

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: Tateyama 15U-434

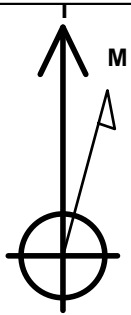
Surface Location: Tateyama 15U-434 Pad Sec.15-T7N-R65W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4857.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1455408.67	3238722.52	40.580320	-104.640560	

RKB - 15' WELL @ 4872.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 560'FNL, 500'FWL	7272.0	-156.2	-4469.5	Point

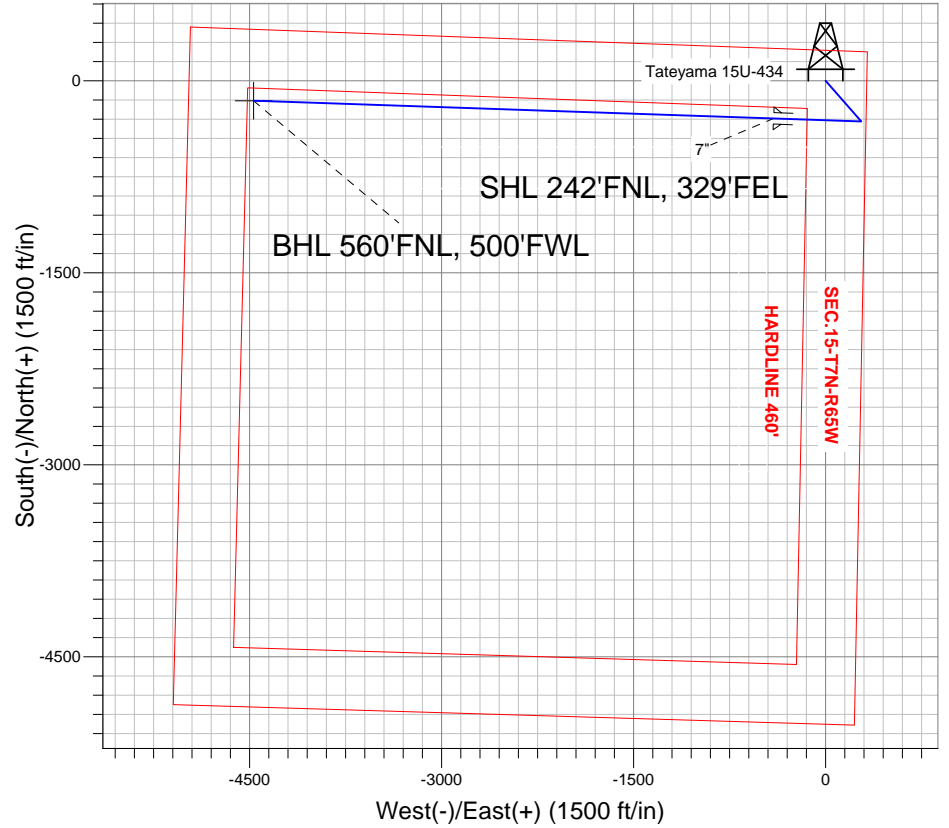


Azimuths to True North
 Magnetic North: 8.60°
 Magnetic Field
 Strength: 53108.8nT
 Dip Angle: 67.16°
 Date: 1/23/2013
 Model: IGRF2010

ANNOTATIONS

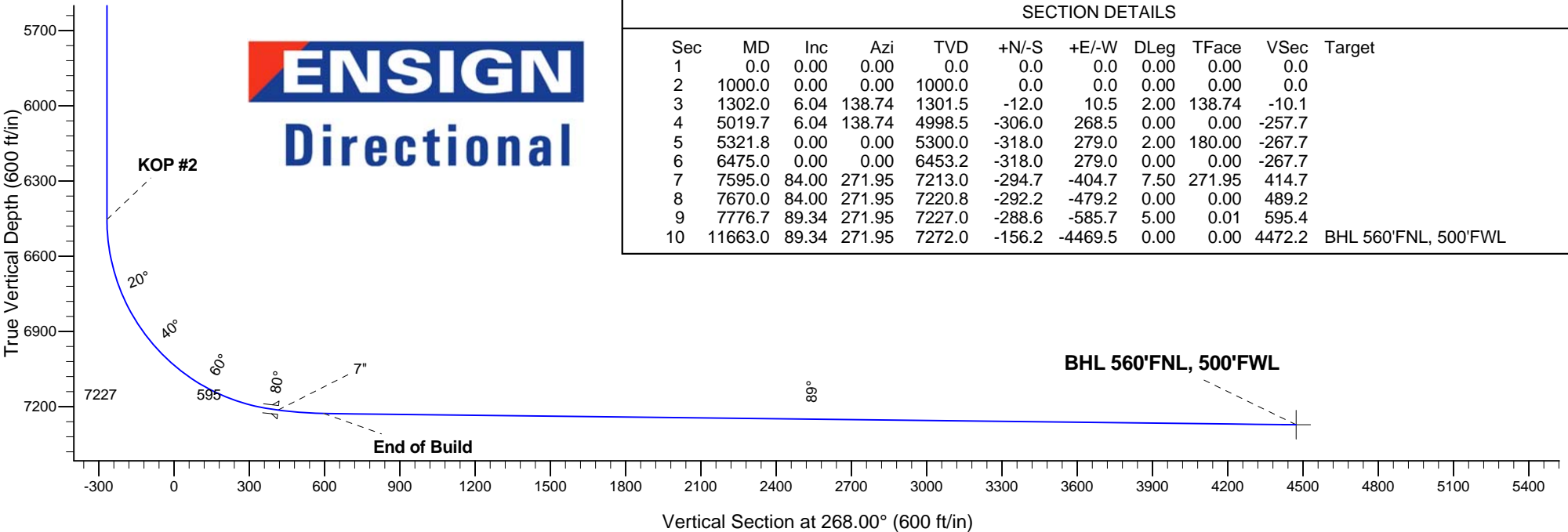
TVD	MD	Annotation
1000.0	1000.0	KOP #1
6453.2	6475.0	KOP #2
7227.0	7776.7	End of Build

