

Oilfield Services Central U.S. Land
Schlumberger Drilling and Measurements
Drilling Group
Geo Market Area: South West Texas Basin
7220 W I-H 20
Midland, Texas 79706
Phone : (432) 742-5400 (Main)
Fax : (432) 742-5606 (Shared)

HOBBS OCD

AUG 06 2018

RECEIVED

Schlumberger

July 30, 2018

OXY USA Inc.
P.O. BOX 2289
Houston, TX 77252

Re:

18, 24S, 32E, Lea NM
N 32.21132 W-103.70875

CLIENT: OXY USA Inc.
WELL: Mesa Verde BS Unit 11H
FIELD: Mesa Verde Bone Spring

RIG: H&P 556
COUNTY: Lea
API NO: 30-025-44187
JOB NO: 18MLD2647

Enclosed, please find the original copy of the survey performed on the referenced well by Drilling & Measurements, a division of Schlumberger Technology Corporation (P-5 No. 754900).
Other information required by your office is as follows.

<u>Name & Title of Surveyor</u>	<u>Drainhole Number</u>	<u>Surveyed Depths</u>	<u>Dates Performed</u>	<u>Type of Survey</u>
Kamonporn Rimkheeree FE	Mesa Verde BS Unit 11H Original Hole	1056.00 Ft to 18134.00 Ft	May 28, 2018 to July 6, 2018	TelePacer SlimPulse

If any other information is required, please contact the undersigned at the above letterhead and phone number.
Sincerely,

Mike Stephens
Field Service Manager

Oilfield Services Central U.S. Land
Schlumberger Drilling and Measurements
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7220 W I-H 20
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Phone : (432) 742-5400 (Main)
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Schlumberger

Well Reference:

18, 24S, 32E, Lea NM
N 32.21132 W -103.70875

I, Kamonporn Rimbheeree certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of May 28, 2018 through July 06, 2018, conduct or supervise the taking of the TelePacer & SlimPulse surveys from a depth of 1056.00 feet to a depth of 18134.00 feet referenced to driller's depth; that the data is true, correct, complete and within the limitations of the tool as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I am authorized and qualified to make this report; that this survey was conducted at the request of OXY USA Inc. for the Mesa Verde BS Unit 11H Well (Original Hole) API No. 30-025-44187 in New Mexico; and that I have reviewed this report and find that it conforms to the principals and procedures as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation.

By
Kamonporn Rimbheeree
FE

Subscribed and Sworn to before me this 30th day of July (month) 2018 (yr)

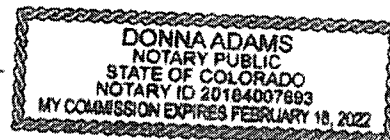
My Commission expires:

2-16-2022

D. Adams
Notary Public

(signature)

Adams County Colorado
(County State)

