

HOBBS OCT
DEC 04 2018
RECEIVED

Devon Energy

Project: Lea County, NM (NAD-83)
Site: Morab 29-20 Fed Com
Well: Morab 29-20 Fed Com #2H
Wellbore: OH
Design: OH



Azimuths to Grid North
True North: -0.34°
Magnetic North: 6.45°

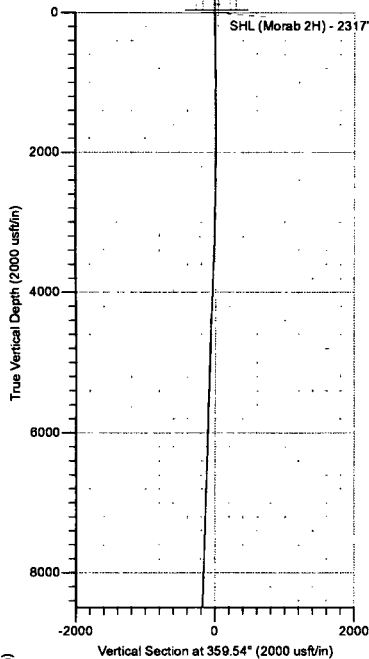
Magnetic Field
Strength: 47885.2anT
Dip Angle: 59.77°
Date: 6/4/2018
Model: HDGM

PROJECT DETAILS: Lea County, NM (NAD-83)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone



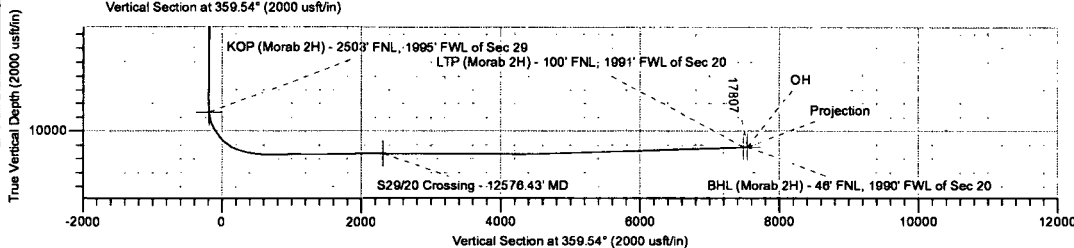
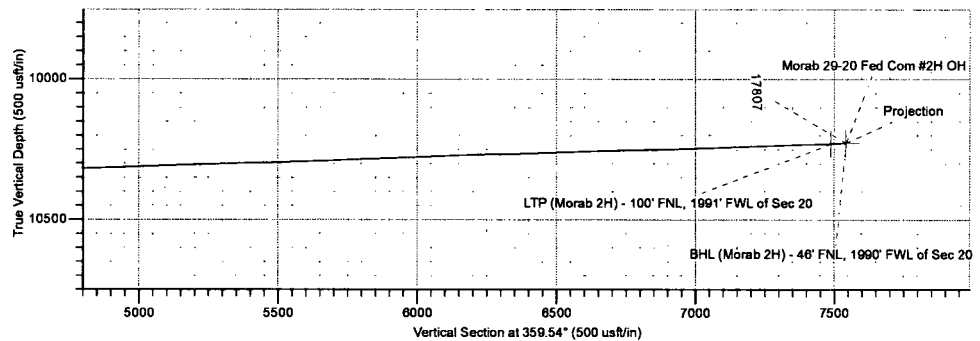
3362.2' GE + 23.5' KB @ 3385.70usft
Ground Level: 3362.20



DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
BHL (Morab 2H)	10226.92	7537.66	-718.94	32° 7' 22.7036 N	103° 41' 58.1330 W
KOP (Morab 2H)	9727.48	-180.65	-655.73	32° 6' 6.2234 N	103° 41' 57.9266 W
LTP (Morab 2H)	10229.09	7483.69	-717.53	32° 7' 22.1694 N	103° 41' 58.1203 W
S29/20 Crossing	10321.92	2309.82	-683.58	32° 6' 30.9888 N	103° 41' 58.0794 W
SHL (Morab 2H)	0.00	0.00	0.00	32° 6' 8.0718 N	103° 41' 50.2903 W

ACTUAL LINE CALLS
SHL: 2317' FNL, 2653' FWL of Sec 29
BHL: 46' FNL, 1990' FWL of Sec 20



LEAM DRILLING SYSTEMS LLC
2010 East Davis, Conroe, Texas 77301
Phone: 936/756-7577, Fax: 936/756-7595

Design: OH (Morab 29-20 Fed Com #2H/OH)
Created By: Dustin Ault
Date: 9-43, August 24, 2018
Approved: _____ Date: _____

Devon Energy

Project: Lea County, NM (NAD-83)
Site: Morab 29-20 Fed Com
Well: Morab 29-20 Fed Com #2H
Wellbore: OH
Design: OH



Azimuths to Grid North
True North: -0.34°
Magnetic North: 6.45°
Magnetic Field
Strength: 47885.2nT
Dip Angle: 59.77°
Date: 6/4/2018
Model: HDGM

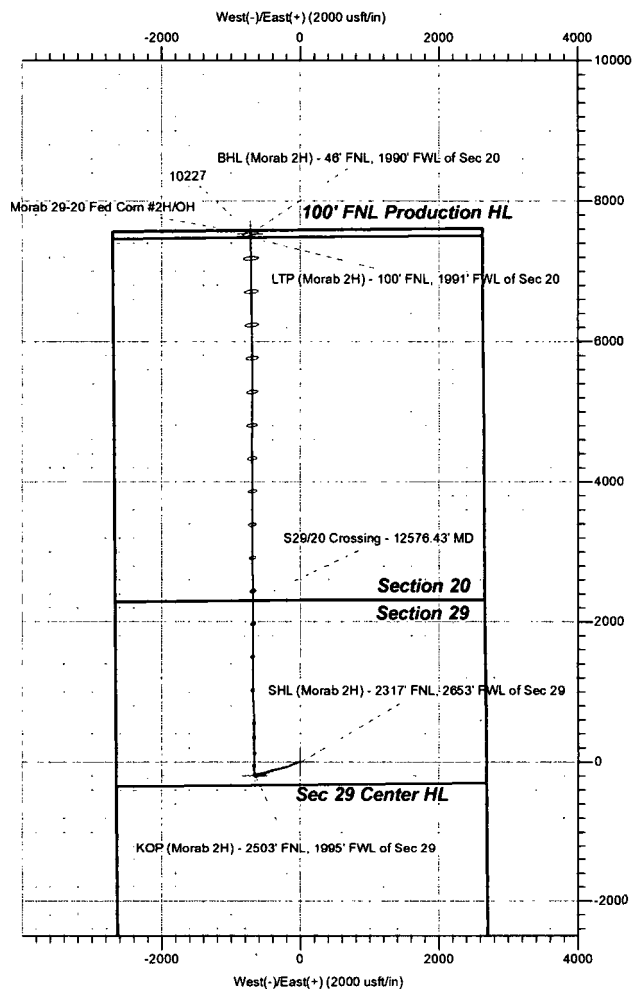
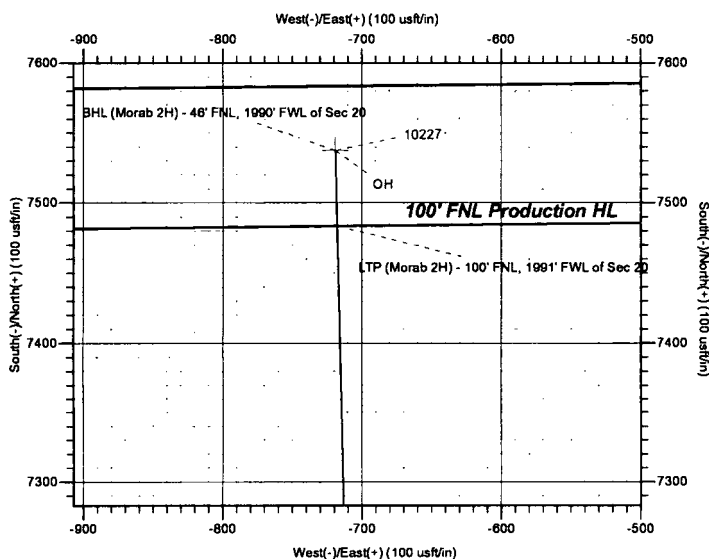
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PROJECT DETAILS: Lea County, NM (NAD-83)
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BHL (Morab 2H)	10226.92	7537.86	-718.94	409050.86	737563.09	32° 7' 22.7038 N	103° 41' 58.1330 W
KOP (Morab 2H)	9727.48	-190.65	-855.73	401322.55	737826.30	32° 6' 6.2234 N	103° 41' 57.9268 W
LTP (Morab 2H)	10229.09	7483.69	-717.53	408996.89	737564.50	32° 7' 22.1694 N	103° 41' 58.1203 W
S29/20 Crossing	10321.92	2309.82	-683.58	403823.02	737598.45	32° 6' 30.9688 N	103° 41' 58.0794 W
SHL (Morab 2H)	0.00	0.00	0.00	401513.20	738282.03	32° 6' 8.0718 N	103° 41' 50.2903 W

