



Confidentiality Requested:

Yes  No

KANSAS CORPORATION COMMISSION 1106242  
OIL & GAS CONSERVATION DIVISION

Form ACO-1

August 2013

Form must be Typed  
Form must be Signed  
All blanks must be Filled

WELL COMPLETION FORM  
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Address 1: \_\_\_\_\_

Address 2: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ + \_\_\_\_\_

Contact Person: \_\_\_\_\_

Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

CONTRACTOR: License # \_\_\_\_\_

Name: \_\_\_\_\_

Wellsite Geologist: \_\_\_\_\_

Purchaser: \_\_\_\_\_

Designate Type of Completion:

- New Well       Re-Entry       Workover
- Oil       WSW       SWD       SIOW
- Gas       D&A       ENHR       SIGW
- OG       GSW       Temp. Abd.
- CM (Coal Bed Methane)
- Cathodic       Other (Core, Expl., etc.): \_\_\_\_\_

If Workover/Re-entry: Old Well Info as follows:

Operator: \_\_\_\_\_

Well Name: \_\_\_\_\_

Original Comp. Date: \_\_\_\_\_ Original Total Depth: \_\_\_\_\_

- Deepening       Re-perf.       Conv. to ENHR       Conv. to SWD
- Plug Back       Conv. to GSW       Conv. to Producer
- Commingled      Permit #: \_\_\_\_\_
- Dual Completion      Permit #: \_\_\_\_\_
- SWD      Permit #: \_\_\_\_\_
- ENHR      Permit #: \_\_\_\_\_
- GSW      Permit #: \_\_\_\_\_

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - \_\_\_\_\_

Spot Description: \_\_\_\_\_

\_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

\_\_\_\_\_ Feet from  North /  South Line of Section

\_\_\_\_\_ Feet from  East /  West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE       NW       SE       SW

GPS Location: Lat: \_\_\_\_\_, Long: \_\_\_\_\_  
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum:  NAD27       NAD83       WGS84

County: \_\_\_\_\_

Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Field Name: \_\_\_\_\_

Producing Formation: \_\_\_\_\_

Elevation: Ground: \_\_\_\_\_ Kelly Bushing: \_\_\_\_\_

Total Vertical Depth: \_\_\_\_\_ Plug Back Total Depth: \_\_\_\_\_

Amount of Surface Pipe Set and Cemented at: \_\_\_\_\_ Feet

Multiple Stage Cementing Collar Used?  Yes  No

If yes, show depth set: \_\_\_\_\_ Feet

If Alternate II completion, cement circulated from: \_\_\_\_\_

feet depth to: \_\_\_\_\_ w/ \_\_\_\_\_ sx cmt.

Drilling Fluid Management Plan

(Data must be collected from the Reserve Pit)

Chloride content: \_\_\_\_\_ ppm Fluid volume: \_\_\_\_\_ bbls

Dewatering method used: \_\_\_\_\_

Location of fluid disposal if hauled offsite:

Operator Name: \_\_\_\_\_

Lease Name: \_\_\_\_\_ License #: \_\_\_\_\_

Quarter \_\_\_\_\_ Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West

County: \_\_\_\_\_ Permit #: \_\_\_\_\_

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- Confidentiality Requested  
Date: \_\_\_\_\_
- Confidential Release Date: \_\_\_\_\_
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT  I  II  III Approved by: \_\_\_\_\_ Date: \_\_\_\_\_



1106242

Operator Name: \_\_\_\_\_ Lease Name: \_\_\_\_\_ Well #: \_\_\_\_\_

Sec. \_\_\_\_\_ Twp. \_\_\_\_\_ S. R. \_\_\_\_\_  East  West County: \_\_\_\_\_

**INSTRUCTIONS:** Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i>  Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No  Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No  List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample  Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> Used							
Report all strings set-conductor, surface, intermediate, production, etc.							
Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> Plug Off Zone				

Did you perform a hydraulic fracturing treatment on this well?  Yes  No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons?  Yes  No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry?  Yes  No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:      Size: \_\_\_\_\_ Set At: \_\_\_\_\_ Packer At: \_\_\_\_\_ Liner Run:  Yes  No

Date of First, Resumed Production, SWD or ENHR: \_\_\_\_\_ Producing Method:  
 Flowing  Pumping  Gas Lift  Other *(Explain)* \_\_\_\_\_

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

<b>DISPOSITION OF GAS:</b> <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	<b>METHOD OF COMPLETION:</b> <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____ <i>(Submit ACO-4)</i>	<b>PRODUCTION INTERVAL:</b> _____ _____
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Form	ACO1 - Well Completion
Operator	EnCana Oil & Gas (USA) Inc.
Well Name	Kerr 1H 2
Doc ID	1106242

All Electric Logs Run

Sonic Gamma Ray Memory
Dual Spaced Neutron
Array Induction
Mud Log

Form	ACO1 - Well Completion
Operator	EnCana Oil & Gas (USA) Inc.
Well Name	Kerr 1H 2
Doc ID	1106242

#### Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
	8706-8708	10,005# prop, 271 bbls SW & 42 bbls acid	8706-8708
	8534-8538	10,000# prop, 268 bbls SW & 48 bbls acid	8534-8538
	8364-8368	10,547# prop, 266 bbls SW & 48 bbls acid	8364-8368
	8192-8196	11,172# prop, 261 bbls SW & 48 bbls acid	8192-8196
	8022-8026	10,000# prop, 261 bbls SW & 64 bbls acid	8022-8026
	7851-7855	10,000# prop, 258 bbls SW & 64 bbls acid	7851-7855
	7677-7681	10,000# prop, 255 bbls SW & 64 bbls acid	7677-7681
	7568-7572	10,000# prop, 253 bbls SW & 64 bbls acid	7568-7572
	7337-7341	10,000# prop, 250 bbls SW & 64 bbls acid	7337-7341
	7124-7128	11,203# prop, 247 bbls SW & 64 bbls acid	7124-7128

Form	ACO1 - Well Completion
Operator	EnCana Oil & Gas (USA) Inc.
Well Name	Kerr 1H 2
Doc ID	1106242

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
	6911-6915	5169 # prop, 237 bbls acid & 62 bbls SW	6911-6915
	6700-6704	15,665# prop, 254 bbls SW & 62 bbls acid	6700-6704
	6488-6492	11,320# prop, 62 bbls acid & 202 bbls SW	6488-6492

Conservation Division  
Finney State Office Building  
130 S. Market, Rm. 2078  
Wichita, KS 67202-3802



Phone: 316-337-6200  
Fax: 316-337-6211  
<http://kcc.ks.gov/>

Mark Sievers, Chairman  
Thomas E. Wright, Commissioner  
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

December 31, 2012

Sharon Cook  
EnCana Oil & Gas (USA) Inc.  
5851 LEGACY CIRCLE  
PLANO, TX 75024

Re: ACO1  
API 15-135-25449-01-00  
Kerr 1H 2  
SE/4 Sec.01-20S-25W  
Ness County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,  
Sharon Cook

THIS DRAWING DOES NOT REPRESENT A BOUNDARY SURVEY. DISTANCES, COORDINATES AND BEARINGS SHOWN ARE NOT INTENDED TO BE DEFINITIVE IN ESTABLISHING ACTUAL TITLE BOUNDARY. THIS DRAWING IS FOR CONSTRUCTION PURPOSES ONLY.  
 All Bearings, Distances, and Coordinates shown hereon are based on the Kansas State Plane Coordinate System, N.A.D. 27 Datum, South Zone.

AS-DRILLED SURFACE LOCATION  
 1,989' FEL & 249' FSL OF SECTION 1  
 LAT: 38.334506  
 LON: -100.032260  
 X: 1,560,497  
 Y: 610,907  
 ELEV: 2,358'

AS-DRILLED TOP OF FORMATION  
 2024' FEL & 893' FSL OF SECTION 1  
 LAT: 38.336273  
 LON: -100.032401  
 X: 1,560,467  
 Y: 611,551

AS-DRILLED TOP PERFORMANCE  
 2155' FEL & 2650' FNL OF SECTION 1  
 LAT: 38.341106  
 LON: -100.032906  
 X: 1,560,351  
 Y: 613,313