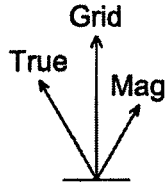




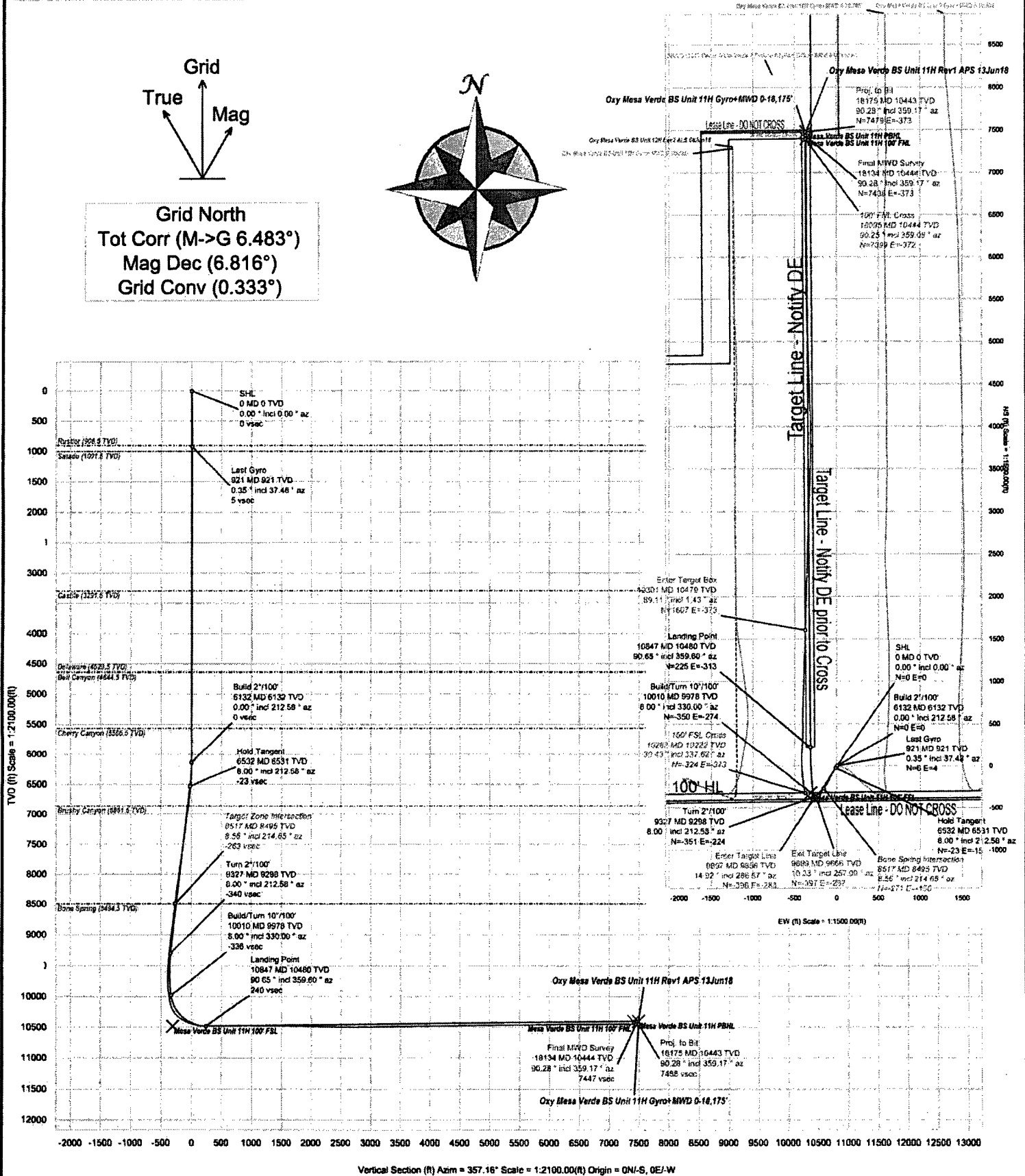
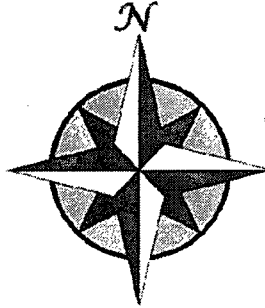
OXY



Borehole:		Well:		Field:		Structure:	
Original Borehole		Oxy Mesa Verde BS Unit 11H		NM Lea County (NAD 83)		Oxy Mesa Verde BS Unit 11H	
Gravity & Magnitude Parameters		Surface Location: NAD83 New Mexico State Plane, Eastern Zone, US Feet				Miscellaneous	
Model:	11GGM 2018	Date:	01-Jun-2018	Lat:	N 32 12 40.74	Long:	W 103 42 31.89
MagDec:	6.81E	FB:	47862.85467	Heading:	441172.18638	Grid Conv:	0.32297
		Gravity FB:	968.429mgn (9.80665 m/s^2)	Easting:	734607.23648	Scale Fact:	0.99998183
						Side:	Oxy Mesa Verde BS Unit 11H
						TVD Ref:	RUD-07(528.58 above MSL)
						Plan:	Oxy Mesa Verde BS Unit 11H Ravi APS 15Jun18



Grid North
Tot Corr (M->G 6.483°)
Mag Dec (6.816°)
Grid Conv (0.333°)



Oxy Mesa Verde BS Unit 11H Gyro+MWD 0-18,175' Survey Geodetic Report (Def Survey)



