

Results of Directional Survey

API number:	30-025-41612		
OGRID:		Operator:	COG OPERATING LLC
		Property:	ORIOLE STATE # 1H

surface	ULSTR:	P	22	T 18S	R 34E
				190 FSL	660 FEL

BH Loc	ULSTR:	A	22	T 18S	R 34E
14575 MD		10000.9	TVD	338 FNL	700 FEL
				4942 FSL	

Top Perf/OH	ULSTR:	P	22	T 18S	R 34E
10377 MD		10194.5	TVD	752 FSL	665 FEL

Bot Perf/OH	ULSTR:	A	22	T 18S	R 34E
14405 MD		10011.4	TVD	508 FNL	701 FEL
				4772 FSL	

	MD	N/S	E/W	VD
	10345	531.76	-3.23	10185.68
TOP PERFS/OH	10377	562.48	-4.78	10194.50
	10377	562.48	-4.78	10194.50
	14340	4517.36	-41.25	10015.33
BOT PERFS/OH	14405	4582.24	-40.57	10011.42
	14435	4612.18	-40.25	10009.61

NEXT TO LAST	14528	4705.02	-39.69	10004.10
LAST READING	14575	4751.91	-39.52	10000.90
TD	14575	4751.91	-39.52	10000.90

Surface Location	190	FS	660	FE
Projected BHL	4942	FS	700	FE
Location of				
Top Perfs/OH	752	FS	665	FE
Bottom Perfs/OH	4772	FS	701	FE

SUMMARY of Subsurface Locations

Surface Location	P-22-18S-34E	190	FS	660	FE	Vert. Depth
Top Perfs/OH	P-22-18S-34E	752	FS	665	FE	10194.50
Bottom Perfs/OH	A-22-18S-34E	4772	FS	701	FE	10011.42
Projected TD	A-22-18S-34E	4942	FS	700	FE	10000.90

AUG 25 2014



May 27, 2014

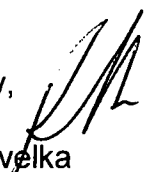
Concho Resources, Inc.
One Concho Center
600 W. Illinois Avenue
Midland, Texas 79701

Attn: Kanicia Castillo

RE: **Oriole State 1H**

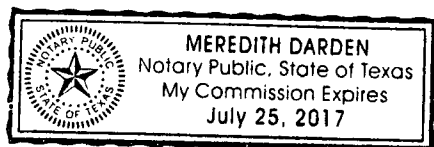
Please find enclosed a copy of the survey from 0.00' to 10,450.00' ran on the above referenced well.

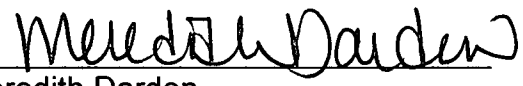
Sincerely,

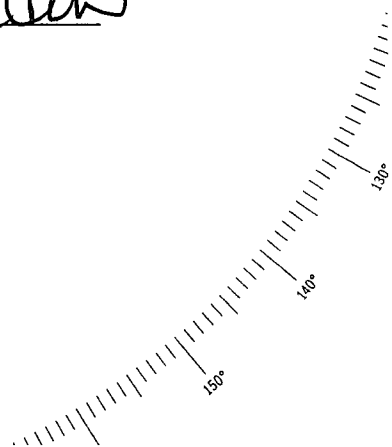

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 27th day of May, A.D., 2014, by Keith Havelka.




Meredith Darden
Notary Public, State of Texas





Company: Concho
Lease/Well: Oriole State/1H

Location: S22 T18S R34E

Rig Name: Pioneer 20

State/County: New Mexico/Lea

Latitude: 32.73, Longitude: -103.54

GRID North is 0.43 Degrees East of True North

VS-Azi: 360.00 Degrees



Depth Reference : R.K.B. = 17 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut

