

Results of Directional Survey

API number:	30-025-41752		
OGRID:		Operator:	COG OPERATING LLC
		Property:	CUATRO HIJOS FEE # 4H

surface	ULSTR:	M	17	T 19S	R 35E
				190 FSL	500 FWL

BH Loc	ULSTR:	D	17	T 19S	R 35E
15268	MD	10832.6	TVD	454 FNL	458 FWL
4826 FSL					

Top Perf/OH	ULSTR:	M	17	T 19S	R 35E
11162	MD	10923.6	TVD	732 FSL	586 FWL

Bot Perf/OH	ULSTR:	D	17	T 19S	R 35E
15105	MD	10839.7	TVD	613 FSL	468 FWL
4667 FSL					

	MD	N/S	E/W	VD
	11130	512.40	79.26	10914.5
TOP PERFS/OH	11162	542.26	86.32	10923.56
	11162	542.26	86.32	10923.56
	15057	4429.26	-29.38	10841.40
BOT PERFS/OH	15105	4477.14	-32.22	10839.69
	15152	4524.03	-35.01	10838.01

NEXT TO LAST	15213	4584.83	-38.94	10835.19
LAST READING	15264	4632.67	-42.04	10832.76
TD	15268	4636.42	-42.28	10832.57

Surface Location	190	FS	500	FW
Projected BHL	4826	FS	458	FW
Location of				
Top Perfs/OH	732	FS	586	FW
Bottom Perfs/OH	4667	FS	468	FW

SUMMARY of Subsurface Locations

Surface Location	M-17-19S-35E	190	FS	500	FW	Vert. Depth
Top Perfs/OH	M-17-19S-35E	732	FS	586	FW	10923.56
Bottom Perfs/OH	D-17-19S-35E	4667	FS	468	FW	10839.69
Projected TD	D-17-19S-35E	4826	FS	458	FW	10832.57

SEP 30 2014



July 18, 2014

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

Attn: Kanicia Castillo

RE: **Cuatro Hijos Fee No. 004H**

Please find enclosed a copy of the survey from 0.00' to 9070.00' ran on the above referenced well.

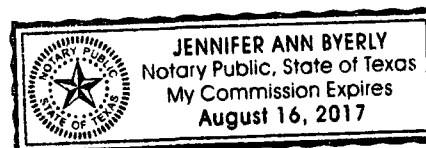
Sincerely,


Keith Havelka
Operations

STATE OF TEXAS §
 §
COUNTY OF NUECES §

This instrument was acknowledged before me on the 18 day of July, A.D., 2014, by Keith Havelka.


Jennifer Ann Byerly
Notary Public, State of Texas



Company: COG OPERATING , LLC (Concho)

