SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5749 (09-2006)

JUL 2013 RECEIVED ND OIL & GAS DIVISION

Well File No.
222100-01

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

- [x] Notice of Intent — Approximate Start Date: **October 1, 2013**
- [ ] Report of Work Done — Date Work Completed:
- [ ] Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03. — Approximate Start Date:

- [ ] Drilling Prognosis
- [ ] Redrilling or Repair
- [ ] Casing or Liner
- [ ] Plug Well
- [ ] Supplemental History
- [ ] Temporarily Abandon
- [ ] Spill Report
- [ ] Shooting
- [ ] Acidizing
- [ ] Fracture Treatment
- [ ] Change Production Method
- [ ] Reclamation
- [x] Other **Central production facility-commingle prod**

Well Name and Number: **(see details)**

Footages	Qtr-Qtr	Section	Township	Range
F L F L		**12**	**153 N**	**101 W**

Field	Pool	County
Baker	**Bakken**	**McKenzie**

24-HOUR PRODUCTION RATE

Before		After	
Oil	Bbls	Oil	Bbls
Water	Bbls	Water	Bbls
Gas	MCF	Gas	MCF

Name of Contractor(s)

Address	City	State	Zip Code

DETAILS OF WORK

Oasis Petroleum North America LLC requests permission to add the following wells to CTB # 222100-01.
~~Well File #22740 Larry 5301 44-12B SESE 12-153-101 API 33-105-04981~~
Well File #22099 Yukon 5301 41-12T SWSW 12-153-101 API 33-053-03911
Well File #25571 Colville 5301 44-12T SESE 12-153-101 API 33-053-04981
Well File #22221 Innoko 5301 43-12T SWSE 12-153-101 API 33-053-03937
The following wells are currently being commingled in the subject CTB:
Well File #22100 Achilles 5301 41-12B SWSW 12-153-101 API 33-053-03912
Well File #22220 Jefferies 5301 43-12B SWSE 12-153-101 API 33-053-03936
Well File #20864 Bray 5301 43-12H SWSE 12-153-101 API 33-053-03609
Well File #22740 Larry 5301 44-12B SESE 12-153-101 API 33-053-04071

Please find the following attachments:1. A schematic drawing of the facility which diagrms the testing, treating, routing, and transferring of production. 2. A plat showing the location of the central facility 3. Affidavit of title indicating common ownership.

Company	Telephone Number
Oasis Petroleum North America LLC	**281-404-9491**

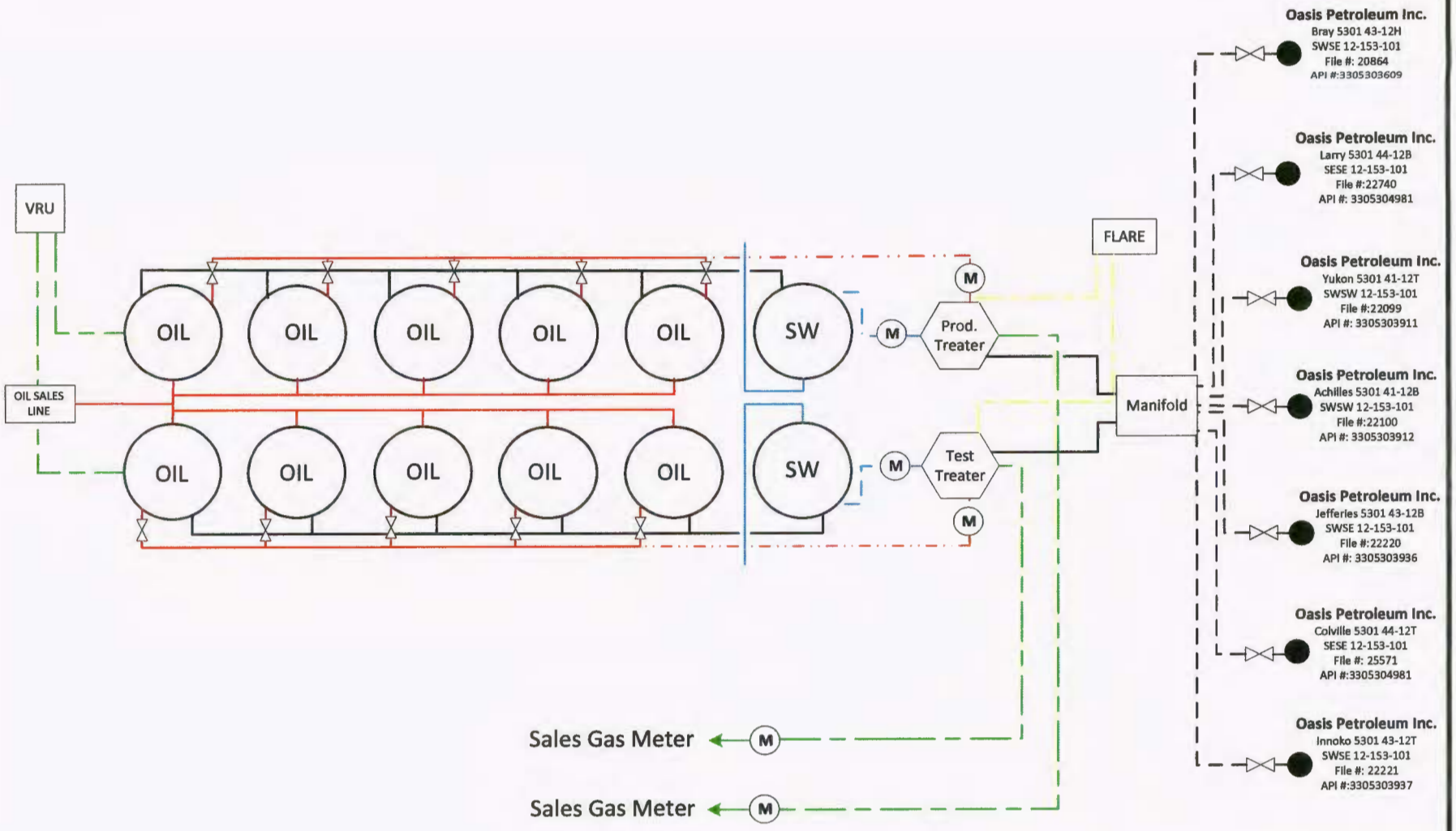
Address		
1001 Fannin, Suite 1500		
City: **Houston**	State: **TX**	Zip Code: **77002**

Signature	Printed Name
	Brandi Terry
Title: **Regulatory Specialist**	Date: **July 24, 2013**
Email Address: **bterry@oasispetroleum.com**	

FOR STATE USE ONLY

- [ ] Received
- [x] Approved

Date: 7-30-13
By: ORIGINAL SIGNED BY DARYL GRONFUR
Title: METER SPECIALIST



OASIS PETROLEUM

5301 13-24 ACHILLES CENTRAL TANK BATTERY

DATE	REV.	BY	APPR.	SCALE
JULY 23, 2013	0	LEE		NA
LOCATION: NORTH DAKOTA		FIELD: BAKER		

COMMINGLING AFFIDAVIT

STATE OF NORTH DAKOTA)
) ss.
COUNTY OF MCKENZIE)

Tom F. Hawkins, being duly sworn, states as follows:

1. I am the Vice President - Land and Contracts employed by Oasis Petroleum North America LLC with responsibilities in the State of North Dakota and I have personal knowledge of the matters set forth in this affidavit.

2. Sections 13 and 24, Township 153 North, Range 101 West, 5th P.M., McKenzie County, North Dakota constitute a spacing unit in accordance with the applicable orders of the North Dakota Industrial Commission for the Bakken pool.

3. Four wells have been drilled in the spacing unit, which are the Bray 5301 43-12H, Achilles 5301 41-12B, Jefferies 5301 43-12B, Larry 5301 44-12B; and three wells have been permitted in the spacing unit, which are the Colville 5301 44-12T, Innoko 5301 43-12T and Yukon 5301 41-12T.

4. By Declaration of Pooled Unit dated August 26, 2011, filed in McKenzie County, North Dakota, document number 422312, all oil and gas interests within the aforementioned spacing unit were pooled.

5. All Working Interests, Royalty Interests and Overriding Royalty Interests in the Bray 5301 43-12H, Achilles 5301 41-12B, Jefferies 5301 43-12B, Colville 5301 44-12T, Innoko 5301 43-12T and Yukon 5301 41-12 wells are common.

Dated this 9TH day of July, 2013.

Tom F. Hawkins TD
Tom F. Hawkins
Vice President-Land and Contracts

STATE OF TEXAS)
) ss.
COUNTY OF HARRIS)

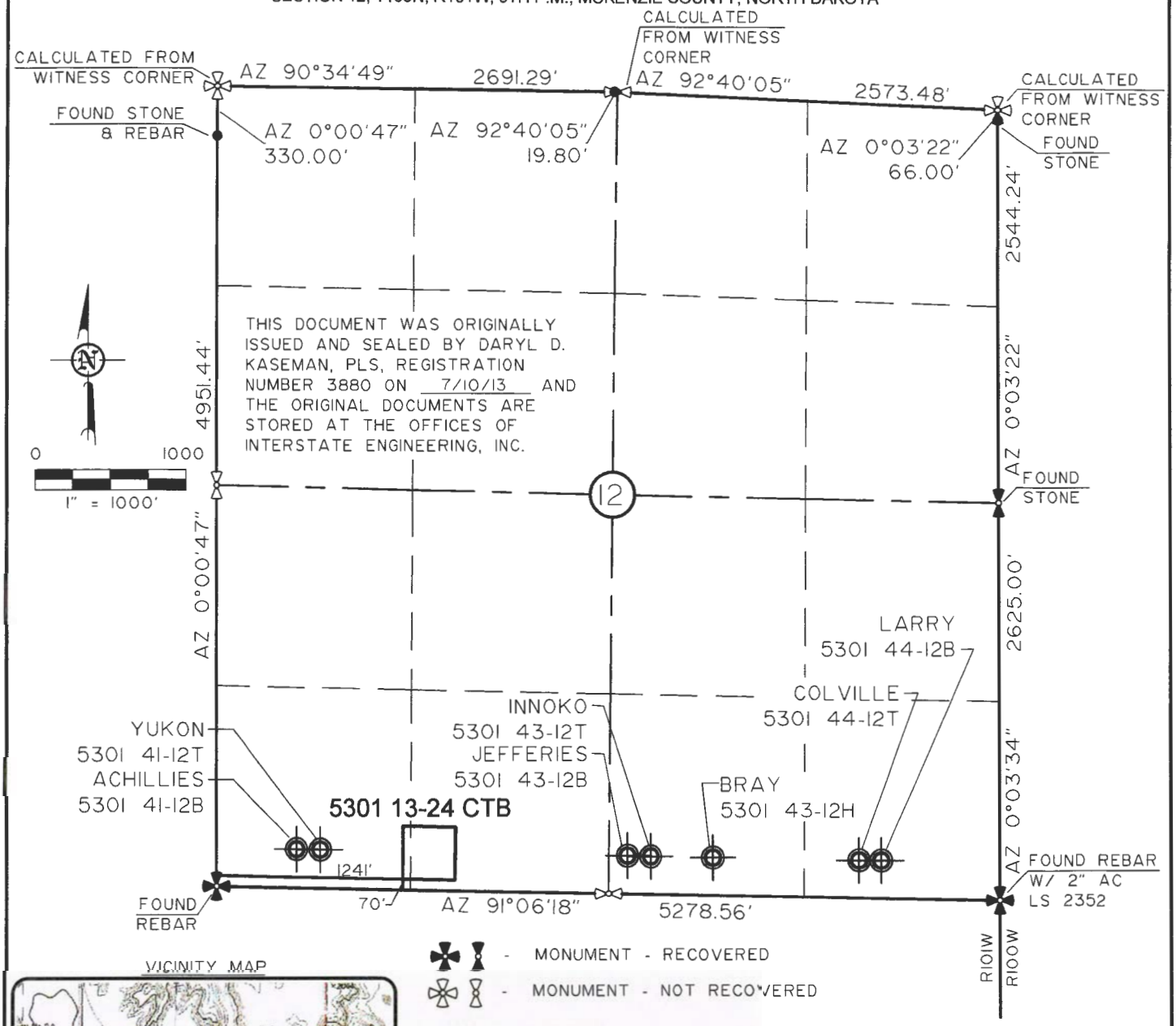
Subscribed to and sworn before me this 9TH day of July, 2013.

Notary Public
State of Texas
My Commission Expires: August 14, 2017

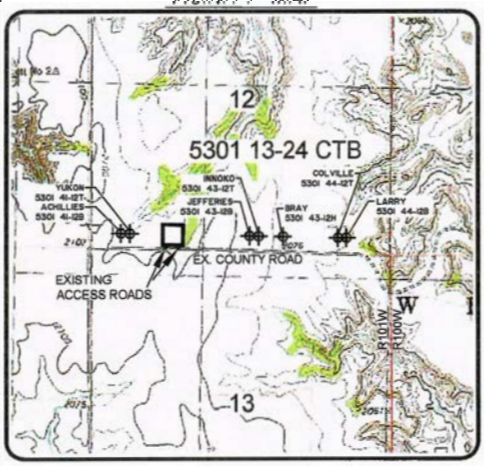
JENNIFER ELLEN SWENSON
My Commission Expires
August 14, 2017

BATTERY LOCATION PLAT

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 202 HOUSTON, TX 77002
"5301 13-24 CTB"
SECTION 12, T153N, R101W, 5TH P.M., MCKENZIE COUNTY, NORTH DAKOTA



VICINITY MAP



- MONUMENT - RECOVERED
- MONUMENT - NOT RECOVERED

STAKED ON 3/08/12
VERTICAL CONTROL DATUM WAS BASED UPON CONTROL POINT 13 WITH AN ELEVATION OF 2090.8'

THIS SURVEY AND PLAT IS BEING PROVIDED AT THE REQUEST OF FABIAN KJORSTAD OF OASIS PETROLEUM. I CERTIFY THAT THIS PLAT CORRECTLY REPRESENTS WORK PERFORMED BY ME OR UNDER MY SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED LAND SURVEYOR
DARYL D. KASEMAN
LS-3880
DATE: 7/10/13
NORTH DAKOTA

DARYL D. KASEMAN LS-3880

1/5
SHEET NO.

INTERSTATE ENGINEERING
Professionals you need, people you trust

Interstate Engineering, Inc.
P.O. Box 648
425 East Main Street
Sidney, Montana 59270
Ph (406) 433-5617
Fax (406) 433-5618
www.iengi.com
Other offices in Minnesota, North Dakota and South Dakota

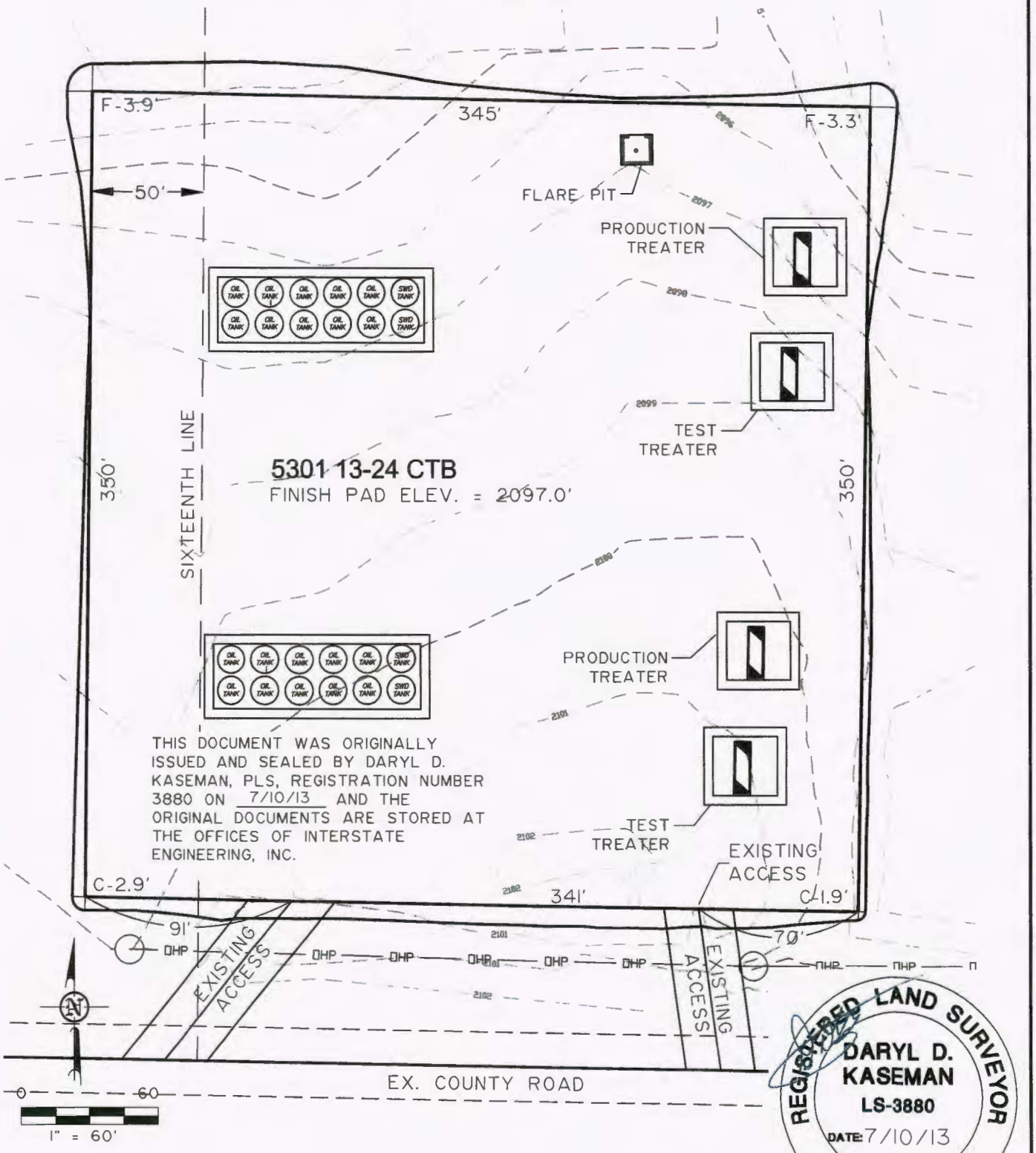
OASIS PETROLEUM NORTH AMERICA, LLC
WELL LOCATION PLAT
SECTION 12, T153N, R101W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: J.D.M. | Project No.: S12-09-249
Checked By: D.D.K. | Date: SEPT. 2012

Revision No.	Date	By	Description
REV 1	7/10/13	JDM	ADDED WELLS

PAD LAYOUT

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 202 HOUSTON, TX 77002
"5301 13-24 CTB"
SECTION 12, T153N, R101W, 5TH P.M., MCKENZIE COUNTY, NORTH DAKOTA



THIS DOCUMENT WAS ORIGINALLY ISSUED AND SEALED BY DARYL D. KASEMAN, PLS, REGISTRATION NUMBER 3880 ON 7/10/13 AND THE ORIGINAL DOCUMENTS ARE STORED AT THE OFFICES OF INTERSTATE ENGINEERING, INC.

REGISTERED LAND SURVEYOR
DARYL D. KASEMAN
LS-3880
DATE: 7/10/13
NORTH DAKOTA

NOTE: All utilities shown are preliminary only, a complete utilities location is recommended before construction.

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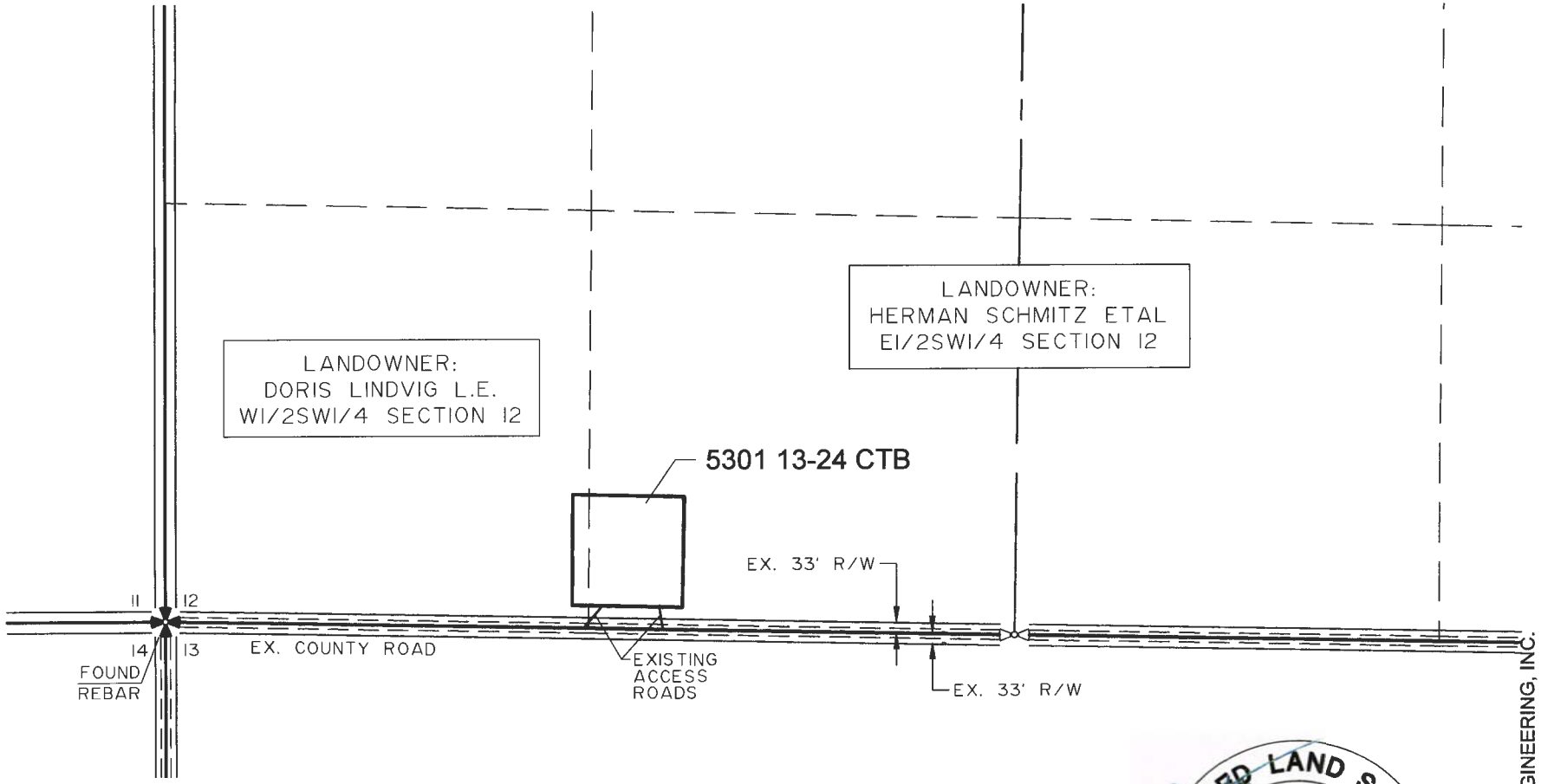
PAD LAYOUT
SECTION 12, T153N, R101W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: J.D.M. | Project No.: S12-9-249
Checked By: D.D.K. | Date: SEPT. 2012

Revision No.	Date	By	Description
REV 1	7/10/13	JDM	ADDED WELLS

ACCESS APPROACH

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 202 HOUSTON, TX 77002
"5301 13-24 CTB"
SECTION 12, T153N, R101W, 5TH P.M., MCKENZIE COUNTY, NORTH DAKOTA



0 500
1" = 500'

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NOTE: All utilities shown are preliminary only, a complete utilities location is recommended before construction.

Revision No.	Date	By	Description
REV 1	7/10/13	JDM	ADDED WELLS

OASIS PETROLEUM NORTH AMERICA, LLC
ACCESS APPROACH
SECTION 12, T153N, R101W
MCKENZIE COUNTY, NORTH DAKOTA
Drawn By: J.D.M. Project No.: S12-09-249
Checked By: D.D.K. Date: SEPT. 2012

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INTERSTATE ENGINEERING
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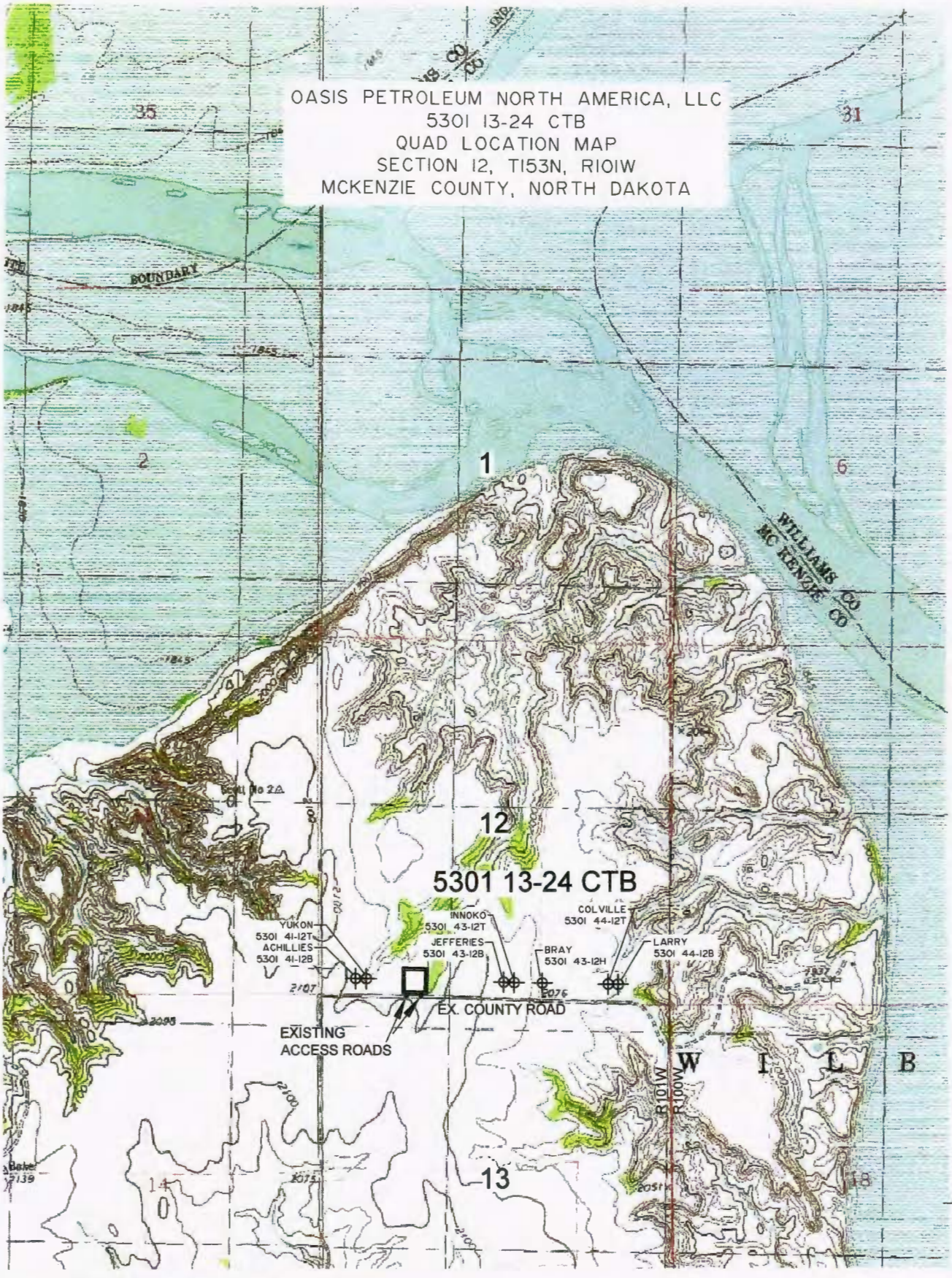
SHEET NO. 3/5

OASIS PETROLEUM NORTH AMERICA, LLC
5301 13-24 CTB
QUAD LOCATION MAP
SECTION 12, T153N, R101W
MCKENZIE COUNTY, NORTH DAKOTA



4/5
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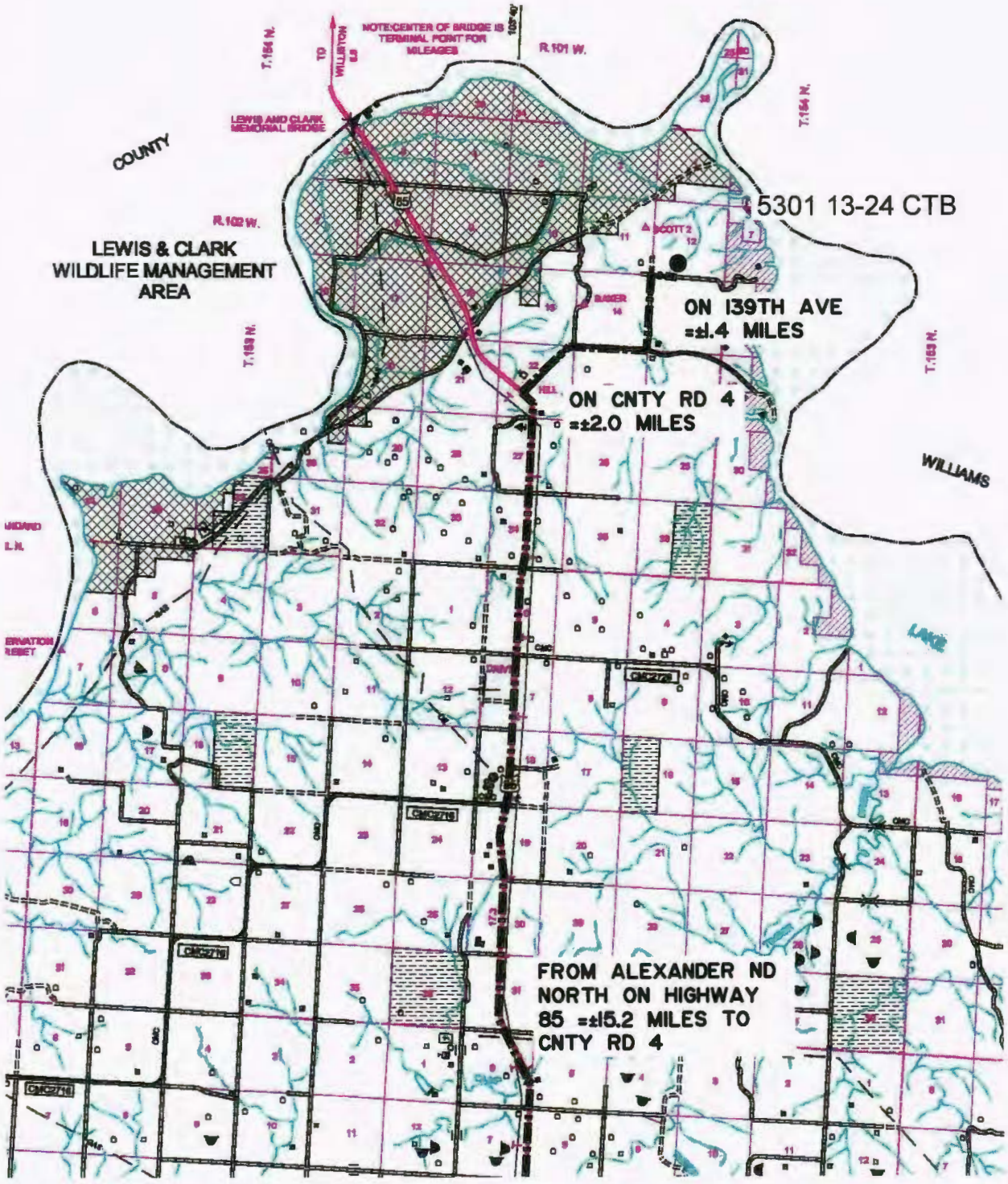
OASIS PETROLEUM NORTH AMERICA, LLC
QUAD LOCATION MAP
SECTION 12, T153N, R101W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: J.D.M. | Project No.: S12-09-249
Checked By: D.D.K. | Date: SEPT. 2012

Revision No.	Date	By	Description
REV 1	7/10/13	JDM	ADDED WELLS

COUNTY ROAD MAP

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 202 HOUSTON, TX 77002
"5301 13-24 CTB"
SECTION 12, T153N, R101W, 5TH P.M., MCKENZIE COUNTY, NORTH DAKOTA



SCALE: 1" = 2 MILE

5/5
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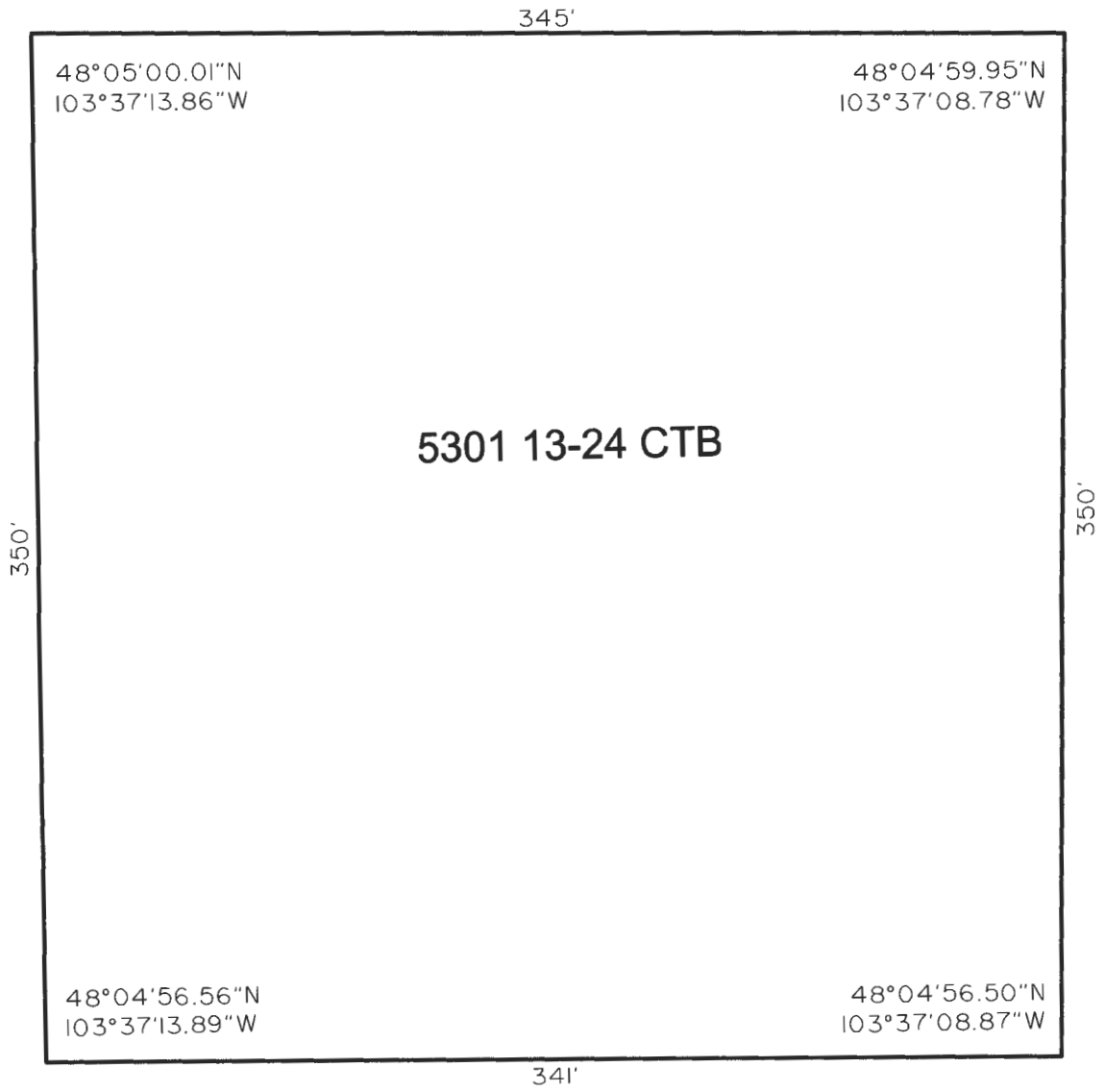
SECTION 12, T153N, R101W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: J.D.M. | Project No.: S12-09-249
Checked By: D.D.K. | Date: SEPT. 2012

Revision No.	Date	By	Description
REV 1	7/10/13	JDM	ADDED WELLS

LAT/LONG PAD CORNERS



SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5749 (09-2006)

JUN 2013
RECEIVED
ND OIL & GAS DIVISION

Well File No.
22740

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

- ☐ Notice of Intent — Approximate Start Date
- ☑ Report of Work Done — Date Work Completed: **May 7, 2013**
- ☐ Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03. — Approximate Start Date

- ☐ Drilling Prognosis
- ☐ Redrilling or Repair
- ☐ Casing or Liner
- ☐ Plug Well
- ☐ Supplemental History
- ☐ Temporarily Abandon
- ☐ Spill Report
- ☐ Shooting
- ☐ Acidizing
- ☐ Fracture Treatment
- ☐ Change Production Method
- ☐ Reclamation
- ☐ Other **Well is now on pump**

Well Name and Number: **Larry 5301 44-12B**

Footages	Qtr-Qtr	Section	Township	Range
250 F S L 800 F E L	SESE	12	153 N	101 W

Field	Pool	County
Baker	Bakken	McKenzie

24-HOUR PRODUCTION RATE

Before		After	
Oil	Bbls	Oil	Bbls
Water	Bbls	Water	Bbls
Gas	MCF	Gas	MCF

Name of Contractor(s)

Address	City	State	Zip Code

DETAILS OF WORK

Effective May 7, 2013 the above referenced well is on pump.

Tubing: 2-7/8" L-80 tubing @ 10168

Pump: 2-1/2" x 2.0" x 24' insert pump @ 10076

Company	Telephone Number
Oasis Petroleum North America LLC	281 404-9563

Address: **1001 Fannin, Suite 1500**

City	State	Zip Code
Houston	TX	77002

Signature	Printed Name
Heather McCowan	Heather McCowan

Title	Date
Regulatory Assistant	May 31, 2013

Email Address: **hmccowan@oasispetroleum.com**

FOR STATE USE ONLY

☑ Received ☐ Approved

Date: June 6, 2013

By:

Title: PETROLEUM ENGINEER

#22740

SURFACE DAMAGE SETTLEMENT AND RELEASE

In consideration for the sum of _____ Dollars ($ _____) paid by Oasis Petroleum North America LLC ("Oasis") to the undersigned surface owners, Larry P. Heen, a married man dealing in his sole & separate property _____ ("Owners," and together with Oasis, the "Parties") for themselves and their heirs, successors, administrators and assigns, hereby acknowledge the receipt and sufficiency of said payment as a full and complete settlement for and as a release of all claims for loss, damage or injury to the Subject Lands (as defined herein) arising out of the Operations (as defined herein) of the Linda 5301 44-12B & Larry 5301 44-12B _____ the "Well(s)" located on the approximately (6) six acre tract of land identified on the plat attached hereto as Exhibit "A" (the "Subject Lands") and which is situated on the following described real property located in McKenzie County, State of North Dakota, to wit:

Township 153 North, Range 101 West, 5th P.M.
Section 12: SE4SE4

The Owner grant Oasis a perpetual 25 foot easement for the installation of a single pipeline from the Linda 5301 44-12B & ~~Larry 5301 44-12B to the~~ Kline/Bray/Foley Battery site.

This pad shall accommodate the drilling of the Linda 5301 44-12B well and the ~~Larry~~ 5300 44-12B well on the same location. The undersigned is fully aware that the cuttings generated from the drilling of the above described wells will be buried on site on the above described location.

The Parties agree that the settlement and release described herein does not include any claims by any third party against the Owners for personal injury or property damage arising directly out of Oasis's Operations, and Oasis agrees to indemnify, defend and hold harmless Owners against all liabilities arising from such claim (except as such claim arises from the gross negligence or willful misconduct of the Owners).

In further consideration of the payments specified herein, Oasis is hereby specifically granted the right to construct, install and operate, replace or remove pads, pits, pumps, compressors, tanks, roads, pipelines, equipment or other facilities on the above described tract of land necessary for its drilling, completion, operation and/or plugging and abandonment of the Well(s) (the "Operations"), and to the extent such facilities are maintained by Oasis for use on the Subject Lands, this agreement shall permit Oasis's use of such facilities for the Operations on the Subject Lands.

Should commercial production be established from the Well(s), Oasis agrees to pay Owners an annual amount of $ _____ per year beginning one year after the completion of the Wells and to be paid annually until the Wells is plugged and abandoned.

The Parties expressly agree and acknowledge that the payments described herein to be made by Oasis to the Owners constitute full satisfaction of the requirements of Chapter 38.11.1 of the North Dakota Century Code and, once in effect, the amended Chapter 38.11.1 of the North Dakota Century Code enacted by House Bill 1241. The Parties further expressly agree and acknowledge that the $ _____ payment set forth above constitutes full and adequate consideration for damage and disruption required under Section 38.11.1-04 of the North Dakota Century Code, and that the _____ payment set forth above constitutes full and adequate consideration for loss of production payments under Section 38.11.1-08.1 of the North Dakota Century Code.

Oasis shall keep the Site free of noxious weeds, and shall take reasonable steps to control erosion and washouts on the Site. Oasis shall restore the Site to a condition as near to the original condition of the Site as is reasonably possible, including the re-contouring, replacing of topsoil and re-seeding of the Site (such actions, the "Restoration").

The surface owners grant Oasis access to the Wells in the location(s) shown on the plats attached hereto as Exhibit "A".

Upon written request and the granting of a full release by the Owners of further Restoration by Oasis with respect to the affected area described in this paragraph, Oasis shall leave in place any road built by it in its Operations for the benefit of the Owners after abandoning its Operations, and shall have no further maintenance obligations with respect to any such road.

This agreement shall apply to the Parties and their respective its successors, assigns, parent and subsidiary companies, affiliates and related companies, trusts and partnerships, as well as their contractors, subcontractors, officers, directors, agents and employees.

This agreement may be executed in multiple counterparts, each of which shall be an original, but all of which shall constitute one instrument.

[Signature Page Follows.]

DATED this 4 day of April 2012

SURFACE OWNERS

Larry P. Heen

Larry P. Heen

Address: 14033 45th Street NW

Williston, ND 58801

Phone: 701-572-6991

STATE OF North Dakota }
} SS.
COUNTY OF McKenzie }

ACKNOWLEDGMENT INDIVIDUAL

BE IT REMEMBERED, That on this 4 day of April, 2012 before me, a Notary Public, in and for said County and State, personally appeared Larry P. Heen, to me known to be the identical person described in and who executed the within and foregoing instrument and acknowledged to me that he executed the same as his free and voluntary act and deed for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my official signature and affixed my notarial seal, the day and year first above written.

Thomas A. Lenihan

My commission expires: April 9, 2013

Thomas A. Lenihan
Notary Public

NOTARY STAMP

THOMAS A LENIHAN
Notary Public
State of North Dakota
My Commission Expires April 9, 2013

STATE OF _____)

COUNTY OF _____)

ACKNOWLEDGMENT CORPORATION

Before me the undersigned, a Notary Public, in and for said County and State, on this ____ day of _____, 2012, personally appeared _____, to me known to be the identical person who subscribed the name of the maker thereof to the foregoing instrument as its _____ and acknowledged to me that _____ executed the same as _____ free and voluntary act and deed and as the free and voluntary act and deed of such corporation, for the uses and purposes therein set forth.

Given under my hand and seal of office the day and year last above written.

