

UIC Class II Permit Application

Continental Resources is requesting to convert the following well to a salt water disposal well to dispose of produced water from the North West Buffalo Area.

Well Name: Hansen State 34-1

Well Location: SWSE Sec 1-T22N-R3E, Harding County, Buffalo, SD.

The application for a permit to inject shall contain the following complete information:

(1) A one-half mile fixed radius area of review plat which shows the location of the injection well or wells, existing or proposed; the location of all oil and gas wells; the location of all water wells active and abandoned; the location of all other wells, including plugged and abandoned wells; abandoned locations; dry holes; current drilling locations; the names of operators; the surface and mineral owners; and each offset operator;

No wells are with the one-half mile fixed radius. See attached map.

Operator: Continental Resources is the operator of the Hansen State 34-1.

Working Owners:

Continental Resources Inc.
Linn Operating INC

Mineral Owners

See Attached.

Surface Owner

Name: Todd Sterns (Sterns Ranch)
Address: 14 6th Ave NW, Bowman, SD, 58623

(2) The formation or formations from which oil, gas, and water wells are producing or have produced;

Oil: Red River "B" Formation

Gas: Red River "B" Formation

Water: Red River "B" Formation, Fox Hills, Hell Creek, Inyan Kara, Madison & Minnelusa.

(3) The name, description (stratigraphic and structural), and depth of the receiving formation or formations and the overlying confining zone or formation;

Receiving formation(s): Dakota Sand (Inyan Kara) 4,650 ft – 4,854 ft MD.

The Dakota Sandstone (Inyan Kara) is a quartzose sandstone with some grey shale with a thickness

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DEPT. OF ENVIRONMENT &
NATURAL RESOURCES,
GROUND WATER PROGRAM

of 204 ft in the Hansen State 34-1.

Confining zone/formation(s): The SBRRU 32-33A well enters the Dakota Sand at 4,650' MD. The top confining zone is 450 ft of the Mowry / Newcastle shale and the bottom confining zone is 165' of the Morrison shale.

(4) The well type, construction, spud date, total depth, formation tops, record of completion or recompletion, and plugging for all oil, gas, and injection wells within the area of review, **and any additional pertinent information which the secretary determines is necessary to make an informed judgment on the issuance of a permit**, including drill stem tests and well logs for all oil and gas wells identified in the area of review;

1) **No wells in the area of review.**

(5) Information on abandoned and active water wells, as follows:

(a) Abandoned water wells: None

(i) The legal location;

(ii) Well name; and

(iii) Method of abandonment, if available;

(b) Active water wells: None

(i) The legal location; NA

(ii) Well name: NA

(iii) NA

(iv) The construction program, including casing size and type, if available; NA

(6) A description of the injection well's casing and the proposed casing program, and the proposed method for testing the casing for mechanical integrity before use as an injection well.

See attached.

1) Proposed wellbore diagram

The current production equipment will be removed and a Baker Model "D" pkr installed with coated tbg. Packer to be set at approx. 4,688.25' ft. The casing will be MIT tested as required by the State of South Dakota, which is a 15 minute test at 1000 psi with an allowable 10% fall off.

(7) The geologic name and the depth to and interval of all freshwater resources which may be affected by injection;

Name: Fox Hills Depth: 800'

(8) The names and addresses of the operators of the project;

Name: Continental Resources
Address: PO Box 268870, Oklahoma City, OK, 73126

(9) Schematic drawings of the surface and subsurface construction details of the well with detailed drawings of the gauge connections;

See Attached

(10) The source and nature of the substance or substances to be injected, its viscosity, its compatibility with the receiving formation, including stability indices, and the estimated average and maximum daily amounts to be injected. If the nature of the injected fluid is produced water, a water quality analysis must be submitted and must include information on total dissolved solids content, chlorides, sodium, sulfates, nitrates, and hydrocarbons;

See attach water analysis from Jacam Laboratories. The water from the Dakota Formation was collected from the SBRRU 32-33A SWD to complete the analysis. Jacam states that there is a potential to precipitate iron carbonate and iron sulfide, although this issue can be eliminated by treating with 50 ppm WWT 1900 chemical.

(11) The average and maximum estimated injection pressure and volumes;

Average: 1,500 BWPD & 1000 psi.
Maximum: 4,000 BWPD & 1500 psi.

(12) A narrative description of any proposed production stimulation program, including a feasibility study, process description, and an explanation of how the data were determined, such as working calculations;

Feasibility Study: NA

Process description: NA

How data was Determined: NA

(13) An analysis of any corrective action on all wells identified on the plat required by subdivision (1) of this section and the basis for the conclusion;

Corrective Action:

There are no wells within the area of review are properly constructed so no corrective action is need.

Basis for the Conclusion:

There are no wells within the area of review are properly constructed so no corrective action is need.

(14) The injection zone characteristics, including porosity, compressibility, and intrinsic permeability. This information has been collected over the numerous years of drilling and completion of wells within the unit using well logs.

Porosity: 18%

Compressibility: NA, need core to determine.

Intrinsic Permeability: NA, need core to determine.

(15) The expected project life

Years: 25

(16) The surface owner's name, address, and telephone number.

Name: Todd Sterns (Sterns Ranch)

Address: 14 6th Ave NW, Bowman, SD, 58623

Telephone number: (701) 523-3723

As indicated in Section 4, the Secretary reserves the right to request additional pertinent information needed to make a recommendation on the approvability of the application. The secretary shall deny any permit application which is incomplete.

In addition, the applicant will need to submit a notarized Certification of Applicant (Form 13), that can be obtained at <http://denr.sd.gov/documents/form13.pdf>. or by contacting the South Dakota Department of Environment and Natural Resources

All permits to inject are issued pursuant to the provisions of chapter 74:10:11.01.

Name of person legally responsible for Class II operation (owner/operator).

