

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)

Schlumberger

RECEIVED

JAN 16 2020

EMNRD-OCD ARTESIA

April 29, 2019

Chevron USA Inc.

5, 24S, 29E, Eddy NM
32.24022 104.00955

Re:

CLIENT: Chevron USA Inc.
WELL: CB SE 5 32 Federal Com 3 3H
FIELD: Purple Sage Wolfcamp

RIG: Patterson 257
COUNTY: Eddy
API NO: 30-015-44976
JOB NO: 18MLD3415

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>
Jorge Pantoja FE	CB SE 5 32 Federal Com 3 3H Original Hole	478.00 Ft to 20259.00 Ft	December 26, 2018 to April 10, 2019	TelePacer SlimPulse

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

Dana Lasher
Field Service Manager

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)
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Schlumberger

Well Reference:

5, 24S, 29E, Eddy NM
32.24022 104.00955

I, Jorge Pantoja certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of December 26, 2018 through April 10, 2019, conduct or supervise the taking of the TelePacer & SlimPulse surveys from a depth of 478.00 feet to a depth of 20259.00 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 Chevron USA Inc. for the CB SE 5 32 Federal Com 3 3H Well (Original Hole) API No. 30-015-44976 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
Jorge Pantoja
FE

Jorge Pantoja

Subscribed and Sworn to before me this 29th day of April (month) 2019 (yr)

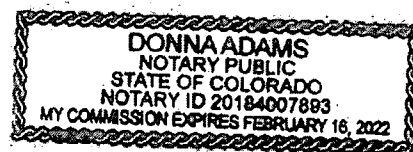
My Commission expires:

2-16-2022

D. Adams
Notary Public

(signature)

Adams County Colorado
(County State)



Chevron CB SE 5 32 FED COM 3 3H MWD to 20300ft Survey Geodetic



Report

(Def Survey)

Report Date: April 08, 2019 - 04:26 PM
 Client: Chevron
 Field: NM Eddy County (NAD 27)
 Structure / Slot: Chevron CB SE 5 32 FED COM 3 Pad / 3H
 Well: CB SE 5 32 FED COM 3 3H
 Borehole: CB SE 5 32 FED COM 3 3H
 UWI / API#: Unknown / Unknown
 Survey Name: Chevron CB SE 5 32 FED COM 3 3H MWD to 20300ft
 Survey Date: April 08, 2019
 Tort / AHD / DDI / ERD Ratio: 297.727' / 11249.074 ft / 6.828' / 1.114
 Coordinate Reference System: NAD27 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 14' 24.80716", W 104° 0' 34.38909"
 Location Grid N/E Y/X: N 451263.000 ftUS, E 600108.000 ftUS
 CRS Grid Convergence Angle: 0.1727°
 Grid Scale Factor: 0.99992057
 Version / Patch: 2.10.753.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 359.270° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: KB - 28.00 ft
 TVD Reference Elevation: 3044.000 ft above MSL
 Seabed / Ground Elevation: 3016.000 ft above MSL
 Magnetic Declination: 7.036°
 Total Gravity Field Strength: 998.4637mgn (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 47921.779 nT
 Magnetic Dip Angle: 59.985°
 Declination Date: April 08, 2019
 Magnetic Declination Model: HDGM 2019
 North Reference: Grid North
 Grid Convergence Used: 0.1727°

