17-06503





## **EQT Production - Marcellus**

Doddridge County, WV Grid Doddridge County 513153 Well #513153

Main Wellbore

Design: 513153 As Drilled

# **Standard Survey Report**

14 May, 2015

Received Office of Oil & Gas OCT 0 8 2015



10/30/2015

PHOE	17.06	503		S	PHX Survey Rep	ort		Whe		Deets inno	vatio
Database: E Company: E Project: D Site: D Well: M Wellbore: M Design: B	DM 5000, 1 Si OT President oddroge Cou oddroge Cou oddroge Cou oddroge Cou oddroge Cou oddroge Cou oddroge Cou oddroge Cou oddroge Cou	ngle Liser Dio - Markadion nly, WV Diod nly 513158		T\ Mi No	/D Reference D Reference: orth Reference		(38) (73) (74)	Dontmage G 923 (g. 1275) 223 (g. 1275) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
Project	Dependence	Seening WV1	ând -								-
Map System: Geo Datum: Map Zone:	NAD 1927 (	ane 1927 (Exa NADCON COI a North 4701			System Datu	m:		an Sea Level ng geodetic so	cale factor		
Site	Destricted	Jounty Statt	3								
Site Position: From: Position Uncertainty	Map v:	0.0 usf	Northi Eastin Slot R	g:	1,642,29	6.70 usft Lo	titude: ingitude: id Converge	nce:		-0	39.21 -80.76 .81 °
Well	(VVI-) #6131	18									
Well Position Position Uncertainty	+N/-S +E/-W	0.0 0.0 0.0	usft Ea	rthing: sting: ellhead Elevation:		260,323.30 us ,642,296.70 us us	ft Long	ude: jitude: ind Level:		39° 12' 2 80° 45' 4 1,25	
Wellbore	1.10 million	ine.					-				
Magnetics	Model	Name	Sample	e Date	Declinatio	on	Dip Ar	igle	Field	Strength	
and the second		HDGM		4/21/2015	(°)	-7.78	(°)	66.68		(nT) COIVEO	
Basker	-								Office		1200
Design Audit Notes:	Loansteinersan										「していい
				1					ULI	0 8 2015	
Version:	1.0		Phase				Depth:				0.0
Vertical Section:		Dep	th From (TV (usft)	/D)	+N/-S (usft)	+E/-W (usft)		Di	rection (°)		
				0.0	0.0		0.0		33	5.34	
Survey Program		Date 5	14/2015							100	
From 0	To (usft)	Survey (W	ellbore)		Tool	Name	Des	cription			
0.00 0.00	5,410		rodata Gyro	(Main Wellbore) ain Wellbore)	GYD	_DP_MS +MWD+HDGM	Gyr	and particular	mpassing and /D + HDGM	l drop	
Survey											
Measured	nclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (*/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00		-1,275.0	0.0	0.0	0.0		0.00	0.00	
110.0 210.0	0.16	294.33 312.16		-1,165.0 -1,065.0	0.1	-0.1 -0.3	0.1		0.15	0.00 17.83	
310.0	0.12	291.39		-965.0	0.3	-0.5	0.5		0.03	-20.77	
410.0	0,16	276.38	410.0	-865.0	0.4	-0,8	0.7	0.04	0.01	-15.01	
510.0	0.16	282.07		-765.0	0.4	-1.1	0.8		0.00	5.69 7.98	
610.0 710.0	0.12	290.05 289.98		-665.0 -565.0	0.5	-1.3 -1.5	1.0		-0.04 0.01	-0.07	