Tateyama 15U-434 Pad Sec.15-T7N-R65W
 Tateyama 15U-434
 Plan #1 (1-23-13)
 8:39, January 25 2013



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1302.0	6.04	138.74	1301.5	-12.0	10.5	2.00	138.74	-10.1	
4	5019.7	6.04	138.74	4998.5	-306.0	268.5	0.00	0.00	-257.7	
5	5321.8	0.00	0.00	5300.0	-318.0	279.0	2.00	180.00	-267.7	
6	6475.0	0.00	0.00	6453.2	-318.0	279.0	0.00	0.00	-267.7	
7	7595.0	84.00	271.95	7213.0	-294.7	-404.7	7.50	271.95	414.7	
8	7670.0	84.00	271.95	7220.8	-292.2	-479.2	0.00	0.00	489.2	
9	7776.7	89.34	271.95	7227.0	-288.6	-585.7	5.00	0.01	595.4	
10	11663.0	89.34	271.95	7272.0	-156.2	-4469.5	0.00	0.00	4472.2	BHL 560'FNL, 500'FWL





Directional

**PETROLEUM DEVELOPMENT
CORP Weld County CO**

SEC.15-T7N-R65W

Tateyama 15U-434 Pad Sec.15-T7N-R65W

Tateyama 15U-434

Wellbore #1

Plan: Plan #1 (1-23-13)

Standard Planning Report

25 January, 2013

Database:	Landmark	Local Co-ordinate Reference:	Well Tateyama 15U-434
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4872.0ft (RKB - 15')
Project:	SEC.15-T7N-R65W	MD Reference:	WELL @ 4872.0ft (RKB - 15')
Site:	Tateyama 15U-434 Pad Sec.15-T7N-R65W	North Reference:	True
Well:	Tateyama 15U-434	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (1-23-13)		

Project	SEC.15-T7N-R65W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Tateyama 15U-434 Pad Sec.15-T7N-R65W				
Site Position:		Northing:	1,455,408.67 ft	Latitude:	40.580320
From:	Lat/Long	Easting:	3,238,722.52 ft	Longitude:	-104.640560
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.56 °

Well	Tateyama 15U-434					
Well Position	+N-S	0.0 ft	Northing:	1,455,408.67 ft	Latitude:	40.580320
	+E-W	0.0 ft	Easting:	3,238,722.52 ft	Longitude:	-104.640560
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,857.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/23/2013	8.60	67.16	53,109

Design	Plan #1 (1-23-13)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N-S (ft)	+E-W (ft)	Direction (°)
	0.0	0.0	0.0	268.00

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,302.0	6.04	138.74	1,301.5	-12.0	10.5	2.00	2.00	0.00	138.74	
5,019.7	6.04	138.74	4,998.5	-306.0	268.5	0.00	0.00	0.00	0.00	
5,321.8	0.00	0.00	5,300.0	-318.0	279.0	2.00	-2.00	0.00	180.00	
6,475.0	0.00	0.00	6,453.2	-318.0	279.0	0.00	0.00	0.00	0.00	
7,595.0	84.00	271.95	7,213.0	-294.7	-404.7	7.50	7.50	0.00	271.95	
7,670.0	84.00	271.95	7,220.8	-292.2	-479.2	0.00	0.00	0.00	0.00	
7,776.7	89.34	271.95	7,227.0	-288.6	-585.7	5.00	5.00	0.00	0.01	
11,663.0	89.34	271.95	7,272.0	-156.2	-4,469.5	0.00	0.00	0.00	0.00	BHL 560'FNL, 500'