Lease/Well: CUATRO HIJOS FEE /No. 004H



Rig Name: PIONEER #20

State/County: NEW MEXICO /LEA

Latitude: 32.65, Longitude: -103.49

GRID North is 0.46 Degrees East of True North

VS-Azi: 359.42 Degrees



Depth Reference : RKB= 17FT

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: cuatro hijos fee 4h.ut

Minimum Curvature Method

Report Date/Time: 7/18/2014 / 09:14

VES Survey International

(432) 563-5444

West Texas

Surveyor: Javier Estrada

Cuatro Hijos Fee No. 004H / API 30-025-41752

HOBBS OCD
SEP 25 2014
RECEIVED

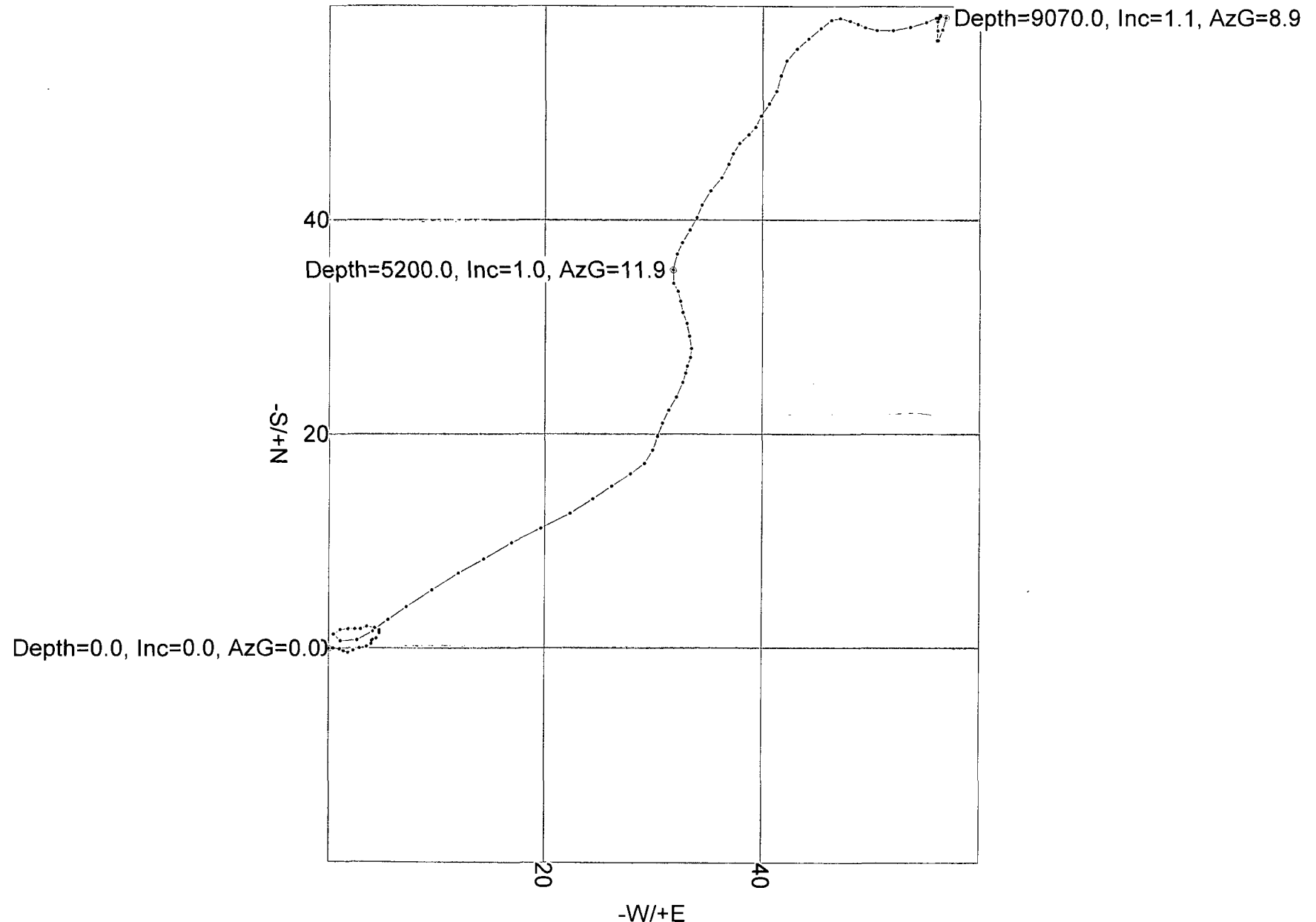
Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.48	89.05	100.00	0.01	0.41	0.00	0.41	89.05	0.48
200.00	0.23	114.26	200.00	-0.07	1.02	-0.08	1.02	93.97	0.28
300.00	0.25	123.64	300.00	-0.28	1.39	-0.29	1.41	101.30	0.04
400.00	0.26	96.28	400.00	-0.42	1.80	-0.44	1.85	103.28	0.12