710.0

0.13

289.98

710.0 -565.0

0.6

-1.5

1.1

COMPASS 5000.1 Build 73

-0.07

0.01 0.01

## 17-06503



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Database: Company: Project: Site: Well: Well: Wellbore: Design:	EDI Frodoren Desammi Co Desammi Co Desammi Co Desampi Co Desampi Co Desampi Co Desampi Co Desampi Co Desampi Co Desampi Co	n geo tros tipo ar e Anno gene a ego (est fina) a eta argan argan argan argan argan argan			Local Co-ordin TVD Reference MD Reference: North Referenc Survey Calcula	: ce:					
Survey											
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usfi	t)
810.0	0,10	277.80	810.0	-465.0	0.6	-1.7	1.3	0.04	-0.03	-12.18	
910.0	0.21	268.30		-365.0	0.6	-2.0	1.4		0.11	-9.50	
1,010.0	0.55	268.96	1,010.0	-265.0	0.6	-2.6	1.6	0.34	0.34	0.66	
1,110.0	0.59	276.20	1,110.0	-165.0	0.6	-3.6	2.1	0.08	0.04	7.24	
1,210.0	0.63	301.24	1,210.0	-65.0	1.0	-4.6	2.8	0.27	0.04	25.04	
1,310.0	1.04	296.82	1,310.0	35.0	1.7	-5.9	4.0	0.41	0.41	-4.42	
1,410.0	1.18	297.35	1,410.0	135.0	2.6	-7.6	5.5	0.14	0.14	0.53	
1,510.0	1.40	299.17	1,509.9	234.9	3.6	-9.6	7.3	0.22	0.22	1.82	
1,610.0	1.29	299.17	1,609.9		4.8	-11.7	9.2		-0.11	0.00	
1,710.0	1.29	299.24	1,709,9	434.9	5.9	-13.6	11.0	0.00	0.00	0.07	
1,810.0	1.31	300.39	1,809.9	534.9	7.0	-15.6	12.9	0.03	0.02	1.15	
1,910.0	1.33	301.65	1,909.8	634.8	8.2	-17.6	14.8	0.04	0.02	1.26	
2,010.0	1.35	297.78	2,009.8	734.8	9.3	-19.6	16.7	0.09	0.02	-3.87	
2,110.0	1.40	296.91	2,109.8	834.8	10.5	-21.7	18.6	0.05	0.05	-0.87	
2,210.0	1.50	296.79	2,209.7	934.7	11.6	-24.0	20.5	0.10	0.10	-0.12	
2,310.0	1.57	297.76	2,309.7	1,034.7	12.8	-26.4	22.7	0.07	0.07	0.97	
2,410.0	1.58	297.64	2,409.7	1,134.7	14.1	-28.8	24.8	0.01	0.01	-0.12	Received
