

Results of Directional Survey

DD

API number:	30-025-40468		
OGRID:		Operator:	CHEVRON U S A INC
		Property:	CENTRAL VACUUM UNIT # 284

surface	ULSTR:	M	31	T	17S	R	35E
				1139	FSL	631	FWL

BH Loc	ULSTR:	I	36	T	17S	R	34E
5261	MD	5037.2	TVD	1342	FSL	77	FEL

Top Perf/OH	ULSTR:	M	31	T	17S	R	35E
4823	MD	4706.5	TVD	1255	FSL	196	FWL

Bot Perf/OH	ULSTR:	M	31	T	17S	R	35E
5141	MD	4949.1	TVD	1317	FSL	0	FWL

	MD	N/S	E/W	VD
	4796	110.77	-419.07	4685.12
TOP PERFS/OH	4823	115.65	-434.81	4706.51
	4841	118.90	-445.31	4720.77
	5112	172.17	-611.99	4927.63
BOT PERFS/OH	5141	178.05	-630.57	4949.10
	5157	181.30	-640.82	4960.95

NEXT TO LAST	5202	190.57	-669.88	4994.03
LAST READING	5261	202.95	-708.16	5037.19
TD	5261	202.95	-708.16	5037.19

Surface Location	1139	FS	631	FW
Projected BHL	1342	FS	77	FE
Location of				
Top Perfs/OH	1255	FS	196	FW
Bottom Perfs/OH	1317	FS	0	FE

SUMMARY of Subsurface Locations

Surface Location	M-31-17S-35E	1139	FS	631	FW	Vert. Depth
Top Perfs/OH	M-31-17S-35E	1255	FS	196	FW	4706.51
Bottom Perfs/OH	M-31-17S-35E	1317	FS	0	FW	4949.10
Projected TD	I-36-17S-34E	1342	FS	77	FE	5037.19

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CHEVRON

Vacuum Grayburg San Andres
Lea County, NM
Central Vacuum Unit #284
VH - Job #32K08121006

SUR: M-31-17s-35e, 1139/S & 631/W
BHL: I-36-17s-34e, 1342/S & 77/E
API # 30-025-40468

30-025-40468
540C 1139 S 631 W
M-31-17s-35E
Survey: Gyro

SDI Standard Survey Report

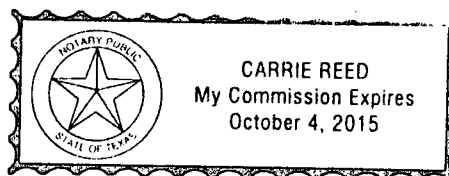
This survey is correct to the best of my knowledge and is supported by actual field data.

[Signature]

Notarized this date 8th of October, 2012.

[Signature]

Notary Signature
County of Midland
State of Texas



Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	CHEVRON	Local Co-ordinate Reference:	Well Central Vacuum Unit #284
Project:	Vacuum Grayburg San Andres	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Site:	Lea County, NM	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Well:	Central Vacuum Unit #284	North Reference:	True
Wellbore:	VH - Job #32K08121006	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K08121006	Database:	EDM-Regulatory

Project	Vacuum Grayburg San Andres		
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	Lea County, NM		
Site Position:		Northing:	656,116.37 usft
From:	Lat/Long	Easting:	755,139.93 usft
Position Uncertainty:	0.00 usft	Slot Radius:	0"
		Latitude:	32° 48' 3.600 N
		Longitude:	103° 30' 10.800 W
		Grid Convergence:	0.45 °

Well	Central Vacuum Unit #284, Vertical		
Well Position	+N-S	0.00 usft	Northing: 651,109.50 usft
	+E-W	0.00 usft	Easting: 755,087.03 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 47' 14.064 N
		Longitude:	103° 30' 11.880 W
		Ground Level:	0.00 usft

Wellbore	VH - Job #32K08121006				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	08/14/12	7.45	60.69	48,872

Design	VH - Job #32K08121006			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD)	+N-S	+E-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.00	0.00	0.00	150.15

Survey Program	Date	10/08/12			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
136.63	3,166.00	Gyro (VH - Job #32K08121006)	Keeper	Keeper Gyro	

