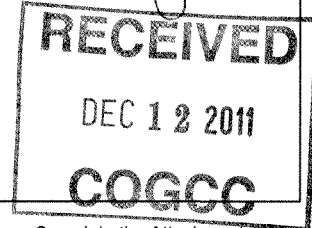




SUNDRY NOTICE

Submit original plus one copy. This form is to be used for general, technical and environmental sundry information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form.) Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b.)



Complete the Attachment Checklist

OP OGCC

1. OGCC Operator Number: 100185	4. Contact Name: Jevin Croteau		
2. Name of Operator: Encana Oil & Gas (USA) Inc.	Phone: 720-876-5339		
3. Address: 370 17th Street, Suite 1700	Fax: 720-876-6339		
City: Denver State: CO Zip: 80202			
5. API Number 05- 077-10095-00	OGCC Facility ID Number	Survey Plat	X
6. Well/Facility Name: Nichols	7. Well/Facility Number 31-9H (PL31SE)	Directional Survey	X
8. Location (QtrQtr, Sec, Twp, Rng, Meridian): 1363' FSL & 675' FEL, NESE of Sec. 31, T9S, R95W, 6th PM		Surface Eqpm Diagram	
9. County: Mesa	10. Field Name: Plateau	Technical Info Page	X
11. Federal, Indian or State Lease Number: COC-13192 & COC-30491		Other	

General Notice

<input checked="" type="checkbox"/> CHANGE OF LOCATION: Attach New Survey Plat (a change of surface qtr/qtr is substantive and requires a new permit)			
Change of Surface Footage from Exterior Section Lines:	1363	FSL	675
Change of Surface Footage to Exterior Section Lines:	1405	FSL	744
Change of Bottomhole Footage from Exterior Section Lines:	633	FNL	791
Change of Bottomhole Footage to Exterior Section Lines:	2329	FSL	1761
Bottomhole location Qtr/Qtr, Sec, Twp, Rng, Mer NESE, Sec. 19, T9S, R95W, 6th PM			
Latitude 39.228480	Distance to nearest property line 1233'	Distance to nearest bldg, public rd, utility or RR 3400'	
Longitude 108.028359	Distance to nearest lease line 478'	Is location in a High Density Area (rule 603b)? Yes/No	NO
Ground Elevation 5918'	Distance to nearest well same formation 800'	Surface owner consultation date:	11/23/11
GPS DATA: Date of Measurement 09/05/07 PDOP Reading 0 Instrument Operator's Name Ted Taggart			
<input checked="" type="checkbox"/> CHANGE SPACING UNIT Formation MNCOS MNC5 Spacing order number Unit Acreage Unit configuration			<input type="checkbox"/> Remove from surface bond Signed surface use agreement attached
<input type="checkbox"/> CHANGE OF OPERATOR (prior to drilling): Effective Date: _____ Plugging Bond: <input type="checkbox"/> Blanket <input type="checkbox"/> Individual		<input checked="" type="checkbox"/> CHANGE WELL NAME From: Nichols 31-9H (PL31SE) To: Nichols 19-10H (PL31SE) Effective Date: 12/09/11	
<input type="checkbox"/> ABANDONED LOCATION: Was location ever built? <input type="checkbox"/> Yes <input type="checkbox"/> No Is site ready for inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No Date Ready for Inspection: _____		<input type="checkbox"/> NOTICE OF CONTINUED SHUT IN STATUS Date well shut in or temporarily abandoned: _____ Has Production Equipment been removed from site? <input type="checkbox"/> Yes <input type="checkbox"/> No MIT required if shut in longer than two years. Date of last MIT _____	
<input type="checkbox"/> SPUD DATE: _____		<input checked="" type="checkbox"/> REQUEST FOR CONFIDENTIAL STATUS (6 mos from date casing set)	
<input type="checkbox"/> SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK *submit cbl and cement job summaries Method used Cementing tool setting/perf depth Cement volume Cement top Cement bottom Date			
<input type="checkbox"/> RECLAMATION: Attach technical page describing final reclamation procedures per Rule 1004. Final reclamation will commence on approximately _____ <input type="checkbox"/> Final reclamation is completed and site is ready for inspection.			

Technical Engineering/Environmental Notice

<input type="checkbox"/> Notice of Intent Approximate Start Date: _____		<input type="checkbox"/> Report of Work Done Date Work Completed: _____	
Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)			
<input type="checkbox"/> Intent to Recomplete (submit form 2)	<input type="checkbox"/> Request to Vent or Flare	<input type="checkbox"/> E&P Waste Disposal	
<input checked="" type="checkbox"/> Change Drilling Plans	<input type="checkbox"/> Repair Well	<input type="checkbox"/> Beneficial Reuse of E&P Waste	
<input checked="" type="checkbox"/> Gross Interval Changed?	<input type="checkbox"/> Rule 502 variance requested	<input type="checkbox"/> Status Update/Change of Remediation Plans	
<input checked="" type="checkbox"/> Casing/Cementing Program Change	<input type="checkbox"/> Other: _____	for Spills and Releases	

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct and complete.

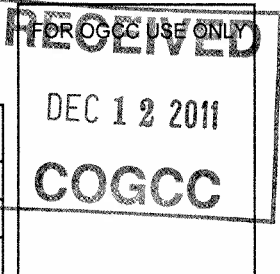
Signed: _____ Date: 12/9/11 Email: jevin.croteau@encana.com

Print Name: Jevin Croteau Title: Regulatory Analyst

COGCC Approved: _____ Title: NWA ENGINEER Date: 1/20/12

CONDITIONS OF APPROVAL, IF ANY:

TECHNICAL INFORMATION PAGE



1. OGCC Operator Number: 100185 API Number: 05-077-10095-00
2. Name of Operator: Encana Oil & Gas (USA) Inc. OGCC Facility ID #
3. Well/Facility Name: Nichols Well/Facility Number: 19-10H (PL31SE)
4. Location (QtrQtr, Sec, Twp, Rng, Meridian): NESE of Sec. 31, T9S, R95W, 6th PM

This form is to be completed whenever a Sundry Notice is submitted requiring detailed report of work to be performed or completed. This form shall be transmitted within 30 days of work completed as a "subsequent" report and must accompany Form 4, page 1.