Total Corr Mag North->Grid North: 6.8634°

Local Coord Referenced To: Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	451263.00	600108.00	N 32 14 24.81	W 104 0 34.39
Adjusted KB	28.00	0.00	0.00	28.00	0.00	0.00	0.00	0.00	451263.00	600108.00	N 32 14 24.81	W 104 0 34.39
First 3rd Party Survey	237.00	1.67	145.46	236.97	-2.53	-2.51	1.73	0.80	451260.49	600109.73	N 32 14 24.78	W 104 0 34.37
	327.00	0.62	49.83	326.96	-3.31	-3.28	2.84	2.04	451259.73	600110.84	N 32 14 24.77	W 104 0 34.36
Last 3rd Party Survey	387.00	2.73	212.43	386.94	-4.30	-4.27	2.32	5.54	451258.73	600110.32	N 32 14 24.76	W 104 0 34.36
First SLB MWD Survey	478.00	1.59	161.07	477.88	-7.32	-7.30	1.57	2.35	451255.70	600109.57	N 32 14 24.73	W 104 0 34.37
	540.00	2.75	129.68	539.84	-9.10	-9.06	3.00	2.61	451253.94	600111.00	N 32 14 24.72	W 104 0 34.35
	599.00	4.45	121.68	598.72	-11.24	-11.17	6.03	3.00	451251.84	600114.03	N 32 14 24.70	W 104 0 34.32
	691.00	5.02	118.76	690.40	-15.14	-14.98	12.60	0.67	451248.03	600120.60	N 32 14 24.66	W 104 0 34.24
	786.00	5.40	107.14	785.01	-18.55	-18.29	20.51	1.18	451244.71	600128.51	N 32 14 24.63	W 104 0 34.15
	876.00	6.68	93.88	874.52	-20.27	-19.90	29.78	2.09	451243.11	600137.78	N 32 14 24.61	W 104 0 34.04
	967.00	7.57	89.23	964.81	-20.69	-20.17	41.06	1.16	451242.83	600149.06	N 32 14 24.61	W 104 0 33.91
	1062.00	8.30	89.48	1058.90	-20.72	-20.03	54.17	0.77	451242.97	600162.17	N 32 14 24.61	W 104 0 33.76
	1158.00	9.48	94.44	1153.75	-21.45	-20.58	68.98	1.46	451242.43	600176.98	N 32 14 24.60	W 104 0 33.59
	1253.00	10.70	102.53	1247.28	-24.18	-23.10	85.39	1.97	451239.91	600193.39	N 32 14 24.58	W 104 0 33.40
	1349.00	10.88	106.45	1341.59	-28.90	-27.59	102.78	0.79	451235.41	600210.78	N 32 14 24.53	W 104 0 33.19
	1445.00	10.53	106.19	1435.92	-34.13	-32.61	119.90	0.37	451230.40	600227.89	N 32 14 24.48	W 104 0 32.99
	1540.00	10.40	105.17	1529.34	-39.01	-37.27	136.51	0.24	451225.73	600244.50	N 32 14 24.43	W 104 0 32.80
	1636.00	10.07	104.15	1623.81	-43.54	-41.59	153.01	0.39	451221.41	600261.00	N 32 14 24.39	W 104 0 32.61
	1731.00	11.60	105.08	1717.11	-48.27	-46.11	170.29	1.62	451216.90	600278.27	N 32 14 24.35	W 104 0 32.41
	1827.00	11.74	105.22	1811.13	-53.58	-51.18	189.03	0.15	451211.82	600297.02	N 32 14 24.30	W 104 0 32.19
	1922.00	11.79	103.99	1904.13	-58.71	-56.06	207.77	0.27	451206.94	600315.76	N 32 14 24.25	W 104 0 31.97
	2018.00	11.58	102.70	1998.14	-63.44	-60.55	226.69	0.35	451202.45	600334.67	N 32 14 24.20	W 104 0 31.75
	2114.00	12.28	107.39	2092.07	-68.85	-65.72	245.83	1.25	451197.28	600353.81	N 32 14 24.15	W 104 0 31.53
