



HOBBS OCD

APR 21 2016

RECEIVED

COG Production, LLC

Lea County, NM (NAD27 NME)

Windward Federal

#5H

OH

Design #1

Anticollision Report

01 February, 2016

APR 22 2016

Reference	Design #1				
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria				
Interpolation Method:	MD Interval 10.0usft	Error Model:	ISCWSA		
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D		
Results Limited by:	Maximum separation factor of 10.00	Error Surface:	Circular Conic		
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied		

Survey Tool Program	Date 1/31/2016				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.0	19,062.0	Design #1 (OH)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
King Tut Federal						
#1H - OH - OH	13,704.2	12,755.4	1,594.1	1,425.7	9.467	CC
#1H - OH - OH	19,062.0	18,079.1	1,668.7	1,312.2	4.681	ES, SF
Red Head 31 Federal #1H - OH - OH	14,481.9	9,245.1	613.1	494.2	5.157	CC
Red Head 31 Federal #1H - OH - OH	14,490.0	9,245.1	613.1	494.1	5.152	ES
Red Head 31 Federal #1H - OH - OH	14,540.0	9,245.5	615.8	495.9	5.136	SF
Windward Federal						
#1H - OH - OH	8,852.6	8,856.5	83.0	44.6	2.160	CC
#1H - OH - OH	8,860.0	8,863.5	83.1	44.6	2.159	ES, SF

Offset Design														Offset Site Error: 2.0 usft
Survey Program: 211- King Tut Federal - #1H - OH - OH														Offset Well Error: 0.0 usft
Reference	Offset	Semi Major Axis		Distance										Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	Offset Wellbore Centre +E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
13,420.0	9,261.9	12,578.1	8,396.7	80.7	79.7	-57.06	-4,472.9	1,170.5	1,603.5	1,443.1	160.39	9.998		
13,430.0	9,261.9	12,584.6	8,396.8	80.8	79.8	-57.06	-4,479.4	1,170.0	1,602.8	1,442.2	160.67	9.976		
13,440.0	9,261.9	12,591.1	8,396.8	81.0	80.0	-57.05	-4,485.9	1,169.6	1,602.2	1,441.3	160.96	9.954		
13,450.0	9,261.8	12,597.7	8,396.9	81.2	80.1	-57.04	-4,492.5	1,169.3	1,601.6	1,440.4	161.24	9.933		
13,460.0	9,261.8	12,604.2	8,396.9	81.4	80.2	-57.04	-4,499.0	1,168.9	1,601.0	1,439.5	161.53	9.912		
13,470.0	9,261.8	12,610.7	8,396.9	81.5	80.3	-57.03	-4,505.5	1,168.5	1,600.5	1,438.7	161.81	9.891		
13,480.0	9,261.8	12,617.3	8,397.0	81.7	80.4	-57.02	-4,512.0	1,168.2	1,599.9	1,437.8	162.10	9.870		
13,490.0	9,261.8	12,623.8	8,397.0	81.9	80.5	-57.02	-4,518.6	1,167.8	1,599.4	1,437.0	162.39	9.849		
13,500.0	9,261.7	12,642.0	8,397.0	82.1	80.8	-57.00	-4,536.7	1,166.9	1,599.0	1,436.1	162.87	9.818		
13,510.0	9,261.7	12,642.0	8,397.0	82.2	80.8	-57.00	-4,536.7	1,166.9	1,598.5	1,435.4	163.04	9.804		
13,520.0	9,261.7	12,642.0	8,397.0	82.4	80.8	-57.00	-4,536.7	1,166.9	1,598.0	1,434.8	163.22	9.790		
13,530.0	9,261.7	12,642.0	8,397.0	82.6	80.8	-57.00	-4,536.7	1,166.9	1,597.6	1,434.2	163.40	9.777		
13,540.0	9,261.6	12,642.0	8,397.0	82.8	80.8	-57.00	-4,536.7	1,166.9	1,597.2	1,433.7	163.57	9.765		
13,550.0	9,261.6	12,661.4	8,396.9	82.9	81.1	-56.98	-4,556.1	1,166.1	1,596.8	1,432.7	164.07	9.732		
13,560.0	9,261.6	12,667.4	8,396.9	83.1	81.2	-56.97	-4,562.1	1,165.8	1,596.4	1,432.1	164.35	9.713		
13,570.0	9,261.6	12,673.4	8,396.9	83.3	81.3	-56.97	-4,568.1	1,165.6	1,596.1	1,431.5	164.63	9.695		
13,580.0	9,261.6	12,679.4	8,396.8	83.5	81.4	-56.96	-4,574.1	1,165.4	1,595.8	1,430.9	164.91	9.677		
13,590.0	9,261.5	12,685.4	8,396.8	83.7	81.5	-56.96	-4,580.1	1,165.2	1,595.5	1,430.3	165.18	9.659		
13,600.0	9,261.5	12,691.5	8,396.7	83.8	81.6	-56.95	-4,586.2	1,165.1	1,595.2	1,429.8	165.46	9.641		
13,610.0	9,261.5	12,697.5	8,396.6	84.0	81.7	-56.94	-4,592.2	1,164.9	1,595.0	1,429.3	165.74	9.624		
13,620.0	9,261.5	12,703.5	8,396.6	84.2	81.8	-56.94	-4,598.2	1,164.7	1,594.8	1,428.8	166.02	9.606		
13,630.0	9,261.5	12,709.5	8,396.5	84.4	81.9	-56.93	-4,604.2	1,164.6	1,594.6	1,428.3	166.30	9.589		
13,640.0	9,261.4	12,715.6	8,396.4	84.5	82.0	-56.93	-4,610.2	1,164.5	1,594.5	1,427.9	166.57	9.572		
13,644.2	9,261.4	12,718.1	8,396.4	84.6	82.1	-56.93	-4,612.8	1,164.4	1,594.4	1,427.7	166.69	9.565		
13,650.0	9,261.4	12,737.0	8,396.1	84.7	82.4	-56.91	-4,631.7	1,164.2	1,594.5	1,427.4	167.11	9.541		
13,660.0	9,261.4	12,737.0	8,396.1	84.9	82.4	-56.91	-4,631.7	1,164.2	1,594.3	1,427.0	167.29	9.530		
13,670.0	9,261.4	12,737.0	8,396.1	85.1	82.4	-56.91	-4,631.7	1,164.2	1,594.2	1,426.7	167.47	9.519		
13,680.0	9,261.4	12,737.0	8,396.1	85.2	82.4	-56.91	-4,631.7	1,164.2	1,594.1	1,426.5	167.64	9.509		
13,684.3	9,261.3	12,737.0	8,396.1	85.3	82.4	-56.91	-4,631.7	1,164.2	1,594.1	1,426.4	167.72	9.505		
13,690.0	9,261.3	12,737.0	8,396.1	85.4	82.4	-56.91	-4,631.7	1,164.2	1,594.1	1,426.3	167.82	9.499		
13,700.0	9,261.3	12,737.0	8,396.1	85.6	82.4	-56.91	-4,631.7	1,164.2	1,594.2	1,426.2	168.00	9.489		
13,704.2	9,261.3	12,755.4	8,395.7	85.7	82.7	-56.90	-4,650.1	1,164.0	1,594.1	1,425.7	168.38	9.467	CC	
13,710.0	9,261.3	12,759.2	8,395.7	85.8	82.8	-56.89	-4,653.9	1,164.0	1,594.1	1,425.5	168.55	9.458		

Offset Design King Tut Federal - #1H - OH - OH												Offset Site Error:	2.0 usft
Survey/Program: 211												Offset Well Error:	0.0 usft
Reference		Offset		Semi-Major Axis			Distance			Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Footface (ft)	Offset Wellbore Centre (usft)	N-S (usft)	E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
13,720.0	9,261.3	12,765.6	8,395.5	85.9	82.9	-56.89	-4,660.3	1,164.0	1,594.1	1,425.3	168.84	9.442	
13,730.0	9,261.2	12,772.1	8,395.4	86.1	83.0	-56.89	-4,666.7	1,164.0	1,594.2	1,425.0	169.12	9.426	
13,740.0	9,261.2	12,778.5	8,395.2	86.3	83.1	-56.88	-4,673.2	1,164.0	1,594.2	1,424.8	169.41	9.411	
13,750.0	9,261.2	12,785.0	8,395.1	86.5	83.2	-56.88	-4,679.6	1,164.0	1,594.3	1,424.6	169.70	9.395	
13,760.0	9,261.2	12,791.4	8,394.9	86.7	83.3	-56.87	-4,686.1	1,164.1	1,594.5	1,424.5	169.98	9.380	
13,770.0	9,261.2	12,797.9	8,394.7	86.8	83.4	-56.87	-4,692.5	1,164.1	1,594.6	1,424.3	170.27	9.365	
13,780.0	9,261.1	12,804.3	8,394.6	87.0	83.5	-56.86	-4,699.0	1,164.2	1,594.8	1,424.2	170.56	9.350	
13,790.0	9,261.1	12,810.8	8,394.4	87.2	83.7	-56.86	-4,705.4	1,164.3	1,595.0	1,424.1	170.84	9.336	
13,800.0	9,261.1	12,813.0	8,393.8	87.4	84.0	-56.85	-4,725.6	1,164.6	1,595.3	1,423.9	171.36	9.309	
13,810.0	9,261.1	12,831.0	8,393.8	87.5	84.0	-56.85	-4,725.6	1,164.6	1,595.4	1,423.9	171.54	9.301	
13,820.0	9,261.1	12,831.0	8,393.8	87.7	84.0	-56.85	-4,725.6	1,164.6	1,595.7	1,423.9	171.72	9.292	
13,830.0	9,261.0	12,831.0	8,393.8	87.9	84.0	-56.85	-4,725.6	1,164.6	1,595.9	1,424.1	171.89	9.284	
13,840.0	9,261.0	12,831.0	8,393.8	88.1	84.0	-56.85	-4,725.6	1,164.6	1,596.3	1,424.2	172.07	9.277	
13,850.0	9,261.0	12,850.8	8,393.1	88.2	84.3	-56.83	-4,745.4	1,165.0	1,596.5	1,424.0	172.59	9.251	
13,860.0	9,261.0	12,857.7	8,392.9	88.4	84.5	-56.83	-4,752.3	1,165.2	1,596.9	1,424.0	172.88	9.237	
13,870.0	9,261.0	12,864.6	8,392.7	88.6	84.6	-56.83	-4,759.2	1,165.4	1,597.2	1,424.1	173.18	9.223	
13,880.0	9,260.9	12,871.5	8,392.4	88.8	84.7	-56.82	-4,766.1	1,165.6	1,597.6	1,424.1	173.48	9.209	
13,890.0	9,260.9	12,878.4	8,392.2	89.0	84.8	-56.82	-4,773.0	1,165.8	1,598.0	1,424.2	173.77	9.196	
13,900.0	9,260.9	12,885.4	8,391.9	89.1	84.9	-56.81	-4,780.0	1,166.0	1,598.4	1,424.3	174.07	9.183	
13,910.0	9,260.9	12,892.3	8,391.7	89.3	85.0	-56.81	-4,786.9	1,166.3	1,598.8	1,424.5	174.36	9.170	
13,920.0	9,260.8	12,899.2	8,391.4	89.5	85.2	-56.81	-4,793.8	1,166.5	1,599.3	1,424.6	174.66	9.157	
13,930.0	9,260.8	12,906.1	8,391.1	89.7	85.3	-56.80	-4,800.7	1,166.8	1,599.8	1,424.8	174.95	9.144	
13,940.0	9,260.8	12,925.0	8,390.3	89.8	85.6	-56.79	-4,819.5	1,167.5	1,600.3	1,424.9	175.46	9.121	
13,950.0	9,260.8	12,925.0	8,390.3	90.0	85.6	-56.79	-4,819.5	1,167.5	1,600.8	1,425.1	175.63	9.114	
13,960.0	9,260.8	12,928.2	8,390.2	90.2	85.7	-56.79	-4,822.7	1,167.7	1,601.3	1,425.4	175.86	9.105	
13,970.0	9,260.7	12,940.1	8,389.8	90.4	85.9	-56.79	-4,834.6	1,168.2	1,601.8	1,425.6	176.25	9.088	
13,980.0	9,260.7	12,952.1	8,389.4	90.6	86.1	-56.79	-4,846.6	1,168.8	1,602.3	1,425.7	176.63	9.072	
13,990.0	9,260.7	12,964.1	8,389.1	90.7	86.3	-56.79	-4,858.5	1,169.4	1,602.8	1,425.8	177.01	9.055	
14,000.0	9,260.7	12,976.0	8,388.9	90.9	86.5	-56.80	-4,870.5	1,170.0	1,603.3	1,425.9	177.39	9.038	
14,010.0	9,260.7	12,988.0	8,388.7	91.1	86.7	-56.80	-4,882.4	1,170.7	1,603.8	1,426.0	177.77	9.022	
14,020.0	9,260.6	13,000.0	8,388.6	91.3	86.9	-56.81	-4,894.4	1,171.4	1,604.2	1,426.1	178.15	9.005	
14,030.0	9,260.6	13,011.9	8,388.6	91.4	87.1	-56.83	-4,906.3	1,172.1	1,604.7	1,426.2	178.53	8.988	
14,040.0	9,260.6	13,019.0	8,388.6	91.6	87.2	-56.84	-4,913.4	1,172.5	1,605.1	1,426.3	178.83	8.976	
14,050.0	9,260.6	13,030.5	8,388.7	91.8	87.4	-56.85	-4,924.9	1,173.3	1,605.6	1,426.4	179.21	8.959	
14,060.0	9,260.6	13,038.7	8,388.7	92.0	87.5	-56.86	-4,933.0	1,173.8	1,606.0	1,426.5	179.52	8.946	
14,070.0	9,260.5	13,046.9	8,388.7	92.2	87.7	-56.87	-4,941.2	1,174.3	1,606.5	1,426.7	179.84	8.933	
14,080.0	9,260.5	13,055.0	8,388.7	92.3	87.8	-56.88	-4,949.3	1,174.8	1,607.0	1,426.8	180.16	8.920	
14,090.0	9,260.5	13,063.2	8,388.7	92.5	88.0	-56.89	-4,957.5	1,175.4	1,607.5	1,427.0	180.48	8.907	
14,100.0	9,260.5	13,071.4	8,388.7	92.7	88.1	-56.90	-4,965.6	1,175.9	1,608.0	1,427.2	180.80	8.894	
14,110.0	9,260.4	13,079.6	8,388.6	92.9	88.2	-56.91	-4,973.8	1,176.4	1,608.5	1,427.4	181.11	8.881	
14,120.0	9,260.4	13,087.7	8,388.6	93.0	88.4	-56.92	-4,982.0	1,177.0	1,609.0	1,427.6	181.43	8.868	
14,130.0	9,260.4	13,095.9	8,388.5	93.2	88.5	-56.93	-4,990.1	1,177.5	1,609.5	1,427.8	181.75	8.856	
14,140.0	9,260.4	13,104.1	8,388.5	93.4	88.7	-56.93	-4,998.3	1,178.1	1,610.1	1,428.0	182.07	8.843	
14,150.0	9,260.4	13,113.0	8,388.4	93.6	88.8	-56.94	-5,007.2	1,178.7	1,610.7	1,428.3	182.40	8.830	
14,160.0	9,260.3	13,113.0	8,388.4	93.8	88.8	-56.94	-5,007.2	1,178.7	1,611.2	1,428.7	182.58	8.825	
14,170.0	9,260.3	13,127.7	8,388.2	93.9	89.1	-56.96	-5,021.8	1,179.7	1,611.8	1,428.8	183.01	8.807	
14,180.0	9,260.3	13,135.4	8,388.1	94.1	89.2	-56.96	-5,029.5	1,180.2	1,612.4	1,429.1	183.32	8.796	
14,190.0	9,260.3	13,143.1	8,388.0	94.3	89.3	-56.97	-5,037.2	1,180.8	1,613.0	1,429.4	183.63	8.784	
14,200.0	9,260.3	13,150.8	8,387.8	94.5	89.5	-56.98	-5,044.9	1,181.3	1,613.6	1,429.7	183.94	8.772	
14,210.0	9,260.2	13,158.5	8,387.7	94.6	89.6	-56.98	-5,052.5	1,181.9	1,614.3	1,430.0	184.26	8.761	
14,220.0	9,260.2	13,166.2	8,387.5	94.8	89.7	-56.99	-5,060.2	1,182.4	1,614.9	1,430.4	184.57	8.750	
14,230.0	9,260.2	13,173.9	8,387.3	95.0	89.9	-56.99	-5,067.9	1,183.0	1,615.6	1,430.7	184.88	8.739	
14,240.0	9,260.2	13,181.6	8,387.1	95.2	90.0	-57.00	-5,075.5	1,183.5	1,616.3	1,431.1	185.19	8.728	
14,250.0	9,260.2	13,189.3	8,386.9	95.4	90.2	-57.00	-5,083.2	1,184.1	1,617.0	1,431.5	185.51	8.717	
14,260.0	9,260.1	13,207.0	8,386.4	95.5	90.5	-57.01	-5,100.9	1,185.4	1,617.8	1,431.8	185.99	8.698	
14,270.0	9,260.1	13,207.0	8,386.4	95.7	90.5	-57.01	-5,100.9	1,185.4	1,618.4	1,432.3	186.17	8.693	
14,280.0	9,260.1	13,218.7	8,386.0	95.9	90.7	-57.02	-5,112.5	1,186.3	1,619.2	1,432.6	186.55	8.680	
14,290.0	9,260.1	13,235.5	8,385.6	96.1	91.0	-57.02	-5,129.4	1,187.5	1,619.9	1,432.8	187.02	8.662	
14,300.0	9,260.0	13,252.4	8,385.1	96.2	91.2	-57.03	-5,146.2	1,188.6	1,620.5	1,433.0	187.48	8.643	
14,310.0	9,260.0	13,269.3	8,384.7	96.4	91.5	-57.04	-5,163.0	1,189.7	1,621.1	1,433.1	187.95	8.625	
14,320.0	9,260.0	13,286.2	8,384.4	96.6	91.8	-57.05	-5,179.9	1,190.7	1,621.7	1,433.2	188.42	8.607	
14,330.0	9,260.0	13,303.7	8,384.1	96.8	92.1	-57.06	-5,197.4	1,191.7	1,622.2	1,433.3	188.90	8.588	
14,340.0	9,260.0	13,326.1	8,383.8	97.0	92.5	-57.07	-5,219.7	1,192.9	1,622.6	1,433.2	189.45	8.565	
14,350.0	9,259.9	13,348.5	8,383.8	97.1	92.9	-57.09	-5,242.1	1,194.1	1,623.0	1,433.0	190.01	8.542	
14,360.0	9,259.9	13,370.8	8,383.9	97.3	93.2	-57.11	-5,264.4	1,195.1	1,623.3	1,432.7	190.56	8.519	
14,370.0	9,259.9	13,393.2	8,384.3	97.5	93.6	-57.14	-5,286.8	1,196.1	1,623.5	1,432.4	191.12	8.495	

Offset Design King Tut Federal - #1H - OH - OH											Offset Site Error:	2.0 usft	
Survey Program: 211											Offset Well Error:	0.0 usft	
Reference		Offset		Semi-Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)			
14,380.0	9,259.9	13,403.4	8,384.5	97.7	93.8	-57.16	-5,296.9	1,196.6	1,623.7	1,432.3	191.47	8.480	
14,390.0	9,259.9	13,412.4	8,384.7	97.8	94.0	-57.17	-5,306.0	1,197.0	1,623.9	1,432.1	191.80	8.467	
14,400.0	9,259.8	13,421.5	8,384.8	98.0	94.1	-57.18	-5,315.1	1,197.3	1,624.1	1,432.0	192.13	8.453	
14,410.0	9,259.8	13,430.6	8,385.0	98.2	94.3	-57.19	-5,324.1	1,197.7	1,624.3	1,431.8	192.47	8.439	
14,420.0	9,259.8	13,439.7	8,385.1	98.4	94.4	-57.20	-5,333.2	1,198.0	1,624.5	1,431.7	192.80	8.426	
14,430.0	9,259.8	13,448.8	8,385.1	98.6	94.6	-57.21	-5,342.3	1,198.4	1,624.7	1,431.6	193.13	8.412	
14,440.0	9,259.7	13,457.9	8,385.2	98.7	94.7	-57.22	-5,351.4	1,198.7	1,624.9	1,431.5	193.47	8.399	
14,450.0	9,259.7	13,467.0	8,385.2	98.9	94.9	-57.22	-5,360.5	1,199.0	1,625.2	1,431.4	193.80	8.386	
14,460.0	9,259.7	13,476.1	8,385.2	99.1	95.0	-57.23	-5,369.6	1,199.3	1,625.4	1,431.3	194.13	8.373	
14,470.0	9,259.7	13,485.2	8,385.1	99.3	95.2	-57.23	-5,378.7	1,199.6	1,625.6	1,431.2	194.47	8.359	
14,480.0	9,259.7	13,496.1	8,385.1	99.5	95.4	-57.23	-5,389.6	1,200.0	1,625.9	1,431.0	194.83	8.345	
14,490.0	9,259.6	13,509.0	8,385.0	99.6	95.6	-57.24	-5,402.5	1,200.4	1,626.1	1,430.9	195.23	8.329	
14,500.0	9,259.6	13,521.9	8,384.9	99.8	95.8	-57.24	-5,415.4	1,200.7	1,626.3	1,430.7	195.63	8.313	
14,510.0	9,259.6	13,534.9	8,384.8	100.0	96.0	-57.25	-5,428.3	1,201.1	1,626.5	1,430.4	196.03	8.297	
14,520.0	9,259.6	13,547.8	8,384.8	100.2	96.3	-57.25	-5,441.3	1,201.4	1,626.6	1,430.2	196.43	8.281	
14,530.0	9,259.6	13,560.7	8,384.7	100.3	96.5	-57.25	-5,454.2	1,201.7	1,626.8	1,430.0	196.83	8.265	
14,540.0	9,259.5	13,573.7	8,384.7	100.5	96.7	-57.26	-5,467.1	1,202.0	1,626.9	1,429.7	197.23	8.249	
14,550.0	9,259.5	13,584.0	8,384.7	100.7	96.9	-57.26	-5,477.4	1,202.2	1,627.0	1,429.5	197.58	8.235	
14,560.0	9,259.5	13,594.3	8,384.7	100.9	97.1	-57.26	-5,487.8	1,202.4	1,627.2	1,429.2	197.94	8.221	
14,570.0	9,259.5	13,602.9	8,384.6	101.1	97.2	-57.26	-5,496.4	1,202.5	1,627.3	1,429.0	198.26	8.208	
14,580.0	9,259.5	13,611.5	8,384.6	101.2	97.3	-57.27	-5,505.0	1,202.7	1,627.4	1,428.8	198.59	8.195	
14,590.0	9,259.4	13,620.1	8,384.5	101.4	97.5	-57.27	-5,513.6	1,202.9	1,627.5	1,428.6	198.91	8.182	
14,600.0	9,259.4	13,628.7	8,384.4	101.6	97.6	-57.27	-5,522.1	1,203.0	1,627.7	1,428.5	199.24	8.170	
14,610.0	9,259.4	13,637.3	8,384.3	101.8	97.8	-57.27	-5,530.7	1,203.2	1,627.9	1,428.3	199.56	8.157	
14,620.0	9,259.4	13,645.9	8,384.2	102.0	97.9	-57.27	-5,539.3	1,203.4	1,628.0	1,428.1	199.89	8.145	
14,630.0	9,259.3	13,654.5	8,384.1	102.1	98.1	-57.27	-5,547.9	1,203.5	1,628.2	1,428.0	200.21	8.132	
14,640.0	9,259.3	13,663.1	8,384.0	102.3	98.2	-57.26	-5,556.5	1,203.7	1,628.4	1,427.8	200.54	8.120	
14,650.0	9,259.3	13,678.0	8,383.7	102.5	98.5	-57.26	-5,571.4	1,204.0	1,628.6	1,427.6	200.97	8.103	
14,660.0	9,259.3	13,681.5	8,383.6	102.7	98.5	-57.26	-5,574.9	1,204.0	1,628.8	1,427.6	201.21	8.095	
14,670.0	9,259.3	13,694.8	8,383.5	102.8	98.8	-57.26	-5,588.2	1,204.3	1,629.0	1,427.3	201.62	8.079	
14,680.0	9,259.2	13,708.1	8,383.3	103.0	99.0	-57.26	-5,601.5	1,204.6	1,629.1	1,427.1	202.02	8.064	
14,690.0	9,259.2	13,721.4	8,383.3	103.2	99.2	-57.27	-5,614.8	1,204.9	1,629.3	1,426.8	202.43	8.049	
14,700.0	9,259.2	13,734.6	8,383.4	103.4	99.5	-57.27	-5,628.0	1,205.3	1,629.4	1,426.6	202.83	8.033	
14,710.0	9,259.2	13,747.9	8,383.5	103.6	99.7	-57.28	-5,641.3	1,205.6	1,629.5	1,426.3	203.24	8.018	
14,720.0	9,259.2	13,761.2	8,383.8	103.7	99.9	-57.30	-5,654.6	1,206.0	1,629.6	1,426.0	203.64	8.002	
14,730.0	9,259.1	13,772.0	8,384.0	103.9	100.1	-57.31	-5,665.4	1,206.3	1,629.7	1,425.7	204.01	7.988	
14,740.0	9,259.1	13,772.0	8,384.0	104.1	100.1	-57.31	-5,665.4	1,206.3	1,629.8	1,425.6	204.19	7.982	
14,750.0	9,259.1	13,788.0	8,384.4	104.3	100.4	-57.33	-5,681.4	1,206.9	1,629.8	1,425.2	204.64	7.964	
14,760.0	9,259.1	13,795.3	8,384.6	104.5	100.5	-57.34	-5,688.7	1,207.1	1,629.9	1,425.0	204.94	7.953	
14,770.0	9,259.1	13,802.7	8,384.7	104.6	100.6	-57.35	-5,696.0	1,207.3	1,630.1	1,424.8	205.25	7.942	
14,780.0	9,259.0	13,810.0	8,384.8	104.8	100.7	-57.36	-5,703.4	1,207.6	1,630.2	1,424.6	205.55	7.931	
14,790.0	9,259.0	13,817.3	8,384.9	105.0	100.9	-57.36	-5,710.7	1,207.8	1,630.3	1,424.5	205.86	7.920	
14,800.0	9,259.0	13,824.7	8,385.0	105.2	101.0	-57.37	-5,718.0	1,208.1	1,630.5	1,424.4	206.16	7.909	
14,810.0	9,259.0	13,832.0	8,385.1	105.3	101.1	-57.38	-5,725.3	1,208.4	1,630.7	1,424.2	206.47	7.898	
14,820.0	9,258.9	13,839.3	8,385.1	105.5	101.2	-57.38	-5,732.7	1,208.6	1,630.9	1,424.1	206.77	7.888	
14,830.0	9,258.9	13,846.7	8,385.2	105.7	101.4	-57.39	-5,740.0	1,208.9	1,631.1	1,424.0	207.08	7.877	
14,840.0	9,258.9	13,866.0	8,385.2	105.9	101.7	-57.40	-5,759.3	1,209.6	1,631.4	1,423.8	207.58	7.859	
14,850.0	9,258.9	13,866.0	8,385.2	106.1	101.7	-57.40	-5,759.3	1,209.6	1,631.6	1,423.9	207.76	7.853	
14,860.0	9,258.9	13,866.0	8,385.2	106.2	101.7	-57.40	-5,759.3	1,209.6	1,631.9	1,423.9	207.94	7.848	
14,870.0	9,258.8	13,866.0	8,385.2	106.4	101.7	-57.40	-5,759.3	1,209.6	1,632.2	1,424.1	208.12	7.843	
14,880.0	9,258.8	13,884.3	8,385.1	106.6	102.0	-57.41	-5,777.6	1,210.4	1,632.5	1,423.8	208.62	7.825	
14,890.0	9,258.8	13,892.0	8,385.1	106.8	102.2	-57.42	-5,785.3	1,210.7	1,632.8	1,423.8	208.93	7.815	
14,900.0	9,258.8	13,899.7	8,385.0	107.0	102.3	-57.42	-5,793.0	1,211.0	1,633.1	1,423.8	209.25	7.805	
14,910.0	9,258.8	13,907.5	8,385.0	107.1	102.4	-57.43	-5,800.7	1,211.3	1,633.4	1,423.9	209.56	7.795	
14,920.0	9,258.7	13,915.2	8,384.9	107.3	102.6	-57.43	-5,808.5	1,211.7	1,633.8	1,423.9	209.87	7.785	
14,930.0	9,258.7	13,922.9	8,384.9	107.5	102.7	-57.44	-5,816.2	1,212.0	1,634.1	1,424.0	210.19	7.775	
14,940.0	9,258.7	13,930.6	8,384.8	107.7	102.8	-57.44	-5,823.9	1,212.4	1,634.5	1,424.0	210.50	7.765	
14,950.0	9,258.7	13,938.4	8,384.7	107.9	103.0	-57.44	-5,831.6	1,212.7	1,634.9	1,424.1	210.82	7.755	
14,960.0	9,258.7	13,946.1	8,384.6	108.0	103.1	-57.45	-5,839.3	1,213.1	1,635.3	1,424.2	211.13	7.746	
14,970.0	9,258.6	13,960.0	8,384.4	108.2	103.3	-57.45	-5,853.2	1,213.8	1,635.8	1,424.2	211.55	7.732	
14,980.0	9,258.6	13,962.1	8,384.4	108.4	103.4	-57.46	-5,855.3	1,213.9	1,636.2	1,424.4	211.77	7.726	
14,990.0	9,258.6	13,972.9	8,384.3	108.6	103.6	-57.46	-5,866.1	1,214.5	1,636.6	1,424.5	212.13	7.715	
15,000.0	9,258.6	13,983.6	8,384.2	108.8	103.7	-57.47	-5,876.8	1,215.0	1,637.1	1,424.6	212.49	7.704	
15,010.0	9,258.5	13,994.4	8,384.1	108.9	103.9	-57.47	-5,887.5	1,215.6	1,637.5	1,424.6	212.86	7.693	
15,020.0	9,258.5	14,005.1	8,384.0	109.1	104.1	-57.48	-5,898.2	1,216.1	1,637.9	1,424.7	213.22	7.682	
15,030.0	9,258.5	14,015.8	8,383.9	109.3	104.3	-57.49	-5,909.0	1,216.7	1,638.3	1,424.7	213.59	7.671	

Offset Design King Tut Federal - #1H - OH - OH											Offset Site Error:	2.0 usft	
Survey Program: 211											Offset Well Error:	0.0 usft	
Reference		Offset		Semi-Major Axis		Highside Toothface (°)	Offset Wellbore Centre		Distance			Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
15,040.0	9,258.5	14,026.6	8,383.9	109.5	104.5	-57.50	-5,919.7	1,217.3	1,638.7	1,424.8	213.95	7.659	
15,050.0	9,258.5	14,037.3	8,383.9	109.6	104.7	-57.51	-5,930.4	1,217.9	1,639.1	1,424.8	214.31	7.648	
15,060.0	9,258.4	14,048.1	8,383.9	109.8	104.9	-57.52	-5,941.1	1,218.5	1,639.5	1,424.9	214.68	7.637	
15,070.0	9,258.4	14,054.0	8,383.9	110.0	105.0	-57.53	-5,947.1	1,218.8	1,640.0	1,425.0	214.96	7.629	
15,080.0	9,258.4	14,065.3	8,383.9	110.2	105.1	-57.54	-5,958.3	1,219.5	1,640.4	1,425.0	215.33	7.618	
15,090.0	9,258.4	14,073.0	8,383.9	110.4	105.3	-57.55	-5,966.1	1,219.9	1,640.8	1,425.1	215.64	7.609	
15,100.0	9,258.4	14,080.8	8,383.9	110.5	105.4	-57.56	-5,973.9	1,220.4	1,641.2	1,425.3	215.96	7.600	
15,110.0	9,258.3	14,088.6	8,383.9	110.7	105.5	-57.57	-5,981.6	1,220.9	1,641.7	1,425.4	216.27	7.591	
15,120.0	9,258.3	14,096.4	8,383.9	110.9	105.7	-57.57	-5,989.4	1,221.4	1,642.1	1,425.6	216.58	7.582	
15,130.0	9,258.3	14,104.2	8,384.0	111.1	105.8	-57.58	-5,997.2	1,221.9	1,642.6	1,425.7	216.89	7.573	
15,140.0	9,258.3	14,111.9	8,384.0	111.3	105.9	-57.59	-6,004.9	1,222.4	1,643.1	1,425.9	217.21	7.565	
15,150.0	9,258.3	14,119.7	8,384.0	111.4	106.1	-57.60	-6,012.7	1,222.9	1,643.6	1,426.1	217.52	7.556	
15,160.0	9,258.2	14,127.5	8,384.0	111.6	106.2	-57.61	-6,020.4	1,223.5	1,644.1	1,426.3	217.83	7.548	
15,170.0	9,258.2	14,135.3	8,384.0	111.8	106.3	-57.62	-6,028.2	1,224.0	1,644.7	1,426.5	218.14	7.539	
15,180.0	9,258.2	14,148.0	8,384.0	112.0	106.6	-57.64	-6,040.9	1,225.0	1,645.2	1,426.7	218.54	7.528	
15,190.0	9,258.2	14,154.1	8,384.0	112.2	106.7	-57.65	-6,047.0	1,225.4	1,645.8	1,427.0	218.83	7.521	
15,200.0	9,258.1	14,171.0	8,384.1	112.3	107.0	-57.68	-6,063.8	1,226.7	1,646.3	1,427.0	219.29	7.507	
15,210.0	9,258.1	14,187.9	8,384.3	112.5	107.2	-57.70	-6,080.7	1,227.8	1,646.8	1,427.0	219.76	7.493	
15,220.0	9,258.1	14,204.8	8,384.6	112.7	107.5	-57.73	-6,097.5	1,229.0	1,647.2	1,427.0	220.23	7.479	
15,230.0	9,258.1	14,221.7	8,384.9	112.9	107.8	-57.76	-6,114.4	1,230.1	1,647.6	1,426.9	220.70	7.465	
15,240.0	9,258.1	14,238.6	8,385.3	113.1	108.1	-57.79	-6,131.2	1,231.2	1,648.0	1,426.8	221.17	7.451	
15,250.0	9,258.0	14,242.0	8,385.3	113.2	108.2	-57.80	-6,134.6	1,231.4	1,648.3	1,426.9	221.41	7.445	
15,260.0	9,258.0	14,256.1	8,385.7	113.4	108.4	-57.82	-6,148.7	1,232.3	1,648.7	1,426.8	221.83	7.432	
15,270.0	9,258.0	14,263.9	8,385.9	113.6	108.6	-57.84	-6,156.5	1,232.8	1,649.0	1,426.9	222.15	7.423	
15,280.0	9,258.0	14,271.8	8,386.0	113.8	108.7	-57.85	-6,164.3	1,233.3	1,649.4	1,426.9	222.46	7.414	
15,290.0	9,258.0	14,279.6	8,386.2	114.0	108.8	-57.86	-6,172.2	1,233.8	1,649.8	1,427.0	222.78	7.406	
15,300.0	9,257.9	14,287.4	8,386.3	114.1	109.0	-57.88	-6,180.0	1,234.3	1,650.2	1,427.1	223.09	7.397	
15,310.0	9,257.9	14,295.3	8,386.4	114.3	109.1	-57.89	-6,187.8	1,234.9	1,650.6	1,427.2	223.41	7.388	
15,320.0	9,257.9	14,303.1	8,386.5	114.5	109.2	-57.90	-6,195.6	1,235.4	1,651.0	1,427.3	223.72	7.380	
15,330.0	9,257.9	14,311.0	8,386.6	114.7	109.4	-57.91	-6,203.5	1,235.9	1,651.5	1,427.4	224.04	7.371	
15,340.0	9,257.9	14,318.8	8,386.7	114.8	109.5	-57.92	-6,211.3	1,236.4	1,651.9	1,427.6	224.35	7.363	
15,350.0	9,257.8	14,336.0	8,386.8	115.0	109.8	-57.95	-6,228.4	1,237.6	1,652.4	1,427.6	224.83	7.350	
15,360.0	9,257.8	14,336.0	8,386.8	115.2	109.8	-57.95	-6,228.4	1,237.6	1,652.9	1,427.9	225.01	7.346	
15,370.0	9,257.8	14,336.0	8,386.8	115.4	109.8	-57.95	-6,228.4	1,237.6	1,653.4	1,428.2	225.19	7.342	
15,380.0	9,257.8	14,349.2	8,386.9	115.6	110.0	-57.97	-6,241.6	1,238.5	1,653.9	1,428.3	225.60	7.331	
15,390.0	9,257.7	14,356.5	8,386.9	115.7	110.2	-57.97	-6,248.9	1,239.0	1,654.4	1,428.5	225.91	7.323	
15,400.0	9,257.7	14,363.8	8,386.9	115.9	110.3	-57.98	-6,256.2	1,239.5	1,654.9	1,428.7	226.22	7.316	
15,410.0	9,257.7	14,371.2	8,386.8	116.1	110.4	-57.99	-6,263.5	1,240.0	1,655.5	1,429.0	226.52	7.308	
15,420.0	9,257.7	14,378.5	8,386.8	116.3	110.5	-58.00	-6,270.8	1,240.5	1,656.1	1,429.2	226.83	7.301	
15,430.0	9,257.7	14,385.8	8,386.7	116.5	110.7	-58.01	-6,278.1	1,241.1	1,656.7	1,429.5	227.14	7.293	
15,440.0	9,257.6	14,393.1	8,386.6	116.6	110.8	-58.01	-6,285.4	1,241.6	1,657.3	1,429.8	227.45	7.286	
15,450.0	9,257.6	14,400.4	8,386.5	116.8	110.9	-58.02	-6,292.7	1,242.1	1,657.9	1,430.1	227.76	7.279	
15,460.0	9,257.6	14,407.7	8,386.4	117.0	111.1	-58.03	-6,300.0	1,242.7	1,658.5	1,430.4	228.07	7.272	
15,470.0	9,257.6	14,415.0	8,386.3	117.2	111.2	-58.03	-6,307.2	1,243.2	1,659.2	1,430.8	228.37	7.265	
15,480.0	9,257.6	14,430.0	8,386.0	117.4	111.5	-58.04	-6,322.2	1,244.3	1,659.9	1,431.0	228.82	7.254	
15,490.0	9,257.5	14,430.0	8,386.0	117.5	111.5	-58.04	-6,322.2	1,244.3	1,660.5	1,431.5	229.00	7.251	
15,500.0	9,257.5	14,448.1	8,385.6	117.7	111.8	-58.06	-6,340.2	1,245.6	1,661.2	1,431.7	229.49	7.239	
15,510.0	9,257.5	14,467.1	8,385.2	117.9	112.1	-58.07	-6,359.2	1,246.9	1,661.8	1,431.8	230.00	7.225	
15,520.0	9,257.5	14,486.1	8,384.9	118.1	112.4	-58.08	-6,378.2	1,248.1	1,662.4	1,431.9	230.51	7.212	
15,530.0	9,257.5	14,505.2	8,384.7	118.3	112.8	-58.09	-6,397.2	1,249.2	1,662.9	1,431.9	231.02	7.198	
15,540.0	9,257.4	14,524.3	8,384.4	118.4	113.1	-58.10	-6,416.2	1,250.2	1,663.3	1,431.8	231.53	7.184	
15,550.0	9,257.4	14,534.3	8,384.3	118.6	113.3	-58.11	-6,426.2	1,250.7	1,663.7	1,431.9	231.88	7.175	
15,560.0	9,257.4	14,543.9	8,384.3	118.8	113.4	-58.11	-6,435.9	1,251.2	1,664.2	1,432.0	232.22	7.166	
15,570.0	9,257.4	14,553.5	8,384.2	119.0	113.6	-58.12	-6,445.5	1,251.8	1,664.6	1,432.0	232.57	7.158	
15,580.0	9,257.3	14,563.2	8,384.1	119.2	113.7	-58.13	-6,455.1	1,252.3	1,665.0	1,432.1	232.91	7.149	
15,590.0	9,257.3	14,572.8	8,384.1	119.3	113.9	-58.14	-6,464.7	1,252.8	1,665.5	1,432.2	233.25	7.140	
15,600.0	9,257.3	14,582.4	8,384.1	119.5	114.1	-58.15	-6,474.3	1,253.4	1,665.9	1,432.3	233.60	7.131	
15,610.0	9,257.3	14,592.0	8,384.1	119.7	114.2	-58.16	-6,483.9	1,254.0	1,666.3	1,432.4	233.94	7.123	
15,620.0	9,257.3	14,601.7	8,384.1	119.9	114.4	-58.17	-6,493.5	1,254.5	1,666.8	1,432.5	234.29	7.114	
15,630.0	9,257.2	14,611.3	8,384.1	120.1	114.6	-58.18	-6,503.1	1,255.1	1,667.2	1,432.6	234.63	7.106	
15,640.0	9,257.2	14,619.0	8,384.2	120.2	114.7	-58.19	-6,510.8	1,255.6	1,667.7	1,432.7	234.94	7.098	
15,650.0	9,257.2	14,619.0	8,384.2	120.4	114.7	-58.19	-6,510.8	1,255.6	1,668.1	1,433.0	235.12	7.095	
15,660.0	9,257.2	14,619.0	8,384.2	120.6	114.7	-58.19	-6,510.8	1,255.6	1,668.7	1,433.4	235.30	7.092	
15,670.0	9,257.2	14,640.7	8,384.2	120.8	115.1	-58.21	-6,532.5	1,257.0	1,669.1	1,433.2	235.86	7.077	
15,680.0	9,257.1	14,647.5	8,384.2	121.0	115.2	-58.22	-6,539.3	1,257.5	1,669.6	1,433.4	236.16	7.070	
15,690.0	9,257.1	14,654.3	8,384.2	121.1	115.3	-58.23	-6,546.1	1,257.9	1,670.1	1,433.7	236.45	7.063	