5. DESCRIBE PROPOSED OR COMPLETED OPERATIONS

Encana Oil & Gas (USA) Inc. plans to change the BHL of the subject well as described on page 1.

Encana Oil & Gas (USA) Inc. plans to change the objective formation to the Mancos - MNCS formation only.

Encana also plans to change the approved casing and cementing program for the subject well:

From:

Casing Type	Size of Hole	Size of Casing	Weight Per Foot	Setting Depth	Sacks of Cement	Cement Bottom	Cement Top
Conductor	24	20	.25 " Wall	40	4	40	0
Surface	17 1/2	13 3/8	68#	1300	903	1300	40
1st	12 1/4	9 5/8	36#	6200	968	6200	1300
2nd	8 3/4	5 1/2	20#	12574	1117	12574	6200

To:

Casing Type	Size of Hole	Size of Casing	Weight Per Foot	Setting Depth	Sacks of Cement	Cement Bottom	Cement Top
Conductor	24	16	65#	40	118	40	0
Surface	14 3/4	10 3/4	40.5#	1508	822	1508	0
1st	9 7/8	7 5/8	26.4#	6900	1041	6900	1152
2nd	6 3/4	5	23.2#	18461	888	18461	6400

Amended 2A # 400231803 in process

RECEIVED

DEC 1 2 2011

T9S, R95W, 6TH P.M.

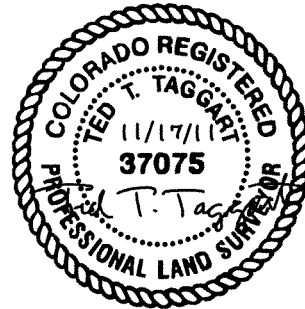
SEE SHEET 1ee FOR CONTINUATION

LEGEND

- SECTION CORNER LOCATED
- SURFACE LOCATION
- BOTTOM HOLE LOCATION
- RECORD LOCATION OF CORNER

CERTIFICATE OF SURVEYOR

I, TED TAGGART OF FRUITA, COLORADO HEREBY CERTIFY THAT THIS MAP WAS MADE FROM NOTES TAKEN DURING AN ACTUAL SURVEY MADE BY ME OR UNDER MY DIRECTION FOR ENCANA OIL & GAS (USA) INC. AND THAT THIS LOCATION HAS BEEN STAKED ON THE GROUND AS SHOWN HEREON.



NICHOLS 19-10H (PL31SE) WELL
(WELLHEAD LOCATION) NAD 83
LATITUDE = 39.228480° N
LONGITUDE = 108.028359° W
(BOTTOM HOLE LOCATION) NAD 83
LATITUDE = 39.260102° N
LONGITUDE = 108.031659° W

NOTES

- WELL FOOTAGES ARE MEASURED AT RIGHT ANGLES TO SECTION LINES.
- BASIS OF BEARING: GEODETIC- BASED ON GPS OBSERVATIONS.
- ELEVATIONS BASED ON GPS OBSERVATIONS, NAVD 88 (GEOID 03), POST PROCESSED USING NGS OPUS.
- SEE ADDENDUM TO LEGAL PLAT (SHEET 1g) FOR VISIBLE IMPROVEMENTS WITHIN 400 FEET OF THE PROPOSED OIL & GAS LOCATION.
- CONTROL FOR SURVEY WAS ESTABLISHED USING DIFFERENTIALLY CORRECTED GPS FROM AN OPUS BASED CONTROL NETWORK. WELL LOCATION WAS ESTABLISHED USING NON-GPS CONVENTIONAL METHODS, THEREFORE NO PDOP READING WAS TAKEN.

MAP to ACCOMPANY
APPLICATION for PERMIT to DRILL
Encana Oil & Gas (USA) Inc.
Nichols 19-10H (PL31SE) Well

NE1/4 SE1/4, SECTION 31
T9S, R95W, 6th P.M.
MESA COUNTY, COLORADO



906 Main Street
Evanston, Wyoming 82930
Phone No. (307) 789-4545

Location Plat		Scale: 1" = 1200'	SHEET 1e OF 10
Project No.	07-04-45	Date Surveyed: 9/05/07	
Date	10/04/11	Latest Revision 11/17/11	
Drawn:		Date:	

DEC 12 2011

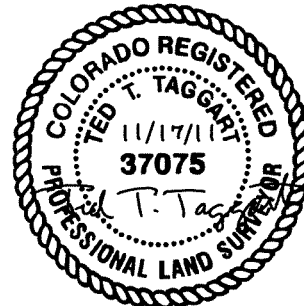
T9S, R95W, 6TH P.M.

COGCC

LEGEND

- ◆ SECTION CORNER LOCATED
- ⊙ SURFACE LOCATION
- BOTTOM HOLE LOCATION
- ▣ RECORD LOCATION OF CORNER

CERTIFICATE OF SURVEYOR
I, TED TAGGART OF FRUITA, COLORADO HEREBY CERTIFY THAT THIS MAP WAS MADE FROM NOTES TAKEN DURING AN ACTUAL SURVEY MADE BY ME OR UNDER MY DIRECTION FOR ENCANA OIL & GAS (USA) INC. AND THAT THIS LOCATION HAS BEEN STAKED ON THE GROUND AS SHOWN HEREON.



NICHOLS 19-10H (PL31SE) WELL
(WELLHEAD LOCATION) NAD 83
LATITUDE = 39.228480° N
LONGITUDE = 108.028359° W
(BOTTOM HOLE LOCATION) NAD 83
LATITUDE = 39.260102° N
LONGITUDE = 108.031659° W

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3. ELEVATIONS BASED ON GPS OBSERVATIONS, NAVD 88 (GEOID 03), POST PROCESSED USING NGS OPUS.
4. SEE ADDENDUM TO LEGAL PLAT (SHEET 1g) FOR VISIBLE IMPROVEMENTS WITHIN 400 FEET OF THE PROPOSED OIL & GAS LOCATION.
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MAP to ACCOMPANY

APPLICATION for PERMIT to DRILL

Encana Oil & Gas (USA) Inc.