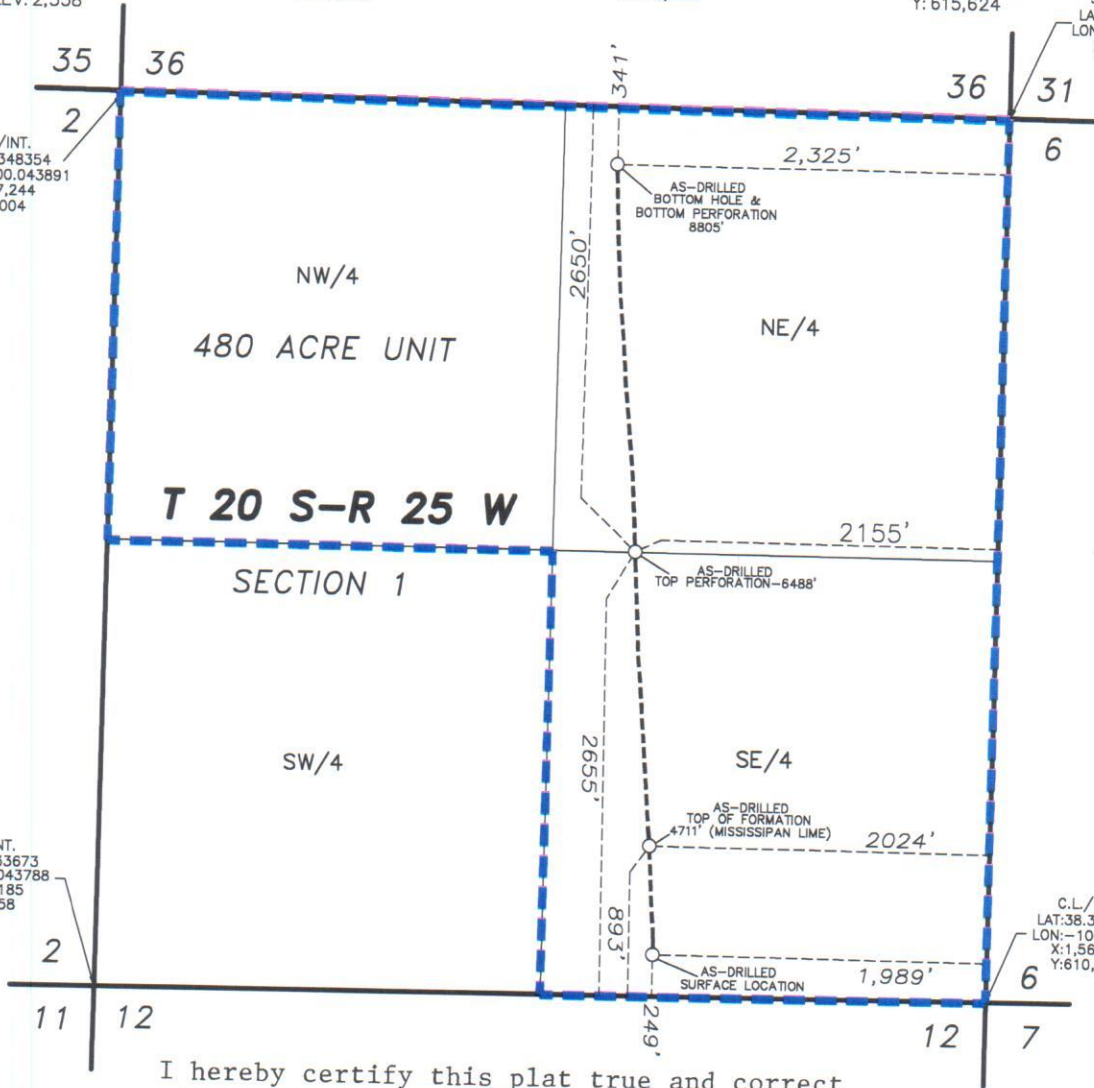
AS-DRILLED BOTTOM HOLE & BOTTOM PERFORMANCE  
 2,325' FEL & 341' FNL OF SECTION 1  
 LAT: 38.347445  
 LON: -100.033560  
 X: 1,560,202  
 Y: 615,624

SPIKE N.L.F.  
 LAT: 38.348403  
 LON: -100.025462  
 X: 1,562,529  
 Y: 615,935

C.L./INT.  
 LAT: 38.348354  
 LON: -100.043891  
 X: 1,557,244  
 Y: 616,004

C.L./INT.  
 LAT: 38.333673  
 LON: -100.043788  
 X: 1,557,185  
 Y: 610,658

C.L./INT.  
 LAT: 38.333913  
 LON: -100.025321  
 X: 1,562,484  
 Y: 610,658



I hereby certify this plat true and correct to the best of my knowledge and belief.

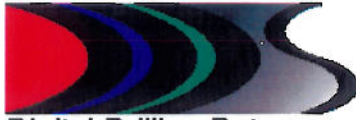
*Sharon Cook*

REVIEW COPY

Sharon Cook

--- = UNIT LINE

**AS-DRILLED PLAT  
 ENCANA OIL & GAS (USA) INC.  
 KERR 1H-2  
 NESS COUNTY, KANSAS  
 SCALE: 1" = 1000'**



Digital Drilling Data  
Systems, LLC

# Survey Report

**Company:** Drillright Technology Inc.

**Location:** Sec. 01, T20S R25W

**Well:** Kerr 1H-2

**Rig:** Precision 209

**API or UWI:** 1513525449000

**Job Number:** DR1209137

**State:** KS

**Operator:** Encana Oil & Gas

**County:** Ness

**Magnetic Declination:** 0.00

**Comment**

**Proposed Azimuth:** 356.53

**North Reference:** GRID

**Tiein Survey Data:**

MD	Inclination	Azimuth	TVD	NS	EW
1578.00	0.95	101.42	1577.52	6.45	34.20

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
1622.00	0.90	148.80	1621.52	6.08	34.74	80.07	35.27	3.97	1.69
1712.00	1.00	142.90	1711.50	4.85	35.58	82.24	35.91	2.69	0.16
1802.00	1.00	160.70	1801.49	3.48	36.31	84.52	36.48	1.28	0.34
1893.00	0.80	246.50	1892.48	2.48	35.99	86.06	36.08	0.30	1.36
1983.00	0.80	236.70	1982.47	1.89	34.89	86.91	34.94	-0.23	0.15
2073.00	0.80	242.40	2072.46	1.25	33.81	87.88	33.83	-0.80	0.09
2164.00	0.80	236.20	2163.46	0.60	32.72	88.95	32.72	-1.38	0.10
2255.00	0.90	240.60	2254.45	-0.10	31.56	90.19	31.57	-2.01	0.13
2345.00	1.20	295.00	2344.43	-0.05	30.09	90.10	30.10	-1.87	1.11
2435.00	1.20	302.90	2434.41	0.86	28.45	88.27	28.46	-0.86	0.18
2525.00	1.30	297.20	2524.39	1.84	26.75	86.07	26.81	0.21	0.18
2615.00	1.20	300.30	2614.37	2.78	25.03	83.66	25.18	1.26	0.13
2706.00	1.10	295.60	2705.35	3.64	23.42	81.17	23.70	2.21	0.15
2796.00	1.10	300.40	2795.33	4.45	21.89	78.52	22.34	3.11	0.10
2887.00	1.10	298.00	2886.32	5.30	20.37	75.41	21.05	4.06	0.05
2977.00	1.10	291.30	2976.30	6.02	18.80	72.25	19.74	4.87	0.14
3068.00	1.00	287.00	3067.29	6.57	17.23	69.13	18.44	5.51	0.14
3158.00	0.90	286.80	3157.27	7.00	15.80	66.10	17.28	6.03	0.11
3248.00	0.90	282.40	3247.26	7.36	14.43	62.99	16.20	6.47	0.08



MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
3339.00	0.90	281.60	3338.25	7.66	13.04	59.57	15.12	6.85	0.01
3429.00	0.80	278.70	3428.24	7.89	11.72	56.05	14.13	7.17	0.12
3519.00	1.20	277.50	3518.23	8.11	10.17	51.42	13.01	7.48	0.45
3565.00	1.30	279.10	3564.22	8.26	9.17	48.01	12.34	7.69	0.23
3610.00	1.20	332.00	3609.21	8.75	8.45	43.98	12.17	8.23	2.48
3655.00	3.00	359.70	3654.18	10.35	8.22	38.47	13.22	9.83	4.48
3701.00	5.90	358.90	3700.03	13.92	8.17	30.42	16.14	13.40	6.31
3746.00	9.40	352.20	3744.63	19.87	7.63	21.00	21.28	19.37	8.01
3791.00	12.50	351.50	3788.80	28.33	6.41	12.74	29.05	27.89	6.90
3836.00	15.90	353.20	3832.42	39.27	4.96	7.19	39.58	38.90	7.61
3882.00	19.20	356.70	3876.27	53.08	3.78	4.07	53.22	52.76	7.53
3927.00	23.20	358.50	3918.22	69.34	3.12	2.57	69.41	69.02	9.00
3972.00	27.20	358.20	3958.93	88.49	2.56	1.66	88.52	88.17	8.89
4017.00	30.70	358.30	3998.30	110.25	1.90	0.99	110.27	109.94	7.78
4062.00	33.70	357.10	4036.37	134.21	0.93	0.40	134.21	133.91	6.82
4107.00	36.60	355.90	4073.17	160.06	-0.67	359.76	160.06	159.81	6.62
4153.00	39.40	355.90	4109.41	188.31	-2.69	359.18	188.33	188.13	6.09
4198.00	42.30	355.10	4143.45	217.65	-5.01	358.68	217.71	217.55	6.55
4243.00	45.80	355.30	4175.78	248.82	-7.62	358.25	248.94	248.83	7.78
4288.00	48.80	355.50	4206.30	281.78	-10.27	357.91	281.97	281.89	6.67
4334.00	51.00	356.30	4235.93	316.88	-12.78	357.69	317.14	317.07	4.96
4379.00	54.30	356.70	4263.22	352.58	-14.96	357.57	352.90	352.84	7.37
4424.00	58.50	357.20	4288.12	390.00	-16.95	357.51	390.37	390.31	9.38
4469.00	60.80	357.60	4310.86	428.79	-18.71	357.50	429.20	429.13	5.17
4514.00	60.70	357.30	4332.84	468.01	-20.46	357.50	468.46	468.39	0.62
4560.00	61.00	357.00	4355.25	508.14	-22.46	357.47	508.63	508.56	0.87
4605.00	60.60	356.80	4377.20	547.36	-24.58	357.43	547.91	547.85	0.97
4650.00	60.60	356.70	4399.29	586.50	-26.81	357.38	587.11	587.05	0.19
4695.00	64.40	356.80	4420.07	626.35	-29.07	357.34	627.02	626.95	8.45
4740.00	69.10	355.60	4437.83	667.59	-31.81	357.27	668.34	668.29	10.73
4786.00	73.30	354.90	4452.65	710.97	-35.42	357.15	711.85	711.81	9.24
4829.00	77.30	354.80	4463.56	752.39	-39.16	357.02	753.40	753.38	9.31
4884.00	80.50	355.20	4474.15	806.15	-43.86	356.89	807.34	807.33	5.86
4916.00	84.80	355.80	4478.24	837.78	-46.35	356.83	839.06	839.05	13.57
4947.00	88.90	356.10	4479.94	868.65	-48.53	356.80	870.01	870.00	13.26