ACTUAL LINE CALLS
SHL: 2317' FNL, 2653' FWL of Sec 29
BHL: 46' FNL, 1990' FWL of Sec 20



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Created By: Dustin Autt
Date: 9/37, August 24 2018
Approved: _____ Date: _____



August 17, 2018

Devon Energy Production Company, LP
Well: Morab 29-20 Fed Com 2H
County/Parish: Lea County, NM

LEAM MWD: (OH) from 0' MD – 17,751' MD
Projection; 17,807' MD

This Borehole Survey taken between 07/10/18 and 07/29/18 had been conducted and calculated according to the highest professional standards and complies with all known State and Federal requirements.

Reviewed and Approved:

Date: August 17, 2018



Survey Certification Form

State of New Mexico

Lea County

I, Randy W. Rakowitz, certify that; I am employed by LEAM Drilling Services, that I did on the day(s) of 07/10/2018 through 07/29/2018, conduct or supervise the taking of MWD Survey from a depth of 0' MD to 17,807' MD; that the data is true, correct, complete and within the limitations of the tools as set forth by LEAM Drilling Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of Devon Energy Production Company, LP for the Morab 29-20 Fed Com 2H in Lea County, New Mexico; and that I reviewed this report and find that it conforms to the principals and procedures as set forth by LEAM Drilling Services.

A handwritten signature in black ink, appearing to read 'Randy W. Rakowitz', is written over a horizontal line.

Randy W. Rakowitz
MWD Operations Coordinator

LEAM Drilling Services

Survey Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Morab 29-20 Fed Com #2H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3362.2' GE + 23.5' KB @ 3385.70usft
Site:	Morab 29-20 Fed Com	MD Reference:	3362.2' GE + 23.5' KB @ 3385.70usft
Well:	Morab 29-20 Fed Com #2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	EDM 5000.1 Multi User Db

Project	Lea County, NM (NAD-83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site	Morab 29-20 Fed Com				
Site Position:		Northing:	401,513.30 usft	Latitude:	32° 6' 8.0710 N
From:	Map	Easting:	738,311.72 usft	Longitude:	103° 41' 49.9451 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.34 °

Well	Morab 29-20 Fed Com #2H					
Well Position	+N/-S	0.00 usft	Northing:	401,513.20 usft	Latitude:	32° 6' 8.0718 N
	+E/-W	0.00 usft	Easting:	738,282.03 usft	Longitude:	103° 41' 50.2903 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,362.20 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/4/2018	6.78	59.77	47,885

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	359.54	

Survey Program	Date 8/17/2018				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
166.00	17,751.00	Survey #1 (OH)	LEAM MWD+HDGM	MWD+HDGM	
17,807.00	17,807.00	Survey #2 (OH)	Project	Projection	

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
166.00	0.40	264.10	166.00	-0.06	-0.58	-0.05	0.24	0.24	0.00
225.00	0.40	264.50	225.00	-0.10	-0.99	-0.09	0.00	0.00	0.68
324.00	0.40	236.40	323.99	-0.32	-1.62	-0.31	0.20	0.00	-28.38
416.00	0.30	302.60	415.99	-0.37	-2.09	-0.36	0.43	-0.11	71.96
508.00	0.40	331.30	507.99	0.04	-2.45	0.06	0.22	0.11	31.20
600.00	0.50	331.80	599.99	0.67	-2.79	0.70	0.11	0.11	0.54
692.00	0.90	351.80	691.98	1.74	-3.08	1.77	0.50	0.43	21.74
784.00	1.10	355.40	783.97	3.34	-3.26	3.36	0.23	0.22	3.91
877.00	1.40	353.60	876.95	5.36	-3.45	5.38	0.33	0.32	-1.94

LEAM Drilling Services

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Design: OH

Local Co-ordinate Reference: Well Morab 29-20 Fed Com #2H
TVD Reference: 3362.2' GE + 23.5' KB @ 3385.70usft
MD Reference: 3362.2' GE + 23.5' KB @ 3385.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Multi User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
968.00	1.60	357.30	967.91	7.73	-3.64	7.76	0.24	0.22	4.07
1,061.00	1.30	348.50	1,060.88	10.06	-3.91	10.09	0.40	-0.32	-9.46
1,153.00	1.10	331.10	1,152.86	11.86	-4.54	11.89	0.45	-0.22	-18.91
1,246.00	0.60	286.10	1,245.86	12.77	-5.44	12.82	0.86	-0.54	-48.39
1,338.00	0.50	251.80	1,337.85	12.78	-6.29	12.83	0.37	-0.11	-37.28
1,429.00	0.50	287.30	1,428.85	12.78	-7.04	12.83	0.34	0.00	39.01
1,522.00	0.50	269.80	1,521.84	12.90	-7.84	12.96	0.16	0.00	-18.82
1,614.00	0.40	281.90	1,613.84	12.96	-8.55	13.03	0.15	-0.11	13.15
1,709.00	0.20	271.00	1,708.84	13.03	-9.04	13.10	0.22	-0.21	-11.47
1,804.00	0.30	215.30	1,803.84	12.83	-9.35	12.91	0.26	0.11	-58.63
1,899.00	0.20	187.50	1,898.84	12.46	-9.52	12.54	0.16	-0.11	-29.26
1,993.00	0.40	214.40	1,992.84	12.03	-9.72	12.11	0.25	0.21	28.62
2,088.00	0.40	213.50	2,087.84	11.48	-10.10	11.56	0.01	0.00	-0.95
2,183.00	0.50	167.10	2,182.83	10.80	-10.19	10.88	0.39	0.11	-48.84
2,278.00	0.50	133.50	2,277.83	10.11	-9.79	10.19	0.30	0.00	-35.37
2,372.00	0.60	129.80	2,371.82	9.51	-9.12	9.59	0.11	0.11	-3.94
2,468.00	0.50	159.60	2,467.82	8.80	-8.58	8.87	0.31	-0.10	31.04
2,562.00	1.30	215.30	2,561.81	7.54	-9.06	7.62	1.17	0.85	59.26
2,657.00	2.20	234.60	2,656.76	5.61	-11.17	5.70	1.12	0.95	20.32
2,752.00	3.00	248.10	2,751.67	3.62	-14.96	3.74	1.05	0.84	14.21
2,847.00	3.70	251.80	2,846.50	1.74	-20.18	1.90	0.77	0.74	3.89
2,941.00	4.10	248.00	2,940.29	-0.47	-26.18	-0.26	0.51	0.43	-4.04
3,036.00	4.70	245.20	3,035.01	-3.37	-32.86	-3.11	0.67	0.63	-2.95
3,131.00	5.60	244.80	3,129.62	-6.98	-40.59	-6.65	0.95	0.95	-0.42
3,226.00	6.60	250.30	3,224.08	-10.79	-49.92	-10.39	1.22	1.05	5.79
3,321.00	6.20	254.70	3,318.49	-13.98	-60.01	-13.50	0.67	-0.42	4.63
3,415.00	5.50	256.20	3,412.00	-16.40	-69.28	-15.84	0.76	-0.74	1.60
3,510.00	5.90	251.30	3,506.53	-19.05	-78.32	-18.42	0.66	0.42	-5.16
3,604.00	6.00	249.90	3,600.03	-22.29	-87.51	-21.58	0.19	0.11	-1.49
3,699.00	5.20	251.10	3,694.57	-25.39	-96.25	-24.61	0.85	-0.84	1.26
3,792.00	5.40	247.60	3,787.17	-28.42	-104.28	-27.58	0.41	0.22	-3.76
3,887.00	6.20	243.80	3,881.69	-32.39	-113.02	-31.48	0.93	0.84	-4.00
3,982.00	6.20	245.30	3,976.13	-36.80	-122.28	-35.82	0.17	0.00	1.58
4,076.00	5.50	242.30	4,069.64	-41.01	-130.88	-39.96	0.81	-0.74	-3.19
4,171.00	6.10	241.50	4,164.16	-45.54	-139.35	-44.42	0.64	0.63	-0.84
4,266.00	6.30	241.60	4,258.60	-50.43	-148.37	-49.23	0.21	0.21	0.11
4,363.00	5.70	239.90	4,355.07	-55.37	-157.22	-54.11	0.65	-0.62	-1.75
4,458.00	6.20	252.90	4,449.56	-59.25	-166.21	-57.91	1.51	0.53	13.68
4,552.00	5.70	258.20	4,543.05	-61.69	-175.63	-60.28	0.79	-0.53	5.64
4,646.00	6.40	256.10	4,636.53	-63.91	-185.28	-62.42	0.78	0.74	-2.23
4,741.00	6.70	256.60	4,730.91	-66.46	-195.81	-64.89	0.32	0.32	0.53
4,836.00	6.60	254.70	4,825.27	-69.19	-206.47	-67.53	0.25	-0.11	-2.00
4,931.00	6.20	255.50	4,919.68	-71.91	-216.70	-70.17	0.43	-0.42	0.84