Continental Resources INC

Address: PO Box 268870, Oklahoma City, OK, 73126

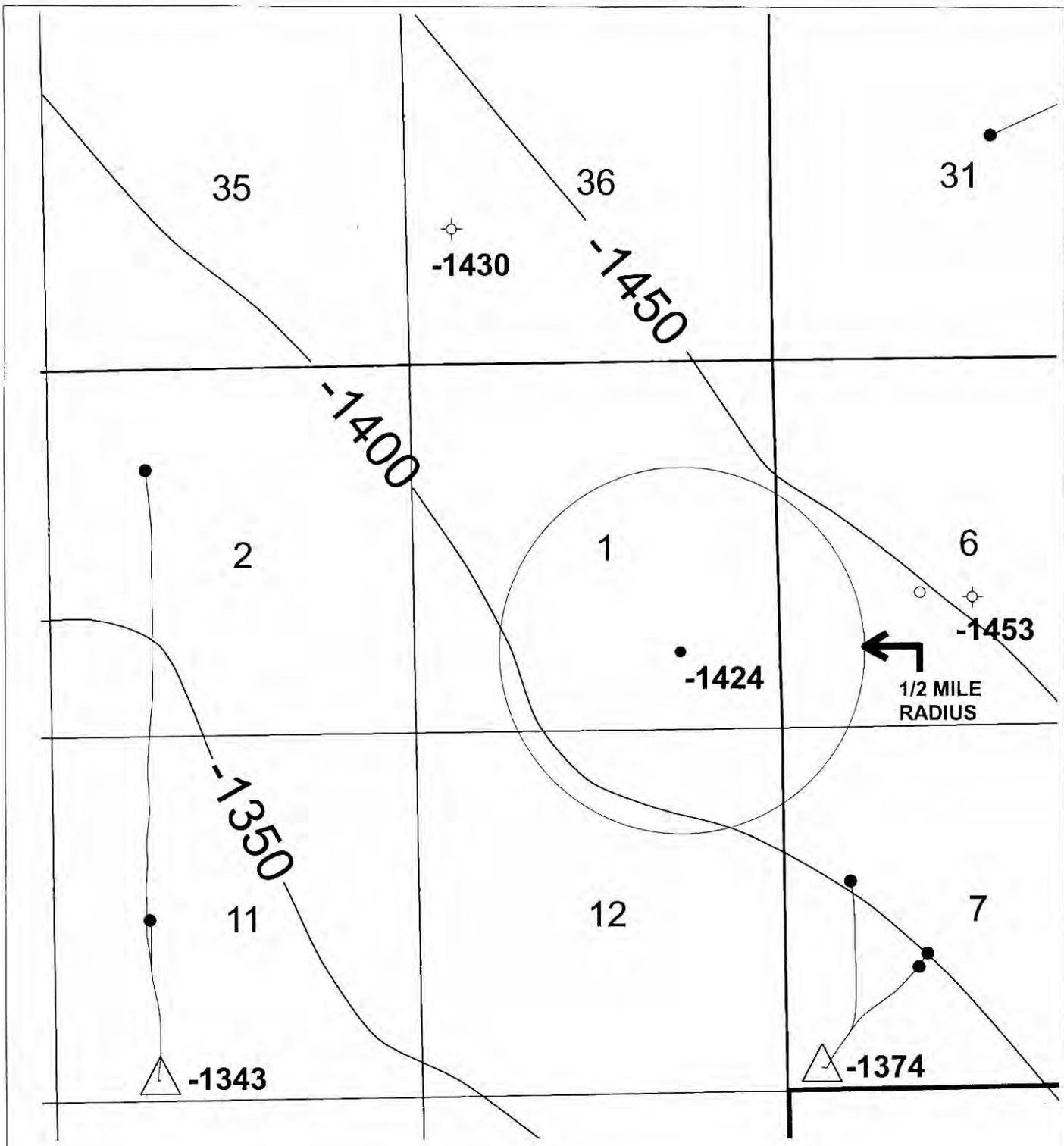
Telephone: (405) 234-9000

Local representative or contact person if different from above:

Name: Gordon Carlson

Address: 11583 S. Cave Hills Road, Buffalo, SD, 57720

Telephone: (605) 375-3731



**EXHIBIT
CASE**

CONTINENTAL RESOURCES INC.		
HANSON STATE #34-1F WELL DAKOTA STRUCTURE C.I. = 50' SEC. 1-T22N-R3E, HARDING COUNTY, SOUTH DAKOTA		
Author: PETE THIES		Date: 27 September, 2013
PTHANSON STATE 341B.GMP	Scale: 1" = 2000'	

HANSEN-STATE 34-1	CONTINENTAL RESOURCES INC	PO Box 268835 OKLAHOMA CITY, OK 73126-8835 LINN ENERGY HOLDING LLC 600 TRAVIS #5100 HOUSTON, TX 77002	WORKING
HANSEN-STATE 34-1	LINN OPERATING INC, AGENT FOR	SUZANNE KIDWELL CONAWAY TRUSTEE 4100 CARDINAL LANE MIDLAND, TX 79707 9710 WINDRUSH DRIVE SPRING, TX 77379	WORKING
HANSEN-STATE 34-1	SUZANNE KIDWELL TRUST	500 N SHORELINE BLVD - SUITE 807N CORPUS CHRISTI, TX 78401-0336 ALVINA HANSEN, PERSONAL REP PO Box 94	VERRIDE
HANSEN-STATE 34-1	THOMAS S GAYLORD	RHAME, ND 58651 10901 W 30TH PLACE LAKEWOOD, CO 80215 4104 TIMBERGLEN CIR MIDLAND, TX 79707	VERRIDE
HANSEN-STATE 34-1	MATTHEW M HAMMER	501 MUSTANG DR MIDLAND, TX 79707-6124 PO Box 837	VERRIDE
HANSEN-STATE 34-1	EARL H HANSEN ESTATE	WHITNEY, TX 77692 PO Box 5187	ROYALTY
HANSEN-STATE 34-1	HAROLD E KELLOGG	MIDLAND, TX 79704 PO Box 957	VERRIDE
HANSEN-STATE 34-1	L PAUL LATHAM	BOWMAN, ND 58623 PO Box 400	VERRIDE
HANSEN-STATE 34-1	L E MALONE	MIDLOTHIAN, TX 76065 3221 MAXWELL MIDLAND, TX 79705 PO Box 1134	VERRIDE
HANSEN-STATE 34-1	THOMAS H MOORE	FORT STOCKTON, TX 79735 301 WATERMERE DR #217 SOUTHLAKE, TX 76092	VERRIDE
HANSEN-STATE 34-1	GEORGE PATTERSON		ROYALTY
HANSEN-STATE 34-1	EILEEN M POWELL		VERRIDE
HANSEN-STATE 34-1	AUBREY PRICE		VERRIDE
HANSEN-STATE 34-1	LINDA J REINLI		VERRIDE
HANSEN-STATE 34-1	WYNONA M RIGGS		VERRIDE
HANSEN-STATE 34-1	BERNARD G SCOTT		VERRIDE