	2209.00	12.85	111.09	2184.80	-75.92	-72.54	265.33	1.04	451190.46	600373.31	N 32 14 24.08	W 104 0 31.30
	2305.00	12.72	111.73	2278.42	-83.92	-80.30	285.11	0.20	451182.71	600393.09	N 32 14 24.00	W 104 0 31.07
	2400.00	12.26	110.74	2371.17	-91.61	-87.74	304.26	0.53	451175.26	600412.23	N 32 14 23.93	W 104 0 30.85
	2496.00	12.27	110.66	2464.98	-99.06	-94.95	323.34	0.02	451168.06	600431.31	N 32 14 23.86	W 104 0 30.63
	2592.00	11.95	114.20	2558.84	-106.97	-102.62	341.95	0.84	451160.38	600449.92	N 32 14 23.78	W 104 0 30.41
	2687.00	11.22	112.54	2651.91	-114.77	-110.20	359.45	0.84	451152.81	600467.42	N 32 14 23.71	W 104 0 30.21
	2783.00	10.68	107.50	2746.16	-121.24	-116.45	376.56	1.14	451146.56	600484.53	N 32 14 23.64	W 104 0 30.01
	2879.00	10.12	101.73	2840.58	-125.85	-120.84	393.31	1.23	451142.17	600501.27	N 32 14 23.60	W 104 0 29.81
	2974.00	10.67	105.73	2934.03	-130.14	-124.93	409.94	0.95	451138.09	600517.91	N 32 14 23.56	W 104 0 29.62
	3069.00	11.03	108.84	3027.33	-135.67	-130.24	427.01	0.72	451132.77	600534.88	N 32 14 23.51	W 104 0 29.42
	3165.00	11.13	107.58	3121.54	-141.66	-136.01	444.54	0.27	451127.00	600552.50	N 32 14 23.45	W 104 0 29.22
	3261.00	11.05	106.38	3215.75	-147.28	-141.40	462.19	0.25	451121.61	600570.16	N 32 14 23.39	W 104 0 29.01
	3356.00	10.98	105.40	3309.00	-152.47	-146.37	479.65	0.21	451116.64	600587.61	N 32 14 23.34	W 104 0 28.81
	3452.00	10.91	104.90	3403.25	-157.46	-151.14	497.25	0.12	451111.88	600605.20	N 32 14 23.30	W 104 0 28.61
	3547.00	10.37	104.51	3496.62	-162.13	-155.59	514.21	0.57	451107.42	600622.17	N 32 14 23.25	W 104 0 28.41
	3643.00	10.69	108.04	3591.00	-167.26	-160.51	531.04	0.75	451102.50	600639.00	N 32 14 23.20	W 104 0 28.21
	3738.00	10.72	109.58	3684.35	-173.17	-166.20	547.74	0.30	451096.81	600655.70	N 32 14 23.15	W 104 0 28.02
	3834.00	10.03	108.52	3778.78	-179.02	-171.85	564.08	0.75	451091.17	600672.04	N 32 14 23.09	W 104 0 27.83
	3929.00	9.61	107.45	3872.39	-184.22	-176.85	579.49	0.48	451086.16	600687.45	N 32 14 23.04	W 104 0 27.65
	4025.00	10.60	108.13	3966.90	-189.58	-182.00	595.53	1.04	451081.01	600703.48	N 32 14 22.99	W 104 0 27.46
	4121.00	11.01	109.19	4061.19	-195.55	-187.77	612.58	0.47	451075.25	600720.53	N 32 14 22.93	W 104 0 27.26
	4216.00	10.80	108.66	4154.48	-201.60	-193.60	629.58	0.24	451069.42	600737.53	N 32 14 22.87	W 104 0 27.07
	4308.00	9.58	109.81	4343.45	-213.18	-204.77	661.65	0.64	451058.25	600759.60	N 32 14 22.76	W 104 0 26.69
	4403.00	9.17	108.10	4437.18	-218.40	-209.80	676.29	0.52	451053.22	600784.23	N 32 14 22.71	W 104 0 26.52