LEAM Drilling Services

Survey Report

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Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Morab 29-20 Fed Com #2H
TVD Reference: 3362.2' GE + 23.5' KB @ 3385.70usft
MD Reference: 3362.2' GE + 23.5' KB @ 3385.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Multi User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,026.00	5.90	256.80	5,014.15	-74.31	-226.42	-72.49	0.35	-0.32	1.37
5,121.00	6.70	255.50	5,108.58	-76.82	-236.54	-74.91	0.86	0.84	-1.37
5,215.00	7.70	255.40	5,201.83	-79.78	-247.94	-77.78	1.06	1.06	-0.11
5,310.00	7.40	255.70	5,296.01	-82.89	-260.03	-80.80	0.32	-0.32	0.32
5,405.00	7.00	255.20	5,390.26	-85.88	-271.56	-83.70	0.43	-0.42	-0.53
5,499.00	6.50	255.40	5,483.61	-88.69	-282.24	-86.42	0.53	-0.53	0.21
5,593.00	6.20	254.70	5,577.03	-91.37	-292.29	-89.02	0.33	-0.32	-0.74
5,688.00	6.10	254.30	5,671.48	-94.09	-302.10	-91.66	0.11	-0.11	-0.42
5,783.00	6.90	256.20	5,765.87	-96.81	-312.50	-94.30	0.87	0.84	2.00
5,877.00	7.00	258.70	5,859.18	-99.28	-323.60	-96.68	0.34	0.11	2.66
5,972.00	7.10	259.00	5,953.46	-101.54	-335.04	-98.84	0.11	0.11	0.32
6,067.00	7.00	260.10	6,047.75	-103.65	-346.50	-100.87	0.18	-0.11	1.16
6,161.00	6.50	258.70	6,141.09	-105.68	-357.36	-102.81	0.56	-0.53	-1.49
6,257.00	6.20	259.20	6,236.51	-107.72	-367.78	-104.76	0.32	-0.31	0.52
6,352.00	6.80	255.20	6,330.89	-110.11	-378.26	-107.07	0.79	0.63	-4.21
6,446.00	6.80	253.40	6,424.23	-113.13	-388.97	-110.00	0.23	0.00	-1.91
6,540.00	6.50	253.60	6,517.60	-116.22	-399.41	-113.01	0.32	-0.32	0.21
6,635.00	6.30	253.60	6,612.01	-119.21	-409.57	-115.92	0.21	-0.21	0.00
6,730.00	6.10	254.80	6,706.45	-122.00	-419.44	-118.63	0.25	-0.21	1.26
6,824.00	6.80	250.40	6,799.86	-125.18	-429.50	-121.73	0.91	0.74	-4.68
6,919.00	7.00	249.40	6,894.17	-129.10	-440.22	-125.56	0.25	0.21	-1.05
7,014.00	6.60	251.10	6,988.50	-132.91	-450.80	-129.28	0.47	-0.42	1.79
7,108.00	5.90	253.10	7,081.94	-136.06	-460.54	-132.36	0.78	-0.74	2.13
7,204.00	5.90	255.20	7,177.43	-138.76	-470.03	-134.98	0.22	0.00	2.19
7,298.00	7.00	249.90	7,270.84	-141.96	-480.08	-138.10	1.33	1.17	-5.64
7,393.00	6.80	247.80	7,365.15	-146.07	-490.72	-142.13	0.34	-0.21	-2.21
7,488.00	6.60	248.30	7,459.50	-150.22	-501.00	-146.19	0.22	-0.21	0.53
7,583.00	6.00	248.30	7,553.93	-154.07	-510.69	-149.97	0.63	-0.63	0.00
7,678.00	5.50	245.70	7,648.45	-157.78	-519.45	-153.61	0.59	-0.53	-2.74
7,772.00	5.90	251.00	7,741.99	-161.21	-528.12	-156.96	0.70	0.43	5.64
7,866.00	6.60	261.20	7,835.43	-163.61	-538.03	-159.28	1.39	0.74	10.85
7,962.00	6.30	262.00	7,930.82	-165.18	-548.70	-160.77	0.33	-0.31	0.83
8,057.00	5.80	262.40	8,025.29	-166.54	-558.62	-162.05	0.53	-0.53	0.42
8,151.00	6.10	257.50	8,118.79	-168.25	-568.20	-163.69	0.63	0.32	-5.21
8,245.00	5.70	255.00	8,212.29	-170.54	-577.59	-165.90	0.51	-0.43	-2.66
8,340.00	5.20	254.50	8,306.86	-172.91	-586.29	-168.20	0.53	-0.53	-0.53
8,435.00	5.00	246.60	8,401.48	-175.71	-594.24	-170.93	0.77	-0.21	-8.32
8,529.00	5.40	242.90	8,495.10	-179.35	-601.94	-174.51	0.56	0.43	-3.94
8,623.00	5.20	245.70	8,588.69	-183.12	-609.76	-178.22	0.35	-0.21	2.98
8,717.00	4.60	253.10	8,682.35	-185.97	-617.25	-181.01	0.93	-0.64	7.87
8,811.00	2.90	268.50	8,776.15	-187.13	-623.23	-182.12	2.09	-1.81	16.38
8,906.00	3.00	290.50	8,871.03	-186.32	-627.96	-181.27	1.19	0.11	23.16
9,001.00	2.10	262.40	8,965.94	-185.68	-632.02	-180.60	1.59	-0.95	-29.58

