	1.3	-178.00	-68.1	-2.4	68.1	65.4	2.76	24.651	
800.0	800.0	800.2	800.1	1.7	1.5	-177.91	-69.5	-2.5	69.5	66.3	3.20	21.739	
900.0	900.0	900.4	900.4	1.9	1.7	-179.59	-69.7	-0.5	69.7	66.0	3.63	19.178	
1,000.0	1,000.0	998.4	998.2	2.1	1.9	178.34	-71.0	2.1	71.0	67.0	4.07	17.453	
1,100.0	1,100.0	1,096.0	1,095.8	2.4	2.2	176.82	-75.6	4.2	75.8	71.3	4.51	16.813	
1,200.0	1,200.0	1,195.2	1,194.8	2.6	2.4	177.02	-82.3	4.3	82.6	77.7	4.96	16.651	
1,300.0	1,300.0	1,295.8	1,295.1	2.8	2.6	177.23	-88.9	4.3	89.2	83.8	5.41	16.486	
1,400.0	1,400.0	1,392.3	1,391.3	3.0	2.8	177.12	-96.2	4.8	96.8	90.9	5.85	16.530	
1,500.0	1,500.0	1,488.4	1,486.8	3.3	3.1	176.74	-106.9	6.1	107.9	101.6	6.33	17.058	
1,600.0	1,600.0	1,588.5	1,586.1	3.5	3.3	176.19	-118.9	7.9	120.1	113.3	6.81	17.641	
1,700.0	1,700.0	1,685.5	1,682.4	3.7	3.6	175.68	-131.3	9.9	132.9	125.6	7.29	18.223	
1,800.0	1,800.0	1,783.8	1,779.6	3.9	3.9	175.13	-145.2	12.4	147.2	139.4	7.80	18.868	
1,900.0	1,900.0	1,884.4	1,879.4	4.2	4.2	174.08	-157.9	16.4	160.2	151.9	8.31	19.277	
2,000.0	2,000.0	1,979.8	1,973.7	4.4	4.5	172.74	-171.2	21.8	174.7	165.9	8.82	19.814	
2,100.0	2,100.0	2,078.9	2,071.5	4.6	4.8	172.09	-186.3	25.9	190.3	180.9	9.34	20.362	
2,200.0	2,200.0	2,180.4	2,171.9	4.8	5.1	172.54	-201.1	26.3	204.9	195.0	9.86	20.770	
2,300.0	2,300.0	2,282.6	2,273.2	5.1	5.3	172.98	-214.8	26.5	218.2	207.8	10.37	21.037	
2,400.0	2,400.0	2,385.4	2,375.3	5.3	5.6	173.22	-226.9	27.0	229.9	219.0	10.87	21.151	
2,500.0	2,500.0	2,478.7	2,468.0	5.5	5.9	173.46	-237.8	27.3	241.6	230.3	11.36	21.277	
2,600.0	2,600.0	2,574.4	2,562.6	5.7	6.2	173.92	-251.9	26.8	256.1	244.2	11.87	21.571	
2,700.0	2,700.0	2,675.8	2,662.9	6.0	6.5	174.31	-266.7	26.6	270.6	258.2	12.41	21.814	
2,800.0	2,800.0	2,773.3	2,759.4	6.2	6.8	174.50	-280.3	27.0	284.6	271.7	12.92	22.019	
2,900.0	2,900.0	2,874.1	2,859.3	6.4	7.1	174.36	-294.6	29.1	298.8	285.4	13.46	22.204	
3,000.0	3,000.0	2,978.9	2,963.1	6.6	7.4	174.02	-307.9	32.3	311.8	297.8	13.99	22.281	
3,100.0	3,100.0	3,070.7	3,054.1	6.9	7.7	173.76	-319.7	34.9	324.9	310.4	14.49	22.417	
3,200.0	3,200.0	3,174.8	3,157.3	7.1	8.0	173.55	-333.6	37.7	338.5	323.5	15.03	22.516	
3,300.0	3,300.0	3,272.8	3,254.4	7.3	8.3	173.38	-346.1	40.2	351.5	336.0	15.55	22.607	
3,400.0	3,400.0	3,375.4	3,356.2	7.5	8.6	173.18	-358.7	42.9	363.9	347.9	16.08	22.640	
3,500.0	3,500.0	3,469.0	3,449.0	7.8	8.9	172.89	-370.6	46.2	377.0	360.4	16.58	22.735	
3,600.0	3,600.0	3,570.0	3,549.1	8.0	9.2	172.55	-383.6	50.2	390.3	373.2	17.11	22.804	
3,700.0	3,700.0	3,666.1	3,644.2	8.2	9.5	172.52	-396.5	52.1	403.9	386.3	17.63	22.907	
3,800.0	3,800.0	3,765.0	3,742.2	8.4	9.8	172.61	-410.4	53.2	417.9	399.7	18.16	23.008	
3,900.0	3,900.0	3,867.9	3,844.1	8.7	10.2	172.66	-424.3	54.7	431.5	412.8	18.70	23.072	
4,000.0	4,000.0	3,971.2	3,946.7	8.9	10.5	172.64	-437.0	56.4	443.9	424.7	19.23	23.081	
4,100.0	4,100.0	4,065.4	4,040.1	9.1	10.8	66.25	-448.7	57.1	455.6	437.8	17.84	25.547	
4,200.0	4,199.9	4,160.9	4,134.6	9.3	11.1	66.83	-462.3	57.4	468.0	449.7	18.25	25.645	
4,300.0	4,299.8	4,271.0	4,243.7	9.5	11.4	67.47	-476.5	58.6	479.1	460.4	18.69	25.632	
4,400.0	4,399.6	4,367.2	4,339.3	9.7	11.7	67.93	-487.5	60.2	488.8	469.7	19.11	25.583	
4,500.0	4,499.5	4,457.9	4,429.2	9.9	12.0	68.35	-499.7	61.8	500.5	481.0	19.51	25.650	
4,600.0	4,599.4	4,561.4	4,531.6	10.1	12.3	68.72	-514.1	64.5	512.9	493.0	19.95	25.704	
4,700.0	4,699.3	4,659.1	4,628.5	10.3	12.6	69.04	-526.6	67.0	524.2	503.8	20.38	25.719	
4,800.0	4,799.2	4,758.5	4,726.9	10.5	12.9	69.58	-540.4	67.6	536.4	515.6	20.81	25.772	
4,900.0	4,899.0	4,860.0	4,827.5	10.7	13.2	70.15	-553.9	67.7	548.0	526.7	21.25	25.788	
5,000.0	4,998.9	4,955.9	4,922.6	10.9	13.5	70.66	-566.7	67.8	559.7	538.1	21.68	25.820	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 162-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.0	5,098.8	5,053.4	5,019.1	11.1	13.8	70.95	-580.2	70.1	572.1	550.0	22.11	25.871		
5,200.0	5,198.7	5,167.7	5,132.4	11.3	14.2	71.31	-595.0	72.3	583.6	561.0	22.59	25.839		
5,300.0	5,298.6	5,262.7	5,226.8	11.5	14.5	71.50	-606.1	75.1	593.8	570.8	23.02	25.801		
5,400.0	5,398.5	5,361.0	5,324.2	11.7	14.8	71.62	-618.1	78.8	604.7	581.2	23.46	25.779		
5,500.0	5,498.3	5,456.0	5,418.4	11.9	15.0	71.85	-630.4	81.0	616.2	592.3	23.89	25.794		
5,600.0	5,598.2	5,559.9	5,521.4	12.2	15.4	72.24	-643.7	82.0	627.5	603.2	24.34	25.779		
5,700.0	5,698.1	5,650.4	5,611.1	12.4	15.6	72.50	-655.5	83.5	639.1	614.3	24.77	25.803		
5,800.0	5,798.0	5,752.5	5,712.3	12.6	16.0	72.73	-669.2	85.9	651.1	625.9	25.22	25.813		
5,900.0	5,897.9	5,851.4	5,810.3	12.8	16.3	72.90	-682.3	88.7	662.9	637.2	25.67	25.822		
6,000.0	5,997.7	5,947.9	5,905.9	13.0	16.6	73.08	-695.3	91.2	675.1	648.9	26.12	25.848		
6,100.0	6,097.6	6,055.8	6,012.8	13.2	16.9	73.39	-709.7	92.6	687.1	660.5	26.59	25.842		
6,200.0	6,197.5	6,159.7	6,116.0	13.5	17.2	73.72	-721.4	93.4	696.9	669.8	27.05	25.767		
6,300.0	6,297.4	6,243.3	6,198.8	13.7	17.5	-75.55	-732.5	93.9	708.7	681.3	27.45	25.816		
6,400.0	6,396.5	6,343.3	6,298.0	13.8	17.8	-85.12	-746.3	94.4	721.1	693.2	27.86	25.886		
6,500.0	6,492.9	6,451.6	6,405.3	14.0	18.1	-88.07	-760.8	94.6	733.5	705.2	28.23	25.980		
6,600.0	6,584.7	6,529.9	6,482.6	14.2	18.4	-89.67	-771.0	89.4	746.5	717.9	28.56	26.134		
6,700.0	6,670.1	6,644.9	6,594.8	14.4	18.7	-92.02	-787.6	70.5	762.2	733.2	29.01	26.273		
6,800.0	6,747.4	6,759.6	6,702.6	14.8	19.0	-94.04	-802.5	34.7	777.6	748.0	29.60	26.272		
6,900.0	6,815.2	6,864.0	6,794.5	15.5	19.3	-95.46	-815.7	-12.8	793.2	762.8	30.42	26.077		
7,000.0	6,872.1	6,962.4	6,874.1	16.4	19.6	-96.48	-828.6	-69.1	810.1	778.5	31.60	25.634		
7,100.0	6,917.0	7,153.1	7,005.1	17.6	20.4	-99.13	-850.5	-205.0	826.8	793.1	33.76	24.489		
7,200.0	6,949.0	7,301.2	7,076.4	19.2	21.4	-100.17	-859.2	-334.1	835.1	798.5	36.64	22.792		
7,300.0	6,967.6	7,455.4	7,120.7	21.0	23.0	-100.79	-864.5	-481.5	840.0	799.5	40.49	20.746		
7,400.0	6,972.5	7,577.2	7,135.2	23.0	24.9	-101.09	-867.5	-602.3	843.7	799.2	44.46	18.976		
7,500.0	6,972.5	7,675.3	7,138.2	25.1	26.6	-101.26	-869.9	-700.3	846.7	798.2	48.48	17.463		
7,600.0	6,972.5	7,755.6	7,140.5	27.3	28.2	-101.36	-873.8	-780.5	851.9	799.5	52.36	16.268		
7,700.0	6,972.5	7,870.7	7,141.6	29.7	30.7	-101.35	-879.7	-895.4	857.2	799.9	57.23	14.978		
7,800.0	6,972.5	8,002.0	7,141.6	32.1	33.6	-101.31	-883.3	-1,026.6	859.9	797.3	62.68	13.720		
7,900.0	6,972.5	8,141.1	7,142.2	34.6	36.8	-101.38	-880.7	-1,165.7	858.2	789.7	68.46	12.535		
8,000.0	6,972.5	8,239.1	7,142.7	37.1	39.2	-101.47	-876.6	-1,263.7	854.2	780.8	73.35	11.645		
8,100.0	6,972.5	8,326.4	7,143.3	39.7	41.3	-101.55	-873.6	-1,350.8	851.0	773.0	78.03	10.906		
8,200.0	6,972.5	8,415.0	7,143.6	42.3	43.5	-101.58	-872.2	-1,439.5	849.5	766.7	82.82	10.258		
8,220.5	6,972.5	8,427.0	7,143.6	42.8	43.8	-101.59	-872.2	-1,451.5	849.5	765.8	83.64	10.156		
8,300.0	6,972.5	8,492.5	7,144.4	44.9	45.5	-101.63	-872.7	-1,516.9	850.2	762.9	87.35	9.734		
8,400.0	6,972.5	8,590.2	7,145.7	47.6	48.0	-101.69	-874.5	-1,614.7	852.2	759.8	92.43	9.220		
8,500.0	6,972.5	8,718.6	7,147.5	50.2	51.3	-101.81	-874.7	-1,743.0	852.8	754.4	98.34	8.672		
8,600.0	6,972.5	8,824.3	7,147.5	52.9	54.1	-101.84	-872.3	-1,848.7	850.5	746.8	103.72	8.200		
8,700.0	6,972.5	8,917.3	7,147.6	55.6	56.5	-101.87	-870.8	-1,941.7	848.9	740.1	108.79	7.803		
8,798.3	6,972.5	9,005.0	7,147.8	58.3	58.8	-101.89	-869.9	-2,029.3	848.1	734.4	113.70	7.459		
8,800.0	6,972.5	9,006.3	7,147.8	58.3	58.9	-101.89	-869.9	-2,030.6	848.1	734.3	113.77	7.454		
8,900.0	6,972.5	9,096.9	7,149.4	61.0	61.3	-101.99	-870.4	-2,121.2	848.9	730.1	118.79	7.146		
9,000.0	6,972.5	9,196.8	7,150.4	63.7	64.0	-102.04	-871.4	-2,221.1	850.1	726.1	124.08	6.852		
9,100.0	6,972.5	9,301.9	7,150.9	66.5	66.8	-102.06	-872.3	-2,326.2	851.1	721.5	129.54	6.570		
9,200.0	6,972.5	9,414.3	7,151.4	69.2	69.8	-102.10	-871.8	-2,438.6	850.7	715.5	135.20	6.292		
9,284.2	6,972.5	9,490.8	7,151.9	71.5	71.9	-102.15	-871.3	-2,515.2	850.3	710.8	139.48	6.096		
9,300.0	6,972.5	9,505.4	7,152.1	71.9	72.3	-102.16	-871.3	-2,529.8	850.3	710.0	140.29	6.061		
9,400.0	6,972.5	9,599.8	7,152.8	74.7	74.8	-102.20	-871.6	-2,624.1	850.8	705.3	145.48	5.848		
9,500.0	6,972.5	9,701.8	7,153.6	77.4	77.6	-102.24	-872.1	-2,726.1	851.5	700.6	150.89	5.643		
9,600.0	6,972.5	9,802.9	7,154.3	80.2	80.4	-102.28	-872.6	-2,827.2	852.0	695.8	156.28	5.452		
9,700.0	6,972.5	9,907.5	7,155.3	82.9	83.2	-102.35	-872.5	-2,931.8	852.2	690.4	161.75	5.268		
9,800.0	6,972.5	10,013.3	7,155.7	85.7	86.1	-102.39	-872.1	-3,037.6	851.9	684.6	167.29	5.092		
9,900.0	6,972.5	10,113.0	7,156.2	88.5	88.8	-102.43	-870.9	-3,137.3	850.8	678.1	172.66	4.928		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 162-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
9,959.2	6,972.5	10,165.4	7,156.6	90.1	90.3	-102.46	-870.6	-3,189.7	850.6	674.9	175.65	4.842	
10,000.0	6,972.5	10,199.9	7,156.9	91.2	91.2	-102.49	-870.7	-3,224.2	850.8	673.1	177.67	4.788	
10,100.0	6,972.5	10,295.2	7,158.2	94.0	93.8	-102.55	-871.8	-3,319.5	852.2	669.3	182.91	4.659	
10,200.0	6,972.5	10,399.1	7,158.5	96.8	96.7	-102.56	-872.7	-3,423.4	853.1	664.7	188.43	4.528	
10,300.0	6,972.5	10,498.4	7,159.3	99.5	99.4	-102.60	-873.5	-3,522.6	854.1	660.3	193.79	4.407	
10,400.0	6,972.5	10,599.9	7,159.9	102.3	102.2	-102.63	-874.3	-3,624.2	855.0	655.8	199.24	4.291	
10,500.0	6,972.5	10,700.1	7,159.8	105.1	105.0	-102.61	-875.1	-3,724.4	855.8	651.1	204.68	4.181	
10,600.0	6,972.5	10,797.8	7,159.3	107.9	107.7	-102.56	-876.1	-3,822.0	856.6	646.6	210.08	4.078	
10,700.0	6,972.5	10,885.1	7,159.3	110.6	110.1	-102.54	-877.6	-3,909.3	858.3	643.1	215.18	3.989	
10,800.0	6,972.5	11,005.0	7,158.3	113.4	113.4	-102.44	-879.9	-4,029.2	860.0	638.8	221.23	3.887	
10,900.0	6,972.5	11,099.0	7,156.4	116.2	116.0	-102.31	-880.6	-4,123.2	860.4	633.8	226.62	3.797	
11,000.0	6,972.5	11,177.8	7,155.8	119.0	118.2	-102.24	-882.6	-4,202.0	862.6	631.1	231.54	3.726	
11,100.0	6,972.5	11,263.1	7,156.7	121.8	120.6	-102.25	-886.1	-4,287.2	866.9	630.3	236.57	3.664	
11,200.0	6,972.5	11,372.1	7,158.7	124.6	123.6	-102.31	-891.1	-4,396.0	871.8	629.6	242.19	3.599	
11,300.0	6,972.5	11,493.4	7,159.3	127.4	126.9	-102.30	-894.4	-4,517.3	874.5	626.3	248.23	3.523	
11,400.0	6,972.5	11,610.0	7,160.2	130.1	130.2	-102.35	-895.0	-4,633.8	875.2	621.1	254.09	3.444	
11,500.0	6,972.5	11,719.0	7,162.1	132.9	133.2	-102.50	-893.3	-4,742.8	874.1	614.4	259.65	3.366	
11,600.0	6,972.5	11,823.3	7,163.7	135.7	136.1	-102.63	-891.4	-4,847.2	872.6	607.5	265.11	3.292	
11,666.8	6,972.5	11,874.0	7,164.2	137.6	137.5	-102.67	-890.2	-4,897.8	871.4	603.1	268.27	3.248	
11,700.0	6,972.5	11,874.0	7,164.2	138.5	137.5	-102.67	-890.2	-4,897.8	872.0	602.8	269.17	3.240 SF	
11,800.0	6,972.5	11,874.0	7,164.2	141.3	137.5	-102.67	-890.2	-4,897.8	881.5	609.6	271.90	3.242	
11,900.0	6,972.5	11,874.0	7,164.2	144.1	137.5	-102.67	-890.2	-4,897.8	902.1	627.4	274.63	3.285	
12,000.0	6,972.5	11,874.0	7,164.2	146.9	137.5	-102.67	-890.2	-4,897.8	932.9	655.6	277.36	3.364	
12,100.0	6,972.5	11,874.0	7,164.2	149.7	137.5	-102.67	-890.2	-4,897.8	973.1	693.0	280.09	3.474	