HANSEN-STATE 34-1	ESTATE OF ROBERT R SMITH	J B SHEPHERD, JR & R S MALAISE IND CO-EXECUTORS 2902 EMERSON PLACE MIDLAND, TX 79705	OVERRIDE
HANSEN-STATE 34-1	STATE OF SOUTH DAKOTA, COMMISSIONER	OF SCHOOL & PUBLIC LAND 500 E CAPITOL AVE 3808 ROADRUNNER TRAIL MIDLAND, TX 79707	ROYALTY
HANSEN-STATE 34-1	ROBERT L THOMAS	6 DESTA DR - SUITE 1100 MIDLAND, TX 79705	OVERRIDE
HANSEN-STATE 34-1	CLAYTON WILLIAMS ENERGY, INC.	CAROL C WINKEL EXECUTRIX 3300 N. A ST, BLDG 2, STE 208 MIDLAND, TX 79705-5408	OVERRIDE
HANSEN-STATE 34-1	JAMES W WINKEL ESTATE	1284 WYOMING ST GOLDEN, CO 80403	OVERRIDE
HANSEN-STATE 34-1	R ALAN WOODARD	1401 17TH STREET - SUITE #6 DENVER, CO 80202	OVERRIDE
HANSEN-STATE 34-1	YELLOWSTONE RESOURCES INC	JOHN R & SHARON L BROSE-CO-TRUSTEES PO Box 5584 SUN CITY WEST, AZ 85376	OVERRIDE
HANSEN-STATE 34-1	BROSE REV LIVING TRUST DTD 03/17/92	PATRICIA B DOUGHERTY & DIANE D TAYLOR AS CO-TRUSTEES DATED 10/20/09 51 BROOKCREST DR MARIETTA, GA 30068	OVERRIDE
HANSEN-STATE 34-1	PATRICIA B DOUGHERTY REVOC. TRUST	DTD 2/16/1991 6210 E 2ND STREET TUSCON, AZ 85711	OVERRIDE
HANSEN-STATE 34-1	REV TRUST OF WALTER E HEINRICHS		OVERRIDE

Hansen State 34-1-Proposed

SWSE Sec 1-22N-3E 1,435' FEL, 1120' FSL
 Elevation 3,099' KB API# 40-063-20385
 Harding County, South Dakota
 Nov 15th, 2013

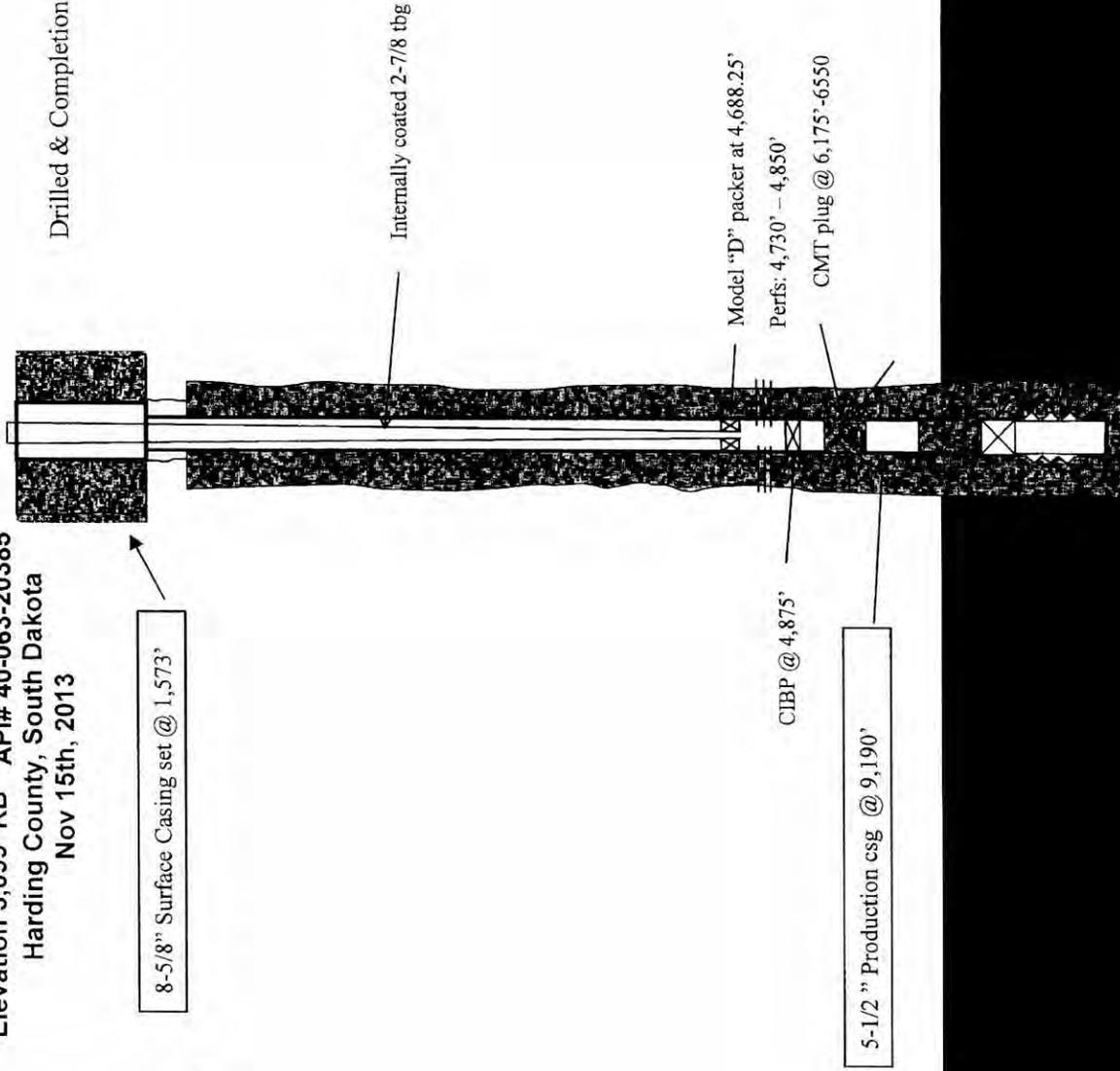
Drilled & Completion : 10/1983

Casing Detail:

8 5/8" 24# Set @ 1,573' cmt w/ 800 sxs cmt .
 5-1/2 17# & 20#Set @ 9,190' w/ 1005 sxs cmt.

