

Results of Directional Survey

API number:	30-025-40688		
OGRID:		Operator:	COG OPERATING LLC
		Property:	QUESO STATE # 1H

surface	ULSTR:	O	36	T	23S	R	32E
				180	FSL	2260	FEL

BH Loc	ULSTR:	B	36	T	23S	R	32E
15507	MD	10912.2	TVD	332	FNL	2258	FEL
				4948	FSL		

Top Perf/OH	ULSTR:	O	36	T	23S	R	32E
11172	MD	10979.8	TVD	617	FSL	2242	FEL

Bot Perf/OH	ULSTR:	B	36	T	23S	R	32E
15323	MD	10915.6	TVD	516	FNL	2258	FEL
				4764	FSL		

	MD	N/S	E/W	VD
	11140	406.83	13.83	10971.73
TOP PERFS/OH	11172	437.46	18.30	10979.83
	11172	437.46	18.30	10979.83
	15290	4550.56	2.01	10916.12
BOT PERFS/OH	15323	4583.55	2.01	10915.57
	15384	4644.54	2.01	10914.56

NEXT TO LAST	15384	4644.54	2.01	10914.56
LAST READING	15507	4767.52	2.22	10912.20
TD	15507	4767.52	2.22	10912.20

Surface Location	180	FS	2260	FE
Projected BHL	4948	FS	2258	FE
Location of				
Top Perfs/OH	617	FS	2242	FE
Bottom Perfs/OH	4764	FS	2258	FE

SUMMARY of Subsurface Locations

Surface Location	O-36-23S-32E	180	FS	2260	FE	Vert. Depth
Top Perfs/OH	O-36-23S-32E	617	FS	2242	FE	10979.83
Bottom Perfs/OH	B-36-23S-32E	4764	FS	2258	FE	10915.57
Projected TD	B-36-23S-32E	4948	FS	2258	FE	10912.20

APR 07 2014



A GYRO TECHNOLOGIES INC. COMPANY

P.O. Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

November 14, 2013

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

HOBBS OCD

JAN 30 2014

RECEIVED

Attn: Kanicia Castillo

RE: **Queso State No. 001H**

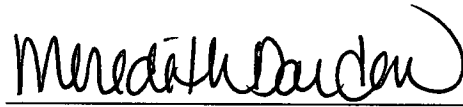
Please find enclosed a copy of the survey from 0.00' to 9830.00' ran on the above referenced well.

Sincerely,

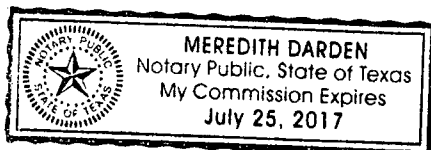

Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 14th day of November
A.D., 2013, by Keith Havelka.



Meredith Darden
Notary Public, State of Texas





Company: COG Operating, LLC (Concho)
Lease/Well: Queso State / No. 001H
Location: S36 T23S R32E
Rig Name: Precision 77
State/County: New Mexico/Lea
Latitude: 32.25, Longitude: -103.63
GRID North is 0.38 Degrees East of True North
VS-Azi: 359.70 Degrees



Depth Reference : R.K.B. = 30 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: gyro survey.ut
Minimum Curvature Method
Report Date/Time: 11/14/2013 / 09:47