My commission expires: _____

_____
Notary Public

NOTARY STAMP

WELL COMPLETION OR RECOMPLETION REPORT - FORM 6

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 2468 (04-2010)

NOV 2012
RECEIVED
ND OIL & GAS
DIVISION

Well File No.
22740

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

Designate Type of Completion
☑ Oil Well ☐ EOR Well ☐ Recompletion ☐ Deepened Well ☐ Added Horizontal Leg ☐ Extended Horizontal Leg
☐ Gas Well ☐ SWD Well ☐ Water Supply Well ☐ Other:

Well Name and Number			Spacing Unit Description
Larry 5301 44-12B			**T153N R101W Section 13 & 24**
Operator: **Oasis Petroleum North America LLC**	Telephone Number: **(281) 404-9491**		Field: **Baker**
Address: **1001 Fannin, Suite 1500**			Pool: **Bakken**
City: **Houston**	State: **TX**	Zip Code: **77002**	Permit Type: ☐ Wildcat ☑ Development ☐ Extension

LOCATION OF WELL

At Surface	Qtr-Qtr	Section	Township	Range	County
250 F S L 800 F E L	**SESE**	**12**	**153 N**	**101 W**	**McKenzie**

Spud Date	Date TD Reached	Drilling Contractor and Rig Number	KB Elevation (Ft)	Graded Elevation (Ft)
June 4, 2012	**August 3, 2012**	**Nabors B22**	**2083**	**2058**

Type of Electric and Other Logs Run (See Instructions)
N/A

CASING & TUBULARS RECORD (Report all strings set in well)

Well Bore	String Type	String Size (Inch)	Top Set (MD Ft)	Depth Set (MD Ft)	Hole Size (Inch)	Weight (Lbs/Ft)	Anchor Set (MD Ft)	Packer Set (MD Ft)	Sacks Cement	Top of Cement
Surface Hole	**Surface**	**9 5/8**		**2035**	**13 1/2**	**36**			**733**	**0**
Vertical Hole	**Intermediate**	**7**		**11080**	**8 3/4**	**29 & 32**			**856**	**1290**
Lateral1	**Liner**	**4 1/2**	**10168**	**21110**	**6**	**11.6**				

PERFORATION & OPEN HOLE INTERVALS

Well Bore	Well Bore TD Drillers Depth (MD Ft)	Completion Type	Open Hole/Perforated Interval (MD,Ft) Top	Bottom	Kick-off Point (MD Ft)	Top of Casing Window (MD Ft)	Date Perf'd or Drilled	Date Isolated	Isolation Method	Sacks Cement
Lateral1	**21140**	**Perforations**	**11080**	**21140**	**10270**		**09/08/2012**			

PRODUCTION

Current Producing Open Hole or Perforated Interval(s), This Completion, Top and Bottom, (MD Ft)
Lateral 1- 11080'-21140'

Name of Zone (If Different from Pool Name)

Date Well Completed (SEE INSTRUCTIONS)	Producing Method	Pumping-Size & Type of Pump	Well Status (Producing or Shut-In)
September 24, 2012	**Flowing**		**Producing**

Date of Test	Hours Tested	Choke Size	Production for Test	Oil (Bbls)	Gas (MCF)	Water (Bbls)	Oil Gravity-API (Corr.)	Disposition of Gas
09/25/2012	**24**	**32 /64**		**2863**	**2159**	**3056**	**39.8 °**	**Sold**

Flowing Tubing Pressure (PSI)	Flowing Casing Pressure (PSI)	Calculated 24-Hour Rate	Oil (Bbls)	Gas (MCF)	Water (Bbls)	Gas-Oil Ratio
1620			**2863**	**2159**	**3056**	**754**

GEOLOGICAL MARKERS

Formation	MD (Ft)	TVD (Ft)
Kibbey Lime	**8348**	**8348**
Charles Salt	**8502**	**8502**
UB	**9111**	**9110**
Base Last Salt	**9199**	**9198**
Ratcliffe	**9231**	**9230**
Mission Canyon	**9420**	**9419**
Lodgepole	**9979**	**9978**
False Bakken	**10797**	**10692**
Scallion	**10799**	**10693**
Upper Bakken	**10826**	**10703**
Middle Bakken	**10880**	**10718**

PLUG BACK INFORMATION

Well Bore	Type of Plug	Top (Ft)	Bottom (Ft)	Sacks Cement

CORES CUT

Top (Ft)	Bottom (Ft)	Formation	Top (Ft)	Bottom (Ft)	Formation

Drill Stem Test

Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation **cmt**	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								

Well Specific Stimulations

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
09/08/2012	Bakken	11080	21140	36	80480	Barrels

Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)	Maximum Treatment Rate (BBLS/Min)
Sand Frac		3600530	9705	39.5

Details
40/70 sand: 1,401,330
30/70 sand: 2,199,200

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units

Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)	Maximum Treatment Rate (BBLS/Min)

Details

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units

Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)	Maximum Treatment Rate (BBLS/Min)

Details

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units

Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)	Maximum Treatment Rate (BBLS/Min)

Details

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units

Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)	Maximum Treatment Rate (BBLS/Min)

Details

ADDITIONAL INFORMATION AND/OR LIST OF ATTACHMENTS

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.	Email Address: bterry@oasispetroleum.com	Date: 11/06/2012
Signature	Printed Name: Brandi Terry	Title: Regulatory Specialist

WELL COMPLETION OR RECOMPLETION REPORT - FORM 6
SFN 2468

1. This report shall be filed by the operator with the Commission immediately after the completion of a well in an unspaced pool or reservoir. Please refer to Section 43-02-03-31 of the North Dakota Administrative Code (NDAC).
2. This report shall be filed by the operator with the Commission within thirty (30) days after the completion of a well, or recompletion of a well in a different pool. Please refer to Section 43-02-03-31 NDAC.
3. The well file number, operator, well name and number, field, pool, permit type, well location(s), and any other pertinent data shall coincide with the official records on file with the Commission. If it does not, an explanation shall be given.
4. If a parasite string was used in the drilling of a well, the size, depth set, cement volume used to plug, and the date plugged shall be included. This information may be included in the "Additional Information" portion of the report or included as an attachment.
5. In the "Perforation & Open Hole Intervals" table, each borehole should be identified in the "Well Bore" column (vertical, sidetrack 1, lateral 1, etc.). On horizontal or directional wells, the following information shall be entered in the table if applicable: pilot hole total depth, kick-off point, casing windows, original lateral total depth, and all sidetracked interval starting and ending footages.
6. In the "Production" section, list all the current producing open hole or perforated intervals associated with the production rates reported. Oil, gas, and water rates and recoveries from perforations or laterals tested but not included in the completion should be included in the "Additional Information" portion of the report or included as an attachment.
7. In The "Date Well Completed" portion of the form please report the appropriate date as follows:
   - An oil well shall be considered completed when the first oil is produced through wellhead equipment into tanks from the ultimate producing interval after casing has been run.
   - A gas well shall be considered complete when the well is capable of producing gas through wellhead equipment from the ultimate producing zone after casing has been run.
   - For EOR or SWD wells, please report the date the well is capable of injection through tubing and packer into the permitted injection zone. Also, please report the packer type and depth and the tubing size, depth, and type. The packer and tubing type may be included in the "Additional Information" portion of the report.
8. The top of the Dakota Formation shall be included in the "Geological Markers."
9. Stimulations for laterals can be listed as a total for each lateral.
10. The operator shall file with the Commission two copies of all logs run. Logs shall be submitted as one paper copy and one digital LAS (log ASCII) formatted copy, or a format approved by the Director. In addition, operators shall file one copy of the following: drill stem test reports and charts, core analyses, formation water analyses and noninterpretive lithologic logs or sample descriptions if compiled.
11. A certified copy of any directional survey run shall be filed directly with the Commission by the survey contractor.
12. The original and one copy of this report shall be filed with the Industrial Commission of North Dakota, Oil and Gas Division, 600 East Boulevard, Dept. 405, Bismarck, ND 58505-0840.

AUTHORIZATION TO PURCHASE AND TRANSPORT OIL FROM LEASE – Form 8

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5698 (03-2000)

SEP 2012
RECEIVED
ND OIL & GAS
DIVISION

ORIGINAL

Well File No.
22740
NDIC CTB No.
1 22740

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND FOUR COPIES.

Well Name and Number	Qtr-Qtr	Section	Township	Range	County
LARRY 5301 44-12B	SESE	12	153 N	101 W	22740

Operator	Telephone Number	Field
Oasis Petroleum North America LLC	(281) 404-9435	BAKER

Address	City	State	Zip Code
1001 Fannin, Suite 1500	Houston	TX	77002

Name of First Purchaser	Telephone Number	% Purchased	Date Effective
Oasis Petroleum Marketing LLC	(281)404-9435	100%	September 24, 2012

Principal Place of Business	City	State	Zip Code
1001 Fannin, Suite 1500	Houston	TX	77002

Field Address	City	State	Zip Code

Transporter	Telephone Number	% Transported	Date Effective
Hiland Crude, LLC	(580) 616-2058	75%	September 24, 2012

Address	City	State	Zip Code
P.O. Box 3886	Enid	OK	73702

The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter.

Other First Purchasers Purchasing From This Lease	% Purchased	Date Effective
Other First Purchasers Purchasing From This Lease	% Purchased	Date Effective
Other Transporters Transporting From This Lease	% Transported	Date Effective
Blackstone Crude Oil LLC	25%	September 24, 2012
Other Transporters Transporting From This Lease	% Transported	Date Effective

Comments

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.

Date: September 25, 2012

Signature	Printed Name	Title
Annette Terrell	Annette Terrell	Marketing Assistant

OCT 03 2012

Above Signature Witnessed By:

Signature	Printed Name	Title
Dina Barron	Dina Barron	Mktg. Contracts Administrator

Eric Peterson
Oil & Gas Production Analyst

Industrial Commission of North Dakota
Oil and Gas Division
Verbal Approval To Purchase and Transport Oil

Well or Facility No **22740**

Tight Hole **Yes**

OPERATOR

Operator	Representative	Rep Phone
OASIS PETROLEUM NORTH AMERICA LL	**Terry Nelson**	

WELL INFORMATION

Well Name: **LARRY 5301 44-12B**

Inspector: **Richard Dunn**

Well Location	QQ	Sec	Twp		Rng		County
	SESE	**12**	**153**	**N**	**101**	**W**	**MCKENZIE**

Field: **BAKER**

Footages: **250** Feet From the **S** Line; **800** Feet From the **E** Line

Pool: **BAKKEN**

Date of First Production Through Permanent Wellhead **9/24/2012** **This Is The First Sales**

PURCHASER / TRANSPORTER

Purchaser	Transporter
OASIS PETROLEUM MARKETING LLC	**BLACKSTONE CRUDE, LLC**

TANK BATTERY

Single Well Tank Battery Number :

SALES INFORMATION **This Is The First Sales**

ESTIMATED BARRELS TO BE SOLD	ACTUAL BARRELS SOLD	DATE
5000 BBLS	BBLS	
BBLS	BBLS	
BBLS	BBLS	
BBLS	BBLS	
BBLS	BBLS	
BBLS	BBLS	
BBLS	BBLS	
BBLS	BBLS	
BBLS	BBLS	

DETAILS

Start Date	**10/2/2012**
Date Approved	**10/2/2012**
Approved By	**John Axtman**

SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5749 (09-2006)

Well File No.
22740

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

☑ Notice of Intent	Approximate Start Date **September 18, 2012**	☐ Drilling Prognosis	☐ Spill Report
☐ Report of Work Done	Date Work Completed	☐ Redrilling or Repair	☐ Shooting
☐ Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03.	Approximate Start Date	☐ Casing or Liner	☐ Acidizing
		☐ Plug Well	☐ Fracture Treatment
		☐ Supplemental History	☐ Change Production Method
		☐ Temporarily Abandon	☐ Reclamation
		☑ Other **Change well status to CONFIDENTIAL**	

Well Name and Number
Larry 5301 44-12B

Footages	Qtr-Qtr	Section	Township	Range
250 F **S** L **800** F **E** L	**SESE**	**12**	**153 N**	**101 W**

Field	Pool	County
Baker	**Bakken**	**McKenzie**

24-HOUR PRODUCTION RATE

Before		After	
Oil	Bbls	Oil	Bbls
Water	Bbls	Water	Bbls
Gas	MCF	Gas	MCF

Name of Contractor(s)			
Address	City	State	Zip Code

DETAILS OF WORK

Effective immediately, we request CONFIDENTIAL STATUS for the above referenced well.

Ends 3-19-2013

Company	Telephone Number
Oasis Petroleum North America LLC	**281-404-9491**
Address **1001 Fannin, Suite 1500**	
City **Houston**	State **TX** / Zip Code **77002**
Signature Brandi Terry	Printed Name **Brandi Terry**
Title **Regulatory Specialist**	Date **September 18, 2012**
Email Address **bterry@oasispetroleum.com**	

FOR STATE USE ONLY

☐ Received	☒ Approved
Date 9-20-2012	
By David Burns	
Title **Engineering Technician**	

SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5749 (09-2006)

AUG 2012
RECEIVED
ND OIL & GAS DIVISION

Well File No.
22740

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

- [x] Notice of Intent — Approximate Start Date: **August 22, 2012**
- [ ] Report of Work Done — Date Work Completed:
- [ ] Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03. — Approximate Start Date:

- [ ] Drilling Prognosis
- [ ] Redrilling or Repair
- [ ] Casing or Liner
- [ ] Plug Well
- [ ] Supplemental History
- [ ] Temporarily Abandon
- [ ] Spill Report
- [ ] Shooting
- [ ] Acidizing
- [ ] Fracture Treatment
- [ ] Change Production Method
- [ ] Reclamation
- [x] Other **Waiver from tubing/packer requirement**

Well Name and Number					
Larry 5301 44-12B					
Footages	Qtr-Qtr	Section	Township	Range	
250 F S L 800 F E L	**SESE**	**12**	**153 N**	**101 W**	
Field	Pool	County			
Baker	**Bakken**	**McKenzie**			

24-HOUR PRODUCTION RATE

Before		After	
Oil	Bbls	Oil	Bbls
Water	Bbls	Water	Bbls
Gas	MCF	Gas	MCF

Name of Contractor(s)			
Address	City	State	Zip Code

DETAILS OF WORK

Oasis Petroleum North America LLC requests a waiver from the tubing/pkr requirement included in NDAC 43-02-03-21: Casing, tubing, and cementing requirements during the completion period immediately following the upcoming fracture stimulation.
The following assurances apply:

1. **The well is equipped with new 29# & 32# casing at surface with an API burst rating of 11,220 psi**
2. **The frac design will use a safety factor of 0.85 API burst rating to determine the maximum pressure.**
3. **Damage to the casing during the frac would be detected immediately by monitoring equipment.**
4. **The casing is exposed to significantly lower rates and pressures during flow back than during the frac job.**
5. **The frac fluid and formation fluids have very low corrosion and erosion rates.**
6. **Production equipment will be installed as soon as possible after the well ceases flowing.**
7. **A 300# gauge will be installed on the surface casing during the flowback period.**

Company	Telephone Number	
Oasis Petroleum North America LLC	**281-404-9591**	
Address		
1001 Fannin, Suite 1500		
City	State	Zip Code
Houston	**TX**	**77002**
Signature	Printed Name	
Stacey Ferrell	**Stacey Ferrell**	
Title	Date	
Sr. Regulatory Specialist	**August 22, 2012**	
Email Address		

FOR STATE USE ONLY

- [ ] Received
- [x] Approved

Date: August 29, 2012
By: D. J. Mulkey
Title: PETROLEUM ENGINEER

SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5749 (09-2006)

AUG 2012
RECEIVED
ND OIL & GAS
DIVISION

Well File No.
22740

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

- [x] Notice of Intent — Approximate Start Date: **August 21, 2012**
- [ ] Report of Work Done — Date Work Completed:
- [ ] Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03. — Approximate Start Date:

- [ ] Drilling Prognosis
- [ ] Redrilling or Repair
- [ ] Casing or Liner
- [ ] Plug Well
- [ ] Supplemental History
- [ ] Temporarily Abandon
- [ ] Other **Reserve pit reclaimation**
- [ ] Spill Report
- [ ] Shooting
- [ ] Acidizing
- [ ] Fracture Treatment
- [ ] Change Production Method
- [ ] Reclamation

Well Name and Number: **Larry 5301 44-12B**

Footages	Qtr-Qtr	Section	Township	Range
250 F S L 800 F E L	SESE	12	153 N	101 W

Field	Pool	County
Baker	Bakken	McKenzie

24-HOUR PRODUCTION RATE

Before		After	
Oil	Bbls	Oil	Bbls
Water	Bbls	Water	Bbls
Gas	MCF	Gas	MCF

Name of Contractor(s): **Excel Industries, Inc.**

Address	City	State	Zip Code
P.Box 159	Miles City	MT	59301

DETAILS OF WORK

Oasis Petroleum North America LLC plans to reclaim the reserve pit for the above referenced well as follows:

NDIC field inspector, Rick Dunn and the landowner were notified on 8/15/2012
Landowner: Larry P Heen, 14033 45th St NW, Williston, ND 58801
No fluid is in pit to be disposed of. Cuttings will be spread out in pit and backfilled with clay. Edges of liner will be folded over pit to completely cover it. Wellsite will be sloped and contoured to ensure proper drainage.

Company	Telephone Number
Oasis Petroleum North America LLC	281-404-9491

Address: **1001 Fannin, Suite 1500**

City	State	Zip Code
Houston	TX	77002

Signature	Printed Name
Brandi Terry	Brandi Terry
Title: **Regulatory Specialist**	Date: **August 16, 2012**

Email Address: **bterry@oasispetroleum.com**

FOR STATE USE ONLY

- [ ] Received
- [x] Approved

Date: 8-22-12
By: Todd Holweger
Title:

Oasis Petroleum North America, LLC

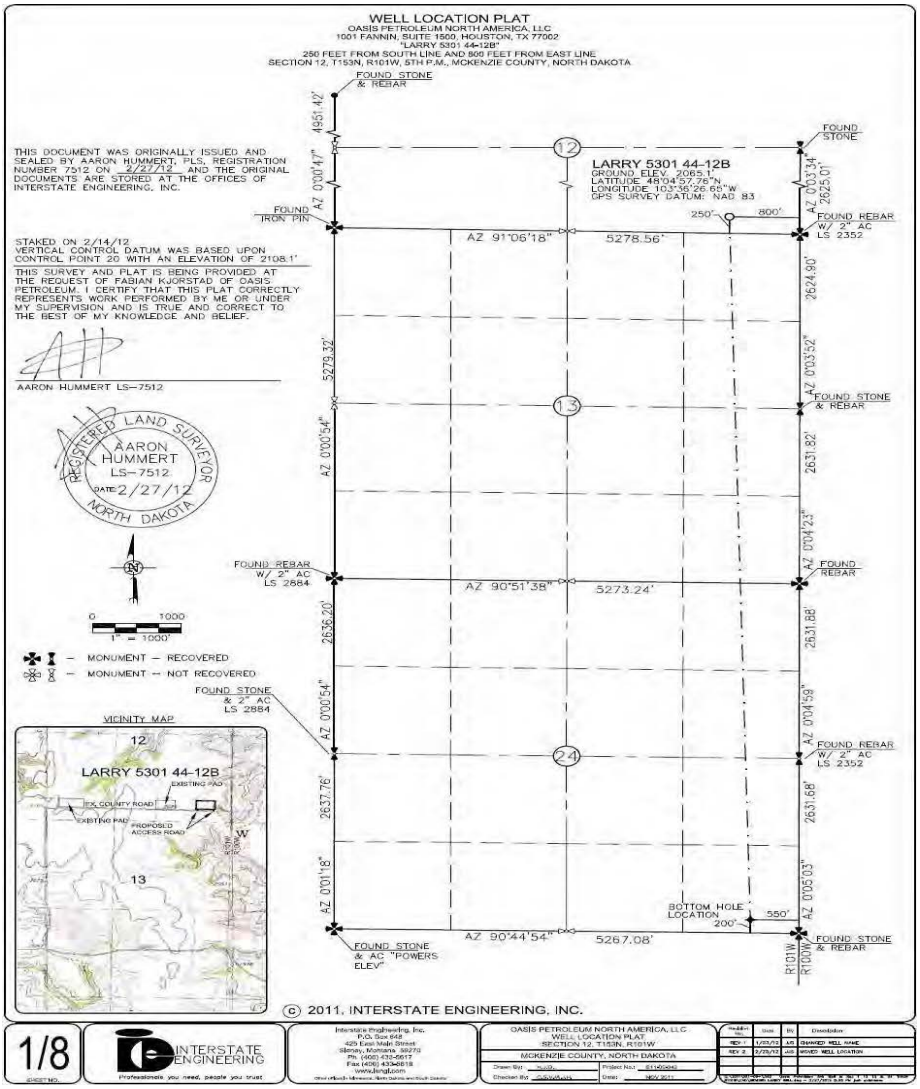
Larry 5301 44-12B

250' FSL & 800' FEL

SE SE Section 12, T153N-R101W

Baker Field / Middle Bakken

McKenzie County, North Dakota



BOTTOM HOLE LOCATION:

BHL: 10,516.82' south & 174.89' east of surface location or approx.
253.46' FSL & 625.11' FEL, SE SE Section 24, T153N-R101W

Prepared for:
Clay Hargett
Oasis Petroleum North America, LLC
1001 Fannin, Suite 1500
Houston, TX 77002

Prepared by:
G. Wayne Peterson, Eric Benjamin
PO Box 51297; Billings, MT 59105
2150 Harnish Blvd., Billings, MT 59101
(406) 259-4124
geology@sunburstconsulting.com
www.sunburstconsulting.com

WELL EVALUATION

Figure 1. Stoneham Rig # 18, drilling the Oasis Petroleum North America, LLC - Larry 5301 44-12B, during August, 2012 in the Baker prospect, Mckenzie County, North Dakota. (G. Wayne Peterson, Sunburst Consulting Geologist).

INTRODUCTION

Oasis Petroleum North America LLC. Larry 5301 44-12B [SE SE Sec. 12, T153N R101W] is located approximately 8 miles south and 2 miles west of the town of Williston in McKenzie County, North Dakota. The Larry 5301 44-12B is a horizontal Middle Bakken development well in part of Oasis Petroleum's Baker prospect within the Williston Basin. The vertical hole was planned to be drilled to approximately 10,246'. The curve would be built at 12 degrees per 100' to land within the Middle Bakken. This well is a three section horizontal lateral which originates in the southeast quarter of Section 12, then drilled south to land in northeast quarter of Section 13. The well bore was steered south to the southeast of Section 25. (Figure 2) Directional drilling technologies were used to land in the Middle Bakken Member reservoir and maintain exposure to the target.

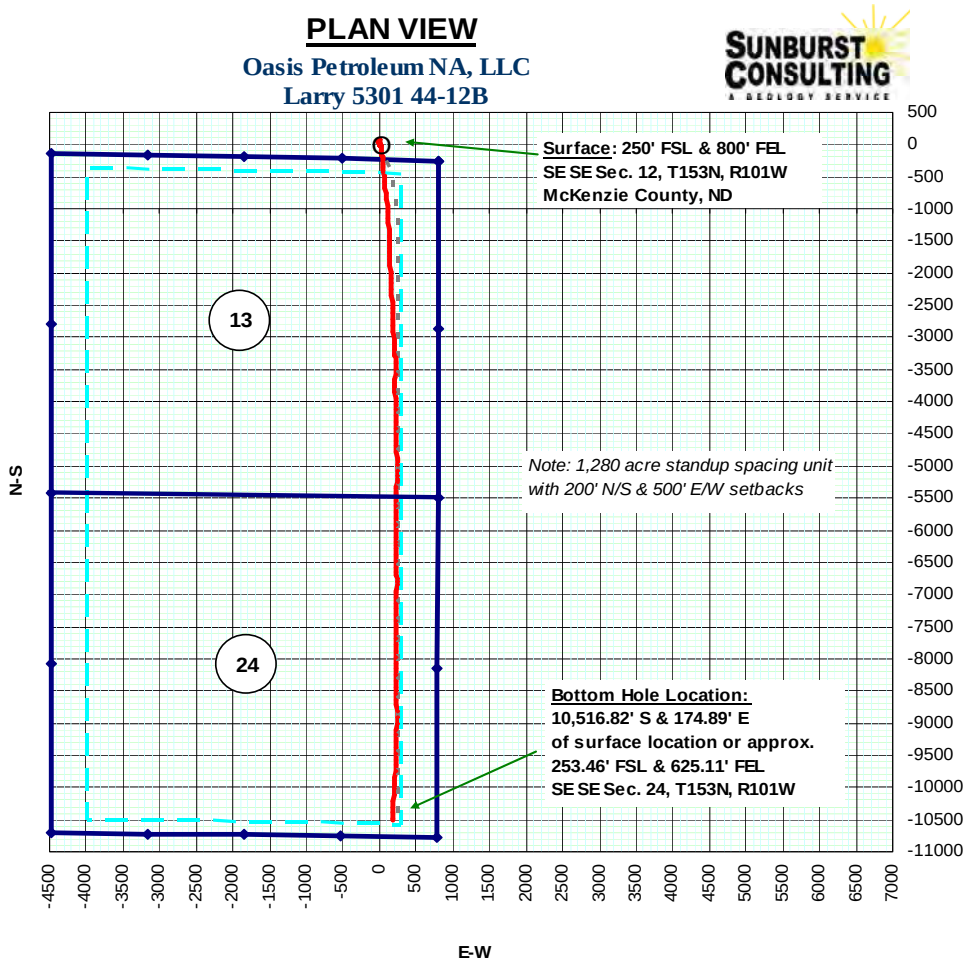


Figure 2. Plan view of Larry 5301 44-12B spacing unit and well path.

OFFSET WELLS

The primary offset wells used for depth correlation during curve operations were the Gulf Oil Exploration and Production Lindvig 1-11-3C; and the Oasis Petroleum North America, LLC. Bray 5301 43-12H. The Gulf Oil Exploration and Production Lindvig 1-11-3C [SE SE Section 11, T153N, R101W] is located approximately 1 mile west of the Larry 5301 44-12B. This well was completed in March of 1982 reached a total depth of 13,800, true vertical depth (TVD). The Oasis Petroleum North America, LLC. Bray 5301 43-12H [SWSE Section 12 T153N, R101W] is located approximately 1/4 mile west of the Larry 5301 44-12B. This well was completed in October of 2011 and reached a total depth of 20,978’ MD. The formation thicknesses expressed by gamma signatures in these wells, and the Oasis Petroleum North America, LLC Kline 5300 11-18H [Lot 1 Section 18, T153N, R100W] were used to assist in landing the curve. This was accomplished by comparing gamma signatures from the offset wells to gamma data collected during drilling operations. The casing target landing true vertical depth (TVD) was periodically updated to ensure accurate landing of the curve. Data used in this evaluation are found in this report.

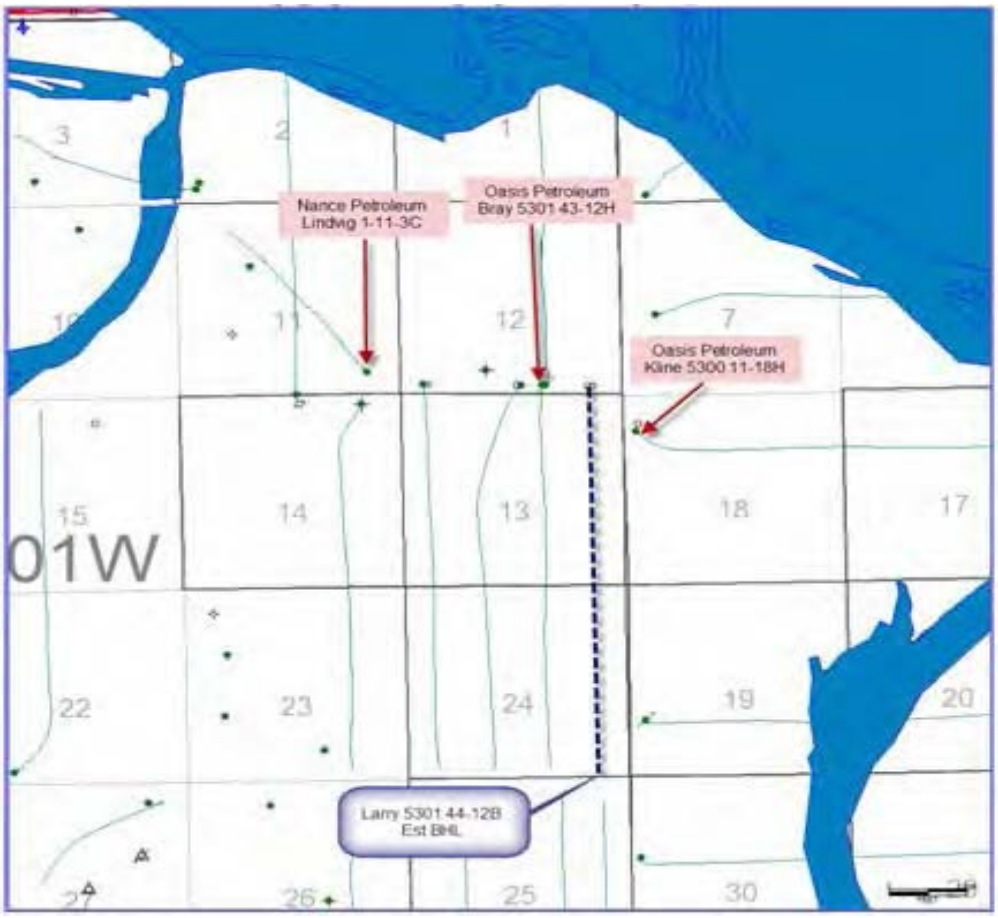


Figure 3. Base map with offsets.

ENGINEERING

Vertical Operations

The Larry 5301 44-12B was re-entered on 16 July, 2012 by Nabors B22. A 13 ½" hole was previously drilled with fresh water to 2,047' and isolated with 9 ⅝" J-55 casing and cemented to surface. After re-entry, the drilling fluid was diesel invert with target weight of 9.6-9.9 ppg for the vertical hole and 9.9-10.3 ppg for curve operations. The vertical hole was drilled from surface casing to the KOP of 10,247' MD in 94 hours with bit #1, a Reed DSH616M , and a Baker 5/6 low speed motor.

Directional Operations

Ryan Energy Technologies provided personnel and equipment for MWD services in the vertical hole, the curve, and throughout the lateral. The directional drillers (RPM), MWD and Sunburst Consulting contractors worked closely together throughout the project to evaluate data and make steering decisions to maximize the amount of borehole in the targeted zones and increase rate of penetration (ROP) of the formation.

Curve Build

The curve was 843' and was drilled in approximately 30 hours by bit #2, a 8 ¾" Reed E1202-A1B PDC bit, attached to a 2.38 degree adjustable National 7/8 5 stage mud motor. The curve was successfully landed at 11,090' MD, approximately 15' below the base of the Upper Bakken Shale. Seven inch diameter 32# HCP-110 and 29# HCP-110 casing were set to 11,080' MD and cemented.

Lateral

After completion of curve operations, MWD tools and bit #3, a 6" Baker DP505FX, 6 blade PDC bit, attached to a 1.5º fixed Baker XLP 5/6 high speed motor were run in the hole. This assembly drilled to the TD of 21,140' MD, drilling 10,050' in 115 hours in the lateral. Total depth of 21,140', with a final azimuth of 182.60° and inclination of 89.40º was achieved at 1550 hours CDT August 3, 2012. The resulting final vertical section was 10,723.80'.

The bottom hole location (BHL) is 10,516.82' south & 174.89' east of surface location or approximately 253.46' FSL & 625.11' FEL, SE SE Sec. 24, T153N, R101W. The hole was then circulated, and reamed for completion.

GEOLOGY

Methods

Geologic analysis for the Larry 5301 44-12B was provided by Sunburst Consulting, Inc. Information was networked through Rig-watch's electronic data recorder system. This information network provided depth, drilling rate, pump strokes and total gas units to multiple areas throughout the well site. Gas data was fed from Sunburst's digital gas detector, a total gas chromatograph, through Rig-watch for dissemination. Hydrocarbon constituents (C_1 through C_4) were recorded in part-per-million concentrations. Gas sampling was pulled through ¼" polyflo tubing after agitation in Sunburst's gas trap at the shakers. Rig crews caught lagged samples at the direction of the well site geologists. Samples were collected at 30' intervals in the vertical/curve and 30' intervals in the lateral. Rock cuttings were analyzed in wet and dry conditions under a 10x45 power binocular microscope (for detailed lithologic descriptions see appendix). Cuttings were sent to North Dakota Geologic Survey. In addition to rock samples, rate of penetration and gamma ray data were also used in geologic analysis to aid geo-steering and dip calculations.

Lithology

Formation analysis began at 8,170' MD with a red orange siltstone and anhydrite characteristic of the Kibbey Formation [Mississippian Big Snowy Group]. This interval consisted of a sub-blocky to sub platy, red orange, friable to firm siltstone with calcareous cement well to moderately cemented and an earthy texture. Also present was a

trace amount of anhydrite which was off white. It was soft, amorphous, with an earthy texture.

The Kibbey "Lime" came in at 8,348' MD (-6,265') subsea (SS). This marker is represented by an anhydrite, which was off white. It was soft, amorphous, with an earthy texture, and a trace of sand grains. The anhydrite is often accompanied by slower penetration rates as the bit transitions out of the overlying siltstone. The rate of penetration (ROP) then increases as the bit exits the anhydrite into the underlying limestone mudstone. This carbonate was described as a light gray to gray lime mudstone which was microcrystalline or occasionally laminated with an earthy texture. Samples in the lower section consisted of red to red orange siltstone that was friable with an earthy texture. This facies was moderately to well cemented with calcite and also was interbedded with soft, off white amorphous or cryptocrystalline anhydrite.

The Charles Formation [Mississippian Madison Group] consisted of salt, anhydrite, limestone and argillaceous lime mudstone. The first Charles salt was drilled at 8,502' MD (-6,419') SS. The Base of the Last Salt (BLS) was logged at 9,199' MD 9,198' TVD (-7,115') SS as indicated by slower penetration rates and increased weight on bit. The intervals of salt within the Charles Formation can be identified by an increase in penetration rates and lower API gamma count rates. Samples of the salt intervals were described as clear to milky, crystalline, euhedral to subhedral, and hard, with no visible porosity. Slower penetration rates are observed as the bit encounters sections of limestone mudstone to wackestone, which was light gray to light gray brown, light brown, microcrystalline, friable, and dense, with an earthy texture. This limestone was argillaceous in part in areas where gamma API counts were elevated. In areas where the penetration rates were slowest anhydrite was observed. These samples were described as off white to white, soft with cryptocrystalline texture or amorphous. Within the Charles Formation at 9,086' MD slower penetration rates indicated the presence of anhydrite. This section was approximately 24' thick, its base, as indicated by the transition to faster penetration rates and higher gamma API counts is indicative of the Upper Berentson which was drilled at 9,111' MD 9,110' TVD (-7,027') SS.

The Ratcliffe interval [Charles Formation] was drilled at 9,231' MD 9,230' TVD (-7,147') SS. The top of this interval was observed as faster penetration rates were encountered, as the well bore transitioned from anhydrite and limestone mudstone. This limestone was light gray, medium gray, tan to medium brown mottled with a trace of cream. It was microcrystalline, trace crystalline, friable to firm, and dense; with an earthy to crystalline texture. A trace of intercrystalline porosity was noted along with a *trace of dark brown dead oil stain* in some samples.

The Mission Canyon Formation [Mississippian Madison Group] was logged at 9,420' MD 9,419' TVD (-7,336') SS. The Mission Canyon Formation consisted of limestone and argillaceous lime mudstone. This limestone facies was described as light gray, light brown, light gray-brown, off white in color. The microcrystalline structure was predominately friable to firm with an earthy to crystalline texture. Fossil fragments, along with dark brown algal material were visible in some samples throughout the Mission

Canyon Formation. A trace of *spotty light brown oil stain* was occasionally observed while logging the Mission Canyon.

Figure 4. Limestone with spotty light brown & and dark brown dead oil staining

The Lodgepole Formation [Mississippian Madison Group] was encountered at 9,979' MD 9,978' TVD (-7,895') SS. This interval was characterized by light to medium gray, light gray-brown, traces of dark gray, with rare off white, argillaceous limestone mudstone which was evidenced by the elevated gamma. The lithology was further characterized as being microcrystalline, friable to firm, and dense, with an earthy to crystalline texture. Disseminated pyrite was also seen in the samples as a trace mineral. Gas shows were negligible in this formation.

The "False Bakken" was drilled at 10,797' MD 10,692' TVD (8,609') SS, and the Scallion limestone at 10,799' MD 10,693' TVD (-8,610') SS. Samples from the False Bakken are typically brown shale, friable, trace firm, sub-blocky, with an earthy texture. This facies is calcareous, with a trace of disseminated pyrite. The Scallion lime mudstone, which was off white to light brown, with light gray and a trace of dark gray. It was microcrystalline, friable to firm, dense, with an earthy texture, along with a trace of disseminated pyrite. Gas levels were elevated through this interval with a maximum of 2,640 units likely due to fracture porosity.

The top of Upper Bakken Shale was drilled at 10,826' MD 10,703' TVD (8,620') which was 11' low to Bray 5301 43-12H. Entry into this interval was characterized by high gamma, elevated background gas and increased rates of penetration. The shale is black, sub-blocky to sub-platy, with an earthy texture. Additionally the shale is described as carbonaceous and petroliferous. Trace minerals included disseminated pyrite. Drilling gas in this interval reached a maximum of 1,209 units, with a sliding gas of 1,259 units.

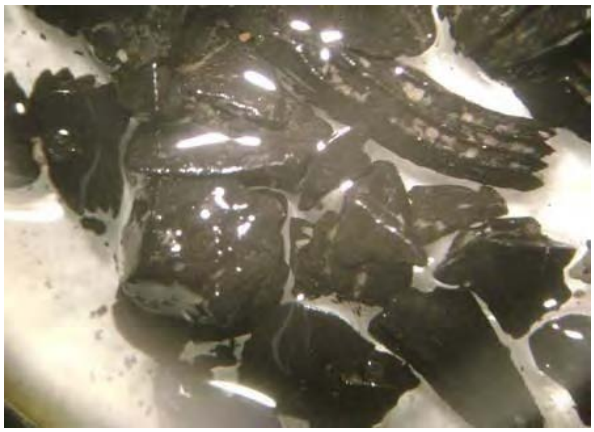


Figure 5. Sample of black, carbonaceous and petroliferous shale from the Upper Bakken Member.

The Bakken Middle Member was reached at 10,880' MD 10,718' TVD (-8,635') SS. This formation was predominantly siltstone and silty sandstone noted by the decreasing penetration rates, gamma API units, and recorded gas levels, relative to the overlying source rock.

The **target zone** of the Middle Bakken was to be drilled in the silty sandstone facies in a ten foot zone beginning 12 feet into the Middle Bakken Member.

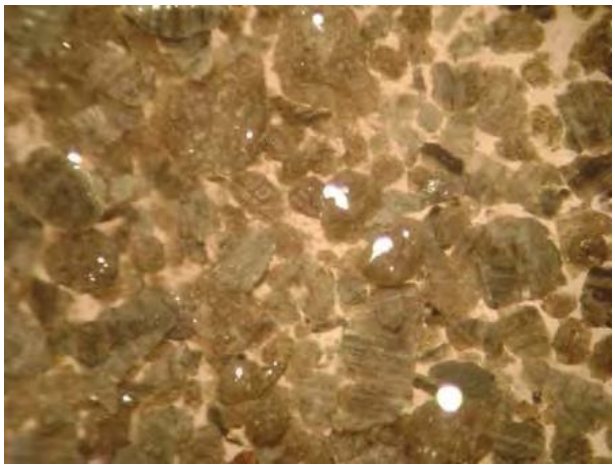


Figure 6. Sample of sandstone and silty sandstone typical of the Middle Bakken target zone

Samples in the Middle Bakken were generally silty sandstone which was gray, off white to white, tan, very fine grained silty sandstone consisting of moderately sorted, subangular quartz grains. Additionally this facies was moderately calcite cemented; with a trace of disseminated and nodular pyrite. Poor intergranular porosity was observed, as was a *trace of light brown spotty oil stain.* Also present in varying amounts was a light brown to brown, translucent, with a trace of off white sandstone. This sandstone was fine to very fine grained, friable, with sub-angular to sub-rounded quartz grains which were moderately sorted, and calcite cemented. Also present was a trace of disseminated and

nodular pyrite. It had from fair to poor intergranular porosity, with *even and spotty light brown oil stain.*

Gas and Oil Shows

Gas monitoring and fluid gains provided evidence of a hydrocarbon saturated reservoir during the drilling of the Larry 5301 44-12B. Oil and gas shows at the shakers and in samples were continuously monitored. In the closed mud system, hydrostatic conditions were maintained near balance. This allowed for gas and fluid gains from the well to be monitored. Gas on the Larry 5301 44-12B varied according to penetration rates and stratigraphic position. Observed concentrations ranged from 3,000 to 4,000 units background gas, and connection peaks of 6,000 to 8,000 units in earlier portion of the lateral where shows were the best. In the later portion of the lateral flow was diverted through the gas buster, effectively muting recordable gas values. There were no trips during the drilling of the lateral therefore no trip gases were observed. Chromatography of gas revealed typical concentrations of methane, ethane, propane and butane (Figure 7).

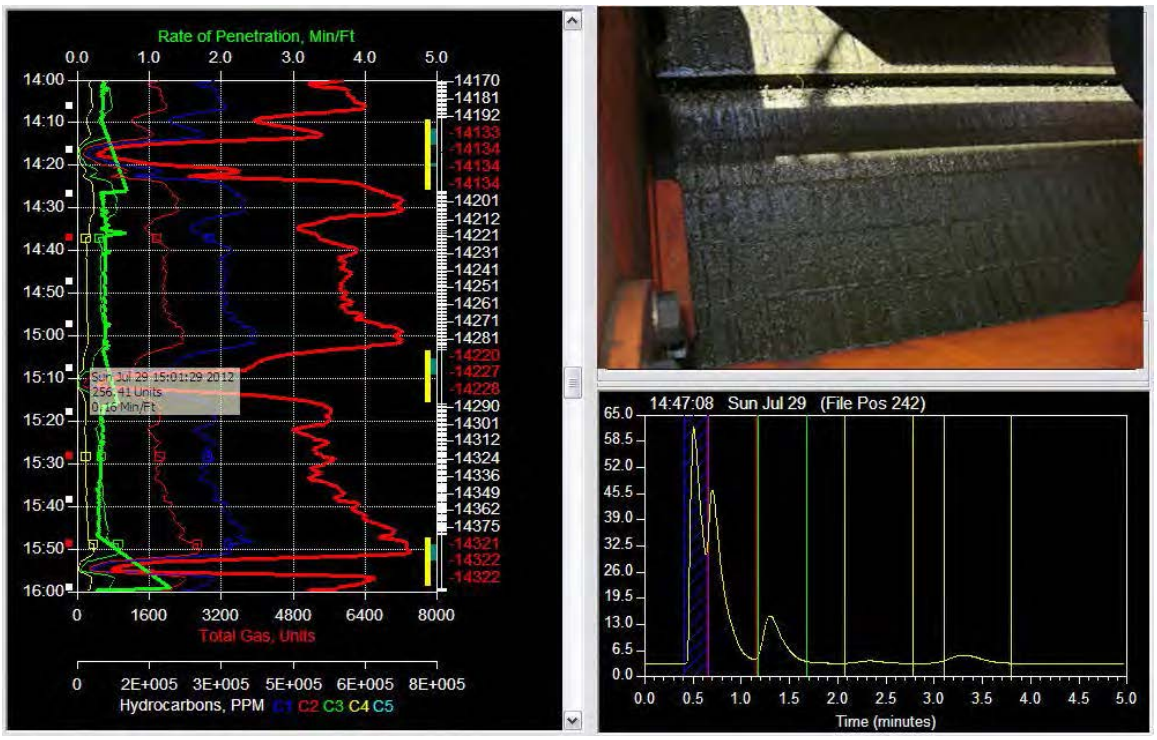


Figure 7. Gas chromatography of 6,400 unit connection gas peaks, drilling gas and green brown oil at the shakers. Note the measurable concentrations of C_3 and C_4 at 2.4 and 3.8 minutes.

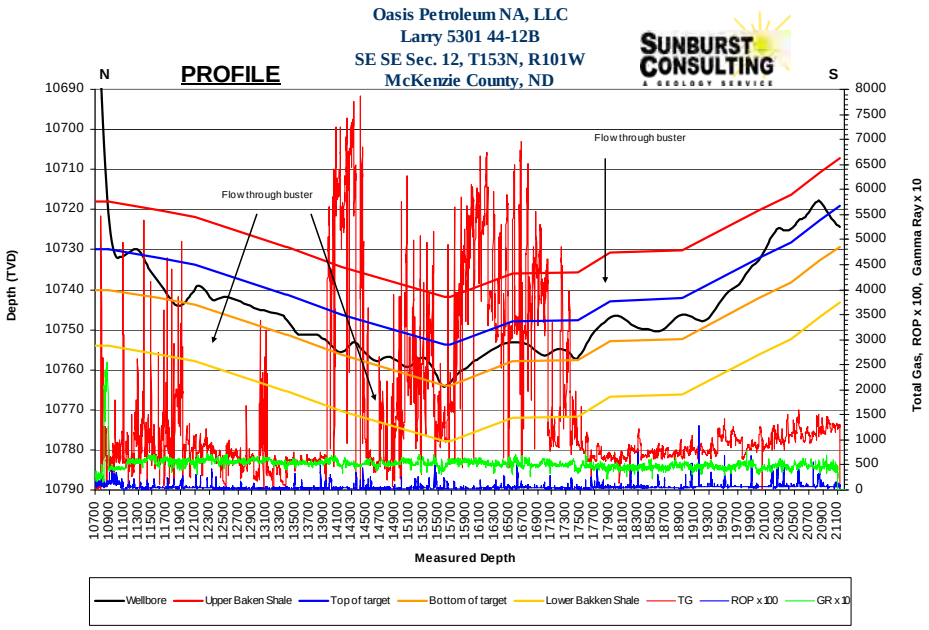


Figure 8. Profile, displaying total gas, gamma ray and rate of penetration.

Geo-steering

Geologic structure maps in the vicinity of the Larry 5301 44-12B estimated 0.15 to 0.2 degree down apparent dip for the first 4,000' of the lateral. This apparent dip would then reverse to a 0.38 degree up dip until total depth (TD) was reached. The Larry 5301 44-12B preferred drilling interval consisted of a ten foot zone located approximately twelve feet below the Upper Bakken Shale. Stratigraphic location in the target zone was based on drill rates, gas shows, gamma ray values and sample observations. The projected target landing was to be fourteen feet into the Middle Bakken and was successfully reached prior to casing operations. Using offsets provided by Oasis representatives, a projected porosity zones were identified as the preferred drilling areas.

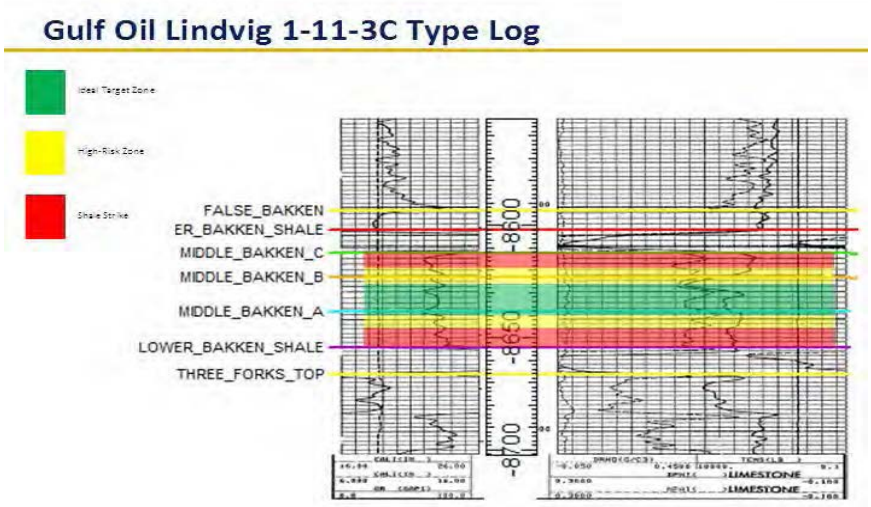


Figure 9. CND Type log gamma profile from the Lindvig 1-11-3C.

As the well bore moved from the top to the bottom of the preferred drilling zone, gamma API counts, collected samples, and gas were evaluated along with penetration rates to identify areas within the 10’ preferred drilling zone that yielded the best penetration rates. Offset logs identified by Oasis representatives indicated a porosity zones in the upper and lower portion of the 10’ preferred drilling zone.

It should be noted that in the later portion of the lateral, after connections, the MWD tool, would intermittently produce gamma API counts that were in excess of 200 API This began at approximately 17,700’ MD until TD. Drilling would proceed with these values until the API counts dropped to what were considered normal values, then the driller would pick up and re-log the erroneous gamma ray data. These distances ranged from 10’ to 60’. The gamma API counts from approximately 17,700’ MD to TD, also appeared to shift lower by approximately 10 to 15 API units, making it difficult to correlate with gamma previously seen in the lateral.

Drilling out of intermediate casing the early inclinations were above 90 degrees. Offset logs and information provided by Oasis representatives indicated that the well bore was to follow a downward path during the early portion of the lateral, which led onsite personnel to steer the well bore down to a position in the lower portion of the preferred drilling zone, where it remained for the greater portion of the lateral. The assembly while drilling in the lower portion of the target interval, began oscillating between two tight streaks located above and below it. Gamma values that ranged from the mid forties to the mid thirties, along with the presence of limestone in collected samples indicated that the well bore had encountered the overlying limestone member. Gamma values in the mid thirties to low forties indicated without the presence of limestone that the well bore had encountered the hard streak below it, a well-cemented silty sandstone. Between these tight streaks the gamma counts ranged form the mid forties to the mid sixties. As noted earlier, from approximately 17,700’ MD to TD, these values shifted 10 to 15 API counts lower.

As the well bore drilled to the south, the overlying limestone member appeared to thin, until it was no longer logged with gamma or observed in drill cuttings. The well bore then moved up to the upper portion of the preferred drilling zone, and even above it. The well bore, while above the target interval persistent to rise on rotation, and continued to deflect off of a tight streak located below it. It became necessary to institute many down side slides to keep the well bore from striking the overlying upper Bakken shale.