Minimum Curvature Method

Report Date/Time: 5/27/2014 / 13:35

VES Survey International

Midland, TX

432-563-5444

Surveyor: Andrew Askew

Oriole State 1H / API 30-025-41612

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.60	227.81	100.00	-0.35	-0.39	-0.35	0.53	227.81	0.60
200.00	0.55	232.87	199.99	-1.00	-1.16	-1.00	1.53	229.39	0.08
300.00	0.69	242.68	299.99	-1.56	-2.08	-1.56	2.60	233.08	0.18
400.00	0.92	237.61	399.98	-2.26	-3.28	-2.26	3.99	235.42	0.24
500.00	0.95	234.68	499.96	-3.17	-4.64	-3.17	5.62	235.62	0.06
600.00	0.73	246.04	599.95	-3.91	-5.90	-3.91	7.08	236.45	0.28
700.00	0.54	223.61	699.95	-4.51	-6.81	-4.51	8.17	236.46	0.31
800.00	0.72	206.11	799.94	-5.42	-7.41	-5.42	9.18	233.82	0.26
900.00	0.65	209.13	899.93	-6.47	-7.96	-6.47	10.26	230.87	0.08
1000.00	0.60	207.80	999.93	-7.43	-8.48	-7.43	11.27	228.77	0.05
1100.00	0.48	185.41	1099.92	-8.31	-8.76	-8.31	12.07	226.52	0.24
1200.00	0.54	208.37	1199.92	-9.14	-9.02	-9.14	12.84	224.64	0.21
1300.00	0.71	207.72	1299.91	-10.11	-9.54	-10.11	13.90	223.34	0.17
1400.00	0.43	208.82	1399.91	-10.99	-10.01	-10.99	14.86	222.33	0.28
1500.00	0.49	189.94	1499.91	-11.74	-10.27	-11.74	15.59	221.17	0.16
1600.00	0.51	203.53	1599.90	-12.56	-10.52	-12.56	16.38	219.93	0.12
1700.00	0.37	229.46	1699.90	-13.18	-10.94	-13.18	17.13	219.69	0.24
1800.00	0.31	194.20	1799.90	-13.65	-11.25	-13.65	17.69	219.48	0.21

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	0.39	263.86	1899.90	-13.95	-11.65	-13.95	18.18	219.86	0.40
2000.00	0.34	224.52	1999.89	-14.20	-12.19	-14.20	18.71	220.65	0.25
2100.00	0.34	246.68	2099.89	-14.52	-12.67	-14.52	19.27	221.09	0.13
2200.00	0.07	316.10	2199.89	-14.60	-12.98	-14.60	19.53	221.65	0.32
2300.00	0.05	309.62	2299.89	-14.52	-13.06	-14.52	19.53	221.97	0.02
2400.00	0.41	72.16	2399.89	-14.38	-12.76	-14.38	19.23	221.58	0.44
2500.00	0.27	34.67	2499.89	-14.08	-12.29	-14.08	18.69	221.11	0.25
2600.00	0.52	42.11	2599.89	-13.55	-11.85	-13.55	18.00	221.17	0.26
2700.00	1.35	37.48	2699.87	-12.28	-10.83	-12.28	16.38	221.41	0.83
2800.00	1.56	45.89	2799.84	-10.40	-9.14	-10.40	13.85	221.30	0.30
2900.00	2.00	50.46	2899.79	-8.34	-6.81	-8.34	10.77	219.24	0.46
3000.00	2.14	36.33	2999.73	-5.73	-4.36	-5.73	7.20	217.28	0.53
3100.00	2.21	41.11	3099.66	-2.77	-1.98	-2.77	3.41	215.63	0.20
3200.00	2.11	58.23	3199.59	-0.34	0.85	-0.34	0.92	111.82	0.65
3300.00	1.77	40.12	3299.53	1.81	3.42	1.81	3.87	62.08	0.70
3400.00	1.45	48.19	3399.49	3.84	5.36	3.84	6.60	54.39	0.39
3500.00	1.65	48.55	3499.45	5.64	7.39	5.64	9.29	52.64	0.19
3600.00	1.55	40.71	3599.41	7.62	9.35	7.62	12.06	50.82	0.24
3700.00	1.57	36.32	3699.38	9.75	11.04	9.75	14.73	48.56	0.12
3800.00	1.49	49.01	3799.34	11.70	12.83	11.70	17.37	47.64	0.35
3900.00	1.20	46.68	3899.31	13.28	14.58	13.28	19.72	47.68	0.30
4000.00	0.97	35.39	3999.30	14.69	15.83	14.69	21.60	47.15	0.31
4100.00	0.74	51.50	4099.28	15.78	16.83	15.78	23.08	46.84	0.33
4200.00	0.48	28.46	4199.28	16.55	17.54	16.55	24.12	46.66	0.36
4300.00	0.41	0.98	4299.28	17.28	17.74	17.28	24.76	45.76	0.22
4400.00	0.55	10.10	4399.27	18.11	17.83	18.11	25.41	44.56	0.16
4500.00	0.42	356.13	4499.27	18.94	17.89	18.94	26.05	43.37	0.18
4600.00	0.50	358.33	4599.27	19.74	17.85	19.74	26.62	42.13	0.09
4700.00	0.34	340.67	4699.26	20.46	17.74	20.46	27.08	40.94	0.21
4800.00	0.53	326.86	4799.26	21.12	17.39	21.12	27.36	39.47	0.22
4900.00	0.55	350.42	4899.26	21.98	17.06	21.98	27.83	37.82	0.22
5000.00	0.51	353.45	4999.25	22.90	16.93	22.90	28.48	36.48	0.05
5100.00	0.71	359.73	5099.25	23.96	16.88	23.96	29.31	35.16	0.21
5200.00	0.70	7.73	5199.24	25.18	16.96	25.18	30.36	33.95	0.10
5300.00	0.58	21.38	5299.23	26.26	17.22	26.26	31.40	33.26	0.19
5400.00	0.67	8.99	5399.23	27.30	17.50	27.30	32.43	32.66	0.16
5500.00	0.81	4.65	5499.22	28.58	17.65	28.58	33.59	31.69	0.15
5600.00	0.79	15.76	5599.21	29.96	17.89	29.96	34.89	30.85	0.16
5700.00	1.11	14.10	5699.19	31.56	18.32	31.56	36.49	30.13	0.32