LEAM Drilling Services

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Wellbore: OH
Design: OH

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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Multi User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,096.00	2.40	255.40	9,060.86	-186.41	-635.67	-181.30	0.43	0.32	-7.37
9,190.00	1.80	246.70	9,154.80	-187.49	-638.93	-182.35	0.72	-0.64	-9.26
9,285.00	1.30	220.40	9,249.76	-188.90	-641.00	-183.75	0.90	-0.53	-27.68
9,380.00	1.70	226.50	9,344.73	-190.69	-642.72	-185.52	0.45	0.42	6.42
9,474.00	1.80	255.00	9,438.69	-192.03	-645.15	-186.85	0.92	0.11	30.32
9,568.00	1.80	282.10	9,532.65	-192.11	-648.02	-186.90	0.90	0.00	28.83
9,663.00	2.20	271.50	9,627.59	-191.74	-651.31	-186.51	0.57	0.42	-11.16
9,691.00	2.40	271.00	9,655.56	-191.72	-652.43	-186.48	0.72	0.71	-1.79
9,763.00	3.30	300.20	9,727.48	-190.65	-655.73	-185.38	2.33	1.25	40.56
9,857.00	12.80	347.80	9,820.51	-179.08	-660.28	-173.77	11.54	10.11	50.64
9,951.00	24.20	353.80	9,909.51	-149.65	-664.58	-144.31	12.28	12.13	6.38
9,998.00	28.70	356.80	9,951.59	-128.79	-666.25	-123.44	9.98	9.57	6.38
10,046.00	31.10	357.10	9,993.19	-104.90	-667.52	-99.54	5.01	5.00	0.63
10,093.00	35.00	358.70	10,032.58	-79.29	-668.44	-73.92	8.50	8.30	3.40
10,140.00	39.00	0.80	10,070.11	-51.01	-668.54	-45.65	8.92	8.51	4.47
10,187.00	43.50	2.20	10,105.44	-20.05	-667.71	-14.68	9.77	9.57	2.98
10,235.00	48.40	2.60	10,138.80	14.41	-666.26	19.76	10.23	10.21	0.83
10,282.00	51.40	2.80	10,169.07	50.32	-664.57	55.65	6.39	6.38	0.43
10,330.00	55.10	358.40	10,197.80	88.75	-664.20	94.08	10.64	7.71	-9.17
10,377.00	60.10	356.40	10,222.97	128.38	-666.02	133.72	11.23	10.64	-4.26
10,424.00	65.30	357.10	10,244.52	170.06	-668.38	175.42	11.14	11.06	1.49
10,471.00	70.60	358.90	10,262.16	213.58	-669.89	218.95	11.82	11.28	3.83
10,519.00	73.20	0.30	10,277.08	259.20	-670.20	264.57	6.08	5.42	2.92
10,566.00	75.00	0.50	10,289.95	304.40	-669.88	309.77	3.85	3.83	0.43
10,614.00	78.10	0.60	10,301.11	351.08	-669.44	356.44	6.46	6.46	0.21
10,661.00	79.20	0.30	10,310.36	397.15	-669.07	402.51	2.42	2.34	-0.64
10,708.00	80.50	0.50	10,318.65	443.42	-668.75	448.77	2.80	2.77	0.43
10,755.00	82.60	0.60	10,325.55	489.90	-668.30	495.25	4.47	4.47	0.21
10,803.00	84.90	359.20	10,330.78	537.61	-668.39	542.96	5.60	4.79	-2.92
10,823.00	85.80	0.30	10,332.40	557.55	-668.48	562.89	7.09	4.50	5.50
10,918.00	89.30	356.30	10,336.46	652.38	-671.29	657.75	5.59	3.68	-4.21
11,013.00	89.80	357.10	10,337.21	747.22	-676.76	752.63	0.99	0.53	0.84
11,107.00	91.60	358.00	10,336.06	841.12	-680.78	846.56	2.14	1.91	0.96
11,202.00	91.20	356.40	10,333.74	935.98	-685.42	941.45	1.74	-0.42	-1.68
11,296.00	90.90	359.20	10,332.02	1,029.88	-689.03	1,035.38	3.00	-0.32	2.98
11,391.00	89.60	357.80	10,331.60	1,124.85	-691.51	1,130.36	2.01	-1.37	-1.47
11,486.00	90.00	359.10	10,331.93	1,219.81	-694.08	1,225.34	1.43	0.42	1.37
11,581.00	89.30	0.50	10,332.51	1,314.80	-694.42	1,320.34	1.65	-0.74	1.47
11,675.00	88.70	1.00	10,334.15	1,408.78	-693.19	1,414.30	0.83	-0.64	0.53
11,770.00	93.00	1.50	10,332.74	1,503.72	-691.11	1,509.22	4.56	4.53	0.53
11,864.00	91.20	0.60	10,329.30	1,597.64	-689.39	1,603.12	2.14	-1.91	-0.96
11,959.00	91.20	359.60	10,327.31	1,692.62	-689.23	1,698.10	1.05	0.00	-1.05
12,054.00	91.50	0.80	10,325.07	1,787.59	-688.90	1,793.06	1.30	0.32	1.26
12,148.00	91.50	2.10	10,322.61	1,881.52	-686.52	1,886.98	1.38	0.00	1.38

LEAM Drilling Services

Survey Report

Company: Devon Energy
Project: Lea County, NM (NAD-83)
Site: Morab 29-20 Fed Com
Well: Morab 29-20 Fed Com #2H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Morab 29-20 Fed Com #2H
TVD Reference: 3362.2' GE + 23.5' KB @ 3385.70usft
MD Reference: 3362.2' GE + 23.5' KB @ 3385.70usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Multi User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,242.00	91.80	359.80	10,319.90	1,975.47	-684.96	1,980.90	2.47	0.32	-2.45
12,337.00	89.70	1.00	10,318.66	2,070.45	-684.30	2,075.88	2.55	-2.21	1.26
12,432.00	89.10	1.20	10,319.66	2,165.43	-682.47	2,170.84	0.67	-0.63	0.21
12,525.00	89.20	358.50	10,321.04	2,258.41	-682.72	2,263.82	2.90	0.11	-2.90
12,620.00	88.50	0.50	10,322.94	2,353.38	-683.55	2,358.79	2.23	-0.74	2.11
12,714.00	89.40	357.80	10,324.66	2,447.34	-684.94	2,452.76	3.03	0.96	-2.87
12,809.00	90.30	359.60	10,324.91	2,542.31	-687.10	2,547.75	2.12	0.95	1.89
12,903.00	90.50	359.60	10,324.26	2,636.31	-687.75	2,641.75	0.21	0.21	0.00
12,998.00	90.70	358.00	10,323.26	2,731.28	-689.74	2,736.73	1.70	0.21	-1.68
13,093.00	89.50	0.60	10,323.10	2,826.26	-690.90	2,831.72	3.01	-1.26	2.74
13,188.00	90.50	0.50	10,323.10	2,921.26	-689.99	2,926.70	1.06	1.05	-0.11
13,282.00	89.40	0.60	10,323.18	3,015.25	-689.09	3,020.69	1.18	-1.17	0.11
13,377.00	89.50	359.20	10,324.09	3,110.24	-689.25	3,115.68	1.48	0.11	-1.47
13,470.00	89.70	0.10	10,324.74	3,203.24	-689.82	3,208.67	0.99	0.22	0.97
13,565.00	89.70	357.70	10,325.24	3,298.21	-691.64	3,303.66	2.53	0.00	-2.53
13,659.00	90.10	1.20	10,325.40	3,392.19	-692.55	3,397.64	3.75	0.43	3.72
13,754.00	90.00	0.60	10,325.32	3,487.18	-691.05	3,492.62	0.64	-0.11	-0.63
13,848.00	90.00	357.70	10,325.32	3,581.16	-692.45	3,586.61	3.09	0.00	-3.09
13,943.00	90.40	1.20	10,324.99	3,676.14	-693.36	3,681.59	3.71	0.42	3.68
14,038.00	89.50	1.40	10,325.07	3,771.12	-691.21	3,776.54	0.97	-0.95	0.21
14,132.00	90.00	359.60	10,325.48	3,865.11	-690.39	3,870.53	1.99	0.53	-1.91
14,225.00	88.50	358.40	10,326.70	3,958.08	-692.01	3,963.51	2.07	-1.61	-1.29
14,320.00	88.10	1.40	10,329.52	4,053.03	-692.17	4,058.45	3.18	-0.42	3.16
14,414.00	89.00	0.80	10,331.89	4,146.98	-690.37	4,152.39	1.15	0.96	-0.64
14,509.00	90.10	358.20	10,332.64	4,241.96	-691.20	4,247.38	2.97	1.16	-2.74
14,604.00	91.30	357.80	10,331.48	4,336.90	-694.51	4,342.33	1.33	1.26	-0.42
14,699.00	91.70	357.50	10,328.99	4,431.78	-698.41	4,437.25	0.53	0.42	-0.32
14,794.00	91.70	0.10	10,326.18	4,526.71	-700.40	4,532.19	2.74	0.00	2.74
14,889.00	91.80	358.90	10,323.27	4,621.66	-701.23	4,627.14	1.27	0.11	-1.26
14,984.00	91.70	1.20	10,320.37	4,716.61	-701.14	4,722.09	2.42	-0.11	2.42
15,078.00	91.90	0.10	10,317.42	4,810.56	-700.08	4,816.02	1.19	0.21	-1.17
15,173.00	91.90	1.70	10,314.27	4,905.49	-698.59	4,910.94	1.68	0.00	1.68
15,268.00	92.20	0.30	10,310.87	5,000.41	-696.93	5,005.85	1.51	0.32	-1.47
15,363.00	92.40	1.50	10,307.06	5,095.32	-695.44	5,100.74	1.28	0.21	1.26
15,458.00	91.70	358.20	10,303.66	5,190.25	-695.69	5,195.67	3.55	-0.74	-3.47
15,553.00	91.90	0.80	10,300.67	5,285.19	-696.51	5,290.61	2.74	0.21	2.74
15,649.00	91.40	1.50	10,297.91	5,381.13	-694.59	5,386.53	0.90	-0.52	0.73
15,744.00	91.50	0.30	10,295.51	5,476.09	-693.10	5,481.47	1.27	0.11	-1.26
15,839.00	91.70	0.30	10,292.85	5,571.05	-692.60	5,576.43	0.21	0.21	0.00
15,941.00	92.40	359.60	10,289.21	5,672.98	-692.69	5,678.36	0.97	0.69	-0.69
16,035.00	92.70	358.90	10,285.02	5,766.88	-693.92	5,772.26	0.81	0.32	-0.74
16,129.00	91.80	359.20	10,281.33	5,860.79	-695.48	5,866.19	1.01	-0.96	0.32
16,223.00	92.20	358.90	10,278.05	5,954.72	-697.03	5,960.13	0.53	0.43	-0.32

