

BEFORE THE BOARD OF OIL AND GAS CONSERVATION OF THE STATE OF MONTANA

IN THE MATTER OF THE APPLICATION OF RIM OPERATING, INC. FOR AN ORDER CREATING A PERMANENT SPACING UNIT ("PSU") COMPRISED OF THE SW/4 OF SECTION 28, AND THE SE/4 OF SECTION 29, TOWNSHIP 32 NORTH, RANGE 58 EAST, M.P.M., SHERIDAN COUNTY, FOR THE PRODUCTION OF OIL AND ASSOCIATED NATURAL GAS FROM THE RED RIVER FORKS FORMATION THEREUNDER, AND SUCH OTHER AND FURTHER RELIEF AS THE MBOGC MAY DEEM APPROPRIATE

MBOGC DOCKET NO. 13-2024

APPLICATION

RIM OPERATING, INC., 5 Inverness Drive East, Englewood, Colorado 80112:

[A] Presents the following application:

1. Applicant is an interest owner and operator within the above-described tract, and its Brethren #43-29 well has been successfully completed as a commercial producer of oil and associated natural gas from the Red River formation thereunder.
2. The Brethren #43-29 well is completed in a reservoir containing common accumulations of oil and associated natural gas in the Red River formation. To efficiently and economically develop the reservoir, and to protect the correlative rights of all owners, the SW/4 of Section 28, and the SE/4 of Section 29, Township 32 North, Range 58 East, M.P.M., Sheridan County, Montana, should be designated a PSU for the production of oil and associated natural gas from the Red River formation.

[B] Requests:

1. This matter be set for hearing, with notice given as required by law and the MOU; and
2. After hearing the matter, the Board enter its order delineating the SW/4 of Section 28, and the SE/4 of Section 29, Township 32 North, Range 58 East, M.P.M., Sheridan County, Montana, as a PSU for the production of oil and associated natural gas from the Red River formation from the Brethren #43-29 well.

DATED this 5th day of January, 2024.

RIM OPERATING, INC.

By 
John R. Lee, Its Attorney

CROWLEY FLECK PLLP
P.O. Box 2529
Billings, MT 59103-2529
Email: jlee@crowleyfleck.com

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**MONTANA BOARD OF OIL &
GAS CONSERVATION • BILLINGS**

BEFORE THE BOARD OF OIL AND GAS CONSERVATION OF THE STATE OF MONTANA

IN THE MATTER OF THE APPLICATION OF RIM OPERATING, INC. FOR AN ORDER POOLING ALL INTERESTS IN THE PERMANENT SPACING UNIT ("PSU") COMPRISED OF THE SW/4 OF SECTION 28, AND THE SE/4 OF SECTION 29, TOWNSHIP 32 NORTH, RANGE 58 EAST, M.P.M., SHERIDAN COUNTY, MONTANA, FOR THE PRODUCTION OF OIL AND ASSOCIATED NATURAL GAS FROM THE RED RIVER FORMATION THEREUNDER, AND SUCH OTHER AND FURTHER RELIEF AS THE MBOGC MAY DEEM APPROPRIATE

MBOGC DOCKET NO. 14-2024

APPLICATION

RIM OPERATING, INC., 5 Inverness Drive East, Englewood, Colorado 80112:

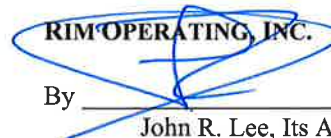
[A] Presents the following application:

1. Applicant is an interest owner and operator within the above-described tract, and its Brethren #43-29 well has been successfully completed as a commercial producer of oil and associated natural gas from the Red River formation thereunder.
2. It is anticipated that the captioned lands will be designated a permanent spacing unit for purposes of Red River formation production pursuant to Montana Board of Oil and Gas Conservation Order No. ___-2024.
3. As of the date of this application, Applicant has been unable to establish voluntary pooling of all interests within said spacing unit with respect to the Brethren #43-29 well, and it is anticipated that such pooling cannot be consummated prior to the hearing on this application.
4. In the absence of voluntary pooling of all interests within the PSU, the pooling of all interests in the spacing unit for the development and operation thereof should be effectuated by an order of the Board for that purpose.

[B] Requests:

1. This matter be set for hearing, with notice given as required by law and the MOU; and
2. After hearing the matter, the Board enter its order pooling all interests in the spacing unit comprised of the SW/4 of Section 28, and the SE/4 of Section 29, Township 32 North, Range 58 East, M.P.M., Sheridan County, Montana, for production of oil and associated natural gas from the Red River formation, and authorizing recovery of non-consent penalties in accordance with Section 82-11-202(2), M.C.A., with respect to the Brethren #43-29 well.

DATED this 5th day of January, 2024.


By _____
John R. Lee, Its Attorney

CROWLEY FLECK PLLP
P.O. Box 2529
Billings, MT 59103-2529
Email: jlee@crowleyfleck.com

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JAN 08 2024

**BEFORE THE BOARD OF OIL AND GAS CONSERVATION
OF THE STATE OF MONTANA**

IN THE MATTER OF THE APPLICATION OF WHITE ROCK OIL & GAS, LLC FOR AN ORDER CREATING AN OVERLAPPING TEMPORARY SPACING UNIT (“OTSU”) COMPRISED OF ALL OF SECTIONS 5, 8 AND 17, TOWNSHIP 22 NORTH, RANGE 59 EAST, M.P.M., RICHLAND COUNTY, MONTANA, AND AUTHORIZING THE DRILLING OF A HORIZONTAL BAKKEN/THREE FORKS FORMATION WELL THEREON AT ANY LOCATION NOT CLOSER THAN 200’ (HEEL TOE SETBACK) / 500’ (LATERAL SETBACK) TO THE BOUNDARIES OF THE OTSU, CLARIFYING MBOGC ORDER NOS. 331-2006 & 238-2007, VACATING MBOGC ORDER NOS. 60-2008 & 60-2023, AND ANY OTHER RELIEF THAT THE MBOGC MAY DEEM APPROPRIATE.

MBOGC DOCKET NO. 16-2024
APPLICATION

WHITE ROCK OIL & GAS, LLC, 5810 TENNYSON PKWY, SUITE 500, PLANO, TX 75024:

[A] Presents the following application:

1. Applicant is an interest owner within all or portions of Sections 5, 8 and 17, Township 22 North, Range 59 East, M.P.M., Richland County, Montana. Sections 5 & 8 are presently subject to MBOGC Order Nos. 93-2006 (PSU), 331-2006 (pooling) and 60-2008 / 60-2023 (inc. density), and White Rock Oil & Gas, LLC operates the Simonsen 44X-5 well located in the pooled spacing unit comprised of Sections 5 & 8, Township 22 North, Range 59 East. Sections 17 & 20 are presently subject to MBOGC Order Nos. 113-2007 (PSU) and 238-2007 (pooling), and White Rock Oil & Gas, LLC operates the Darlene 41X-20 and Marker 34X-20 wells located in the PSU comprised of Sections 17 and 20, Township 22 North, Range 59 East.

2. To more efficiently and economically recover Bakken/Three Forks formation reserves underlying the captioned lands, Applicant proposes to drill a horizontal Bakken/Three Forks formation well at a location within, but not closer than 200’ (heel toe setback) / 500’ (lateral setback) to the exterior boundaries of, an OTSU comprised of all of Sections 5, 8 and 17, Township 22 North, Range 59 East, M.P.M. To preserve correlative rights of all interest owners in Sections 5 & 8, MBOGC Order No. 331-2006 should be amended to clarify that the order is limited to oil and associated natural gas produced from the Bakken/Three Forks formation from the Simonsen 44X-5 well. To preserve correlative rights of all interest owners in Sections 17 & 20, MBOGC Order No. 238-2007 should be amended to clarify that the pooling order is limited to oil and associated natural gas produced from the Bakken/Three Forks formation from the Darlene 41X-20 and Marker 34X-20 wells. It will also be necessary to vacate MBOGC Order Nos. 60-2008 and 60-2023.

3. Applicant will, within 90 days of successful completion of the proposed horizontal operation, file an application for the Board’s consideration of permanent spacing and other matters relating to production from the well.

[B] Requests:

1. This matter be set for hearing, with notice given as required by law and the MOU;
2. After hearing the matter, the Board enter its order (i) creating an OTSU comprised of ALL of Sections 5, 8 and 17, Township 22 North, Range 59 East, M.P.M., Richland County, Montana, and authorizing the

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drilling of a horizontal Bakken/Three Forks formation well at any location within such OTSU but not closer than 200' (heel toe setback) / 500' (lateral setback) to the exterior boundaries thereof; (ii) amending MBOGC Order 331-2006 to clarify that the order is limited to oil and associated natural gas produced from the Bakken/Three Forks formation from the Simonsen 44X-5 well; (iii) amending MBOGC Order 238-2007 to clarify that the pooling order is limited to oil and associated natural gas produced from the Bakken/Three Forks formation from the Darlene 41X-20 and Marker 34X-20 wells; (iv) vacating MBOGC Order Nos. 60-2008 and 60-2023; and (v) any other relief as the MBOGC may deem appropriate.

Dated this 8th day of January, 2024.

WHITE ROCK OIL & GAS, LLC

By _____



Uriah J. Price, Its Attorney
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**MONTANA BOARD OF OIL &
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**BEFORE THE BUREAU OF LAND MANAGEMENT, MONTANA STATE OFFICE
UNITED STATES DEPARTMENT OF THE INTERIOR**

**BEFORE THE BOARD OF OIL AND GAS CONSERVATION
OF THE STATE OF MONTANA**

IN THE MATTER OF THE APPLICATION OF CONTINENTAL RESOURCES, INC. FOR AN ORDER CREATING AN OVERLAPPING TEMPORARY SPACING UNIT COMPRISING ALL OF SECTIONS 13, 24, AND 25 TOWNSHIP 28 NORTH, RANGE 57 EAST, M.P.M., AND SECTIONS 18, 19, AND 30 TOWNSHIP 28 NORTH, RANGE 58 EAST, M.P.M., ROOSEVELT COUNTY, MT, AUTHORIZING THE DRILLING OF A HORIZONTAL BAKKEN/THREE FORKS FORMATION WELL THEREIN AT ANY LOCATION NOT FURTHER THAN 500' FROM THE OTSU N-S CENTER SECTION LINE AND NOT CLOSER THAN 200' TO THE OTSU N-S BOUNDARIES, AND SUCH OTHER AND FURTHER RELIEF AS THE MBOGC MAY DEEM APPROPRIATE

APPLICATION

BLM DOCKET NO. 9-2024 FED

MBOGCC DOCKET NO. 13-2024

COMES NOW, Continental Resources, Inc., 20 N. Broadway, Oklahoma City, OK 73102 ("CLR" or "Applicant"), a corporation authorized to do business in the State of Montana, and makes application to the Montana Board of Oil and Gas Conservation ("MBOGC") for an order establishing an overlapping temporary spacing unit covering the Bakken/Three Forks Formation underlying the Application Lands (described below) ("OTSU").

1. Applicant owns interests within Sections 13, 24, and 25, Township 28 North, Range 57 East, M.P.M., and Sections 18, 19, and 30, Township 28 North, Range 58 East, M.P.M., Roosevelt County, MT ("Application Lands").
2. The Application Lands are subject to the following orders of the MBOGC and, if applicable, the corresponding orders of the Bureau of Land Management ("BLM").

MBOGC Order No.	BLM Order No.	Twp	Section(s)	Description
032-2011	15-2011 FED	28N-57E	13, 14	Temp. Spacing
143-2010		28N-57E	24, 25	Temp. Spacing
318-2011		28N-57E	24, 25	Setbacks
125-2013		28N-57E	24, 25	Perm. Spacing
126-2013		28N-57E	24, 25	Pooling
127-2013		28N-57E	24, 25	Well Density
019-1978		28N-57E	25, 26	Delineation

MBOGC Order No.	BLM Order No.	Twp	Section(s)	Description
042-1979		28N-57E	25, 26	Field Amendment
099-2010		28N-58E	18, 19	Temp. Spacing
253-2011	30-2011 FED	28N-58E	18, 19	Perm. Spacing
284-2012	31-2012 FED	28N-58E	18, 19	Well Density
088-2015		28N-58E	18, 19	Pooling
159-2010		28N-58E	30	Temp. Spacing
104-2011		28N-58E	30	Setbacks
004-2013		28N-58E	30	Perm. Spacing
005-2013		28N-58E	30	Well Density
087-2015		28N-58E	30	Pooling

3. According to the MBOGC's online well database, the following wells are producing from the Bakken/Three Forks Formation underlying the Application Lands.

API	Operator	Name	Status	Field	SHL Sec	BHL Sec	Fm'n
25-085-21819	CLR	Grindland 34X-25C	Producing	Elm Coulee, Northeast	25	24	Bakken
25-085-21757	Oasis ¹	Beulah Irene Federal 19-18H	Producing	Elm Coulee, Northeast	19	18	Bakken
25-085-21785	Oasis ¹	Dixie Federal 2758 14-6H	Producing	Elm Coulee, Northeast	6	30	Bakken

4. To more efficiently and economically recover Bakken/Three Forks formation reserves underlying the captioned lands, Applicant proposes to drill a horizontal Bakken/Three Forks formation well with a lateral not further than 500' from the north-south center section line of the OTSU (the section line dividing (i) Sections 13, 24, and 25 from (ii) Sections 18, 19, and 30), with the heel/toe to be completed no closer than 200' to the northern and southern exterior boundaries of the OTSU.

5. Applicant has submitted an application concurrently herewith requesting an order: (i) establishing an OTSU covering Sections 13, 24, and 25 of the Application Lands; (ii) amending Order Nos. 125-2013 and 126-2013 as to the Application Lands to clarify that said orders are limited to oil and associated natural gas produced from the Bakken/Three Forks formation from the Grindland 34X-25C well; and (iii) vacating Order No. 127-2013.

6. Applicant will, within 90 days of successful completion of the proposed horizontal operation, file an application for MBOGC consideration of permanent spacing and other matters relating to production from said well.

7. The OTSU contains the following federal and Indian Lands tracts:

¹ Oasis Petroleum North America LLC

Tract	Status	Type
Sec 13, T.28N., R.57E.: NW $\frac{1}{4}$	Leased	BIA
Sec 13, T.28N., R.57E.: SW $\frac{1}{4}$ SE $\frac{1}{4}$	Unleased	BLM
Sec 18, T.28N., R.58E.: SE $\frac{1}{4}$ SW $\frac{1}{4}$	Leased	BIA
Sec 19, T.28N., R.58E.: NE $\frac{1}{4}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$, SE $\frac{1}{4}$ NW $\frac{1}{4}$	Leased	BIA

8. NOW THEREFORE, Applicant respectfully requests as follows.

a. This matter be set for hearing, with notice given as required by law;

b. After hearing the matter, the BLM and the Board enter orders: (i) creating an OTSU covering the Bakken/Three Forks Formation underlying the Application Lands, and authorizing the drilling of a horizontal Bakken/Three Forks formation well within such OTSU at any location but not further than 500' from the north-south center section line of the OTSU (the line dividing (a) Sections 13, 24, and 25 from (b) Sections 18, 19, and 30) and not closer than 200' to the northern and southern exterior boundaries of the OTSU, (ii) providing that operations for the drilling of such well must be commenced within one year from the date of such order and further providing that the OTSU shall be limited to production from the proposed horizontal well; and (iii) and such other and further relief as the MBOGC may deem appropriate.

DATED this 11th day of January, 2024.

CONTINENTAL RESOURCES, INC.

By: 

James Parrot, Its Attorney
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 Ph: (303) 407-4458

**State of Montana
Board of Oil and Gas**

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**MONTANA BOARD OF OIL &
GAS CONSERVATION • BILLINGS**

Docket No: TBD 26 - 2024

**Underground Injection Control
Application**

Brutus 1-8

Section 8, Township 24N, Range 57E

White Rock Oil and Gas, LLC

February 15, 2024

January 11, 2024

Benjamin Jones
Administrator
Interim Underground Injection Control (UIC) Program Director
Montana Board of Oil and Gas Conservation
2535 St. Johns Avenue
Billings, MT 59102

RE: Request for Injection Permit
Brutus 1-8 located in Section 8, Township 24N, Range 57E
Richland County, Montana

Dear Mr. Benjamin Jones,

Please find enclosed an Underground Injection Control (UIC) application by White Rock Oil and Gas, LLC. requesting an aquifer exemption for the Dakota/ Lakota Formations in the well, Brutus 1-8, operated by White Rock Oil and Gas, LLC. in Lone Tree Field. This shut in Red River well will be plugged back and completed as a water disposal well.

I certify the information contained in this application are, to the best of my knowledge, true and correct, and the work associated with the operation proposed herein will be performed by White Rock Oil and Gas, LLC. in conformity with this application and the terms and conditions under which it is approved.

White Rock Oil and Gas, LLC. is requesting the application be placed on the docket for the MBOGC February 15, 2024 hearing.

If you have any questions concerning the enclosed application, please contact Shawna Bonini, Operations Engineer at (406) 690-0068 or via email at sbonini@whiterockog.com.

Sincerely,



Rusty Ginnetti
Chief Operating Officer
White Rock Oil and Gas, LLC.

26-2024

**Underground Injection Control (UIC) Permit Application
Brutus 1-8 Injection**

The following report and justification are submitted in support of the application by White Rock Oil and Gas, LLC. to permit the conversion of the Brutus 1-8, which is a shut in Red River producer, for the purpose of water injection into the Dakota/ Lakota formations as required by Rule 36.22.1403 of the Rules and Regulations of the Montana Board of Oil and Gas Conservation.

1(a) Location of Injection Well:

The Brutus 1-8 well is herein proposed for conversion to a water injection well. This well was originally drilled to the Ordovician Red River Formation and successfully completed in the Red River “D” zone. The well produced until a downhole failure in April 2017. During the workover in April 2017 to restore production, the casing was found to be collapsed at 6,913’ and the well was subsequently shut in. Exhibit 1 shows the surface location and a circle of a quarter (1/4) mile or 1,320 ft radius representing the area of review (AOR) for this well.

Brutus 1-8	739 ft FSL, 831 ft FEL	SESE, Sec 8, T24N, R57E
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1(b) Wells within a Quarter Mile (1,320 ft) Area of Review (AOR):

There are not any wells drilled within ¼ mile AOR.

The closest wells to the Brutus 1-8 are the Peanut-Ray 16-4 HLID Bakken well and Lyle Pederson 2-17H Bakken well which are outside the AOR at 0.34 miles as shown in Exhibit 1.

1(c) Location of all pipelines:

Produced water from the Bakken White Rock Oil and Gas wells will be delivered to the location by truck.

There is an inactive water gathering line that will be reviewed for reactivation. If this occurs, the line would be flushed with freshwater and pressure tested prior to use. There would be meters at all associated sites to verify shipment and injection water volumes are aligned.

1(d) Area Producing Formations, Freshwater Aquifers, and Water Well Information:

Jensen 2-9, (NWSW, Section 9, T24N, R57E), 2,136 ft to the NE of the proposed SWD well was drilled in 1996 and produced from the Red River, Putnam, and Interlake. The

well is currently produced from the Interlake. The shallowest perforations are at 11,816 ft TVD.

Jensen 1-9, (NWSW, Section 9, T24N, R57E), 2,011 ft to the NE of the proposed SWD well was drilled in 1971 and produced from the Red River until 1987. The well was ultimately plugged and abandoned in 1995 due to collapsed casing at 6,850'. Shallowest perforations at 12,238 ft TVD.

Daniels 1, (S2SENE, Section 8, T24N, R57E), 1,803 ft to the NW of the proposed SWD well was drilled in 1972 and produced first from the Red River. The well produced from the Interlake formation only until 2015 when the well was SI. Shallowest perforations at 11,496 ft TVD.

There are Bakken horizontal producers in the area. The closest Bakken wells to the proposed SWD include the Brutus Rachel 8-14H well 2,412 ft west, Lyle Pederson 2-17H well which is 1,799 ft southwest, and Peanut Ray 16-4 HLID 1,793 ft southeast. The Bakken produces at a depth of approximately 10,350 ft TVD.

Freshwater well data was obtained from the Ground Water Information Center (MBMG Data Center) website <https://mbmggwic.mtech.edu/>. There are no freshwater wells which produce within the AOR of the proposed injector, See Exhibit 2. The closest freshwater wells are listed below (outside the AOR):

Well Name	Location	Use	Distance from Proposed SWD	Depth of Well
Ericksen Edward	Sec 17, T24N, R57E	Stockwater	0.54 miles	Not Available
Daniel Charles	Sec 08, T24N, R57E 47.85302, -104.4393	Stockwater	0.69 miles	56 ft
Baue Donald	Sec 16, T24N, R57E 47.8748, -104.7090	Stockwater	0.74 miles	109 ft
Baue Donald	Sec 15, T24N, R57E 47.8438, -104.3975	Stockwater	1.36 miles	140 ft

There is an upper member of the Fort Union, the Tongue River, with water production normally less than a depth of 200' from the surface. There are several shallow water wells drilled for cattle watering and for domestic use that appear to be in this zone. There are not any of these wells in the area of review. There is a water quality sample taken at the Baue Donald located in Section 15, T24N, R57E. Total dissolved solids for this water well located 1.36 miles southeast of Brutus 1-8 were 3,694 ppm. See Exhibit 3. for full analysis.

The Hell Creek and Fox Hill zones act as potential sources of freshwater as well. The depth to the Fox Hills-Lower Hell Creek Aquifer is approximately 1400 to 1600 ft in the area of the Brutus 1-8 per Depth to the Fox Hills – Lower Hell Creek Aquifer, Lower Yellowstone River Area map by Larry Smith which is part of the GWAA 1-2-03 publication dated 1998. Surface casing has been cemented to surface to protect shallower freshwater zones.