	4503.00	8.71	108.64	4532.01	-223.28	-214.50	690.44	0.49	451048.52	600798.39	N 32 14 22.66	W 104 0 26.36
	4599.00	8.36	108.47	4626.95	-227.98	-219.03	703.95	0.37	451043.99	600811.89	N 32 14 22.62	W 104 0 26.20
	4695.00	8.41	108.26	4720.93	-232.51	-223.40	717.10	0.06	451039.62	600825.04	N 32 14 22.58	W 104 0 26.05
	4790.00	7.29	105.94	4816.03	-236.55	-227.27	729.62	1.21	451035.75	600837.56	N 32 14 22.54	W 104 0 25.90
	4886.00	5.68	104.26	4910.42	-239.49	-230.28	739.98	1.71	451032.94	600847.92	N 32 14 22.51	W 104 0 25.78
	4981.00	5.23	103.33	5005.99	-241.78	-232.26	748.84	0.48	451030.76	600856.78	N 32 14 22.49	W 104 0 25.68
	5077.00	3.49	104.36	5100.71	-243.59	-233.98	755.85	1.83	451029.04	600866.79	N 32 14 22.47	W 104 0 25.60
	5172.00	1.87	102.49	5196.60	-244.71	-235.04	760.21	1.69	451027.98	600876.15	N 32 14 22.46	W 104 0 25.55
	5268.00	0.95	106.76	5291.57	-245.30	-235.60	762.48	0.97	451027.42	600887.42	N 32 14 22.45	W 104 0 25.52
	5363.00	0.81	115.22	5387.56	-245.83	-236.12	763.86	0.20	451026.90	600897.19	N 32 14 22.44	W 104 0 25.50
	5459.00	1.18	113.02	5482.54	-246.52	-236.79	765.36	0.39	451026.23	600907.30	N 32 14 22.44	W 104 0 25.49
	5554.00	1.19	112.78	5578.52	-247.32	-237.56	767.19	0.01	451025.46	600917.53	N 32 14 22.43	W 104 0 25.47
	5650.00	1.31	114.34	5673.50	-248.17	-238.39	769.09	0.13	451024.63	600927.03	N 32 14 22.43	W 104 0 25.44
	5745.00	1.32	116.76	5769.47	-249.15	-239.34	771.08	0.06	451023.68	600937.02	N 32 14 22.42	W 104 0 25.42
	5841.00	0.69	109.62	5864.46	-249.85	-240.03	772.59	0.67	451022.99	600946.53	N 32 14 22.41	W 104 0 25.40
	5936.00	0.55	95.10	5960.45	-250.10	-240.26	773.60	0.22	451022.76	600956.14	N 32 14 22.41	W 104 0 25.39
	6032.00	0.67	103.31	6056.45	-250.28	-240.43	774.60	0.15	451022.59	600965.74	N 32 14 22.40	W 104 0 25.38
	6128.00	0.51	48.45	6151.44	-250.14	-240.28	775.46	0.59	451022.74	600975.34	N 32 14 22.41	W 104 0 25.37
	6223.00	0.58	47.02	6247.44	-249.53	-239.66	776.14	0.07	451023.36	600984.97	N 32 14 22.41	W 104 0 25.36
	6319.00	0.28	67.38	6342.44	-249.12	-239.25	776.70	0.35	451023.77	600994.64	N 32 14 22.42	W 104 0 25.35
	6414.00	0.35	49.77	6438.44	-248.85	-238.97	777.14	0.12	451024.05	601004.30	N 32 14 22.42	W 104 0 25.35
	6510.00	0.38	98.26	6533.43	-248.71	-238.83	777.68	0.32	451024.19	601014.01	N 32 14 22.42	W 104 0 25.34
	6605.00	0.23	191.25	6629.43	-248.95	-239.06	777.95	0.47	451023.96	601023.72	N 32 14 22.42	W 104 0 25.34
	6701.00	0.30	207.95	6725.43	-249.36	-239.47	777.80	0.11	451023.55	601033.55	N 32 14 22.41	W 104 0 25.34
	67797.											

