

KINGSLEY ENERGY SERVICES

OPERATOR: Enduring Resources, LLC

START: JULY 14, 2013

WELL: University 48 # 0704-H

FINISH: JULY 26, 2013

LOCATION: Reagan Co.

DIR. DRILLE T. Iselt, T. Parker

Rig: Ensign 784

CO. REP. K. Dabney / I. Dabney

TIE-IN SURVEY PROVIDED BY:

Commen Directional by Marksmen Directional

DECLINATION (+E / -W 6.73

Grid Conv.

MINIMUM CURVATURE CALCULATIONS(SPE-3362)

PROPOSED DIR.: 181.16

*****Survey Input*****

Survey No.	Measured Depth	INC	TRUE AZM	TVD	North + - South	East + - West	Vertical Section	DLS/ 100
Tie In	0	0	0	0	0	0	0	****
Gyro	100	0.37	77.59	99.9993	0.06939	0.315341	-0.07576	0.370001
Gyro	200	0.16	79.68	199.9982	0.163793	0.768048	-0.17931	0.210188
Gyro	300	0.39	81.68	299.997	0.238054	1.24217	-0.26315	0.230166
Gyro	400	0.42	97.34	399.9945	0.240476	1.942438	-0.27975	0.114282
Gyro	500	0.45	83.49	499.9916	0.238173	2.696113	-0.29271	0.109041
Gyro	600	0.22	78.59	599.9899	0.320676	3.274469	-0.3869	0.231568
Gyro	700	0.2	63.02	699.9892	0.437838	3.618197	-0.511	0.060244
Gyro	800	0.21	55.83	799.9886	0.619948	3.925359	-0.69929	0.027578
Gyro	900	0.05	69.38	899.9883	0.738242	4.117821	-0.82145	0.161817
Gyro	1001	0.26	80.36	1000.988	0.792136	4.384993	-0.88075	0.20904
MWD1	1081	0.2	334.7	1080.987	0.948766	4.504273	-1.03976	0.460422
MWD2	1175	0.2	314.7	1174.987	1.21249	4.317546	-1.29965	0.073893
MWD3	1270	5.8	1.3	1269.821	6.132063	4.308587	-6.21803	5.962569
MWD4	1364	4.6	0.2	1363.432	14.65013	4.429506	-14.7368	1.280936
MWD5	1458	4.1	4.4	1457.161	21.76999	4.700471	-21.8607	0.630363
MWD6	1553	3.8	5.1	1551.936	28.29167	5.24086	-28.392	0.319837
MWD7	1647	4.2	36.4	1645.717	34.16553	7.560701	-34.3116	2.330418
MWD8	1741	4.4	70.4	1739.468	38.14635	13.00111	-38.4017	2.680331
MWD9	1835	4	68.3	1833.215	40.56816	19.44421	-40.9535	0.455834
MWD10	1929	4.6	87.9	1926.955	41.9186	26.25767	-42.4416	1.678163
MWD11	2023	4.7	84.1	2020.646	42.45259	33.85522	-43.1293	0.344485
MWD12	2118	4.8	83	2115.32	43.33706	41.67176	-44.1718	0.142383
MWD13	2213	4	91.5	2210.04	43.73473	48.92932	-44.7163	1.084249
MWD14	2307	4	89.7	2303.811	43.66608	55.48526	-44.7804	0.133571
MWD15	2401	4	89.7	2397.582	43.70041	62.04228	-44.9475	1.52E-06
MWD16	2495	4	92.3	2491.353	43.586	68.59671	-44.9658	0.192928
MWD17	2589	4	93.2	2585.124	43.27141	75.14607	-44.7838	0.066788
MWD18	2683	4	93.2	2678.895	42.90539	81.69295	-44.5504	1.52E-06
MWD19	2778	4	93.6	2773.664	42.51237	88.30811	-44.2914	0.029372
MWD20	2871	3.9	94.4	2866.443	42.06606	94.69878	-43.9746	0.122772
MWD21	2966	4	95.5	2961.217	41.50062	101.2182	-43.5412	0.132066
MWD22	3060	3.8	96.6	3055	40.82837	107.5759	-42.9978	0.227157