Vaughn Energy Services
Midland, TX
432-563-5444

Surveyor: Andrew Askew
Queso State No. 001H / API 30-025-40688

HOBBS OCD

JAN 30 2014

RECEIVED

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	0.12	133.10	100.00	-0.07	0.08	-0.07	0.11	133.10	0.12
200.00	0.17	56.50	200.00	-0.06	0.28	-0.07	0.28	102.96	0.18
300.00	0.14	33.70	300.00	0.12	0.47	0.12	0.48	75.71	0.07
400.00	0.20	316.28	400.00	0.35	0.41	0.35	0.54	49.89	0.22
500.00	0.53	254.84	500.00	0.35	-0.15	0.36	0.39	336.76	0.46
600.00	0.52	227.15	599.99	-0.07	-0.93	-0.07	0.93	265.43	0.25
700.00	0.15	239.48	699.99	-0.45	-1.37	-0.44	1.44	251.90	0.38
800.00	0.30	251.69	799.99	-0.60	-1.73	-0.59	1.83	251.00	0.15
900.00	0.55	309.86	899.99	-0.37	-2.35	-0.35	2.37	261.12	0.47
1000.00	0.55	278.23	999.98	0.01	-3.19	0.03	3.19	270.23	0.30
1100.00	0.35	295.18	1099.98	0.21	-3.95	0.23	3.96	273.09	0.24
1200.00	0.77	320.27	1199.98	0.86	-4.66	0.88	4.74	280.45	0.47
1300.00	0.76	289.86	1299.97	1.60	-5.71	1.63	5.93	285.65	0.40
1400.00	0.59	286.14	1399.96	1.96	-6.82	2.00	7.09	286.08	0.18
1500.00	0.98	293.47	1499.95	2.45	-8.09	2.49	8.46	286.83	0.41
1600.00	0.70	279.59	1599.94	2.89	-9.49	2.94	9.92	286.95	0.34
1700.00	1.12	286.04	1699.93	3.27	-11.03	3.32	11.51	286.48	0.43
1800.00	1.23	284.29	1799.91	3.80	-13.01	3.87	13.55	286.28	0.11