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7658.00	0.88	293.79	7586.20	-260.05	-250.34	763.19	0.30	451012.68	600871.12	N 32 14 22.31 W 104	0 25.51
	7753.00	0.61	290.32	7681.19	-259.56	-249.87	762.05	0.29	451013.15	600869.98	N 32 14 22.31 W 104	0 25.53
	7849.00	0.68	255.72	7777.18	-259.51	-249.84	761.01	0.41	451013.18	600868.95	N 32 14 22.31 W 104	0 25.54
	7945.00	0.63	251.11	7873.18	-259.81	-250.15	759.96	0.08	451012.87	600867.90	N 32 14 22.31 W 104	0 25.55
	8040.00	0.30	206.24	7968.17	-260.19	-250.54	759.36	0.49	451012.48	600867.30	N 32 14 22.31 W 104	0 25.56
	8136.00	0.39	247.02	8064.17	-260.54	-250.89	758.95	0.27	451012.13	600866.88	N 32 14 22.30 W 104	0 25.56
	8231.00	0.13	268.54	8159.17	-260.66	-251.02	758.54	0.29	451012.00	600866.48	N 32 14 22.30 W 104	0 25.57
	8327.00	0.23	21.41	8255.17	-260.49	-250.84	758.50	0.32	451012.18	600866.44	N 32 14 22.30 W 104	0 25.57
	8423.00	0.28	37.97	8351.17	-260.13	-250.48	758.72	0.09	451012.54	600866.66	N 32 14 22.31 W 104	0 25.56
	8518.00	0.16	20.12	8446.17	-259.82	-250.17	758.91	0.14	451012.85	600866.84	N 32 14 22.31 W 104	0 25.56
	8614.00	0.13	240.64	8542.17	-259.75	-250.10	758.86	0.28	451012.92	600866.80	N 32 14 22.31 W 104	0 25.56
	8709.00	0.18	323.93	8637.17	-259.68	-250.03	758.68	0.22	451012.99	600866.61	N 32 14 22.31 W 104	0 25.57
	8805.00	0.18	136.65	8733.17	-259.67	-250.02	758.69	0.37	451013.00	600866.63	N 32 14 22.31 W 104	0 25.56
	8901.00	0.18	257.14	8829.17	-259.81	-250.16	758.65	0.33	451012.86	600866.58	N 32 14 22.31 W 104	0 25.57
	8996.00	0.51	222.35	8924.17	-260.15	-250.51	758.22	0.40	451012.51	600866.15	N 32 14 22.31 W 104	0 25.57
	9092.00	0.93	251.55	9020.16	-260.70	-251.07	757.19	0.57	451011.95	600865.13	N 32 14 22.30 W 104	0 25.58
	9187.00	0.98	257.13	9115.15	-261.10	-251.50	755.67	0.11	451011.52	600863.60	N 32 14 22.30 W 104	0 25.60
	9283.00	0.83	257.34	9211.14	-261.42	-251.83	754.19	0.16	451011.19	600862.13	N 32 14 22.29 W 104	0 25.62
	9359.00	0.78	241.72	9287.13	-261.77	-252.20	753.19	0.30	451010.82	600861.13	N 32 14 22.29 W 104	0 25.63
	9479.00	0.93	273.49	9363.11	-262.08	-252.52	751.50	0.41	451010.50	600859.44	N 32 14 22.29 W 104	0 25.65
	9575.00	3.89	353.32	9503.03	-258.78	-249.24	750.35	4.00	451013.78	600858.29	N 32 14 22.32 W 104	0 25.66
	9670.00	12.12	359.14	9597.03	-245.58	-236.05	749.82	8.69	451026.97	600857.76	N 32 14 22.45 W 104	0 25.67
	9766.00	16.60	359.99	9690.01	-221.76	-212.24	749.67	4.67	451050.77	600857.61	N 32 14 22.68 W 104	0 25.67
	9862.00	29.30	0.64	9778.23	-184.43	-174.89	749.93	13.23	451088.12	600857.87	N 32 14 23.05 W 104	0 25.66
	9958.00	38.14	1.79	9858.00	-131.22	-121.66	751.12	9.23	451141.35	600859.06	N 32 14 23.58 W 104	0 25.65