500.00	0.39	50.03	499.99	-0.23	2.28	-0.25	2.30	95.79	0.28
600.00	0.37	87.47	599.99	0.00	2.87	-0.03	2.87	89.98	0.24
700.00	0.43	72.75	699.99	0.13	3.55	0.09	3.55	87.96	0.12
800.00	0.20	32.29	799.99	0.39	4.00	0.34	4.02	84.50	0.31
900.00	0.19	335.51	899.99	0.68	4.02	0.64	4.08	80.40	0.18
1000.00	0.22	106.11	999.99	0.78	4.14	0.73	4.21	79.37	0.37
1100.00	0.30	44.55	1099.99	0.91	4.50	0.87	4.60	78.53	0.28
1200.00	0.38	17.65	1199.98	1.42	4.79	1.37	5.00	73.53	0.17
1300.00	0.13	241.07	1299.98	1.67	4.79	1.62	5.07	70.74	0.48
1400.00	0.51	308.99	1399.98	1.90	4.34	1.85	4.74	66.37	0.48
1500.00	0.52	250.83	1499.98	2.03	3.56	1.99	4.10	60.31	0.50
1600.00	0.18	235.37	1599.98	1.79	3.00	1.76	3.50	59.17	0.35
1700.00	0.50	279.67	1699.97	1.78	2.45	1.75	3.03	54.01	0.39
1800.00	0.23	254.00	1799.97	1.79	1.82	1.78	2.56	45.45	0.30