Report Date: July 09, 2018 - 03:29 PM
Client: OXY
Field: NM Lea County (NAD 83)
Structure / Slot: Oxy Mesa Verde BS Unit 11H / Oxy Mesa Verde BS Unit 11H
Well: Oxy Mesa Verde BS Unit 11H
Borehole: Original Borehole
UWI / API#: Unknown / 30-025-44187
Survey Name: Oxy Mesa Verde BS Unit 11H Gyro+MWD 0-18,175'
Survey Date: June 21, 2018
Tort / AMD / DDI / ERD Ratio: 179.482° / 8467.018 ft / 6.420 / 0.807
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 12' 40.73869", W 103° 42' 31.49912"
Location Grid N/E Y/X: N 441172.180 RUS, E 734507.250 RUS
CRS Grid Convergence Angle: 0.3329°
Grid Scale Factor: 0.99996183
Version / Patch: 2.10.720.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 357.163° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB=30'
TVD Reference Elevation: 3599.800 ft above MSL
Seabed / Ground Elevation: 3599.800 ft above MSL
Magnetic Declination: 6.816°
Total Gravity Field Strength: 988.4295mgm (8.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47992.554 nT
Magnetic Dip Angle: 59.921°
Declination Date: June 21, 2018
Magnetic Declination Model: HDGM 2018
North Reference: Grid North
Grid Convergence Used: 0.3329°
Total Corr Mag North-Grid North: 6.4826°
Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (RUS)	Easting (RUS)	Latitude (N/S ° ° °)	Longitude (E/W ° ° °)
RKB	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	441172.18	734507.25	N 32 12 40.74	W 103 42 31.50
SHL	30.00	0.00	0.00	30.00	0.00	0.00	0.00	0.00	441172.18	734507.25	N 32 12 40.74	W 103 42 31.50
	110.00	0.60	38.15	110.00	0.42	0.44	0.34	1.00	441172.62	734507.59	N 32 12 40.74	W 103 42 31.50
	200.00	0.72	36.65	199.99	1.33	1.39	1.07	0.09	441173.57	734608.32	N 32 12 40.76	W 103 42 31.49
	288.00	0.62	27.97	287.98	2.17	2.25	1.62	0.16	441174.43	734608.87	N 32 12 40.76	W 103 42 31.48
	383.00	0.55	18.82	382.98	3.03	3.14	2.01	0.12	441175.32	734609.28	N 32 12 40.77	W 103 42 31.48
	478.00	0.24	358.50	477.98	3.66	3.77	2.15	0.35	441176.95	734609.40	N 32 12 40.78	W 103 42 31.47
	573.00	0.30	83.33	572.98	3.87	3.99	2.40	0.39	441178.17	734609.85	N 32 12 40.78	W 103 42 31.47
	668.00	0.35	47.50	667.97	4.07	4.22	2.88	0.22	441178.40	734610.11	N 32 12 40.78	W 103 42 31.47
	763.00	0.45	52.73	762.97	4.47	4.84	3.37	0.11	441176.82	734510.82	N 32 12 40.78	W 103 42 31.46
	858.00	0.55	49.07	857.97	4.95	5.16	4.00	0.11	441177.34	734511.25	N 32 12 40.79	W 103 42 31.45
	921.00	0.35	37.48	920.97	5.30	5.52	4.35	0.34	441177.70	734511.80	N 32 12 40.79	W 103 42 31.45
	1056.00	0.17	304.51	1055.97	5.73	5.98	4.44	0.29	441178.14	734511.69	N 32 12 40.80	W 103 42 31.45
	1147.00	0.08	221.40	1146.96	5.77	5.99	4.28	0.20	441178.17	734511.53	N 32 12 40.80	W 103 42 31.45
	1241.00	0.32	239.11	1240.96	5.60	5.80	4.02	0.26	441177.98	734511.27	N 32 12 40.80	W 103 42 31.45
	1336.00	0.16	273.25	1335.96	5.49	5.69	3.64	0.21	441177.85	734510.89	N 32 12 40.79	W 103 42 31.46