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Diamond Valley East Pad Sec.23-T6N-R67W - Diamond Valley East #10 - Wellbore #1 - Wellbore #1												Offset Well Error:	0.0 ft
Survey Program: 173-MWD													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,098.8	5,047.0	4,991.7	11.1	15.8	-111.26	771.5	-23.0	796.3	773.8	22.42	35.519	
5,200.0	5,198.7	5,154.0	5,097.8	11.3	16.1	-111.63	785.2	-24.6	810.9	788.0	22.87	35.461	
5,300.0	5,298.6	5,240.0	5,183.0	11.5	16.4	-111.91	796.6	-25.8	826.0	802.7	23.27	35.489	
5,400.0	5,398.5	5,334.0	5,276.0	11.7	16.7	-112.17	810.3	-26.6	842.4	818.7	23.71	35.530	
5,500.0	5,498.3	5,415.1	5,356.1	11.9	16.9	-112.40	823.1	-27.7	860.0	835.9	24.12	35.661	
5,600.0	5,598.2	5,501.6	5,441.2	12.2	17.3	-112.68	837.9	-29.7	879.1	854.6	24.54	35.823	
5,700.0	5,698.1	5,615.1	5,553.0	12.4	17.7	-113.02	857.5	-32.0	898.4	873.4	25.03	35.896	
5,800.0	5,798.0	5,718.4	5,655.1	12.6	18.0	-113.29	873.8	-33.5	916.2	890.7	25.49	35.949	
5,900.0	5,897.9	5,811.7	5,747.1	12.8	18.4	-113.53	888.6	-35.1	934.1	908.1	25.92	36.030	
6,000.0	5,997.7	5,905.7	5,839.9	13.0	18.7	-113.77	904.0	-36.7	952.4	926.1	26.37	36.121	
6,100.0	6,097.6	6,006.7	5,939.4	13.2	19.1	-113.97	920.7	-37.9	970.9	944.1	26.83	36.192	
6,200.0	6,197.5	6,109.6	6,041.1	13.5	19.4	-114.19	937.0	-39.2	988.8	961.5	27.29	36.236	

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Diamond Valley East Pad Sec.23-T6N-R67W - Diamond Valley East #11 - Wellbore #1 - Wellbore #1												Offset Well Error:	0.0 ft
Survey Program: 133-MWD													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,098.8	5,034.8	4,953.3	11.1	17.7	-102.70	863.8	98.7	891.6	868.7	22.86	38.994	
5,200.0	5,198.7	5,120.5	5,037.8	11.3	18.1	-102.93	878.4	100.0	909.7	886.5	23.28	39.071	
5,300.0	5,298.6	5,207.1	5,122.8	11.5	18.4	-103.12	894.3	102.0	929.3	905.6	23.71	39.192	
5,400.0	5,398.5	5,295.8	5,209.8	11.7	18.7	-103.38	911.6	102.9	949.9	925.8	24.15	39.336	
5,500.0	5,498.3	5,386.4	5,298.5	11.9	19.1	-103.68	930.1	103.2	971.5	946.9	24.59	39.505	
5,600.0	5,598.2	5,485.6	5,395.5	12.2	19.5	-104.04	950.5	102.6	993.2	968.1	25.06	39.635	

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	1.25	127.5	2.8	127.5					
100.0	100.0	100.0	100.0	0.1	0.1	1.25	127.5	2.8	127.5	127.3	0.22	567.457		
200.0	200.0	200.0	200.0	0.3	0.3	1.25	127.5	2.8	127.5	126.9	0.67	189.152 CC, ES		
300.0	300.0	295.7	295.7	0.6	0.6	1.29	129.1	2.9	129.2	128.1	1.11	115.970		
400.0	400.0	391.2	391.1	0.8	0.8	1.39	133.9	3.2	134.2	132.7	1.56	86.045		
500.0	500.0	486.3	485.8	1.0	1.0	1.55	141.8	3.8	142.5	140.5	2.02	70.566		
600.0	600.0	580.7	579.6	1.2	1.3	1.73	152.7	4.6	154.1	151.6	2.50	61.580		
700.0	700.0	674.3	672.2	1.5	1.6	1.94	166.6	5.6	169.0	166.0	3.02	56.036		
800.0	800.0	766.9	763.2	1.7	1.9	2.14	183.3	6.9	187.1	183.5	3.56	52.495		
900.0	900.0	858.4	852.6	1.9	2.3	2.34	202.6	8.3	208.3	204.1	4.15	50.201		
1,000.0	1,000.0	951.9	943.4	2.1	2.7	2.52	225.0	9.9	232.2	227.4	4.78	48.619		
1,100.0	1,100.0	1,048.9	1,037.5	2.4	3.1	2.68	248.6	11.6	256.6	251.2	5.44	47.159		
1,200.0	1,200.0	1,145.9	1,131.5	2.6	3.6	2.81	272.2	13.4	281.0	274.9	6.11	45.953		
1,300.0	1,300.0	1,242.9	1,225.6	2.8	4.1	2.92	295.8	15.1	305.4	298.6	6.79	44.946		
1,400.0	1,400.0	1,339.8	1,319.6	3.0	4.5	3.01	319.3	16.8	329.7	322.3	7.48	44.097		
1,500.0	1,500.0	1,436.8	1,413.7	3.3	5.0	3.09	342.9	18.5	354.1	345.9	8.16	43.375		
1,600.0	1,600.0	1,533.8	1,507.7	3.5	5.5	3.16	366.5	20.2	378.5	369.6	8.85	42.753		
1,700.0	1,700.0	1,630.8	1,601.8	3.7	6.0	3.22	390.1	22.0	402.9	393.3	9.54	42.214		
1,800.0	1,800.0	1,727.8	1,695.8	3.9	6.5	3.28	413.7	23.7	427.2	417.0	10.24	41.742		
1,900.0	1,900.0	1,824.7	1,789.9	4.2	6.9	3.33	437.3	25.4	451.6	440.7	10.93	41.326		
2,000.0	2,000.0	1,921.7	1,883.9	4.4	7.4	3.37	460.8	27.1	476.0	464.4	11.62	40.956		
2,100.0	2,100.0	2,018.7	1,978.0	4.6	7.9	3.41	484.4	28.9	500.4	488.1	12.32	40.626		
2,200.0	2,200.0	2,115.7	2,072.1	4.8	8.4	3.45	508.0	30.6	524.8	511.8	13.01	40.329		
2,300.0	2,300.0	2,212.7	2,166.1	5.1	8.9	3.48	531.6	32.3	549.2	535.4	13.71	40.061		
2,400.0	2,400.0	2,309.7	2,260.2	5.3	9.4	3.51	555.2	34.0	573.5	559.1	14.40	39.818		
2,500.0	2,500.0	2,406.6	2,354.2	5.5	9.9	3.54	578.8	35.8	597.9	582.8	15.10	39.596		
2,600.0	2,600.0	2,503.6	2,448.3	5.7	10.3	3.56	602.4	37.5	622.3	606.5	15.80	39.393		
2,700.0	2,700.0	2,600.6	2,542.3	6.0	10.8	3.58	625.9	39.2	646.7	630.2	16.49	39.207		
2,800.0	2,800.0	2,697.6	2,636.4	6.2	11.3	3.61	649.5	40.9	671.1	653.9	17.19	39.035		
2,900.0	2,900.0	2,794.6	2,730.4	6.4	11.8	3.63	673.1	42.6	695.4	677.6	17.89	38.876		
3,000.0	3,000.0	2,891.5	2,824.5	6.6	12.3	3.64	696.7	44.4	719.8	701.2	18.59	38.728		
3,100.0	3,100.0	2,988.5	2,918.5	6.9	12.8	3.66	720.3	46.1	744.2	724.9	19.28	38.591		
3,200.0	3,200.0	3,085.5	3,012.6	7.1	13.3	3.68	743.9	47.8	768.6	748.6	19.98	38.464		
3,300.0	3,300.0	3,182.5	3,106.7	7.3	13.8	3.69	767.4	49.5	793.0	772.3	20.68	38.344		
3,400.0	3,400.0	3,279.5	3,200.7	7.5	14.2	3.71	791.0	51.3	817.4	796.0	21.38	38.232		
3,500.0	3,500.0	3,376.5	3,294.8	7.8	14.7	3.72	814.6	53.0	841.7	819.7	22.08	38.128		
3,600.0	3,600.0	3,473.4	3,388.8	8.0	15.2	3.73	838.2	54.7	866.1	843.3	22.78	38.029		
3,700.0	3,700.0	3,570.4	3,482.9	8.2	15.7	3.75	861.8	56.4	890.5	867.0	23.47	37.936		
3,800.0	3,800.0	3,667.4	3,576.9	8.4	16.2	3.76	885.4	58.2	914.9	890.7	24.17	37.849		
3,900.0	3,900.0	3,764.4	3,671.0	8.7	16.7	3.77	909.0	59.9	939.3	914.4	24.87	37.766		
4,000.0	4,000.0	3,861.4	3,765.0	8.9	17.2	3.78	932.5	61.6	963.7	938.1	25.57	37.687 SF		
4,100.0	4,100.0	3,958.2	3,859.0	9.1	17.7	-102.28	956.1	63.3	988.4	969.0	19.40	50.958		