Any potential Underground Sources of Drinking Water (USDW) are protected from the proposed injection zone by surface casing set at 1,850 ft MD/TVD and cemented to surface. The production casing was set at 12,592 ft with a two-stage cement job. The first stage cement consisted of 800 sacks of 15.6 ppg cement slurry that resulted in an estimated Top of Cement (TOC) at 9,026 ft. Based on the cement reports from Halliburton, 3 barrels of cement was circulated to surface between stage jobs which means that cement was as shallow as the stage tool at 9,022 ft. The second stage consisted of 630 sacks of 11.8 ppg cement slurry. The well history report documented the TOC at 2,550 ft MD/TVD. Tubing and an injection packer will result in further isolation of fresh USDW from produced water.

1(e) Name and Geologic Description of Injection Zone:

The Brutus 1-8 SWD will be completed for disposal into the Lakota and Dakota formations. See Exhibit 4: Cross Section of Dakota/ Lakota, Exhibit 5: Log of Injection Interval, and Exhibit 6: Water Analysis of Injection Intervals.

Water quality information for the proposed disposal zones in the immediate area of Brutus 1-8 is not available. However, a water sample from the Dakota in RR Lonetree Edna 1-13 SWD located 5.79 miles southwest of the proposed disposal site had total dissolved solids of between 5,173 to 10,352 mg/L, and water from the Dakota and Lakota in the Brutus 1-8 is expected to be similar. The samples from the Edna 1-13 were acquired by swab testing the interval and measuring the TDS for the interval. The upper Dakota water lies between the 3,000 ppm and 10,000 ppm cutoff and will require an aquifer exemption.

Proposed injection zones for the Brutus 1-8 SWD are as follows:

Formation	Lithology	Top (ft)	Bottom (ft)	Net pay (ft)	Pressure (psi)	Porosity
Dakota	Sandstone	5,480	5,567	36	2,400	6%
Lakota	Sandstone	5,726	5,970	138	2,525	9%

Depth and net pay for each of the proposed injections zones are estimate from the July 3, 2012 Laterlog-Gamma Ray log from the Brutus 1-8. The porosity is based on the density log across the zones of interest in the Pederson #1 well located 1/2 mile south. The porosity was derived from the bulk density curve calculated on a sandstone matrix. Formation pressure was estimated using a water gradient of 0.435 psi/ft.

The confining formations for the proposed injection zones are the Skull Creek for the Dakota and the Fuson for the Lakota. The actual fracture gradients for these confining zones are unknown, but fracture gradients for the confining shale layers are known to be higher than those for the underlying sandstone injection zone.

Formation	Lithology	Top (ft)	Bottom (ft)
Skull Creek	Shale	5,226	5,480
Fuson	Shale	5,567	5,726

Considering the vertical distance to any USDW and the maximum feasible injection rate that could occur, the likelihood of a fracture extending from the proposed disposal zones to any USDW under any reasonable disposal conditions is considered low.

1(f) Additional Information on Producing Wells within the AOR:

There are no producing wells within the area of review.

1(g) Open Hole Logs:

Logs and geologic information for the Brutus 1-8 well are currently on file with MBOGC. A cement bond log currently exists for Brutus 1-8 with the top of cement at 2,550 ft.

1(h) Description of the Wellbore Construction:

The current configuration of the wellbore, as indicated on the attached diagram, Exhibit 7: Current WBD and Exhibit 8: Proposed WBD. The well currently has collapsed casing at 6,913 ft. A Cast Iron Cement Retainer (CICR) will be set shallower than the collapsed casing to isolate the current Red River perforations. An attempt will be made to squeeze cement below the CICR. If unable to squeeze cement, 30 sx of cement will be placed on top of the CICR.

The interval proposed for disposal will be the Dakota from 5,480-5,567 ft and the Lakota from 5,726 - 5,970 ft. This interval will likely be treated with 15% HCl upon approval of

the permit to facilitate near wellbore debris and aid in injectivity. The well is currently shut in waiting on permit approval.

When the well is recompleted, plastic coated equipment will be used to help mitigate corrosion and the tubing/casing annulus will be filled with packer fluid to protect from corrosion. Pressure gauges will be utilized on both the tubing and the tubing/ casing annulus to monitor pressures. This data will be recorded along with disposal rates and volumes daily.

1(i) Description of Injection Fluid:

The fluid to be injected will consist entirely of water produced with the Bakken in multiple White Rock wells. The anticipated injection volumes will be in the range of 1,000 to 1,500 BWPd. Actual injection rates may vary, and volumes will be determined by the capacity of the well to take the fluid and at what injection pressure. Exhibit 9 is the representative water chemistry analysis of the produced Bakken water. No incompatibilities are expected.

Surface injection pressures will not be allowed to exceed a maximum based on the EPA accepted fracture gradient of 0.733 psi/ ft and the following equation.

$$IP_{MAX} = (FG) (D_{Top}) - (SG) (0.433)(D_{Top})$$

Where: IP_{MAX} = Maximum Surface Injection Pressure (psi)
 FG = Assumed Fracture Gradient in Confining Zone = 0.733 psi/ft
 SG = Specific Gravity of Injection Fluid = 1.18
 D_{Top} = Depth at top of perforated interval of injection zone (ft)

The computed maximum injection pressure would be:

$$IP_{MAX} = (0.733 \text{ psi/ft})(5,480 \text{ ft}) - (1.18) (0.433)(5,480 \text{ ft})$$

$$IP_{MAX} = 1,215 \text{ psi}$$

The computed maximum injection pressure for the Dakota/ Lakota is 1,215 psi. An injection test (step-rate test) will be performed to determine the final injection pressures and volumes to ensure the formation parting pressure (fracture pressure) is not reached during injection operations. In comparison, the Simonsen A 1-4 max injection pressure is 1,317 psi.

1(j) Name of Owners on Record:

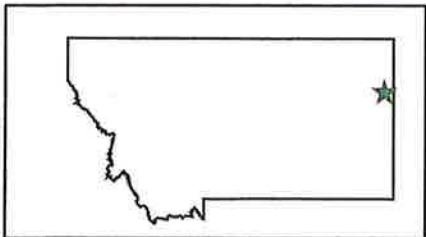
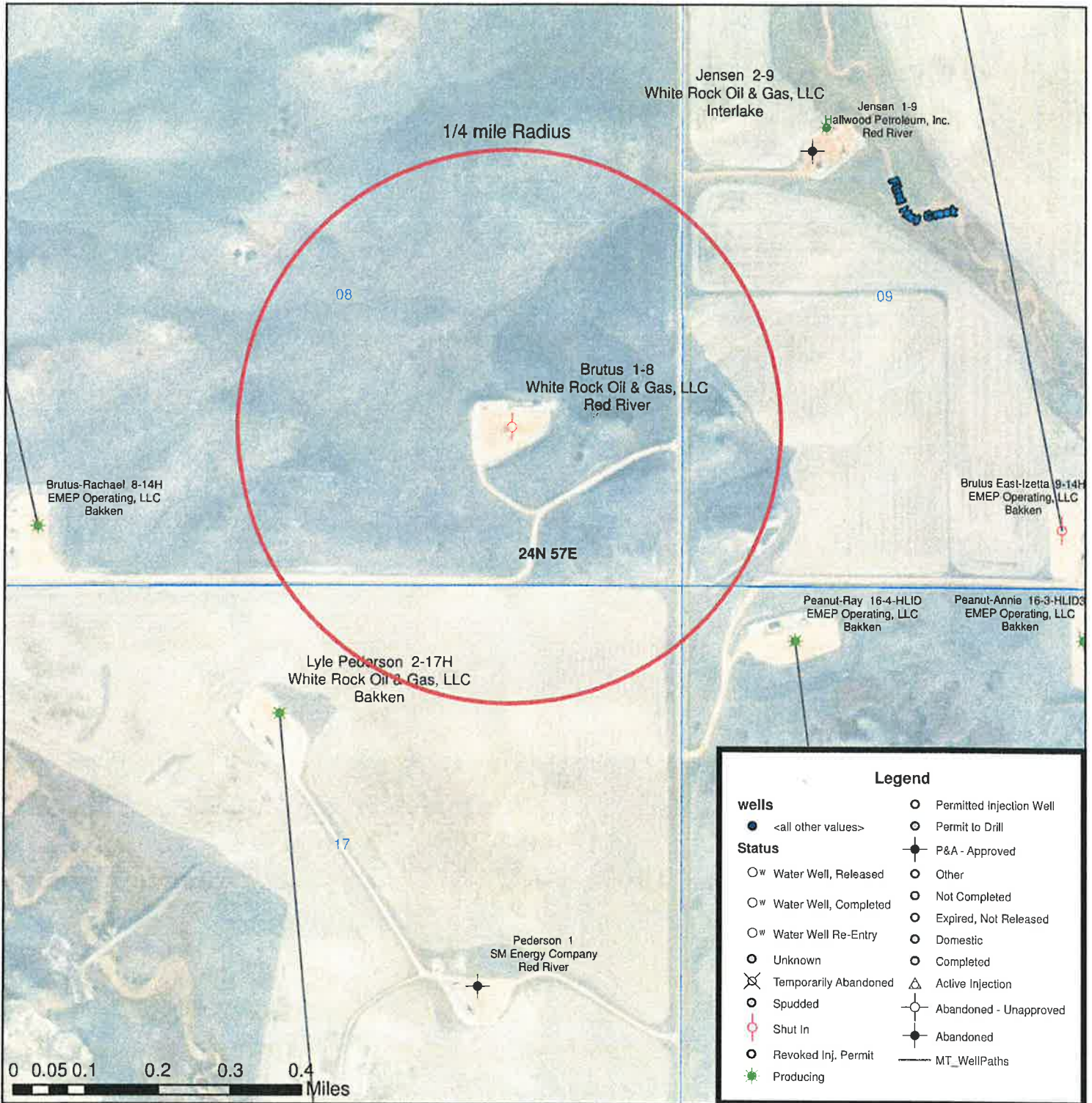
The names and addresses of leasehold and surface owners within the area of review for the proposed injection well are listed in Exhibit 10.

White Rock oil and Gas, LLC. notified surface owners in accordance with 36.22.1410(1) notification requirements for an underground injection permit. The affidavit reflecting this notification is included on Exhibit 11. Additional public notice will be in the Helena Independent Record and Sidney Herald. These affidavits will be sent to MBOG as soon as these notices are printed.

List of Exhibits

Exhibit 1	Map of General Area with Area of Review (AOR)
Exhibit 2	Map of freshwater wells with Area of Review (AOR)
Exhibit 3	Freshwater sample analysis
Exhibit 4	Geologic Cross Section of the Dakota/ Lakota
Exhibit 5	Log of Injection Intervals
Exhibit 6	Water Analysis of Injection Intervals
Exhibit 7	Current Wellbore Diagram
Exhibit 8	Proposed Wellbore Diagram and Site Facility Diagram
Exhibit 9	Bakken Water analysis
Exhibit 10	Surface Owner List
Exhibit 11	Notification to Surface Owners Letter
Exhibit 12	Affidavit of Notification to Surface Owners

**Exhibit 1: Map of General Area with
area of review (AOR)
Production Wells**

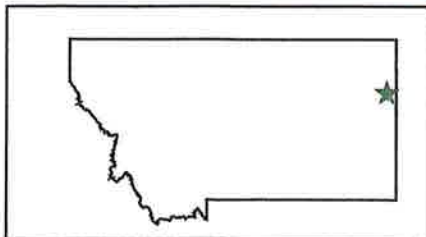
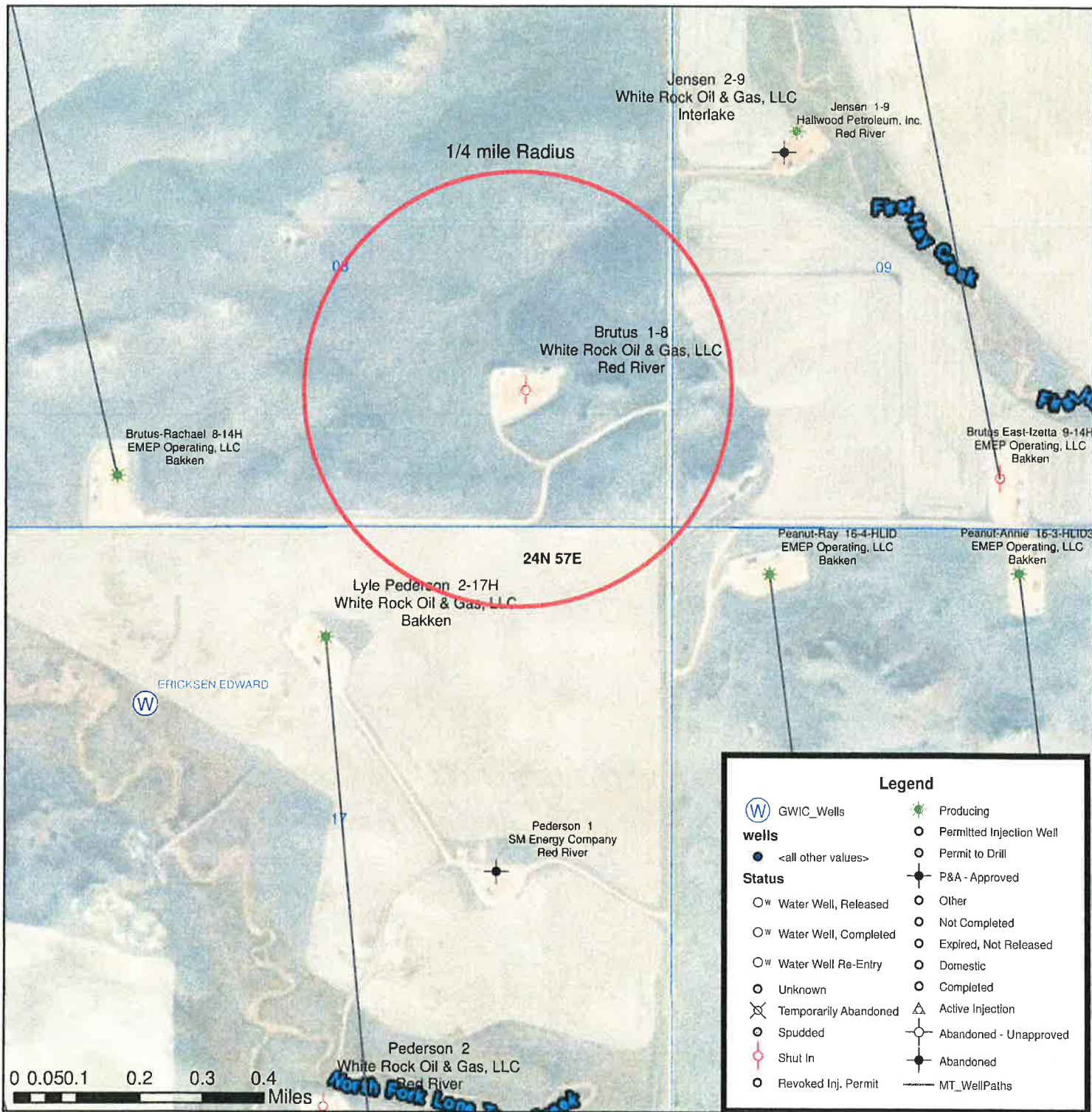


**Brutus 1-8
Proposed Produced Water Injector
Richland County, Montana
739 ft FSL, 831 ft FEL
Sec 8, T24N, R57E**

26-2024

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
Projection: Mercator Auxiliary SphereDatum: WGS 1984

Exhibit 2: Map of freshwater wells area of review (AOR)



**Brutus 1-8
Proposed Produced Water Injector
Richland County, Montana
739 ft FSL, 831 ft FEL
Sec 8, T24N, R57E**

26-2024

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
Projection: Mercator Auxiliary SphereDatum: WGS 1984

Exhibit 3: Freshwater Sample Analysis

Ground-Water Information Center Water Quality Report

Site Name: BAUE DONALD

Report Date: 1/10/2024

Compare to Water Quality Standards

Location Information

Sample Id/Site Id: 1995Q0537 / 139776	Sample Date: 5/19/1995 3:00:00 PM
Location (TRS): 24N 57E 15 BBC	Agency/Sampler: MBMG / DCM
Latitude/Longitude: 47° 50' 37" N 104° 23' 51" W	Field Number: 139776
Datum: NAD27	Lab Date: 7/7/1995
Altitude: 2360	Lab/Analyst: MBMG / TSH
County/State: RICHLAND / MT	Sample Method/Handling: PUMPED / 4220
Site Type: WELL	Procedure Type: DISSOLVED
Geology: 125FRUN	Total Depth (ft): 140
USGS 7.5' Quad: GIRARD 7 1/2'	SWL-MP (ft): NR
PWS Id:	Depth Water Enters (ft): 130
Project: GWCP01	

Major Ion Results

	mg/L	meq/L		mg/L	meq/L
Calcium (Ca)	364.000	18.164	Bicarbonate (HCO3)	596.600	9.778
Magnesium (Mg)	285.500	23.494	Carbonate (CO3)	0.000	0.000
Sodium (Na)	330.700	14.385	Chloride (Cl)	4.500	0.127
Potassium (K)	15.900	0.407	Sulfate (SO4)	2,380.000	49.575
Iron (Fe)	4.700	0.168	Nitrate (as N)	<.25 P	0.000
Manganese (Mn)	0.417	0.015	Fluoride (F)	0.252	0.013
Silica (SiO2)	12.800		Orthophosphate (as P)	<1.	0.000
Total Cations		56.910	Total Anions		59.494

Trace Element Results (µg/L)

Aluminum (Al):	<30.	Cesium (Cs):	NR	Molybdenum (Mo):	<10.	Strontium (Sr):	10,000.000
Antimony (Sb):	<2.	Chromium (Cr):	<2.	Nickel (Ni):	6.800	Thallium (Tl):	NR
Arsenic (As):	<1.	Cobalt (Co):	<2.	Niobium (Nb):	NR	Thorium (Th):	NR
Barium (Ba):	13.900	Copper (Cu):	4.700	Neodymium (Nd):	NR	Tin (Sn):	NR
Beryllium (Be):	<2.	Gallium (Ga):	NR	Palladium (Pd):	NR	Titanium (Ti):	<10.
Boron (B):	521.000	Lanthanum (La):	NR	Praseodymium (Pr):	NR	Tungsten (W):	NR
Bromide (Br):	100.000	Lead (Pb):	<2.	Rubidium (Rb):	NR	Uranium (U):	NR
Cadmium (Cd):	<2.	Lithium (Li):	139.000	Silver (Ag):	<1.	Vanadium (V):	<5.
Cerium (Ce):	NR	Mercury (Hg):	NR	Selenium (Se):	<1.	Zinc (Zn):	25.200
						Zirconium (Zr):	<20.

Field Chemistry and Other Analytical Results

**Total Dissolved Solids (mg/L):	3693.62	Field Hardness as CaCO3 (mg/L):	NR	Ammonia (mg/L):	NR
**Sum of Diss. Constituents (mg/L):	3996.53	Hardness as CaCO3:	2084.03	T.P. Hydrocarbons (µg/L):	NR
Field Conductivity (µmhos):	3960	Field Alkalinity as CaCO3 (mg/L):	480	PCP (µg/L):	NR
Lab Conductivity (µmhos):	3420	Alkalinity as CaCO3 (mg/L):	489.64	Phosphorus, TD (mg/L):	NR
Field pH:	7.15	Ryznar Stability Index:	5.068	Field Nitrate (mg/L):	NR
Lab pH:	7.43	Sodium Adsorption Ratio:	3.1549	Field Dissolved O2 (mg/L):	7.200
Water Temp (°C):	9.5	Langlier Saturation Index:	1.181	Field Chloride (mg/L):	NR
Air Temp (°C):	NR	Nitrite (mg/L as N):	NR	Field Redox (mV):	100.3
Nitrate + Nitrite (mg/L as N)	NR	Hydroxide (mg/L as OH):	NR	Lab, Dissolved Organic Carbon (mg/L):	NR
Total Kjeldahl Nitrogen (mg/L as N)	NR	Lab, Dissolved Inorganic Carbon (mg/L):	NR	Lab, Total Organic Carbon (mg/L):	NR
Total Nitrogen (mg/L as N)	NR	Acidity to 4.5 (mg/L CaCO3)	NR	Acidity to 8.3 (mg/L CaCO3)	NR
As(III) (ug/L)	NR	As(V) (ug/L)	NR	Total Susp Solids (mg/L)	NR

Additional Parameters

Alkalinity Fld (CaCO3)	480.000	Oxygen Dis Field(mg/L-O)	7.200	Phosphate T Dis (mg/L - P)	L.2
Redox Potential (Mv)	100.300				

Sample Condition: CLEAR

Field Remarks:

Lab Remarks:

Notes

Explanation: mg/L = milligrams per Liter; µg/L = micrograms per Liter; ft = feet; NR = No Reading in GWIC

Qualifiers: A = Hydride atomic absorption; E = Estimated due to interference; H = Exceeded holding time; J = Estimated quantity above detection limit but below reporting limit; K = Na+K combined; N = Spiked sample recovery not within control limits; P = Preserved sample; S = Method of standard additions; U = Undetected quantity below detection limit; * = Duplicate analysis not within control limits; ** = Sum of Dissolved Constituents is the sum of major cations (Na, Ca, K, Mg, Mn, Fe) and anions (HCO3, CO3, SO4, Cl, SiO2, NO3, F) in mg/L. Total Dissolved Solids is reported as equivalent weight of evaporation residue.

Disclaimer

These data represent the contents of the GWIC databases at the Montana Bureau of Mines and Geology at the time and date of the retrieval. The information is considered unpublished and is subject to correction and review on a daily basis. The Bureau warrants the accurate transmission of the data to the original end user. Retransmission of the data to other users is discouraged and the Bureau claims no responsibility if the material is retransmitted.

