

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

October 19, 2018

Cimarex Energy Co.
202 S. Cheyenne Ave.
Tulsa, OK 74103

HOBBS OCD

DEC 26 2018

RECEIVED

S25, 16S, 33E Lea NM

Re:

CLIENT: Cimarex Energy Co.
WELL: State 25 1H ST01
FIELD: Kennitz; CISCO, SOUTH

RIG: H&P 395
COUNTY: Lea
API NO: 30-025-44894
JOB NO: 18MLD2180

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>
Cen Chen FE	State 25 1H ST01 Side Track	10793.00 Ft to 14042.00 Ft	August 13, 2018 to September 20, 2018	SlimPulse Third Party Corrected

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

Eric Payne
Field Service Manager

Schlumberger-Private

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:

S25, 16S, 33E Lea NM

I, Cen Chen certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of August 13, 2018 through September 20, 2018, conduct or supervise the taking of the SlimPulse & Third Party Corrected surveys from a depth of 10793.00 feet to a depth of 14042.00 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 Cimarex Energy Co. for the State 25 1H ST01 Well (Side Track) API No. 30-025-44894 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
Cen Chen
FE

Subscribed and Sworn to before me this 19th day of October (month) 2018 (yr)

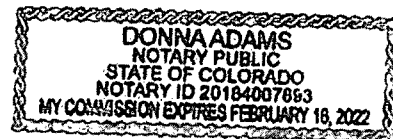
My Commission expires:

2-16-2022

Donna Adams
Notary Public

Adams County Colorado
(County State)

(signature)



Schlumberger

Cimarex Final PVA



Borehole:	ST01	Well:	Cimarex State 25 #1H	Field:	NM Lea County (NAD 83)	Structure:	Cimarex State 25 #1H
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Gravity & Magnetic Parameters	Model: MDGM 2018	Dip: 88.81°	Date: 01-Aug-2018	Surface Location	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Grid Conv:	6.35327	Miscellaneous
MagDec:	6.647°	FB: 45233.34mT	Gravity FB: 988.84m/s (9.80665 Based)	Lat: N 32 52 35.16	Northing: 629902.448N/5	Scale Fact:	0.3099568	Stat: Cimarex State 25 #1H TVD Ref: RNS(4174.32 above NSL)
				Long: W 103 38 33.38	Eastng: 763286.148E/5			Plant: Final Survey - Cimarex State 25 #1H ST01 MWD 08-141000 (Surcon Corrected)

Critical Points

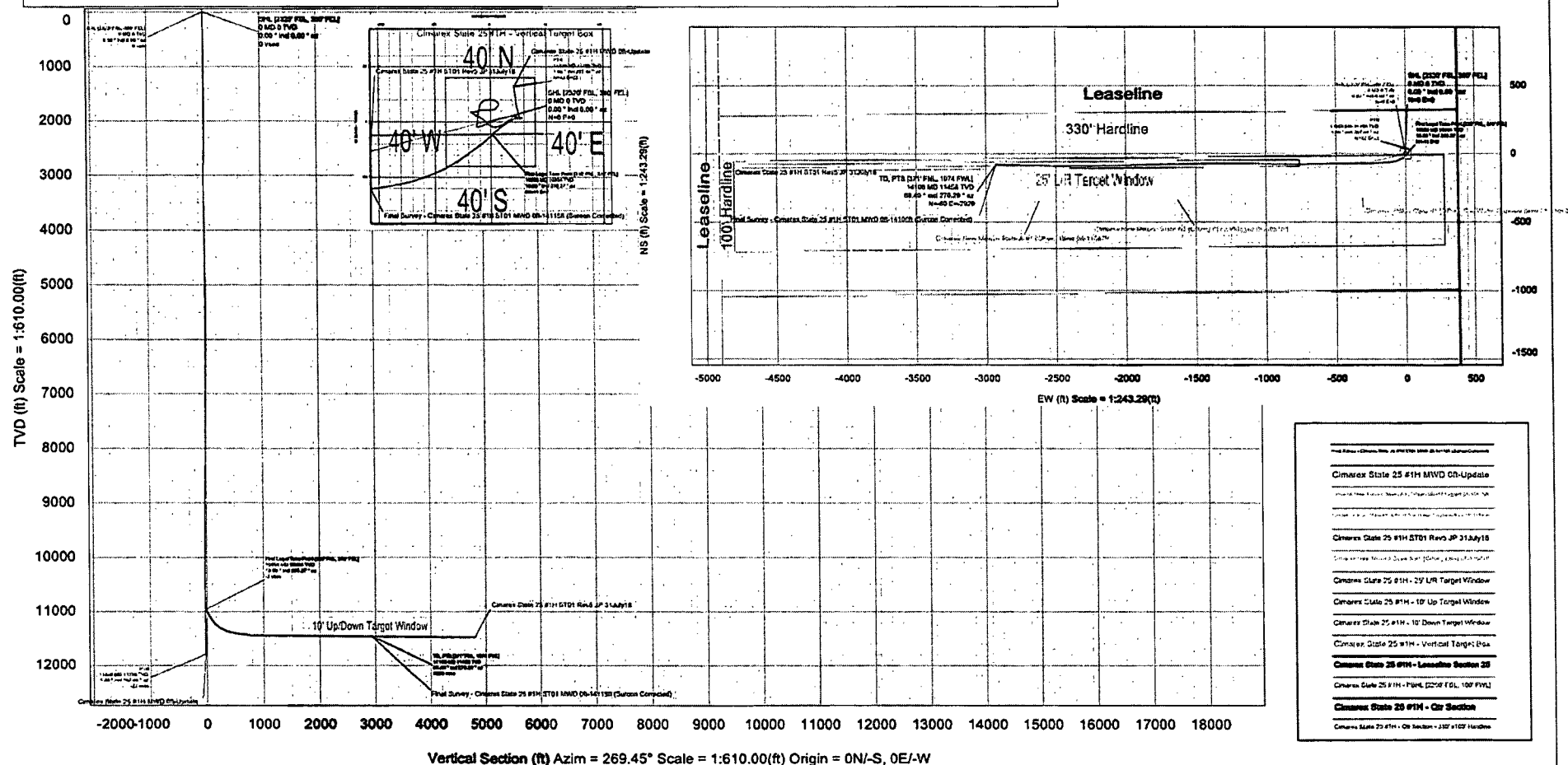
Critical Point	MD	DCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	OLS
SHL [230° FOL, 380° FOL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
First Legal Take Point [330° FOL, 370° FOL]	10954.40	19.00	236.27	10954.21	-1.08	-11.00	2.08	15.54
TD, PTB [271° FOL, 1974 FOL]	14106.00	65.49	270.39	11457.81	2020.04	-80.37	-2020.30	0.00