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

Offset Design Diamond Valley East Pad Sec.23-T6N-R67W - Diamond Valley East #2 - Wellbore #1 - Plan #1 (6-23-1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
15,600.0	6,972.5	15,637.6	6,974.0	247.7	247.7	-90.14	-660.2	-8,834.3	620.2	124.9	495.32	1.252 Level 3	
15,700.0	6,972.5	15,737.6	6,974.0	250.5	250.5	-90.14	-659.7	-8,934.3	619.6	118.7	500.92	1.237 Level 2	
15,800.0	6,972.5	15,837.6	6,974.0	253.3	253.3	-90.14	-659.2	-9,034.3	619.1	112.6	506.53	1.222 Level 2	
15,900.0	6,972.5	15,937.6	6,974.0	256.1	256.1	-90.14	-658.6	-9,134.3	618.6	106.5	512.14	1.208 Level 2	
16,000.0	6,972.5	16,037.6	6,974.0	258.9	259.0	-90.14	-658.1	-9,234.3	618.1	100.3	517.75	1.194 Level 2	
16,100.0	6,972.5	16,137.6	6,974.0	261.7	261.8	-90.14	-657.6	-9,334.2	617.6	94.2	523.36	1.180 Level 2	
16,200.0	6,972.5	16,237.6	6,974.0	264.5	264.6	-90.14	-657.1	-9,434.2	617.0	88.1	528.97	1.166 Level 2	
16,300.0	6,972.5	16,337.6	6,974.0	267.3	267.4	-90.14	-656.5	-9,534.2	616.5	81.9	534.57	1.153 Level 2	
16,400.0	6,972.5	16,437.6	6,974.0	270.1	270.2	-90.14	-656.0	-9,634.2	616.0	75.8	540.18	1.140 Level 2	
16,500.0	6,972.5	16,537.6	6,974.0	272.9	273.0	-90.14	-655.5	-9,734.2	615.5	69.7	545.79	1.128 Level 2	
16,600.0	6,972.5	16,637.6	6,974.0	275.7	275.8	-90.14	-655.0	-9,834.2	614.9	63.5	551.40	1.115 Level 2	
16,700.0	6,972.5	16,737.6	6,974.0	278.5	278.6	-90.14	-654.4	-9,934.2	614.4	57.4	557.01	1.103 Level 2	
16,800.0	6,972.5	16,837.6	6,974.0	281.3	281.4	-90.14	-653.9	-10,034.2	613.9	51.3	562.62	1.091 Level 2	
16,844.0	6,972.5	16,881.6	6,974.0	282.5	282.6	-90.14	-653.7	-10,078.2	613.7	48.6	565.09	1.086 Level 2, SF	