Survey								
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
136.63	0.46	22.40	136.63	0.51	0.21	22.40	0.55	
230.84	0.91	62.04	230.83	1.21	1.01	40.02	1.58	
324.71	1.11	91.71	324.69	1.53	2.58	59.34	3.00	
418.36	1.05	78.67	418.32	1.67	4.33	68.89	4.64	
511.87	0.79	73.90	511.82	2.02	5.79	70.78	6.13	
603.79	0.53	82.67	603.73	2.25	6.82	71.75	7.18	
695.81	0.33	138.92	695.75	2.10	7.42	74.17	7.71	
731.39	0.59	177.29	731.33	1.84	7.49	76.18	7.71	
821.59	1.07	197.79	821.52	0.58	7.26	85.45	7.28	
911.79	1.91	203.60	911.69	-1.60	6.40	104.06	6.59	
1,001.99	2.20	199.64	1,001.83	-4.61	5.21	131.49	6.96	

Scientific Drilling International, Inc.
SDI Standard Survey Report



Company:	CHEVRON	Local Co-ordinate Reference:	Well Central Vacuum Unit #284
Project:	Vacuum Grayburg San Andres	TVD Reference:	WELL @ 0.00usft (Original Well Elev)
Site:	Lea County, NM	MD Reference:	WELL @ 0.00usft (Original Well Elev)
Well:	Central Vacuum Unit #284	North Reference:	True
Wellbore:	VH - Job #32K08121006	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K08121006	Database:	EDM-Regulatory

Survey								
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)	
1,092.19	2.73	185.11	1,091.95	-8.38	4.44	152.09	9.48	
1,182.39	3.36	185.93	1,182.02	-13.15	3.98	163.18	13.74	
1,272.59	3.66	190.64	1,272.05	-18.61	3.17	170.33	18.88	
1,362.79	3.79	193.37	1,362.06	-24.34	1.95	175.42	24.42	
1,452.99	3.16	194.49	1,452.09	-29.65	0.64	178.77	29.65	
1,543.19	2.38	194.84	1,542.19	-33.86	-0.46	180.78	33.87	
1,633.39	1.65	202.36	1,632.33	-36.87	-1.44	182.23	36.90	
1,723.59	1.14	207.61	1,722.51	-38.87	-2.35	183.46	38.94	
1,813.79	1.15	216.78	1,812.69	-40.39	-3.30	184.68	40.53	
1,903.99	1.11	210.47	1,902.87	-41.87	-4.29	185.85	42.09	
1,994.19	1.03	189.20	1,993.05	-43.42	-4.86	186.39	43.69	
2,084.39	1.42	160.59	2,083.23	-45.28	-4.62	185.83	45.51	
2,174.59	1.76	144.98	2,173.40	-47.46	-3.45	184.16	47.59	
2,264.79	1.57	133.08	2,263.56	-49.44	-1.76	182.03	49.47	
2,354.99	1.66	112.22	2,353.73	-50.78	0.36	179.60	50.78	
2,445.19	1.88	105.76	2,443.88	-51.68	2.99	176.69	51.76	
2,535.39	2.05	91.31	2,534.03	-52.12	6.03	173.40	52.46	
2,625.59	2.86	78.31	2,624.15	-51.70	9.84	169.22	52.63	
2,715.79	2.91	72.52	2,714.23	-50.55	14.23	164.28	52.52	
2,805.99	2.71	69.71	2,804.33	-49.13	18.41	159.45	52.46	
2,896.19	1.99	71.33	2,894.45	-47.88	21.90	155.43	52.65	
2,986.39	1.27	75.53	2,984.61	-47.13	24.35	152.68	53.05	
3,076.62	0.85	104.46	3,074.83	-47.05	25.97	151.11	53.74	
3,166.00	0.99	116.63	3,164.20	-47.56	27.30	150.15	54.84	