LEAM Drilling Services

Survey Report

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Site: Morab 29-20 Fed Com
Well: Morab 29-20 Fed Com #2H
Wellbore: OH
Design: OH

Local Co-ordinate Reference: Well Morab 29-20 Fed Com #2H
TVD Reference: 3362.2' GE + 23.5' KB @ 3385.70usft
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Multi User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
16,318.00	92.20	358.50	10,274.41	6,049.63	-699.19	6,055.05	0.42	0.00	-0.42
16,413.00	92.70	358.70	10,270.34	6,144.51	-701.51	6,149.95	0.57	0.53	0.21
16,508.00	90.80	359.20	10,267.44	6,239.45	-703.25	6,244.89	2.07	-2.00	0.53
16,603.00	91.40	359.10	10,265.62	6,334.42	-704.65	6,339.87	0.64	0.63	-0.11
16,698.00	92.20	359.20	10,262.64	6,429.36	-706.06	6,434.82	0.85	0.84	0.11
16,793.00	91.70	359.10	10,259.40	6,524.29	-707.47	6,529.76	0.54	-0.53	-0.11
16,888.00	92.40	359.40	10,256.00	6,619.23	-708.71	6,624.70	0.80	0.74	0.32
16,983.00	91.00	359.40	10,253.19	6,714.18	-709.71	6,719.66	1.47	-1.47	0.00
17,078.00	91.50	359.60	10,251.11	6,809.15	-710.54	6,814.63	0.57	0.53	0.21
17,173.00	91.50	359.80	10,248.63	6,904.12	-711.03	6,909.60	0.21	0.00	0.21
17,267.00	91.70	359.80	10,246.00	6,998.08	-711.36	7,003.56	0.21	0.21	0.00
17,362.00	92.00	359.80	10,242.94	7,093.03	-711.69	7,098.51	0.32	0.32	0.00
17,457.00	92.50	359.80	10,239.21	7,187.95	-712.03	7,193.44	0.53	0.53	0.00
17,551.00	91.80	359.10	10,235.68	7,281.88	-712.93	7,287.37	1.05	-0.74	-0.74
17,646.00	91.80	358.50	10,232.70	7,376.81	-714.92	7,382.32	0.63	0.00	-0.63
17,740.00	92.00	358.70	10,229.58	7,470.73	-717.21	7,476.25	0.30	0.21	0.21
17,751.00	92.30	358.50	10,229.17	7,481.72	-717.48	7,487.24	3.28	2.73	-1.82
17,807.00	92.30	358.50	10,226.92	7,537.66	-718.94	7,543.19	0.00	0.00	0.00

Projection

COMPANY	Devcon Energy
FIELD	Lea County, NM (NAD-83)
SITE	Morab 29-20 Fed Com
WELL	Morab 29-20 Fed Com #2H
WELLPATH	OH
DESIGN	OH
DEPTH/UNT	(usft)

WELL INFO	North American Datum 1983
MAP DATUM	US State Plane 1983
MAP SYSTEM	US State Plane 1983
MAP ZONE	North America Eastern Zone
WELL LAT	32.102242
WELL LONG	-103.697309
WELL ELEV MA	738282.03
WELL NS MAP	405153.2
CONVERGENCE	0.34
MAAGWDEL	HIGH
DENIGATION	
NORTH REF	Grid
K8 ELEV	3362.7
K8 ELEV	3385.7
YS AZ	359.54