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-32.8	0.0	32.8					
100.0	100.0	100.0	100.0	0.1	0.1	-180.00	-32.8	0.0	32.8	32.6	0.22	145.860		
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-32.8	0.0	32.8	32.1	0.67	48.620		
300.0	300.0	300.0	300.0	0.6	0.6	-180.00	-32.8	0.0	32.8	31.7	1.12	29.172		
400.0	400.0	400.0	400.0	0.8	0.8	-180.00	-32.8	0.0	32.8	31.2	1.57	20.837		
500.0	500.0	500.0	500.0	1.0	1.0	-180.00	-32.8	0.0	32.8	30.8	2.02	16.207		
600.0	600.0	600.0	600.0	1.2	1.2	-180.00	-32.8	0.0	32.8	30.3	2.47	13.260		
700.0	700.0	700.0	700.0	1.5	1.5	-180.00	-32.8	0.0	32.8	29.9	2.92	11.220		
800.0	800.0	800.0	800.0	1.7	1.7	-180.00	-32.8	0.0	32.8	29.4	3.37	9.724		
900.0	900.0	900.0	900.0	1.9	1.9	-180.00	-32.8	0.0	32.8	29.0	3.82	8.580		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-180.00	-32.8	0.0	32.8	28.5	4.27	7.677		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-180.00	-32.8	0.0	32.8	28.1	4.72	6.946		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-180.00	-32.8	0.0	32.8	27.6	5.17	6.342		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-180.00	-32.8	0.0	32.8	27.2	5.62	5.834		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-180.00	-32.8	0.0	32.8	26.7	6.07	5.402		
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	-180.00	-32.8	0.0	32.8	26.3	6.52	5.030 CC		
1,600.0	1,600.0	1,598.9	1,598.9	3.5	3.5	179.07	-34.4	0.6	34.4	27.5	6.94	4.962		
1,700.0	1,700.0	1,697.7	1,697.5	3.7	3.6	176.74	-39.2	2.2	39.4	32.0	7.33	5.367		
1,800.0	1,800.0	1,797.4	1,797.1	3.9	3.8	174.48	-45.4	4.4	45.7	38.0	7.74	5.910		
1,900.0	1,900.0	1,897.2	1,896.6	4.2	4.0	172.77	-51.7	6.6	52.2	44.0	8.16	6.399		
2,000.0	2,000.0	1,997.0	1,996.2	4.4	4.2	171.43	-57.9	8.7	58.7	50.1	8.58	6.838		
2,100.0	2,100.0	2,096.8	2,095.8	4.6	4.4	170.37	-64.1	10.9	65.2	56.2	9.01	7.234		
2,200.0	2,200.0	2,196.6	2,195.3	4.8	4.6	169.49	-70.3	13.0	71.7	62.3	9.44	7.592		
2,300.0	2,300.0	2,296.3	2,294.9	5.1	4.8	168.77	-76.6	15.2	78.2	68.4	9.88	7.916		
2,400.0	2,400.0	2,396.1	2,394.4	5.3	5.0	168.15	-82.8	17.4	84.8	74.5	10.33	8.210		
2,500.0	2,500.0	2,495.9	2,494.0	5.5	5.3	167.63	-89.0	19.5	91.3	80.6	10.78	8.477		
2,600.0	2,600.0	2,595.7	2,593.6	5.7	5.5	167.17	-95.3	21.7	97.9	86.7	11.23	8.722		
2,700.0	2,700.0	2,695.5	2,693.1	6.0	5.7	166.77	-101.5	23.9	104.5	92.8	11.68	8.946		
2,800.0	2,800.0	2,795.3	2,792.7	6.2	6.0	166.42	-107.7	26.0	111.1	98.9	12.13	9.152		
2,900.0	2,900.0	2,895.0	2,892.3	6.4	6.2	166.11	-113.9	28.2	117.6	105.0	12.59	9.342		
3,000.0	3,000.0	2,994.8	2,991.8	6.6	6.4	165.83	-120.2	30.3	124.2	111.2	13.05	9.517		
3,100.0	3,100.0	3,094.6	3,091.4	6.9	6.7	165.58	-126.4	32.5	130.8	117.3	13.51	9.679		
3,200.0	3,200.0	3,194.4	3,191.0	7.1	6.9	165.35	-132.6	34.7	137.4	123.4	13.98	9.830		
3,300.0	3,300.0	3,294.2	3,290.5	7.3	7.1	165.14	-138.9	36.8	144.0	129.5	14.44	9.971		
3,400.0	3,400.0	3,393.9	3,390.1	7.5	7.4	164.95	-145.1	39.0	150.6	135.7	14.90	10.101		
3,500.0	3,500.0	3,493.7	3,489.6	7.8	7.6	164.78	-151.3	41.2	157.1	141.8	15.37	10.224		
3,600.0	3,600.0	3,593.5	3,589.2	8.0	7.9	164.62	-157.5	43.3	163.7	147.9	15.84	10.338		
3,700.0	3,700.0	3,693.3	3,688.8	8.2	8.1	164.48	-163.8	45.5	170.3	154.0	16.31	10.446		
3,800.0	3,800.0	3,793.1	3,788.3	8.4	8.4	164.34	-170.0	47.6	176.9	160.1	16.78	10.546		
3,900.0	3,900.0	3,892.8	3,887.9	8.7	8.6	164.22	-176.2	49.8	183.5	166.3	17.25	10.642		
4,000.0	4,000.0	3,992.6	3,987.5	8.9	8.9	164.10	-182.4	52.0	190.1	172.4	17.72	10.731		
4,100.0	4,100.0	4,092.5	4,087.1	9.1	9.1	57.86	-188.7	54.1	195.8	178.1	17.68	11.072		
4,200.0	4,199.9	4,192.3	4,186.7	9.3	9.4	58.83	-194.9	56.3	200.0	181.9	18.10	11.050		
4,300.0	4,299.8	4,292.2	4,286.3	9.5	9.6	59.85	-201.1	58.5	204.1	185.6	18.51	11.023		
4,400.0	4,399.6	4,392.0	4,386.0	9.7	9.9	60.83	-207.4	60.6	208.2	189.3	18.93	10.999		
4,500.0	4,499.5	4,491.9	4,485.6	9.9	10.1	61.77	-213.6	62.8	212.5	193.1	19.36	10.978		
4,600.0	4,599.4	4,591.7	4,585.2	10.1	10.4	62.68	-219.8	65.0	216.8	197.0	19.78	10.958		
4,700.0	4,699.3	4,691.6	4,684.9	10.3	10.6	63.55	-226.1	67.1	221.1	200.9	20.21	10.941		
4,800.0	4,799.2	4,791.4	4,784.5	10.5	10.9	64.38	-232.3	69.3	225.5	204.8	20.64	10.926		
4,900.0	4,899.0	4,891.3	4,884.1	10.7	11.1	65.19	-238.5	71.4	229.9	208.8	21.07	10.912		
5,000.0	4,998.9	4,991.1	4,983.8	10.9	11.4	65.96	-244.8	73.6	234.4	212.9	21.50	10.900		
5,100.0	5,098.8	5,091.0	5,083.4	11.1	11.6	66.71	-251.0	75.8	238.9	217.0	21.94	10.889		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,200.0	5,198.7	5,190.8	5,183.0	11.3	11.9	67.43	-257.2	77.9	243.5	221.1	22.38	10.879	
5,300.0	5,298.6	5,290.7	5,282.7	11.5	12.1	68.12	-263.5	80.1	248.1	225.2	22.82	10.870	
5,400.0	5,398.5	5,390.5	5,382.3	11.7	12.4	68.78	-269.7	82.3	252.7	229.4	23.26	10.862	
5,500.0	5,498.3	5,490.4	5,481.9	11.9	12.6	69.42	-275.9	84.4	257.3	233.6	23.71	10.855	
5,600.0	5,598.2	5,590.2	5,581.6	12.2	12.9	70.04	-282.2	86.6	262.0	237.9	24.15	10.849	
5,700.0	5,698.1	5,690.1	5,681.2	12.4	13.2	70.64	-288.4	88.8	266.8	242.2	24.60	10.844	
5,800.0	5,798.0	5,789.9	5,780.8	12.6	13.4	71.21	-294.6	90.9	271.5	246.5	25.05	10.839	
5,900.0	5,897.9	5,889.8	5,880.5	12.8	13.7	71.77	-300.8	93.1	276.3	250.8	25.50	10.835	
6,000.0	5,997.7	5,989.6	5,980.1	13.0	13.9	72.31	-307.1	95.3	281.1	255.1	25.95	10.831	
6,100.0	6,097.6	6,089.5	6,079.7	13.2	14.2	72.83	-313.3	97.4	285.9	259.5	26.40	10.828	
6,200.0	6,197.5	6,189.3	6,179.4	13.5	14.4	73.33	-319.5	99.6	290.8	263.9	26.86	10.826	
6,300.0	6,297.4	6,289.1	6,279.0	13.7	14.7	-76.45	-325.8	100.8	295.6	268.3	27.28	10.836	
6,400.0	6,396.5	6,389.1	6,378.2	13.8	14.9	-86.09	-332.0	90.9	300.5	272.9	27.63	10.877	
6,500.0	6,492.9	6,489.5	6,475.4	14.0	15.1	-87.86	-338.2	67.1	305.3	277.4	27.94	10.926	
6,600.0	6,584.7	6,590.3	6,568.8	14.2	15.2	-88.64	-344.2	29.8	310.0	281.7	28.29	10.958	
6,700.0	6,670.1	6,691.5	6,656.3	14.4	15.4	-89.10	-349.8	-20.5	314.4	285.6	28.76	10.930	
6,800.0	6,747.4	6,793.1	6,736.2	14.8	15.6	-89.40	-355.0	-82.9	318.4	288.9	29.51	10.790	
6,900.0	6,815.2	6,895.0	6,806.6	15.5	15.9	-89.62	-359.7	-156.2	322.1	291.4	30.69	10.493	
7,000.0	6,872.1	6,997.2	6,866.2	16.4	16.6	-89.77	-363.7	-239.1	325.2	292.8	32.46	10.020	
7,100.0	6,917.0	7,099.7	6,913.5	17.6	17.7	-89.88	-366.9	-329.9	327.8	292.9	34.88	9.398	
7,200.0	6,949.0	7,202.4	6,947.4	19.2	19.2	-89.95	-369.4	-426.8	329.7	291.8	37.96	8.686	
7,300.0	6,967.6	7,305.3	6,967.2	21.0	21.0	-89.99	-371.0	-527.6	331.0	289.4	41.59	7.958	
7,400.0	6,972.5	7,407.8	6,972.5	23.0	23.0	-90.00	-371.6	-629.9	331.6	286.0	45.63	7.267	
7,500.0	6,972.5	7,507.9	6,972.5	25.1	25.1	-90.00	-371.9	-730.0	331.9	282.0	49.91	6.650	
7,600.0	6,972.5	7,608.0	6,972.5	27.3	27.4	-90.00	-372.2	-830.1	332.2	277.7	54.44	6.102	
7,700.0	6,972.5	7,708.1	6,972.5	29.7	29.7	-90.00	-372.5	-930.2	332.4	273.3	59.16	5.620	
7,800.0	6,972.5	7,808.2	6,972.5	32.1	32.1	-90.00	-372.7	-1,030.3	332.7	268.6	64.02	5.197	
7,900.0	6,972.5	7,908.3	6,972.5	34.6	34.6	-90.00	-372.9	-1,130.4	332.9	263.9	68.99	4.825	
8,000.0	6,972.5	8,008.4	6,972.5	37.1	37.1	-90.00	-373.1	-1,230.5	333.0	259.0	74.06	4.497	
8,100.0	6,972.5	8,108.5	6,972.5	39.7	39.7	-90.00	-373.2	-1,330.6	333.2	254.0	79.21	4.206	
8,200.0	6,972.5	8,208.6	6,972.5	42.3	42.3	-90.00	-373.4	-1,430.7	333.3	248.9	84.41	3.949	
8,300.0	6,972.5	8,308.7	6,972.5	44.9	44.9	-90.00	-373.4	-1,530.8	333.4	243.7	89.67	3.718	
8,400.0	6,972.5	8,408.8	6,972.5	47.6	47.6	-90.00	-373.5	-1,630.9	333.4	238.5	94.96	3.511	
8,500.0	6,972.5	8,508.9	6,972.5	50.2	50.2	-90.00	-373.5	-1,730.9	333.5	233.2	100.29	3.325	
8,600.0	6,972.5	8,609.0	6,972.5	52.9	52.9	-90.00	-373.5	-1,831.0	333.5	227.8	105.66	3.156	
8,700.0	6,972.5	8,709.1	6,972.5	55.6	55.6	-90.00	-373.5	-1,931.1	333.5	222.4	111.04	3.003	
8,800.0	6,972.5	8,809.1	6,972.5	58.3	58.3	-90.00	-373.5	-2,031.2	333.4	217.0	116.45	2.863	
8,900.0	6,972.5	8,909.2	6,972.5	61.0	61.0	-90.00	-373.4	-2,131.3	333.3	211.5	121.88	2.735	
9,000.0	6,972.5	9,009.3	6,972.5	63.7	63.7	-90.00	-373.3	-2,231.4	333.2	205.9	127.33	2.617	
9,100.0	6,972.5	9,109.4	6,972.5	66.5	66.4	-90.00	-373.1	-2,331.5	333.1	200.3	132.79	2.508	
9,200.0	6,972.5	9,209.5	6,972.5	69.2	69.2	-90.00	-373.0	-2,431.6	332.9	194.7	138.26	2.408	
9,300.0	6,972.5	9,309.6	6,972.5	71.9	71.9	-90.00	-372.8	-2,531.7	332.7	189.0	143.74	2.315	
9,400.0	6,972.5	9,409.7	6,972.5	74.7	74.7	-90.00	-372.6	-2,631.8	332.5	183.3	149.24	2.228	
9,500.0	6,972.5	9,509.8	6,972.5	77.4	77.4	-90.00	-372.3	-2,731.9	332.3	177.5	154.74	2.147	
9,600.0	6,972.5	9,609.9	6,972.5	80.2	80.2	-90.00	-372.0	-2,832.0	332.0	171.7	160.25	2.072	
9,700.0	6,972.5	9,710.0	6,972.5	82.9	82.9	-90.00	-371.7	-2,932.1	331.7	165.9	165.77	2.001	
9,800.0	6,972.5	9,810.1	6,972.5	85.7	85.7	-90.00	-371.4	-3,032.2	331.4	160.1	171.30	1.934	
9,900.0	6,972.5	9,910.2	6,972.5	88.5	88.5	-90.00	-371.0	-3,132.3	331.0	154.2	176.83	1.872	
10,000.0	6,972.5	10,010.3	6,972.5	91.2	91.2	-90.00	-370.7	-3,232.3	330.6	148.2	182.37	1.813	
10,100.0	6,972.5	10,110.4	6,972.5	94.0	94.0	-90.00	-370.2	-3,332.4	330.2	142.3	187.91	1.757	
10,200.0	6,972.5	10,210.4	6,972.5	96.8	96.8	-90.00	-369.8	-3,432.5	329.7	136.3	193.46	1.704	
10,300.0	6,972.5	10,310.5	6,972.5	99.5	99.5	-90.00	-369.3	-3,532.6	329.3	130.3	199.01	1.655	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,400.0	6,972.5	10,410.6	6,972.5	102.3	102.3	-90.00	-368.8	-3,632.7	328.8	124.2	204.56	1.607		
10,500.0	6,972.5	10,510.7	6,972.5	105.1	105.1	-90.00	-368.3	-3,732.8	328.2	118.1	210.12	1.562		
10,600.0	6,972.5	10,610.8	6,972.5	107.9	107.9	-90.00	-367.7	-3,832.9	327.7	112.0	215.68	1.519		
10,700.0	6,972.5	10,710.9	6,972.5	110.6	110.7	-90.00	-367.1	-3,933.0	327.1	105.9	221.25	1.478 Level 3		
10,800.0	6,972.5	10,811.0	6,972.5	113.4	113.5	-90.00	-366.5	-4,033.1	326.5	99.7	226.82	1.439 Level 3		
10,900.0	6,972.5	10,911.1	6,972.5	116.2	116.2	-90.00	-365.9	-4,133.1	325.8	93.5	232.39	1.402 Level 3		
11,000.0	6,972.5	11,011.2	6,972.5	119.0	119.0	-90.00	-365.2	-4,233.2	325.2	87.2	237.96	1.367 Level 3		
11,100.0	6,972.5	11,111.3	6,972.5	121.8	121.8	-90.00	-364.5	-4,333.3	324.5	80.9	243.54	1.332 Level 3		
11,200.0	6,972.5	11,211.3	6,972.5	124.6	124.6	-90.00	-363.8	-4,433.4	323.8	74.6	249.11	1.300 Level 3		
11,300.0	6,972.5	11,311.3	6,972.5	127.4	127.4	-90.00	-363.1	-4,533.4	323.0	68.3	254.69	1.268 Level 3		
11,400.0	6,972.5	11,411.3	6,972.5	130.1	130.2	-90.00	-362.3	-4,633.4	322.3	62.0	260.26	1.238 Level 2		
11,500.0	6,972.5	11,511.3	6,972.5	132.9	133.0	-90.00	-361.6	-4,733.4	321.5	55.7	265.84	1.210 Level 2		
11,600.0	6,972.5	11,611.3	6,972.5	135.7	135.7	-90.00	-360.8	-4,833.4	320.8	49.4	271.41	1.182 Level 2		
11,700.0	6,972.5	11,711.3	6,972.5	138.5	138.5	-90.00	-360.1	-4,933.4	320.1	43.1	276.99	1.156 Level 2		
11,800.0	6,972.5	11,811.3	6,972.5	141.3	141.3	-90.00	-359.4	-5,033.4	319.3	36.8	282.57	1.130 Level 2		
11,900.0	6,972.5	11,911.3	6,972.5	144.1	144.1	-90.00	-358.6	-5,133.4	318.6	30.4	288.16	1.106 Level 2		
12,000.0	6,972.5	12,011.3	6,972.5	146.9	146.9	-90.00	-357.9	-5,233.4	317.9	24.1	293.74	1.082 Level 2		
12,100.0	6,972.5	12,111.3	6,972.5	149.7	149.7	-90.00	-357.2	-5,333.3	317.1	17.8	299.33	1.059 Level 2		
12,200.0	6,972.5	12,211.3	6,972.5	152.5	152.5	-90.00	-356.4	-5,433.3	316.4	11.5	304.91	1.038 Level 2		
12,300.0	6,972.5	12,311.3	6,972.5	155.3	155.3	-90.00	-355.7	-5,533.3	315.6	5.1	310.50	1.017 Level 2		
12,400.0	6,972.5	12,411.3	6,972.5	158.1	158.1	-90.00	-354.9	-5,633.3	314.9	-1.2	316.09	0.996 Level 1		
12,500.0	6,972.5	12,511.3	6,972.5	160.9	160.9	-90.00	-354.2	-5,733.3	314.2	-7.5	321.68	0.977 Level 1		
12,600.0	6,972.5	12,611.3	6,972.5	163.7	163.6	-90.00	-353.5	-5,833.3	313.4	-13.8	327.27	0.958 Level 1		
12,700.0	6,972.5	12,711.3	6,972.5	166.5	166.4	-90.00	-352.7	-5,933.3	312.7	-20.2	332.86	0.939 Level 1		
12,800.0	6,972.5	12,811.3	6,972.5	169.2	169.2	-90.00	-352.0	-6,033.3	312.0	-26.5	338.45	0.922 Level 1		
12,900.0	6,972.5	12,911.3	6,972.5	172.0	172.0	-90.00	-351.3	-6,133.3	311.2	-32.8	344.05	0.905 Level 1		
13,000.0	6,972.5	13,011.3	6,972.5	174.8	174.8	-90.00	-350.5	-6,233.3	310.5	-39.2	349.64	0.888 Level 1		
13,100.0	6,972.5	13,111.3	6,972.5	177.6	177.6	-90.00	-349.8	-6,333.3	309.7	-45.5	355.23	0.872 Level 1		
13,200.0	6,972.5	13,211.3	6,972.5	180.4	180.4	-90.00	-349.0	-6,433.3	309.0	-51.8	360.83	0.856 Level 1		
13,300.0	6,972.5	13,311.3	6,972.5	183.2	183.2	-90.00	-348.3	-6,533.3	308.3	-58.2	366.43	0.841 Level 1		
13,400.0	6,972.5	13,411.3	6,972.5	186.0	186.0	-90.00	-347.6	-6,633.3	307.5	-64.5	372.02	0.827 Level 1		
13,500.0	6,972.5	13,511.3	6,972.5	188.8	188.8	-90.00	-346.8	-6,733.3	306.8	-70.8	377.62	0.812 Level 1		
13,600.0	6,972.5	13,611.3	6,972.5	191.6	191.6	-90.00	-346.1	-6,833.3	306.1	-77.2	383.22	0.799 Level 1		
13,700.0	6,972.5	13,711.3	6,972.5	194.4	194.4	-90.00	-345.4	-6,933.3	305.3	-83.5	388.82	0.785 Level 1		
13,800.0	6,972.5	13,811.3	6,972.5	197.2	197.2	-90.00	-344.6	-7,033.3	304.6	-89.8	394.42	0.772 Level 1		
13,900.0	6,972.5	13,911.3	6,972.5	200.0	200.0	-90.00	-343.9	-7,133.3	303.8	-96.2	400.02	0.760 Level 1		
14,000.0	6,972.5	14,011.3	6,972.5	202.8	202.8	-90.00	-343.1	-7,233.2	303.1	-102.5	405.62	0.747 Level 1		
14,100.0	6,972.5	14,111.3	6,972.5	205.6	205.6	-90.00	-342.4	-7,333.2	302.4	-108.9	411.22	0.735 Level 1		
14,200.0	6,972.5	14,211.3	6,972.5	208.4	208.4	-90.00	-341.7	-7,433.2	301.6	-115.2	416.82	0.724 Level 1		
14,300.0	6,972.5	14,311.3	6,972.5	211.2	211.2	-90.00	-340.9	-7,533.2	300.9	-121.5	422.42	0.712 Level 1		
14,400.0	6,972.5	14,411.3	6,972.5	214.0	214.0	-90.00	-340.2	-7,633.2	300.2	-127.9	428.03	0.701 Level 1		
14,500.0	6,972.5	14,511.3	6,972.5	216.8	216.8	-90.00	-339.5	-7,733.2	299.4	-134.2	433.63	0.690 Level 1		
14,600.0	6,972.5	14,611.2	6,972.5	219.6	219.6	-90.00	-338.7	-7,833.2	298.7	-140.6	439.23	0.680 Level 1		
14,700.0	6,972.5	14,711.2	6,972.5	222.4	222.4	-90.00	-338.0	-7,933.2	297.9	-146.9	444.84	0.670 Level 1		
14,800.0	6,972.5	14,811.2	6,972.5	225.2	225.2	-90.00	-337.2	-8,033.2	297.2	-153.2	450.44	0.660 Level 1		
14,900.0	6,972.5	14,911.2	6,972.5	228.0	228.0	-90.00	-336.5	-8,133.2	296.5	-159.6	456.04	0.650 Level 1		
15,000.0	6,972.5	15,011.2	6,972.5	230.8	230.8	-90.00	-335.8	-8,233.2	295.7	-165.9	461.65	0.641 Level 1		
15,100.0	6,972.5	15,111.2	6,972.5	233.7	233.6	-90.00	-335.0	-8,333.2	295.0	-172.3	467.25	0.631 Level 1		
15,200.0	6,972.5	15,211.2	6,972.5	236.5	236.4	-90.00	-334.3	-8,433.2	294.3	-178.6	472.86	0.622 Level 1		
15,300.0	6,972.5	15,311.2	6,972.5	239.3	239.2	-90.00	-333.6	-8,533.2	293.5	-185.0	478.47	0.613 Level 1		
15,400.0	6,972.5	15,411.2	6,972.5	242.1	242.0	-90.00	-332.8	-8,633.2	292.8	-191.3	484.07	0.605 Level 1		
15,500.0	6,972.5	15,511.2	6,972.5	244.9	244.8	-90.00	-332.1	-8,733.2	292.0	-197.6	489.68	0.596 Level 1		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