Total depth (TD) of 20,464’ MD was reached at 1550 hours CDT August 3, 2012. The well-site team worked well together maintaining the well bore in the desired target interval for 92% of the lateral, opening 9,812’ of potentially productive reservoir rock. The bottom hole location (BHL) lies: 10,516.82' south & 174.89' east of surface location or approximately 253.46' FSL & 625.11' FEL, SE SE Sec. 24, T153N, R101W

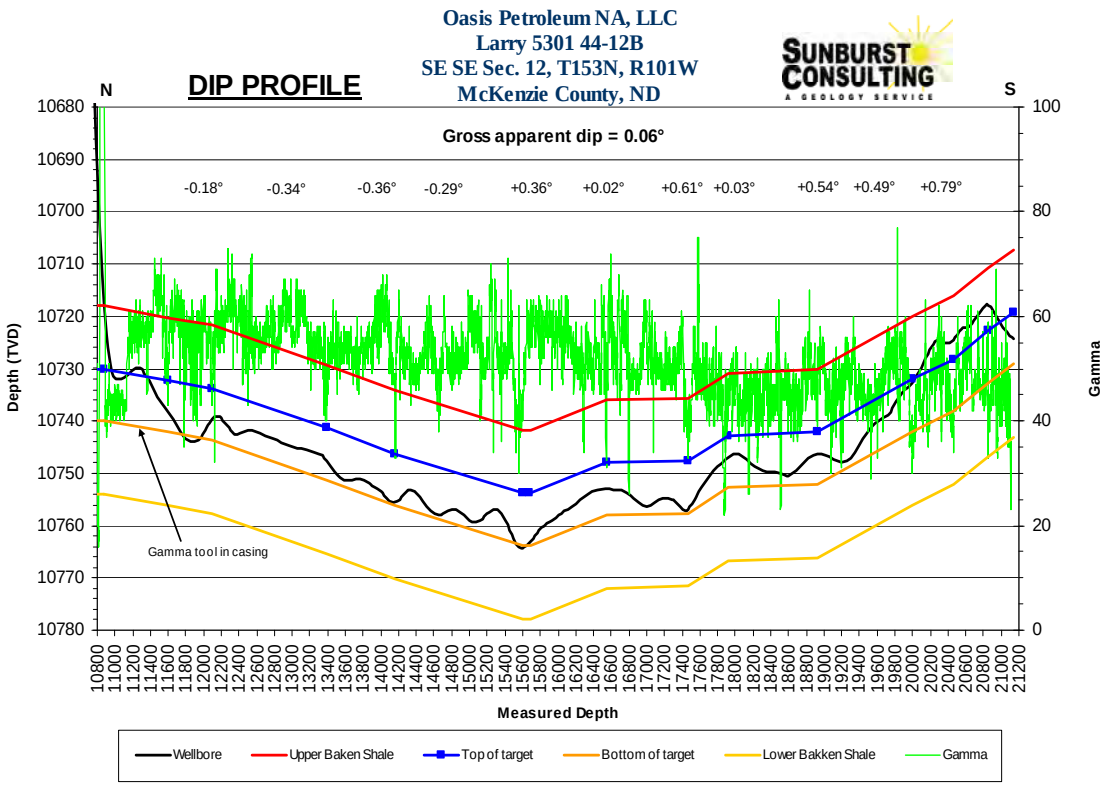


Figure 10. Cross-sectional interpretation of the Larry 5301 44-12B borehole based upon lithology, MWD gamma ray.

SUMMARY

The Larry 5301 44-12B is a successful well in Oasis Petroleum's horizontal Middle Bakken development program. The project was drilled from surface to TD in 19 days. The TD of 21,140' MD was achieved at 1550 hours CDT August 3, 2012. The well site team worked well together maintaining the well bore in the desired target interval for 92% of the lateral, opening 9,812' of potentially productive reservoir rock

Diesel invert drilling fluid 9.6-9.9 ppg for the vertical hole and 9.9-10.3 ppg for curve operations were used to maintain stable hole conditions, minimize washout through the salt intervals and permit adequate analysis of mud gas concentrations.

Samples in the Middle Bakken were generally silty sandstone which was varying shades of gray, off white to white, tan, very fine grained silty sandstone consisting of moderately sorted, subangular quartz grains. Additionally this facies was moderately calcite cemented; with a trace of disseminated and nodular pyrite. Poor intergranular porosity was observed, as was a *trace of light brown spotty oil stain*. Also present in varying amounts was a light brown to brown, translucent, with a trace of off white sandstone. This sandstone was fine to very fine grained, friable, with subangular to subround quartz grains which were moderately sorted, and calcite cemented. Also present was a trace of disseminated and nodular pyrite. It had from fair to poor intergranular porosity, with *even and spotty light brown oil stain.*

Gas monitoring and fluid gains provided evidence of a hydrocarbon saturated reservoir during the drilling of the Larry 5301 44-12B. Oil and gas shows at the shakers and in samples were continuously monitored. In the closed mud system, hydrostatic conditions were maintained near balance. This allowed for gas and fluid gains from the well to be monitored. Gas on the Larry 5301 44-12B varied according to penetration rates and location of the well bore in the stratigraphic column. Observed concentrations ranged from 3,000 to 4,000 units background gas, and connection peaks of 6,000 to 8,000 units in earlier portion of the lateral where shows were the best. In the later portion of the lateral flow was diverted through the gas buster, effectively muting recordable gas values. There were no trips during the drilling of the lateral therefore no trip gases were noted.

The Oasis Petroleum North America, LLC. Larry 5301 44-12B awaits completion operations to determine its ultimate production potential.

Respectfully submitted,
G. Wayne Peterson
c/o Sunburst Consulting, Inc.
6 August, 2012

WELL DATA SUMMARY

OPERATOR:	**Oasis Petroleum North America, LLC**
ADDRESS:	1001 Fannin, Suite 1500 Houston, TX 77002
WELL NAME:	**Larry 5301 44-12B**
API #:	33-053-04071
SURFACE LOCATION:	250' FSL & 800' FEL SE SE Section 12, T153N-R101W
FIELD/ PROSPECT:	Baker Field / Middle Bakken
COUNTY, STATE	McKenzie County, North Dakota
BASIN:	Williston
WELL TYPE:	Middle Bakken Horizontal
ELEVATION:	GL: 2,058' KB: 2,083'
SPUD/ RE-ENTRY DATE:	July 16, 2012
BOTTOM HOLE LOCATION1:	BHL: 10,516.82' south & 174.89' east of surface location or approx. 253.46' FSL & 625.11' FEL, SE SE Section 24, T153N-R101W
CLOSURE COORDINATES:	Closure Azimuth: 179.47° Closure Distance: 10,518.28'
TOTAL DEPTH / DATE:	21,140' on August 3, 2012
TOTAL DRILLING DAYS:	19 days
CONTRACTOR:	Nabors B22
PUMPS:	H&H Triplex (stroke length - 12")
TOOLPUSHERS:	Ron Cheney, Chase Erdman

FIELD SUPERVISORS:	Dominic Bohn, Mike Bader
CHEMICAL COMPANY:	NOV Fluid Control
MUD ENGINEER:	Mike McCall, Don Groetken
MUD TYPE:	Fresh water in surface hole Diesel invert in curve; Saltwater brine in lateral
MUD LOSSES:	Invert Mud: 467 bbls, Salt Water: 0 bbls
PROSPECT GEOLOGIST:	Clay Hargett
WELLSITE GEOLOGISTS:	G. Wayne Peterson, Eric Benjamin
GEOSTEERING SYSTEM:	Sunburst Digital Wellsite Geological System
ROCK SAMPLING:	30' from 8,170' - 10,870' 10' from 10,870' -11,090' 30' from 10,090' - 21,140' (TD)
SAMPLE EXAMINATION:	Binocular microscope & fluoroscope
SAMPLE CUTS:	Trichloroethylene (Carbo-Sol)
GAS DETECTION:	MSI (Mudlogging Systems, Inc.) TGC - total gas with chromatograph
DIRECTIONAL DRILLERS:	RPM, Inc. Dominic Bohn, Mike Bader, Rick Bansemer
MWD:	Ryan Mike McCammond, Matt Aesoph
CASING:	Surface: 9 5/8" 36# J-55 set to 2,047' Intermediate: 7" 3,629' 32# HCP-110, 7,451' 29# HCP-110 set to 11,080'

KEY OFFSET WELLS:

Oasis Petroleum North America, LLC
Bray 5301 43-12H
SW SE Section 12 T153N R101W
McKenzie County, ND

Oasis Petroleum North America, LLC
Kline 5300 11-18H
Lot 1 Section 18 T153N R100W
McKenzie County, ND

SM Energy Company
Lindvig 1-11HR
SE SE Section 11, T153N, R101W
McKenzie County, ND

WELL LOCATION PLAT

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"LARRY 5301 44-12B"
250 FEET FROM SOUTH LINE AND 800 FEET FROM EAST LINE
SECTION 12, T153N, R101W, 5TH P.M., MCKENZIE COUNTY, NORTH DAKOTA

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AARON HUMMERT LS–7512

REGISTERED LAND SURVEYOR
AARON HUMMERT
LS–7512
DATE: 2/27/12
NORTH DAKOTA

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1" = 1000'

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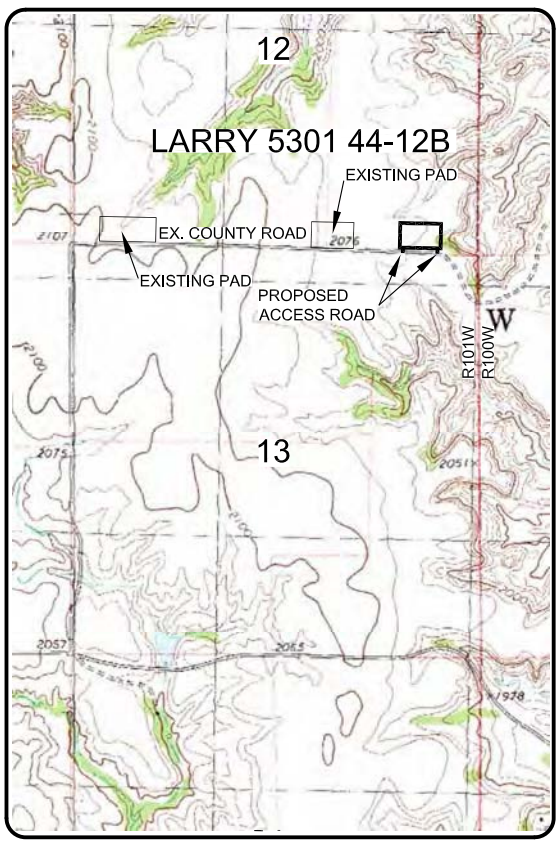
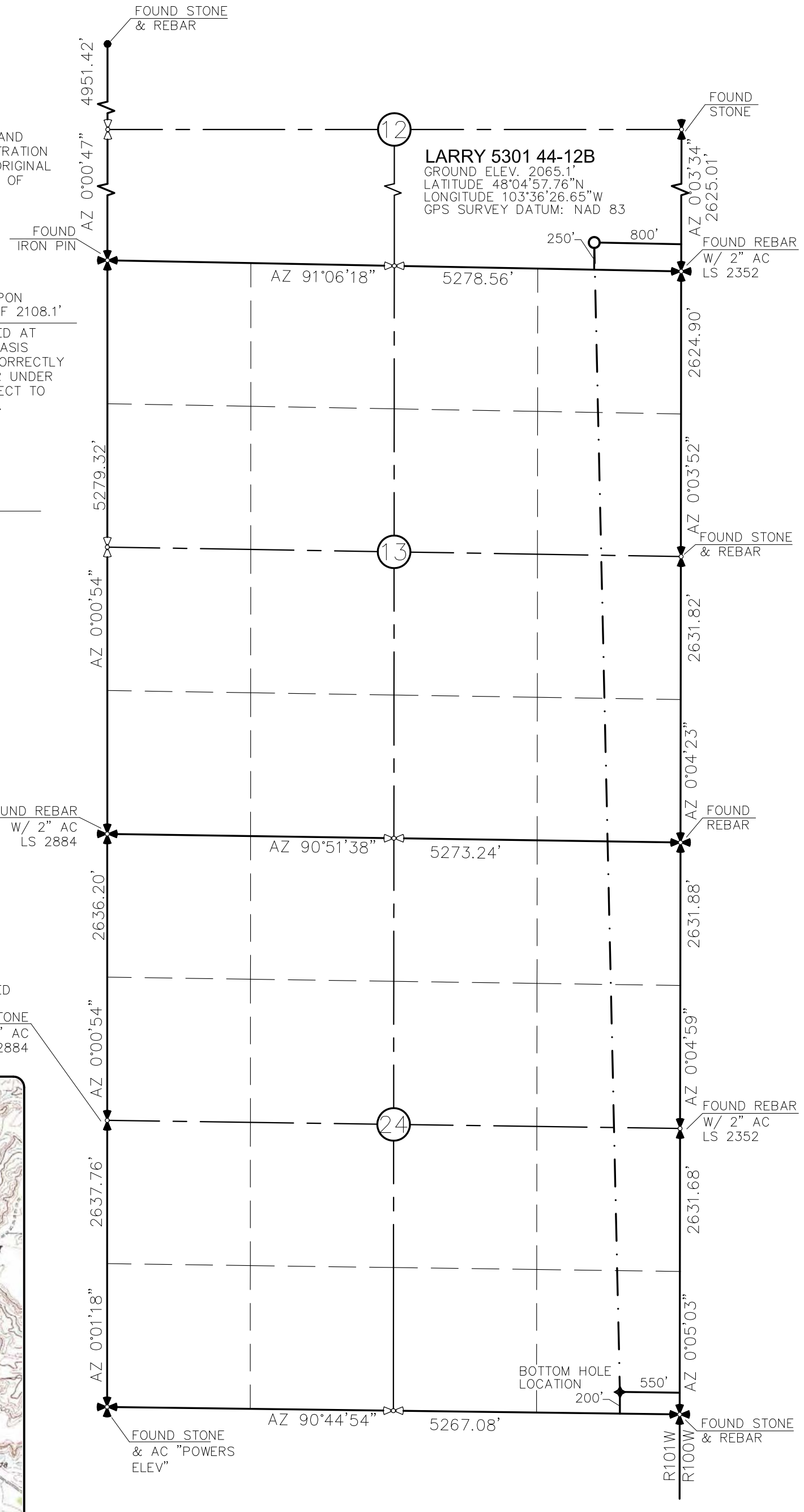
– MONUMENT – NOT RECOVERED

VICINITY MAP





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Other offices In MInnesota, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC
WELL LOCATION PLAT
SECTION 12, T153N, R101W
MCKENZIE COUNTY, NORTH DAKOTA

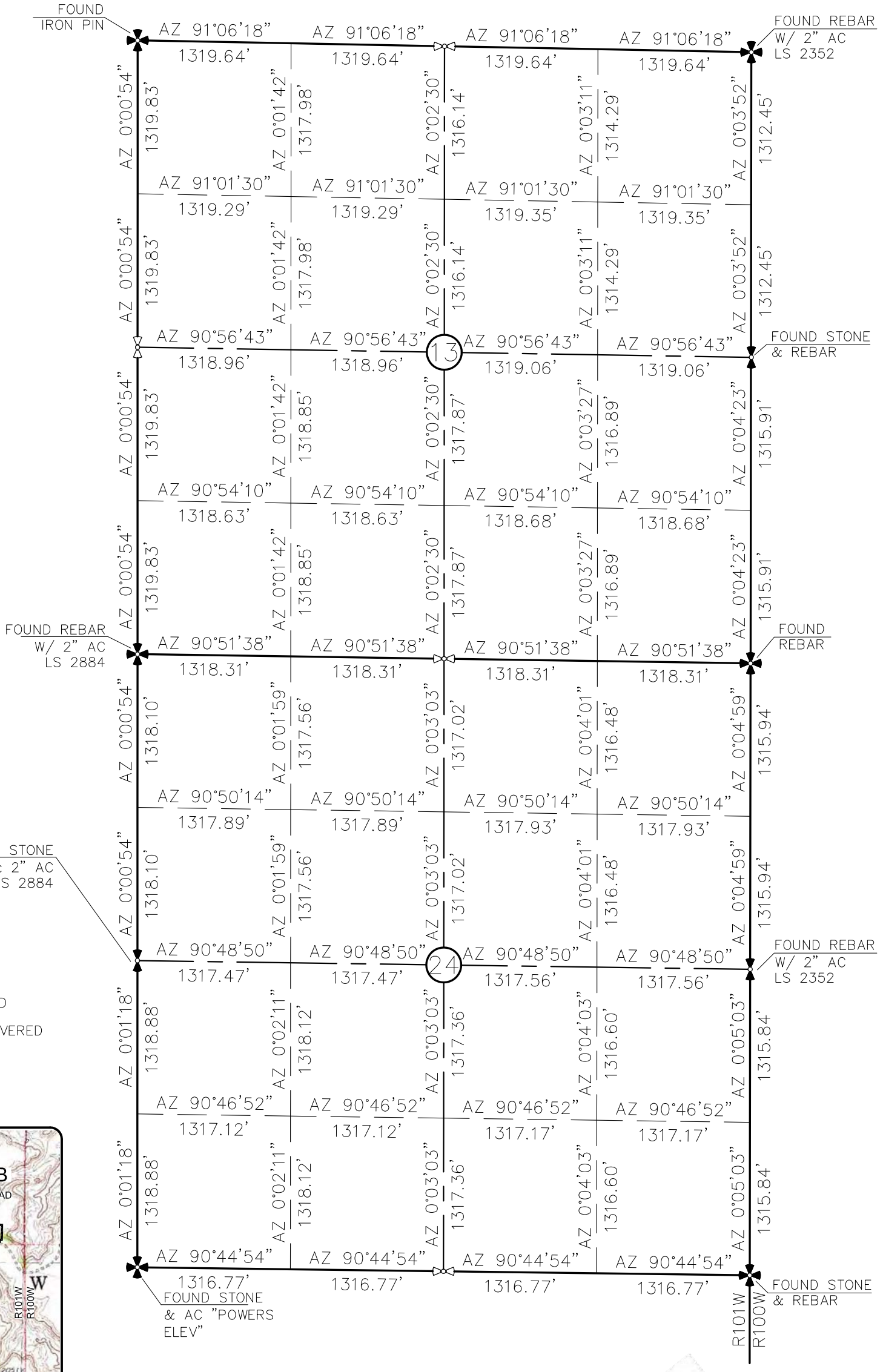
Drawn By: H.J.G. | Project No.: S11-09-342
Checked By: C.S.V./A.J.H. | Date: NOV 2011

Revision No.	Date	By	Description
REV 1	1/23/12	JJS	CHANGED WELL NAME
REV 2	2/25/12	JJS	MOVED WELL LOCATION

G:\2011\S11-09-\342 Oasis Petroleum 6th Well in Sec 1 12 13 & 24 T153N R101W\CAD\REVISED LARRY WELL.dwg – 2/27/2012 5:25 PM josh schmierer

SECTION BREAKDOWN

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"LARRY 5301 44-12B"
250 FEET FROM SOUTH LINE AND 800 FEET FROM EAST LINE
SECTION 12, T153N, R101W, 5TH P.M., MCKENZIE COUNTY, NORTH DAKOTA



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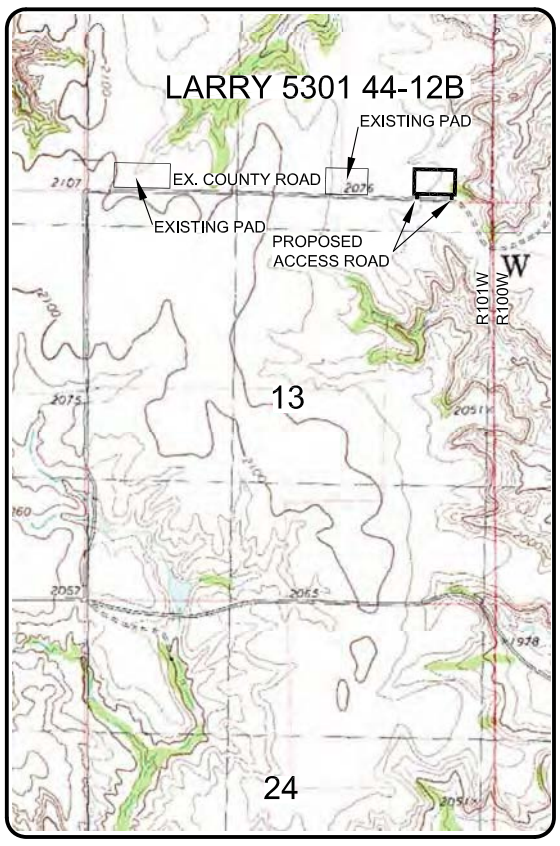
VICINITY MAP



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LS-7512
DATE: 2/27/12
NORTH DAKOTA

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SECTION BREAKDOWN
SECTIONS 13 & 24, T153N, R101W
MCKENZIE COUNTY, NORTH DAKOTA

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PAD LAYOUT

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"LARRY 5301 44-12B"
250 FEET FROM SOUTH LINE AND 800 FEET FROM EAST LINE
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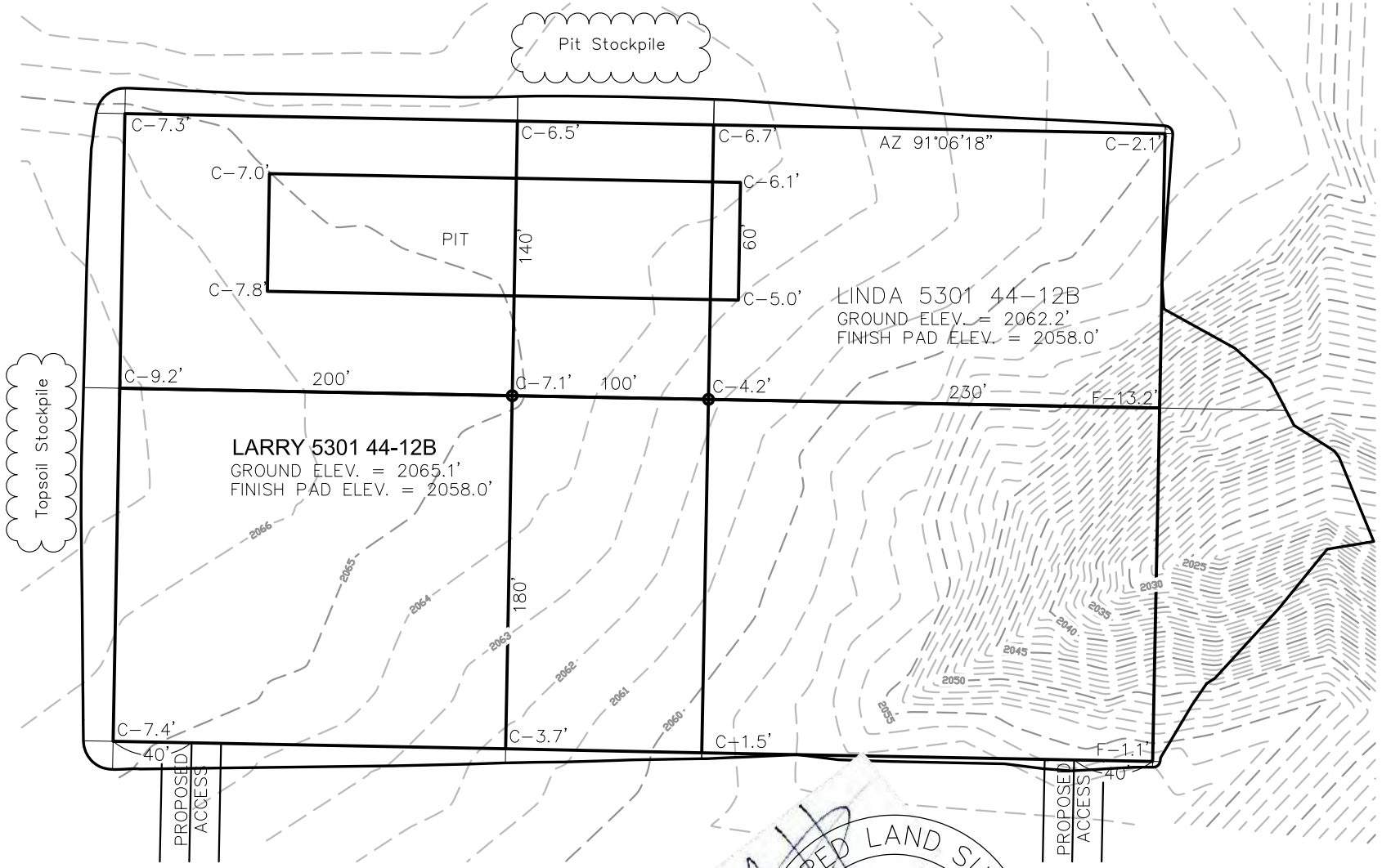

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Revision No.	Date	By	Description
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REV 2	2/25/12	JJS	MOVED WELL LOCATION

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PAD LAYOUT
SECTION 12, T153N, R101W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: HJG. Project No.: S11-09-342
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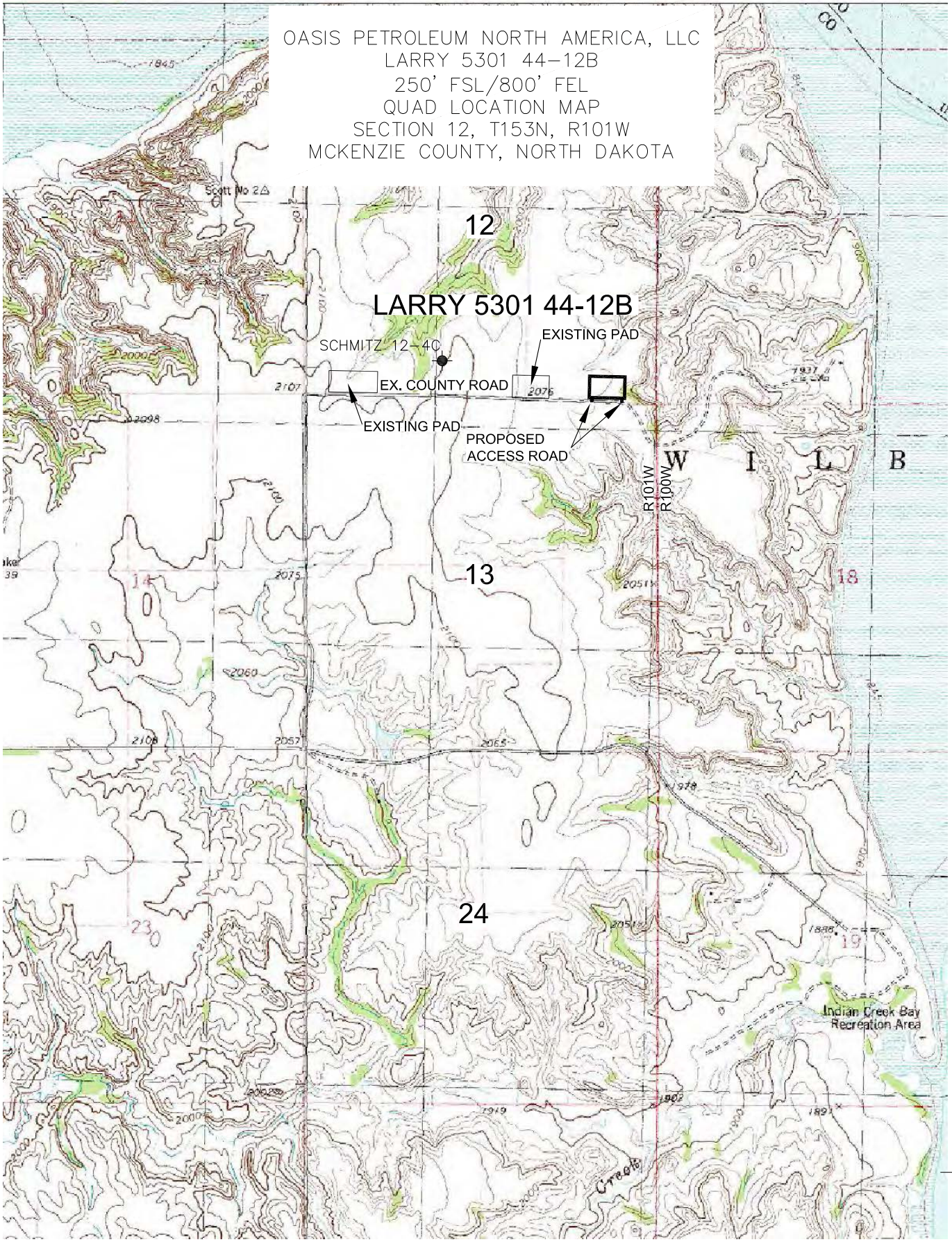
QUAD LOCATION MAP
SECTION 12, T153N, R101W
MCKENZIE COUNTY, NORTH DAKOTA



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MCKENZIE COUNTY, NORTH DAKOTA

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REV 2	2/25/12	JJS	MOVED WELL LOCATION

COUNTY ROAD MAP

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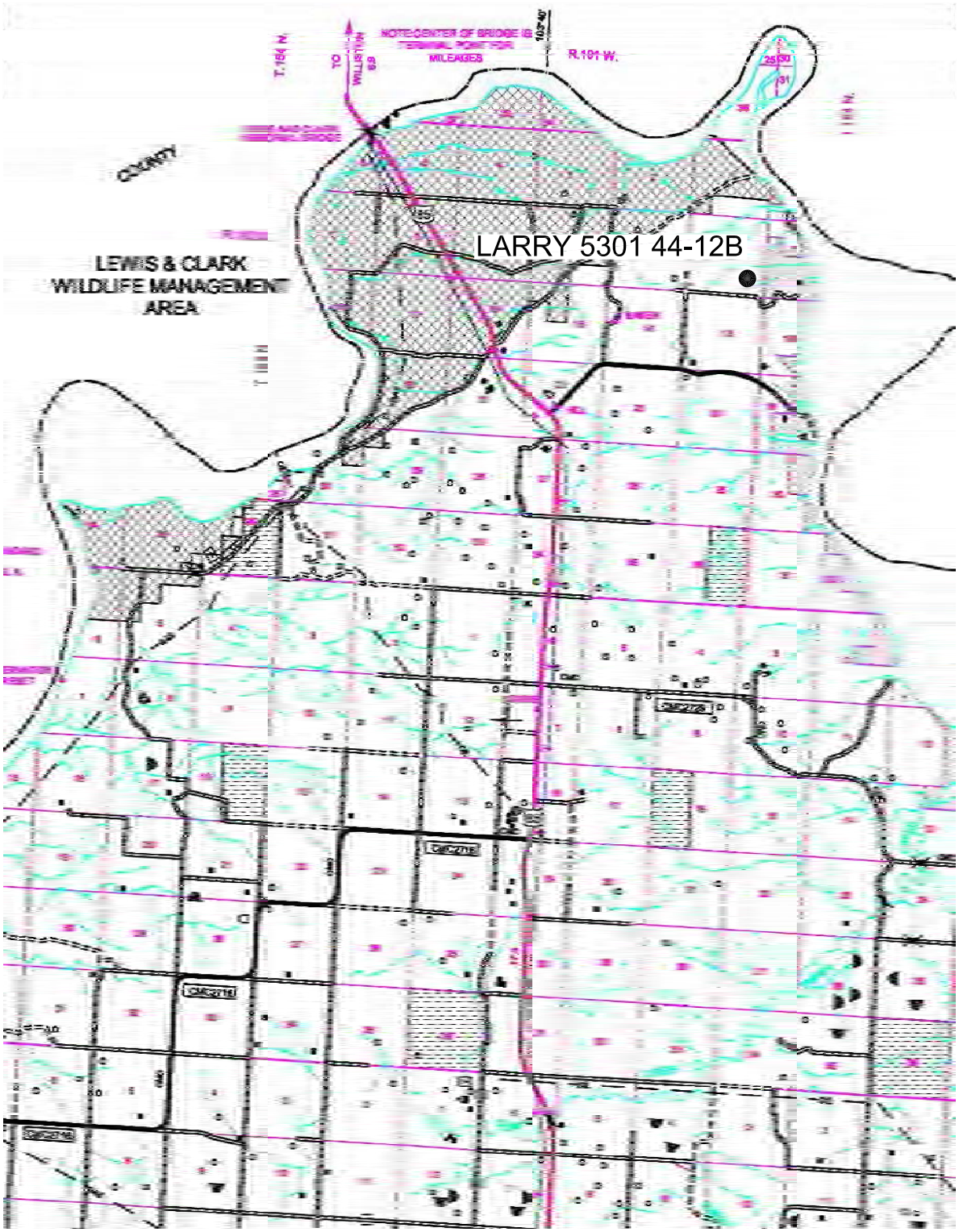

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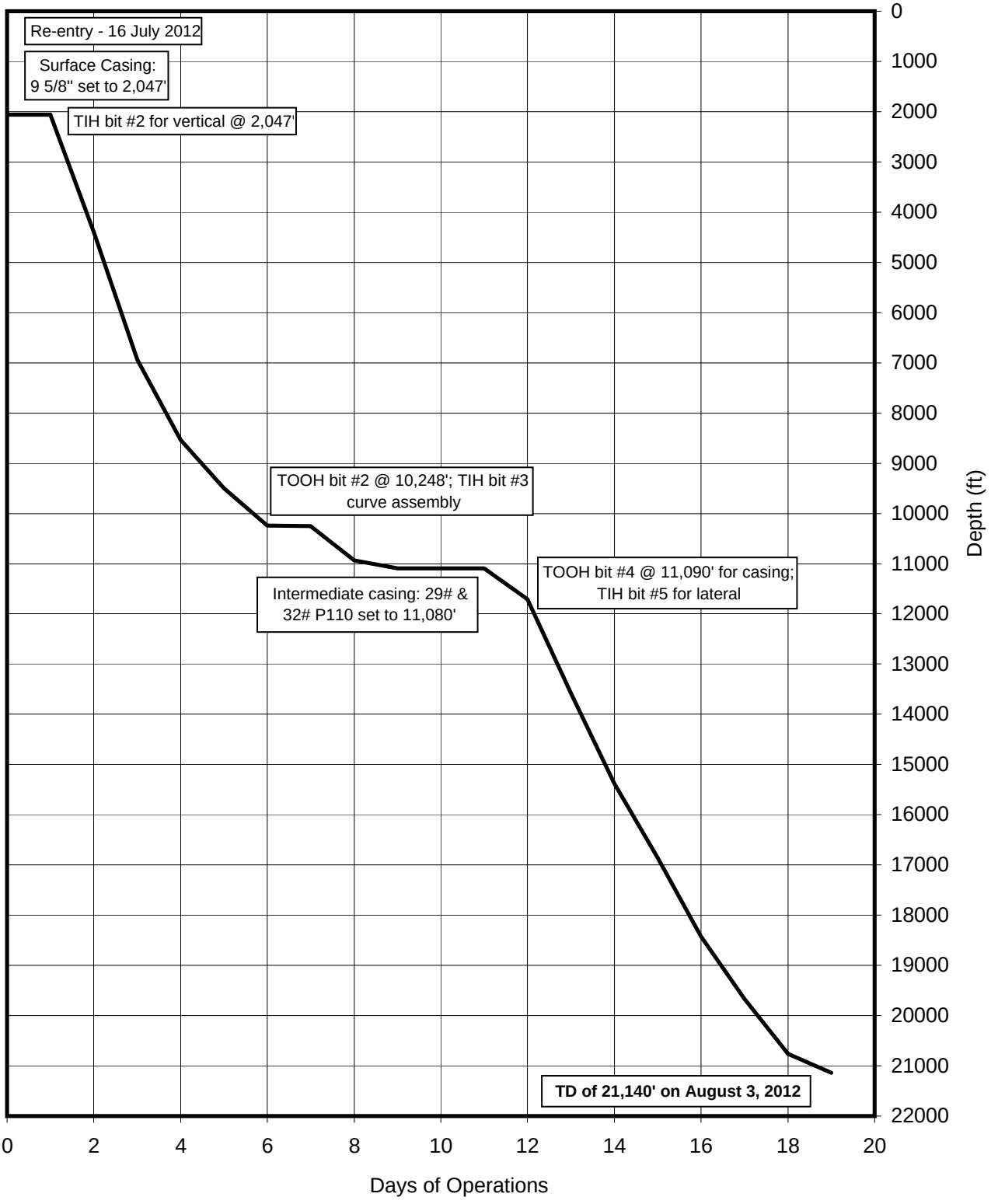
TIME VS DEPTH

Oasis Petroleum North America, LLC

Larry 5301 44-12B



DAILY DRILLING SUMMARY

Day	Date 2012	Depth (0600 Hrs)	24 Hr Footage	Bit #	WOB (Klbs) RT	WOB (Klbs) MM	RPM (RT)	RPM (MM)	PP	SPM 1	SPM 2	GPM	24 Hr Activity	Formation
0	7/16	2,061'	-	-	-	-	-	-	-	-	-	-	Spud re-entry	-
1	7/17	2,061'	0	-	-	-	-	-	-	-	-	-	Finish rigging up. Pick up BHA. Drill collars. Install rotary head.	-
2	7/18	4,393'	2,332	1	15	-	50	-	2900	110	0	541	Pick up 5" drill pipe, survey at 500'. Service trp drive grease wash pipe. Pi up 5" drill pipe, survey at 1500'. Displace to oil base. Drill out float/cement. Drill 2061'-3275'. Service rig. Drill 3275'-4393'	-
3	7/19	6,943'	2,550	1	15	-	50	-	3200	0	110	541	Drill 4393'-5231' Service top drive. Drill 5231'-6165'. Drill 6165'-6445' Change o-ring in standpipe. Drill 6835'-6943'	-
4	7/20	8,534'	1,591	1	25	-	50	130	3000	0	110	541	Drilling 6943'-7565', Service rig-grease top drive and crown, Drilling 7565'-8534'	Kibbey
5	7/21	9,502'	968	1	25	-	50	130	3200	55	55	541	Drilling 8561'-8872', Service top drive, Drilling 8872'-9058', Drilling 9058'-9502'	Mission Canyon
6	7/22	10,247'	745	1	40	-	50	120	3600	51	51	502	Drilling 9495'-9782', Service rig grease top drive, blocks and crown, Drilling 9782'-9873', Drilling 9873'-10247', Working as directed by operator-pull rotating rubber, TOOH	Lodgepole
7	7/23	10,256'	9	2	-	-	-	-	-	-	-	-	TOOH, Washing through tight spots 9200'-8450', TOOH, L/D BHA, P/U BHA, TIH, Reaming salts 8500'-9255', TIH Drill 10,247-10,256'	Lodgepole
8	7/24	10,935'	679	2	30	23	25	131	2900	92	0	453	Drilling 10250'-10437', Service top drive grease top drive and crown, Drillin 10437'-10530', Drilling 10530'-10,935'	Middle Bakken
9	7/25	11,090'	155	2	30	30	25	131	3000	92	0	453	Drilling 10934'-11090', Service rig, TOOH, TIH back to bottom, Washed last stand down, Circulate and condition bottoms up, Pump dry job, L/D drill pipe out of hole, TOOH	Middle Bakken
10	7/26	11,090'	0	-	-	-	-	-	-	-	-	-	L/D drill pipe, L/D BHA, Remove wear bushing, Rig up to run casing, Rig up casing crew, Clean floor for running casing, Run casing tested float/shoe, Run casing, Rig up cementers, Pump cement	Middle Bakken
11	7/27	11,090'	0	3	-	-	-	-	-	-	-	-	Primary cementing, Rig up cementers, Leaking cement head seal changed, Circulate cement and displace cement casing, Displace oil base salt water, Pull/L/D landing joint, L/D all casing tools, Take all 5" tools off, Replace saver sub with 4", Replace elevators with 4", Put matting boards in front of company man/MWD shacks, Put BHA on catwalk, Number and strap 200 joints of 4" drillpipe on pipe racks, P/U BHA, Test MWD, P/U drill pipe, Set pack-off and test, P/U drill pipe, TIH	Middle Bakken
12	7/28	11,710'	620	3	13	9	32	210	2500	0	58	204	Working as directed by operator, Number tally dp, Sort out all bad joints off pipe racks, Renumber pipe tally, P/U drill pipe, TIH, Cut drilling, TIH, Drilling 11090'-11710'	Middle Bakken
13	7/29	13,591'	1,881	3	20	13	45	299	2600	59	0	290	Drilling 11702'-12357', Service rig-grease top drive and crown, Drilling 12357'-13591'	Middle Bakken

DAILY DRILLING SUMMARY

Day	Date 2012	Depth (0600 Hrs)	24 Hr Footage	Bit #	WOB (Klbs) RT	WOB (Klbs) MM	RPM (RT)	RPM (MM)	PP	SPM 1	SPM 2	GPM	24 Hr Activity	Formation
14	7/30	15,380'	1,789	3	20	23	45	299	2900	59	0	290	Drilling 13636'-14043', Service top drive, Drilling 14043'-14418', Drilling 14418'-15380'	Middle Bakken
15	7/31	16,860'	1,480	3	20	23	45	294	3200	0	58	285	Drilling 15356'-15637', Service rig, Drilling 15637'-16074', Drilling 16074'-16668', Service rig, Drilling 16668'-16860'	Middle Bakken
16	8/1	18,420'	1,560	3	13	28	45	294	3100	0	58	285	Drilling 16865'-17511', Service rig, Drilling 17511'-17668', Drilling 17668'-18420'	Middle Bakken
17	8/2	19,666'	1,246	3	20	32	25	294	3200	58	0	285	Drilling 18418'-18823', Service rig, Drilling 18823'-19106', Drilling 19106'-19666'	Middle Bakken
18	8/3	20,762'	1,096	3	10	50	25	264	2800	0	52	256	Drilling 19667'-19854', Working as directed by operator, Drilling 19854'-20139', Service rig, Drilling 20139'-20231', Drilling 20231'-20323', Service top drive-grease top drive-blocks and crown, Drilling 20323'-20537', Directional work relog gamma, Drilling 20537'-20762'	Middle Bakken
19	8/4	21,140'	378	3	10	50	25	264	2800	0	52	256	Drill 20762'-21140'	Middle Bakken

DAILY MUD SUMMARY

Day	Date 2012	Mud Depth	Mud WT (ppg)	VIS (sec/qt)	PV (cP)	YP (lbs/ 100 ft2)	Gels (lbs/ 100 ft^2)	600/ 300	NAP/ H_20 (ratio)	API/HTHP Filtrate (ml)	Cake (API/ HTHP)	Cor. Solids (%)	Oil/ H_20 (%)	Alk	pH	Excess Lime (lb/bbl)	Cl^- (mg/L)	LGS/ HGS (%)	Salinity (ppm)	Electrical Stability	Gain/ Loss (bbls)
0	07/16	93'	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	07/17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	07/18	3,275'	9.8	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	07/19	6,165'	9.6	50	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-
4	07/20	7,565'	9.85	44	17	8	7/11/-	42/25	81.8/18.2	4.6	2	9.9	72/16	2.9	-	3.8	38k	2.7/7.2	264,320	740	-/123
5	07/21	8,929'	9.7	43	15	7	6/11/-	37/22	83.0/17.0	4.4	2	10	73/15	3.8	-	4.9	45k	6.1/4.0	264,320	765	-/-96
6	07/22	9,767'	9.9	51	22	14	11/19/-	58/36	78.2/21.8	5.6	2	10.5	68/19	3.7	-	4.8	55k	4.1/6.1	264,320	690	-/121
7	07/23	10,247'	9.8	50	21	12	8/14/-	54/33	81.8/18.2	5.4	2	9.9	72/16	3.2	-	4.1	56k	3.3/6.8	264,320	710	-/94
8	07/24	10,410'	10.2	50	21	12	9/15/-	54/33	80.5/19.5	6.2	2	10.7	70/17	3.2	-	4.1	55k	2.2/8.7	264,320	780	-/4
9	07/25	11,006'	10.3	51	25	12	9/15/-	62/37	82.4/4.8	4.8	2	13	82.4/17.6	3.7	-	4.8	56k	4.8/8.5	264,320	820	-/8
10	07/26	11,090'	10.2	50	21	12	9/15/-	54/33	80.5/19.5	6.2	2	10.7	70/17	3.2	-	4.1	55k	2.2/8.7	264,320	780	-
11	07/27		Change over frm diesel invert to saltwater drilling fluid																		
12	07/28	11,090'	9.85	29	1	1	1/1/-	3/2	-	-	-	-	1/88	-	9.5	-	169k	0.0/0.9	-	-	-
13	07/29	12,800'	9.8	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	07/30	14,021'	9.65	28	1	1	1/1/-	3/2	-	-	-	-	3/87	-	10	-	145k	0.0/1.1	-	-	-
15	07/31	16,860'	9.65	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	08/01	17,368'	9.95	28	1	1	1/1/-	3/2	-	-	-	-	2/87	-	8.5	-	182k	0.2/0.2	-	-	-
17	08/02	18,500'	9.95	28	1	1	1/1/-	3/2	-	-	-	-	2/87	-	8.5	-	182k	0.2/0.2	-	-	-
18	08/03	19,892'	9.9	29	1	1	1/1/-	3/2	-	-	-	-	2/87	-	8.5	-	182k	0.3/0.3	-	-	-
19	08/04	20,500'	9.9	29	1	1	1/1/-	3/2	-	-	-	-	2/87	-	8.5	-	182k	0.3/0.3	-	-	-

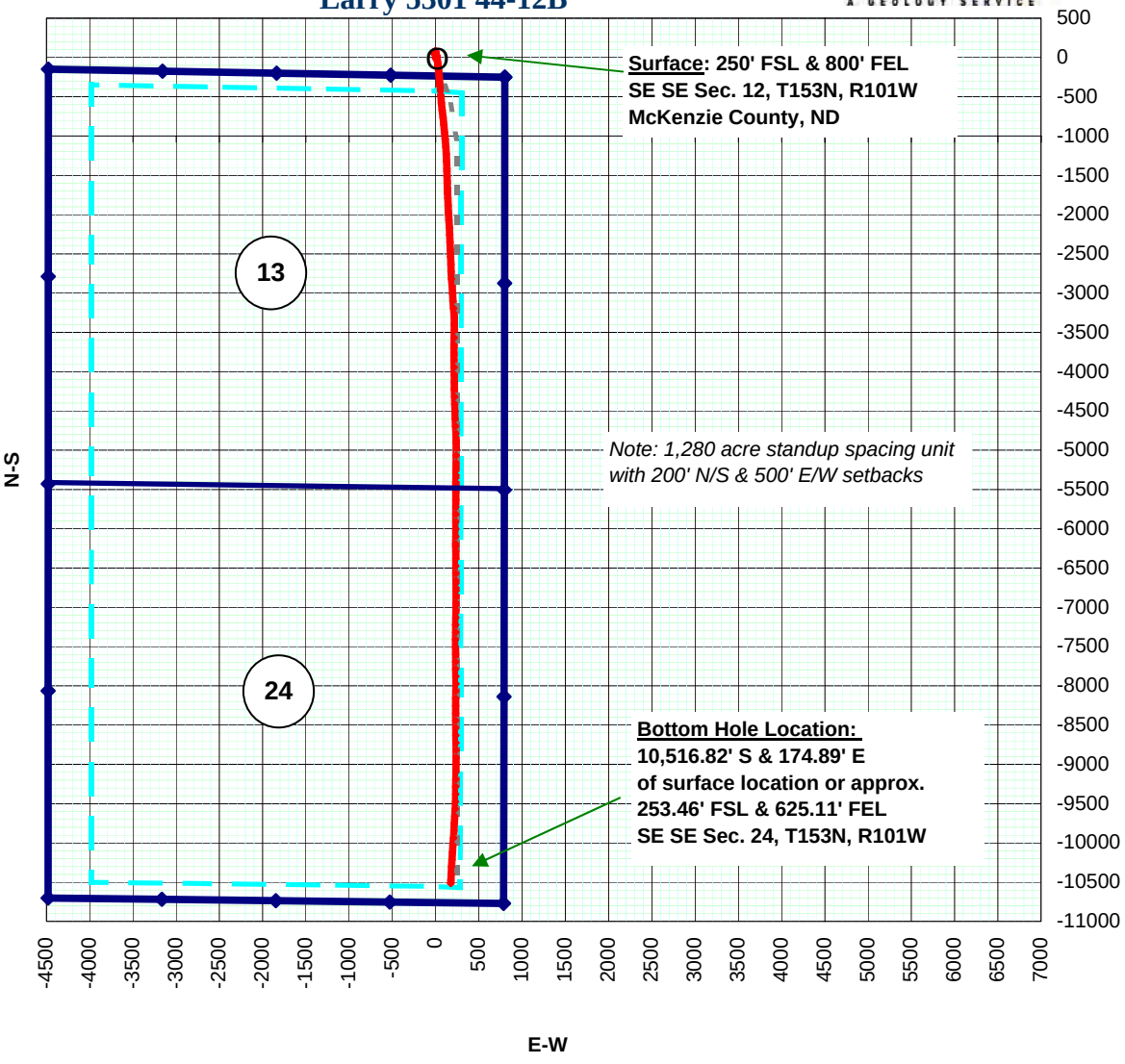
BIT RECORD

Bit #	Size	Type	Make	Model	Serial #	Jets	Depth In	Depth Out	Footage	Hours	Accum. Hours	Vert. Dev.
1	8 3/4	PDC	Reed	DSH616M	A160820	6x12	2,074'	10,247'	8,173'	94	94.00	Vertical
2	8 3/4	PDC	Reed	E1202-A1B	E156506	5x18	10,247'	11,090'	843'	30	124.00	Curve
3	6"	PDC	Baker	DP505FX	7030361	5x18	11,090'	21,140'	10,050'	115	239.00	Lateral