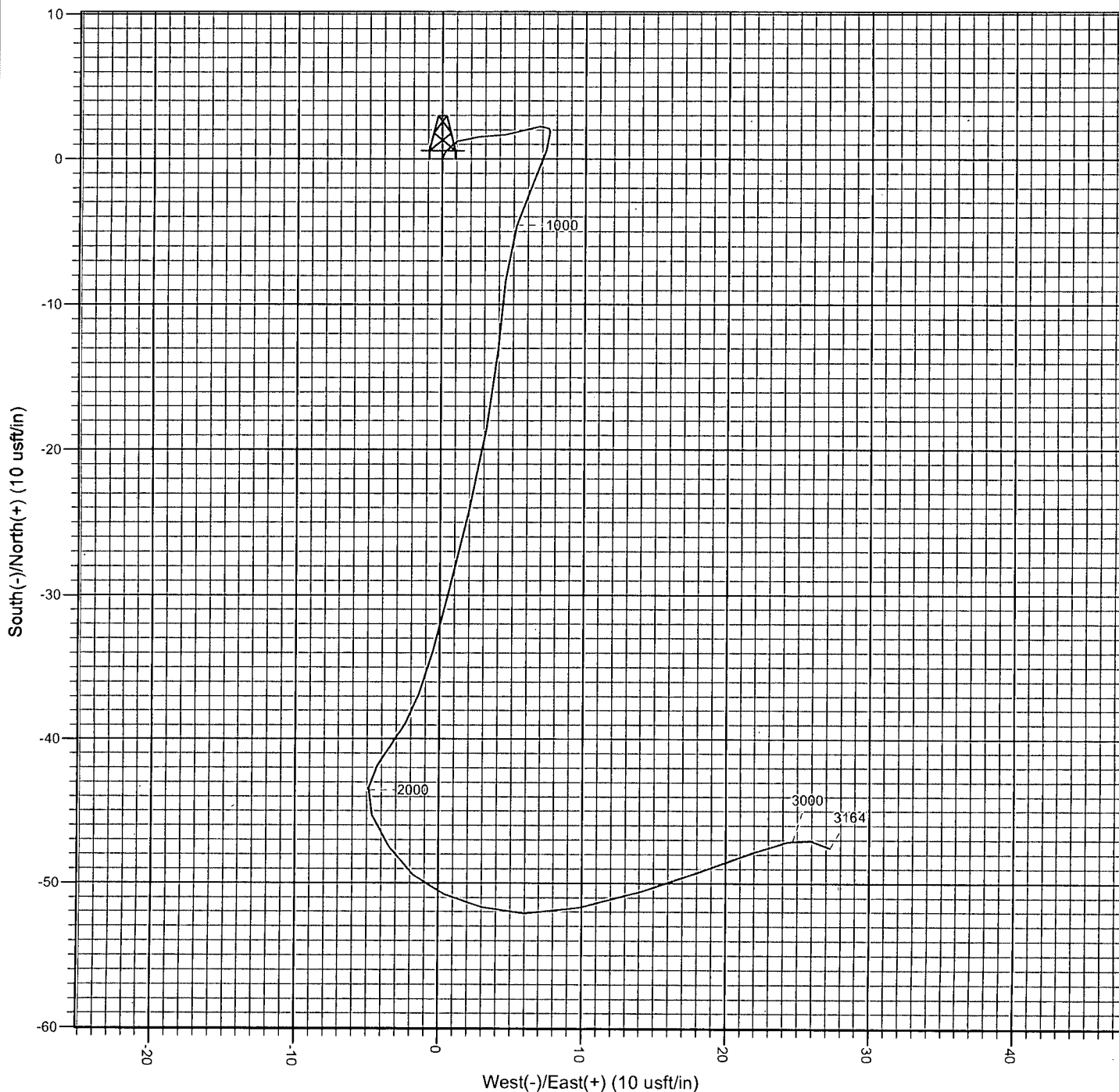


Scientific Drilling

Project: Vacuum Grayburg San Andres
Lea County, NM
Well: Central Vacuum Unit #284
Wellbore: VH - Job #32K08121006
Design: VH - Job #32K08121006

WELL DETAILS: Central Vacuum Unit #284
WELL @ 0.00usft (Original Well Elev)
Ground Level: 0.00

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	651109.50	755087.03	32° 47' 14.064 N	103° 30' 11.880 W	



PROJECT DETAILS: Vacuum Grayburg San Andres	SITE DETAILS: Lea County, NM
Geodetic System: US State Plane 1927 (Exact solution)	Site Centre Latitude: 32° 48' 3.600 N
Datum: NAD 1927 (NADCON CONUS)	Longitude: 103° 30' 10.800 W
Ellipsoid: Clarke 1866	Positional Uncertainty: 0.00
Zone: New Mexico East 3001	Convergence: 0.45
System Datum: Mean Sea Level	Local North: True

SUR: M-31-17s-35e, 1139/S & 631/W
 BHL: I-36-17s-34e, 1342/S & 77/E
 API # 30-025-40468