Offset Design Diamond Valley East Pad Sec.23-T6N-R67W - Diamond Valley East #3 - Wellbore #1 - Plan #2 (6-23-1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
15,600.0	6,972.5	15,611.2	6,972.5	247.7	247.6	-90.00	-331.3	-8,833.2	291.3	-204.0	495.29	0.588	Level 1
15,700.0	6,972.5	15,711.2	6,972.5	250.5	250.4	-90.00	-330.6	-8,933.2	290.6	-210.3	500.89	0.580	Level 1
15,800.0	6,972.5	15,811.2	6,972.5	253.3	253.2	-90.00	-329.9	-9,033.1	289.8	-216.7	506.50	0.572	Level 1
15,900.0	6,972.5	15,911.2	6,972.5	256.1	256.0	-90.00	-329.1	-9,133.1	289.1	-223.0	512.11	0.565	Level 1
16,000.0	6,972.5	16,011.2	6,972.5	258.9	258.9	-90.00	-328.4	-9,233.1	288.4	-229.4	517.71	0.557	Level 1
16,100.0	6,972.5	16,111.2	6,972.5	261.7	261.7	-90.00	-327.7	-9,333.1	287.6	-235.7	523.32	0.550	Level 1
16,200.0	6,972.5	16,211.2	6,972.5	264.5	264.5	-90.00	-326.9	-9,433.1	286.9	-242.1	528.93	0.542	Level 1
16,300.0	6,972.5	16,311.2	6,972.5	267.3	267.3	-90.00	-326.2	-9,533.1	286.1	-248.4	534.54	0.535	Level 1
16,400.0	6,972.5	16,411.2	6,972.5	270.1	270.1	-90.00	-325.4	-9,633.1	285.4	-254.7	540.15	0.528	Level 1
16,500.0	6,972.5	16,511.2	6,972.5	272.9	272.9	-90.00	-324.7	-9,733.1	284.7	-261.1	545.76	0.522	Level 1
16,600.0	6,972.5	16,611.2	6,972.5	275.7	275.7	-90.00	-324.0	-9,833.1	283.9	-267.4	551.37	0.515	Level 1
16,700.0	6,972.5	16,711.2	6,972.5	278.5	278.5	-90.00	-323.2	-9,933.1	283.2	-273.8	556.97	0.508	Level 1
16,800.0	6,972.5	16,811.2	6,972.5	281.3	281.3	-90.00	-322.5	-10,033.1	282.5	-280.1	562.58	0.502	Level 1
16,844.0	6,972.5	16,855.2	6,972.5	282.5	282.5	-90.00	-322.2	-10,077.1	282.1	-282.9	565.05	0.499	Level 1, ES, SF

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 133-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.5	0.5	0.0	0.0	-180.00	-18.2	0.0	18.2	18.2	0.00	N/A	CC	
100.0	100.0	100.5	100.5	0.1	0.1	-179.79	-18.2	-0.1	18.2	18.0	0.23	80.814		
200.0	200.0	200.5	200.5	0.3	0.3	178.52	-18.2	0.5	18.3	17.6	0.63	29.191	ES	
300.0	300.0	300.3	300.3	0.6	0.5	167.58	-18.3	4.0	18.8	17.7	1.06	17.646		
400.0	400.0	400.1	399.9	0.8	0.7	151.33	-18.4	10.0	20.9	19.4	1.52	13.806		
500.0	500.0	500.0	499.6	1.0	1.0	138.59	-18.3	16.1	24.4	22.5	1.96	12.434		
600.0	600.0	600.0	599.3	1.2	1.2	128.76	-17.7	22.1	28.3	25.9	2.42	11.720		
700.0	700.0	699.8	698.9	1.5	1.4	119.78	-16.2	28.4	32.7	29.8	2.88	11.351		
800.0	800.0	799.1	798.1	1.7	1.7	113.54	-15.2	34.9	38.2	34.8	3.35	11.406		
900.0	900.0	898.6	897.3	1.9	1.9	111.89	-16.8	41.7	45.1	41.3	3.81	11.832		
1,000.0	1,000.0	998.5	996.9	2.1	2.1	112.20	-19.7	48.2	52.2	47.9	4.27	12.229		
1,100.0	1,100.0	1,099.8	1,098.0	2.4	2.4	114.25	-23.8	52.9	58.0	53.3	4.72	12.294		
1,200.0	1,200.0	1,200.2	1,198.3	2.6	2.6	116.66	-27.7	55.2	61.8	56.6	5.16	11.975		
1,300.0	1,300.0	1,300.4	1,298.4	2.8	2.8	118.41	-31.0	57.2	65.1	59.5	5.59	11.643		
1,400.0	1,400.0	1,400.5	1,398.5	3.0	3.0	120.00	-34.0	58.9	68.1	62.0	6.03	11.293		
1,500.0	1,500.0	1,498.7	1,496.6	3.3	3.2	121.48	-37.8	61.7	72.4	66.0	6.47	11.203		
1,600.0	1,600.0	1,599.0	1,596.7	3.5	3.4	123.97	-43.3	64.3	77.6	70.7	6.91	11.223		
1,700.0	1,700.0	1,699.4	1,696.9	3.7	3.7	126.31	-48.6	66.2	82.2	74.9	7.36	11.174		
1,800.0	1,800.0	1,799.3	1,796.7	3.9	3.9	127.97	-53.1	68.1	86.5	78.6	7.80	11.080		
1,900.0	1,900.0	1,897.9	1,895.2	4.2	4.1	129.09	-57.5	70.8	91.4	83.1	8.25	11.079		
2,000.0	2,000.0	1,997.7	1,994.7	4.4	4.3	130.02	-62.7	74.7	97.7	89.0	8.70	11.234		
2,100.0	2,100.0	2,097.3	2,094.2	4.6	4.5	131.09	-67.8	77.8	103.4	94.2	9.15	11.295		
2,200.0	2,200.0	2,197.3	2,194.0	4.8	4.8	131.39	-72.3	82.1	109.6	100.0	9.61	11.400		
2,300.0	2,300.0	2,296.4	2,292.9	5.1	5.0	131.32	-76.2	86.7	115.6	105.6	10.07	11.487		
2,400.0	2,400.0	2,397.0	2,393.3	5.3	5.3	131.46	-80.7	91.3	122.1	111.5	10.53	11.596		
2,500.0	2,500.0	2,495.9	2,492.0	5.5	5.5	131.89	-85.4	95.2	128.2	117.2	10.98	11.676		
2,600.0	2,600.0	2,596.8	2,592.7	5.7	5.7	132.96	-91.5	98.3	134.5	123.1	11.44	11.760		
2,700.0	2,700.0	2,698.9	2,694.7	6.0	5.9	133.78	-96.4	100.6	139.5	127.6	11.89	11.727		
2,800.0	2,800.0	2,798.6	2,794.3	6.2	6.2	134.25	-100.2	102.8	143.7	131.3	12.34	11.645		
2,900.0	2,900.0	2,896.6	2,892.2	6.4	6.4	134.77	-104.5	105.4	148.7	135.9	12.78	11.633		
3,000.0	3,000.0	2,996.0	2,991.3	6.6	6.6	135.45	-110.0	108.3	154.6	141.4	13.23	11.682		
3,100.0	3,100.0	3,097.2	3,092.4	6.9	6.8	135.75	-114.5	111.5	160.0	146.3	13.69	11.688		
3,200.0	3,200.0	3,196.4	3,191.4	7.1	7.1	135.84	-118.3	114.9	165.1	151.0	14.14	11.678		
3,300.0	3,300.0	3,293.6	3,288.4	7.3	7.3	136.05	-123.1	118.7	171.5	156.9	14.59	11.752		
3,400.0	3,400.0	3,393.4	3,387.9	7.5	7.5	136.41	-129.2	123.0	178.9	163.8	15.05	11.882		
3,500.0	3,500.0	3,494.8	3,489.1	7.8	7.8	136.91	-134.8	126.2	185.0	169.5	15.52	11.924		
3,600.0	3,600.0	3,592.7	3,586.8	8.0	8.0	137.94	-142.0	128.2	191.8	175.8	15.97	12.008		
3,700.0	3,700.0	3,692.1	3,685.8	8.2	8.3	139.04	-149.9	130.1	199.0	182.6	16.43	12.113		
3,800.0	3,800.0	3,792.1	3,785.5	8.4	8.5	140.10	-157.9	132.0	206.4	189.5	16.90	12.216		
3,900.0	3,900.0	3,892.5	3,885.6	8.7	8.7	141.03	-165.6	134.0	213.5	196.2	17.36	12.301		
4,000.0	4,000.0	3,994.4	3,987.2	8.9	9.0	141.89	-172.9	135.6	220.2	202.4	17.82	12.355		
4,100.0	4,100.0	4,096.0	4,088.6	9.1	9.2	36.21	-178.8	137.4	224.3	206.7	17.65	12.708		
4,200.0	4,199.9	4,198.1	4,190.6	9.3	9.4	37.13	-183.2	139.7	225.5	207.5	18.06	12.489		
4,300.0	4,299.8	4,299.4	4,291.8	9.5	9.7	38.03	-186.8	141.6	225.7	207.2	18.47	12.220		
4,400.0	4,399.6	4,400.0	4,392.4	9.7	9.9	38.92	-190.0	143.3	225.4	206.6	18.88	11.942		
4,500.0	4,499.5	4,500.0	4,492.3	9.9	10.1	39.95	-193.4	144.4	225.1	205.8	19.29	11.671		
4,600.0	4,599.4	4,602.3	4,594.6	10.1	10.3	41.14	-196.7	144.8	224.3	204.6	19.70	11.384		
4,700.0	4,699.3	4,702.1	4,694.3	10.3	10.5	42.25	-199.3	145.2	223.1	203.0	20.11	11.092		
4,800.0	4,799.2	4,803.2	4,795.4	10.5	10.7	43.17	-201.3	146.1	221.7	201.2	20.53	10.798		
4,900.0	4,899.0	4,903.4	4,895.6	10.7	10.9	44.00	-202.9	147.2	220.1	199.1	20.94	10.507		
5,000.0	4,998.9	5,004.4	4,996.5	10.9	11.2	44.85	-204.2	148.1	218.1	196.8	21.36	10.210		
5,100.0	5,098.8	5,104.9	5,097.0	11.1	11.4	45.71	-205.2	148.8	215.9	194.2	21.78	9.912		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 133-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
9,900.0	6,972.5	10,128.4	7,159.1	88.5	89.2	-143.86	-176.0	-3,119.7	230.7	119.1	111.63	2.067	
10,000.0	6,972.5	10,229.9	7,160.5	91.2	92.0	-142.89	-181.9	-3,221.0	235.4	118.1	117.27	2.007	
10,100.0	6,972.5	10,333.0	7,161.9	94.0	94.8	-142.26	-186.2	-3,324.0	238.9	116.6	122.28	1.954	
10,200.0	6,972.5	10,433.6	7,163.0	96.8	97.6	-141.85	-189.3	-3,424.5	241.7	114.8	126.84	1.905	
10,300.0	6,972.5	10,532.9	7,164.2	99.5	100.4	-141.44	-192.4	-3,523.7	244.6	113.2	131.40	1.861	
10,400.0	6,972.5	10,634.7	7,165.2	102.3	103.2	-141.01	-195.7	-3,625.4	247.4	111.2	136.14	1.817	
10,500.0	6,972.5	10,739.0	7,165.3	105.1	106.1	-140.64	-197.8	-3,729.8	248.7	107.9	140.82	1.766	
10,600.0	6,972.5	10,840.4	7,164.0	107.9	108.9	-140.18	-199.3	-3,831.1	248.7	103.0	145.71	1.707	
10,611.2	6,972.5	10,851.5	7,163.9	108.2	109.2	-140.13	-199.5	-3,842.2	248.7	102.4	146.27	1.700	
10,700.0	6,972.5	10,936.7	7,163.0	110.6	111.5	-139.70	-201.2	-3,927.4	249.2	98.5	150.64	1.654	
10,800.0	6,972.5	11,035.4	7,163.7	113.4	114.3	-139.40	-203.5	-4,026.0	251.2	96.0	155.19	1.619	
10,900.0	6,972.5	11,138.0	7,163.8	116.2	117.1	-139.01	-205.8	-4,128.6	252.7	92.7	160.09	1.579	
11,000.0	6,972.5	11,235.1	7,163.5	119.0	119.8	-138.60	-208.0	-4,225.7	254.0	89.0	164.97	1.540	
11,100.0	6,972.5	11,334.6	7,164.7	121.8	122.6	-138.41	-210.2	-4,325.2	256.4	87.0	169.35	1.514	
11,200.0	6,972.5	11,435.0	7,165.8	124.6	125.4	-138.23	-212.2	-4,425.5	258.5	84.8	173.73	1.488 Level 3	
11,300.0	6,972.5	11,537.1	7,166.7	127.4	128.2	-138.08	-213.9	-4,527.6	260.3	82.2	178.07	1.462 Level 3	
11,400.0	6,972.5	11,644.8	7,166.3	130.1	131.2	-138.06	-213.7	-4,635.3	259.9	77.7	182.17	1.427 Level 3	
11,500.0	6,972.5	11,743.9	7,165.6	132.9	134.0	-138.17	-212.4	-4,734.5	258.4	72.7	185.70	1.392 Level 3	
11,600.0	6,972.5	11,843.6	7,164.8	135.7	136.8	-138.25	-211.3	-4,834.1	257.2	67.8	189.34	1.358 Level 3	
11,666.6	6,972.5	11,910.2	7,164.3	137.6	138.6	-138.26	-210.7	-4,900.7	256.4	64.5	191.87	1.336 Level 3, SF	
11,700.0	6,972.5	11,915.0	7,164.2	138.5	138.8	-138.26	-210.7	-4,905.5	257.5	64.9	192.61	1.337 Level 3	
11,800.0	6,972.5	11,915.0	7,164.2	141.3	138.8	-138.26	-210.7	-4,905.5	285.4	90.8	194.55	1.467 Level 3	
11,900.0	6,972.5	11,915.0	7,164.2	144.1	138.8	-138.26	-210.7	-4,905.5	341.4	144.9	196.48	1.737	
12,000.0	6,972.5	11,915.0	7,164.2	146.9	138.8	-138.26	-210.7	-4,905.5	414.3	215.9	198.42	2.088	
12,100.0	6,972.5	11,915.0	7,164.2	149.7	138.8	-138.26	-210.7	-4,905.5	496.7	296.4	200.36	2.479	
12,200.0	6,972.5	11,915.0	7,164.2	152.5	138.8	-138.26	-210.7	-4,905.5	584.7	382.4	202.30	2.890	
12,300.0	6,972.5	11,915.0	7,164.2	155.3	138.8	-138.26	-210.7	-4,905.5	676.0	471.7	204.24	3.310	
12,400.0	6,972.5	11,915.0	7,164.2	158.1	138.8	-138.26	-210.7	-4,905.5	769.4	563.3	206.18	3.732	
12,500.0	6,972.5	11,915.0	7,164.2	160.9	138.8	-138.26	-210.7	-4,905.5	864.4	656.2	208.13	4.153	
12,600.0	6,972.5	11,915.0	7,164.2	163.7	138.8	-138.26	-210.7	-4,905.5	960.3	750.3	210.07	4.572	