Database:	Landmark	Local Co-ordinate Reference:	Well Tateyama 15U-434
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4872.0ft (RKB - 15')
Project:	SEC.15-T7N-R65W	MD Reference:	WELL @ 4872.0ft (RKB - 15')
Site:	Tateyama 15U-434 Pad Sec.15-T7N-R65W	North Reference:	True
Well:	Tateyama 15U-434	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (1-23-13)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00	
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00	
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00	
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00	
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00	
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00	
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00	
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00	
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00	
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00	
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00	
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00	
760.0	0.00	0.00	760.0	0.0	0.0	0.0	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00	
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00	
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00	
960.0	0.00	0.00	960.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,040.0	0.80	138.74	1,040.0	-0.2	0.2	-0.2	2.00	2.00	0.00	
1,080.0	1.60	138.74	1,080.0	-0.8	0.7	-0.7	2.00	2.00	0.00	
1,120.0	2.40	138.74	1,120.0	-1.9	1.7	-1.6	2.00	2.00	0.00	
1,160.0	3.20	138.74	1,159.9	-3.4	2.9	-2.8	2.00	2.00	0.00	
1,200.0	4.00	138.74	1,199.8	-5.2	4.6	-4.4	2.00	2.00	0.00	
1,240.0	4.80	138.74	1,239.7	-7.6	6.6	-6.4	2.00	2.00	0.00	
1,280.0	5.60	138.74	1,279.6	-10.3	9.0	-8.7	2.00	2.00	0.00	
1,302.0	6.04	138.74	1,301.5	-12.0	10.5	-10.1	2.00	2.00	0.00	
1,320.0	6.04	138.74	1,319.3	-13.4	11.7	-11.3	0.00	0.00	0.00	
1,360.0	6.04	138.74	1,359.1	-16.5	14.5	-13.9	0.00	0.00	0.00	
1,400.0	6.04	138.74	1,398.9	-19.7	17.3	-16.6	0.00	0.00	0.00	
1,440.0	6.04	138.74	1,438.7	-22.9	20.1	-19.3	0.00	0.00	0.00	
1,480.0	6.04	138.74	1,478.5	-26.0	22.8	-21.9	0.00	0.00	0.00	
1,520.0	6.04	138.74	1,518.2	-29.2	25.6	-24.6	0.00	0.00	0.00	
1,560.0	6.04	138.74	1,558.0	-32.4	28.4	-27.2	0.00	0.00	0.00	
1,600.0	6.04	138.74	1,597.8	-35.5	31.2	-29.9	0.00	0.00	0.00	
1,640.0	6.04	138.74	1,637.6	-38.7	33.9	-32.6	0.00	0.00	0.00	
1,680.0	6.04	138.74	1,677.3	-41.9	36.7	-35.2	0.00	0.00	0.00	
1,720.0	6.04	138.74	1,717.1	-45.0	39.5	-37.9	0.00	0.00	0.00	
1,760.0	6.04	138.74	1,756.9	-48.2	42.3	-40.6	0.00	0.00	0.00	
1,800.0	6.04	138.74	1,796.7	-51.3	45.1	-43.2	0.00	0.00	0.00	
1,840.0	6.04	138.74	1,836.5	-54.5	47.8	-45.9	0.00	0.00	0.00	
1,880.0	6.04	138.74	1,876.2	-57.7	50.6	-48.6	0.00	0.00	0.00	
1,920.0	6.04	138.74	1,916.0	-60.8	53.4	-51.2	0.00	0.00	0.00	
1,960.0	6.04	138.74	1,955.8	-64.0	56.2	-53.9	0.00	0.00	0.00	
2,000.0	6.04	138.74	1,995.6	-67.2	58.9	-56.5	0.00	0.00	0.00	
2,040.0	6.04	138.74	2,035.3	-70.3	61.7	-59.2	0.00	0.00	0.00	