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
4979.00	89.70	356.50	4480.33	900.58	-50.60	356.78	902.00	901.99	2.80
5010.00	90.20	356.60	4480.36	931.52	-52.46	356.78	933.00	932.99	1.64
5042.00	91.00	356.30	4480.03	963.46	-54.44	356.77	964.99	964.99	2.67
5074.00	89.90	355.80	4479.77	995.38	-56.65	356.74	997.00	996.99	3.78
5105.00	88.50	355.10	4480.21	1026.28	-59.11	356.70	1027.98	1027.98	5.05
5137.00	88.50	355.20	4481.04	1058.16	-61.81	356.66	1059.96	1059.96	0.31
5169.00	89.10	355.20	4481.71	1090.04	-64.49	356.61	1091.95	1091.94	1.87
5200.00	90.90	355.60	4481.71	1120.93	-66.97	356.58	1122.93	1122.93	5.95
5232.00	91.00	356.00	4481.18	1152.84	-69.32	356.56	1154.92	1154.92	1.29
5263.00	91.40	356.20	4480.53	1183.77	-71.43	356.55	1185.92	1185.92	1.44
5294.00	92.80	356.30	4479.40	1214.68	-73.45	356.54	1216.89	1216.89	4.53
5324.00	91.80	356.00	4478.19	1244.59	-75.46	356.53	1246.87	1246.87	3.48
5355.00	90.70	356.10	4477.52	1275.50	-77.60	356.52	1277.86	1277.86	3.56
5386.00	87.80	355.90	4477.92	1306.42	-79.76	356.51	1308.86	1308.86	9.38
5417.00	87.90	356.30	4479.09	1337.33	-81.87	356.50	1339.83	1339.83	1.33
5447.00	89.40	356.10	4479.79	1367.25	-83.86	356.49	1369.82	1369.82	5.04
5477.00	89.90	355.60	4479.98	1397.17	-86.03	356.48	1399.82	1399.82	2.36
5508.00	90.30	356.10	4479.92	1428.09	-88.27	356.46	1430.82	1430.82	2.07
5539.00	91.60	356.40	4479.41	1459.02	-90.30	356.46	1461.82	1461.82	4.30
5569.00	91.40	356.50	4478.62	1488.95	-92.15	356.46	1491.80	1491.80	0.75
5600.00	90.80	355.80	4478.03	1519.88	-94.24	356.45	1522.80	1522.80	2.97
5630.00	90.80	355.20	4477.61	1549.78	-96.59	356.43	1552.78	1552.78	2.00
5661.00	90.70	355.80	4477.20	1580.68	-99.02	356.42	1583.79	1583.78	1.96
5691.00	91.30	355.80	4476.68	1610.60	-101.22	356.40	1613.78	1613.77	2.00
5722.00	91.20	356.20	4476.00	1641.52	-103.38	356.40	1644.76	1644.76	1.33
5752.00	90.90	355.50	4475.45	1671.43	-105.55	356.39	1674.76	1674.75	2.54
5783.00	89.70	354.40	4475.29	1702.31	-108.28	356.36	1705.75	1705.75	5.25
5814.00	88.40	354.00	4475.81	1733.15	-111.41	356.32	1736.73	1736.71	4.39
5844.00	88.80	355.50	4476.54	1763.01	-114.16	356.30	1766.70	1766.68	5.17
5875.00	90.00	356.50	4476.86	1793.93	-116.32	356.29	1797.70	1797.68	5.04
5906.00	90.90	357.60	4476.62	1824.89	-117.91	356.30	1828.69	1828.68	4.58
5936.00	90.30	357.30	4476.31	1854.86	-119.25	356.32	1858.69	1858.68	2.24
5967.00	90.20	357.30	4476.17	1885.82	-120.71	356.34	1889.68	1889.67	0.32
5997.00	92.00	357.50	4475.60	1915.79	-122.07	356.35	1919.67	1919.66	6.04
6028.00	91.90	357.30	4474.54	1946.74	-123.47	356.37	1950.65	1950.64	0.72

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
6059.00	91.60	357.20	4473.59	1977.69	-124.96	356.38	1981.63	1981.62	1.02
6089.00	92.00	357.00	4472.65	2007.63	-126.48	356.40	2011.61	2011.60	1.49
6120.00	93.00	357.50	4471.30	2038.57	-127.96	356.41	2042.58	2042.58	3.61
6150.00	93.00	357.20	4469.73	2068.49	-129.35	356.42	2072.53	2072.53	1.00
6181.00	91.80	356.70	4468.43	2099.42	-131.00	356.43	2103.51	2103.51	4.19
6212.00	89.70	356.40	4468.02	2130.36	-132.86	356.43	2134.51	2134.50	6.84
6243.00	89.60	356.60	4468.21	2161.30	-134.75	356.43	2165.51	2165.50	0.72
6273.00	90.00	357.00	4468.32	2191.26	-136.43	356.44	2195.49	2195.49	1.89
6295.00	90.00	357.70	4468.32	2213.23	-137.45	356.45	2217.50	2217.49	3.18
6325.00	90.00	357.40	4468.32	2243.20	-138.73	356.46	2247.49	2247.49	1.00
6356.00	90.20	357.60	4468.26	2274.18	-140.08	356.48	2278.48	2278.48	0.91
6388.00	90.70	357.30	4468.01	2306.14	-141.50	356.49	2310.49	2310.49	1.82
6419.00	91.50	357.40	4467.42	2337.10	-142.94	356.50	2341.47	2341.47	2.60
6451.00	92.20	357.40	4466.38	2369.05	-144.39	356.51	2373.46	2373.46	2.19
6483.00	92.80	357.50	4464.99	2400.99	-145.81	356.52	2405.42	2405.42	1.90
6514.00	92.90	357.70	4463.45	2431.93	-147.11	356.54	2436.37	2436.37	0.72
6546.00	91.90	357.30	4462.11	2463.87	-148.50	356.55	2468.34	2468.34	3.37
6577.00	91.40	357.10	4461.21	2494.82	-150.02	356.56	2499.32	2499.32	1.74
6609.00	90.40	357.00	4460.71	2526.77	-151.66	356.57	2531.33	2531.33	3.14
6641.00	90.70	357.20	4460.41	2558.73	-153.28	356.57	2563.32	2563.32	1.13
6672.00	90.80	357.20	4460.00	2589.69	-154.80	356.58	2594.32	2594.32	0.32
6704.00	90.00	356.30	4459.78	2621.64	-156.61	356.58	2626.31	2626.31	3.76
6735.00	89.10	356.20	4460.02	2652.57	-158.64	356.58	2657.30	2657.30	2.92
6767.00	89.10	356.30	4460.52	2684.49	-160.73	356.57	2689.31	2689.31	0.31
6799.00	90.80	356.90	4460.55	2716.44	-162.63	356.57	2721.30	2721.30	5.63
6830.00	91.70	357.40	4459.87	2747.39	-164.17	356.58	2752.30	2752.30	3.32
6862.00	91.50	357.20	4458.98	2779.34	-165.68	356.59	2784.27	2784.27	0.88
6894.00	91.70	357.20	4458.09	2811.29	-167.24	356.60	2816.26	2816.25	0.62
6925.00	90.20	356.60	4457.57	2842.24	-168.91	356.60	2847.27	2847.27	5.21
6957.00	89.80	356.50	4457.57	2874.18	-170.84	356.60	2879.27	2879.26	1.29
6989.00	90.60	356.00	4457.46	2906.11	-172.93	356.59	2911.24	2911.24	2.95
7020.00	90.00	355.10	4457.30	2937.02	-175.34	356.58	2942.26	2942.26	3.49
7052.00	89.50	354.30	4457.44	2968.88	-178.29	356.56	2974.23	2974.23	2.95
7084.00	89.90	354.50	4457.61	3000.73	-181.42	356.54	3006.20	3006.20	1.40
7115.00	90.20	354.50	4457.58	3031.59	-184.39	356.52	3037.18	3037.18	0.97