MWD23	3155	3.5	97.4	3149.807	40.09307	113.5787	-42.3842	0.320301
MWD24	3250	3.3	96.4	3244.639	39.41479	119.1716	-41.8193	0.21958
MWD25	3344	3.2	96.6	3338.488	38.81166	124.4665	-41.3235	0.107065
MWD26	3438	4.4	87.1	3432.281	38.69254	130.6741	-41.33	1.437411
MWD27	3533	4	86	3527.026	39.10804	137.619	-41.886	0.429489
MWD28	3627	3.5	87.4	3620.824	39.4669	143.756	-42.3691	0.540722
MWD29	3722	3.4	84.2	3715.652	39.88313	149.4554	-42.9006	0.228364
MWD30	3816	3.2	86.5	3809.496	40.32498	154.8473	-43.4515	0.255122
MWD31	3911	2.9	84.6	3904.361	40.71301	159.8864	-43.9415	0.333195
MWD32	4005	4	79	3998.19	41.56239	165.4722	-44.9038	1.222523
MWD33	4100	3.9	73.7	4092.964	43.10139	171.8256	-46.5711	0.398306
MWD34	4194	3.4	68.3	4186.774	45.02925	177.4838	-48.6131	0.644947
MWD35	4288	4.1	87.6	4280.576	46.20066	183.4314	-49.9047	1.524909
MWD36	4382	3.5	86.7	4374.369	46.50655	189.6534	-50.3364	0.641425
MWD37	4477	3	88.3	4469.216	46.74723	195.0333	-50.686	0.534856
MWD38	4571	3.2	86.2	4563.078	46.99408	200.1098	-51.0356	0.24464
MWD39	4666	4.5	94.8	4657.862	46.85794	206.4696	-51.0282	1.493605
MWD40	4760	3.7	94.6	4751.621	46.30612	213.1676	-50.6121	0.851199
MWD41	4854	3.2	90.8	4845.45	46.02624	218.8143	-50.4466	0.584622
MWD42	4949	4.2	93	4940.251	45.80715	224.9397	-50.3515	1.062995
MWD43	5043	3.5	91.3	5034.039	45.5619	231.2458	-50.234	0.754436
MWD44	5137	5	92.5	5127.777	45.31811	238.2072	-50.1312	1.59846
MWD45	5232	4.6	91.8	5222.444	45.01787	246.1507	-49.9918	0.425536
MWD46	5326	4	89.5	5316.179	44.92808	253.1967	-50.0447	0.664014
MWD47	5420	3.3	85	5409.988	45.1925	259.1705	-50.43	0.804071
MWD48	5515	4.9	84.8	5504.742	45.79857	265.9354	-51.1729	1.684276
MWD49	5610	4.1	83.9	5599.448	46.52719	273.353	-52.0515	0.845354
MWD50	5704	3.7	84.1	5693.23	47.19605	279.7114	-52.849	0.425778
MWD51	5798	3.3	81.8	5787.055	47.89371	285.4062	-53.6618	0.450904
MWD52	5892	4.1	95.1	5880.86	47.98088	291.4313	-53.8709	1.242814
MWD53	5986	3.9	90.1	5974.631	47.67658	297.9751	-53.6992	0.427518
MWD54	6080	3.2	87.2	6068.45	47.79917	303.7924	-53.9395	0.768557
MWD55	6175	3.8	105.3	6163.276	47.09799	309.4774	-53.3535	1.315583
MWD56	6269	3.3	100.8	6257.095	45.76909	315.1395	-52.1395	0.60854
MWD57	6364	2.8	100.4	6351.96	44.83786	320.1077	-51.3091	0.52679
MWD58	6427	2.8	104.6	6414.885	44.1722	323.1102	-50.7043	0.325593
MWD59	6459	4	124.3	6446.829	43.34617	324.7887	-49.9125	5.181863
MWD60	6490	5.9	137.5	6477.713	41.56196	326.7586	-48.1685	7.107127
MWD61	6520	8.3	145.1	6507.482	38.64876	329.0395	-45.3021	8.573928
MWD62	6552	11.1	151.4	6539.022	34.04892	331.8362	-40.7598	9.34496
MWD63	6583	13.8	158.8	6569.292	27.98038	334.6024	-34.7485	10.09958
MWD64	6615	16.5	161.1	6600.177	20.12136	337.455	-26.9488	8.64246
MWD65	6646	19.2	162.8	6629.682	11.08527	340.3889	-17.974	8.869513
MWD66	6678	22.2	163.4	6659.613	0.262741	343.6727	-7.22015	9.398282
MWD67	6709	25	163.9	6688.018	-11.6458	347.1632	4.615243	9.055235
MWD68	6741	27.8	164.8	6716.678	-25.3464	350.9956	18.23545	8.838679
MWD69	6773	30.7	165.5	6744.595	-40.4593	354.9983	33.26422	9.125174