Grid
True
Mag

Grid North
Tot Cor (N=+0.6354°)
Mag Dec (6.647°)
Grid Conv (0.3099°)

CONTROLLED	
Drawn by	_____ 21/08/2018
Checked by	_____ 21/08/2018
Drawn by	_____ 21/08/2018
Checked by	_____ 21/08/2018
Drawn by	_____ 21/08/2018
Checked by	_____ 21/08/2018



Final Survey - Cimarex State 25 #1H ST01 MWD 0ft-14106ft (Surcon Corrected) Survey Geodetic Report (Def Survey)



Report Date: September 27, 2018 - 10:36 AM
 Client: Cimarex
 Field: NM Lea County (NAD 83)
 Structure / Slot: Cimarex State 25 #1H / Cimarex State 25 #1H
 Well: Cimarex State 25 #1H
 Borehole: ST01
 UWI / API#: Unknown / Unknown
 Survey Name: Final Survey - Cimarex State 25 #1H ST01 MWD 0ft-14106ft (Surcon Corrected)
 Survey Date: July 10, 2018
 Tori / AHD / DDH / ERD Ratio: 158.179' / 3119.022 ft / 5.783' / 0.272
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 53' 31.16221", W 103° 36' 33.38046"
 Location Grid N/E Y/X: N 689002.440 RUS, E 763590.140 RUS
 CRS Grid Convergence Angle: 0.3932°
 Grid Scale Factor: 0.99995566
 Version / Patch: 2.10.740.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 269.450° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Elevation: RUS
 Seabed / Ground Elevation: 4174.200 ft above MSL
 Magnetic Declination: 8.647°
 Total Gravity Field Strength: 998.5103mg (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 48233.254 nT
 Magnetic Dip Angle: 60.819°
 Declination Date: August 01, 2018
 Magnetic Declination Model: HDGM 2018
 North Reference: Grid North
 Grid Convergence Used: 0.3932°
 Total Corr Mag North to Grid North: 0.2540°
 Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azlm Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')	Closure Azimuth (°)	Closure (ft)
SHL [2320 FSL, 380 FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	689002.44	763590.14	N 32 53 31.16	W 103 36 33.38	0.00	0.00
198.00	0.70	242.99	198.00	1.08	-0.55	-1.08	0.35	689001.89	763589.06	N 32 53 31.16	W 103 36 33.39		242.99	1.21
287.00	0.76	222.29	266.99	1.77	-1.08	-1.76	0.39	689001.36	763588.38	N 32 53 31.15	W 103 36 33.40		238.50	2.07
298.00	0.97	241.29	297.99	2.12	-1.34	-2.11	0.84	689001.10	763588.03	N 32 53 31.15	W 103 36 33.41		237.44	2.50
397.00	0.90	253.15	396.97	3.53	-1.93	-3.51	0.19	689000.51	763586.63	N 32 53 31.14	W 103 36 33.42		241.18	4.01
579.00	0.75	251.26	578.96	6.03	-2.73	-6.01	0.08	688999.71	763584.14	N 32 53 31.14	W 103 36 33.45		245.57	6.60
761.00	0.90	250.40	760.94	8.51	-3.49	-8.48	0.08	688998.85	763581.66	N 32 53 31.13	W 103 36 33.48		247.05	9.21
852.00	0.84	253.09	851.93	9.83	-4.02	-9.79	0.08	688998.42	763580.35	N 32 53 31.12	W 103 36 33.50		247.66	10.69
943.00	0.96	247.77	942.92	11.18	-4.51	-11.13	0.16	688997.93	763579.01	N 32 53 31.12	W 103 36 33.51		247.97	12.01
1123.00	0.65	3.28	1122.91	12.51	-4.06	-12.47	0.76	688998.33	763577.67	N 32 53 31.12	W 103 36 33.53		251.98	13.12
1311.00	0.54	18.36	1310.90	12.15	-2.15	-12.13	0.10	689000.29	763578.01	N 32 53 31.14	W 103 36 33.52		259.94	12.32
1405.00	0.54	10.78	1404.89	11.92	-1.30	-11.91	0.08	689001.14	763578.23	N 32 53 31.15	W 103 36 33.52		263.79	11.98
1473.00	0.50	15.60	1472.89	11.78	-0.70	-11.77	0.09	689001.74	763578.37	N 32 53 31.16	W 103 36 33.52		266.62	11.79
1598.00	0.48	353.45	1595.83	11.68	0.33	-11.69	0.16	689002.77	763578.46	N 32 53 31.17	W 103 36 33.52		271.63	11.69
1690.00	0.59	350.54	1689.88	11.79	1.20	-11.81	0.12	689003.64	763578.33	N 32 53 31.17	W 103 36 33.52		275.81	11.87
1784.00	0.55	3.84	1783.88	11.84	2.13	-11.83	0.15	689004.57	763578.28	N 32 53 31.18	W 103 36 33.52		280.18	12.05
1973.00	0.87	2.26	1972.66	11.70	4.47	-11.74	0.17	689006.91	763578.40	N 32 53 31.21	W 103 36 33.52		290.83	12.56
2067.00	1.02	7.47	2066.85	11.54	6.01	-11.60	0.18	689008.45	763578.54	N 32 53 31.22	W 103 36 33.52		297.38	13.07
2161.00	1.07	4.50	2160.83	11.35	7.71	-11.42	0.08	689010.15	763578.72	N 32 53 31.24	W 103 36 33.51		304.03	13.78
2256.00	1.18	11.02	2255.81	11.08	9.56	-11.17	0.18	689012.00	763578.97	N 32 53 31.26	W 103 36 33.51		310.56	14.70
2350.00	1.37	12.07	2349.79	10.64	11.61	-10.75	0.20	689014.05	763579.39	N 32 53 31.28	W 103 36 33.51		317.20	15.82
2445.00	1.58	18.07	2444.78	9.97	13.95	-10.11	0.26	689016.39	763580.03	N 32 53 31.30	W 103 36 33.50		324.07	17.23
2539.00	1.78	21.90	2538.72	8.01	16.52	-9.17	0.26	689018.96	763580.97	N 32 53 31.33	W 103 36 33.49		330.97	18.69
2634.00	1.85	263.69	2633.67	7.16	18.73	-7.34	1.14	689021.17	763582.60	N 32 53 31.35	W 103 36 33.46		338.61	20.12