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
7147.00	90.30	354.50	4457.44	3063.44	-187.45	356.50	3069.17	3069.17	0.31
7178.00	90.70	354.60	4457.17	3094.30	-190.40	356.48	3100.15	3100.15	1.33
7210.00	90.90	355.10	4456.72	3126.17	-193.27	356.46	3132.14	3132.13	1.68
7242.00	89.30	355.20	4456.67	3158.05	-195.98	356.45	3164.12	3164.12	5.01
7273.00	89.70	355.10	4456.94	3188.94	-198.60	356.44	3195.12	3195.11	1.33
7305.00	89.80	355.00	4457.08	3220.82	-201.36	356.42	3227.11	3227.11	0.44
7336.00	89.90	354.80	4457.16	3251.69	-204.11	356.41	3258.11	3258.10	0.72
7368.00	90.00	354.30	4457.19	3283.55	-207.15	356.39	3290.07	3290.06	1.59
7399.00	90.50	354.20	4457.05	3314.39	-210.26	356.37	3321.05	3321.04	1.64
7431.00	90.90	354.10	4456.66	3346.22	-213.52	356.35	3353.03	3353.02	1.29
7463.00	90.70	354.30	4456.21	3378.06	-216.75	356.33	3385.01	3384.99	0.88
7494.00	90.20	355.10	4455.97	3408.92	-219.62	356.31	3416.00	3415.97	3.04
7526.00	89.60	356.10	4456.02	3440.83	-222.07	356.31	3447.98	3447.96	3.64
7558.00	89.50	356.50	4456.28	3472.76	-224.14	356.31	3479.99	3479.97	1.29
7589.00	89.50	356.40	4456.55	3503.70	-226.06	356.31	3510.99	3510.96	0.32
7621.00	90.10	356.50	4456.66	3535.64	-228.04	356.31	3542.99	3542.97	1.90
7652.00	90.20	356.30	4456.58	3566.58	-229.98	356.31	3573.97	3573.95	0.72
7684.00	90.00	355.80	4456.52	3598.50	-232.19	356.31	3605.99	3605.96	1.68
7715.00	90.40	355.70	4456.41	3629.42	-234.49	356.30	3636.99	3636.96	1.33
7747.00	90.50	355.40	4456.16	3661.32	-236.97	356.30	3668.97	3668.94	0.99
7778.00	90.20	354.80	4455.97	3692.20	-239.62	356.29	3699.97	3699.93	2.16
7810.00	90.60	354.40	4455.75	3724.06	-242.63	356.27	3731.96	3731.92	1.77
7842.00	90.70	354.50	4455.39	3755.91	-245.72	356.26	3763.94	3763.90	0.44
7873.00	90.80	354.20	4454.98	3786.76	-248.77	356.24	3794.92	3794.87	1.02
7904.00	89.60	354.20	4454.87	3817.60	-251.91	356.22	3825.91	3825.85	3.87
7936.00	89.30	354.90	4455.18	3849.45	-254.95	356.21	3857.88	3857.82	2.38
7968.00	89.70	355.00	4455.46	3881.32	-257.76	356.20	3889.88	3889.82	1.29
7999.00	89.80	354.80	4455.59	3912.20	-260.52	356.19	3920.86	3920.79	0.72
8031.00	89.30	356.50	4455.84	3944.11	-262.95	356.19	3952.86	3952.78	5.54
8062.00	89.00	356.60	4456.30	3975.05	-264.81	356.19	3983.86	3983.79	1.02
8094.00	89.60	356.30	4456.70	4006.98	-266.79	356.19	4015.85	4015.78	2.10
8126.00	89.70	355.90	4456.89	4038.91	-268.97	356.19	4047.86	4047.79	1.29
8157.00	88.50	357.50	4457.38	4069.85	-270.75	356.19	4078.86	4078.79	6.45
8189.00	88.10	357.60	4458.33	4101.81	-272.12	356.20	4110.83	4110.76	1.29
8221.00	89.00	357.50	4459.14	4133.77	-273.49	356.21	4142.80	4142.74	2.83

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
8252.00	89.30	356.90	4459.60	4164.73	-275.00	356.22	4173.80	4173.74	2.16
8284.00	89.30	356.50	4459.99	4196.67	-276.84	356.23	4205.80	4205.74	1.25
8315.00	89.40	356.60	4460.34	4227.61	-278.71	356.23	4236.80	4236.74	0.46
8347.00	89.70	357.20	4460.59	4259.57	-280.44	356.23	4268.78	4268.73	2.10
8379.00	89.50	357.00	4460.81	4291.52	-282.06	356.24	4300.78	4300.72	0.88
8410.00	89.30	356.90	4461.14	4322.48	-283.71	356.24	4331.77	4331.72	0.72
8442.00	90.00	358.20	4461.33	4354.45	-285.08	356.25	4363.79	4363.73	4.61
8474.00	89.70	358.40	4461.42	4386.43	-286.03	356.27	4395.73	4395.69	1.13
8505.00	90.10	358.30	4461.47	4417.42	-286.92	356.28	4426.74	4426.70	1.33
8537.00	91.60	358.90	4461.00	4449.41	-287.70	356.30	4458.70	4458.67	5.05
8568.00	92.10	358.30	4460.00	4480.38	-288.46	356.32	4489.67	4489.64	2.52
8600.00	92.00	357.50	4458.85	4512.34	-289.63	356.33	4521.64	4521.61	2.52
8632.00	92.30	358.60	4457.65	4544.30	-290.72	356.34	4553.58	4553.55	3.56
8663.00	92.70	358.80	4456.30	4575.26	-291.42	356.36	4584.54	4584.52	1.44
8695.00	92.20	358.80	4454.93	4607.22	-292.09	356.37	4616.47	4616.45	1.56
8726.00	91.80	357.30	4453.85	4638.19	-293.14	356.38	4647.43	4647.41	5.00
8758.00	91.20	358.50	4453.01	4670.15	-294.31	356.39	4679.42	4679.41	4.19
8805.00	91.20	358.50	4452.03	4717.13	-295.55	356.41	4726.38	4726.37	0.00



Survey Calculation Program

M.W.D. OPERATOR: Kenney H. / Shawn F. .

DIRECTIONAL DRILLERS: Richard Snider / Billy Spurgeon

Encana Oil & Gas

Precision 209

Kerr 1H-2

Magnetic Declination: 6.79

Job #: DR1209137

Vertical Section Azimuth 356.53

Minimum Curvature Calculation

No.	Survey	Depth	INC	AZM	TVD	N-S	E-W	Vertical		DLS/100
								Section	Section	
Tie	1578	0.95	101.42	1577.52	6.45	34.20	6.45	0.96		
1	1622	0.9	148.8	1621.51	6.08	34.74	3.97	1.69		
2	1712	1.0	142.9	1711.50	4.85	35.58	2.69	0.16		
3	1802	1.0	160.7	1801.49	3.48	36.31	1.28	0.34		
4	1893	0.8	246.5	1892.48	2.48	35.99	0.30	1.36		
5	1983	0.8	236.7	1982.47	1.89	34.89	-0.23	0.15		
6	2073	0.8	242.4	2072.46	1.25	33.81	-0.80	0.09		
7	2164	0.8	236.2	2163.45	0.60	32.72	-1.38	0.10		
8	2254	0.9	240.6	2253.44	-0.09	31.58	-2.01	0.13		
9	2345	1.2	295.0	2344.43	-0.04	30.09	-1.86	1.09		
10	2435	1.2	302.9	2434.41	0.87	28.45	-0.86	0.18		
11	2525	1.3	297.2	2524.39	1.85	26.75	0.22	0.18		
12	2615	1.2	300.3	2614.37	2.79	25.02	1.27	0.13		
13	2706	1.1	295.6	2705.35	3.65	23.41	2.22	0.15		
14	2796	1.1	300.4	2795.33	4.46	21.89	3.12	0.10		
15	2887	1.1	298.0	2886.32	5.31	20.37	4.07	0.05		
16	2977	1.1	291.3	2976.30	6.03	18.80	4.88	0.14		
17	3068	1.0	287.0	3067.29	6.58	17.22	5.52	0.14		
18	3158	0.9	286.8	3157.27	7.01	15.80	6.04	0.11		
19	3248	0.9	282.4	3247.26	7.37	14.43	6.48	0.08		
20	3339	0.9	281.6	3338.25	7.66	13.03	6.86	0.01		
21	3429	0.8	278.7	3428.24	7.90	11.72	7.18	0.12		
22	3519	1.2	277.5	3518.23	8.12	10.16	7.49	0.45		
23	3565	1.3	279.1	3564.22	8.27	9.17	7.69	0.23		



Survey Calculation Program

M.W.D. OPERATOR: Kenney H. / Shawn F..

DIRECTIONAL DRILLERS: Richard Snider / Billy Spurgeon

Encana Oil & Gas

Precision 209

Kerr 1H-2

Magnetic Declination: 6.79

Job #: DR1209137

Vertical Section Azimuth 356.53

Minimum Curvature Calculation

No.	Survey Depth	INC	AZM	TVD	N-S	E-W	Vertical		DLS/ 100
							Section	Section	
24	3610	1.2	332.0	3609.21	8.76	8.45	8.23	2.48	
25	3655	3.0	359.7	3654.18	10.36	8.22	9.84	4.48	
26	3701	5.9	358.9	3700.03	13.92	8.17	13.40	6.31	
27	3746	9.4	352.2	3744.63	19.88	7.62	19.38	8.01	
28	3791	12.5	351.5	3788.80	28.34	6.40	27.90	6.90	
29	3836	15.9	353.2	3832.42	39.28	4.95	38.91	7.61	
30	3882	19.2	356.7	3876.27	53.09	3.77	52.77	7.53	
31	3927	23.2	358.5	3918.22	69.35	3.11	69.03	9.00	
32	3972	27.2	358.2	3958.93	88.49	2.56	88.18	8.89	
33	4017	30.7	358.3	3998.30	110.26	1.89	109.95	7.78	
34	4062	33.7	357.1	4036.37	134.22	0.92	133.92	6.82	
35	4107	36.6	355.9	4073.17	160.07	-0.67	159.82	6.62	
36	4153	39.4	355.9	4109.41	188.32	-2.69	188.14	6.09	
37	4198	42.3	355.1	4143.45	217.66	-5.01	217.56	6.55	
38	4243	45.8	355.3	4175.78	248.83	-7.63	248.84	7.78	
39	4288	48.8	355.5	4206.30	281.79	-10.28	281.90	6.67	
40	4334	51.0	356.3	4235.93	316.89	-12.79	317.08	4.96	
41	4379	54.3	356.7	4263.22	352.59	-14.97	352.85	7.37	
42	4424	58.5	357.2	4288.12	390.01	-16.96	390.32	9.38	
43	4469	60.8	357.9	4310.86	428.80	-18.62	429.14	5.28	
44	4514	60.7	357.3	4332.84	468.03	-20.26	468.40	1.18	
45	4560	61.0	357.0	4355.25	508.15	-22.26	508.57	0.87	
46	4605	60.6	356.8	4377.20	547.38	-24.38	547.85	0.97	
47	4650	60.6	356.7	4399.30	586.52	-26.60	587.05	0.19	



**DrillRight**  
TECHNOLOGY, INC.

Survey Calculation Program

M.W.D. OPERATOR: Kenney H. / Shawn F. .