26-2024

Exhibit 4: Geologic Cross Section of the Dakota/ Lakota

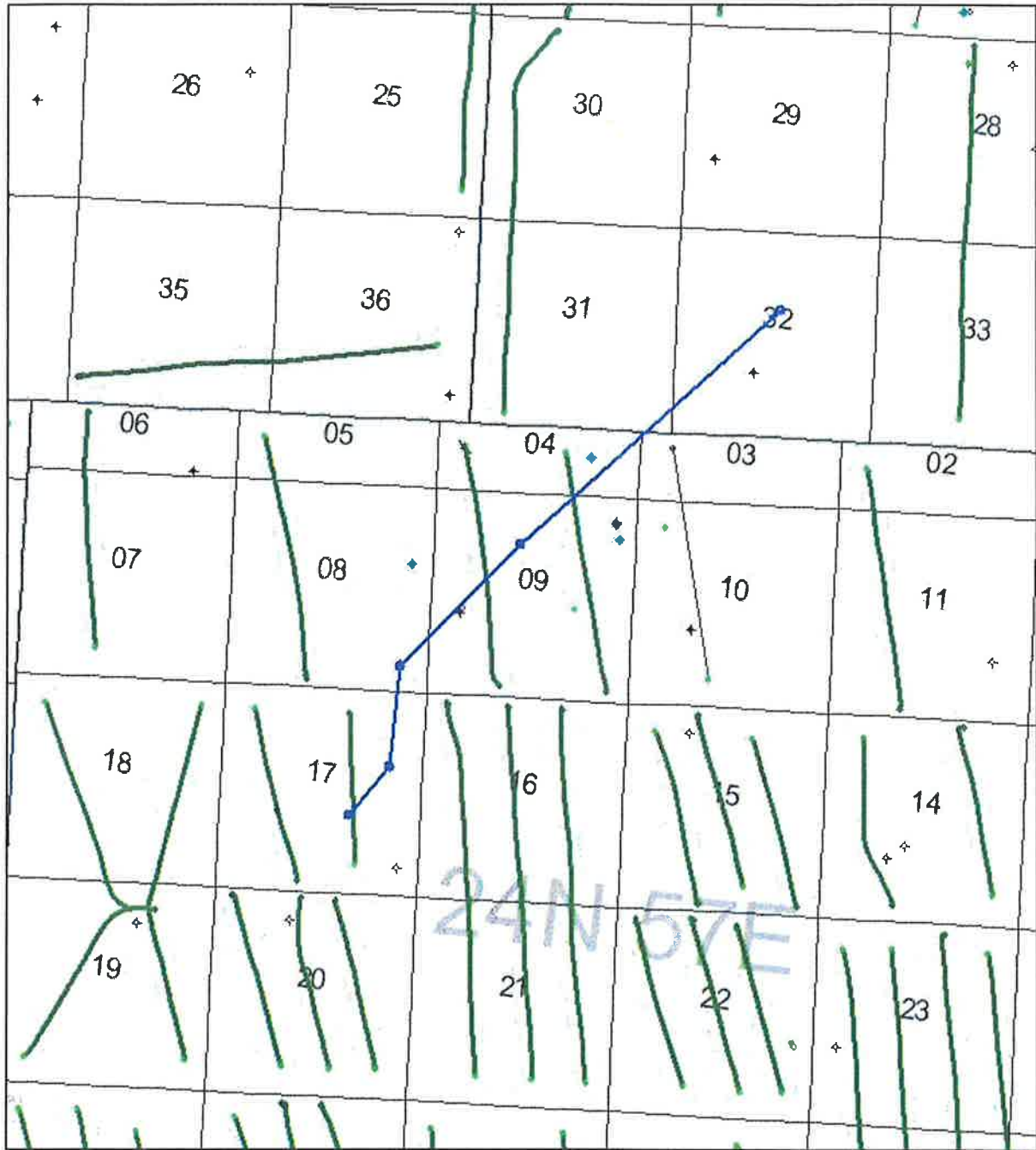
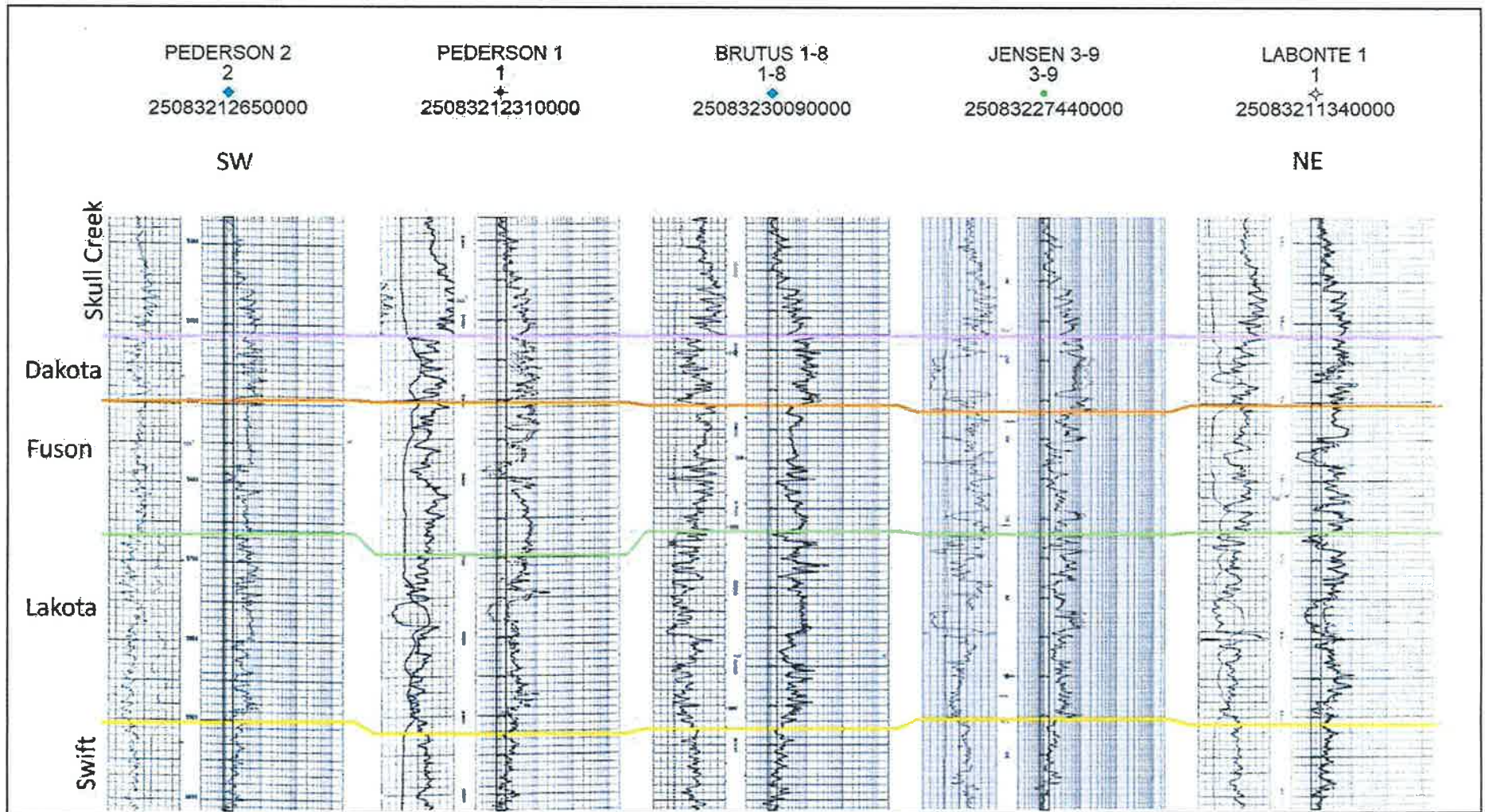


Exhibit 4: Geologic Cross Section of the Dakota/ Lakota





FILE NO: 04058941
 COMPANY: ENCORE ENERGY PARTNERS
 WELL: BRUTUS-1-8
 FIELD: LONE TREE CREEK
 COUNTY: RICHLAND
 STATE: MONTANA

Version: MT PERMIT: 30116
 LOCATION: 739' FSL & 831' FEL
 SEC 8 TWP 24 N RGE 57 E
 OTHER SERVICES: COMPOSITE ZXL-CN-CR BHP

PERMANENT DATUM: GL ELEVATION 2428 FT
 LOG MEASURED FROM: KB 18 FT ABOVE P.D.
 DRILL MEAS. FROM: KB
 ELEVATIONS: KB 2446 FT, DF, GL 2428 FT

DATE	03-JUL-2012
RUN	1
TRIP	1
SERVICE ORDER	574878
DEPTH DRILLER	12500 FT
DEPTH LOGGER	12505 FT
BOTTOM LOGGED INTERVAL	12500 FT
TOP LOGGED INTERVAL	50 FT
ASING DRILLER	9.825 IN @ 1803 FT
ASING LOGGER	1801 FT
T SIZE	8.75 IN
PE OF FLUID IN HOLE	OSM
DENSITY	10.1 LB/G
VISCOSITY	50 S
FLUID LOSS	NA
DURGE OF SAMPLE	NA
I AT MEAS. TEMP.	NA
WF AT MEAS. TEMP.	NA
WC AT MEAS. TEMP.	NA
DURGE OF RNF	NA
I AT BHT	NA
ME SINCE CIRCULATION	12.5
AX. RECORDED TEMP.	242 DEGF
RUP. NO.	HL-6744
LOCATION	WILLISTON
RECORDED BY	LANCE SCHUBERT
WITNESSED BY	TOBY HARLEY

RECEIVED OCT 16 2012

GR BACKUP	
GAMMA RAY [gr]	150
(gAPI)	
CALIPER [cal]	16
(in)	
BIT SIZE	16
(in)	

2FT. Matched Resolution Resistivity	
0.2	10 in. DOI [m2r1] 2000
	(ohm.m)
0.2	20 in. DOI [m2r2] 2000
	(ohm.m)
0.2	30 in. DOI [m2r3] 2000
	(ohm.m)
0.2	60 in. DOI [m2r6] 2000
	(ohm.m)
0.2	90 in. DOI [m2r9] 2000
	(ohm.m)
0.2	120 in. DOI [m2rx] 2000
	(ohm.m)

26-2024

Exhibit 5: Log of Injection Intervals

BVOL

10
100
1000

CVOL

10
100
1000

CSG

1900

1300

TGS ^{ADD}

5200

SKULLCREEK [MBOG]=5226.0

4202-92

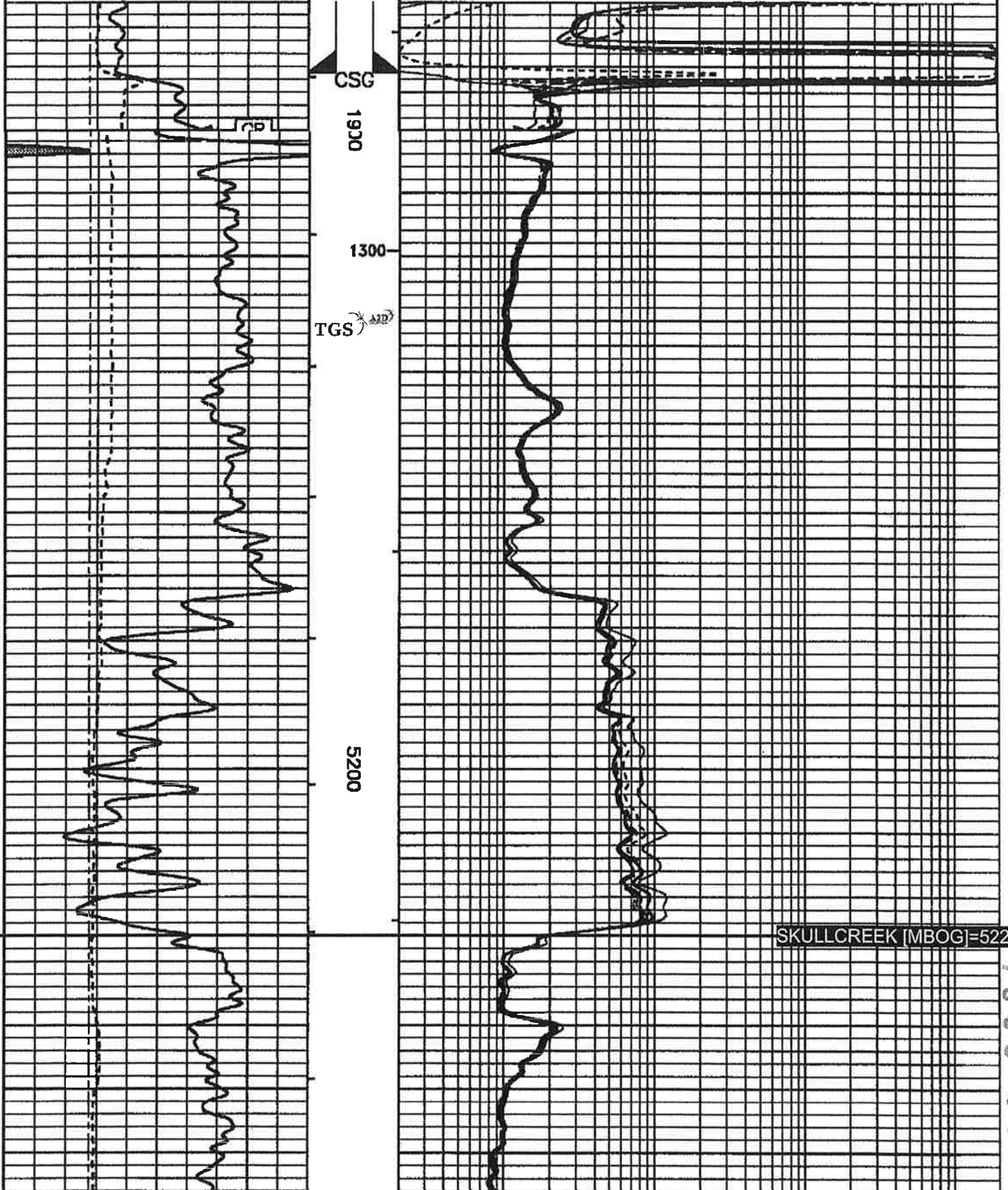
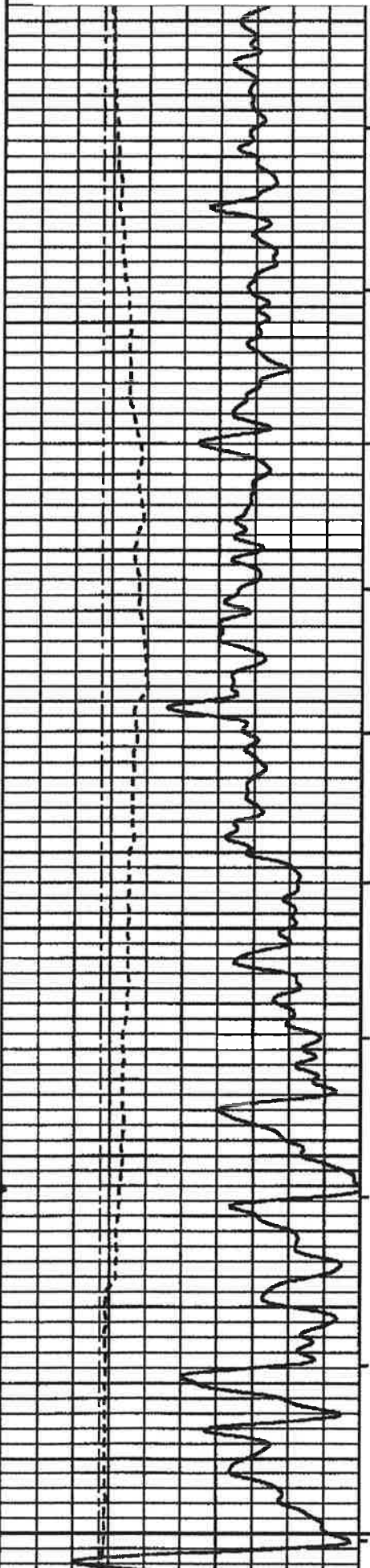
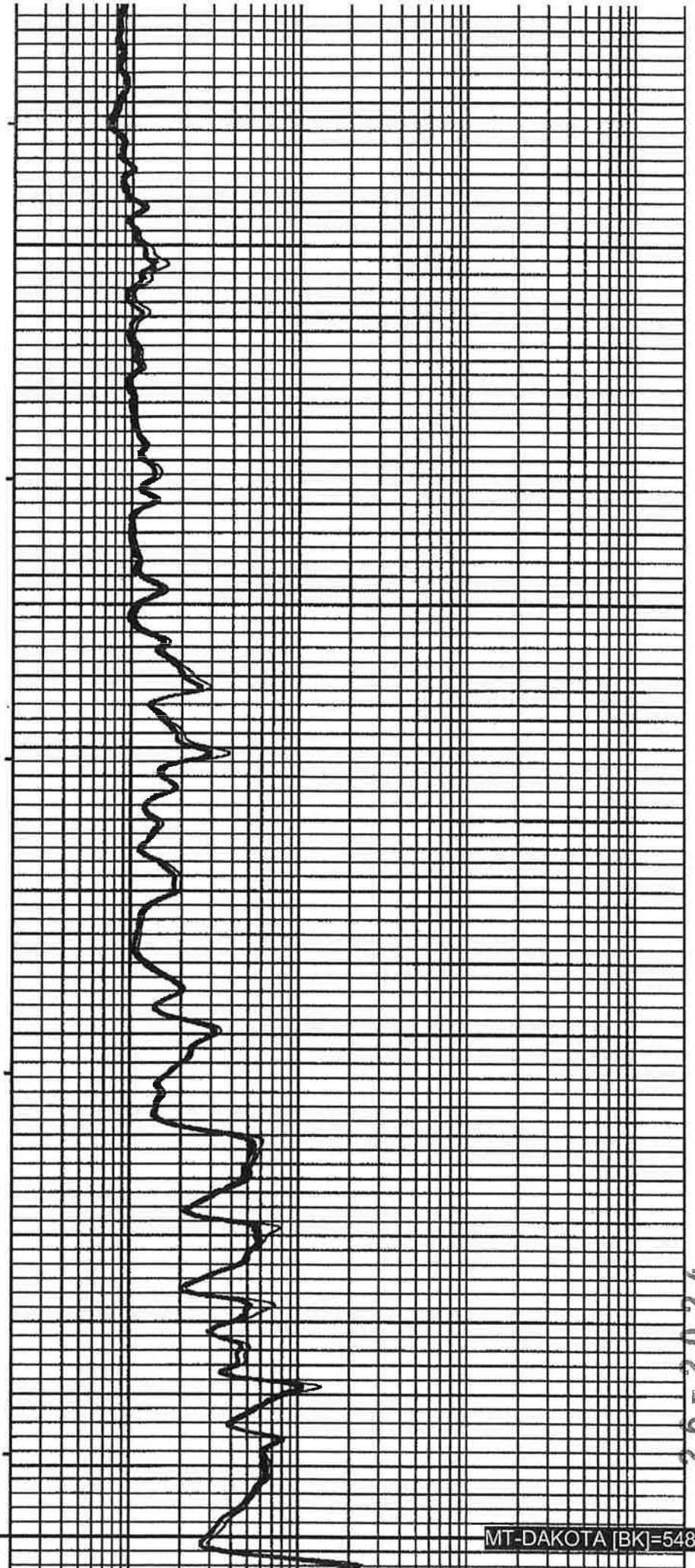