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
5800.00	1.17	18.49	5799.17	33.47	18.87	33.47	38.42	29.42	0.11
5900.00	1.49	338.41	5899.15	35.64	18.72	35.64	40.26	27.71	0.96
6000.00	1.45	6.23	5999.12	38.11	18.38	38.11	42.31	25.75	0.71
6100.00	1.47	0.72	6099.08	40.65	18.53	40.65	44.68	24.51	0.14
6200.00	1.27	355.86	6199.06	43.03	18.47	43.03	46.83	23.23	0.23
6300.00	1.21	350.12	6299.03	45.18	18.21	45.18	48.71	21.95	0.14
6400.00	1.10	341.92	6399.01	47.12	17.73	47.12	50.35	20.62	0.20
6500.00	1.08	339.36	6499.00	48.91	17.10	48.91	51.82	19.27	0.05
6600.00	1.77	333.28	6598.96	51.18	16.08	51.18	53.64	17.44	0.71
6700.00	1.82	334.41	6698.91	53.99	14.70	53.99	55.95	15.23	0.06
6800.00	2.14	337.03	6798.85	57.14	13.28	57.14	58.66	13.09	0.33
6900.00	2.36	337.76	6898.78	60.76	11.77	60.76	61.89	10.97	0.23
7000.00	2.27	342.69	6998.70	64.56	10.40	64.56	65.40	9.15	0.22
7100.00	2.05	347.52	7098.62	68.21	9.43	68.21	68.86	7.87	0.29
7200.00	2.09	4.69	7198.56	71.78	9.19	71.78	72.36	7.29	0.62
7300.00	1.98	5.11	7298.50	75.32	9.49	75.32	75.91	7.18	0.11
7400.00	2.24	354.43	7398.43	78.98	9.46	78.98	79.55	6.83	0.47
7500.00	2.22	347.86	7498.35	82.82	8.86	82.82	83.29	6.11	0.26
7600.00	2.31	350.94	7598.28	86.70	8.13	86.70	87.08	5.36	0.15
7700.00	2.64	350.07	7698.18	90.95	7.42	90.95	91.26	4.66	0.33
7800.00	2.88	353.51	7798.07	95.72	6.74	95.72	95.95	4.03	0.29
7900.00	2.81	352.59	7897.94	100.64	6.14	100.64	100.83	3.49	0.09
8000.00	3.18	345.55	7997.81	105.76	5.13	105.76	105.88	2.78	0.52
8100.00	2.55	343.40	8097.68	110.57	3.81	110.57	110.64	1.97	0.64
8200.00	2.90	350.00	8197.57	115.19	2.73	115.19	115.22	1.36	0.47
8300.00	2.55	4.46	8297.46	119.91	2.47	119.91	119.93	1.18	0.77
8400.00	2.39	4.61	8397.36	124.20	2.81	124.20	124.23	1.29	0.17
8500.00	1.72	15.49	8497.30	127.73	3.37	127.73	127.77	1.51	0.77
8600.00	1.24	17.05	8597.27	130.21	4.09	130.21	130.28	1.80	0.49
8700.00	1.16	21.80	8697.24	132.19	4.79	132.19	132.27	2.07	0.13
8800.00	1.48	13.40	8797.22	134.39	5.46	134.39	134.50	2.33	0.38
8900.00	1.24	15.99	8897.19	136.68	6.06	136.68	136.82	2.54	0.26
9000.00	0.82	20.25	8997.17	138.39	6.61	138.39	138.55	2.73	0.42
9100.00	1.09	7.28	9097.16	140.01	6.97	140.01	140.18	2.85	0.35
9200.00	1.60	359.29	9197.13	142.35	7.08	142.35	142.53	2.85	0.54
9300.00	0.86	327.69	9297.11	144.38	6.66	144.38	144.53	2.64	0.98
9400.00	0.35	287.25	9397.10	145.10	5.97	145.10	145.22	2.35	0.63
9500.00	1.55	256.69	9497.09	144.88	4.36	144.88	144.95	1.72	1.26
9600.00	2.49	265.91	9597.02	144.42	0.88	144.42	144.42	0.35	0.99