DIRECTIONAL DRILLERS: Richard Snider / Billy Spurgeon

Encana Oil & Gas

Precision 209

Kerr 1H-2

Magnetic Declination: 6.79

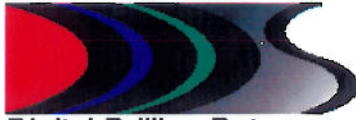
Job #: DR1209137

Vertical Section Azimuth 356.53

Minimum Curvature Calculation

No.	Survey Depth	INC	AZM	TVD	N-S	E-W	Vertical Section	DLS/ 100
48	4695	64.4	356.8	4420.07	626.36	-28.87	626.96	8.45
49	4740	69.1	355.6	4437.83	667.60	-31.61	668.29	10.73
50	4786	73.3	354.9	4452.65	710.99	-35.22	711.82	9.24
51	4829	77.3	354.8	4463.56	752.41	-38.95	753.38	9.31
52	4884	80.5	355.2	4474.15	806.16	-43.66	807.33	5.86
53	4916	84.8	355.8	4478.24	837.80	-46.14	839.05	13.57





Digital Drilling Data  
Systems, LLC

# Survey Report

**Company:** Drillright Technology Inc.

**Location:** Sec. 01, T20S R25W

**Well:** Kerr 1H-2

**Rig:** Precision 209

**API or UWI:** 1513525449000

**Job Number:** DR1209137

**State:** KS

**Operator:** Encana Oil & Gas

**County:** Ness

**Magnetic Declination:** 0.00

**Comment**

**Proposed Azimuth:** 356.53

**North Reference:** GRID

**Tiein Survey Data:**

MD	Inclination	Azimuth	TVD	NS	EW
1578.00	0.95	101.42	1577.52	6.45	34.20

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
1622.00	0.90	148.80	1621.52	6.08	34.74	80.07	35.27	3.97	1.69
1712.00	1.00	142.90	1711.50	4.85	35.58	82.24	35.91	2.69	0.16
1802.00	1.00	160.70	1801.49	3.48	36.31	84.52	36.48	1.28	0.34
1893.00	0.80	246.50	1892.48	2.48	35.99	86.06	36.08	0.30	1.36
1983.00	0.80	236.70	1982.47	1.89	34.89	86.91	34.94	-0.23	0.15
2073.00	0.80	242.40	2072.46	1.25	33.81	87.88	33.83	-0.80	0.09
2164.00	0.80	236.20	2163.46	0.60	32.72	88.95	32.72	-1.38	0.10
2255.00	0.90	240.60	2254.45	-0.10	31.56	90.19	31.57	-2.01	0.13
2345.00	1.20	295.00	2344.43	-0.05	30.09	90.10	30.10	-1.87	1.11
2435.00	1.20	302.90	2434.41	0.86	28.45	88.27	28.46	-0.86	0.18
2525.00	1.30	297.20	2524.39	1.84	26.75	86.07	26.81	0.21	0.18
2615.00	1.20	300.30	2614.37	2.78	25.03	83.66	25.18	1.26	0.13
2706.00	1.10	295.60	2705.35	3.64	23.42	81.17	23.70	2.21	0.15
2796.00	1.10	300.40	2795.33	4.45	21.89	78.52	22.34	3.11	0.10
2887.00	1.10	298.00	2886.32	5.30	20.37	75.41	21.05	4.06	0.05
2977.00	1.10	291.30	2976.30	6.02	18.80	72.25	19.74	4.87	0.14
3068.00	1.00	287.00	3067.29	6.57	17.23	69.13	18.44	5.51	0.14
3158.00	0.90	286.80	3157.27	7.00	15.80	66.10	17.28	6.03	0.11
3248.00	0.90	282.40	3247.26	7.36	14.43	62.99	16.20	6.47	0.08

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
3339.00	0.90	281.60	3338.25	7.66	13.04	59.57	15.12	6.85	0.01
3429.00	0.80	278.70	3428.24	7.89	11.72	56.05	14.13	7.17	0.12
3519.00	1.20	277.50	3518.23	8.11	10.17	51.42	13.01	7.48	0.45
3565.00	1.30	279.10	3564.22	8.26	9.17	48.01	12.34	7.69	0.23
3610.00	1.20	332.00	3609.21	8.75	8.45	43.98	12.17	8.23	2.48
3655.00	3.00	359.70	3654.18	10.35	8.22	38.47	13.22	9.83	4.48
3701.00	5.90	358.90	3700.03	13.92	8.17	30.42	16.14	13.40	6.31
3746.00	9.40	352.20	3744.63	19.87	7.63	21.00	21.28	19.37	8.01
3791.00	12.50	351.50	3788.80	28.33	6.41	12.74	29.05	27.89	6.90
3836.00	15.90	353.20	3832.42	39.27	4.96	7.19	39.58	38.90	7.61
3882.00	19.20	356.70	3876.27	53.08	3.78	4.07	53.22	52.76	7.53
3927.00	23.20	358.50	3918.22	69.34	3.12	2.57	69.41	69.02	9.00
3972.00	27.20	358.20	3958.93	88.49	2.56	1.66	88.52	88.17	8.89
4017.00	30.70	358.30	3998.30	110.25	1.90	0.99	110.27	109.94	7.78
4062.00	33.70	357.10	4036.37	134.21	0.93	0.40	134.21	133.91	6.82
4107.00	36.60	355.90	4073.17	160.06	-0.67	359.76	160.06	159.81	6.62
4153.00	39.40	355.90	4109.41	188.31	-2.69	359.18	188.33	188.13	6.09
4198.00	42.30	355.10	4143.45	217.65	-5.01	358.68	217.71	217.55	6.55
4243.00	45.80	355.30	4175.78	248.82	-7.62	358.25	248.94	248.83	7.78
4288.00	48.80	355.50	4206.30	281.78	-10.27	357.91	281.97	281.89	6.67
4334.00	51.00	356.30	4235.93	316.88	-12.78	357.69	317.14	317.07	4.96
4379.00	54.30	356.70	4263.22	352.58	-14.96	357.57	352.90	352.84	7.37
4424.00	58.50	357.20	4288.12	390.00	-16.95	357.51	390.37	390.31	9.38
4469.00	60.80	357.60	4310.86	428.79	-18.71	357.50	429.20	429.13	5.17
4514.00	60.70	357.30	4332.84	468.01	-20.46	357.50	468.46	468.39	0.62
4560.00	61.00	357.00	4355.25	508.14	-22.46	357.47	508.63	508.56	0.87
4605.00	60.60	356.80	4377.20	547.36	-24.58	357.43	547.91	547.85	0.97
4650.00	60.60	356.70	4399.29	586.50	-26.81	357.38	587.11	587.05	0.19
4695.00	64.40	356.80	4420.07	626.35	-29.07	357.34	627.02	626.95	8.45
4740.00	69.10	355.60	4437.83	667.59	-31.81	357.27	668.34	668.29	10.73
4786.00	73.30	354.90	4452.65	710.97	-35.42	357.15	711.85	711.81	9.24
4829.00	77.30	354.80	4463.56	752.39	-39.16	357.02	753.40	753.38	9.31
4884.00	80.50	355.20	4474.15	806.15	-43.86	356.89	807.34	807.33	5.86
4916.00	84.80	355.80	4478.24	837.78	-46.35	356.83	839.06	839.05	13.57
4947.00	88.90	356.10	4479.94	868.65	-48.53	356.80	870.01	870.00	13.26