2728.00	2.67	81.61	2727.60	3.71	18.68	-3.90	1.34	689022.32	763586.24	N 32 53 31.36	W 103 36 33.42		348.90	20.26
2822.00	2.68	91.43	2821.50	-0.65	20.15	0.46	0.49	689022.59	763590.60	N 32 53 31.36	W 103 36 33.37		1.31	20.15
2858.00	2.80	99.72	2857.46	-2.36	18.88	2.17	1.15	689022.42	763592.31	N 32 53 31.36	W 103 36 33.35		6.20	20.10
2917.00	2.74	112.82	2916.39	-5.07	19.19	4.89	1.08	689021.63	763595.03	N 32 53 31.35	W 103 36 33.32		14.30	19.80
2962.00	2.30	125.50	2961.35	-6.79	18.25	6.62	1.57	689020.69	763596.76	N 32 53 31.34	W 103 36 33.30		19.93	19.41
3011.00	1.73	163.34	3010.32	-7.79	16.97	7.63	2.88	689019.41	763597.77	N 32 53 31.33	W 103 36 33.29		24.21	18.60
3105.00	2.17	217.55	3104.27	-14.20	8.55	1.94	689018.64	763597.09	N 32 53 31.30	W 103 36 33.30		26.09	15.81	
3200.00	1.15	225.41	3199.23	-5.29	12.10	5.18	1.10	689014.54	763595.32	N 32 53 31.28	W 103 36 33.32		23.16	13.16
3295.00	0.63	267.64	3294.22	-4.08	11.41	3.98	0.85	689013.85	763594.11	N 32 53 31.27	W 103 36 33.33		19.21	12.08
3389.00	0.64	259.06	3388.22	-3.05	11.29	2.94	0.10	689013.73	763593.08	N 32 53 31.27	W 103 36 33.35		14.61	11.67
3484.00	0.69	267.83	3483.21	-1.56	11.17	1.85	0.12	689015.61	763591.99	N 32 53 31.27	W 103 36 33.36		9.41	11.32
3578.00	0.67	282.85	3577.20	-0.85	11.08	0.74	0.07	689013.52	763590.88	N 32 53 31.27	W 103 36 33.37		3.82	11.10
3673.00	0.75	259.83	3672.19	0.32	10.50	-0.42	0.09	689013.34	763589.72	N 32 53 31.27	W 103 36 33.38		357.78	10.91
3767.00	0.65	274.98	3766.19	1.92	10.85	-1.72	0.25	689013.29	763588.42	N 32 53 31.27	W 103 36 33.40		350.97	10.88
3861.00	0.82	274.75	3860.17	3.06	10.97	-3.17	0.07	689013.41	763586.97	N 32 53 31.27	W 103 36 33.42		343.88	11.42
3956.00	0.89	268.83	3955.16	4.59	10.99	-4.87	0.14	689013.43	763585.47	N 32 53 31.27	W 103 36 33.43		338.99	11.94
4050.00	0.86	268.98	4049.15	8.00	10.91	-6.10	0.03	689013.35	763584.04	N 32 53 31.27	W 103 36 33.45		330.80	12.50
4145.00	0.90	268.49	4144.14	7.45	10.86	-7.56	0.05	689013.30	763582.58	N 32 53 31.27	W 103 36 33.47		325.16	13.23
4239.00	0.67	275.85	4238.13	8.74	10.89	-8.84	0.27	689013.33	763581.30	N 32 53 31.27	W 103 36 33.48		320.93	14.03
4333.00	0.03	102.26	4332.13	9.28	10.94	-9.37	0.74	689013.39	763580.77	N 32 53 31.27	W 103 36 33.49		319.43	14.40
4428.00	0.03	198.12	4427.13	9.24	10.91	-9.35	0.05	689013.35	763580.79	N 32 53 31.27	W 103 36 33.49		319.41	14.37
4522.00	0.11	229.98	4521.13	9.32	10.83	-9.43	0.09	689013.27	763580.71	N 32 53 31.27	W 103 36 33.49		318.97	14.36
4616.00	0.40	268.10	4615.13	8.71	10.78	-9.87	0.10	689013.20	763580.27	N 32 53 31.27	W 103 36 33.50		317.47	14.61
4711.00	0.39	254.46	4710.13	10.46	10.67	-10.57	0.13	689013.11	763579.68	N 32 53 31.27	W 103 36 33.50		315.28	15.01
4805.00	0.61	236.82	4804.12	11.19	10.31	-11.29	0.28	689012.75	763578.85	N 32 53 31.28	W 103 36 33.51		312.39	15.29
4900.00	0.51	233.47	4899.12	11.90	9.78	-12.06	0.11	689012.22	763578.09	N 32 53 31.26	W 103 36 33.52		309.05	15.52
4994.00	0.55	245.09	4993.11	12.71	9.34	-12.80	0.12	689011.78	763577.34	N 32 53 31.26	W 103 36 33.53		306.12	15.85
5089.00	0.46	263.72	5088.11	13.50	9.11	-13.59	0.20	689011.55	763576.65	N 32 53 31.25	W 103 36 33.54		303.82	16.36
5183.00	0.49	251.34	5182.11	14.26	8.94	-14.35	0.11	689011.38	763575.79	N 32 53 31.25	W 103 36 33.55		301.92	16.90
5277.00	0.45	237.16	5276.10	15.01	8.66	-15.09	0.10	689011.30	763575.05	N 32 53 31.25	W 103 36 33.56		300.42	17.51
5372.00	0.32	269.05	5371.10	15.64	8.92	-15.73	0.15	689011.36	763574.41	N 32 53 31.25	W 103 36 33.58		299.55	18.06
5466.00	0.48	260.56	5465.10	16.29	8.65	-16.38	0.18	689011.29	763573.76	N 32 53 31.25	W 103 36 33.57		298.37	18.62
5561.00	0.51	260.34	5560.10	17.10	8.68	-17.10	0.18	689011.30	763572.95	N 32 53 31.25	W 103 36 33.58		297.26	19.34
5655.00	0.24	153.24	5654.09	17.43	8.76	-17.51	0.73	689011.20	763572.63	N 32 53 31.25	W 103 36 33.59		296.57	19.58
5750.00	0.86	117.02	5749.09	16.71	8.26	-16.79	0.72	689010.70	763573.35	N 32 53 31.25	W 103 36 33.58		296.19	18.71
5844.00	0.91	117.83	5843.08	15.47	7.59	-15.50	0.05	689010.03	763574.64	N 32 53 31.24	W 103 36 33.58		295.08	17.28
5939.00	0.82	119.46	5938.07	14.12	6.90	-14.24	0.10	689009.34	763575.90	N 32 53 31.22	W 103 36 33.55		295.85	15.82
6033.00	0.87	127.74	6032.06	13.03	6.13	-13.09	0.14	689008.57	763577.05	N 32 53 31.22	W 103 36 33.53		295.10	14.45
6127.00	0.69	122.23	6126.05	11.99	5.39	-12.05	0.21	689007.83	763578.09	N 32 53 31.22	W 103 36 33.52		294.12	13.20
6222.00	0.81	126.77	6221.04	10.98	4.69	-11.02	0.14	689007.13	763579.12	N 32 53 31.21	W 10			