Nichols 19-10H (PL31SE) Well

NE1/4, SE1/4, SECTION 31

T9S, R95W, 6th P.M.

MESA COUNTY, COLORADO

-SEE SHEET 1e FOR CONTINUATION-

906 Main Street
Evanston, Wyoming 82930
Phone No. (307) 789-4545

Location Plat		Scale: 1" = 1200'	SHEET 1ee OF 10
Project No.	07-04-45	Date Surveyed: 9/05/07	
Date	10/04/11	Latest Revision 11/17/11	
Drawn:		Date:	

WELL Nichols 19-10H			FIELD CO, Mesa Co.(NAD83UTM13)			STRUCTURE Encana 31-09S-95W (PL31SE)		
Magnetic Parameters Model: BGSIM 2011 Dip: 65.499° Mag Dec: 10.296°			Surface Location Lat: N 39 13 42.528 Lon: W 108 1 42.092			NAD83 UTM Zone 13N, US Feet 14260151.85 NUS 782773.80 RUS Grid Conv: -1.91626154° Scale Fact: 1.00044149		
Date: November 01, 2011 FS: 52027.1nT			Miscellaneous Site: Nichols 19-10H Plan: R2 ors 01-Dec-11			TVD Ref: RKB(5937ft above MSL) Soy Date: November 01, 2011		

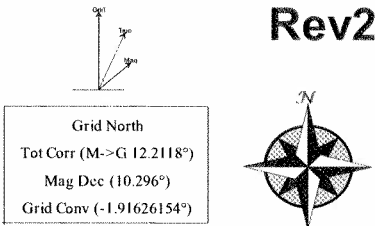
Surface Location								
Target Description			Grid Coord			Local Coord		
Target Name	Shape	Major Axis	N(+)S(-)	E(+)W(-)	TVD	YSec	N(+)S(-)	E(+)W(-)
Nichols 19-10H TD	Point	0.00	39.26	-108.03	8208.00	11555.82	11542.79	-548.61

Critical Points								
Critical Point	MD	INCL	AZIM	TVD	YSEC	N(+) / S(-)	E(+) / W(-)	DLS
Nichols 19-10H SHL	0.00	0.00	307.84	0.00	0.00	0.00	0.00	
Marker MudLine	22.00	0.00	307.84	22.00	0.00	0.00	0.00	0.00
KOP, Build 1 DLS	400.00	0.00	307.84	400.00	0.00	0.00	0.00	0.00
Ohio Creek (Top Kmv)	1352.38	9.52	307.84	1348.00	51.35	48.44	-62.37	1.00
Hold	1358.20	9.58	307.84	1353.74	51.97	49.03	-63.13	1.00
Williams Fork Fm	1671.84	9.58	307.84	1663.00	85.92	81.06	-104.36	0.00
Top Gas	3218.41	9.58	307.84	3188.00	253.31	238.97	-307.69	0.00
Coal Ridge (Paludal)	3841.10	9.58	307.84	3802.00	320.70	302.55	-389.55	0.00
Rollins Ss (lies Fm)	4124.05	9.58	307.84	4081.00	351.33	331.44	-426.75	0.00
Cozzette Ss	4414.10	9.58	307.84	4367.00	382.72	361.05	-464.88	0.00
Corcoran Ss	4597.66	9.58	307.84	4548.00	402.58	379.80	-489.01	0.00
Buck Tongue	5313.65	9.58	307.84	5254.00	480.08	452.90	-583.14	0.00
Castlegate	5850.13	9.58	307.84	5783.00	538.14	507.68	-653.67	0.00
Mancoes B	6118.88	9.58	307.84	6048.00	567.23	535.12	-689.00	0.00
Blue Gate	6177.70	9.58	307.84	6106.00	573.59	541.13	-696.73	0.00
Prairie Canyon	6478.90	9.58	307.84	6403.00	606.19	571.88	-736.33	0.00
KOP, Build&Turn 6 DLS	7089.55	9.58	307.84	7005.13	672.29	634.23	-816.61	0.00
Niobrara Fm	7490.48	30.54	348.81	7381.00	796.56	756.42	-863.42	6.00
Horizontal Target	8463.17	87.99	2.00	7859.00	1595.68	1554.83	-897.40	6.00
Landing Point	8463.31	88.00	2.00	7859.01	1595.82	1554.97	-897.39	6.00
Nto. Laminated Shst	10182.39	88.00	2.00	7919.00	3308.02	3271.95	-837.43	0.00
Nichols 19-10H TD	18463.31	88.00	2.00	8208.00	11555.82	11542.79	-548.61	0.00

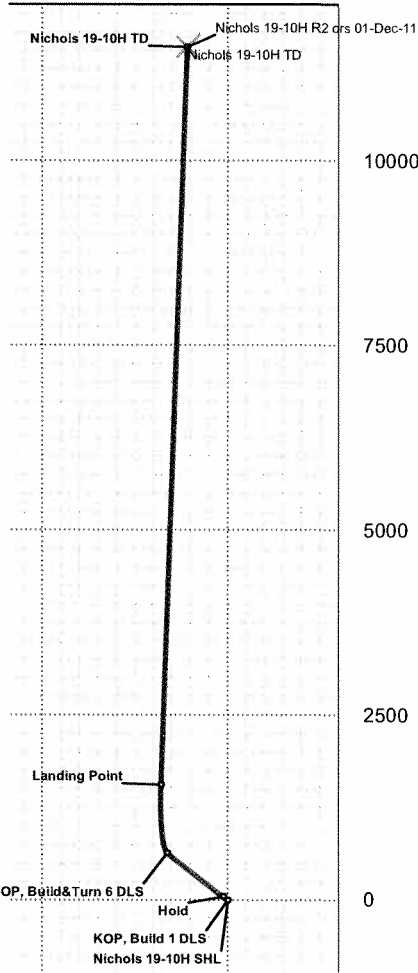
Quality Control
Date Drawn: December 01, 2011 03:26:33 PM
Drawn by: Oswaldo Salazar
Checked by:
Client OK:

Proposal

Rev2



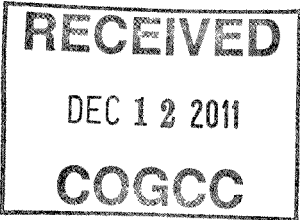
<<< W Scale = 1(in):2500(ft) E >>>
-2500 0



TVD Scale = 1(in):2500(ft)

<<< S Scale = 1(in):2500(ft) N >>>

Nichols 19-10H R2 ors 01-Dec-11 Proposal Report
(Def Plan)



Report Date:	December 01, 2011 - 03:44 PM	Survey / DLS Computation:	Minimum Curvature / Lubinski
Client:	EnCana Oil & Gas (USA) Inc.	Vertical Section Azimuth:	357.279 ° (Grid North)
Field:	CO, Mesa County (NAD 83 UTM 13) EnCana 2010	Vertical Section Origin:	0.000 ft, 0.000 ft
Structure / Slot:	Encana 31-09S-95W (PL31SE Pad) / Nichols 19-10H	TVD Reference Datum:	RKB
Well:	Nichols 19-10H	TVD Reference Elevation:	5937.000 ft above MSL
Borehole:	Original Hole	Seabed / Ground Elevation:	5915.000 ft above MSL
UWI / API#:	Unknown / Unknown	Magnetic Declination:	10.296 °
Survey Name:	Nichols 19-10H R2 ors 01-Dec-11	Total Field Strength:	52027.117 nT
Survey Date:	November 01, 2011	Magnetic Dip Angle:	65.499 °
Tort / AHD / DDI / ERD Ratio:	92.008 ° / 11961.202 ft / 6.394 / 1.457	Declination Date:	November 01, 2011
Coordinate Reference System:	NAD83 UTM Zone 13N, US Feet	Magnetic Declination Model:	BGGM 2011
Location Lat / Long:	N 39° 13' 42.52800", W 108° 1' 42.09242"	North Reference:	Grid North
Location Grid N/E Y/X:	N 14260151.848 ftUS, E 782773.797 ftUS	Grid Convergence Used:	-1.916 °
CRS Grid Convergence Angle:	-1.91626154 °	Total Corr Mag North->Grid North:	12.212 °
Grid Scale Factor:	1.00044149	Local Coord Referenced To:	Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Nichols 19-10H SHL	0.00	0.00	307.84	0.00	0.00	0.00	0.00	N/A	14260151.85	782773.80	N 39 13 42.53 W 108	1 42.09
Marker MudLine	22.00	0.00	307.84	22.00	0.00	0.00	0.00	0.00	14260151.85	782773.80	N 39 13 42.53 W 108	1 42.09
	100.00	0.00	307.84	100.00	0.00	0.00	0.00	0.00	14260151.85	782773.80	N 39 13 42.53 W 108	1 42.09
	200.00	0.00	307.84	200.00	0.00	0.00	0.00	0.00	14260151.85	782773.80	N 39 13 42.53 W 108	1 42.09
	300.00	0.00	307.84	300.00	0.00	0.00	0.00	0.00	14260151.85	782773.80	N 39 13 42.53 W 108	1 42.09
	400.00	0.00	307.84	400.00	0.00	0.00	0.00	0.00	14260151.85	782773.80	N 39 13 42.53 W 108	1 42.09
	500.00	1.00	307.84	499.99	0.57	0.54	-0.69	1.00	14260152.38	782773.11	N 39 13 42.53 W 108	1 42.10
	600.00	2.00	307.84	599.96	2.27	2.14	-2.76	1.00	14260153.99	782771.04	N 39 13 42.55 W 108	1 42.13
	700.00	3.00	307.84	699.86	5.11	4.82	-6.20	1.00	14260156.67	782767.59	N 39 13 42.57 W 108	1 42.17
	800.00	4.00	307.84	799.68	9.07	8.56	-11.02	1.00	14260160.41	782762.77	N 39 13 42.61 W 108	1 42.24
	900.00	5.00	307.84	899.37	14.18	13.37	-17.22	1.00	14260165.23	782756.57	N 39 13 42.65 W 108	1 42.32
KOP, Build 1 DLS	1000.00	6.00	307.84	998.90	20.41	19.25	-24.79	1.00	14260171.11	782749.00	N 39 13 42.71 W 108	1 42.42
	1100.00	7.00	307.84	1098.26	27.77	26.20	-33.73	1.00	14260178.06	782740.05	N 39 13 42.78 W 108	1 42.53
	1200.00	8.00	307.84	1197.40	36.25	34.20	-44.04	1.00	14260186.07	782729.74	N 39 13 42.85 W 108	1 42.67
	1300.00	9.00	307.84	1296.30	45.87	43.27	-55.71	1.00	14260195.14	782718.06	N 39 13 42.94 W 108	1 42.82
	1352.38	9.52	307.84	1348.00	51.35	48.44	-62.37	1.00	14260200.31	782711.40	N 39 13 42.99 W 108	1 42.91
	1358.20	9.58	307.84	1353.74	51.97	49.03	-63.13	1.00	14260200.90	782710.64	N 39 13 42.99 W 108	1 42.92
	1400.00	9.58	307.84	1394.96	56.50	53.30	-68.63	0.00	14260205.17	782705.14	N 39 13 43.03 W 108	1 42.99
	1500.00	9.58	307.84	1493.56	67.32	63.51	-81.77	0.00	14260215.39	782691.99	N 39 13 43.13 W 108	1 43.16
	1600.00	9.58	307.84	1592.17	78.14	73.72	-94.92	0.00	14260225.60	782678.83	N 39 13 43.22 W 108	1 43.33
	1671.84	9.58	307.84	1663.00	85.92	81.06	-104.36	0.00	14260232.94	782669.39	N 39 13 43.29 W 108	1 43.45
Williams Fork Fm	1700.00	9.58	307.84	1690.77	88.97	83.93	-108.07	0.00	14260235.82	782665.68	N 39 13 43.32 W 108	1 43.50
	1800.00	9.58	307.84	1789.38	99.79	94.14	-121.21	0.00	14260246.03	782652.53	N 39 13 43.42 W 108	1 43.67
	1900.00	9.58	307.84	1887.98	110.61	104.35	-134.36	0.00	14260256.25	782639.38	N 39 13 43.51 W 108	1 43.84
	2000.00	9.58	307.84	1986.59	121.44	114.56	-147.51	0.00	14260266.46	782626.23	N 39 13 43.61 W 108	1 44.01
	2100.00	9.58	307.84	2085.19	132.26	124.77	-160.65	0.00	14260276.68	782613.07	N 39 13 43.71 W 108	1 44.19
	2200.00	9.58	307.84	2183.80	143.08	134.98	-173.80	0.00	14260286.89	782599.92	N 39 13 43.80 W 108	1 44.36
	2300.00	9.58	307.84	2282.40	153.91	145.20	-186.95	0.00	14260297.11	782586.77	N 39 13 43.90 W 108	1 44.53
	2400.00	9.58	307.84	2381.00	164.73	155.41	-200.09	0.00	14260307.32	782573.62	N 39 13 44.00 W 108	1 44.70