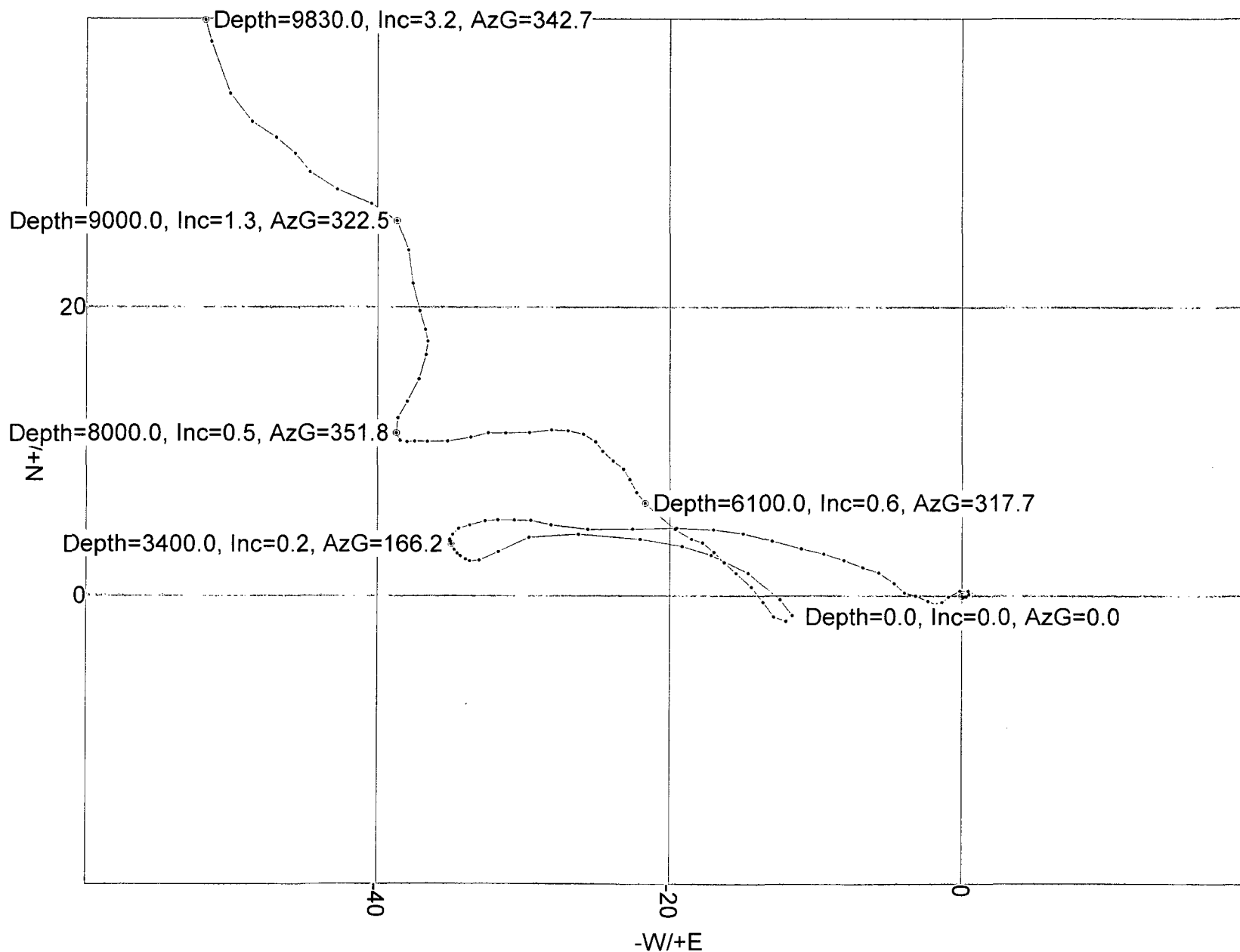
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	1.11	285.05	1899.89	4.31	-14.98	4.39	15.59	286.07	0.12
2000.00	1.24	270.89	1999.86	4.58	-16.99	4.67	17.60	285.09	0.32
2100.00	1.68	273.70	2099.83	4.69	-19.53	4.80	20.09	283.51	0.45
2200.00	1.78	264.11	2199.79	4.63	-22.54	4.75	23.01	281.60	0.30
2300.00	1.77	274.91	2299.74	4.60	-25.62	4.74	26.03	280.18	0.33
2400.00	1.16	280.53	2399.71	4.92	-28.16	5.07	28.58	279.91	0.62
2500.00	0.45	287.49	2499.70	5.22	-29.53	5.38	29.99	280.03	0.72
2600.00	0.86	262.52	2599.69	5.24	-30.64	5.40	31.09	279.71	0.49
2700.00	0.45	286.30	2699.68	5.26	-31.76	5.42	32.19	279.40	0.48
2800.00	0.60	250.51	2799.68	5.19	-32.63	5.36	33.04	279.04	0.35
2900.00	0.65	258.15	2899.67	4.90	-33.67	5.08	34.03	278.28	0.10
3000.00	0.26	239.80	2999.67	4.67	-34.42	4.85	34.73	277.73	0.41
3100.00	0.43	214.88	3099.67	4.26	-34.83	4.44	35.08	276.97	0.22
3200.00	0.05	178.10	3199.67	3.91	-35.04	4.09	35.25	276.36	0.38
3300.00	0.08	157.01	3299.67	3.79	-35.01	3.98	35.21	276.18	0.04
3400.00	0.16	166.19	3399.67	3.59	-34.95	3.78	35.13	275.87	0.08
3500.00	0.35	143.35	3499.67	3.22	-34.73	3.40	34.88	275.29	0.21
3600.00	0.03	133.19	3599.66	2.96	-34.53	3.14	34.66	274.89	0.32
3700.00	0.30	126.48	3699.66	2.78	-34.30	2.96	34.41	274.64	0.27