Tbg Detail:

150jts 2 7/8 internally coated tbg 4,687.50
 1 SN @ 8487.12 0.75
 1 Model "D" packer 5 1/2 6.80
 EOT 4,695.05





Hansen State 34-1

Section 1-22N-3E, 1,435' FEL, 1,120' FSL

Harding County, South Dakota

5-1/2" 17# & 20# casing set @ 1,573' w/ 1,005 sacks cement

Convert the Hansen State 34-1 to a SWD:

1. MIRUPU. Perform safety meeting. ND WH, NU BOP.
2. TOH w/ tbg.
3. PU & TIH w/ CIBP, set at 8,925'. Pressure test to 500 psi.
4. MIRU Sanjel CMT equipment. Perform safety meeting.
5. Spot 10 sxs Class "G" cmt on top of CIBP. (42 ft of cmt). PU & reverse circ. tbg clean.
6. Pump 49bbls pkr fluid.
7. TOH w/ tbg to 6,550 ft. Set balance plug from 6,175' to 6,550' (475') w/ 52 sxs class "G" cmt. See attached Sanjel Procedure.
8. TOH to 6,000', reverse circ. clean. RD Sanjel.
9. Pump 30 bbls pkr fluid.
10. TOH w/ tbg. TIH with CIBP on tbg. Set as 4,875' TOH. Pressure test to 500 psi.
11. MIRU WL. Perform safety meeting.
12. RIH w/ guns, perforate w/ 4 shots per ft from 4,730'-4,850.
13. PU & TIH w/ pkr. Set pkr @ 4,400'.
14. MI 400 bbls flat tank.
15. MIRU Sanjel acid equipment. Perform safety meeting. Pump acid as per Sanjel procedure.
16. Displace with 30 bbls fresh water.
17. RDMO Sanjel. Report results to OKC.
18. Swab well to flat tank, recover 150 bbls.
19. TOH & LD pkr & tbg.
20. TIH w/ pkr & internally coated tbg. Pump pkr fluid. Set pkr @ 4,688.25'.
21. ND WH, NU injection wellhead.
22. RDMO



JACAM LABORATORIES

DownHole R_x

WATER CHEMISTRY AT VARIOUS RATIOS

CONTINENTAL RESOURCES SBRRU 32-33A	BART HONEYMAN WELLHEAD	CONTINENTAL RESOURCES - BIBART HONEYMAN STATE CTB #4
Report Date 05-09-2013	Sample # 2183	Report Date 03-22-2013
Sample Date 05-03-2013	at 0000	Sample # -31722
		Sample Date 02-20-2013
		at 0000

CATIONS	% INJECTION WATER						
	0.00	16.67	33.33	50.00	66.67	83.33	100.00
Calcium(as Ca)	542.50	474.52	406.53	338.55	270.57	202.58	134.60
Magnesium(as Mg)	87.23	78.00	68.78	59.55	50.32	41.10	31.87
Barium(as Ba)	0.204	0.204	0.204	0.204	0.204	0.204	0.204
Strontium(as Sr)	24.00	20.98	17.96	14.94	11.93	8.91	5.89
Sodium(as Na)	6865	5837	4809	3781	2752	1724	696.16
Potassium(as K)	362.00	312.33	262.66	212.99	163.32	113.65	63.98
Lithium(as Li)	15.55	13.35	11.14	8.94	6.73	4.53	2.32
Iron(as Fe)	1.77	2.94	4.11	5.28	6.45	7.62	8.79
Ammonia(as NH ₃)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aluminum(as Al)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese (as Mn)	0.0120	0.0120	0.0120	0.0120	0.0120	0.0120	0.0120
Zinc (as Zn)	0.0820	0.0820	0.0820	0.0820	0.0820	0.0820	0.0820
Lead (as Pb)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ANIONS							
Chloride(as Cl)	10600	9000	7400	5800	4200	2600	1000
Sulfate(as SO ₄)	1850	1613	1375	1138	900.00	662.50	425.00
Bromine (as Br)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dissolved CO ₂	372.8	326.3	275.6	220.3	160.4	95.4	25.1
Bicarbonate	663.5	603.0	542.9	482.6	422.3	362.0	300.7
Carbonate	0.5	0.5	0.4	0.4	0.4	0.4	1.5
Silica(as SiO ₂)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phosphate(as PO ₄)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
H ₂ S(as H ₂ S)	25.00	20.83	16.67	12.50	8.33	4.17	0.00
Fluoride(as F)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrate(as NO ₃)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Boron(as B)	80.44	67.08	53.72	40.37	27.01	13.65	0.291
PARAMETERS							
pH	6.26	6.31	6.38	6.46	6.58	6.80	7.54
Temperature(°F)	72.00	70.00	68.00	66.00	64.00	62.00	60.00
Pressure(atm)	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Density(g/mL)	1.01	1.01	1.01	1.00	1.00	1.00	1.00
Calculated TDS	21842	18668	15488	12301	9107	5906	2698
Calc. Conductivity	24.00	20.98	17.96	14.94	11.93	8.91	5.89
Calc. Resistivity	24.00	20.98	17.96	14.94	11.93	8.91	5.89
Caustic Soda	0.00	0.00	0.00	0.00	0.00	0.00	0.00

JACAM LABORATORIES

205 S. Broadway · P.O. Box 96 · Sterling, KS 67579-0096



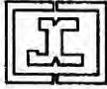
JACAM LABORATORIES

DownHole R_x
MIXED WATER

CONTINENTAL RESOURCES BART HONEYMAN
SBRRU 32-33A WELLHEAD
Report Date 05-09-2013 Sample # 2183
Sample Date 05-03-2013 at 0000

CONTINENTAL RESOURCES - BART HONEYMAN
STATE CTB #4 TREATER
Report Date 03-22-2013 Sample # -31722
Sample Date 02-20-2013 at 0000