2,510.0	1.64	300.44	2,509.6	1,234.6	15.5	-31.3	27.1	0.10	0.06	2.80 1	ice of Oil & r
2,610.0	1 67	301.59	2,609.6	1,334.6	17.0	-33.7	29.5	0.04	0.03	1.15	Le UI Linia.
2,710.0	1.72	303.07	2,709.5	1,434.5	18.5	-36.2	32.0		0.05	1.48	OCT 0 8 2015
2,810.0	1.78	304.36	2,809.5	1,534.5	20.2	-38.8	34.6		0.06	1.29	061 00 200
2,910.0	1.87	306.45	2,909.4	1,634.4	22 1	-41.4	37.3	0.11	0.09	2.09	
3,010.0	1.91	305.74	3,009.4	1,734.4	24.0	-44.0	40.2	0.05	0.04	-0.71	
3,110.0	1.95	305.37	3,109.3	1,834.3	26.0	-46.8	43.1	0.04	0.04	-0.37	
3,210.0	2.06	302.42	3,209.3	1,934.3	27.9	-49.7	46.1	0.15	0.11	-2.95	
3,310.0	2.15	302.58	3,309.2	2,034.2	29.9	-52.8	49.2	0.09	0.09	0.16	
3,410.0	2.25	305.41	3,409.1	2,134.1	32.0	-55.9	52.5	0.15	0.10	2.83	
3,510.0	2.36	306.95	3,509.0	2,234.0	34.4	-59.2	56.0	0.13	0.11	1.54	
3,610.0	2.36	309.08	3,609.0	2,334.0	37.0	-62.4	59.6	0.09	0.00	2.13	
3,710.0	2.42	310.17	3,708.9	2,433.9	39.6	-65.6	63.4	0.08	0.06	1.09	
3,810.0	2.70	309.33	3,808.8	2,533.8	42.5	-69.1	67.4	0.28	0.28	-0.84	
3,910.0	3.78	303.69	3,908.6	2,633.6	45.8	-73.6	72.3	1.12	1.08	-5.64	
4,010.0	4.73	304.44	4,008.3	2,733.3	50.0	-79.8	78.7	0.95	0.95	0.75	
4,110.0	5.46	306.43		2,832.9	55.1	-87.0	86.4	0.75	0.73	1.99	
4,210.0	5.71	306.72		2,932.5	60.9	-94.8	94.9		0.25	0.29	
4,310.0	5.86	309.13	4,307.0	3,032.0	67.1	-102.8	103.9	0.29	0.15	2.41	
4,410.0	5.86	311.78	4,406.4	3,131.4	73.7	-110.5	113.1	0.27	0.00	2.65	
4,510.0	6.04	315.11	4,505.9	3,230.9	80.9	-118.1	122.7	0.39	0.18	3.33	
4,610.0	6.14	319.99	4,605.3	3,330.3	88.7	-125.2	132.8	0.53	0.10	4.88	
4,710.0	6.22	324.34	4,704.8	3,429.8	97.2	-131.8	143.3	0.47	0.08	4.35	
4,810.0	6.05	327.79	4,804.2	3,529.2	106.0	-137.8	153.8	0.41	-0.17	3.45	
4,910.0	5.89	330.81	4,903.6	3,628.6	115.0	-143.1	164.2	0.35	-0.16	3.02	