MWD70	6804	33.9	166	6770.795	-56.5131	359.0721	49.23227	10.35842
MWD71	6836	36.9	166.3	6796.876	-74.5094	363.5073	67.13516	9.390693
MWD72	6867	40.2	167.2	6821.117	-93.3125	367.9292	85.84485	10.79758
MWD73	6899	43.4	168.1	6844.969	-114.146	372.4853	106.5818	10.17398
MWD74	6930	46.6	169.2	6866.887	-135.635	376.7928	127.9795	10.62283
MWD75	6961	49.9	170.4	6887.527	-158.395	380.8815	150.6515	11.02959
MWD76	6993	53	172.7	6907.468	-183.145	384.5474	175.3222	11.19912
MWD77	7024	55.9	174.6	6925.491	-208.208	387.329	200.3241	10.60025
MWD78	7056	58.9	176.7	6942.731	-235.084	389.3651	227.1534	10.88299
MWD79	7087	62.3	178.1	6957.947	-262.059	390.5845	254.0983	11.65173
MWD80	7118	65.7	179.5	6971.536	-289.911	391.163	281.9324	11.6944
MWD81	7150	69.4	180.9	6983.754	-319.479	391.0549	311.4971	12.24876
MWD82	7181	73.1	181.3	6993.717	-348.823	390.4904	340.8467	11.99783
MWD83	7213	75.3	181.3	7002.429	-379.605	389.7918	371.6357	6.875002
MWD84	7244	77.5	181.3	7009.718	-409.726	389.1083	401.7646	7.096776
MWD85	7276	80.1	181.3	7015.933	-441.106	388.3962	433.1524	8.125002
MWD86	7307	82.5	181.6	7020.622	-471.737	387.6206	463.793	7.800804
MWD87	7339	84.9	182.2	7024.133	-503.524	386.5657	495.5946	7.728052
MWD88	7370	87.1	182.3	7026.296	-534.422	385.3517	526.5116	7.104067
MWD89	7402	88.3	182.7	7027.58	-566.366	383.9569	558.4764	3.952523
MWD90	7458	89	183	7028.899	-622.28	381.1733	614.4361	1.3599
MWD91	7552	88.7	182.7	7030.786	-716.145	376.5004	708.3761	0.4513
MWD92	7647	90.5	180.9	7031.449	-811.088	373.5169	803.36	2.679476
MWD93	7741	90.3	181.1	7030.793	-905.071	371.8764	897.3573	0.300893
MWD94	7836	90	182	7030.544	-1000.04	369.3068	992.3537	0.99861
MWD95	7930	90	183.7	7030.544	-1093.92	364.6331	1086.309	1.808511
MWD96	8024	90.2	185.3	7030.38	-1187.62	357.2582	1180.146	1.715371
MWD97	8119	89.8	183.7	7030.38	-1282.33	349.8049	1274.982	1.736042
MWD98	8213	90.3	184.6	7030.298	-1376.08	343.0024	1368.853	1.095277
MWD99	8307	89.8	182.2	7030.216	-1469.91	337.428	1462.774	2.608003
MWD100	8402	91.1	180.9	7029.47	-1564.86	334.8584	1557.764	1.93519
MWD101	8496	90.9	180.8	7027.829	-1658.84	333.4642	1651.749	0.237873
MWD102	8591	90.6	180.6	7026.586	-1753.82	332.3037	1746.737	0.379523
MWD103	8685	90.8	181.1	7025.437	-1847.81	330.9093	1840.728	0.572853
MWD104	8779	91.3	181.5	7023.715	-1941.77	328.7771	1934.712	0.681138
MWD105	8874	90	179.5	7022.637	-2036.75	327.9484	2029.693	2.510768
MWD106	8969	90	180.1	7022.637	-2131.75	328.28	2124.665	0.631579
MWD107	9063	90.4	181.5	7022.309	-2225.74	326.9676	2218.66	1.548948
MWD108	9157	89.3	179.5	7022.555	-2319.73	326.1474	2312.648	2.428203
MWD109	9252	89.8	180.1	7023.301	-2414.72	326.4789	2407.617	0.822115
MWD110	9346	90.2	180.9	7023.301	-2508.72	325.6587	2501.61	0.951517
MWD111	9440	90.7	181.5	7022.563	-2602.69	323.6902	2595.606	0.830861
MWD112	9535	89.7	179.7	7022.231	-2697.68	322.6955	2690.596	2.167471
MWD113	9630	90.3	180.9	7022.231	-2792.68	322.198	2785.583	1.412248
MWD114	9724	88.5	180.6	7023.215	-2886.66	320.9677	2879.572	1.941303
MWD115	9819	87.9	180.6	7026.199	-2981.61	319.9734	2974.52	0.63158
MWD116	9913	87.8	180.6	7029.726	-3075.54	318.9897	3068.449	0.106384