[illegible]

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) 742-3400 (Main)
Fax : (432) 742-5606 (Shared)

Schlumberger

October 19, 2018

Cimarex Energy Co.
202 S. Cheyenne Ave.
Tulsa, OK 74103

Re:

S25, 16S, 33E Lea NM

CLIENT: Cimarex Energy Co.
WELL: State 25 1H
FIELD: Kemnitz, CISCO, SOUTH

RIG: H&P 395
COUNTY: Lea
API NO: 30-025-44894
JOB NO: 18MLD2180

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>
Cen Chen FE	State 25 1H Original Hole	198.00 Ft to 11710.00 Ft	July 9, 2018 to July 31, 2018	Extreme Third Party Corrected

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

Eric Payne
Field Service Manager

Schlumberger-Private

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

Well Reference:

S25, 16S, 33E Lea NM

I, Cen Chen certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of July 09, 2018 through July 31, 2018, conduct or supervise the taking of the Extreme & Third Party Corrected surveys from a depth of 198.00 feet to a depth of 11710.00 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 Cimarex Energy Co. for the State 25 1H Well (Original Hole) API No. 30-025-44894 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
Cen Chen
FE

Subscribed and Sworn to before me this 19th day of October (month) 2018 (yr)

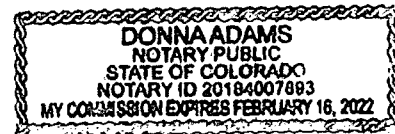
My Commission expires:

2-16-2022

Donna Adams
Notary Public

(signature)

Adams County Colorado
(County State)



Final Survey - Cimarex State 25 #1H MWD 0ft-11800ft (Surcon Corrected)



Survey Geodetic Report

(Def Survey)