COMPASS 5000.1 Build 73

### 17.06503



### PHX Survey Report



Database: Company: Project: Site: Vell: Vellbore: Design:		n Maria Ny Werdie Ny Merdie			TVD Reference MD Reference: North Reference Survey Calcula	:e:				
iurvey										
Measured Depth	Inclination	Azimuth	Vertical Depth	Subsea Depth	+N/-S	+E/-W	Vertical Section	Dogleg Rate	Build Rate	Turn Rate
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	) (°/100usft)
5,010.0	5.73	332.99		3,728.1	123.9	-147.9	174.3	0.27	-0.16	2.18
5,110.0	5.44	337.04		3,827.6	132.7	-152.0	184.0		-0.29	4.05
5,210.0	5.51	337.64		3,927.2	141.5	-155.7	193.6		0.07	0.60
5,310.0	5.11	340.76	5,301.8	4,026.8	150.2	-158.9	202.8	0.49	-0.40	3.12
5,410.0	4.45	359.07	5,401.4	4,126.4	158.2	-160.5	210.8	1.65	-0.66	18.31
5,474.0	4.00	49.30	5,465 3	4,190.3	162.2	-158.8	213.7	5.64	-0.70	78.48
5,505.0	7.30	94.90		4,221.1	162.2	-156.0	213.7		10.65	147.10
5,537.0	12.10	110.20		4,252.7	161.4	-150.9	209.6		15.00	47.81
5,569.0	15.90	118.60		4,283.7	158.1	-143.9	203.7		11.88	26.25
5,600.0	17.30	127 40		4,313.4	153.3	-136.5	196.3		4.52	28.39
5,631.0	17.90	140.70	5.618.0	4,343.0	146.8	-129.8	187.6	13.09	1.94	42.90
5,663.0	20.40	147.30		4,373.2	138.3	-123.7	177.3	10.32		20.63
5,695.0	22.90	146.80		4,403.0	128.4	-117.2	165.6		7.81	-1.56
5,726.0	23.70	150.40		4,431.4	117.9	-110.9	153.4		2.58	11.61
5,747.0	24.92	151.92	5,725.6	4,450.6	110.4	-106.7	144.8	6.51	5.79	7 25
5,757.0	25.50	152.60	5,734.6	4,459.6	106.6	-104.7	140.6	6.51	5.84	6.77
5,789.0	27.90	152.40	5,763.2	4,488.2	93,8	-98.1	126.2	7.51	7.50	-0.63
5,821.0	30.20	150.50	5,791.2	4,516.2	80.2	-90.6	110.7	7.74	7.19	-5.94 December
5,852.0	32.40	149.10	5,817.7	4,542.7	66.3	-82.5	94.7	7.47	7.10	-4.52 Received
5,884.0	32.00	146.60	5,844.7	4,569.7	51.9	-73.5	77.8	4.35	-1.25	Office of Oil & G
5,915.0	28.40	144.40	5,871.5	4,596.5	39.0	-64.6	62.4	12.15	-11.61	-7.10 OCT 0.0 2015
5,947.0	24.80	142.60	5,900.1	4,625 1	27.5	-56.1	48.4	11.53	-11.25	-7.10 -5.63 OCT 0 8 2015
5,979.0	20.40	139.20	5,929.7	4,654.7	17.9	-48.4	36.5	14.34	-13.75	-10.63
6,010.0	16.70	135.00	5,959.1	4,684.1	10,7	-41.7	27.1	12.68	-11.94	-13.55
6,042.0	14.20	127.60	5,989.9	4,714.9	5.0	-35.4	19.3	9.93	-7.81	-23.13
6,074.0	11,90	117.00	6,021.1	4,746.1	1.1	-29.3	13.3	10.35	-7.19	-33.13
6,106.0	9.50	104.70		4,777.5	-1.0	-23.8	9.0		-7.50	-38.44
6,137.0	7.40	91.20		4,808.2	-1.7	-19.4	6.5		-6.77	-43.55
6,168.0	5.70	67.40	6,114.0	4,839.0	-1.2	-15.9	5.6	10.22	-5.48	-76.77
6,200.0	5.40	52.20	6,145.8	4,870.8	0.4	-13.3	5.9	4.67	-0.94	-47.50
6,231.0	5.30	48.10	6,176.7	4,901.7	2.2	-11.1	6.6	1.27	-0.32	-13.23
6,263.0	5.30	40.00		4,933.6	4.3	-9.0	7.7		0.00	-25.31
6,294.0	6.70	29.40		4,964.4	7.0	-7.2	9.4	5.74	4.52	-34.19
6,326.0	8.50	22.60	6,271.1	4,996.1	10.8	-5 4	12.1	6.28	5.63	-21.25
6,358.0	11.10	9.60	6,302.7	5,027.7	16.0	-4.0	16.2	10.62	8.13	-40.63
6,389.0	14.00	359.30	6,332.9	5,057.9	22.7	-3.5	22.1	11.78	9.35	-33.23
6,421.0	16.30	352.10		5,088.8	31.0	-4.2	30.0		7.19	-22.50
6,452.0	18.50	345.30		5,118.4	40.1	-6.0	39.0	9.65	7.10	-21.94
6,483.0	21.00	343.20	6,422.6	5,147.6	50.2	-8.9	49.3	8.38	8.06	-6,77
6,515.0	24.00	342.50	6,452.1	5,177.1	61.9	-12.5	61.5	9.41	9.38	-2.19
6,546.0	27.40	342.70	6,480.1	5,205.1	74.7	-16.5	74.8	10.97	10.97	0.65