Offset Design King Tut Federal #1H - OH - OH											Offset Site Error:	2.0 usft
Survey Program: 214											Offset Well Error:	0.0 usft
Reference												
Offset												
Semi-Major Axis												
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N-S (usft)	E-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
Warning												
15,700.0	9,257.1	14,661.1	8,384.2	121.3	115.4	-58.24	-6,552.8	1,258.4	1,670.7	1,433.9	236.75	7.057
15,710.0	9,257.1	14,667.9	8,384.2	121.5	115.5	-58.24	-6,559.6	1,258.9	1,671.3	1,434.2	237.05	7.050
15,720.0	9,257.0	14,674.7	8,384.2	121.7	115.7	-58.25	-6,566.4	1,259.4	1,671.9	1,434.5	237.35	7.044
15,730.0	9,257.0	14,681.5	8,384.1	121.9	115.8	-58.26	-6,573.2	1,259.9	1,672.5	1,434.8	237.64	7.038
15,740.0	9,257.0	14,688.3	8,384.1	122.0	115.9	-58.27	-6,579.9	1,260.4	1,673.1	1,435.2	237.94	7.032
15,750.0	9,257.0	14,695.1	8,384.0	122.2	116.0	-58.27	-6,586.7	1,261.0	1,673.7	1,435.5	238.24	7.025
15,760.0	9,257.0	14,713.0	8,383.8	122.4	116.3	-58.29	-6,604.6	1,262.4	1,674.5	1,435.7	238.73	7.014
15,770.0	9,256.9	14,713.0	8,383.8	122.6	116.3	-58.29	-6,604.6	1,262.4	1,675.1	1,436.2	238.91	7.011
15,780.0	9,256.9	14,720.3	8,383.7	122.8	116.5	-58.30	-6,611.9	1,263.0	1,675.8	1,436.6	239.22	7.005
15,790.0	9,256.9	14,741.1	8,383.5	122.9	116.8	-58.32	-6,632.6	1,264.6	1,676.4	1,436.7	239.76	6.992
15,800.0	9,256.9	14,761.9	8,383.4	123.1	117.2	-58.35	-6,653.3	1,266.2	1,677.0	1,436.7	240.30	6.979
15,810.0	9,256.9	14,782.7	8,383.4	123.3	117.5	-58.37	-6,674.1	1,267.6	1,677.6	1,436.7	240.84	6.965
15,820.0	9,256.8	14,803.5	8,383.6	123.5	117.9	-58.40	-6,694.8	1,269.0	1,678.0	1,436.6	241.38	6.952
15,830.0	9,256.8	14,807.0	8,383.6	123.7	118.0	-58.41	-6,698.3	1,269.2	1,678.5	1,436.8	241.62	6.947
15,840.0	9,256.8	14,807.0	8,383.6	123.8	118.0	-58.41	-6,698.3	1,269.2	1,679.0	1,437.2	241.80	6.944
15,850.0	9,256.8	14,826.2	8,383.7	124.0	118.3	-58.43	-6,717.5	1,270.4	1,679.4	1,437.0	242.32	6.930
15,860.0	9,256.8	14,833.0	8,383.7	124.2	118.4	-58.44	-6,724.3	1,270.9	1,679.8	1,437.2	242.61	6.924
15,870.0	9,256.7	14,839.8	8,383.7	124.4	118.5	-58.44	-6,731.0	1,271.3	1,680.3	1,437.4	242.91	6.918
15,880.0	9,256.7	14,846.6	8,383.7	124.6	118.7	-58.45	-6,737.8	1,271.7	1,680.9	1,437.6	243.21	6.911
15,890.0	9,256.7	14,853.4	8,383.6	124.7	118.8	-58.46	-6,744.6	1,272.2	1,681.4	1,437.9	243.51	6.905
15,900.0	9,256.7	14,860.1	8,383.5	124.9	118.9	-58.46	-6,751.4	1,272.6	1,682.0	1,438.2	243.80	6.899
15,910.0	9,256.6	14,866.9	8,383.4	125.1	119.0	-58.47	-6,758.1	1,273.1	1,682.5	1,438.4	244.10	6.893
15,920.0	9,256.6	14,873.7	8,383.3	125.3	119.1	-58.47	-6,764.9	1,273.5	1,683.1	1,438.7	244.40	6.887
15,930.0	9,256.6	14,880.5	8,383.2	125.5	119.2	-58.48	-6,771.7	1,274.0	1,683.7	1,439.0	244.70	6.881
15,940.0	9,256.6	14,901.0	8,382.6	125.6	119.6	-58.48	-6,792.1	1,275.3	1,684.5	1,439.2	245.23	6.869
15,950.0	9,256.6	14,901.0	8,382.6	125.8	119.6	-58.48	-6,792.1	1,275.3	1,685.0	1,439.6	245.41	6.866
15,960.0	9,256.5	14,901.0	8,382.6	126.0	119.6	-58.48	-6,792.1	1,275.3	1,685.7	1,440.1	245.59	6.864
15,970.0	9,256.5	14,917.7	8,382.1	126.2	119.9	-58.49	-6,808.7	1,276.5	1,686.4	1,440.3	246.06	6.853
15,980.0	9,256.5	14,934.7	8,381.7	126.4	120.2	-58.49	-6,825.8	1,277.6	1,687.0	1,440.4	246.54	6.843
15,990.0	9,256.5	14,951.8	8,381.4	126.5	120.5	-58.50	-6,842.8	1,278.6	1,687.6	1,440.5	247.01	6.832
16,000.0	9,256.5	14,968.9	8,381.1	126.7	120.8	-58.51	-6,859.9	1,279.7	1,688.1	1,440.6	247.49	6.821
16,010.0	9,256.4	14,986.0	8,380.9	126.9	121.1	-58.52	-6,876.9	1,280.7	1,688.6	1,440.6	247.97	6.810
16,020.0	9,256.4	15,004.6	8,380.8	127.1	121.4	-58.54	-6,895.5	1,281.7	1,689.0	1,440.6	248.47	6.798
16,030.0	9,256.4	15,024.8	8,380.7	127.3	121.7	-58.55	-6,915.7	1,282.7	1,689.4	1,440.4	248.99	6.785
16,040.0	9,256.4	15,045.0	8,380.7	127.4	122.1	-58.57	-6,935.9	1,283.6	1,689.8	1,440.2	249.52	6.772
16,050.0	9,256.4	15,065.2	8,380.7	127.6	122.4	-58.58	-6,956.1	1,284.4	1,690.0	1,440.0	250.04	6.759
16,060.0	9,256.3	15,085.5	8,380.8	127.8	122.8	-58.60	-6,976.3	1,285.2	1,690.2	1,439.7	250.57	6.746
16,070.0	9,256.3	15,105.2	8,380.9	128.0	123.1	-58.61	-6,996.0	1,285.7	1,690.4	1,439.3	251.09	6.732
16,080.0	9,256.3	15,124.7	8,381.2	128.2	123.4	-58.62	-7,015.5	1,286.2	1,690.5	1,438.9	251.60	6.719
16,090.0	9,256.3	15,144.3	8,381.4	128.3	123.8	-58.64	-7,035.1	1,286.6	1,690.5	1,438.4	252.11	6.705
16,100.0	9,256.2	15,163.9	8,381.7	128.5	124.1	-58.65	-7,054.7	1,286.9	1,690.5	1,437.9	252.63	6.692
16,110.0	9,256.2	15,183.0	8,382.0	128.7	124.4	-58.66	-7,073.8	1,287.1	1,690.4	1,437.3	253.14	6.678
16,120.0	9,256.2	15,183.0	8,382.0	128.9	124.4	-58.66	-7,073.8	1,287.1	1,690.4	1,437.0	253.32	6.673
16,130.0	9,256.2	15,199.4	8,382.3	129.1	124.7	-58.67	-7,090.2	1,287.2	1,690.2	1,436.5	253.78	6.660
16,140.0	9,256.2	15,207.5	8,382.5	129.2	124.9	-58.68	-7,098.3	1,287.3	1,690.2	1,436.1	254.10	6.652
16,150.0	9,256.1	15,215.6	8,382.6	129.4	125.0	-58.68	-7,106.4	1,287.3	1,690.1	1,435.7	254.42	6.643
16,160.0	9,256.1	15,223.7	8,382.7	129.6	125.1	-58.68	-7,114.5	1,287.4	1,690.1	1,435.3	254.74	6.634
16,170.0	9,256.1	15,231.8	8,382.8	129.8	125.3	-58.69	-7,122.6	1,287.5	1,690.0	1,435.0	255.06	6.626
16,180.0	9,256.1	15,239.9	8,382.9	130.0	125.4	-58.69	-7,130.6	1,287.6	1,690.0	1,434.6	255.38	6.618
16,190.0	9,256.1	15,248.0	8,383.0	130.1	125.6	-58.70	-7,138.7	1,287.7	1,690.0	1,434.3	255.70	6.609
16,200.0	9,256.0	15,256.1	8,383.1	130.3	125.7	-58.70	-7,146.8	1,287.8	1,690.0	1,433.9	256.02	6.601
16,200.9	9,256.0	15,256.8	8,383.1	130.3	125.7	-58.70	-7,147.5	1,287.8	1,690.0	1,433.9	256.05	6.600
16,210.0	9,256.0	15,264.2	8,383.1	130.5	125.8	-58.70	-7,154.9	1,287.9	1,690.0	1,433.6	256.34	6.593
16,220.0	9,256.0	15,278.0	8,383.2	130.7	126.1	-58.71	-7,168.8	1,288.1	1,690.0	1,433.2	256.76	6.582
16,222.1	9,256.0	15,278.0	8,383.2	130.7	126.1	-58.71	-7,168.8	1,288.1	1,690.0	1,433.2	256.79	6.581
16,230.0	9,256.0	15,282.6	8,383.2	130.9	126.2	-58.71	-7,173.4	1,288.1	1,690.0	1,433.0	257.02	6.575
16,240.0	9,256.0	15,298.6	8,383.3	131.0	126.4	-58.71	-7,189.4	1,288.3	1,690.0	1,432.5	257.47	6.564
16,250.0	9,255.9	15,314.7	8,383.4	131.2	126.7	-58.72	-7,205.4	1,288.4	1,690.0	1,432.0	257.93	6.552
16,260.0	9,255.9	15,330.7	8,383.5	131.4	127.0	-58.72	-7,221.4	1,288.4	1,689.9	1,431.5	258.38	6.540
16,270.0	9,255.9	15,346.7	8,383.6	131.6	127.3	-58.72	-7,237.4	1,288.4	1,689.8	1,431.0	258.84	6.528
16,280.0	9,255.9	15,362.7	8,383.7	131.8	127.5	-58.72	-7,253.5	1,288.3	1,689.7	1,430.4	259.30	6.516
16,290.0	9,255.8	15,372.0	8,383.7	131.9	127.7	-58.72	-7,262.8	1,288.2	1,689.5	1,429.9	259.64	6.507
16,300.0	9,255.8	15,372.0	8,383.7	132.1	127.7	-58.72	-7,262.8	1,288.2	1,689.4	1,429.5	259.82	6.502
16,310.0	9,255.8	15,389.3	8,383.8	132.3	128.0	-58.72	-7,280.0	1,288.1	1,689.2	1,428.9	260.29	6.489
16,320.0	9,255.8	15,396.4	8,383.8	132.5	128.1	-58.72	-7,287.2	1,288.0	1,689.0	1,428.4	260.60	6.481
16,330.0	9,255.8	15,403.6	8,383.7	132.7	128.2	-58.72	-7,294.3	1,288.0	1,688.9	1,428.0	260.90	6.473

Offset Design King Tut Federal - #1H - OH - OH													Offset Site Error:	2.0 usft
Survey Program: 211													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
16,340.0	9,255.7	15,410.7	8,383.7	132.8	128.4	-58.71	-7,301.5	1,287.9	1,688.8	1,427.6	261.20	6.466		
16,350.0	9,255.7	15,417.9	8,383.7	133.0	128.5	-58.71	-7,308.6	1,287.9	1,688.8	1,427.2	261.51	6.458		
16,360.0	9,255.7	15,425.0	8,383.6	133.2	128.6	-58.71	-7,315.8	1,287.9	1,688.7	1,426.9	261.81	6.450		
16,370.0	9,255.7	15,432.2	8,383.6	133.4	128.7	-58.71	-7,322.9	1,287.8	1,688.6	1,426.5	262.11	6.442		
16,380.0	9,255.7	15,439.3	8,383.5	133.6	128.8	-58.70	-7,330.1	1,287.8	1,688.6	1,426.2	262.42	6.435		
16,390.0	9,255.6	15,446.4	8,383.4	133.8	129.0	-58.70	-7,337.2	1,287.8	1,688.6	1,425.9	262.72	6.427		
16,391.9	9,255.6	15,447.8	8,383.4	133.8	129.0	-58.70	-7,338.6	1,287.8	1,688.6	1,425.8	262.78	6.426		
16,400.0	9,255.6	15,466.0	8,383.1	133.9	129.3	-58.69	-7,356.8	1,287.8	1,688.7	1,425.4	263.24	6.415		
16,410.0	9,255.6	15,466.0	8,383.1	134.1	129.3	-58.69	-7,356.8	1,287.8	1,688.6	1,425.2	263.42	6.411		
16,410.1	9,255.6	15,466.0	8,383.1	134.1	129.3	-58.69	-7,356.8	1,287.8	1,688.6	1,425.2	263.42	6.410		
16,420.0	9,255.6	15,470.5	8,383.1	134.3	129.4	-58.69	-7,361.3	1,287.8	1,688.7	1,425.0	263.68	6.404		
16,430.0	9,255.6	15,487.5	8,382.8	134.5	129.7	-58.68	-7,378.3	1,287.8	1,688.7	1,424.5	264.15	6.393		
16,440.0	9,255.5	15,504.6	8,382.6	134.7	130.0	-58.67	-7,395.3	1,287.7	1,688.7	1,424.0	264.62	6.381		
16,450.0	9,255.5	15,521.6	8,382.4	134.8	130.3	-58.66	-7,412.4	1,287.6	1,688.6	1,423.5	265.10	6.370		
16,460.0	9,255.5	15,538.6	8,382.2	135.0	130.6	-58.66	-7,429.4	1,287.4	1,688.5	1,422.9	265.57	6.358		
16,470.0	9,255.5	15,555.7	8,382.1	135.2	130.8	-58.65	-7,446.4	1,287.1	1,688.3	1,422.3	266.04	6.346		
16,480.0	9,255.4	15,559.0	8,382.1	135.4	130.9	-58.65	-7,449.8	1,287.1	1,688.1	1,421.9	266.28	6.340		
16,490.0	9,255.4	15,572.1	8,382.0	135.6	131.1	-58.64	-7,462.8	1,286.9	1,688.0	1,421.3	266.69	6.329		
16,500.0	9,255.4	15,579.3	8,381.9	135.7	131.3	-58.63	-7,470.1	1,286.8	1,687.8	1,420.8	266.99	6.322		
16,510.0	9,255.4	15,586.6	8,381.8	135.9	131.4	-58.63	-7,477.3	1,286.7	1,687.7	1,420.4	267.30	6.314		
16,520.0	9,255.4	15,593.8	8,381.8	136.1	131.5	-58.62	-7,484.6	1,286.6	1,687.6	1,420.0	267.60	6.306		
16,530.0	9,255.3	15,601.1	8,381.7	136.3	131.6	-58.62	-7,491.8	1,286.5	1,687.5	1,419.6	267.91	6.299		
16,540.0	9,255.3	15,608.3	8,381.5	136.5	131.8	-58.62	-7,499.1	1,286.4	1,687.4	1,419.2	268.21	6.291		
16,550.0	9,255.3	15,615.6	8,381.4	136.6	131.9	-58.61	-7,506.3	1,286.3	1,687.3	1,418.8	268.52	6.284		
16,560.0	9,255.3	15,622.8	8,381.3	136.8	132.0	-58.60	-7,513.6	1,286.2	1,687.3	1,418.5	268.82	6.277		
16,570.0	9,255.3	15,630.1	8,381.1	137.0	132.1	-58.60	-7,520.8	1,286.2	1,687.3	1,418.1	269.13	6.269		
16,580.0	9,255.2	15,637.3	8,381.0	137.2	132.3	-58.59	-7,528.1	1,286.1	1,687.2	1,417.8	269.43	6.262		
16,584.7	9,255.2	15,640.8	8,380.9	137.3	132.3	-58.59	-7,531.5	1,286.1	1,687.2	1,417.7	269.58	6.259		
16,590.0	9,255.2	15,654.0	8,380.6	137.4	132.5	-58.58	-7,544.7	1,286.0	1,687.3	1,417.4	269.90	6.251		
16,598.1	9,255.2	15,654.0	8,380.6	137.5	132.5	-58.58	-7,544.7	1,286.0	1,687.3	1,417.2	270.04	6.248		
16,600.0	9,255.2	15,654.0	8,380.6	137.5	132.5	-58.58	-7,544.7	1,286.0	1,687.3	1,417.2	270.08	6.247		
16,610.0	9,255.2	15,667.5	8,380.3	137.7	132.8	-58.57	-7,558.2	1,285.9	1,687.3	1,416.8	270.49	6.238		
16,620.0	9,255.2	15,686.8	8,379.9	137.9	133.1	-58.55	-7,577.5	1,285.8	1,687.2	1,416.2	271.00	6.226		
16,630.0	9,255.1	15,706.0	8,379.7	138.1	133.4	-58.54	-7,596.8	1,285.6	1,687.1	1,415.6	271.51	6.214		
16,640.0	9,255.1	15,725.3	8,379.6	138.3	133.8	-58.53	-7,616.0	1,285.3	1,687.0	1,415.0	272.02	6.202		
16,650.0	9,255.1	15,744.6	8,379.6	138.4	134.1	-58.53	-7,635.3	1,285.0	1,686.8	1,414.3	272.54	6.189		
16,660.0	9,255.1	15,762.1	8,379.7	138.6	134.4	-58.52	-7,652.8	1,284.7	1,686.5	1,413.5	273.01	6.178		
16,670.0	9,255.0	15,779.2	8,379.9	138.8	134.7	-58.52	-7,669.9	1,284.3	1,686.2	1,412.8	273.48	6.166		
16,680.0	9,255.0	15,796.3	8,380.2	139.0	135.0	-58.52	-7,687.0	1,284.0	1,685.9	1,412.0	273.95	6.154		
16,690.0	9,255.0	15,813.4	8,380.5	139.2	135.3	-58.52	-7,704.1	1,283.5	1,685.5	1,411.1	274.42	6.142		
16,700.0	9,255.0	15,830.5	8,380.9	139.3	135.5	-58.53	-7,721.2	1,283.1	1,685.1	1,410.2	274.89	6.130		
16,710.0	9,255.0	15,842.0	8,381.2	139.5	135.7	-58.53	-7,732.7	1,282.7	1,684.7	1,409.4	275.27	6.120		
16,720.0	9,254.9	15,853.2	8,381.6	139.7	135.9	-58.53	-7,743.9	1,282.4	1,684.2	1,408.5	275.64	6.110		
16,730.0	9,254.9	15,861.7	8,381.8	139.9	136.1	-58.54	-7,752.4	1,282.1	1,683.7	1,407.8	275.96	6.101		
16,740.0	9,254.9	15,870.2	8,382.0	140.1	136.2	-58.54	-7,760.8	1,281.9	1,683.3	1,407.0	276.29	6.092		
16,750.0	9,254.9	15,878.6	8,382.2	140.3	136.4	-58.54	-7,769.3	1,281.6	1,682.9	1,406.2	276.61	6.084		
16,760.0	9,254.9	15,887.1	8,382.4	140.4	136.5	-58.54	-7,777.8	1,281.4	1,682.4	1,405.5	276.94	6.075		
16,770.0	9,254.8	15,895.6	8,382.5	140.6	136.7	-58.54	-7,786.2	1,281.1	1,682.0	1,404.7	277.26	6.066		
16,780.0	9,254.8	15,904.1	8,382.7	140.8	136.8	-58.54	-7,794.7	1,280.9	1,681.6	1,404.0	277.59	6.058		
16,790.0	9,254.8	15,912.5	8,382.8	141.0	136.9	-58.54	-7,803.2	1,280.6	1,681.2	1,403.3	277.92	6.049		
16,800.0	9,254.8	15,921.0	8,382.9	141.2	137.1	-58.53	-7,811.6	1,280.4	1,680.8	1,402.6	278.24	6.041		
16,810.0	9,254.8	15,936.0	8,383.1	141.3	137.3	-58.53	-7,826.6	1,279.9	1,680.4	1,401.8	278.68	6.030		
16,820.0	9,254.7	15,936.0	8,383.1	141.5	137.3	-58.53	-7,826.6	1,279.9	1,680.1	1,401.2	278.86	6.025		
16,830.0	9,254.7	15,936.0	8,383.1	141.7	137.3	-58.53	-7,826.6	1,279.9	1,679.7	1,400.7	279.04	6.020		
16,840.0	9,254.7	15,953.6	8,383.3	141.9	137.6	-58.53	-7,844.2	1,279.4	1,679.3	1,399.8	279.52	6.008		
16,850.0	9,254.7	15,961.5	8,383.4	142.1	137.8	-58.52	-7,852.1	1,279.2	1,679.0	1,399.2	279.84	6.000		
16,860.0	9,254.6	15,969.4	8,383.4	142.2	137.9	-58.52	-7,860.0	1,279.0	1,678.7	1,398.5	280.16	5.992		
16,870.0	9,254.6	15,977.2	8,383.5	142.4	138.1	-58.52	-7,867.8	1,278.8	1,678.4	1,397.9	280.47	5.984		
16,880.0	9,254.6	15,985.1	8,383.5	142.6	138.2	-58.52	-7,875.7	1,278.6	1,678.1	1,397.3	280.79	5.976		
16,890.0	9,254.6	15,993.0	8,383.6	142.8	138.3	-58.52	-7,883.6	1,278.5	1,677.8	1,396.7	281.11	5.969		
16,900.0	9,254.6	16,000.9	8,383.6	143.0	138.5	-58.51	-7,891.5	1,278.3	1,677.5	1,396.1	281.42	5.961		
16,910.0	9,254.5	16,008.8	8,383.6	143.1	138.6	-58.51	-7,899.4	1,278.1	1,677.3	1,395.5	281.74	5.953		
16,920.0	9,254.5	16,016.7	8,383.7	143.3	138.7	-58.51	-7,907.3	1,278.0	1,677.0	1,395.0	282.06	5.946		
16,930.0	9,254.5	16,030.0	8,383.7	143.5	139.0	-58.50	-7,920.6	1,277.7	1,676.8	1,394.3	282.47	5.936		
16,940.0	9,254.5	16,030.0	8,383.7	143.7	139.0	-58.50	-7,920.6	1,277.7	1,676.6	1,393.9	282.65	5.932		
16,950.0	9,254.5	16,030.0	8,383.7	143.9	139.0	-58.50	-7,920.6	1,277.7	1,676.4	1,393.6	282.83	5.927		

Offset Design King Tut Federal - #1H - OH - OH											Offset Site Error:	2.0 usft	
Survey Program: 211											Offset Well Error:	0.0 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)			
16,960.0	9,254.4	16,047.4	8,383.7	144.0	139.3	-58.50	-7,938.0	1,277.5	1,676.2	1,392.8	283.31	5.916	
16,970.0	9,254.4	16,055.0	8,383.7	144.2	139.4	-58.50	-7,945.6	1,277.4	1,676.0	1,392.3	283.62	5.909	
16,980.0	9,254.4	16,062.5	8,383.7	144.4	139.5	-58.50	-7,953.1	1,277.3	1,675.8	1,391.9	283.93	5.902	
16,990.0	9,254.4	16,070.1	8,383.7	144.6	139.7	-58.49	-7,960.7	1,277.2	1,675.7	1,391.4	284.24	5.895	
17,000.0	9,254.3	16,077.6	8,383.7	144.8	139.8	-58.49	-7,968.2	1,277.1	1,675.5	1,391.0	284.55	5.888	
17,010.0	9,254.3	16,085.2	8,383.7	144.9	139.9	-58.49	-7,975.8	1,277.1	1,675.4	1,390.5	284.87	5.881	
17,020.0	9,254.3	16,092.7	8,383.7	145.1	140.0	-58.49	-7,983.3	1,277.0	1,675.3	1,390.1	285.18	5.875	
17,030.0	9,254.3	16,100.3	8,383.7	145.3	140.2	-58.49	-7,990.9	1,277.0	1,675.2	1,389.7	285.49	5.868	
17,040.0	9,254.3	16,107.9	8,383.7	145.5	140.3	-58.49	-7,998.4	1,277.0	1,675.1	1,389.3	285.80	5.861	
17,050.0	9,254.2	16,124.0	8,383.7	145.7	140.6	-58.49	-8,014.6	1,277.0	1,675.1	1,388.8	286.26	5.852	
17,060.0	9,254.2	16,124.0	8,383.7	145.9	140.6	-58.49	-8,014.6	1,277.0	1,675.0	1,388.6	286.44	5.848	
17,067.8	9,254.2	16,124.0	8,383.7	146.0	140.6	-58.49	-8,014.6	1,277.0	1,675.0	1,388.4	286.58	5.845	
17,070.0	9,254.2	16,124.0	8,383.7	146.0	140.6	-58.49	-8,014.6	1,277.0	1,675.0	1,388.4	286.62	5.844	
17,080.0	9,254.2	16,124.0	8,383.7	146.2	140.6	-58.49	-8,014.6	1,277.0	1,675.0	1,388.2	286.80	5.840	
17,084.2	9,254.2	16,139.4	8,383.7	146.3	140.9	-58.49	-8,029.9	1,277.0	1,675.0	1,387.8	287.14	5.833	
17,090.0	9,254.2	16,143.3	8,383.6	146.4	140.9	-58.49	-8,033.9	1,277.1	1,675.0	1,387.7	287.32	5.830	
17,100.0	9,254.1	16,150.0	8,383.6	146.6	141.0	-58.49	-8,040.6	1,277.1	1,675.0	1,387.4	287.61	5.824	
17,110.0	9,254.1	16,156.7	8,383.6	146.8	141.2	-58.49	-8,047.3	1,277.2	1,675.1	1,387.1	287.91	5.818	
17,120.0	9,254.1	16,163.5	8,383.5	146.9	141.3	-58.48	-8,054.1	1,277.3	1,675.1	1,386.9	288.21	5.812	
17,130.0	9,254.1	16,170.2	8,383.5	147.1	141.4	-58.48	-8,060.8	1,277.3	1,675.2	1,386.7	288.51	5.806	
17,140.0	9,254.1	16,176.9	8,383.4	147.3	141.5	-58.48	-8,067.5	1,277.4	1,675.3	1,386.5	288.81	5.801	
17,150.0	9,254.0	16,183.7	8,383.4	147.5	141.6	-58.48	-8,074.3	1,277.6	1,675.4	1,386.3	289.10	5.795	
17,160.0	9,254.0	16,190.4	8,383.3	147.7	141.7	-58.48	-8,081.0	1,277.7	1,675.6	1,386.2	289.40	5.790	
17,170.0	9,254.0	16,197.1	8,383.2	147.8	141.9	-58.48	-8,087.7	1,277.8	1,675.7	1,386.0	289.70	5.784	
17,180.0	9,254.0	16,218.0	8,383.0	148.0	142.2	-58.48	-8,108.6	1,278.3	1,676.0	1,385.8	290.24	5.775	
17,190.0	9,253.9	16,218.0	8,383.0	148.2	142.2	-58.48	-8,108.6	1,278.3	1,676.2	1,385.7	290.42	5.771	
17,200.0	9,253.9	16,218.0	8,383.0	148.4	142.2	-58.48	-8,108.6	1,278.3	1,676.3	1,385.7	290.60	5.769	
17,210.0	9,253.9	16,228.8	8,382.8	148.6	142.4	-58.48	-8,119.4	1,278.6	1,676.6	1,385.6	290.97	5.762	
17,220.0	9,253.9	16,240.9	8,382.7	148.7	142.6	-58.48	-8,131.4	1,278.9	1,676.8	1,385.4	291.36	5.755	
17,230.0	9,253.9	16,252.9	8,382.5	148.9	142.8	-58.49	-8,143.5	1,279.2	1,677.0	1,385.2	291.75	5.748	
17,240.0	9,253.8	16,265.0	8,382.4	149.1	143.0	-58.49	-8,155.5	1,279.5	1,677.2	1,385.0	292.14	5.741	
17,250.0	9,253.8	16,277.0	8,382.3	149.3	143.2	-58.49	-8,167.5	1,279.7	1,677.4	1,384.8	292.53	5.734	
17,260.0	9,253.8	16,289.0	8,382.2	149.5	143.4	-58.49	-8,179.6	1,280.0	1,677.5	1,384.6	292.92	5.727	
17,270.0	9,253.8	16,301.1	8,382.1	149.7	143.7	-58.49	-8,191.6	1,280.2	1,677.7	1,384.4	293.31	5.720	
17,280.0	9,253.8	16,313.2	8,382.0	149.8	143.9	-58.49	-8,203.7	1,280.5	1,677.8	1,384.1	293.70	5.713	
17,290.0	9,253.7	16,331.7	8,381.9	150.0	144.2	-58.49	-8,222.3	1,280.8	1,677.9	1,383.8	294.20	5.703	
17,300.0	9,253.7	16,350.3	8,381.9	150.2	144.5	-58.50	-8,240.8	1,281.0	1,678.0	1,383.3	294.70	5.694	
17,310.0	9,253.7	16,368.8	8,381.9	150.4	144.8	-58.50	-8,259.4	1,281.2	1,678.0	1,382.8	295.20	5.684	
17,320.0	9,253.7	16,387.4	8,382.1	150.6	145.1	-58.51	-8,277.9	1,281.4	1,678.0	1,382.3	295.70	5.675	
17,330.0	9,253.7	16,405.9	8,382.3	150.7	145.5	-58.51	-8,296.5	1,281.4	1,677.9	1,381.7	296.19	5.665	
17,340.0	9,253.6	16,421.1	8,382.5	150.9	145.7	-58.52	-8,311.6	1,281.5	1,677.8	1,381.1	296.64	5.656	
17,350.0	9,253.6	16,436.1	8,382.8	151.1	146.0	-58.52	-8,326.6	1,281.4	1,677.6	1,380.5	297.07	5.647	
17,360.0	9,253.6	16,451.1	8,383.1	151.3	146.2	-58.53	-8,341.6	1,281.4	1,677.4	1,379.9	297.51	5.638	
17,370.0	9,253.6	16,466.0	8,383.4	151.5	146.5	-58.54	-8,356.5	1,281.3	1,677.2	1,379.2	297.95	5.629	
17,380.0	9,253.5	16,481.0	8,383.8	151.6	146.7	-58.55	-8,371.5	1,281.2	1,676.9	1,378.5	298.38	5.620	
17,390.0	9,253.5	16,496.0	8,384.2	151.8	147.0	-58.56	-8,386.5	1,281.1	1,676.6	1,377.8	298.82	5.611	
17,400.0	9,253.5	16,501.0	8,384.3	152.0	147.1	-58.56	-8,391.5	1,281.0	1,676.3	1,377.3	299.09	5.605	
17,410.0	9,253.5	16,501.0	8,384.3	152.2	147.1	-58.56	-8,391.5	1,281.0	1,676.1	1,376.8	299.27	5.601	
17,420.0	9,253.5	16,519.4	8,384.8	152.4	147.4	-58.57	-8,409.9	1,280.9	1,675.8	1,376.0	299.77	5.590	
17,430.0	9,253.4	16,526.3	8,385.0	152.5	147.5	-58.57	-8,416.8	1,280.8	1,675.5	1,375.5	300.07	5.584	
17,440.0	9,253.4	16,533.2	8,385.1	152.7	147.6	-58.58	-8,423.7	1,280.8	1,675.3	1,374.9	300.37	5.577	
17,450.0	9,253.4	16,540.2	8,385.3	152.9	147.8	-58.58	-8,430.7	1,280.7	1,675.1	1,374.4	300.67	5.571	
17,460.0	9,253.4	16,547.1	8,385.4	153.1	147.9	-58.58	-8,437.6	1,280.7	1,674.9	1,373.9	300.97	5.565	
17,470.0	9,253.4	16,554.0	8,385.5	153.3	148.0	-58.59	-8,444.5	1,280.7	1,674.7	1,373.5	301.27	5.559	
17,480.0	9,253.3	16,560.9	8,385.6	153.5	148.1	-58.59	-8,451.4	1,280.6	1,674.6	1,373.0	301.57	5.553	
17,490.0	9,253.3	16,567.8	8,385.7	153.6	148.2	-58.59	-8,458.3	1,280.6	1,674.4	1,372.6	301.87	5.547	
17,500.0	9,253.3	16,574.8	8,385.7	153.8	148.4	-58.59	-8,465.2	1,280.6	1,674.3	1,372.1	302.17	5.541	
17,510.0	9,253.3	16,595.0	8,385.8	154.0	148.7	-58.59	-8,485.5	1,280.6	1,674.3	1,371.6	302.70	5.531	
17,520.0	9,253.3	16,595.0	8,385.8	154.2	148.7	-58.59	-8,485.5	1,280.6	1,674.1	1,371.3	302.88	5.527	
17,530.0	9,253.2	16,595.0	8,385.8	154.4	148.7	-58.59	-8,485.5	1,280.6	1,674.1	1,371.0	303.07	5.524	
17,538.7	9,253.2	16,595.0	8,385.8	154.5	148.7	-58.59	-8,485.5	1,280.6	1,674.0	1,370.8	303.22	5.521	
17,540.0	9,253.2	16,595.0	8,385.8	154.5	148.7	-58.59	-8,485.5	1,280.6	1,674.0	1,370.8	303.25	5.520	
17,550.0	9,253.2	16,610.0	8,385.8	154.7	149.0	-58.59	-8,500.5	1,280.7	1,674.0	1,370.3	303.69	5.512	
17,560.0	9,253.2	16,617.3	8,385.8	154.9	149.1	-58.59	-8,507.8	1,280.7	1,674.0	1,370.0	304.00	5.507	
17,563.7	9,253.2	16,620.0	8,385.8	155.0	149.1	-58.59	-8,510.5	1,280.7	1,674.0	1,369.9	304.11	5.504	
17,570.0	9,253.1	16,624.5	8,385.8	155.1	149.2	-58.59	-8,515.0	1,280.7	1,674.0	1,369.7	304.31	5.501	

Offset Design King Tut Federal - #1H - OH - OH												Offset Site Error:	2.0 usft
Survey Program: 211												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		N-S (usft)	E-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
17,580.0	9,253.1	16,631.8	8,385.7	155.3	149.4	-58.59	-8,522.3	1,280.8	1,674.0	1,369.4	304.61	5.495	
17,590.0	9,253.1	16,639.0	8,385.7	155.4	149.5	-58.59	-8,529.5	1,280.8	1,674.0	1,369.1	304.92	5.490	
17,600.0	9,253.1	16,646.3	8,385.6	155.6	149.6	-58.59	-8,536.8	1,280.9	1,674.1	1,368.9	305.23	5.485	
17,610.0	9,253.1	16,653.5	8,385.5	155.8	149.7	-58.59	-8,544.0	1,280.9	1,674.1	1,368.6	305.54	5.479	
17,620.0	9,253.0	16,660.8	8,385.5	156.0	149.9	-58.59	-8,551.2	1,281.0	1,674.2	1,368.4	305.85	5.474	
17,630.0	9,253.0	16,668.0	8,385.4	156.2	150.0	-58.58	-8,558.5	1,281.1	1,674.3	1,368.2	306.15	5.469	
17,640.0	9,253.0	16,675.2	8,385.2	156.4	150.1	-58.58	-8,565.7	1,281.2	1,674.5	1,368.0	306.46	5.464	
17,650.0	9,253.0	16,689.0	8,385.0	156.5	150.4	-58.58	-8,579.5	1,281.4	1,674.6	1,367.7	306.88	5.457	
17,660.0	9,253.0	16,691.2	8,385.0	156.7	150.4	-58.58	-8,581.7	1,281.4	1,674.7	1,367.6	307.10	5.453	
17,670.0	9,252.9	16,712.6	8,384.6	156.9	150.8	-58.57	-8,603.1	1,281.6	1,674.8	1,367.2	307.66	5.444	
17,680.0	9,252.9	16,734.1	8,384.3	157.1	151.1	-58.56	-8,624.5	1,281.7	1,674.9	1,366.7	308.21	5.434	
17,690.0	9,252.9	16,755.5	8,384.1	157.3	151.5	-58.55	-8,646.0	1,281.7	1,674.9	1,366.1	308.76	5.425	
17,700.0	9,252.9	16,776.9	8,384.0	157.4	151.9	-58.55	-8,667.4	1,281.6	1,674.8	1,365.5	309.31	5.415	
17,710.0	9,252.9	16,789.6	8,384.0	157.6	152.1	-58.54	-8,680.1	1,281.5	1,674.6	1,364.9	309.71	5.407	
17,720.0	9,252.8	16,798.9	8,384.0	157.8	152.3	-58.54	-8,689.4	1,281.4	1,674.5	1,364.5	310.05	5.401	
17,730.0	9,252.8	16,808.1	8,383.9	158.0	152.4	-58.54	-8,698.6	1,281.3	1,674.4	1,364.0	310.39	5.394	
17,740.0	9,252.8	16,817.4	8,383.9	158.2	152.6	-58.54	-8,707.8	1,281.2	1,674.2	1,363.5	310.73	5.388	
17,750.0	9,252.8	16,826.6	8,383.8	158.3	152.7	-58.53	-8,717.1	1,281.1	1,674.1	1,363.1	311.08	5.382	
17,760.0	9,252.7	16,835.9	8,383.8	158.5	152.9	-58.53	-8,726.3	1,281.0	1,674.0	1,362.6	311.42	5.375	
17,770.0	9,252.7	16,845.1	8,383.7	158.7	153.1	-58.52	-8,735.6	1,280.9	1,673.9	1,362.1	311.76	5.369	
17,780.0	9,252.7	16,854.4	8,383.7	158.9	153.2	-58.52	-8,744.8	1,280.8	1,673.8	1,361.7	312.10	5.363	
17,790.0	9,252.7	16,863.6	8,383.6	159.1	153.4	-58.51	-8,754.1	1,280.7	1,673.7	1,361.2	312.44	5.357	
17,800.0	9,252.7	16,872.9	8,383.5	159.2	153.5	-58.51	-8,763.3	1,280.6	1,673.6	1,360.8	312.78	5.351	
17,810.0	9,252.6	16,877.0	8,383.4	159.4	153.6	-58.51	-8,767.5	1,280.5	1,673.5	1,360.5	313.03	5.346	
17,820.0	9,252.6	16,877.0	8,383.4	159.6	153.6	-58.51	-8,767.5	1,280.5	1,673.5	1,360.2	313.21	5.343	
17,830.0	9,252.6	16,894.3	8,383.2	159.8	153.9	-58.50	-8,784.7	1,280.4	1,673.3	1,359.7	313.69	5.334	
17,840.0	9,252.6	16,901.0	8,383.1	160.0	154.0	-58.49	-8,791.5	1,280.3	1,673.3	1,359.3	313.99	5.329	
17,850.0	9,252.6	16,907.8	8,383.0	160.2	154.1	-58.49	-8,798.3	1,280.3	1,673.3	1,359.0	314.29	5.324	
17,854.7	9,252.5	16,911.0	8,382.9	160.2	154.2	-58.49	-8,801.4	1,280.3	1,673.3	1,358.9	314.43	5.322	
17,860.0	9,252.5	16,914.6	8,382.8	160.3	154.3	-58.48	-8,805.0	1,280.2	1,673.3	1,358.7	314.59	5.319	
17,870.0	9,252.5	16,921.3	8,382.6	160.5	154.4	-58.48	-8,811.8	1,280.2	1,673.3	1,358.4	314.89	5.314	
17,880.0	9,252.5	16,928.1	8,382.5	160.7	154.5	-58.47	-8,818.6	1,280.2	1,673.3	1,358.2	315.19	5.309	
17,890.0	9,252.5	16,934.9	8,382.3	160.9	154.6	-58.46	-8,825.3	1,280.2	1,673.4	1,357.9	315.48	5.304	
17,900.0	9,252.5	16,941.6	8,382.1	161.1	154.7	-58.46	-8,832.1	1,280.1	1,673.5	1,357.7	315.78	5.299	
17,910.0	9,252.4	16,948.4	8,381.8	161.2	154.8	-58.45	-8,838.8	1,280.1	1,673.6	1,357.5	316.08	5.295	
17,920.0	9,252.4	16,955.2	8,381.6	161.4	155.0	-58.44	-8,845.6	1,280.1	1,673.7	1,357.3	316.38	5.290	
17,930.0	9,252.4	16,971.0	8,381.0	161.6	155.2	-58.42	-8,861.4	1,280.1	1,673.9	1,357.0	316.84	5.283	
17,940.0	9,252.4	16,971.0	8,381.0	161.8	155.2	-58.42	-8,861.4	1,280.1	1,674.0	1,357.0	317.02	5.280	
17,950.0	9,252.3	16,979.9	8,380.6	162.0	155.4	-58.41	-8,870.3	1,280.1	1,674.2	1,356.8	317.35	5.275	
17,960.0	9,252.3	16,993.4	8,380.1	162.1	155.6	-58.40	-8,883.8	1,280.2	1,674.3	1,356.5	317.77	5.269	
17,970.0	9,252.3	17,006.9	8,379.7	162.3	155.9	-58.39	-8,897.3	1,280.2	1,674.4	1,356.3	318.18	5.263	
17,980.0	9,252.3	17,020.4	8,379.3	162.5	156.1	-58.37	-8,910.8	1,280.2	1,674.5	1,355.9	318.59	5.256	
17,990.0	9,252.3	17,034.0	8,378.9	162.7	156.3	-58.36	-8,924.3	1,280.2	1,674.6	1,355.6	319.01	5.249	
18,000.0	9,252.2	17,047.5	8,378.6	162.9	156.5	-58.36	-8,937.9	1,280.3	1,674.7	1,355.3	319.42	5.243	
18,010.0	9,252.2	17,061.0	8,378.4	163.1	156.8	-58.35	-8,951.4	1,280.3	1,674.7	1,354.9	319.84	5.236	
18,020.0	9,252.2	17,094.7	8,378.1	163.2	157.4	-58.34	-8,985.0	1,280.2	1,674.7	1,354.1	320.59	5.224	
18,030.0	9,252.2	17,136.7	8,378.2	163.4	158.1	-58.33	-9,027.0	1,279.6	1,674.5	1,353.0	321.48	5.209	
18,040.0	9,252.2	17,160.0	8,378.5	163.6	158.5	-58.32	-9,050.4	1,279.0	1,674.1	1,352.1	322.06	5.198	
18,050.0	9,252.1	17,173.0	8,378.7	163.8	158.7	-58.32	-9,063.3	1,278.6	1,673.7	1,351.3	322.47	5.190	
18,060.0	9,252.1	17,181.9	8,378.9	164.0	158.8	-58.32	-9,072.3	1,278.3	1,673.3	1,350.5	322.80	5.184	
18,070.0	9,252.1	17,190.9	8,379.0	164.1	159.0	-58.32	-9,081.2	1,278.1	1,672.9	1,349.8	323.14	5.177	
18,080.0	9,252.1	17,199.9	8,379.1	164.3	159.1	-58.32	-9,090.2	1,277.8	1,672.6	1,349.1	323.47	5.171	
18,090.0	9,252.1	17,208.8	8,379.2	164.5	159.3	-58.31	-9,099.2	1,277.5	1,672.2	1,348.4	323.81	5.164	
18,100.0	9,252.0	17,217.8	8,379.3	164.7	159.5	-58.31	-9,108.1	1,277.3	1,671.8	1,347.7	324.14	5.158	
18,110.0	9,252.0	17,226.8	8,379.4	164.9	159.6	-58.31	-9,117.1	1,277.0	1,671.4	1,347.0	324.48	5.151	
18,120.0	9,252.0	17,235.7	8,379.5	165.0	159.8	-58.31	-9,126.1	1,276.7	1,671.1	1,346.3	324.81	5.145	
18,130.0	9,252.0	17,244.7	8,379.5	165.2	159.9	-58.30	-9,135.0	1,276.5	1,670.7	1,345.6	325.15	5.138	
18,140.0	9,251.9	17,254.0	8,379.6	165.4	160.1	-58.30	-9,144.3	1,276.2	1,670.4	1,344.9	325.49	5.132	
18,150.0	9,251.9	17,254.0	8,379.6	165.6	160.1	-58.30	-9,144.3	1,276.2	1,670.1	1,344.4	325.67	5.128	
18,160.0	9,251.9	17,269.3	8,379.6	165.8	160.3	-58.29	-9,159.6	1,275.7	1,669.7	1,343.6	326.11	5.120	
18,170.0	9,251.9	17,277.1	8,379.7	166.0	160.5	-58.29	-9,167.4	1,275.5	1,669.4	1,343.0	326.43	5.114	
18,180.0	9,251.9	17,284.8	8,379.7	166.1	160.6	-58.28	-9,175.1	1,275.3	1,669.1	1,342.4	326.74	5.108	
18,190.0	9,251.8	17,292.6	8,379.6	166.3	160.7	-58.28	-9,182.9	1,275.1	1,668.8	1,341.8	327.06	5.103	
18,200.0	9,251.8	17,300.4	8,379.6	166.5	160.9	-58.27	-9,190.7	1,274.9	1,668.6	1,341.2	327.38	5.097	
18,210.0	9,251.8	17,308.2	8,379.6	166.7	161.0	-58.27	-9,198.5	1,274.7	1,668.3	1,340.6	327.69	5.091	
18,220.0	9,251.8	17,316.0	8,379.5	166.9	161.1	-58.26	-9,206.3	1,274.5	1,668.1	1,340.1	328.01	5.085	