PLAN VIEW

Oasis Petroleum NA, LLC
Larry 5301 44-12B

SUNBURST CONSULTING
A GEOLOGY SERVICE



Oasis Petroleum NA, LLC
Larry 5301 44-12B
SE SE Sec. 12, T153N, R101W
McKenzie County, ND

SUNBURST CONSULTING
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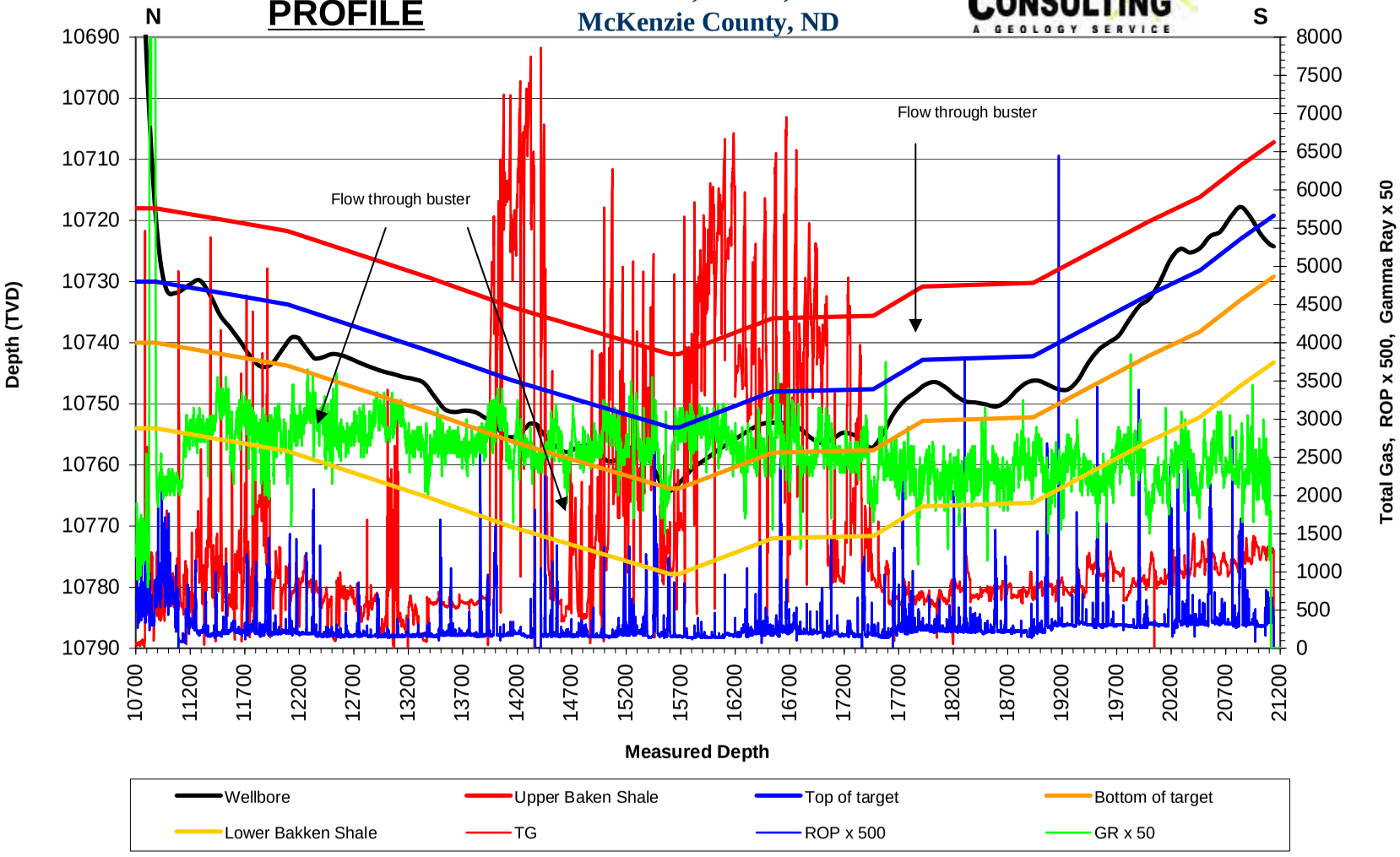
PROFILE



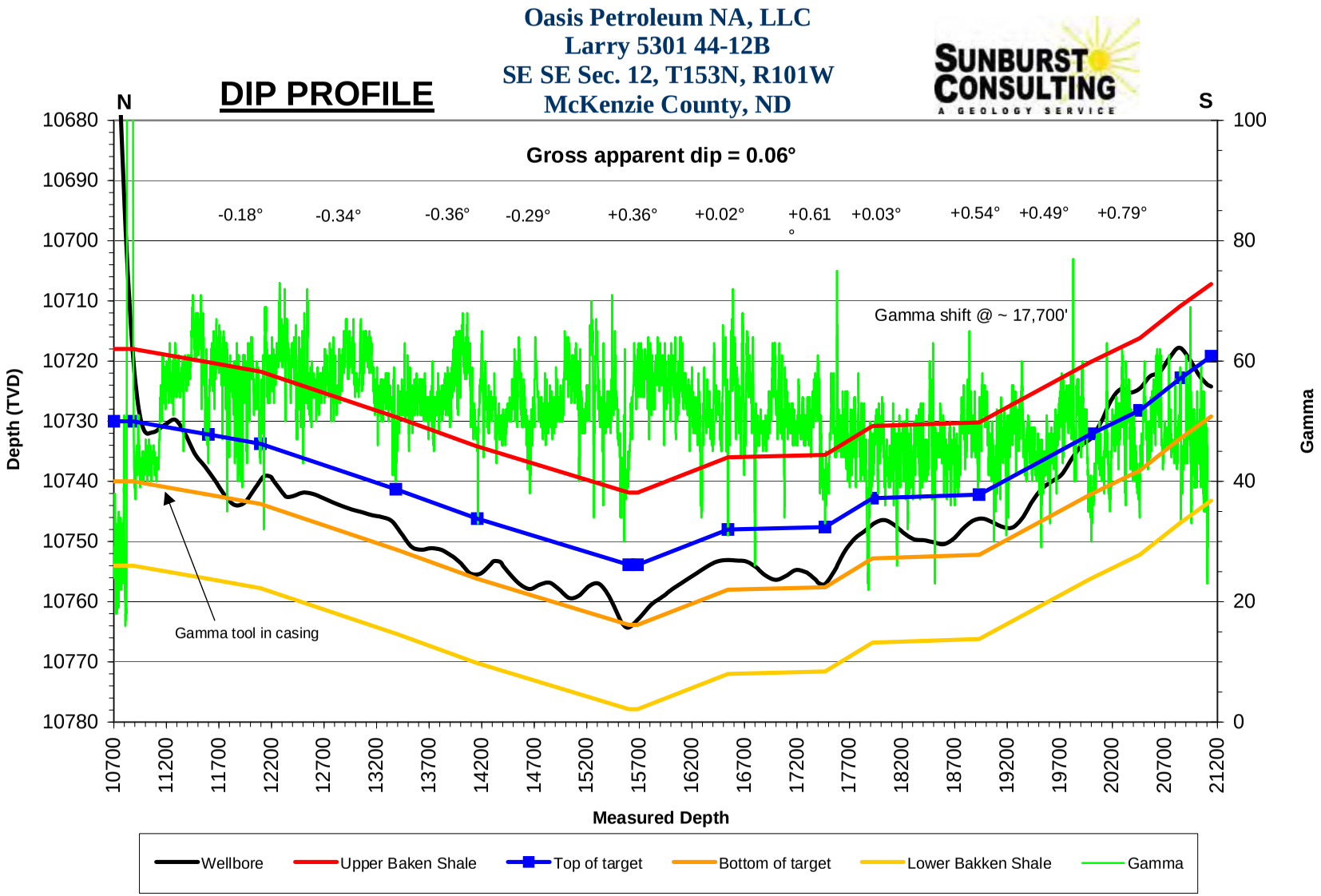
FORMATION MARKERS & DIP ESTIMATES

Oasis Petroleum NA, LLC - Larry 5301 44-12B

Dip Change Points	MD	TVD	TVD diff.	MD diff.	Dip	Dipping up/down	Type of Marker
Marker							
Zone entry	10,880'	10,730.00					Gamma
Low gamma #1	11,600'	10,732.20	2.20	720.00	***-0.18***	Down	Gamma
Low gamma #1	12,094'	10,733.75	1.55	494.00	***-0.18***	Down	Gamma
Low gamma #1	13,383'	10,741.30	7.55	1289.00	***-0.34***	Down	Gamma
Low gamma #2	14,158'	10,746.20	4.90	775.00	***-0.36***	Down	Gamma
Low gamma #2	15,600'	10,753.85	7.65	1442.00	***-0.30***	Down	Gamma
Low gamma #2	15,600'	10,753.85	0.00	0.00	***flat***	Flat	Gamma
Low gamma #1	16,543'	10,748.00	-5.85	943.00	***0.36***	Up	Gamma
Low gamma #2	17,466'	10,747.60	-0.40	923.00	***0.02***	Up	Gamma
Low gamma #1	17,919'	10,742.80	-4.80	453.00	***0.61***	Up	Gamma
Low gamma #1	18,933'	10,742.20	-0.60	1014.00	***0.03***	Up	Gamma
Top of target	20,000'	10,732.10	-10.10	1067.00	***0.54***	Up	Gamma
Low gamma #3	20,460'	10,728.20	-3.90	460.00	***0.49***	Up	Gamma
Low gamma #3	20,854'	10,722.78	-5.42	394.00	***0.79***	Up	Gamma
TD	21,140'	10,718.90	-3.88	286.00	***0.78***	Up	Gamma
Gross Dip							
Initial Target Contact	10,880'	10,730.00					
Projected Final Target Contact	21,140'	10,719.20	-10.80	10260.00	***0.06***	Up	Projection

* = GR / electric log confirmation

Other markers based on natural deflections & drill rate changes


Oasis Petroleum NA, LLC
Larry 5301 44-12B
SE SE Sec. 12, T153N, R101W
McKenzie County, ND
DIP PROFILE
SUNBURST CONSULTING
A GEOLOGY SERVICE
N
S
Gross apparent dip = 0.06°
-0.18°
-0.34°
-0.36°
-0.29°
+0.36°
+0.02°
+0.61°
+0.03°
+0.54°
+0.49°
+0.79°
Gamma shift @ ~ 17,700'
Gamma tool in casing
Depth (TVD)
Gamma
Measured Depth
10680
10690
10700
10710
10720
10730
10740
10750
10760
10770
10780
100
80
60
40
20
0
10700
11200
11700
12200
12700
13200
13700
14200
14700
15200
15700
16200
16700
17200
17700
18200
18700
19200
19700
20200
20700
21200
Wellbore
Upper Baken Shale
Top of target
Bottom of target
Lower Bakken Shale
Gamma

SUNBURST CONSULTING, INC.

Operator:	Oasis Petroleum NA, LLC			Kick-off:	7/22/2012
Well :	Larry 5301 44-12B			Finish:	8/3/2012
County:	McKenzie	State:	ND	Directional Supervision:	
QQ:	SE SE	Section:	12	RPM Inc.	
Township:	153	N/S:	N		
Range:	101	E/W:	W	Date:	8/9/2012
Footages:	250	FN/SL:	S	Time:	9:22
	800	FE/WL:	E	**F9 to re-calculate**	

Minimum Curvature Method (SPE-3362) Proposed dir: 178.65

[North and East are positive and South and West are negative, relative to surface location]

No.	MD	INC	TRUE AZM	TVD	N-S	E-W	SECT	DLS/ 100
Tie	2074.00	0.00	0.00	2074.00	0.00	0.00	0.00	
1	2108.00	0.10	248.80	2108.00	-0.01	-0.03	0.01	0.29
2	2201.00	0.30	203.80	2201.00	-0.26	-0.20	0.26	0.26
3	2295.00	0.70	181.70	2295.00	-1.06	-0.32	1.05	0.46
4	2388.00	0.90	184.30	2387.99	-2.36	-0.39	2.35	0.22
5	2481.00	1.10	174.40	2480.97	-3.97	-0.36	3.97	0.28
6	2575.00	1.50	156.30	2574.95	-6.00	0.23	6.00	0.60
7	2668.00	2.20	157.20	2667.90	-8.76	1.41	8.79	0.75
8	2762.00	0.90	84.60	2761.87	-10.35	2.84	10.42	2.25
9	2855.00	1.00	75.00	2854.86	-10.07	4.35	10.17	0.20
10	2948.00	1.00	85.80	2947.84	-9.81	5.94	9.94	0.20
11	3042.00	0.60	97.10	3041.83	-9.81	7.25	9.97	0.46
12	3135.00	0.80	98.80	3134.83	-9.97	8.38	10.16	0.22
13	3228.00	0.40	106.30	3227.82	-10.16	9.33	10.37	0.44
14	3321.00	0.40	1.10	3320.82	-9.92	9.65	10.15	0.68
15	3415.00	0.40	5.10	3414.82	-9.27	9.68	9.49	0.03
16	3508.00	0.50	348.30	3507.81	-8.55	9.63	8.77	0.18
17	3600.00	0.50	354.80	3599.81	-7.75	9.51	7.98	0.06
18	3694.00	0.40	344.50	3693.81	-7.03	9.39	7.25	0.14
19	3787.00	0.50	353.30	3786.81	-6.31	9.25	6.53	0.13
20	3880.00	0.40	342.70	3879.80	-5.60	9.11	5.81	0.14
21	3973.00	0.60	351.50	3972.80	-4.81	8.94	5.02	0.23
22	4067.00	0.80	356.10	4066.79	-3.67	8.82	3.87	0.22
23	4160.00	0.70	351.50	4159.78	-2.46	8.69	2.66	0.13
24	4253.00	0.70	350.40	4252.78	-1.34	8.52	1.54	0.01
25	4346.00	0.60	346.60	4345.77	-0.30	8.31	0.50	0.12
26	4440.00	0.60	343.40	4439.77	0.65	8.05	-0.46	0.04
27	4533.00	0.40	5.80	4532.76	1.44	7.95	-1.25	0.30
28	4625.00	0.40	355.80	4624.76	2.08	7.96	-1.89	0.08
29	4718.00	0.10	273.40	4717.76	2.41	7.85	-2.22	0.43
30	4812.00	0.30	176.90	4811.76	2.17	7.78	-1.98	0.35
31	4905.00	0.20	129.00	4904.76	1.82	7.92	-1.63	0.24
32	4998.00	0.70	66.70	4997.76	1.94	8.57	-1.74	0.68
33	5092.00	0.90	40.90	5091.75	2.73	9.58	-2.50	0.43
34	5185.00	0.80	28.10	5184.74	3.85	10.36	-3.61	0.23
35	5278.00	0.50	347.70	5277.73	4.82	10.58	-4.57	0.57
36	5372.00	0.40	9.10	5371.73	5.55	10.55	-5.30	0.21
37	5465.00	0.50	1.00	5464.72	6.27	10.61	-6.02	0.13
38	5558.00	0.40	359.40	5557.72	7.00	10.61	-6.75	0.11
39	5652.00	0.40	6.20	5651.72	7.66	10.64	-7.40	0.05

SUNBURST CONSULTING, INC.

Operator:	Oasis Petroleum NA, LLC			Kick-off:	7/22/2012
Well :	Larry 5301 44-12B			Finish:	8/3/2012
County:	McKenzie	State:	ND	Directional Supervision:	
QQ:	SE SE	Section:	12	RPM Inc.	
Township:	153	N/S:	N		
Range:	101	E/W:	W	Date:	8/9/2012
Footages:	250	FN/SL:	S	Time:	9:22
	800	FE/WL:	E	**F9 to re-calculate**	

Minimum Curvature Method (SPE-3362) Proposed dir: 178.65

[North and East are positive and South and West are negative, relative to surface location]

No.	MD	INC	TRUE AZM	TVD	N-S	E-W	SECT	DLS/ 100
40	5745.00	0.40	24.30	5744.72	8.28	10.81	-8.02	0.14
41	5838.00	0.30	33.40	5837.72	8.77	11.08	-8.51	0.12
42	5931.00	0.90	349.20	5930.71	9.70	11.08	-9.43	0.77
43	6025.00	1.40	358.40	6024.69	11.57	10.91	-11.31	0.57
44	6118.00	1.50	353.70	6117.66	13.91	10.74	-13.66	0.17
45	6211.00	1.70	351.50	6210.63	16.49	10.40	-16.24	0.22
46	6305.00	1.90	349.80	6304.58	19.40	9.92	-19.16	0.22
47	6398.00	2.30	348.90	6397.52	22.75	9.29	-22.52	0.43
48	6491.00	1.50	304.30	6490.47	25.27	7.92	-25.07	1.74
49	6585.00	1.70	302.70	6584.43	26.71	5.73	-26.57	0.22
50	6678.00	1.90	317.80	6677.39	28.60	3.54	-28.51	0.55
51	6771.00	2.20	332.50	6770.33	31.33	1.68	-31.28	0.65
52	6865.00	1.30	310.90	6864.28	33.63	0.04	-33.61	1.17
53	6958.00	1.80	312.80	6957.25	35.31	-1.83	-35.34	0.54
54	7051.00	1.70	310.40	7050.21	37.19	-3.95	-37.28	0.13
55	7145.00	1.90	311.50	7144.16	39.13	-6.18	-39.27	0.22
56	7238.00	2.00	312.00	7237.11	41.24	-8.54	-41.43	0.11
57	7332.00	2.20	318.80	7331.04	43.69	-10.95	-43.94	0.34
58	7425.00	1.80	336.60	7423.99	46.38	-12.71	-46.66	0.79
59	7518.00	1.60	339.80	7516.95	48.94	-13.73	-49.25	0.24
60	7611.00	1.70	344.60	7609.91	51.48	-14.55	-51.81	0.18
61	7705.00	1.60	348.20	7703.87	54.11	-15.19	-54.46	0.15
62	7798.00	1.30	354.80	7796.84	56.43	-15.55	-56.79	0.37
63	7891.00	1.10	12.10	7889.82	58.36	-15.46	-58.71	0.44
64	7985.00	1.00	21.50	7983.80	60.00	-14.97	-60.34	0.21
65	8078.00	0.80	27.60	8076.79	61.33	-14.37	-61.66	0.24
66	8171.00	0.70	30.60	8169.78	62.40	-13.78	-62.71	0.12
67	8265.00	0.80	35.50	8263.78	63.43	-13.11	-63.72	0.13
68	8358.00	0.80	39.20	8356.77	64.46	-12.32	-64.73	0.06
69	8451.00	0.70	53.00	8449.76	65.30	-11.45	-65.56	0.22
70	8545.00	0.50	38.70	8543.75	65.97	-10.74	-66.20	0.26
71	8638.00	0.30	63.00	8636.75	66.40	-10.27	-66.62	0.28
72	8731.00	0.20	64.30	8729.75	66.58	-9.91	-66.79	0.11
73	8825.00	0.30	35.60	8823.75	66.85	-9.61	-67.06	0.17
74	8918.00	0.30	53.00	8916.75	67.19	-9.28	-67.39	0.10
75	9011.00	0.40	32.00	9009.75	67.62	-8.91	-67.81	0.17
76	9103.00	0.50	30.40	9101.74	68.23	-8.54	-68.42	0.11
77	9193.00	0.60	26.80	9191.74	68.99	-8.13	-69.17	0.12
78	9284.00	0.60	6.80	9282.73	69.89	-7.86	-70.06	0.23
79	9374.00	0.60	6.10	9372.73	70.83	-7.75	-70.99	0.01

SUNBURST CONSULTING, INC.

Operator:	Oasis Petroleum NA, LLC			Kick-off:	7/22/2012
Well :	Larry 5301 44-12B			Finish:	8/3/2012
County:	McKenzie	State:	ND	Directional Supervision:	
QQ:	SE SE	Section:	12	RPM Inc.	
Township:	153	N/S:	N		
Range:	101	E/W:	W	Date:	8/9/2012
Footages:	250	FN/SL:	S	Time:	9:22
	800	FE/WL:	E	**F9 to re-calculate**	

Minimum Curvature Method (SPE-3362) Proposed dir: 178.65

[North and East are positive and South and West are negative, relative to surface location]

No.	MD	INC	TRUE AZM	TVD	N-S	E-W	SECT	DLS/ 100
80	9465.00	0.40	18.00	9463.73	71.60	-7.60	-71.76	0.25
81	9555.00	0.60	29.30	9553.72	72.31	-7.27	-72.46	0.25
82	9644.00	0.50	27.50	9642.72	73.06	-6.87	-73.21	0.11
83	9735.00	0.60	20.00	9733.71	73.86	-6.52	-74.00	0.14
84	9826.00	0.70	39.70	9824.71	74.74	-6.00	-74.86	0.27
85	9920.00	0.70	47.40	9918.70	75.57	-5.21	-75.67	0.10
86	10013.00	0.80	36.40	10011.69	76.48	-4.41	-76.56	0.19
87	10107.00	0.80	20.00	10105.68	77.62	-3.79	-77.69	0.24
88	10200.00	0.90	345.00	10198.68	78.94	-3.76	-79.00	0.56
89	10237.00	1.00	350.40	10235.67	79.54	-3.89	-79.61	0.36
90	10269.00	1.90	170.10	10267.67	79.29	-3.85	-79.36	9.06
91	10300.00	7.00	164.50	10298.56	76.96	-3.25	-77.02	16.49
92	10331.00	13.20	164.40	10329.07	71.73	-1.79	-71.75	20.00
93	10362.00	14.90	165.20	10359.14	64.46	0.18	-64.44	5.52
94	10393.00	17.60	166.20	10388.90	56.06	2.31	-55.99	8.76
95	10424.00	18.80	167.60	10418.35	46.63	4.50	-46.51	4.12
96	10455.00	21.00	168.70	10447.49	36.30	6.66	-36.13	7.20
97	10486.00	26.00	168.90	10475.91	24.18	9.06	-23.96	16.13
98	10517.00	31.60	169.50	10503.07	9.51	11.85	-9.23	18.09
99	10548.00	33.30	170.60	10529.23	-6.87	14.72	7.21	5.80
100	10579.00	34.60	170.40	10554.94	-23.94	17.58	24.35	4.21
101	10611.00	40.30	171.50	10580.34	-43.15	20.63	43.63	17.93
102	10642.00	44.40	174.40	10603.24	-63.87	23.17	64.40	14.65
103	10673.00	48.30	174.60	10624.64	-86.20	25.32	86.77	12.59
104	10704.00	51.70	174.00	10644.56	-109.82	27.68	110.44	11.07
105	10735.00	56.40	173.30	10662.75	-134.76	30.46	135.44	15.27
106	10766.00	61.50	172.90	10678.74	-161.11	33.65	161.86	16.49
107	10797.00	66.70	174.90	10692.28	-188.83	36.60	189.64	17.75
108	10828.00	70.00	176.30	10703.71	-217.55	38.81	218.41	11.44
109	10859.00	74.20	176.70	10713.24	-246.99	40.61	247.88	13.60
110	10890.00	78.00	176.30	10720.68	-277.02	42.44	277.95	12.32
111	10921.00	82.30	175.60	10725.99	-307.48	44.60	308.45	14.05
112	10952.00	85.10	175.20	10729.39	-338.19	47.07	339.21	9.12
113	10984.00	87.70	174.70	10731.40	-370.00	49.88	371.07	8.27
114	11015.00	89.90	173.90	10732.05	-400.84	52.96	401.98	7.55
115	11046.00	90.50	174.30	10731.94	-431.68	56.15	432.88	2.33
116	11099.00	90.10	177.00	10731.66	-484.52	60.17	485.80	5.15
117	11193.00	91.30	174.60	10730.51	-578.25	67.05	579.67	2.85
118	11286.00	89.60	174.50	10729.78	-670.82	75.88	672.42	1.83
119	11380.00	87.50	174.20	10732.16	-764.33	85.13	766.12	2.26

SUNBURST CONSULTING, INC.

Operator:	Oasis Petroleum NA, LLC			Kick-off:	7/22/2012
Well :	Larry 5301 44-12B			Finish:	8/3/2012
County:	McKenzie	State:	ND	Directional Supervision:	
QQ:	SE SE	Section:	12	RPM Inc.	
Township:	153	N/S:	N		
Range:	101	E/W:	W	Date:	8/9/2012
Footages:	250	FN/SL:	S	Time:	9:22
	800	FE/WL:	E	**F9 to re-calculate**	

Minimum Curvature Method (SPE-3362) Proposed dir: 178.65

[North and East are positive and South and West are negative, relative to surface location]

No.	MD	INC	TRUE AZM	TVD	N-S	E-W	SECT	DLS/ 100
120	11473.00	88.40	174.40	10735.49	-856.81	94.37	858.80	0.99
121	11567.00	89.10	175.50	10737.54	-950.42	102.64	952.58	1.39
122	11660.00	88.10	174.80	10739.81	-1043.06	110.50	1045.37	1.31
123	11754.00	88.90	176.00	10742.27	-1136.72	118.03	1139.19	1.53
124	11847.00	89.10	176.80	10743.89	-1229.52	123.87	1232.10	0.89
125	11941.00	91.30	178.70	10743.56	-1323.44	127.56	1326.08	3.09
126	12034.00	91.40	178.70	10741.37	-1416.39	129.67	1419.05	0.11
127	12065.00	91.50	178.40	10740.59	-1447.37	130.46	1450.04	1.02
128	12128.00	91.10	178.90	10739.16	-1510.34	131.94	1513.03	1.02
129	12190.00	88.80	178.90	10739.21	-1572.32	133.13	1575.02	3.71
130	12221.00	88.60	178.40	10739.92	-1603.30	133.86	1606.01	1.74
131	12283.00	88.70	178.30	10741.38	-1665.26	135.64	1667.99	0.23
132	12315.00	88.70	177.60	10742.10	-1697.23	136.79	1699.98	2.19
133	12346.00	89.50	177.30	10742.59	-1728.20	138.17	1730.97	2.76
134	12408.00	90.80	178.10	10742.43	-1790.15	140.66	1792.96	2.46
135	12502.00	89.90	177.40	10741.85	-1884.07	144.35	1886.95	1.21
136	12595.00	89.80	177.00	10742.10	-1976.96	148.89	1979.92	0.44
137	12689.00	89.40	177.20	10742.75	-2070.84	153.65	2073.88	0.48
138	12782.00	89.70	177.30	10743.48	-2163.73	158.11	2166.85	0.34
139	12876.00	89.50	177.50	10744.14	-2257.63	162.37	2260.82	0.30
140	12970.00	89.80	177.90	10744.72	-2351.55	166.14	2354.81	0.53
141	13063.00	89.70	177.60	10745.12	-2444.48	169.79	2447.80	0.34
142	13157.00	89.70	178.30	10745.61	-2538.41	173.16	2541.79	0.74
143	13251.00	89.90	178.40	10745.94	-2632.37	175.86	2635.79	0.24
144	13344.00	89.30	177.50	10746.59	-2725.31	179.19	2728.78	1.16
145	13438.00	88.10	176.10	10748.72	-2819.14	184.44	2822.70	1.96
146	13532.00	89.30	176.90	10750.86	-2912.93	190.17	2916.61	1.53
147	13626.00	90.10	176.90	10751.35	-3006.79	195.26	3010.56	0.85
148	13719.00	90.20	176.60	10751.10	-3099.64	200.53	3103.51	0.34
149	13813.00	89.50	175.60	10751.35	-3193.42	206.92	3197.41	1.30
150	13876.00	89.40	176.30	10751.96	-3256.26	211.37	3260.34	1.12
151	13907.00	89.30	176.30	10752.31	-3287.20	213.37	3291.31	0.32
152	13938.00	89.40	177.60	10752.66	-3318.15	215.02	3322.30	4.21
153	14001.00	88.90	179.90	10753.59	-3381.12	216.39	3385.28	3.74
154	14032.00	88.80	180.60	10754.22	-3412.12	216.26	3416.27	2.28
155	14095.00	89.20	180.40	10755.32	-3475.11	215.71	3479.22	0.71
156	14188.00	90.80	181.20	10755.32	-3568.09	214.41	3572.15	1.92
157	14282.00	91.00	181.00	10753.84	-3662.06	212.61	3666.06	0.30
158	14313.00	91.10	181.20	10753.27	-3693.05	212.01	3697.02	0.72
159	14376.00	88.70	180.00	10753.38	-3756.04	211.35	3759.98	4.26

SUNBURST CONSULTING, INC.

Operator:	Oasis Petroleum NA, LLC			Kick-off:	7/22/2012
Well :	Larry 5301 44-12B			Finish:	8/3/2012
County:	McKenzie	State:	ND	Directional Supervision:	
QQ:	SE SE	Section:	12	RPM Inc.	
Township:	153	N/S:	N		
Range:	101	E/W:	W	Date:	8/9/2012
Footages:	250	FN/SL:	S	Time:	9:22
	800	FE/WL:	E	**F9 to re-calculate**	

Minimum Curvature Method (SPE-3362) Proposed dir: 178.65

[North and East are positive and South and West are negative, relative to surface location]

No.	MD	INC	TRUE AZM	TVD	N-S	E-W	SECT	DLS/ 100
160	14407.00	88.50	179.80	10754.14	-3787.03	211.41	3790.96	0.91
161	14470.00	89.10	178.50	10755.46	-3850.01	212.34	3853.95	2.27
162	14563.00	88.90	178.50	10757.08	-3942.97	214.77	3946.93	0.22
163	14657.00	90.10	179.80	10757.90	-4036.95	216.17	4040.92	1.88
164	14751.00	90.80	180.30	10757.16	-4130.94	216.09	4134.89	0.92
165	14845.00	89.60	179.20	10756.83	-4224.94	216.50	4228.87	1.73
166	14939.00	89.00	178.40	10757.98	-4318.91	218.47	4322.86	1.06
167	15033.00	89.30	178.30	10759.38	-4412.86	221.17	4416.85	0.34
168	15126.00	91.20	177.90	10758.97	-4505.80	224.26	4509.84	2.09
169	15220.00	90.70	178.80	10757.41	-4599.75	226.96	4603.82	1.10
170	15314.00	89.80	177.20	10757.00	-4693.69	230.24	4697.81	1.95
171	15407.00	87.80	177.40	10758.95	-4786.56	234.62	4790.76	2.16
172	15501.00	88.00	179.20	10762.39	-4880.45	237.41	4884.69	1.93
173	15532.00	88.00	179.10	10763.48	-4911.43	237.87	4915.67	0.32
174	15595.00	90.50	180.10	10764.30	-4974.42	238.31	4978.65	4.27
175	15689.00	91.20	180.40	10762.91	-5068.41	237.90	5072.60	0.81
176	15783.00	91.10	180.60	10761.02	-5162.38	237.08	5166.54	0.24
177	15814.00	91.00	181.00	10760.45	-5193.37	236.64	5197.51	1.33
178	15845.00	90.60	180.40	10760.02	-5224.37	236.27	5228.49	2.33
179	15876.00	90.60	180.60	10759.69	-5255.37	236.00	5259.47	0.65
180	15939.00	90.80	180.70	10758.93	-5318.36	235.28	5322.42	0.35
181	15970.00	90.80	180.70	10758.49	-5349.35	234.90	5353.40	0.00
182	16032.00	90.70	180.70	10757.68	-5411.34	234.14	5415.36	0.16
183	16064.00	90.60	180.40	10757.32	-5443.34	233.84	5447.34	0.99
184	16157.00	90.70	180.20	10756.26	-5536.33	233.35	5540.29	0.24
185	16251.00	90.60	179.90	10755.20	-5630.33	233.27	5634.26	0.34
186	16345.00	90.70	179.20	10754.13	-5724.32	234.01	5728.24	0.75
187	16438.00	90.30	180.60	10753.32	-5817.31	234.17	5821.21	1.57
188	16532.00	90.00	179.50	10753.07	-5911.31	234.09	5915.18	1.21
189	16626.00	89.90	180.60	10753.15	-6005.31	234.00	6009.15	1.18
190	16720.00	89.90	180.60	10753.32	-6099.30	233.02	6103.10	0.00
191	16814.00	88.90	180.20	10754.30	-6193.29	232.36	6197.05	1.15
192	16845.00	89.10	179.80	10754.84	-6224.29	232.36	6228.03	1.44
193	16908.00	89.30	179.30	10755.72	-6287.28	232.86	6291.02	0.85
194	17001.00	89.90	180.20	10756.37	-6380.27	233.26	6384.00	1.16
195	17095.00	90.90	179.90	10755.72	-6474.27	233.18	6477.97	1.11
196	17189.00	90.30	180.00	10754.73	-6568.27	233.26	6571.94	0.65
197	17283.00	89.30	178.40	10755.06	-6662.25	234.58	6665.93	2.01
198	17314.00	89.40	177.30	10755.41	-6693.23	235.74	6696.92	3.56
199	17376.00	88.90	179.50	10756.33	-6755.19	237.47	6758.91	3.64

SUNBURST CONSULTING, INC.

Operator:	Oasis Petroleum NA, LLC			Kick-off:	7/22/2012
Well :	Larry 5301 44-12B			Finish:	8/3/2012
County:	McKenzie	State:	ND	Directional Supervision:	
QQ:	SE SE	Section:	12	RPM Inc.	
Township:	153	N/S:	N		
Range:	101	E/W:	W	Date:	8/9/2012
Footages:	250	FN/SL:	S	Time:	9:22
	800	FE/WL:	E	**F9 to re-calculate**	

Minimum Curvature Method (SPE-3362) Proposed dir: 178.65

[North and East are positive and South and West are negative, relative to surface location]

No.	MD	INC	TRUE AZM	TVD	N-S	E-W	SECT	DLS/ 100
200	17408.00	89.00	180.00	10756.92	-6787.19	237.61	6790.90	1.59
201	17470.00	90.80	180.90	10757.03	-6849.18	237.12	6852.87	3.25
202	17564.00	92.10	180.90	10754.65	-6943.14	235.65	6946.76	1.38
203	17595.00	92.00	180.40	10753.54	-6974.12	235.30	6977.72	1.64
204	17658.00	91.70	180.50	10751.51	-7037.08	234.80	7040.66	0.50
205	17752.00	90.80	181.20	10749.45	-7131.05	233.41	7134.57	1.21
206	17845.00	90.70	180.60	10748.24	-7224.03	231.95	7227.49	0.65
207	17939.00	90.90	180.60	10746.92	-7318.01	230.96	7321.42	0.21
208	18033.00	89.70	180.30	10746.43	-7412.01	230.22	7415.37	1.32
209	18126.00	89.30	179.40	10747.24	-7505.00	230.47	7508.35	1.06
210	18220.00	89.00	179.90	10748.64	-7598.99	231.04	7602.32	0.62
211	18314.00	89.80	179.90	10749.62	-7692.98	231.21	7696.29	0.85
212	18408.00	90.00	179.90	10749.79	-7786.98	231.37	7790.27	0.21
213	18501.00	89.60	178.10	10750.11	-7879.96	232.99	7883.27	1.98
214	18595.00	90.00	179.90	10750.44	-7973.94	234.63	7977.26	1.96
215	18688.00	91.10	181.50	10749.55	-8066.93	233.50	8070.19	2.09
216	18782.00	91.00	180.70	10747.82	-8160.89	231.69	8164.09	0.86
217	18876.00	90.60	180.10	10746.51	-8254.88	231.04	8258.03	0.77
218	18970.00	89.80	179.50	10746.18	-8348.88	231.36	8352.01	1.06
219	19064.00	89.40	179.90	10746.84	-8442.88	231.86	8446.00	0.60
220	19157.00	89.70	179.10	10747.57	-8535.87	232.67	8538.98	0.92
221	19251.00	90.20	178.80	10747.65	-8629.85	234.39	8632.98	0.62
222	19345.00	91.70	179.70	10746.09	-8723.83	235.62	8726.96	1.86
223	19438.00	91.70	179.60	10743.34	-8816.79	236.19	8819.90	0.11
224	19532.00	90.90	179.60	10741.20	-8910.76	236.85	8913.86	0.85
225	19625.00	90.60	181.30	10739.99	-9003.74	236.12	9006.81	1.86
226	19719.00	90.80	180.60	10738.84	-9097.72	234.56	9100.72	0.77
227	19813.00	92.30	180.40	10736.29	-9191.68	233.74	9194.64	1.61
228	19907.00	90.50	181.20	10734.00	-9285.64	232.42	9288.54	2.10
229	20000.00	91.00	180.60	10732.78	-9378.62	230.96	9381.46	0.84
230	20097.00	92.30	181.10	10729.99	-9475.57	229.53	9478.34	1.44
231	20189.00	92.00	182.60	10726.54	-9567.45	226.56	9570.13	1.66
232	20282.00	90.30	183.60	10724.67	-9660.29	221.53	9662.83	2.12
233	20373.00	89.00	182.80	10725.22	-9751.15	216.45	9753.54	1.68
234	20465.00	91.90	183.30	10724.50	-9843.00	211.56	9845.26	3.20
235	20558.00	90.50	183.50	10722.55	-9935.82	206.04	9937.91	1.52
236	20650.00	90.40	183.80	10721.83	-10027.63	200.18	10029.56	0.34
237	20745.00	92.50	183.40	10719.43	-10122.40	194.22	10124.17	2.25
238	20835.00	89.60	183.20	10717.78	-10212.23	189.04	10213.85	3.23
239	20927.00	88.30	182.50	10719.47	-10304.10	184.47	10305.58	1.60

SUNBURST CONSULTING, INC.

Operator:	Oasis Petroleum NA, LLC			Kick-off:	7/22/2012
Well :	Larry 5301 44-12B			Finish:	8/3/2012
County:	McKenzie	State:	ND	Directional Supervision:	
QQ:	SE SE	Section:	12	RPM Inc.	
Township:	153	N/S:	N		
Range:	101	E/W:	W	Date:	8/9/2012
Footages:	250	FN/SL:	S	Time:	9:22
	800	FE/WL:	E	**F9 to re-calculate**	

Minimum Curvature Method (SPE-3362) Proposed dir: 178.65

[North and East are positive and South and West are negative, relative to surface location]

No.	MD	INC	TRUE AZM	TVD	N-S	E-W	SECT	DLS/ 100
240	21021.00	88.30	182.60	10722.25	-10397.96	180.29	10399.32	0.11
241	21098.00	89.40	182.60	10723.80	-10474.87	176.80	10476.13	1.43
242	21140.00	89.40	182.60	10724.24	-10516.82	174.89	10518.02	0.00

FORMATION TOPS & STRUCTURAL RELATIONSHIPS

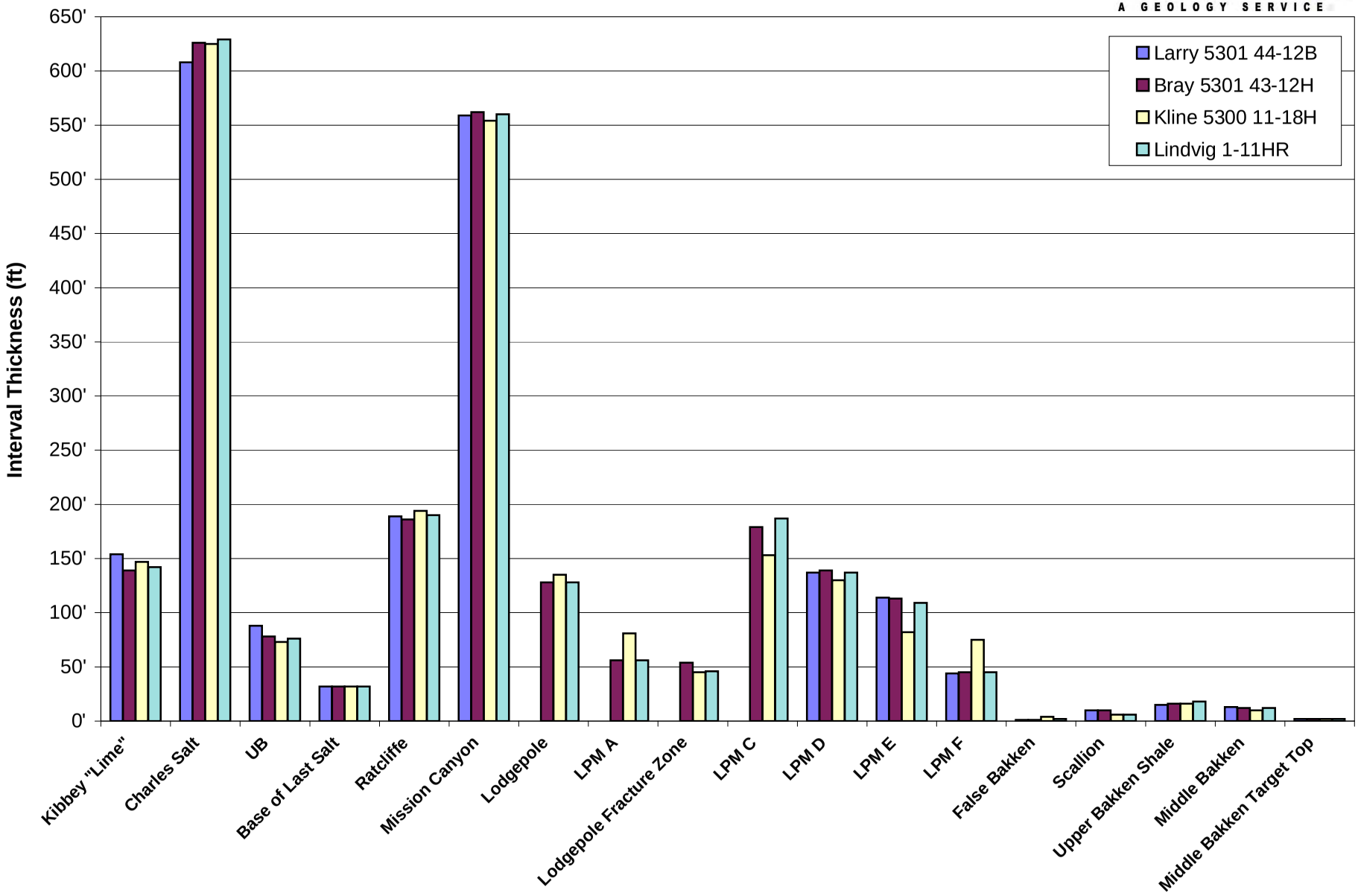
	Subject Well:								Offset Wells:		
Operator:	**Oasis Petroleum North America, LLC**										
Well Name:	**Larry 5301 44-12B**										
Location:	250' FSL & 800' FEL										
	SE SE Section 12, T153N-R101W										
Elevation:	GL: 2,058' Sub: 25' KB: 2,083'										
Formation/ Zone	**Prog. Top**	**Prog. Datum (MSL)**	**Driller's Depth Top (MD)**	**Driller's Depth Top (TVD)**	**Datum (MSL)**	**Interval Thickness**	**Thickness to Target**	**Dip To Prog.**	**Dip To Bray 5301 43-12H**	**Dip To Kline 5300 11-18H**	**Dip To Lindvig 1-11HR**
Kibbey "Lime"	8,357'	-6,274'	8,348'	8,348'	-6,265'	154'	2,383'	9'	-4'	27'	-7'
Charles Salt	8,502'	-6,419'	8,502'	8,502'	-6,419'	608'	2,229'	0'	-19'	20'	-19'
UB	9,129'	-7,046'	9,111'	9,110'	-7,027'	88'	1,621'	19'	-1'	37'	2'
Base of Last Salt	9,215'	-7,132'	9,199'	9,198'	-7,115'	32'	1,533'	17'	-11'	22'	-10'
Ratcliffe	9,250'	-7,167'	9,231'	9,230'	-7,147'	189'	1,501'	20'	-11'	22'	-10'
Mission Canyon	9,424'	-7,341'	9,420'	9,419'	-7,336'	559'	1,312'	5'	-14'	27'	-9'
Lodgepole	9,987'	-7,904'	9,979'	9,978'	-7,895'	-	753'	9'	-11'	22'	-8'
LPA											
Lodgepole Fractured Zone	10,233'	-8,150'									
LPC											
LPD			10,402'	10,397'	-8,314'	137'	334'	-	-13'	17'	-10'
LPE			10,553'	10,534'	-8,451'	114'	197'	-	-11'	10'	-10'
LPF			10,693'	10,648'	-8,565'	44'	83'	-	-12'	-22'	-15'
False Bakken	10,691'	-8,608'	10,797'	10,692'	-8,609'	1'	39'	-1'	-11'	9'	-14'
Scallion	-	-	10,799'	10,693'	-8,610'	10'	38'	-	-11'	12'	-13'
Upper Bakken Shale	10,701'	-8,618'	10,826'	10,703'	-8,620'	15'	28'	-2'	-11'	8'	-17'
Middle Bakken	10,713'	-8,630'	10,880'	10,718'	-8,635'	13'	13'	-5'	-10'	9'	-14'
Middle Bakken Target Top	10,723'	-8,640'		10,731'	-8,648'	2'	0'	-8'	-11'	6'	-15'
Landing target				10,733'	-8,650'	-	-2'				
Base Middle Bakken Target	10,737'	-8,654'									
Lower Bakken Shale	10,752'	-8,669'									
Three Forks	10,764'	-8,681'									