Report Date: September 28, 2018 - 10:56 AM
 Client: Cimarex
 Field: NM Lea County (NAD 83)
 Structure / Slot: Cimarex State 25 #1H / Cimarex State 25 #1H
 Well: Cimarex State 25 #1H
 Borehole: Original Borehole
 UTM / APIF: Unknown / Unknown
 Survey Name: Final Survey - Cimarex State 25 #1H MWD 0ft-11800ft (Surcon Corrected)
 Survey Date: July 10, 2018
 Tort / AHD / DDI / ERD Ratio: 34.938° / 172.874 ft / 3.781 / 0.015
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 53' 31.16221", W 103° 36' 33.38046"
 Location Grid N/E Y/X: N 689002.440 ftUS, E 763590.140 ftUS
 CRS Grid Convergence Angle: 0.3932°
 Grid Scale Factor: 0.99998566
 Version / Patch: 2.10.740.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 0.000° (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB
 TVD Reference Elevation: 4174.200 ft above MSL
 Seabed / Ground Elevation: 4148.200 ft above MSL
 Magnetic Declination: 6.653°
 Total Gravity Field Strength: 998.5103mgm (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 48240.321 nT
 Magnetic Dip Angle: 60.821°
 Declination Date: July 10, 2018
 Magnetic Declination Model: HDOM 2018
 North Reference: Grid North
 Grid Convergence Used: 0.3932°
 Total Corr Mag North-Grid: 6.2596°
 North: 6.2596°
 Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azimuth (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ° ' ")	Longitude (E/W ° ° ' ")
SHL [2320' FSL, 380' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	689002.44	763590.14	N 32 53 31.16	W 103 36 33.38
	198.00	0.70	242.99	198.00	-0.55	-0.55	-1.08	0.35	689001.89	763589.06	N 32 53 31.16	W 103 36 33.39
	267.00	0.76	222.29	266.99	-1.08	-1.08	-1.76	0.39	689001.36	763588.38	N 32 53 31.15	W 103 36 33.40
	298.00	0.87	241.29	297.99	-1.34	-1.34	-2.11	0.94	689001.10	763588.03	N 32 53 31.15	W 103 36 33.41
	397.00	0.90	253.15	396.97	-1.93	-1.93	-3.51	0.19	689000.51	763586.63	N 32 53 31.14	W 103 36 33.42
	579.00	0.75	251.26	578.96	-2.73	-2.73	-6.01	0.08	688999.71	763584.14	N 32 53 31.14	W 103 36 33.45
	761.00	0.90	250.40	760.94	-3.59	-3.59	-8.48	0.08	688998.85	763581.66	N 32 53 31.13	W 103 36 33.48
	852.00	0.84	253.09	851.93	-4.02	-4.02	-9.79	0.08	688998.42	763580.35	N 32 53 31.12	W 103 36 33.50
	943.00	0.96	247.77	942.92	-4.51	-4.51	-11.13	0.16	688997.93	763579.01	N 32 53 31.12	W 103 36 33.51
	1123.00	0.65	3.28	1122.81	-4.06	-4.06	-12.47	0.76	688998.38	763577.67	N 32 53 31.12	W 103 36 33.53
	1311.00	0.54	18.36	1310.90	-2.15	-2.15	-12.13	0.10	689000.29	763578.01	N 32 53 31.14	W 103 36 33.52
	1403.00	0.54	10.76	1404.89	-1.30	-1.30	-11.91	0.09	689001.14	763578.23	N 32 53 31.15	W 103 36 33.52
	1473.00	0.50	15.80	1472.89	-0.70	-0.70	-11.77	0.09	689001.74	763578.37	N 32 53 31.16	W 103 36 33.52
	1596.00	0.48	353.45	1595.88	0.33	0.33	-11.68	0.16	689002.77	763578.46	N 32 53 31.17	W 103 36 33.52
	1690.00	0.59	350.54	1689.88	1.20	1.20	-11.81	0.12	689003.64	763578.33	N 32 53 31.17	W 103 36 33.52
	1784.00	0.55	3.84	1783.88	2.13	2.13	-11.86	0.15	689004.57	763578.28	N 32 53 31.18	W 103 36 33.52
	1973.00	0.87	2.26	1972.86	4.47	4.47	-11.74	0.17	689006.91	763578.40	N 32 53 31.21	W 103 36 33.52
	2067.00	1.02	7.47	2066.85	6.01	6.01	-11.60	0.18	689008.45	763578.54	N 32 53 31.22	W 103 36 33.52
	2161.00	1.07	4.50	2160.83	7.71	7.71	-11.42	0.08	689010.15	763578.72	N 32 53 31.24	W 103 36 33.51
	2256.00	1.18	11.02	2255.81	9.56	9.56	-11.17	0.18	689012.00	763578.97	N 32 53 31.26	W 103 36 33.51
	2350.00	1.37	12.07	2349.79	11.61	11.61	-10.75	0.20	689014.05	763579.39	N 32 53 31.28	W 103 36 33.51
	2445.00	1.56	18.07	2444.76	13.95	13.95	-10.11	0.26	689016.39	763580.03	N 32 53 31.30	W 103 36 33.51
	2539.00	1.78	21.90	2538.72	16.52	16.52	-9.17	0.26	689018.96	763580.97	N 32 53 31.33	W 103 36 33.49
	2634.00	1.65	56.69	2633.67	18.73	18.73	-7.34	1.14	689021.17	763582.80	N 32 53 31.35	W 103 36 33.48
	2728.00	2.67	81.61	2727.60	19.88	19.88	-3.90	1.34	689022.32	763586.24	N 32 53 31.36	W 103 36 33.42
	2822.00	2.68	91.43	2821.50	20.15	20.15	0.46	0.49	689022.59	763590.60	N 32 53 31.36	W 103 36 33.37
	2858.00	2.80	99.72	2857.46	19.98	19.98	2.17	1.15	689022.42	763592.31	N 32 53 31.36	W 103 36 33.35
	2917.00	2.74	112.82	2916.39	19.19	19.19	4.69	1.08	689021.63	763595.03	N 32 53 31.35	W 103 36 33.32
	2962.00	2.30	125.50	2961.35	18.25	18.25	6.62	1.57	689020.69	763596.76	N 32 53 31.34	W 103 36 33.30
	3011.00	1.73	163.34	3010.32	16.97	16.97	7.63	2.88	689019.41	763597.77	N 32 53 31.34	W 103 36 33.29
	3105.00	2.17	217.55	3104.27	14.20	14.20	6.95	1.94	689016.64	763597.09	N 32 53 31.30	W 103 36 33.30
