HP
Survey Report - Geographic

Company:	COG Operating LLC	**Local Co-ordinate Reference:**	Well Mastiff Federal #3H
Project:	Lea County, NM	**TVD Reference:**	well @ 3695.0usft (Ensign #772)
Site:	Sec 4, T24-S, R-32-E, N.M.P.M	**MD Reference:**	well @ 3695.0usft (Ensign #772)
Well:	Mastiff Federal #3H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	Compass

Project Lea County, NM

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site Sec 4, T24-S, R-32-E, N.M.P.M

Site Position:		**Northing:**	456,424.49 usft	**Latitude:**	32° 15' 11.322 N
From:	Lat/Long	**Easting:**	701,585.37 usft	**Longitude:**	103° 40' 52.518 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.35 °

Well Mastiff Federal #3H

Well Position	**+N/-S**	0.0 usft	**Northing:**	456,424.40 usft	**Latitude:**	32° 15' 11.321 N
	+E/-W	0.0 usft	**Easting:**	701,585.20 usft	**Longitude:**	103° 40' 52.520 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**	0.0 usft	**Ground Level:**	3,664.0 usft

Wellbore Wellbore #1

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2015	9/8/2015	7.20	60.09	48,124

Design Wellbore #1

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.0

Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
	0.0	0.0	0.0	179.87

Survey Program **Date** 10/15/2015

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	10,000.0	GYRO (Wellbore #1)	Good_gyro	Good Gyro
10,035.0	15,020.0	Curve & Lateral (Wellbore #1)	MWD default	MWD - Standard

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	456,424.40	701,585.20	32° 15' 11.321 N	103° 40' 52.520 W
100.0	0.16	106.10	100.0	0.0	0.1	456,424.36	701,585.33	32° 15' 11.321 N	103° 40' 52.519 W
200.0	0.17	177.70	200.0	-0.2	0.3	456,424.17	701,585.47	32° 15' 11.319 N	103° 40' 52.517 W
300.0	0.37	168.75	300.0	-0.7	0.3	456,423.71	701,585.54	32° 15' 11.314 N	103° 40' 52.516 W
400.0	0.29	198.88	400.0	-1.2	0.3	456,423.15	701,585.52	32° 15' 11.309 N	103° 40' 52.516 W
500.0	0.50	238.51	500.0	-1.7	-0.1	456,422.69	701,585.07	32° 15' 11.304 N	103° 40' 52.522 W
600.0	0.54	210.03	600.0	-2.3	-0.7	456,422.05	701,584.46	32° 15' 11.298 N	103° 40' 52.529 W
700.0	0.65	210.78	700.0	-3.2	-1.3	456,421.15	701,583.93	32° 15' 11.289 N	103° 40' 52.535 W
800.0	0.65	225.12	800.0	-4.1	-2.0	456,420.27	701,583.24	32° 15' 11.280 N	103° 40' 52.543 W
900.0	1.09	229.76	900.0	-5.1	-3.1	456,419.25	701,582.11	32° 15' 11.270 N	103° 40' 52.556 W
1,000.0	1.00	217.56	1,000.0	-6.5	-4.3	456,417.95	701,580.85	32° 15' 11.258 N	103° 40' 52.571 W

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Site:	Sec 4, T24-S, R-32-E, N M.P.M	**MD Reference:**	well @ 3695 0usft (Ensign #772)
Well:	Mastiff Federal #3H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	Compass