	2500.00	9.58	307.84	2479.61	175.55	165.62	-213.24	0.00	14260317.54	782560.46	N 39 13 44.09 W 108	1 44.87
	2600.00	9.58	307.84	2578.21	186.38	175.83	-226.39	0.00	14260327.75	782547.31	N 39 13 44.19 W 108	1 45.04
Top Gas	2700.00	9.58	307.84	2676.82	197.20	186.04	-239.53	0.00	14260337.97	782534.16	N 39 13 44.29 W 108	1 45.21
	2800.00	9.58	307.84	2775.42	208.02	196.25	-252.68	0.00	14260348.18	782521.01	N 39 13 44.38 W 108	1 45.39
	2900.00	9.58	307.84	2874.03	218.85	206.46	-265.83	0.00	14260358.40	782507.85	N 39 13 44.48 W 108	1 45.56
	3000.00	9.58	307.84	2972.63	229.67	216.67	-278.97	0.00	14260368.61	782494.70	N 39 13 44.58 W 108	1 45.73
	3100.00	9.58	307.84	3071.24	240.49	226.88	-292.12	0.00	14260378.83	782481.55	N 39 13 44.67 W 108	1 45.90
	3200.00	9.58	307.84	3169.84	251.31	237.09	-305.27	0.00	14260389.04	782468.40	N 39 13 44.77 W 108	1 46.07
	3218.41	9.58	307.84	3188.00	253.31	238.97	-307.69	0.00	14260390.92	782465.97	N 39 13 44.79 W 108	1 46.10
	3300.00	9.58	307.84	3268.45	262.14	247.30	-318.41	0.00	14260399.26	782455.24	N 39 13 44.87 W 108	1 46.24
	3400.00	9.58	307.84	3367.05	272.96	257.51	-331.56	0.00	14260409.47	782442.09	N 39 13 44.96 W 108	1 46.41
	3500.00	9.58	307.84	3465.66	283.78	267.72	-344.71	0.00	14260419.69	782428.94	N 39 13 45.06 W 108	1 46.58
Coal Ridge (Paludal)	3600.00	9.58	307.84	3564.26	294.61	277.93	-357.85	0.00	14260429.90	782415.79	N 39 13 45.16 W 108	1 46.76
	3700.00	9.58	307.84	3662.87	305.43	288.14	-371.00	0.00	14260440.12	782402.63	N 39 13 45.25 W 108	1 46.93
	3800.00	9.58	307.84	3761.47	316.25	298.35	-384.15	0.00	14260450.33	782389.48	N 39 13 45.35 W 108	1 47.10
	3841.10	9.58	307.84	3802.00	320.70	302.55	-389.55	0.00	14260454.53	782384.08	N 39 13 45.39 W 108	1 47.17
	3900.00	9.58	307.84	3880.08	327.08	308.56	-397.29	0.00	14260460.55	782376.33	N 39 13 45.44 W 108	1 47.27
	4000.00	9.58	307.84	3958.68	337.90	318.77	-410.44	0.00	14260470.76	782363.18	N 39 13 45.54 W 108	1 47.44
	4100.00	9.58	307.84	4057.29	348.72	328.98	-423.59	0.00	14260480.98	782350.03	N 39 13 45.64 W 108	1 47.61
	4124.05	9.58	307.84	4081.00	351.33	331.44	-426.75	0.00	14260483.43	782346.86	N 39 13 45.66 W 108	1 47.65
	4200.00	9.58	307.84	4155.89	359.55	339.19	-436.73	0.00	14260491.19	782336.87	N 39 13 45.73 W 108	1 47.78
	4300.00	9.58	307.84	4254.50	370.37	349.41	-449.88	0.00	14260501.41	782323.72	N 39 13 45.83 W 108	1 47.95
Cozzette Ss	4400.00	9.58	307.84	4353.10	381.19	359.62	-463.03	0.00	14260511.62	782310.57	N 39 13 45.93 W 108	1 48.13
	4414.10	9.58	307.84	4367.00	382.72	361.05	-464.88	0.00	14260513.06	782308.71	N 39 13 45.94 W 108	1 48.15
	4500.00	9.58	307.84	4451.71	392.02	369.83	-476.17	0.00	14260521.84	782297.42	N 39 13 46.02 W 108	1 48.30
	4597.66	9.58	307.84	4548.00	402.58	379.80	-489.01	0.00	14260531.81	782284.57	N 39 13 46.12 W 108	1 48.46
	4600.00	9.58	307.84	4550.31	402.84	380.04	-489.32	0.00	14260532.05	782284.26	N 39 13 46.12 W 108	1 48.47
	4700.00	9.58	307.84	4648.92	413.66	390.25	-502.47	0.00	14260542.27	782271.11	N 39 13 46.22 W 108	1 48.64
	4800.00	9.58	307.84	4747.52	424.48	400.46	-515.61	0.00	14260552.48	782257.96	N 39 13 46.31 W 108	1 48.81
	4900.00	9.58	307.84	4846.13	435.31	410.67	-528.76	0.00	14260562.70	782244.81	N 39 13 46.41 W 108	1 48.98
	5000.00	9.58	307.84	4944.73	446.13	420.88	-541.90	0.00	14260572.91	782231.65	N 39 13 46.51 W 108	1 49.15
	5100.00	9.58	307.84	5043.34	456.95	431.09	-555.05	0.00	14260583.13	782218.50	N 39 13 46.60 W 108	1 49.33
Buck Tonque	5200.00	9.58	307.84	5141.94	467.78	441.30	-568.20	0.00	14260593.34	782205.35	N 39 13 46.70 W 108	1 49.50
	5300.00	9.58	307.84	5240.54	478.60	451.51	-581.34	0.00	14260603.56	782192.20	N 39 13 46.80 W 108	1 49.67
	5313.65	9.58	307.84	5254.00	480.08	452.90	-583.14	0.00	14260604.95	782190.40	N 39 13 46.81 W 108	1 49.69
	5400.00	9.58	307.84	5339.15	489.42	461.72	-594.49	0.00	14260613.77	782179.04	N 39 13 46.89 W 108	1 49.84
	5500.00	9.58	307.84	5437.75	500.25	471.93	-607.64	0.00	14260623.99	782165.89	N 39 13 46.99 W 108	1 50.01
	5600.00	9.58	307.84	5536.36	511.07	482.14	-620.78	0.00	14260634.20	782152.74	N 39 13 47.09 W 108	1 50.18
	5700.00	9.58	307.84	5634.96	521.89	492.35	-633.93	0.00	14260644.42	782139.59	N 39 13 47.18 W 108	1 50.35
	5800.00	9.58	307.84	5733.57	532.72	502.56	-647.08	0.00	14260654.63	782126.44	N 39 13 47.28 W 108	1 50.52
	5850.13	9.58	307.84	5783.00	538.14	507.68	-653.67	0.00	14260659.75	782119.84	N 39 13 47.33 W 108	1 50.61
	5900.00	9.58	307.84	5832.17	543.54	512.77	-660.22	0.00	14260664.85	782113.28	N 39 13 47.37 W 108	1 50.70
Castlegate	6000.00	9.58	307.84	5930.78	554.36	522.98	-673.37	0.00	14260675.06	782100.13	N 39 13 47.3	