SURVEY PROGRAM

1	166.00	- 17751.00	SURVEY #1 : LEAM MWID+HDSM
2	17807.00	- 17807.00	SURVEY #2 : PROJECT

Measured Def Inclination		Course Length		True Vertical		Subsea		TVD		Local N/S		East/W		East/W		Northing		Latitude		Longitude		Dogleg Severity		Build Rate		Turn Rate		Vertical Section	
MD	INC	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	156.00	254.10	166.00	166.00	166.00	3385.70	3219.70	-0.06	-0.58	7382.02	401513.14	32.102742	-103.697303	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
225.00	0.40	264.50	59.00	225.00	3160.70	-0.06	-0.99	7382.04	401513.14	32.102742	-103.697306	0.00	-0.58	7382.05	401513.14	32.102742	-103.697306	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
416.00	0.30	302.60	92.00	324.00	3061.71	-0.33	-1.62	7382.02	401512.88	32.102744	-103.697310	0.20	0.00	-0.58	7382.04	401512.88	32.102744	-103.697310	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
508.00	0.50	331.90	92.00	507.99	2877.71	0.04	-2.05	7382.09	401513.24	32.102742	-103.697311	0.22	0.00	-0.58	7382.09	401513.24	32.102742	-103.697311	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
692.00	0.90	351.80	92.00	599.99	2688.72	0.67	-2.79	7382.73	401514.94	32.102744	-103.697312	0.11	0.00	-0.58	7382.73	401514.94	32.102744	-103.697312	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
874.00	1.10	355.40	92.00	783.97	2601.13	3.34	-3.08	7382.78	401514.94	32.102744	-103.697313	0.23	0.00	-0.58	7382.78	401514.94	32.102744	-103.697313	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
968.00	1.40	353.60	93.00	916.00	2508.75	5.36	-3.45	7382.78	401516.56	32.102742	-103.697314	0.33	0.00	-0.58	7382.78	401516.56	32.102742	-103.697314	0.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1061.00	1.30	348.50	91.00	1060.92	2471.79	7.73	-3.61	7382.78	401520.93	32.102746	-103.697315	0.24	0.00	-0.58	7382.78	401520.93	32.102746	-103.697315	0.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1156.00	1.10	331.10	92.00	1155.87	2232.84	11.86	-4.54	7382.75	401523.26	32.102750	-103.697316	0.45	0.00	-0.58	7382.75	401523.26	32.102750	-103.697316	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1245.00	0.80	286.10	92.00	1245.86	2139.85	12.77	-5.44	7382.75	401525.98	32.102750	-103.697320	0.86	0.00	-0.58	7382.75	401525.98	32.102750	-103.697320	0.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1338.00	0.50	251.80	92.00	1337.85	2047.85	12.78	-6.29	7382.75	401525.98	32.102750	-103.697323	0.37	0.00	-0.58	7382.75	401525.98	32.102750	-103.697323	0.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1429.00	0.50	287.30	92.00	1428.85	1956.85	12.78	-7.04	7382.74	401525.98	32.102777	-103.697328	0.34	0.00	-0.58	7382.74	401525.98	32.102777	-103.697328	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1522.00	0.50	269.80	93.00	1521.85	1863.86	12.90	-8.54	7382.73	401526.10	32.102778	-103.697328	0.15	0.00	-0.58	7382.73	401526.10	32.102778	-103.697328	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1614.00	0.20	281.90	92.00	1613.84	1771.86	12.96	-8.55	7382.73	401526.10	32.102778	-103.697330	0.16	0.00	-0.58	7382.73	401526.10	32.102778	-103.697330	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1709.00	0.20	271.00	92.00	1709.04	1676.86	13.03	-9.04	7382.72	401526.23	32.102778	-103.697333	0.22	0.00	-0.58	7382.72	401526.23	32.102778	-103.697333	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1804.00	0.20	215.50	95.00	1803.84	1581.86	13.03	-9.35	7382.72	401526.23	32.102778	-103.697333	0.26	0.00	-0.58	7382.72	401526.23	32.102778	-103.697333	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1899.00	0.40	187.50	95.00	1898.84	1486.86	13.46	-9.32	7382.72	401525.23	32.102777	-103.697333	0.16	0.00	-0.58	7382.72	401525.23	32.102777	-103.697333	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1993.00	0.40	214.40	95.00	1992.84	1392.86	12.06	-9.73	7382.71	401525.23	32.102777	-103.697333	0.26	0.00	-0.58	7382.71	401525.23	32.102777	-103.697333	0.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2088.00	0.40	213.50	95.00	2087.84	1297.87	11.48	-10.10	7382.71	401524.00	32.102774	-103.697335	0.01	0.00	-0.58	7382.71	401524.00	32.102774	-103.697335	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2183.00	0.50	167.10	92.00	2182.83	1202.87	10.80	-10.19	7382.71	401523.31	32.102770	-103.697334	0.39	0.00	-0.58	7382.71	401523.31	32.102770	-103.697334	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2278.00	0.50	133.50	92.00	2277.83	1107.87	9.11	-9.79	7382.72	401522.71	32.102768	-103.697334	0.30	0.00	-0.58	7382.72	401522.71	32.102768	-103.697334	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2372.00	0.50	129.80	94.00	2371.83	1013.88	9.51	-9.12	7382.72	401522.71	32.102768	-103.697330	0.31	0.00	-0.58	7382.72	401522.71	32.102768	-103.697330	0.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2468.00	0.50	159.60	96.00	2467.82	917.88	8.80	-8.59	7382.73	401522.00	32.102768	-103.697330	0.17	0.00	-0.58	7382.73	401522.00	32.102768	-103.697330	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2562.00	1.30	215.90	94.00	2561.81	823.89	7.54	-9.06	7382.72	401520.74	32.102763	-103.697330	0.11	0.00	-0.58	7382.72	401520.74	32.102763	-103.697330	0.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2657.00	2.20	234.60	95.00	2656.77	728.84	5.61	-11.17	7382.70	401518.81	32.102758	-103.697339	0.12	0.00	-0.58	7382.70	401518.81	32.102758	-103.697339	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2752.00	3.00	244.10	95.00	2751.67	634.03	3.63	-14.96	7382.67	401516.94	32.102752	-103.697351	0.07	0.00	-0.58	7382.67	401516.94	32.102752	-103.697351	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2847.00	3.70	251.80	95.00	2846.28	539.20	1.74	-20.18	7382.65	401514.94	32.102746	-103.697366	0.01	0.00	-0.58	7382.65	401514.94	32.102746	-103.697366	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2941.00	4.70	248.00	94.00	2940.28	445.41	-0.47	-26.18	7382.65	401512.73	32.102733	-103.697381	0.05	0.00	-0.58	7382.65	401512.73	32.102733	-103.697381	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3036.00	5.60	245.80	95.00	3035.62	350.69	-3.37	-32.86	7382.64	401509.82	32.102724	-103.697404	0.07	0.00	-0.58	7382.64	401509.82	32.102724	-103.697404	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3131.00	6.20	244.80	95.00	3129.62	256.08	-6.98	-40.92	7382.61	401506.28	32.102224	-103.697434	0.05	0.00	-0.58	7382.61	401506.28	32.102224	-103.697434	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3131.00	5.60	245.80	95.00	3129.62	256.08	-6.98	-40.92	7382.61	401506.28	32.102224	-103.697434	0.05	0.00	-0.58	7382.61	401506.28	32.102224	-103.697434	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3226.00	6.60	250.50	95.00	3224.08	161.52	-10.79	-60.01	7382.22	401496.80	32.102205	-103.697464	0.07	0.00	-0.58	7382.22	401496.80	32.102205	-103.697464	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3321.00	6.20	258.70	95.00	3318.49	67.21	-13.99	-68.28	7382.12	401494.92	32.102196	-103.697527	0.06	0.00	-0.58	7382.12	401494.92	32.102196	-103.697527	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3415.00	5.30	256.20	94.00	3412.00	-26.30	-16.40	-69.28	7382.03	401494.13	32.102191	-103.697559	0.06	0.00	-0.58	7382.03	401494.13	32.102191	-103.697559	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3510.00	5.90	251.50	95.00	3506.53	-120.83	-19.05	-78.33	7382.03	401494.13	32.102191	-103.697559	0.06	0.00	-0.58	7382.03	401494.13	32.102191	-103.697559	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3604.00	5.20	249.90	95.00	3600.03	-214.33	-22.29	-87.52	7382.04	401490.91	32.102182	-103.697586	0.06	0.00	-0.58	7382.04	401490.91	32.102182	-103.697586	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3799.00	5.40	251.10	95.00	3789.57	-308.87	-25.39	-96.25	7382.05	401487.81	32.102174	-103.697614	0.05	0.00	-0.58	7382.05	401487.81	32.102174	-103.697614	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		