3800.00	0.16	117.57	3799.66	2.56	-33.97	2.74	34.06	274.31	0.14
3900.00	0.21	112.19	3899.66	2.43	-33.67	2.60	33.76	274.12	0.05
4000.00	0.56	77.18	3999.66	2.47	-33.03	2.64	33.12	274.27	0.41
4100.00	1.11	59.31	4099.65	3.07	-31.71	3.24	31.86	275.53	0.60
4200.00	1.52	68.55	4199.62	4.05	-29.65	4.21	29.92	277.78	0.46
4300.00	2.48	96.71	4299.56	4.28	-26.26	4.42	26.61	279.26	1.35
4400.00	2.40	93.10	4399.47	3.92	-22.03	4.03	22.37	280.08	0.17
4500.00	1.01	114.29	4499.43	3.44	-19.14	3.54	19.45	280.20	1.50
4600.00	1.41	102.47	4599.40	2.82	-17.14	2.91	17.37	279.33	0.47
4700.00	1.86	126.24	4699.36	1.59	-14.63	1.67	14.72	276.20	0.81
4800.00	1.41	135.51	4799.32	-0.25	-12.46	-0.18	12.46	268.86	0.53
4900.00	0.26	188.91	4899.31	-1.35	-11.63	-1.29	11.71	263.37	1.27
5000.00	0.49	246.99	4999.31	-1.75	-12.06	-1.68	12.19	261.76	0.42
5100.00	0.73	317.05	5099.31	-1.45	-12.89	-1.38	12.97	263.58	0.72
5200.00	0.73	331.98	5199.30	-0.43	-13.62	-0.35	13.62	268.21	0.19
5300.00	0.78	314.90	5299.29	0.61	-14.40	0.69	14.41	272.45	0.23
5400.00	0.86	309.83	5399.28	1.58	-15.46	1.66	15.54	275.82	0.11
5500.00	0.38	318.00	5499.27	2.30	-16.25	2.39	16.42	278.06	0.49
5600.00	0.77	315.33	5599.27	3.03	-16.95	3.12	17.22	280.13	0.39
5700.00	0.41	299.04	5699.26	3.68	-17.74	3.78	18.12	281.73	0.40