Exhibit 5: Log of Injection Intervals



3200
5300

5400



4202-02

Exhibit 5: Log of Injection Interval

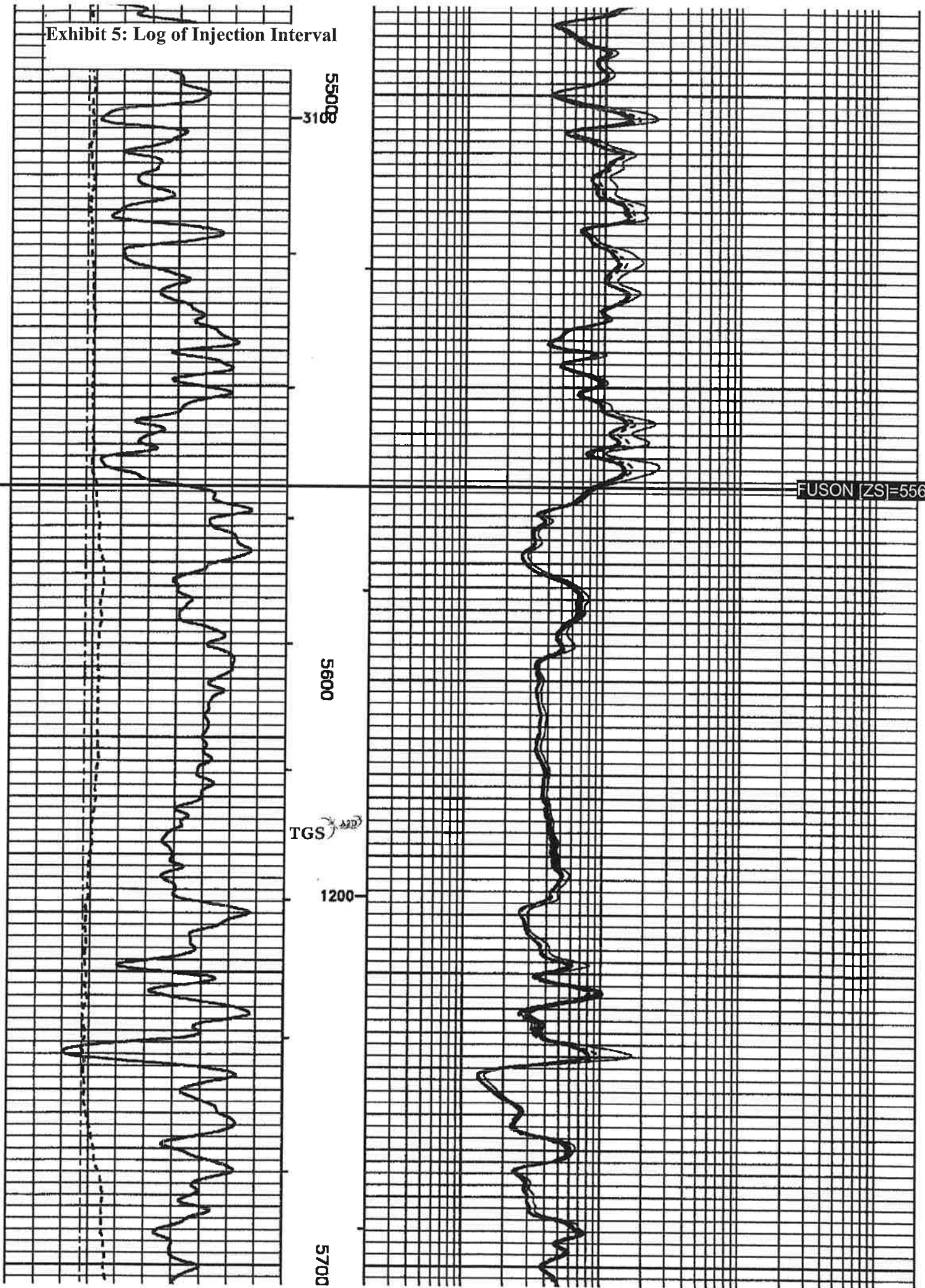
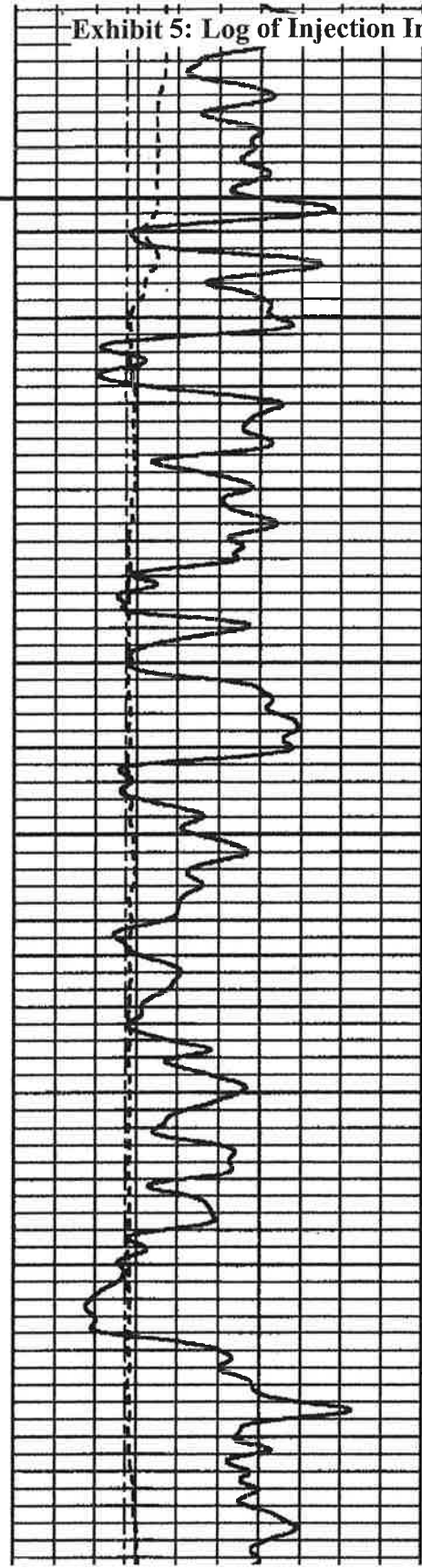


Exhibit 5: Log of Injection Intervals



3000

5800

MT-LAKOTA [MBOGC]-5726.0

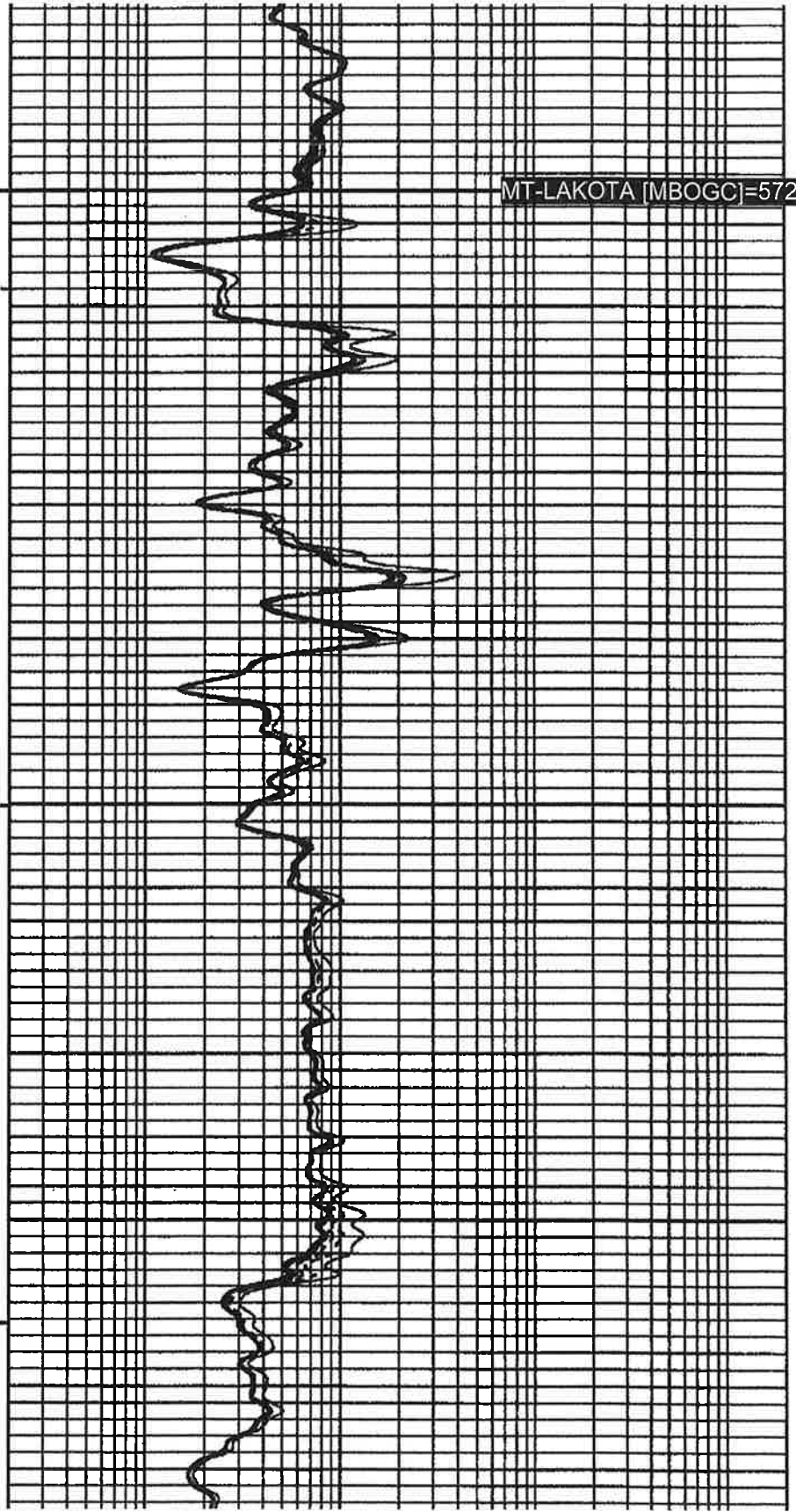


Exhibit 6: Water Analysis of Injection Interval- Swab results of a nearby well to Brutus 1-8

SATHE ANALYTICAL LABORATORY, INC.

303 W. 2ND STREET

P.O. BOX 1527
WILLISTON, ND. 58901

701-572-3632

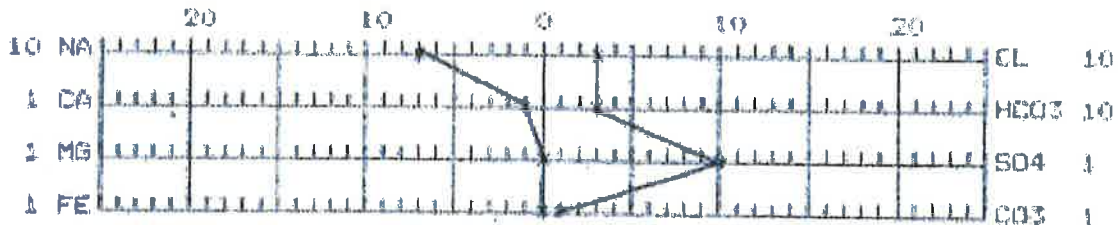
WATER ANALYSIS REPORT

OPERATOR: ENERPLUS L.P. DATE: 4/8/09
 WELL NO. LONE TREE EDNA 1-13 LAB NO.: W-09-1703
 FIELD: not listed FORMATION: Upper Dakota
 COUNTY: Richland INTERVAL: 3588-3608
 STATE: MT DST #:
 LOG: not listed SAMPLE RUN #9-SAMPLE 65 BBLS OUT

CATIONS	MG/L	MEQ/L	ANIONS	MG/L	MEQ/L
SODIUM	1710.0	74.4	CHLORIDE	1125.5	31.7
CALCIUM	13.0	0.6	CARBONATE	24.0	0.8
MAGNESIUM	3.8	0.3	BICARBONATE	1977.0	32.4
IRON	0.6	0.0	SULFATE	436.8	9.5
POTASSIUM	11.8	0.3	NITRATE	0.0	0.0
BARIUM	0.0	0.0			
CHROMIUM	0.0	0.0			

SPECIFIC GRAVITY @ 77°F 1.000 PH 7.88
 RESISTIVITY @ 77°F, ohm-meters 1.558 NACL (Calc.) 1855.9
 TOTAL DISSOLVED SOLIDS (Calc.) MG/L 5322.6 HYDROGEN SULFIDE NEG

WATER ANALYSIS PATTERN - MEQ/L



REMARKS - Run #9 Sample 65 BBLS out.
Received 4/8/09.

DISTRIBUTION OF RESULTS
 Rocky Gorder -- Sidney MT,
 Lynn Sundby -- Halliburton - Williston ND.

Exhibit 6: Water Analysis of Injection Interval- Swab results of a nearby well to Brutus 1-8

SATHE ANALYTICAL LABORATORY, INC.

301 W. 2ND STREET

P.O. BOX 1527
WILLISTON, ND, 58801

701-572-3632

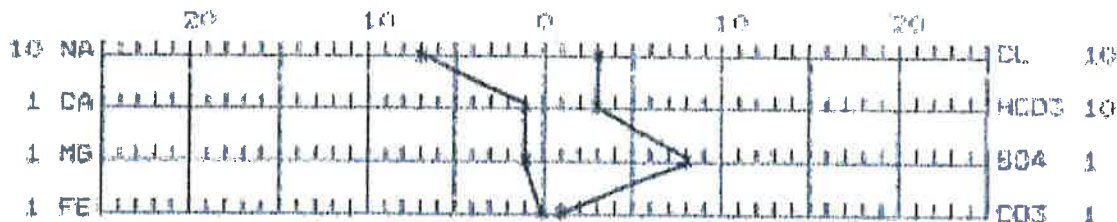
WATER ANALYSIS REPORT

OPERATOR:	ENERPLUS L.P.	DATE:	4/8/09
WELL NO.	LONE TREE EDNA 1-13	LAB NO.:	W-09-1705
FIELD:	not listed	FORMATION:	Upper Dakota
COUNTY:	Richland	INTERVAL:	5500-5600
STATE:	MT	DST #:	
LOG:	not listed	SAMPLE RUN #16-SAMPLE 130 BBL5 BACK	

CATIONS	MG/L	MEQ/L	ANIONS	MG/L	MEQ/L
SODIUM	1680.0	73.1	CHLORIDE	1114.7	31.4
CALCIUM	14.8	0.7	CARBONATE	31.9	1.1
MAGNESIUM	7.6	0.6	BICARBONATE	1922.1	51.9
IRON	1.2	0.1	SULFATE	391.2	8.1
POTASSIUM	9.9	0.3	NITRATE	0.0	0.0
BARIUM	0.0	0.0			
CHROMIUM	0.0	0.0			

SPECIFIC GRAVITY @ 77°F	1.000	PH	7.85
RESISTIVITY @ 77°F, ohm-meters	1.569	NACL (Calc.)	1038.1
TOTAL DISSOLVED SOLIDS (Calc.) MG/L	5173.0	HYDROGEN SULFIDE	NEG

WATER ANALYSIS PATTERN MEQ/L



REMARKS - Run #16 Sample 130 BBL5 Back.
Received 4/8/09.

DISTRIBUTION OF RESULTS
Rocky Border -- Sidney MT.
Lynn Sundry -- Halliburton - Williston ND.

Exhibit 6: Water Analysis of Injection Interval- Swab results of a nearby well to Brutus 1-8

SATHE ANALYTICAL LABORATORY, INC.

304 W. 2ND STREET

P.O. BOX 1327
WILLISTON, ND. 58901

701-572-3632

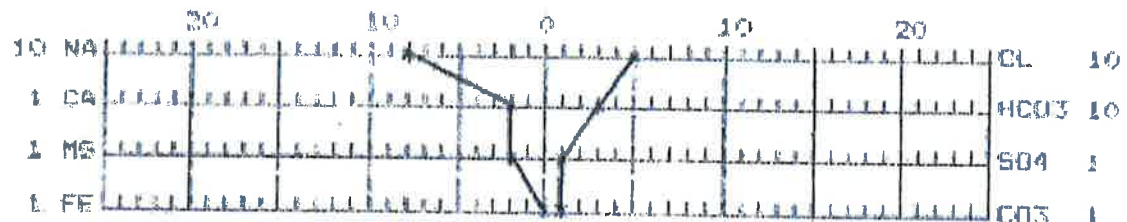
WATER ANALYSIS REPORT

OPERATOR: ENERPLUS RESOURCES L.P. DATE: 4/7/09
 WELL NO. LONE TREE EDNA 1-13 LAB NO.: N-09-1692
 FIELD: not listed FORMATION: Lower Dakota
 COUNTY: Richland INTERVAL: 5844'-5864'
 STATE: MT DST #:
 LOC: not listed SAMPLE 4TH RUN - TUBING SWAB 4/6/09

CATIONS	MG/L	MEQ/L	ANIONS	MG/L	MEQ/L
SODIUM	1700.0	67.6	CHLORIDE	1893.9	53.4
CALCIUM	40.7	2.0	CARBONATE	28.9	0.9
MAGNESIUM	22.9	1.9	BICARBONATE	1726.9	28.3
IRON	1.0	0.1	SULFATE	67.3	1.4
POTASSIUM	32.3	0.8	NITRATE	0.0	0.0
BARIUM	0.0	0.0			
CHROMIUM	0.0	0.0			

SPECIFIC GRAVITY @ 77°F 1.000 PH 8.01
 RESISTIVITY @ 77°F, ohm-meters 1.442 NaCl (Calc.) 3122.9
 TOTAL DISSOLVED SOLIDS (Calc.) MG/L 5713.4 HYDROGEN SULFIDE NEG

WATER ANALYSIS PATTERN - MEQ/L



REMARKS - 4th RUN TUBING SWAB 4/6/09.

DISTRIBUTION OF RESULTS
 Rocky Gorder -- Sidney MT.
 Lynn Bundy -- Malliburton - Williston ND

Exhibit 6: Water Analysis of Injection Interval- Swab results of a nearby well to Brutus 1-8

SATHE ANALYTICAL LABORATORY, INC.

301 W. 2ND STREET

P.O. BOX 1527
WILLISTON, ND. 58801

701-572-3632

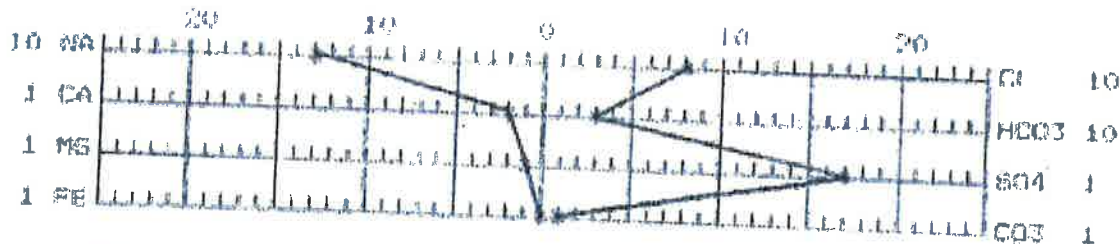
WATER ANALYSIS REPORT

OPERATOR: ENERPLUS RESOURCES L.P. DATE: 4/7/09
 WELL NO. LONE TREE EDNA 1-13 LAB NO.: W-09-1693
 FIELD: not listed FORMATION: Lower Dakota
 COUNTY: Richland INTERVAL: 5844'-5864'
 STATE: MT DST #:
 LOC: not listed SAMPLE 5th SWAB RUN-FORMATION 4/6/09

CATIONS			ANIONS		
	MG/L	MEQ/L		MG/L	MEQ/L
SODIUM	2080.0	125.3	CHLORIDE	2921.9	82.4
CALCIUM	37.0	1.8	CARBONATE	18.0	0.6
MAGNESIUM	13.4	1.1	BICARBONATE	1762.5	27.9
IRON	2.1	0.1	SULFATE	827.7	17.2
POTASSIUM	49.2	1.3	NITRATE	0.0	0.0
BARIUM	0.0	0.0			
CHROMIUM	0.0	0.0			

SPECIFIC GRAVITY @ 77°F 1.000 PH 7.79
 RESISTIVITY @ 77°F, ohm-centimeters 1.018 NACL (Calc.) 4816.2
 TOTAL DISSOLVED SOLIDS (Calc.) MG/L 8451.8 HYDROGEN SULFIDE NEG

WATER ANALYSIS PATTERN - MEQ/L



REMARKS - 5th RUN SWAB - FORMATION SAMPLE 4/6/09.
 Received 4/7/09.

DISTRIBUTION OF RESULTS
 Rocky Border -- Sidney MT.
 Lynn Sundby -- Malliburton - Williston ND.

Exhibit 6: Water Analysis of Injection Interval- Swab results of a nearby well to Brutus 1-8

SATHE ANALYTICAL LABORATORY, INC.

301 W. 2ND STREET

WILLISTON, ND, 58803

701-572-3632

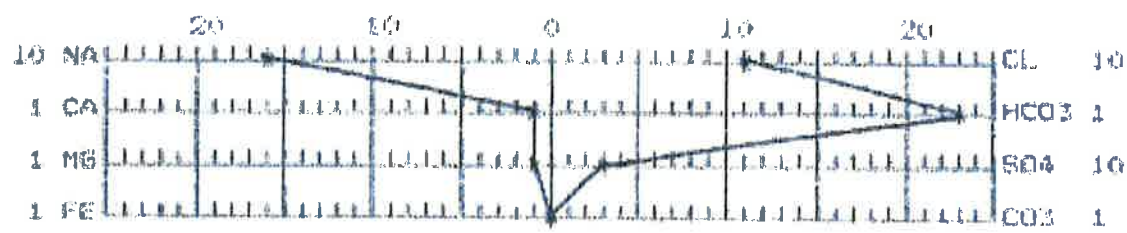
WATER ANALYSIS REPORT

OPERATOR: ENERPLUS RESOURCES L.P. DATE: 4/7/09
 WELL NO.: LONG TREE EDNA 1-13 LAB NO.: W-09-1694
 FIELD: not listed FORMATION: Lower Dakota
 COUNTY: Richland INTERVAL: 5844'-5964'
 STATE: MT DST #:
 LOC: not listed SAMPLE 11TH SWAB RUN-TOTAL 105 BBLs

CATIONS	MG/L	MEQ/L	ANIONS	MG/L	MEQ/L
SODIUM	3580.0	155.7	CHLORIDE	3766.1	106.2
CALCIUM	29.6	1.3	CARBONATE	0.0	0.0
MAGNESIUM	11.4	0.9	BICARBONATE	1415.7	25.2
IRON	0.2	0.0	SULFATE	1532.2	31.9
POTASSIUM	17.4	0.4	NITRATE	0.0	0.0
BARIUM	0.0	0.0			
CHROMIUM	0.0	0.0			

SPECIFIC GRAVITY @ 77°F 1.000 PH 7.55
 RESISTIVITY @ 77°F, ohm-meters 0.912 NACL (Calc.) 6210.2
 TOTAL DISSOLVED SOLIDS (Calc.) MG/L 10552.5 HYDROGEN SULFIDE NEG

WATER ANALYSIS PATTERN -- MEQ/L



REMARKS - 11th RUN SWAB - TOTAL 105 BBL 4/7/09.
 Received 4/7/09.

DISTRIBUTION OF RESULTS
 Rocky Gordan -- Bidney MT.
 Lynn Sundby -- Halliburton - Williston ND.