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	0.62	266.98	1899.97	1.71	1.09	1.70	2.03	32.42	0.40
2000.00	0.43	195.14	1999.97	1.32	0.45	1.31	1.39	18.72	0.64
2100.00	0.93	110.68	2099.96	0.66	1.11	0.65	1.29	59.10	0.99
2200.00	1.00	65.24	2199.95	0.74	2.66	0.72	2.76	74.43	0.75
2300.00	0.96	56.43	2299.93	1.57	4.16	1.53	4.44	69.27	0.16
2400.00	1.10	49.64	2399.92	2.66	5.58	2.60	6.18	64.56	0.18
2500.00	1.27	58.45	2499.90	3.86	7.26	3.78	8.22	62.02	0.25
2600.00	1.99	55.04	2599.86	5.43	9.63	5.33	11.05	60.57	0.72
2700.00	1.36	61.14	2699.81	7.00	12.09	6.88	13.97	59.94	0.65
2800.00	1.70	59.63	2799.78	8.32	14.41	8.18	16.64	59.99	0.34
2900.00	1.71	59.07	2899.73	9.84	16.98	9.67	19.62	59.90	0.02
3000.00	1.71	67.10	2999.69	11.19	19.64	10.99	22.60	60.32	0.24
3100.00	1.75	57.96	3099.64	12.59	22.31	12.36	25.61	60.57	0.28
3200.00	1.09	55.37	3199.61	13.94	24.39	13.69	28.09	60.25	0.67
3300.00	1.29	54.95	3299.59	15.13	26.10	14.86	30.16	59.90	0.20
3400.00	1.08	58.56	3399.57	16.27	27.82	15.98	32.23	59.69	0.22
3500.00	0.79	45.31	3499.55	17.24	29.12	16.95	33.84	59.37	0.36
3600.00	0.94	17.94	3599.54	18.51	29.86	18.20	35.13	58.21	0.44
3700.00	0.61	23.93	3699.53	19.77	30.33	19.47	36.21	56.89	0.34
3800.00	0.91	19.28	3799.52	21.02	30.81	20.70	37.29	55.70	0.31
3900.00	0.62	33.24	3899.52	22.22	31.37	21.90	38.44	54.68	0.34
4000.00	1.02	28.69	3999.50	23.46	32.09	23.13	39.75	53.84	0.40
4100.00	0.71	12.64	4099.49	24.84	32.66	24.51	41.03	52.74	0.39
4200.00	0.31	27.41	4199.49	25.68	32.92	25.35	41.75	52.03	0.41
4300.00	0.48	6.33	4299.49	26.34	33.09	26.00	42.29	51.48	0.22
4400.00	0.53	30.35	4399.48	27.16	33.37	26.82	43.02	50.86	0.22
4500.00	0.53	342.99	4499.48	28.00	33.47	27.66	43.64	50.08	0.43
4600.00	0.82	354.91	4599.47	29.15	33.27	28.82	44.24	48.77	0.32
4700.00	0.59	339.90	4699.46	30.35	33.03	30.01	44.86	47.42	0.29
4800.00	0.64	338.07	4799.46	31.35	32.64	31.02	45.26	46.16	0.05
4900.00	0.64	358.94	4899.45	32.43	32.42	32.10	45.86	45.00	0.23
5000.00	0.49	328.19	4999.45	33.34	32.19	33.01	46.35	43.99	0.33
5100.00	0.51	333.34	5099.44	34.10	31.77	33.77	46.60	42.98	0.05
5200.00	1.00	11.88	5199.44	35.34	31.75	35.02	47.51	41.94	0.68
5300.00	0.76	17.89	5299.42	36.82	32.13	36.50	48.87	41.11	0.25
5400.00	0.59	33.09	5399.42	37.88	32.62	37.55	49.99	40.73	0.25
5500.00	0.98	29.83	5499.41	39.06	33.32	38.72	51.34	40.47	0.40
5600.00	0.56	27.20	5599.40	40.23	33.97	39.89	52.66	40.18	0.42
5700.00	0.87	17.09	5699.39	41.40	34.42	41.05	53.84	39.74	0.34