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,600.0	0.74	130.95	6,598.6	-23 6	62.1	456,400.79	701,647.30	32° 15' 11.084 N	103° 40' 51.799 W
6,700.0	0.91	153.48	6,698.6	-24.7	62.9	456,399.66	701,648 14	32° 15' 11.072 N	103° 40' 51.789 W
6,800.0	0.86	132.83	6,798.6	-26.0	63.9	456,398 44	701,649.05	32° 15' 11.060 N	103° 40' 51.778 W
6,900.0	0.95	147.27	6,898 6	-27.2	64.8	456,397.23	701,650.04	32° 15' 11.048 N	103° 40' 51.767 W
7,000.0	1.08	137.09	6,998 6	-28.6	65.9	456,395.84	701,651.13	32° 15' 11.035 N	103° 40' 51.754 W
7,100.0	1.00	174.37	7,098.5	-30.1	66.7	456,394.28	701,651.86	32° 15' 11.019 N	103° 40' 51.746 W
7,200.0	1 03	163.05	7,198 5	-31.8	67.0	456,392.55	701,652.21	32° 15' 11 002 N	103° 40' 51.742 W
7,300.0	1.11	180.86	7,298 5	-33.7	67.3	456,390.73	701,652.46	32° 15' 10.984 N	103° 40' 51.739 W
7,400.0	0.79	180.74	7,398 5	-35.3	67.2	456,389.07	701,652.43	32° 15' 10 967 N	103° 40' 51.740 W
7,500.0	0.60	105.44	7,498 5	-36.2	67.7	456,388.24	701,652.93	32° 15' 10.959 N	103° 40' 51.734 W
7,600.0	0.89	94.72	7,598.5	-36.4	69 0	456,388.04	701,654.21	32° 15' 10.957 N	103° 40' 51.719 W
7,700.0	0.36	101.84	7,698.5	-36.5	70.1	456,387.91	701,655.29	32° 15' 10.956 N	103° 40' 51.706 W
7,800.0	0.09	115 61	7,798.5	-36.6	70 5	456,387.81	701,655.67	32° 15' 10.955 N	103° 40' 51.702 W
7,900.0	0.31	137.67	7,898.5	-36.8	70 7	456,387.58	701,655.92	32° 15' 10.952 N	103° 40' 51.699 W
8,000.0	0.29	117.67	7,998.5	-37.1	71.1	456 387.26	701,656.33	32° 15' 10.949 N	103° 40' 51.694 W
8,100 0	0.73	101.57	8,098.5	-37.4	72 0	456 387.01	701,657.18	32° 15' 10.947 N	103° 40' 51.685 W
8,200 0	0.74	127.06	8,198.5	-37.9	73 1	456,386.50	701,658.31	32° 15' 10.942 N	103° 40' 51.671 W
8,300.0	0.62	120.62	8,298.4	-38.6	74.1	456,385.83	701,659.30	32° 15' 10.935 N	103° 40' 51.660 W
8,400.0	0.93	148.52	8,398.4	-39.5	75 0	456,384 86	701,660.19	32° 15' 10.925 N	103° 40' 51.650 W
8,500.0	1.23	138.53	8,498.4	-41.0	76.1	456,383 37	701,661.32	32° 15' 10.910 N	103° 40' 51.637 W
8,600.0	1.31	165.74	8,598.4	-42.9	77 1	456,381.45	701,662.31	32° 15' 10.891 N	103° 40' 51.625 W
8,700.0	1.24	182.48	8,698.4	-45.1	77.4	456,379.27	701,662.55	32° 15' 10.870 N	103° 40' 51.623 W
8,800.0	1.26	183.90	8,798.3	-47.3	77.2	456,377.09	701,662.43	32° 15' 10.848 N	103° 40' 51.624 W
8,900.0	0.89	177.60	8,898.3	-49.2	77.2	456,375.21	701,662.38	32° 15' 10.830 N	103° 40' 51.625 W
9,000.0	0.87	171 39	8,998 3	-50.7	77.3	456,373.69	701,662.53	32° 15' 10.815 N	103° 40' 51.623 W
9,100.0	1.00	174.91	9,098 3	-52.3	77.5	456,372.07	701,662.72	32° 15' 10.799 N	103° 40' 51.621 W
9,200.0	1.66	166.12	9,198 3	-54.6	77.9	456,369.79	701,663.14	32° 15' 10.776 N	103° 40' 51.616 W