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Prairie Canyon	6400.00	9.58	307.84	6325.20	597.65	563.83	-725.96	0.00	14260715.92	782047.52	N 39 13 47.86	W 108 1 51.55
	6478.90	9.58	307.84	6403.00	606.19	571.88	-736.33	0.00	14260723.98	782037.14	N 39 13 47.93	W 108 1 51.69
	6500.00	9.58	307.84	6423.80	608.48	574.04	-739.10	0.00	14260726.14	782034.37	N 39 13 47.95	W 108 1 51.72
	6600.00	9.58	307.84	6522.41	619.30	584.25	-752.25	0.00	14260736.35	782021.22	N 39 13 48.05	W 108 1 51.89
	6700.00	9.58	307.84	6621.01	630.12	594.46	-765.40	0.00	14260746.57	782008.06	N 39 13 48.15	W 108 1 52.07
	6800.00	9.58	307.84	6719.62	640.95	604.67	-778.54	0.00	14260756.78	781994.91	N 39 13 48.24	W 108 1 52.24
	6900.00	9.58	307.84	6818.22	651.77	614.88	-791.69	0.00	14260767.00	781981.76	N 39 13 48.34	W 108 1 52.41
	7000.00	9.58	307.84	6916.83	662.59	625.09	-804.84	0.00	14260777.21	781968.61	N 39 13 48.44	W 108 1 52.58
	7089.55	9.58	307.84	7005.13	672.29	634.23	-816.61	0.00	14260786.36	781956.83	N 39 13 48.52	W 108 1 52.73
KOP, Build&Turn 6 DLS	7100.00	9.96	310.80	7015.43	673.47	635.36	-817.98	6.00	14260787.48	781955.46	N 39 13 48.53	W 108 1 52.75
	7200.00	14.44	330.06	7113.18	690.53	651.83	-830.76	6.00	14260803.96	781942.67	N 39 13 48.69	W 108 1 52.92
	7300.00	19.74	339.77	7208.75	717.75	678.50	-842.84	6.00	14260830.65	781930.59	N 39 13 48.95	W 108 1 53.09
	7400.00	25.34	345.42	7301.08	754.84	715.10	-854.07	6.00	14260867.26	781919.35	N 39 13 49.31	W 108 1 53.24
	7490.48	30.54	348.81	7381.00	796.56	756.42	-863.42	6.00	14260908.60	781910.00	N 39 13 49.71	W 108 1 53.38
	7500.00	31.09	349.11	7389.17	801.38	761.20	-864.35	6.00	14260913.39	781909.07	N 39 13 49.76	W 108 1 53.39
	7600.00	36.90	351.74	7472.05	856.87	816.32	-873.55	6.00	14260968.52	781899.86	N 39 13 50.30	W 108 1 53.53
	7700.00	42.77	353.74	7548.81	920.70	879.84	-881.58	6.00	14261032.07	781891.83	N 39 13 50.93	W 108 1 53.66
	7800.00	48.66	355.33	7618.61	992.16	951.06	-888.34	6.00	14261103.33	781885.07	N 39 13 51.63	W 108 1 53.78
Niobrara Fm	7900.00	54.57	356.67	7680.68	1070.49	1029.22	-893.77	6.00	14261181.52	781879.64	N 39 13 52.40	W 108 1 53.88
	8000.00	60.49	357.82	7734.35	1154.81	1113.45	-897.80	6.00	14261265.78	781875.61	N 39 13 53.23	W 108 1 53.97
	8100.00	66.42	358.84	7779.02	1244.21	1202.82	-900.39	6.00	14261355.20	781873.01	N 39 13 54.11	W 108 1 54.04
	8200.00	72.35	359.77	7814.22	1337.71	1296.37	-901.51	6.00	14261448.79	781871.89	N 39 13 55.04	W 108 1 54.09
	8300.00	78.29	0.64	7839.54	1434.27	1393.06	-901.15	6.00	14261545.52	781872.25	N 39 13 55.99	W 108 1 54.13
	8400.00	84.24	1.48	7854.72	1532.85	1491.84	-899.31	6.00	14261644.35	781874.09	N 39 13 56.97	W 108 1 54.15
	8463.17	87.99	2.00	7859.00	1595.68	1554.83	-897.40	6.00	14261707.36	781876.01	N 39 13 57.59	W 108 1 54.15
	8463.31	88.00	2.00	7859.01	1595.82	1554.97	-897.39	6.00	14261707.50	781876.01	N 39 13 57.59	W 108 1 54.15
	8500.00	88.00	2.00	7860.29	1632.36	1591.61	-896.11	0.00	14261744.16	781877.29	N 39 13 57.95	W 108 1 54.15
Horizontal Target Landing Point	8600.00	88.00	2.00	7863.78	1731.96	1691.49	-892.62	0.00	14261844.08	781880.78	N 39 13 58.94	W 108 1 54.15
	8700.00	88.00	2.00	7867.27	1831.56	1791.37	-889.14	0.00	14261944.00	781884.27	N 39 13 59.93	W 108 1 54.15
	8800.00	88.00	2.00	7870.76	1931.16	1891.25	-885.65	0.00	14262043.93	781887.76	N 39 14 0.92	W 108 1 54.15
	8900.00	88.00	2.00	7874.25	2030.76	1991.12	-882.16	0.00	14262143.85	781891.25	N 39 14 1.90	W 108 1 54.14