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	0.94	43.91	5799.38	42.72	35.22	42.36	55.36	39.50	0.43
5900.00	0.88	35.41	5899.37	43.94	36.23	43.57	56.95	39.51	0.15
6000.00	0.76	19.44	5999.36	45.19	36.90	44.81	58.34	39.23	0.26
6100.00	0.49	25.21	6099.35	46.19	37.30	45.81	59.37	38.92	0.27
6200.00	0.78	35.51	6199.34	47.13	37.87	46.74	60.46	38.78	0.31
6300.00	0.59	57.63	6299.34	47.96	38.70	47.56	61.62	38.90	0.32
6400.00	0.56	24.29	6399.33	48.67	39.33	48.27	62.58	38.94	0.33
6500.00	0.79	26.28	6499.33	49.73	39.84	49.33	63.72	38.70	0.24
6600.00	0.76	40.60	6599.32	50.85	40.57	50.44	65.05	38.58	0.20
6700.00	0.86	23.24	6699.31	52.04	41.30	51.62	66.43	38.43	0.26
6800.00	0.89	7.02	6799.30	53.50	41.69	53.07	67.82	37.93	0.25
6900.00	0.88	34.99	6899.28	54.90	42.22	54.47	69.26	37.56	0.43
7000.00	0.79	45.92	6999.27	56.01	43.16	55.57	70.71	37.62	0.18
7100.00	0.84	50.40	7099.26	56.96	44.22	56.51	72.11	37.83	0.08
7200.00	0.88	47.50	7199.25	57.94	45.35	57.48	73.58	38.05	0.06
7300.00	0.52	57.84	7299.24	58.70	46.30	58.23	74.76	38.26	0.38
7400.00	0.49	98.50	7399.24	58.88	47.10	58.40	75.40	38.66	0.35
7500.00	0.58	109.53	7499.24	58.64	48.01	58.15	75.79	39.30	0.14
7600.00	0.33	117.44	7599.23	58.34	48.74	57.85	76.02	39.87	0.26
7700.00	0.50	117.15	7699.23	58.01	49.38	57.51	76.18	40.41	0.18
7800.00	0.82	95.46	7799.22	57.74	50.48	57.23	76.70	41.16	0.39
7900.00	0.89	85.03	7899.21	57.74	51.96	57.21	77.68	41.98	0.17
8000.00	0.97	72.26	7999.20	58.06	53.54	57.52	78.98	42.68	0.22
8100.00	0.80	73.59	8099.19	58.52	55.01	57.96	80.32	43.23	0.17
8200.00	0.38	48.71	8199.18	58.94	55.93	58.37	81.25	43.50	0.48
8300.00	0.12	66.69	8299.18	59.20	56.28	58.63	81.69	43.55	0.27
8400.00	0.18	199.13	8399.18	59.10	56.33	58.52	81.64	43.63	0.28
8500.00	0.14	245.18	8499.18	58.90	56.17	58.33	81.39	43.64	0.13
8600.00	0.30	180.06	8599.18	58.59	56.05	58.01	81.08	43.74	0.27
8700.00	0.66	178.31	8699.18	57.75	56.07	57.18	80.49	44.15	0.36
8800.00	0.42	189.39	8799.17	56.82	56.03	56.25	79.80	44.60	0.26
8900.00	0.43	22.36	8899.17	56.81	56.11	56.24	79.85	44.65	0.84
9000.00	0.83	22.54	8999.16	57.82	56.53	57.25	80.86	44.35	0.40
9070.00	1.09	8.85	9069.16	58.94	56.83	58.37	81.88	43.95	0.50