Offset Design King Tut Federal - #1H - OH - OH												Offset Site Error:	2.0 usft
Survey Program: 211												Offset Well Error:	0.0 usft
Reference		Offset		Semi-Major Axis		Distance		Minimum		Separation		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N/S (usft)	Offset Wellbore Centre E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
18,230.0	9,251.8	17,323.7	8,379.5	167.0	161.3	-58.26	-9,214.0	1,274.3	1,667.8	1,339.5	328.32	5.080	
18,240.0	9,251.7	17,331.5	8,379.4	167.2	161.4	-58.25	-9,221.8	1,274.1	1,667.6	1,339.0	328.64	5.074	
18,250.0	9,251.7	17,348.0	8,379.2	167.4	161.7	-58.24	-9,238.3	1,273.7	1,667.5	1,338.3	329.11	5.067	
18,260.0	9,251.7	17,348.0	8,379.2	167.6	161.7	-58.24	-9,238.3	1,273.7	1,667.2	1,337.9	329.29	5.063	
18,270.0	9,251.7	17,356.2	8,379.1	167.8	161.8	-58.23	-9,246.5	1,273.5	1,667.1	1,337.4	329.61	5.058	
18,280.0	9,251.6	17,365.6	8,379.0	167.9	162.0	-58.22	-9,255.9	1,273.3	1,666.9	1,336.9	329.95	5.052	
18,290.0	9,251.6	17,374.9	8,378.8	168.1	162.2	-58.22	-9,265.2	1,273.2	1,666.7	1,336.4	330.29	5.046	
18,300.0	9,251.6	17,384.3	8,378.8	168.3	162.3	-58.21	-9,274.5	1,273.0	1,666.5	1,335.9	330.63	5.040	
18,310.0	9,251.6	17,393.6	8,378.7	168.5	162.5	-58.21	-9,283.9	1,272.8	1,666.4	1,335.4	330.97	5.035	
18,320.0	9,251.6	17,403.0	8,378.6	168.7	162.6	-58.20	-9,293.2	1,272.7	1,666.2	1,334.9	331.31	5.029	
18,330.0	9,251.5	17,412.3	8,378.5	168.9	162.8	-58.20	-9,302.6	1,272.5	1,666.1	1,334.4	331.65	5.023	
18,340.0	9,251.5	17,421.6	8,378.5	169.0	163.0	-58.19	-9,311.9	1,272.4	1,665.9	1,333.9	331.99	5.018	
18,350.0	9,251.5	17,431.0	8,378.5	169.2	163.1	-58.19	-9,321.3	1,272.3	1,665.8	1,333.4	332.34	5.012	
18,360.0	9,251.5	17,442.0	8,378.4	169.4	163.3	-58.18	-9,332.3	1,272.2	1,665.6	1,332.9	332.70	5.006	
18,370.0	9,251.5	17,452.5	8,378.4	169.6	163.5	-58.18	-9,342.7	1,272.1	1,665.5	1,332.4	333.06	5.000	
18,380.0	9,251.4	17,465.2	8,378.5	169.8	163.7	-58.18	-9,355.5	1,271.9	1,665.3	1,331.8	333.46	4.994	
18,390.0	9,251.4	17,477.9	8,378.6	169.9	163.9	-58.18	-9,369.2	1,271.8	1,665.1	1,331.3	333.85	4.988	
18,400.0	9,251.4	17,490.6	8,378.7	170.1	164.1	-58.18	-9,380.9	1,271.7	1,664.9	1,330.7	334.25	4.981	
18,410.0	9,251.4	17,503.4	8,379.0	170.3	164.3	-58.19	-9,393.6	1,271.6	1,664.7	1,330.1	334.64	4.975	
18,420.0	9,251.4	17,516.1	8,379.2	170.5	164.5	-58.19	-9,406.4	1,271.5	1,664.5	1,329.4	335.04	4.968	
18,430.0	9,251.3	17,528.8	8,379.5	170.7	164.8	-58.20	-9,419.1	1,271.5	1,664.2	1,328.8	335.43	4.961	
18,440.0	9,251.3	17,536.0	8,379.8	170.9	164.9	-58.20	-9,426.3	1,271.4	1,664.0	1,328.2	335.73	4.956	
18,450.0	9,251.3	17,536.0	8,379.8	171.0	164.9	-58.20	-9,426.3	1,271.4	1,663.8	1,327.9	335.92	4.953	
18,460.0	9,251.3	17,554.3	8,380.3	171.2	165.2	-58.22	-9,444.5	1,271.3	1,663.5	1,327.1	336.41	4.945	
18,470.0	9,251.2	17,561.8	8,380.5	171.4	165.3	-58.22	-9,452.1	1,271.3	1,663.3	1,326.5	336.72	4.940	
18,480.0	9,251.2	17,569.3	8,380.6	171.6	165.5	-58.23	-9,459.6	1,271.3	1,663.1	1,326.0	337.03	4.934	
18,490.0	9,251.2	17,576.8	8,380.8	171.8	165.6	-58.23	-9,467.1	1,271.3	1,662.9	1,325.5	337.34	4.929	
18,500.0	9,251.2	17,584.4	8,381.0	171.9	165.7	-58.24	-9,474.6	1,271.3	1,662.7	1,325.0	337.65	4.924	
18,510.0	9,251.2	17,591.9	8,381.1	172.1	165.8	-58.24	-9,482.1	1,271.3	1,662.5	1,324.6	337.97	4.919	
18,520.0	9,251.1	17,599.4	8,381.3	172.3	166.0	-58.25	-9,489.6	1,271.4	1,662.4	1,324.1	338.28	4.914	
18,530.0	9,251.1	17,606.9	8,381.4	172.5	166.1	-58.25	-9,497.2	1,271.4	1,662.3	1,323.7	338.59	4.909	
18,540.0	9,251.1	17,614.4	8,381.6	172.7	166.2	-58.25	-9,504.7	1,271.4	1,662.2	1,323.3	338.90	4.905	
18,550.0	9,251.1	17,630.0	8,381.8	172.8	166.5	-58.26	-9,520.2	1,271.5	1,662.1	1,322.7	339.35	4.898	
18,560.0	9,251.1	17,630.0	8,381.8	173.0	166.5	-58.26	-9,520.2	1,271.5	1,662.0	1,322.4	339.53	4.895	
18,570.0	9,251.0	17,637.8	8,381.9	173.2	166.6	-58.27	-9,528.1	1,271.6	1,661.9	1,322.0	339.85	4.890	
18,580.0	9,251.0	17,646.3	8,382.0	173.4	166.8	-58.27	-9,536.5	1,271.6	1,661.8	1,321.7	340.18	4.885	
18,590.0	9,251.0	17,654.7	8,382.1	173.6	166.9	-58.27	-9,544.9	1,271.7	1,661.8	1,321.3	340.51	4.880	
18,600.0	9,251.0	17,663.1	8,382.2	173.8	167.1	-58.28	-9,553.4	1,271.8	1,661.7	1,320.9	340.84	4.875	
18,610.0	9,251.0	17,671.6	8,382.3	173.9	167.2	-58.28	-9,561.8	1,271.9	1,661.7	1,320.5	341.17	4.871	
18,620.0	9,250.9	17,680.0	8,382.4	174.1	167.4	-58.28	-9,570.2	1,271.9	1,661.7	1,320.2	341.50	4.866	
18,630.0	9,250.9	17,688.4	8,382.5	174.3	167.5	-58.29	-9,578.6	1,272.0	1,661.7	1,319.8	341.83	4.861	
18,640.0	9,250.9	17,696.9	8,382.5	174.5	167.7	-58.29	-9,587.1	1,272.1	1,661.7	1,319.5	342.16	4.856	
18,641.7	9,250.9	17,698.3	8,382.5	174.5	167.7	-58.29	-9,588.5	1,272.2	1,661.7	1,319.4	342.21	4.856	
18,650.0	9,250.9	17,705.3	8,382.6	174.7	167.8	-58.29	-9,595.5	1,272.2	1,661.7	1,319.2	342.49	4.852	
18,660.0	9,250.8	17,713.7	8,382.6	174.8	168.0	-58.30	-9,603.9	1,272.3	1,661.7	1,318.9	342.82	4.847	
18,670.0	9,250.8	17,724.0	8,382.7	175.0	168.2	-58.30	-9,614.2	1,272.5	1,661.7	1,318.5	343.18	4.842	
18,680.0	9,250.8	17,724.0	8,382.7	175.2	168.2	-58.30	-9,614.2	1,272.5	1,661.7	1,318.4	343.36	4.840	
18,690.0	9,250.8	17,738.7	8,382.8	175.4	168.4	-58.31	-9,628.9	1,272.7	1,661.8	1,318.0	343.80	4.834	
18,700.0	9,250.8	17,746.9	8,382.8	175.6	168.6	-58.31	-9,637.1	1,272.8	1,661.8	1,317.7	344.12	4.829	
18,710.0	9,250.7	17,755.1	8,382.8	175.7	168.7	-58.31	-9,645.4	1,273.0	1,661.9	1,317.4	344.45	4.825	
18,720.0	9,250.7	17,763.4	8,382.9	175.9	168.8	-58.32	-9,653.6	1,273.1	1,662.0	1,317.2	344.78	4.820	
18,730.0	9,250.7	17,771.6	8,382.9	176.1	169.0	-58.32	-9,661.8	1,273.3	1,662.0	1,316.9	345.10	4.816	
18,740.0	9,250.7	17,779.8	8,382.9	176.3	169.1	-58.32	-9,670.1	1,273.5	1,662.1	1,316.7	345.43	4.812	
18,750.0	9,250.7	17,788.1	8,383.0	176.5	169.3	-58.33	-9,678.3	1,273.6	1,662.2	1,316.5	345.75	4.808	
18,760.0	9,250.6	17,796.3	8,383.0	176.7	169.4	-58.33	-9,686.5	1,273.8	1,662.4	1,316.3	346.08	4.803	
18,770.0	9,250.6	17,804.6	8,383.0	176.8	169.6	-58.33	-9,694.8	1,274.0	1,662.5	1,316.1	346.40	4.799	
18,780.0	9,250.6	17,819.0	8,383.0	177.0	169.8	-58.34	-9,709.2	1,274.4	1,662.6	1,315.8	346.84	4.794	
18,790.0	9,250.6	17,819.0	8,383.0	177.2	169.8	-58.34	-9,709.2	1,274.4	1,662.8	1,315.8	347.02	4.792	
18,800.0	9,250.6	17,829.9	8,383.1	177.4	170.0	-58.35	-9,720.1	1,274.7	1,662.9	1,315.5	347.39	4.787	
18,810.0	9,250.5	17,838.6	8,383.1	177.6	170.2	-58.35	-9,728.8	1,274.9	1,663.1	1,315.4	347.73	4.783	
18,820.0	9,250.5	17,847.4	8,383.1	177.7	170.3	-58.35	-9,737.6	1,275.2	1,663.3	1,315.2	348.06	4.779	
18,830.0	9,250.5	17,856.1	8,383.0	177.9	170.5	-58.36	-9,746.3	1,275.4	1,663.4	1,315.0	348.40	4.775	
18,840.0	9,250.5	17,864.9	8,383.0	178.1	170.6	-58.36	-9,755.0	1,275.7	1,663.6	1,314.9	348.74	4.770	
18,850.0	9,250.4	17,873.6	8,383.0	178.3	170.8	-58.37	-9,763.8	1,275.9	1,663.8	1,314.8	349.07	4.766	
18,860.0	9,250.4	17,882.3	8,383.0	178.5	170.9	-58.37	-9,772.5	1,276.2	1,664.0	1,314.6	349.41	4.762	
18,870.0	9,250.4	17,891.1	8,383.0	178.7	171.1	-58.37	-9,781.3	1,276.4	1,664.2	1,314.5	349.74	4.758	

Offset Design King Tut Federal - #1H - OH - OH													Offset Site Error: 2.0 usft
Survey Program: 211-													Offset Well Error: 0.0 usft
Reference		Offset		Semi-Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
18,880.0	9,250.4	17,899.8	8,382.9	178.8	171.2	-58.38	-9,790.0	1,276.7	1,664.5	1,314.4	350.08	4.755	
18,890.0	9,250.4	17,913.0	8,382.9	179.0	171.5	-58.38	-9,803.2	1,277.1	1,664.7	1,314.2	350.49	4.750	
18,900.0	9,250.3	17,917.9	8,382.8	179.2	171.6	-58.38	-9,808.0	1,277.3	1,664.9	1,314.2	350.76	4.747	
18,910.0	9,250.3	17,927.8	8,382.8	179.4	171.7	-58.39	-9,818.0	1,277.6	1,665.1	1,314.0	351.11	4.743	
18,920.0	9,250.3	17,937.8	8,382.8	179.6	171.9	-58.39	-9,827.9	1,277.9	1,665.4	1,313.9	351.46	4.738	
18,930.0	9,250.3	17,947.7	8,382.7	179.7	172.1	-58.40	-9,837.8	1,278.2	1,665.6	1,313.8	351.82	4.734	
18,940.0	9,250.3	17,957.6	8,382.7	179.9	172.2	-58.40	-9,847.8	1,278.6	1,665.8	1,313.7	352.17	4.730	
18,950.0	9,250.2	17,967.6	8,382.7	180.1	172.4	-58.41	-9,857.7	1,278.9	1,666.1	1,313.6	352.52	4.726	
18,960.0	9,250.2	17,977.5	8,382.7	180.3	172.6	-58.41	-9,867.6	1,279.2	1,666.3	1,313.4	352.88	4.722	
18,970.0	9,250.2	17,987.4	8,382.7	180.5	172.8	-58.42	-9,877.5	1,279.6	1,666.5	1,313.3	353.23	4.718	
18,980.0	9,250.2	17,997.4	8,382.7	180.6	172.9	-58.42	-9,887.5	1,280.0	1,666.8	1,313.2	353.58	4.714	
18,990.0	9,250.2	18,007.3	8,382.8	180.8	173.1	-58.43	-9,897.4	1,280.3	1,667.0	1,313.1	353.94	4.710	
19,000.0	9,250.1	18,017.2	8,382.8	181.0	173.3	-58.44	-9,907.3	1,280.7	1,667.3	1,313.0	354.29	4.706	
19,010.0	9,250.1	18,027.1	8,382.8	181.2	173.4	-58.45	-9,917.2	1,281.1	1,667.5	1,312.9	354.64	4.702	
19,020.0	9,250.1	18,037.1	8,382.9	181.4	173.6	-58.45	-9,927.2	1,281.4	1,667.7	1,312.7	355.00	4.698	
19,030.0	9,250.1	18,047.1	8,382.9	181.6	173.8	-58.46	-9,937.2	1,281.8	1,668.0	1,312.6	355.35	4.694	
19,040.0	9,250.0	18,057.1	8,383.0	181.7	174.0	-58.47	-9,947.2	1,282.2	1,668.2	1,312.5	355.71	4.690	
19,050.0	9,250.0	18,067.1	8,383.0	181.9	174.1	-58.48	-9,957.1	1,282.6	1,668.4	1,312.4	356.06	4.686	
19,060.0	9,250.0	18,077.1	8,383.1	182.1	174.3	-58.49	-9,967.1	1,283.0	1,668.7	1,312.3	356.41	4.682	
19,062.0	9,250.0	18,079.1	8,383.1	182.1	174.3	-58.49	-9,969.1	1,283.1	1,668.7	1,312.2	356.48	4.681 ES, SF	

Offset Design											Offset Site Error: 2.0 usft		
King Tut Federal - Red Head 31 Federal #1H - OH - OH											Offset Wall Error: 0.0 usft		
Reference		Offset		Semi-Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
13,650.0	9,261.4	9,239.5	9,238.4	84.7	19.4	-91.28	-5,435.5	446.4	1,033.4	929.3	104.08	9.929	
13,660.0	9,261.4	9,239.5	9,238.5	84.9	19.4	-91.28	-5,435.5	446.4	1,025.4	921.1	104.26	9.835	
13,670.0	9,261.4	9,239.6	9,238.6	85.1	19.4	-91.29	-5,435.5	446.4	1,017.4	912.9	104.44	9.742	
13,680.0	9,261.4	9,239.7	9,238.6	85.2	19.4	-91.30	-5,435.5	446.4	1,009.4	904.8	104.61	9.649	
13,690.0	9,261.3	9,239.7	9,238.7	85.4	19.4	-91.30	-5,435.5	446.4	1,001.5	896.7	104.79	9.557	
13,700.0	9,261.3	9,239.8	9,238.8	85.6	19.4	-91.31	-5,435.5	446.4	993.6	888.6	104.97	9.466	
13,710.0	9,261.3	9,239.9	9,238.8	85.8	19.4	-91.31	-5,435.5	446.4	985.7	880.6	105.14	9.375	
13,720.0	9,261.3	9,239.9	9,238.9	85.9	19.4	-91.32	-5,435.5	446.4	977.9	872.6	105.32	9.285	
13,730.0	9,261.2	9,240.0	9,239.0	86.1	19.4	-91.33	-5,435.5	446.4	970.2	864.7	105.50	9.196	
13,740.0	9,261.2	9,240.1	9,239.0	86.3	19.4	-91.33	-5,435.5	446.4	962.4	856.8	105.67	9.107	
13,750.0	9,261.2	9,240.1	9,239.1	86.5	19.4	-91.34	-5,435.5	446.3	954.7	848.9	105.85	9.020	
13,760.0	9,261.2	9,240.2	9,239.2	86.7	19.4	-91.35	-5,435.5	446.3	947.1	841.1	106.03	8.932	
13,770.0	9,261.2	9,240.3	9,239.2	86.8	19.4	-91.35	-5,435.5	446.3	939.5	833.3	106.21	8.846	
13,780.0	9,261.1	9,240.3	9,239.3	87.0	19.4	-91.36	-5,435.5	446.3	931.9	825.6	106.38	8.760	
13,790.0	9,261.1	9,240.4	9,239.4	87.2	19.4	-91.36	-5,435.5	446.3	924.4	817.9	106.56	8.675	
13,800.0	9,261.1	9,240.5	9,239.4	87.4	19.4	-91.37	-5,435.5	446.3	917.0	810.2	106.74	8.591	
13,810.0	9,261.1	9,240.5	9,239.5	87.5	19.4	-91.38	-5,435.5	446.3	909.6	802.6	106.91	8.507	
13,820.0	9,261.1	9,240.6	9,239.6	87.7	19.4	-91.38	-5,435.5	446.3	902.2	795.1	107.09	8.425	
13,830.0	9,261.0	9,240.7	9,239.6	87.9	19.4	-91.39	-5,435.5	446.3	894.9	787.6	107.27	8.342	
13,840.0	9,261.0	9,240.7	9,239.7	88.1	19.4	-91.39	-5,435.5	446.3	887.6	780.2	107.45	8.261	
13,850.0	9,261.0	9,240.8	9,239.8	88.2	19.4	-91.40	-5,435.5	446.3	880.4	772.8	107.62	8.181	
13,860.0	9,261.0	9,240.9	9,239.8	88.4	19.4	-91.41	-5,435.5	446.3	873.3	765.5	107.80	8.101	
13,870.0	9,261.0	9,240.9	9,239.9	88.6	19.4	-91.41	-5,435.5	446.3	866.2	758.2	107.98	8.022	
13,880.0	9,260.9	9,241.0	9,240.0	88.8	19.4	-91.42	-5,435.5	446.3	859.2	751.0	108.16	7.944	
13,890.0	9,260.9	9,241.1	9,240.0	89.0	19.4	-91.43	-5,435.5	446.3	852.2	743.8	108.33	7.866	
13,900.0	9,260.9	9,241.1	9,240.1	89.1	19.4	-91.43	-5,435.5	446.3	845.3	736.7	108.51	7.790	
13,910.0	9,260.9	9,241.2	9,240.2	89.3	19.4	-91.44	-5,435.5	446.3	838.4	729.7	108.69	7.714	
13,920.0	9,260.8	9,241.3	9,240.2	89.5	19.4	-91.44	-5,435.5	446.3	831.6	722.8	108.87	7.639	
13,930.0	9,260.8	9,241.3	9,240.3	89.7	19.4	-91.45	-5,435.5	446.3	824.9	715.9	109.04	7.565	
13,940.0	9,260.8	9,241.4	9,240.4	89.8	19.4	-91.46	-5,435.5	446.3	818.2	709.0	109.22	7.492	
13,950.0	9,260.8	9,241.5	9,240.4	90.0	19.4	-91.46	-5,435.5	446.3	811.6	702.3	109.40	7.419	
13,960.0	9,260.8	9,241.5	9,240.5	90.2	19.4	-91.47	-5,435.5	446.3	805.1	695.6	109.58	7.348	
13,970.0	9,260.7	9,241.6	9,240.6	90.4	19.4	-91.48	-5,435.5	446.3	798.7	688.9	109.75	7.277	
13,980.0	9,260.7	9,241.7	9,240.6	90.6	19.4	-91.48	-5,435.5	446.3	792.3	682.4	109.93	7.207	
13,990.0	9,260.7	9,241.7	9,240.7	90.7	19.4	-91.49	-5,435.5	446.3	786.0	675.9	110.11	7.139	
14,000.0	9,260.7	9,241.8	9,240.8	90.9	19.4	-91.49	-5,435.5	446.3	779.8	669.5	110.29	7.071	
14,010.0	9,260.7	9,241.9	9,240.8	91.1	19.4	-91.50	-5,435.5	446.3	773.7	663.2	110.46	7.004	
14,020.0	9,260.6	9,241.9	9,240.9	91.3	19.4	-91.51	-5,435.5	446.3	767.6	657.0	110.64	6.938	
14,030.0	9,260.6	9,242.0	9,241.0	91.4	19.4	-91.51	-5,435.5	446.3	761.6	650.8	110.82	6.873	
14,040.0	9,260.6	9,242.1	9,241.0	91.6	19.4	-91.52	-5,435.5	446.3	755.7	644.7	111.00	6.809	
14,050.0	9,260.6	9,242.1	9,241.1	91.8	19.4	-91.53	-5,435.5	446.3	749.9	638.8	111.17	6.745	
14,060.0	9,260.6	9,242.2	9,241.2	92.0	19.4	-91.53	-5,435.5	446.3	744.2	632.9	111.35	6.683	
14,070.0	9,260.5	9,242.3	9,241.2	92.2	19.4	-91.54	-5,435.5	446.3	738.6	627.1	111.53	6.622	
14,080.0	9,260.5	9,242.3	9,241.3	92.3	19.4	-91.54	-5,435.5	446.3	733.1	621.4	111.71	6.562	
14,090.0	9,260.5	9,242.4	9,241.4	92.5	19.4	-91.55	-5,435.5	446.3	727.6	615.7	111.89	6.503	
14,100.0	9,260.5	9,242.5	9,241.4	92.7	19.4	-91.56	-5,435.5	446.3	722.3	610.2	112.06	6.445	
14,110.0	9,260.4	9,242.5	9,241.5	92.9	19.4	-91.56	-5,435.5	446.3	717.1	604.8	112.24	6.388	
14,120.0	9,260.4	9,242.6	9,241.6	93.0	19.4	-91.57	-5,435.5	446.3	711.9	599.5	112.42	6.333	
14,130.0	9,260.4	9,242.7	9,241.6	93.2	19.4	-91.58	-5,435.5	446.3	706.9	594.3	112.60	6.278	
14,140.0	9,260.4	9,242.7	9,241.7	93.4	19.4	-91.58	-5,435.5	446.3	702.0	589.2	112.78	6.224	
14,150.0	9,260.4	9,242.8	9,241.8	93.6	19.4	-91.59	-5,435.5	446.3	697.1	584.2	112.95	6.172	
14,160.0	9,260.3	9,242.9	9,241.8	93.8	19.4	-91.60	-5,435.5	446.3	692.4	579.3	113.13	6.121	
14,170.0	9,260.3	9,242.9	9,241.9	93.9	19.4	-91.60	-5,435.5	446.3	687.8	574.5	113.31	6.071	
14,180.0	9,260.3	9,243.0	9,242.0	94.1	19.4	-91.61	-5,435.5	446.3	683.4	569.9	113.49	6.022	
14,190.0	9,260.3	9,243.1	9,242.0	94.3	19.4	-91.61	-5,435.5	446.3	679.0	565.3	113.67	5.974	
14,200.0	9,260.3	9,243.1	9,242.1	94.5	19.4	-91.62	-5,435.5	446.3	674.8	560.9	113.84	5.927	
14,210.0	9,260.2	9,243.2	9,242.2	94.6	19.4	-91.63	-5,435.5	446.3	670.7	556.6	114.02	5.882	
14,220.0	9,260.2	9,243.3	9,242.2	94.8	19.4	-91.63	-5,435.5	446.2	666.7	552.5	114.20	5.838	
14,230.0	9,260.2	9,243.3	9,242.3	95.0	19.4	-91.64	-5,435.5	446.2	662.8	548.4	114.38	5.795	
14,240.0	9,260.2	9,243.4	9,242.4	95.2	19.4	-91.65	-5,435.5	446.2	659.1	544.5	114.56	5.753	
14,250.0	9,260.2	9,243.5	9,242.4	95.4	19.4	-91.65	-5,435.5	446.2	655.5	540.7	114.73	5.713	
14,260.0	9,260.1	9,243.5	9,242.5	95.5	19.4	-91.66	-5,435.5	446.2	652.0	537.1	114.91	5.674	
14,270.0	9,260.1	9,243.6	9,242.6	95.7	19.4	-91.67	-5,435.5	446.2	648.7	533.6	115.09	5.636	
14,280.0	9,260.1	9,243.7	9,242.6	95.9	19.4	-91.67	-5,435.5	446.2	645.5	530.2	115.27	5.600	
14,290.0	9,260.1	9,243.7	9,242.7	96.1	19.4	-91.68	-5,435.5	446.2	642.4	527.0	115.45	5.564	
14,300.0	9,260.0	9,243.8	9,242.8	96.2	19.4	-91.68	-5,435.5	446.2	639.5	523.9	115.62	5.531	

Offset Design											Offset Site Error: 2.0 usft		
Survey Program: 100- King Tut Federal - Red Head 31 Federal #1H - OH - OH											Offset Well Error: 0.0 usft		
Reference		Offset		Semi-Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		N/S (usft)	E/W (usft)	Between Centres (usft)	Between Ellipses (usft)			
14,310.0	9,260.0	9,243.9	9,242.8	96.4	19.4	-91.69	-5,435.5	446.2	636.7	520.9	115.80	5.498	
14,320.0	9,260.0	9,244.0	9,242.9	96.6	19.4	-91.70	-5,435.5	446.2	634.1	518.1	115.98	5.467	
14,330.0	9,260.0	9,244.0	9,243.0	96.8	19.4	-91.70	-5,435.5	446.2	631.6	515.4	116.16	5.437	
14,340.0	9,260.0	9,244.1	9,243.1	97.0	19.4	-91.71	-5,435.5	446.2	629.3	512.9	116.34	5.409	
14,350.0	9,259.9	9,244.2	9,243.1	97.1	19.4	-91.72	-5,435.5	446.2	627.1	510.6	116.52	5.382	
14,360.0	9,259.9	9,244.2	9,243.2	97.3	19.4	-91.72	-5,435.5	446.2	625.1	508.4	116.69	5.356	
14,370.0	9,259.9	9,244.3	9,243.3	97.5	19.4	-91.73	-5,435.5	446.2	623.2	506.3	116.87	5.332	
14,380.0	9,259.9	9,244.4	9,243.3	97.7	19.4	-91.74	-5,435.5	446.2	621.5	504.4	117.05	5.309	
14,390.0	9,259.9	9,244.4	9,243.4	97.8	19.4	-91.74	-5,435.5	446.2	619.9	502.7	117.23	5.288	
14,400.0	9,259.8	9,244.5	9,243.5	98.0	19.4	-91.75	-5,435.5	446.2	618.5	501.1	117.41	5.268	
14,410.0	9,259.8	9,244.6	9,243.5	98.2	19.4	-91.75	-5,435.5	446.2	617.3	499.7	117.59	5.249	
14,420.0	9,259.8	9,244.6	9,243.6	98.4	19.4	-91.76	-5,435.5	446.2	616.2	498.4	117.76	5.232	
14,430.0	9,259.8	9,244.7	9,243.7	98.6	19.4	-91.77	-5,435.5	446.2	615.3	497.3	117.94	5.217	
14,440.0	9,259.7	9,244.8	9,243.7	98.7	19.4	-91.77	-5,435.5	446.2	614.5	496.4	118.12	5.202	
14,450.0	9,259.7	9,244.8	9,243.8	98.9	19.4	-91.78	-5,435.5	446.2	613.9	495.6	118.30	5.189	
14,460.0	9,259.7	9,244.9	9,243.9	99.1	19.4	-91.79	-5,435.5	446.2	613.5	495.0	118.48	5.178	
14,470.0	9,259.7	9,245.0	9,243.9	99.3	19.4	-91.79	-5,435.5	446.2	613.2	494.5	118.66	5.168	
14,480.0	9,259.7	9,245.1	9,244.0	99.5	19.4	-91.80	-5,435.5	446.2	613.1	494.2	118.84	5.159	
14,481.9	9,259.7	9,245.1	9,244.0	99.5	19.4	-91.80	-5,435.5	446.2	613.1	494.2	118.87	5.157 CC	
14,490.0	9,259.6	9,245.1	9,244.1	99.6	19.4	-91.81	-5,435.5	446.2	613.1	494.1	119.01	5.152 ES	
14,500.0	9,259.6	9,245.2	9,244.2	99.8	19.4	-91.81	-5,435.5	446.2	613.3	494.1	119.19	5.146	
14,510.0	9,259.6	9,245.3	9,244.2	100.0	19.4	-91.82	-5,435.5	446.2	613.7	494.3	119.37	5.141	
14,520.0	9,259.6	9,245.3	9,244.3	100.2	19.4	-91.83	-5,435.5	446.2	614.2	494.7	119.55	5.138	
14,530.0	9,259.6	9,245.4	9,244.4	100.3	19.4	-91.83	-5,435.5	446.2	614.9	495.2	119.73	5.136	
14,540.0	9,259.5	9,245.5	9,244.4	100.5	19.4	-91.84	-5,435.5	446.2	615.8	495.9	119.91	5.136 SF	
14,550.0	9,259.5	9,245.5	9,244.5	100.7	19.4	-91.84	-5,435.5	446.2	616.8	496.7	120.09	5.137	
14,560.0	9,259.5	9,245.6	9,244.6	100.9	19.4	-91.85	-5,435.5	446.2	618.0	497.7	120.27	5.139	
14,570.0	9,259.5	9,245.7	9,244.6	101.1	19.4	-91.86	-5,435.5	446.2	619.4	498.9	120.44	5.142	
14,580.0	9,259.5	9,245.7	9,244.7	101.2	19.4	-91.86	-5,435.5	446.2	620.9	500.2	120.62	5.147	
14,590.0	9,259.4	9,245.8	9,244.8	101.4	19.4	-91.87	-5,435.5	446.2	622.5	501.7	120.80	5.153	
14,600.0	9,259.4	9,245.9	9,244.8	101.6	19.4	-91.88	-5,435.5	446.2	624.3	503.3	120.98	5.161	
14,610.0	9,259.4	9,245.9	9,244.9	101.8	19.4	-91.88	-5,435.5	446.2	626.3	505.1	121.16	5.169	
14,620.0	9,259.4	9,246.0	9,245.0	102.0	19.4	-91.89	-5,435.5	446.2	628.4	507.1	121.34	5.179	
14,630.0	9,259.3	9,246.1	9,245.1	102.1	19.4	-91.90	-5,435.5	446.2	630.7	509.2	121.52	5.190	
14,640.0	9,259.3	9,246.2	9,245.1	102.3	19.4	-91.90	-5,435.5	446.2	633.1	511.4	121.70	5.202	
14,650.0	9,259.3	9,246.2	9,245.2	102.5	19.4	-91.91	-5,435.5	446.2	635.7	513.8	121.87	5.216	
14,660.0	9,259.3	9,246.3	9,245.3	102.7	19.4	-91.92	-5,435.6	446.2	638.4	516.3	122.05	5.231	
14,670.0	9,259.3	9,246.4	9,245.3	102.8	19.4	-91.92	-5,435.6	446.2	641.3	519.0	122.23	5.246	
14,680.0	9,259.2	9,246.4	9,245.4	103.0	19.4	-91.93	-5,435.6	446.2	644.3	521.9	122.41	5.263	
14,690.0	9,259.2	9,246.5	9,245.5	103.2	19.4	-91.94	-5,435.6	446.1	647.4	524.8	122.59	5.281	
14,700.0	9,259.2	9,246.6	9,245.5	103.4	19.4	-91.94	-5,435.6	446.1	650.7	527.9	122.77	5.300	
14,710.0	9,259.2	9,246.6	9,245.6	103.6	19.4	-91.95	-5,435.6	446.1	654.1	531.2	122.95	5.320	
14,720.0	9,259.2	9,246.7	9,245.7	103.7	19.4	-91.96	-5,435.6	446.1	657.7	534.5	123.13	5.341	
14,730.0	9,259.1	9,246.8	9,245.7	103.9	19.4	-91.96	-5,435.6	446.1	661.3	538.0	123.30	5.364	
14,740.0	9,259.1	9,246.9	9,245.8	104.1	19.4	-91.97	-5,435.6	446.1	665.2	541.7	123.48	5.387	
14,750.0	9,259.1	9,246.9	9,245.9	104.3	19.4	-91.98	-5,435.6	446.1	669.1	545.4	123.66	5.411	
14,760.0	9,259.1	9,247.0	9,246.0	104.5	19.4	-91.98	-5,435.6	446.1	673.2	549.3	123.84	5.436	
14,770.0	9,259.1	9,247.1	9,246.0	104.6	19.4	-91.99	-5,435.6	446.1	677.4	553.3	124.02	5.462	
14,780.0	9,259.0	9,247.1	9,246.1	104.8	19.4	-91.99	-5,435.6	446.1	681.7	557.5	124.20	5.489	
14,790.0	9,259.0	9,247.2	9,246.2	105.0	19.4	-92.00	-5,435.6	446.1	686.1	561.7	124.38	5.516	
14,800.0	9,259.0	9,247.3	9,246.2	105.2	19.4	-92.01	-5,435.6	446.1	690.7	566.1	124.56	5.545	
14,810.0	9,259.0	9,247.3	9,246.3	105.3	19.4	-92.01	-5,435.6	446.1	695.3	570.6	124.74	5.574	
14,820.0	9,258.9	9,247.4	9,246.4	105.5	19.4	-92.02	-5,435.6	446.1	700.1	575.2	124.92	5.605	
14,830.0	9,258.9	9,247.5	9,246.5	105.7	19.4	-92.03	-5,435.6	446.1	705.0	579.9	125.09	5.636	
14,840.0	9,258.9	9,247.6	9,246.5	105.9	19.4	-92.03	-5,435.6	446.1	710.0	584.7	125.27	5.667	
14,850.0	9,258.9	9,247.6	9,246.6	106.1	19.4	-92.04	-5,435.6	446.1	715.1	589.6	125.45	5.700	
14,860.0	9,258.9	9,247.7	9,246.7	106.2	19.4	-92.05	-5,435.6	446.1	720.3	594.6	125.63	5.733	
14,870.0	9,258.8	9,247.8	9,246.7	106.4	19.4	-92.05	-5,435.6	446.1	725.6	599.7	125.81	5.767	
14,880.0	9,258.8	9,247.8	9,246.8	106.6	19.4	-92.06	-5,435.6	446.1	731.0	605.0	125.99	5.802	
14,890.0	9,258.8	9,247.9	9,246.9	106.8	19.4	-92.07	-5,435.6	446.1	736.5	610.3	126.17	5.837	
14,900.0	9,258.8	9,248.0	9,246.9	107.0	19.4	-92.07	-5,435.6	446.1	742.0	615.7	126.35	5.873	
14,910.0	9,258.8	9,248.1	9,247.0	107.1	19.4	-92.08	-5,435.6	446.1	747.7	621.2	126.53	5.910	
14,920.0	9,258.7	9,248.1	9,247.1	107.3	19.4	-92.09	-5,435.6	446.1	753.5	626.8	126.71	5.947	
14,930.0	9,258.7	9,248.2	9,247.2	107.5	19.4	-92.09	-5,435.6	446.1	759.3	632.5	126.89	5.984	
14,940.0	9,258.7	9,248.3	9,247.2	107.7	19.4	-92.10	-5,435.6	446.1	765.3	638.2	127.07	6.023	
14,950.0	9,258.7	9,248.3	9,247.3	107.9	19.4	-92.11	-5,435.6	446.1	771.3	644.1	127.24	6.062	