6446.00	6.80	94.00	6424.23	-3038.53	-113.13	-389.47	737893.06	401400.08	32.101938	-103.688561	0.23	0.00	-1.91	-113.00
6540.00	6.50	94.00	6517.60	-3131.90	-116.22	-399.41	737882.62	401396.98	32.101938	-103.688561	0.32	-0.32	0.21	-113.01
6635.00	6.30	94.00	6612.01	-3276.31	-119.21	-409.57	737872.61	401391.99	32.101921	-103.688628	0.21	-0.21	0.00	-115.92
6730.00	6.10	94.00	6706.45	-3320.75	-122.00	-419.44	737862.59	401391.20	32.101914	-103.688660	0.25	-0.21	1.26	-118.63
6824.00	6.80	94.00	6799.86	-3414.16	-125.18	-429.50	737852.53	401388.02	32.101905	-103.688692	0.91	0.74	-4.68	-121.73
6919.00	7.00	94.00	6894.17	-3508.47	-129.10	-440.22	737841.81	401384.10	32.101894	-103.688727	0.25	0.21	-1.05	-125.56
7014.00	6.60	95.00	6988.50	-3602.80	-132.91	-450.80	737831.23	401380.29	32.101884	-103.688761	0.47	-0.74	1.79	-129.28
7109.00	5.90	95.00	7082.14	-3696.24	-136.06	-460.54	737821.49	401377.14	32.101876	-103.688793	0.78	-0.74	2.13	-132.36
7204.00	5.90	95.00	7177.84	-3791.73	-139.76	-470.03	737812.49	401373.44	32.101860	-103.688823	0.33	0.00	2.19	-134.98
7300.00	6.80	94.00	7273.43	-3885.14	-141.96	-480.08	737801.95	401369.13	32.101849	-103.688856	1.33	1.17	-5.64	-138.10
7400.00	6.80	94.00	7369.15	-3979.45	-146.07	-490.71	737791.31	401365.13	32.101837	-103.688890	0.34	-0.21	-2.21	-142.13
7500.00	6.60	94.00	7465.50	-4073.80	-150.22	-501.00	737781.03	401361.98	32.101827	-103.688924	0.22	-0.21	0.53	-146.19
7600.00	6.00	94.00	7563.93	-4168.33	-154.07	-510.69	737771.34	401359.13	32.101817	-103.688955	0.63	-0.63	0.00	-149.97
7700.00	5.30	94.00	7668.45	-4262.75	-157.78	-519.45	737762.36	401355.42	32.101817	-103.688983	0.59	-0.53	-2.74	-153.61
7800.00	5.30	94.00	7761.95	-4361.75	-161.21	-528.13	737753.91	401351.99	32.101808	-103.689011	0.70	0.43	-3.64	-156.96
7900.00	6.60	94.00	7853.45	-4449.73	-163.61	-538.03	737744.00	401349.59	32.101801	-103.689043	1.39	0.74	10.85	-159.28
8000.00	6.30	94.00	7950.82	-4545.12	-165.18	-548.70	737733.33	401348.02	32.101797	-103.689078	0.33	-0.31	0.83	-160.77
8100.00	5.80	94.00	8025.29	-4639.59	-166.55	-558.62	737722.41	401346.66	32.101793	-103.689110	0.53	-0.53	0.42	-162.05
8200.00	5.60	94.00	8118.79	-4733.09	-168.25	-568.20	737713.83	401344.95	32.101789	-103.689141	0.63	0.32	-5.21	-163.69
8300.00	5.70	94.00	8212.29	-4826.59	-170.54	-577.59	737694.44	401342.66	32.101783	-103.689171	0.51	-0.43	-2.66	-165.90
8400.00	5.20	94.00	8306.86	-4921.16	-172.91	-586.29	737685.74	401340.79	32.101776	-103.689199	0.53	-0.53	-0.53	-168.20
8500.00	5.40	94.00	8401.48	-5015.78	-175.71	-594.24	737677.79	401337.49	32.101769	-103.689225	0.77	-0.21	-8.32	-170.93
8600.00	5.40	94.00	8495.10	-5109.40	-179.35	-601.94	737668.09	401333.85	32.101759	-103.689250	0.56	0.49	-3.94	-174.51
8700.00	5.20	94.00	8588.70	-5203.00	-183.12	-609.76	737657.27	401330.08	32.101749	-103.689275	0.35	-0.21	2.98	-178.22
8800.00	5.20	94.00	8682.35	-5296.65	-185.97	-617.25	737648.78	401327.23	32.101741	-103.689300	0.93	-0.64	7.87	-181.01
8900.00	4.60	94.00	8776.15	-5390.45	-187.13	-623.23	737654.80	401326.07	32.101738	-103.689319	2.09	-1.81	16.38	-182.12
9000.00	3.00	94.00	8871.03	-5485.33	-186.32	-627.96	737654.07	401324.88	32.101740	-103.689334	1.19	0.11	23.16	-181.27
9100.00	2.90	94.00	8965.94	-5580.24	-185.68	-632.02	737650.01	401321.52	32.101742	-103.689347	1.59	-0.95	-79.58	-180.60
9200.00	2.40	95.00	9060.86	-5675.16	-186.41	-635.67	737646.36	401316.79	32.101740	-103.689359	0.43	0.32	-7.37	-181.30
9300.00	1.80	94.00	9154.80	-5769.10	-187.49	-638.93	737641.30	401315.71	32.101737	-103.689370	0.72	-0.64	-9.26	-182.35
9400.00	2.20	94.00	9249.77	-5864.07	-188.90	-641.00	737634.03	401314.30	32.101730	-103.689376	0.90	-0.53	-27.68	-183.75
9500.00	1.30	94.00	9344.73	-5959.03	-190.69	-642.72	737638.31	401312.51	32.101728	-103.689382	0.45	0.42	6.42	-185.52
9600.00	1.70	94.00	9438.69	-6052.99	-192.03	-645.16	737636.88	401311.17	32.101725	-103.689390	0.92	0.11	30.32	-186.85
9700.00	1.80	94.00	9532.65	-6146.95	-192.11	-648.01	737634.01	401310.13	32.101725	-103.689399	0.90	0.00	28.83	-186.90
9800.00	2.20	94.00	9627.59	-6241.89	-191.75	-651.02	737630.72	401312.46	32.101726	-103.689410	0.57	0.42	-11.16	-186.51
9900.00	2.40	94.00	9722.48	-6341.78	-191.62	-652.43	737629.60	401311.48	32.101729	-103.689413	0.72	0.71	-1.79	-186.48
1000.00	3.30	94.00	9817.48	-6434.81	-179.08	-654.58	737621.75	401313.52	32.101761	-103.689439	2.33	1.25	-40.56	-185.38
1100.00	12.80	94.00	9909.51	-6523.81	-149.65	-660.58	737617.45	401316.15	32.101842	-103.689452	11.54	10.11	-50.64	-173.77
2200.00	34.20	94.00	9951.59	-6565.89	-128.79	-667.25	737615.78	401318.41	32.101899	-103.689457	9.99	9.57	6.38	-143.31
3300.00	35.80	48.00	9993.19	-6607.49	-104.90	-666.52	737615.45	401316.40	32.101965	-103.689460	5.01	5.00	0.62	-99.54
4400.00	35.80	47.00	10032.58	-6646.88	-79.29	-668.44	737613.59	401333.91	32.101035	-103.689463	8.50	8.30	3.40	-73.92
5500.00	35.80	47.00	10070.11	-6684.41	-51.02	-668.54	737613.49	401362.19	32.101113	-103.689463	8.92	8.51	4.47	-45.65
6600.00	39.00	47.00	10107.14	-6719.74	-20.05	-667.71	737614.32	401493.15	32.101938	-103.689459	9.77	9.57	2.98	-14.69
7700.00	43.50	47.00	10105.44	-6753.10	14.41	-666.76	737613.77	401327.61	32.102738	-103.689454	10.23	10.21	0.83	19.76
8800.00	48.40	48.00	10138.80	-6773.10	14.41	-666.76	737617.46	401363.52	32.102738	-103.689448	6.39	6.38	0.43	55.65
9900.00	47.00	47.00	10169.07	-6783.37	50.32	-664.70	737617.83	401361.96	32.102737	-103.689446	10.64	7.71	-9.17	94.08
1100.00	55.10	48.00	10197.80	-6812.10	88.76	-664.70	737617.83	401361.96	32.102737	-103.689446	10.64	7.71	-9.17	94.08
2200.00	51.40	48.00	10232.88	-6837.28	128.38	-666.02	737613.65	401381.26	32.102730	-103.689451	11.33	10.66	-4.26	133.72
3300.00	46.10	47.00	10272.88	-6858.82	170.08	-668.38	737613.65	401381.26	32.102730	-103.689451	11.33	10.66	-4.26	133.72
4400.00	65.30	47.00	10314.52	-6882.82	170.08	-668.38	737613.65	401381.26	32.102730	-103.689451	11.33	10.66	-4.26	133.72
5500.00	65.30	47.00	10352.16	-6896.46	213.58	-669.88	737613.15	401377.40	32.102860	-103.689462	16.02	11.28	3.83	218.95
6600.00	70.50	48.00	10393.18	-6891.38	259.20	-670.30	737613.15	401377.40	32.102860	-103.689462	16.02	11.28	3.83	218.95
7700.00	72.20	0.30	10429.95	-6894.25	304.40	-669.88	737612.15	401371.60	32.102860	-103.689462	3.85	3.83	0.43	302.77
8800.00	75.20	0.30	10469.11	-6893.41	351.08	-669.88	737612.15	401371.60	32.102860	-103.689462	3.85	3.83	0.43	302.77
9900.00	78.10	0.60	10510.11	-6892.46	397.15	-669.88	737612.15	401371.60	32.102860	-103.689462	3.85	3.83	0.43	302.77
1100.00	78.10	0.60	10510.11	-6892.46	397.15	-669.88	737612.15	401371.60	32.102860	-103.689462	3.85	3.83	0.43	302.77
2200.00	82.60	0.50	10551.35	-6893.85	443.42	-668.75	737613.78	402366.02	32.103472	-103.689454	2.80	2.77	0.43	448.77
3300.00	82.60	0.50	10551.35	-6893.85	443.42	-668.75	737613.78	402366.02	32.103472	-103.689454	2.80	2.77	0.43	448.77
4400.00	86.90	0.60	10595.00	-6893.85	489.90	-668.75	737613.78	402366.02	32.103472	-103.689454	2.80	2.77	0.43	448.77
5500.00	86.90	0.60	10595.00	-6893.85	489.90	-668.75	737613.78	402366.02	32.103472	-103.689454	2.80	2.77	0.43	448.77
6600.00	88.90	0.30	10637.40	-6946.70	537.65	-668.48	737613.35	402070.75	32.103731	-103.689451	5.60	4.79	-2.92	542.96
7700.00	88.90	0.30	10637.40	-6946.70	537.65	-668.48	737613.35	402070.75	32.103731	-103.689451	5.60	4.79	-2.92	542.96
8800.00	88.90	0.30	10637.40	-6946.70	537.65	-668.48	737613.35	402070.75	32.103731	-103.689451	5.60	4.79	-2.92	542.96
9900.00	88.90	0.30	10637.40	-6946.70	537.65	-668.48	737613.35	402070.75	32.103731	-103.689451	5.60	4.79	-2.92	542.96
1100.00	88.90	0.30	10637.40	-6946.70	537.65	-668.48	737613.35	402070.75	32.103731	-103.689451	5.60	4.79	-2.92	542.96
2200.00	88.90	0.30	10637.40	-6946.70	537.65	-668.48	737613.35	402070.75	32.103731	-103.689451	5.60	4.79	-2.92	542.96
3300.00	88.90	0.30	10637.40	-6946.70	537.65	-668.48	737613.35	402070.75	32.103731	-103.689451	5.60	4.79	-2.92	542.96
4400.00	88.90	0.30	10637.40	-6946.70	537.65	-668.48	737613.35	402070.75	32.103731	-103.689451	5.60	4.79	-2.92	542.96
5500.00	88.90	0.30	10637.40	-6946.70	537.65	-668.48	737613.35	402070.75	32.103731	-103.689451	5.60	4.79	-2.92	542.96
6600.00	88.90	0.30	10637.40	-6946.70	537.65	-668.48	737613.35	402070.75	32.103731	-103.689451	5.60	4.79	-	