SATURATION LEVEL	% INJECTION WATER						
	0.00	16.67	33.33	50.00	66.67	83.33	100.00
Calcite	0.384	0.352	0.327	0.310	0.312	0.375	1.42
Aragonite	0.336	0.308	0.286	0.272	0.275	0.330	1.25
Witherite	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.00146
Strontianite	0.0708	0.0670	0.0641	0.0628	0.0654	0.0811	0.319
Calcium oxalate	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Magnesite	0.0497	0.0454	0.0422	0.0406	0.0420	0.0533	0.228
Anhydrite	0.240	0.205	0.171	0.138	0.108	0.0787	0.0521
Gypsum	0.398	0.344	0.290	0.238	0.187	0.138	0.0920
Barite	12.92	13.43	13.96	14.50	15.06	15.70	16.83
Celestite	1.00	0.866	0.733	0.602	0.474	0.351	0.236
Calcium phosphate	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hydroxyapatite	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluorite	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Silica	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Brucite	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Mag. silicate	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferric hydroxide	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	2186
Siderite	2.15	3.71	5.56	8.06	12.25	22.87	137.92
Strengite	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halite	0.00115	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Thenardite	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Iron sulfide	4.87	9.15	14.92	23.41	37.70	67.00	0.00
SIMPLE INDICES							
Langelier	-0.273	-0.319	-0.361	-0.393	-0.399	-0.329	0.245
Ryznar	6.81	6.95	7.10	7.25	7.38	7.46	7.05
Oddo-Tomson	-0.743	-0.747	-0.741	-0.719	-0.665	-0.526	0.130
Stiff-Davis	-0.628	-0.623	-0.618	-0.599	-0.564	-0.473	0.0772
Puckorius	4.52	4.78	5.06	5.36	5.71	6.10	6.55
Larson-Skold	30.99	29.04	26.63	23.64	19.79	14.65	7.44



JACAM LABORATORIES

DownHole Rx

**MIXED WATER
DEPOSITION POTENTIAL INDICATORS**

CONTINENTAL RESOURCES SBRRU 32-33A	BART HONEYMAN WELLHEAD	CONTINENTAL RESOURCES - BIBART HONEYMAN STATE CTB #4	TREATER
Report Date 05-09-2013	Sample # 2183	Report Date 03-22-2013	Sample # -31722
Sample Date 05-03-2013	at 0000	Sample Date 02-20-2013	at 0000

		<u>% INJECTION WATER</u>						
TOTAL VS FREE IONS		0.00	16.67	33.33	50.00	66.67	83.33	100.00
Ca	Total	542.50	474.52	406.53	338.55	270.57	202.58	134.60
	Free	443.73	390.74	337.03	282.56	227.30	171.12	113.51
Ba	Total	0.204	0.204	0.204	0.204	0.204	0.204	0.204
	Free	0.204	0.204	0.204	0.204	0.204	0.204	0.204
CO ₃	Total	0.525	0.464	0.416	0.382	0.373	0.431	1.54
	Free	0.130	0.127	0.125	0.126	0.135	0.172	0.661
PO ₄	Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Free	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO ₄	Total	1850	1613	1375	1138	900.00	662.50	425.00
	Free	1415	1254	1087	914.67	736.40	551.49	358.65

FREE ION MOMENTARY EXCESS (ppm)

Calcite	-0.348	-0.388	-0.429	-0.468	-0.496	-0.476	0.326
Aragonite	-0.429	-0.474	-0.519	-0.562	-0.595	-0.579	0.223
Witherite	-40.75	-38.44	-35.89	-33.02	-29.71	-25.68	-19.65
Strontianite	-3.82	-3.88	-3.94	-3.96	-3.93	-3.74	-2.46
Calcium oxalate	-0.274	-0.285	-0.297	-0.309	-0.322	-0.333	-0.331
Magnesite	-3.45	-3.68	-3.90	-4.10	-4.22	-4.14	-3.02
Anhydrite	-1801	-1850	-1876	-1874	-1831	-1724	-1495
Gypsum	-1143	-1219	-1280	-1320	-1329	-1288	-1149
Barite	0.320	0.321	0.322	0.323	0.324	0.325	0.326
Celestite	0.0119	-6.69	-13.41	-20.12	-26.74	-32.97	-37.34
Calcium phosphate	>-0.001	>-0.001	>-0.001	>-0.001	>-0.001	>-0.001	>-0.001
Hydroxyapatite	-833.47	-797.63	-757.48	-711.57	-657.45	-590.31	-497.23
Fluorite	-30.59	-31.20	-31.86	-32.59	-33.36	-34.10	-34.40
Silica	-108.58	-106.04	-103.53	-101.06	-98.62	-96.23	-93.86
Brucite	0.00118	0.00120	0.00125	0.00136	0.00161	0.00232	0.0109
Mag. silicate	-274.09	-266.67	-258.44	-249.08	-238.06	-224.28	-204.63
Ferric hydroxide	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Siderite	0.129	0.176	0.197	0.213	0.239	0.316	1.27
Strengite	>-0.001	>-0.001	>-0.001	>-0.001	>-0.001	>-0.001	>-0.001
Halite	-494481	-489616	-483383	-475282	-464456	-449161	-424566
Thenardite	-164167	-159370	-153888	-147464	-139710	-129779	-115399
Iron sulfide	0.524	1.02	1.59	2.25	3.06	4.11	-0.0121

**JACAM LABORATORIES****DownHole R_x****WATER CHEMISTRY AT VARIOUS RATIOS**

CONTINENTAL RESOURCES	BART HONEYMAN	CONTINENTAL RESOURCES	BART HONEYMAN
SBRRU 32-33A	WELLHEAD	NON-UNIT QUINN #4-36H	TREATER
Report Date 05-09-2013	Sample # 2183	Report Date 06-13-2013	Sample # 2183
Sample Date 05-03-2013	at 0000	Sample Date 05-15-2013	at 0000