CONTROL DATA

Operator:	Oasis Petroleum North America, LLC				Oasis Petroleum North America, LLC				SM Energy Company			
Well Name:	Bray 5301 43-12H				Kline 5300 11-18H				Lindvig 1-11HR			
Location:	SW SE Section 12 T153N R101W McKenzie County, ND 1/4 mile W of the Larry 5301 44-12B				Lot 1 Section 18 T153N R100W McKenzie County, ND 1/4 mile SE of the Larry 5301 44-12B				SE SE Section 11, T153N, R101W McKenzie County, ND 1 mile W of the Larry 5301 44-12B			
Elevation:	KB: 2,094'				KB: 2,079'				KB: 2,105'			
Formation/ Zone	**E-Log Top**	**Datum (MSL)**	**Interval Thickness**	**Thickness to Target**	**E-Log Top**	**Datum (MSL)**	**Interval Thickness**	**Thickness to Target**	**E-Log Top**	**Datum (MSL)**	**Interval Thickness**	**Thickness to Target**
Kibbey "Lime"	8,355'	-6,261'	139'	2,378'	8,371'	-6,292'	147'	2,364'	8,363'	-6,258'	142'	2,377'
Charles Salt	8,494'	-6,400'	626'	2,239'	8,518'	-6,439'	625'	2,217'	8,505'	-6,400'	629'	2,235'
UB	9,120'	-7,026'	78'	1,613'	9,143'	-7,064'	73'	1,592'	9,134'	-7,029'	76'	1,606'
Base of Last Salt	9,198'	-7,104'	32'	1,535'	9,216'	-7,137'	32'	1,519'	9,210'	-7,105'	32'	1,530'
Ratcliffe	9,230'	-7,136'	186'	1,503'	9,248'	-7,169'	194'	1,487'	9,242'	-7,137'	190'	1,498'
Mission Canyon	9,416'	-7,322'	562'	1,317'	9,442'	-7,363'	554'	1,293'	9,432'	-7,327'	560'	1,308'
Lodgepole	9,978'	-7,884'	128'	755'	9,996'	-7,917'	135'	739'	9,992'	-7,887'	128'	748'
LPM A	10,106'	-8,012'	56'	627'	10,131'	-8,052'	81'	604'	10,120'	-8,015'	56'	620'
Lodgepole Fracture Zone	10,162'	-8,068'	54'	571'	10,212'	-8,133'	45'	523'	10,176'	-8,071'	46'	564'
LPM C	10,216'	-8,122'	179'	517'	10,257'	-8,178'	153'	478'	10,222'	-8,117'	187'	518'
LPM D	10,395'	-8,301'	139'	338'	10,410'	-8,331'	130'	325'	10,409'	-8,304'	137'	331'
LPM E	10,534'	-8,440'	113'	199'	10,540'	-8,461'	82'	195'	10,546'	-8,441'	109'	194'
LPM F	10,647'	-8,553'	45'	86'	10,622'	-8,543'	75'	113'	10,655'	-8,550'	45'	85'
False Bakken	10,692'	-8,598'	1'	41'	10,697'	-8,618'	4'	38'	10,700'	-8,595'	2'	40'
Scallion	10,693'	-8,599'	10'	40'	10,701'	-8,622'	6'	34'	10,702'	-8,597'	6'	38'
Upper Bakken Shale	10,703'	-8,609'	16'	30'	10,707'	-8,628'	16'	28'	10,708'	-8,603'	18'	32'
Middle Bakken	10,719'	-8,625'	12'	14'	10,723'	-8,644'	10'	12'	10,726'	-8,621'	12'	14'
Middle Bakken Target Top	10,731'	-8,637'	2'	2'	10,733'	-8,654'	2'	2'	10,738'	-8,633'	2'	2'
Target Landing	10,733'	-8,639'	8'	0'	10,735'	-8,656'	7'	0'	10,740'	-8,635'	8'	0'
Base of Middle Bakken Target	10,741'	-8,647'	-	-	10,742'	-8,663'	-	-	10,748'	-8,643'	-	-
Lower Bakken Shale	-	-	-	-		-	-	-	10,762'	-	-	-

INTERVAL THICKNESS

Oasis Petroleum North America, LLC - Larry 5301 44-12B



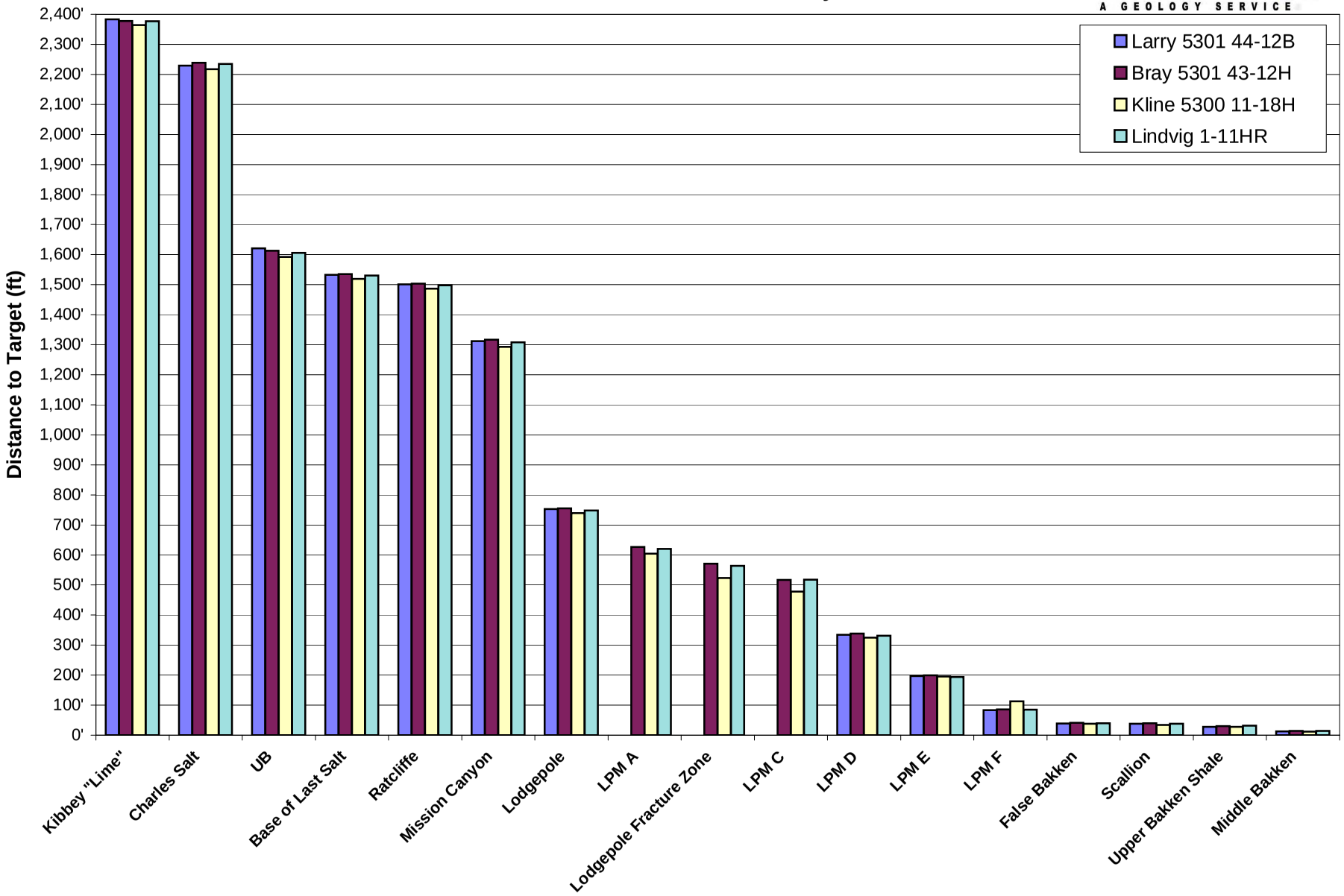
TARGET PROXIMATION

Formation/ Zone:	Proposed Top of Target From:			
	Bray 5301 43-12H	Kline 5300 11-18H	Lindvig 1-11HR	Average of Offset Wells
Kibbey "Lime"	10,726'	10,712'	10,725'	10,721'
Charles Salt	10,741'	10,719'	10,737'	10,732'
UB	10,723'	10,702'	10,716'	10,714'
Base of Last Salt	10,733'	10,717'	10,728'	10,726'
Ratcliffe	10,733'	10,717'	10,728'	10,726'
Mission Canyon	10,736'	10,712'	10,727'	10,725'
Lodgepole	10,733'	10,717'	10,726'	10,725'
LPM A	-	-	-	-
Lodgepole Fracture Zone	-	-	-	-
LPM C	-	-	-	-
LPM D	10,735'	10,722'	10,728'	10,728'
LPM E	10,733'	10,729'	10,728'	10,730'
LPM F	10,734'	10,761'	10,733'	10,743'
False Bakken	10,733'	10,730'	10,732'	10,732'
Scallion	10,733'	10,727'	10,731'	10,730'
Upper Bakken Shale	10,733'	10,731'	10,735'	10,733'
Middle Bakken	10,732'	10,730'	10,732'	10,731'
Middle Bakken Target Top	10,733'	10,733'	10,733'	10,733'
Target Landing	10,733'	10,735'	10,733'	10,734'

ISOPACH TO TARGET

Oasis Petroleum North America, LLC - Larry 5301 44-12B

SUNBURST CONSULTING
A GEOLOGY SERVICE



LITHOLOGY

Oasis Petroleum North America, LLC. Larry 5301 44-12B

Rig crews caught lagged samples, under the supervision of Sunburst geologists, in 30' intervals from 8,170' to 10,870', 10' intervals from 10,870' to 11,090', and then 30' intervals to the TD at 20,464' MD. Sample or gamma ray marker tops have been inserted in the sample descriptions below for reference. Samples were examined wet and dry under a binocular microscope. The drilling fluid was diesel-based invert from surface casing to the TD of the curve at 11,090', and salt water from 11,090' to 21,140' MD.

Drilling in the Kibbey Formation:

8170-8200 SILTSTONE: red orange, firm to friable, sub blocky to sub platy, calcite cement, well to moderately cemented, no visible porosity; trace ANHYDRITE: off white, cryptocrystalline, soft, amorphous, no visible porosity

8200-8230 SILTSTONE: red orange to trace pink, friable, sub blocky to sub platy, calcite cement, moderately cemented, anhydrite in part, trace sandy grained, no visible porosity; rare ANHYDRITE: off white, cryptocrystalline, soft, amorphous, no visible porosity

8230-8260 SILTSTONE: red orange, firm to trace friable, sub blocky to sub platy, calcite cement, well to trace moderately cemented, no visible porosity

8260-8290 SILTSTONE: red orange, firm, sub blocky to sub platy, calcite cement, well cemented, anhydrite in part, no visible porosity

8290-8320 ANHYDRITE: off white to common translucent, cryptocrystalline to common microcrystalline, soft, amorphous, common sandy grained, no visible porosity

Kibbey "Lime": 8,348' MD (-6,265')

8320-8350 ANHYDRITE: off white, cryptocrystalline, soft, amorphous, trace sandy grained, no visible porosity

8350-8380 SILTSTONE: light gray, friable, sub blocky to sub platy, calcite cement, moderately cemented, no visible porosity

8380-8410 SILTSTONE: red orange, firm to trace friable, sub blocky to sub platy, calcite cement, well to trace moderately cemented, no visible porosity; trace ANHYDRITE: off white to rare translucent, cryptocrystalline to common microcrystalline, soft, amorphous, common sandy grained, no visible porosity

8410-8440 SILTSTONE: red orange, firm to trace friable, sub blocky to sub platy, calcite cement, well to trace moderately cemented, no visible porosity; trace ANHYDRITE: off white to rare translucent, cryptocrystalline to common microcrystalline, soft, amorphous, common sandy grained, no visible porosity

8440-8470 SILTSTONE: red orange, firm to trace friable, sub blocky to sub platy, calcite cement, well to trace moderately cemented, no visible porosity; trace ANHYDRITE: off white to rare translucent, cryptocrystalline to common microcrystalline, soft, amorphous, common sandy grained, no visible porosity; rare SALT: clear to milky, crystalline, hard, euhedral, crystalline texture

8470-8500 SILTSTONE: red orange, firm to trace friable, sub blocky to sub platy, calcite cement, well to trace moderately cemented; common SALT: clear to milky, crystalline, hard, euhedral, crystalline texture; trace ANHYDRITE: off white to rare translucent, cryptocrystalline to common microcrystalline, soft, amorphous

Charles Salt: 8,502' MD (-6,419')

8500-8530 SALT: clear to milky, crystalline, hard, euhedral, crystalline texture; trace SILTSTONE: red orange, firm to trace friable, sub blocky to sub platy, calcite cement, well to trace moderately cemented, no visible porosity; trace ANHYDRITE: off white to rare translucent, cryptocrystalline to common microcrystalline, soft, amorphous

8530-8560 no sample

8560-8590 no sample

8590-8620 SALT: clear to milky, crystalline, hard, euhedral, crystalline texture

8620-8650 SALT: clear to milky, crystalline, hard, euhedral, crystalline texture

8650-8680 SALT: clear to milky, crystalline, hard, euhedral, crystalline texture

8680-8710 ARGILLACEOUS LIMESTONE: mudstone, light gray to gray, gray brown, microcrystalline, soft to friable, dense, earthy; ANHYDRITE: off white to white, microcrystalline, soft, amorphous; SALT: clear to milky, crystalline, hard, euhedral, crystalline texture

8710-8740 ANHYDRITE: off white to white, microcrystalline, soft, amorphous; SALT: clear to milky, crystalline, hard, euhedral, crystalline texture, occasional ARGILLACEOUS LIMESTONE: mudstone, light gray to gray, gray brown, microcrystalline, soft to friable, dense, earthy

8740-8770 SALT: clear to milky, crystalline, hard, euhedral, crystalline texture; trace ANHYDRITE: off white to white, microcrystalline, soft, amorphous

8770-8800 SALT: clear to milky, crystalline, hard, euhedral, crystalline texture; trace ANHYDRITE: off white to white, microcrystalline, soft, amorphous, trace ARGILLACEOUS LIMESTONE: mudstone, light gray, microcrystalline, soft to friable, dense, earthy, dolomitic in part

8800-8830 ANHYDRITE: off white to white, microcrystalline, soft, amorphous; ARGILLACEOUS LIMESTONE: mudstone, light gray, microcrystalline, soft to friable, dense, earthy, dolomitic in part, trace SALT: clear to milky, crystalline, hard, euhedral, crystalline texture

8830-8860 SALT: clear to milky, crystalline, hard, euhedral, crystalline texture; ARGILLACEOUS LIMESTONE: mudstone, light gray to gray, gray brown, microcrystalline, soft to friable, dense, earthy; ANHYDRITE: off white to white, microcrystalline, soft, amorphous

8860-8890 ANHYDRITE: off white to white, microcrystalline, soft, amorphous; occasional ARGILLACEOUS LIMESTONE: mudstone, light gray to gray, gray brown, microcrystalline, soft to friable, dense, earthy

8890-8920 LIMESTONE: mudstone to wackestone, light brown, gray brown, light gray, microcrystalline, friable, dense, earthy argillaceous in part; trace ANHYDRITE: off white to white, microcrystalline, soft, amorphous

8920-8950 LIMESTONE: mudstone to wackestone, light brown, gray brown, light gray, microcrystalline, friable, dense, earthy argillaceous in part; trace ANHYDRITE: off white to white, microcrystalline, soft, amorphous

8950-8980 SALT: clear to milky, crystalline, hard, euhedral, crystalline texture; ARGILLACEOUS LIMESTONE: mudstone, light gray, light brown, light gray brown, microcrystalline, soft to friable, dense, earthy; ANHYDRITE: off white to white, microcrystalline, soft, amorphous

8980-9010 no sample

9010-9040 LIMESTONE: mudstone, cream to trace medium brown, microcrystalline, firm to trace hard, earthy to trace crystalline texture, siliceous in part, possible intergranular porosity, trace dark brown dead spotty oil stain; trace ANHYDRITE: off white, cryptocrystalline, soft, amorphous, no visible porosity

9040-9070 LIMESTONE: mudstone, cream to rare medium brown to trace tan, microcrystalline, firm to trace hard, earthy to trace crystalline texture, siliceous in part, possible intergranular porosity, trace dark brown dead spotty oil stain

9070-9100 ANHYDRITE: off white, cryptocrystalline, soft, amorphous, no visible porosity

9100-9130 ANHYDRITE: off white, cryptocrystalline, soft, amorphous, no visible porosity

Upper Berentson: 9,111' MD 9,110' TVD (-7,027')

9130-9160 SALT: frosted to rare clear, crystalline, hard, euhedral to rare subhedral, crystalline texture, no intercrystalline porosity; trace ANHYDRITE: off white, cryptocrystalline, soft, amorphous, no visible porosity; trace LIMESTONE: mudstone, medium gray, microcrystalline, firm, crystalline texture, siliceous in part, no visible porosity

9160-9190 DOLOMITE: mudstone, light gray to trace medium gray, microcrystalline, friable to trace firm to trace hard, earthy to trace crystalline texture, trace siliceous, no visible porosity

Base Last Salt: 9,199' MD 9,198' TVD (-7,115')

9190-9220 ANHYDRITE: off white, cryptocrystalline, soft, amorphous, no visible porosity; rare DOLOMITE: mudstone, medium gray to trace medium brown, microcrystalline, friable to trace hard, earthy to trace crystalline texture, trace siliceous, no visible porosity

9220-9250 LIMESTONE: mudstone, tan to common medium brown to trace cream, microcrystalline, firm to trace hard, earthy to rare crystalline texture, siliceous in part, argillaceous in part, possible intergranular porosity, trace dark brown dead spotty oil stain

Ratcliffe: 9,231' MD 9,230' TVD (-7,147')

9250-9280 ANHYDRITE: off white, cryptocrystalline, soft, amorphous, no visible porosity; common LIMESTONE: mudstone, cream light gray to trace dark brown to trace medium brown, microcrystalline, firm, earthy to trace crystalline texture, trace siliceous, no visible porosity

9280-9310 LIMESTONE: mudstone, cream light gray to rare medium brown, microcrystalline, hard, earthy to rare crystalline texture, siliceous in part, possible intergranular porosity, trace dark brown dead spotty oil stain

9310-9340 LIMESTONE: mudstone, medium gray to light gray mottled to trace cream, microcrystalline, firm, earthy to trace crystalline texture, trace siliceous, no visible porosity

9340-9370 LIMESTONE: mudstone, tan to medium brown mottled to trace cream, microcrystalline, firm to trace friable, earthy to trace crystalline texture, trace siliceous, trace spar calcareous, trace intercrystalline porosity

9370-9400 LIMESTONE: mudstone, medium brown to trace cream, microcrystalline, firm, earthy to rare crystalline texture, siliceous in part, no visible porosity

9400-9430 LIMESTONE: mudstone, medium brown to trace cream, microcrystalline, firm, earthy to rare crystalline texture, trace spotty light brown oil stain, possible intercrystalline porosity

Mission Canyon: 9,420' MD 9,419' TVD (-7,336')

9430-9460 LIMESTONE: mudstone, light brown, light gray brown, off white, trace light gray, microcrystalline, firm to friable, earthy to crystalline texture, trace fossil fragment

9460-9490 LIMESTONE: mudstone, gray to light gray, light brown, gray brown, microcrystalline, firm to friable, earthy to crystalline texture, argillaceous in part, common alga material, trace fossil fragment

9490-9520 LIMESTONE: mudstone, light gray, light brown, light gray brown, off white, trace light gray, microcrystalline, firm to friable, earthy to crystalline texture, argillaceous in part, trace fossil fragment, trace disseminated pyrite, trace spotty light brown oil stain, possible intercrystalline porosity

9520-9550 LIMESTONE: mudstone, light brown, light gray brown, off white, trace light gray, microcrystalline, firm to friable, earthy to crystalline texture, argillaceous in part, trace fossil fragment, trace spotty light brown oil stain, possible intercrystalline porosity

9550-9580 LIMESTONE: mudstone, light gray, light brown, light gray brown, off white, microcrystalline, firm to friable, earthy to crystalline texture, argillaceous in part, trace fossil fragment, trace alga material, trace spotty light brown oil stain, possible intercrystalline porosity

9580-9610 LIMESTONE: mudstone, light brown, light gray brown, off white, trace light gray, microcrystalline, firm to friable, earthy to crystalline texture, argillaceous in part, trace fossil fragment, common alga material, trace spotty light brown oil stain, possible intercrystalline porosity

9610-9640 LIMESTONE: mudstone, off white, light brown, light gray brown, microcrystalline, firm to friable, earthy to crystalline texture, argillaceous in part, trace fossil fragment, trace alga material

9640-9670 LIMESTONE: mudstone, gray, light gray brown, off white, trace light brown, microcrystalline, firm to friable, earthy to crystalline texture, argillaceous in part, trace fossil fragment, trace alga material, trace disseminated pyrite

9670-9700 LIMESTONE: mudstone, off white, light gray, light gray brown, microcrystalline, firm to friable, earthy to crystalline texture, argillaceous in part, trace fossil fragment, trace disseminated pyrite

9700-9730 LIMESTONE: mudstone, off white, light gray, light gray brown, microcrystalline, firm to friable, earthy to crystalline texture, trace fossil fragment, trace disseminated pyrite

9730-9760 LIMESTONE: mudstone, off white, light brown, trace light gray, microcrystalline, firm to friable, earthy to crystalline texture, trace fossil fragment

9760-9790 LIMESTONE: mudstone, off white, light brown, trace light gray, microcrystalline, firm to friable, earthy to crystalline texture, trace fossil fragment, common alga material, trace dead oil stain

9790-9820 LIMESTONE: mudstone, dark brown to cream mottled to rare cream, microcrystalline, firm to rare friable to trace hard, earthy to trace crystalline texture, trace siliceous, possible intergranular porosity, trace dark brown dead spotty oil stain

9820-9850 ARGILLACEOUS LIMESTONE: mudstone, dark brown to dark brown cream mottled to trace cream, microcrystalline, firm, earthy to rare crystalline texture, siliceous in part, trace spar calcareous, trace disseminated pyrite, no visible porosity

9850-9880 ARGILLACEOUS LIMESTONE: mudstone, dark brown to trace dark brown cream mottled, microcrystalline, firm to rare friable to trace hard, earthy to rare crystalline texture, trace siliceous, trace disseminated pyrite, no visible porosity

9880-9910 LIMESTONE: mudstone, cream to rare medium brown, microcrystalline, hard, earthy to rare crystalline texture, siliceous in part, no visible porosity

9910-9940 LIMESTONE: mudstone, cream gray to rare medium gray to trace dark gray to trace medium brown, microcrystalline, firm to rare hard, earthy to trace crystalline texture, trace siliceous, possible intergranular porosity, trace dark brown dead spotty oil stain

9940-9970 LIMESTONE: mudstone, cream light gray to occasional medium gray to trace cream, microcrystalline, firm to rare hard to trace friable, earthy to trace crystalline texture, trace siliceous, trace disseminated pyrite, trace spar calcareous, argillaceous in part, no visible porosity

Lodgepole: 9,979' MD 9,978' TVD (-7,895')

9970-10000 ARGILLACEOUS LIMESTONE: mudstone, tan light gray to rare medium gray to trace medium brown, microcrystalline, firm to trace hard, earthy to trace crystalline texture, trace siliceous, trace disseminated pyrite, no visible porosity

10000-10030 ARGILLACEOUS LIMESTONE: mudstone, brown medium gray to rare cream, microcrystalline, firm to trace hard, earthy texture, trace disseminated pyrite, no visible porosity

10030-10060 ARGILLACEOUS LIMESTONE: mudstone, brown medium gray to occasional light gray, microcrystalline, firm, earthy texture, trace disseminated pyrite, no visible porosity

10060-10090 ARGILLACEOUS LIMESTONE: mudstone, brown medium gray to rare cream light gray, microcrystalline, firm to trace hard, earthy to trace crystalline texture, trace siliceous, trace disseminated pyrite, no visible porosity

10090-10120 ARGILLACEOUS LIMESTONE: mudstone, gray light brown to trace cream, microcrystalline, firm to rare hard, earthy texture, trace disseminated pyrite, trace spar calcareous, no visible porosity

10120-10150 ARGILLACEOUS LIMESTONE: mudstone, gray light brown to trace medium gray, microcrystalline, firm to trace hard, earthy to trace crystalline texture, trace siliceous, trace disseminated pyrite, no visible porosity

10150-10180 ARGILLACEOUS LIMESTONE: mudstone, tan to rare medium brown, microcrystalline, firm to rare hard, earthy to rare crystalline texture, trace siliceous, trace disseminated pyrite, no visible porosity

10180-10210 ARGILLACEOUS LIMESTONE: mudstone, light brown, microcrystalline, firm to rare hard, earthy to trace crystalline texture, trace siliceous, trace disseminated pyrite, no visible porosity

10210-10240 no sample

10247-10270 ARGILLACEOUS LIMESTONE: mudstone, light gray, light gray brown, rarely off white, trace dark gray, microcrystalline, friable to firm, dense, earthy to crystalline texture, trace disseminated pyrite

10270-10300 LIMESTONE: mudstone, light gray, light gray brown, rarely off white, trace dark gray, microcrystalline, friable to firm, dense, earthy to crystalline texture, trace disseminated pyrite

10300-10330 LIMESTONE: mudstone, light gray to gray, gray brown, rarely off white, microcrystalline, friable to firm, dense, earthy to crystalline texture, trace disseminated pyrite

10330-10360 LIMESTONE: mudstone, gray to light gray, gray brown, rarely off white, microcrystalline, friable to firm, dense, earthy to crystalline texture, trace disseminated pyrite

10360-10390 LIMESTONE: mudstone, light gray to gray, gray brown, rarely off white, microcrystalline, friable to firm, dense, earthy to crystalline texture, trace disseminated pyrite

10390-10420 ARGILLACEOUS LIMESTONE: mudstone, light gray to gray, off white, gray brown, microcrystalline, friable to firm, dense, earthy to crystalline texture, trace disseminated pyrite

10420-10450 ARGILLACEOUS LIMESTONE: mudstone, light gray to gray, off white, gray brown, microcrystalline, friable to firm, dense, earthy to crystalline texture, trace disseminated pyrite

10450-10480 ARGILLACEOUS LIMESTONE: mudstone, light gray to dark gray, gray brown, trace off white, microcrystalline, friable to firm, dense, earthy to crystalline texture, trace disseminated pyrite

10480-10510 ARGILLACEOUS LIMESTONE: mudstone, gray light brown to trace tan, microcrystalline, firm0trace hard to trace brittle, earthy to trace crystalline texture, trace siliceous, trace disseminated pyrite, no visible porosity

10510-10540 ARGILLACEOUS LIMESTONE: mudstone, gray light brown to trace tan, microcrystalline, firm to rare hard, earthy to trace crystalline texture, trace siliceous, trace disseminated pyrite, no visible porosity

10540-10570 ARGILLACEOUS LIMESTONE: mudstone, gray medium brown to rare tan to trace medium brown, microcrystalline, firm to trace hard, earthy to trace crystalline texture, siliceous in part, trace disseminated pyrite, no visible porosity

10570-10600 ARGILLACEOUS LIMESTONE: mudstone, gray medium brown to trace tan, microcrystalline, firm to rare hard to trace friable, earthy to rare crystalline texture, siliceous in part, trace disseminated pyrite, no visible porosity

10600-10630 ARGILLACEOUS LIMESTONE: mudstone, brown medium gray to rare light gray, microcrystalline, firm to rare hard, earthy to rare crystalline texture, siliceous in part, trace disseminated pyrite, no visible porosity

10630-10660 ARGILLACEOUS LIMESTONE: mudstone, brown medium gray to trace cream light gray, microcrystalline, firm to trace hard, earthy to trace crystalline texture, trace siliceous, trace disseminated pyrite, no visible porosity

10660-10690 ARGILLACEOUS LIMESTONE: mudstone, brown light gray to occasional cream light gray, microcrystalline, firm to trace hard, earthy to trace crystalline texture, trace siliceous, trace disseminated pyrite, no visible porosity

10690-10720 ARGILLACEOUS LIMESTONE: mudstone, medium gray, microcrystalline, firm to rare hard, earthy to trace crystalline texture, trace siliceous, trace siliceous, trace disseminated pyrite, no visible porosity

10720-10750 ARGILLACEOUS LIMESTONE: mudstone, medium brown to rare cream, microcrystalline, firm to rare hard, earthy texture, trace disseminated pyrite, no visible porosity

10750-10780 ARGILLACEOUS LIMESTONE: mudstone, cream light gray to rare medium to dark gray, microcrystalline, firm to trace friable, earthy to trace crystalline texture, trace siliceous, trace disseminated pyrite, no visible porosity

False Bakken 10,797' MD 10,692' TVD (8,609')

10780-10810 ARGILLACEOUS LIMESTONE: mudstone, tan, microcrystalline, firm to rare hard to trace friable, earthy texture, trace disseminated pyrite, no visible porosity

Scallion: 10,799' MD 10,693' TVD (-8,601')

10780-10810 LIMESTONE: mudstone, tan, microcrystalline, firm to rare hard to trace friable, earthy texture, trace disseminated pyrite, no visible porosity

Upper Bakken Shale: 10,826' MD 10,703' TVD (8,620')

10810-10840 SHALE: black, firm to rare hard, sub-blocky to sub-platy, earthy to rare waxy texture, common disseminated pyrite, carbonaceous, petroliferous, even black oil stain

10840-10870 SHALE: black, firm to rare hard, sub-blocky to sub-platy, earthy to rare waxy texture, common disseminated pyrite, carbonaceous, petroliferous, even black oil stain

10870-10880 SHALE: black, firm to rare hard, sub-blocky to sub-platy, earthy to rare waxy texture, common disseminated pyrite, carbonaceous, petroliferous, even black oil stain; SILTSTONE: medium gray, gray brown, trace dark gray, friable, blocky, calcite cement, moderately cemented

Middle Bakken 10,880' MD 10,718' TVD (-8,635')

10880-10890 SILTSTONE: medium gray, gray brown, trace dark gray, friable, blocky, calcite cement moderately cemented; trace SHALE: as above

10890-10900 SILTSTONE: medium gray, gray brown, trace dark gray, friable, blocky, calcite cement, moderately cemented

10900-10910 SILTSTONE: medium gray, gray brown, trace dark gray, friable, blocky, calcite cement, moderately cemented

10910-10920 SILTSTONE: as above; trace SILTY SANDSTONE: light brown to brown, off white, very fine grained, friable, subrounded, vitreous, calcite cement moderately cemented, trace nodules and disseminated pyrite, trace intergranular porosity, trace spotty light brown oil stain

10920-10930 SILTSTONE: medium gray, gray brown, trace dark gray, friable, blocky, calcite cement moderately cemented; rare SILTY SANDSTONE: light brown to brown, off white, very fine grained, friable, subrounded, vitreous, calcite cement moderately cemented, trace nodules and disseminated pyrite, trace intergranular porosity, trace spotty light brown oil stain

10930-10940 SILTY SANDSTONE: light brown to brown, off white, very fine grained, friable, subrounded, vitreous, calcite cement moderately cemented, trace nodules and disseminated pyrite, trace intergranular porosity, trace spotty light brown oil stain; occasional SILTSTONE: as above

10940-10950 SILTY SANDSTONE: light brown to brown, off white, very fine grained, friable, subrounded, vitreous, calcite cement moderately cemented, trace nodules and disseminated pyrite, trace intergranular porosity, trace spotty light brown oil stain; occasional SILTSTONE: as above

10950-10960 SILTY SANDSTONE: light brown to brown, off white, very fine grained, friable, subrounded, vitreous, calcite cement moderately cemented, trace nodules and disseminated pyrite, trace intergranular porosity, trace spotty light brown oil stain; trace SILTSTONE: as above

10960-10970 SILTY SANDSTONE: light brown to brown, off white, very fine grained, friable, subrounded, vitreous, calcite cement moderately cemented, trace nodules and disseminated pyrite, trace intergranular porosity, trace spotty light brown oil stain; trace SILTSTONE: as above

10970-10980 SILTY SANDSTONE: light brown to brown, off white, very fine grained, friable, subrounded, vitreous, calcite cement moderately cemented, trace nodules and disseminated pyrite, trace intergranular porosity, trace spotty light brown oil stain; trace SILTSTONE: as above

10980-10990 SILTY SANDSTONE: light brown to brown, off white, very fine grained, friable, subrounded, vitreous, calcite cement moderately cemented, trace nodules and disseminated pyrite, trace intergranular porosity, trace spotty light brown oil stain; trace SILTSTONE: as above

10990-11000 SILTY SANDSTONE: light brown to brown, off white, very fine grained, friable, subrounded, vitreous, calcite cement moderately cemented, trace nodules and disseminated pyrite, trace intergranular porosity, spotty and even light brown oil stain

11000-11010 SILTY SANDSTONE: light brown to brown, off white, very fine grained, friable, subrounded, vitreous, calcite cement moderately cemented, trace nodules and disseminated pyrite, trace intergranular porosity, spotty and even light brown oil stain

11010-11020 SILTY SANDSTONE: light brown to brown, off white, very fine grained, friable, subrounded, vitreous, calcite cement moderately cemented, trace nodules and disseminated pyrite, trace intergranular porosity, spotty and even light brown oil stain

11020-11030 SILTY SANDSTONE: light brown to brown, off white, very fine grained, friable, subrounded, vitreous, calcite cement moderately cemented, trace nodules and disseminated pyrite, trace intergranular porosity, spotty and even light brown oil stain

11030-11040 SILTY SANDSTONE: light brown to brown, off white, very fine grained, friable, subrounded, vitreous, calcite cement moderately cemented, trace nodules and disseminated pyrite, trace intergranular porosity, spotty and even light brown oil stain

11040-11050 SILTY SANDSTONE: light brown to brown, off white, very fine grained, friable, subrounded, vitreous, calcite cement moderately cemented, trace nodules and disseminated pyrite, trace intergranular porosity, spotty and even light brown oil stain

11050-11060 SILTY SANDSTONE: light brown to brown, off white, very fine grained, friable, subrounded, vitreous, calcite cement moderately cemented, trace nodules and disseminated pyrite, trace intergranular porosity, spotty and even light brown oil stain

11060-11090 SILTY SANDSTONE: light brown to brown, off white, very fine grained, friable, subrounded, vitreous, calcite cement moderately cemented, trace nodules and disseminated pyrite, trace intergranular porosity, spotty and even light brown oil stain

11060-11090 SILTY SANDSTONE: light brown to brown, off white, very fine grained, friable, subrounded, vitreous, calcite cement, moderately cemented, trace nodules and disseminated pyrite, trace intergranular porosity, spotty and even light brown oil stain

11090-11120 SILTY SANDSTONE: light gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace intergranular porosity, occasional dark to medium brown spotty to even oil stain

11120-11150 SILTY SANDSTONE: light gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace intergranular porosity, occasional dark to medium brown spotty to even oil stain

11150-11180 SILTY SANDSTONE: light gray to rare off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace intergranular porosity, trace dark to light brown spotty to even oil stain

11180-11210 SILTY SANDSTONE: light gray to rare off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace intergranular porosity, trace dark to light brown spotty to even oil stain

11210-11240 SILTY SANDSTONE: light gray to occasional off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

11240-11270 SILTY SANDSTONE: light gray to occasional off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

11270-11300 SILTY SANDSTONE: light gray to rare off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite, trace nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

11300-11330 SILTY SANDSTONE: light gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, rare nodular pyrite, trace disseminated pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

11330-11360 SILTY SANDSTONE: light gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, rare nodular pyrite, trace disseminated pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

11360-11390 SILTY SANDSTONE: light gray to trace off white, very fine grained, friable to rare firm, subangular to subrounded, well sorted, calcite cement, moderately to rare well cemented, trace disseminated pyrite, trace nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

11390-11420 SILTY SANDSTONE: light gray to trace off white, very fine grained, friable to rare firm, subangular to subrounded, well sorted, calcite cement, moderately to rare well cemented, trace disseminated pyrite, trace nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

11420-11450 SILTY SANDSTONE: light gray to rare off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

11450-11480 SILTY SANDSTONE: light gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

11480-11510 SILTY SANDSTONE: light gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

11510-11540 SILTY SANDSTONE: light brown, light gray, rare off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

11540-11570 SILTY SANDSTONE: light gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

11570-11600 SANDSTONE: light gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

11600-11630 SANDSTONE: light gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

11630-11660 SANDSTONE: light gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

11660-11690 sample cont with drilling lube; SILTY SANDSTONE: light gray, off white to white, light brown, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

11690-11720 sample cont with drilling lube; SILTY SANDSTONE: light gray, off white to white, light brown, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

11720-11750 sample cont with drilling lube; SILTY SANDSTONE: light gray, off white to white, light brown, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

11750-11780 sample cont with drilling lube; SILTY SANDSTONE: light gray, off white to white, light brown, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

11780-11810 sample cont with drilling lube; SILTY SANDSTONE: light gray, off white to white, light brown, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

11810-11840 sample cont with drilling lube; SILTY SANDSTONE: light gray, off white to white, light brown, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

11840-11870 sample cont with drilling lube; SILTY SANDSTONE: light gray, off white to white, light brown, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

11870-11900 sample cont with drilling lube; SILTY SANDSTONE: light gray, off white to white, light brown, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

11900-11930 SILTY SANDSTONE: light gray, off white to white, light brown, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

11930-11960 SILTY SANDSTONE: light gray, off white to white, light brown, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

11960-11990 sample cont with drilling lube; SILTY SANDSTONE: light gray, off white to white, light brown, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

11990-12020 sample cont with drilling lube; SILTY SANDSTONE: light gray, off white to white, light brown, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

12020-12050 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

12050-12080 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

12080-12110 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

12110-12140 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

12140-12170 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

12170-12200 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

12200-12230 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

12230-12260 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

12260-12290 SILTY SANDSTONE: light gray to trace medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

12290-12320 SILTY SANDSTONE: light gray to trace medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

12320-12350 SILTY SANDSTONE: light to medium gray to trace off white, very fine grained, friable to trace firm, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

12350-12380 SILTY SANDSTONE: light to medium gray to trace off white, very fine grained, friable to trace firm, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

12380-12410 SILTY SANDSTONE: light gray to trace off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

12410-12440 SILTY SANDSTONE: light gray to trace off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

12440-12470 SILTY SANDSTONE: light gray to rare medium gray to rare off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

12470-12500 SILTY SANDSTONE: light gray to rare medium gray to rare off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

12500-12530 SILTY SANDSTONE: light gray to rare medium gray to rare off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

12530-12560 SILTY SANDSTONE: light gray to rare medium gray to rare off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

12560-12590 SILTY SANDSTONE: light gray to rare off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

12590-12620 SILTY SANDSTONE: light gray to rare off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

12620-12650 SILTY SANDSTONE: light gray to trace off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

12650-12680 SILTY SANDSTONE: light gray to trace off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

12680-12710 SILTY SANDSTONE: light gray to rare off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

12710-12740 SILTY SANDSTONE: light gray to rare off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

12740-12770 SILTY SANDSTONE: light gray to trace off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

12770-12800 SILTY SANDSTONE: light gray to trace off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

12800-12830 SILTY SANDSTONE: light gray to trace off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

12830-12860 SILTY SANDSTONE: light gray to trace off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

12860-12890 SILTY SANDSTONE: light gray to trace off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

12890-12920 SILTY SANDSTONE: light gray to trace off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

12920-12950 SILTY SANDSTONE: light gray to trace off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

12950-12980 SILTY SANDSTONE: light gray to trace off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

12980-13010 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

13010-13040 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, possible fracture porosity, common dark to light brown spotty to even oil stain

13040-13070 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, possible fracture porosity, common dark to light brown spotty to even oil stain

13070-13100 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable to rare firm, well sorted, calcite cement, moderately to rare well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, possible fracture porosity, common dark to light brown spotty to even oil stain

13100-13130 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable to rare firm, well sorted, calcite cement, moderately to rare well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

13130-13160 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable to rare firm, well sorted, calcite cement, moderately to rare well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

13160-13190 SILTY SANDSTONE: light gray to occasional off white to rare medium gray, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

13190-13220 SILTY SANDSTONE: light gray to occasional off white to rare medium gray, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

13220-13250 SILTY SANDSTONE: light gray to trace medium gray, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

13250-13280 SILTY SANDSTONE: light gray to trace medium gray, very fine grained, friable, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

13280-13310 SILTY SANDSTONE: light gray to trace medium gray to trace off white, very fine grained, friable to trace firm, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

13310-13340 SILTY SANDSTONE: light gray to trace medium gray to trace off white, very fine grained, friable to trace firm, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

13340-13370 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

13370-13400 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

13400-13430 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

13430-13460 SILTY SANDSTONE: light gray, trace medium gray, off white to white, light brown, very fine grained, friable to trace firm, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

13460-13490 SILTY SANDSTONE: light gray, trace medium gray, off white to white, light brown, very fine grained, friable to trace firm, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

13490-13520 SILTY SANDSTONE: light gray, trace medium gray, off white to white, light brown, very fine grained, friable to trace firm, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

13520-13550 SILTY SANDSTONE: light gray, trace medium gray, off white to white, light brown, very fine grained, friable to trace firm, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

13550-13580 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

13580-13610 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

13610-13640 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

13640-13670 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

13670-13700 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

13700-13730 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

13730-13760 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

13760-13790 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

13790-13820 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

13820-13850 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

13850-13880 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

13880-13910 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

13910-13940 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

13940-13970 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

13970-14000 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

14000-14030 SILTY SANDSTONE: light gray, trace medium gray, off white to white, light brown, very fine grained, friable to trace firm, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14030-14060 SILTY SANDSTONE: light gray, trace medium gray, off white to white, light brown, very fine grained, friable to trace firm, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14060-14090 SILTY SANDSTONE: light gray, trace medium gray, off white to white, light brown, very fine grained, friable to trace firm, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14090-14120 SILTY SANDSTONE: light gray, trace medium gray, off white to white, light brown, very fine grained, friable to trace firm, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14120-14150 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

14150-14180 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

14180-14210 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

14210-14240 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

14240-14270 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

14270-14300 SILTY SANDSTONE: light brown, light gray, off white to white, translucent, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

14300-14330 SILTY SANDSTONE: light gray to trace medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

14330-14360 SILTY SANDSTONE: light gray to trace medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

14360-14390 SILTY SANDSTONE: light gray to trace medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14390-14420 SILTY SANDSTONE: light gray to trace medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14420-14450 SILTY SANDSTONE: light gray to rare off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14450-14480 SILTY SANDSTONE: light gray to rare off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14480-14510 SILTY SANDSTONE: light gray to rare medium to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14510-14540 SILTY SANDSTONE: light gray to rare medium to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14540-14570 SILTY SANDSTONE: light gray to rare medium to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14570-14600 SILTY SANDSTONE: light gray to rare medium to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14600-14630 SILTY SANDSTONE: light gray to rare medium to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14630-14660 SILTY SANDSTONE: light gray to rare medium to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14660-14690 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14690-14720 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14720-14750 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14750-14780 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14780-14810 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

14810-14840 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

14840-14870 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14870-14900 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14900-14930 SILTY SANDSTONE: light gray to trace off white to trace medium gray, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14930-14960 SILTY SANDSTONE: light gray to trace off white to trace medium gray, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

14960-14990 SILTY SANDSTONE: light gray to rare medium gray, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

14990-15020 SILTY SANDSTONE: light gray to rare medium gray, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

15020-15050 SILTY SANDSTONE: light gray to rare off white to trace medium gray, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

15050-15080 SILTY SANDSTONE: light gray to rare off white to trace medium gray, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

15080-15110 SILTY SANDSTONE: light gray to rare off white to trace medium gray, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

15110-15140 SILTY SANDSTONE: light gray to rare off white to trace medium gray, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

15140-15170 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

15170-15200 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

15200-15230 SILTY SANDSTONE: off white, light to medium gray, light brown, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

15230-15260 SILTY SANDSTONE: off white, light to medium gray, light brown, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain; common LIMESTONE: packstone, off white to white, microcrystalline, friable, crystalline, common oolites and pellet

15260-15290 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

15290-15320 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

15320-15350 no sample

15350-15380 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

15380-15410 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

15410-15440 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

15440-15470 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

15470-15500 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

15500-15530 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

15530-15560 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

15560-15590 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

15590-15620 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

15620-15650 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

15650-15680 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

15680-15710 SILTY SANDSTONE: light brown, light to medium gray, off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

15710-15740 SILTY SANDSTONE: light brown, light to medium gray, off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

15740-15770 SILTY SANDSTONE: light brown, light to medium gray, off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

15770-15800 SILTY SANDSTONE: light brown, light to medium gray, off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

15800-15830 SILTY SANDSTONE: light brown, light to medium gray, off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

15830-15860 SILTY SANDSTONE: light brown, light to medium gray, off white, very fine grained, friable to trace firm, subangular to subrounded, well sorted, calcite cement, moderately to trace well cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common light brown spotty to even oil stain

15860-15890 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

15890-15920 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

15920-15950 SILTY SANDSTONE: light gray to trace off white to trace medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

15950-15980 SILTY SANDSTONE: light gray to trace off white to trace medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

15980-16010 SILTY SANDSTONE: light gray to rare medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

16010-16040 SILTY SANDSTONE: light gray to rare medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

16040-16070 SILTY SANDSTONE: light gray to rare medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

16070-16100 SILTY SANDSTONE: light gray to rare medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

16100-16130 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

16130-16160 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

16160-16190 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

16190-16220 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

16220-16250 SILTY SANDSTONE: light gray to rare medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

16250-16280 SILTY SANDSTONE: light gray to rare medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

16280-16310 SILTY SANDSTONE: light gray to rare medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

16310-16340 SILTY SANDSTONE: light gray to rare medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

16340-16370 SILTY SANDSTONE: light gray to rare off white to trace medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

16370-16400 SILTY SANDSTONE: light gray to rare off white to trace medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

16400-16430 SILTY SANDSTONE: light gray to rare off white to trace medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain; rare LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

16430-16460 SILTY SANDSTONE: light gray to rare off white to trace medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain; rare LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

16460-16490 SILTY SANDSTONE: light gray to trace off white to trace medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

16490-16520 SILTY SANDSTONE: light gray to trace off white to trace medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

16520-16550 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

16550-16580 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

16580-16610 SILTY SANDSTONE: light gray to rare off white to rare medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

16610-16640 SILTY SANDSTONE: light gray to rare off white to rare medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

16640-16670 SILTY SANDSTONE: light gray to rare off white to trace medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

16670-16700 SILTY SANDSTONE: light gray to rare off white to trace medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

16700-16730 SILTY SANDSTONE: light to medium gray, off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

16730-16760 SILTY SANDSTONE: light to medium gray, off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

16760-16790 SILTY SANDSTONE: light to medium gray, off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

16790-16820 SILTY SANDSTONE: light to medium gray, off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

16820-16850 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

16850-16880 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

16880-16910 sample cont with drilling lube; SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

16910-16940 sample cont with drilling lube; SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

16940-16970 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

16970-17000 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

17000-17030 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

17030-17060 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

17060-17090 sample cont with drilling lube; SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

17090-17120 sample cont with drilling lube; SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

17120-17150 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

17150-17180 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

17180-17210 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

17210-17240 SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

17240-17270 sample cont with drilling lube; SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

17270-17300 sample cont with drilling lube; SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

17300-17330 sample cont with drilling lube; SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

17330-17360 sample cont with drilling lube; SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

17360-17390 sample heavily cont with drilling lube; SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

17390-17420 sample cont with drilling lube; SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

17420-17450 sample cont with drilling lube; SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

17450-17480 sample cont with drilling lube; SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

17480-17510 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

17510-17540 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

17540-17570 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

17570-17600 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty to even oil stain

17600-17630 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

17630-17660 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

17660-17690 SILTY SANDSTONE: light gray to rare medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

17690-17720 SILTY SANDSTONE: light gray to rare medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

17720-17750 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

17750-17780 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

17780-17810 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

17810-17840 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

17840-17870 SILTY SANDSTONE: light gray to rare off white to trace medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