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
4979.00	89.70	356.50	4480.33	900.58	-50.60	356.78	902.00	901.99	2.80
5010.00	90.20	356.60	4480.36	931.52	-52.46	356.78	933.00	932.99	1.64
5042.00	91.00	356.30	4480.03	963.46	-54.44	356.77	964.99	964.99	2.67
5074.00	89.90	355.80	4479.77	995.38	-56.65	356.74	997.00	996.99	3.78
5105.00	88.50	355.10	4480.21	1026.28	-59.11	356.70	1027.98	1027.98	5.05
5137.00	88.50	355.20	4481.04	1058.16	-61.81	356.66	1059.96	1059.96	0.31
5169.00	89.10	355.20	4481.71	1090.04	-64.49	356.61	1091.95	1091.94	1.87
5200.00	90.90	355.60	4481.71	1120.93	-66.97	356.58	1122.93	1122.93	5.95
5232.00	91.00	356.00	4481.18	1152.84	-69.32	356.56	1154.92	1154.92	1.29
5263.00	91.40	356.20	4480.53	1183.77	-71.43	356.55	1185.92	1185.92	1.44
5294.00	92.80	356.30	4479.40	1214.68	-73.45	356.54	1216.89	1216.89	4.53
5324.00	91.80	356.00	4478.19	1244.59	-75.46	356.53	1246.87	1246.87	3.48
5355.00	90.70	356.10	4477.52	1275.50	-77.60	356.52	1277.86	1277.86	3.56
5386.00	87.80	355.90	4477.92	1306.42	-79.76	356.51	1308.86	1308.86	9.38
5417.00	87.90	356.30	4479.09	1337.33	-81.87	356.50	1339.83	1339.83	1.33
5447.00	89.40	356.10	4479.79	1367.25	-83.86	356.49	1369.82	1369.82	5.04
5477.00	89.90	355.60	4479.98	1397.17	-86.03	356.48	1399.82	1399.82	2.36
5508.00	90.30	356.10	4479.92	1428.09	-88.27	356.46	1430.82	1430.82	2.07
5539.00	91.60	356.40	4479.41	1459.02	-90.30	356.46	1461.82	1461.82	4.30
5569.00	91.40	356.50	4478.62	1488.95	-92.15	356.46	1491.80	1491.80	0.75
5600.00	90.80	355.80	4478.03	1519.88	-94.24	356.45	1522.80	1522.80	2.97
5630.00	90.80	355.20	4477.61	1549.78	-96.59	356.43	1552.78	1552.78	2.00
5661.00	90.70	355.80	4477.20	1580.68	-99.02	356.42	1583.79	1583.78	1.96
5691.00	91.30	355.80	4476.68	1610.60	-101.22	356.40	1613.78	1613.77	2.00
5722.00	91.20	356.20	4476.00	1641.52	-103.38	356.40	1644.76	1644.76	1.33
5752.00	90.90	355.50	4475.45	1671.43	-105.55	356.39	1674.76	1674.75	2.54
5783.00	89.70	354.40	4475.29	1702.31	-108.28	356.36	1705.75	1705.75	5.25
5814.00	88.40	354.00	4475.81	1733.15	-111.41	356.32	1736.73	1736.71	4.39
5844.00	88.80	355.50	4476.54	1763.01	-114.16	356.30	1766.70	1766.68	5.17
5875.00	90.00	356.50	4476.86	1793.93	-116.32	356.29	1797.70	1797.68	5.04
5906.00	90.90	357.60	4476.62	1824.89	-117.91	356.30	1828.69	1828.68	4.58
5936.00	90.30	357.30	4476.31	1854.86	-119.25	356.32	1858.69	1858.68	2.24
5967.00	90.20	357.30	4476.17	1885.82	-120.71	356.34	1889.68	1889.67	0.32
5997.00	92.00	357.50	4475.60	1915.79	-122.07	356.35	1919.67	1919.66	6.04
6028.00	91.90	357.30	4474.54	1946.74	-123.47	356.37	1950.65	1950.64	0.72

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
6059.00	91.60	357.20	4473.59	1977.69	-124.96	356.38	1981.63	1981.62	1.02
6089.00	92.00	357.00	4472.65	2007.63	-126.48	356.40	2011.61	2011.60	1.49
6120.00	93.00	357.50	4471.30	2038.57	-127.96	356.41	2042.58	2042.58	3.61
6150.00	93.00	357.20	4469.73	2068.49	-129.35	356.42	2072.53	2072.53	1.00
6181.00	91.80	356.70	4468.43	2099.42	-131.00	356.43	2103.51	2103.51	4.19
6212.00	89.70	356.40	4468.02	2130.36	-132.86	356.43	2134.51	2134.50	6.84
6243.00	89.60	356.60	4468.21	2161.30	-134.75	356.43	2165.51	2165.50	0.72
6273.00	90.00	357.00	4468.32	2191.26	-136.43	356.44	2195.49	2195.49	1.89
6295.00	90.00	357.70	4468.32	2213.23	-137.45	356.45	2217.50	2217.49	3.18
6325.00	90.00	357.40	4468.32	2243.20	-138.73	356.46	2247.49	2247.49	1.00
6356.00	90.20	357.60	4468.26	2274.18	-140.08	356.48	2278.48	2278.48	0.91
6388.00	90.70	357.30	4468.01	2306.14	-141.50	356.49	2310.49	2310.49	1.82
6419.00	91.50	357.40	4467.42	2337.10	-142.94	356.50	2341.47	2341.47	2.60
6451.00	92.20	357.40	4466.38	2369.05	-144.39	356.51	2373.46	2373.46	2.19
6483.00	92.80	357.50	4464.99	2400.99	-145.81	356.52	2405.42	2405.42	1.90
6514.00	92.90	357.70	4463.45	2431.93	-147.11	356.54	2436.37	2436.37	0.72
6546.00	91.90	357.30	4462.11	2463.87	-148.50	356.55	2468.34	2468.34	3.37
6577.00	91.40	357.10	4461.21	2494.82	-150.02	356.56	2499.32	2499.32	1.74
6609.00	90.40	357.00	4460.71	2526.77	-151.66	356.57	2531.33	2531.33	3.14
6641.00	90.70	357.20	4460.41	2558.73	-153.28	356.57	2563.32	2563.32	1.13
6672.00	90.80	357.20	4460.00	2589.69	-154.80	356.58	2594.32	2594.32	0.32
6704.00	90.00	356.30	4459.78	2621.64	-156.61	356.58	2626.31	2626.31	3.76
6735.00	89.10	356.20	4460.02	2652.57	-158.64	356.58	2657.30	2657.30	2.92
6767.00	89.10	356.30	4460.52	2684.49	-160.73	356.57	2689.31	2689.31	0.31
6799.00	90.80	356.90	4460.55	2716.44	-162.63	356.57	2721.30	2721.30	5.63
6830.00	91.70	357.40	4459.87	2747.39	-164.17	356.58	2752.30	2752.30	3.32
6862.00	91.50	357.20	4458.98	2779.34	-165.68	356.59	2784.27	2784.27	0.88
6894.00	91.70	357.20	4458.09	2811.29	-167.24	356.60	2816.26	2816.25	0.62
6925.00	90.20	356.60	4457.57	2842.24	-168.91	356.60	2847.27	2847.27	5.21
6957.00	89.80	356.50	4457.57	2874.18	-170.84	356.60	2879.27	2879.26	1.29
6989.00	90.60	356.00	4457.46	2906.11	-172.93	356.59	2911.24	2911.24	2.95
7020.00	90.00	355.10	4457.30	2937.02	-175.34	356.58	2942.26	2942.26	3.49
7052.00	89.50	354.30	4457.44	2968.88	-178.29	356.56	2974.23	2974.23	2.95
7084.00	89.90	354.50	4457.61	3000.73	-181.42	356.54	3006.20	3006.20	1.40
7115.00	90.20	354.50	4457.58	3031.59	-184.39	356.52	3037.18	3037.18	0.97

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
7147.00	90.30	354.50	4457.44	3063.44	-187.45	356.50	3069.17	3069.17	0.31
7178.00	90.70	354.60	4457.17	3094.30	-190.40	356.48	3100.15	3100.15	1.33
7210.00	90.90	355.10	4456.72	3126.17	-193.27	356.46	3132.14	3132.13	1.68
7242.00	89.30	355.20	4456.67	3158.05	-195.98	356.45	3164.12	3164.12	5.01
7273.00	89.70	355.10	4456.94	3188.94	-198.60	356.44	3195.12	3195.11	1.33
7305.00	89.80	355.00	4457.08	3220.82	-201.36	356.42	3227.11	3227.11	0.44
7336.00	89.90	354.80	4457.16	3251.69	-204.11	356.41	3258.11	3258.10	0.72
7368.00	90.00	354.30	4457.19	3283.55	-207.15	356.39	3290.07	3290.06	1.59
7399.00	90.50	354.20	4457.05	3314.39	-210.26	356.37	3321.05	3321.04	1.64
7431.00	90.90	354.10	4456.66	3346.22	-213.52	356.35	3353.03	3353.02	1.29
7463.00	90.70	354.30	4456.21	3378.06	-216.75	356.33	3385.01	3384.99	0.88
7494.00	90.20	355.10	4455.97	3408.92	-219.62	356.31	3416.00	3415.97	3.04
7526.00	89.60	356.10	4456.02	3440.83	-222.07	356.31	3447.98	3447.96	3.64
7558.00	89.50	356.50	4456.28	3472.76	-224.14	356.31	3479.99	3479.97	1.29
7589.00	89.50	356.40	4456.55	3503.70	-226.06	356.31	3510.99	3510.96	0.32
7621.00	90.10	356.50	4456.66	3535.64	-228.04	356.31	3542.99	3542.97	1.90
7652.00	90.20	356.30	4456.58	3566.58	-229.98	356.31	3573.97	3573.95	0.72
7684.00	90.00	355.80	4456.52	3598.50	-232.19	356.31	3605.99	3605.96	1.68
7715.00	90.40	355.70	4456.41	3629.42	-234.49	356.30	3636.99	3636.96	1.33
7747.00	90.50	355.40	4456.16	3661.32	-236.97	356.30	3668.97	3668.94	0.99
7778.00	90.20	354.80	4455.97	3692.20	-239.62	356.29	3699.97	3699.93	2.16
7810.00	90.60	354.40	4455.75	3724.06	-242.63	356.27	3731.96	3731.92	1.77
7842.00	90.70	354.50	4455.39	3755.91	-245.72	356.26	3763.94	3763.90	0.44
7873.00	90.80	354.20	4454.98	3786.76	-248.77	356.24	3794.92	3794.87	1.02
7904.00	89.60	354.20	4454.87	3817.60	-251.91	356.22	3825.91	3825.85	3.87
7936.00	89.30	354.90	4455.18	3849.45	-254.95	356.21	3857.88	3857.82	2.38
7968.00	89.70	355.00	4455.46	3881.32	-257.76	356.20	3889.88	3889.82	1.29
7999.00	89.80	354.80	4455.59	3912.20	-260.52	356.19	3920.86	3920.79	0.72
8031.00	89.30	356.50	4455.84	3944.11	-262.95	356.19	3952.86	3952.78	5.54
8062.00	89.00	356.60	4456.30	3975.05	-264.81	356.19	3983.86	3983.79	1.02
8094.00	89.60	356.30	4456.70	4006.98	-266.79	356.19	4015.85	4015.78	2.10
8126.00	89.70	355.90	4456.89	4038.91	-268.97	356.19	4047.86	4047.79	1.29
8157.00	88.50	357.50	4457.38	4069.85	-270.75	356.19	4078.86	4078.79	6.45
8189.00	88.10	357.60	4458.33	4101.81	-272.12	356.20	4110.83	4110.76	1.29
8221.00	89.00	357.50	4459.14	4133.77	-273.49	356.21	4142.80	4142.74	2.83