	3200.00	1.15	225.41	3199.23	12.10	12.10	5.18	1.10	689014.54	763595.32	N 32 53 31.28	W 103 36 33.32
	3295.00	0.63	267.64	3294.22	11.41	11.41	3.98	0.85	689013.85	763594.11	N 32 53 31.27	W 103 36 33.33
	3389.00	0.64	259.06	3388.22	11.29	11.29	2.94	0.10	689013.73	763593.08	N 32 53 31.27	W 103 36 33.35
	3484.00	0.69	267.83	3483.21	11.17	11.17	1.85	0.12	689013.61	763591.99	N 32 53 31.27	W 103 36 33.36
	3578.00	0.67	262.85	3577.20	11.08	11.08	0.74	0.07	689013.52	763590.88	N 32 53 31.27	W 103 36 33.37
	3673.00	0.75	259.83	3672.19	10.90	10.90	-0.42	0.09	689013.34	763589.72	N 32 53 31.27	W 103 36 33.38
	3767.00	0.85	274.86	3766.19	10.85	10.85	-1.72	0.25	689013.29	763588.42	N 32 53 31.27	W 103 36 33.40
	3861.00	0.92	274.75	3860.17	10.97	10.97	-3.17	0.07	689013.41	763586.97	N 32 53 31.27	W 103 36 33.42
	3956.00	0.89	266.83	3955.16	10.99	10.99	-4.67	0.14	689013.43	763585.47	N 32 53 31.27	W 103 36 33.43
	4050.00	0.86	266.98	4049.15	10.91	10.91	-6.10	0.03	689013.35	763584.04	N 32 53 31.27	W 103 36 33.45
	4145.00	0.90	268.49	4144.14	10.86	10.86	-7.56	0.05	689013.30	763582.58	N 32 53 31.27	W 103 36 33.47
	4239.00	0.67	275.65	4238.13	10.89	10.89	-8.84	0.27	689013.33	763581.30	N 32 53 31.27	W 103 36 33.48
	4333.00	0.03	102.26	4332.13	10.94	10.94	-9.37	0.74	689013.38	763580.77	N 32 53 31.27	W 103 36 33.49
	4428.00	0.03	198.12	4427.13	10.91	10.91	-9.35	0.05	689013.35	763580.79	N 32 53 31.27	W 103 36 33.49
	4522.00	0.11	229.88	4521.13	10.83	10.83	-8.43	0.09	689013.27	763580.71	N 32 53 31.27	W 103 36 33.49
	4616.00	0.46	268.70	4615.13	10.76	10.76	-8.87	0.40	689013.20	763580.27	N 32 53 31.27	W 103 36 33.50
	4711.00	0.39	254.46	4710.13	10.67	10.67	-10.57	0.13	689013.11	763579.58	N 32 53 31.27	W 103 36 33.50
	4805.00	0.61	236.82	4804.12	10.31	10.31	-11.29	0.28	689012.75	763578.85	N 32 53 31.26	W 103 36 33.51
	4900.00	0.51	233.47	4899.12	9.78	9.78	-12.06	0.11	689012.22	763578.09	N 32 53 31.26	W 103 36 33.52
	4994.00	0.55	245.09	4993.11	9.34	9.34	-12.80	0.12	689011.78	763577.34	N 32 53 31.26	W 103 36 33.53
	5089.00	0.46	263.72	5088.11	9.11	9.11	-13.59	0.20	689011.55	763576.55	N 32 53 31.25	W 103 36 33.54
	5183.00	0.49	251.34	5182.11	8.94	8.94	-14.35	0.11	689011.38	763575.79	N 32 53 31.25	W 103 36 33.55
	5277.00	0.45	278.61	5276.10	8.66	8.66	-15.09	0.24	689011.30	763575.05	N 32 53 31.25	W 103 36 33.56
	5372.00	0.32	269.05	5371.10	8.92	8.92	-15.73	0.15	689011.36	763574.41	N 32 53 31.25	W 103 36 33.56
	5466.00	0.48	260.58	5465.10	8.85	8.85	-16.38	0.18	689011.29	763573.76	N 32 53 31.25	W 103 36 33.57
	5561.00	0.51	280.34	5560.10	8.86	8.86	-17.19	0.18	689011.30	763572.95	N 32 53 31.25	W 103 36 33.58
	5655.00	0.24	153.24	5654.09	8.76	8.76	-17.51	0.73	689011.20	763572.63	N 32 53 31.25	W 103 36 33.58
	5750.00	0.86	117.02	5749.09	8.26	8.26	-16.79	0.72	689010.03	763571.35	N 32 53 31.25	W 103 36 33.59
	5844.00	0.91	117.83	5843.08	7.59	7.59	-15.50	0.05	689010.03	763570.64	N 32 53 31.24	W 103 36 33.56
	5939.00	0.82	119.46	5938.07	6.90	6.90	-14.24	0.10	689009.34	763575.90	N 32 53 31.23	W 103 36 33.55
	6033.00	0.87	127.74	6032.06	6.13	6.13	-13.09	0.14	689008.57	763577.05	N 32 53 31.22	W 103 36 33.53
	6127.00	0.59	122.23	6126.05	5.39	5.39	-12.05	0.21	689007.83	763576.09	N 32 53 31.22	W 103 36 33.52
	6222.00	0.81	126.77	6221.04	4.69	4.69	-11.02	0.14	689007.13	763575.12	N 32 53 31.21	W 103 36 33.51
	6316.00	0.66	118.42	6315.03	4.03	4.03	-10.02	0.20	689006.47	763580.12	N 32 53 31.20	W 103 36 33.50
	6410.00	0.64	122.80	6409.03	3.49	3.49	-9.10	0.06	689005.93	763581.04	N 32 53 31.20	W 103 36 33.49
	6505.00	0.54	112.96	6504.02	3.03	3.03	-8.24	0.15	689005.47	763581.90	N 32 53 31.19	W 103 36 33.46
	6599.00	0.61	119.03	6598.02	2.61	2.61	-7.39	0.10	689005.05	763582.75	N 32 53 31.19	W 103 36 33.47
	6690.00	0.60	131.16	6689.01	2.06	2.06	-6.61	0.14	689004.50	763583.53	N 32 53 31.18	W 103 36 33.46
	6781.00	0.58	137.17	6780.01	1.41	1.41	-5.94	0.07	689003.85	763584.20	N 32 53 31.18	W 103 36 33.45
	6876.00	0.47	145.79	6875.00	0.74	0.74	-5.39	0.14	689003.18	763584.75	N 32 53 31.17	W 103 36 33.44
	6970.00	0.43	132.74	6969.90	0.18	0.18	-4.92	0.12	689002.62	763585.22	N 32 53 31.16	W 103 36 33.44
	7064.00	0.45	139.68	7063.00	-0.34	-0.34	-4.42	0.06	689002.10	763585.72	N 32 53 31.18	W 103 36 33.46
	7159.00	0.51	137.48	7157.99	-0.94	-0.94	-3.89	0.07	689001.50	763586.25	N 32 53 31.15	W 103 36 33.43
	7251.00	0.59	120.79	7251.99	-1.49	-1.49	-3.20	0.19	689000.95	763586.94	N 32 53 31.15	W 103 36 33.42