Offset Design: King Tut Federal - Red Head 31 Federal #1H - OH - OH										Offset Site Error: 2.0 usft	
Survey Program: 100										Offset Well Error: 0.0 usft	
Reference		Offset		Semi-Major Axis		Distance		Minimum Separation		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation Factor
14,960.0	9,258.7	9,248.4	9,247.4	108.0	19.4	-92.11	-5,435.6	446.1	777.4	650.0	127.42
14,970.0	9,258.6	9,248.5	9,247.4	108.2	19.4	-92.12	-5,435.6	446.1	783.6	656.0	127.60
14,980.0	9,258.6	9,248.5	9,247.5	108.4	19.4	-92.13	-5,435.6	446.1	789.9	662.1	127.78
14,990.0	9,258.6	9,248.6	9,247.6	108.6	19.4	-92.13	-5,435.6	446.1	796.2	668.3	127.96
15,000.0	9,258.6	9,248.7	9,247.7	108.8	19.4	-92.14	-5,435.6	446.1	802.6	674.5	128.14
15,010.0	9,258.5	9,248.8	9,247.7	108.9	19.4	-92.15	-5,435.6	446.1	809.1	680.8	128.32
15,020.0	9,258.5	9,248.8	9,247.8	109.1	19.4	-92.15	-5,435.6	446.1	815.7	687.2	128.50
15,030.0	9,258.5	9,248.9	9,247.9	109.3	19.4	-92.16	-5,435.6	446.1	822.3	693.6	128.68
15,040.0	9,258.5	9,249.0	9,247.9	109.5	19.4	-92.17	-5,435.6	446.1	829.0	700.2	128.86
15,050.0	9,258.5	9,249.0	9,248.0	109.6	19.4	-92.17	-5,435.6	446.1	835.8	706.7	129.04
15,060.0	9,258.4	9,249.1	9,248.1	109.8	19.4	-92.18	-5,435.6	446.1	842.6	713.4	129.22
15,070.0	9,258.4	9,249.2	9,248.2	110.0	19.4	-92.19	-5,435.6	446.1	849.5	720.1	129.40
15,080.0	9,258.4	9,249.3	9,248.2	110.2	19.4	-92.19	-5,435.6	446.1	856.5	726.9	129.58
15,090.0	9,258.4	9,249.3	9,248.3	110.4	19.4	-92.20	-5,435.6	446.1	863.5	733.7	129.76
15,100.0	9,258.4	9,249.4	9,248.4	110.5	19.4	-92.21	-5,435.6	446.1	870.5	740.6	129.93
15,110.0	9,258.3	9,249.5	9,248.4	110.7	19.4	-92.21	-5,435.6	446.1	877.7	747.6	130.11
15,120.0	9,258.3	9,249.5	9,248.5	110.9	19.4	-92.22	-5,435.6	446.1	884.9	754.6	130.29
15,130.0	9,258.3	9,249.6	9,248.6	111.1	19.4	-92.23	-5,435.6	446.1	892.1	761.6	130.47
15,140.0	9,258.3	9,249.7	9,248.7	111.3	19.4	-92.23	-5,435.6	446.0	899.4	768.7	130.65
15,150.0	9,258.3	9,249.8	9,248.7	111.4	19.4	-92.24	-5,435.6	446.0	906.7	775.9	130.83
15,160.0	9,258.2	9,249.8	9,248.8	111.6	19.4	-92.25	-5,435.6	446.0	914.1	783.1	131.01
15,170.0	9,258.2	9,249.9	9,248.9	111.8	19.4	-92.25	-5,435.6	446.0	921.6	790.4	131.19
15,180.0	9,258.2	9,250.0	9,248.9	112.0	19.4	-92.26	-5,435.6	446.0	929.0	797.7	131.37
15,190.0	9,258.2	9,250.0	9,249.0	112.2	19.4	-92.27	-5,435.6	446.0	936.6	805.0	131.55
15,200.0	9,258.1	9,250.1	9,249.1	112.3	19.4	-92.27	-5,435.6	446.0	944.2	812.4	131.73
15,210.0	9,258.1	9,250.2	9,249.2	112.5	19.4	-92.28	-5,435.6	446.0	951.8	819.9	131.91
15,220.0	9,258.1	9,250.3	9,249.2	112.7	19.4	-92.29	-5,435.6	446.0	959.5	827.4	132.09
15,230.0	9,258.1	9,250.3	9,249.3	112.9	19.4	-92.29	-5,435.6	446.0	967.2	834.9	132.27
15,240.0	9,258.1	9,250.4	9,249.4	113.1	19.4	-92.30	-5,435.6	446.0	974.9	842.5	132.45
15,250.0	9,258.0	9,250.5	9,249.4	113.2	19.4	-92.31	-5,435.6	446.0	982.7	850.1	132.63
15,260.0	9,258.0	9,250.6	9,249.5	113.4	19.4	-92.31	-5,435.6	446.0	990.6	857.8	132.81
15,270.0	9,258.0	9,250.6	9,249.6	113.6	19.4	-92.32	-5,435.6	446.0	998.4	865.4	132.99
15,280.0	9,258.0	9,250.7	9,249.7	113.8	19.4	-92.33	-5,435.6	446.0	1,006.3	873.2	133.17
15,290.0	9,258.0	9,250.8	9,249.7	114.0	19.4	-92.33	-5,435.6	446.0	1,014.3	881.0	133.35
15,300.0	9,257.9	9,250.8	9,249.8	114.1	19.4	-92.34	-5,435.6	446.0	1,022.3	888.8	133.53
15,310.0	9,257.9	9,250.9	9,249.9	114.3	19.4	-92.35	-5,435.6	446.0	1,030.3	896.6	133.71
15,320.0	9,257.9	9,251.0	9,249.9	114.5	19.4	-92.35	-5,435.6	446.0	1,038.4	904.5	133.89
15,330.0	9,257.9	9,251.1	9,250.0	114.7	19.4	-92.36	-5,435.6	446.0	1,046.4	912.4	134.06
15,340.0	9,257.9	9,251.1	9,250.1	114.8	19.4	-92.37	-5,435.6	446.0	1,054.6	920.3	134.24
15,350.0	9,257.8	9,251.2	9,250.2	115.0	19.4	-92.37	-5,435.6	446.0	1,062.7	928.3	134.42
15,360.0	9,257.8	9,251.3	9,250.2	115.2	19.4	-92.38	-5,435.6	446.0	1,070.9	936.3	134.60
15,370.0	9,257.8	9,251.3	9,250.3	115.4	19.4	-92.39	-5,435.6	446.0	1,079.1	944.3	134.78
15,380.0	9,257.8	9,251.4	9,250.4	115.6	19.4	-92.39	-5,435.6	446.0	1,087.4	952.4	134.96
15,390.0	9,257.7	9,251.5	9,250.5	115.7	19.4	-92.40	-5,435.6	446.0	1,095.6	960.5	135.14
15,400.0	9,257.7	9,251.6	9,250.5	115.9	19.4	-92.41	-5,435.6	446.0	1,103.9	968.6	135.32
15,410.0	9,257.7	9,251.6	9,250.6	116.1	19.4	-92.42	-5,435.6	446.0	1,112.3	976.8	135.50
15,420.0	9,257.7	9,251.7	9,250.7	116.3	19.4	-92.42	-5,435.6	446.0	1,120.6	984.9	135.68
15,430.0	9,257.7	9,251.8	9,250.7	116.5	19.4	-92.43	-5,435.6	446.0	1,129.0	993.1	135.86
15,440.0	9,257.6	9,251.9	9,250.8	116.6	19.4	-92.44	-5,435.6	446.0	1,137.4	1,001.4	136.04
15,450.0	9,257.6	9,251.9	9,250.9	116.8	19.4	-92.44	-5,435.6	446.0	1,145.8	1,009.6	136.22
15,460.0	9,257.6	9,252.0	9,251.0	117.0	19.4	-92.45	-5,435.6	446.0	1,154.3	1,017.9	136.40
15,470.0	9,257.6	9,252.1	9,251.0	117.2	19.4	-92.46	-5,435.6	446.0	1,162.8	1,026.2	136.58
15,480.0	9,257.6	9,252.2	9,251.1	117.4	19.4	-92.46	-5,435.6	446.0	1,171.3	1,034.5	136.76
15,490.0	9,257.5	9,252.2	9,251.2	117.5	19.4	-92.47	-5,435.6	446.0	1,179.8	1,042.9	136.94
15,500.0	9,257.5	9,252.3	9,251.3	117.7	19.4	-92.48	-5,435.6	446.0	1,188.4	1,051.3	137.12
15,510.0	9,257.5	9,252.4	9,251.3	117.9	19.4	-92.48	-5,435.6	446.0	1,197.0	1,059.7	137.30
15,520.0	9,257.5	9,252.4	9,251.4	118.1	19.4	-92.49	-5,435.6	446.0	1,205.6	1,068.1	137.48
15,530.0	9,257.5	9,252.5	9,251.5	118.3	19.4	-92.50	-5,435.6	446.0	1,214.2	1,076.5	137.66
15,540.0	9,257.4	9,252.6	9,251.5	118.4	19.4	-92.50	-5,435.6	446.0	1,222.8	1,085.0	137.84
15,550.0	9,257.4	9,252.7	9,251.6	118.6	19.4	-92.51	-5,435.6	446.0	1,231.5	1,093.5	138.02
15,560.0	9,257.4	9,252.7	9,251.7	118.8	19.4	-92.52	-5,435.6	446.0	1,240.2	1,102.0	138.20
15,570.0	9,257.4	9,252.8	9,251.8	119.0	19.4	-92.52	-5,435.6	446.0	1,248.9	1,110.5	138.38
15,580.0	9,257.3	9,252.9	9,251.8	119.2	19.4	-92.53	-5,435.6	445.9	1,257.6	1,119.0	138.56
15,590.0	9,257.3	9,253.0	9,251.9	119.3	19.4	-92.54	-5,435.6	445.9	1,266.3	1,127.6	138.74
15,600.0	9,257.3	9,253.0	9,252.0	119.5	19.4	-92.55	-5,435.6	445.9	1,275.1	1,136.2	138.92
15,610.0	9,257.3	9,253.1	9,252.1	119.7	19.4	-92.55	-5,435.6	445.9	1,283.9	1,144.8	139.10

Offset Design: King Tut Federal - Red Head 31 Federal #1H - OH - OH											Offset Site Error: 2:0.0usft		
Survey Program: 100-											Offset Well Error: 0:0.0usft		
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		Separation Factor
15,620.0	9,257.3	9,253.2	9,252.1	119.9	19.4	-92.56	-5,435.6	445.9	1,292.7	1,153.4	139.28	9.281	
15,630.0	9,257.2	9,253.3	9,252.2	120.1	19.4	-92.57	-5,435.6	445.9	1,301.5	1,162.0	139.46	9.332	
15,640.0	9,257.2	9,253.3	9,252.3	120.2	19.4	-92.57	-5,435.6	445.9	1,310.3	1,170.7	139.64	9.383	
15,650.0	9,257.2	9,253.4	9,252.4	120.4	19.4	-92.58	-5,435.6	445.9	1,319.2	1,179.3	139.82	9.435	
15,660.0	9,257.2	9,253.5	9,252.4	120.6	19.4	-92.59	-5,435.6	445.9	1,328.0	1,188.0	140.00	9.486	
15,670.0	9,257.2	9,253.5	9,252.5	120.8	19.4	-92.59	-5,435.6	445.9	1,336.9	1,196.7	140.18	9.537	
15,680.0	9,257.1	9,253.6	9,252.6	121.0	19.4	-92.60	-5,435.6	445.9	1,345.8	1,205.4	140.36	9.588	
15,690.0	9,257.1	9,253.7	9,252.7	121.1	19.4	-92.61	-5,435.6	445.9	1,354.7	1,214.2	140.54	9.639	
15,700.0	9,257.1	9,253.8	9,252.7	121.3	19.4	-92.61	-5,435.6	445.9	1,363.6	1,222.9	140.72	9.690	
15,710.0	9,257.1	9,253.8	9,252.8	121.5	19.4	-92.62	-5,435.6	445.9	1,372.6	1,231.7	140.90	9.741	
15,720.0	9,257.0	9,253.9	9,252.9	121.7	19.4	-92.63	-5,435.6	445.9	1,381.5	1,240.4	141.08	9.792	
15,730.0	9,257.0	9,254.0	9,252.9	121.9	19.4	-92.64	-5,435.6	445.9	1,390.5	1,249.2	141.26	9.843	
15,740.0	9,257.0	9,254.1	9,253.0	122.0	19.4	-92.64	-5,435.6	445.9	1,399.5	1,258.0	141.44	9.894	
15,750.0	9,257.0	9,254.1	9,253.1	122.2	19.4	-92.65	-5,435.6	445.9	1,408.5	1,266.8	141.62	9.945	
15,760.0	9,257.0	9,254.2	9,253.2	122.4	19.4	-92.66	-5,435.6	445.9	1,417.5	1,275.7	141.80	9.996	

Offset Design										Windward Federal - #1H - OH - OH		Offset Site Error: 3.0(usft)	
Survey Program: 238-8977										Offset Well Error: 3.0(usft)			
Reference		Offset		Semi-Major Axis		Distance		Minimum Separation		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N/S (usft)	Offset Wellbore Centre E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation Factor		
2,060.0	2,060.0	2,066.1	2,065.9	4.5	5.9	-76.22	24.5	-100.1	103.1	92.7	10.36		
2,070.0	2,070.0	2,076.2	2,076.1	4.5	5.9	-76.24	24.5	-99.9	102.9	92.5	10.39		
2,080.0	2,080.0	2,086.4	2,086.2	4.5	5.9	-76.26	24.4	-99.7	102.7	92.3	10.43		
2,090.0	2,090.0	2,096.5	2,096.3	4.6	5.9	-76.27	24.3	-99.5	102.5	92.0	10.47		
2,100.0	2,100.0	2,106.7	2,106.5	4.6	5.9	-76.27	24.3	-99.3	102.3	91.8	10.51		
2,110.0	2,110.0	2,116.8	2,116.6	4.6	5.9	-76.27	24.2	-99.1	102.0	91.5	10.54		
2,120.0	2,120.0	2,126.9	2,126.7	4.6	6.0	-76.25	24.2	-98.9	101.8	91.2	10.58		
2,130.0	2,130.0	2,137.0	2,136.8	4.6	6.0	-76.23	24.2	-98.6	101.6	90.9	10.62		
2,140.0	2,140.0	2,146.9	2,146.7	4.7	6.0	-76.21	24.1	-98.3	101.3	90.6	10.66		
2,150.0	2,150.0	2,156.9	2,156.7	4.7	6.0	-76.18	24.1	-98.1	101.1	90.4	10.69		
2,160.0	2,160.0	2,166.8	2,166.6	4.7	6.0	-76.14	24.1	-97.9	100.8	90.1	10.73		
2,170.0	2,170.0	2,176.7	2,176.5	4.7	6.0	-76.10	24.2	-97.6	100.6	89.8	10.77		
2,180.0	2,180.0	2,186.7	2,186.4	4.8	6.0	-76.06	24.2	-97.4	100.4	89.6	10.80		
2,190.0	2,190.0	2,196.6	2,196.4	4.8	6.1	-76.01	24.2	-97.1	100.1	89.3	10.84		
2,200.0	2,200.0	2,206.5	2,206.3	4.8	6.1	-75.95	24.3	-96.9	99.9	89.0	10.88		
2,210.0	2,210.0	2,216.4	2,216.2	4.8	6.1	-75.89	24.3	-96.7	99.7	88.8	10.92		
2,220.0	2,220.0	2,226.4	2,226.1	4.8	6.1	-75.83	24.4	-96.5	99.5	88.6	10.95		
2,230.0	2,230.0	2,236.3	2,236.0	4.9	6.1	-75.76	24.4	-96.3	99.3	88.3	10.99		
2,240.0	2,240.0	2,246.1	2,245.9	4.9	6.1	-75.68	24.5	-96.1	99.2	88.1	11.03		
2,250.0	2,250.0	2,256.0	2,255.8	4.9	6.1	-75.59	24.6	-95.9	99.0	87.9	11.06		
2,260.0	2,260.0	2,265.9	2,265.7	4.9	6.2	-75.50	24.7	-95.7	98.8	87.7	11.10		
2,270.0	2,270.0	2,275.8	2,275.5	5.0	6.2	-75.40	24.9	-95.5	98.7	87.6	11.14		
2,280.0	2,280.0	2,285.7	2,285.4	5.0	6.2	-75.30	25.0	-95.3	98.6	87.4	11.18		
2,290.0	2,290.0	2,295.6	2,295.3	5.0	6.2	-75.18	25.2	-95.2	98.4	87.2	11.21		
2,300.0	2,300.0	2,305.4	2,305.2	5.0	6.2	-75.06	25.3	-95.0	98.3	87.1	11.25		
2,310.0	2,310.0	2,315.3	2,315.1	5.1	6.2	-74.94	25.5	-94.9	98.2	87.0	11.29		
2,320.0	2,320.0	2,325.2	2,324.9	5.1	6.3	-74.81	25.7	-94.7	98.2	86.8	11.33		
2,330.0	2,330.0	2,335.0	2,334.7	5.1	6.3	-74.68	25.9	-94.6	98.1	86.7	11.36		
2,340.0	2,340.0	2,344.8	2,344.6	5.1	6.3	-74.56	26.1	-94.5	98.1	86.7	11.40		
2,350.0	2,350.0	2,354.6	2,354.4	5.1	6.3	-74.43	26.3	-94.4	98.0	86.6	11.44		
2,360.0	2,360.0	2,364.5	2,364.2	5.2	6.3	-74.32	26.5	-94.4	98.0	86.5	11.48		
2,360.2	2,360.2	2,364.6	2,364.4	5.2	6.3	-74.32	26.5	-94.4	98.0	86.5	11.48		
2,370.0	2,370.0	2,374.3	2,374.0	5.2	6.3	-74.20	26.7	-94.3	98.0	86.5	11.51		
2,380.0	2,380.0	2,384.1	2,383.9	5.2	6.3	-74.09	26.9	-94.3	98.1	86.5	11.55		
2,390.0	2,390.0	2,394.0	2,393.7	5.2	6.4	-73.99	27.1	-94.3	98.1	86.5	11.59		
2,400.0	2,400.0	2,403.8	2,403.5	5.3	6.4	-73.88	27.3	-94.3	98.2	86.5	11.63		
2,410.0	2,410.0	2,413.6	2,413.4	5.3	6.4	-73.78	27.4	-94.3	98.2	86.6	11.67		
2,420.0	2,420.0	2,423.6	2,423.3	5.3	6.4	-73.68	27.6	-94.4	98.3	86.6	11.70		
2,430.0	2,430.0	2,433.5	2,433.3	5.3	6.4	-73.59	27.8	-94.4	98.4	86.7	11.74		
2,440.0	2,440.0	2,443.5	2,443.2	5.3	6.4	-73.49	28.0	-94.5	98.5	86.7	11.78		
2,450.0	2,450.0	2,453.4	2,453.2	5.4	6.5	-73.40	28.2	-94.5	98.6	86.8	11.82		
2,460.0	2,460.0	2,463.4	2,463.1	5.4	6.5	-73.31	28.4	-94.6	98.7	86.9	11.86		
2,470.0	2,470.0	2,473.3	2,473.1	5.4	6.5	-73.22	28.5	-94.6	98.8	86.9	11.89		
2,480.0	2,480.0	2,483.3	2,483.0	5.4	6.5	-73.13	28.7	-94.7	99.0	87.0	11.93		
2,490.0	2,490.0	2,493.2	2,493.0	5.5	6.5	-73.05	28.9	-94.8	99.1	87.1	11.97		
2,500.0	2,500.0	2,503.2	2,502.9	5.5	6.5	-72.97	29.1	-94.9	99.2	87.2	12.01		
2,510.0	2,510.0	2,513.2	2,512.9	5.5	6.5	-72.89	29.2	-94.9	99.3	87.3	12.05		
2,520.0	2,520.0	2,523.2	2,522.9	5.5	6.6	-72.82	29.4	-95.0	99.5	87.4	12.09		
2,530.0	2,530.0	2,533.2	2,532.9	5.5	6.6	-72.76	29.5	-95.1	99.6	87.5	12.12		
2,540.0	2,540.0	2,543.2	2,542.9	5.6	6.6	-72.70	29.7	-95.2	99.7	87.6	12.16		
2,550.0	2,550.0	2,553.1	2,552.8	5.6	6.6	-72.65	29.8	-95.3	99.9	87.7	12.20		
2,560.0	2,560.0	2,563.1	2,562.8	5.6	6.6	-72.61	29.9	-95.4	100.0	87.8	12.24		
2,570.0	2,570.0	2,573.1	2,572.8	5.6	6.6	-72.57	30.0	-95.5	100.2	87.9	12.28		
2,580.0	2,580.0	2,583.1	2,582.8	5.7	6.7	-72.54	30.1	-95.7	100.3	88.0	12.32		
2,590.0	2,590.0	2,593.1	2,592.8	5.7	6.7	-72.52	30.2	-95.8	100.4	88.1	12.36		
2,600.0	2,600.0	2,603.1	2,602.8	5.7	6.7	-72.50	30.2	-95.9	100.6	88.2	12.39		
2,610.0	2,610.0	2,613.1	2,612.8	5.7	6.7	-72.49	30.3	-96.0	100.7	88.3	12.43		
2,620.0	2,620.0	2,623.1	2,622.7	5.7	6.7	-72.49	30.3	-96.2	100.9	88.4	12.47		
2,630.0	2,630.0	2,633.0	2,632.7	5.8	6.7	-72.49	30.4	-96.3	101.0	88.5	12.51		
2,640.0	2,640.0	2,643.0	2,642.7	5.8	6.8	-72.50	30.4	-96.5	101.2	88.6	12.55		
2,650.0	2,650.0	2,653.0	2,652.7	5.8	6.8	-72.52	30.4	-96.6	101.3	88.7	12.59		
2,660.0	2,660.0	2,663.0	2,662.7	5.8	6.8	-72.55	30.4	-96.8	101.4	88.8	12.63		
2,670.0	2,670.0	2,673.0	2,672.7	5.9	6.8	-72.58	30.4	-96.9	101.6	88.9	12.67		
2,680.0	2,680.0	2,683.0	2,682.7	5.9	6.8	-72.61	30.4	-97.1	101.7	89.0	12.71		
2,690.0	2,690.0	2,693.0	2,692.7	5.9	6.8	-72.65	30.4	-97.3	101.9	89.2	12.74		
2,700.0	2,700.0	2,703.0	2,702.7	5.9	6.9	-72.70	30.3	-97.4	102.0	89.3	12.78		

Offset Design													Offset Site Error:
Windward Federal - #1H - OH - OH													3.0 usft
Survey Program: 239-8977													Offset Well Error:
													3.0 usft
Reference	Offset	Semi-Major Axis		Distance		Minimum		Separation		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,710.0	2,710.0	2,713.1	2,712.8	5.9	6.9	-72.76	30.3	-97.6	102.2	89.4	12.82	7.969	
2,720.0	2,720.0	2,723.2	2,722.9	6.0	6.9	-72.81	30.2	-97.7	102.3	89.5	12.86	7.955	
2,730.0	2,730.0	2,733.3	2,732.9	6.0	6.9	-72.88	30.2	-97.9	102.4	89.5	12.90	7.941	
2,740.0	2,740.0	2,743.4	2,743.0	6.0	6.9	-72.94	30.1	-98.0	102.6	89.6	12.94	7.926	
2,750.0	2,750.0	2,753.4	2,753.1	6.0	6.9	-73.01	30.0	-98.2	102.7	89.7	12.98	7.910	
2,760.0	2,760.0	2,763.5	2,763.2	6.1	7.0	-73.09	29.9	-98.3	102.8	89.8	13.02	7.894	
2,770.0	2,770.0	2,773.6	2,773.3	6.1	7.0	-73.17	29.8	-98.5	102.9	89.8	13.06	7.878	
2,780.0	2,780.0	2,783.7	2,783.4	6.1	7.0	-73.25	29.7	-98.6	103.0	89.9	13.10	7.861	
2,790.0	2,790.0	2,793.8	2,793.4	6.1	7.0	-73.34	29.5	-98.7	103.0	89.9	13.14	7.843	
2,800.0	2,800.0	2,803.9	2,803.5	6.2	7.0	-73.43	29.4	-98.8	103.1	89.9	13.18	7.825	
2,810.0	2,810.0	2,813.9	2,813.6	6.2	7.0	-73.53	29.3	-98.9	103.2	90.0	13.22	7.806	
2,820.0	2,820.0	2,824.0	2,823.7	6.2	7.1	-73.63	29.1	-99.0	103.2	90.0	13.26	7.787	
2,830.0	2,830.0	2,834.1	2,833.8	6.2	7.1	-73.74	28.9	-99.1	103.3	90.0	13.30	7.767	
2,840.0	2,840.0	2,844.2	2,843.8	6.2	7.1	-73.85	28.7	-99.2	103.3	90.0	13.34	7.747	
2,850.0	2,850.0	2,854.3	2,853.9	6.3	7.1	-73.97	28.5	-99.3	103.3	90.0	13.37	7.726	
2,860.0	2,860.0	2,864.4	2,864.0	6.3	7.1	-74.09	28.3	-99.4	103.4	89.9	13.41	7.705	
2,870.0	2,870.0	2,874.4	2,874.1	6.3	7.1	-74.22	28.1	-99.5	103.4	89.9	13.45	7.684	
2,880.0	2,880.0	2,884.5	2,884.2	6.3	7.2	-74.35	27.9	-99.5	103.4	89.9	13.49	7.662	
2,890.0	2,890.0	2,894.7	2,894.4	6.4	7.2	-74.49	27.7	-99.6	103.4	89.8	13.53	7.639	
2,900.0	2,900.0	2,905.0	2,904.6	6.4	7.2	-74.61	27.4	-99.6	103.3	89.8	13.57	7.614	
2,910.0	2,910.0	2,915.2	2,914.8	6.4	7.2	-74.74	27.2	-99.7	103.3	89.7	13.61	7.588	
2,920.0	2,920.0	2,925.4	2,925.0	6.4	7.2	-74.85	27.0	-99.6	103.2	89.6	13.65	7.561	
2,930.0	2,930.0	2,935.6	2,935.3	6.4	7.2	-74.96	26.8	-99.6	103.1	89.4	13.69	7.532	
2,940.0	2,940.0	2,945.9	2,945.5	6.5	7.3	-75.07	26.5	-99.5	103.0	89.3	13.73	7.502	
2,950.0	2,950.0	2,956.1	2,955.7	6.5	7.3	-75.16	26.3	-99.4	102.9	89.1	13.77	7.470	
2,960.0	2,960.0	2,966.3	2,965.9	6.5	7.3	-75.25	26.1	-99.3	102.7	88.9	13.81	7.437	
2,970.0	2,970.0	2,976.5	2,976.2	6.5	7.3	-75.34	26.0	-99.2	102.5	88.7	13.85	7.402	
2,980.0	2,980.0	2,986.7	2,986.3	6.6	7.3	-75.41	25.8	-99.0	102.3	88.4	13.89	7.367	
2,990.0	2,990.0	2,996.7	2,996.4	6.6	7.4	-75.49	25.6	-98.8	102.1	88.2	13.93	7.331	
3,000.0	3,000.0	3,006.8	3,006.4	6.6	7.4	-75.56	25.4	-98.7	101.9	87.9	13.97	7.295	
3,010.0	3,010.0	3,016.8	3,016.4	6.6	7.4	-75.62	25.2	-98.5	101.7	87.7	14.01	7.259	
3,020.0	3,020.0	3,026.9	3,026.5	6.6	7.4	-75.69	25.1	-98.3	101.5	87.4	14.05	7.222	
3,030.0	3,030.0	3,036.9	3,036.5	6.7	7.4	-75.75	24.9	-98.1	101.3	87.2	14.09	7.186	
3,040.0	3,040.0	3,047.0	3,046.6	6.7	7.4	-75.81	24.8	-97.9	101.0	86.9	14.13	7.150	
3,050.0	3,050.0	3,057.0	3,056.6	6.7	7.5	-75.87	24.6	-97.7	100.8	86.6	14.17	7.113	
3,060.0	3,060.0	3,067.0	3,066.6	6.7	7.5	-75.92	24.4	-97.5	100.5	86.3	14.21	7.076	
3,070.0	3,070.0	3,077.1	3,076.7	6.8	7.5	-75.98	24.3	-97.3	100.3	86.1	14.25	7.040	
3,080.0	3,080.0	3,087.0	3,086.6	6.8	7.5	-76.02	24.2	-97.1	100.1	85.8	14.29	7.003	
3,090.0	3,090.0	3,097.0	3,096.6	6.8	7.5	-76.07	24.0	-96.9	99.8	85.5	14.33	6.967	
3,100.0	3,100.0	3,107.0	3,106.6	6.8	7.5	-76.11	23.9	-96.6	99.6	85.2	14.37	6.931	
3,110.0	3,110.0	3,117.0	3,116.6	6.8	7.6	-76.14	23.8	-96.4	99.3	84.9	14.41	6.895	
3,120.0	3,120.0	3,127.0	3,126.5	6.9	7.6	-76.17	23.7	-96.2	99.1	84.7	14.45	6.860	
3,130.0	3,130.0	3,136.9	3,136.5	6.9	7.6	-76.19	23.6	-96.0	98.9	84.4	14.49	6.825	
3,140.0	3,140.0	3,146.9	3,146.5	6.9	7.6	-76.21	23.5	-95.8	98.6	84.1	14.53	6.790	
3,150.0	3,150.0	3,156.9	3,156.5	6.9	7.6	-76.22	23.4	-95.5	98.4	83.8	14.57	6.756	
3,160.0	3,160.0	3,166.9	3,166.4	7.0	7.6	-76.23	23.4	-95.3	98.2	83.6	14.60	6.722	
3,170.0	3,170.0	3,176.8	3,176.4	7.0	7.7	-76.23	23.3	-95.1	97.9	83.3	14.64	6.688	
3,180.0	3,180.0	3,186.8	3,186.4	7.0	7.7	-76.22	23.3	-94.9	97.7	83.0	14.68	6.655	
3,190.0	3,190.0	3,196.8	3,196.3	7.0	7.7	-76.22	23.2	-94.7	97.5	82.8	14.72	6.622	
3,200.0	3,200.0	3,206.7	3,206.3	7.1	7.7	-76.20	23.2	-94.5	97.3	82.5	14.76	6.590	
3,210.0	3,210.0	3,216.7	3,216.2	7.1	7.7	-76.18	23.2	-94.2	97.1	82.3	14.80	6.558	
3,220.0	3,220.0	3,226.7	3,226.2	7.1	7.7	-76.16	23.2	-94.0	96.9	82.0	14.84	6.526	
3,230.0	3,230.0	3,236.6	3,236.2	7.1	7.8	-76.13	23.2	-93.8	96.7	81.8	14.88	6.495	
3,240.0	3,240.0	3,246.6	3,246.1	7.1	7.8	-76.09	23.2	-93.6	96.5	81.5	14.92	6.464	
3,250.0	3,250.0	3,256.6	3,256.1	7.2	7.8	-76.05	23.2	-93.4	96.3	81.3	14.96	6.434	
3,260.0	3,260.0	3,266.5	3,266.1	7.2	7.8	-76.00	23.2	-93.2	96.1	81.1	15.00	6.403	
3,270.0	3,270.0	3,276.5	3,276.0	7.2	7.8	-75.95	23.3	-93.0	95.9	80.8	15.04	6.374	
3,280.0	3,280.0	3,286.4	3,286.0	7.2	7.9	-75.89	23.3	-92.8	95.7	80.6	15.08	6.344	
3,290.0	3,290.0	3,296.4	3,295.9	7.3	7.9	-75.82	23.4	-92.6	95.5	80.4	15.12	6.315	
3,300.0	3,300.0	3,306.4	3,305.9	7.3	7.9	-75.75	23.5	-92.4	95.3	80.2	15.16	6.287	
3,310.0	3,310.0	3,316.3	3,315.9	7.3	7.9	-75.68	23.6	-92.2	95.1	79.9	15.20	6.259	
3,320.0	3,320.0	3,326.3	3,325.8	7.3	7.9	-75.60	23.6	-92.0	95.0	79.7	15.24	6.231	
3,330.0	3,330.0	3,336.3	3,335.8	7.3	7.9	-75.51	23.7	-91.8	94.8	79.5	15.28	6.203	
3,340.0	3,340.0	3,346.3	3,345.9	7.4	8.0	-75.42	23.8	-91.6	94.6	79.3	15.32	6.176	
3,350.0	3,350.0	3,356.4	3,355.9	7.4	8.0	-75.34	23.9	-91.4	94.4	79.1	15.36	6.148	
3,360.0	3,360.0	3,366.3	3,365.9	7.4	8.0	-75.25	24.0	-91.1	94.3	78.9	15.40	6.120	

Offset Design Windward Federal - #1H - OH - OH													Offset Site Error:	3:0 usft
Survey Program: 239 - 8977													Offset Well Error:	3:0 usft
Reference	Offset		Semi-Major Axis		Distance		Minimum Separation		Separation Factor		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
3,370.0	3,370.0	3,376.3	3,375.8	7.4	8.0	-75.17	24.1	-90.9	94.1	78.6	15.44	6.093		
3,380.0	3,380.0	3,386.2	3,385.7	7.5	8.0	-75.07	24.2	-90.7	93.9	78.4	15.48	6.066		
3,390.0	3,390.0	3,396.1	3,395.6	7.5	8.0	-74.97	24.3	-90.6	93.8	78.2	15.52	6.041		
3,400.0	3,400.0	3,406.0	3,405.6	7.5	8.1	-74.87	24.4	-90.4	93.6	78.1	15.56	6.015		
3,410.0	3,410.0	3,416.0	3,415.5	7.5	8.1	-74.76	24.6	-90.2	93.5	77.9	15.60	5.991		
3,420.0	3,420.0	3,425.9	3,425.4	7.5	8.1	-74.64	24.7	-90.0	93.3	77.7	15.64	5.967		
3,430.0	3,430.0	3,435.8	3,435.3	7.6	8.1	-74.52	24.9	-89.8	93.2	77.5	15.68	5.944		
3,440.0	3,440.0	3,445.7	3,445.2	7.6	8.1	-74.39	25.1	-89.7	93.1	77.4	15.72	5.921		
3,450.0	3,450.0	3,456.0	3,455.5	7.6	8.2	-74.25	25.2	-89.5	93.0	77.2	15.77	5.898		
3,460.0	3,460.0	3,466.3	3,465.8	7.6	8.2	-74.13	25.4	-89.3	92.8	77.0	15.81	5.873		
3,470.0	3,470.0	3,476.6	3,476.1	7.7	8.2	-74.01	25.5	-89.0	92.6	76.8	15.85	5.846		
3,480.0	3,480.0	3,486.9	3,486.4	7.7	8.2	-73.90	25.6	-88.8	92.4	76.5	15.89	5.818		
3,490.0	3,490.0	3,497.2	3,496.7	7.7	8.2	-73.81	25.7	-88.5	92.2	76.2	15.93	5.787		
3,500.0	3,500.0	3,507.5	3,507.0	7.7	8.2	-73.72	25.8	-88.2	91.9	75.9	15.97	5.754		
3,510.0	3,510.0	3,517.8	3,517.3	7.7	8.3	-73.64	25.8	-87.8	91.6	75.6	16.01	5.719		
3,520.0	3,520.0	3,528.1	3,527.6	7.8	8.3	-73.57	25.8	-87.4	91.2	75.2	16.05	5.683		
3,530.0	3,530.0	3,538.4	3,537.9	7.8	8.3	-73.51	25.8	-87.0	90.8	74.7	16.09	5.644		
3,540.0	3,540.0	3,548.3	3,547.7	7.8	8.3	-73.46	25.7	-86.6	90.4	74.3	16.13	5.605		
3,550.0	3,550.0	3,558.0	3,557.4	7.8	8.3	-73.40	25.7	-86.3	90.1	73.9	16.17	5.569		
3,560.0	3,560.0	3,567.7	3,567.1	7.9	8.4	-73.35	25.7	-85.9	89.7	73.5	16.21	5.534		
3,570.0	3,570.0	3,577.4	3,576.8	7.9	8.4	-73.29	25.7	-85.6	89.4	73.2	16.25	5.501		
3,580.0	3,580.0	3,587.1	3,586.5	7.9	8.4	-73.22	25.7	-85.3	89.1	72.9	16.29	5.471		
3,590.0	3,590.0	3,596.8	3,596.2	7.9	8.4	-73.15	25.8	-85.1	88.9	72.6	16.33	5.443		
3,600.0	3,600.0	3,606.5	3,605.9	7.9	8.4	-73.08	25.8	-84.8	88.7	72.3	16.37	5.417		
3,610.0	3,610.0	3,616.2	3,615.6	8.0	8.4	-73.00	25.9	-84.6	88.5	72.1	16.41	5.393		
3,620.0	3,620.0	3,625.9	3,625.3	8.0	8.5	-72.93	25.9	-84.5	88.4	71.9	16.45	5.371		
3,630.0	3,630.0	3,635.6	3,635.1	8.0	8.5	-72.84	26.0	-84.3	88.3	71.8	16.49	5.351		
3,640.0	3,640.0	3,645.4	3,644.8	8.0	8.5	-72.76	26.1	-84.2	88.2	71.6	16.53	5.333		
3,650.0	3,650.0	3,655.1	3,654.5	8.1	8.5	-72.67	26.3	-84.1	88.1	71.6	16.57	5.317		
3,659.7	3,659.7	3,664.5	3,663.9	8.1	8.5	-72.58	26.4	-84.1	88.1	71.5	16.61	5.304		
3,660.0	3,660.0	3,664.8	3,664.2	8.1	8.5	-72.58	26.4	-84.1	88.1	71.5	16.62	5.303		
3,670.0	3,670.0	3,674.5	3,673.9	8.1	8.5	-72.48	26.5	-84.0	88.1	71.5	16.66	5.292		
3,680.0	3,680.0	3,684.2	3,683.6	8.1	8.6	-72.38	26.7	-84.0	88.2	71.5	16.70	5.282		
3,690.0	3,690.0	3,693.9	3,693.3	8.2	8.6	-72.28	26.9	-84.1	88.3	71.5	16.74	5.274		
3,700.0	3,700.0	3,703.6	3,703.0	8.2	8.6	-72.18	27.0	-84.1	88.4	71.6	16.78	5.268		
3,710.0	3,710.0	3,713.4	3,712.8	8.2	8.6	-72.07	27.2	-84.2	88.5	71.7	16.82	5.264		
3,720.0	3,720.0	3,723.1	3,722.5	8.2	8.6	-71.97	27.5	-84.3	88.7	71.9	16.86	5.263		
3,730.0	3,730.0	3,732.9	3,732.3	8.2	8.7	-71.85	27.7	-84.5	88.9	72.0	16.90	5.262		
3,740.0	3,740.0	3,742.8	3,742.2	8.3	8.7	-71.75	27.9	-84.6	89.1	72.2	16.94	5.263		
3,750.0	3,750.0	3,752.8	3,752.1	8.3	8.7	-71.65	28.1	-84.8	89.4	72.4	16.98	5.264		
3,760.0	3,760.0	3,762.7	3,762.1	8.3	8.7	-71.55	28.3	-85.0	89.6	72.6	17.02	5.265		
3,770.0	3,770.0	3,772.7	3,772.0	8.3	8.7	-71.47	28.5	-85.2	89.8	72.8	17.06	5.266		
3,780.0	3,780.0	3,782.6	3,782.0	8.4	8.7	-71.39	28.7	-85.3	90.1	73.0	17.10	5.268		
3,790.0	3,790.0	3,792.6	3,791.9	8.4	8.8	-71.32	28.9	-85.5	90.3	73.2	17.14	5.270		
3,800.0	3,800.0	3,802.5	3,801.9	8.4	8.8	-71.25	29.1	-85.8	90.6	73.4	17.18	5.272		
3,810.0	3,810.0	3,812.4	3,811.8	8.4	8.8	-71.20	29.3	-86.0	90.8	73.6	17.22	5.275		
3,820.0	3,820.0	3,822.4	3,821.8	8.4	8.8	-71.15	29.4	-86.2	91.1	73.8	17.26	5.278		
3,830.0	3,830.0	3,832.5	3,831.8	8.5	8.8	-71.10	29.6	-86.4	91.4	74.1	17.30	5.281		
3,840.0	3,840.0	3,842.5	3,841.9	8.5	8.9	-71.06	29.7	-86.6	91.6	74.3	17.34	5.283		
3,850.0	3,850.0	3,852.6	3,852.0	8.5	8.9	-71.03	29.9	-86.9	91.9	74.5	17.39	5.285		
3,860.0	3,860.0	3,862.7	3,862.0	8.5	8.9	-71.00	30.0	-87.1	92.1	74.7	17.43	5.286		
3,870.0	3,870.0	3,872.7	3,872.1	8.6	8.9	-70.98	30.1	-87.3	92.4	74.9	17.47	5.287		
3,880.0	3,880.0	3,882.8	3,882.2	8.6	8.9	-70.96	30.2	-87.5	92.6	75.1	17.51	5.288		
3,890.0	3,890.0	3,892.9	3,892.2	8.6	8.9	-70.95	30.3	-87.7	92.8	75.2	17.55	5.288		
3,900.0	3,900.0	3,903.0	3,902.3	8.6	9.0	-70.95	30.4	-87.9	93.0	75.4	17.59	5.287		
3,910.0	3,910.0	3,913.0	3,912.4	8.6	9.0	-70.95	30.4	-88.1	93.2	75.6	17.63	5.286		
3,920.0	3,920.0	3,923.1	3,922.5	8.7	9.0	-70.96	30.5	-88.3	93.4	75.7	17.67	5.284		
3,930.0	3,930.0	3,933.2	3,932.6	8.7	9.0	-70.98	30.5	-88.4	93.6	75.9	17.71	5.282		
3,940.0	3,940.0	3,943.3	3,942.7	8.7	9.0	-71.01	30.5	-88.6	93.7	76.0	17.76	5.280		
3,950.0	3,950.0	3,953.4	3,952.8	8.7	9.1	-71.05	30.5	-88.8	93.9	76.1	17.80	5.276		
3,960.0	3,960.0	3,963.5	3,962.9	8.8	9.1	-71.10	30.5	-89.0	94.0	76.2	17.84	5.272		
3,970.0	3,970.0	3,973.6	3,973.0	8.8	9.1	-71.17	30.4	-89.1	94.2	76.3	17.88	5.268		
3,980.0	3,980.0	3,983.7	3,983.1	8.8	9.1	-71.25	30.3	-89.3	94.3	76.4	17.92	5.263		
3,990.0	3,990.0	3,993.8	3,993.1	8.8	9.1	-71.34	30.2	-89.5	94.4	76.5	17.96	5.257		
4,000.0	4,000.0	4,003.9	4,003.2	8.8	9.2	-71.44	30.1	-89.6	94.5	76.5	18.00	5.251		
4,010.0	4,010.0	4,014.0	4,013.4	8.9	9.2	-71.55	29.9	-89.8	94.6	76.6	18.04	5.244		