MD	INC	AZI	TVD	VSEC	NS	EW	DL/100'	BLD/100'	TURN
0	0	0	0	0	0	0	0	0	0
136.63	0.46	22.4	136.63	-0.06	0.51	0.21	0.34	0.34	0
230.84	0.91	62.04	230.83	-0.64	1.21	1.01	0.67	0.48	42.08
324.71	1.11	91.71	324.69	-2.06	1.53	2.58	0.59	0.21	31.61
418.36	1.05	78.67	418.32	-3.7	1.67	4.33	0.27	-0.06	-13.92
511.87	0.79	73.9	511.82	-5	2.02	5.79	0.29	-0.28	-5.1
603.79	0.53	82.67	603.73	-5.93	2.25	6.82	0.3	-0.28	9.54
695.81	0.33	138.92	695.75	-6.54	2.1	7.42	0.48	-0.22	61.13
731.39	0.59	177.29	731.33	-6.69	1.84	7.49	1.09	0.73	107.84
821.59	1.07	197.79	821.52	-6.81	0.58	7.26	0.62	0.53	22.73
911.79	1.91	203.6	911.69	-6.59	-1.6	6.4	0.95	0.93	6.44
1001.99	2.2	199.64	1001.83	-6.29	-4.61	5.21	0.36	0.32	-4.39
1092.19	2.73	185.11	1091.95	-6.59	-8.38	4.44	0.9	0.59	-16.11
1182.39	3.36	185.93	1182.02	-7.46	-13.15	3.98	0.7	0.7	0.91
1272.59	3.66	190.64	1272.05	-8.2	-18.61	3.17	0.46	0.33	5.22
1362.79	3.79	193.37	1362.06	-8.62	-24.34	1.95	0.24	0.14	3.03
1452.99	3.16	194.49	1452.09	-8.83	-29.65	0.64	0.7	-0.7	1.24
1543.19	2.38	194.84	1542.19	-8.94	-33.86	-0.46	0.86	-0.86	0.39
1633.39	1.65	202.36	1632.33	-8.84	-36.87	-1.44	0.86	-0.81	8.34
1723.59	1.14	207.61	1722.51	-8.51	-38.87	-2.35	0.58	-0.57	5.82
1813.79	1.15	216.78	1812.69	-8.01	-40.39	-3.3	0.2	0.01	10.17
1903.99	1.11	210.47	1902.87	-7.48	-41.87	-4.29	0.14	-0.04	-7
1994.19	1.03	189.2	1993.05	-7.36	-43.42	-4.86	0.45	-0.09	-23.58
2084.39	1.42	160.59	2083.23	-8.1	-45.28	-4.62	0.79	0.43	-31.72
2174.59	1.76	144.98	2173.4	-9.83	-47.46	-3.45	0.61	0.38	-17.31
2264.79	1.57	133.08	2263.56	-12.01	-49.44	-1.76	0.44	-0.21	-13.19
2354.99	1.66	112.22	2353.73	-14.41	-50.78	0.36	0.66	0.1	-23.13
2445.19	1.88	105.76	2443.88	-17.19	-51.68	2.99	0.33	0.24	-7.16
2535.39	2.05	91.31	2534.03	-20.23	-52.12	6.03	0.58	0.19	-16.02
2625.59	2.86	78.31	2624.15	-23.78	-51.7	9.84	1.08	0.9	-14.41
2715.79	2.91	72.52	2714.23	-27.68	-50.55	14.23	0.33	0.06	-6.42
2805.99	2.71	69.71	2804.33	-31.3	-49.13	18.41	0.27	-0.22	-3.12
2896.19	1.99	71.33	2894.45	-34.31	-47.88	21.9	0.8	-0.8	1.8
2986.39	1.27	75.53	2984.61	-36.45	-47.13	24.35	0.81	-0.8	4.66
3076.62	0.85	104.46	3074.83	-37.98	-47.05	25.97	0.74	-0.47	32.06
3166	0.99	116.63	3164.2	-39.41	-47.56	27.3	0.27	0.16	13.62
3262	0.74	127.12	3260.19	-40.8	-48.31	28.53	0.31	-0.26	10.93
3307	0.57	99.99	3305.18	-41.29	-48.52	28.99	0.78	-0.38	-60.29
3352	1.35	301.22	3350.18	-41	-48.29	28.75	4.21	1.73	-352.82
3397	2.58	306.21	3395.15	-39.54	-47.41	27.48	2.76	2.73	11.09
3442	3.77	300.87	3440.08	-37.16	-46.06	25.39	2.72	2.64	-11.87
3488	4.58	288.88	3485.96	-33.86	-44.69	22.36	2.58	1.76	-26.07
3533	5.75	288	3530.78	-29.82	-43.41	18.51	2.61	2.6	-1.96
3578	6.6	285.18	3575.52	-24.98	-42.03	13.87	2.01	1.89	-6.27
3623	7.82	286.89	3620.16	-19.33	-40.47	8.45	2.75	2.71	3.8
3668	8.25	287.69	3664.72	-13.04	-38.6	2.44	0.99	0.96	1.78