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Site:	Tateyama 15U-434 Pad Sec.15-T7N-R65W	North Reference:	True
Well:	Tateyama 15U-434	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (1-23-13)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
2,080.0	6.04	138.74	2,075.1	-73.5	64.5	-61.9	0.00	0.00	0.00	
2,120.0	6.04	138.74	2,114.9	-76.7	67.3	-64.5	0.00	0.00	0.00	
2,160.0	6.04	138.74	2,154.7	-79.8	70.0	-67.2	0.00	0.00	0.00	
2,200.0	6.04	138.74	2,194.5	-83.0	72.8	-69.9	0.00	0.00	0.00	
2,240.0	6.04	138.74	2,234.2	-86.2	75.6	-72.5	0.00	0.00	0.00	
2,280.0	6.04	138.74	2,274.0	-89.3	78.4	-75.2	0.00	0.00	0.00	
2,320.0	6.04	138.74	2,313.8	-92.5	81.1	-77.9	0.00	0.00	0.00	
2,360.0	6.04	138.74	2,353.6	-95.6	83.9	-80.5	0.00	0.00	0.00	
2,400.0	6.04	138.74	2,393.3	-98.8	86.7	-83.2	0.00	0.00	0.00	
2,440.0	6.04	138.74	2,433.1	-102.0	89.5	-85.9	0.00	0.00	0.00	
2,480.0	6.04	138.74	2,472.9	-105.1	92.2	-88.5	0.00	0.00	0.00	
2,520.0	6.04	138.74	2,512.7	-108.3	95.0	-91.2	0.00	0.00	0.00	
2,560.0	6.04	138.74	2,552.5	-111.5	97.8	-93.8	0.00	0.00	0.00	
2,600.0	6.04	138.74	2,592.2	-114.6	100.6	-96.5	0.00	0.00	0.00	
2,640.0	6.04	138.74	2,632.0	-117.8	103.3	-99.2	0.00	0.00	0.00	
2,680.0	6.04	138.74	2,671.8	-121.0	106.1	-101.8	0.00	0.00	0.00	
2,720.0	6.04	138.74	2,711.6	-124.1	108.9	-104.5	0.00	0.00	0.00	
2,760.0	6.04	138.74	2,751.3	-127.3	111.7	-107.2	0.00	0.00	0.00	
2,800.0	6.04	138.74	2,791.1	-130.5	114.5	-109.8	0.00	0.00	0.00	
2,840.0	6.04	138.74	2,830.9	-133.6	117.2	-112.5	0.00	0.00	0.00	
2,880.0	6.04	138.74	2,870.7	-136.8	120.0	-115.2	0.00	0.00	0.00	
2,920.0	6.04	138.74	2,910.5	-139.9	122.8	-117.8	0.00	0.00	0.00	
2,960.0	6.04	138.74	2,950.2	-143.1	125.6	-120.5	0.00	0.00	0.00	
3,000.0	6.04	138.74	2,990.0	-146.3	128.3	-123.1	0.00	0.00	0.00	
3,040.0	6.04	138.74	3,029.8	-149.4	131.1	-125.8	0.00	0.00	0.00	
3,080.0	6.04	138.74	3,069.6	-152.6	133.9	-128.5	0.00	0.00	0.00	
3,120.0	6.04	138.74	3,109.3	-155.8	136.7	-131.1	0.00	0.00	0.00	
3,160.0	6.04	138.74	3,149.1	-158.9	139.4	-133.8	0.00	0.00	0.00	
3,200.0	6.04	138.74	3,188.9	-162.1	142.2	-136.5	0.00	0.00	0.00	
3,240.0	6.04	138.74	3,228.7	-165.3	145.0	-139.1	0.00	0.00	0.00	
3,280.0	6.04	138.74	3,268.5	-168.4	147.8	-141.8	0.00	0.00	0.00	
3,320.0	6.04	138.74	3,308.2	-171.6	150.5	-144.5	0.00	0.00	0.00	
3,360.0	6.04	138.74	3,348.0	-174.8	153.3	-147.1	0.00	0.00	0.00	
3,400.0	6.04	138.74	3,387.8	-177.9	156.1	-149.8	0.00	0.00	0.00	
3,440.0	6.04	138.74	3,427.6	-181.1	158.9	-152.4	0.00	0.00	0.00	
3,480.0	6.04	138.74	3,467.3	-184.2	161.6	-155.1	0.00	0.00	0.00	
3,520.0	6.04	138.74	3,507.1	-187.4	164.4	-157.8	0.00	0.00	0.00	
3,560.0	6.04	138.74	3,546.9	-190.6	167.2	-160.4	0.00	0.00	0.00	
3,600.0	6.04	138.74	3,586.7	-193.7	170.0	-163.1	0.00	0.00	0.00	
3,640.0	6.04	138.74	3,626.5	-196.9	172.8	-165.8	0.00	0.00	0.00	
3,680.0	6.04	138.74	3,666.2	-200.1	175.5	-168.4	0.00	0.00	0.00	
3,720.0	6.04	138.74	3,706.0	-203.2	178.3	-171.1	0.00	0.00	0.00	
3,760.0	6.04	138.74	3,745.8	-206.4	181.1	-173.8	0.00	0.00	0.00	
3,800.0	6.04	138.74	3,785.6	-209.6	183.9	-176.4	0.00	0.00	0.00	
3,840.0	6.04	138.74	3,825.3	-212.7	186.6	-179.1	0.00	0.00	0.00	
3,880.0	6.04	138.74	3,865.1	-215.9	189.4	-181.8	0.00	0.00	0.00	
3,920.0	6.04	138.74	3,904.9	-219.0	192.2	-184.4	0.00	0.00	0.00	
3,960.0	6.04	138.74	3,944.7	-222.2	195.0	-187.1	0.00	0.00	0.00	
4,000.0	6.04	138.74	3,984.5	-225.4	197.7	-189.7	0.00	0.00	0.00	
4,040.0	6.04	138.74	4,024.2	-228.5	200.5	-192.4	0.00	0.00	0.00	
4,080.0	6.04	138.74	4,064.0	-231.7	203.3	-195.1	0.00	0.00	0.00	
4,120.0	6.04	138.74	4,103.8	-234.9	206.1	-197.7	0.00	0.00	0.00	
4,160.0	6.04	138.74	4,143.6	-238.0	208.8	-200.4	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Tateyama 15U-434
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4872.0ft (RKB - 15')