Offset Design Windward Federal - #1H - OH - OH													Offset Site Error:	3.0 usft
Survey Program: 239 - 8377													Offset Wall Error:	3.0 usft
Reference		Offset		Semi-Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation (Factor)	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
4,020.0	4,020.0	4,024.2	4,023.5	8.9	9.2	-71.67	29.8	-89.9	94.7	76.6	18.09	5.237		
4,030.0	4,030.0	4,034.4	4,033.7	8.9	9.2	-71.79	29.6	-90.0	94.8	76.6	18.13	5.228		
4,040.0	4,040.0	4,044.5	4,043.8	8.9	9.2	-71.91	29.4	-90.1	94.8	76.7	18.17	5.219		
4,050.0	4,050.0	4,054.7	4,054.0	9.0	9.2	-72.04	29.3	-90.2	94.9	76.6	18.21	5.209		
4,060.0	4,060.0	4,064.8	4,064.1	9.0	9.3	-72.17	29.1	-90.3	94.9	76.6	18.25	5.198		
4,070.0	4,070.0	4,075.0	4,074.3	9.0	9.3	-72.30	28.8	-90.4	94.9	76.6	18.29	5.186		
4,080.0	4,080.0	4,085.1	4,084.4	9.0	9.3	-72.43	28.6	-90.4	94.9	76.5	18.34	5.173		
4,090.0	4,090.0	4,095.3	4,094.6	9.1	9.3	-72.57	28.4	-90.5	94.8	76.4	18.38	5.160		
4,100.0	4,100.0	4,105.4	4,104.7	9.1	9.3	-72.71	28.2	-90.5	94.8	76.4	18.42	5.146		
4,110.0	4,110.0	4,115.6	4,114.9	9.1	9.4	-72.86	27.9	-90.5	94.7	76.3	18.46	5.131		
4,120.0	4,120.0	4,125.8	4,125.0	9.1	9.4	-73.00	27.7	-90.5	94.6	76.1	18.50	5.115		
4,130.0	4,130.0	4,135.9	4,135.2	9.1	9.4	-73.14	27.4	-90.5	94.5	76.0	18.54	5.098		
4,140.0	4,140.0	4,146.1	4,145.4	9.2	9.4	-73.29	27.2	-90.4	94.4	75.8	18.59	5.080		
4,150.0	4,150.0	4,156.2	4,155.5	9.2	9.4	-73.43	26.9	-90.4	94.3	75.7	18.63	5.062		
4,160.0	4,160.0	4,166.4	4,165.7	9.2	9.5	-73.57	26.6	-90.3	94.1	75.5	18.67	5.043		
4,170.0	4,170.0	4,176.6	4,175.8	9.2	9.5	-73.71	26.4	-90.2	94.0	75.3	18.71	5.023		
4,180.0	4,180.0	4,186.7	4,186.0	9.3	9.5	-73.85	26.1	-90.1	93.8	75.0	18.75	5.002		
4,190.0	4,190.0	4,196.9	4,196.2	9.3	9.5	-73.99	25.8	-89.9	93.6	74.8	18.79	4.980		
4,200.0	4,200.0	4,207.0	4,206.3	9.3	9.5	-74.12	25.5	-89.8	93.4	74.5	18.84	4.957		
4,210.0	4,210.0	4,217.0	4,216.3	9.3	9.6	-74.26	25.3	-89.6	93.1	74.3	18.88	4.935		
4,220.0	4,220.0	4,227.1	4,226.3	9.3	9.6	-74.38	25.0	-89.5	92.9	74.0	18.92	4.912		
4,230.0	4,230.0	4,237.1	4,236.3	9.4	9.6	-74.51	24.8	-89.3	92.7	73.7	18.96	4.889		
4,240.0	4,240.0	4,247.1	4,246.3	9.4	9.6	-74.62	24.5	-89.1	92.5	73.5	19.00	4.867		
4,250.0	4,250.0	4,257.1	4,256.3	9.4	9.6	-74.74	24.3	-89.0	92.2	73.2	19.04	4.844		
4,260.0	4,260.0	4,267.1	4,266.3	9.4	9.6	-74.84	24.0	-88.8	92.0	72.9	19.08	4.821		
4,270.0	4,270.0	4,277.1	4,276.4	9.5	9.7	-74.95	23.8	-88.6	91.8	72.6	19.12	4.799		
4,280.0	4,280.0	4,287.2	4,286.4	9.5	9.7	-75.04	23.6	-88.4	91.5	72.4	19.17	4.776		
4,290.0	4,290.0	4,297.2	4,296.4	9.5	9.7	-75.13	23.4	-88.2	91.3	72.1	19.21	4.753		
4,300.0	4,300.0	4,307.1	4,306.4	9.5	9.7	-75.22	23.2	-88.0	91.1	71.8	19.25	4.731		
4,310.0	4,310.0	4,317.1	4,316.3	9.5	9.7	-75.31	23.0	-87.8	90.8	71.5	19.29	4.709		
4,320.0	4,320.0	4,327.1	4,326.3	9.6	9.8	-75.40	22.8	-87.6	90.6	71.3	19.33	4.687		
4,330.0	4,330.0	4,337.1	4,336.3	9.6	9.8	-75.48	22.7	-87.4	90.4	71.0	19.37	4.665		
4,340.0	4,340.0	4,347.0	4,346.2	9.6	9.8	-75.56	22.5	-87.3	90.1	70.7	19.41	4.643		
4,350.0	4,350.0	4,357.0	4,356.2	9.6	9.8	-75.64	22.3	-87.1	89.9	70.5	19.45	4.622		
4,360.0	4,360.0	4,367.0	4,366.2	9.7	9.8	-75.72	22.1	-86.9	89.7	70.2	19.49	4.600		
4,370.0	4,370.0	4,377.0	4,376.2	9.7	9.9	-75.79	22.0	-86.7	89.5	69.9	19.53	4.579		
4,380.0	4,380.0	4,387.0	4,386.2	9.7	9.9	-75.86	21.8	-86.5	89.2	69.7	19.58	4.558		
4,390.0	4,390.0	4,396.9	4,396.1	9.7	9.9	-75.93	21.6	-86.3	89.0	69.4	19.62	4.538		
4,400.0	4,400.0	4,406.9	4,406.1	9.7	9.9	-75.99	21.5	-86.1	88.8	69.1	19.66	4.517		
4,410.0	4,410.0	4,416.9	4,416.1	9.8	9.9	-76.03	21.4	-86.0	88.6	68.9	19.70	4.497		
4,420.0	4,420.0	4,426.9	4,426.0	9.8	9.9	-76.05	21.3	-85.8	88.4	68.6	19.74	4.477		
4,430.0	4,430.0	4,436.8	4,436.0	9.8	10.0	-76.06	21.2	-85.6	88.2	68.4	19.78	4.457		
4,440.0	4,440.0	4,446.8	4,446.0	9.8	10.0	-76.05	21.2	-85.4	88.0	68.2	19.82	4.438		
4,450.0	4,450.0	4,456.8	4,455.9	9.9	10.0	-76.02	21.2	-85.2	87.8	67.9	19.86	4.419		
4,460.0	4,460.0	4,466.7	4,465.9	9.9	10.0	-75.98	21.2	-85.0	87.6	67.7	19.91	4.400		
4,470.0	4,470.0	4,476.7	4,475.9	9.9	10.0	-75.92	21.3	-84.7	87.4	67.4	19.95	4.381		
4,480.0	4,480.0	4,486.7	4,485.8	9.9	10.1	-75.85	21.3	-84.5	87.2	67.2	19.99	4.362		
4,490.0	4,490.0	4,496.6	4,495.8	10.0	10.1	-75.76	21.4	-84.3	87.0	67.0	20.03	4.344		
4,500.0	4,500.0	4,506.6	4,505.8	10.0	10.1	-75.68	21.5	-84.1	86.8	66.8	20.07	4.326		
4,510.0	4,510.0	4,516.6	4,515.7	10.0	10.1	-75.60	21.5	-83.9	86.6	66.5	20.11	4.308		
4,520.0	4,520.0	4,526.5	4,525.7	10.0	10.1	-75.52	21.6	-83.7	86.5	66.3	20.15	4.291		
4,530.0	4,530.0	4,536.5	4,535.6	10.0	10.2	-75.44	21.7	-83.5	86.3	66.1	20.20	4.274		
4,540.0	4,540.0	4,546.4	4,545.6	10.1	10.2	-75.36	21.8	-83.3	86.1	65.9	20.24	4.257		
4,550.0	4,550.0	4,556.4	4,555.5	10.1	10.2	-75.29	21.8	-83.2	86.0	65.7	20.28	4.241		
4,560.0	4,560.0	4,566.3	4,565.5	10.1	10.2	-75.21	21.9	-83.0	85.8	65.5	20.32	4.224		
4,570.0	4,570.0	4,576.3	4,575.4	10.1	10.2	-75.13	22.0	-82.8	85.7	65.3	20.36	4.209		
4,580.0	4,580.0	4,586.3	4,585.4	10.2	10.2	-75.05	22.1	-82.6	85.5	65.1	20.40	4.193		
4,590.0	4,590.0	4,596.2	4,595.4	10.2	10.3	-74.97	22.1	-82.5	85.4	65.0	20.44	4.178		
4,600.0	4,600.0	4,606.2	4,605.3	10.2	10.3	-74.90	22.2	-82.3	85.3	64.8	20.49	4.163		
4,610.0	4,610.0	4,616.1	4,615.3	10.2	10.3	-74.82	22.3	-82.2	85.2	64.6	20.53	4.148		
4,620.0	4,620.0	4,626.1	4,625.2	10.2	10.3	-74.74	22.4	-82.0	85.0	64.5	20.57	4.134		
4,630.0	4,630.0	4,636.0	4,635.2	10.3	10.3	-74.67	22.4	-81.9	84.9	64.3	20.61	4.120		
4,640.0	4,640.0	4,646.0	4,645.1	10.3	10.4	-74.59	22.5	-81.7	84.8	64.1	20.65	4.106		
4,650.0	4,650.0	4,655.9	4,655.1	10.3	10.4	-74.52	22.6	-81.6	84.7	64.0	20.69	4.093		
4,660.0	4,660.0	4,665.9	4,665.0	10.3	10.4	-74.44	22.7	-81.5	84.6	63.9	20.73	4.080		
4,670.0	4,670.0	4,675.8	4,674.9	10.4	10.4	-74.35	22.8	-81.4	84.5	63.7	20.78	4.068		

Offset Design												Offset Site Error:	3.0 usft
Survey Program: 289-8977												Offset Well Error:	3.0 usft
Reference		Offset		Semi-Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
4,680.0	4,680.0	4,685.7	4,684.8	10.4	10.4	-74.27	22.9	-81.3	84.4	63.6	20.82	4.056	
4,690.0	4,690.0	4,695.6	4,694.8	10.4	10.5	-74.18	23.0	-81.2	84.4	63.5	20.86	4.044	
4,700.0	4,700.0	4,705.6	4,704.7	10.4	10.5	-74.09	23.1	-81.1	84.3	63.4	20.90	4.033	
4,710.0	4,710.0	4,715.5	4,714.6	10.4	10.5	-73.99	23.2	-81.0	84.2	63.3	20.94	4.023	
4,720.0	4,720.0	4,725.4	4,724.5	10.5	10.5	-73.89	23.4	-80.9	84.2	63.2	20.98	4.013	
4,730.0	4,730.0	4,735.4	4,734.5	10.5	10.5	-73.79	23.5	-80.8	84.2	63.1	21.02	4.003	
4,740.0	4,740.0	4,745.3	4,744.4	10.5	10.6	-73.69	23.6	-80.7	84.1	63.1	21.07	3.994	
4,750.0	4,750.0	4,755.3	4,754.4	10.5	10.6	-73.58	23.8	-80.7	84.1	63.0	21.11	3.984	
4,760.0	4,760.0	4,765.3	4,764.4	10.6	10.6	-73.48	23.9	-80.6	84.1	62.9	21.15	3.975	
4,770.0	4,770.0	4,775.3	4,774.4	10.6	10.6	-73.37	24.1	-80.5	84.1	62.9	21.19	3.967	
4,780.0	4,780.0	4,785.2	4,784.4	10.6	10.6	-73.26	24.2	-80.5	84.0	62.8	21.23	3.958	
4,790.0	4,790.0	4,795.2	4,794.3	10.6	10.6	-73.16	24.3	-80.4	84.0	62.7	21.27	3.949	
4,800.0	4,800.0	4,805.2	4,804.3	10.6	10.7	-73.05	24.5	-80.3	84.0	62.7	21.32	3.941	
4,810.0	4,810.0	4,815.2	4,814.3	10.7	10.7	-72.95	24.6	-80.3	84.0	62.6	21.36	3.932	
4,820.0	4,820.0	4,825.2	4,824.3	10.7	10.7	-72.84	24.8	-80.2	84.0	62.6	21.40	3.924	
4,830.0	4,830.0	4,835.1	4,834.2	10.7	10.7	-72.73	24.9	-80.2	84.0	62.5	21.44	3.916	
4,833.4	4,833.4	4,838.5	4,837.6	10.7	10.7	-72.70	25.0	-80.2	84.0	62.5	21.45	3.914	
4,840.0	4,840.0	4,845.0	4,844.1	10.7	10.7	-72.62	25.1	-80.1	84.0	62.5	21.48	3.909	
4,850.0	4,850.0	4,854.9	4,854.0	10.8	10.8	-72.51	25.2	-80.1	84.0	62.5	21.52	3.902	
4,860.0	4,860.0	4,864.8	4,863.9	10.8	10.8	-72.39	25.4	-80.1	84.0	62.4	21.57	3.895	
4,870.0	4,870.0	4,874.7	4,873.8	10.8	10.8	-72.28	25.6	-80.1	84.0	62.4	21.61	3.890	
4,880.0	4,880.0	4,884.6	4,883.7	10.8	10.8	-72.15	25.8	-80.0	84.1	62.4	21.65	3.884	
4,890.0	4,890.0	4,894.5	4,893.6	10.8	10.8	-72.03	26.0	-80.0	84.1	62.5	21.69	3.880	
4,900.0	4,900.0	4,904.4	4,903.5	10.9	10.9	-71.90	26.2	-80.1	84.2	62.5	21.73	3.876	
4,910.0	4,910.0	4,914.4	4,913.4	10.9	10.9	-71.77	26.4	-80.1	84.3	62.5	21.77	3.872	
4,920.0	4,920.0	4,924.3	4,923.3	10.9	10.9	-71.64	26.6	-80.1	84.4	62.6	21.81	3.869	
4,930.0	4,930.0	4,934.3	4,933.4	10.9	10.9	-71.50	26.8	-80.1	84.5	62.6	21.86	3.866	
4,940.0	4,940.0	4,944.3	4,943.4	11.0	10.9	-71.36	27.0	-80.2	84.6	62.7	21.90	3.863	
4,950.0	4,950.0	4,954.4	4,953.5	11.0	11.0	-71.22	27.3	-80.2	84.7	62.7	21.94	3.860	
4,960.0	4,960.0	4,964.4	4,963.5	11.0	11.0	-71.09	27.5	-80.2	84.8	62.8	21.98	3.856	
4,970.0	4,970.0	4,974.5	4,973.6	11.0	11.0	-70.95	27.7	-80.2	84.9	62.8	22.02	3.853	
4,980.0	4,980.0	4,984.5	4,983.6	11.1	11.0	-70.81	27.9	-80.2	84.9	62.9	22.07	3.849	
4,990.0	4,990.0	4,994.6	4,993.6	11.1	11.0	-70.67	28.1	-80.2	85.0	62.9	22.11	3.844	
5,000.0	5,000.0	5,004.6	5,003.7	11.1	11.1	-70.54	28.3	-80.2	85.1	62.9	22.15	3.840	
5,010.0	5,010.0	5,014.7	5,013.7	11.1	11.1	-70.40	28.6	-80.2	85.1	62.9	22.19	3.835	
5,020.0	5,020.0	5,024.7	5,023.8	11.1	11.1	-70.26	28.8	-80.2	85.2	62.9	22.23	3.830	
5,030.0	5,030.0	5,034.7	5,033.8	11.2	11.1	-70.13	29.0	-80.1	85.2	62.9	22.28	3.825	
5,040.0	5,040.0	5,044.7	5,043.8	11.2	11.1	-69.99	29.2	-80.1	85.3	62.9	22.32	3.820	
5,050.0	5,050.0	5,054.7	5,053.8	11.2	11.2	-69.85	29.4	-80.1	85.3	62.9	22.36	3.815	
5,060.0	5,060.0	5,064.8	5,063.8	11.2	11.2	-69.71	29.6	-80.1	85.4	63.0	22.40	3.810	
5,070.0	5,070.0	5,074.8	5,073.8	11.3	11.2	-69.58	29.8	-80.0	85.4	63.0	22.44	3.805	
5,080.0	5,080.0	5,084.8	5,083.9	11.3	11.2	-69.44	30.0	-80.0	85.4	63.0	22.49	3.800	
5,090.0	5,090.0	5,094.8	5,093.9	11.3	11.2	-69.30	30.2	-80.0	85.5	62.9	22.53	3.794	
5,100.0	5,100.0	5,104.8	5,103.9	11.3	11.2	-69.16	30.4	-79.9	85.5	62.9	22.57	3.789	
5,110.0	5,110.0	5,114.9	5,113.9	11.3	11.3	-69.02	30.6	-79.9	85.5	62.9	22.61	3.783	
5,120.0	5,120.0	5,124.9	5,123.9	11.4	11.3	-68.89	30.8	-79.8	85.6	62.9	22.65	3.778	
5,130.0	5,130.0	5,134.9	5,134.0	11.4	11.3	-68.75	31.0	-79.8	85.6	62.9	22.69	3.772	
5,140.0	5,140.0	5,145.0	5,144.0	11.4	11.3	-68.61	31.2	-79.7	85.6	62.9	22.74	3.766	
5,150.0	5,150.0	5,155.0	5,154.0	11.4	11.3	-68.48	31.4	-79.7	85.7	62.9	22.78	3.760	
5,160.0	5,160.0	5,165.0	5,164.1	11.5	11.4	-68.34	31.6	-79.6	85.7	62.8	22.82	3.754	
5,170.0	5,170.0	5,175.1	5,174.1	11.5	11.4	-68.21	31.8	-79.6	85.7	62.8	22.86	3.748	
5,180.0	5,180.0	5,185.1	5,184.1	11.5	11.4	-68.08	32.0	-79.5	85.7	62.8	22.91	3.741	
5,190.0	5,190.0	5,195.1	5,194.2	11.5	11.4	-67.95	32.2	-79.4	85.7	62.7	22.95	3.734	
5,200.0	5,200.0	5,205.2	5,204.2	11.5	11.4	-67.82	32.4	-79.4	85.7	62.7	22.99	3.728	
5,210.0	5,210.0	5,215.2	5,214.2	11.6	11.5	-67.69	32.5	-79.3	85.7	62.7	23.03	3.721	
5,220.0	5,220.0	5,225.2	5,224.2	11.6	11.5	-67.57	32.7	-79.2	85.7	62.6	23.07	3.714	
5,230.0	5,230.0	5,235.2	5,234.3	11.6	11.5	-67.44	32.9	-79.1	85.7	62.6	23.12	3.707	
5,240.0	5,240.0	5,245.2	5,244.3	11.6	11.5	-67.32	33.0	-79.0	85.7	62.5	23.16	3.700	
5,250.0	5,250.0	5,255.3	5,254.3	11.7	11.5	-67.19	33.2	-79.0	85.7	62.5	23.20	3.692	
5,260.0	5,260.0	5,265.3	5,264.3	11.7	11.6	-67.07	33.4	-78.9	85.7	62.4	23.24	3.685	
5,270.0	5,270.0	5,275.3	5,274.3	11.7	11.6	-66.95	33.5	-78.8	85.6	62.4	23.28	3.678	
5,280.0	5,280.0	5,285.3	5,284.3	11.7	11.6	-66.83	33.7	-78.7	85.6	62.3	23.33	3.671	
5,290.0	5,290.0	5,295.3	5,294.3	11.7	11.6	-66.71	33.8	-78.6	85.6	62.2	23.37	3.664	
5,300.0	5,300.0	5,305.3	5,304.3	11.8	11.6	-66.60	34.0	-78.6	85.6	62.2	23.41	3.656	
5,310.0	5,310.0	5,315.3	5,314.3	11.8	11.7	-66.48	34.1	-78.5	85.6	62.1	23.45	3.649	
5,320.0	5,320.0	5,325.3	5,324.4	11.8	11.7	-66.37	34.3	-78.4	85.6	62.1	23.50	3.642	

Offset Design: Windward Federal - #1H - OH - OH													Offset Site Error:
Survey Program: 239 - 18977													Offset Well Error:
Reference													3.0 usft
Offset													3.0 usft
Semi-Major Axis													
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,330.0	5,330.0	5,335.3	5,334.4	11.8	11.7	-66.26	34.4	-78.3	85.5	62.0	23.54	3.634	
5,340.0	5,340.0	5,345.3	5,344.4	11.9	11.7	-66.15	34.6	-78.2	85.5	61.9	23.58	3.627	
5,350.0	5,350.0	5,355.3	5,354.4	11.9	11.7	-66.05	34.7	-78.1	85.5	61.9	23.62	3.620	
5,360.0	5,360.0	5,365.3	5,364.4	11.9	11.8	-65.95	34.8	-78.1	85.5	61.8	23.66	3.613	
5,370.0	5,370.0	5,375.4	5,374.4	11.9	11.8	-65.85	35.0	-78.0	85.5	61.8	23.71	3.605	
5,380.0	5,380.0	5,385.4	5,384.4	12.0	11.8	-65.75	35.1	-77.9	85.5	61.7	23.75	3.598	
5,390.0	5,390.0	5,395.4	5,394.4	12.0	11.8	-65.66	35.2	-77.8	85.4	61.6	23.79	3.591	
5,400.0	5,400.0	5,405.3	5,404.3	12.0	11.8	-65.57	35.3	-77.8	85.4	61.6	23.83	3.584	
5,410.0	5,410.0	5,415.2	5,414.2	12.0	11.9	-65.47	35.5	-77.7	85.4	61.5	23.87	3.577	
5,413.4	5,413.4	5,418.6	5,417.6	12.0	11.9	-65.44	35.5	-77.7	85.4	61.5	23.89	3.575	
5,420.0	5,420.0	5,425.1	5,424.2	12.0	11.9	-65.37	35.6	-77.6	85.4	61.5	23.92	3.571	
5,430.0	5,430.0	5,435.1	5,434.1	12.1	11.9	-65.28	35.7	-77.6	85.4	61.5	23.96	3.565	
5,440.0	5,440.0	5,445.0	5,444.0	12.1	11.9	-65.18	35.9	-77.5	85.4	61.4	24.00	3.560	
5,450.0	5,450.0	5,454.9	5,453.9	12.1	11.9	-65.07	36.0	-77.5	85.5	61.4	24.04	3.555	
5,460.0	5,460.0	5,464.9	5,463.9	12.1	12.0	-64.97	36.2	-77.5	85.5	61.4	24.08	3.550	
5,470.0	5,470.0	5,474.8	5,473.8	12.2	12.0	-64.87	36.3	-77.4	85.5	61.4	24.13	3.546	
5,480.0	5,480.0	5,484.7	5,483.7	12.2	12.0	-64.76	36.5	-77.4	85.6	61.4	24.17	3.542	
5,490.0	5,490.0	5,494.7	5,493.7	12.2	12.0	-64.65	36.7	-77.4	85.7	61.5	24.21	3.538	
5,500.0	5,500.0	5,504.7	5,503.7	12.2	12.0	-64.55	36.8	-77.4	85.7	61.5	24.25	3.535	
5,510.0	5,510.0	5,514.7	5,513.7	12.2	12.1	-64.44	37.0	-77.4	85.8	61.5	24.29	3.531	
5,520.0	5,520.0	5,524.7	5,523.7	12.3	12.1	-64.35	37.2	-77.4	85.8	61.5	24.34	3.527	
5,530.0	5,530.0	5,534.7	5,533.7	12.3	12.1	-64.25	37.3	-77.4	85.9	61.5	24.38	3.524	
5,540.0	5,540.0	5,544.7	5,543.7	12.3	12.1	-64.16	37.5	-77.4	86.0	61.5	24.42	3.520	
5,550.0	5,550.0	5,554.7	5,553.7	12.3	12.1	-64.08	37.6	-77.4	86.0	61.6	24.46	3.516	
5,560.0	5,560.0	5,564.7	5,563.7	12.4	12.1	-63.99	37.7	-77.4	86.1	61.6	24.50	3.512	
5,570.0	5,570.0	5,574.7	5,573.7	12.4	12.2	-63.92	37.9	-77.4	86.1	61.6	24.55	3.509	
5,580.0	5,580.0	5,584.8	5,583.7	12.4	12.2	-63.84	38.0	-77.4	86.2	61.6	24.59	3.505	
5,590.0	5,590.0	5,594.8	5,593.8	12.4	12.2	-63.76	38.1	-77.3	86.2	61.6	24.63	3.501	
5,600.0	5,600.0	5,604.8	5,603.8	12.4	12.2	-63.68	38.3	-77.3	86.3	61.6	24.67	3.497	
5,610.0	5,610.0	5,614.8	5,613.8	12.5	12.2	-63.59	38.4	-77.3	86.3	61.6	24.72	3.493	
5,620.0	5,620.0	5,624.8	5,623.8	12.5	12.3	-63.50	38.5	-77.3	86.4	61.6	24.76	3.489	
5,630.0	5,630.0	5,634.8	5,633.8	12.5	12.3	-63.40	38.7	-77.3	86.4	61.6	24.80	3.485	
5,640.0	5,640.0	5,644.9	5,643.8	12.5	12.3	-63.30	38.9	-77.2	86.5	61.6	24.84	3.480	
5,650.0	5,650.0	5,654.9	5,653.9	12.6	12.3	-63.19	39.0	-77.2	86.5	61.6	24.88	3.476	
5,660.0	5,660.0	5,664.9	5,663.9	12.6	12.3	-63.07	39.2	-77.2	86.5	61.6	24.93	3.472	
5,670.0	5,670.0	5,674.9	5,673.9	12.6	12.4	-62.95	39.4	-77.1	86.6	61.6	24.97	3.467	
5,680.0	5,680.0	5,684.9	5,683.9	12.6	12.4	-62.83	39.6	-77.1	86.6	61.6	25.01	3.463	
5,690.0	5,690.0	5,694.9	5,693.9	12.6	12.4	-62.70	39.7	-77.0	86.7	61.6	25.05	3.459	
5,700.0	5,700.0	5,704.9	5,703.8	12.7	12.4	-62.58	39.9	-76.9	86.7	61.6	25.10	3.454	
5,710.0	5,710.0	5,714.9	5,713.8	12.7	12.4	-62.46	40.1	-76.9	86.7	61.6	25.14	3.450	
5,720.0	5,720.0	5,724.9	5,723.8	12.7	12.5	-62.33	40.3	-76.9	86.8	61.6	25.18	3.446	
5,730.0	5,730.0	5,734.8	5,733.8	12.7	12.5	-62.21	40.5	-76.8	86.8	61.6	25.22	3.442	
5,740.0	5,740.0	5,744.8	5,743.8	12.8	12.5	-62.09	40.7	-76.8	86.9	61.6	25.26	3.438	
5,750.0	5,750.0	5,754.8	5,753.8	12.8	12.5	-61.96	40.9	-76.7	86.9	61.6	25.31	3.435	
5,760.0	5,760.0	5,764.8	5,763.8	12.8	12.5	-61.84	41.0	-76.7	87.0	61.6	25.35	3.431	
5,770.0	5,770.0	5,774.8	5,773.7	12.8	12.6	-61.72	41.2	-76.6	87.0	61.6	25.39	3.427	
5,780.0	5,780.0	5,784.8	5,783.8	12.8	12.6	-61.60	41.4	-76.6	87.1	61.6	25.43	3.423	
5,790.0	5,790.0	5,794.8	5,793.8	12.9	12.6	-61.48	41.6	-76.5	87.1	61.6	25.48	3.420	
5,800.0	5,800.0	5,804.8	5,803.8	12.9	12.6	-61.36	41.8	-76.5	87.2	61.7	25.52	3.416	
5,810.0	5,810.0	5,814.8	5,813.8	12.9	12.6	-61.24	42.0	-76.5	87.2	61.7	25.56	3.412	
5,820.0	5,820.0	5,824.8	5,823.8	12.9	12.7	-61.13	42.1	-76.4	87.3	61.7	25.60	3.409	
5,830.0	5,830.0	5,834.8	5,833.8	13.0	12.7	-61.01	42.3	-76.4	87.3	61.7	25.64	3.405	
5,840.0	5,840.0	5,844.8	5,843.8	13.0	12.7	-60.90	42.5	-76.3	87.4	61.7	25.69	3.401	
5,850.0	5,850.0	5,854.9	5,853.8	13.0	12.7	-60.79	42.7	-76.3	87.4	61.7	25.73	3.397	
5,860.0	5,860.0	5,864.9	5,863.8	13.0	12.7	-60.68	42.8	-76.2	87.5	61.7	25.77	3.393	
5,870.0	5,870.0	5,874.9	5,873.8	13.1	12.8	-60.57	43.0	-76.2	87.5	61.7	25.81	3.390	
5,880.0	5,880.0	5,884.9	5,883.8	13.1	12.8	-60.46	43.2	-76.2	87.5	61.7	25.86	3.386	
5,890.0	5,890.0	5,894.9	5,893.9	13.1	12.8	-60.35	43.3	-76.1	87.6	61.7	25.90	3.382	
5,900.0	5,900.0	5,905.0	5,903.9	13.1	12.8	-60.25	43.5	-76.1	87.6	61.7	25.94	3.377	
5,910.0	5,910.0	5,915.0	5,913.9	13.1	12.8	-60.15	43.6	-76.0	87.7	61.7	25.98	3.373	
5,920.0	5,920.0	5,925.0	5,923.9	13.2	12.9	-60.05	43.8	-76.0	87.7	61.7	26.03	3.369	
5,930.0	5,930.0	5,935.0	5,934.0	13.2	12.9	-59.95	43.9	-75.9	87.7	61.6	26.07	3.365	
5,940.0	5,940.0	5,945.0	5,944.0	13.2	12.9	-59.86	44.1	-75.9	87.7	61.6	26.11	3.360	
5,950.0	5,950.0	5,955.1	5,954.0	13.2	12.9	-59.77	44.2	-75.8	87.8	61.6	26.15	3.356	
5,960.0	5,960.0	5,965.1	5,964.0	13.3	12.9	-59.67	44.3	-75.8	87.8	61.6	26.20	3.351	
5,970.0	5,970.0	5,975.1	5,974.0	13.3	13.0	-59.59	44.5	-75.7	87.8	61.6	26.24	3.347	

Offset Design													Offset Site Error:	3.0 usft
Windward Federal - #1H - OH - OH													Offset Well Error:	3.0 usft
Survey Program: 239-8977-														
Reference		Offset		Semi-Major Axis		Distance		Minimum Separation		Separation Factor		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,980.0	5,980.0	5,985.0	5,984.0	13.3	13.0	-59.50	44.6	-75.7	87.8	61.6	26.28	3.342		
5,990.0	5,990.0	5,995.0	5,994.0	13.3	13.0	-59.42	44.7	-75.6	87.9	61.5	26.32	3.338		
6,000.0	6,000.0	6,005.0	6,003.9	13.3	13.0	-59.34	44.8	-75.6	87.9	61.5	26.37	3.334		
6,010.0	6,010.0	6,015.0	6,013.9	13.4	13.0	-59.27	44.9	-75.6	87.9	61.5	26.41	3.329		
6,020.0	6,020.0	6,025.0	6,023.9	13.4	13.1	-59.19	45.0	-75.5	88.0	61.5	26.45	3.325		
6,030.0	6,030.0	6,035.0	6,033.9	13.4	13.1	-59.12	45.2	-75.5	88.0	61.5	26.49	3.321		
6,040.0	6,040.0	6,044.9	6,043.9	13.4	13.1	-59.06	45.3	-75.5	88.0	61.5	26.54	3.317		
6,050.0	6,050.0	6,054.9	6,053.8	13.5	13.1	-58.99	45.4	-75.5	88.1	61.5	26.58	3.314		
6,060.0	6,060.0	6,064.9	6,063.9	13.5	13.1	-58.93	45.5	-75.5	88.1	61.5	26.62	3.310		
6,070.0	6,070.0	6,075.0	6,073.9	13.5	13.2	-58.87	45.6	-75.5	88.1	61.5	26.66	3.306		
6,080.0	6,080.0	6,085.0	6,083.9	13.5	13.2	-58.82	45.7	-75.4	88.2	61.5	26.71	3.302		
6,090.0	6,090.0	6,095.0	6,093.9	13.5	13.2	-58.77	45.7	-75.4	88.2	61.5	26.75	3.298		
6,100.0	6,100.0	6,105.0	6,103.9	13.6	13.2	-58.72	45.8	-75.4	88.2	61.5	26.79	3.294		
6,110.0	6,110.0	6,115.0	6,113.9	13.6	13.2	-58.68	45.9	-75.4	88.3	61.4	26.83	3.290		
6,120.0	6,120.0	6,125.0	6,124.0	13.6	13.3	-58.64	46.0	-75.4	88.3	61.4	26.88	3.286		
6,130.0	6,130.0	6,135.1	6,134.0	13.6	13.3	-58.60	46.0	-75.4	88.3	61.4	26.92	3.282		
6,140.0	6,140.0	6,145.1	6,144.0	13.7	13.3	-58.56	46.1	-75.4	88.4	61.4	26.96	3.277		
6,150.0	6,150.0	6,155.1	6,154.0	13.7	13.3	-58.53	46.1	-75.4	88.4	61.4	27.00	3.273		
6,160.0	6,160.0	6,165.0	6,163.9	13.7	13.3	-58.51	46.2	-75.4	88.4	61.4	27.05	3.269		
6,170.0	6,170.0	6,175.0	6,173.9	13.7	13.4	-58.49	46.2	-75.4	88.4	61.4	27.09	3.265		
6,180.0	6,180.0	6,184.9	6,183.8	13.7	13.4	-58.47	46.3	-75.4	88.5	61.4	27.13	3.261		
6,190.0	6,190.0	6,194.9	6,193.8	13.8	13.4	-58.46	46.3	-75.4	88.5	61.4	27.17	3.258		
6,200.0	6,200.0	6,204.8	6,203.8	13.8	13.4	-58.45	46.3	-75.5	88.6	61.4	27.22	3.254		
6,210.0	6,210.0	6,214.8	6,213.7	13.8	13.4	-58.44	46.4	-75.5	88.6	61.4	27.26	3.251		
6,220.0	6,220.0	6,224.8	6,223.7	13.8	13.5	-58.44	46.4	-75.6	88.7	61.4	27.30	3.248		
6,230.0	6,230.0	6,234.7	6,233.6	13.9	13.5	-58.44	46.4	-75.6	88.7	61.4	27.34	3.246		
6,240.0	6,240.0	6,244.7	6,243.6	13.9	13.5	-58.45	46.5	-75.7	88.8	61.4	27.39	3.243		
6,250.0	6,250.0	6,254.7	6,253.6	13.9	13.5	-58.46	46.5	-75.7	88.9	61.4	27.43	3.240		
6,260.0	6,260.0	6,264.8	6,263.7	13.9	13.5	-58.46	46.5	-75.8	88.9	61.5	27.47	3.237		
6,270.0	6,270.0	6,274.8	6,273.7	14.0	13.6	-58.47	46.5	-75.9	89.0	61.5	27.51	3.234		
6,280.0	6,280.0	6,284.9	6,283.8	14.0	13.6	-58.47	46.6	-75.9	89.0	61.5	27.56	3.231		
6,290.0	6,290.0	6,294.9	6,293.8	14.0	13.6	-58.48	46.6	-75.9	89.1	61.5	27.60	3.228		
6,300.0	6,300.0	6,305.0	6,303.9	14.0	13.6	-58.48	46.6	-76.0	89.1	61.5	27.64	3.224		
6,310.0	6,310.0	6,315.0	6,313.9	14.0	13.6	-58.48	46.6	-76.0	89.2	61.5	27.68	3.220		
6,320.0	6,320.0	6,325.1	6,324.0	14.1	13.7	-58.48	46.6	-76.0	89.2	61.5	27.73	3.216		
6,330.0	6,330.0	6,335.1	6,334.0	14.1	13.7	-58.47	46.6	-76.0	89.2	61.4	27.77	3.212		
6,340.0	6,340.0	6,345.2	6,344.1	14.1	13.7	-58.47	46.7	-76.0	89.2	61.4	27.81	3.208		
6,350.0	6,350.0	6,355.2	6,354.1	14.1	13.7	-58.47	46.7	-76.1	89.2	61.4	27.85	3.203		
6,360.0	6,360.0	6,365.3	6,364.2	14.2	13.7	-58.48	46.7	-76.1	89.2	61.3	27.90	3.199		
6,370.0	6,370.0	6,375.3	6,374.2	14.2	13.8	-58.48	46.6	-76.1	89.2	61.3	27.94	3.194		
6,380.0	6,380.0	6,385.4	6,384.3	14.2	13.8	-58.49	46.6	-76.1	89.2	61.2	27.98	3.189		
6,390.0	6,390.0	6,395.4	6,394.3	14.2	13.8	-58.51	46.6	-76.1	89.2	61.2	28.02	3.183		
6,400.0	6,400.0	6,405.5	6,404.4	14.2	13.8	-58.52	46.6	-76.1	89.2	61.1	28.07	3.178		
6,410.0	6,410.0	6,415.5	6,414.4	14.3	13.8	-58.54	46.5	-76.1	89.2	61.1	28.11	3.172		
6,420.0	6,420.0	6,425.6	6,424.5	14.3	13.9	-58.56	46.5	-76.1	89.1	61.0	28.15	3.166		
6,430.0	6,430.0	6,435.6	6,434.5	14.3	13.9	-58.59	46.4	-76.0	89.1	60.9	28.19	3.160		
6,440.0	6,440.0	6,445.5	6,444.4	14.3	13.9	-58.61	46.4	-76.0	89.1	60.8	28.24	3.155		
6,450.0	6,450.0	6,455.5	6,454.4	14.4	13.9	-58.63	46.4	-76.0	89.1	60.8	28.28	3.149		
6,460.0	6,460.0	6,465.4	6,464.3	14.4	13.9	-58.65	46.3	-76.0	89.0	60.7	28.32	3.144		
6,470.0	6,470.0	6,475.4	6,474.3	14.4	14.0	-58.67	46.3	-76.0	89.0	60.7	28.36	3.139		
6,480.0	6,480.0	6,485.3	6,484.3	14.4	14.0	-58.68	46.3	-76.0	89.0	60.6	28.41	3.134		
6,490.0	6,490.0	6,495.3	6,494.2	14.4	14.0	-58.70	46.2	-76.1	89.0	60.6	28.45	3.129		
6,493.0	6,493.0	6,498.3	6,497.2	14.5	14.0	-58.70	46.2	-76.1	89.0	60.5	28.46	3.127		
6,500.0	6,500.0	6,505.3	6,504.2	14.5	14.0	-58.71	46.2	-76.1	89.0	60.5	28.49	3.124		
6,510.0	6,510.0	6,515.2	6,514.1	14.5	14.0	-58.72	46.2	-76.1	89.0	60.5	28.53	3.120		
6,520.0	6,520.0	6,525.2	6,524.1	14.5	14.1	-58.73	46.2	-76.1	89.0	60.4	28.57	3.115		
6,530.0	6,530.0	6,535.2	6,534.1	14.5	14.1	-58.74	46.2	-76.1	89.0	60.4	28.62	3.111		
6,540.0	6,540.0	6,545.2	6,544.1	14.6	14.1	-58.75	46.2	-76.1	89.0	60.4	28.66	3.107		
6,550.0	6,550.0	6,555.2	6,554.1	14.6	14.1	-58.78	46.2	-76.2	89.1	60.4	28.70	3.103		
6,560.0	6,560.0	6,565.2	6,564.1	14.6	14.1	-58.81	46.1	-76.2	89.1	60.3	28.74	3.099		
6,570.0	6,570.0	6,575.2	6,574.1	14.6	14.2	-58.85	46.1	-76.2	89.1	60.3	28.79	3.095		
6,580.0	6,580.0	6,585.2	6,584.1	14.6	14.2	-58.90	46.0	-76.3	89.1	60.3	28.83	3.090		
6,590.0	6,590.0	6,595.2	6,594.1	14.7	14.2	-58.96	45.9	-76.3	89.1	60.2	28.87	3.086		
6,600.0	6,600.0	6,605.2	6,604.1	14.7	14.2	-59.02	45.9	-76.4	89.1	60.2	28.91	3.082		
6,610.0	6,610.0	6,615.2	6,614.1	14.7	14.2	-59.09	45.8	-76.5	89.1	60.2	28.96	3.077		
6,620.0	6,620.0	6,625.2	6,624.1	14.7	14.3	-59.17	45.7	-76.5	89.1	60.1	29.00	3.073		