VES Survey International
(432) 563-5444
West Texas
Surveyor: Javier Estrada
Cuatro Hijos Fee No. 004H / API 30-025-41752



VES Survey Date: 07/03/2014



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 6/24/2014 through 7/13/2014 conduct or supervise the taking of a MWD survey from a depth of 9232 feet to a depth 15261 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 Cuatro Hijos Fee #4H Well API 30-025-41752 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 of Michael K. Baber, consisting of a stylized "M" and "K" followed by 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 of the Notary Public, consisting of a stylized "L" and "G" followed by a horizontal line.

Notary Public's Signature



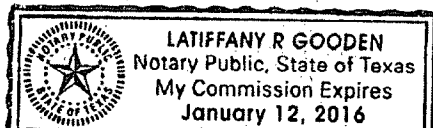
Customer Name: COG Operating LLC
 Well Name: Cuatro Hijos Fee #4H
 API Number: 30-025-41752
 County / Parish: 25 SW Hobbs NM/ Le:

M.W.D. Operator: Mike Sakas
 Directional Driller: Chris Tille
 Total Magnetic Correction: 6.78
 Job #: NM-450

Vertical Section: 359.42

Tie In Survey(s) Provided By:

	Meas. Depth	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+E / -W	Dist.	Angle	DLS
Tie - In										
0	9070.00	1.09	8.85	9069.16	0.00	58.94	56.83	0.00	0.00	0.00
1	9232.00	1.40	35.00	9231.12	61.49	62.08	58.20	85.10	43.15	0.39
2	9485.00	0.90	45.00	9484.07	65.40	66.02	61.38	90.15	42.91	0.21
3	9738.00	0.70	357.30	9737.05	68.33	68.97	62.71	93.22	42.28	0.27
4	9991.00	0.40	338.50	9990.04	70.70	71.33	62.32	94.72	41.14	0.14
5	10245.00	1.00	28.70	10244.02	73.46	74.10	63.06	97.30	40.39	0.32
6	10403.00	1.00	24.30	10402.00	75.92	76.57	64.28	99.98	40.02	0.05
7	10434.00	2.10	355.50	10432.98	76.73	77.38	64.35	100.64	39.75	4.24
8	10466.00	5.80	353.90	10464.90	78.92	79.58	64.13	102.20	38.87	11.57
9	10498.00	10.70	355.20	10496.56	83.50	84.15	63.71	105.55	37.13	15.32
10	10530.00	15.70	358.50	10527.71	90.79	91.44	63.35	111.24	34.71	15.80
11	10561.00	20.00	358.30	10557.21	100.29	100.94	63.08	119.03	32.00	13.87
12	10593.00	22.90	356.80	10586.99	111.99	112.62	62.57	128.84	29.06	9.22
13	10625.00	25.70	356.10	10616.15	125.13	125.77	61.75	140.11	26.15	8.80
14	10656.00	29.20	355.40	10643.66	139.39	140.01	60.69	152.60	23.43	11.34
15	10688.00	33.20	355.40	10671.02	155.93	156.53	59.36	167.41	20.77	12.50
16	10720.00	37.50	357.40	10697.12	174.41	175.01	58.22	184.43	18.40	13.91
17	10751.00	41.10	358.60	10721.10	194.03	194.63	57.54	202.95	16.47	11.87
18	10782.00	44.10	359.40	10743.92	215.01	215.60	57.18	223.06	14.85	9.83
19	10814.00	47.10	0.00	10766.31	237.87	238.46	57.06	245.19	13.46	9.47
20	10845.00	49.80	0.20	10786.87	261.07	261.66	57.10	267.82	12.31	8.72
21	10877.00	52.60	359.80	10806.91	286.00	286.60	57.10	292.23	11.27	8.80
22	10909.00	56.30	0.00	10825.52	312.03	312.63	57.06	317.79	10.34	11.57
23	10940.00	60.50	1.00	10841.76	338.43	339.02	57.29	343.83	9.59	13.82
24	10972.00	64.50	2.10	10856.53	366.78	367.39	58.06	371.95	8.98	12.87
25	11003.00	67.90	3.50	10869.04	395.09	395.72	59.45	400.16	8.54	11.72
26	11034.00	69.10	6.10	10880.40	423.81	424.45	61.87	428.94	8.29	8.71
27	11066.00	68.80	10.10	10891.90	453.32	454.01	66.07	458.80	8.28	11.70
28	11098.00	68.40	13.70	10903.58	482.40	483.16	72.22	488.53	8.50	10.55
29	11130.00	71.70	13.40	10914.50	511.57	512.40	79.26	518.49	8.79	10.35
30	11162.00	75.40	13.20	10923.56	541.36	542.26	86.32	549.09	9.04	11.58
31	11193.00	79.20	11.60	10930.37	570.82	571.79	92.81	579.27	9.22	13.25
32	11224.00	82.20	8.80	10935.38	600.87	601.89	98.22	609.86	9.27	13.16
33	11256.00	85.80	6.30	10938.73	632.37	633.44	102.40	641.66	9.18	13.67
34	11288.00	89.60	3.50	10940.01	664.19	665.28	105.13	673.54	8.98	14.75
35	11319.00	92.30	0.00	10939.50	695.15	696.26	106.08	704.29	8.66	14.26
36	11351.00	93.80	358.40	10937.79	727.10	728.21	105.63	735.83	8.25	6.85
37	11446.00	93.10	357.70	10932.08	821.90	822.98	102.40	829.33	7.09	1.04
38	11541.00	93.30	357.50	10926.77	916.70	917.75	98.43	923.01	6.12	0.30
39	11635.00	93.70	357.30	10921.03	1010.47	1011.48	94.18	1015.85	5.32	0.48
40	11730.00	91.40	357.00	10916.81	1105.29	1106.26	89.46	1109.87	4.62	2.44
41	11826.00	92.20	357.20	10913.79	1201.17	1202.09	84.60	1205.06	4.03	0.86
42	11921.00	92.80	356.80	10909.65	1295.99	1296.86	79.64	1299.31	3.51	0.76
43	12016.00	90.90	356.60	10906.58	1390.83	1391.65	74.17	1393.63	3.05	2.01



[Handwritten Signature]

[Handwritten Signature]