	9000.00	88.00	2.00	7877.74	2130.36	2091.00	-878.67	0.00	14262243.77	781894.74	N 39 14 2.89	W 108 1 54.14
	9100.00	88.00	2.00	7881.23	2229.96	2190.88	-875.18	0.00	14262343.69	781898.23	N 39 14 3.88	W 108 1 54.14
	9200.00	88.00	2.00	7884.72	2329.56	2290.76	-871.70	0.00	14262443.61	781901.72	N 39 14 4.87	W 108 1 54.14
	9300.00	88.00	2.00	7888.20	2429.16	2390.64	-868.21	0.00	14262543.54	781905.21	N 39 14 5.86	W 108 1 54.14
	9400.00	88.00	2.00	7891.69	2528.76	2490.52	-864.72	0.00	14262643.46	781908.70	N 39 14 6.84	W 108 1 54.13
	9500.00	88.00	2.00	7895.18	2628.36	2590.39	-861.23	0.00	14262743.38	781912.19	N 39 14 7.83	W 108 1 54.13
	9600.00	88.00	2.00	7898.67	2727.96	2690.27	-857.75	0.00	14262843.30	781915.67	N 39 14 8.82	W 108 1 54.13
	9700.00	88.00	2.00	7902.16	2827.56	2790.15	-854.26	0.00	14262943.22	781919.16	N 39 14 9.81	W 108 1 54.13
	9800.00	88.00	2.00	7905.65	2927.16	2890.03	-850.77	0.00	14263043.15	781922.65	N 39 14 10.79	W 108 1 54.13
	9900.00	88.00	2.00	7909.14	3026.76	2989.91	-847.28	0.00	14263143.07	781926.14	N 39 14 11.78	W 108 1 54.13
	10000.00	88.00	2.00	7912.63	3126.36	3089.78	-843.79	0.00	14263242.99	781929.63	N 39 14 12.77	W 108 1 54.12
	10100.00	88.00	2.00	7916.12	3225.96	3189.66	-840.31	0.00	14263342.91	781933.12	N 39 14 13.76	W 108 1 54.12
	10182.39	88.00	2.00	7919.00	3308.02	3271.95	-837.43	0.00	14263425.24	781936.00	N 39 14 14.57	W 108 1 54.12
	Nio. Laminated Siltst	10200.00	88.00	2.00	7919.61	3325.56	3289.54	-836.82	0.00	14263442.83	781936.61	N 39 14 14.75
10300.00		88.00	2.00	7923.10	3425.16	3389.42	-833.33	0.00	14263542.76	781940.10	N 39 14 15.73	W 108 1 54.12
10400.00		88.00	2.00	7926.59	3524.76	3489.30	-829.84	0.00	14263642.68	781943.59	N 39 14 16.72	W 108 1 54.12
10500.00		88.00	2.00	7930.08	3624.36	3589.18	-826.36	0.00	14263742.60	781947.08	N 39 14 17.71	W 108 1 54.11
10600.00		88.00	2.00	7933.57	3723.96	3689.05	-822.87	0.00	14263842.52	781950.57	N 39 14 18.70	W 108 1 54.11
10700.00		88.00	2.00	7937.06	3823.56	3788.93	-819.38	0.00	14263942.45	781954.06	N 39 14 19.68	W 108 1 54.11
10800.00		88.00	2.00	7940.55	3923.16	3888.81	-815.89	0.00	14264042.37	781957.55	N 39 14 20.67	W 108 1 54.11
10900.00		88.00	2.00	7944.04	4022.76	3988.69	-812.40	0.00	14264142.29	781961.04	N 39 14 21.66	W 108 1 54.11
11000.00		88.00	2.00	7947.53	4122.36	4088.57	-808.92	0.00	14264242.21	781964.53	N 39 14 22.65	W 108 1 54.11
	11100.00	88.00	2.00	7951.02	4221.96	4188.44	-805.43	0.00	14264342.13	781968.01	N 39 14 23.64	W 108 1 54.10
	11200.00	88.00	2.00	7954.51	4321.56	4288.32	-801.94	0.00	14264442.06	781971.50	N 39 14 24.62	W 108 1 54.10
	11300.00	88.00	2.00	7958.00	4421.16	4388.20	-798.45	0.00	14264541.98	781974.99	N 39 14 25.61	W 108 1 54.10
	11400.00	88.00	2.00	7961.49	4520.76	4488.08	-794.96	0.00	14264641.90	781978.48	N 39 14 26.60	W 108 1 54.10
	11500.00	88.00	2.00	7964.98	4620.36	4587.96	-791.48	0.00	14264741.82	781981.97	N 39 14 27.59	W 108 1 54.10
	11600.00	88.00	2.00	7968.47	4719.96	4687.84	-787.99	0.00	14264841.74	781985.46	N 39 14 28.57	W 108 1 54.09
	11700.00	88.00	2.00	7971.96	4819.56	4787.71	-784.50	0.00	14264941.67	781988.95	N 39 14 29.56	W 108 1 54.09
	11800.00	88.00	2.00	7975.45	4919.16	4887.59	-781.01	0.00	14265041.59	781992.44	N 39 14 30.55	W 108 1 54.09
	11900.00	88.00	2.00	7978.94	5018.76	4987.47	-777.53	0.00	14265141.51	781995.93	N 39 14 31.54	W 108 1 54.09
	12000.00	88.00	2.00	7982.43	5118.36	5087.35	-774.04	0.00	14265241.43	781999.42	N 39 14 32.53	W 108 1 54.09
	12100.00	88.00	2.00	7985.92	52							