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 1-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.0	0.0	0.5	0.5	0.0	0.0	0.00	14.6	0.0	14.6	14.6	0.00	N/A	
100.0	100.0	100.5	100.5	0.1	0.1	0.00	14.6	0.0	14.6	14.4	0.23	64.691	
200.0	200.0	200.5	200.5	0.3	0.3	0.00	14.6	0.0	14.6	13.9	0.67	21.600	
300.0	300.0	300.5	300.5	0.6	0.6	0.00	14.6	0.0	14.6	13.5	1.12	12.964	
400.0	400.0	400.5	400.5	0.8	0.8	0.00	14.6	0.0	14.6	13.0	1.57	9.261	
500.0	500.0	500.5	500.5	1.0	1.0	0.00	14.6	0.0	14.6	12.6	2.02	7.204	
600.0	600.0	600.5	600.5	1.2	1.2	0.00	14.6	0.0	14.6	12.1	2.47	5.894	
700.0	700.0	700.5	700.5	1.5	1.5	0.00	14.6	0.0	14.6	11.7	2.92	4.988	
800.0	800.0	800.5	800.5	1.7	1.7	0.00	14.6	0.0	14.6	11.2	3.37	4.323	
900.0	900.0	900.5	900.5	1.9	1.9	0.00	14.6	0.0	14.6	10.8	3.82	3.814	
1,000.0	1,000.0	1,000.5	1,000.5	2.1	2.1	0.00	14.6	0.0	14.6	10.3	4.27	3.413	
1,100.0	1,100.0	1,100.5	1,100.5	2.4	2.4	0.00	14.6	0.0	14.6	9.9	4.72	3.088	
1,200.0	1,200.0	1,200.5	1,200.5	2.6	2.6	0.00	14.6	0.0	14.6	9.4	5.17	2.819	
1,300.0	1,300.0	1,300.5	1,300.5	2.8	2.8	0.00	14.6	0.0	14.6	9.0	5.62	2.594	
1,400.0	1,400.0	1,400.5	1,400.5	3.0	3.0	0.00	14.6	0.0	14.6	8.5	6.07	2.402	
1,500.0	1,500.0	1,500.5	1,500.5	3.3	3.3	0.00	14.6	0.0	14.6	8.1	6.52	2.236	
1,600.0	1,600.0	1,600.5	1,600.5	3.5	3.5	0.00	14.6	0.0	14.6	7.6	6.97	2.092	
1,700.0	1,700.0	1,700.5	1,700.5	3.7	3.7	0.00	14.6	0.0	14.6	7.2	7.42	1.965	
1,800.0	1,800.0	1,800.5	1,800.5	3.9	3.9	0.00	14.6	0.0	14.6	6.7	7.87	1.853	
1,900.0	1,900.0	1,900.5	1,900.5	4.2	4.2	0.00	14.6	0.0	14.6	6.3	8.32	1.753	
1,966.5	1,966.5	1,967.0	1,967.0	4.3	4.3	0.00	14.6	0.0	14.6	6.0	8.62	1.692 CC	
2,000.0	2,000.0	2,000.5	2,000.5	4.4	4.4	0.00	14.6	0.0	14.6	5.8	8.77	1.663	
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	2.51	16.2	0.7	16.2	7.0	9.21	1.758	
2,200.0	2,200.0	2,199.4	2,199.3	4.8	4.8	7.59	20.8	2.8	21.1	11.4	9.66	2.180	
2,300.0	2,300.0	2,299.2	2,298.9	5.1	5.1	11.27	26.5	5.3	27.0	16.9	10.10	2.674	
2,400.0	2,400.0	2,399.0	2,398.5	5.3	5.3	13.61	32.1	7.8	33.1	22.5	10.55	3.133	
2,500.0	2,500.0	2,498.8	2,498.1	5.5	5.5	15.23	37.7	10.3	39.1	28.1	11.00	3.557	
2,600.0	2,600.0	2,598.7	2,597.7	5.7	5.7	16.41	43.3	12.8	45.2	33.8	11.45	3.948	
2,700.0	2,700.0	2,698.5	2,697.4	6.0	6.0	17.31	48.9	15.2	51.3	39.4	11.91	4.311	
2,800.0	2,800.0	2,798.3	2,797.0	6.2	6.2	18.02	54.5	17.7	57.5	45.1	12.36	4.648	
2,900.0	2,900.0	2,898.1	2,896.6	6.4	6.4	18.59	60.2	20.2	63.6	50.8	12.82	4.960	
3,000.0	3,000.0	2,997.9	2,996.2	6.6	6.7	19.06	65.8	22.7	69.7	56.4	13.28	5.251	
3,100.0	3,100.0	3,097.7	3,095.8	6.9	6.9	19.46	71.4	25.2	75.9	62.1	13.73	5.523	
3,200.0	3,200.0	3,197.5	3,195.5	7.1	7.1	19.79	77.0	27.7	82.0	67.8	14.19	5.777	
3,300.0	3,300.0	3,297.3	3,295.1	7.3	7.4	20.08	82.6	30.2	88.1	73.5	14.65	6.014	
3,400.0	3,400.0	3,397.1	3,394.7	7.5	7.6	20.33	88.2	32.7	94.3	79.2	15.12	6.238	
3,500.0	3,500.0	3,496.9	3,494.3	7.8	7.8	20.55	93.9	35.2	100.4	84.8	15.58	6.447	
3,600.0	3,600.0	3,596.8	3,593.9	8.0	8.1	20.75	99.5	37.7	106.6	90.5	16.04	6.645	
3,700.0	3,700.0	3,696.6	3,693.6	8.2	8.3	20.92	105.1	40.2	112.7	96.2	16.50	6.831	
3,800.0	3,800.0	3,796.4	3,793.2	8.4	8.6	21.08	110.7	42.7	118.9	101.9	16.96	7.007	
3,900.0	3,900.0	3,896.2	3,892.8	8.7	8.8	21.22	116.3	45.2	125.0	107.6	17.43	7.173	
4,000.0	4,000.0	3,996.0	3,992.4	8.9	9.0	21.35	121.9	47.7	131.2	113.3	17.89	7.331	
4,100.0	4,100.0	4,095.8	4,092.0	9.1	9.3	-85.61	127.6	50.2	137.2	119.0	18.19	7.542	
4,200.0	4,199.9	4,195.5	4,191.6	9.3	9.5	-87.27	133.2	52.6	143.0	124.4	18.61	7.687	
4,300.0	4,299.8	4,295.3	4,291.1	9.5	9.8	-88.93	138.8	55.1	149.0	130.0	19.03	7.830	
4,400.0	4,399.6	4,395.0	4,390.7	9.7	10.0	-90.47	144.4	57.6	155.1	135.7	19.46	7.972	
4,500.0	4,499.5	4,494.7	4,490.2	9.9	10.3	-91.89	150.0	60.1	161.3	141.4	19.89	8.112	
4,600.0	4,599.4	4,594.5	4,589.8	10.1	10.5	-93.21	155.6	62.6	167.6	147.3	20.32	8.249	
4,700.0	4,699.3	4,694.2	4,689.3	10.3	10.7	-94.43	161.2	65.1	173.9	153.2	20.75	8.384	
4,800.0	4,799.2	4,793.9	4,788.8	10.5	11.0	-95.56	166.8	67.6	180.4	159.2	21.18	8.516	
4,900.0	4,899.0	4,893.7	4,888.4	10.7	11.2	-96.61	172.5	70.1	186.9	165.3	21.62	8.644	
5,000.0	4,998.9	4,993.4	4,987.9	10.9	11.5	-97.60	178.1	72.6	193.5	171.4	22.06	8.770	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 1-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
15,500.0	6,972.5	15,510.4	6,975.5	244.9	245.1	90.39	330.2	-8,729.1	370.3	-119.6	489.88	0.756	Level 1
15,600.0	6,972.5	15,610.4	6,975.5	247.7	247.9	90.39	330.7	-8,829.1	370.8	-124.7	495.48	0.748	Level 1
15,700.0	6,972.5	15,710.4	6,975.5	250.5	250.7	90.39	331.2	-8,929.1	371.3	-129.8	501.09	0.741	Level 1
15,800.0	6,972.5	15,810.4	6,975.5	253.3	253.5	90.39	331.8	-9,029.1	371.8	-134.9	506.70	0.734	Level 1
15,900.0	6,972.5	15,910.4	6,975.5	256.1	256.3	90.38	332.3	-9,129.1	372.4	-140.0	512.30	0.727	Level 1
16,000.0	6,972.5	16,010.4	6,975.5	258.9	259.1	90.38	332.8	-9,229.1	372.9	-145.0	517.91	0.720	Level 1
16,100.0	6,972.5	16,110.4	6,975.5	261.7	261.9	90.38	333.3	-9,329.1	373.4	-150.1	523.52	0.713	Level 1
16,200.0	6,972.5	16,210.4	6,975.5	264.5	264.7	90.38	333.9	-9,429.0	373.9	-155.2	529.13	0.707	Level 1
16,300.0	6,972.5	16,310.3	6,975.5	267.3	267.5	90.38	334.4	-9,529.0	374.5	-160.3	534.74	0.700	Level 1
16,400.0	6,972.5	16,410.3	6,975.5	270.1	270.3	90.38	334.9	-9,629.0	375.0	-165.4	540.34	0.694	Level 1
16,500.0	6,972.5	16,510.3	6,975.5	272.9	273.1	90.38	335.4	-9,729.0	375.5	-170.5	545.95	0.688	Level 1
16,600.0	6,972.5	16,610.3	6,975.5	275.7	275.9	90.38	336.0	-9,829.0	376.0	-175.5	551.56	0.682	Level 1
16,700.0	6,972.5	16,710.3	6,975.5	278.5	278.7	90.38	336.5	-9,929.0	376.5	-180.6	557.17	0.676	Level 1
16,800.0	6,972.5	16,810.3	6,975.5	281.3	281.4	90.38	337.0	-10,029.0	377.1	-185.6	562.68	0.670	Level 1
16,844.0	6,972.5	16,854.3	6,975.5	282.5	282.2	90.38	337.2	-10,073.0	377.3	-187.4	564.71	0.668	Level 1, ES, SF