Project:	SEC.15-T7N-R65W	MD Reference:	WELL @ 4872.0ft (RKB - 15')
Site:	Tateyama 15U-434 Pad Sec.15-T7N-R65W	North Reference:	True
Well:	Tateyama 15U-434	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (1-23-13)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
4,200.0	6.04	138.74	4,183.3	-241.2	211.6	-203.1	0.00	0.00	0.00	
4,240.0	6.04	138.74	4,223.1	-244.4	214.4	-205.7	0.00	0.00	0.00	
4,280.0	6.04	138.74	4,262.9	-247.5	217.2	-208.4	0.00	0.00	0.00	
4,320.0	6.04	138.74	4,302.7	-250.7	219.9	-211.1	0.00	0.00	0.00	
4,360.0	6.04	138.74	4,342.5	-253.9	222.7	-213.7	0.00	0.00	0.00	
4,400.0	6.04	138.74	4,382.2	-257.0	225.5	-216.4	0.00	0.00	0.00	
4,440.0	6.04	138.74	4,422.0	-260.2	228.3	-219.0	0.00	0.00	0.00	
4,480.0	6.04	138.74	4,461.8	-263.3	231.1	-221.7	0.00	0.00	0.00	
4,520.0	6.04	138.74	4,501.6	-266.5	233.8	-224.4	0.00	0.00	0.00	
4,560.0	6.04	138.74	4,541.4	-269.7	236.6	-227.0	0.00	0.00	0.00	
4,600.0	6.04	138.74	4,581.1	-272.8	239.4	-229.7	0.00	0.00	0.00	
4,640.0	6.04	138.74	4,620.9	-276.0	242.2	-232.4	0.00	0.00	0.00	
4,680.0	6.04	138.74	4,660.7	-279.2	244.9	-235.0	0.00	0.00	0.00	
4,720.0	6.04	138.74	4,700.5	-282.3	247.7	-237.7	0.00	0.00	0.00	
4,760.0	6.04	138.74	4,740.2	-285.5	250.5	-240.4	0.00	0.00	0.00	
4,800.0	6.04	138.74	4,780.0	-288.7	253.3	-243.0	0.00	0.00	0.00	
4,840.0	6.04	138.74	4,819.8	-291.8	256.0	-245.7	0.00	0.00	0.00	
4,880.0	6.04	138.74	4,859.6	-295.0	258.8	-248.3	0.00	0.00	0.00	
4,920.0	6.04	138.74	4,899.4	-298.2	261.6	-251.0	0.00	0.00	0.00	
4,960.0	6.04	138.74	4,939.1	-301.3	264.4	-253.7	0.00	0.00	0.00	
5,000.0	6.04	138.74	4,978.9	-304.5	267.1	-256.3	0.00	0.00	0.00	
5,019.7	6.04	138.74	4,998.5	-306.0	268.5	-257.7	0.00	0.00	0.00	
5,040.0	5.64	138.74	5,018.7	-307.6	269.9	-259.0	2.00	-2.00	0.00	
5,080.0	4.84	138.74	5,058.5	-310.3	272.3	-261.3	2.00	-2.00	0.00	
5,120.0	4.04	138.74	5,098.4	-312.7	274.3	-263.2	2.00	-2.00	0.00	
5,160.0	3.24	138.74	5,138.3	-314.6	276.0	-264.8	2.00	-2.00	0.00	
5,200.0	2.44	138.74	5,178.3	-316.1	277.3	-266.1	2.00	-2.00	0.00	
5,240.0	1.64	138.74	5,218.3	-317.1	278.2	-267.0	2.00	-2.00	0.00	
5,280.0	0.84	138.74	5,258.2	-317.8	278.8	-267.5	2.00	-2.00	0.00	
5,320.0	0.04	138.74	5,298.2	-318.0	279.0	-267.7	2.00	-2.00	0.00	
5,321.8	0.00	0.00	5,300.0	-318.0	279.0	-267.7	2.00	-2.00	0.00	
5,360.0	0.00	0.00	5,338.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
5,400.0	0.00	0.00	5,378.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
5,440.0	0.00	0.00	5,418.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
5,480.0	0.00	0.00	5,458.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
5,520.0	0.00	0.00	5,498.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
5,560.0	0.00	0.00	5,538.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
5,600.0	0.00	0.00	5,578.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
5,640.0	0.00	0.00	5,618.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
5,680.0	0.00	0.00	5,658.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
5,720.0	0.00	0.00	5,698.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
5,760.0	0.00	0.00	5,738.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
5,800.0	0.00	0.00	5,778.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
5,840.0	0.00	0.00	5,818.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
5,880.0	0.00	0.00	5,858.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
5,920.0	0.00	0.00	5,898.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
5,960.0	0.00	0.00	5,938.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
6,000.0	0.00	0.00	5,978.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
6,040.0	0.00	0.00	6,018.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
6,080.0	0.00	0.00	6,058.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