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	16500.00	88.00	2.00	8139.48	9600.36	9581.87	-617.09	0.00	14269737.93	782156.44	N 39 15 16.97	W 108 1 54.01
	16600.00	88.00	2.00	8142.97	9699.96	9681.75	-613.60	0.00	14269837.85	782159.93	N 39 15 17.96	W 108 1 54.01
	16700.00	88.00	2.00	8146.46	9799.56	9781.62	-610.11	0.00	14269937.77	782163.42	N 39 15 18.95	W 108 1 54.00
	16800.00	88.00	2.00	8149.95	9899.16	9881.50	-606.62	0.00	14270037.69	782166.91	N 39 15 19.94	W 108 1 54.00
	16900.00	88.00	2.00	8153.44	9998.76	9981.38	-603.13	0.00	14270137.62	782170.40	N 39 15 20.93	W 108 1 54.00
	17000.00	88.00	2.00	8156.93	10098.36	10081.26	-599.65	0.00	14270237.54	782173.89	N 39 15 21.91	W 108 1 54.00
	17100.00	88.00	2.00	8160.42	10197.96	10181.14	-596.16	0.00	14270337.46	782177.38	N 39 15 22.90	W 108 1 54.00
	17200.00	88.00	2.00	8163.91	10297.56	10281.01	-592.67	0.00	14270437.38	782180.87	N 39 15 23.89	W 108 1 53.99
	17300.00	88.00	2.00	8167.40	10397.16	10380.89	-589.18	0.00	14270537.30	782184.36	N 39 15 24.88	W 108 1 53.99
	17400.00	88.00	2.00	8170.89	10496.76	10480.77	-585.70	0.00	14270637.23	782187.84	N 39 15 25.86	W 108 1 53.99
	17500.00	88.00	2.00	8174.38	10596.36	10580.65	-582.21	0.00	14270737.15	782191.33	N 39 15 26.85	W 108 1 53.99
	17600.00	88.00	2.00	8177.87	10695.96	10680.53	-578.72	0.00	14270837.07	782194.82	N 39 15 27.84	W 108 1 53.99
	17700.00	88.00	2.00	8181.36	10795.56	10780.41	-575.23	0.00	14270936.99	782198.31	N 39 15 28.83	W 108 1 53.99
	17800.00	88.00	2.00	8184.85	10895.16	10880.28	-571.74	0.00	14271036.91	782201.80	N 39 15 29.82	W 108 1 53.98
	17900.00	88.00	2.00	8188.34	10994.76	10980.16	-568.26	0.00	14271136.84	782205.29	N 39 15 30.80	W 108 1 53.98
	18000.00	88.00	2.00	8191.83	11094.36	11080.04	-564.77	0.00	14271236.76	782208.78	N 39 15 31.79	W 108 1 53.98
	18100.00	88.00	2.00	8195.32	11193.96	11179.92	-561.28	0.00	14271336.68	782212.27	N 39 15 32.78	W 108 1 53.98
	18200.00	88.00	2.00	8198.81	11293.56	11279.80	-557.79	0.00	14271436.60	782215.76	N 39 15 33.77	W 108 1 53.98
	18300.00	88.00	2.00	8202.30	11393.16	11379.68	-554.30	0.00	14271536.52	782219.25	N 39 15 34.75	W 108 1 53.97
	18400.00	88.00	2.00	8205.79	11492.76	11479.55	-550.82	0.00	14271636.45	782222.74	N 39 15 35.74	W 108 1 53.97
Nichols 19-10H TD	18463.31	88.00	2.00	8208.00	11555.82	11542.79	-548.61	0.00	14271699.71	782224.95	N 39 15 36.37	W 108 1 53.97

Survey Type: Def Plan

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

Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Survey Tool Type	Borehole / Survey
	0.000	22.000	1/100.000	SLB_MWD-STD-Depth Only	Original Hole / Nichols 19-10H R2 ors 01-Dec-11
	22.000	18463.313	1/100.000	SLB_MWD-STD	Original Hole / Nichols 19-10H R2 ors 01-Dec-11