CATIONS	% INJECTION WATER						
	0.00	16.67	33.33	50.00	66.67	83.33	100.00
Calcium(as Ca)	440.00	389.10	338.20	287.30	236.40	185.50	134.60
Magnesium(as Mg)	90.43	80.67	70.91	61.15	51.39	41.63	31.87
Barium(as Ba)	0.204	0.204	0.204	0.204	0.204	0.204	0.204
Strontium(as Sr)	21.56	18.95	16.34	13.72	11.11	8.50	5.89
Sodium(as Na)	6861	5834	4806	3779	2751	1724	696.16
Potassium(as K)	319.70	277.08	234.46	191.84	149.22	106.60	63.98
Lithium(as Li)	12.64	10.92	9.20	7.48	5.76	4.04	2.32
Iron(as Fe)	0.0510	1.51	2.96	4.42	5.88	7.33	8.79
Ammonia(as NH ₃)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aluminum(as Al)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Manganese (as Mn)	0.0120	0.0120	0.0120	0.0120	0.0120	0.0120	0.0120
Zinc (as Zn)	0.0820	0.0820	0.0820	0.0820	0.0820	0.0820	0.0820
Lead (as Pb)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ANIONS							
Chloride(as Cl)	10600	9000	7400	5800	4200	2600	1000
Sulfate(as SO ₄)	1775	1550	1325	1100	875.00	650.00	425.00
Bromine (as Br)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Dissolved CO ₂	140.4	127.8	113.0	95.6	75.3	51.9	25.1
Bicarbonate	348.5	340.8	332.9	325.0	317.2	309.2	300.7
Carbonate	0.5	0.4	0.4	0.5	0.5	0.7	1.5
Silica(as SiO ₂)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Phosphate(as PO ₄)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
H ₂ S(as H ₂ S)	10.00	8.33	6.67	5.00	3.33	1.67	0.00
Fluoride(as F)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrate(as NO ₃)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Boron(as B)	64.23	53.57	42.92	32.26	21.60	10.95	0.291
PARAMETERS							
pH	6.40	6.48	6.57	6.69	6.84	7.07	7.54
Temperature(°F)	81.00	77.50	74.00	70.50	67.00	63.50	60.00
Pressure(atm)	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Density(g/mL)	1.01	1.01	1.01	1.00	1.00	1.00	1.00
Calculated TDS	20939	17911	14879	11841	8799	5751	2698
Calc. Conductivity	21.56	18.95	16.34	13.72	11.11	8.50	5.89
Calc. Resistivity	21.56	18.95	16.34	13.72	11.11	8.50	5.89
Caustic Soda	0.00	0.00	0.00	0.00	0.00	0.00	0.00

JACAM LABORATORIES

205 S. Broadway • P.O. Box 96 • Sterling, KS 67579-0096



JACAM LABORATORIES

DownHole Rx

MIXED WATER

CONTINENTAL RESOURCES SBRRU 32-33A	BART HONEYMAN WELLHEAD	CONTINENTAL RESOURCES NON-UNIT QUINN #4-36H	BART HONEYMAN TREATER
Report Date 05-09-2013	Sample # 2183	Report Date 06-13-2013	Sample # 2183
Sample Date 05-03-2013	at 0000	Sample Date 05-15-2013	at 0000

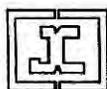
SATURATION LEVEL	% INJECTION WATER						
	0.00	16.67	33.33	50.00	66.67	83.33	100.00
Calcite	0.276	0.285	0.302	0.334	0.400	0.566	1.42
Aragonite	0.239	0.248	0.264	0.293	0.351	0.498	1.25
Witherite	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.00146
Strontianite	0.0515	0.0551	0.0606	0.0695	0.0860	0.125	0.319
Calcium oxalate	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Magnesite	0.0490	0.0492	0.0509	0.0550	0.0645	0.0903	0.228
Anhydrite	0.198	0.169	0.143	0.117	0.0939	0.0719	0.0521
Gypsum	0.314	0.275	0.236	0.198	0.161	0.125	0.0920
Barite	10.37	11.13	11.96	12.87	13.87	15.05	16.83
Celestite	0.889	0.772	0.658	0.546	0.437	0.332	0.236
Calcium phosphate	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hydroxyapatite	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fluorite	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Silica	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Brucite	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Mag. silicate	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ferric hydroxide	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	2182
Siderite	0.0578	1.96	4.62	8.81	16.66	36.60	137.81
Strengite	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Halite	0.00111	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Thenardite	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Iron sulfide	0.109	3.98	9.98	19.80	36.89	66.32	0.00

SIMPLE INDICES

Langelier	-0.423	-0.417	-0.400	-0.364	-0.294	-0.151	0.244
Ryznar	7.25	7.31	7.37	7.42	7.43	7.37	7.05
Oddo-Tomson	-0.874	-0.829	-0.768	-0.682	-0.555	-0.345	0.130
Stiff-Davis	-0.722	-0.674	-0.621	-0.556	-0.461	-0.297	0.0768
Puckorius	5.51	5.67	5.84	6.01	6.19	6.38	6.55
Larson-Skold	58.67	51.10	43.20	34.91	26.21	17.06	7.44

JACAM LABORATORIES

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**JACAM LABORATORIES****DownHole R_x****MIXED WATER
DEPOSITION POTENTIAL INDICATORS**