9,300.0	1.46	160 34	9,298.2	-57.2	78.7	456,367 19	701,663.92	32° 15' 10.750 N	103° 40' 51.607 W
9,400.0	1.16	172.07	9,398.2	-59.4	79.3	456,364.99	701,664.49	32° 15' 10.728 N	103° 40' 51.601 W
9,500.0	0.87	189.05	9,498.2	-61.2	79.3	456,363.23	701,664.51	32° 15' 10.711 N	103° 40' 51.601 W
9,600 0	0.48	205 17	9,598.2	-62.3	79.0	456,362.10	701,664.21	32° 15' 10.700 N	103° 40' 51.604 W
9,700 0	0.78	293.85	9,698.2	-62.4	78.2	456,362 00	701,663.41	32° 15' 10.699 N	103° 40' 51.614 W
9,800.0	0.77	299.00	9,798.2	-61.8	77.0	456,362 60	701,662.20	32° 15' 10.705 N	103° 40' 51.628 W
9,900.0	1.04	265.18	9,898.2	-61.5	75.5	456,362.85	701,660 71	32° 15' 10.707 N	103° 40' 51.645 W
10,000.0	0.27	252.86	9,998.2	-61.7	74 4	456,362.70	701,659.58	32° 15' 10.706 N	103° 40' 51.658 W
Tie Into GYRO @ 10000' MD / 9998' TVD									
10,035 0	1.20	198.40	10,033.2	-62.1	74 2	456,362.33	701,659.39	32° 15' 10.702 N	103° 40' 51.661 W
10,066.0	3.80	179.80	10,064.1	-63.4	74 1	456,361.00	701,659.29	32° 15' 10.689 N	103° 40' 51.662 W
10,098 0	7.40	174.70	10,096.0	-66.5	74.3	456,357.88	701,659.48	32° 15' 10.658 N	103° 40' 51.660 W
10,129.0	11.80	172.10	10,126.5	-71.6	74.9	456,352.75	701,660.10	32° 15' 10.608 N	103° 40' 51.653 W
10,161.0	15 70	175.60	10,157.6	-79.2	75.7	456,345.19	701,660.88	32° 15' 10.533 N	103° 40' 51.644 W
10,192.0	18.30	178.20	10,187.2	-88.3	76.2	456,336.15	701,661.36	32° 15' 10.443 N	103° 40' 51.639 W
10,223.0	21.40	179.60	10,216.4	-98.8	76.4	456,325.62	701,661.55	32° 15' 10.339 N	103° 40' 51.638 W
10,255.0	24.50	178.90	10,245 9	-111.3	76.5	456,313 15	701,661.72	32° 15' 10.216 N	103° 40' 51.637 W
10,286.0	27.00	178.40	10,273.8	-124.7	76.8	456,299.68	701,662.04	32° 15' 10.082 N	103° 40' 51.634 W
10,318.0	28.90	177.40	10,302.0	-139.7	77.4	456,284.70	701,662.59	32° 15' 9.934 N	103° 40' 51.629 W
10,318.2	28.90	177.40	10,302.2	-139 8	77.4	456,284.60	701,662.60	32° 15' 9 933 N	103° 40' 51.629 W
Crossed Hard Line @ 10318' MD / 10302' TVD									
10,349.0	31.60	177.90	10,328.8	-155.3	78 0	456,269.10	701,663.23	32° 15' 9.780 N	103° 40' 51.622 W
10,380.0	34.40	179.50	10,354.8	-172.2	78 4	456,252.22	701,663 60	32° 15' 9.613 N	103° 40' 51.619 W
10,411.0	36.90	181.40	10,380.0	-190.2	78 3	456,234.15	701,663.45	32° 15' 9.434 N	103° 40' 51.622 W
10,443.0	39.60	183.50	10,405.1	-210.0	77 4	456,214 37	701,662.59	32° 15' 9.238 N	103° 40' 51.634 W
10,474.0	43.10	183.90	10,428.4	-230.5	76.1	456,193 93	701,661.27	32° 15' 9.036 N	103° 40' 51.651 W
10,506 0	46.10	184.60	10,451.2	-252.9	74 4	456,171.53	701,659.60	32° 15' 8.814 N	103° 40' 51.672 W
10,537.0	49.50	183.20	10,472 0	-275 8	72.9	456,148.62	701,658.05	32° 15' 8.588 N	103° 40' 51.691 W