State of New Mexico
County of Lea

I, Michael K. Baber, certify that: I am employed by Terra Directional Services LLC; that I did on the day(s) of 05/05/2014 through 06/16/2014 conduct or supervise the taking of a MWD survey from a depth of 9551 feet to a depth 14575 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Terra Directional Services LLC; that I am authorized and qualified to make this report; that this survey was conducted at the request of Concho Oil & Gas for the Oriole State #1H Well API 30-025-41612 in Lea County, New Mexico; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by Terra Directional Services LLC.

A handwritten signature in black ink, appearing to read "Michael K. Baber", written over a horizontal line.

Michael K. Baber
MWD Operations Manager

State of Texas
County of Montgomery

Before me, a notary public, on this day personally appeared Michael K. Baber, known to me to be the person whose name is subscribed to the foregoing document and, being by me first duly sworn, declared that the statements therein contained are true and correct.

A handwritten signature in black ink, written over a horizontal line.
Notary Public's Signature



Customer Name: COG Operating, LLC
 Well Name: Oriole State 1H
 API Number: 30-025-41612
 County / Parish: Lea County, New Mexico

M.W.D. Operator: M. Sakas
 Directional Driller: C. Owens
 Total Magnetic Correction: 6.86
 Job #: NM-435

Vertical Section: 359.48

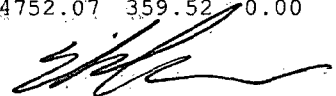
Tie In Survey(s) Provided By:

VES - GYRO

	Meas. Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle	DLS
Tie - In										
0	9500.00	1.55	256.69	9497.09	144.88	144.88	4.36	0.00	0.00	0.00
1	9551.00	1.80	250.30	9548.07	144.42	144.45	2.93	144.48	1.16	0.61
2	9615.00	2.80	31.10	9612.04	145.42	145.45	2.80	145.48	1.10	6.79
3	9646.00	7.70	39.70	9642.91	147.65	147.70	4.51	147.77	1.75	15.96
4	9678.00	11.00	34.60	9674.48	151.79	151.86	7.62	152.05	2.87	10.62
5	9710.00	14.60	21.10	9705.68	158.04	158.14	10.81	158.51	3.91	14.55
6	9741.00	18.10	12.50	9735.43	166.36	166.49	13.26	167.02	4.55	13.70
7	9773.00	20.30	7.40	9765.65	176.71	176.85	15.05	177.49	4.86	8.64
8	9804.00	20.30	359.80	9794.73	187.41	187.56	15.72	188.22	4.79	8.50
9	9836.00	21.30	0.00	9824.64	198.78	198.93	15.70	199.55	4.51	3.13
10	9868.00	23.70	359.10	9854.21	211.02	211.17	15.60	211.75	4.23	7.58
11	9900.00	25.80	358.60	9883.26	224.42	224.56	15.33	225.09	3.91	6.59
12	9932.00	27.00	358.10	9911.93	238.64	238.79	14.92	239.25	3.57	3.81
13	9964.00	28.10	355.60	9940.30	253.42	253.56	14.10	253.95	3.18	4.99
14	9995.00	30.20	354.40	9967.37	268.48	268.60	12.78	268.91	2.72	7.03
15	10027.00	33.80	353.90	9994.50	285.36	285.47	11.05	285.68	2.22	11.28
16	10059.00	36.60	353.90	10020.65	303.71	303.81	9.09	303.94	1.71	8.75
17	10091.00	40.30	354.20	10045.71	323.52	323.60	7.03	323.67	1.24	11.58
18	10122.00	44.80	355.30	10068.54	344.41	344.47	5.12	344.50	0.85	14.71
19	10154.00	49.40	356.10	10090.32	367.79	367.83	3.37	367.85	0.52	14.49
20	10186.00	52.50	357.40	10110.47	392.61	392.64	1.96	392.65	0.29	10.19
21	10219.00	55.80	358.40	10129.80	419.34	419.37	0.99	419.37	0.14	10.30
22	10250.00	59.60	358.40	10146.36	445.54	445.56	0.26	445.56	0.03	12.26
23	10282.00	63.30	357.90	10161.65	473.63	473.65	-0.65	473.65	359.92	11.64
24	10313.00	67.50	357.50	10174.55	501.80	501.80	-1.79	501.81	359.80	13.60
25	10345.00	71.80	357.00	10185.68	531.77	531.76	-3.23	531.77	359.65	13.52
26	10377.00	76.20	357.20	10194.50	562.50	562.48	-4.78	562.50	359.51	13.76
27	10409.00	79.40	357.40	10201.26	593.75	593.72	-6.25	593.75	359.40	10.02
28	10441.00	82.00	357.70	10206.43	625.31	625.26	-7.60	625.31	359.30	8.18
29	10459.00	83.70	358.10	10208.67	643.16	643.11	-8.26	643.16	359.26	9.70
30	10503.00	89.80	358.90	10211.16	687.06	687.00	-9.41	687.07	359.22	13.98
31	10535.00	91.60	359.30	10210.77	719.06	719.00	-9.91	719.06	359.21	5.76
32	10630.00	92.50	358.60	10207.37	813.99	813.92	-11.65	814.00	359.18	1.20
33	10726.00	92.90	358.60	10202.85	909.87	909.78	-13.99	909.89	359.12	0.42
34	10821.00	92.90	358.10	10198.05	1004.73	1004.62	-16.72	1004.76	359.05	0.53
35	10917.00	93.20	357.50	10192.94	1100.55	1100.41	-20.40	1100.60	358.94	0.70
36	11012.00	93.90	357.00	10187.06	1195.30	1195.12	-24.95	1195.38	358.80	0.90
37	11107.00	93.90	358.80	10180.59	1290.04	1289.83	-28.43	1290.15	358.74	1.89
38	11202.00	94.40	359.70	10173.72	1384.79	1384.58	-29.67	1384.89	358.77	1.08
39	11297.00	95.30	0.20	10165.69	1479.44	1479.23	-29.75	1479.53	358.85	1.08
40	11392.00	92.30	0.70	10159.39	1574.21	1574.01	-29.00	1574.28	358.94	3.20
41	11488.00	90.00	0.70	10157.46	1670.16	1669.98	-27.83	1670.21	359.05	2.40
42	11583.00	90.90	0.00	10156.72	1765.15	1764.97	-27.25	1765.18	359.12	1.20
43	11678.00	92.90	359.70	10153.57	1860.09	1859.91	-27.50	1860.12	359.15	2.13
44	11773.00	93.50	359.30	10148.27	1954.94	1954.76	-28.33	1954.97	359.17	0.76