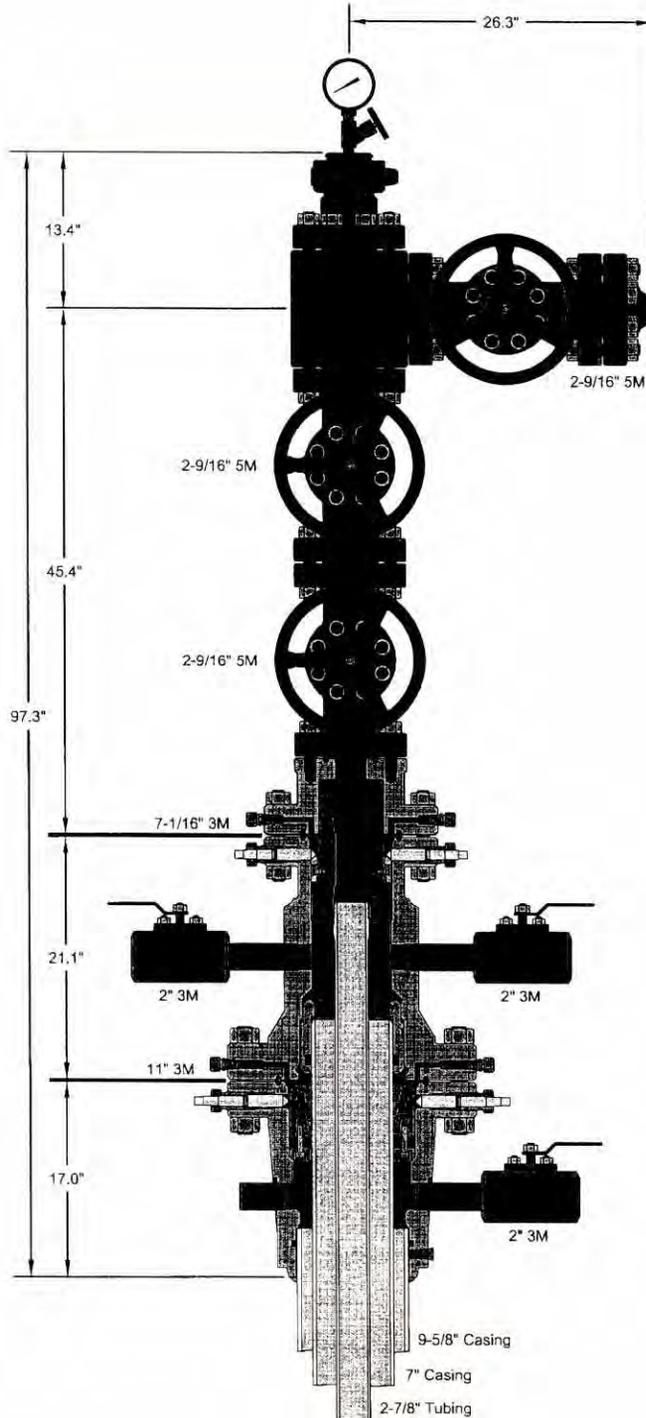
CONTINENTAL RESOURCES SBRRU 32-33A	BART HONEYMAN WELLHEAD	CONTINENTAL RESOURCES NON-UNIT QUINN #4-36H	BART HONEYMAN TREATER
Report Date 05-09-2013	Sample # 2183	Report Date 06-13-2013	Sample # 2183
Sample Date 05-03-2013	at 0000	Sample Date 05-15-2013	at 0000

		% INJECTION WATER						
TOTAL VS FREE IONS		0.00	16.67	33.33	50.00	66.67	83.33	100.00
Ca	Total	440.00	389.10	338.20	287.30	236.40	185.50	134.60
	Free	363.76	323.34	282.51	241.23	199.44	157.02	113.51
Ba	Total	0.204	0.204	0.204	0.204	0.204	0.204	0.204
	Free	0.204	0.204	0.204	0.204	0.204	0.204	0.204
CO ₃	Total	0.455	0.441	0.441	0.460	0.518	0.684	1.54
	Free	0.105	0.115	0.130	0.152	0.190	0.276	0.661
PO ₄	Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Free	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SO ₄	Total	1775	1550	1325	1100	875.00	650.00	425.00
	Free	1367	1215	1056	892.09	721.58	544.20	358.65

FREE ION MOMENTARY EXCESS (ppm)							
Calcite	-0.460	-0.482	-0.499	-0.503	-0.475	-0.352	0.325
Aragonite	-0.556	-0.582	-0.603	-0.611	-0.586	-0.463	0.222
Witherite	-41.34	-38.94	-36.26	-33.24	-29.76	-25.55	-19.65
Strontianite	-4.23	-4.25	-4.24	-4.18	-4.02	-3.65	-2.46
Calcium oxalate	-0.337	-0.346	-0.354	-0.361	-0.365	-0.361	-0.331
Magnesite	-2.83	-3.08	-3.34	-3.59	-3.78	-3.79	-3.02
Anhydrite	-1911	-1947	-1957	-1936	-1872	-1743	-1495
Gypsum	-1355	-1394	-1417	-1420	-1393	-1318	-1149
Barite	0.313	0.316	0.318	0.320	0.322	0.324	0.326
Celestite	-5.54	-11.48	-17.39	-23.24	-28.91	-34.10	-37.34
Calcium phosphate	>-0.001	>-0.001	>-0.001	>-0.001	>-0.001	>-0.001	>-0.001
Hydroxyapatite	-871.17	-826.91	-778.91	-725.84	-665.44	-593.23	-497.23
Fluorite	-34.44	-34.76	-35.07	-35.36	-35.54	-35.44	-34.40
Silica	-123.29	-118.01	-112.88	-107.90	-103.07	-98.40	-93.86
Brucite	0.00239	0.00243	0.00255	0.00280	0.00331	0.00460	0.0109
Mag. silicate	-287.98	-277.84	-266.98	-255.13	-241.79	-225.91	-204.63
Ferric hydroxide	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Siderite	-0.424	0.105	0.194	0.259	0.345	0.518	1.27
Strengite	>-0.001	>-0.001	>-0.001	>-0.001	>-0.001	>-0.001	>-0.001
Halite	-502128	-495709	-487970	-478437	-466286	-449853	-424566
Thenardite	-163786	-158935	-153413	-146999	-139291	-129484	-115399
Iron sulfide	-0.154	0.439	1.10	1.86	2.77	3.65	-0.0121



GE Oil & Gas



VIEWED: 2013/01/15 14:55:20
DOCUMENT: HP-WE00413 | NC

REVIEWED BY: N/A REVIEWED ON:
APPROVED BY: N/A APPROVED ON:

STATE: CREATE
REVISION PENDING: NO

<p>This drawing is the property of GE Oil & Gas Pressure Control LP and is considered confidential. Unless otherwise approved in writing, neither it nor its contents may be used, copied, transmitted or reproduced except for the sole purpose of GE Oil & Gas Pressure Control LP.</p>	<p>CONTINENTAL RESOURCES, INC. BAKKEN SWD</p>		
	<p>DRAWN</p>	<p>VJK</p>	<p>15JAN13</p>
<p>9-5/8" x 7" x 2-7/8" 3/5M Conventional Wellhead Assembly, With T-EBS Tubing Head, T-EN Tubing Hanger and A5PEN Adapter Flange</p>	<p>APPRV</p>	<p>KN</p>	<p>15JAN13</p>
<p>FOR REFERENCE ONLY</p>			<p>DRAWING NO. WE00413</p>

DOC NOT RELEASED.