6,120.0	0.00	0.00	6,098.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
6,160.0	0.00	0.00	6,138.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
6,200.0	0.00	0.00	6,178.2	-318.0	279.0	-267.7	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Tateyama 15U-434
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4872.0ft (RKB - 15')
Project:	SEC.15-T7N-R65W	MD Reference:	WELL @ 4872.0ft (RKB - 15')
Site:	Tateyama 15U-434 Pad Sec.15-T7N-R65W	North Reference:	True
Well:	Tateyama 15U-434	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (1-23-13)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
6,240.0	0.00	0.00	6,218.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
6,280.0	0.00	0.00	6,258.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
6,320.0	0.00	0.00	6,298.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
6,360.0	0.00	0.00	6,338.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
6,400.0	0.00	0.00	6,378.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
6,440.0	0.00	0.00	6,418.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
6,475.0	0.00	0.00	6,453.2	-318.0	279.0	-267.7	0.00	0.00	0.00	
6,480.0	0.37	271.95	6,458.2	-318.0	279.0	-267.7	7.50	7.50	0.00	
6,520.0	3.37	271.95	6,498.2	-318.0	277.7	-266.4	7.50	7.50	0.00	
6,560.0	6.37	271.95	6,538.1	-317.8	274.3	-263.0	7.50	7.50	0.00	
6,600.0	9.37	271.95	6,577.7	-317.7	268.8	-257.5	7.50	7.50	0.00	
6,640.0	12.37	271.95	6,617.0	-317.4	261.3	-250.0	7.50	7.50	0.00	
6,680.0	15.37	271.95	6,655.8	-317.1	251.7	-240.4	7.50	7.50	0.00	
6,720.0	18.37	271.95	6,694.1	-316.7	240.1	-228.9	7.50	7.50	0.00	
6,760.0	21.37	271.95	6,731.7	-316.2	226.5	-215.3	7.50	7.50	0.00	
6,800.0	24.37	271.95	6,768.5	-315.7	210.9	-199.8	7.50	7.50	0.00	
6,840.0	27.37	271.95	6,804.5	-315.1	193.5	-182.4	7.50	7.50	0.00	
6,880.0	30.37	271.95	6,839.5	-314.4	174.2	-163.1	7.50	7.50	0.00	
6,920.0	33.37	271.95	6,873.5	-313.7	153.1	-142.0	7.50	7.50	0.00	
6,960.0	36.37	271.95	6,906.3	-312.9	130.2	-119.2	7.50	7.50	0.00	
7,000.0	39.37	271.95	6,937.9	-312.1	105.7	-94.7	7.50	7.50	0.00	
7,040.0	42.37	271.95	6,968.1	-311.2	79.5	-68.6	7.50	7.50	0.00	
7,080.0	45.37	271.95	6,997.0	-310.3	51.8	-41.0	7.50	7.50	0.00	
7,120.0	48.37	271.95	7,024.3	-309.3	22.7	-11.8	7.50	7.50	0.00	
7,160.0	51.37	271.95	7,050.1	-308.2	-7.9	18.7	7.50	7.50	0.00	
7,200.0	54.37	271.95	7,074.2	-307.1	-39.8	50.5	7.50	7.50	0.00	
7,240.0	57.37	271.95	7,096.6	-306.0	-72.9	83.5	7.50	7.50	0.00	
7,280.0	60.37	271.95	7,117.3	-304.9	-107.1	117.7	7.50	7.50	0.00	
7,320.0	63.37	271.95	7,136.2	-303.7	-142.3	152.9	7.50	7.50	0.00	
7,360.0	66.37	271.95	7,153.2	-302.4	-178.5	189.0	7.50	7.50	0.00	
7,400.0	69.37	271.95	7,168.2	-301.2	-215.6	225.9	7.50	7.50	0.00	
7,440.0	72.37	271.95	7,181.3	-299.9	-253.3	263.6	7.50	7.50	0.00	
7,480.0	75.37	271.95	7,192.4	-298.6	-291.7	302.0	7.50	7.50	0.00	
7,520.0	78.37	271.95	7,201.5	-297.2	-330.7	340.8	7.50	7.50	0.00	
7,560.0	81.37	271.95	7,208.5	-295.9	-370.0	380.1	7.50	7.50	0.00	
7,595.0	84.00	271.95	7,213.0	-294.7	-404.7	414.7	7.50	7.50	0.00	
7,600.0	84.00	271.95	7,213.5	-294.6	-409.7	419.7	0.00	0.00	0.00	
7,640.0	84.00	271.95	7,217.7	-293.2	-449.4	459.4	0.00	0.00	0.00	
7,670.0	84.00	271.95	7,220.8	-292.2	-479.2	489.2	0.00	0.00	0.00	
7,680.0	84.50	271.95	7,221.8	-291.8	-489.2	499.1	5.00	5.00	0.00	
7,720.0	86.50	271.95	7,225.0	-290.5	-529.0	538.9	5.00	5.00	0.00	
7,760.0	88.50	271.95	7,226.7	-289.1	-569.0	578.7	5.00	5.00	0.00	
7,776.7	89.34	271.95	7,227.0	-288.6	-585.7	595.4	5.00	5.00	0.00	
7,800.0	89.34	271.95	7,227.3	-287.8	-608.9	618.6	0.00	0.00	0.00	
7,840.0	89.34	271.95	7,227.8	-286.4	-648.9	658.5	0.00	0.00	0.00	
7,880.0	89.34	271.95	7,228.2	-285.0	-688.9	698.4	0.00	0.00	0.00	
7,920.0	89.34	271.95	7,228.7	-283.7	-728.9	738.3	0.00	0.00	0.00	