	10053.00	46.09	3.05	9928.41	-67.67	-58.07	753.86	8.42	451204.94	600861.80	N 32 14 24.21 W 104	0 25.61
	10149.00	51.00	4.84	9991.95	4.01	13.68	758.55	5.30	451276.68	600866.79	N 32 14 24.92 W 104	0 25.55
Heel HL Cross	10171.00	53.59	4.54	10005.40	21.34	31.03	760.27	11.84	451294.02	600868.21	N 32 14 25.09 W 104	0 25.54
	10244.00	62.21	3.67	10044.16	82.90	92.65	764.67	11.84	451355.64	600872.61	N 32 14 25.70 W 104	0 25.48
	10340.00	72.18	3.28	10081.32	171.05	180.87	770.02	10.39	451443.86	600877.96	N 32 14 26.57 W 104	0 25.42
	10435.00	86.25	1.49	10099.05	264.00	273.88	773.85	14.93	451536.86	600881.80	N 32 14 27.49 W 104	0 25.37
	10531.00	90.55	358.21	10101.73	359.92	369.81	773.61	5.63	451632.78	600881.54	N 32 14 28.44 W 104	0 25.37
	10627.00	90.52	357.82	10100.84	455.89	465.74	770.28	0.41	451728.71	600878.22	N 32 14 29.39 W 104	0 25.40
	10722.00	90.24	357.34	10100.21	550.85	560.66	766.27	0.58	451823.61	600874.21	N 32 14 30.33 W 104	0 25.45
	10773.00	90.41	356.62	10099.92	601.81	611.58	763.58	1.45	451874.53	600871.52	N 32 14 30.84 W 104	0 25.48
	10868.00	91.51	352.86	10098.33	696.48	706.15	754.88	4.12	451969.10	600862.82	N 32 14 31.77 W 104	0 25.58
	10959.00	90.93	344.62	10094.25	884.06	893.27	717.62	4.32	452156.20	600825.56	N 32 14 33.62 W 104	0 26.00
	11055.00	89.90	344.92	10093.56	976.99	985.90	692.40	1.12	452248.82	600800.35	N 32 14 34.54 W 104	0 26.29
	11251.00	90.07	344.92	10093.58	1070.00	1078.59	667.43	0.18	452341.50	600775.37	N 32 14 35.46 W 104	0 26.58
	11346.00	90.03	345.49	10093.50	1162.15	1170.44	643.17	0.60	452433.34	600751.12	N 32 14 36.37 W 104	0 26.86
	11442.00	90.00	347.80	10093.47	1255.82	1263.84	621.00	2.41	452526.73	600728.94	N 32 14 37.29 W 104	0 27.11
	11537.00	90.10	348.61	10093.39	1349.06	1356.83	601.58	0.86	452619.72	600709.53	N 32 14 38.22 W 104	0 27.34
	11633.00	89.73	349.10	10093.53	1443.47	1451.02	583.02	0.64	452713.90	600690.97	N 32 14 39.15 W 104	0 27.55
	11729.00	90.07	350.44	10093.70	1538.15	1545.49	565.97	1.44	452808.36	600673.93	N 32 14 40.08 W 104	0 27.75
	11825.00	90.79	352.77	10092.98	1633.29	1640.45	551.96	2.54	452903.32	600659.91	N 32 14 41.02 W 104	0 27.91
	11920.00	91.41	355.46	10091.16	1727.88	1734.93	542.22	2.91	452997.78	600650.17	N 32 14 41.96 W 104	0 28.02
	12016.00	88.66	356.40	10091.10	1823.70	1830.67	535.41	3.03	453093.52	600643.36	N 32 14 42.91 W 104	0 28.09
	12111.00	88.56	0.51	10093.40	1918.64	1925.59	532.85	4.23	453188.43	600640.80	N 32 14 43.85 W 104	0 28.12
	12302.00	92.03	3.04	10092.42	2109.42	2116.45	538.76	2.35	453379.28	600646.72	N 32 14 45.73 W 104	0 28.04
	12398.00	91.21	1.58	10089.71	2205.24	2212.33	542.63	1.74	453475.15	600650.58	N 32 14 46.68 W 104	0 27.99
	12493.00	90.38	0.95	10088.39	2300.17	2307.30	544.72	1.10	453570.11	600652.68	N 32 14 47.62 W 104	0 27.97