Exhibit 7: Current Wellbore Diagram



Wellbore Diagram

Lease & Well No.	Brutus 1-8
Field Name	Lone Tree Creek
Location	739' FSL, 831' FEL, SESE, Section 8 TWN 24N, RGE 57E 47.8506141392732, -104.424928502805

Status:	Shut in/ collapsed casing
County & State:	Richland County, MT
API No:	25-083-23009
NDIC/ FEDERAL:	N/A
Pool Name:	Red River

Well Information

Spud:	6/14/2012	Ground Elevation:	2,429'	Total Depth:	12,592'
Completed:	9/5/2012	KB Elevation:	2,446' (17' KB)	TVD:	12,588'
Recompleted:	N/A			S/T Depth:	N/A
Slidetrack:	N/A			S/T TVD:	N/A

Pipe Data

Surface						
Hole Size	Depth	Size (OD)	Weight	Grade	Sx Cmt	Comments
13-1/2"	1,850'	9-5/8"	36 PPF	K-55	675 sx	SURFACE
Production						
Hole Size	Depth	Size (OD)	Weight	Grade	Sx Cmt	Comments
8-3/4"	12,592'	5-1/2"	20, 23 PPF	L-80 P110	800 sx, 630 sx	2 stage job, DV @ 9022' TOC @ 2,550' CBL
Downhole Tubulars (Top to Bottom)						
Tubing	210 JTS 2-7/8" L-80 @ ~6,779', 55MSN @ 6,803', 4' Perf'd Sub, BP @ 6,808'.					
Rods	109 - 1" N97, 127 - 7/8" N97, 27 - 3/4" N97, 2.5-1.5-RHBM DV - 24X24.3X26.3					

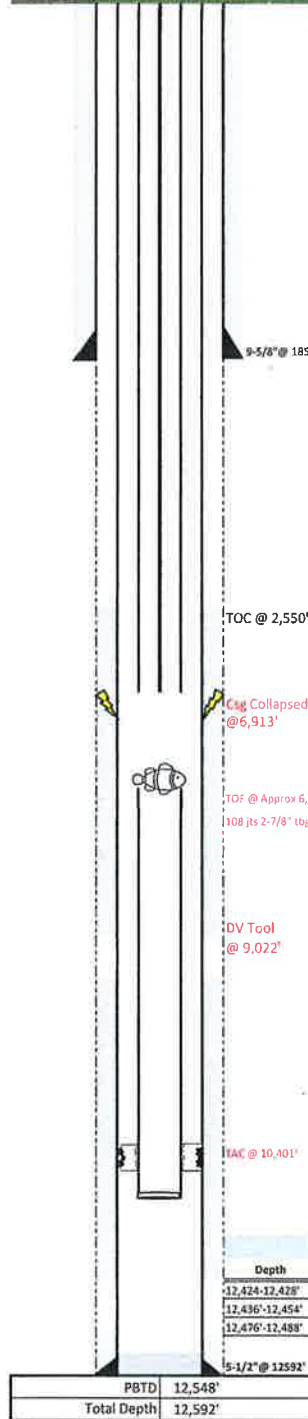
Surface Equipment

Artificial Lift Info	Prime Mover	Separator	Tanks
C912-365-168	WEG 100 HP		

Brutus 1-8 Well History

Date	Event	Description
6/14/2012	SPUD	Spud well
8/21/2012	COMP	Perf 12476-488, 12424-428, 12436-454. Set packer at 12375'. Acidiz IP = 37 BOPDe w/ 3500 gal 15% HCL. Rig up to swab, FLFS @ 4,500' on first run. Acidized with 4500 gal of 15% HCL and 150 1.1 SG Balls. Put well on pump. No indications of swab results. IP = 37 BOPD
11/19/2012	No Failure	Respaced well, the pumping unit crew spaced out too high
1/25/2013	Pump Efficiency	Pump salted in tubing. Pulled tubing to make repairs. LD packer and gas separator. RIW w/ 5.5" TAC, mud anchor, and diptube. Hydrotest to 7000 psi and RTP
3/26/2013	TBG-Collar	27th joint above MSN had washed pin and collar. Hydrotested tubing at 7000.
4/20/2013	Pump Efficiency	Down size pump to a 2-1/2"x1-1/2"x20"x22"x26" RHBM
8/15/2013	ROD-Box	15th 1" box parted. Fish and hang, no pump pull. 25 bbls to fill tbg.
9/5/2013	ROD-Box	27th 1" box parted. Fish and send pump to Wilson for repair. Picked up on tbg, TAC still set. 42 bbls to fill.
10/17/2013	ROD-Box	42nd 1" box parted. Fish and hang, no pump pull. 40 bbls to fill.
4/11/2014	ROD-Pin	Parted rods - 19th 7/8" pin parted. Lay down 67-1" and 11-7/8" rods and replace w/ 78- new 3/4" N97 rods. 1 1/2" pump spaced @ 36". 24 bbls to fill.
4/30/2014	ROD-Box	Rod part - 2nd 1 1/2" k-bar above pump had parted fishing neck. Replaced 4 k-bar, R&R pump. Pump spaced @ 45". 30 bbls to fill. Slowed unit down to 5 stroke/min.
9/21/2015	ROD-Box	Rod part - 26th 1" rod box was parted. TAC was sheared. Replaced bottom 5 jts 2 7/8" L-80 tbg above the MSN w/ new due to rod wear. (Did not hydrotest). Moved TAC uphole 2 jts and set @ 10401.77' KB in 20k tension w/ 46" stretch. 1 1/2" pump set @ 10467.42' KB, spaced @ 45". 34 bbls to fill.
12/14/2015	ROD-Box	Rod part- 68th 1" rod box parted. Fish and hang well on, did NOT change
4/13/2016	UNIT	Change wristpins, bored and sleeved right-long hole on pumping unit.
4/7/2017	TBG-Hole	Tbg parted = left 108 jts plus 30' 5-1/2" TAC, 2 jts 2-7/8" L-80 tubing. Csg collapsed at 6913' Could not get 1-11/16" tools through. Ran 210 joints 2-7/8" L-80 tubing, MSN, 4' perf sub with bull plug, BCT @ 6808 KB. LD (12) 1-1/2" kbar, (141) 3/4" rods. Ran rest of rod string in the hole

Current Status: Inactive



Formation Tops (WL MD)	
Skull Creek	5,226'
Dakota	5,480'
Fuson	5,567'
Lakota	5,726'
Kibbey	8,124'
Ratcliffe	8,958'
Mission Canyon	9,098'
Upper Bakken	10,350'
Middle Bakken	10,358'
Three Forks	10,406'
Nisku	10,544'
Duperow	10,624'
Interlake	11,518'
Red River	12,258'
Red River "D"	12,396'

Casing Sz/Wt/Gr	Depths
5-1/2", L80, 20 PPF	Surface to 6,406'
5-1/2", P-110, 23 PPF	6,406' - 9,022'
DV	9,022'
5-1/2", L80, 20 PPF	9,022' - 12,592'

Logs	
Induction/GR/Caliper, Compensated Z	
Densilog/ Neutron/ GR/ Caliper/ Borehole profile/ Mud log/ CBL/ GR/ CCL	

Red River (Ordovician)	
Cum Oil (bbls)	33,000
Cum Gas (MCF)	
Cum Water (bbls)	54,140

Red River			
Depth	SPF	Date	Details
12,424-12,428'	4 SPF	8/21/2012	4500 gal 15% HCl at 4 BPM
12,436-12,454'	4 SPF	8/21/2012	
12,476-12,488'	4 SPF	8/21/2012	

PBTD	12,548'
Total Depth	12,592'

Exhibit 8: Proposed Wellbore Diagram and Site Facility Diagram

Wellbore Diagram

WHITE ROCK OIL & GAS

Lease & Well No.	Brutus 1-8
Field Name	Lone Tree Creek
Location	739' FSL, 831' FEL, SESE, Section 8 TWN 24N, RGE 57E
	47.8506141392732, -104.424928502805

Status:	Proposed SWD
County & State:	Richland County, MT
API No:	25-083-23009
NDIC/ FEDERAL:	N/A
Pool Name:	Dakota Injector

Well Information

Spud:	6/14/2012	Ground Elevation:	2,429'	Total Depth:	12,592'
Completed:	9/5/2012	KB Elevation:	2,446' (17' KB)	TVD:	12,588'
Recompleted:	N/A			S/T Depth:	N/A
Sidetrack:	N/A			S/T TVD:	N/A

Pipe Data

Surface						
Hole Size	Depth	Size (OD)	Weight	Grade	Sx Cmt	Comments
13-1/2"	1,850'	9-5/8"	36 PPF	K-55	675 sx	SURFACE
Production						
Hole Size	Depth	Size (OD)	Weight	Grade	Sx Cmt	Comments
8-3/4"	12,592'	5-1/2"	20, 23 PPF	L-80 P110	800 sx, 630 sx	2 stage job, DV @ 9022' TOC @ 2,550' CBL
Downhole Tubulars (Top to Bottom)						
Tubing	210 JTS 2-7/8" L-80 @ ~6,779', SSMSN @ 6,803', 4' Perf'd Sub, BP @ 6,808'.					
Rods	N/A					

Surface Equipment

Artificial Lift Info	Prime Mover	Separator	Tanks
N/A	N/A	N/A	

Brutus 1-8 Well History

Date	Event	Description
6/14/2012	SPUD	Spud well
8/21/2012	COMP	Perf 12476-488, 12424-428, 12436-454. Set packer at 12375'. Acidiz IP = 37 BOPDe with 3500 gal 15% HCL. Rig up to swab, FLFS @ 4,500' on first run. Acidized with 4500 gal of 15% HCL and 150 1.1 SG Balls. Put well on pump. No indications of swab results. IP = 37 BOPD
11/19/2012	No Failure	Respaced well, the pumping unit crew spaced out too high
1/25/2013	Pump-Efficiency	Pump salted in tubing. Pulled tubing to make repairs. LD packer and gas separator. RIW with 5.5" TAC, mud anchor, and diptube. Hydrotest to 7000 psi and RTP
3/26/2013	TBG-Collar	27th Joint above MSN had washed pin and collar. Hydrotested tubing at 7000.
4/20/2013	Pump-Efficiency	Down size pump to a 2-1/2"x1-1/2"x 20"x22"x26' RHBM
8/15/2013	ROD-Box	15th 1" box parted. Fish and hang, no pump pull. 25 bbls to fill tbg.
9/5/2013	ROD-Box	27th 1" box parted. Fish and send pump to Wilson for repair. Picked up on tbg, TAC still set. 42 bbls to fill.
10/17/2013	ROD-Box	42nd 1" box parted. Fish and hang, no pump pull. 40 bbls to fill.
4/11/2014	ROD-Pin	Parted rods - 19th 7/8" pin parted. Lay down 67- 1" and 11- 7/8" rods and replace w/ 78- new 3/4" N97 rods. 1 1/2" pump spaced @ 36". 24 bbls to fill.
4/30/2014	ROD-Box	Rod part - 2nd 1 1/2" k-bar above pump had parted fishing neck. Replaced 4 k-bar, R&R pump. Pump spaced @ 45". 30 bbls to fill. Slowed unit down to 5 stroke/min.
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Current Status: Proposed SWD

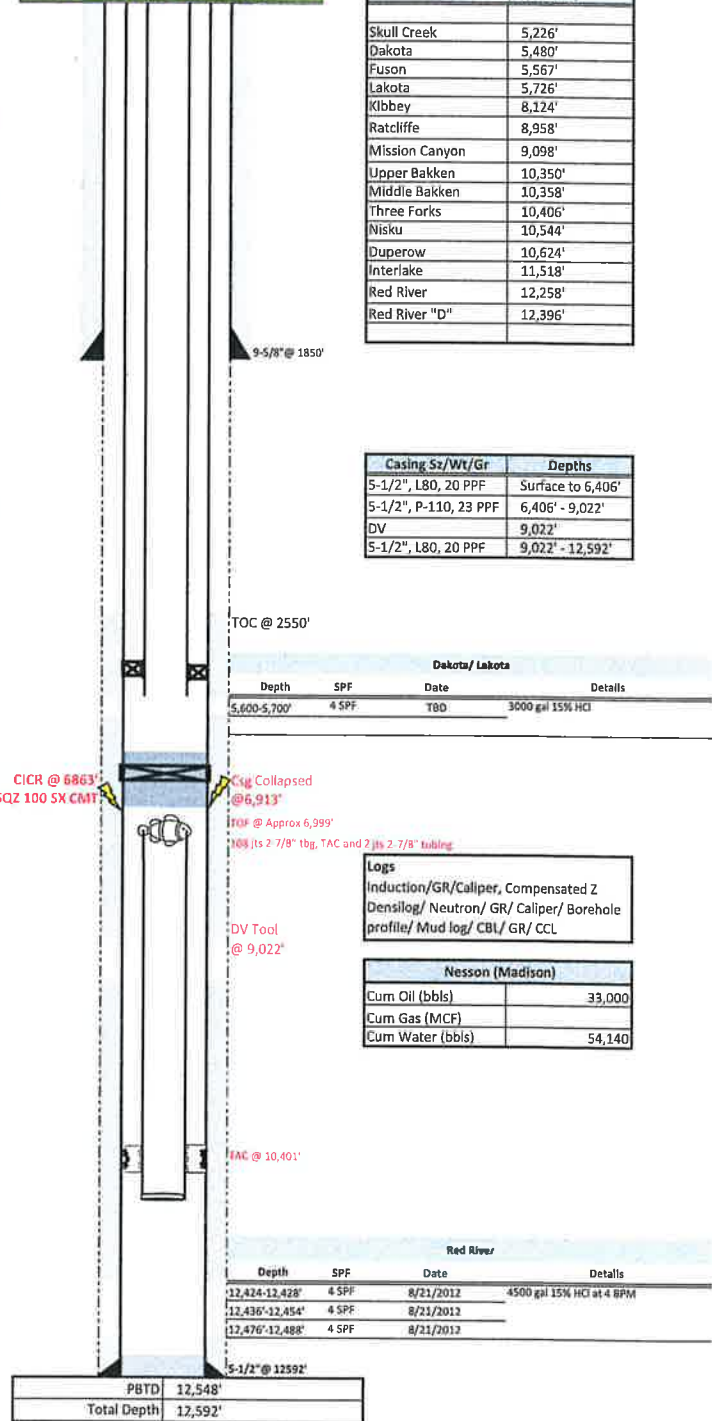
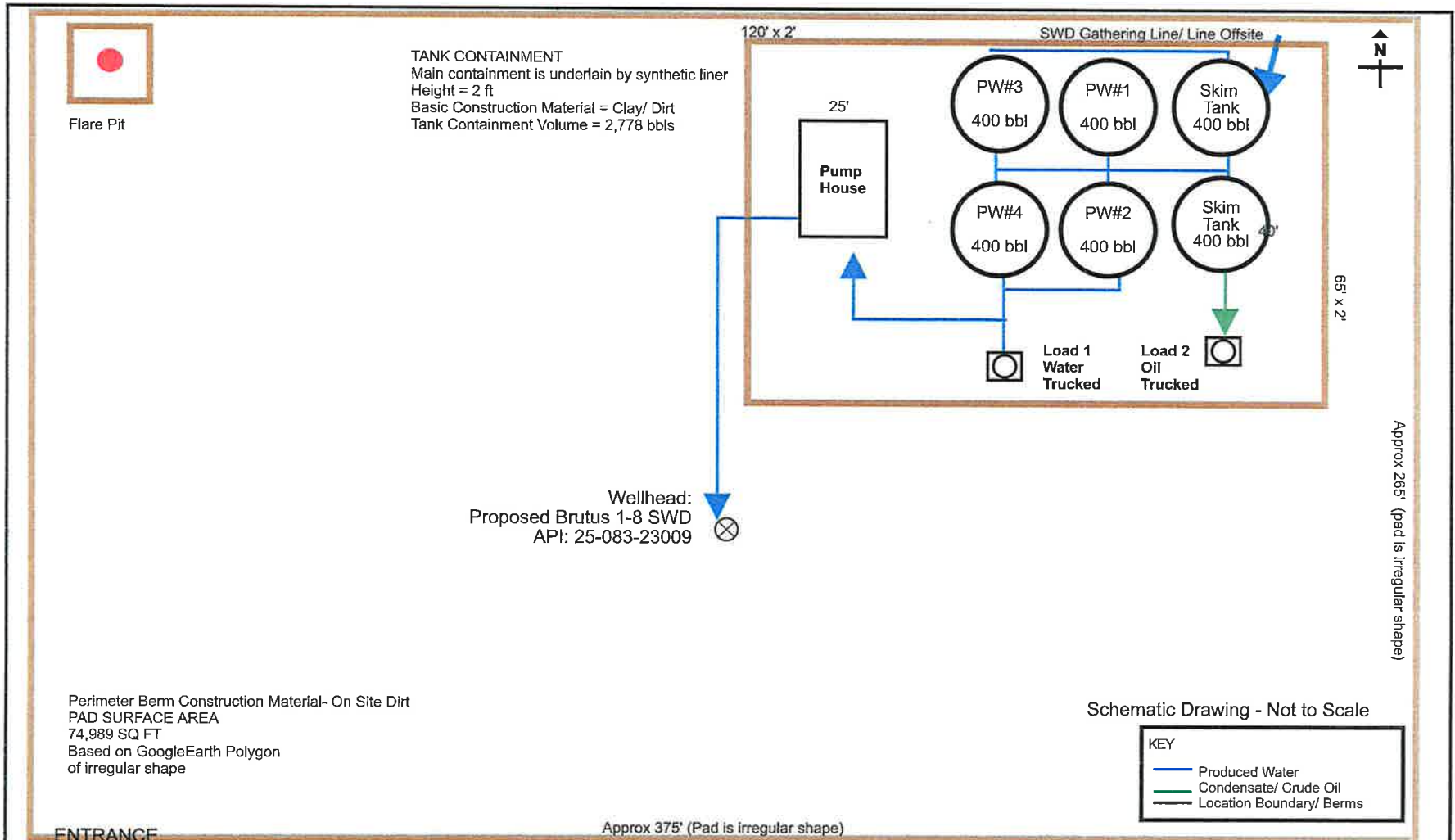


Exhibit 8: Proposed Wellbore Diagram and Site Facility Diagram



Rev	Date	Description	By	Proposed Site Facility Diagram
0	1/10/2024	Site Facility Diagram Creation	SB/ WROG	White Rock Oil and Gas, LLC. Brutus 1-8 Proposed SWD Lonetree Field Richland County, Montana 47.85061413, -104.4249285 Located in SE1/4 SE1/4, Sec. 8, T24N, R57E



JACAM LABORATORIES

DownHole R_x

WATER CHEMISTRY

SM ENERGY
PETE OPSAL

LYLE PEDERSON 2-17H
TREATER

Report Date: 10-05-2011 Sampled: 09-28-2011
Sample #: 9278 at 0000

CATIONS

Calcium (as Ca)	15810
Magnesium (as Mg)	1267
Barium (as Ba)	18.57
Strontium (as Sr)	1219
Sodium (as Na)	75103
Potassium (as K)	7161
Lithium (as Li)	69.88
Ammonia (as NH ₃)	0.00
Aluminum (as Al)	7.80
Iron (as Fe)	197.20
Manganese (as Mn)	10.55
Zinc (as Zn)	8.22
Lead (as Pb)	0.00

ANIONS

Chloride (as Cl)	175400
Sulfate (as SO ₄)	225.00
Bromine (as Br)	0.00
Dissolved CO ₂ (as CO ₂)	900.00
Bicarbonate (as HCO ₃)	207.40
Carbonate (as CO ₃)	0.00
Silica (as Si)	0.00
Phosphate (as PO ₄)	0.00
H ₂ S (as H ₂ S)	5.00
Fluoride (as F)	0.00
Nitrate (as NO ₃)	0.00
Boron (as B)	448.60

PARAMETERS

pH	6.17
Temperature (°F)	120.00
Density(g/mL)	1.18
Pressure(atm)	1.00
Calculated T.D.S.	280744
Molar Conductivity	112298
Field Fe	0.00

CORROSION RATE PREDICTION

CO ₂ - H ₂ S Rate(mpy)	0.00
--	------

JACAM LABORATORIES

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



JACAM LABORATORIES

DownHole R_x

DEPOSITION POTENTIAL INDICATORS

SM ENERGY
PETE OPSAL

LYLE PEDERSON 2-17H
TREATER

Report Date: 10-05-2011 Sampled: 09-28-2011
Sample #: 9278 at 0000

SATURATION LEVEL

Calcite (CaCO ₃)	6.17
Aragonite (CaCO ₃)	5.16
Witherite (BaCO ₃)	< 0.001
Strontianite (SrCO ₃)	0.110
Magnesite (MgCO ₃)	0.965
Anhydrite (CaSO ₄)	0.206
Gypsum (CaSO ₄ *2H ₂ O)	0.197
Barite (BaSO ₄)	0.747
Celestite (SrSO ₄)	0.0713
Fluorite (CaF ₂)	0.00
Calcium phosphate	0.00
Hydroxyapatite	0.00
Silica (SiO ₂)	0.00
Brucite (Mg(OH) ₂)	< 0.001
Magnesium silicate	0.00
Iron hydroxide (Fe(OH) ₃)	< 0.001
Strengite (FePO ₄ *2H ₂ O)	0.00
Siderite (FeCO ₃)	31.08
Halite (NaCl)	0.283
Thenardite (Na ₂ SO ₄)	< 0.001
Iron sulfide (FeS)	11.49

MOMENTARY EXCESS (Lbs/1000 Barrels)

Calcite (CaCO ₃)	0.0134
Aragonite (CaCO ₃)	0.0129
Witherite (BaCO ₃)	-26.05
Strontianite (SrCO ₃)	-0.191
Magnesite (MgCO ₃)	>-0.001
Anhydrite (CaSO ₄)	-53.05
Gypsum (CaSO ₄ *2H ₂ O)	-63.52
Barite (BaSO ₄)	-2.38
Celestite (SrSO ₄)	-195.56
Fluorite (CaF ₂)	-1.56
Calcium phosphate	>-0.001
Hydroxyapatite	-291.75
Silica (SiO ₂)	-46.10
Brucite (Mg(OH) ₂)	-0.190
Magnesium silicate	-102.48
Iron hydroxide (Fe(OH) ₃)	< 0.001
Strengite (FePO ₄ *2H ₂ O)	>-0.001
Siderite (FeCO ₃)	0.0180
Halite (NaCl)	-66132
Thenardite (Na ₂ SO ₄)	-87943
Iron sulfide (FeS)	0.747