Offset Design Windward Federal - #1H - OH - OH												Offset Site Error:	3.0 usft
Survey Program: 239-8977												Offset Well Error:	3.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
6,630.0	6,630.0	6,635.2	6,634.1	14.8	14.3	-59.24	45.6	-76.6	89.1	60.1	29.04	3.069	
6,640.0	6,640.0	6,645.1	6,644.0	14.8	14.3	-59.32	45.5	-76.7	89.1	60.1	29.08	3.065	
6,650.0	6,650.0	6,655.1	6,654.0	14.8	14.3	-59.40	45.4	-76.7	89.2	60.0	29.13	3.061	
6,660.0	6,660.0	6,665.1	6,664.0	14.8	14.3	-59.47	45.3	-76.8	89.2	60.0	29.17	3.058	
6,670.0	6,670.0	6,675.0	6,673.9	14.9	14.4	-59.55	45.2	-76.9	89.2	60.0	29.21	3.054	
6,680.0	6,680.0	6,685.0	6,683.9	14.9	14.4	-59.62	45.1	-77.0	89.2	60.0	29.25	3.051	
6,690.0	6,690.0	6,694.9	6,693.8	14.9	14.4	-59.69	45.1	-77.1	89.3	60.0	29.29	3.048	
6,700.0	6,700.0	6,704.9	6,703.8	14.9	14.4	-59.76	45.0	-77.2	89.3	60.0	29.34	3.045	
6,710.0	6,710.0	6,715.0	6,713.9	14.9	14.4	-59.84	44.9	-77.3	89.4	60.0	29.38	3.042	
6,720.0	6,720.0	6,724.9	6,723.8	15.0	14.5	-59.90	44.8	-77.4	89.4	60.0	29.42	3.039	
6,730.0	6,730.0	6,734.9	6,733.8	15.0	14.5	-59.97	44.8	-77.5	89.5	60.0	29.46	3.036	
6,740.0	6,740.0	6,745.0	6,743.9	15.0	14.5	-60.02	44.7	-77.5	89.5	60.0	29.51	3.033	
6,750.0	6,750.0	6,755.0	6,753.9	15.0	14.5	-60.07	44.7	-77.6	89.5	60.0	29.55	3.030	
6,760.0	6,760.0	6,765.1	6,764.0	15.1	14.5	-60.11	44.6	-77.7	89.6	60.0	29.59	3.027	
6,770.0	6,770.0	6,775.1	6,774.0	15.1	14.6	-60.15	44.6	-77.7	89.6	60.0	29.63	3.023	
6,780.0	6,780.0	6,785.2	6,784.1	15.1	14.6	-60.18	44.6	-77.7	89.6	59.9	29.68	3.019	
6,790.0	6,790.0	6,795.2	6,794.1	15.1	14.6	-60.21	44.5	-77.8	89.6	59.9	29.72	3.015	
6,800.0	6,800.0	6,805.3	6,804.2	15.1	14.6	-60.22	44.5	-77.8	89.6	59.9	29.76	3.011	
6,810.0	6,810.0	6,815.3	6,814.2	15.2	14.6	-60.23	44.5	-77.8	89.6	59.8	29.80	3.007	
6,820.0	6,820.0	6,825.2	6,824.1	15.2	14.7	-60.25	44.5	-77.8	89.6	59.8	29.85	3.003	
6,830.0	6,830.0	6,835.1	6,834.0	15.2	14.7	-60.26	44.5	-77.8	89.6	59.8	29.89	2.999	
6,840.0	6,840.0	6,845.1	6,844.0	15.2	14.7	-60.28	44.5	-77.9	89.7	59.7	29.93	2.996	
6,850.0	6,850.0	6,855.0	6,853.9	15.3	14.7	-60.30	44.4	-77.9	89.7	59.7	29.97	2.993	
6,860.0	6,860.0	6,864.9	6,863.8	15.3	14.7	-60.32	44.4	-78.0	89.7	59.7	30.01	2.990	
6,870.0	6,870.0	6,874.8	6,873.8	15.3	14.8	-60.35	44.4	-78.0	89.8	59.7	30.06	2.987	
6,880.0	6,880.0	6,884.8	6,883.7	15.3	14.8	-60.37	44.4	-78.1	89.8	59.7	30.10	2.985	
6,890.0	6,890.0	6,894.7	6,893.6	15.3	14.8	-60.40	44.4	-78.2	89.9	59.8	30.14	2.983	
6,900.0	6,900.0	6,904.7	6,903.6	15.4	14.8	-60.43	44.4	-78.3	90.0	59.8	30.18	2.981	
6,910.0	6,910.0	6,914.7	6,913.6	15.4	14.8	-60.46	44.4	-78.3	90.0	59.8	30.23	2.979	
6,920.0	6,920.0	6,924.8	6,923.7	15.4	14.9	-60.50	44.4	-78.4	90.1	59.8	30.27	2.976	
6,930.0	6,930.0	6,934.9	6,933.8	15.4	14.9	-60.54	44.3	-78.5	90.1	59.8	30.31	2.974	
6,940.0	6,940.0	6,945.0	6,943.9	15.5	14.9	-60.59	44.3	-78.6	90.2	59.8	30.35	2.971	
6,950.0	6,950.0	6,955.1	6,954.0	15.5	14.9	-60.64	44.2	-78.6	90.2	59.8	30.40	2.968	
6,960.0	6,960.0	6,965.2	6,964.1	15.5	14.9	-60.69	44.2	-78.7	90.2	59.8	30.44	2.964	
6,970.0	6,970.0	6,975.3	6,974.2	15.5	15.0	-60.74	44.1	-78.7	90.2	59.8	30.48	2.960	
6,980.0	6,980.0	6,985.4	6,984.3	15.5	15.0	-60.80	44.0	-78.8	90.2	59.7	30.53	2.956	
6,990.0	6,990.0	6,995.4	6,994.3	15.6	15.0	-60.87	43.9	-78.8	90.2	59.7	30.57	2.952	
7,000.0	7,000.0	7,005.4	7,004.3	15.6	15.0	-60.93	43.8	-78.8	90.2	59.6	30.61	2.947	
7,010.0	7,010.0	7,015.4	7,014.3	15.6	15.0	-60.99	43.7	-78.9	90.2	59.5	30.65	2.942	
7,020.0	7,020.0	7,025.4	7,024.3	15.6	15.1	-61.05	43.6	-78.9	90.2	59.5	30.70	2.938	
7,030.0	7,030.0	7,035.4	7,034.3	15.7	15.1	-61.11	43.6	-79.0	90.2	59.4	30.74	2.934	
7,040.0	7,040.0	7,045.3	7,044.2	15.7	15.1	-61.17	43.5	-79.0	90.2	59.4	30.78	2.929	
7,050.0	7,050.0	7,055.3	7,054.2	15.7	15.1	-61.22	43.4	-79.0	90.2	59.3	30.82	2.925	
7,056.4	7,056.4	7,061.7	7,060.6	15.7	15.1	-61.25	43.4	-79.1	90.2	59.3	30.85	2.923	
7,060.0	7,060.0	7,065.3	7,064.2	15.7	15.1	-61.27	43.3	-79.1	90.2	59.3	30.87	2.921	
7,070.0	7,070.0	7,075.3	7,074.2	15.7	15.2	-61.32	43.3	-79.1	90.2	59.3	30.91	2.917	
7,080.0	7,080.0	7,085.2	7,084.1	15.8	15.2	-61.37	43.2	-79.1	90.2	59.2	30.95	2.913	
7,090.0	7,090.0	7,095.2	7,094.1	15.8	15.2	-61.41	43.2	-79.2	90.2	59.2	30.99	2.910	
7,100.0	7,100.0	7,105.2	7,104.1	15.8	15.2	-61.46	43.1	-79.2	90.2	59.1	31.04	2.906	
7,110.0	7,110.0	7,115.3	7,114.2	15.8	15.2	-61.50	43.0	-79.3	90.2	59.1	31.08	2.902	
7,120.0	7,120.0	7,125.3	7,124.2	15.9	15.3	-61.55	43.0	-79.3	90.2	59.1	31.12	2.898	
7,130.0	7,130.0	7,135.3	7,134.2	15.9	15.3	-61.60	42.9	-79.3	90.2	59.0	31.16	2.894	
7,140.0	7,140.0	7,145.3	7,144.2	15.9	15.3	-61.65	42.8	-79.4	90.2	59.0	31.21	2.891	
7,150.0	7,150.0	7,155.3	7,154.2	15.9	15.3	-61.70	42.8	-79.4	90.2	59.0	31.25	2.887	
7,160.0	7,160.0	7,165.3	7,164.2	16.0	15.3	-61.75	42.7	-79.5	90.2	58.9	31.29	2.883	
7,170.0	7,170.0	7,175.3	7,174.2	16.0	15.4	-61.81	42.6	-79.5	90.2	58.9	31.33	2.879	
7,180.0	7,180.0	7,185.4	7,184.2	16.0	15.4	-61.86	42.5	-79.5	90.2	58.8	31.38	2.875	
7,190.0	7,190.0	7,195.4	7,194.3	16.0	15.4	-61.92	42.5	-79.6	90.2	58.8	31.42	2.870	
7,200.0	7,200.0	7,205.5	7,204.4	16.0	15.4	-61.97	42.4	-79.6	90.2	58.7	31.46	2.866	
7,210.0	7,210.0	7,215.5	7,214.4	16.1	15.4	-62.03	42.3	-79.6	90.1	58.6	31.50	2.861	
7,220.0	7,220.0	7,225.6	7,224.5	16.1	15.5	-62.09	42.2	-79.6	90.1	58.6	31.55	2.857	
7,230.0	7,230.0	7,235.7	7,234.5	16.1	15.5	-62.15	42.1	-79.6	90.1	58.5	31.59	2.852	
7,240.0	7,240.0	7,245.7	7,244.6	16.1	15.5	-62.21	42.0	-79.7	90.0	58.4	31.63	2.846	
7,250.0	7,250.0	7,255.8	7,254.7	16.2	15.5	-62.27	41.9	-79.7	90.0	58.3	31.68	2.841	
7,260.0	7,260.0	7,265.8	7,264.7	16.2	15.5	-62.34	41.8	-79.7	89.9	58.2	31.72	2.835	
7,270.0	7,270.0	7,275.9	7,274.8	16.2	15.6	-62.40	41.6	-79.6	89.9	58.1	31.76	2.830	

Offset Design: Windward Federal - #1H - OH - OH														Offset Site Error:	3.0 usft
Survey Program: 239 - 8977														Offset Well Error:	3.0 usft
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N/S (usft)	Offset Wellbore Centre E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
7,280.0	7,280.0	7,285.9	7,284.8	16.2	15.6	-62.46	41.5	-79.6	89.8	58.0	31.80	2.824			
7,290.0	7,290.0	7,295.8	7,294.7	16.2	15.6	-62.53	41.4	-79.6	89.7	57.9	31.85	2.818			
7,300.0	7,300.0	7,305.8	7,304.7	16.3	15.6	-62.61	41.3	-79.6	89.7	57.8	31.89	2.813			
7,310.0	7,310.0	7,315.7	7,314.6	16.3	15.6	-62.68	41.1	-79.6	89.6	57.7	31.93	2.807			
7,320.0	7,320.0	7,325.6	7,324.5	16.3	15.7	-62.77	41.0	-79.7	89.6	57.6	31.97	2.802			
7,330.0	7,330.0	7,335.6	7,334.4	16.3	15.7	-62.86	40.9	-79.7	89.6	57.6	32.02	2.798			
7,340.0	7,340.0	7,345.5	7,344.4	16.4	15.7	-62.95	40.7	-79.8	89.6	57.5	32.06	2.793			
7,350.0	7,350.0	7,355.4	7,354.3	16.4	15.7	-63.05	40.6	-79.8	89.5	57.4	32.10	2.789			
7,360.0	7,360.0	7,365.3	7,364.2	16.4	15.7	-63.15	40.4	-79.9	89.5	57.4	32.14	2.785			
7,362.3	7,362.3	7,367.7	7,366.5	16.4	15.7	-63.17	40.4	-79.9	89.5	57.4	32.15	2.784			
7,370.0	7,370.0	7,375.3	7,374.1	16.4	15.8	-63.26	40.3	-80.0	89.5	57.3	32.19	2.782			
7,380.0	7,380.0	7,385.3	7,384.2	16.4	15.8	-63.37	40.1	-80.0	89.5	57.3	32.23	2.778			
7,390.0	7,390.0	7,395.4	7,394.2	16.5	15.8	-63.49	40.0	-80.1	89.5	57.3	32.27	2.774			
7,400.0	7,400.0	7,405.4	7,404.3	16.5	15.8	-63.62	39.8	-80.2	89.5	57.2	32.32	2.771			
7,410.0	7,410.0	7,415.4	7,414.3	16.5	15.8	-63.75	39.6	-80.3	89.5	57.2	32.36	2.767			
7,420.0	7,420.0	7,425.5	7,424.4	16.5	15.9	-63.89	39.4	-80.4	89.5	57.1	32.40	2.763			
7,430.0	7,430.0	7,435.5	7,434.4	16.6	15.9	-64.03	39.2	-80.5	89.5	57.0	32.44	2.758			
7,440.0	7,440.0	7,445.6	7,444.4	16.6	15.9	-64.18	39.0	-80.5	89.5	57.0	32.49	2.754			
7,450.0	7,450.0	7,455.6	7,454.5	16.6	15.9	-64.34	38.7	-80.6	89.4	56.9	32.53	2.749			
7,460.0	7,460.0	7,465.7	7,464.5	16.6	15.9	-64.50	38.5	-80.7	89.4	56.8	32.57	2.745			
7,470.0	7,470.0	7,475.7	7,474.5	16.6	16.0	-64.66	38.2	-80.8	89.4	56.7	32.62	2.740			
7,480.0	7,480.0	7,485.7	7,484.6	16.7	16.0	-64.83	38.0	-80.8	89.3	56.7	32.66	2.735			
7,490.0	7,490.0	7,495.7	7,494.6	16.7	16.0	-65.00	37.7	-80.9	89.3	56.6	32.70	2.730			
7,500.0	7,500.0	7,505.7	7,504.6	16.7	16.0	-65.16	37.5	-81.0	89.2	56.5	32.74	2.725			
7,510.0	7,510.0	7,515.7	7,514.6	16.7	16.0	-65.33	37.2	-81.1	89.2	56.4	32.79	2.721			
7,520.0	7,520.0	7,525.8	7,524.6	16.8	16.1	-65.49	37.0	-81.1	89.2	56.3	32.83	2.716			
7,530.0	7,530.0	7,535.8	7,534.6	16.8	16.1	-65.66	36.7	-81.2	89.1	56.2	32.87	2.711			
7,540.0	7,540.0	7,545.8	7,544.6	16.8	16.1	-65.83	36.5	-81.3	89.1	56.1	32.91	2.706			
7,550.0	7,550.0	7,555.8	7,554.6	16.8	16.1	-65.99	36.2	-81.3	89.0	56.1	32.96	2.701			
7,560.0	7,560.0	7,565.8	7,564.6	16.9	16.1	-66.16	36.0	-81.4	89.0	56.0	33.00	2.696			
7,570.0	7,570.0	7,575.8	7,574.6	16.9	16.2	-66.32	35.7	-81.4	88.9	55.9	33.04	2.691			
7,580.0	7,580.0	7,585.8	7,584.6	16.9	16.2	-66.49	35.4	-81.5	88.9	55.8	33.09	2.686			
7,590.0	7,590.0	7,595.8	7,594.6	16.9	16.2	-66.66	35.2	-81.6	88.8	55.7	33.13	2.681			
7,600.0	7,600.0	7,605.8	7,604.6	16.9	16.2	-66.83	34.9	-81.6	88.8	55.6	33.17	2.676			
7,610.0	7,610.0	7,615.8	7,614.6	17.0	16.3	-67.01	34.7	-81.7	88.7	55.5	33.21	2.671			
7,620.0	7,620.0	7,625.8	7,624.6	17.0	16.3	-67.18	34.4	-81.7	88.7	55.4	33.26	2.666			
7,630.0	7,630.0	7,635.8	7,634.6	17.0	16.3	-67.35	34.1	-81.8	88.6	55.3	33.30	2.662			
7,640.0	7,640.0	7,645.8	7,644.6	17.0	16.3	-67.53	33.9	-81.9	88.6	55.2	33.34	2.657			
7,650.0	7,650.0	7,655.8	7,654.6	17.1	16.3	-67.71	33.6	-81.9	88.5	55.1	33.39	2.652			
7,660.0	7,660.0	7,665.8	7,664.6	17.1	16.4	-67.89	33.3	-82.0	88.5	55.1	33.43	2.647			
7,670.0	7,670.0	7,675.8	7,674.6	17.1	16.4	-68.07	33.0	-82.0	88.4	55.0	33.47	2.642			
7,680.0	7,680.0	7,685.8	7,684.6	17.1	16.4	-68.25	32.8	-82.1	88.4	54.9	33.51	2.637			
7,690.0	7,690.0	7,695.8	7,694.6	17.1	16.4	-68.44	32.5	-82.2	88.3	54.8	33.56	2.633			
7,700.0	7,700.0	7,705.8	7,704.6	17.2	16.4	-68.63	32.2	-82.2	88.3	54.7	33.60	2.628			
7,710.0	7,710.0	7,715.8	7,714.6	17.2	16.5	-68.82	31.9	-82.3	88.3	54.6	33.64	2.623			
7,720.0	7,720.0	7,725.8	7,724.6	17.2	16.5	-69.01	31.6	-82.4	88.2	54.5	33.69	2.618			
7,730.0	7,730.0	7,735.8	7,734.6	17.2	16.5	-69.21	31.3	-82.4	88.2	54.4	33.73	2.614			
7,740.0	7,740.0	7,745.8	7,744.6	17.3	16.5	-69.41	31.0	-82.5	88.1	54.3	33.77	2.609			
7,750.0	7,750.0	7,755.8	7,754.6	17.3	16.5	-69.61	30.7	-82.6	88.1	54.3	33.82	2.605			
7,760.0	7,760.0	7,765.9	7,764.6	17.3	16.6	-69.81	30.4	-82.6	88.0	54.2	33.86	2.600			
7,770.0	7,770.0	7,775.9	7,774.6	17.3	16.6	-70.00	30.1	-82.7	88.0	54.1	33.90	2.595			
7,780.0	7,780.0	7,785.9	7,784.6	17.3	16.6	-70.19	29.8	-82.7	87.9	54.0	33.94	2.591			
7,790.0	7,790.0	7,795.9	7,794.6	17.4	16.6	-70.38	29.5	-82.8	87.9	53.9	33.99	2.586			
7,800.0	7,800.0	7,805.9	7,804.6	17.4	16.6	-70.55	29.2	-82.8	87.8	53.8	34.03	2.582			
7,810.0	7,810.0	7,815.9	7,814.6	17.4	16.7	-70.73	29.0	-82.9	87.8	53.7	34.07	2.577			
7,820.0	7,820.0	7,825.9	7,824.6	17.4	16.7	-70.89	28.7	-82.9	87.8	53.6	34.11	2.572			
7,830.0	7,830.0	7,835.9	7,834.6	17.5	16.7	-71.06	28.5	-83.0	87.7	53.6	34.16	2.568			
7,840.0	7,840.0	7,845.9	7,844.6	17.5	16.7	-71.22	28.2	-83.0	87.7	53.5	34.20	2.563			
7,850.0	7,850.0	7,855.9	7,854.6	17.5	16.7	-71.37	28.0	-83.0	87.6	53.4	34.24	2.559			
7,860.0	7,860.0	7,865.9	7,864.6	17.5	16.8	-71.53	27.7	-83.1	87.6	53.3	34.28	2.554			
7,870.0	7,870.0	7,875.8	7,874.5	17.5	16.8	-71.69	27.5	-83.1	87.5	53.2	34.33	2.550			
7,880.0	7,880.0	7,885.8	7,884.5	17.6	16.8	-71.84	27.3	-83.1	87.5	53.1	34.37	2.546			
7,890.0	7,890.0	7,895.8	7,894.5	17.6	16.8	-72.00	27.0	-83.2	87.5	53.0	34.41	2.542			
7,900.0	7,900.0	7,905.8	7,904.5	17.6	16.8	-72.16	26.8	-83.2	87.4	53.0	34.45	2.537			
7,910.0	7,910.0	7,915.8	7,914.4	17.6	16.9	-72.32	26.5	-83.3	87.4	52.9	34.50	2.534			
7,920.0	7,920.0	7,925.7	7,924.4	17.7	16.9	-72.48	26.3	-83.3	87.4	52.8	34.54	2.530			

Offset Design													Offset Site Error:		3.0usft
Survey Program: 239- 8977													Offset Well Error:		3.0usft
Reference		Offset		Semi-Major Axis			Distance						Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
7,930.0	7,930.0	7,935.7	7,934.4	17.7	16.9	-72.64	26.1	-83.4	87.3	52.8	34.58	2.526			
7,940.0	7,940.0	7,945.7	7,944.4	17.7	16.9	-72.80	25.8	-83.4	87.3	52.7	34.62	2.522			
7,950.0	7,950.0	7,955.7	7,954.3	17.7	16.9	-72.96	25.6	-83.5	87.3	52.6	34.67	2.519			
7,960.0	7,960.0	7,965.6	7,964.3	17.7	17.0	-73.12	25.3	-83.5	87.3	52.6	34.71	2.515			
7,970.0	7,970.0	7,975.6	7,974.3	17.8	17.0	-73.28	25.1	-83.6	87.3	52.5	34.75	2.512			
7,980.0	7,980.0	7,985.6	7,984.3	17.8	17.0	-73.45	24.9	-83.7	87.3	52.5	34.79	2.508			
7,990.0	7,990.0	7,995.6	7,994.2	17.8	17.0	-73.61	24.6	-83.7	87.3	52.4	34.84	2.505			
8,000.0	8,000.0	8,005.5	8,004.2	17.8	17.0	-73.78	24.4	-83.8	87.3	52.4	34.88	2.502			
8,002.9	8,002.9	8,008.4	8,007.1	17.8	17.0	-73.83	24.3	-83.8	87.3	52.4	34.89	2.501			
8,010.0	8,010.0	8,015.5	8,014.2	17.9	17.1	-73.95	24.1	-83.9	87.3	52.3	34.92	2.499			
8,020.0	8,020.0	8,025.5	8,024.2	17.9	17.1	-74.12	23.9	-83.9	87.3	52.3	34.96	2.496			
8,030.0	8,030.0	8,035.5	8,034.1	17.9	17.1	-74.29	23.6	-84.0	87.3	52.3	35.01	2.493			
8,040.0	8,040.0	8,045.5	8,044.2	17.9	17.1	-74.46	23.4	-84.1	87.3	52.2	35.05	2.490			
8,050.0	8,050.0	8,055.5	8,054.2	18.0	17.1	-74.63	23.1	-84.2	87.3	52.2	35.09	2.487			
8,060.0	8,060.0	8,065.6	8,064.2	18.0	17.2	-74.80	22.9	-84.2	87.3	52.1	35.14	2.484			
8,070.0	8,070.0	8,075.6	8,074.2	18.0	17.2	-74.97	22.6	-84.3	87.3	52.1	35.18	2.481			
8,080.0	8,080.0	8,085.6	8,084.2	18.0	17.2	-75.13	22.4	-84.4	87.3	52.1	35.22	2.478			
8,090.0	8,090.0	8,095.6	8,094.3	18.0	17.2	-75.30	22.1	-84.4	87.3	52.0	35.26	2.475			
8,100.0	8,100.0	8,105.7	8,104.3	18.1	17.2	-75.46	21.9	-84.5	87.3	52.0	35.31	2.471			
8,110.0	8,110.0	8,115.7	8,114.3	18.1	17.3	-75.62	21.7	-84.5	87.2	51.9	35.35	2.468			
8,120.0	8,120.0	8,125.7	8,124.3	18.1	17.3	-75.79	21.4	-84.6	87.2	51.8	35.39	2.465			
8,130.0	8,130.0	8,135.7	8,134.4	18.1	17.3	-75.95	21.2	-84.6	87.2	51.8	35.43	2.461			
8,140.0	8,140.0	8,145.8	8,144.4	18.2	17.3	-76.13	20.9	-84.7	87.2	51.7	35.48	2.458			
8,150.0	8,150.0	8,155.8	8,154.4	18.2	17.3	-76.31	20.6	-84.7	87.2	51.7	35.52	2.454			
8,160.0	8,160.0	8,165.8	8,164.4	18.2	17.4	-76.51	20.3	-84.8	87.2	51.6	35.56	2.451			
8,170.0	8,170.0	8,175.8	8,174.4	18.2	17.4	-76.72	20.0	-84.8	87.1	51.5	35.61	2.447			
8,180.0	8,180.0	8,185.8	8,184.4	18.2	17.4	-76.94	19.7	-84.9	87.1	51.5	35.65	2.443			
8,190.0	8,190.0	8,195.8	8,194.4	18.3	17.4	-77.17	19.3	-84.9	87.1	51.4	35.69	2.440			
8,200.0	8,200.0	8,205.8	8,204.4	18.3	17.4	-77.41	19.0	-85.0	87.1	51.3	35.74	2.436			
8,210.0	8,210.0	8,215.9	8,214.4	18.3	17.5	-77.66	18.6	-85.0	87.0	51.3	35.78	2.433			
8,220.0	8,220.0	8,225.9	8,224.4	18.3	17.5	-77.92	18.2	-85.1	87.0	51.2	35.82	2.429			
8,230.0	8,230.0	8,235.9	8,234.4	18.4	17.5	-78.19	17.8	-85.1	87.0	51.1	35.86	2.425			
8,240.0	8,240.0	8,245.9	8,244.4	18.4	17.5	-78.45	17.4	-85.2	87.0	51.0	35.91	2.422			
8,250.0	8,250.0	8,255.9	8,254.4	18.4	17.5	-78.72	17.0	-85.3	86.9	51.0	35.95	2.418			
8,260.0	8,260.0	8,265.9	8,264.4	18.4	17.6	-78.98	16.6	-85.3	86.9	50.9	35.99	2.415			
8,270.0	8,270.0	8,275.9	8,274.4	18.4	17.6	-79.24	16.2	-85.4	86.9	50.9	36.04	2.411			
8,280.0	8,280.0	8,285.9	8,284.4	18.5	17.6	-79.51	15.8	-85.4	86.9	50.8	36.08	2.408			
8,290.0	8,290.0	8,295.8	8,294.4	18.5	17.6	-79.77	15.4	-85.5	86.8	50.7	36.12	2.404			
8,300.0	8,300.0	8,305.8	8,304.3	18.5	17.7	-80.04	15.0	-85.5	86.8	50.7	36.16	2.401			
8,310.0	8,310.0	8,315.8	8,314.3	18.5	17.7	-80.30	14.6	-85.6	86.8	50.6	36.21	2.398			
8,320.0	8,320.0	8,325.8	8,324.3	18.6	17.7	-80.56	14.2	-85.6	86.8	50.5	36.25	2.394			
8,330.0	8,330.0	8,335.8	8,334.3	18.6	17.7	-80.83	13.8	-85.7	86.8	50.5	36.29	2.391			
8,340.0	8,340.0	8,345.8	8,344.3	18.6	17.7	-81.08	13.4	-85.7	86.8	50.4	36.34	2.388			
8,350.0	8,350.0	8,355.8	8,354.3	18.6	17.8	-81.34	13.1	-85.8	86.8	50.4	36.38	2.385			
8,360.0	8,360.0	8,365.8	8,364.2	18.6	17.8	-81.59	12.7	-85.8	86.8	50.3	36.42	2.382			
8,370.0	8,370.0	8,375.8	8,374.2	18.7	17.8	-81.85	12.3	-85.9	86.8	50.3	36.46	2.379			
8,380.0	8,380.0	8,385.8	8,384.2	18.7	17.8	-82.09	11.9	-85.9	86.8	50.3	36.51	2.377			
8,382.5	8,382.5	8,388.3	8,386.7	18.7	17.8	-82.16	11.8	-85.9	86.8	50.2	36.52	2.376			
8,390.0	8,390.0	8,395.8	8,394.2	18.7	17.8	-82.34	11.6	-86.0	86.8	50.2	36.55	2.374			
8,400.0	8,400.0	8,405.7	8,404.2	18.7	17.9	-82.59	11.2	-86.0	86.8	50.2	36.59	2.371			
8,410.0	8,410.0	8,415.8	8,414.2	18.8	17.9	-82.83	10.8	-86.1	86.8	50.1	36.63	2.368			
8,420.0	8,420.0	8,425.8	8,424.2	18.8	17.9	-83.06	10.5	-86.1	86.8	50.1	36.68	2.366			
8,430.0	8,430.0	8,435.8	8,434.2	18.8	17.9	-83.29	10.1	-86.2	86.8	50.0	36.72	2.363			
8,440.0	8,440.0	8,445.9	8,444.3	18.8	17.9	-83.50	9.8	-86.2	86.8	50.0	36.76	2.360			
8,450.0	8,450.0	8,455.9	8,454.3	18.9	18.0	-83.70	9.5	-86.2	86.7	49.9	36.80	2.357			
8,460.0	8,460.0	8,466.0	8,464.4	18.9	18.0	-83.90	9.2	-86.2	86.7	49.9	36.85	2.354			
8,470.0	8,470.0	8,476.0	8,474.4	18.9	18.0	-84.08	8.9	-86.2	86.7	49.8	36.89	2.350			
8,480.0	8,480.0	8,486.1	8,484.5	18.9	18.0	-84.25	8.7	-86.2	86.7	49.7	36.93	2.347			
8,490.0	8,490.0	8,496.1	8,494.5	18.9	18.0	-84.42	8.4	-86.2	86.6	49.7	36.97	2.343			
8,500.0	8,500.0	8,506.2	8,504.6	19.0	18.1	-84.57	8.2	-86.2	86.6	49.6	37.02	2.340			
8,510.0	8,510.0	8,516.2	8,514.6	19.0	18.1	-84.72	8.0	-86.2	86.6	49.5	37.06	2.336			
8,520.0	8,520.0	8,526.2	8,524.6	19.0	18.1	-84.88	7.7	-86.2	86.5	49.4	37.10	2.332			
8,530.0	8,530.0	8,536.2	8,534.6	19.0	18.1	-85.05	7.5	-86.1	86.5	49.3	37.15	2.328			
8,540.0	8,540.0	8,546.2	8,544.6	19.1	18.1	-85.22	7.2	-86.1	86.4	49.2	37.19	2.324			
8,550.0	8,550.0	8,556.3	8,554.6	19.1	18.2	-85.40	6.9	-86.1	86.4	49.1	37.23	2.320			
8,560.0	8,560.0	8,566.3	8,564.6	19.1	18.2	-85.59	6.6	-86.1	86.3	49.1	37.27	2.316			

Offset Design Windward Federal - #1H - OH - OH													Offset Site Error	3.0 usft
Survey Program: 239-18977													Offset Well Error	3.0 usft
Reference		Offset		Semi Major Axis		Highside Toolface (")	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)				
8,570.0	8,570.0	8,576.3	8,574.6	19.1	18.2	-85.78	6.3	-86.0	86.3	49.0	37.32	2.312		
8,580.0	8,580.0	8,586.3	8,584.7	19.1	18.2	-85.99	6.0	-86.0	86.2	48.9	37.36	2.308		
8,590.0	8,590.0	8,596.3	8,594.7	19.2	18.2	-86.20	5.7	-86.0	86.2	48.8	37.40	2.304		
8,600.0	8,600.0	8,606.3	8,604.6	19.2	18.3	-86.41	5.4	-86.0	86.1	48.7	37.45	2.300		
8,610.0	8,610.0	8,616.2	8,614.5	19.2	18.3	-86.63	5.1	-85.9	86.1	48.6	37.49	2.296		
8,620.0	8,620.0	8,626.1	8,624.5	19.2	18.3	-86.84	4.7	-85.9	86.0	48.5	37.53	2.293		
8,630.0	8,630.0	8,636.1	8,634.4	19.3	18.3	-87.05	4.4	-85.9	86.0	48.4	37.57	2.289		
8,640.0	8,640.0	8,646.0	8,644.3	19.3	18.3	-87.26	4.1	-85.9	86.0	48.4	37.62	2.286		
8,650.0	8,650.0	8,655.9	8,654.2	19.3	18.4	-87.46	3.8	-85.9	86.0	48.3	37.66	2.283		
8,655.0	8,655.0	8,660.8	8,659.2	19.3	18.4	-87.56	3.7	-85.9	86.0	48.3	37.68	2.282		
8,660.0	8,660.0	8,665.8	8,664.2	19.3	18.4	-87.67	3.5	-85.9	86.0	48.3	37.70	2.281		
8,670.0	8,670.0	8,675.8	8,674.1	19.3	18.4	-87.87	3.2	-85.9	86.0	48.3	37.75	2.278		
8,680.0	8,680.0	8,685.7	8,684.0	19.4	18.4	-88.07	2.9	-86.0	86.0	48.2	37.79	2.276		
8,690.0	8,690.0	8,695.7	8,694.0	19.4	18.4	-88.26	2.6	-86.0	86.0	48.2	37.83	2.274		
8,700.0	8,700.0	8,705.8	8,704.1	19.4	18.5	79.04	2.3	-86.0	86.1	48.2	37.87	2.272		
8,710.0	8,710.0	8,715.9	8,714.2	19.4	18.5	78.92	2.0	-86.0	86.0	48.1	37.91	2.270		
8,720.0	8,720.0	8,726.0	8,724.3	19.4	18.5	78.91	1.7	-86.0	86.0	48.0	37.95	2.266		
8,730.0	8,730.0	8,736.1	8,734.4	19.5	18.5	79.02	1.3	-86.0	85.9	47.9	37.99	2.260		
8,740.0	8,740.0	8,746.3	8,744.5	19.5	18.5	79.24	1.0	-86.0	85.7	47.7	38.02	2.254		
8,750.0	8,749.9	8,756.4	8,754.6	19.5	18.6	79.57	0.6	-86.0	85.5	47.4	38.06	2.246		
8,760.0	8,759.9	8,766.5	8,764.7	19.5	18.6	80.02	0.2	-85.9	85.2	47.1	38.10	2.238		
8,770.0	8,769.8	8,776.5	8,774.8	19.5	18.6	80.58	-0.2	-85.8	85.0	46.8	38.14	2.228		
8,780.0	8,779.7	8,786.6	8,784.9	19.5	18.6	81.26	-0.6	-85.8	84.6	46.5	38.17	2.217		
8,790.0	8,789.6	8,796.4	8,794.7	19.6	18.6	82.04	-1.0	-85.7	84.3	46.1	38.21	2.206		
8,800.0	8,799.4	8,806.1	8,804.3	19.6	18.7	82.92	-1.4	-85.6	84.0	45.7	38.25	2.196		
8,810.0	8,809.3	8,815.7	8,813.9	19.6	18.7	83.92	-1.8	-85.6	83.7	45.4	38.28	2.186		
8,820.0	8,819.1	8,825.3	8,823.6	19.6	18.7	85.03	-2.1	-85.6	83.4	45.1	38.32	2.178		
8,830.0	8,828.8	8,834.9	8,833.1	19.6	18.7	86.25	-2.5	-85.6	83.2	44.9	38.36	2.170		
8,840.0	8,838.5	8,844.5	8,842.7	19.6	18.7	87.58	-2.9	-85.7	83.1	44.7	38.39	2.165		
8,850.0	8,848.2	8,854.0	8,852.2	19.7	18.8	89.01	-3.3	-85.8	83.0	44.6	38.43	2.161		
8,852.6	8,850.7	8,856.5	8,854.7	19.7	18.8	89.40	-3.3	-85.8	83.0	44.6	38.44	2.160 CC		
8,860.0	8,857.8	8,863.5	8,861.7	19.7	18.8	90.54	-3.6	-85.9	83.1	44.6	38.47	2.159 ES, SF		
8,870.0	8,867.4	8,872.9	8,871.1	19.7	18.8	92.15	-4.0	-86.0	83.2	44.7	38.50	2.161		
8,880.0	8,876.9	8,882.3	8,880.5	19.7	18.8	93.85	-4.3	-86.2	83.4	44.9	38.54	2.165		
8,890.0	8,886.4	8,892.0	8,890.2	19.7	18.8	95.69	-4.7	-86.4	83.8	45.2	38.57	2.172		
8,900.0	8,895.8	8,901.7	8,899.8	19.8	18.8	97.62	-5.0	-86.5	84.2	45.6	38.60	2.182		
8,910.0	8,905.1	8,911.3	8,909.5	19.8	18.9	99.61	-5.4	-86.7	84.8	46.2	38.62	2.196		
8,920.0	8,914.4	8,920.9	8,919.0	19.8	18.9	101.67	-5.7	-86.8	85.5	46.9	38.65	2.212		
8,930.0	8,923.6	8,930.4	8,928.5	19.8	18.9	103.77	-6.1	-86.9	86.4	47.7	38.68	2.233		
8,940.0	8,932.8	8,939.8	8,938.0	19.8	18.9	105.90	-6.4	-87.0	87.4	48.7	38.70	2.257		
8,950.0	8,941.9	8,949.2	8,947.3	19.8	18.9	108.06	-6.8	-87.0	88.6	49.8	38.73	2.287		
8,960.0	8,950.9	8,958.5	8,956.6	19.8	18.9	110.22	-7.1	-87.1	90.0	51.2	38.76	2.321		
8,970.0	8,959.8	8,967.7	8,965.8	19.9	18.9	112.38	-7.4	-87.1	91.6	52.8	38.78	2.361		
8,980.0	8,968.6	8,976.8	8,974.9	19.9	18.9	114.53	-7.7	-87.1	93.4	54.6	38.81	2.407		
8,990.0	8,977.4	8,985.8	8,983.9	19.9	18.9	116.61	-8.0	-87.1	95.5	56.6	38.83	2.459		
9,000.0	8,986.1	8,994.6	8,992.7	19.9	18.9	118.66	-8.4	-87.1	97.8	58.9	38.84	2.517		
9,010.0	8,994.7	9,003.4	9,001.5	19.9	18.9	120.65	-8.7	-87.1	100.3	61.5	38.86	2.581		
9,020.0	9,003.2	9,012.1	9,010.2	20.0	18.9	122.58	-9.0	-87.1	103.1	64.2	38.88	2.652		
9,030.0	9,011.6	9,020.7	9,018.8	20.0	18.9	124.44	-9.3	-87.1	106.2	67.3	38.90	2.730		
9,040.0	9,019.9	9,029.2	9,027.3	20.0	18.9	126.24	-9.6	-87.1	109.5	70.6	38.92	2.813		
9,050.0	9,028.1	9,037.7	9,035.7	20.0	18.9	127.96	-9.9	-87.1	113.0	74.1	38.94	2.903		
9,060.0	9,036.2	9,046.0	9,044.1	20.0	18.9	129.61	-10.2	-87.1	116.8	77.9	38.96	2.999		
9,070.0	9,044.2	9,054.3	9,052.3	20.1	18.9	131.18	-10.5	-87.1	120.9	81.9	38.98	3.101		
9,080.0	9,052.1	9,062.4	9,060.4	20.1	18.9	132.67	-10.8	-87.1	125.2	86.2	39.01	3.209		
9,090.0	9,059.9	9,070.4	9,068.5	20.1	18.9	134.08	-11.2	-87.1	129.7	90.6	39.03	3.322		
9,100.0	9,067.6	9,078.4	9,076.4	20.1	18.9	135.42	-11.5	-87.1	134.4	95.3	39.05	3.441		
9,110.0	9,075.2	9,086.2	9,084.2	20.1	18.9	136.66	-11.8	-87.1	139.3	100.3	39.08	3.565		
9,120.0	9,082.6	9,093.8	9,091.9	20.2	18.9	137.84	-12.1	-87.1	144.5	105.4	39.10	3.695		
9,130.0	9,090.0	9,101.4	9,099.4	20.2	18.9	138.94	-12.3	-87.2	149.9	110.7	39.13	3.829		
9,140.0	9,097.2	9,108.9	9,106.9	20.2	18.9	139.97	-12.6	-87.2	155.4	116.3	39.16	3.969		
9,150.0	9,104.3	9,116.2	9,114.2	20.3	18.9	140.93	-12.9	-87.2	161.2	122.0	39.19	4.113		
9,160.0	9,111.2	9,123.5	9,121.5	20.3	18.9	141.83	-13.2	-87.3	167.1	127.9	39.22	4.262		
9,170.0	9,118.1	9,130.6	9,128.6	20.3	18.9	142.66	-13.5	-87.3	173.2	134.0	39.25	4.414		
9,180.0	9,124.8	9,137.6	9,135.6	20.3	18.9	143.43	-13.8	-87.4	179.5	140.3	39.28	4.571		
9,190.0	9,131.4	9,144.5	9,142.4	20.4	18.9	144.15	-14.0	-87.4	186.0	146.7	39.31	4.732		
9,200.0	9,137.8	9,151.2	9,149.2	20.4	18.9	144.80	-14.3	-87.5	192.7	153.3	39.34	4.897		