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	0.52	279.15	5799.26	3.93	-18.50	4.03	18.91	281.99	0.19
5900.00	1.08	311.58	5899.25	4.62	-19.64	4.73	20.18	283.25	0.70
6000.00	0.72	307.99	5999.24	5.64	-20.84	5.74	21.59	285.13	0.36
6100.00	0.61	317.67	6099.23	6.42	-21.70	6.53	22.63	286.47	0.16
6200.00	0.49	327.42	6199.23	7.16	-22.28	7.28	23.41	287.82	0.15
6300.00	0.67	335.47	6299.22	8.05	-22.75	8.17	24.14	289.49	0.20
6400.00	0.32	316.02	6399.22	8.79	-23.19	8.91	24.80	290.75	0.38
6500.00	0.69	307.55	6499.21	9.35	-23.86	9.48	25.63	291.41	0.37
6600.00	0.45	319.58	6599.21	10.02	-24.59	10.14	26.55	292.16	0.27
6700.00	0.49	328.05	6699.20	10.67	-25.07	10.81	27.25	293.07	0.08
6800.00	0.73	285.29	6799.20	11.20	-25.91	11.34	28.22	293.39	0.50
6900.00	0.52	277.62	6899.19	11.43	-26.97	11.57	29.29	292.97	0.22
7000.00	0.78	270.01	6999.19	11.49	-28.10	11.64	30.36	292.24	0.27
7100.00	0.96	257.09	7099.18	11.31	-29.60	11.46	31.68	290.90	0.27
7200.00	0.93	281.19	7199.16	11.28	-31.21	11.44	33.19	289.86	0.40
7300.00	0.47	249.08	7299.15	11.29	-32.39	11.46	34.30	289.21	0.59
7400.00	0.95	258.79	7399.15	10.98	-33.58	11.16	35.33	288.11	0.49
7500.00	0.90	262.50	7499.13	10.72	-35.17	10.90	36.76	286.95	0.08
7600.00	0.71	276.04	7599.12	10.68	-36.56	10.87	38.09	286.29	0.26
7700.00	0.30	258.87	7699.12	10.70	-37.43	10.89	38.93	285.95	0.44
7800.00	0.31	271.94	7799.12	10.66	-37.96	10.86	39.42	285.68	0.07
7900.00	0.23	289.97	7899.12	10.73	-38.41	10.94	39.88	285.61	0.12
8000.00	0.54	351.75	7999.12	11.27	-38.66	11.47	40.27	286.25	0.48
8100.00	0.69	15.91	8099.11	12.32	-38.57	12.52	40.49	287.72	0.30
8200.00	0.82	39.76	8199.10	13.46	-37.94	13.66	40.26	289.53	0.34
8300.00	1.21	18.43	8299.09	15.01	-37.15	15.21	40.07	292.01	0.54
8400.00	0.81	11.32	8399.07	16.71	-36.67	16.90	40.30	294.49	0.42
8500.00	0.28	355.86	8499.07	17.64	-36.55	17.83	40.59	295.76	0.54
8600.00	0.68	345.50	8599.06	18.46	-36.72	18.65	41.10	296.69	0.40
8700.00	0.88	342.00	8699.05	19.76	-37.10	19.95	42.04	298.03	0.21
8800.00	1.36	348.88	8799.03	21.65	-37.57	21.85	43.36	299.95	0.50
8900.00	1.31	356.12	8899.01	23.95	-37.88	24.15	44.81	302.31	0.18
9000.00	1.26	322.55	8998.98	25.96	-38.62	26.17	46.54	303.91	0.74
9100.00	1.35	285.94	9098.96	27.16	-40.42	27.37	48.70	303.90	0.82
9200.00	1.63	297.11	9198.92	28.13	-42.82	28.36	51.24	303.30	0.40
9300.00	0.97	311.87	9298.90	29.34	-44.72	29.58	53.49	303.27	0.74
9400.00	0.97	330.63	9398.88	30.65	-45.76	30.88	55.08	303.81	0.32
9500.00	1.10	291.59	9498.87	31.74	-47.07	31.98	56.77	303.99	0.70
9600.00	1.24	314.52	9598.85	32.85	-48.74	33.11	58.78	303.98	0.49