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 223-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,000.0	6,972.5	10,196.3	7,164.0	91.2	91.0	110.89	459.2	-3,218.3	534.5	363.9	170.56	3.134		
10,100.0	6,972.5	10,284.7	7,163.9	94.0	93.4	110.74	462.7	-3,306.7	538.1	362.5	175.62	3.064		
10,200.0	6,972.5	10,396.1	7,166.3	96.8	96.5	110.83	466.7	-3,417.9	542.3	361.3	181.02	2.996		
10,300.0	6,972.5	10,532.7	7,168.3	99.5	100.3	111.14	463.6	-3,554.5	540.5	353.7	186.80	2.894		
10,400.0	6,972.5	10,623.5	7,166.0	102.3	102.8	111.02	461.0	-3,645.2	536.9	345.0	191.89	2.798		
10,500.0	6,972.5	10,712.4	7,163.1	105.1	105.2	110.73	460.8	-3,734.1	535.5	338.4	197.16	2.716		
10,600.0	6,972.5	10,815.2	7,160.2	107.9	108.1	110.43	461.1	-3,836.8	534.9	332.0	202.83	2.637		
10,700.0	6,972.5	10,925.7	7,159.3	110.6	111.1	110.42	459.0	-3,947.2	532.8	324.5	208.33	2.557		
10,800.0	6,972.5	11,026.2	7,159.2	113.4	113.9	110.55	455.3	-4,047.7	529.3	315.9	213.39	2.480		
10,900.0	6,972.5	11,123.2	7,158.1	116.2	116.6	110.53	452.9	-4,144.7	526.6	308.0	218.57	2.409		
11,000.0	6,972.5	11,209.9	7,156.9	119.0	119.0	110.46	451.6	-4,231.4	524.8	301.2	223.54	2.347		
11,001.6	6,972.5	11,211.1	7,156.9	119.0	119.0	110.46	451.6	-4,232.6	524.7	301.1	223.62	2.347		
11,100.0	6,972.5	11,295.2	7,156.1	121.8	121.4	110.30	453.6	-4,316.6	526.5	297.9	228.62	2.303		
11,200.0	6,972.5	11,398.1	7,157.4	124.6	124.2	110.34	456.2	-4,419.4	529.3	295.4	233.89	2.263		
11,300.0	6,972.5	11,500.8	7,159.1	127.4	127.1	110.47	457.3	-4,522.1	530.9	291.9	239.02	2.221		
11,400.0	6,972.5	11,604.6	7,159.7	130.1	130.0	110.47	458.8	-4,625.9	532.5	288.1	244.36	2.179		
11,500.0	6,972.5	11,722.3	7,160.4	132.9	133.3	110.58	457.9	-4,743.6	532.0	282.1	249.90	2.129		
11,600.0	6,972.5	11,826.4	7,159.9	135.7	136.2	110.64	454.8	-4,847.7	529.1	273.9	255.15	2.074		
11,663.2	6,972.5	11,873.0	7,159.3	137.5	137.4	110.63	453.5	-4,894.2	527.3	269.3	258.03	2.044		
11,700.0	6,972.5	11,873.0	7,159.3	138.5	137.4	110.63	453.5	-4,894.2	528.6	269.6	258.99	2.041 SF		
11,800.0	6,972.5	11,873.0	7,159.3	141.3	137.4	110.63	453.5	-4,894.2	544.8	283.2	261.61	2.082		
11,900.0	6,972.5	11,873.0	7,159.3	144.1	137.4	110.63	453.5	-4,894.2	578.1	313.8	264.24	2.188		
12,000.0	6,972.5	11,873.0	7,159.3	146.9	137.4	110.63	453.5	-4,894.2	625.7	358.8	266.86	2.345		
12,100.0	6,972.5	11,873.0	7,159.3	149.7	137.4	110.63	453.5	-4,894.2	684.7	415.2	269.48	2.541		
12,200.0	6,972.5	11,873.0	7,159.3	152.5	137.4	110.63	453.5	-4,894.2	752.5	480.4	272.11	2.765		
12,300.0	6,972.5	11,873.0	7,159.3	155.3	137.4	110.63	453.5	-4,894.2	826.8	552.0	274.73	3.009		
12,400.0	6,972.5	11,873.0	7,159.3	158.1	137.4	110.63	453.5	-4,894.2	906.0	628.7	277.36	3.267		
12,500.0	6,972.5	11,873.0	7,159.3	160.9	137.4	110.63	453.5	-4,894.2	989.1	709.1	279.99	3.533		

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 1-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.5	0.5	0.0	0.0	0.00	61.9	0.0	61.9				
100.0	100.0	100.5	100.5	0.1	0.1	0.00	61.9	0.0	61.9	61.7	0.23	274.879	
200.0	200.0	200.5	200.5	0.3	0.3	0.00	61.9	0.0	61.9	61.3	0.67	91.779	
300.0	300.0	300.5	300.5	0.6	0.6	0.00	61.9	0.0	61.9	60.8	1.12	55.086	
400.0	400.0	400.5	400.5	0.8	0.8	0.00	61.9	0.0	61.9	60.4	1.57	39.353	
500.0	500.0	500.5	500.5	1.0	1.0	0.00	61.9	0.0	61.9	59.9	2.02	30.610	
600.0	600.0	600.5	600.5	1.2	1.2	0.00	61.9	0.0	61.9	59.5	2.47	25.046	
700.0	700.0	700.5	700.5	1.5	1.5	0.00	61.9	0.0	61.9	59.0	2.92	21.193	
800.0	800.0	800.5	800.5	1.7	1.7	0.00	61.9	0.0	61.9	58.6	3.37	18.368	
900.0	900.0	900.5	900.5	1.9	1.9	0.00	61.9	0.0	61.9	58.1	3.82	16.207	
1,000.0	1,000.0	1,000.5	1,000.5	2.1	2.1	0.00	61.9	0.0	61.9	57.7	4.27	14.502	
1,100.0	1,100.0	1,100.5	1,100.5	2.4	2.4	0.00	61.9	0.0	61.9	57.2	4.72	13.121	
1,166.5	1,166.5	1,167.0	1,167.0	2.5	2.5	0.00	61.9	0.0	61.9	56.9	5.02	12.339 CC	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	0.00	61.9	0.0	61.9	56.8	5.17	11.983 ES	
1,300.0	1,300.0	1,298.4	1,298.4	2.8	2.8	0.32	63.6	0.4	63.6	58.0	5.61	11.334	
1,400.0	1,400.0	1,396.0	1,395.9	3.0	3.0	1.17	68.5	1.4	68.7	62.6	6.06	11.337	
1,500.0	1,500.0	1,493.3	1,492.8	3.3	3.3	2.34	76.6	3.1	77.1	70.6	6.50	11.850	
1,600.0	1,600.0	1,592.8	1,591.8	3.5	3.5	3.47	86.4	5.2	87.0	80.1	6.96	12.505	
1,700.0	1,700.0	1,692.3	1,690.8	3.7	3.7	4.36	96.3	7.3	97.1	89.6	7.42	13.072	
1,800.0	1,800.0	1,791.8	1,789.7	3.9	4.0	5.08	106.1	9.4	107.1	99.2	7.89	13.565	
1,900.0	1,900.0	1,891.3	1,888.7	4.2	4.2	5.69	116.0	11.5	117.1	108.8	8.37	13.997	
2,000.0	2,000.0	1,990.8	1,987.7	4.4	4.5	6.19	125.8	13.6	127.2	118.3	8.85	14.377	
2,100.0	2,100.0	2,090.3	2,086.7	4.6	4.7	6.62	135.6	15.8	137.3	127.9	9.33	14.713	
2,200.0	2,200.0	2,189.7	2,185.7	4.8	5.0	7.00	145.5	17.9	147.3	137.5	9.81	15.013	
2,300.0	2,300.0	2,289.2	2,284.6	5.1	5.3	7.32	155.3	20.0	157.4	147.1	10.30	15.282	
2,400.0	2,400.0	2,388.7	2,383.6	5.3	5.5	7.61	165.2	22.1	167.5	156.7	10.79	15.523	
2,500.0	2,500.0	2,488.2	2,482.6	5.5	5.8	7.86	175.0	24.2	177.6	166.3	11.28	15.742	
2,600.0	2,600.0	2,587.7	2,581.6	5.7	6.1	8.09	184.8	26.3	187.7	175.9	11.77	15.940	
2,700.0	2,700.0	2,687.2	2,680.5	6.0	6.4	8.29	194.7	28.4	197.7	185.5	12.27	16.121	
2,800.0	2,800.0	2,786.7	2,779.5	6.2	6.6	8.47	204.5	30.5	207.8	195.1	12.76	16.287	
2,900.0	2,900.0	2,886.2	2,878.5	6.4	6.9	8.64	214.4	32.6	217.9	204.7	13.26	16.438	
3,000.0	3,000.0	2,985.6	2,977.5	6.6	7.2	8.79	224.2	34.7	228.0	214.3	13.75	16.578	
3,100.0	3,100.0	3,085.1	3,076.5	6.9	7.5	8.93	234.0	36.8	238.1	223.9	14.25	16.708	
3,200.0	3,200.0	3,184.6	3,175.4	7.1	7.7	9.06	243.9	38.9	248.2	233.5	14.75	16.828	
3,300.0	3,300.0	3,284.1	3,274.4	7.3	8.0	9.18	253.7	41.0	258.3	243.1	15.25	16.939	
3,400.0	3,400.0	3,383.6	3,373.4	7.5	8.3	9.28	263.6	43.1	268.4	252.7	15.75	17.042	
3,500.0	3,500.0	3,483.1	3,472.4	7.8	8.6	9.38	273.4	45.2	278.5	262.3	16.25	17.139	
3,600.0	3,600.0	3,582.6	3,571.3	8.0	8.9	9.48	283.2	47.3	288.6	271.9	16.75	17.230	
3,700.0	3,700.0	3,682.0	3,670.3	8.2	9.1	9.57	293.1	49.4	298.7	281.5	17.25	17.314	
3,800.0	3,800.0	3,781.5	3,769.3	8.4	9.4	9.65	302.9	51.5	308.8	291.1	17.76	17.394	
3,900.0	3,900.0	3,881.0	3,868.3	8.7	9.7	9.72	312.8	53.6	319.0	300.7	18.26	17.469	
4,000.0	4,000.0	3,980.5	3,967.2	8.9	10.0	9.80	322.6	55.7	329.1	310.3	18.76	17.540	
4,100.0	4,100.0	4,080.0	4,066.2	9.1	10.3	-96.69	332.4	57.8	339.4	321.1	18.31	18.530	
4,200.0	4,199.9	4,179.3	4,165.0	9.3	10.6	-97.29	342.3	59.9	350.0	331.3	18.74	18.680	
4,300.0	4,299.8	4,278.6	4,263.8	9.5	10.8	-97.97	352.1	62.0	360.8	341.6	19.17	18.823	
4,400.0	4,399.6	4,378.0	4,362.7	9.7	11.1	-98.61	361.9	64.1	371.6	352.0	19.60	18.960	
4,500.0	4,499.5	4,477.3	4,461.5	9.9	11.4	-99.21	371.7	66.2	382.4	362.4	20.03	19.091	
4,600.0	4,599.4	4,576.6	4,560.3	10.1	11.7	-99.79	381.6	68.3	393.3	372.8	20.47	19.217	
4,700.0	4,699.3	4,676.0	4,659.1	10.3	12.0	-100.33	391.4	70.4	404.2	383.3	20.90	19.337	
4,800.0	4,799.2	4,775.3	4,758.0	10.5	12.2	-100.84	401.2	72.5	415.2	393.8	21.34	19.452	
4,900.0	4,899.0	4,874.6	4,856.8	10.7	12.5	-101.32	411.0	74.6	426.1	404.4	21.79	19.561	
5,000.0	4,998.9	4,974.0	4,955.6	10.9	12.8	-101.79	420.9	76.7	437.2	414.9	22.23	19.667	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