SIMPLE INDICES

Langelier	2.04
Ryznar	2.09
Puckorius	-0.403
Larson-Skold Index	329.36
Stiff Davis Index	2.89
Oddo-Tomson	1.17

BOUND IONS

Calcium	15810	15334
Barium	18.57	18.57
Carbonate	4.33	0.0276
Phosphate	0.00	0.00
Sulfate	225.00	27.93

TOTAL

FREE

OPERATING CONDITIONS

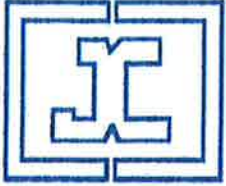
Temperature (°F)	120.00
Time(secs)	0.00

JACAM LABORATORIES

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

DownHole SAT™ Water Analysis Report

Exhibit 9: Bakken Water Analysis SYSTEM IDENTIFICATION



SM ENERGY
LYLE PEDERSON 2-17H
PETE OPSAL
TREATER

Sample ID#: 9278
ID: *2676
Report Date: 10-05-2011
Sample Date: 09-28-2011
at 0000

JACAM LABORATORIES

WATER CHEMISTRY

CATIONS

Calcium(as Ca)	15810
Magnesium(as Mg)	1267
Barium(as Ba)	18.57
Strontium(as Sr)	1219
Sodium(as Na)	75103
Potassium(as K)	7161
Lithium(as Li)	69.88
Iron(as Fe)	197.20
Field Iron(as Fe)	0.00
Ammonia(as NH ₃)	0.00
Aluminum(as Al)	7.80
Manganese(as Mn)	10.55
Zinc(as Zn)	8.22
Lead(as Pb)	0.00

ANIONS

Chloride(as Cl)	175400
Sulfate(as SO ₄)	225.00
Bromine(as Br)	0.00
Dissolved CO ₂ (as CO ₂)	900.00
Bicarbonate(as HCO ₃)	207.40
Carbonate(as CO ₃)	0.00
Silica(as Si)	0.00
Phosphate(as PO ₄)	0.00
H ₂ S (as H ₂ S)	5.00
Fluoride(as F)	0.00
Nitrate(as NO ₃)	0.00
Boron(as B)	448.60

PARAMETERS

Temperature(°F)	120.00
Sample pH	6.17

SCALE AND CORROSION POTENTIAL

Temp. (°F)	Press. (atm)	Calcite CaCO ₃		Anhydrite CaSO ₄		Gypsum CaSO ₄ *2H ₂ O		Barite BaSO ₄		Celestite SrSO ₄		Siderite FeCO ₃		Mackawenite FeS		CO ₂ (mpy)	pCO ₂ (atm)
50.00	0.00	4.76	0.0154	0.202	-67.27	0.255	-56.39	4.40	7.62	0.0896	-189.24	14.91	0.0210	35.19	1.91	0.223	2.53
65.45	0.00	5.50	0.0163	0.184	-71.30	0.225	-62.89	2.88	6.11	0.0856	-188.65	19.38	0.0219	32.97	1.87	0.586	2.53
80.91	0.00	6.00	0.0163	0.178	-70.51	0.203	-68.02	1.93	4.20	0.0815	-189.23	23.59	0.0217	30.44	1.81	1.22	2.53
96.36	0.00	6.22	0.0154	0.182	-65.68	0.187	-71.77	1.31	1.90	0.0774	-190.94	27.13	0.0205	27.70	1.73	1.60	2.53
111.82	0.00	6.21	0.0141	0.195	-57.98	0.189	-67.97	0.904	-0.791	0.0734	-193.76	29.83	0.0189	24.96	1.65	1.69	2.53
127.27	0.00	6.09	0.0128	0.218	-48.68	0.203	-60.16	0.634	-3.88	0.0695	-197.68	32.10	0.0172	22.54	1.58	1.45	2.53
142.73	0.00	5.92	0.0116	0.253	-38.90	0.216	-53.93	0.450	-7.40	0.0657	-202.73	33.99	0.0157	20.38	1.52	1.19	2.53
158.18	0.00	5.69	0.0105	0.303	-29.47	0.229	-48.95	0.324	-11.36	0.0620	-208.99	35.50	0.0144	18.41	1.47	1.14	2.53
173.64	0.00	5.44	0.00953	0.375	-20.95	0.240	-44.97	0.237	-15.82	0.0585	-216.51	36.69	0.0131	16.59	1.42	1.08	2.53
189.09	0.00	5.17	0.00865	0.477	-13.60	0.251	-41.81	0.175	-20.83	0.0552	-225.43	37.55	0.0121	14.90	1.38	0.501	2.53
204.55	0.00	4.90	0.00788	0.621	-7.50	0.261	-39.35	0.130	-26.47	0.0519	-235.90	38.08	0.0112	13.31	1.33	0.394	2.53
220.00	0.171	4.59	0.00740	0.821	-2.75	0.268	-38.91	0.0972	-33.43	0.0485	-255.56	38.20	0.0107	13.31	1.52	0.529	2.96
		Lbs per xSAT 1000 Barrels		Lbs per xSAT 1000 Barrels		Lbs per xSAT 1000 Barrels		Lbs per xSAT 1000 Barrels		Lbs per xSAT 1000 Barrels		Lbs per xSAT 1000 Barrels		Lbs per xSAT 1000 Barrels			

Saturation Levels (xSAT) are the ratio of ion activity to solubility, e.g. {Ca}{CO₃}/K_{sp}. pCO₂ (atm) is the partial pressure of CO₂ in the gas phase. Lbs/1000 Barrels scale is the quantity of precipitation (or dissolution) required to instantaneously bring the water to equilibrium.

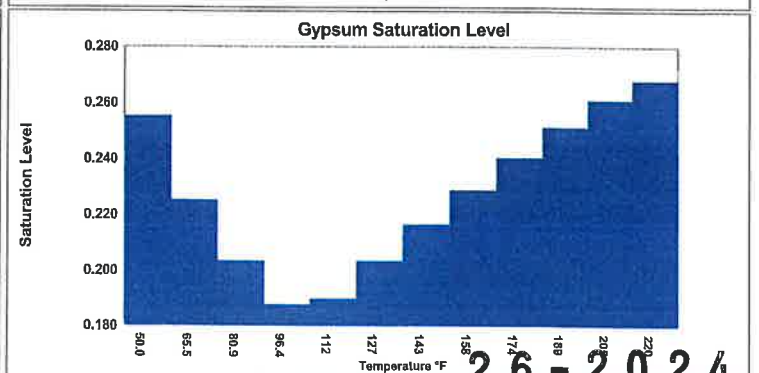
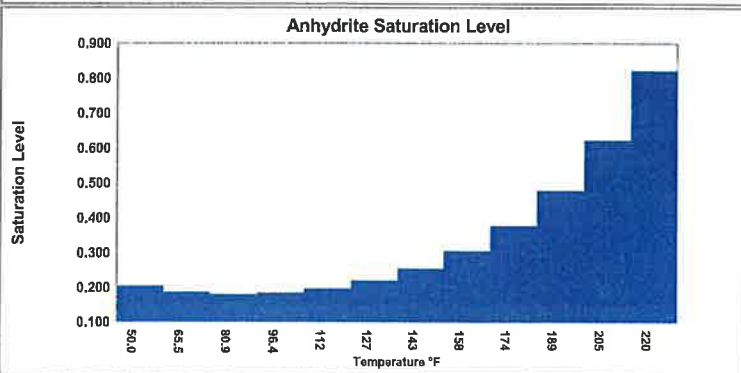
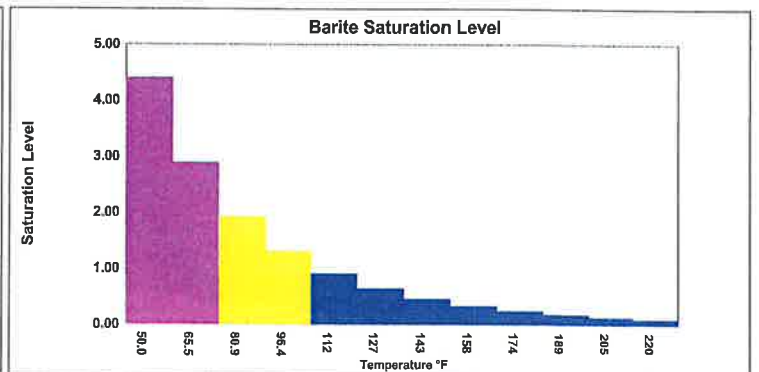
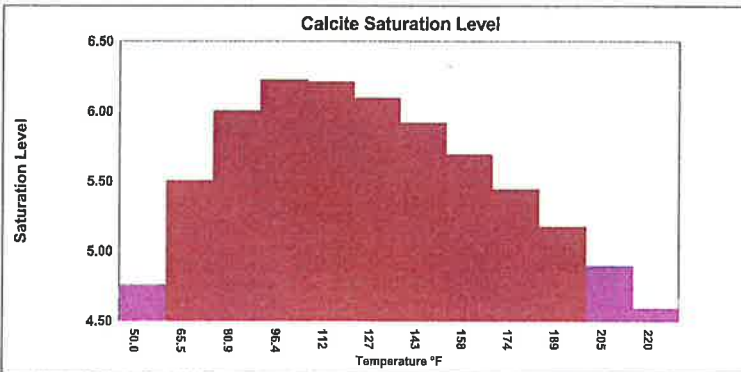


Exhibit 10: Surface Owner List

Surface Description	Name	Address
S17, T24 N, R57 E, N1/2, SW1/4, N1/2SE	C Lazy K Ranch LLC	28851 140 th Ave SE Auburn, WA 98092-2250
S08, T24N, R57E, N1/2NW, NWNE, S1/2N1/2 @ S1/2	Daniels Family Ltd Partnership	1101 11 th St NW Great Falls, MT 59404-1761
S16, T24 N, R57 E, W1/2	Franz Ranch Land Trust	13221 County Road 339 Sidney, MT 59270
S09, T24 N, R57 E, NW1/4, N1/2SW, SESW	Kilen Pamela Kay Etal	13481 County Road 341 Fairview, MT 59221
S09, T24 N, R57 E, SWSW	Larry and Nancy Simonsen	1104 11 th St SW Sidney, MT 59270-5226

Exhibit 11: Notification to Surface Owners

BEFORE THE BOARD OF OIL AND GAS CONSERVATION
OF THE STATE OF MONTANA

APPLICATION OF WHITE ROCK OIL AND GAS, LLC.
FOR AN UNDERGROUND INJECTION CONTROL
(UIC) PERMIT TO CONVERT BRUTUS 1-8 WELL,
739' FSL, 831' FEL, SEC 8 T24N, R57E, TO AN
INJECTION WELL FOR THE PURPOSE OF
SALTWATER DISPOSAL WITHIN THE LONE TREE
FIELD.

NOTICE OF APPLICATION FOR UIC PERMIT FOR
INJECTION WELL

DATE: January 11, 2024

TO: SURFACE OWNERS WITHIN AREA OF REVIEW AS LISTED IN UIC APPLICATION

RE Application for Underground Injection Permit

Ladies and Gentlemen,

WHITE ROCK OIL AND GAS, LLC. at 5810 Tennyson Pkwy, Suite 500, Plano, TX 75024, has applied for a permit to convert Brutus 1-8 well, 739' FSL, 831' FEL, SESE, Sec 8, T24N, R57E, Richland County, MT to a saltwater disposal well. The application will be heard by the Montana Board of Oil and Gas Conservation at its February 15, 2024 hearing beginning at 9:00 AM in the Montana Board of Oil and Gas Hearing Room at 2535 St. John's Avenue, Billings, Montana.

A portion of the application that describes the proposed project is enclosed. A copy of the complete application is on file with the Montana Board of Oil and Gas Conservation, 2535 St. John's Avenue, Billings, MT, 59102. If you have any questions concerning the application, please contact Ms. Shawna Bonini, Operations Engineer, White Rock Oil and Gas, 720 Lohwest Lane, Billings, MT 59106.

Sincerely,



Shawna Bonini, PE
Operations Engineer
White Rock Oil and Gas, LLC.
720 Lohwest Ln.
Billings, MT 59106
Cell: 406-690-0068
sbonini@whiterockog.com

26 - 2024

Exhibit 12: Affidavit of Notification to Surface Owners

BEFORE THE BOARD OF OIL AND GAS CONSERVATION
OF THE STATE OF MONTANA

APPLICATION OF WHITE ROCK OIL AND GAS, LLC.
FOR AN UNDERGROUND INJECTION CONTROL
(UIC) PERMIT TO CONVERT BRUTUS 1-8 WELL,
739' FSL, 831' FEL, SEC 8 T24N, R57E, TO AN
INJECTION WELL FOR THE PURPOSE OF
SALTWATER DISPOSAL WITHIN THE LONETREE
FIELD.

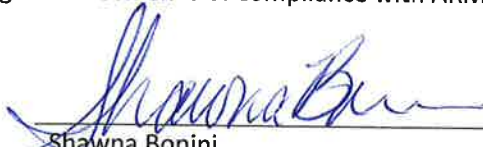
AFFIDAVIT OF NOTIFICATION

DATE: January 11, 2024

STATE OF MONTANA)
) SS.
COUNTY OF YELLOWSTONE)

Shawna Bonini, being duly sworn, deposes, and says:


That Notice advising WHITE ROCK OIL AND GAS, LLC. application for UIC Permit in the captioned matter, in the form attached Exhibit 11 was mailed to the surface owners within the area of review at the addresses show in Exhibit 10 attached, by mailing a true copy thereof this 11th Day of January, 2024, postage prepaid, First Class Mail. This Affidavit is given as evidence of compliance with ARM 36.22.1410.



Shawna Bonini

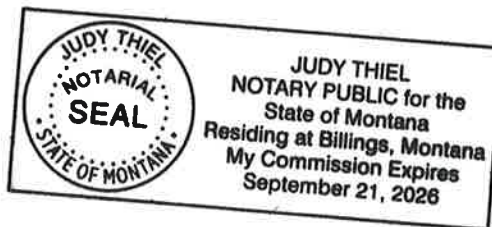
STATE OF MONTANA)
) SS.
COUNTY OF YELLOWSTONE)

Subscribed and sworn to before me this 11th Day of January 2024.



Notary Public
State of Montana
My Commission Expires

September 21, 2026





January 11, 2024

Benjamin Jones
Administrator
Interim Underground Injection Control (UIC) Program Director
Montana Board of Oil and Gas Conservation
2535 St. Johns Avenue
Billings, MT 59102

RECEIVED

JAN 11 2024

MONTANA BOARD OF OIL &
GAS CONSERVATION • BILLINGS

RE: Request for Aquifer Exemption
Brutus 1-8 located in Section 8, Township 24N, Range 57E
Richland County, Montana

Dear Mr. Benjamin Jones,

Please accept additional information to supplement White Rock Oil and Gas, LLC. Brutus 1-8 Aquifer Exemption and Disposal Application for the February 15, 2024 Montana Board of Oil and Gas hearing.

An aquifer exemption is required if the proposed injection zone contains water that is less than 10,000 ppm of total dissolved solids (TDS), and therefore defined as an Underground Source of Drinking Water (USDW). There is swab analysis from the Dakota Formation that indicates the TDS is less than 10,000 ppm.

There are no water wells located within the one quarter mile area of review. Underground Sources of Drinking Water (USDW) having TDS of less than 1600 mg/liter area available to the base of the Fox Hills at a depth of 1400 to 1600 ft. The applicant estimates the cost of drilling a well into the Dakota and Lakota formations would be more than four times the cost of drilling a well to the Fox Hills. Additionally, the cost of treating the Dakota and Lakota waters would greatly exceed the cost of treating the Fox Hills water.

- 1) Descriptive Data – Plat Map showing boundaries of the exempted aquifer. The Environmental Protection Agency (EPA), in UIC guidance 34, defined the minimum data set needed for aquifer exemptions; these will include at least all oil and gas boreholes within the area, all public and private water wells within the area and at least ¼ mile beyond the boundary any existing wellhead protection areas, and the locations of all relevant water samples.
 - See Exhibit 1A
- 2) Narrative description of the proposed exempted aquifer listing formation name, approximate depth or elevation, confining zone, as well as geological definition of the exempted area. Include adequate wireline logs to demonstrate vertical confinement from sources of drinking water.

The Brutus 1-8 SWD will be completed for disposal into the Lakota and Dakota formations. See Exhibit 2A: Cross Section of Dakota/ Lakota and Exhibit 3A: Log of Injection Interval.

Water quality information for the proposed disposal zones in the immediate area of Brutus 1-8 is not available. However, a water sample from the Dakota in RR Lonetree Edna 1-13 SWD located 5.79 miles southwest of the proposed disposal site had total dissolved solids of between 5,173 to 10,352 mg/L, and water from the Dakota and Lakota in the Brutus 1-8 is expected to be similar. The samples from the Edna 1-13 were acquired by swab testing the interval and measuring the TDS for the interval. The upper Dakota water lies between the 3,000 ppm and 10,000 ppm cutoff and will require an aquifer exemption.

Proposed injection zones for the Brutus 1-8 SWD are as follows:

Formation	Lithology	Top (ft)	Bottom (ft)	Net pay (ft)	Pressure (psi)	Porosity
Dakota	Sandstone	5,480	5,567	36	2,400	6%
Lakota	Sandstone	5,726	5,970	138	2,525	9%

Depth and net pay for each of the proposed injections zones are estimate from the July 3, 2012 Laterlog-Gamma Ray log from the Brutus 1-8. The porosity is based on the density log across the zones of interest in the Pederson #1 well located 1/2 mile south. The porosity was derived from the bulk density curve calculated on a sandstone matrix. Formation pressure was estimated using a water gradient of 0.435 psi/ft. The confining formations for the proposed injection zones are the Skull Creek for the Dakota and the Fuson for the Lakota. The actual fracture gradients for these confining zones are unknown, but fracture gradients for the confining shale layers are known to be higher than those for the underlying sandstone injection zone.

Formation	Lithology	Top (ft)	Bottom (ft)
Skull Creek	Shale	5,226	5,480
Fuson	Shale	5,567	5,726

Considering the vertical distance to any USDW and the maximum feasible injection rate that could occur, the likelihood of a fracture extending from the proposed disposal zones to any USDW under any reasonable disposal conditions is considered low.

- 3) Thickness, area, and average porosity of the reservoir to be exempted. If the proposed UIC well within the exempted area is an SWD, calculate the volume of connate water that will be displaced by the injectate using the following formula (this pore volume figure is made part of the MBOGC permit for the included SWD well. For example, if the pore volume calculation shows the exempted aquifer to contain 5.0 million barrels within the exempted area, the UIC permit will terminate when the cumulative injected volume reaches 5.0 million barrels of saltwater)

$$\text{Pore Volume (in barrels)} = (p \times r^2 \times h \times f) / 5.63$$

Where:

r = radius of the exempted area, in feet (usually 1320')

h = average thickness, in feet, of the proposed exempted aquifer

f = average porosity, in decimal, of the proposed exempted aquifer

$$\text{Lakota: } (3.14) (1320)^2(138)(0.09) / 5.63 = 1.207 \times 10^7$$

$$\text{Dakota: } (3.14) (1320)^2(36)(0.06) / 5.63 = 2.099 \times 10^6$$

Total 1.417×10^7 bbls

Minimum Water Injection Rate	0 BWPD
Average Water Injection Rate	986 BWPD
Maximum Water Injection Rate	1315 BWPD
<u>Radius of Emplaced Fluid</u>	
Receive Net Thickness	174 FT
Injection Period (20 years)	7,300 DAYS
Injection Rate	28.8 GPM
Injection Rate	986.30 BWPD
Injection Rate	5538 FT ³ /DAY
Porosity	8%
Radius - Emplaced Fluid	946 FT
Radius - Emplaced Fluid	0.18 miles
$r = (Q \cdot \text{time} / (\pi \cdot h \cdot \text{porosity}))^{0.5}$	

- 4) Water Quality analysis of the aquifer to be exempted. How was water quality determined?
- Water sample from a well 5.76 miles southwest of the Brutus 1-8. See Exhibit 4A for the swab results of the water samples from Lone Tree Edna 1-13.

Please contact me if there are any questions regarding this submission.