17870-17900 SILTY SANDSTONE: light gray to rare off white to trace medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

17900-17930 SILTY SANDSTONE: light gray to trace medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

17930-17960 SILTY SANDSTONE: light gray to trace medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

17960-17990 SILTY SANDSTONE: medium gray to occasional light gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, trace dark to light brown spotty to even oil stain

17990-18020 SILTY SANDSTONE: medium gray to occasional light gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, trace dark to light brown spotty to even oil stain

18020-18050 SILTY SANDSTONE: light gray to rare medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

18050-18080 SILTY SANDSTONE: light gray to rare medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

18080-18110 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

18110-18140 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

18140-18160 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

18160-18200 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

18200-18230 SILTY SANDSTONE: light gray to occasional medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, trace dark to light brown spotty to even oil stain

18230-18260 SILTY SANDSTONE: light gray to occasional medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, trace dark to light brown spotty to even oil stain

18260-18290 sample heavily cont with drilling lube; SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty and even oil stain

18290-18320 sample heavily cont with drilling lube; SILTY SANDSTONE: light to medium gray, light brown, off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional light brown spotty and even oil stain

18320-18350 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18350-18380 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18380-18410 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18410-18440 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18410-18440 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18440-18470 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18470-18500 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18500-18530 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18530-18560 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18560-18590 Sample heavily cont with drilling lube; SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18590-18620 Sample heavily cont with drilling lube; SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18620-18650 Sample heavily cont with drilling lube; SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18650-18680 Sample heavily cont with drilling lube; SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18680-18710 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18710-18740 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18740-18770 Sample heavily cont with drilling lube; SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18770-18800 Sample heavily cont with drilling lube; SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18800-18830 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18830-18860 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18860-18890 Sample heavily cont with drilling lube; SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18890-18920 Sample heavily cont with drilling lube; SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18920-18950 Sample heavily cont with drilling lube; SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18950-18980 Sample heavily cont with drilling lube; SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

18980-19010 SILTY SANDSTONE: light gray to trace medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

19010-19040 SILTY SANDSTONE: light gray to trace medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

19040-19070 SILTY SANDSTONE: light gray to trace medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

19070-19100 SILTY SANDSTONE: light gray to trace medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

19100-19130 SILTY SANDSTONE: light gray to rare medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

19130-19160 SILTY SANDSTONE: light gray to rare medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

19160-19190 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

19190-19220 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

19220-19250 SILTY SANDSTONE: medium gray to occasional light gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

19250-19280 SILTY SANDSTONE: medium gray to occasional light gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

19280-19310 SILTY SANDSTONE: light gray to rare medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

19310-19340 SILTY SANDSTONE: light gray to rare medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

19340-19370 SILTY SANDSTONE: light gray to occasional medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

19370-19400 SILTY SANDSTONE: light gray to occasional medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

19400-19430 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

19430-19460 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

19460-19490 SILTY SANDSTONE: light gray to trace medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

19490-19520 SILTY SANDSTONE: light gray to trace medium gray, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

19520-19550 SILTY SANDSTONE: light gray to rare medium to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

19550-19580 SILTY SANDSTONE: light gray to rare medium to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

19580-19610 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

19610-19640 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain; trace LIMESTONE: packstone, off white, microcrystalline, friable, crystalline texture, trace pellets, no visible porosity

19640-19670 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

19670-19700 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

19700-19730 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

19730-19760 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

19760-19790 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

19790-19820 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

19820-19850 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

19850-19880 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

19880-19910 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

19910-19940 SILTY SANDSTONE: light to medium gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

19940-19970 Sample heavily cont with drilling lube; SILTY SANDSTONE: off white to white, occasional light to medium gray, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty, trace even oil stain

19970-20000 Sample heavily cont with drilling lube; SILTY SANDSTONE: off white to white, occasional light to medium gray, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty, trace even oil stain

20000-20030 Sample heavily cont with drilling lube; SILTY SANDSTONE: off white to white, occasional light to medium gray, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty, trace even oil stain

20030-20060 SILTY SANDSTONE: light to dark gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

20060-20090 SILTY SANDSTONE: light to dark gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

20090-20120 SILTY SANDSTONE: light to dark gray, trace off white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

20120-20150 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

20150-20180 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

20180-20210 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

20210-20240 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, common dark to light brown spotty to even oil stain

20240-20270 SILTY SANDSTONE: light gray to occasional medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

20270-20300 SILTY SANDSTONE: light gray to occasional medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

20300-20330 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

20330-20360 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

20360-20390 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, trace dark to light brown spotty to even oil stain

20390-20420 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace intergranular porosity, trace dark to light brown spotty to even oil stain

20420-20450 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

20450-20480 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare dark to light brown spotty to even oil stain

20510-20540 SILTY SANDSTONE: light gray to rare medium gray to trace off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, occasional dark to light brown spotty to even oil stain

20540-20570 Sample heavily cont with drilling lube; SILTY SANDSTONE: light gray to medium gray, rare off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

20570-20600 Sample heavily cont with drilling lube; SILTY SANDSTONE: light gray to medium gray, rare off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

20600-20630 Sample heavily cont with drilling lube; SILTY SANDSTONE: light gray to medium gray, rare off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

20630-20660 Sample heavily cont with drilling lube; SILTY SANDSTONE: light gray to medium gray, rare off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

20660-20690 Sample heavily cont with drilling lube; SILTY SANDSTONE: light gray to medium gray, rare off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

20690-20720 Sample heavily cont with drilling lube; SILTY SANDSTONE: light gray to medium gray, rare off white, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

20720-20750 SILTY SANDSTONE: light gray to medium gray, rare off white, rare light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

20750-20780 SILTY SANDSTONE: light gray to medium gray, rare off white, rare light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

20780-20810 Sample heavily cont with drilling lube; SILTY SANDSTONE: light gray to medium gray, off white to white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

20810-20840 Sample heavily cont with drilling lube; SILTY SANDSTONE: light gray to medium gray, off white to white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

20840-20870 Sample heavily cont with drilling lube; SILTY SANDSTONE: light gray to medium gray, off white to white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

20870-20900 Sample heavily cont with drilling lube; SILTY SANDSTONE: light gray to medium gray, off white to white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

20900-20930 Sample heavily cont with drilling lube; SILTY SANDSTONE: light gray to medium gray, off white to white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

20930-20960 Sample heavily cont with drilling lube; SILTY SANDSTONE: light gray to medium gray, off white to white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

20960-20990 Sample heavily cont with drilling lube; SILTY SANDSTONE: light gray to medium gray, off white to white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

20990-21020 Sample heavily cont with drilling lube; SILTY SANDSTONE: light gray to medium gray, off white to white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

21020-21050 Sample heavily cont with drilling lube; SILTY SANDSTONE: light gray to medium gray, off white to white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

21050-21080 Sample heavily cont with drilling lube; SILTY SANDSTONE: light gray to medium gray, off white to white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

21080-21140 Sample heavily cont with drilling lube; SILTY SANDSTONE: light gray to medium gray, off white to white, trace light brown, very fine grained, friable, subangular to subrounded, well sorted, calcite cement, moderately cemented, trace disseminated and nodular pyrite, trace intergranular porosity, rare light brown spotty and even oil stain

#22740

STRATA
A Professional Services Corporation
Integrity From the Ground Up

June 8, 2012
Project No. D12013A

Deloury Construction
Mr. David Brownsberger
46 Lowell Junction Road
Andover MA 01810
dbrownsberger@deloury.com

RE: **Laboratory Testing Report**
Larry Linda Well Site
Williams County, North Dakota

Dear Mr. Brownsberger:

STRATA has performed the authorized laboratory testing for the Larry Linda drill pad in Williams County, North Dakota.

Following are the results of our laboratory testing:

- pH = 6.78
- electrical conductivity (EC) = 4.64 mmhos/cm
- cation exchange capacity (CEC) = 20.34 meq/100g
- sodium absorption ratio (SAR) = 0.63
- permeability = 4.4 x 10^{-8}cm/s
- soluble sulfates = 2075 mg/kg

Soil samples remaining after testing will be retained for a period of 30 days after the date of this report, and then discarded. We should be notified if the client requires other dispensation of the samples.

If you have any questions regarding the report or if we may provide you with additional information, please feel free to contact our office.

Sincerely,
STRATA

Jeremy Cox
Area Manager

Taunya Ernst, P.E., P.G.
Sr. Geotechnical Engineer/Area Manager

JC/TE/cj
D12013A/PERMLTRS/LARRY LINDALETTER.DOC

RYAN DIRECTIONAL SERVICES, INC.
A NABORS COMPANY

19510 Oil Center Blvd
Houston, TX 77073
Bus 281.443.1414
Fax 281.443.1676

Tuesday, August 07, 2012

State of North Dakota

Subject: **Surveys**

Re: **Oasis**
Larry 5301 #44-12B
McKenzie County, ND

Enclosed, please find the original and one copy of the survey performed on the above-referenced well by Ryan Directional Services, Inc. Other information required by your office is as follows:

Surveyor Name	*Surveyor Title*	*Borehole Number*	*Start Depth*	*End Depth*	*Start Date*	*End Date*	*Type of Survey*	*TD Straight Line Projection*
Mccammond, Mike	MWD Operator	O.H.	2074'	21021'	07/17/12	08/03/12	MWD	21140'

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required please contact the undersigned at the letterhead address or phone number.

Douglas Hudson
Well Planner

RYAN DIRECTIONAL SERVICES, INC.
A NABORS COMPANY

19510 Oil Center Blvd
Houston, TX 77073
Bus 281.443.1414
Fax 281.443.1676

Tuesday, August 07, 2012

State of North Dakota

Subject: **Survey Certification Letter**

Re: **Oasis**
Larry 5301 #44-12B
McKenzie County, ND

I, Mike Mccammond, certify that; I am employed by Ryan Directional Services, Inc.; that I did on the conduct or supervise the taking of the following MWD surveys:

on the day(s) of 7/17/2012 thru 8/3/2012 from a depth of 2074' MD to a depth of 21021' MD and Straight line projection to TD 21140' MD;

that the data is true, correct, complete, and within the limitations of the tool as set forth by Ryan Directional Services, Inc.; that I am authorized and qualified to make this report; that this survey was conducted at the request of Oasis for the Larry 5301 #44-12B; in McKenzie County, ND.

Mike Mccammond

Mike Mccammond
MWD Operator
Ryan Directional Services, Inc.

Report #: 1
Date: 17-Jul-12

RYAN DIRECTIONAL SERVICES
A NABORS COMPANY

Ryan Job # 5450
Kit # 6

SURVEY REPORT

Customer: Oasis Petroleum
Well Name: Larry 5301 44-12B
Block or Section: 13/24-153N-101W
Rig #: Nabors B-22
Calculation Method: Minimun Curvature Calculation

MWD Operator: M McCammond
Directional Drillers: D Bohn/M Bader
Survey Corrected To: True North
Vertical Section Direction: 178.65
Survey Correction: 8.55
Temperature Forecasting Model (Chart Only): Logarithmic

Survey #	MD	Inc	Azm	Temp	TVD	VS	N/S	E/W	DLS
Tie in to Gyro Surveys									
Tie In	**2074**	**0.00**	**0.00**	**0.00**	**2074.00**	**0.00**	**0.00**	**0.00**	**0.00**
1	2108	0.10	248.20	95.00	2108.00	0.01	-0.01	-0.03	0.29
2	2201	0.30	203.80	99.00	2201.00	0.26	-0.26	-0.20	0.26
3	2295	0.70	181.70	100.00	2295.00	1.06	-1.06	-0.32	0.46
4	2388	0.90	184.30	102.00	2387.99	2.35	-2.36	-0.39	0.22
5	**2481**	**1.10**	**174.40**	**104.00**	**2480.97**	**3.97**	**-3.98**	**-0.36**	**0.28**
6	2575	1.50	156.30	107.00	2574.95	6.00	-6.00	0.23	0.60
7	2668	2.20	157.20	109.00	2667.90	8.79	-8.76	1.41	0.75
8	2762	0.90	84.60	113.00	2761.87	10.42	-10.35	2.84	2.25
9	2855	1.00	75.00	114.00	2854.86	10.18	-10.08	4.35	0.20
10	**2948**	**1.00**	**85.80**	**116.00**	**2947.84**	**9.94**	**-9.81**	**5.95**	**0.20**
11	3042	0.60	97.10	118.00	3041.83	9.98	-9.81	7.25	0.46
12	3135	0.80	98.80	120.00	3134.83	10.16	-9.97	8.38	0.22
13	3228	0.40	106.30	122.00	3227.82	10.37	-10.16	9.33	0.44
14	3321	0.40	1.10	122.00	3320.82	10.15	-9.92	9.65	0.68
15	**3415**	**0.40**	**5.10**	**123.00**	**3414.82**	**9.49**	**-9.27**	**9.68**	**0.03**
16	3508	0.50	348.30	125.00	3507.81	8.77	-8.55	9.63	0.18
17	3600	0.50	354.80	125.00	3599.81	7.98	-7.76	9.51	0.06
18	3694	0.40	344.50	127.00	3693.81	7.25	-7.03	9.39	0.14
19	3787	0.50	353.30	129.00	3786.81	6.53	-6.31	9.25	0.13
20	**3880**	**0.40**	**342.70**	**129.00**	**3879.80**	**5.81**	**-5.60**	**9.11**	**0.14**
21	3973	0.60	351.50	131.00	3972.80	5.02	-4.81	8.94	0.23
22	4067	0.80	356.10	131.00	4066.79	3.88	-3.67	8.82	0.22
23	4160	0.70	351.50	132.00	4159.78	2.66	-2.46	8.70	0.13
24	4253	0.70	350.40	134.00	4252.78	1.54	-1.34	8.52	0.01
25	**4346**	**0.60**	**346.60**	**136.00**	**4345.77**	**0.50**	**-0.30**	**8.31**	**0.12**
26	4440	0.60	343.40	138.00	4439.77	-0.46	0.65	8.05	0.04
27	4533	0.40	5.80	138.00	4532.76	-1.25	1.44	7.95	0.30
28	4625	0.40	355.80	140.00	4624.76	-1.89	2.08	7.96	0.08
29	4718	0.10	273.40	140.00	4717.76	-2.22	2.41	7.85	0.43
30	**4812**	**0.30**	**176.90**	**141.00**	**4811.76**	**-1.98**	**2.16**	**7.78**	**0.35**
31	4905	0.20	129.00	143.00	4904.76	-1.63	1.82	7.92	0.24
32	4998	0.70	66.70	145.00	4997.76	-1.74	1.94	8.57	0.68
33	5092	0.90	40.90	147.00	5091.75	-2.50	2.73	9.58	0.43
34	5185	0.80	28.10	147.00	5184.74	-3.61	3.85	10.37	0.23
35	**5278**	**0.50**	**347.70**	**147.00**	**5277.73**	**-4.57**	**4.82**	**10.58**	**0.57**
36	5372	0.40	9.10	150.00	5371.73	-5.30	5.55	10.55	0.21
37	5465	0.50	1.00	152.00	5464.72	-6.02	6.27	10.61	0.13
38	5558	0.40	359.40	154.00	5557.72	-6.75	7.00	10.61	0.11
39	5652	0.40	6.20	156.00	5651.72	-7.40	7.66	10.64	0.05
40	**5745**	**0.40**	**24.30**	**159.00**	**5744.72**	**-8.02**	**8.27**	**10.81**	**0.14**
41	5838	0.30	33.40	161.00	5837.72	-8.51	8.77	11.08	0.12
42	5931	0.90	349.20	161.00	5930.71	-9.43	9.69	11.08	0.77
43	6025	1.40	358.40	163.00	6024.69	-11.31	11.57	10.91	0.57
44	6118	1.50	353.70	165.00	6117.66	-13.66	13.91	10.74	0.17
45	**6211**	**1.70**	**351.50**	**167.00**	**6210.63**	**-16.24**	**16.49**	**10.40**	**0.22**
46	6305	1.90	349.80	168.00	6304.58	-19.16	19.40	9.92	0.22
47	6398	2.30	348.90	167.00	6397.52	-22.52	22.75	9.29	0.43
48	6491	1.50	304.30	167.00	6490.47	-25.07	25.27	7.92	1.74
49	6585	1.70	302.70	168.00	6584.43	-26.57	26.71	5.73	0.22
50	**6678**	**1.90**	**317.80**	**172.00**	**6677.39**	**-28.51**	**28.60**	**3.54**	**0.55**
51	6771	2.20	332.50	174.00	6770.33	-31.28	31.33	1.68	0.65
52	6865	1.30	310.90	172.00	6864.28	-33.61	33.62	0.04	1.17
53	6958	1.80	312.80	170.00	6957.25	-35.34	35.31	-1.83	0.54
54	7051	1.70	310.40	172.00	7050.21	-37.28	37.19	-3.95	0.13
55	**7145**	**1.90**	**311.50**	**176.00**	**7144.16**	**-39.26**	**39.13**	**-6.18**	**0.22**
56	7238	2.00	312.00	177.00	7237.11	-41.43	41.24	-8.54	0.11
57	7332	2.20	318.80	181.00	7331.04	-43.94	43.69	-10.95	0.34
58	7425	1.80	336.60	183.00	7423.99	-46.66	46.38	-12.70	0.79
59	7518	1.60	339.80	185.00	7516.95	-49.24	48.93	-13.73	0.24
60	**7611**	**1.70**	**344.60**	**186.00**	**7609.91**	**-51.81**	**51.48**	**-14.55**	**0.18**

Report #: 1
Date: 17-Jul-12

RYAN DIRECTIONAL SERVICES
A NABORS COMPANY

Ryan Job # 5450
Kit # 6

SURVEY REPORT

Customer: Oasis Petroleum
Well Name: Larry 5301 44-12B
Block or Section: 13/24-153N-101W
Rig #: Nabors B-22
Calculation Method: Minimun Curvature Calculation

MWD Operator: M McCammond
Directional Drillers: D Bohn/M Bader
Survey Corrected To: True North
Vertical Section Direction: 178.65
Survey Correction: 8.55
Temperature Forecasting Model (Chart Only): Logarithmic

Survey #	MD	Inc	Azm	Temp	TVD	VS	N/S	E/W	DLS
61	7705	1.60	348.20	188.00	7703.87	-54.46	54.11	-15.19	0.15
62	7798	1.30	354.80	190.00	7796.84	-56.78	56.43	-15.55	0.37
63	7891	1.10	12.10	192.00	7889.82	-58.71	58.36	-15.46	0.44
64	7985	1.00	21.50	194.00	7983.80	-60.34	60.00	-14.97	0.21
65	**8078**	**0.80**	**27.60**	**194.00**	**8076.79**	**-61.65**	**61.33**	**-14.37**	**0.24**
66	8171	0.70	30.60	195.00	8169.78	-62.70	62.40	-13.78	0.12
67	8265	0.80	35.50	197.00	8263.78	-63.72	63.43	-13.10	0.13
68	8358	0.80	39.20	199.00	8356.77	-64.73	64.46	-12.32	0.06
69	8451	0.70	53.00	199.00	8449.76	-65.55	65.30	-11.45	0.22
70	**8545**	**0.50**	**38.70**	**199.00**	**8543.75**	**-66.20**	**65.97**	**-10.74**	**0.26**
71	8638	0.30	63.00	201.00	8636.75	-66.62	66.40	-10.27	0.28
72	8731	0.20	64.30	203.00	8729.75	-66.79	66.58	-9.90	0.11
73	8825	0.30	35.60	203.00	8823.75	-67.06	66.85	-9.61	0.17
74	8918	0.30	53.00	203.00	8916.75	-67.39	67.19	-9.28	0.10
75	**9011**	**0.40**	**32.00**	**199.00**	**9009.75**	**-67.81**	**67.61**	**-8.91**	**0.17**
76	9103	0.50	30.40	203.00	9101.74	-68.41	68.23	-8.54	0.11
77	9193	0.60	26.80	203.00	9191.74	-69.16	68.99	-8.13	0.12
78	9284	0.60	6.80	204.00	9282.73	-70.06	69.89	-7.86	0.23
79	9374	0.60	6.10	208.00	9372.73	-70.99	70.83	-7.75	0.01
80	**9465**	**0.40**	**18.00**	**206.00**	**9463.73**	**-71.76**	**71.60**	**-7.60**	**0.25**
81	9555	0.60	29.30	208.00	9553.72	-72.46	72.31	-7.27	0.25
82	9644	0.50	27.50	208.00	9642.72	-73.20	73.06	-6.87	0.11
83	9735	0.60	20.00	206.00	9733.71	-74.00	73.86	-6.52	0.14
84	9826	0.70	39.70	208.00	9824.71	-74.86	74.74	-6.00	0.27
85	**9920**	**0.70**	**47.40**	**210.00**	**9918.70**	**-75.67**	**75.57**	**-5.21**	**0.10**
86	10013	0.80	36.40	210.00	10011.69	-76.56	76.48	-4.41	0.19
87	10107	0.80	20.00	212.00	10105.68	-77.69	77.62	-3.79	0.24
88	10200	0.90	345.00	213.00	10198.68	-79.00	78.94	-3.76	0.56
89	10237	1.00	350.40	190.00	10235.67	-79.61	79.54	-3.89	0.36
90	**10269**	**1.90**	**170.10**	**190.00**	**10267.67**	**-79.36**	**79.29**	**-3.85**	**9.06**
91	10300	7.00	164.50	190.00	10298.56	-77.02	76.96	-3.25	16.49
92	10331	13.20	164.40	192.00	10329.07	-71.75	71.73	-1.79	20.00
93	10362	14.90	165.20	192.00	10359.14	-64.44	64.46	0.18	5.52
94	10393	17.60	166.20	194.00	10388.90	-55.99	56.06	2.31	8.76
95	**10424**	**18.80**	**167.60**	**195.00**	**10418.35**	**-46.51**	**46.63**	**4.50**	**4.12**
96	10455	21.00	168.70	195.00	10447.49	-36.13	36.30	6.66	7.20
97	10486	26.00	168.90	195.00	10475.91	-23.96	24.18	9.06	16.13
98	10517	31.60	169.50	197.00	10503.07	-9.23	9.51	11.85	18.09
99	10548	33.30	170.60	197.00	10529.23	7.22	-6.87	14.72	5.80
100	**10579**	**34.60**	**170.40**	**199.00**	**10554.94**	**24.35**	**-23.95**	**17.58**	**4.21**
101	10611	40.30	171.50	199.00	10580.34	43.63	-43.16	20.63	17.93
102	10642	44.40	174.40	201.00	10603.24	64.40	-63.87	23.17	14.65
103	10673	48.30	174.60	201.00	10624.64	86.77	-86.20	25.32	12.59
104	10704	51.70	174.00	201.00	10644.56	110.44	-109.82	27.68	11.07
105	**10735**	**56.40**	**173.30**	**201.00**	**10662.75**	**135.44**	**-134.76**	**30.46**	**15.27**
106	10766	61.50	172.90	201.00	10678.74	161.86	-161.11	33.65	16.49
107	10797	66.70	174.90	201.00	10692.28	189.64	-188.83	36.60	17.75
108	10828	70.00	176.30	201.00	10703.71	218.41	-217.56	38.81	11.44
109	10859	74.20	176.70	203.00	10713.24	247.88	-246.99	40.61	13.60
110	**10890**	**78.00**	**176.30**	**201.00**	**10720.68**	**277.95**	**-277.02**	**42.44**	**12.32**
111	10921	82.30	175.60	201.00	10725.99	308.45	-307.48	44.60	14.05
112	10952	85.10	175.20	203.00	10729.39	339.21	-338.19	47.07	9.12
113	10984	87.70	174.70	203.00	10731.40	371.08	-370.00	49.89	8.27
114	11015	89.90	173.90	204.00	10732.05	401.98	-400.84	52.96	7.55
115	**11046**	**90.50**	**174.30**	**204.00**	**10731.94**	**432.88**	**-431.68**	**56.15**	**2.33**
116	11099	90.10	177.00	217.00	10731.66	485.80	-484.52	60.17	5.15
117	11193	91.30	174.60	212.00	10730.51	579.67	-578.25	67.05	2.85
118	11286	89.60	174.50	208.00	10729.78	672.43	-670.82	75.88	1.83
119	11380	87.50	174.20	210.00	10732.16	766.13	-764.33	85.14	2.26
120	**11473**	**88.40**	**174.40**	**210.00**	**10735.49**	**858.80**	**-856.81**	**94.37**	**0.99**

Report #: 1
Date: 17-Jul-12

RYAN DIRECTIONAL SERVICES
A NABORS COMPANY

Ryan Job # 5450
Kit # 6

SURVEY REPORT

Customer: Oasis Petroleum
Well Name: Larry 5301 44-12B
Block or Section: 13/24-153N-101W
Rig #: Nabors B-22
Calculation Method: Minimun Curvature Calculation

MWD Operator: M McCammond
Directional Drillers: D Bohn/M Bader
Survey Corrected To: True North
Vertical Section Direction: 178.65
Survey Correction: 8.55
Temperature Forecasting Model (Chart Only): Logarithmic

Survey #	MD	Inc	Azm	Temp	TVD	VS	N/S	E/W	DLS
121	11567	89.10	175.50	210.00	10737.54	952.58	-950.42	102.64	1.39
122	11660	88.10	174.80	212.00	10739.81	1045.37	-1043.06	110.50	1.31
123	11754	88.90	176.00	212.00	10742.27	1139.19	-1136.72	118.03	1.53
124	11847	89.10	176.80	213.00	10743.89	1232.10	-1229.52	123.87	0.89
125	**11941**	**91.30**	**178.70**	**212.00**	**10743.56**	**1326.08**	**-1323.44**	**127.56**	**3.09**
126	12034	91.40	178.70	213.00	10741.37	1419.05	-1416.39	129.67	0.11
127	12065	91.50	178.40	215.00	10740.59	1450.04	-1447.37	130.46	1.02
128	12128	91.10	178.90	215.00	10739.16	1513.03	-1510.34	131.94	1.02
129	12190	88.80	178.90	215.00	10739.21	1575.02	-1572.32	133.13	3.71
130	**12221**	**88.60**	**178.40**	**215.00**	**10739.92**	**1606.01**	**-1603.31**	**133.86**	**1.74**
131	12283	88.70	178.30	215.00	10741.38	1668.00	-1665.26	135.65	0.23
132	12315	88.70	177.60	215.00	10742.10	1699.98	-1697.23	136.79	2.19
133	12346	89.50	177.30	215.00	10742.59	1730.97	-1728.20	138.17	2.76
134	12408	90.80	178.10	217.00	10742.43	1792.96	-1790.15	140.66	2.46
135	**12502**	**89.90**	**177.40**	**219.00**	**10741.85**	**1886.95**	**-1884.07**	**144.35**	**1.21**
136	12595	89.80	177.00	222.00	10742.10	1979.92	-1976.96	148.89	0.44
137	12689	89.40	177.20	222.00	10742.75	2073.88	-2070.84	153.65	0.48
138	12782	89.70	177.30	222.00	10743.48	2166.85	-2163.73	158.11	0.34
139	12876	89.50	177.50	224.00	10744.14	2260.83	-2257.63	162.37	0.30
140	**12970**	**89.80**	**177.90**	**224.00**	**10744.72**	**2354.81**	**-2351.55**	**166.14**	**0.53**
141	13063	89.70	177.60	226.00	10745.12	2447.80	-2444.48	169.80	0.34
142	13157	89.70	178.30	226.00	10745.61	2541.79	-2538.41	173.16	0.74
143	13251	89.90	178.40	228.00	10745.94	2635.79	-2632.37	175.86	0.24
144	13344	89.30	177.50	230.00	10746.59	2728.78	-2725.31	179.19	1.16
145	**13438**	**88.10**	**176.10**	**230.00**	**10748.72**	**2822.70**	**-2819.14**	**184.44**	**1.96**
146	13532	89.30	176.90	230.00	10750.86	2916.61	-2912.93	190.17	1.53
147	13626	90.10	176.90	230.00	10751.35	3010.56	-3006.80	195.26	0.85
148	13719	90.20	176.60	231.00	10751.10	3103.51	-3099.65	200.53	0.34
149	13813	89.50	175.60	233.00	10751.35	3197.41	-3193.43	206.92	1.30
150	**13876**	**89.40**	**176.30**	**230.00**	**10751.96**	**3260.34**	**-3256.26**	**211.37**	**1.12**
151	13907	89.30	176.30	230.00	10752.31	3291.31	-3287.20	213.37	0.32
152	13938	89.40	177.60	230.00	10752.66	3322.30	-3318.15	215.02	4.21
153	14001	88.90	179.90	230.00	10753.59	3385.29	-3381.13	216.39	3.74
154	14032	88.80	180.60	230.00	10754.22	3416.27	-3412.12	216.26	2.28
155	**14095**	**89.20**	**180.40**	**231.00**	**10755.32**	**3479.22**	**-3475.11**	**215.71**	**0.71**
156	14188	90.80	181.20	233.00	10755.32	3572.15	-3568.09	214.41	1.92
157	14282	91.00	181.00	235.00	10753.84	3666.06	-3662.06	212.61	0.30
158	14313	91.10	181.20	235.00	10753.27	3697.02	-3693.05	212.01	0.72
159	14376	88.70	180.00	233.00	10753.38	3759.98	-3756.04	211.35	4.26
160	**14407**	**88.50**	**179.80**	**233.00**	**10754.14**	**3790.96**	**-3787.04**	**211.41**	**0.91**
161	14470	89.10	178.50	233.00	10755.46	3853.95	-3850.01	212.34	2.27
162	14563	88.90	178.50	235.00	10757.08	3946.93	-3942.97	214.78	0.22
163	14657	90.10	179.80	237.00	10757.90	4040.92	-4036.95	216.17	1.88
164	14751	90.80	180.30	237.00	10757.16	4134.89	-4130.95	216.09	0.92
165	**14845**	**89.60**	**179.20**	**239.00**	**10756.83**	**4228.87**	**-4224.94**	**216.50**	**1.73**
166	14939	89.00	178.40	239.00	10757.98	4322.86	-4318.91	218.47	1.06
167	15033	89.30	178.30	240.00	10759.38	4416.85	-4412.86	221.17	0.34
168	15126	91.20	177.90	240.00	10758.97	4509.84	-4505.81	224.26	2.09
169	15220	90.70	178.80	240.00	10757.41	4603.82	-4599.75	226.96	1.10
170	**15314**	**89.80**	**177.20**	**240.00**	**10757.00**	**4697.81**	**-4693.69**	**230.24**	**1.95**
171	15407	87.80	177.40	240.00	10758.95	4790.76	-4786.56	234.62	2.16
172	15501	88.00	179.20	239.00	10762.39	4884.69	-4880.45	237.41	1.93
173	15532	88.00	179.10	239.00	10763.48	4915.67	-4911.43	237.87	0.32
174	15595	90.50	180.10	239.00	10764.30	4978.65	-4974.42	238.31	4.27
175	**15689**	**91.20**	**180.40**	**240.00**	**10762.91**	**5072.60**	**-5068.41**	**237.90**	**0.81**
176	15783	91.10	180.60	240.00	10761.02	5166.54	-5162.38	237.08	0.24
177	15814	91.00	181.00	240.00	10760.45	5197.51	-5193.38	236.64	1.33
178	15845	90.60	180.40	242.00	10760.02	5228.49	-5224.37	236.27	2.33
179	15876	90.60	180.60	242.00	10759.69	5259.47	-5255.37	236.00	0.65
180	**15939**	**90.80**	**180.70**	**242.00**	**10758.93**	**5322.43**	**-5318.36**	**235.28**	**0.35**

Report #: 1
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RYAN DIRECTIONAL SERVICES
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Ryan Job # 5450
Kit # 6

SURVEY REPORT

Customer: Oasis Petroleum
Well Name: Larry 5301 44-12B
Block or Section: 13/24-153N-101W
Rig #: Nabors B-22
Calculation Method: Minimun Curvature Calculation

MWD Operator: M McCammond
Directional Drillers: D Bohn/M Bader
Survey Corrected To: True North
Vertical Section Direction: 178.65
Survey Correction: 8.55
Temperature Forecasting Model (Chart Only): Logarithmic

Survey #	MD	Inc	Azm	Temp	TVD	VS	N/S	E/W	DLS
181	15970	90.80	180.70	242.00	10758.49	5353.40	-5349.35	234.90	0.00
182	16032	90.70	180.70	244.00	10757.68	5415.36	-5411.34	234.14	0.16
183	16064	90.60	180.40	244.00	10757.32	5447.34	-5443.34	233.84	0.99
184	16157	90.70	180.20	244.00	10756.26	5540.29	-5536.33	233.35	0.24
185	**16251**	**90.60**	**179.90**	**246.00**	**10755.20**	**5634.26**	**-5630.33**	**233.27**	**0.34**
186	16345	90.70	179.20	246.00	10754.13	5728.24	-5724.32	234.01	0.75
187	16438	90.30	180.60	246.00	10753.32	5821.21	-5817.31	234.17	1.57
188	16532	90.00	179.50	246.00	10753.07	5915.18	-5911.31	234.09	1.21
189	16626	89.90	180.60	246.00	10753.15	6009.15	-6005.31	234.01	1.18
190	**16720**	**89.90**	**180.60**	**248.00**	**10753.32**	**6103.10**	**-6099.30**	**233.02**	**0.00**
191	16814	88.90	180.20	248.00	10754.30	6197.05	-6193.29	232.36	1.15
192	16845	89.10	179.80	248.00	10754.84	6228.04	-6224.29	232.36	1.44
193	16908	89.30	179.30	248.00	10755.72	6291.02	-6287.28	232.86	0.85
194	17001	89.90	180.20	246.00	10756.37	6384.00	-6380.28	233.26	1.16
195	**17095**	**90.90**	**179.90**	**248.00**	**10755.72**	**6477.97**	**-6474.27**	**233.18**	**1.11**
196	17189	90.30	180.00	248.00	10754.73	6571.94	-6568.27	233.26	0.65
197	17283	89.30	178.40	248.00	10755.06	6665.93	-6662.25	234.58	2.01
198	17314	89.40	177.30	246.00	10755.41	6696.92	-6693.23	235.74	3.56
199	17376	88.90	179.50	248.00	10756.33	6758.91	-6755.19	237.47	3.64
200	**17408**	**89.00**	**180.00**	**248.00**	**10756.92**	**6790.90**	**-6787.19**	**237.61**	**1.59**
201	17470	90.80	180.90	248.00	10757.03	6852.87	-6849.18	237.12	3.25
202	17564	92.10	180.90	249.00	10754.65	6946.76	-6943.14	235.65	1.38
203	17595	92.00	180.40	249.00	10753.54	6977.72	-6974.12	235.30	1.64
204	17658	91.70	180.50	249.00	10751.51	7040.66	-7037.08	234.80	0.50
205	**17752**	**90.80**	**181.20**	**249.00**	**10749.45**	**7134.57**	**-7131.05**	**233.41**	**1.21**
206	17845	90.70	180.60	249.00	10748.24	7227.49	-7224.03	231.95	0.65
207	17939	90.90	180.60	251.00	10746.92	7321.42	-7318.01	230.96	0.21
208	18033	89.70	180.30	251.00	10746.43	7415.37	-7412.01	230.22	1.32
209	18126	89.30	179.40	251.00	10747.24	7508.35	-7505.00	230.47	1.06
210	**18220**	**89.00**	**179.90**	**251.00**	**10748.64**	**7602.32**	**-7598.99**	**231.04**	**0.62**
211	18314	89.80	179.90	251.00	10749.62	7696.30	-7692.98	231.21	0.85
212	18408	90.00	179.90	251.00	10749.79	7790.27	-7786.98	231.37	0.21
213	18501	89.60	178.10	253.00	10750.11	7883.27	-7879.96	232.99	1.98
214	18595	90.00	179.90	251.00	10750.44	7977.26	-7973.95	234.63	1.96
215	**18688**	**91.10**	**181.50**	**253.00**	**10749.55**	**8070.19**	**-8066.93**	**233.50**	**2.09**
216	18782	91.00	180.70	253.00	10747.82	8164.09	-8160.90	231.69	0.86
217	18876	90.60	180.10	253.00	10746.51	8258.04	-8254.88	231.04	0.77
218	18970	89.80	179.50	255.00	10746.18	8352.01	-8348.88	231.37	1.06
219	19064	89.40	179.90	253.00	10746.84	8446.00	-8442.88	231.86	0.60
220	**19157**	**89.70**	**179.10**	**253.00**	**10747.57**	**8538.98**	**-8535.87**	**232.67**	**0.92**
221	19251	90.20	178.80	255.00	10747.65	8632.98	-8629.85	234.39	0.62
222	19345	91.70	179.70	253.00	10746.09	8726.96	-8723.83	235.62	1.86
223	19438	91.70	179.60	255.00	10743.34	8819.90	-8816.79	236.19	0.11
224	19532	90.90	179.60	253.00	10741.20	8913.87	-8910.76	236.85	0.85
225	**19625**	**90.60**	**181.30**	**253.00**	**10739.99**	**9006.81**	**-9003.74**	**236.12**	**1.86**
226	19719	90.80	180.60	255.00	10738.84	9100.73	-9097.72	234.56	0.77
227	19813	92.30	180.40	255.00	10736.29	9194.64	-9191.68	233.74	1.61
228	19907	90.50	181.20	255.00	10734.00	9288.54	-9285.64	232.42	2.10
229	20000	91.00	180.60	257.00	10732.78	9381.46	-9378.62	230.96	0.84
230	**20097**	**92.30**	**181.10**	**257.00**	**10729.99**	**9478.35**	**-9475.57**	**229.53**	**1.44**
231	20189	92.00	182.60	255.00	10726.54	9570.13	-9567.45	226.56	1.66
232	20282	90.30	183.60	255.00	10724.67	9662.83	-9660.29	221.53	2.12
233	20373	89.00	182.80	257.00	10725.22	9753.54	-9751.15	216.45	1.68
234	20465	91.90	183.30	257.00	10724.50	9845.26	-9843.00	211.56	3.20
235	**20558**	**90.50**	**183.50**	**257.00**	**10722.55**	**9937.91**	**-9935.82**	**206.04**	**1.52**
236	20650	90.40	183.80	257.00	10721.83	10029.56	-10027.63	200.19	0.34
237	20745	92.50	183.40	257.00	10719.43	10124.17	-10122.40	194.22	2.25
238	20835	89.60	183.20	257.00	10717.78	10213.85	-10212.23	189.04	3.23
239	20927	88.30	182.50	257.00	10719.47	10305.58	-10304.10	184.47	1.60
240	**21021**	**88.30**	**182.60**	**258.00**	**10722.25**	**10399.33**	**-10397.96**	**180.29**	**0.11**
Projection	21140	88.30	182.60		10725.78	10517.99	-10516.79	174.89	0.00

SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5749 (09-2006)

MAY 2012
RECEIVED
ND OIL & GAS DIVISION

Well File No.
22740

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

- [x] Notice of Intent — Approximate Start Date: 5-14-12
- [ ] Report of Work Done — Date Work Completed:
- [ ] Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03. — Approximate Start Date:

- [ ] Drilling Prognosis
- [ ] Redrilling or Repair
- [ ] Casing or Liner
- [ ] Plug Well
- [ ] Supplemental History
- [ ] Temporarily Abandon
- [x] Other: Soil Cement
- [x] Spill Report
- [ ] Shooting
- [ ] Acidizing
- [ ] Fracture Treatment
- [ ] Change Production Method
- [ ] Reclamation

Well Name and Number: Lokay / Linda 5301 44-12B

Footages	Qtr-Qtr	Section	Township	Range
250 F S L 800 F E L	SESE	12	153 N	101 W

Field: | Pool: Bakken | County: McKenzie

24-HOUR PRODUCTION RATE

Before		After	
Oil	Bbls	Oil	Bbls
Water	Bbls	Water	Bbls
Gas	MCF	Gas	MCF

Name of Contractor(s): Delaney Industries

Address: 100 Burtt Road | City: Andover | State: MA | Zip Code: 01810

DETAILS OF WORK

Installation of Commercial grade portland Cement on Top of existing Soil. Roto Mill Cement in at Approx. 8 in depth Roll out and Water

* Reclaim Procedure: areas to be reclaimed will be Roto milled + removed from reclaim area
Soil Sample has been pulled Application Rate 4%

Company: Oasis Petroleum | Telephone Number:
Address: PO Box 1126
City: Williston | State: ND | Zip Code: 58802
Signature: Marty Knutson | Printed Name: Marty Knutson
Title: Consultant | Date: 5/14/12
Email Address:

FOR STATE USE ONLY

- [ ] Received
- [x] Approved

Date: 5-14-12
By: Todd Holweger
Title:

SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5749 (09-2006)

MAY 2012
RECEIVED
ND OIL & GAS
DIVISION

Well File No.
22740

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

☑ Notice of Intent	Approximate Start Date **April 20, 2012**	☑ Drilling Prognosis	☐ Spill Report
☐ Report of Work Done	Date Work Completed	☐ Redrilling or Repair	☐ Shooting
☐ Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03.	Approximate Start Date	☐ Casing or Liner	☐ Acidizing
		☐ Plug Well	☐ Fracture Treatment
		☐ Supplemental History	☐ Change Production Method
		☐ Temporarily Abandon	☐ Reclamation
		☑ Other **Suspension of Drilling**	

Well Name and Number					
Larry 5301 44-12B					
Footages		Qtr-Qtr	Section	Township	Range
250 F S L	**800 F E L**	**SESE**	**12**	**153 N**	**101 W**
Field	Pool	County			
Baker	**Bakken**	**McKenzie**			

24-HOUR PRODUCTION RATE

Before		After	
Oil	Bbls	Oil	Bbls
Water	Bbls	Water	Bbls
Gas	MCF	Gas	MCF

Name of Contractor(s)			
Craigs Roustabout			
Address	City	State	Zip Code
5053 South 4625 East	**Vernal**	**UT**	**84078**

DETAILS OF WORK

Oasis requests permission for suspension of drilling for up to 90 days for the referenced well under NDAC 43-02-03-55. Oasis intends to drill the surface hole with freshwater based drilling mud and set surface casing with a small drilling rig and move off within 3 to 5 days. The casing will be set at a depth pre-approved by the NDIC per the Application for Permit to Drill NDAC 43-02-03-21. No saltwater will be used in the drilling and cementing operations of the surface casing. Once the surface casing is cemented, a plug or mechanical seal will be placed at the top of the casing to prevent any foreign matter from getting into the well. A rig capable of drilling to TD will move onto the location within the 90 days previously outlined to complete the drilling and casing plan as per the APD. The undersigned states that this request for suspension of drilling operations in accordance with the Subsection 4 of Section 43-02-03-55 of the NDAC, is being requested to take advantage of the cost savings and time savings of using an initial rig that is smaller than the rig necessary to drill a well to total depth but is not intended to alter or extend the terms and conditions of, or suspend any obligation under, any oil and gas lease with acreage in or under the spacing or drilling unit for the above-referenced well. Oasis understands NDAC 43-02-03-31 requirements regarding confidentiality pertaining to this permit. The drilling pit will be fenced immediately after construction if the well pad is located in a pasture (NDAC 43-02-03-19 & 19.1). Oasis will plug and abandon the well and reclaim the well site if the well is not drilled by the larger rotary rig within 90 days after spudding the well with the smaller drilling rig.

Company		Telephone Number
Oasis Petroleum North America LLC		**281-404-9461**
Address		
1001 Fannin, Suite 1500		
City	State	Zip Code
Houston	**TX**	**77002**
Signature KBass	Printed Name **Kaitlin Bass**	
Title **Operations Asssistant**	Date **April 20, 2012**	
Email Address **kbass@oasispetroleum.com**		

FOR STATE USE ONLY

☐ Received	☒ Approved
Date 5-14-2012	
By David Tabor	
Title Engineering Technician	

22740

Oil and Gas Division

Lynn D. Helms - Director Bruce E. Hicks - Assistant Director

Department of Mineral Resources

Lynn D. Helms - Director

North Dakota Industrial Commission

www.oilgas.nd.gov

ROBIN E. HESKETH
OASIS PETROLEUM NORTH AMERICA LLC
1001 FANNIN, SUITE 1500
HOUSTON, TX 77002 USA

Date: **4/17/2012**

RE: CORES AND SAMPLES

Well Name: **LARRY 5301 44-12B** Well File No.: **22740**
Location: **SESE 12-153-101** County: MCKENZIE
Permit Type: **Development - HORIZONTAL**
Field: **BAKER** Target Horizon: BAKKEN

Dear ROBIN E. HESKETH:

North Dakota Century Code (NDCC) Section 38-08-04 provides for the preservation of cores and samples and their shipment to the State Geologist when requested. The following is required on the above referenced well:

1) All cores, core chips and samples must be submitted to the State Geologist as provided for the NDCC Section 38-08-04 and North Dakota Administrative Code 43-02-03-38.1.

2) Samples shall include all cuttings from:

Base of the Last Charles Salt

Samples of cuttings shall be taken at 30' maximum intervals through all vertical, build and horizontal sections. Samples must be washed, dried, packed in sample envelopes in correct order with labels showing operator, well name, location and depth, and forwarded in standard boxes to the State Geologist within 30 days of the completion of drilling operations.

3) Cores: ALL CORES cut shall be preserved in correct order, properly boxed, and forwarded to the State Geologist within 90 days of completion of drilling operations. Any extension of time must have written approval from the State Geologist.

4) All cores, core chips, and samples must be shipped, prepaid, to the State Geologist at the following address:

ND Geological Survey Core Library
Campus Road and Cornell
Grand Forks, ND 58202

5) NDCC Section 38-08-16 allows for a civil penalty for any violation of Chapter 38 08 not to exceed $12,500 for each offense, and each day's violation is a separate offense.

Sincerely

Richard A. Suggs
Geologist

SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5749 (09-2006)

RECEIVED
MAR 2012
ND OIL & GAS DIVISION

Well File No. 22740

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

- [x] Notice of Intent — Approximate Start Date: March 16, 2012
- [ ] Report of Work Done — Date Work Completed:
- [ ] Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03. — Approximate Start Date: April 1, 2012

- [x] Drilling Prognosis
- [ ] Spill Report
- [ ] Redrilling or Repair
- [ ] Shooting
- [ ] Casing or Liner
- [ ] Acidizing
- [ ] Plug Well
- [ ] Fracture Treatment
- [ ] Supplemental History
- [ ] Change Production Method
- [ ] Temporarily Abandon
- [ ] Reclamation
- [x] Other: Waiver to rule Rule 43-02-03-31

Well Name and Number					
Larry 5301 44-12B					
Footages		Qtr-Qtr	Section	Township	Range
250 F S L	800 F E L	~~SENE~~ SESE	12	153 N	101 W
Field	Pool		County		
	Bakken		McKenzie		

24-HOUR PRODUCTION RATE

Before		After	
Oil	Bbls	Oil	Bbls
Water	Bbls	Water	Bbls
Gas	MCF	Gas	MCF

Name of Contractor(s)			
Address	City	State	Zip Code

DETAILS OF WORK

Oasis Petroleum respectfully requests a waiver to Rule 43-02-03-31 in regards to running open hole logs for the above referenced well. Justification for this request is as follows:

The SM Energy/Lindvig 1-11HR (NDIC 9309) located within a mile of the subject well

If this exception is approved, Oasis Petroleum will run a CBL on the intermediate string, and we will also run GR to surface. Oasis Petroleum will also submit two digital copies of each cased hole log and a copy of the mud log containing MWD gamma ray.