	1525.00	0.16	218.40	1524.98	5.36	5.52	3.21	0.08	441177.70	734510.46	N 32 12 40.79	W 103 42 31.46
	1620.00	0.16	272.40	1619.98	5.29	5.44	3.01	0.14	441177.62	734510.26	N 32 12 40.79	W 103 42 31.46
	1714.00	0.11	258.45	1713.98	5.29	5.44	2.79	0.08	441177.61	734510.04	N 32 12 40.79	W 103 42 31.47
	1809.00	0.13	225.36	1808.98	5.21	5.34	2.62	0.08	441177.52	734509.87	N 32 12 40.79	W 103 42 31.47
	1904.00	0.08	350.91	1903.98	5.20	5.33	2.54	0.20	441177.51	734509.78	N 32 12 40.79	W 103 42 31.47
	1998.00	0.08	9.68	1997.98	5.33	5.46	2.53	0.02	441177.84	734509.78	N 32 12 40.79	W 103 42 31.47
	2093.00	0.13	298.89	2092.98	5.45	5.58	2.44	0.13	441177.82	734509.69	N 32 12 40.79	W 103 42 31.47
	2188.00	0.13	13.74	2187.98	5.61	5.74	2.37	0.17	441177.82	734509.62	N 32 12 40.80	W 103 42 31.47
	2282.00	0.08	61.71	2281.98	5.74	5.87	2.54	0.10	441178.05	734509.70	N 32 12 40.80	W 103 42 31.47
	2377.00	0.13	165.27	2376.96	5.66	5.80	2.54	0.16	441177.98	734509.79	N 32 12 40.80	W 103 42 31.47
	2566.00	0.16	97.37	2565.98	5.40	5.55	2.69	0.09	441177.73	734510.14	N 32 12 40.79	W 103 42 31.47
	2661.00	0.17	137.91	2660.96	5.27	5.43	3.13	0.13	441177.61	734510.38	N 32 12 40.79	W 103 42 31.46
	2756.00	0.08	199.86	2755.96	5.10	5.26	3.20	0.16	441177.44	734510.45	N 32 12 40.79	W 103 42 31.46
	2850.00	0.08	353.20	2849.96	5.10	5.26	3.17	0.17	441177.44	734510.42	N 32 12 40.79	W 103 42 31.46
	3040.00	0.34	98.15	3039.96	5.13	5.32	3.72	0.19	441177.50	734510.97	N 32 12 40.79	W 103 42 31.46
	3229.00	0.16	145.91	3228.96	4.77	4.99	4.44	0.14	441177.17	734511.69	N 32 12 40.79	W 103 42 31.45
	3418.00	0.11	180.67	3418.06	4.33	4.56	4.80	0.06	441176.74	734511.85	N 32 12 40.78	W 103 42 31.45
	3608.00	0.17	186.72	3607.96	3.87	4.10	4.57	0.03	441176.28	734511.82	N 32 12 40.78	W 103 42 31.45
	3797.00	0.06	300.48	3796.98	3.65	3.87	4.45	0.11	441176.05	734511.70	N 32 12 40.78	W 103 42 31.45
	3986.00	0.26	148.43	3985.98	3.34	3.57	4.58	0.16	441175.75	734511.83	N 32 12 40.77	W 103 42 31.45
	4081.00	0.11	33.49	4080.95	3.23	3.47	4.74	0.33	441175.65	734511.99	N 32 12 40.77	W 103 42 31.44
	4175.00	0.23	173.64	4174.95	3.12	3.36	4.81	0.34	441175.54	734512.06	N 32 12 40.77	W 103 42 31.44
	4270.00	0.30	177.83	4269.95	2.68	2.92	4.84	0.08	441175.10	734512.09	N 32 12 40.77	W 103 42 31.44
	4459.00	0.17	319.63	4458.95	2.41	2.64	4.68	0.24	441174.92	734511.93	N 32 12 40.76	W 103 42 31.44
	4554.00	0.08	55.71	4553.95	2.55	2.79	4.64	0.21	441174.97	734511.89	N 32 12 40.77	W 103 42 31.44
	4681.00	0.08	254.54	4680.95	2.56	2.79	4.64	0.58	441174.97	734511.89	N 32 12 40.77	W 103 42 31.44
	4722.00	0.05	264.62	4721.95	2.53	2.76	4.48	0.02	441174.94	734511.73	N 32 12 40.77	W 103 42 31.45
	4817.00	0.11	110.27	4816.95	2.50	2.72	4.53	0.16	441174.80	734511.78	N 32 12 40.77	W 103 42 31.45
	4911.00	0.11	268.08	4910.95	2.46	2.69	4.52	0.23	441174.87	734511.77	N 32 12 40.77	W 103 42 31.45