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	1.58	328.57	9698.82	34.79	-50.24	35.06	61.11	304.71	0.48
9800.00	2.86	346.31	9798.74	38.40	-51.55	38.67	64.28	306.68	1.43
9830.00	3.17	342.66	9828.70	39.92	-51.97	40.19	65.53	307.53	1.21



Vaughn Energy Services
Midland, TX
432-563-5444
Surveyor: Andrew Askew
Queso State No. 001H / API 30-025-40688



VES Survey Date: 11/04/2013



HOBBS OCD

JAN 30 2014

RECEIVED

Customer Name: Concho Oil & Gas

Well Name: Queso State #1H

API Number: 30-025-40688

County / Parish: Lea County, NM

Vertical Section: 359.70

M.W.D. Operator: J. Burleson

Directional Driller: S. Brandt

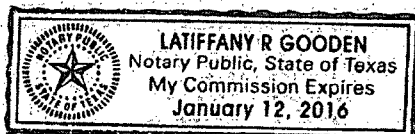
Total Magnetic Correction: 6.97

Job #: NM-336

Tie In Survey(s) Provided By:

VES

	Meas. Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle	DLS
Tie - In										
0	9800.00	2.86	346.31	9798.74	38.67	38.40	-51.55	64.28	306.68	0.00
1	9847.00	3.00	346.60	9845.68	41.01	40.74	-52.11	66.14	308.01	0.30
2	9942.00	0.40	333.60	9940.63	43.73	43.45	-52.84	68.41	309.43	2.75
3	10037.00	0.40	357.80	10035.63	44.36	44.08	-53.00	68.93	309.75	0.18
4	10130.00	0.40	26.00	10128.62	44.97	44.70	-52.87	69.23	310.21	0.21
5	10225.00	0.40	53.90	10223.62	45.46	45.19	-52.45	69.23	310.75	0.20
6	10319.00	0.70	30.90	10317.62	46.15	45.88	-51.89	69.26	311.48	0.39
7	10414.00	0.90	11.70	10412.61	47.37	47.10	-51.44	69.75	312.48	0.35
8	10445.00	1.90	18.70	10443.60	48.10	47.83	-51.23	70.09	313.03	3.27
9	10477.00	2.50	21.90	10475.58	49.24	48.98	-50.80	70.57	313.95	1.91
10	10508.00	2.70	25.80	10506.54	50.53	50.26	-50.23	71.06	315.02	0.86
11	10539.00	5.20	19.30	10537.47	52.51	52.25	-49.45	71.94	316.58	8.18
12	10571.00	8.60	14.70	10569.23	56.18	55.93	-48.36	73.94	319.15	10.76
13	10602.00	12.00	11.70	10599.73	61.58	61.33	-47.12	77.34	322.47	11.10
14	10634.00	15.60	10.00	10630.80	69.07	68.83	-45.70	82.62	326.42	11.32
15	10666.00	19.00	9.30	10661.35	78.44	78.21	-44.11	89.79	330.58	10.64
16	10698.00	22.80	11.90	10691.24	89.64	89.42	-41.99	98.79	334.85	12.22
17	10729.00	26.60	14.00	10719.40	102.24	102.04	-39.07	109.26	339.05	12.58
18	10761.00	30.60	14.40	10747.49	117.07	116.88	-35.31	122.10	343.19	12.51
19	10792.00	33.80	13.80	10773.71	133.07	132.90	-31.29	136.54	346.75	10.37
20	10824.00	37.40	13.30	10799.73	151.15	151.01	-26.93	153.39	349.89	11.29
21	10856.00	41.80	12.20	10824.38	171.02	170.90	-22.43	172.37	352.52	13.92
22	10887.00	46.30	11.00	10846.65	192.10	192.01	-18.11	192.86	354.61	14.76
23	10918.00	50.60	9.40	10867.21	214.91	214.84	-14.01	215.30	356.27	14.40
24	10950.00	54.10	8.60	10886.76	239.91	239.86	-10.06	240.07	357.60	11.12
25	10982.00	56.50	8.00	10904.97	265.92	265.89	-6.26	265.96	358.65	7.66
26	11014.00	58.70	7.70	10922.12	292.66	292.65	-2.57	292.67	359.50	6.92
27	11045.00	62.30	7.70	10937.38	319.38	319.39	1.04	319.39	0.19	11.61
28	11077.00	66.80	8.20	10951.13	347.97	348.00	5.04	348.03	0.83	14.13
29	11109.00	71.30	8.70	10962.57	377.49	377.55	9.43	377.67	1.43	14.14
30	11140.00	74.30	8.40	10971.73	406.75	406.83	13.83	407.07	1.95	9.72
31	11172.00	76.40	8.20	10979.83	437.36	437.46	18.30	437.85	2.40	6.59
32	11203.00	79.70	8.20	10986.24	467.35	467.48	22.63	468.03	2.77	10.65
33	11235.00	83.90	7.30	10990.81	498.71	498.85	26.90	499.58	3.09	13.42
34	11270.00	86.10	4.30	10993.86	533.37	533.54	30.42	534.40	3.26	10.60
35	11302.00	86.40	3.80	10995.95	565.21	565.39	32.67	566.33	3.31	1.82
36	11333.00	87.70	2.40	10997.55	596.11	596.30	34.35	597.29	3.30	6.16
37	11365.00	89.80	1.30	10998.24	628.08	628.27	35.38	629.27	3.22	7.41
38	11428.00	91.50	1.00	10997.53	691.05	691.26	36.64	692.23	3.03	2.74
39	11523.00	92.80	1.50	10993.97	785.95	786.16	38.72	787.12	2.82	1.47