COMPASS 5000.1 Build 73

### 17-06503

## PHOENIX





Database: Company: Project: Site: Well: Wellbore: Design:	EDM Spacific ECT Products Testal/up Cor Containing Co Containing Co Co Co Co Co Co Co Co Co Co Co Co Co C	n agin shini nDe ni Marae Ale ni Marae Ale ni Shataa Nasi			Local Co-ordin TVD Reference MD Reference North Reference Survey Calcula	: ce:	2 - 2 ) - (7) - (7)	Contractor (* 1974) go 1974 (* 1975) go 1974 (* 1974) 1974 (* 1974)			
Survey											
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
6,578.0	31.30	343.10	6,507.9	5,232.9	89.7	-21.1	90.3	12.20	12.19	1.25	
6,610.0	34.50	344.10	6,534.8	5,259.8	106.4	-26.0	107.5	10.14	10.00	3.13	
6,642.0	38.60	343.50	6,560.5	5,285.5	124.7	-31.3	126.4		12.81	-1.88	
6,673.0	42.60	342.10	6,584.0	5,309.0	143.9	-37.3	146.4	13.23	12.90	-4.52	
6,704.0	46.50	341.40	6,606.1	5,331.1	164.6	-44.1	168.0	12.68	12.58	-2.26	
6,736.0	51.00	341.70	6,627.2	5,352.2	187.4	-51.7	191.9		14.06	0.94	
6,767.0	55.10	342.00	6,645.8	5,370.8	210.9	-59.4	216.5	13.25	13.23	0.97	
6,799.0	58.70	342.60	6,663.3	5,388.3	236.5	-67.6	243.1		11.25	1.88	
6,831.0	62,60	342.20	6,679.0	5,404.0	263.1	-76.0	270.8	12.24	12.19	-1.25	
6,884.0	67.00	341.50	6,701.6	5,426.6	308.6	-91.0	318.4	8.39	8.30	-1.32	
6,925.0	71.10	338.40	6,716.2	5,441.2	344.6	-104.1	356.6	12.24	10.00	-7.56	
6,957.0	73.90	336.10	6,725.8	5,450.8	372.7	-115.9	387.1	11.11	8.75	-7.19	
6,989.0	76.50	334.40	6,734.0	5,459.0	400.8	-128.8	418.0	9.61	8.13	-5.31	
7,020.0	79.30	334.50	6,740.5	5,465.5	428 1	-141.9	448.3	9.04	9.03	0.32	
7,051.0	82.50	334.60	6,745,4	5,470.4	455.8	-155.1	478.9	10.33	10.32	0.32	
7,084.0	85.20	334.60	6,749.0	5,474.0	485.4	-169.1	511.7	8.18	8.18	0.00	
7,116.0	86.00	334.90	6,751.4	5,476.4	514.3	-182.8	543.6	2.67	2.50	0.94	
7,178.0	87.20	335.00	6,755.1	5,480.1	570.3	-209.0	605.5	1.94	1.94	0.16	
7,272.0	89.40	334.80	6,757.9	5,482.9	655.4	-248.8	699.5	2.35	2.34	-0.21	
- Diminis	Concoloditio	242 AU. + 14									Panaluas
7,367.0	89.60	334.10		5,483.7	741.1	-289.8	794.4	0.77		-0.74	Received
7,461.0	91.30	335.00		5,483.0	826.0	-330.2	888.4	2.05			ice of Oil 8
7,556.0	91.10	332.70		5,481.0	911.2	-372.0	983.4		-0.21	-2.42	
7,650.0	91.60	332.60		5,478.8	994.7	-415.2	1,077.2		0.53	-0.11	OCT 0 8 201
7,744.0	92.00	334.80	6,750.8	5,475.8	1,078.9	-456.8	1,171.1	2.38	0.43	2.34	
7,838.0	91.90	333.90	6,747.6	5,472.6	1,163.6	-497.5	1,265.1	0.96	-0.11	-0.96	
7,933.0	92.10	334.50	6,744.3	5,469.3	1,249.1	-538.8	1,360.0	0.67	0.21	0.63	
8,027.0	91.70	332.60	6,741.2	5,466.2	1,333.2	-580.7	1,453.9	2.06	-0.43	-2.02	
8,122.0	92.40	335.50	6,737.8	5,462.8	1,418.6	-622.2	1,548.8	3.14	0.74	3.05	
8,216.0	91.60	333.90	6,734.5	5,459.5	1,503.5	-662.4	1,642.7	1.90	-0.85	-1.70	
8,310.0	91.40	333.90	6,732.0	5,457.0	1,587.9	-703.7	1,736.7	0.21	-0.21	0.00	
8,405.0	93.20	335.50	6,728.2	5,453.2	1,673.7	-744.3	1,831.6		1.89	1.68	
8,499.0	93.20	333.90	6,723.0	5,448.0	1,758.5	-784.4	1,925.4	1.70	0.00	-1.70	
	22.22			and and a	A TOTAL STOLEN						