	5008.00	0.14	65.61	5005.95	2.51	2.73	4.54	0.26	441174.91	734511.79	N 32 12 40.77	W 103 42 31.45
	5101.00	0.10	170.36	5100.95	2.47	2.70	4.65	0.20	441174.88	734511.90	N 32 12 40.77	W 103 42 31.44
	5290.00	0.07	221.38	5289.95	2.22	2.45	4.61	0.04	441174.63	734511.88	N 32 12 40.76	W 103 42 31.45
	5385.00	0.11	345.36	5384.95	2.27	2.50	4.54	0.17	441174.68	734511.79	N 32 12 40.76	W 103 42 31.45
	5479.00	0.07	48.57	5478.95	2.39	2.62	4.57	0.11	441174.80	734511.81	N 32 12 40.76	W 103 42 31.45
	5574.00	0.11	253.82	5573.95	2.41	2.63	4.52	0.19	441174.81	734511.77	N 32 12 40.76	W 103 42 31.45
	5668.00	0.11	208.07	5667.95	2.31	2.53	4.39	0.09	441174.71	734511.64	N 32 12 40.76	W 103 42 31.45
	5763.00	0.14	171.67	5762.95	2.12	2.33	4.37	0.09	441174.51	734511.82	N 32 12 40.76	W 103 42 31.45
	5852.00	0.08	357.28	5851.95	2.02	2.24	4.39	0.12	441174.42	734511.64	N 32 12 40.76	W 103 42 31.45
	6047.00	0.08	87.74	6046.95	2.08	2.31	4.46	0.12	441174.49	734511.71	N 32 12 40.76	W 103 42 31.45
	6142.00	1.14	211.92	6141.85	1.31	1.51	4.02	1.25	441173.69	734511.27	N 32 12 40.75	W 103 42 31.45
	6237.00	2.21	218.47	6236.90	-0.85	-0.73	2.38	1.14	441171.45	734509.63	N 32 12 40.73	W 103 42 31.47
	6331.00	3.03	215.81	6330.80	-4.15	-4.16	-0.20	0.88	441168.02	734507.05	N 32 12 40.70	W 103 42 31.50
	6426.00	3.77	212.45	6425.64	-8.66	-8.84	-3.34	0.81	441163.35	734503.91	N 32 12 40.65	W 103 42 31.54
	6521.00	4.88	213.67	6520.38	-14.46	-14.84	-7.26	1.18	441157.34	734499.99	N 32 12 40.59	W 103 42 31.58
	6615.00	5.80	211.90	6613.95	-21.59	-22.21	-11.99	0.98	441149.97	734495.26	N 32 12 40.52	W 103 42 31.64
	6710.00	6.94	211.13	6708.37	-30.29	-31.20	-17.50	1.20	441140.99	734489.75	N 32 12 40.43	W 103 42 31.70
	6805.00	8.93	210.69	6802.45	-41.21	-42.46	-24.22	2.10	441129.72	734483.03	N 32 12 40.32	W 103 42 31.78
	6899.00	9.50	210.84	6896.24	-53.75	-55.40	-31.81	0.61	441116.78	734475.34	N 32 12 40.19	W 103 42 31.87
	6993.00	8.81	212.31	6988.04	-66.09	-68.14	-39.73	0.78	441104.04	734467.52	N 32 12 40.07	W 103 42 31.97
	7087.00	8.58	209.46	7080.96	-77.91	-80.33	-47.03	0.52	441091.85	734460.22	N 32 12 39.95	W 103 42 32.05
	7182.00	8.81	208.28	7174.87	-90.12	-92.91	-53.96	0.31	441079.28	734453.29	N 32 12 39.82	W 103 42 32.13
	7277.00	8.70	208.82	7268.76	-102.47	-105.61	-60.87	0.14	441066.57	734446.38	N 32 12 39.70	W 103 42 32.21
	7371.00	8.98	207.43	7361.65	-114.86	-118.35	-67.68	0.37	441053.84	734439.58	N 32 12 39.57	W 103 42 32.28
	7465.00	8.97	209.15	7454.49	-127.41	-131.26	-74.63	0.29	441040.92	734432.63	N 32 12 39.44	W 103 42 32.38
	7560.00	8.93	208.62	7548.34	-139.98	-144.20	-81.77	0.10	441027.98	734425.49	N 32 12 39.32	W 103 42 32.46
	7655.00	8.90	208.54	7642.19	-152.54	-157.13	-88.81	0.03	441015.06	734418.45	N 32 12 39.19	W 103 42 32.54
	7749.00	8.78	206.78	7735.07	-164.99	-169.92	-95.52	0.31	441002.27	734411.74	N 32 12 39.06	W 103 42 32.62

Schlumberger-Private

[illegible]