MWD117	10008	87.7	181.1	7033.456	-3170.45	317.5815	3163.374	0.536341
MWD118	10103	87.6	180.8	7037.351	-3265.36	316.0078	3258.294	0.332621
MWD119	10197	87.5	180.6	7041.369	-3359.27	314.8604	3352.205	0.237707
MWD120	10291	89.8	181.1	7043.584	-3453.22	313.4662	3446.171	2.503919
MWD121	10386	90	181.3	7043.75	-3548.2	311.4767	3541.17	0.297729
MWD122	10481	91.8	182.5	7042.257	-3643.13	308.3278	3636.145	2.277075
MWD123	10575	91.4	181.6	7039.633	-3737.04	304.9667	3730.096	1.047409
MWD124	10670	91.3	182	7037.395	-3831.96	301.9835	3825.063	0.433898
MWD125	10765	91.5	182.3	7035.073	-3926.87	298.4206	3920.021	0.379453
MWD126	10859	91.9	183	7032.285	-4020.72	294.0765	4013.947	0.857401
MWD127	10953	89.6	180.8	7031.054	-4114.65	290.9611	4107.919	3.385675
MWD128	11047	89.2	180.9	7032.039	-4208.64	289.5667	4201.912	0.438627
MWD129	11141	89.4	180.9	7033.187	-4302.62	288.0903	4295.904	0.212767
MWD130	11235	89.5	181.6	7034.089	-4396.59	286.0398	4389.899	0.752207
MWD131	11330	89.3	181.3	7035.084	-4491.55	283.636	4484.892	0.379518
MWD132	11424	88.8	180.9	7036.643	-4585.52	281.8317	4578.879	0.681147
MWD133	11519	90.6	181.6	7037.14	-4680.5	279.7593	4673.873	2.032955
MWD134	11613	91.2	182.5	7035.664	-4774.42	276.3973	4767.849	1.150606
MWD135	11707	91.4	183.2	7033.531	-4868.28	271.7248	4861.783	0.774295
MWD136	11802	89.3	180.4	7032.951	-4963.22	268.7415	4956.761	3.684036
MWD137	11896	89.7	180.8	7033.771	-5057.21	267.7572	5050.752	0.601781
MWD138	11991	90.1	181.8	7033.937	-5152.18	265.602	5145.75	1.133715
MWD139	12085	90.3	182.3	7033.609	-5246.12	262.2395	5239.738	0.572887
MWD140	12180	90	179.9	7033.36	-5341.1	260.4159	5334.731	2.545966
MWD141	12274	90.4	180.4	7033.032	-5435.1	260.1698	5428.715	0.68118
MWD142	12369	89.7	178.8	7032.949	-5530.09	260.833	5523.676	1.838333
MWD143	12464	90	180.8	7033.198	-5625.08	261.1646	5618.644	2.128806