Offset Design: Windward Federal - #1H - OH - OH													Offset Site Error:	3.0 usft
Survey Program: 239 - 8977													Offset Well Error:	3.0 usft
Reference		Offset		Semi-Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,210.0	9,144.2	9,157.9	9,155.8	20.4	18.9	145.40	-14.6	-87.5	199.4	160.1	39.38	5.065		
9,220.0	9,150.4	9,164.4	9,162.3	20.5	18.9	145.95	-14.8	-87.6	206.4	167.0	39.41	5.237		
9,230.0	9,156.4	9,168.0	9,166.0	20.5	18.9	145.99	-15.0	-87.6	213.5	174.0	39.45	5.412		
9,240.0	9,162.3	9,176.2	9,174.1	20.5	18.9	146.76	-15.3	-87.7	220.7	181.2	39.48	5.590		
9,250.0	9,168.1	9,181.7	9,179.6	20.6	18.9	147.06	-15.5	-87.8	228.1	188.6	39.52	5.772		
9,260.0	9,173.7	9,187.1	9,185.0	20.6	18.9	147.31	-15.7	-87.9	235.7	196.1	39.56	5.957		
9,270.0	9,179.2	9,192.3	9,190.2	20.7	18.9	147.51	-15.8	-87.9	243.4	203.8	39.60	6.145		
9,280.0	9,184.5	9,197.3	9,195.2	20.7	18.9	147.66	-16.0	-88.0	251.2	211.6	39.65	6.336		
9,290.0	9,189.7	9,202.2	9,200.1	20.8	18.9	147.76	-16.1	-88.1	259.2	219.5	39.69	6.530		
9,300.0	9,194.7	9,206.9	9,204.8	20.8	18.9	147.81	-16.2	-88.1	267.3	227.5	39.73	6.727		
9,310.0	9,199.6	9,211.4	9,209.4	20.8	18.9	147.80	-16.3	-88.2	275.5	235.7	39.78	6.925		
9,320.0	9,204.3	9,215.8	9,213.8	20.9	18.9	147.74	-16.4	-88.2	283.8	244.0	39.83	7.126		
9,330.0	9,208.9	9,220.1	9,218.0	20.9	18.9	147.62	-16.5	-88.3	292.2	252.4	39.87	7.329		
9,340.0	9,213.3	9,224.1	9,222.0	21.0	18.9	147.45	-16.6	-88.4	300.8	260.9	39.92	7.534		
9,350.0	9,217.6	9,228.0	9,225.9	21.0	18.9	147.21	-16.6	-88.4	309.4	269.5	39.97	7.742		
9,360.0	9,221.7	9,231.8	9,229.7	21.1	18.9	146.91	-16.7	-88.5	318.2	278.1	40.02	7.950		
9,370.0	9,225.6	9,235.3	9,233.3	21.1	18.9	146.54	-16.7	-88.5	327.0	286.9	40.08	8.160		
9,380.0	9,229.4	9,238.7	9,236.7	21.2	18.9	146.09	-16.8	-88.6	335.9	295.8	40.13	8.371		
9,390.0	9,233.0	9,242.0	9,239.9	21.2	18.9	145.57	-16.8	-88.6	344.9	304.8	40.18	8.584		
9,400.0	9,236.5	9,245.1	9,243.0	21.3	18.9	144.96	-16.8	-88.7	354.0	313.8	40.24	8.798		
9,410.0	9,239.7	9,248.0	9,245.9	21.4	18.9	144.25	-16.8	-88.7	363.2	322.9	40.30	9.013		
9,420.0	9,242.9	9,250.8	9,248.7	21.4	18.9	143.44	-16.8	-88.8	372.4	332.1	40.36	9.228		
9,430.0	9,245.8	9,253.4	9,251.3	21.5	18.9	142.51	-16.9	-88.8	381.7	341.3	40.42	9.445		
9,440.0	9,248.6	9,255.8	9,253.7	21.5	18.9	141.46	-16.9	-88.9	391.1	350.6	40.48	9.662		
9,450.0	9,251.2	9,263.0	9,260.9	21.6	18.9	141.54	-16.9	-89.0	400.6	360.0	40.54	9.881		
12,270.0	9,264.3	13,364.0	10,465.1	60.7	59.5	-174.49	-3,223.1	-64.5	1,202.1	1,081.9	120.23	9.999		
12,280.0	9,264.3	13,374.6	10,465.2	60.9	59.7	-174.51	-3,233.6	-64.8	1,202.2	1,081.6	120.57	9.971		
12,290.0	9,264.3	13,385.1	10,465.2	61.0	59.9	-174.53	-3,244.2	-65.2	1,202.2	1,081.3	120.91	9.943		
12,300.0	9,264.3	13,395.6	10,465.3	61.2	60.1	-174.55	-3,254.7	-65.5	1,202.3	1,081.0	121.26	9.915		
12,310.0	9,264.2	13,406.2	10,465.3	61.4	60.2	-174.57	-3,265.2	-65.9	1,202.3	1,080.7	121.60	9.887		
12,320.0	9,264.2	13,416.7	10,465.4	61.5	60.4	-174.59	-3,275.7	-66.4	1,202.3	1,080.4	121.95	9.860		
12,330.0	9,264.2	13,425.6	10,465.5	61.7	60.6	-174.62	-3,284.6	-66.7	1,202.4	1,080.1	122.26	9.834		
12,340.0	9,264.2	13,434.3	10,465.5	61.9	60.7	-174.64	-3,293.3	-67.1	1,202.4	1,079.8	122.57	9.810		
12,350.0	9,264.2	13,443.0	10,465.6	62.0	60.8	-174.66	-3,302.0	-67.5	1,202.5	1,079.6	122.88	9.786		
12,360.0	9,264.1	13,451.7	10,465.7	62.2	61.0	-174.68	-3,310.7	-68.0	1,202.5	1,079.3	123.19	9.762		
12,370.0	9,264.1	13,460.4	10,465.8	62.4	61.1	-174.71	-3,319.4	-68.4	1,202.6	1,079.1	123.50	9.738		
12,380.0	9,264.1	13,469.1	10,465.9	62.6	61.2	-174.73	-3,328.0	-68.9	1,202.7	1,078.9	123.81	9.714		
12,390.0	9,264.1	13,477.8	10,466.0	62.7	61.4	-174.76	-3,336.7	-69.4	1,202.8	1,078.7	124.12	9.691		
12,400.0	9,264.1	13,486.4	10,466.1	62.9	61.5	-174.79	-3,345.4	-69.9	1,202.9	1,078.5	124.43	9.667		
12,410.0	9,264.0	13,495.1	10,466.3	63.1	61.7	-174.81	-3,354.0	-70.4	1,203.0	1,078.3	124.74	9.644		
12,420.0	9,264.0	13,503.8	10,466.4	63.2	61.8	-174.84	-3,362.7	-71.0	1,203.1	1,078.1	125.05	9.622		
12,430.0	9,264.0	13,512.0	10,466.6	63.4	61.9	-174.87	-3,370.9	-71.5	1,203.3	1,077.9	125.35	9.599		
12,440.0	9,264.0	13,512.0	10,466.6	63.6	61.9	-174.87	-3,370.9	-71.5	1,203.5	1,078.0	125.52	9.588		
12,450.0	9,263.9	13,527.2	10,466.9	63.8	62.2	-174.93	-3,386.1	-72.5	1,203.6	1,077.7	125.94	9.557		
12,460.0	9,263.9	13,534.7	10,467.1	63.9	62.3	-174.95	-3,393.5	-73.0	1,203.8	1,077.6	126.23	9.537		
12,470.0	9,263.9	13,542.1	10,467.3	64.1	62.4	-174.98	-3,400.9	-73.5	1,204.1	1,077.5	126.52	9.517		
12,480.0	9,263.9	13,549.5	10,467.5	64.3	62.5	-175.01	-3,408.3	-74.1	1,204.3	1,077.5	126.81	9.497		
12,490.0	9,263.9	13,556.9	10,467.7	64.4	62.6	-175.04	-3,415.7	-74.6	1,204.6	1,077.5	127.10	9.478		
12,500.0	9,263.8	13,564.3	10,468.0	64.6	62.8	-175.07	-3,423.1	-75.1	1,204.9	1,077.5	127.39	9.458		
12,510.0	9,263.8	13,571.8	10,468.2	64.8	62.9	-175.09	-3,430.5	-75.7	1,205.2	1,077.5	127.68	9.439		
12,520.0	9,263.8	13,579.2	10,468.5	65.0	63.0	-175.12	-3,437.8	-76.2	1,205.5	1,077.5	127.97	9.420		
12,530.0	9,263.8	13,586.6	10,468.8	65.1	63.1	-175.15	-3,445.2	-76.8	1,205.9	1,077.6	128.26	9.402		
12,540.0	9,263.8	13,606.0	10,469.7	65.3	63.4	-175.23	-3,464.6	-78.3	1,206.3	1,077.6	128.74	9.370		
12,550.0	9,263.7	13,606.0	10,469.7	65.5	63.4	-175.23	-3,464.6	-78.3	1,206.6	1,077.7	128.91	9.360		
12,560.0	9,263.7	13,606.0	10,469.7	65.7	63.4	-175.23	-3,464.6	-78.3	1,207.1	1,078.0	129.09	9.351		
12,570.0	9,263.7	13,618.1	10,470.3	65.8	63.6	-175.28	-3,476.6	-79.2	1,207.5	1,078.0	129.45	9.328		
12,580.0	9,263.7	13,626.9	10,470.7	66.0	63.8	-175.32	-3,485.4	-79.9	1,207.9	1,078.2	129.76	9.309		
12,590.0	9,263.7	13,635.8	10,471.1	66.2	63.9	-175.36	-3,494.2	-80.6	1,208.4	1,078.3	130.08	9.290		
12,600.0	9,263.6	13,644.6	10,471.6	66.3	64.0	-175.40	-3,503.0	-81.3	1,208.8	1,078.4	130.39	9.271		
12,610.0	9,263.6	13,653.4	10,472.0	66.5	64.2	-175.44	-3,511.7	-82.1	1,209.3	1,078.6	130.70	9.252		
12,620.0	9,263.6	13,662.2	10,472.5	66.7	64.3	-175.47	-3,520.5	-82.8	1,209.8	1,078.8	131.02	9.234		
12,630.0	9,263.6	13,671.0	10,473.0	66.9	64.5	-175.51	-3,529.3	-83.5	1,210.3	1,078.9	131.33	9.216		
12,640.0	9,263.5	13,679.8	10,473.5	67.0	64.6	-175.55	-3,538.0	-84.2	1,210.8	1,079.1	131.64	9.197		
12,650.0	9,263.5	13,688.6	10,473.9	67.2	64.7	-175.59	-3,546.8	-84.9	1,211.3	1,079.3	131.96	9.179		
12,660.0	9,263.5	13,700.0	10,474.6	67.4	64.9	-175.64	-3,558.1	-85.9	1,211.8	1,079.5	132.31	9.159		
12,670.0	9,263.5	13,708.3	10,475.1	67.6	65.1	-175.68	-3,566.3	-86.6	1,212.3	1,079.7	132.62	9.141		

Windward Federal - #1H - OH - OH													Offset Site Error:	3.0 usft
Survey Program: 299-8977													Offset Well Error:	3.0 usft
Offset Design		Reference											Warning	
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi-Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor		
		Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset		N-S (usft)	E-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
12,680.0	9,263.5	13,720.0	10,475.7	67.7	65.3	-175.73	-3,578.0	-87.6	1,212.8	1,079.9	132.98	9.120		
12,690.0	9,263.4	13,731.7	10,476.4	67.9	65.4	-175.78	-3,589.7	-88.5	1,213.3	1,080.0	133.35	9.099		
12,700.0	9,263.4	13,743.5	10,477.0	68.1	65.6	-175.83	-3,601.4	-89.5	1,213.8	1,080.1	133.71	9.078		
12,710.0	9,263.4	13,755.2	10,477.6	68.2	65.8	-175.88	-3,613.1	-90.4	1,214.3	1,080.2	134.08	9.057		
12,720.0	9,263.4	13,767.0	10,478.2	68.4	66.0	-175.93	-3,624.8	-91.4	1,214.8	1,080.3	134.45	9.035		
12,730.0	9,263.4	13,778.7	10,478.7	68.6	66.2	-175.98	-3,636.5	-92.3	1,215.2	1,080.4	134.81	9.014		
12,740.0	9,263.3	13,790.5	10,479.3	68.8	66.4	-176.03	-3,648.2	-93.2	1,215.6	1,080.5	135.18	8.993		
12,750.0	9,263.3	13,802.7	10,479.8	68.9	66.6	-176.08	-3,660.3	-94.2	1,216.0	1,080.5	135.55	8.971		
12,760.0	9,263.3	13,815.1	10,480.4	69.1	66.8	-176.13	-3,672.7	-95.1	1,216.4	1,080.5	135.94	8.949		
12,770.0	9,263.3	13,827.5	10,480.9	69.3	67.0	-176.18	-3,685.0	-96.1	1,216.8	1,080.5	136.32	8.926		
12,780.0	9,263.3	13,839.9	10,481.3	69.5	67.2	-176.23	-3,697.4	-97.0	1,217.2	1,080.5	136.70	8.904		
12,790.0	9,263.2	13,852.3	10,481.8	69.6	67.4	-176.28	-3,709.7	-97.9	1,217.5	1,080.4	137.08	8.882		
12,800.0	9,263.2	13,864.7	10,482.2	69.8	67.7	-176.32	-3,722.1	-98.9	1,217.8	1,080.4	137.46	8.859		
12,810.0	9,263.2	13,877.1	10,482.6	70.0	67.9	-176.37	-3,734.5	-99.8	1,218.1	1,080.3	137.84	8.837		
12,820.0	9,263.2	13,889.9	10,483.0	70.2	68.1	-176.42	-3,747.2	-100.7	1,218.4	1,080.2	138.23	8.814		
12,830.0	9,263.1	13,905.1	10,483.4	70.3	68.3	-176.47	-3,762.5	-101.7	1,218.6	1,080.0	138.67	8.788		
12,840.0	9,263.1	13,920.4	10,483.8	70.5	68.6	-176.53	-3,777.7	-102.8	1,218.8	1,079.7	139.10	8.762		
12,850.0	9,263.1	13,935.7	10,484.0	70.7	68.9	-176.58	-3,793.0	-103.7	1,219.0	1,079.5	139.53	8.736		
12,860.0	9,263.1	13,951.0	10,484.2	70.9	69.1	-176.63	-3,808.3	-104.7	1,219.1	1,079.1	139.96	8.710		
12,870.0	9,263.1	13,966.4	10,484.4	71.0	69.4	-176.67	-3,823.5	-105.6	1,219.2	1,078.8	140.40	8.684		
12,880.0	9,263.0	13,981.7	10,484.4	71.2	69.6	-176.72	-3,838.8	-106.4	1,219.2	1,078.4	140.83	8.657		
12,890.0	9,263.0	13,995.9	10,484.4	71.4	69.9	-176.76	-3,853.1	-107.2	1,219.2	1,077.9	141.25	8.631		
12,900.0	9,263.0	14,010.2	10,484.4	71.5	70.1	-176.79	-3,867.3	-107.9	1,219.1	1,077.5	141.67	8.606		
12,910.0	9,263.0	14,024.4	10,484.3	71.7	70.4	-176.83	-3,881.5	-108.5	1,219.1	1,077.0	142.08	8.580		
12,920.0	9,263.0	14,038.7	10,484.1	71.9	70.6	-176.86	-3,895.8	-109.1	1,218.9	1,076.4	142.50	8.554		
12,930.0	9,262.9	14,052.9	10,483.9	72.1	70.8	-176.89	-3,910.0	-109.6	1,218.8	1,075.9	142.92	8.528		
12,940.0	9,262.9	14,067.1	10,483.6	72.2	71.1	-176.91	-3,924.2	-110.1	1,218.6	1,075.3	143.34	8.502		
12,950.0	9,262.9	14,076.0	10,483.5	72.4	71.2	-176.93	-3,933.1	-110.4	1,218.4	1,074.7	143.66	8.481		
12,960.0	9,262.9	14,076.0	10,483.5	72.6	71.2	-176.93	-3,933.1	-110.4	1,218.2	1,074.4	143.84	8.469		
12,970.0	9,262.9	14,093.1	10,483.1	72.8	71.5	-176.96	-3,950.1	-110.9	1,218.0	1,073.7	144.29	8.441		
12,980.0	9,262.8	14,100.2	10,483.0	72.9	71.6	-176.97	-3,957.3	-111.1	1,217.8	1,073.3	144.59	8.423		
12,990.0	9,262.8	14,107.4	10,482.9	73.1	71.8	-176.98	-3,964.5	-111.3	1,217.7	1,072.8	144.88	8.405		
13,000.0	9,262.8	14,114.6	10,482.8	73.3	71.9	-176.99	-3,971.7	-111.4	1,217.6	1,072.4	145.17	8.387		
13,010.0	9,262.8	14,121.8	10,482.7	73.5	72.0	-177.00	-3,978.8	-111.6	1,217.5	1,072.0	145.47	8.370		
13,020.0	9,262.7	14,129.0	10,482.7	73.6	72.1	-177.01	-3,986.0	-111.8	1,217.4	1,071.7	145.76	8.352		
13,030.0	9,262.7	14,136.1	10,482.7	73.8	72.2	-177.02	-3,993.2	-111.9	1,217.4	1,071.3	146.05	8.335		
13,040.0	9,262.7	14,143.3	10,482.6	74.0	72.4	-177.03	-4,000.4	-112.1	1,217.4	1,071.0	146.35	8.319		
13,043.1	9,262.7	14,145.6	10,482.6	74.0	72.4	-177.03	-4,002.6	-112.1	1,217.4	1,070.9	146.44	8.313		
13,050.0	9,262.7	14,150.5	10,482.6	74.2	72.5	-177.04	-4,007.6	-112.2	1,217.4	1,070.7	146.64	8.302		
13,060.0	9,262.7	14,170.0	10,482.7	74.3	72.8	-177.06	-4,027.0	-112.6	1,217.5	1,070.4	147.14	8.275		
13,067.5	9,262.6	14,170.0	10,482.7	74.5	72.8	-177.06	-4,027.0	-112.6	1,217.5	1,070.2	147.27	8.267		
13,070.0	9,262.6	14,170.0	10,482.7	74.5	72.8	-177.06	-4,027.0	-112.6	1,217.5	1,070.2	147.31	8.265		
13,080.0	9,262.6	14,170.0	10,482.7	74.7	72.8	-177.06	-4,027.0	-112.6	1,217.5	1,070.1	147.49	8.255		
13,090.0	9,262.6	14,180.7	10,482.8	74.9	73.0	-177.07	-4,037.7	-112.8	1,217.6	1,069.8	147.83	8.237		
13,100.0	9,262.6	14,189.0	10,482.9	75.0	73.1	-177.08	-4,046.0	-112.9	1,217.7	1,069.6	148.14	8.220		
13,110.0	9,262.6	14,197.3	10,483.0	75.2	73.2	-177.09	-4,054.3	-113.1	1,217.8	1,069.4	148.45	8.204		
13,120.0	9,262.5	14,205.6	10,483.1	75.4	73.4	-177.10	-4,062.6	-113.2	1,218.0	1,069.2	148.76	8.188		
13,130.0	9,262.5	14,213.9	10,483.2	75.6	73.5	-177.11	-4,070.9	-113.4	1,218.1	1,069.1	149.06	8.172		
13,140.0	9,262.5	14,222.2	10,483.3	75.7	73.6	-177.12	-4,079.3	-113.5	1,218.3	1,068.9	149.37	8.156		
13,150.0	9,262.5	14,230.5	10,483.4	75.9	73.8	-177.13	-4,087.6	-113.7	1,218.5	1,068.8	149.68	8.140		
13,160.0	9,262.4	14,238.8	10,483.5	76.1	73.9	-177.14	-4,095.9	-113.8	1,218.6	1,068.7	149.99	8.125		
13,170.0	9,262.4	14,247.1	10,483.8	76.3	74.0	-177.15	-4,104.2	-113.9	1,218.8	1,068.6	150.30	8.110		
13,180.0	9,262.4	14,255.4	10,483.9	76.4	74.2	-177.16	-4,112.5	-114.1	1,219.1	1,068.5	150.60	8.095		
13,190.0	9,262.4	14,264.0	10,484.1	76.6	74.3	-177.17	-4,121.0	-114.2	1,219.3	1,068.4	150.92	8.079		
13,200.0	9,262.4	14,264.0	10,484.1	76.8	74.3	-177.17	-4,121.0	-114.2	1,219.6	1,068.5	151.09	8.072		
13,210.0	9,262.3	14,279.7	10,484.5	77.0	74.6	-177.18	-4,136.7	-114.5	1,219.8	1,068.3	151.52	8.050		
13,220.0	9,262.3	14,287.6	10,484.7	77.1	74.7	-177.19	-4,144.6	-114.6	1,220.1	1,068.3	151.82	8.036		
13,230.0	9,262.3	14,295.6	10,484.9	77.3	74.8	-177.20	-4,152.6	-114.7	1,220.4	1,068.2	152.13	8.022		
13,240.0	9,262.3	14,303.5	10,485.2	77.5	74.9	-177.21	-4,160.5	-114.8	1,220.7	1,068.2	152.43	8.008		
13,250.0	9,262.3	14,311.5	10,485.4	77.7	75.1	-177.21	-4,168.5	-114.9	1,221.0	1,068.3	152.73	7.994		
13,260.0	9,262.2	14,319.4	10,485.7	77.8	75.2	-177.22	-4,176.4	-115.0	1,221.3	1,068.3	153.04	7.981		
13,270.0	9,262.2	14,327.4	10,486.0	78.0	75.3	-177.23	-4,184.4	-115.1	1,221.7	1,068.4	153.34	7.967		
13,280.0	9,262.2	14,335.3	10,486.2	78.2	75.4	-177.23	-4,192.3	-115.2	1,222.1	1,068.4	153.64	7.954		
13,290.0	9,262.2	14,343.3	10,486.6	78.4	75.6	-177.24	-4,200.2	-115.2	1,222.5	1,068.5	153.95	7.941		
13,300.0	9,262.2	14,358.0	10,487.1	78.5	75.8	-177.25	-4,215.0	-115.3	1,222.9	1,068.6	154.36	7.923		
13,310.0	9,262.1	14,358.0	10,487.1	78.7	75.8	-177.25	-4,215.0	-115.3	1,223.3	1,068.8	154.53	7.916		

Offset Design												Offset Site Error:		3.0 usft
Survey Program: 239-18977												Offset Well Error:		3.0 usft
Reference		Offset		Semi Major Axis			Distance					Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset/Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
13,320.0	9,262.1	14,367.9	10,487.6	78.9	76.0	-177.26	-4,224.8	-115.4	1,223.8	1,068.9	154.87	7.902		
13,330.0	9,262.1	14,376.5	10,487.9	79.1	76.1	-177.26	-4,233.5	-115.4	1,224.2	1,069.0	155.19	7.889		
13,340.0	9,262.1	14,385.1	10,488.3	79.2	76.3	-177.27	-4,242.1	-115.4	1,224.7	1,069.2	155.50	7.876		
13,350.0	9,262.0	14,393.7	10,488.7	79.4	76.4	-177.27	-4,250.7	-115.5	1,225.2	1,069.3	155.82	7.863		
13,360.0	9,262.0	14,402.4	10,489.1	79.6	76.5	-177.28	-4,259.3	-115.5	1,225.6	1,069.5	156.13	7.850		
13,370.0	9,262.0	14,411.0	10,489.5	79.8	76.7	-177.28	-4,267.9	-115.6	1,226.1	1,069.7	156.45	7.837		
13,380.0	9,262.0	14,419.6	10,490.0	80.0	76.8	-177.29	-4,276.5	-115.6	1,226.6	1,069.9	156.76	7.825		
13,390.0	9,262.0	14,428.2	10,490.4	80.1	77.0	-177.29	-4,285.1	-115.7	1,227.2	1,070.1	157.08	7.813		
13,400.0	9,261.9	14,436.8	10,490.8	80.3	77.1	-177.30	-4,293.7	-115.7	1,227.7	1,070.3	157.39	7.800		
13,410.0	9,261.9	14,445.4	10,491.3	80.5	77.2	-177.31	-4,302.3	-115.8	1,228.2	1,070.5	157.71	7.788		
13,420.0	9,261.9	14,452.0	10,491.7	80.7	77.3	-177.31	-4,308.8	-115.8	1,228.8	1,070.8	157.99	7.778		
13,430.0	9,261.9	14,463.0	10,492.3	80.8	77.5	-177.32	-4,319.9	-115.8	1,229.4	1,071.0	158.35	7.764		
13,440.0	9,261.9	14,471.9	10,492.8	81.0	77.7	-177.32	-4,328.8	-115.9	1,229.9	1,071.3	158.67	7.752		
13,450.0	9,261.8	14,480.9	10,493.3	81.2	77.8	-177.33	-4,337.7	-115.9	1,230.5	1,071.5	158.99	7.740		
13,460.0	9,261.8	14,489.8	10,493.8	81.4	78.0	-177.33	-4,346.5	-115.9	1,231.1	1,071.8	159.31	7.728		
13,470.0	9,261.8	14,498.7	10,494.3	81.5	78.1	-177.33	-4,355.4	-115.9	1,231.7	1,072.1	159.63	7.716		
13,480.0	9,261.8	14,507.6	10,494.8	81.7	78.2	-177.34	-4,364.3	-115.9	1,232.3	1,072.3	159.95	7.704		
13,490.0	9,261.8	14,516.5	10,495.3	81.9	78.4	-177.34	-4,373.2	-115.9	1,232.9	1,072.6	160.28	7.692		
13,500.0	9,261.7	14,525.4	10,495.9	82.1	78.5	-177.34	-4,382.1	-115.8	1,233.5	1,072.9	160.60	7.681		
13,510.0	9,261.7	14,534.3	10,496.4	82.2	78.7	-177.34	-4,391.0	-115.8	1,234.2	1,073.2	160.92	7.669		
13,520.0	9,261.7	14,547.0	10,497.2	82.4	78.9	-177.35	-4,403.7	-115.7	1,234.8	1,073.5	161.30	7.655		
13,530.0	9,261.7	14,556.2	10,497.8	82.6	79.0	-177.35	-4,412.8	-115.7	1,235.4	1,073.8	161.63	7.644		
13,540.0	9,261.6	14,572.1	10,498.7	82.8	79.3	-177.35	-4,428.7	-115.6	1,236.0	1,074.0	162.07	7.627		
13,550.0	9,261.6	14,588.1	10,499.5	82.9	79.6	-177.35	-4,444.7	-115.5	1,236.6	1,074.1	162.51	7.609		
13,560.0	9,261.6	14,604.0	10,500.3	83.1	79.8	-177.36	-4,460.6	-115.5	1,237.1	1,074.1	162.95	7.592		
13,570.0	9,261.6	14,620.0	10,501.0	83.3	80.1	-177.37	-4,476.6	-115.6	1,237.5	1,074.2	163.39	7.574		
13,580.0	9,261.6	14,636.0	10,501.6	83.5	80.4	-177.37	-4,492.5	-115.6	1,237.9	1,074.1	163.83	7.556		
13,590.0	9,261.5	14,648.8	10,502.1	83.7	80.6	-177.38	-4,505.3	-115.7	1,238.3	1,074.1	164.21	7.541		
13,600.0	9,261.5	14,660.1	10,502.4	83.8	80.8	-177.39	-4,516.7	-115.7	1,238.7	1,074.1	164.58	7.526		
13,610.0	9,261.5	14,671.4	10,502.8	84.0	80.9	-177.40	-4,528.0	-115.8	1,239.0	1,074.1	164.94	7.512		
13,620.0	9,261.5	14,682.8	10,503.2	84.2	81.1	-177.40	-4,539.3	-115.9	1,239.3	1,074.0	165.31	7.497		
13,630.0	9,261.5	14,694.1	10,503.5	84.4	81.3	-177.41	-4,550.6	-116.0	1,239.7	1,074.0	165.67	7.483		
13,640.0	9,261.4	14,705.4	10,503.9	84.5	81.5	-177.42	-4,562.0	-116.1	1,240.0	1,073.9	166.04	7.468		
13,650.0	9,261.4	14,716.8	10,504.2	84.7	81.7	-177.43	-4,573.3	-116.2	1,240.3	1,073.9	166.40	7.453		
13,660.0	9,261.4	14,728.1	10,504.5	84.9	81.9	-177.44	-4,584.6	-116.3	1,240.6	1,073.8	166.77	7.439		
13,670.0	9,261.4	14,739.4	10,504.8	85.1	82.1	-177.45	-4,596.0	-116.4	1,240.8	1,073.7	167.13	7.424		
13,680.0	9,261.4	14,750.8	10,505.1	85.2	82.3	-177.46	-4,607.4	-116.5	1,241.1	1,073.6	167.50	7.409		
13,690.0	9,261.3	14,762.2	10,505.3	85.4	82.5	-177.47	-4,618.7	-116.7	1,241.3	1,073.5	167.87	7.395		
13,700.0	9,261.3	14,773.6	10,505.6	85.6	82.6	-177.48	-4,630.1	-116.8	1,241.6	1,073.4	168.24	7.380		
13,710.0	9,261.3	14,785.0	10,505.9	85.8	82.8	-177.49	-4,641.5	-116.9	1,241.8	1,073.2	168.61	7.365		
13,720.0	9,261.3	14,796.4	10,506.1	85.9	83.0	-177.49	-4,652.9	-117.0	1,242.0	1,073.1	168.98	7.350		
13,730.0	9,261.2	14,807.8	10,506.3	86.1	83.2	-177.50	-4,664.3	-117.1	1,242.2	1,072.9	169.34	7.336		
13,740.0	9,261.2	14,819.2	10,506.5	86.3	83.4	-177.51	-4,675.7	-117.3	1,242.4	1,072.7	169.71	7.321		
13,750.0	9,261.2	14,829.7	10,506.7	86.5	83.6	-177.52	-4,686.2	-117.4	1,242.6	1,072.6	170.07	7.307		
13,760.0	9,261.2	14,839.7	10,506.9	86.7	83.8	-177.53	-4,696.2	-117.5	1,242.8	1,072.4	170.41	7.293		
13,770.0	9,261.2	14,849.7	10,507.1	86.8	83.9	-177.54	-4,706.2	-117.6	1,243.0	1,072.3	170.76	7.279		
13,780.0	9,261.1	14,859.7	10,507.2	87.0	84.1	-177.55	-4,716.2	-117.7	1,243.2	1,072.1	171.11	7.266		
13,790.0	9,261.1	14,869.7	10,507.4	87.2	84.3	-177.55	-4,726.2	-117.8	1,243.4	1,071.9	171.46	7.252		
13,800.0	9,261.1	14,872.0	10,507.4	87.4	84.3	-177.55	-4,728.5	-117.8	1,243.6	1,071.9	171.67	7.244		
13,810.0	9,261.1	14,872.0	10,507.4	87.5	84.3	-177.55	-4,728.5	-117.8	1,243.9	1,072.0	171.85	7.238		
13,820.0	9,261.1	14,872.0	10,507.4	87.7	84.3	-177.55	-4,728.5	-117.8	1,244.3	1,072.2	172.03	7.233		
13,830.0	9,261.0	14,872.0	10,507.4	87.9	84.3	-177.55	-4,728.5	-117.8	1,244.7	1,072.5	172.20	7.228		
13,840.0	9,261.0	14,872.0	10,507.4	88.1	84.3	-177.55	-4,728.5	-117.8	1,245.2	1,072.9	172.38	7.224		
13,850.0	9,261.0	14,872.0	10,507.4	88.2	84.3	-177.55	-4,728.5	-117.8	1,245.9	1,073.3	172.56	7.220		
13,860.0	9,261.0	14,872.0	10,507.4	88.4	84.3	-177.55	-4,728.5	-117.8	1,246.5	1,073.8	172.74	7.216		
13,870.0	9,261.0	14,872.0	10,507.4	88.6	84.3	-177.55	-4,728.5	-117.8	1,247.3	1,074.4	172.91	7.214		
13,880.0	9,260.9	14,872.0	10,507.4	88.8	84.3	-177.55	-4,728.5	-117.8	1,248.2	1,075.1	173.09	7.211		
13,890.0	9,260.9	14,872.0	10,507.4	89.0	84.3	-177.55	-4,728.5	-117.8	1,249.1	1,075.8	173.27	7.209		
13,900.0	9,260.9	14,872.0	10,507.4	89.1	84.3	-177.55	-4,728.5	-117.8	1,250.1	1,076.7	173.44	7.208		
13,910.0	9,260.9	14,872.0	10,507.4	89.3	84.3	-177.55	-4,728.5	-117.8	1,251.2	1,077.6	173.62	7.206		
13,920.0	9,260.8	14,872.0	10,507.4	89.5	84.3	-177.55	-4,728.5	-117.8	1,252.4	1,078.6	173.80	7.206		
13,930.0	9,260.8	14,872.0	10,507.4	89.7	84.3	-177.55	-4,728.5	-117.8	1,253.6	1,079.6	173.98	7.206		
13,940.0	9,260.8	14,872.0	10,507.4	89.8	84.3	-177.55	-4,728.5	-117.8	1,254.9	1,080.8	174.15	7.206		
13,950.0	9,260.8	14,872.0	10,507.4	90.0	84.3	-177.55	-4,728.5	-117.8	1,256.3	1,082.0	174.33	7.207		
13,960.0	9,260.8	14,872.0	10,507.4	90.2	84.3	-177.55	-4,728.5	-117.8	1,257.8	1,083.3	174.51	7.208		
13,970.0	9,260.7	14,872.0	10,507.4	90.4	84.3	-177.55	-4,728.5	-117.8	1,259.4	1,084.7	174.69	7.209		