40	11617.00	91.60	2.40	10990.36	879.81	880.04	41.91	881.03	2.73	1.60
41	11712.00	91.00	1.90	10988.20	974.69	974.94	45.47	976.00	2.67	0.82
42	11807.00	91.60	1.30	10986.05	1069.62	1069.88	48.13	1070.96	2.58	0.89
43	11901.00	90.50	1.30	10984.32	1163.56	1163.84	50.26	1164.93	2.47	1.17
44	11995.00	91.80	2.20	10982.44	1257.48	1257.78	53.13	1258.90	2.42	1.68
45	12090.00	90.80	1.00	10980.28	1352.40	1352.71	55.78	1353.86	2.36	1.64
46	12184.00	90.30	0.80	10979.38	1446.38	1446.69	57.26	1447.83	2.27	0.57
47	12278.00	90.70	359.40	10978.56	1540.37	1540.69	57.42	1541.76	2.13	1.55
48	12372.00	92.20	359.20	10976.18	1634.33	1634.65	56.27	1635.62	1.97	1.61
49	12466.00	91.50	0.10	10973.15	1728.28	1728.60	55.70	1729.49	1.85	1.21
50	12560.00	91.50	1.20	10970.69	1822.23	1822.56	56.77	1823.44	1.78	1.17
51	12654.00	90.90	0.30	10968.72	1916.20	1916.53	58.00	1917.40	1.73	1.15
52	12748.00	90.00	359.20	10967.98	2010.19	2010.52	57.58	2011.34	1.64	1.51
53	12842.00	89.00	357.30	10968.80	2104.15	2104.47	54.71	2105.18	1.49	2.28
54	12936.00	89.70	357.50	10969.86	2198.07	2198.36	50.45	2198.94	1.31	0.77
55	13030.00	90.70	358.00	10969.54	2292.01	2292.29	46.76	2292.77	1.17	1.19
56	13124.00	91.80	358.50	10967.49	2385.96	2386.22	43.89	2386.63	1.05	1.29
57	13218.00	90.50	357.50	10965.60	2479.90	2480.14	40.61	2480.47	0.94	1.74
58	13311.00	91.50	357.70	10963.98	2572.82	2573.05	36.72	2573.31	0.82	1.10
59	13405.00	92.00	358.20	10961.11	2666.73	2666.94	33.36	2667.15	0.72	0.75
60	13500.00	90.10	357.30	10959.37	2761.65	2761.85	29.63	2762.00	0.61	2.21
61	13595.00	90.30	357.10	10959.03	2856.56	2856.73	24.99	2856.84	0.50	0.30
62	13690.00	90.50	357.70	10958.37	2951.48	2951.63	20.68	2951.70	0.40	0.67
63	13784.00	91.70	357.50	10956.57	3045.40	3045.53	16.74	3045.58	0.31	1.29
64	13878.00	91.70	357.70	10953.78	3139.30	3139.41	12.81	3139.43	0.23	0.21
65	13972.00	91.70	358.20	10950.99	3233.21	3233.30	9.45	3233.32	0.17	0.53
66	14066.00	91.90	358.50	10948.04	3327.14	3327.22	6.74	3327.23	0.12	0.38
67	14159.00	92.20	359.40	10944.71	3420.07	3420.14	5.04	3420.15	0.08	1.02
68	14253.00	92.60	359.90	10940.77	3513.99	3514.06	4.46	3514.06	0.07	0.68
69	14346.00	93.60	0.30	10935.74	3606.85	3606.92	4.63	3606.92	0.07	1.16
70	14441.00	91.80	358.70	10931.27	3701.73	3701.80	3.80	3701.81	0.06	2.53
71	14535.00	92.20	359.20	10927.99	3795.67	3795.73	2.07	3795.73	0.03	0.68
72	14629.00	90.90	359.80	10925.45	3889.63	3889.69	1.25	3889.69	0.02	1.52
73	14722.00	91.50	359.90	10923.50	3982.61	3982.67	1.01	3982.67	0.01	0.65
74	14817.00	92.40	1.20	10920.26	4077.54	4077.61	1.92	4077.61	0.03	1.66
75	14912.00	90.20	0.30	10918.11	4172.49	4172.57	3.17	4172.57	0.04	2.50
76	15006.00	89.90	359.80	10918.03	4266.49	4266.57	3.25	4266.57	0.04	0.62
77	15100.00	90.40	359.60	10917.78	4360.49	4360.56	2.76	4360.57	0.04	0.57
78	15195.00	90.40	359.80	10917.12	4455.49	4455.56	2.26	4455.56	0.03	0.21
79	15290.00	90.80	359.90	10916.12	4550.48	4550.56	2.01	4550.56	0.03	0.43
80	15384.00	91.10	0.10	10914.56	4644.47	4644.54	2.01	4644.54	0.02	0.38
PTB	15507.00	91.10	0.10	10912.20	4767.44	4767.52	2.22	4767.52	0.03	0.00