8,593.0

8,688.0

8,782.0

8,877.0

8,971.0

9,066.0

9,161.0

9,255.0

9,350.0

93.30

93.10

90.70

91.40

91.80

92.00

92.00

90.90

91.80

337.20

335.80

331.80

334.30 336.60

336.20

335.90

333.40

336.20

1,844.0

1,930.9

2,015.2

2,099.9

2,185.3

2,272.3

2,359.1

2,444.0

2,530.0

-823.2

-861.0

-902.5

-945.5

-984.6

-1,022.6

-1,061.1

-1,101.4

-1,141.8

2,019.3

2,114.1

2,208.0

2,302.9

2,396.8

2,491.8

2,586.7

2,680.7

2,775.6

3.51 0.11

1.49 -0.21

4.96 -2.55

2.73 0.74

2.48 0.43

0.47 0.21

0.32 0.00

2.90 -1.17

3.10 0.95

6,717.6 5,442.6

6,712.3 5,437.3

6,709.2 5,434.2

6,707.5 5,432.5

6,704.9 5,429.9

6,701.7 5,426.7

6,698.4 5,423.4

6,696.0 5,421.0

6,693.8 5,418.8

COMPASS 5000.1 Build 73

3.51

-1.47

-4.26

2.63

2.45

-0.42

-0.32

-2.66

2.95

### 17.06503

#### PHOENIX TECHNOLOGY SERVICES

PHX Survey Report



Database: Company: Project: Site: Nell: Nellbore: Design:		inger of ser till Following Hon Markanger Hongel Schöft			Local Co-ordin TVD Reference MD Reference: North Referenc Survey Calcula	e:				÷.
Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100us	Rate
9,445.0	90.60	334.80	6,691.8	5,416.8	2,616.4	-1,181.2	2,870.6	1.94	-1.26	-1.47
9,539.0	90.50	334.70	6,690.9	5,415.9	2,701.4	-1,221.3	2,964.6	0.15	-0.11	-0.11
9,634.0	90.40	334.20	6,690.1	5,415.1	2,787.1	-1,262.2	3,059.6	0.54	-0.11	-0.53
9,728.0	91.20	336.20	6,688.8	5,413.8	2,872.4	-1,301.7	3,153.6	2.29	0.85	2.13
9,822.0	90.90	335.80		5,412.1	2,958.3	-1,339.9	3,247.5		-0.32	-0.43
9,916.0	91.30	336.90	6,685.3	5,410.3	3,044.4	-1,377.6	3,341.5	1.24	0.43	1.17
10,010.0	91.80	337.70	6,682.8	5,407.8	3,131.0	-1,413.9	3,435.4	1.00	0.53	0.85
10,105.0	91.30	335.40	6,680.2	5,405.2	3,218.2	-1,451.6	3,530.3	2.48	-0.53	-2.42
10,199.0	90.80	332.60	6 678 5	5,403.5	3,302.6	-1,492.8	3,624.3	3.03	-0.53	-2.98
10,294.0	91.60	336.30		5,401.5	3,388.3	-1,533.8	3,719.2		0.84	
10,388.0	91.50	335.10		5,398.9	3,473.9	-1,572.5	3,813.2		-0.11	3.89 -1.28 Received
10,483.0	91.00	333.90		5,396.9	3,559.7	-1.613.4	3,908.2		-0.53	OFFICE OF OIL & C
10,577.0	91.10	336.80		5,395.1	3,645.1	-1,652.5	4,002.1		0.11	-1.28 Received Office of Oil & G 1.18 CT 0 8 2015
10,672.0	91.10	337.90	6 668 3	5,393.3	3,732.7	-1,689.1	4,097.1	1.16	0.00	1 DCT 0 8 2015