45	11868.00	93.70	358.90	10142.30	2049.75	2049.56	-29.82	2049.78	359.17	0.47
46	11963.00	94.70	358.80	10135.34	2144.49	2144.29	-31.72	2144.52	359.15	1.06
47	12058.00	91.60	359.10	10130.12	2239.33	2239.12	-33.46	2239.37	359.14	3.28
48	12153.00	91.50	359.10	10127.55	2334.29	2334.07	-34.95	2334.33	359.14	0.11
49	12248.00	92.20	358.80	10124.49	2429.24	2429.00	-36.69	2429.28	359.13	0.80
50	12343.00	93.20	358.80	10120.01	2524.12	2523.88	-38.67	2524.17	359.12	1.05
51	12438.00	93.40	358.40	10114.54	2618.95	2618.69	-40.99	2619.01	359.10	0.47
52	12533.00	94.40	358.40	10108.08	2713.72	2713.43	-43.64	2713.78	359.08	1.05
53	12628.00	93.40	358.60	10101.62	2808.48	2808.18	-46.12	2808.56	359.06	1.07
54	12723.00	94.10	358.10	10095.41	2903.26	2902.93	-48.85	2903.35	359.04	0.90
55	12818.00	92.50	359.10	10089.94	2998.09	2997.74	-51.16	2998.18	359.02	1.99
56	12913.00	92.90	358.90	10085.46	3092.98	3092.62	-52.82	3093.08	359.02	0.47
57	13009.00	92.90	0.40	10080.61	3188.85	3188.50	-53.41	3188.94	359.04	1.56
58	13104.00	93.80	0.00	10075.05	3283.68	3283.33	-53.07	3283.76	359.07	1.04
59	13199.00	92.80	0.50	10069.59	3378.51	3378.17	-52.66	3378.58	359.11	1.18
60	13294.00	93.00	0.90	10064.78	3473.37	3473.04	-51.50	3473.43	359.15	0.47
61	13389.00	93.40	359.80	10059.48	3568.21	3567.89	-50.92	3568.26	359.18	1.23
62	13485.00	90.90	0.90	10055.88	3664.12	3663.81	-50.34	3664.16	359.21	2.84
63	13579.00	89.70	1.10	10055.38	3758.08	3757.80	-48.69	3758.11	359.26	1.29
64	13674.00	90.60	359.70	10055.13	3853.07	3852.79	-48.03	3853.09	359.29	1.75
65	13770.00	94.40	359.80	10050.95	3948.96	3948.68	-48.45	3948.98	359.30	3.96
66	13865.00	95.70	0.00	10042.59	4043.58	4043.31	-48.62	4043.60	359.31	1.38
67	13960.00	94.50	0.70	10034.14	4138.20	4137.93	-48.04	4138.21	359.33	1.46
68	14055.00	91.70	1.10	10029.00	4233.02	4232.77	-46.55	4233.03	359.37	2.98
69	14150.00	92.00	0.90	10025.94	4327.93	4327.71	-44.89	4327.94	359.41	0.38
70	14245.00	93.40	1.40	10021.46	4422.79	4422.58	-42.99	4422.79	359.44	1.56
71	14340.00	94.00	0.70	10015.33	4517.55	4517.36	-41.25	4517.55	359.48	0.97
72	14435.00	92.90	0.50	10009.61	4612.36	4612.18	-40.25	4612.36	359.50	1.18
73	14528.00	93.90	0.20	10004.10	4705.18	4705.02	-39.69	4705.18	359.52	1.12
PTB	14575.00	93.90	0.20	10000.90	4752.07	4751.91	-39.52	4752.07	359.52	0.00





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