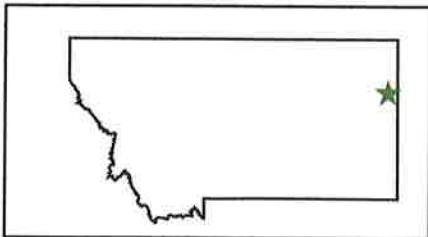
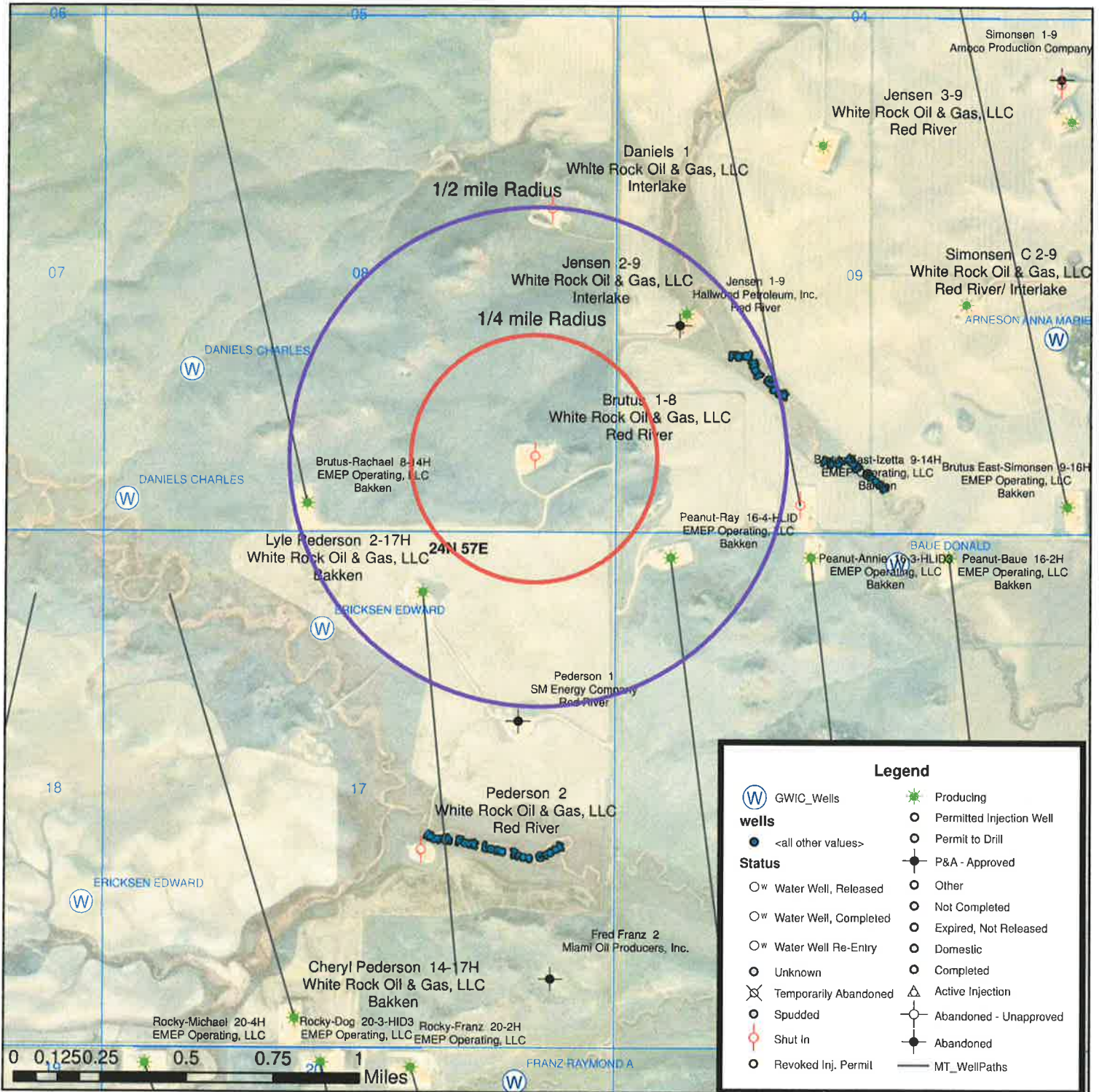
Sincerely,



Shawna Bonini, PE
Operations Engineer
406-690-0068
sbonini@whiterockog.com



Exhibit 1A: Map with all well types around area of review including 1/4 mile beyond the area of review



**Brutus 1-8
Proposed Produced Water Injector
Richland County, Montana
739 ft FSL, 831 ft FEL
Sec 8, T24N, R57E**

Service Layer Credits: Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community
Coordinate System: WGS 1984 Web Mercator Auxiliary Sphere
Projection: Mercator Auxiliary SphereDatum: WGS 1984

26-2024

Exhibit 2A: Cross Section of the Dakota/ Lakota

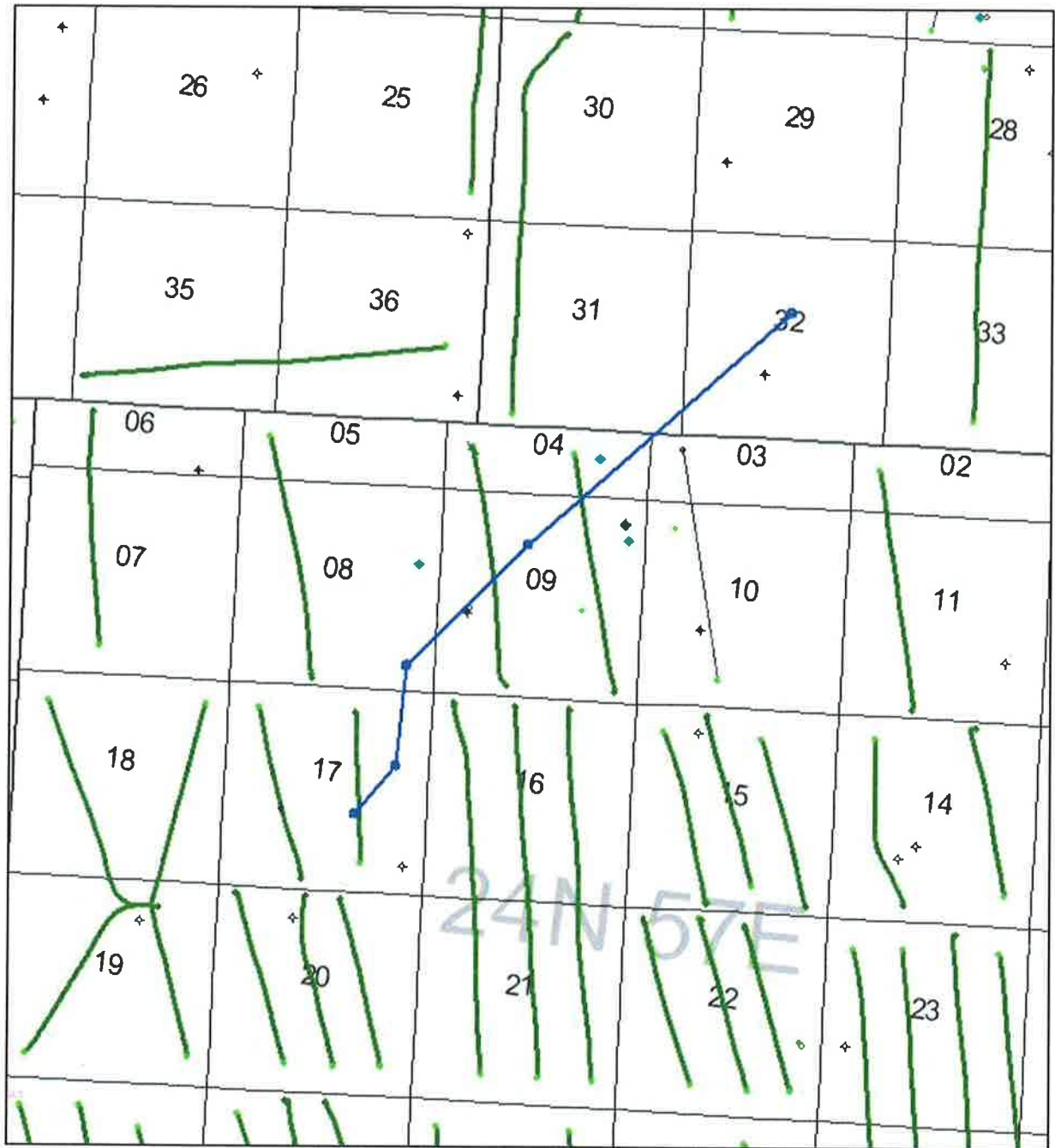
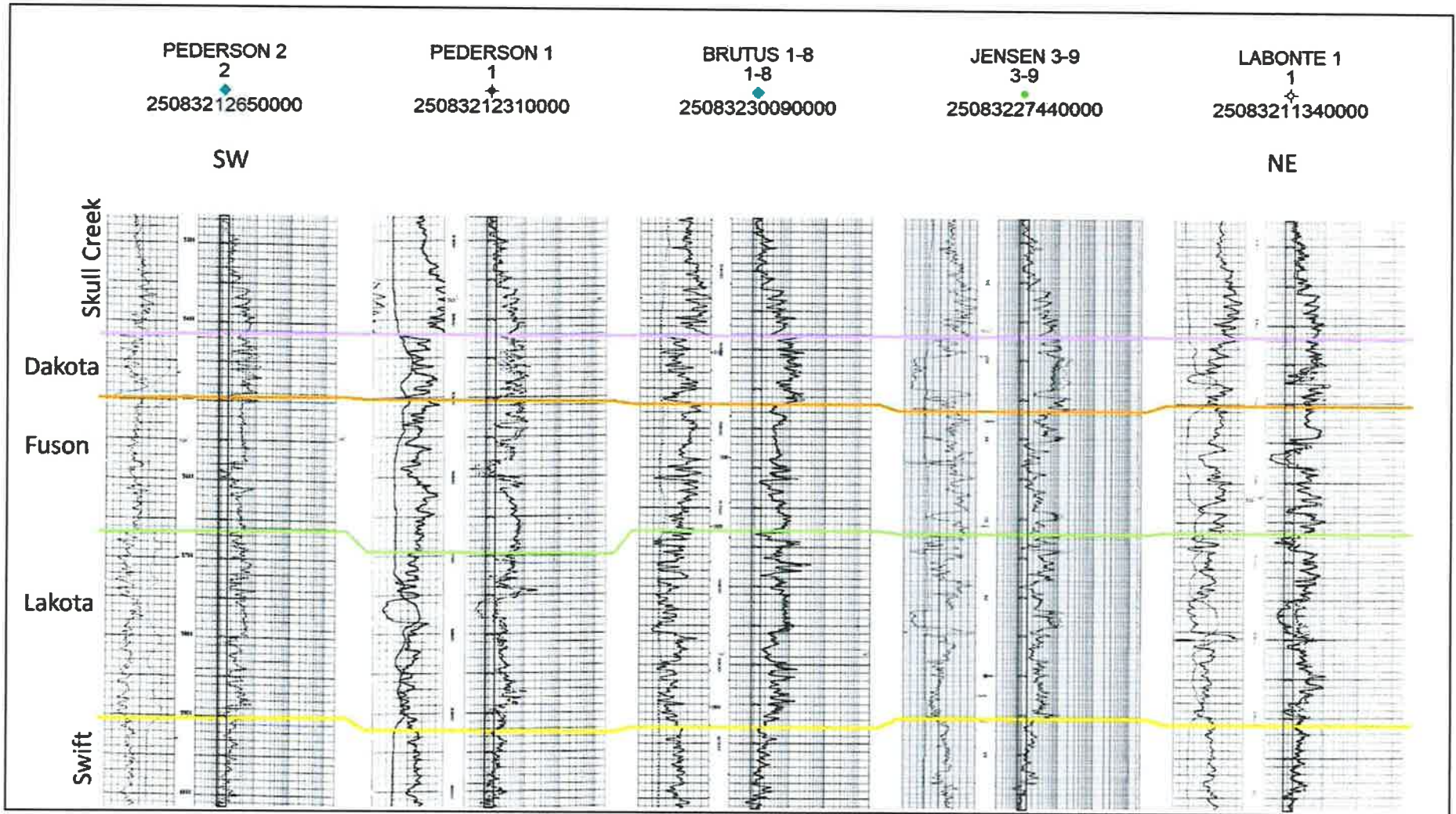


Exhibit 2A: Cross Section of the Dakota/ Lakota





FILE NO: 04058841
 COMPANY: ENCORE ENERGY PARTNERS
 WELL: BRUTUS 1-B
 FIELD: LONE TREE CREEK
 COUNTY: RICHLAND
 STATE: MONTANA

Version: MT PERMIT: 30116
 LOCATION: 739' FSL & 831' FEL
 SEC 8 TWP 24 N RBE 57 E
 OTHER SERVICES: ZUL-OR GR BHP

PERMANENT DATUM LOG MEASURED FROM DRILL MEAS. FROM
 G. ELEVATION 2428 FT
 KB 18 FT ABOVE P.D.
 KB 2446 FT
 DF
 GL 2428 FT

DATE	03-JUL-2012
RUN	1
TRIP	1
SERVICE ORDER	574878
DEPTH DRILLER	12500 FT
DEPTH LOGGER	12505 FT
BOTTOM LOGGED INTERVAL	12500 FT
SING DRILLER	50 FT
SING LOGGER	9.825 IN
PIPE SIZE	8.75 IN
PE OF FLUID IN HOLE	OBM
NSITY	10.1 LB/G
FLUID LOSS	50 S
URGE OF SAMPLE	NA
AT MEAS. TEMP.	NA
F AT MEAS. TEMP.	NA
IC AT MEAS. TEMP.	NA
URGE OF RMF	NA
AT BHT	NA
E SINCE CIRCULATION	12.5
X RECORDED TEMP.	242 DEGS
UP. NO.	HL-6741
LOCATION	WILLISTON
CORDED BY	LANCE SCHUBERT
WITNESSED BY	TOBY HARLEY

RECEIVED
 OCT 16 2012
 MONTANA BOARD OF OIL & GAS CONSERVATION • BILLINGS

GR BACKUP	
GAMMA RAY [gr]	150
(gAPI)	
CALIPER [cal]	16
(in)	
BIT SIZE	16
(in)	

FEET

2FT. Matched Resolution Resistivity

0.2	10 in. DOI [m2r1]	2000
	(ohm.m)	
0.2	20 in. DOI [m2r2]	2000
	(ohm.m)	
0.2	30 in. DOI [m2r3]	2000
	(ohm.m)	
0.2	60 in. DOI [m2r6]	2000
	(ohm.m)	
0.2	90 in. DOI [m2r9]	2000
	(ohm.m)	
0.2	120 in. DOI [m2rx]	2000
	(ohm.m)	

Exhibit 3A: Log of Injection Intervals

BVOL
-10
-100
-1000

CVOL
10
100
1000

CSG

1930

1300

TGS ^{ADD?}

5200

SKULLCREEK [MBOG]=5226.0

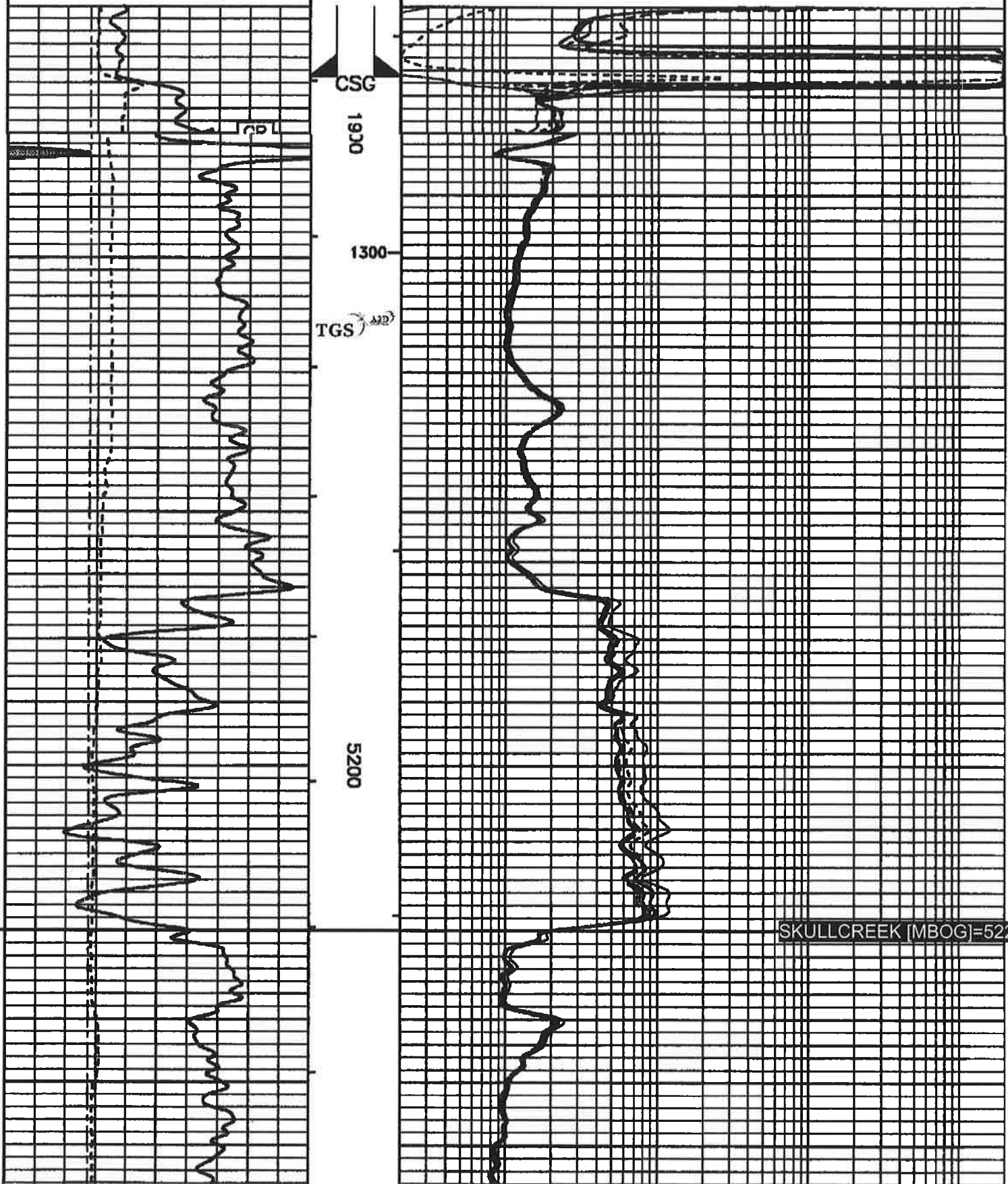
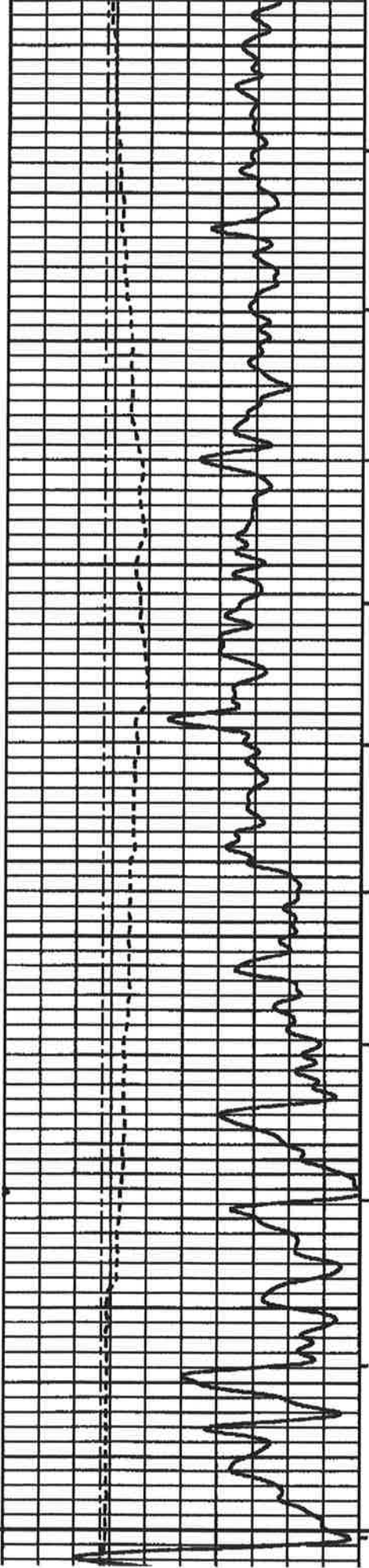
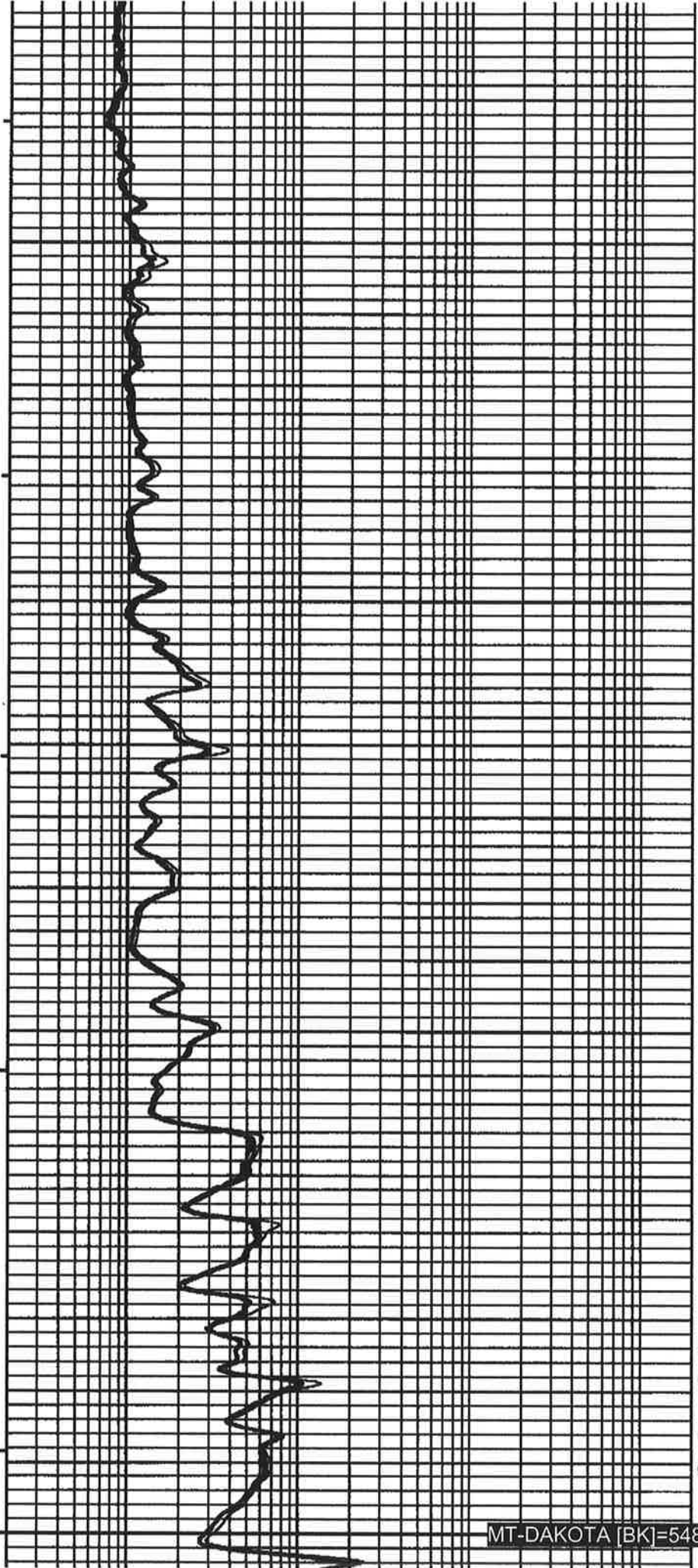