Comments	MD (ft)	Incl (°)	Azim Grd (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Eastings (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7537.00	0.60	119.52	7535.98	-2.95	-2.95	-1.03	0.03	688999.49	763589.11	N 32 53 31.13 W	103 36 33.39
	7631.00	0.63	113.98	7629.97	-3.40	-3.40	-0.13	0.07	688999.04	763590.01	N 32 53 31.13 W	103 36 33.38
	7728.00	0.63	111.24	7724.97	-3.80	-3.80	0.83	0.03	688998.64	763590.97	N 32 53 31.12 W	103 36 33.37
	7820.00	0.63	103.15	7818.96	-4.11	-4.11	1.82	0.09	688998.33	763591.90	N 32 53 31.12 W	103 36 33.36
	7915.00	0.68	109.35	7913.95	-4.41	-4.41	2.86	0.09	688998.03	763593.00	N 32 53 31.12 W	103 36 33.35
	8009.00	0.80	97.81	8007.95	-4.69	-4.69	4.03	0.20	688997.75	763594.17	N 32 53 31.12 W	103 36 33.33
	8104.00	0.74	84.82	8102.94	-4.72	-4.72	5.30	0.19	688997.72	763595.44	N 32 53 31.12 W	103 36 33.32
	8198.00	0.92	78.05	8196.93	-4.51	-4.51	6.64	0.22	688997.93	763596.78	N 32 53 31.12 W	103 36 33.32
	8292.00	0.83	68.93	8290.92	-3.98	-3.98	7.95	0.35	688998.46	763598.09	N 32 53 31.12 W	103 36 33.32
	8387.00	0.87	67.71	8385.91	-3.34	-3.34	9.20	0.17	688999.10	763599.34	N 32 53 31.13 W	103 36 33.29
	8481.00	1.06	63.36	8479.89	-2.68	-2.68	10.63	0.22	688999.77	763600.77	N 32 53 31.14 W	103 36 33.27
	8575.00	1.18	55.40	8573.88	-1.74	-1.74	12.21	0.21	688999.77	763602.35	N 32 53 31.14 W	103 36 33.26
	8670.00	1.10	56.57	8668.88	-0.88	-0.88	13.77	0.09	689001.76	763603.91	N 32 53 31.15 W	103 36 33.22
	8764.00	1.31	48.95	8762.84	0.52	0.52	15.34	0.28	689002.96	763605.48	N 32 53 31.17 W	103 36 33.20
	8859.00	1.52	56.04	8857.81	1.94	1.94	17.20	0.28	689004.38	763607.34	N 32 53 31.18 W	103 36 33.18
	8953.00	1.58	48.64	8951.77	3.49	3.49	18.21	0.22	689005.93	763609.35	N 32 53 31.20 W	103 36 33.15
	9048.00	1.15	58.20	9046.75	4.89	4.89	20.98	0.49	689007.33	763611.12	N 32 53 31.21 W	103 36 33.13
	9142.00	0.78	61.65	9140.73	5.71	5.71	22.32	0.43	689008.15	763612.46	N 32 53 31.22 W	103 36 33.12
	9236.00	0.23	109.11	9234.73	5.94	5.94	23.04	0.67	689008.38	763613.18	N 32 53 31.22 W	103 36 33.11
	9330.00	0.64	203.70	9328.73	5.40	5.40	23.01	0.74	689007.84	763613.15	N 32 53 31.21 W	103 36 33.11
	9424.00	0.76	192.42	9422.72	4.31	4.31	22.67	0.19	689006.75	763612.81	N 32 53 31.20 W	103 36 33.11
	9518.00	0.36	190.13	9517.72	3.40	3.40	22.48	0.42	689005.84	763612.62	N 32 53 31.19 W	103 36 33.12
	9613.00	0.42	113.78	9611.71	2.97	2.97	22.74	0.52	689005.41	763612.88	N 32 53 31.19 W	103 36 33.11
	9708.00	0.53	98.35	9704.71	2.76	2.76	23.48	0.17	689005.20	763613.62	N 32 53 31.19 W	103 36 33.10
	9800.00	0.35	95.59	9798.71	2.67	2.67	24.19	0.19	689005.10	763614.33	N 32 53 31.19 W	103 36 33.10