	12589.00	90.65	1.08	10087.52	2396.12	2403.28	546.42	0.31	453666.08	600654.38	N 32 14 48.57 W 104	0 27.94
	12684.00	90.52	1.13	10086.56	2491.07	2498.26	548.26	0.15	453761.05	600656.21	N 32 14 49.51 W 104	0 27.92
	12780.00	90.38	0.94	10085.80	2587.02	2594.24	549.99	0.25	453857.03	600657.95	N 32 14 50.46 W 104	0 27.89
	12971.00	90.31	1.26	10084.65	2777.92	2785.20	553.66	0.17	454047.97	600661.61	N 32 14 52.35 W 104	0 27.84
	13066.00	91.75	1.48	10082.94	2872.84	2880.15	555.93	1.53	454142.92	600663.88	N 32 14 53.29 W 104	0 27.82
	13162.00	89.97	1.09	10081.50	2968.76	2976.11	558.08	1.90	454238.87	600666.04	N 32 14 54.24 W 104	0 27.79
	13258.00	91.55	1.28	10080.23	3064.70	3072.08	560.07	1.66	454334.83	600668.02	N 32 14 55.19 W 104	0 27.76
	13353.00	91.17	0.18	10077.97	3159.64	3167.05	561.28	1.22	454429.79	600669.23	N 32 14 56.13 W 104	0 27.74
	13449.00	91.27	1.26	10075.93	3255.58	3263.02	562.48	1.13	454525.75	600670.44	N 32 14 57.08 W 104	0 27.73
	13544.00	90.31	0.58	10074.62	3350.53	3357.99	564.01	1.24	454620.72	600671.96	N 32 14 58.02 W 104	0 27.70
	13640.00	90.45	1.01	10073.98	3446.50	3453.98	565.34	0.47	454716.70	600673.29	N 32 14 58.97 W 104	0 27.69
	13735.00	89.59	1.53	10073.95	3541.44	3548.96	567.44	1.06	454811.67	600675.40	N 32 14 59.91 W 104	0 27.66
	13831.00	92.10	1.38	10072.53	3637.35	3644.91	569.88	2.62	454907.61	600677.84	N 32 15 0.86 W 104	0 27.63
	13927.00	91.62	1.50	10069.42	3733.23	3740.83	572.29	0.52	455003.52	600680.25	N 32 15 1.81 W 104	0 27.59
	14118.00	90.24	1.47	10066.32	3924.06	3931.73	577.24	0.72	455194.41	600685.19	N 32 15 3.70 W 104	0 27.53
	14213.00	91.13	359.77	10065.18	4019.02	4026.72	578.27	2.02	455289.39	600686.22	N 32 15 4.64 W 104	0 27.51
	14308.00	92.06	0.21	10062.54	4113.98	4121.68	578.25	1.08	455384.34	600686.21	N 32 15 5.58 W 104	0 27.51
	14404.00	91.51	359.81	10059.55	4209.92	4217.63	578.27	0.71	455480.29	600686.22	N 32 15 6.52 W 104	0 27.51
	14500.00	91.00	359.46	10057.45	4305.89	4313.60	577.66	0.64	455576.25	600685.61	N 32 15 7.47 W 104	0 27.51
	14595.00	91.14	359.42	10055.67	4400.88	4408.58	576.73	0.15	455671.22	600684.68	N 32 15 8.41 W 104	0 27.52
	14691.00	91.20	359.31	10053.71	4496.86	4504.56	575.67	0.13	455767.19	600683.62	N 32 15 9.36 W 104	0 27.53
	14787.00	91.03	359.11	10051.84	4592.84	4600.53	574.34	0.27	455863.16	600682.30	N 32 15 10.31 W 104	0 27.54
	14882.00	91.20	359.20	10050.00	4688.82	4695.50	572.94	0.20	455958.12	600680.90	N 32 15 11.25 W 104	0 27.55
	14978.00	90.24	358.53	10048.79	4783.81	4791.47	571.04	1.22	456054.08	600678.99	N 32 15 12.20 W 104	0 27.57
	15169.00	91.00	357.52	10046.72	4974.75	4982.35	564.46	0.66	456244.94	600672.41	N 32 15 14.09 W 104	0 27.64
	15264.00	89.83	356.41	10046.03	5069.67	5077.21	559.43	1.70	456339.79			