MD	Inclination	Azimuth	TVD	NS	EW	CA	CD	VS	DLS
8252.00	89.30	356.90	4459.60	4164.73	-275.00	356.22	4173.80	4173.74	2.16
8284.00	89.30	356.50	4459.99	4196.67	-276.84	356.23	4205.80	4205.74	1.25
8315.00	89.40	356.60	4460.34	4227.61	-278.71	356.23	4236.80	4236.74	0.46
8347.00	89.70	357.20	4460.59	4259.57	-280.44	356.23	4268.78	4268.73	2.10
8379.00	89.50	357.00	4460.81	4291.52	-282.06	356.24	4300.78	4300.72	0.88
8410.00	89.30	356.90	4461.14	4322.48	-283.71	356.24	4331.77	4331.72	0.72
8442.00	90.00	358.20	4461.33	4354.45	-285.08	356.25	4363.79	4363.73	4.61
8474.00	89.70	358.40	4461.42	4386.43	-286.03	356.27	4395.73	4395.69	1.13
8505.00	90.10	358.30	4461.47	4417.42	-286.92	356.28	4426.74	4426.70	1.33
8537.00	91.60	358.90	4461.00	4449.41	-287.70	356.30	4458.70	4458.67	5.05
8568.00	92.10	358.30	4460.00	4480.38	-288.46	356.32	4489.67	4489.64	2.52
8600.00	92.00	357.50	4458.85	4512.34	-289.63	356.33	4521.64	4521.61	2.52
8632.00	92.30	358.60	4457.65	4544.30	-290.72	356.34	4553.58	4553.55	3.56
8663.00	92.70	358.80	4456.30	4575.26	-291.42	356.36	4584.54	4584.52	1.44
8695.00	92.20	358.80	4454.93	4607.22	-292.09	356.37	4616.47	4616.45	1.56
8726.00	91.80	357.30	4453.85	4638.19	-293.14	356.38	4647.43	4647.41	5.00
8758.00	91.20	358.50	4453.01	4670.15	-294.31	356.39	4679.42	4679.41	4.19
8805.00	91.20	358.50	4452.03	4717.13	-295.55	356.41	4726.38	4726.37	0.00



Survey Calculation Program

M.W.D. OPERATOR: Kenney H. / Shawn F..

DIRECTIONAL DRILLERS: Richard Snider / Billy Spurgeon

Encana Oil & Gas

Precision 209

Kerr 1H-2

Magnetic Declination: 6.79

Job #: DR1209137

Vertical Section Azimuth 356.53

Minimum Curvature Calculation

No.	Survey	Depth	INC	AZM	TVD	N-S	E-W	Vertical		DLS/
								Section	100	
Tie	1578	0.95	101.42	1577.52	6.45	34.20	6.45	0.96		
1	1622	0.9	148.8	1621.51	6.08	34.74	3.97	1.69		
2	1712	1.0	142.9	1711.50	4.85	35.58	2.69	0.16		
3	1802	1.0	160.7	1801.49	3.48	36.31	1.28	0.34		
4	1893	0.8	246.5	1892.48	2.48	35.99	0.30	1.36		
5	1983	0.8	236.7	1982.47	1.89	34.89	-0.23	0.15		
6	2073	0.8	242.4	2072.46	1.25	33.81	-0.80	0.09		
7	2164	0.8	236.2	2163.45	0.60	32.72	-1.38	0.10		
8	2254	0.9	240.6	2253.44	-0.09	31.58	-2.01	0.13		
9	2345	1.2	295.0	2344.43	-0.04	30.09	-1.86	1.09		
10	2435	1.2	302.9	2434.41	0.87	28.45	-0.86	0.18		
11	2525	1.3	297.2	2524.39	1.85	26.75	0.22	0.18		
12	2615	1.2	300.3	2614.37	2.79	25.02	1.27	0.13		
13	2706	1.1	295.6	2705.35	3.65	23.41	2.22	0.15		
14	2796	1.1	300.4	2795.33	4.46	21.89	3.12	0.10		
15	2887	1.1	298.0	2886.32	5.31	20.37	4.07	0.05		
16	2977	1.1	291.3	2976.30	6.03	18.80	4.88	0.14		
17	3068	1.0	287.0	3067.29	6.58	17.22	5.52	0.14		
18	3158	0.9	286.8	3157.27	7.01	15.80	6.04	0.11		
19	3248	0.9	282.4	3247.26	7.37	14.43	6.48	0.08		
20	3339	0.9	281.6	3338.25	7.66	13.03	6.86	0.01		
21	3429	0.8	278.7	3428.24	7.90	11.72	7.18	0.12		
22	3519	1.2	277.5	3518.23	8.12	10.16	7.49	0.45		
23	3565	1.3	279.1	3564.22	8.27	9.17	7.69	0.23		



Survey Calculation Program

M.W.D. OPERATOR: Kenney H. / Shawn F..

DIRECTIONAL DRILLERS: Richard Snider / Billy Spurgeon

Encana Oil & Gas

Precision 209

Kerr 1H-2

Magnetic Declination: 6.79

Job #: DR1209137

Vertical Section Azimuth 356.53

Minimum Curvature Calculation

No.	Survey Depth	INC	AZM	TVD	Vertical Section		Vertical Section	DLS/ 100
					N-S	E-W		
24	3610	1.2	332.0	3609.21	8.76	8.45	8.23	2.48
25	3655	3.0	359.7	3654.18	10.36	8.22	9.84	4.48
26	3701	5.9	358.9	3700.03	13.92	8.17	13.40	6.31
27	3746	9.4	352.2	3744.63	19.88	7.62	19.38	8.01
28	3791	12.5	351.5	3788.80	28.34	6.40	27.90	6.90
29	3836	15.9	353.2	3832.42	39.28	4.95	38.91	7.61
30	3882	19.2	356.7	3876.27	53.09	3.77	52.77	7.53
31	3927	23.2	358.5	3918.22	69.35	3.11	69.03	9.00
32	3972	27.2	358.2	3958.93	88.49	2.56	88.18	8.89
33	4017	30.7	358.3	3998.30	110.26	1.89	109.95	7.78
34	4062	33.7	357.1	4036.37	134.22	0.92	133.92	6.82
35	4107	36.6	355.9	4073.17	160.07	-0.67	159.82	6.62
36	4153	39.4	355.9	4109.41	188.32	-2.69	188.14	6.09
37	4198	42.3	355.1	4143.45	217.66	-5.01	217.56	6.55
38	4243	45.8	355.3	4175.78	248.83	-7.63	248.84	7.78
39	4288	48.8	355.5	4206.30	281.79	-10.28	281.90	6.67
40	4334	51.0	356.3	4235.93	316.89	-12.79	317.08	4.96
41	4379	54.3	356.7	4263.22	352.59	-14.97	352.85	7.37
42	4424	58.5	357.2	4288.12	390.01	-16.96	390.32	9.38
43	4469	60.8	357.9	4310.86	428.80	-18.62	429.14	5.28
44	4514	60.7	357.3	4332.84	468.03	-20.26	468.40	1.18
45	4560	61.0	357.0	4355.25	508.15	-22.26	508.57	0.87
46	4605	60.6	356.8	4377.20	547.38	-24.38	547.85	0.97
47	4650	60.6	356.7	4399.30	586.52	-26.60	587.05	0.19





**DrillRight**  
TECHNOLOGY, INC.

Survey Calculation Program

M.W.D. OPERATOR: Kenney H. / Shawn F. .