Company	Telephone Number
Oasis Petroleum North America LLC	281-404-9461
Address: 1001 Fannin, Suite 1500	
City: Houston	State: TX — Zip Code: 77002
Signature: KBass	Printed Name: Kaitlin Bass
Title: Operations Asssistant	Date: March 16, 2012
Email Address: kbass@oasispetroleum.com	

FOR STATE USE ONLY

- [ ] Received
- [x] Approved

Date: 4-11-2012
By: RCB
Title: Richard A. Suggs Geologist

Oil and Gas Division

Lynn D. Helms - Director Bruce E. Hicks - Assistant Director

Department of Mineral Resources

Lynn D. Helms - Director

North Dakota Industrial Commission

www.oilgas.nd.gov

April 11, 2012

Kaitlin Bass
Operations Assistant
OASIS PETROLEUM NORTH AMERICA LLC
1001 Fannin Suite 1500
Houston, TX 77002

RE: HORIZONTAL WELL
LARRY 5301 44-12B
SESE Section 12-153N-101W
McKenzie County
Well File # 22740

Dear Kaitlin:

Pursuant to Commission Order No. 18012, approval to drill the above captioned well is hereby given. The approval is granted on the condition that all portions of the well bore not isolated by cement, be no closer than the 200' setback from the north & south boundaries and 500' setback from the east & west boundaries within the 1280 acre spacing unit consisting of Sections 13 & 24 T153N, R101W.

PERMIT STIPULATIONS: DUE TO SURFICIAL WATER ADJACENT TO THE WELL SITE, A DIKE IS REQUIRED SURROUNDING THE ENTIRE LOCATION. In cases where a spacing unit is accessed from an off-site drill pad, an affidavit must be provided affirming that the surface owner of the multi-well pad agrees to accept burial on their property of the cuttings generated from drilling the well(s) into an offsite spacing/drilling unit. Tool error is not required pursuant to order. OASIS PETRO. NO. AMER. must contact NDIC Field Inspector Marc Binns at 701-220-5989 prior to location construction.

Drilling pit
NDAC 43-02-03-19.4 states that "a pit may be utilized to bury drill cuttings and solids generated during well drilling and completion operations, providing the pit can be constructed, used and reclaimed in a manner that will prevent pollution of the land surface and freshwaters. Reserve and circulation of mud system through earthen pits are prohibited. All pits shall be inspected by an authorized representative of the director prior to lining and use. Drill cuttings and solids must be stabilized in a manner approved by the director prior to placement in a cuttings pit."

Form 1 Changes & Hard Lines
Any changes, shortening of casing point or lengthening at Total Depth must have prior approval by the NDIC. The proposed directional plan is at a legal location. The minimum legal coordinate from the well head at casing point is: 450' south. Also, based on the azimuth of the proposed lateral the maximum legal coordinates from the well head are: 10570' south and 300' east.

Location Construction Commencement (Three Day Waiting Period)
Operators shall not commence operations on a drill site until the 3rd business day following publication of the approved drilling permit on the NDIC - OGD Daily Activity Report. If circumstances require operations to commence before the 3rd business day following publication on the Daily Activity Report, the waiting period may be waived by the Director. Application for a waiver must be by sworn affidavit providing the information necessary to evaluate the extenuating circumstances, the factors of NDAC 43-02-03-16.2 (1), (a)-(f), and any other information that would allow the Director to conclude that in the event another owner seeks revocation of the drilling permit, the applicant should retain the permit.

Permit Fee & Notification
Payment was received in the amount of $100 via credit card .The permit fee has been received. It is requested that notification be given immediately upon the spudding of the well. This information should be relayed to the Oil & Gas Division, Bismarck, via telephone. The following information must be included: Well name, legal location, permit number, drilling contractor, company representative, date and time of spudding. Office hours are 8:00 a.m. to 12:00 p.m. and 1:00 p.m. to 5:00 p.m. Central Time. Our telephone number is (701) 328-8020, leave a message if after hours or on the weekend.

Survey Requirements for Horizontal, Horizontal Re-entry, and Directional Wells

NDAC Section 43-02-03-25 (Deviation Tests and Directional Surveys) states in part (that) the survey contractor shall file a certified copy of all surveys with the director free of charge within thirty days of completion. Surveys must be submitted as one electronic copy, or in a form approved by the director. However, the director may require the directional survey to be filed immediately after completion if the survey is needed to conduct the operation of the director's office in a timely manner. Certified surveys must be submitted via email in one adobe document, with a certification cover page to certsurvey@nd.gov. Survey points shall be of such frequency to accurately determine the entire location of the well bore.
Specifically, the Horizontal and Directional well survey frequency is 100 feet in the vertical, 30 feet in the curve (or when sliding) and 90 feet in the lateral.

Surface casing cement

Tail cement utilized on surface casing must have a minimum compressive strength of 500 psi within 12 hours, and tail cement utilized on production casing must have a minimum compressive strength of 500 psi before drilling the plug or initiating tests.

Logs

NDAC Section 43-02-03-31 requires the running of a Cement Bond Log from which the presence of cement can be determined in every well in which production or intermediate casing has been set and a Gamma Ray Log must be run from total depth to ground level elevation of the well bore. All logs must be submitted as one paper copy and one digital copy in LAS (Log ASCII) format, or a format approved by the Director. Image logs that include, but are not limited to, Mud Logs, Cement Bond Logs, and Cyberlook Logs, cannot be produced in their entirety as LAS (Log ASCII) files. To create a solution and establish a standard format for industry to follow when submitting image logs, the Director has given approval for the operator to submit an image log as a TIFF (*.tif) formatted file. The TIFF (*.tif) format will be accepted only when the log cannot be produced in its entirety as a LAS (Log ASCII) file format. The digital copy may be submitted on a 3.5" floppy diskette, a standard CD, or attached to an email sent to digitallogs@nd.gov
Thank you for your cooperation.

Sincerely,

Nathaniel Erbele
Petroleum Resource Specialist

APPLICATION FOR PERMIT TO DRILL HORIZONTAL WELL - FORM 1H

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 54269 (08-2005)

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

Type of Work	Type of Well	Approximate Date Work Will Start	Confidential Status
New Location	**Oil & Gas**	**6 / 01 / 2011**	**No**

Operator	Telephone Number
OASIS PETROLEUM NORTH AMERICA LLC	**281-404-9491**

Address	City	State	Zip Code
1001 Fannin Suite 1500	**Houston**	**TX**	**77002**

☑ Notice has been provided to the owner of any permanently occupied dwelling within 1,320 feet.

☑ This well is not located within five hundred feet of an occupied dwelling.

WELL INFORMATION **(If more than one lateral proposed, enter data for additional laterals on page 2)**

Well Name	Well Number
LARRY	**5301 44-12B**

Surface Footages	Qtr-Qtr	Section	Township	Range	County
250 F **S** L **800** F **E** L	**SESE**	**12**	**153 N**	**101 W**	**McKenzie**
Longstring Casing Point Footages	Qtr-Qtr	Section	Township	Range	County
214 F **N** L **622** F **E** L	**NENE**	**12**	**153 N**	**101 W**	**McKenzie**
Longstring Casing Point Coordinates From Well Head	Azimuth	Longstring Total Depth			
464 S From WH **178 W** From WH	**159 °**	**11015** Feet MD	**10723** Feet TVD		
Bottom Hole Footages From Nearest Section Line	Qtr-Qtr	Section	Township	Range	County
200 F **S** L **550** F **E** L	**SESE**	**24**	**153 N**	**101 W**	**McKenzie**
Bottom Hole Coordinates From Well Head	KOP Lateral 1	Azimuth Lateral 1	Estimated Total Depth Lateral 1		
10570 S From WH **250 E** From WH	**10246** Feet MD	**180 °**	**21129** Feet MD	**10684** Feet TVD	

Latitude of Well Head	Longitude of Well Head	NAD Reference	Description of (Subject to NDIC Approval)
48 ° 04 ' 57.76 "	**-103 ° 36 ' 26.65 "**	**NAD83**	**SPACING UNIT: Sections 13 & 24 T153N, R101W**

Ground Elevation	Acres in Spacing/Drilling Unit	Spacing/Drilling Unit Setback Requirement	Industrial Commission Order
2065 Feet Above S.L.	**1280**	**200** Feet N/S **500** Feet E/W	**18012**

North Line of Spacing/Drilling Unit	South Line of Spacing/Drilling Unit	East Line of Spacing/Drilling Unit	West Line of Spacing/Drilling Unit
5278 Feet	**5267** Feet	**10520** Feet	**10553** Feet

Objective Horizons	Pierre Shale Top
Bakken	**1883**

Proposed	Size	Weight	Depth	Cement Volume	
Surface Casing	**9 - 5/8 "**	**36** Lb./Ft.	**2040** Feet	**621** Sacks	**NOTE: Surface hole must be drilled with fresh water and surface casing must be cemented back to surface.**

Proposed	Size	Weight(s)	Longstring Total Depth		Cement Volume	Cement Top	Top Dakota Sand
Longstring Casing	**7 - "**	**29/32** Lb./Ft.	**11015** Feet MD	**10723** Feet TVD	**807** Sacks	**4949** Feet	**5449** Feet

Base Last Charles Salt (If Applicable)	
9215 Feet	**NOTE: Intermediate or longstring casing string must be cemented above the top Dakota Group Sand.**

Proposed Logs
CBL/GR-TOC/GR-BSC

Drilling Mud Type (Vertical Hole - Below Surface Casing)	Drilling Mud Type (Lateral)
Invert	**Salt Water Gel**

Survey Type in Vertical Portion of Well	Survey Frequency: Build Section	Survey Frequency: Lateral	Survey Contractor
MWD Every 100 Feet	**30** Feet	**90** Feet	**Ryan**

NOTE: A Gamma Ray log must be run to ground surface and a CBL must be run on intermediate or longstring casing string if set.

Surveys are required at least every 30 feet in the build section and every 90 feet in the lateral section of a horizontal well. Measurement inaccuracies are not considered when determining compliance with the spacing/drilling unit boundary setback requirement except in the following scenarios: 1) When the angle between the well bore and the respective boundary is 10 degrees or less; or 2) If Industry standard methods and equipment are not utilized. Consult the applicable field order for exceptions.

If measurement inaccuracies are required to be considered, a 2° MWD measurement inaccuracy will be applied to the horizontal portion of the well bore. This measurement inaccuracy is applied to the well bore from KOP to TD.

REQUIRED ATTACHMENTS: Certified surveyor's plat, horizontal section plat, estimated geological tops, proposed mud/cementing plan, directional plot/plan, $100 fee.

See Page 2 for Comments section and signature block.

COMMENTS, ADDITIONAL INFORMATION, AND/OR LIST OF ATTACHMENTS

Additional Attachments: Drill Plan with geological tops/mud Well Summary with casing and cement plans Directional plan/plot and surveyor's plats.

Lateral 2

KOP Lateral 2 Feet MD	Azimuth Lateral 2 °	Estimated Total Depth Lateral 2 Feet MD	Feet TVD	KOP Coordinates From Well Head From WH	From WH
Formation Entry Point Coordinates From Well Head From WH	From WH	Bottom Hole Coordinates From Well Head From WH	From WH		
KOP Footages From Nearest Section Line F L	F L	Qtr-Qtr	Section	Township N	Range W	County
Bottom Hole Footages From Nearest Section Line F L	F L	Qtr-Qtr	Section	Township N	Range W	County

Lateral 3

KOP Lateral 3 Feet MD	Azimuth Lateral 3 °	Estimated Total Depth Lateral 3 Feet MD	Feet TVD	KOP Coordinates From Well Head From WH	From WH
Formation Entry Point Coordinates From Well Head From WH	From WH	Bottom Hole Coordinates From Well Head From WH	From WH		
KOP Footages From Nearest Section Line F L	F L	Qtr-Qtr	Section	Township N	Range W	County
Bottom Hole Footages From Nearest Section Line F L	F L	Qtr-Qtr	Section	Township N	Range W	County

Lateral 4

KOP Lateral 4 Feet MD	Azimuth Lateral 4 °	Estimated Total Depth Lateral 4 Feet MD	Feet TVD	KOP Coordinates From Well Head From WH	From WH
Formation Entry Point Coordinates From Well Head From WH	From WH	Bottom Hole Coordinates From Well Head From WH	From WH		
KOP Footages From Nearest Section Line F L	F L	Qtr-Qtr	Section	Township N	Range W	County
Bottom Hole Footages From Nearest Section Line F L	F L	Qtr-Qtr	Section	Township N	Range W	County

Lateral 5

KOP Lateral 5 Feet MD	Azimuth Lateral 5 °	Estimated Total Depth Lateral 5 Feet MD	Feet TVD	KOP Coordinates From Well Head From WH	From WH
Formation Entry Point Coordinates From Well Head From WH	From WH	Bottom Hole Coordinates From Well Head From WH	From WH		
KOP Footages From Nearest Section Line F L	F L	Qtr-Qtr	Section	Township N	Range W	County
Bottom Hole Footages From Nearest Section Line F L	F L	Qtr-Qtr	Section	Township N	Range W	County

I hereby swear or affirm the information provided is true, complete and correct as determined from all available records.	Date **3 / 16 / 2012**
ePermit	Printed Name **Kaitlin Bass**	Title **Operations Assistant**

FOR STATE USE ONLY

Permit and File Number **22740**	API Number **33 - 053 - 04071**
Field **BAKER**	
Pool **BAKKEN**	Permit Type **DEVELOPMENT**

FOR STATE USE ONLY

Date Approved **4 / 11 / 2012**
By **Nathaniel Erbele**
Title **Petroleum Resource Specialist**

WELL LOCATION PLAT

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"LARRY 5301 44-12B"
250 FEET FROM SOUTH LINE AND 800 FEET FROM EAST LINE
SECTION 12, T153N, R101W, 5TH P.M., MCKENZIE COUNTY, NORTH DAKOTA

THIS DOCUMENT WAS ORIGINALLY ISSUED AND SEALED BY AARON HUMMERT, PLS, REGISTRATION NUMBER 7512 ON 2/27/12 AND THE ORIGINAL DOCUMENTS ARE STORED AT THE OFFICES OF INTERSTATE ENGINEERING, INC.

STAKED ON 2/14/12
VERTICAL CONTROL DATUM WAS BASED UPON CONTROL POINT 20 WITH AN ELEVATION OF 2108.1'

THIS SURVEY AND PLAT IS BEING PROVIDED AT THE REQUEST OF FABIAN KJORSTAD OF OASIS PETROLEUM. I CERTIFY THAT THIS PLAT CORRECTLY REPRESENTS WORK PERFORMED BY ME OR UNDER MY SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

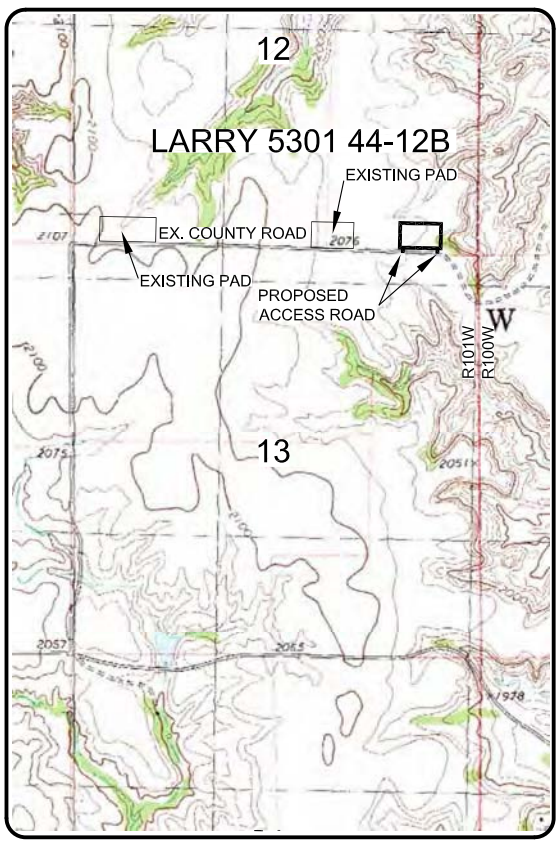
AARON HUMMERT LS–7512

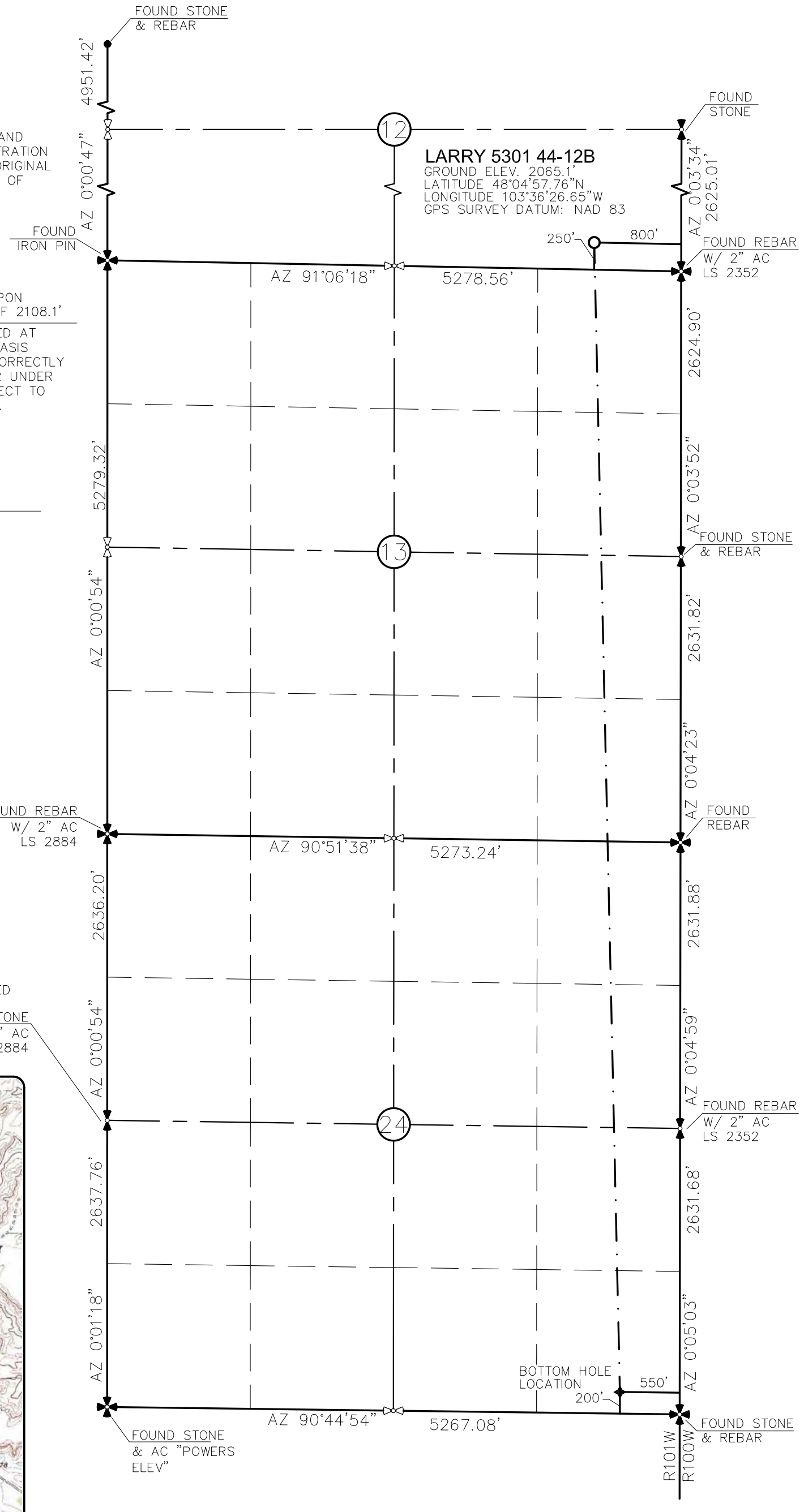
REGISTERED LAND SURVEYOR
AARON HUMMERT
LS–7512
DATE: 2/27/12
NORTH DAKOTA

0 1000
1" = 1000'

– MONUMENT – RECOVERED
– MONUMENT – NOT RECOVERED

VICINITY MAP





1/8
SHEET NO.

INTERSTATE ENGINEERING
Professionals you need, people you trust

Interstate Engineering, Inc.
P.O. Box 648
425 East Main Street
Sidney, Montana 59270
Ph (406) 433-5617
Fax (406) 433-5618
www.iengi.com
Other offices In MInnesota, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC
WELL LOCATION PLAT
SECTION 12, T153N, R101W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: H.J.G. | Project No.: S11-09-342
Checked By: C.S.V./A.J.H. | Date: NOV 2011

Revision No.	Date	By	Description
REV 1	1/23/12	JJS	CHANGED WELL NAME
REV 2	2/25/12	JJS	MOVED WELL LOCATION

G:\2011\S11-09-\342 Oasis Petroleum 6th Well in Sec 1 12 13 & 24 T153N R101W\CAD\REVISED LARRY WELL.dwg – 2/27/2012 5:25 PM josh schmierer

Oasis Petroleum
Well Summary
Larry 5301 44-12B
Section 13 T153N R101W
McKenzie County, ND

SURFACE CASING AND CEMENT DESIGN

							Make-up Torque (ft-lbs)		
Size	**Interval**	**Weight**	**Grade**	**Coupling**	**I.D.**	**Drift**	**Minimum**	**Optimum**	**Max**
9-5/8”	0’ to 2,040’	36	J-55	LTC	8.921"	8.765"	3400	4530	5660

Interval	**Description**	**Collapse**	**Burst**	**Tension**	**Cost per ft**
		(psi) a	(psi) b	(1000 lbs) c	
0’ to 2,040’	9-5/8", 36#, J-55, LTC, 8rd	2020 / 2.11	3520 / 3.68	453 / 2.77	

API Rating & Safety Factor

a) Based on full casing evacuation with 9 ppg fluid on backside (2,040' setting depth).
b) Burst pressure based on 9 ppg fluid with no fluid on backside (2,040' setting depth).
c) Based on string weight in 9 ppg fluid at 2,040' TVD plus 100k# overpull. (Buoyed weight equals 63k lbs.)

Cement volumes are based on 9-5/8" casing set in 13-1/2" hole with 55% excess to circulate cement back to surface. Mix and pump the following slurry.

Pre-flush (Spacer): **20 bbls** fresh water

Lead Slurry: **421 sks** (223 bbls) 11.5 lb/gal VARICEM CEMENT with 0.25 lb/sk Poly-E-Flake (lost circulation additive)

Tail Slurry: **200 sks** (72 bbls) 13 lb/gal VARICEM CEMENT with 0.25 lb/sk Poly-E-Flake (lost circulation additive)

Oasis Petroleum
Well Summary
Larry 5301 44-12B
Section 13 T153N R101W
McKenzie County, ND

INTERMEDIATE CASING AND CEMENT DESIGN

Intermediate Casing Design

							Make-up Torque (ft-lbs)		
Size	**Interval**	**Weight**	**Grade**	**Coupling**	**I.D.**	**Drift**	**Minimum**	**Optimum**	**Max**
7”	0’ – 6,750’	29	P-110	LTC	6.184”	6.059”	5,980	7,970	8,770
7”	6,750’ – 10,281’ (KOP)	32	HCP-110	LTC	6.094”	6.000”**	6,730	8,970	9,870
7”	10,281’ – 10,990’	29	P-110	LTC	6.184”	6.059”	5,980	7,970	8,770

**Special Drift

Interval	Length	Description	Collapse	Burst	Tension
			(psi) a	(psi) b	(1000 lbs) c
0' - 6700'	6,700’	7”, 29#, P-110, LTC, 8rd	8530 / 2.44*	11220 / 1.19	797 / 2.09
6700' - 10246'	3,546’	7”, 32#, HCP-110, LTC, 8rd	11820 / 2.21*	12460 / 1.29	
6700' - 10246'	3,546’	7”, 32#, HCP-110, LTC, 8rd	11820 / 1.06**	12460 / 1.29	
10246' - 11015'	769’	7”, 29 lb, P-110, LTC, 8rd	8530 / 1.52*	11220 / 1.16	

API Rating & Safety Factor

a. *Assume full casing evacuation with 10 ppg fluid on backside. **Assume full casing evacuation with 1.2 psi/ft equivalent fluid gradient across salt intervals.
b. Burst pressure based on 9000 psig max press for stimulation plus 10.2 ppg fluid in casing and 9 ppg fluid on backside-to 10723' TVD.
c. Based on string weight in 10 ppg fluid, (280k lbs buoyed weight) plus 100k lbs overpull.

Cement volumes are estimates based on 7" casing set in an 8-3/4" hole with 30% excess.

Pre-flush (Spacer): **100 bbls** Saltwater
70 sks Pozmix A
20 bbls Fresh Water

Lead Slurry: **109 sks** (50 bbls) 11.8 lb/gal ECONOCEM SYSTEM with 0.3% Fe-2 (additive material) and 0.25 lb/sk Poly-E-Flake (lost circulation additive)

Primary Slurry: **348 sks** (86 bbls) 14 lb/gal EXTENDACEM SYSTEM with 0.6% HR-5 (retarder) and 0.25 lb/sk Poly-E-Flake (lost circulation additive)

Tail Slurry: **274 sks** (76 bbls) 15.6 lb/gal HALCEM SYSTEM with 0.2% HR-5 (retarder), 0.25 lb/sk Poly-E-Flake (lost circulation additive) and 35% SSA-1 (additive material)

Oasis Petroleum
Well Summary
Larry 5301 44-12B
Section 13 T153N R101W
McKenzie County, ND

PRODUCTION LINER

							Make-up Torque (ft-lbs)		
Size	**Interval**	**Weight**	**Grade**	**Coupling**	**I.D.**	**Drift**	**Minimum**	**Optimum**	**Max**
4-1/2”	10,925’ to 20,624’	11.6	P-110	BTC	4.000"	3.875"			

Interval	Description	Collapse	Burst	Tension	Cost per ft
		(psi) **a**	(psi) **b**	(1000 lbs) **c**	
10950' - 21129'	4-1/2”, 11.6 lb, P-110, BTC	7560 / 1.42	10690 / 1.10	279 / 1.38	

API Rating & Safety Factor

a) Based on full casing evacuation with 9.5 ppg fluid on backside @ 10723' TVD.
b) Burst pressure based on 9000 psi treating pressure with 10.2 ppg internal fluid gradient and 9 ppg external fluid gradient @ 10723' TVD.
c) Based on string weight in 9.5 ppg fluid (Buoyed weight: 101k lbs.) plus 100k lbs overpull.

DRILLING PLAN

OPERATOR	OASIS PETROLEUM	**COUNTY/STATE**	McKenzie Co., ND
WELL NAME	Larry 5301 44-12B	**RIG**	Nabors 149
WELL TYPE	Horizontal Middle Bakken		
LOCATION	SESE 12-153N-101W Surface Location (survey plat): 250' fsl	800' fel	
EST. T.D.	21,129'	**GROUND ELEV:**	2058 Finished Pad Elev. **Sub Height:** 25
	TOTAL LATERAL: 10,114' (est)	**KB ELEV:**	2083

PROGNOSIS: Based on 2,083' KB(est)

MARKER		DEPTH (Surf Loc)	DATUM (Surf Loc)
Pierre	NDIC MAP	1,883	200
Greenhorn		4,616	(2,533)
Mowry		5,020	(2,937)
Dakota		5,449	(3,366)
Rierdon		6,402	(4,319)
Dunham Salt		6,877	(4,794)
Dunham Salt Base		6,981	(4,898)
Spearfish		6,987	(4,904)
Pine Salt		7,247	(5,164)
Pine Salt Base		7,297	(5,214)
Opeche Salt		7,338	(5,255)
Opeche Salt Base		7,387	(5,304)
Broom Creek (Top of Minnelusa Gp.)		7,576	(5,493)
Amsden		7,650	(5,567)
Tyler		7,819	(5,736)
Otter (Base of Minnelusa Gp.)		8,000	(5,917)
Kibbey		8,357	(6,274)
Charles Salt		8,503	(6,420)
UB		9,129	(7,046)
Base Last Salt		9,215	(7,132)
Ratcliffe		9,250	(7,167)
Mission Canyon		9,424	(7,341)
Lodgepole		9,987	(7,904)
Lodgepole Fracture Zone		10,233	(8,150)
False Bakken		10,691	(8,608)
Upper Bakken		10,701	(8,618)
Middle Bakken		10,713	(8,630)
Middle Bakken Sand Target		10,723	(8,640)
Base Middle Bakken Sand Target		10,737	(8,654)
Lower Bakken		10,752	(8,669)
Three Forks		10,764	(8,681)

Dip Rate: +0.22° or .37' /100' up

LOGS:

	Type	Interval
OH Logs:	Triple Combo KOP to Kibby (or min run of 1800' whichever is greater); GR/Res to BSC; GR to surf; CND through the Dakota	
CBL/GR:	Above top of cement/GR to base of casing	
MWD GR:	KOP to lateral TD	

DEVIATION:

Surf:	3 deg. max., 1 deg / 100'; srvy every 500'
Prod:	5 deg. max., 1 deg / 100'; srvy every 100'

DST'S: None planned

CORES: None planned

MUDLOGGING:

Two-Man: 8,303'

~200' above the Charles (Kibbey) to Casing point; Casing point to TD

30' samples at direction of wellsite geologist; 10' through target @ curve land

BOP: 11" 5000 psi blind, pipe & annular

Max. Anticipated BHP: 4659

Surface Formation: *Glacial till*

MUD:	Interval		Type	WT	Vis	WL	Remarks
Surface	0' -	2,040'	FW/Gel - Lime Sweeps	8.4-9.0	28-32	NC	Circ Mud Tanks
Intermediate	2,040' -	11,015'	Invert	9.6-10.4	40-50	30+HtHp	Circ Mud Tanks
Liner	11,015' -	21,129'	Salt Water	9.5-10.2	28-32	NC	Circ Mud Tanks

CASING:	Size	Wt ppf	Hole	Depth		Cement	WOC	Remarks
Surface:	9-5/8"	36#	13-1/2"	2,040'		To Surface	12	100' into Pierre
Intermediate:	7"	29/32#	8-3/4"	11,015'		4,949'	24	500' above Dakota
Production Liner:	4.5"	11.6#	6"	21,129'	TOL @ 10,195'			50' above KOP

PROBABLE PLUGS, IF REQ'D:

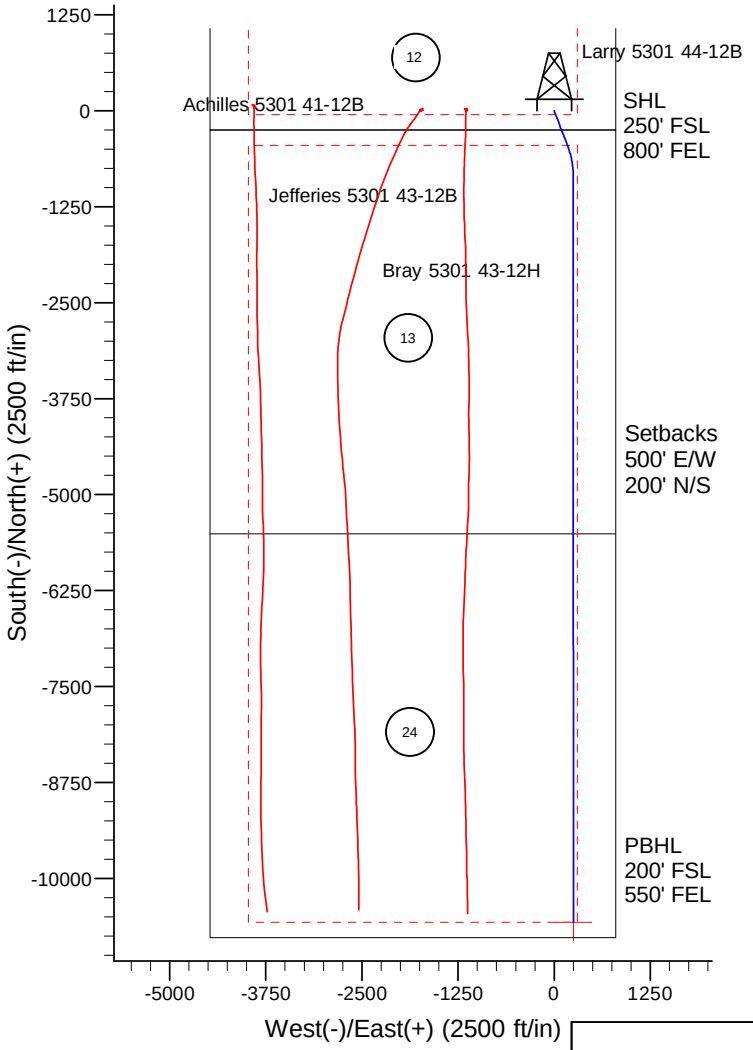
OTHER:	MD	TVD	FNL/FSL	FEL/FWL	S-T-R	AZI
Surface:	2,040	2,040	250' FSL	800' FEL	12-T153N-R101W	Survey Company:
KOP:	10,246'	10,246'	250' FSL	800' FEL	12-T153N-R101W	Build Rate: 12 deg /100'
EOC:	10,997'	10,723'	197' FNL	628' FEL	13-T153N-R101W	159.0
Casing Point:	11,015'	10,723'	214' FNL	622' FEL	13-T153N-R101W	159.0
Middle Bakken Lateral TD:	21,129'	10,684'	200' FSL	550' FEL	24-T153N-R101W	180.0

Comments:

No frac string will be utilized.

36 Stage frac with 3 sleeves

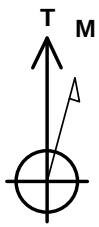
Geology: C. HARGETT 12/14/2011 **Engineering:** L. Strong 3/9/2012



OASIS PETROLEUM

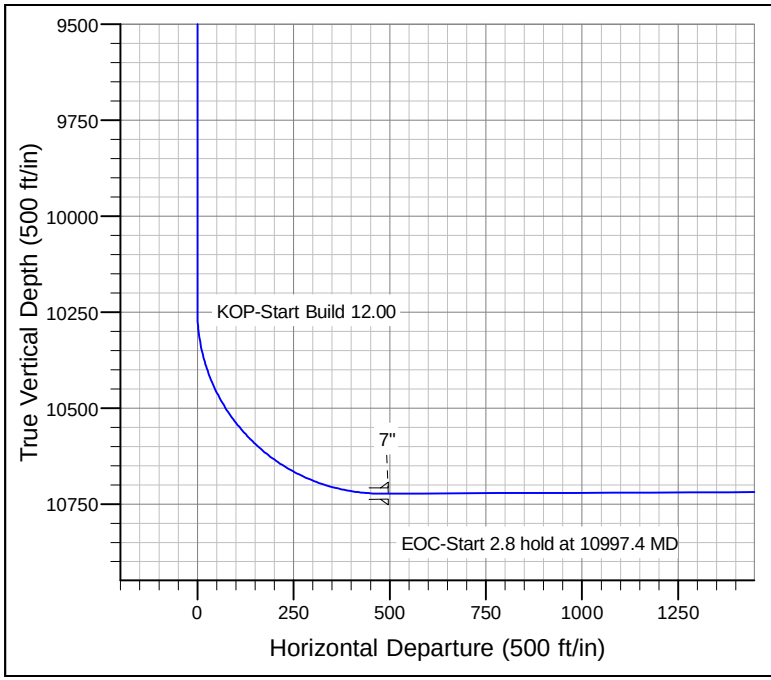
SITE DETAILS: 153N-101W-13/24	
Site Centre Latitude:	48° 4' 57.960 N
Longitude:	103° 36' 43.250 W
Positional Uncertainty:	0.0
Convergence:	-2.32
Local North:	True

Project:	Indian Hills
Site:	153N-101W-13/24
Well:	Larry 5301 44-12B
Wellbore:	OH
Design:	Plan #1



Azimuths to True North
Magnetic North: 8.55°

Magnetic Field
Strength: 56723.8snT
Dip Angle: 73.09°
Date: 12/14/2011
Model: IGRF200510

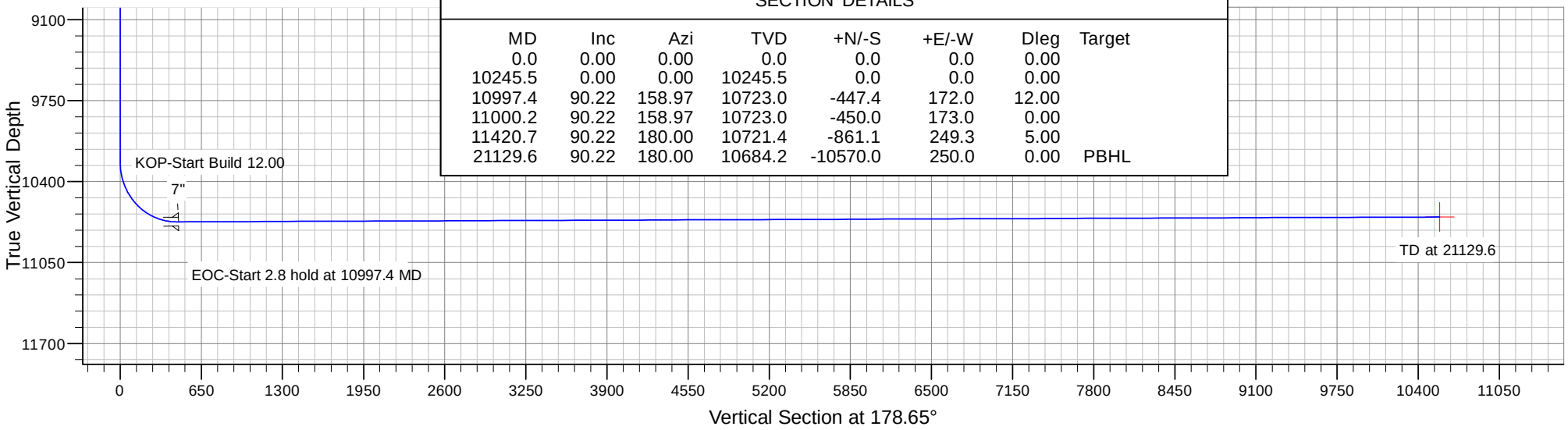


CASING DETAILS

TVD	MD	Name	Size
2040.0	2040.0	9 5/8"	9.625
10722.9	11015.0	7"	7.000

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	
10245.5	0.00	0.00	10245.5	0.0	0.0	0.00	
10997.4	90.22	158.97	10723.0	-447.4	172.0	12.00	
11000.2	90.22	158.97	10723.0	-450.0	173.0	0.00	
11420.7	90.22	180.00	10721.4	-861.1	249.3	5.00	
21129.6	90.22	180.00	10684.2	-10570.0	250.0	0.00	PBHL



Oasis

Indian Hills
153N-101W-13/24
Larry 5301 44-12B

OH

Plan: Plan #1

Standard Planning Report

27 March, 2012

Database:	OpenWellsCompass - EDM Prod	**Local Co-ordinate Reference:**	Well Larry 5301 44-12B
Company:	Oasis	**TVD Reference:**	WELL @ 2082.0ft (Original Well Elev)
Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0ft (Original Well Elev)
Site:	153N-101W-13/24	**North Reference:**	True
Well:	Larry 5301 44-12B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project Indian Hills

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	North Dakota Northern Zone		

Site 153N-101W-13/24

Site Position:		**Northing:**	125,067.66 m	**Latitude:**	48° 4' 57.960 N
From:	Lat/Long	**Easting:**	368,214.56 m	**Longitude:**	103° 36' 43.250 W
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	-2.32 °

Well Larry 5301 44-12B

Well Position	**+N/-S**	-20.2 ft	**Northing:**	125,047.62 m	**Latitude:**	48° 4' 57.760 N
	+E/-W	1,127.1 ft	**Easting:**	368,557.57 m	**Longitude:**	103° 36' 26.650 W
Position Uncertainty		0.0 ft	**Wellhead Elevation:**		**Ground Level:**	2,058.0 ft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/14/2011	8.55	73.09	56,724

Design Plan #1

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	178.65

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
10,245.5	0.00	0.00	10,245.5	0.0	0.0	0.00	0.00	0.00	0.00	
10,997.4	90.22	158.97	10,723.0	-447.4	172.0	12.00	12.00	0.00	158.97	
11,000.2	90.22	158.97	10,723.0	-450.0	173.0	0.00	0.00	0.00	0.00	
11,420.7	90.22	180.00	10,721.4	-861.1	249.3	5.00	0.00	5.00	89.96	
21,129.6	90.22	180.00	10,684.2	-10,570.0	250.0	0.00	0.00	0.00	0.00	Larry 5301 44-12B PE

Database:	OpenWellsCompass - EDM Prod	**Local Co-ordinate Reference:**	Well Larry 5301 44-12B
Company:	Oasis	**TVD Reference:**	WELL @ 2082.0ft (Original Well Elev)
Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0ft (Original Well Elev)
Site:	153N-101W-13/24	**North Reference:**	True
Well:	Larry 5301 44-12B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,883.0	0.00	0.00	1,883.0	0.0	0.0	0.0	0.00	0.00	0.00
Pierre									
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,040.0	0.00	0.00	2,040.0	0.0	0.0	0.0	0.00	0.00	0.00
9 5/8"									
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,616.0	0.00	0.00	4,616.0	0.0	0.0	0.0	0.00	0.00	0.00
Greenhorn									

Database:	OpenWellsCompass - EDM Prod	**Local Co-ordinate Reference:**	Well Larry 5301 44-12B
Company:	Oasis	**TVD Reference:**	WELL @ 2082.0ft (Original Well Elev)
Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0ft (Original Well Elev)
Site:	153N-101W-13/24	**North Reference:**	True
Well:	Larry 5301 44-12B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,020.0	0.00	0.00	5,020.0	0.0	0.0	0.0	0.00	0.00	0.00
Mowry									
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,449.0	0.00	0.00	5,449.0	0.0	0.0	0.0	0.00	0.00	0.00
Dakota									
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00
6,402.0	0.00	0.00	6,402.0	0.0	0.0	0.0	0.00	0.00	0.00
Rierdon									
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00
6,877.0	0.00	0.00	6,877.0	0.0	0.0	0.0	0.00	0.00	0.00
Dunham Salt									
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,981.0	0.00	0.00	6,981.0	0.0	0.0	0.0	0.00	0.00	0.00
Dunham Salt Base									
6,987.0	0.00	0.00	6,987.0	0.0	0.0	0.0	0.00	0.00	0.00
Spearfish									
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00
7,247.0	0.00	0.00	7,247.0	0.0	0.0	0.0	0.00	0.00	0.00
Pine Salt									
7,297.0	0.00	0.00	7,297.0	0.0	0.0	0.0	0.00	0.00	0.00
Pine Salt Base									
7,300.0	0.00	0.00	7,300.0	0.0	0.0	0.0	0.00	0.00	0.00
7,338.0	0.00	0.00	7,338.0	0.0	0.0	0.0	0.00	0.00	0.00
Opeche Salt									
7,387.0	0.00	0.00	7,387.0	0.0	0.0	0.0	0.00	0.00	0.00
Opeche Salt Base									
7,400.0	0.00	0.00	7,400.0	0.0	0.0	0.0	0.00	0.00	0.00
7,500.0	0.00	0.00	7,500.0	0.0	0.0	0.0	0.00	0.00	0.00
7,576.0	0.00	0.00	7,576.0	0.0	0.0	0.0	0.00	0.00	0.00
Broom Creek (Top of Minnelusa Gp.)									
7,600.0	0.00	0.00	7,600.0	0.0	0.0	0.0	0.00	0.00	0.00
7,650.0	0.00	0.00	7,650.0	0.0	0.0	0.0	0.00	0.00	0.00

Database:	OpenWellsCompass - EDM Prod	**Local Co-ordinate Reference:**	Well Larry 5301 44-12B
Company:	Oasis	**TVD Reference:**	WELL @ 2082.0ft (Original Well Elev)
Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0ft (Original Well Elev)
Site:	153N-101W-13/24	**North Reference:**	True
Well:	Larry 5301 44-12B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
Amsden									
7,700.0	0.00	0.00	7,700.0	0.0	0.0	0.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,800.0	0.0	0.0	0.0	0.00	0.00	0.00
7,819.0	0.00	0.00	7,819.0	0.0	0.0	0.0	0.00	0.00	0.00
Tyler									
7,900.0	0.00	0.00	7,900.0	0.0	0.0	0.0	0.00	0.00	0.00
8,000.0	0.00	0.00	8,000.0	0.0	0.0	0.0	0.00	0.00	0.00
Otter (Base of Minnelusa Gp.)									
8,100.0	0.00	0.00	8,100.0	0.0	0.0	0.0	0.00	0.00	0.00
8,200.0	0.00	0.00	8,200.0	0.0	0.0	0.0	0.00	0.00	0.00
8,300.0	0.00	0.00	8,300.0	0.0	0.0	0.0	0.00	0.00	0.00
8,357.0	0.00	0.00	8,357.0	0.0	0.0	0.0	0.00	0.00	0.00
Kibbey									
8,400.0	0.00	0.00	8,400.0	0.0	0.0	0.0	0.00	0.00	0.00
8,500.0	0.00	0.00	8,500.0	0.0	0.0	0.0	0.00	0.00	0.00
8,503.0	0.00	0.00	8,503.0	0.0	0.0	0.0	0.00	0.00	0.00
Charles Salt									
8,600.0	0.00	0.00	8,600.0	0.0	0.0	0.0	0.00	0.00	0.00
8,700.0	0.00	0.00	8,700.0	0.0	0.0	0.0	0.00	0.00	0.00
8,800.0	0.00	0.00	8,800.0	0.0	0.0	0.0	0.00	0.00	0.00
8,900.0	0.00	0.00	8,900.0	0.0	0.0	0.0	0.00	0.00	0.00
9,000.0	0.00	0.00	9,000.0	0.0	0.0	0.0	0.00	0.00	0.00
9,100.0	0.00	0.00	9,100.0	0.0	0.0	0.0	0.00	0.00	0.00
9,129.0	0.00	0.00	9,129.0	0.0	0.0	0.0	0.00	0.00	0.00
UB									
9,200.0	0.00	0.00	9,200.0	0.0	0.0	0.0	0.00	0.00	0.00
9,215.0	0.00	0.00	9,215.0	0.0	0.0	0.0	0.00	0.00	0.00
Base Last Salt									
9,250.0	0.00	0.00	9,250.0	0.0	0.0	0.0	0.00	0.00	0.00
Ratcliffe									
9,300.0	0.00	0.00	9,300.0	0.0	0.0	0.0	0.00	0.00	0.00
9,400.0	0.00	0.00	9,400.0	0.0	0.0	0.0	0.00	0.00	0.00
9,424.0	0.00	0.00	9,424.0	0.0	0.0	0.0	0.00	0.00	0.00
Mission Canyon									
9,500.0	0.00	0.00	9,500.0	0.0	0.0	0.0	0.00	0.00	0.00
9,600.0	0.00	0.00	9,600.0	0.0	0.0	0.0	0.00	0.00	0.00
9,700.0	0.00	0.00	9,700.0	0.0	0.0	0.0	0.00	0.00	0.00
9,800.0	0.00	0.00	9,800.0	0.0	0.0	0.0	0.00	0.00	0.00
9,900.0	0.00	0.00	9,900.0	0.0	0.0	0.0	0.00	0.00	0.00
9,987.0	0.00	0.00	9,987.0	0.0	0.0	0.0	0.00	0.00	0.00
Lodgepole									
10,000.0	0.00	0.00	10,000.0	0.0	0.0	0.0	0.00	0.00	0.00
10,100.0	0.00	0.00	10,100.0	0.0	0.0	0.0	0.00	0.00	0.00
10,200.0	0.00	0.00	10,200.0	0.0	0.0	0.0	0.00	0.00	0.00
10,233.0	0.00	0.00	10,233.0	0.0	0.0	0.0	0.00	0.00	0.00
Lodgepole Fracture Zone									
10,245.5	0.00	0.00	10,245.5	0.0	0.0	0.0	0.00	0.00	0.00
KOP-Start Build 12.00									
10,250.0	0.53	158.97	10,250.0	0.0	0.0	0.0	12.00	12.00	0.00
10,275.0	3.53	158.97	10,275.0	-0.8	0.3	0.9	12.00	12.00	0.00
10,300.0	6.53	158.97	10,299.9	-2.9	1.1	2.9	12.00	12.00	0.00
10,325.0	9.53	158.97	10,324.6	-6.2	2.4	6.2	12.00	12.00	0.00