Exhibit 3A: Log of Injection Intervals



3200
5300

5400



MT-DAKOTA [BK]-5480.0

26-2024

Exhibit 3A: Log of Injection Intervals

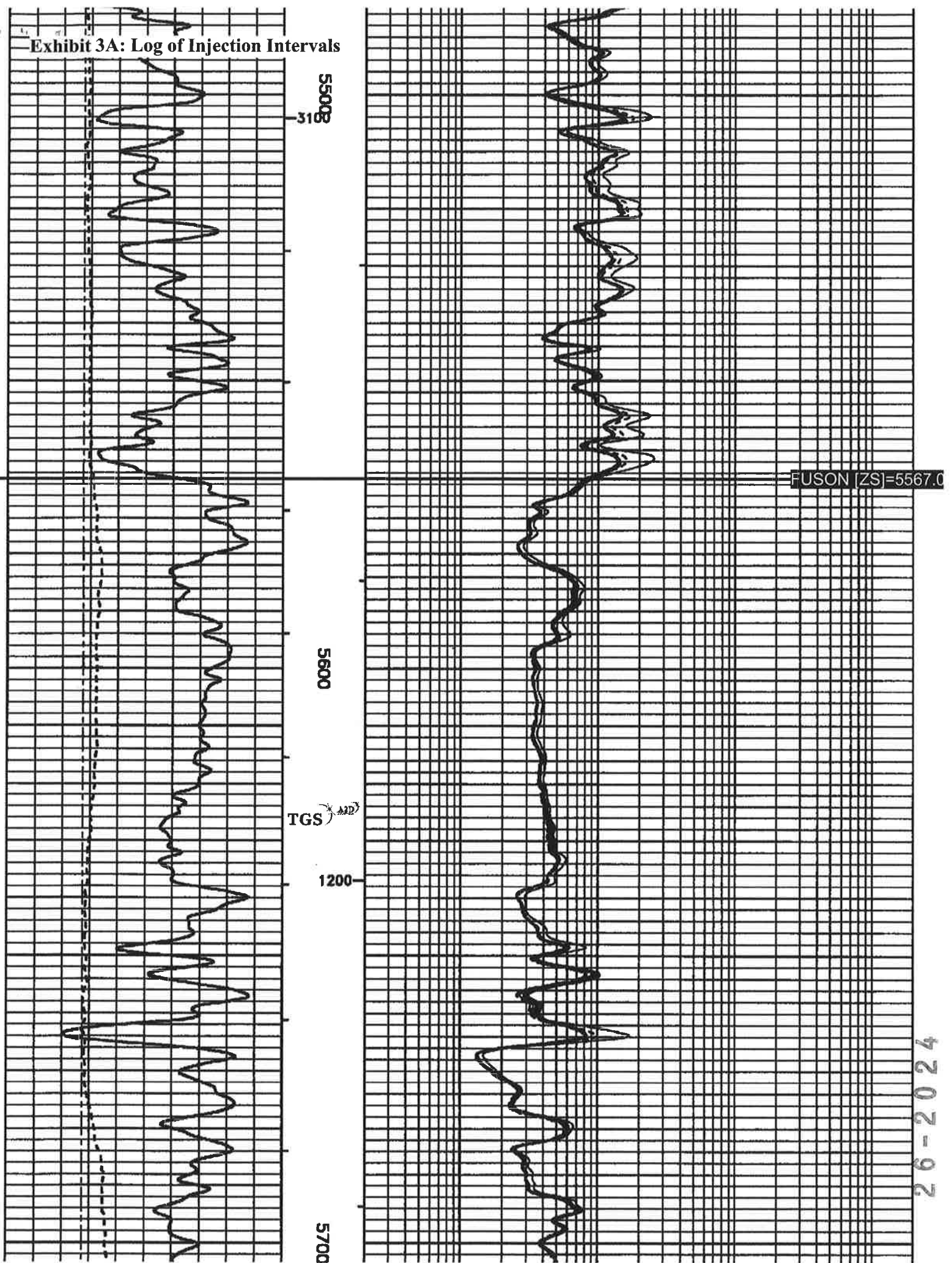


Exhibit 3A: Log of Injection Intervals

3000

MT-LAKOTA (MBOGC)=5726.0

5800

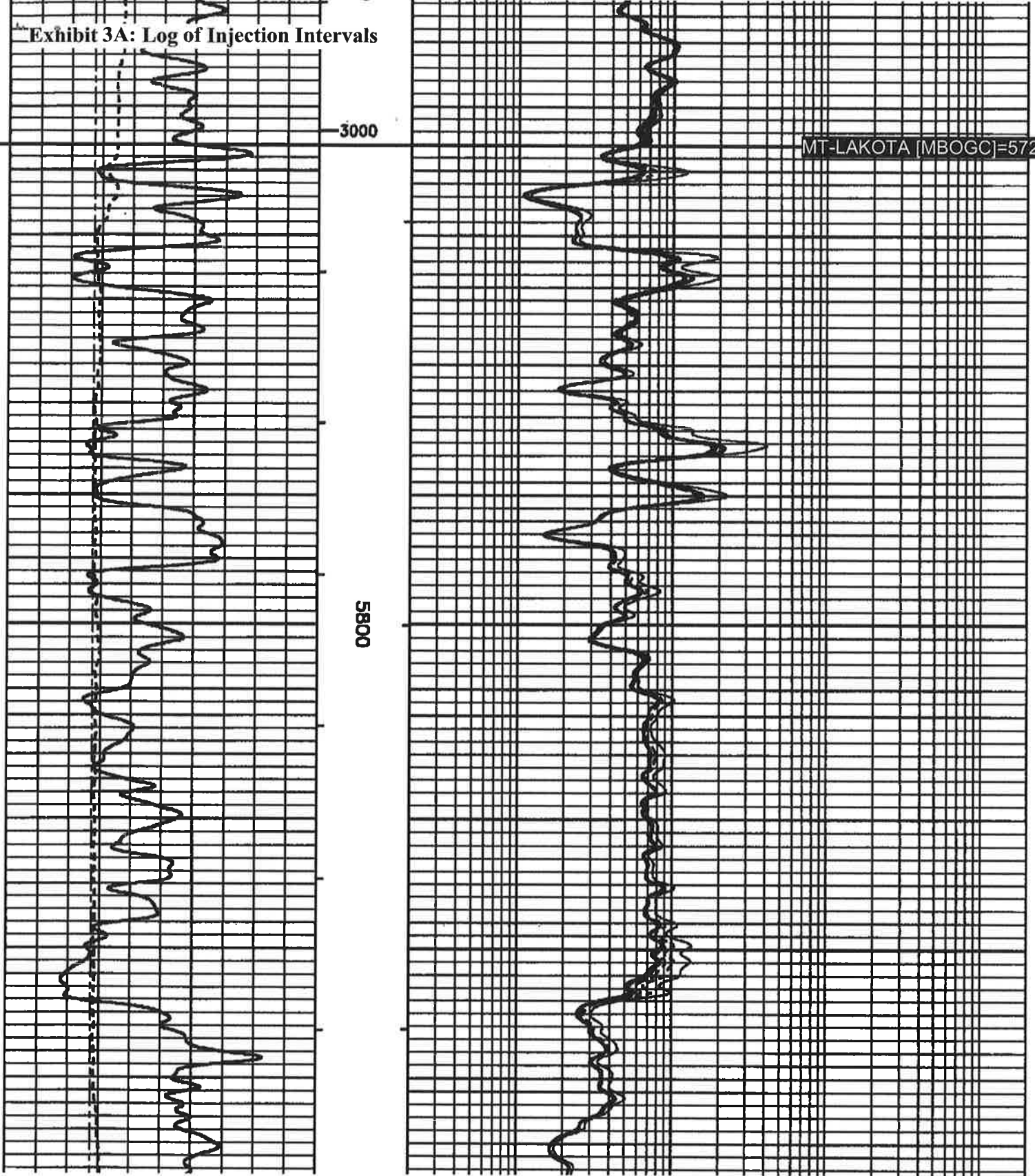


Exhibit 4A: Dakota/ Lakota Swab Sample Results

SATHE ANALYTICAL LABORATORY, INC.

301 W. 2ND STREET

P.O. BOX 1527
WILLISTON, ND. 58801

701-572-3532

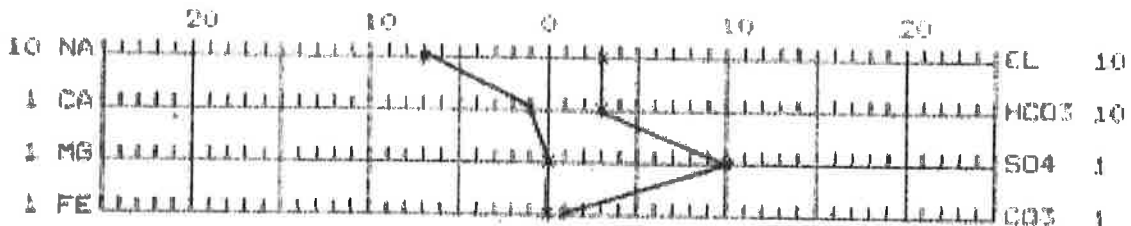
WATER ANALYSIS REPORT

OPERATOR:	ENERPLUS L.P.	DATE:	4/8/09
WELL NO.	LONE TREE EDNA 1-13	LAB NO.:	W-09-1703
FIELD:	not listed	FORMATION:	Upper Dakota
COUNTY:	Richland	INTERVAL:	5388-5608
STATE:	MT	DIST #:	
LOG:	not listed	SAMPLE RUN #9-SAMPLE 65 BBLs OUT	

CATIONS	MG/L	MEQ/L	ANIONS	MG/L	MEQ/L
SODIUM	1710.0	74.4	CHLORIDE	1125.5	31.7
CALCIUM	13.0	0.6	CARBONATE	24.0	0.8
MAGNESIUM	3.8	0.3	BICARBONATE	1977.0	32.4
IRON	0.6	0.0	SULFATE	436.8	9.5
POTASSIUM	11.8	0.3	NITRATE	0.0	0.0
BARIUM	0.0	0.0			
CHROMIUM	0.0	0.0			

SPECIFIC GRAVITY @ 77°F	1.006	PH	7.88
RESISTIVITY @ 77°F, ohm-meters	1.558	NACL (Calc.)	1855.9
TOTAL DISSOLVED SOLIDS (Calc.) MG/L	5322.6	HYDROGEN SULFIDE	NEG

WATER ANALYSIS PATTERN - MEQ/L



REMARKS - Run #9 Sample 65 BBLs out.
Received 4/8/09.

DISTRIBUTION OF RESULTS
Rocky Border -- Sidney MT.
Lynn Sundby -- Halliburton - Williston ND.

Exhibit 4A: Dakota/ Lakota Swab Sample Results

SATHE ANALYTICAL LABORATORY, INC.

301 W. 2ND STREET

P.O. BOX 1527
WILLISTON, ND, 58801

701-572-3632

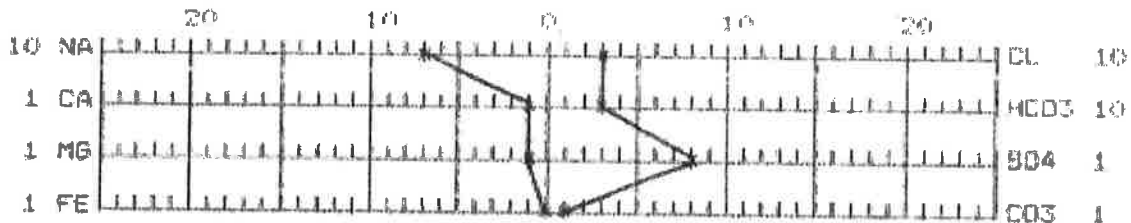
WATER ANALYSIS REPORT

OPERATOR: ENERPLUS L.P. DATE: 4/8/09
 WELL NO. LONE TREE EDNA 1-13 LAB NO.: W-09-1705
 FIELD: not listed FORMATION: Upper Dakota
 COUNTY: Richland INTERVAL: 5588-5608
 STATE: MT DST #:
 LOC: not listed SAMPLE RUN #16-SAMPLE 130 BBLs BACK

CATIONS	MG/L	MEQ/L	ANIONS	MG/L	MEQ/L
SODIUM	1680.0	73.1	CHLORIDE	1114.7	31.4
CALCIUM	14.8	0.7	CARBONATE	31.5	1.1
MAGNESIUM	7.6	0.6	BICARBONATE	1922.1	31.9
IRON	1.2	0.1	SULFATE	391.2	8.1
POTASSIUM	9.9	0.3	NItrate	0.0	0.0
BARIUM	0.0	0.0			
CHROMIUM	0.0	0.0			

SPECIFIC GRAVITY @ 77°F 1.000 PH 7.85
 RESISTIVITY @ 77°F, ohm-centimeters 1.569 NaCl (Calc.) 1838.1
 TOTAL DISSOLVED SOLIDS (Calc.) MG/L 5173.0 HYDROGEN SULFIDE NEG

WATER ANALYSIS PATTERN - MEQ/L



REMARKS - Run #16 Sample 130 BBLs Back.
 Received 4/8/09.

DISTRIBUTION OF RESULTS
 Rocky Gorder -- Sidney MT.
 Lynn Sundby -- Halliburton - Williston ND.

Exhibit 4A: Dakota/ Lakota Swab Sample Results

BATHE ANALYTICAL LABORATORY, INC.

301 W. 2ND STREET

P.O. BOX 1327
WILLISTON, ND, 58801

701-572-3632

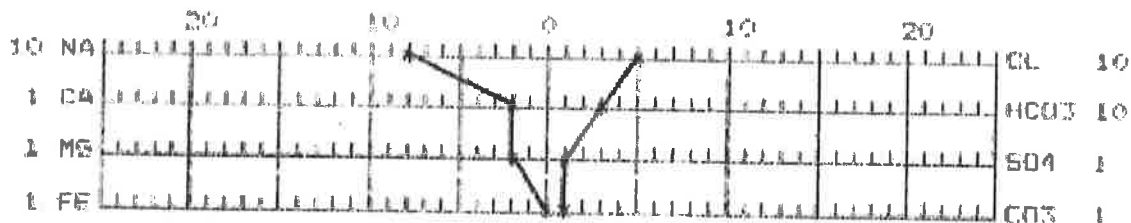
WATER ANALYSIS REPORT

OPERATOR: ENERPLUS RESOURCES L.P. DATE: 4/7/09
 WELL NO. LONE TREE EDNA 1-13 LAB NO.: W-09-1692
 FIELD: not listed FORMATION: Lower Dakota
 COUNTY: Richland INTERVAL: 5044'-5064'
 STATE: MT DST #:
 LOC: not listed SAMPLE 4th RUN - TUBING SWAB 4/6/09

CATIONS	MG/L	MEQ/L	ANIONS	MG/L	MEQ/L
SODIUM	1700.0	07.6	CHLORIDE	1893.9	53.4
CALCIUM	40.7	2.0	CARBONATE	28.5	0.9
MAGNESIUM	22.9	1.8	BICARBONATE	1726.9	28.3
IRON	1.0	0.1	SULFATE	67.3	1.4
POTASSIUM	32.3	0.8	NITRATE	0.0	0.0
BARIUM	0.0	0.0			
CHROMIUM	0.0	0.0			

SPECIFIC GRAVITY @ 77°F 1.000 PH 8.01
 RESISTIVITY @ 77°F, ohm-meters 1.442 NAOL (Calc.) 3122.9
 TOTAL DISSOLVED SOLIDS (Calc.) MG/L 5713.4 HYDROGEN SULFIDE NEG

WATER ANALYSIS PATTERN - MEQ/L



REMARKS - 4th RUN TUBING SWAB 4/6/09.

DISTRIBUTION OF RESULTS
 Rocky Gorder -- Sidney MT.
 Lynn Sundry -- Halliburton - Williston ND

Exhibit 4A: Dakota/ Lakota Swab Sample Results

SATHE ANALYTICAL LABORATORY, INC.

301 W. 2ND STREET

F.O.B.D. 1827
WILLISTON, ND. 58801

701-572-3632

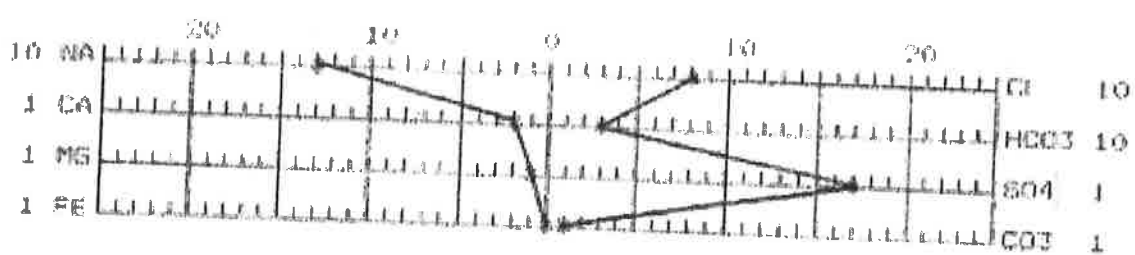
WATER ANALYSIS REPORT

OPERATOR: ENERPLUS RESOURCES L.P. DATE: 4/7/09
 WELL NO. LONE TREE EDNA 1-13 LAB NO.: W-09-1675
 FIELD: not listed FORMATION: Lower Dakota
 COUNTY: Richland INTERVAL: 5844'-5864'
 STATE: MT DST #:
 LOC: not listed SAMPLE 5TH SWAB RUN-FORMATION 4/6/09

CATIONS	MG/L	MEQ/L	ANIONS	MG/L	MEQ/L
SODIUM	2089.0	125.3	CHLORIDE	2921.9	82.4
CALCIUM	37.0	1.8	CARBONATE	18.0	0.6
MAGNESIUM	13.4	1.1	BICARBONATE	1202.5	27.9
IRON	2.1	0.1	SULFATE	827.7	17.2
POTASSIUM	49.2	1.3	NITRATE	0.0	0.0
BARIUM	0.0	0.0			
CHROMIUM	0.0	0.0			

SPECIFIC GRAVITY @ 77°F 1.000 PH 7.79
 RESISTIVITY @ 77°F, ohm-centimeters 1.018 NaCl (Calc.) 4818.2
 TOTAL DISSOLVED SOLIDS (Calc.) MG/L 8451.8 HYDROGEN SULFIDE NEG

WATER ANALYSIS PATTERN - MEQ/L



REMARKS - 5th RUN SWAB - FORMATION SAMPLE 4/6/09,
 Received 4/7/09.

DISTRIBUTION OF RESULTS
 Rocky Border -- Sidney MT.
 Lynn Sundry -- Halliburton -- Williston ND.

Exhibit 4A: Dakota/ Lakota Swab Sample Results

SATHE ANALYTICAL LABORATORY, INC.

301 W. 2ND STREET

P.O. BOX 1527
WILLISTON, ND. 58801

701-572-3632

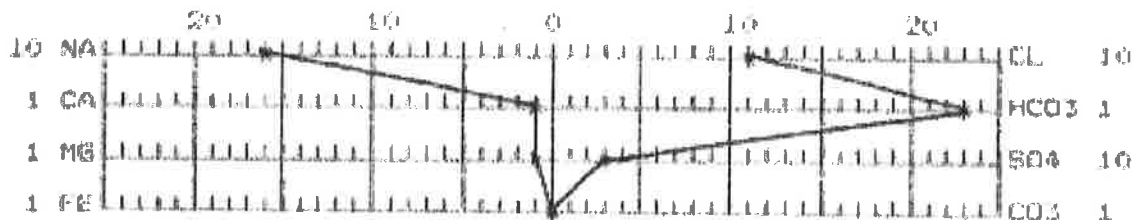
WATER ANALYSIS REPORT

OPERATOR: ENERPLUS RESOURCES L.P. DATE: 4/7/09
 WELL NO. LONG TREE EDNA 1-13 LAB NO.: W-09-1694
 FIELD: not listed FORMATION: Lower Dakota
 COUNTY: Richland INTERVAL: 5844'-5864'
 STATE: MT DST #:
 LOC: not listed SAMPLE 11TH SWAB RUN-TOTAL 105 BBLs

CATIONS	MG/L	MEQ/L	ANIONS	MG/L	MEQ/L
SODIUM	3580.0	155.7	CHLORIDE	3766.1	106.2
CALCIUM	29.6	1.3	CARBONATE	0.0	0.0
MAGNESIUM	11.4	0.9	BICARBONATE	1418.7	28.2
IRON	0.2	0.0	SULFATE	1532.2	31.9
POTASSIUM	17.4	0.4	NITRATE	0.0	0.0
BARIUM	0.0	0.0			
CHROMIUM	0.0	0.0			

SPECIFIC GRAVITY @ 77°F 1.000 PH 7.55
 RESISTIVITY @ 77°F, ohm-meters 0.912 NAOL (Calc.) 6210.2
 TOTAL DISSOLVED SOLIDS (Calc.) MG/L 10332.3 HYDROGEN SULFIDE NEG

WATER ANALYSIS PATTERN - MEQ/L



REMARKS - 11th RUN SWAB - TOTAL 105 BBL 4/6/09.
 Received 4/7/09.

DISTRIBUTION OF RESULTS
 Rocky Gorder -- Sidney MT,
 Lynn Sundby -- Halliburton - Williston ND.