MWD144	12558	89.9	182	7033.28	-5719.05	258.868	5712.641	1.28102
MWD145	12652	89.9	185	7033.444	-5812.87	253.1301	5806.552	3.191484
MWD146	12747	89.8	186.4	7033.692	-5907.4	243.695	5901.251	1.477434
MWD147	12841	89.3	183.9	7034.431	-6001.01	235.2581	5995.013	2.712157
MWD148	12935	89.7	182.9	7035.251	-6094.84	229.6836	6088.936	1.145741
MWD149	13030	88.6	179	7036.661	-6189.79	228.1086	6183.905	4.264937
MWD150	13124	88.6	179.7	7038.958	-6283.76	229.1746	6277.83	0.744459
MWD151	13218	88.7	179.5	7041.172	-6377.73	229.8307	6371.769	0.237828
MWD152	13313	89.1	180.1	7042.996	-6472.71	230.1622	6466.724	0.758966
MWD153	13407	90.7	180.4	7043.16	-6566.71	229.752	6560.709	1.731788
MWD154	13501	90.6	179.5	7042.094	-6660.7	229.8341	6654.681	0.963279
MWD155	13595	90.7	179.5	7041.027	-6754.69	230.6543	6748.635	0.106384
MWD156	13690	90.7	179.3	7039.867	-6849.68	231.6491	6843.583	0.210512
MWD157	13785	90.8	179	7038.623	-6944.66	233.0582	6938.517	0.332847
MWD158	13880	90.3	180.8	7037.711	-7039.65	233.224	7033.485	1.966388
MWD159	13974	90	181.5	7037.465	-7133.63	231.3374	7127.484	0.810186
MWD160	14068	90.3	181.3	7037.219	-7227.6	229.0408	7221.483	0.38357
MWD161	14163	90.5	181.8	7036.556	-7322.56	226.4712	7316.478	0.566847
MWD162	14257	91	182	7035.325	-7416.5	223.3549	7410.462	0.572883
MWD163	14352	89.1	179.3	7035.242	-7511.48	222.2774	7505.445	3.475172

MWD164	14446	89	176.5	7036.801	-7605.4	225.721	7599.27	2.980214
MWD165	14540	88.7	176.4	7038.688	-7699.2	231.5403	7692.934	0.336407
MWD166	14635	88.6	176	7040.926	-7793.96	237.8345	7787.552	0.433899
MWD167	14729	89.1	179.9	7042.813	-7887.87	241.1954	7881.367	4.182052
MWD168	14823	88.9	182.9	7044.454	-7981.81	238.8995	7975.341	3.198087
MWD169	14918	88.8	184.4	7046.361	-8076.6	232.8531	8070.229	1.582135
PBHL	15050	88.8	184.4	7049.125	-8208.18	222.7284	8201.989	4.34E-07