14794.00	91.70	0.10	95.00	10326.18	-6940.48	4526.71	-700.40	737581.63	406039.91	32.114696	-103.699479	2.74	0.00	2.74	4532.19
14889.00	91.80	358.90	95.00	10323.27	-6937.57	4621.66	-701.23	737580.81	406134.86	32.114957	-103.699480	1.27	0.11	-1.26	4627.14
14984.00	91.70	1.20	95.00	10320.37	-6934.67	4716.61	-701.14	737580.89	406229.81	32.115218	-103.699478	2.42	-0.11	2.42	4722.09
15078.00	91.90	0.10	94.00	10317.42	-6931.72	4810.56	-700.08	737581.95	406323.76	32.115477	-103.699472	1.19	0.21	-1.17	4810.02
15173.00	91.90	1.70	95.00	10314.27	-6928.57	4905.49	-698.59	737583.45	406418.69	32.115738	-103.699466	1.68	0.00	1.68	4910.94
15268.00	92.20	0.30	95.00	10310.87	-6925.17	5000.41	-696.93	737585.10	406513.61	32.115999	-103.699459	1.51	0.32	-1.47	5005.85
15363.00	92.40	1.50	95.00	10307.06	-6921.36	5095.32	-695.44	737586.59	406608.52	32.116259	-103.699452	1.28	0.21	1.26	5100.74
15458.00	91.70	358.20	95.00	10303.66	-6917.96	5190.25	-695.69	737586.34	406703.45	32.116520	-103.699451	3.55	-0.74	-3.47	5195.67
15553.00	91.90	0.80	95.00	10300.67	-6914.97	5285.19	-696.52	737585.52	406798.39	32.116781	-103.699452	2.74	0.21	2.74	5290.61
15649.00	91.40	1.50	96.00	10297.91	-6912.21	5381.13	-694.59	737587.44	406894.33	32.117045	-103.699444	0.90	-0.52	0.73	5386.53
15744.00	91.50	0.30	95.00	10295.51	-6909.81	5476.09	-693.10	737588.93	406989.29	32.117306	-103.699437	1.27	0.11	-1.26	5481.47
15839.00	91.70	0.30	95.00	10292.85	-6907.15	5571.05	-692.60	737589.43	407084.25	32.117567	-103.699434	0.21	0.21	0.00	5576.43
15941.00	92.40	359.60	102.00	10289.21	-6903.51	5672.98	-692.69	737589.34	407186.18	32.117847	-103.699432	0.97	0.69	-0.69	5678.36
16035.00	92.70	358.90	94.00	10285.02	-6899.32	5766.88	-693.92	737588.11	407280.08	32.118105	-103.699434	0.81	0.32	-0.74	5772.26
16129.00	91.80	359.20	94.00	10281.33	-6895.63	5860.79	-695.48	737586.56	407373.99	32.118363	-103.699437	1.01	-0.96	0.32	5866.19
16223.00	92.20	358.90	94.00	10278.05	-6892.35	5954.72	-697.03	737585.00	407467.92	32.118622	-103.699441	0.53	0.43	-0.32	5960.13
16318.00	92.20	358.50	95.00	10274.41	-6888.71	6049.63	-699.19	737582.84	407562.83	32.118883	-103.699446	0.42	0.00	-0.42	6055.05
16413.00	92.70	358.70	95.00	10270.34	-6884.64	6144.51	-701.51	737580.53	407657.71	32.119143	-103.699452	0.57	0.53	0.21	6149.95
16508.00	90.80	359.20	95.00	10267.44	-6881.74	6239.45	-703.25	737578.79	407752.65	32.119404	-103.699455	2.07	-1.00	0.53	6244.89
16603.00	91.40	359.10	95.00	10265.62	-6879.92	6334.42	-704.65	737577.38	407847.62	32.119666	-103.699458	0.64	0.63	-0.11	6339.87
16698.00	92.20	359.20	95.00	10262.64	-6876.94	6429.36	-706.06	737575.97	407942.56	32.119927	-103.699461	0.85	0.84	0.11	6434.82
16793.00	91.70	359.10	95.00	10259.40	-6873.70	6524.30	-707.47	737574.56	408037.50	32.120188	-103.699464	0.54	-0.53	-0.11	6529.76
16888.00	92.40	359.40	95.00	10256.00	-6870.30	6619.23	-708.71	737573.32	408132.43	32.120448	-103.699466	0.80	0.74	0.32	6624.70
16983.00	91.00	359.40	95.00	10253.19	-6867.49	6714.18	-709.71	737572.32	408227.38	32.120709	-103.699467	1.47	-1.47	0.00	6719.66
17078.00	91.50	359.60	95.00	10251.11	-6865.41	6809.15	-710.54	737571.49	408322.35	32.120971	-103.699468	0.57	0.53	0.21	6814.63
17173.00	91.50	359.80	95.00	10248.63	-6862.93	6904.12	-711.03	737571.00	408417.32	32.121232	-103.699468	0.21	0.00	0.21	6909.60
17267.00	91.70	359.80	94.00	10246.00	-6860.30	6998.08	-711.36	737570.67	408511.28	32.121490	-103.699467	0.21	0.21	0.00	7003.56
17362.00	92.00	359.80	95.00	10242.94	-6857.24	7093.03	-711.69	737570.34	408606.23	32.121751	-103.699466	0.32	0.32	0.00	7098.51
17457.00	92.50	359.80	95.00	10239.21	-6853.51	7187.95	-712.03	737570.01	408701.15	32.122012	-103.699466	0.53	0.53	0.00	7193.44
17551.00	91.80	359.10	94.00	10235.68	-6849.98	7281.88	-712.93	737569.10	408795.08	32.122270	-103.699467	1.05	-0.74	-0.74	7287.37
17646.00	91.80	358.50	95.00	10232.70	-6847.00	7376.81	-714.92	737567.11	408890.01	32.122531	-103.699471	0.63	0.00	-0.63	7382.32
17740.00	92.00	358.70	94.00	10229.58	-6843.88	7470.73	-717.21	737564.82	408983.93	32.122789	-103.699477	0.30	0.21	0.21	7476.25
17751.00	92.30	358.50	11.00	10229.17	-6843.47	7481.72	-717.48	737564.55	408994.92	32.122819	-103.699478	3.28	2.73	-1.82	7487.24
17807.00	92.30	358.50	56.00	10226.92	-6841.22	7537.66	-718.94	737563.09	409050.86	32.122973	-103.699481	0.00	0.00	0.00	7543.19

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