Company:	COG Operating LLC	**Local Co-ordinate Reference:**	Well Mastiff Federal #3H
Project:	Lea County, NM	**TVD Reference:**	well @ 3695.0usft (Ensign #772)
Site:	Sec 4, T24-S, R-32-E, N.M P.M	**MD Reference:**	well @ 3695.0usft (Ensign #772)
Well:	Mastiff Federal #3H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Wellbore #1	**Database:**	Compass

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,972.0	86.70	179.50	10,649.1	-4,677.2	-36.0	451,747.23	701,549.19	32° 14' 25.039 N	103° 40' 53.270 W
15,020.0	86.70	179.50	10,651.8	-4,725.1	-35.6	451,699.31	701,549.60	32° 14' 24.565 N	103° 40' 53.269 W
TD @ 15020' MD / 10652' TVD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
10,000.0	9,998.2	-61.7	74.4	Tie into GYRO @ 10000' MD / 9998' TVD
10,318.2	10,302.2	-139.8	77.4	Crossed Hard Line @ 10318' MD / 10302' TVD
15,020.0	10,651.8	-4,725.1	-35.6	TD @ 15020' MD / 10652' TVD

Checked By: _____ Approved By: _____ Date: _____

MASTIFF FEDERAL #3H

30-025-42064

Sec 4-T24S-R32E

Perfs	7 1/2% Acid (Gal)	Sand (#)	Fluid (Gal)
14730-14860	3516	312818	353376
14529-14661	3024	311558	322056
14331-14463	3024	308723	343854
14132-14264	3024	311819	320376
13934-14066	3066	309414	318654
13735-13867	3066	309805	318948
13536-13669	3024	309117	318318
13338-13470	3024	308425	327054
13139-13272	3012	313236	332880
12941-13073	3024	311983	315840
12750-12872	3024	315989	320670
12544-12676	3024	309796	312816
12345-12479	3012	311959	314652
12147-12279	1548	310383	317058
11948-12081	3024	310305	314874
11750-11882	3012	311549	315996
11551-11684	3024	313957	319116
11353-11485	3024	312331	318696
11154-11286	3024	308407	314454
10962-11084	3024	313379	315482
10757-10889	3012	314029	319662
Totals	**62556**	**6538982**	**6754832**

VES SURVEY INTERNATIONAL

I Jason Wilson certify that I am employed by Vaughn Energy Services. That I did on the day(s) of 10/03/15 through 10/03/15 conduct or supervise the taking of a Rate Gyro survey from a depth of 0 feet to a depth of 12570 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Vaughn Energy Services, that I am authorized and qualified to make this report; that this survey was conducted at the request of Concho for the Mastiff Federal Well # 3H API # 30-025-42064 in Lea County / Parish New Mexico ; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Vaughn Energy Services

Jason Wilson
Service Technician
Vaughn Energy Services

VES SURVEY INTERNATIONAL

October 7, 2015

Concho Resources, Inc.
One Concho Center
600 W. Illinois Avenue
Midland, Texas 79701

Attn: Kanicia Castillo

RE: **Mastiff Federal 3H**

Please find enclosed a copy of the survey from 0' to 12,570' ran on the above referenced well.

Sincerely,

Keith Havelka
Operations

STATE OF TEXAS §
§
COUNTY OF NUECES §

This instrument was acknowledged before me on the 7 day of October, A.D., 2015, by Keith Havelka.