**STATE OF SOUTH DAKOTA
BEFORE THE SECRETARY OF
THE DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES**

IN THE MATTER OF THE)
APPLICATION OF Hansen State 34-1, convert to SWD) CERTIFICATION OF APPLICANT

STATE OF Oklahoma)
) SS
COUNTY OF Oklahoma)

I, Peter MacIntyre, the applicant in the above matter after being duly sworn upon oath hereby certify the following information in regard to this application:

South Dakota Codified Laws Section 1-40-27 provides:

"The secretary may reject an application for any permit filed pursuant to Titles 34A or 45, including any application by any concentrated swine feeding operation for authorization to operate under a general permit, upon making a specific finding that:

(1) The applicant is unsuited or unqualified to perform the obligations of a permit holder based upon a finding that the applicant, any officer, director, partner, or resident general manager of the facility for which application has been made:

- (a) Has intentionally misrepresented a material fact in applying for a permit;*
- (b) Has been convicted of a felony or other crime of moral turpitude;*
- (c) Has habitually and intentionally violated environmental laws of any state or the United States which have caused significant and material environmental damage;*
- (d) Has had any permit revoked under the environmental laws of any state or the United States;*
- (e) Has otherwise demonstrated through clear and convincing evidence of previous actions that the applicant lacks the necessary good character and competency to reliably carry out the obligations imposed by law upon the permit holder; or*

(2) The application substantially duplicates an application by the same applicant denied within the past five years which denial has not been reversed by a court of competent jurisdiction. Nothing in this subdivision may be construed to prohibit an applicant from submitting a new application for a permit previously denied, if the new application represents a good faith attempt by the applicant to correct the deficiencies that served as the basis for the denial in the original application.

All applications filed pursuant to Titles 34A and 45 shall include a certification, sworn to under oath and signed by the applicant, that he is not disqualified by reason of this section from obtaining a permit. In the absence of evidence to the contrary, that certification shall constitute a prima facie showing of the suitability and qualification of the applicant. If at any point in the application review recommendation, or hearing process, the secretary finds the applicant has intentionally made any material misrepresentation of fact in regard to this certification, consideration of the application may be suspended and the application may be rejected as provided for under this section.

Applications rejected pursuant to this section constitute final agency action upon that application and may be appealed to circuit court as provided for under chapter 1-26."

Pursuant to SDCL 1-40-27, I certify that I have read the forgoing provision of state law, and that I am not disqualified by reason of that provision from obtaining the permit for which application has been made.

I declare and affirm under the penalties of perjury that this claim (petition, application, information) has been examined by me, and to the best of my knowledge and belief, is in all things true and correct.

Dated this 16 day of October, 2013.



Applicant

Subscribed and sworn before me this 16 day of October, 2013.



Notary Public

My commission expires: 1/25/15

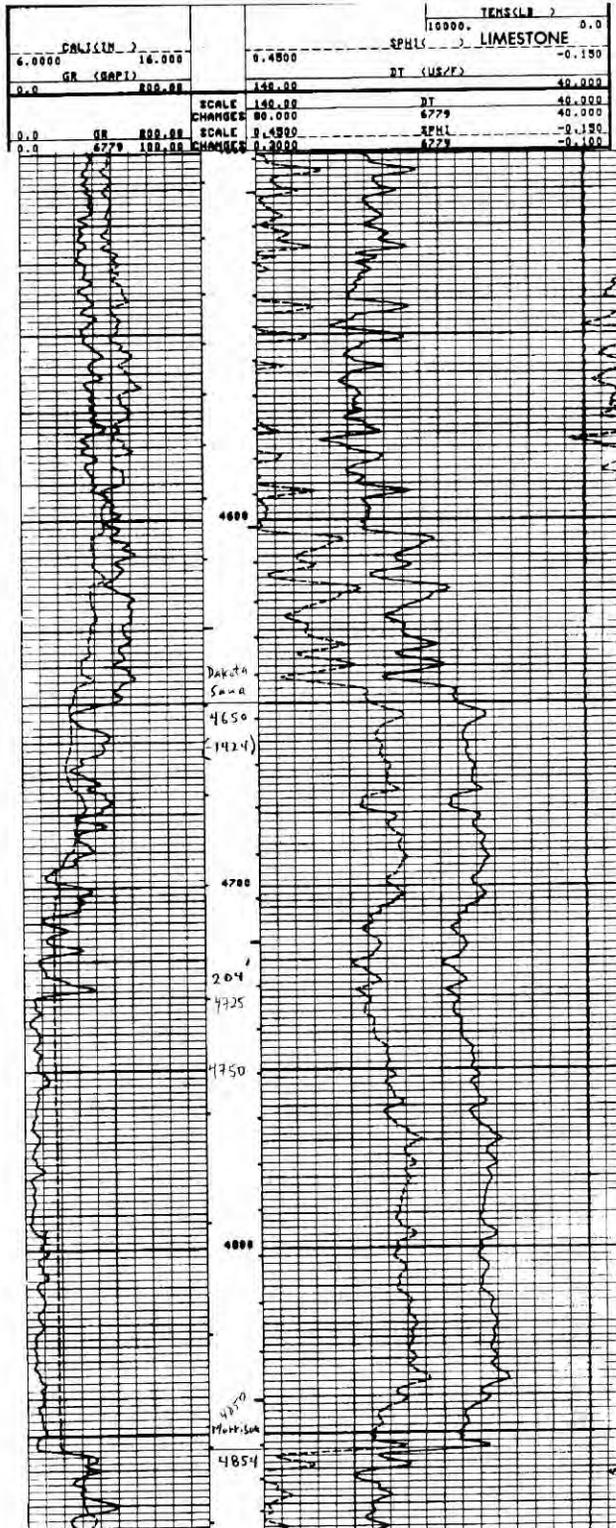


**PLEASE ATTACH SHEET DISCLOSING ALL FACTS PERTAINING TO
SDCL 1-40-27 (1)(a) THROUGH (e).
ALL VIOLATIONS MUST BE DISCLOSED, BUT WILL NOT
AUTOMATICALLY RESULT IN THE REJECTION OF AN APPLICATION.**

40063203850000

CONTINENTAL RESOURCE
HANSEN-STATE 34-1 34-1
1120 FSL 1435 FEL
TWP: 22 N - Range: 3 E - Sec. 1
Datum=3226.00

K8 = 3226



-1500

4730-4850