3713	9.3	287.6	3709.19	-6.18	-36.52	-4.1	2.33	2.33	-0.2
3758	10.28	288.76	3753.53	1.47	-34.13	-11.37	2.22	2.18	2.58
3804	10.99	288.95	3798.74	9.95	-31.38	-19.4	1.55	1.54	0.41
3849	12.29	291.02	3842.82	19	-28.27	-27.93	3.03	2.89	4.6
3894	13.98	290.5	3886.64	29.19	-24.65	-37.49	3.76	3.76	-1.16
3939	15.05	290.01	3930.2	40.44	-20.75	-48.07	2.39	2.38	-1.09
3984	16.28	290.9	3973.53	52.56	-16.5	-59.45	2.78	2.73	1.98
4029	17.72	291.87	4016.56	65.66	-11.7	-71.7	3.26	3.2	2.16
4074	19.04	292.33	4059.27	79.77	-6.36	-84.85	2.95	2.93	1.02
4119	20.66	291.73	4101.59	94.96	-0.63	-99.01	3.63	3.6	-1.33
4164	22.37	290.05	4143.45	111.41	5.25	-114.43	4.04	3.8	-3.73
4210	23.85	287.96	4185.76	129.44	11.12	-131.5	3.68	3.22	-4.54
4255	25.61	288.44	4226.63	148.25	17	-149.39	3.94	3.91	1.07
4300	26.61	289.69	4267.04	168.02	23.47	-168.1	2.54	2.22	2.78
4345	27.74	289.59	4307.07	188.54	30.38	-187.46	2.51	2.51	-0.22
4390	29.45	290.07	4346.58	210.03	37.69	-207.72	3.83	3.8	1.07
4435	30.32	289.69	4385.6	232.4	45.31	-228.8	1.98	1.93	-0.84
4480	31.47	289.19	4424.21	255.47	53	-250.59	2.62	2.56	-1.11
4525	33.14	289.62	4462.25	279.47	60.99	-273.27	3.75	3.71	0.96
4571	34.33	290	4500.5	304.96	69.65	-297.31	2.63	2.59	0.83
4616	33.94	289.5	4537.75	330.16	78.18	-321.07	1.07	-0.87	-1.11
4661	33.71	288.96	4575.13	355.18	86.43	-344.72	0.84	-0.51	-1.2
4706	34.84	288.69	4612.32	380.49	94.61	-368.71	2.53	2.51	-0.6
4751	35.97	287.86	4648.99	406.54	102.78	-393.47	2.73	2.51	-1.84
4796	37.21	286.8	4685.12	433.36	110.77	-419.07	3.09	2.76	-2.36
4841	38.04	287.64	4720.77	460.82	118.9	-445.31	2.17	1.84	1.87
4886	38.78	287.95	4756.03	488.77	127.45	-471.93	1.7	1.64	0.69
4932	39.76	287.62	4791.64	517.87	136.34	-499.66	2.18	2.13	-0.72
4977	40.36	287.58	4826.08	546.82	145.1	-527.26	1.33	1.33	-0.09
5022	40.79	287.64	4860.26	576.08	153.95	-555.16	0.96	0.96	0.13
5067	41.63	287.88	4894.11	605.71	163	-583.39	1.9	1.87	0.53
5112	42.1	287.68	4927.63	635.73	172.17	-611.99	1.09	1.04	-0.44
5157	42.36	287.48	4960.95	665.97	181.3	-640.82	0.65	0.58	-0.44
5202	42.99	287.91	4994.03	696.46	190.57	-669.88	1.54	1.4	0.96
5261	42.99	287.91	5037.19	736.67	202.95	-708.16	0	0	0