7,960.0	89.34	271.95	7,229.2	-282.3	-768.8	778.2	0.00	0.00	0.00	
8,000.0	89.34	271.95	7,229.6	-281.0	-808.8	818.1	0.00	0.00	0.00	
8,040.0	89.34	271.95	7,230.1	-279.6	-848.8	858.0	0.00	0.00	0.00	
8,080.0	89.34	271.95	7,230.5	-278.2	-888.8	897.9	0.00	0.00	0.00	
8,120.0	89.34	271.95	7,231.0	-276.9	-928.7	937.8	0.00	0.00	0.00	
8,160.0	89.34	271.95	7,231.5	-275.5	-968.7	977.7	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Tateyama 15U-434
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4872.0ft (RKB - 15')
Project:	SEC.15-T7N-R65W	MD Reference:	WELL @ 4872.0ft (RKB - 15')
Site:	Tateyama 15U-434 Pad Sec.15-T7N-R65W	North Reference:	True
Well:	Tateyama 15U-434	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (1-23-13)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,200.0	89.34	271.95	7,231.9	-274.1	-1,008.7	1,017.6	0.00	0.00	0.00
8,240.0	89.34	271.95	7,232.4	-272.8	-1,048.7	1,057.5	0.00	0.00	0.00
8,280.0	89.34	271.95	7,232.9	-271.4	-1,088.6	1,097.5	0.00	0.00	0.00
8,320.0	89.34	271.95	7,233.3	-270.1	-1,128.6	1,137.4	0.00	0.00	0.00
8,360.0	89.34	271.95	7,233.8	-268.7	-1,168.6	1,177.3	0.00	0.00	0.00
8,400.0	89.34	271.95	7,234.3	-267.3	-1,208.6	1,217.2	0.00	0.00	0.00
8,440.0	89.34	271.95	7,234.7	-266.0	-1,248.5	1,257.1	0.00	0.00	0.00
8,480.0	89.34	271.95	7,235.2	-264.6	-1,288.5	1,297.0	0.00	0.00	0.00
8,520.0	89.34	271.95	7,235.6	-263.3	-1,328.5	1,336.9	0.00	0.00	0.00
8,560.0	89.34	271.95	7,236.1	-261.9	-1,368.5	1,376.8	0.00	0.00	0.00
8,600.0	89.34	271.95	7,236.6	-260.5	-1,408.4	1,416.7	0.00	0.00	0.00
8,640.0	89.34	271.95	7,237.0	-259.2	-1,448.4	1,456.6	0.00	0.00	0.00
8,680.0	89.34	271.95	7,237.5	-257.8	-1,488.4	1,496.5	0.00	0.00	0.00
8,720.0	89.34	271.95	7,238.0	-256.4	-1,528.3	1,536.4	0.00	0.00	0.00
8,760.0	89.34	271.95	7,238.4	-255.1	-1,568.3	1,576.3	0.00	0.00	0.00
8,800.0	89.34	271.95	7,238.9	-253.7	-1,608.3	1,616.2	0.00	0.00	0.00
8,840.0	89.34	271.95	7,239.3	-252.4	-1,648.3	1,656.1	0.00	0.00	0.00
8,880.0	89.34	271.95	7,239.8	-251.0	-1,688.2	1,696.0	0.00	0.00	0.00
8,920.0	89.34	271.95	7,240.3	-249.6	-1,728.2	1,735.9	0.00	0.00	0.00
8,960.0	89.34	271.95	7,240.7	-248.3	-1,768.2	1,775.8	0.00	0.00	0.00
9,000.0	89.34	271.95	7,241.2	-246.9	-1,808.2	1,815.7	0.00	0.00	0.00
9,040.0	89.34	271.95	7,241.7	-245.6	-1,848.1	1,855.6	0.00	0.00	0.00
9,080.0	89.34	271.95	7,242.1	-244.2	-1,888.1	1,895.5	0.00	0.00	0.00
9,120.0	89.34	271.95	7,242.6	-242.8	-1,928.1	1,935.4	0.00	0.00	0.00
9,160.0	89.34	271.95	7,243.0	-241.5	-1,968.1	1,975.3	0.00	0.00	0.00
9,200.0	89.34	271.95	7,243.5	-240.1	-2,008.0	2,015.2	0.00	0.00	0.00
9,240.0	89.34	271.95	7,244.0	-238.7	-2,048.0	2,055.1	0.00	0.00	0.00
9,280.0	89.34	271.95	7,244.4	-237.4	-2,088.0	2,095.0	0.00	0.00	0.00
9,320.0	89.34	271.95	7,244.9	-236.0	-2,128.0	2,134.9	0.00	0.00	0.00
9,360.0	89.34	271.95	7,245.4	-234.7	-2,167.9	2,174.8	0.00	0.00	0.00
9,400.0	89.34	271.95	7,245.8	-233.3	-2,207.9	2,214.7	0.00	0.00	0.00
9,440.0	89.34	271.95	7,246.3	-231.9	-2,247.9	2,254.6	0.00	0.00	0.00
9,480.0	89.34	271.95	7,246.7	-230.6	-2,287.9	2,294.5	0.00	0.00	0.00
9,520.0	89.34	271.95	7,247.2	-229.2	-2,327.8	2,334.4	0.00	0.00	0.00
9,560.0	89.34	271.95	7,247.7	-227.8	-2,367.8	2,374.3	0.00	0.00	0.00
9,600.0	89.34	271.95	7,248.1	-226.5	-2,407.8	2,414.2	0.00	0.00	0.00
9,640.0	89.34	271.95	7,248.6	-225.1	-2,447.8	2,454.1	0.00	0.00	0.00
9,680.0	89.34	271.95	7,249.1	-223.8	-2,487.7	2,494.0	0.00	0.00	0.00
9,720.0	89.34	271.95	7,249.5	-222.4	-2,527.7	2,533.9	0.00	0.00	0.00
9,760.0	89.34	271.95	7,250.0	-221.0	-2,567.7	2,573.8	0.00	0.00	0.00
9,800.0	89.34	271.95	7,250.4	-219.7	-2,607.6	2,613.7	0.00	0.00	0.00
9,840.0	89.34	271.95	7,250.9	-218.3	-2,647.6	2,653.6	0.00	0.00	0.00
9,880.0	89.34	271.95	7,251.4	-217.0	-2,687.6	2,693.5	0.00	0.00	0.00