DIRECTIONAL DRILLERS: Richard Snider / Billy Spurgeon

Encana Oil & Gas

Precision 209

Kerr 1H-2

Magnetic Declination: 6.79

Job #: DR1209137

Vertical Section Azimuth 356.53

Minimum Curvature Calculation

No.	Survey Depth	INC	AZM	TVD	N-S	E-W	Vertical Section	DLS/ 100
48	4695	64.4	356.8	4420.07	626.36	-28.87	626.96	8.45
49	4740	69.1	355.6	4437.83	667.60	-31.61	668.29	10.73
50	4786	73.3	354.9	4452.65	710.99	-35.22	711.82	9.24
51	4829	77.3	354.8	4463.56	752.41	-38.95	753.38	9.31
52	4884	80.5	355.2	4474.15	806.16	-43.66	807.33	5.86
53	4916	84.8	355.8	4478.24	837.80	-46.14	839.05	13.57

The Road to Excellence Starts with Safety

Sold To #: 340078	Ship To #: 2946886	Quote #:	Sales Order #: 9794443
Customer: ENCANA OIL & GAS (USA) INC. - EBUS		Customer Rep: Willson, Rodney	
Well Name: Kerr 12H	Well #: 1	API/UWI #: 15-135-35450	
Field:	City (SAP): NESS CITY	County/Parish: Ness	State: Kansas
Legal Description: Section 1 Township 20S Range 25W			
Contractor: Precision		Rig/Platform Name/Num: 209	
Job Purpose: Cement Surface Casing			
Well Type: Development Well		Job Type: Cement Surface Casing	
Sales Person: DAIGLE, COLTER		Srvc Supervisor: AGUILERA, FABIAN	MBU ID Emp #: 442123

### Job Personnel

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
AGUILERA, FABIAN J	5	442123	HEIDT, JAMES Nicholas	5	517102	LUONG, JOHN M	5	497077
MENDOZA, VICTOR	5	442596	NASH, JONATHAN Clark	5	524600			

### Equipment

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way

### Job Hours

Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours
TOTAL			Total is the sum of each column separately					

### Job

### Job Times

Formation Name	Top	Bottom	Called Out	Date	Time	Time Zone
Formation Depth (MD)			On Location	06 - Sep - 2012	08:30	CST
Form Type		BHST	Job Started	06 - Sep - 2012	13:30	CST
Job depth MD	1586. ft	Job Depth TVD	Job Completed	06 - Sep - 2012	16:34	CST
Water Depth		Wk Ht Above Floor	Departed Loc	06 - Sep - 2012	17:49	CST
Perforation Depth (MD)	From	To		06 - Sep - 2012	20:30	CST

### Well Data

Description	New / Used	Max pressure psig	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Surface Casing Open Hole				12.25				60.	1612.		
Preset Conductor	Unknown		14.	13.344	50.		J-55	.	60.		
Surface Casing	Unknown		9.625	8.921	36.		J-55	.	1611.		

### Sales/Rental/3<sup>rd</sup> Party (HES)

Description	Qty	Qty uom	Depth	Supplier
PLUG,CMTG, TOP,9 5/8,HWE,8.16 MIN/9.06 MA	1	EA		

### Tools and Accessories

Type	Size	Qty	Make	Depth	Type	Size	Qty	Make	Depth	Type	Size	Qty	Make
Guide Shoe					Packer					Top Plug			
Float Shoe					Bridge Plug					Bottom Plug			
Float Collar					Retainer					SSR plug set			
Insert Float										Plug Container			
Stage Tool										Centralizers			

### Miscellaneous Materials

Gelling Agt	Conc	Surfactant	Conc	Acid Type	Qty	Conc	%
Treatment Fld	Conc	Inhibitor	Conc	Sand Type	Size	Qty	

Fluid Data										
Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty uom	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sk	Mix Fluid Gal/sk	Rate bbl/min	Total Mix Fluid Gal/sk	
1	ExtendaCem	EXTENDACEM (TM) SYSTEM (452981)	340.0	sacks	12.4	2.09	11.5		11.5	
	0.25 lbm	POLY-E-FLAKE (101216940)								
	2 %	CALCIUM CHLORIDE, PELLET, 50 LB (101509387)								
	11.495 Gal	FRESH WATER								
2	HalCem	HALCEM (TM) SYSTEM (452986)	280.0	sacks	15.6	1.19	5.3		5.3	
	1 %	CALCIUM CHLORIDE, PELLET, 50 LB (101509387)								
	0.125 lbm	POLY-E-FLAKE (101216940)								
	5.302 Gal	FRESH WATER								
3	Displacement (TBC)		122.00	bbl	.	.0	.0	.0		
4	Top Out Cement	CMT - STANDARD CEMENT (100003684)		sacks	15.6	1.18	5.25		5.25	
	94 lbm	CMT - STANDARD - CLASS A REG OR TYPE I, BULK (100003684)								
	5.245 Gal	FRESH WATER								
Calculated Values			Pressures			Volumes				
Displacement	122 BBL	Shut In: Instant		Lost Returns	0	Cement Slurry	186 BBL	Pad		
Top Of Cement	SURFACE 0	5 Min		Cement Returns	55 BBL	Actual Displacement	120 BBL	Treatment		
Frac Gradient		15 Min		Spacers	0	Load and Breakdown		Total Job		
Rates										
Circulating	0	Mixing	5	Displacement	5	Avg. Job	5			
Cement Left In Pipe	Amount	40 ft	Reason	Shoe Joint						
Frac Ring # 1 @	ID	Frac ring # 2 @	ID	Frac Ring # 3 @	ID	Frac Ring # 4 @	ID			
<b>The Information Stated Herein Is Correct</b>				Customer Representative Signature						

The Road to Excellence Starts with Safety

Sold To #: 340078	Ship To #: 2946886	Quote #:	Sales Order #: 9804988
Customer: ENCANA OIL & GAS (USA) INC. - EBUS		Customer Rep: Millins, Greg	
Well Name: Kerr 12H	Well #: 1	API/UWI #: 15-135-35450	
Field:	City (SAP): NESS CITY	County/Parish: Ness	State: Kansas
Legal Description: Section 1 Township 20S Range 25W			
Contractor: Precision		Rig/Platform Name/Num: 209	
Job Purpose: Cement Intermediate Casing			
Well Type: Development Well		Job Type: Cement Intermediate Casing	
Sales Person: DAIGLE, COLTER		Srvc Supervisor: WOODROW, JOHN	MBU ID Emp #: 105848

### Job Personnel

HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #	HES Emp Name	Exp Hrs	Emp #
JOURNAGAN, MICHAEL D	12	524224	SMITH, THOMAS Miles	12	493032	WOODROW, JOHN Phillip	12	105848

### Equipment

HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way	HES Unit #	Distance-1 way

### Job Hours

Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours	Date	On Location Hours	Operating Hours
9/10/12	2	1	9/11/12	5	2			

TOTAL Total is the sum of each column separately

### Job

### Job Times

Formation Name	Date	Time	Time Zone
Formation Depth (MD) Top Bottom	Called Out	10 - Sep - 2012	15:00 CST
Form Type BHST	On Location	10 - Sep - 2012	21:45 CST
Job depth MD 4864. ft Job Depth TVD 4446. ft	Job Started	11 - Sep - 2012	02:30 CST
Water Depth Wk Ht Above Floor 5. ft	Job Completed	11 - Sep - 2012	03:35 CST
Perforation Depth (MD) From To	Departed Loc	11 - Sep - 2012	05:30 CST

### Well Data

Description	New / Used	Max pressure psig	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Intermediate Open Hole				8.75				1586.	4901.	.	3500.
Intermediate Casing	Unknown		7.	6.366	23.		N-80	.	4900.	.	3500.
Surface Casing	Unknown		9.625	8.921	36.		J-55	.	1586.		

### Sales/Rental/3<sup>rd</sup> Party (HES)

Description	Qty	Qty uom	Depth	Supplier
PLUG,CMTG, TOP, 7, HWE, 5.66 MIN/6.54 MAX CS	1	EA		

### Tools and Accessories

Type	Size	Qty	Make	Depth	Type	Size	Qty	Make	Depth	Type	Size	Qty	Make
Guide Shoe					Packer					Top Plug			
Float Shoe					Bridge Plug					Bottom Plug			
Float Collar					Retainer					SSR plug set			
Insert Float										Plug Container			
Stage Tool										Centralizers			

### Miscellaneous Materials

Gelling Agt	Conc	Surfactant	Conc	Acid Type	Qty	Conc	%
Treatment Fld	Conc	Inhibitor	Conc	Sand Type	Size	Qty	

### Fluid Data

Stage/Plug #: 1

Fluid #	Stage Type	Fluid Name	Qty	Qty uom	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sk	Mix Fluid Gal/sk	Rate bbl/min	Total Mix Fluid Gal/sk
1	Water ahead		10.00	bbl	8.33	.0	.0	.0	
2	Lead Cement	MIDCON-2 CEMENT STANDARD - SBM (15078)	70.0	sacks	11.4	2.89	17.84		17.84
	0.25 lbm	POLY-E-FLAKE (101216940)							
	17.838 Gal	FRESH WATER							
3	Tail Cement	CMT - STANDARD CEMENT (100003684)	105.0	sacks	15.6	1.18	5.2		5.2
	94 lbm	CMT - STANDARD - CLASS A REG OR TYPE I, BULK (100003684)							
	0.25 lbm	POLY-E-FLAKE (101216940)							
	5.204 Gal	FRESH WATER							
4	Displacement (TBC)		169.00	bbl	8.33	.0	.0	.0	
Calculated Values		Pressures			Volumes				
Displacement	184	Shut In: Instant		Lost Returns	0	Cement Slurry	58	Pad	
Top Of Cement	2264	5 Min		Cement Returns	0	Actual Displacement	184	Treatment	
Frac Gradient		15 Min		Spacers	10	Load and Breakdown		Total Job	
Rates									
Circulating	5	Mixing	5	Displacement	5	Avg. Job	5		
Cement Left In Pipe	Amount	40 ft	Reason	Shoe Joint					
Frac Ring # 1 @	ID	Frac ring # 2 @	ID	Frac Ring # 3 @	ID	Frac Ring # 4 @	ID		
The Information Stated Herein Is Correct				Customer Representative Signature					