Jennifer Ann Byerly
Notary Public, State of Texas

JENNIFER ANN BYERLY
Notary Public, State of Texas
My Commission Expires
August 16, 2017

VES Survey International
P.O. Box 261021, Corpus Christi, Texas 78426
T (361) 767-0602 F (361) 767-0612
www.vessurvey.com

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	1.61	150.62	1899.63	-25.61	-10.04	-25.61	27.50	201.41	0.04
2000.00	1.09	134.39	1999.60	-27.49	-8.67	-27.49	28.83	197.50	0.63
2100.00	1.20	157.20	2099.58	-29.12	-7.58	-29.12	30.10	194.59	0.46
2200.00	1.01	132.46	2199.56	-30.68	-6.53	-30.68	31.37	192.01	0.51
2300.00	1.17	138.84	2299.55	-32.05	-5.20	-32.05	32.47	189.22	0.20
2400.00	0.94	150.75	2399.53	-33.53	-4.13	-33.53	33.78	187.02	0.32
2500.00	0.21	103.99	2499.52	-34.29	-3.55	-34.29	34.47	185.92	0.81
2600.00	0.29	57.94	2599.52	-34.20	-3.16	-34.20	34.34	185.28	0.21
2700.00	0.33	47.34	2699.52	-33.87	-2.73	-33.87	33.98	184.61	0.07
2800.00	0.70	47.72	2799.52	-33.26	-2.06	-33.26	33.32	183.55	0.37
2900.00	0.98	48.60	2899.51	-32.28	-0.97	-32.28	32.29	181.72	0.28
3000.00	1.03	34.82	2999.49	-30.97	0.19	-30.97	30.97	179.65	0.25
3100.00	1.29	59.19	3099.47	-29.66	1.66	-29.66	29.71	176.79	0.55
3200.00	1.40	64.68	3199.44	-28.57	3.73	-28.57	28.81	172.56	0.17
3300.00	1.36	46.99	3299.41	-27.24	5.70	-27.24	27.62	168.18	0.43
3400.00	1.47	48.87	3399.38	-25.58	7.53	-25.58	26.67	163.59	0.11
3500.00	1.31	30.90	3499.35	-23.76	9.08	-23.76	25.44	159.08	0.46
3600.00	1.36	41.00	3599.33	-21.88	10.45	-21.88	24.25	154.47	0.24
3700.00	1.41	18.47	3699.30	-19.82	11.62	-19.82	22.97	149.63	0.54
3800.00	1.06	50.50	3799.28	-18.07	12.72	-18.07	22.10	144.86	0.76
3900.00	1.03	12.48	3899.26	-16.60	13.63	-16.60	21.48	140.63	0.68
4000.00	1.56	35.05	3999.24	-14.61	14.60	-14.61	20.66	135.01	0.73
4100.00	1.26	32.95	4099.21	-12.57	15.98	-12.57	20.33	128.18	0.30
4200.00	1.41	30.37	4199.18	-10.58	17.20	-10.58	20.20	121.60	0.16
4300.00	1.27	29.94	4299.15	-8.57	18.38	-8.57	20.28	114.99	0.14
4400.00	1.42	60.13	4399.13	-6.99	20.00	-6.99	21.19	109.27	0.71
4500.00	1.55	88.91	4499.09	-6.35	22.43	-6.35	23.31	105.81	0.75
4600.00	1.50	108.04	4599.06	-6.73	25.03	-6.73	25.92	105.05	0.51
4700.00	1.54	112.70	4699.02	-7.65	27.51	-7.65	28.56	105.54	0.13
4800.00	1.87	108.96	4798.98	-8.70	30.29	-8.70	31.52	106.02	0.35
4900.00	1.77	100.20	4898.93	-9.50	33.35	-9.50	34.68	105.90	0.29
5000.00	1.35	107.47	4998.89	-10.13	35.99	-10.13	37.39	105.72	0.46
5100.00	1.48	117.51	5098.86	-11.08	38.26	-11.08	39.83	106.15	0.28
5200.00	1.43	121.49	5198.83	-12.33	40.47	-12.33	42.30	106.94	0.11
5300.00	1.63	107.77	5298.79	-13.41	42.89	-13.41	44.94	107.37	0.41
5400.00	1.05	110.95	5398.77	-14.18	45.10	-14.18	47.27	107.45	0.58
5500.00	1.10	123.49	5498.75	-15.03	46.75	-15.03	49.11	107.82	0.24
5600.00	1.26	102.60	5598.73	-15.80	48.62	-15.80	51.12	108.00	0.46
5700.00	1.05	110.75	5698.71	-16.36	50.55	-16.36	53.13	107.94	0.27