Offset Design - [Windward Federal - #1H - OH - OH]												Offset Site Error:	3.0 usft
Survey Program: 239 - 8977												Offset Well Error:	3.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre N/S (usft)	E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
13,980.0	9,260.7	14,872.0	10,507.4	90.6	84.3	-177.55	-4,728.5	-117.8	1,261.0	1,086.1	174.86	7.211	
13,990.0	9,260.7	14,872.0	10,507.4	90.7	84.3	-177.55	-4,728.5	-117.8	1,262.7	1,087.7	175.04	7.214	
14,000.0	9,260.7	14,872.0	10,507.4	90.9	84.3	-177.55	-4,728.5	-117.8	1,264.5	1,089.3	175.22	7.217	
14,010.0	9,260.7	14,872.0	10,507.4	91.1	84.3	-177.55	-4,728.5	-117.8	1,266.4	1,091.0	175.40	7.220	
14,020.0	9,260.6	14,872.0	10,507.4	91.3	84.3	-177.55	-4,728.5	-117.8	1,268.3	1,092.7	175.57	7.224	
14,030.0	9,260.6	14,872.0	10,507.4	91.4	84.3	-177.55	-4,728.5	-117.8	1,270.3	1,094.6	175.75	7.228	
14,040.0	9,260.6	14,872.0	10,507.4	91.6	84.3	-177.55	-4,728.5	-117.8	1,272.4	1,096.5	175.93	7.233	
14,050.0	9,260.6	14,872.0	10,507.4	91.8	84.3	-177.55	-4,728.5	-117.8	1,274.6	1,098.5	176.11	7.238	
14,060.0	9,260.6	14,872.0	10,507.4	92.0	84.3	-177.55	-4,728.5	-117.8	1,276.8	1,100.6	176.28	7.243	
14,070.0	9,260.5	14,872.0	10,507.4	92.2	84.3	-177.55	-4,728.5	-117.8	1,279.2	1,102.7	176.46	7.249	
14,080.0	9,260.5	14,872.0	10,507.4	92.3	84.3	-177.55	-4,728.5	-117.8	1,281.5	1,104.9	176.64	7.255	
14,090.0	9,260.5	14,872.0	10,507.4	92.5	84.3	-177.55	-4,728.5	-117.8	1,284.0	1,107.2	176.82	7.262	
14,100.0	9,260.5	14,872.0	10,507.4	92.7	84.3	-177.55	-4,728.5	-117.8	1,286.5	1,109.6	176.99	7.269	
14,110.0	9,260.4	14,872.0	10,507.4	92.9	84.3	-177.55	-4,728.5	-117.8	1,289.2	1,112.0	177.17	7.276	
14,120.0	9,260.4	14,872.0	10,507.4	93.0	84.3	-177.55	-4,728.5	-117.8	1,291.8	1,114.5	177.35	7.284	
14,130.0	9,260.4	14,872.0	10,507.4	93.2	84.3	-177.55	-4,728.5	-117.8	1,294.6	1,117.1	177.53	7.292	
14,140.0	9,260.4	14,872.0	10,507.4	93.4	84.3	-177.55	-4,728.5	-117.8	1,297.4	1,119.7	177.71	7.301	
14,150.0	9,260.4	14,872.0	10,507.4	93.6	84.3	-177.55	-4,728.5	-117.8	1,300.3	1,122.4	177.88	7.310	
14,160.0	9,260.3	14,872.0	10,507.4	93.8	84.3	-177.55	-4,728.5	-117.8	1,303.3	1,125.2	178.06	7.319	
14,170.0	9,260.3	14,872.0	10,507.4	93.9	84.3	-177.55	-4,728.5	-117.8	1,306.3	1,128.1	178.24	7.329	
14,180.0	9,260.3	14,872.0	10,507.4	94.1	84.3	-177.55	-4,728.5	-117.8	1,309.4	1,131.0	178.42	7.339	
14,190.0	9,260.3	14,872.0	10,507.4	94.3	84.3	-177.55	-4,728.5	-117.8	1,312.6	1,134.0	178.60	7.350	
14,200.0	9,260.3	14,872.0	10,507.4	94.5	84.3	-177.55	-4,728.5	-117.8	1,315.8	1,137.1	178.77	7.360	
14,210.0	9,260.2	14,872.0	10,507.4	94.6	84.3	-177.55	-4,728.5	-117.8	1,319.1	1,140.2	178.95	7.372	
14,220.0	9,260.2	14,872.0	10,507.4	94.8	84.3	-177.55	-4,728.5	-117.8	1,322.5	1,143.4	179.13	7.383	
14,230.0	9,260.2	14,872.0	10,507.4	95.0	84.3	-177.55	-4,728.5	-117.8	1,326.0	1,146.7	179.31	7.395	
14,240.0	9,260.2	14,872.0	10,507.4	95.2	84.3	-177.55	-4,728.5	-117.8	1,329.5	1,150.0	179.49	7.407	
14,250.0	9,260.2	14,872.0	10,507.4	95.4	84.3	-177.55	-4,728.5	-117.8	1,333.1	1,153.4	179.66	7.420	
14,260.0	9,260.1	14,872.0	10,507.4	95.5	84.3	-177.55	-4,728.5	-117.8	1,336.7	1,156.9	179.84	7.433	
14,270.0	9,260.1	14,872.0	10,507.4	95.7	84.3	-177.55	-4,728.5	-117.8	1,340.4	1,160.4	180.02	7.446	
14,280.0	9,260.1	14,872.0	10,507.4	95.9	84.3	-177.55	-4,728.5	-117.8	1,344.2	1,164.0	180.20	7.459	
14,290.0	9,260.1	14,872.0	10,507.4	96.1	84.3	-177.55	-4,728.5	-117.8	1,348.0	1,167.6	180.38	7.473	
14,300.0	9,260.0	14,872.0	10,507.4	96.2	84.3	-177.55	-4,728.5	-117.8	1,351.9	1,171.4	180.55	7.488	
14,310.0	9,260.0	14,872.0	10,507.4	96.4	84.3	-177.55	-4,728.5	-117.8	1,355.9	1,175.1	180.73	7.502	
14,320.0	9,260.0	14,872.0	10,507.4	96.6	84.3	-177.55	-4,728.5	-117.8	1,359.9	1,179.0	180.91	7.517	
14,330.0	9,260.0	14,872.0	10,507.4	96.8	84.3	-177.55	-4,728.5	-117.8	1,364.0	1,182.9	181.09	7.532	
14,340.0	9,260.0	14,872.0	10,507.4	97.0	84.3	-177.55	-4,728.5	-117.8	1,368.1	1,186.8	181.27	7.548	
14,350.0	9,259.9	14,872.0	10,507.4	97.1	84.3	-177.55	-4,728.5	-117.8	1,372.3	1,190.9	181.44	7.563	
14,360.0	9,259.9	14,872.0	10,507.4	97.3	84.3	-177.55	-4,728.5	-117.8	1,376.6	1,195.0	181.62	7.579	
14,370.0	9,259.9	14,872.0	10,507.4	97.5	84.3	-177.55	-4,728.5	-117.8	1,380.9	1,199.1	181.80	7.596	
14,380.0	9,259.9	14,872.0	10,507.4	97.7	84.3	-177.55	-4,728.5	-117.8	1,385.3	1,203.3	181.98	7.612	
14,390.0	9,259.9	14,872.0	10,507.4	97.8	84.3	-177.55	-4,728.5	-117.8	1,389.7	1,207.6	182.16	7.629	
14,400.0	9,259.8	14,872.0	10,507.4	98.0	84.3	-177.55	-4,728.5	-117.8	1,394.2	1,211.9	182.34	7.647	
14,410.0	9,259.8	14,872.0	10,507.4	98.2	84.3	-177.55	-4,728.5	-117.8	1,398.8	1,216.3	182.51	7.664	
14,420.0	9,259.8	14,872.0	10,507.4	98.4	84.3	-177.55	-4,728.5	-117.8	1,403.4	1,220.7	182.69	7.682	
14,430.0	9,259.8	14,872.0	10,507.4	98.6	84.3	-177.55	-4,728.5	-117.8	1,408.1	1,225.2	182.87	7.700	
14,440.0	9,259.7	14,872.0	10,507.4	98.7	84.3	-177.55	-4,728.5	-117.8	1,412.8	1,229.7	183.05	7.718	
14,450.0	9,259.7	14,872.0	10,507.4	98.9	84.3	-177.55	-4,728.5	-117.8	1,417.6	1,234.3	183.23	7.737	
14,460.0	9,259.7	14,872.0	10,507.4	99.1	84.3	-177.55	-4,728.5	-117.8	1,422.4	1,239.0	183.41	7.755	
14,470.0	9,259.7	14,872.0	10,507.4	99.3	84.3	-177.55	-4,728.5	-117.8	1,427.3	1,243.7	183.58	7.775	
14,480.0	9,259.7	14,872.0	10,507.4	99.5	84.3	-177.55	-4,728.5	-117.8	1,432.2	1,248.5	183.76	7.794	
14,490.0	9,259.6	14,872.0	10,507.4	99.6	84.3	-177.55	-4,728.5	-117.8	1,437.2	1,253.3	183.94	7.813	
14,500.0	9,259.6	14,872.0	10,507.4	99.8	84.3	-177.55	-4,728.5	-117.8	1,442.3	1,258.1	184.12	7.833	
14,510.0	9,259.6	14,872.0	10,507.4	100.0	84.3	-177.55	-4,728.5	-117.8	1,447.3	1,263.0	184.30	7.853	
14,520.0	9,259.6	14,872.0	10,507.4	100.2	84.3	-177.55	-4,728.5	-117.8	1,452.5	1,268.0	184.48	7.874	
14,530.0	9,259.6	14,872.0	10,507.4	100.3	84.3	-177.55	-4,728.5	-117.8	1,457.7	1,273.0	184.65	7.894	
14,540.0	9,259.5	14,872.0	10,507.4	100.5	84.3	-177.55	-4,728.5	-117.8	1,462.9	1,278.1	184.83	7.915	
14,550.0	9,259.5	14,872.0	10,507.4	100.7	84.3	-177.55	-4,728.5	-117.8	1,468.2	1,283.2	185.01	7.936	
14,560.0	9,259.5	14,872.0	10,507.4	100.9	84.3	-177.55	-4,728.5	-117.8	1,473.6	1,288.4	185.19	7.957	
14,570.0	9,259.5	14,872.0	10,507.4	101.1	84.3	-177.55	-4,728.5	-117.8	1,479.0	1,293.6	185.37	7.979	
14,580.0	9,259.5	14,872.0	10,507.4	101.2	84.3	-177.55	-4,728.5	-117.8	1,484.4	1,298.9	185.55	8.000	
14,590.0	9,259.4	14,872.0	10,507.4	101.4	84.3	-177.55	-4,728.5	-117.8	1,489.9	1,304.2	185.73	8.022	
14,600.0	9,259.4	14,872.0	10,507.4	101.6	84.3	-177.55	-4,728.5	-117.8	1,495.4	1,309.5	185.90	8.044	
14,610.0	9,259.4	14,872.0	10,507.4	101.8	84.3	-177.55	-4,728.5	-117.8	1,501.0	1,314.9	186.08	8.066	
14,620.0	9,259.4	14,872.0	10,507.4	102.0	84.3	-177.55	-4,728.5	-117.8	1,506.6	1,320.4	186.26	8.089	
14,630.0	9,259.3	14,872.0	10,507.4	102.1	84.3	-177.55	-4,728.5	-117.8	1,512.3	1,325.9	186.44	8.112	

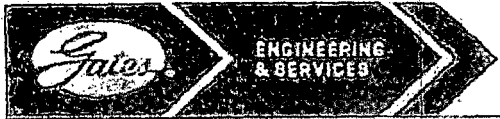
Offset Design												Offset Site Error:	3.0 usft
Windward Federal - #1H - OH - OH												Offset Well Error:	3.0 usft
Survey Program: 239 - 8977													
Reference		Offset		Semi-Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,640.0	9,259.3	14,872.0	10,507.4	102.3	84.3	-177.55	-4,728.5	-117.8	1,518.0	1,331.4	186.62	8.134	
14,650.0	9,259.3	14,872.0	10,507.4	102.5	84.3	-177.55	-4,728.5	-117.8	1,523.8	1,337.0	186.80	8.157	
14,660.0	9,259.3	14,872.0	10,507.4	102.7	84.3	-177.55	-4,728.5	-117.8	1,529.6	1,342.6	186.98	8.181	
14,670.0	9,259.3	14,872.0	10,507.4	102.8	84.3	-177.55	-4,728.5	-117.8	1,535.4	1,348.3	187.15	8.204	
14,680.0	9,259.2	14,872.0	10,507.4	103.0	84.3	-177.55	-4,728.5	-117.8	1,541.3	1,354.0	187.33	8.228	
14,690.0	9,259.2	14,872.0	10,507.4	103.2	84.3	-177.55	-4,728.5	-117.8	1,547.3	1,359.7	187.51	8.252	
14,700.0	9,259.2	14,872.0	10,507.4	103.4	84.3	-177.55	-4,728.5	-117.8	1,553.2	1,365.5	187.69	8.275	
14,710.0	9,259.2	14,872.0	10,507.4	103.6	84.3	-177.55	-4,728.5	-117.8	1,559.2	1,371.4	187.87	8.300	
14,720.0	9,259.2	14,872.0	10,507.4	103.7	84.3	-177.55	-4,728.5	-117.8	1,565.3	1,377.3	188.05	8.324	
14,730.0	9,259.1	14,872.0	10,507.4	103.9	84.3	-177.55	-4,728.5	-117.8	1,571.4	1,383.2	188.23	8.348	
14,740.0	9,259.1	14,872.0	10,507.4	104.1	84.3	-177.55	-4,728.5	-117.8	1,577.5	1,389.1	188.41	8.373	
14,750.0	9,259.1	14,872.0	10,507.4	104.3	84.3	-177.55	-4,728.5	-117.8	1,583.7	1,395.1	188.58	8.398	
14,760.0	9,259.1	14,872.0	10,507.4	104.5	84.3	-177.55	-4,728.5	-117.8	1,589.9	1,401.2	188.76	8.423	
14,770.0	9,259.1	14,872.0	10,507.4	104.6	84.3	-177.55	-4,728.5	-117.8	1,596.2	1,407.2	188.94	8.448	
14,780.0	9,259.0	14,872.0	10,507.4	104.8	84.3	-177.55	-4,728.5	-117.8	1,602.5	1,413.3	189.12	8.473	
14,790.0	9,259.0	14,872.0	10,507.4	105.0	84.3	-177.55	-4,728.5	-117.8	1,608.8	1,419.5	189.30	8.499	
14,800.0	9,259.0	14,872.0	10,507.4	105.2	84.3	-177.55	-4,728.5	-117.8	1,615.2	1,425.7	189.48	8.524	
14,810.0	9,259.0	14,872.0	10,507.4	105.3	84.3	-177.55	-4,728.5	-117.8	1,621.6	1,431.9	189.66	8.550	
14,820.0	9,258.9	14,872.0	10,507.4	105.5	84.3	-177.55	-4,728.5	-117.8	1,628.0	1,438.2	189.84	8.576	
14,830.0	9,258.9	14,872.0	10,507.4	105.7	84.3	-177.55	-4,728.5	-117.8	1,634.5	1,444.5	190.02	8.602	
14,840.0	9,258.9	14,872.0	10,507.4	105.9	84.3	-177.55	-4,728.5	-117.8	1,641.0	1,450.8	190.19	8.628	
14,850.0	9,258.9	14,872.0	10,507.4	106.1	84.3	-177.55	-4,728.5	-117.8	1,647.5	1,457.2	190.37	8.654	
14,860.0	9,258.9	14,872.0	10,507.4	106.2	84.3	-177.55	-4,728.5	-117.8	1,654.1	1,463.6	190.55	8.681	
14,870.0	9,258.8	14,872.0	10,507.4	106.4	84.3	-177.55	-4,728.5	-117.8	1,660.7	1,470.0	190.73	8.707	
14,880.0	9,258.8	14,872.0	10,507.4	106.6	84.3	-177.55	-4,728.5	-117.8	1,667.4	1,476.5	190.91	8.734	
14,890.0	9,258.8	14,872.0	10,507.4	106.8	84.3	-177.55	-4,728.5	-117.8	1,674.1	1,483.0	191.09	8.761	
14,900.0	9,258.8	14,872.0	10,507.4	107.0	84.3	-177.55	-4,728.5	-117.8	1,680.8	1,489.5	191.27	8.787	
14,910.0	9,258.8	14,872.0	10,507.4	107.1	84.3	-177.55	-4,728.5	-117.8	1,687.5	1,496.1	191.45	8.814	
14,920.0	9,258.7	14,872.0	10,507.4	107.3	84.3	-177.55	-4,728.5	-117.8	1,694.3	1,502.7	191.63	8.842	
14,930.0	9,258.7	14,872.0	10,507.4	107.5	84.3	-177.55	-4,728.5	-117.8	1,701.1	1,509.3	191.81	8.869	
14,940.0	9,258.7	14,872.0	10,507.4	107.7	84.3	-177.55	-4,728.5	-117.8	1,707.9	1,516.0	191.98	8.896	
14,950.0	9,258.7	14,872.0	10,507.4	107.9	84.3	-177.55	-4,728.5	-117.8	1,714.8	1,522.6	192.16	8.924	
14,960.0	9,258.7	14,872.0	10,507.4	108.0	84.3	-177.55	-4,728.5	-117.8	1,721.7	1,529.4	192.34	8.951	
14,970.0	9,258.6	14,872.0	10,507.4	108.2	84.3	-177.55	-4,728.5	-117.8	1,728.6	1,536.1	192.52	8.979	
14,980.0	9,258.6	14,872.0	10,507.4	108.4	84.3	-177.55	-4,728.5	-117.8	1,735.6	1,542.9	192.70	9.007	
14,990.0	9,258.6	14,872.0	10,507.4	108.6	84.3	-177.55	-4,728.5	-117.8	1,742.6	1,549.7	192.88	9.035	
15,000.0	9,258.6	14,872.0	10,507.4	108.8	84.3	-177.55	-4,728.5	-117.8	1,749.6	1,556.6	193.06	9.063	
15,010.0	9,258.5	14,872.0	10,507.4	108.9	84.3	-177.55	-4,728.5	-117.8	1,756.7	1,563.4	193.24	9.091	
15,020.0	9,258.5	14,872.0	10,507.4	109.1	84.3	-177.55	-4,728.5	-117.8	1,763.8	1,570.3	193.42	9.119	
15,030.0	9,258.5	14,872.0	10,507.4	109.3	84.3	-177.55	-4,728.5	-117.8	1,770.9	1,577.3	193.60	9.147	
15,040.0	9,258.5	14,872.0	10,507.4	109.5	84.3	-177.55	-4,728.5	-117.8	1,778.0	1,584.2	193.78	9.176	
15,050.0	9,258.5	14,872.0	10,507.4	109.6	84.3	-177.55	-4,728.5	-117.8	1,785.2	1,591.2	193.96	9.204	
15,060.0	9,258.4	14,872.0	10,507.4	109.8	84.3	-177.55	-4,728.5	-117.8	1,792.4	1,598.2	194.13	9.233	
15,070.0	9,258.4	14,872.0	10,507.4	110.0	84.3	-177.55	-4,728.5	-117.8	1,799.6	1,605.3	194.31	9.261	
15,080.0	9,258.4	14,872.0	10,507.4	110.2	84.3	-177.55	-4,728.5	-117.8	1,806.8	1,612.3	194.49	9.290	
15,090.0	9,258.4	14,872.0	10,507.4	110.4	84.3	-177.55	-4,728.5	-117.8	1,814.1	1,619.4	194.67	9.319	
15,100.0	9,258.4	14,872.0	10,507.4	110.5	84.3	-177.55	-4,728.5	-117.8	1,821.4	1,626.5	194.85	9.348	
15,110.0	9,258.3	14,872.0	10,507.4	110.7	84.3	-177.55	-4,728.5	-117.8	1,828.7	1,633.7	195.03	9.376	
15,120.0	9,258.3	14,872.0	10,507.4	110.9	84.3	-177.55	-4,728.5	-117.8	1,836.0	1,640.8	195.21	9.405	
15,130.0	9,258.3	14,872.0	10,507.4	111.1	84.3	-177.55	-4,728.5	-117.8	1,843.4	1,648.0	195.39	9.435	
15,140.0	9,258.3	14,872.0	10,507.4	111.3	84.3	-177.55	-4,728.5	-117.8	1,850.8	1,655.2	195.57	9.464	
15,150.0	9,258.3	14,872.0	10,507.4	111.4	84.3	-177.55	-4,728.5	-117.8	1,858.2	1,662.5	195.75	9.493	
15,160.0	9,258.2	14,872.0	10,507.4	111.6	84.3	-177.55	-4,728.5	-117.8	1,865.7	1,669.7	195.93	9.522	
15,170.0	9,258.2	14,872.0	10,507.4	111.8	84.3	-177.55	-4,728.5	-117.8	1,873.1	1,677.0	196.11	9.552	
15,180.0	9,258.2	14,872.0	10,507.4	112.0	84.3	-177.55	-4,728.5	-117.8	1,880.6	1,684.4	196.29	9.581	
15,190.0	9,258.2	14,872.0	10,507.4	112.2	84.3	-177.55	-4,728.5	-117.8	1,888.2	1,691.7	196.47	9.611	
15,200.0	9,258.1	14,872.0	10,507.4	112.3	84.3	-177.55	-4,728.5	-117.8	1,895.7	1,699.0	196.64	9.640	
15,210.0	9,258.1	14,872.0	10,507.4	112.5	84.3	-177.55	-4,728.5	-117.8	1,903.2	1,706.4	196.82	9.670	
15,220.0	9,258.1	14,872.0	10,507.4	112.7	84.3	-177.55	-4,728.5	-117.8	1,910.8	1,713.8	197.00	9.699	
15,230.0	9,258.1	14,872.0	10,507.4	112.9	84.3	-177.55	-4,728.5	-117.8	1,918.4	1,721.3	197.18	9.729	
15,240.0	9,258.1	14,872.0	10,507.4	113.1	84.3	-177.55	-4,728.5	-117.8	1,926.1	1,728.7	197.36	9.759	
15,250.0	9,258.0	14,872.0	10,507.4	113.2	84.3	-177.55	-4,728.5	-117.8	1,933.7	1,736.2	197.54	9.789	
15,260.0	9,258.0	14,872.0	10,507.4	113.4	84.3	-177.55	-4,728.5	-117.8	1,941.4	1,743.7	197.72	9.819	
15,270.0	9,258.0	14,872.0	10,507.4	113.6	84.3	-177.55	-4,728.5	-117.8	1,949.1	1,751.2	197.90	9.849	
15,280.0	9,258.0	14,872.0	10,507.4	113.8	84.3	-177.55	-4,728.5	-117.8	1,956.8	1,758.7	198.08	9.879	
15,290.0	9,258.0	14,872.0	10,507.4	114.0	84.3	-177.55	-4,728.5	-117.8	1,964.5	1,766.3	198.26	9.909	

Offset Design		Windward Federal - #1H - OH - OH										Offset Site Error:		3.0 usft
Survey Program:		239-8977										Offset Well Error:		3.0 usft
Reference		Offset		Semi-Major Axis		Distance								
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Topface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning		
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(")	+N-S (usft)	+E-W (usft)	(usft)	(usft)	(usft)			
15,300.0	9,257.9	14,872.0	10,507.4	114.1	84.3	-177.55	-4,728.5	-117.8	1,972.3	1,773.8	198.44	9.939		
15,310.0	9,257.9	14,872.0	10,507.4	114.3	84.3	-177.55	-4,728.5	-117.8	1,980.0	1,781.4	198.62	9.969		
15,320.0	9,257.9	14,872.0	10,507.4	114.5	84.3	-177.55	-4,728.5	-117.8	1,987.8	1,789.0	198.80	9.999		



Midwest Hose
& Specialty, Inc.

INTERNAL HYDROSTATIC TEST REPORT			
Customer: INDEPENDENCE CONTRACT DRILLING		P.O. Number: PO00109267	
HOSE SPECIFICATIONS			
Type: Stainless Steel Armor Choke & Kill Hose		Hose Length: 75' FT	
I.D. 3-1/2 INCHES		O.D. 8 INCHES	
WORKING PRESSURE	TEST PRESSURE	BURST PRESSURE	
10,000 PSI	15,000 PSI	0 PSI	
COUPLINGS			
Stem Part No. 4-1/16" 10K 4-1/16" 10K		Ferrule No. 4-1/16" 10K 4-1/16" 10K	
Type of Coupling: Swage-It			
PROCEDURE			
<i>Hose assembly pressure tested with water at ambient temperature.</i>			
TIME HELD AT TEST PRESSURE 17 1/4 MIN.		ACTUAL BURST PRESSURE: 0 PSI	
Hose Assembly Serial Number: 237726		Hose Serial Number: 10911	
Comments:			
Date: 3/6/2014	Tested: TONY KELLINGTON		Approved: RYAN ADAMS



GATES E & S NORTH AMERICA, INC
DU-TEX
134 44TH STREET
CORPUS CHRISTI, TEXAS 78405

PHONE: 361-887-9807
FAX: 361-887-0812
EMAIL: crpe&s@gates.com
WEB: www.gates.com

10K CHOKE & KILL ASSEMBLY PRESSURE TEST CERTIFICATE

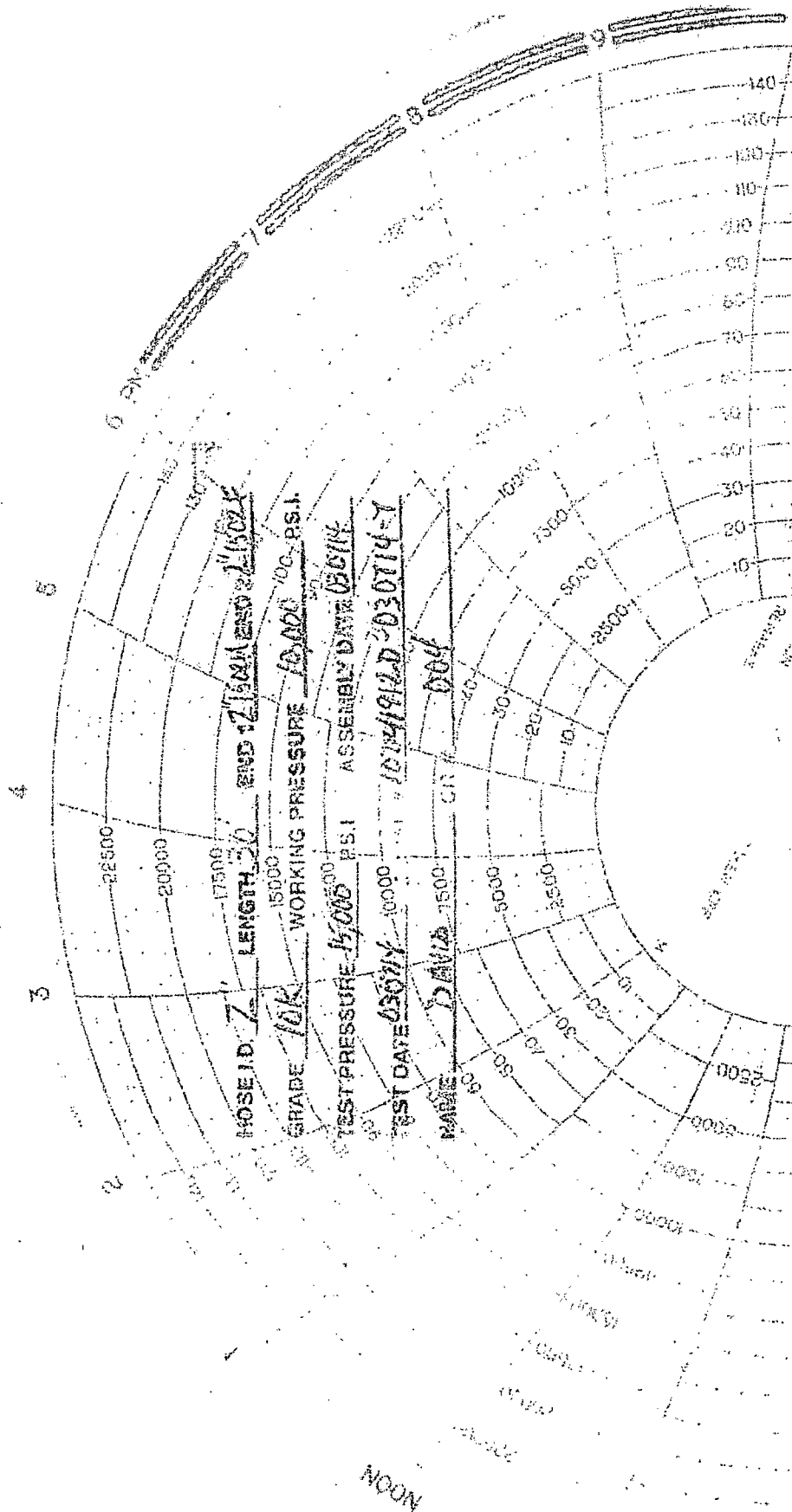
Customer :	MOTION INDUSTRIES	Test Date:	3/7/2014
Customer Ref. :	TX89-00059208	Hose Serial No.:	D-030714-7
Invoice No. :	199560	Created By:	ANNA L.

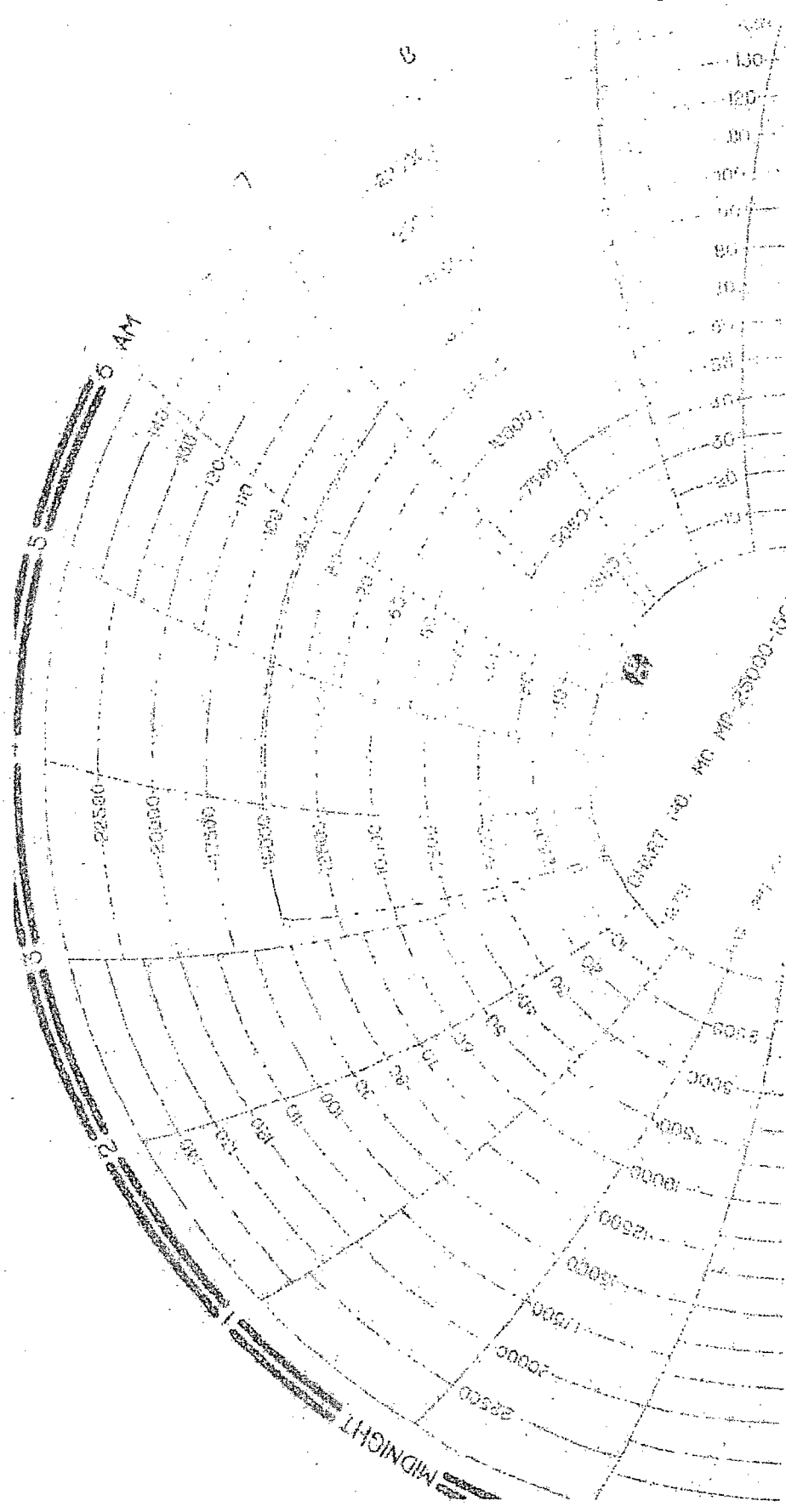
Product Description: 10K2.030.0CK2.01502MXF

End Fitting 1 :	2" 1502 MALE	End Fitting 2 :	2" 1502 FEMALE
Gates Part No. :	3670-0778	Assembly Code :	10041912D-030714-7
Working Pressure :	10,000 PSI	Test Pressure :	15,000 PSI

Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 15,000 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9.

Quality Manager :	QUALITY	Technical Supervisor :	PRODUCTION
Date :	3/7/2014	Date :	3/7/2014
Signature :		Signature :	





Flex Hose Variance Request

Flex Hose Variance Statement

COG Operating LLC (operator) requests a variance if Independence 205 (rig name) is used to drill this well to use a co-flex line between the BOP and choke manifold.

Manufacturer: Midwest Hose & Specialty Inc

Serial Number 237726

Length: 75'

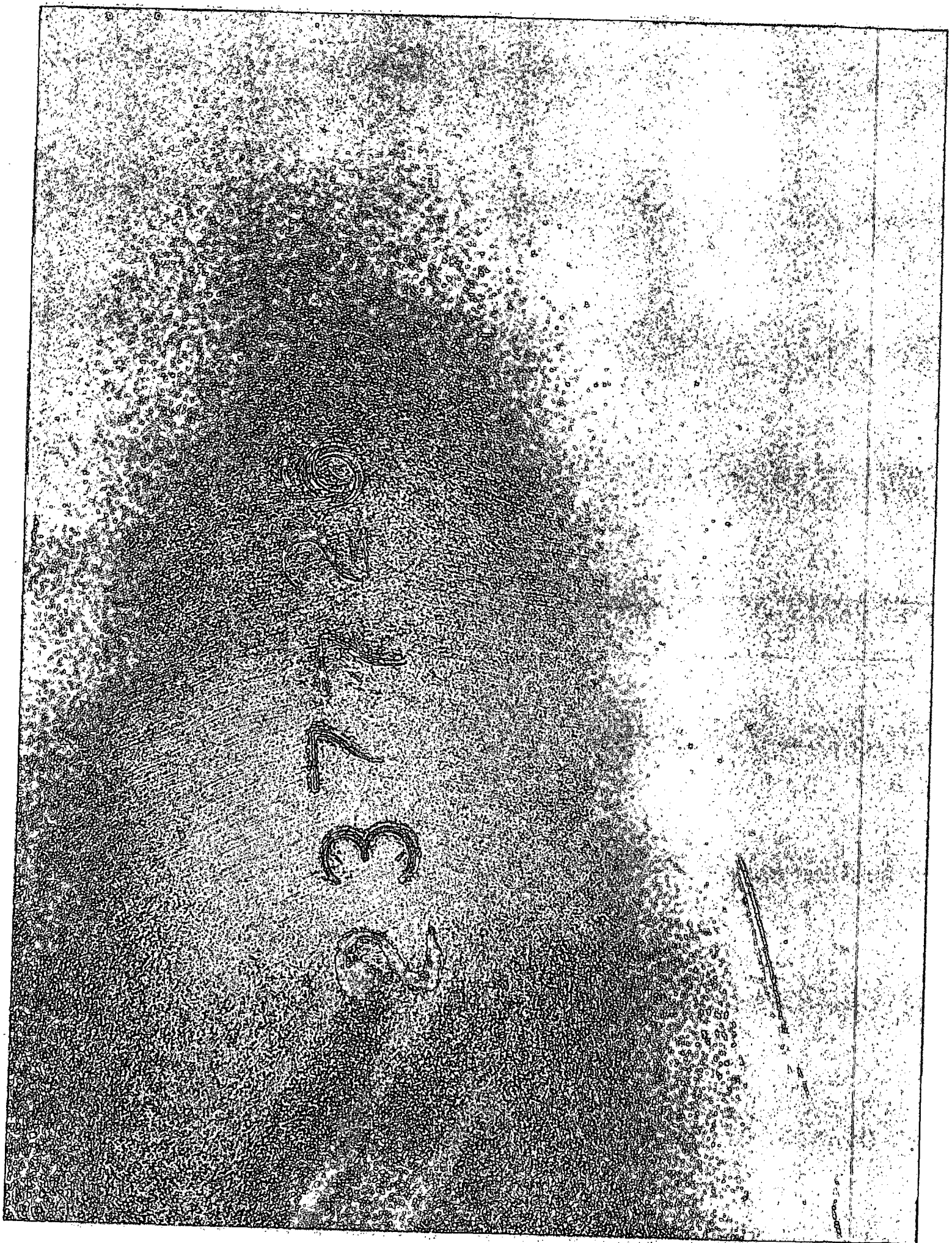
Size:

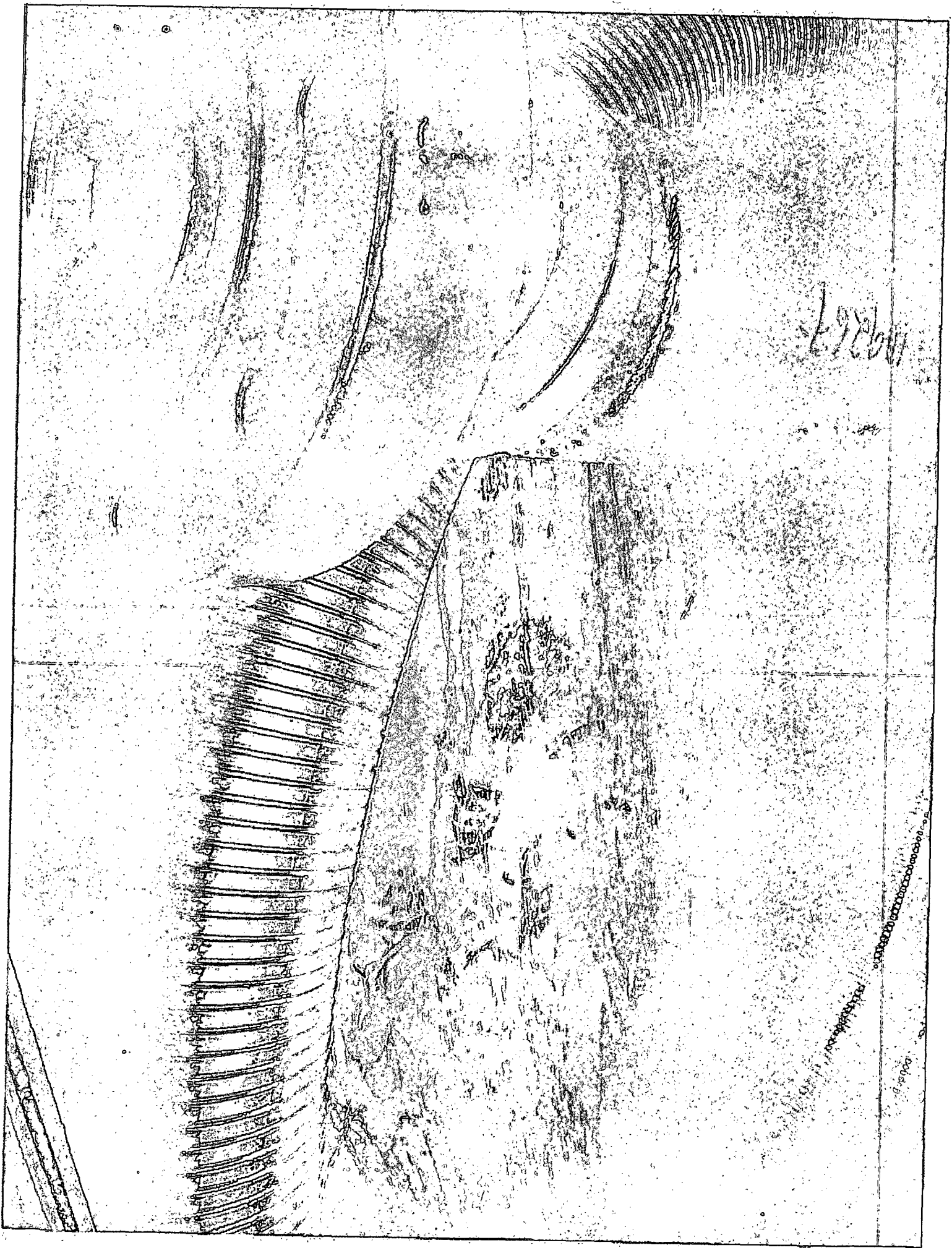
3-1/2"

Ends flanges/clamps

WP rating: 10,000 psi

Anchor required by manufacturer -- Yes/No





Choke & Kill, BOP

Choke & Kill, BOP

Rotary hose

Hydraulic hose

Hammer Unions

Industrial hose

Fire hose

Metal hose,
Expansion Joints

Ducting hose

Automotive hose

Crimp Fittings
& Machines

Frac Fittings,
Notched KCS

Cam & Groove
Universal
Shank Fittings

Valves

Black Pipe

Quick Couplings

Gauges

Belts, Sheaves,
& Bushings

Steel Adapters

Brass Adapters

Choke & Kill

Designed as a flexible connection to the choke manifold.

Tube: petroleum resistant for oil based drilling fluids

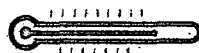
Cover: ozone, petroleum, and abrasion resistant

Reinforcement: high tensile steel wire spiral layers

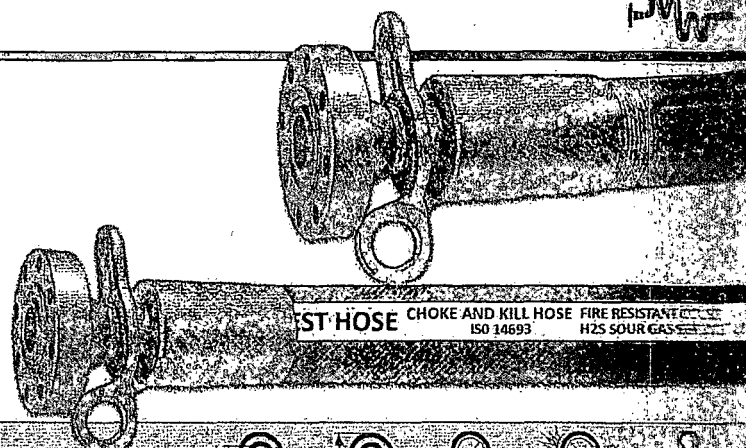
Thermal Blanket: 1500° continuous ratings, non-flammable, non-conductive

Armor Wall: .144"

Max Length: 150 feet



-20° F / +212° F
-29° C / +100° C



Item	ID inch	OD inch	WP PSI	Test PSI	Weight lb/ft
CK-48 Red	3	4.94	5,000	10,000	14.9
CK-56 Red	3½	5.44			17.7
CK-64 Red	4	6.31			26.3
CK-48 Armor	3	6.5			20.5
CK-56 Armor	3½	7			23.1
CK-64 Armor	4	8			26.3
CK-4810K Red	3	5.31	10,000	15,000	22.3
CK-5610K Red	3½	5.81			25.0
CK-6410K Red	4	4.75			36.1
CK-4810K Armor	3	6.5			26.1
CK-5610K Armor	3½	7			29.2
CK-6410K Armor	4	8			32.2

BOP Control Line

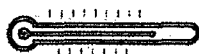
For blowout preventer lines.

Tube: for hydraulic BOP actuation

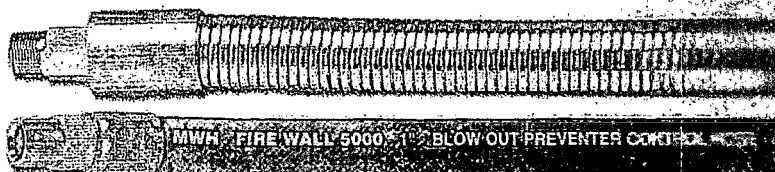
Thermal Blanket: 1500° continuous rating, non-flammable, non-conductive

Armor Wall: .08"

Popular with a larger hex and longer threads for easier installation of hammer unions.

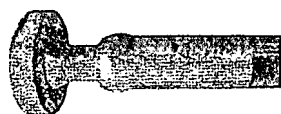


-20° F / +212° F
-29° C / +100° C

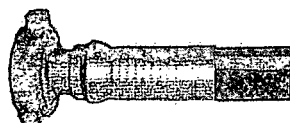


Item	ID inch	OD inch	WP PSI	Test PSI	Weight lb/ft
BOP-16 Armor	1	2.06	5,000	10,000	3.9
BOP-32 Armor	2	3.75			11.7
BOP-16	1	1.77			2.3
BOP-32	2	3.09			10.7

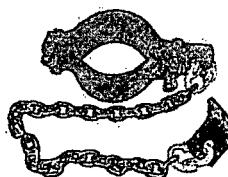
Carbon or stainless steel nipples are available. 1/2", 3/4", 1-1/4", and 1-1/2" sizes are available.



Weld-on Flanges or Hammer Unions



Integral 1002/1502 Hammer Union Fittings



Safety Clamps



Fire Proof Quick Connects