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
	18895.00	90.03	9.09	10059.75	8693.57	8701.91	598.93	1.83	459964.20	600706.88	N 32 15 50.90	W 104 0 27.11
	18891.00	89.35	8.24	10060.26	8768.28	8796.81	613.39	1.13	460059.09	600721.34	N 32 15 51.84	W 104 0 26.94
	19086.00	89.42	8.41	10061.28	8882.09	8890.80	627.15	0.19	460153.08	600735.09	N 32 15 52.77	W 104 0 26.77
	19182.00	89.72	7.77	10062.00	8976.95	8985.84	640.66	0.74	460248.11	600748.60	N 32 15 53.71	W 104 0 26.61
	19278.00	91.10	7.85	10061.32	9071.88	9080.95	653.70	1.44	460343.21	600761.65	N 32 15 54.65	W 104 0 26.46
	19373.00	88.52	6.06	10061.63	9166.02	9175.24	665.20	3.31	460437.49	600773.15	N 32 15 55.58	W 104 0 26.32
	19469.00	88.69	4.86	10063.97	9261.43	9270.77	674.33	1.26	460533.02	600782.28	N 32 15 56.52	W 104 0 26.21
	19564.00	90.24	3.79	10064.86	9356.05	9365.49	681.50	1.98	460627.73	600789.44	N 32 15 57.46	W 104 0 26.12
	19660.00	89.83	4.58	10064.80	9451.69	9461.23	688.50	0.93	460723.46	600796.45	N 32 15 58.41	W 104 0 26.04
	19851.00	89.97	8.19	10065.13	9641.19	9651.02	709.74	1.89	460913.23	600817.68	N 32 16 0.29	W 104 0 25.78
	19947.00	90.14	6.29	10065.04	9736.26	9746.25	721.84	1.99	461008.45	600829.78	N 32 16 1.23	W 104 0 25.64
	19992.00	89.97	4.67	10065.00	9780.99	9791.04	726.14	3.62	461053.24	600834.08	N 32 16 1.67	W 104 0 25.59
	20042.00	90.46	2.12	10064.80	9830.86	9840.95	729.10	5.20	461103.15	600837.04	N 32 16 2.17	W 104 0 25.55
	20090.00	91.20	0.84	10064.10	9878.82	9888.93	730.34	3.06	461151.12	600838.28	N 32 16 2.64	W 104 0 25.54
	20138.00	92.20	358.86	10062.67	9926.79	9936.90	730.21	4.62	461199.09	600838.15	N 32 16 3.11	W 104 0 25.54
Toe HL Cross	20150.00	91.85	358.32	10062.25	9938.78	9948.89	729.92	5.36	461211.08	600837.86	N 32 16 3.23	W 104 0 25.54
	20233.00	89.41	354.60	10061.34	10021.66	10031.71	724.79	5.36	461293.89	600832.73	N 32 16 4.05	W 104 0 25.60
Last SLB MWD Survey	20259.00	89.45	354.90	10061.60	10047.58	10057.60	722.41	1.16	461319.78	600830.36	N 32 16 4.31	W 104 0 25.62
Projection to Bit	20300.00	89.45	354.90	10061.99	10088.45	10098.43	718.77	0.00	461360.61	600826.71	N 32 16 4.71	W 104 0 25.66

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 3 *** 3-D 97.071% Confidence 3.0000 sigma
Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	28.000	1/98.425	30.000	30.000	A001Ma_MWD-Depth Only	CB SE 5 32 FED COM 3 3H / Chevron CB SE 5 32 FED COM 3
	1	28.000	28.000	Act Stns	30.000	30.000	A001Ma_MWD-Depth Only	CB SE 5 32 FED COM 3 3H / Chevron CB SE 5 32 FED COM 3
	1	28.000	387.000	Act Stns	30.000	30.000	A001Ma_MWD	CB SE 5 32 FED COM 3 3H / Chevron CB SE 5 32 FED COM 3
	1	387.000	20300.000	Act Stns	30.000	30.000	B001Ma_MWD+HDGM	CB SE 5 32 FED COM 3 3H / Chevron CB SE 5 32 FED COM 3

...CB SE 5 32 FED COM 3 3H/CB SE 5 32 FED COM 3 3H/Chevron CB SE 5 32 FED COM 3 3H MWD to 20300ft