VES Survey Date: 10/3/2015

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
9700.00	0.78	293.85	9698.19	-62.38	78.16	-62.38	100.00	128.59	0.91
9800.00	0.77	299.00	9798.18	-61.78	76.95	-61.78	98.68	128.76	0.07
9900.00	1.04	265.18	9898.17	-61.53	75.46	-61.53	97.36	129.19	0.59
10000.00	0.27	252.86	9998.16	-61.68	74.32	-61.68	96.58	129.69	0.78
10100.00	0.49	254.83	10098.16	-61.86	73.68	-61.86	96.20	130.02	0.22
10200.00	0.88	243.83	10198.15	-62.31	72.58	-62.31	95.65	130.65	0.41
10300.00	1.60	256.71	10298.13	-62.97	70.52	-62.97	94.55	131.76	0.77
10400.00	1.53	237.97	10398.09	-64.00	68.03	-64.00	93.40	133.25	0.52
10500.00	0.93	228.17	10498.07	-65.25	66.29	-65.25	93.02	134.55	0.64
10600.00	0.80	221.12	10598.05	-66.31	65.23	-66.31	93.02	135.47	0.17
10700.00	0.64	218.05	10698.05	-67.28	64.43	-67.28	93.15	136.24	0.16
10800.00	0.23	219.69	10798.04	-67.87	63.95	-67.87	93.26	136.70	0.41
10900.00	0.54	210.96	10898.04	-68.43	63.59	-68.43	93.41	137.10	0.31
11000.00	1.14	208.07	10998.03	-69.71	62.88	-69.71	93.88	137.95	0.60
11100.00	2.09	212.15	11097.99	-72.13	61.44	-72.13	94.75	139.57	0.96
11200.00	2.00	219.59	11197.93	-75.02	59.36	-75.02	95.66	141.65	0.28
11300.00	1.73	224.28	11297.87	-77.45	57.19	-77.45	96.27	143.56	0.31
11400.00	2.09	222.54	11397.82	-79.87	54.90	-79.87	96.92	145.50	0.36
11500.00	1.10	224.68	11497.78	-81.89	53.00	-81.89	97.55	147.09	0.99
11600.00	1.04	240.83	11597.76	-83.02	51.53	-83.02	97.71	148.17	0.30
11700.00	1.64	233.57	11697.73	-84.31	49.58	-84.31	97.81	149.54	0.62
11800.00	1.76	236.24	11797.69	-86.02	47.15	-86.02	98.09	151.27	0.14
11900.00	1.07	231.41	11897.66	-87.45	45.14	-87.45	98.42	152.70	0.70
12000.00	1.11	212.14	11997.64	-88.86	43.89	-88.86	99.11	153.71	0.37
12100.00	1.33	187.51	12097.62	-90.83	43.23	-90.83	100.59	154.55	0.56
12200.00	1.05	201.60	12197.60	-92.84	42.74	-92.84	102.20	155.28	0.40
12300.00	0.80	205.53	12297.58	-94.32	42.10	-94.32	103.29	155.95	0.26
12400.00	0.74	211.41	12397.57	-95.50	41.46	-95.50	104.11	156.53	0.10
12500.00	0.82	241.28	12497.56	-96.40	40.49	-96.40	104.56	157.21	0.41
12570.00	1.13	259.07	12567.55	-96.77	39.38	-96.77	104.48	157.86	0.61

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