	9895.00	0.60	85.95	9893.71	2.87	2.87	24.90	0.31	689005.11	763615.03	N 32 53 31.19 W	103 36 33.09
	9989.00	0.50	105.25	9987.70	2.66	2.66	25.03	1.49	689005.10	763615.17	N 32 53 31.19 W	103 36 33.09
	9993.00	0.72	69.66	9991.70	2.76	2.76	25.98	0.45	689005.20	763616.12	N 32 53 31.19 W	103 36 33.08
	10088.00	0.87	78.20	10086.69	3.11	3.11	27.24	0.20	689005.55	763617.38	N 32 53 31.19 W	103 36 33.06
	10181.00	0.74	53.63	10179.68	3.61	3.61	28.42	0.39	689006.05	763618.56	N 32 53 31.20 W	103 36 33.05
	10276.00	0.33	219.97	10274.88	3.77	3.77	28.74	1.12	689006.21	763618.87	N 32 53 31.20 W	103 36 33.04
	10370.00	0.36	239.08	10368.68	3.41	3.41	28.31	0.13	689005.85	763618.45	N 32 53 31.19 W	103 36 33.03
	10464.00	0.48	287.51	10462.68	3.24	3.24	27.66	0.25	689005.68	763617.80	N 32 53 31.19 W	103 36 33.06
	10559.00	0.47	301.80	10557.67	3.43	3.43	26.93	0.29	689005.87	763617.07	N 32 53 31.19 W	103 36 33.06
	10653.00	0.41	307.78	10651.67	3.84	3.84	26.34	0.68	689006.28	763616.48	N 32 53 31.20 W	103 36 33.07
	10747.00	0.81	343.58	10745.68	4.68	4.68	25.89	0.57	689007.12	763616.02	N 32 53 31.21 W	103 36 33.08
	10836.00	0.88	352.90	10834.65	5.99	5.99	25.82	0.17	689008.43	763615.76	N 32 53 31.22 W	103 36 33.08
	10932.00	1.09	343.75	10930.64	7.56	7.56	25.28	0.28	689010.00	763615.42	N 32 53 31.24 W	103 36 33.08
	11027.00	1.32	344.80	11025.62	9.49	9.49	24.74	0.24	689011.93	763614.88	N 32 53 31.25 W	103 36 33.09
	11121.00	1.50	347.88	11119.59	11.74	11.74	24.20	0.21	689014.18	763614.33	N 32 53 31.28 W	103 36 33.10
	11215.00	1.47	347.55	11213.56	14.12	14.12	23.68	0.03	689016.56	763613.82	N 32 53 31.30 W	103 36 33.10
	11310.00	1.57	348.29	11308.53	16.58	16.58	23.15	0.11	689019.02	763613.29	N 32 53 31.32 W	103 36 33.11
	11404.00	1.58	358.98	11402.49	19.14	19.14	22.87	0.31	689021.58	763613.00	N 32 53 31.35 W	103 36 33.11
	11499.00	2.05	354.23	11497.44	22.14	22.14	22.67	0.52	689024.58	763612.81	N 32 53 31.38 W	103 36 33.11
	11593.00	2.07	349.85	11591.38	25.48	25.48	22.20	0.17	689027.92	763612.34	N 32 53 31.41 W	103 36 33.12
	11710.00	1.80	357.44	11708.32	29.40	29.40	21.75	0.32	689031.84	763611.89	N 32 53 31.45 W	103 36 33.12
PTB [287' FNL, 358' FEL]	11800.00	1.80	357.44	11788.27	32.22	32.22	21.62	0.00	689034.66	763611.76	N 32 53 31.48 W	103 36 33.12

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	1	0.000	26.000	1/98.425	12.250	NAL_MWD_JFR1+MS-Depth Only	Original Borehole / Final Survey - Cimarex State 25 #1H MWD Off- 11800ft (Surcon Corrected)
	1	26.000	26.000	Act Shs	12.250	NAL_MWD_JFR1+MS-Depth Only	Original Borehole / Final Survey - Cimarex State 25 #1H MWD Off- 11800ft (Surcon Corrected)
	1	26.000	11800.000	Act Shs	12.250	NAL_MWD_JFR1+MS	Original Borehole / Final Survey - Cimarex State 25 #1H MWD Off-