44	12111.00	91.20	356.30	10904.84	1485.69	1486.46	68.29	1488.02	2.63	0.45
45	12206.00	89.10	357.10	10904.59	1580.57	1581.29	62.82	1582.54	2.28	2.37
46	12301.00	90.50	357.40	10904.92	1675.50	1676.18	58.26	1677.19	1.99	1.51
47	12396.00	90.50	356.90	10904.09	1770.42	1771.06	53.54	1771.87	1.73	0.53
48	12491.00	90.90	356.40	10902.93	1865.31	1865.89	47.99	1866.50	1.47	0.67
49	12586.00	91.20	356.20	10901.19	1960.15	1960.67	41.86	1961.12	1.22	0.38
50	12681.00	91.50	355.90	10898.96	2054.96	2055.42	35.32	2055.72	0.98	0.45
51	12776.00	91.70	355.80	10896.30	2149.74	2150.14	28.44	2150.32	0.76	0.24
52	12871.00	91.10	357.90	10893.98	2244.61	2244.96	23.23	2245.08	0.59	2.30
53	12965.00	91.30	358.50	10892.01	2338.56	2338.89	20.27	2338.98	0.50	0.67
54	13060.00	92.10	358.50	10889.19	2433.51	2433.81	17.79	2433.88	0.42	0.84
55	13155.00	90.70	359.10	10886.87	2528.47	2528.76	15.80	2528.81	0.36	1.60
56	13249.00	90.20	358.90	10886.14	2622.47	2622.75	14.16	2622.78	0.31	0.57
57	13344.00	90.50	358.50	10885.55	2717.46	2717.72	12.00	2717.75	0.25	0.53
58	13438.00	92.50	359.20	10883.09	2811.42	2811.66	10.12	2811.68	0.21	2.25
59	13532.00	93.50	358.70	10878.17	2905.28	2905.52	8.40	2905.53	0.17	1.19
60	13627.00	91.20	359.50	10874.28	3000.19	3000.42	6.91	3000.43	0.13	2.56
61	13722.00	91.80	359.50	10871.79	3095.16	3095.38	6.08	3095.39	0.11	0.63
62	13817.00	92.40	359.20	10868.31	3190.10	3190.31	5.00	3190.31	0.09	0.71
63	13912.00	93.10	358.90	10863.75	3284.98	3285.19	3.43	3285.19	0.06	0.80
64	14008.00	91.20	358.90	10860.15	3380.91	3381.10	1.59	3381.10	0.03	1.98
65	14103.00	90.10	359.40	10859.07	3475.90	3476.08	0.18	3476.08	0.00	1.27
66	14198.00	90.00	359.40	10858.99	3570.90	3571.07	-0.82	3571.07	359.99	0.11
67	14293.00	90.10	359.00	10858.91	3665.90	3666.06	-2.14	3666.07	359.97	0.43
68	14388.00	90.20	358.60	10858.66	3760.89	3761.04	-4.13	3761.05	359.94	0.43
69	14484.00	90.50	358.30	10858.07	3856.88	3857.01	-6.73	3857.01	359.90	0.44
70	14580.00	90.80	358.20	10856.98	3952.85	3952.95	-9.66	3952.97	359.86	0.33
71	14675.00	91.30	358.30	10855.24	4047.81	4047.89	-12.56	4047.91	359.82	0.54
72	14770.00	91.90	357.80	10852.59	4142.75	4142.80	-15.79	4142.83	359.78	0.82
73	14866.00	92.40	357.50	10848.99	4238.64	4238.65	-19.73	4238.70	359.73	0.61
74	14962.00	92.50	357.00	10844.89	4334.48	4334.45	-24.33	4334.52	359.68	0.53
75	15057.00	91.70	356.90	10841.40	4429.33	4429.26	-29.38	4429.35	359.62	0.85
76	15152.00	92.40	356.30	10838.01	4524.15	4524.03	-35.01	4524.16	359.56	0.97
77	15213.00	92.90	356.30	10835.19	4584.99	4584.83	-38.94	4585.00	359.51	0.82
PTB	15261.00	92.90	356.30	10832.76	4632.86	4632.67	-42.04	4632.86	359.48	0.00