10,072.0	91.30	339.60		5,391.3	3,821.3	-1,723.5	4,191.9		0.21	1.79
10,862.0	91.20	339.00		5,389.2	3,909.7	-1,758.1	4,191.9		-0.11	-2.00
10,956.0	91.00	337.40		5,387.4	3,996.6	-1,794.0	4,280.7		-0.21	-0.32
11,051.0	90.40	335.90		5,386.3	4,083.8	-1,831.7	4,475.6		-0.63	-1.58
	24 52	000.00	C 050 7	5 004 7	1 100 7	4 000 7	1 500 5	1.05	4.47	0.40
11,145.0	91.50	336.30		5,384.7	4,169.7	-1,869.7	4,569.5		1.17	0.43
11,239.0	91.10	335.80		5,382.6	4,255.6	-1,907.9	4,663.5		-0.43	-0.53
11,334.0	90.30	332.90		5,381.4 5,379.3	4,341.2	-1,949.0 -1,991.8	4,758.5		-0.84	-3.05 0.00
11,428.0	92.30	332.90			4,424.9		4,852.4		2.13	
11,523.0	92.20	332.60	0,050.0	5,375.6	4,509.3	-2,035.3	4,947.2	0.55	-0.11	-0.32
11,617.0	92.50	332.00	6,646.7	5,371.7	4,592.4	-2,078.9	5,041.0	0.71	0.32	-0.64
11,712.0	90.70	332.30	6,644.1	5,369.1	4,676.4	-2,123.3	5,135.8	1.92	-1.89	0.32
11,806.0	90.50	331.80	6,643,1	5,368.1	4,759.4	-2,167.3	5,229.6	0.57	-0.21	-0.53
11,901.0	90.00	331.10	6,642.7	5,367.7	4,842.8	-2,212.8	5,324.4	0.91	-0.53	-0.74
11,995.0	90.10	334.40	6,642.6	5,367.6	4,926.4	-2,255.8	5,418.3	3.51	0.11	3.51
12,090.0	90.20	335.20	6,642.3	5,367.3	5,012.4	-2,296.2	5,513.3	0.85	0.11	0.84
12,184.0	89.90	334.00	6,642.3	5,367.3	5,097.3	-2,336.6	5,607.3	1.32	-0.32	-1.28
12,279.0	90.30	333.20	6,642.1	5,367.1	5,182.4	-2,378.8	5,702.2	0.94	0.42	-0.84
12,373.0	90.00	335.60		5,366.8	5,267.1	-2,419.4	5,796.2	2.57	-0.32	2.55
12,468.0	89.30	335.50		5,367.4	5,353.6	-2,458.7	5,891.2	0.74	-0.74	-0.11
12,563.0	88.40	332.90	6,644.3	5,369.3	5,439,1	-2,500.1	5,986.2	2.90	-0.95	-2.74
12,657.0	89.00	336.00		5,371.5	5,523.9	-2,540.6	6,080.1		0.64	3.30
12,752.0	88.80	334.90		5,373.3	5,610.3	-2,580.0	6,175.1		-0.21	-1.16
12,846.0	90.30	336.60		5,374.0	5,696.0	-2,618.7	6,269.1		1.60	1.81
12,940.0	90.20	335.40		5,373.6	5,781.9	-2,656.9	6,363.1		-0.11	-1.28
13,035.0	90.20	335.80	6,648.3	5,373.3	5,868.4	-2,696.1	6,458.1	0.42	0.00	0.42
13,129.0	90.20	335.50		5,373.0	5,954.0	-2,734.9	6,552.1		0.00	-0.32
13,224.0	90.10	334.80		5,372.7	6,040.2	-2,774.8	6,647.1		-0.11	-0.74
13,318.0	90.10	333,50		5,372.5	6,124.8	-2,815.8	6,741.1		0.00	-1.38
13,413.0	88.40	335.10		5,373.8	6,210.4	-2,857.0	6,836.0		-1.79	1.68