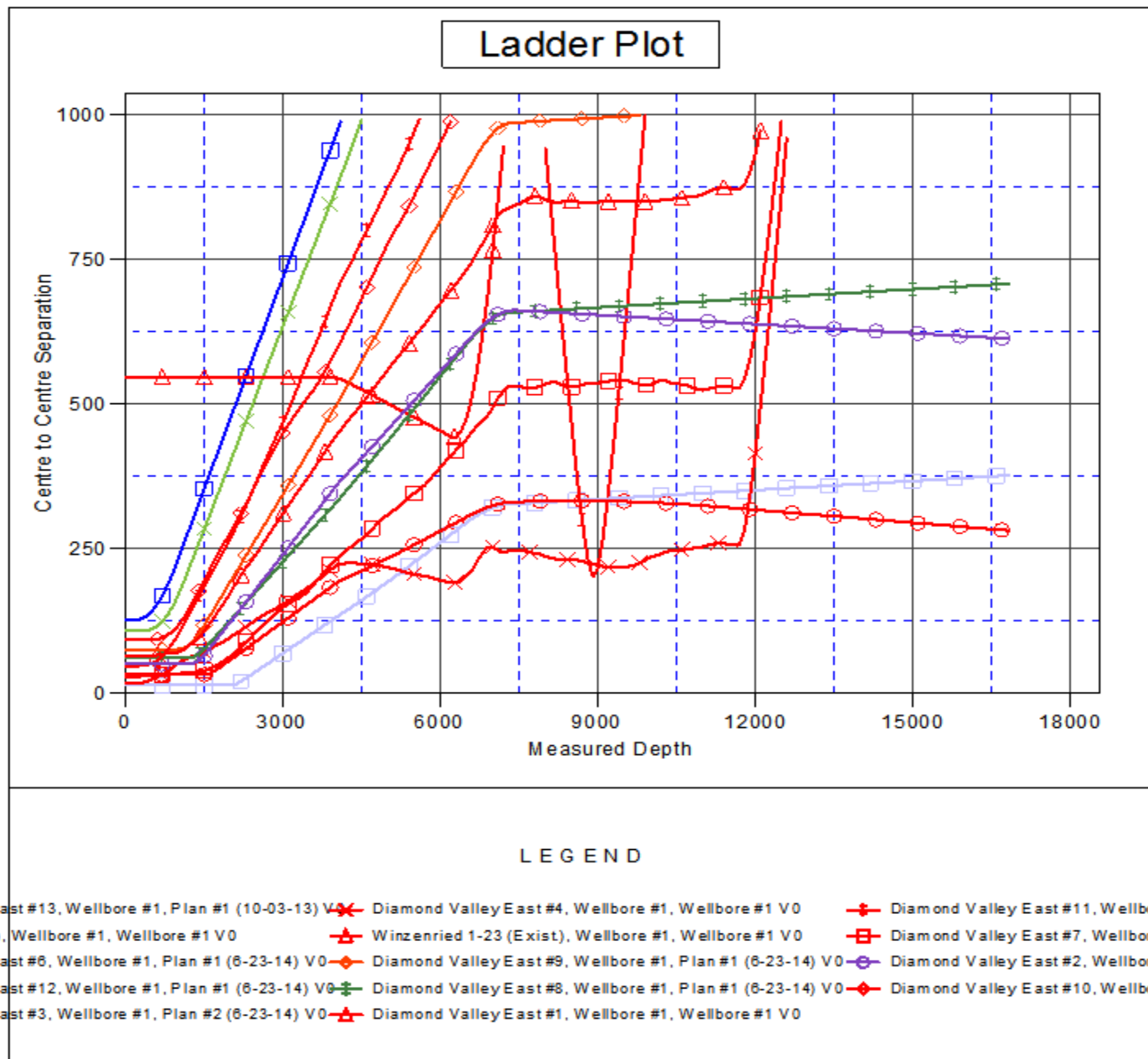
Offset Design												Offset Site Error:	0.0 ft
Survey Program: 1-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
15,500.0	6,972.5	15,528.2	6,975.5	244.9	245.2	90.20	661.7	-8,727.3	701.8	211.9	489.91	1.432	Level 3
15,600.0	6,972.5	15,628.2	6,975.5	247.7	248.0	90.20	662.2	-8,827.3	702.3	206.8	495.51	1.417	Level 3
15,700.0	6,972.5	15,728.2	6,975.5	250.5	250.8	90.20	662.8	-8,927.3	702.8	201.7	501.12	1.403	Level 3
15,800.0	6,972.5	15,828.2	6,975.5	253.3	253.6	90.20	663.3	-9,027.3	703.3	196.6	506.73	1.388	Level 3
15,900.0	6,972.5	15,928.2	6,975.5	256.1	256.4	90.20	663.8	-9,127.3	703.9	191.5	512.33	1.374	Level 3
16,000.0	6,972.5	16,028.2	6,975.5	258.9	259.2	90.20	664.3	-9,227.3	704.4	186.5	517.94	1.360	Level 3
16,100.0	6,972.5	16,128.2	6,975.5	261.7	262.0	90.20	664.9	-9,327.3	704.9	181.4	523.55	1.346	Level 3
16,200.0	6,972.5	16,228.2	6,975.5	264.5	264.8	90.20	665.4	-9,427.3	705.4	176.3	529.16	1.333	Level 3
16,300.0	6,972.5	16,328.2	6,975.5	267.3	267.6	90.20	665.9	-9,527.3	706.0	171.2	534.77	1.320	Level 3
16,400.0	6,972.5	16,428.2	6,975.5	270.1	270.4	90.20	666.4	-9,627.3	706.5	166.1	540.37	1.307	Level 3
16,500.0	6,972.5	16,528.2	6,975.5	272.9	273.2	90.20	667.0	-9,727.3	707.0	161.0	545.98	1.295	Level 3
16,600.0	6,972.5	16,628.2	6,975.5	275.7	276.0	90.20	667.5	-9,827.3	707.5	156.0	551.59	1.283	Level 3
16,700.0	6,972.5	16,728.2	6,975.5	278.5	278.8	90.20	668.0	-9,927.3	708.1	150.9	557.20	1.271	Level 3
16,800.0	6,972.5	16,828.2	6,975.5	281.3	281.3	90.20	668.5	-10,027.3	708.6	146.1	562.53	1.260	Level 3
16,844.0	6,972.5	16,872.2	6,975.5	282.5	282.1	90.20	668.8	-10,071.3	708.8	144.3	564.56	1.256	Level 3, SF

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

Offset Design Diamond Valley East Pad Sec.23-T6N-R67W - Winzenried 1-23 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7232-UNKNOWN												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,200.0	5,198.7	5,174.7	5,174.7	11.3	103.5	10.58	-239.3	491.1	492.2	377.6	114.61	4.295	
5,300.0	5,298.6	5,274.6	5,274.6	11.5	105.5	10.69	-239.3	491.1	487.4	370.6	116.80	4.173	
5,400.0	5,398.5	5,374.5	5,374.5	11.7	107.5	10.80	-239.3	491.1	482.7	363.7	119.00	4.056	
5,500.0	5,498.3	5,474.3	5,474.3	11.9	109.5	10.90	-239.3	491.1	477.9	356.7	121.20	3.943	
5,600.0	5,598.2	5,574.2	5,574.2	12.2	111.5	11.02	-239.3	491.1	473.1	349.7	123.40	3.834	
5,700.0	5,698.1	5,674.1	5,674.1	12.4	113.5	11.13	-239.3	491.1	468.3	342.7	125.61	3.729	
5,800.0	5,798.0	5,774.0	5,774.0	12.6	115.5	11.25	-239.3	491.1	463.6	335.8	127.81	3.627	
5,900.0	5,897.9	5,873.9	5,873.9	12.8	117.5	11.36	-239.3	491.1	458.8	328.8	130.01	3.529	
6,000.0	5,997.7	5,973.7	5,973.7	13.0	119.5	11.48	-239.3	491.1	454.0	321.8	132.22	3.434	
6,100.0	6,097.6	6,073.6	6,073.6	13.2	121.5	11.61	-239.3	491.1	449.3	314.9	134.42	3.342	
6,200.0	6,197.5	6,173.5	6,173.5	13.5	123.5	11.73	-239.3	491.1	444.5	307.9	136.63	3.254	
6,268.4	6,265.9	6,241.9	6,241.9	13.6	124.8	-122.54	-239.3	491.1	443.4	305.1	138.26	3.207	
6,300.0	6,297.4	6,273.4	6,273.4	13.7	125.5	-138.37	-239.3	491.1	443.2	304.3	138.83	3.192 CC, ES, SF	
6,400.0	6,396.5	6,372.5	6,372.5	13.8	127.5	-148.37	-239.3	491.1	453.8	314.6	139.17	3.260	
6,500.0	6,492.9	6,468.9	6,468.9	14.0	129.4	-150.77	-239.3	491.1	476.8	339.5	137.25	3.474	
6,600.0	6,584.7	6,560.7	6,560.7	14.2	131.2	-152.22	-239.3	491.1	512.2	379.2	133.00	3.851	
6,700.0	6,670.1	6,646.1	6,646.1	14.4	132.9	-153.17	-239.3	491.1	559.7	433.1	126.56	4.422	
6,800.0	6,747.4	6,723.4	6,723.4	14.8	134.5	-153.52	-239.3	491.1	618.7	500.4	118.37	5.227	
6,900.0	6,815.2	6,791.2	6,791.2	15.5	135.8	-153.03	-239.3	491.1	688.2	578.8	109.42	6.290	
7,000.0	6,872.1	6,848.1	6,848.1	16.4	137.0	-151.27	-239.3	491.1	767.0	665.3	101.69	7.542	
7,100.0	6,917.0	6,893.0	6,893.0	17.6	137.9	-147.36	-239.3	491.1	853.3	754.2	99.07	8.613	
7,200.0	6,949.0	6,925.0	6,925.0	19.2	138.5	-139.12	-239.3	491.1	945.4	836.8	108.61	8.705	

Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Diamond Valley East #5	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (6-23-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL 1 @ 4791.0ft (Frontier 10 RKB Coordinates are relative to: Diamond Valley East #5
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.41°



Company:	Extraction Oil & Gas	Local Co-ordinate Reference:	Well Diamond Valley East #5
Project:	SEC.23-T6N-R67W	TVD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Reference Site:	Diamond Valley East Pad Sec.23-T6N-R67W	MD Reference:	WELL 1 @ 4791.0ft (Frontier 10 RKB - 22')
Site Error:	0.0ft	North Reference:	True
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