9,920.0	89.34	271.95	7,251.8	-215.6	-2,727.6	2,733.4	0.00	0.00	0.00
9,960.0	89.34	271.95	7,252.3	-214.2	-2,767.5	2,773.3	0.00	0.00	0.00
10,000.0	89.34	271.95	7,252.8	-212.9	-2,807.5	2,813.2	0.00	0.00	0.00
10,040.0	89.34	271.95	7,253.2	-211.5	-2,847.5	2,853.1	0.00	0.00	0.00
10,080.0	89.34	271.95	7,253.7	-210.1	-2,887.5	2,893.0	0.00	0.00	0.00
10,120.0	89.34	271.95	7,254.1	-208.8	-2,927.4	2,933.0	0.00	0.00	0.00
10,160.0	89.34	271.95	7,254.6	-207.4	-2,967.4	2,972.9	0.00	0.00	0.00
10,200.0	89.34	271.95	7,255.1	-206.1	-3,007.4	3,012.8	0.00	0.00	0.00
10,240.0	89.34	271.95	7,255.5	-204.7	-3,047.4	3,052.7	0.00	0.00	0.00
10,280.0	89.34	271.95	7,256.0	-203.3	-3,087.3	3,092.6	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Tateyama 15U-434
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4872.0ft (RKB - 15')
Project:	SEC.15-T7N-R65W	MD Reference:	WELL @ 4872.0ft (RKB - 15')
Site:	Tateyama 15U-434 Pad Sec.15-T7N-R65W	North Reference:	True
Well:	Tateyama 15U-434	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (1-23-13)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,320.0	89.34	271.95	7,256.5	-202.0	-3,127.3	3,132.5	0.00	0.00	0.00
10,360.0	89.34	271.95	7,256.9	-200.6	-3,167.3	3,172.4	0.00	0.00	0.00
10,400.0	89.34	271.95	7,257.4	-199.2	-3,207.3	3,212.3	0.00	0.00	0.00
10,440.0	89.34	271.95	7,257.9	-197.9	-3,247.2	3,252.2	0.00	0.00	0.00
10,480.0	89.34	271.95	7,258.3	-196.5	-3,287.2	3,292.1	0.00	0.00	0.00
10,520.0	89.34	271.95	7,258.8	-195.2	-3,327.2	3,332.0	0.00	0.00	0.00
10,560.0	89.34	271.95	7,259.2	-193.8	-3,367.2	3,371.9	0.00	0.00	0.00
10,600.0	89.34	271.95	7,259.7	-192.4	-3,407.1	3,411.8	0.00	0.00	0.00
10,640.0	89.34	271.95	7,260.2	-191.1	-3,447.1	3,451.7	0.00	0.00	0.00
10,680.0	89.34	271.95	7,260.6	-189.7	-3,487.1	3,491.6	0.00	0.00	0.00
10,720.0	89.34	271.95	7,261.1	-188.4	-3,527.1	3,531.5	0.00	0.00	0.00
10,760.0	89.34	271.95	7,261.6	-187.0	-3,567.0	3,571.4	0.00	0.00	0.00
10,800.0	89.34	271.95	7,262.0	-185.6	-3,607.0	3,611.3	0.00	0.00	0.00
10,840.0	89.34	271.95	7,262.5	-184.3	-3,647.0	3,651.2	0.00	0.00	0.00
10,880.0	89.34	271.95	7,262.9	-182.9	-3,687.0	3,691.1	0.00	0.00	0.00
10,920.0	89.34	271.95	7,263.4	-181.5	-3,726.9	3,731.0	0.00	0.00	0.00
10,960.0	89.34	271.95	7,263.9	-180.2	-3,766.9	3,770.9	0.00	0.00	0.00
11,000.0	89.34	271.95	7,264.3	-178.8	-3,806.9	3,810.8	0.00	0.00	0.00
11,040.0	89.34	271.95	7,264.8	-177.5	-3,846.8	3,850.7	0.00	0.00	0.00
11,080.0	89.34	271.95	7,265.3	-176.1	-3,886.8	3,890.6	0.00	0.00	0.00
11,120.0	89.34	271.95	7,265.7	-174.7	-3,926.8	3,930.5	0.00	0.00	0.00
11,160.0	89.34	271.95	7,266.2	-173.4	-3,966.8	3,970.4	0.00	0.00	0.00
11,200.0	89.34	271.95	7,266.6	-172.0	-4,006.7	4,010.3	0.00	0.00	0.00
11,240.0	89.34	271.95	7,267.1	-170.7	-4,046.7	4,050.2	0.00	0.00	0.00
11,280.0	89.34	271.95	7,267.6	-169.3	-4,086.7	4,090.1	0.00	0.00	0.00
11,320.0	89.34	271.95	7,268.0	-167.9	-4,126.7	4,130.0	0.00	0.00	0.00
11,360.0	89.34	271.95	7,268.5	-166.6	-4,166.6	4,169.9	0.00	0.00	0.00
11,400.0	89.34	271.95	7,269.0	-165.2	-4,206.6	4,209.8	0.00	0.00	0.00
11,440.0	89.34	271.95	7,269.4	-163.8	-4,246.6	4,249.7	0.00	0.00	0.00
11,480.0	89.34	271.95	7,269.9	-162.5	-4,286.6	4,289.6	0.00	0.00	0.00
11,520.0	89.34	271.95	7,270.3	-161.1	-4,326.5	4,329.5	0.00	0.00	0.00
11,560.0	89.34	271.95	7,270.8	-159.8	-4,366.5	4,369.4	0.00	0.00	0.00
11,600.0	89.34	271.95	7,271.3	-158.4	-4,406.5	4,409.3	0.00	0.00	0.00
11,640.0	89.34	271.95	7,271.7	-157.0	-4,446.5	4,449.2	0.00	0.00	0.00
11,663.0	89.34	271.95	7,272.0	-156.2	-4,469.5	4,472.2	0.00	0.00	0.00

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,595.0	7,213.0	7"	7	8-3/4

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.0	1,000.0	0.0	0.0	KOP #1
6,475.0	6,453.2	-318.0	279.0	KOP #2
7,776.7	7,227.0	-288.6	-585.7	End of Build