COMPASS 5000.1 Build 73





PHX Survey Report



atabase: ompany: roject: ite: /ell: /ellbore: esign:						Frictigation Marcellas TVD Reference:   Hoge Soun W, VVV Grid MD Reference:   Hoge Soun W, VVV Grid North Reference:   Hoge Sounty 513183 North Reference:   Weilsone Survey Calculation Method:						Sile Duadridge Caulty 9394557 Kfol(2) & 1275 Gush Kalgets & 1275 dush Gris Menimum Gutwages				
irvey																
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	Subsea Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)						
13,508.0	88.40	335.60	6,651.4	5,376.4	6,296.7	-2,896.6	6,931.0	0.53	0.00	0.53						
13,603.0	88.30	335.30	6,654.2	5,379.2	6,383.1	-2,936.0	7,025.9	0.33	-0.11	-0.32						
13,697.0	88.00	333.90	6,657.2	5,382.2	6,467.9	-2,976.3	7,119.9	1.52	-0.32	-1.49						
13,791.0	88.10	333.50	6,660.4	5,385.4	6,552.2	-3,018.0	7,213.8	0.44	0.11	-0.43						
13,886.0	88.60	336.50	6,663.1	5,388.1	6,638.2	-3,058.1	7,308.7	3.20	0.53	3.16						
13,980.0	90.80	336.90	6,663.6	5,388.6	6,724.5	-3,095.3	7,402.7	2.38	2.34	0.43						
14,075.0	91.70	335.90	6,661.6	5,386.6	6,811.6	-3,133.3	7,497.7	1.42	0.95	-1.05						
14,169.0	91.40	335.20	6,659.0	5,384.0	6,897.1	-3,172.2	7,591.6	0.81	-0.32	-0.74						
14,264.0	90.90	334.60	6,657.1	5,382.1	6,983.1	-3,212.5	7,686.6	0.82	-0.53	-0.63						
14,358.0	90.30	334.10	6,656.1	5,381.1	7,067.9	-3,253.2	7,780.6	0.83	-0.64	-0.53						
14,452.0	89.90	334.60	6,656.0	5,381.0	7,152.6	-3,293.9	7,874.6	0.68	-0.43	0.53						
14,546.0	88.00	336.00	6,657.7	5,382.7	7,238.0	-3,333.1	7,968.6	2.51	-2.02	1.49						
14,641.0	88.00	336.30	6,661.0	5,386.0	7,324.8	-3,371.5	8,063.5	0.32	0.00	0.32						
	vey=1462 M															
14,662.0	88.10	336.10	6,661.7	5,386.7	7,344.0	-3,380.0	8,084.5	1.06	0.48	-0.95						
	1710-14720' N															
14,720.0	88.10	336.10	6,663.6	5,388.6	7,397.0	-3,403.5	8,142.4	0.00	0.00	0.00						

Measured	Vertical	Local Cool	rdinates	
Depth (usft)	Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
5,410.0	5,401.4	158.2	-160.5	Plan Tie In-5410' MD
5,747.0	5,725.6	110.4	-106.7	KOP=5747' MD
7,272.0	6,757.9	655.4	-248.8	LP=7272' MD/ 6758' TVD
7,367.0	6,758.7	741.1	-289.8	Deepest Point of Well=7367' MD/ 6759' TVD
14,662.0	6,661.7	7,344.0	-3,380.0	Final Survey=14662' MD/ 6662' TVD
14,720.0	6,663.6	7,397.0	-3,403.5	Projected TD=14720' MD/6664' TVD

Checked By: \_\_\_\_\_ Date: \_\_\_\_\_ Received Office of Oil & Gas DCT 0 8 2015