Database:	OpenWellsCompass - EDM Prod	**Local Co-ordinate Reference:**	Well Larry 5301 44-12B
Company:	Oasis	**TVD Reference:**	WELL @ 2082.0ft (Original Well Elev)
Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0ft (Original Well Elev)
Site:	153N-101W-13/24	**North Reference:**	True
Well:	Larry 5301 44-12B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
10,350.0	12.53	158.97	10,349.2	-10.6	4.1	10.7	12.00	12.00	0.00
10,375.0	15.53	158.97	10,373.4	-16.3	6.3	16.4	12.00	12.00	0.00
10,400.0	18.53	158.97	10,397.3	-23.1	8.9	23.3	12.00	12.00	0.00
10,425.0	21.53	158.97	10,420.8	-31.1	12.0	31.4	12.00	12.00	0.00
10,450.0	24.53	158.97	10,443.8	-40.2	15.5	40.6	12.00	12.00	0.00
10,475.0	27.53	158.97	10,466.3	-50.5	19.4	50.9	12.00	12.00	0.00
10,500.0	30.53	158.97	10,488.1	-61.8	23.8	62.3	12.00	12.00	0.00
10,525.0	33.53	158.97	10,509.3	-74.2	28.5	74.8	12.00	12.00	0.00
10,550.0	36.53	158.97	10,529.8	-87.6	33.7	88.3	12.00	12.00	0.00
10,575.0	39.53	158.97	10,549.5	-101.9	39.2	102.8	12.00	12.00	0.00
10,600.0	42.53	158.97	10,568.3	-117.3	45.1	118.3	12.00	12.00	0.00
10,625.0	45.53	158.97	10,586.3	-133.5	51.3	134.7	12.00	12.00	0.00
10,650.0	48.53	158.97	10,603.3	-150.6	57.9	151.9	12.00	12.00	0.00
10,675.0	51.53	158.97	10,619.4	-168.4	64.8	169.9	12.00	12.00	0.00
10,700.0	54.53	158.97	10,634.4	-187.1	71.9	188.7	12.00	12.00	0.00
10,725.0	57.53	158.97	10,648.4	-206.4	79.4	208.3	12.00	12.00	0.00
10,750.0	60.53	158.97	10,661.3	-226.4	87.1	228.4	12.00	12.00	0.00
10,775.0	63.53	158.97	10,673.0	-247.0	95.0	249.2	12.00	12.00	0.00
10,800.0	66.53	158.97	10,683.5	-268.2	103.1	270.6	12.00	12.00	0.00
10,819.7	68.90	158.97	10,691.0	-285.2	109.7	287.7	12.00	12.00	0.00
False Bakken									
10,825.0	69.53	158.97	10,692.9	-289.8	111.4	292.4	12.00	12.00	0.00
10,850.0	72.53	158.97	10,701.0	-311.9	119.9	314.6	12.00	12.00	0.00
Upper Bakken									
10,875.0	75.53	158.97	10,707.9	-334.3	128.5	337.3	12.00	12.00	0.00
10,897.6	78.24	158.97	10,713.0	-354.9	136.4	358.0	12.00	12.00	0.00
Middle Bakken									
10,900.0	78.53	158.97	10,713.5	-357.1	137.3	360.2	12.00	12.00	0.00
10,925.0	81.53	158.97	10,717.8	-380.1	146.1	383.4	12.00	12.00	0.00
10,950.0	84.53	158.97	10,720.8	-403.2	155.0	406.8	12.00	12.00	0.00
10,975.0	87.53	158.97	10,722.6	-426.5	164.0	430.2	12.00	12.00	0.00
10,991.9	89.56	158.97	10,723.0	-442.2	170.0	446.1	12.00	12.00	0.00
Middle Bakken Sand Target									
10,997.4	90.22	158.97	10,723.0	-447.4	172.0	451.3	12.00	12.00	0.00
EOC-Start 2.8 hold at 10997.4 MD									
11,000.2	90.22	158.97	10,723.0	-450.0	173.0	454.0	0.00	0.00	0.00
Start DLS 5.00 TFO 89.96									
11,015.0	90.22	159.71	10,722.9	-463.9	178.2	467.9	5.00	0.00	5.00
7"									
11,100.0	90.22	163.96	10,722.6	-544.6	204.7	549.3	5.00	0.00	5.00
11,200.0	90.22	168.96	10,722.2	-641.8	228.1	647.0	5.00	0.00	5.00
11,300.0	90.22	173.96	10,721.8	-740.6	243.0	746.2	5.00	0.00	5.00
11,400.0	90.22	178.96	10,721.4	-840.4	249.1	846.1	5.00	0.00	5.00
11,420.7	90.22	180.00	10,721.4	-861.1	249.3	866.8	5.00	0.00	5.00
Start 9717.0 hold at 11420.7 MD									
11,500.0	90.22	180.00	10,721.1	-940.4	249.3	946.1	0.00	0.00	0.00
11,600.0	90.22	180.00	10,720.7	-1,040.4	249.3	1,046.0	0.00	0.00	0.00
11,700.0	90.22	180.00	10,720.3	-1,140.4	249.3	1,146.0	0.00	0.00	0.00
11,800.0	90.22	180.00	10,719.9	-1,240.4	249.3	1,246.0	0.00	0.00	0.00
11,900.0	90.22	180.00	10,719.5	-1,340.4	249.4	1,345.9	0.00	0.00	0.00
12,000.0	90.22	180.00	10,719.2	-1,440.4	249.4	1,445.9	0.00	0.00	0.00
12,100.0	90.22	180.00	10,718.8	-1,540.4	249.4	1,545.9	0.00	0.00	0.00
12,200.0	90.22	180.00	10,718.4	-1,640.4	249.4	1,645.9	0.00	0.00	0.00

Database:	OpenWellsCompass - EDM Prod	**Local Co-ordinate Reference:**	Well Larry 5301 44-12B
Company:	Oasis	**TVD Reference:**	WELL @ 2082.0ft (Original Well Elev)
Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0ft (Original Well Elev)
Site:	153N-101W-13/24	**North Reference:**	True
Well:	Larry 5301 44-12B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,300.0	90.22	180.00	10,718.0	-1,740.4	249.4	1,745.8	0.00	0.00	0.00
12,400.0	90.22	180.00	10,717.6	-1,840.4	249.4	1,845.8	0.00	0.00	0.00
12,500.0	90.22	180.00	10,717.2	-1,940.4	249.4	1,945.8	0.00	0.00	0.00
12,600.0	90.22	180.00	10,716.9	-2,040.4	249.4	2,045.7	0.00	0.00	0.00
12,700.0	90.22	180.00	10,716.5	-2,140.4	249.4	2,145.7	0.00	0.00	0.00
12,800.0	90.22	180.00	10,716.1	-2,240.4	249.4	2,245.7	0.00	0.00	0.00
12,900.0	90.22	180.00	10,715.7	-2,340.4	249.4	2,345.7	0.00	0.00	0.00
13,000.0	90.22	180.00	10,715.3	-2,440.4	249.4	2,445.6	0.00	0.00	0.00
13,100.0	90.22	180.00	10,714.9	-2,540.4	249.4	2,545.6	0.00	0.00	0.00
13,200.0	90.22	180.00	10,714.6	-2,640.4	249.4	2,645.6	0.00	0.00	0.00
13,300.0	90.22	180.00	10,714.2	-2,740.4	249.4	2,745.5	0.00	0.00	0.00
13,400.0	90.22	180.00	10,713.8	-2,840.4	249.5	2,845.5	0.00	0.00	0.00
13,500.0	90.22	180.00	10,713.4	-2,940.4	249.5	2,945.5	0.00	0.00	0.00
13,600.0	90.22	180.00	10,713.0	-3,040.4	249.5	3,045.5	0.00	0.00	0.00
13,700.0	90.22	180.00	10,712.6	-3,140.4	249.5	3,145.4	0.00	0.00	0.00
13,800.0	90.22	180.00	10,712.3	-3,240.4	249.5	3,245.4	0.00	0.00	0.00
13,900.0	90.22	180.00	10,711.9	-3,340.4	249.5	3,345.4	0.00	0.00	0.00
14,000.0	90.22	180.00	10,711.5	-3,440.4	249.5	3,445.3	0.00	0.00	0.00
14,100.0	90.22	180.00	10,711.1	-3,540.4	249.5	3,545.3	0.00	0.00	0.00
14,200.0	90.22	180.00	10,710.7	-3,640.4	249.5	3,645.3	0.00	0.00	0.00
14,300.0	90.22	180.00	10,710.3	-3,740.4	249.5	3,745.3	0.00	0.00	0.00
14,400.0	90.22	180.00	10,710.0	-3,840.4	249.5	3,845.2	0.00	0.00	0.00
14,500.0	90.22	180.00	10,709.6	-3,940.4	249.5	3,945.2	0.00	0.00	0.00
14,600.0	90.22	180.00	10,709.2	-4,040.4	249.5	4,045.2	0.00	0.00	0.00
14,700.0	90.22	180.00	10,708.8	-4,140.4	249.5	4,145.1	0.00	0.00	0.00
14,800.0	90.22	180.00	10,708.4	-4,240.4	249.6	4,245.1	0.00	0.00	0.00
14,900.0	90.22	180.00	10,708.0	-4,340.4	249.6	4,345.1	0.00	0.00	0.00
15,000.0	90.22	180.00	10,707.7	-4,440.4	249.6	4,445.1	0.00	0.00	0.00
15,100.0	90.22	180.00	10,707.3	-4,540.4	249.6	4,545.0	0.00	0.00	0.00
15,200.0	90.22	180.00	10,706.9	-4,640.4	249.6	4,645.0	0.00	0.00	0.00
15,300.0	90.22	180.00	10,706.5	-4,740.4	249.6	4,745.0	0.00	0.00	0.00
15,400.0	90.22	180.00	10,706.1	-4,840.4	249.6	4,844.9	0.00	0.00	0.00
15,500.0	90.22	180.00	10,705.8	-4,940.4	249.6	4,944.9	0.00	0.00	0.00
15,600.0	90.22	180.00	10,705.4	-5,040.4	249.6	5,044.9	0.00	0.00	0.00
15,700.0	90.22	180.00	10,705.0	-5,140.4	249.6	5,144.9	0.00	0.00	0.00
15,800.0	90.22	180.00	10,704.6	-5,240.4	249.6	5,244.8	0.00	0.00	0.00
15,900.0	90.22	180.00	10,704.2	-5,340.4	249.6	5,344.8	0.00	0.00	0.00
16,000.0	90.22	180.00	10,703.8	-5,440.4	249.6	5,444.8	0.00	0.00	0.00
16,100.0	90.22	180.00	10,703.5	-5,540.4	249.6	5,544.7	0.00	0.00	0.00
16,200.0	90.22	180.00	10,703.1	-5,640.4	249.7	5,644.7	0.00	0.00	0.00
16,300.0	90.22	180.00	10,702.7	-5,740.4	249.7	5,744.7	0.00	0.00	0.00
16,400.0	90.22	180.00	10,702.3	-5,840.4	249.7	5,844.7	0.00	0.00	0.00
16,500.0	90.22	180.00	10,701.9	-5,940.4	249.7	5,944.6	0.00	0.00	0.00
16,600.0	90.22	180.00	10,701.5	-6,040.4	249.7	6,044.6	0.00	0.00	0.00
16,700.0	90.22	180.00	10,701.2	-6,140.4	249.7	6,144.6	0.00	0.00	0.00
16,800.0	90.22	180.00	10,700.8	-6,240.4	249.7	6,244.5	0.00	0.00	0.00
16,900.0	90.22	180.00	10,700.4	-6,340.4	249.7	6,344.5	0.00	0.00	0.00
17,000.0	90.22	180.00	10,700.0	-6,440.4	249.7	6,444.5	0.00	0.00	0.00
17,100.0	90.22	180.00	10,699.6	-6,540.4	249.7	6,544.5	0.00	0.00	0.00
17,200.0	90.22	180.00	10,699.2	-6,640.4	249.7	6,644.4	0.00	0.00	0.00
17,300.0	90.22	180.00	10,698.9	-6,740.4	249.7	6,744.4	0.00	0.00	0.00
17,400.0	90.22	180.00	10,698.5	-6,840.4	249.7	6,844.4	0.00	0.00	0.00
17,500.0	90.22	180.00	10,698.1	-6,940.4	249.7	6,944.3	0.00	0.00	0.00
17,600.0	90.22	180.00	10,697.7	-7,040.4	249.8	7,044.3	0.00	0.00	0.00

Database:	OpenWellsCompass - EDM Prod	**Local Co-ordinate Reference:**	Well Larry 5301 44-12B
Company:	Oasis	**TVD Reference:**	WELL @ 2082.0ft (Original Well Elev)
Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0ft (Original Well Elev)
Site:	153N-101W-13/24	**North Reference:**	True
Well:	Larry 5301 44-12B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
17,700.0	90.22	180.00	10,697.3	-7,140.4	249.8	7,144.3	0.00	0.00	0.00
17,800.0	90.22	180.00	10,696.9	-7,240.4	249.8	7,244.3	0.00	0.00	0.00
17,900.0	90.22	180.00	10,696.6	-7,340.4	249.8	7,344.2	0.00	0.00	0.00
18,000.0	90.22	180.00	10,696.2	-7,440.4	249.8	7,444.2	0.00	0.00	0.00
18,100.0	90.22	180.00	10,695.8	-7,540.4	249.8	7,544.2	0.00	0.00	0.00
18,200.0	90.22	180.00	10,695.4	-7,640.4	249.8	7,644.1	0.00	0.00	0.00
18,300.0	90.22	180.00	10,695.0	-7,740.4	249.8	7,744.1	0.00	0.00	0.00
18,400.0	90.22	180.00	10,694.6	-7,840.4	249.8	7,844.1	0.00	0.00	0.00
18,500.0	90.22	180.00	10,694.3	-7,940.4	249.8	7,944.1	0.00	0.00	0.00
18,600.0	90.22	180.00	10,693.9	-8,040.4	249.8	8,044.0	0.00	0.00	0.00
18,700.0	90.22	180.00	10,693.5	-8,140.4	249.8	8,144.0	0.00	0.00	0.00
18,800.0	90.22	180.00	10,693.1	-8,240.4	249.8	8,244.0	0.00	0.00	0.00
18,900.0	90.22	180.00	10,692.7	-8,340.4	249.8	8,343.9	0.00	0.00	0.00
19,000.0	90.22	180.00	10,692.4	-8,440.4	249.9	8,443.9	0.00	0.00	0.00
19,100.0	90.22	180.00	10,692.0	-8,540.4	249.9	8,543.9	0.00	0.00	0.00
19,200.0	90.22	180.00	10,691.6	-8,640.4	249.9	8,643.9	0.00	0.00	0.00
19,300.0	90.22	180.00	10,691.2	-8,740.4	249.9	8,743.8	0.00	0.00	0.00
19,400.0	90.22	180.00	10,690.8	-8,840.4	249.9	8,843.8	0.00	0.00	0.00
19,500.0	90.22	180.00	10,690.4	-8,940.4	249.9	8,943.8	0.00	0.00	0.00
19,600.0	90.22	180.00	10,690.1	-9,040.4	249.9	9,043.7	0.00	0.00	0.00
19,700.0	90.22	180.00	10,689.7	-9,140.4	249.9	9,143.7	0.00	0.00	0.00
19,800.0	90.22	180.00	10,689.3	-9,240.4	249.9	9,243.7	0.00	0.00	0.00
19,900.0	90.22	180.00	10,688.9	-9,340.4	249.9	9,343.7	0.00	0.00	0.00
20,000.0	90.22	180.00	10,688.5	-9,440.4	249.9	9,443.6	0.00	0.00	0.00
20,100.0	90.22	180.00	10,688.1	-9,540.4	249.9	9,543.6	0.00	0.00	0.00
20,200.0	90.22	180.00	10,687.8	-9,640.4	249.9	9,643.6	0.00	0.00	0.00
20,300.0	90.22	180.00	10,687.4	-9,740.4	249.9	9,743.5	0.00	0.00	0.00
20,400.0	90.22	180.00	10,687.0	-9,840.4	249.9	9,843.5	0.00	0.00	0.00
20,500.0	90.22	180.00	10,686.6	-9,940.4	250.0	9,943.5	0.00	0.00	0.00
20,600.0	90.22	180.00	10,686.2	-10,040.4	250.0	10,043.5	0.00	0.00	0.00
20,700.0	90.22	180.00	10,685.8	-10,140.4	250.0	10,143.4	0.00	0.00	0.00
20,800.0	90.22	180.00	10,685.5	-10,240.4	250.0	10,243.4	0.00	0.00	0.00
20,900.0	90.22	180.00	10,685.1	-10,340.4	250.0	10,343.4	0.00	0.00	0.00
21,000.0	90.22	180.00	10,684.7	-10,440.4	250.0	10,443.3	0.00	0.00	0.00
21,100.0	90.22	180.00	10,684.3	-10,540.4	250.0	10,543.3	0.00	0.00	0.00
21,129.6	90.22	180.00	10,684.2	-10,570.0	250.0	10,572.9	0.00	0.00	0.00
TD at 21129.6									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (m)	Easting (m)	Latitude	Longitude
Larry 5301 44-12B PBHl - plan hits target center - Point	0.00	0.00	10,684.2	-10,570.0	250.0	121,825.43	368,503.72	48° 3' 13.445 N	103° 36' 22.970 W

Database:	OpenWellsCompass - EDM Prod	**Local Co-ordinate Reference:**	Well Larry 5301 44-12B
Company:	Oasis	**TVD Reference:**	WELL @ 2082.0ft (Original Well Elev)
Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0ft (Original Well Elev)
Site:	153N-101W-13/24	**North Reference:**	True
Well:	Larry 5301 44-12B	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
2,040.0	2,040.0	9 5/8"	9.625	13.500
11,015.0	10,722.9	7"	7.000	8.750

Formations

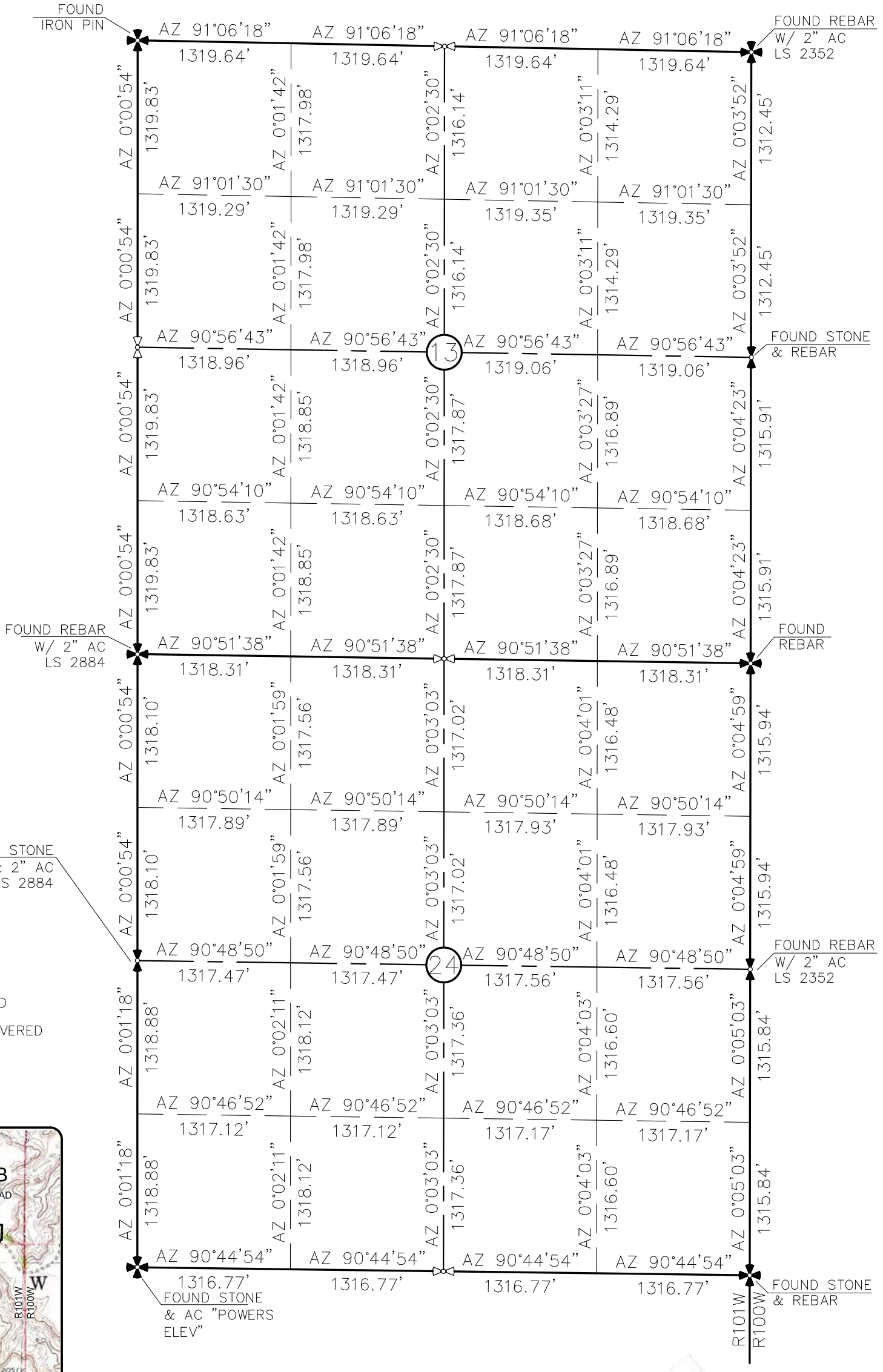
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,883.0	1,883.0	Pierre			
4,616.0	4,616.0	Greenhorn			
5,020.0	5,020.0	Mowry			
5,449.0	5,449.0	Dakota			
6,402.0	6,402.0	Rierdon			
6,877.0	6,877.0	Dunham Salt			
6,981.0	6,981.0	Dunham Salt Base			
6,987.0	6,987.0	Spearfish			
7,247.0	7,247.0	Pine Salt			
7,297.0	7,297.0	Pine Salt Base			
7,338.0	7,338.0	Opeche Salt			
7,387.0	7,387.0	Opeche Salt Base			
7,576.0	7,576.0	Broom Creek (Top of Minnelusa Gp.)			
7,650.0	7,650.0	Amsden			
7,819.0	7,819.0	Tyler			
8,000.0	8,000.0	Otter (Base of Minnelusa Gp.)			
8,357.0	8,357.0	Kibbey			
8,503.0	8,503.0	Charles Salt			
9,129.0	9,129.0	UB			
9,215.0	9,215.0	Base Last Salt			
9,250.0	9,250.0	Ratcliffe			
9,424.0	9,424.0	Mission Canyon			
9,987.0	9,987.0	Lodgepole			
10,233.0	10,233.0	Lodgepole Fracture Zone			
10,819.7	10,691.0	False Bakken			
10,850.0	10,701.0	Upper Bakken			
10,897.6	10,713.0	Middle Bakken			
10,991.9	10,723.0	Middle Bakken Sand Target			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
10,245.5	10,245.5	0.0	0.0	KOP-Start Build 12.00
10,997.4	10,723.0	-447.4	172.0	EOC-Start 2.8 hold at 10997.4 MD
11,000.2	10,723.0	-450.0	173.0	Start DLS 5.00 TFO 89.96
11,420.7	10,721.4	-861.1	249.3	Start 9717.0 hold at 11420.7 MD
21,129.6	10,684.2	-10,570.0	250.0	TD at 21129.6

SECTION BREAKDOWN

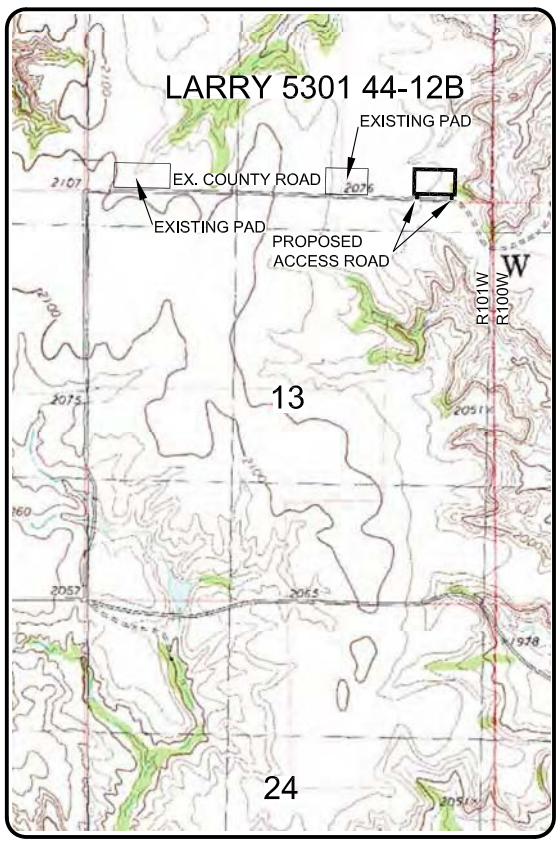
OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"LARRY 5301 44-12B"
250 FEET FROM SOUTH LINE AND 800 FEET FROM EAST LINE
SECTION 12, T153N, R101W, 5TH P.M., MCKENZIE COUNTY, NORTH DAKOTA



0 1000
1" = 1000'

— MONUMENT — RECOVERED
— MONUMENT — NOT RECOVERED

VICINITY MAP



ALL AZIMUTHS ARE BASED ON G.P.S. OBSERVATIONS. THE ORIGINAL SURVEY OF THIS AREA FOR THE GENERAL LAND OFFICE (G.L.O.) WAS 1900. THE CORNERS FOUND ARE AS INDICATED AND ALL OTHERS ARE COMPUTED FROM THOSE CORNERS FOUND AND BASED ON G.L.O. DATA.

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REGISTERED LAND SURVEYOR
AARON HUMMERT
LS-7512
DATE: 2/27/12
NORTH DAKOTA

INTERSTATE ENGINEERING
Professionals you need, people you trust

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Sidney, Montana 59270
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Other offices in Minnesota, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC
SECTION BREAKDOWN
SECTIONS 13 & 24, T153N, R101W
MCKENZIE COUNTY, NORTH DAKOTA

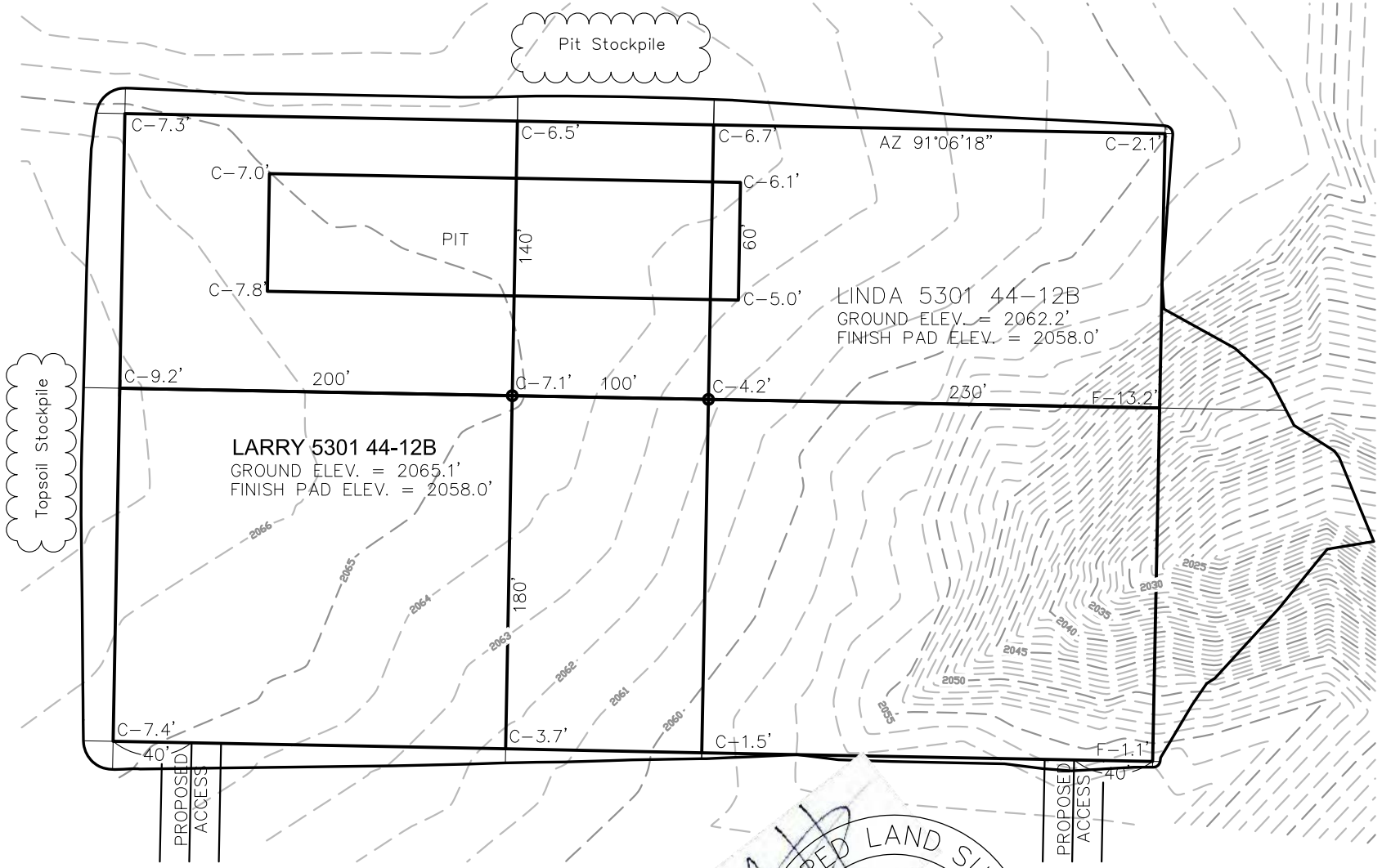
Drawn By: H.J.G. | Project No.: S11-09-342
Checked By: C.S.V./ A.J.H. | Date: NOV 2011

Revision No.	Date	By	Description
REV 1	1/23/12	JJS	CHANGED WELL NAME
REV 2	2/25/12	JJS	MOVED WELL LOCATION

C:\2011\S11-09-\342 Oasis Petroleum 6th Well in Sec 1 12 13 & 24 T153N R101W\CAD\REVISED LARRY WELL.dwg – 2/27/2012 5:26 PM josh schmierer

PAD LAYOUT

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"LARRY 5301 44-12B"
250 FEET FROM SOUTH LINE AND 800 FEET FROM EAST LINE
SECTION 12, T153N, R101W, 5TH P.M., MCKENZIE COUNTY, NORTH DAKOTA



0 80
1" = 80'

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NOTE: All utilities shown are preliminary only, a complete utilities location is recommended before construction.

Revision No.	Date	By	Description
REV 1	1/23/12	JJS	CHANGED WELL NAME
REV 2	2/25/12	JJS	MOVED WELL LOCATION

OASIS PETROLEUM NORTH AMERICA, LLC
PAD LAYOUT
SECTION 12, T153N, R101W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: HJG. Project No.: S11-09-342
Checked By: CSV/AJH. Date: NOV 2011

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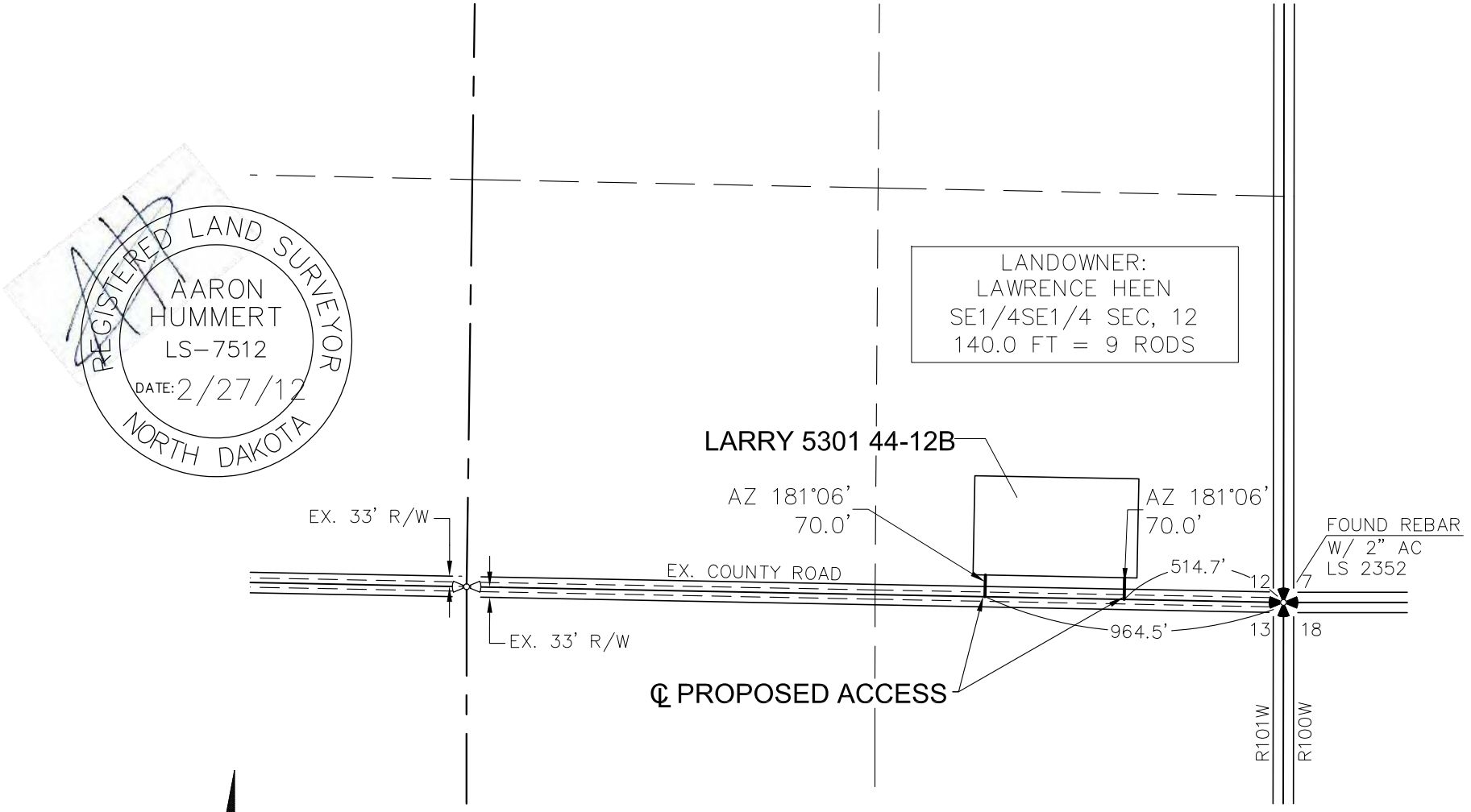
INTERSTATE ENGINEERING
Professionals you need, people you trust

ACCESS APPROACH

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"LARRY 5301 44-12B"
250 FEET FROM SOUTH LINE AND 800 FEET FROM EAST LINE
SECTION 12, T153N, R101W, 5TH P.M., MCKENZIE COUNTY, NORTH DAKOTA



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NOTE: All utilities shown are preliminary only, a complete utilities location is recommended before construction.

Revision No.	Date	By	Description
REV 1	1/23/12	JJS	CHANGED WELL NAME
REV 2	2/25/12	JJS	MOVED WELL LOCATION

OASIS PETROLEUM NORTH AMERICA, LLC
ACCESS APPROACH
SECTION 12, T153N, R101W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: H.J.G. | Project No.: S11-09-342
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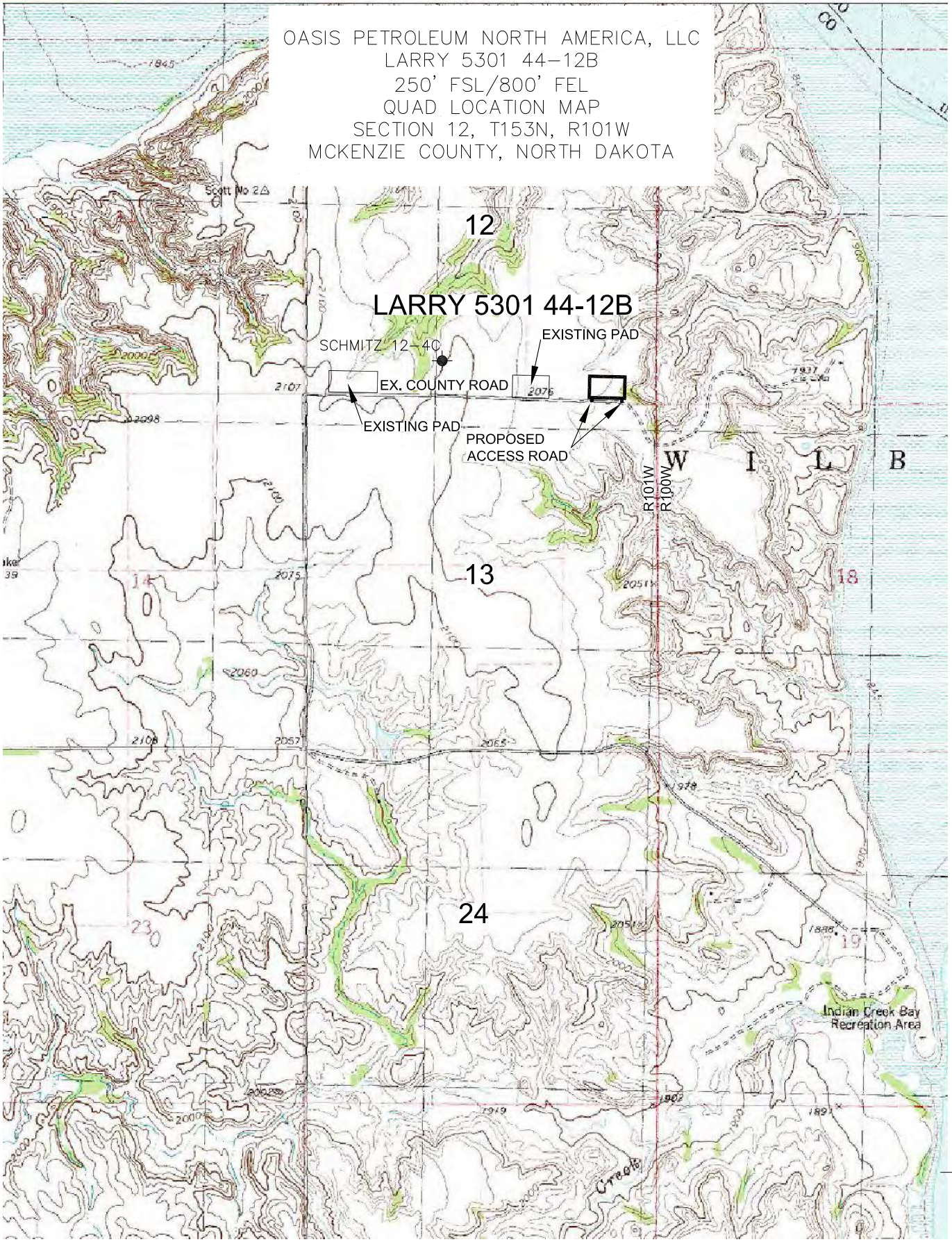
OASIS PETROLEUM NORTH AMERICA, LLC
LARRY 5301 44–12B
250' FSL/800' FEL
QUAD LOCATION MAP
SECTION 12, T153N, R101W
MCKENZIE COUNTY, NORTH DAKOTA



5/8
SHEET NO.

INTERSTATE ENGINEERING
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Other offices in Minnesota, North Dakota and South Dakota

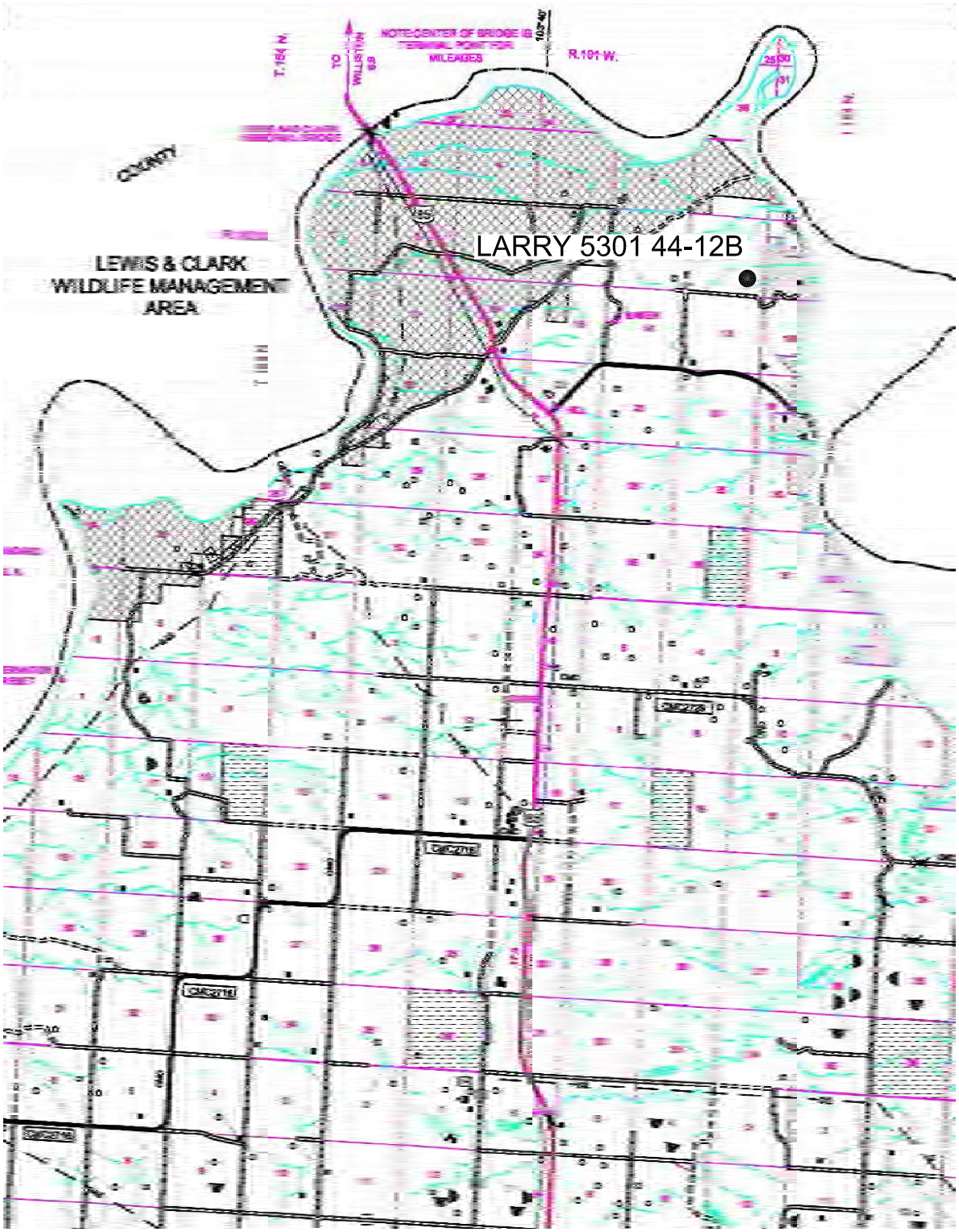
OASIS PETROLEUM NORTH AMERICA, LLC
QUAD LOCATION MAP
SECTION 12, T153N, R101W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: H.J.G. | Project No.: S11-09-342
Checked By: C.S.V./A.J.H. | Date: NOV 2011

Revision No.	Date	By	Description
REV 1	1/23/12	JJS	CHANGED WELL NAME
REV 2	2/25/12	JJS	MOVED WELL LOCATION

COUNTY ROAD MAP

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"LARRY 5301 44-12B"
250 FEET FROM SOUTH LINE AND 800 FEET FROM EAST LINE
SECTION 12, T153N, R101W, 5TH P.M., MCKENZIE COUNTY, NORTH DAKOTA



SCALE: 1" = 2 MILE

6/8
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OASIS PETROLEUM NORTH AMERICA, LLC
COUNTY ROAD MAP
SECTION 12, T153N, R101W
MCKENZIE COUNTY, NORTH DAKOTA

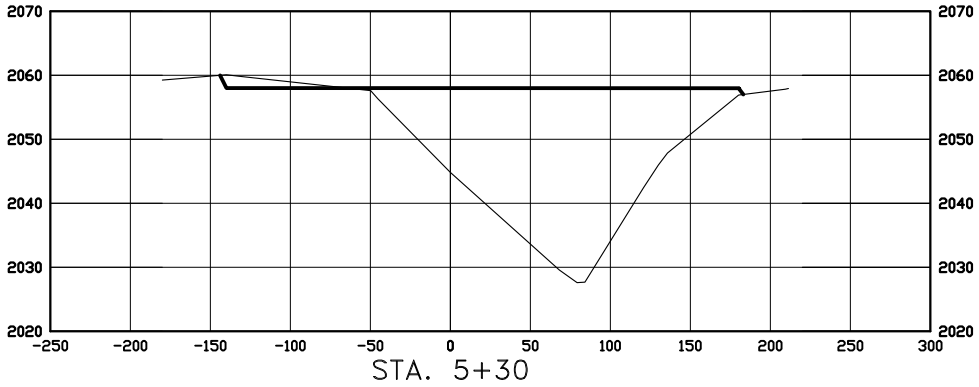
Drawn By: H.J.G. | Project No.: S11-09-342
Checked By: C.S.V./A.J.H. | Date: NOV 2011

Revision No.	Date	By	Description
REV 1	1/23/12	JJS	CHANGED WELL NAME
REV 2	2/25/12	JJS	MOVED WELL LOCATION

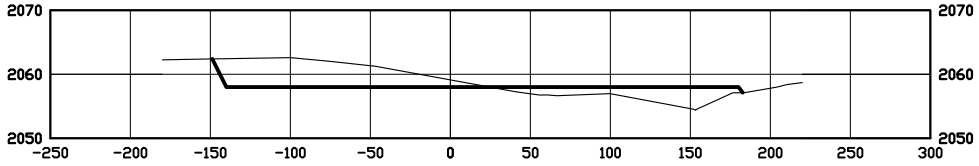
CROSS SECTIONS

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"LARRY 5301 44-12B"
250 FEET FROM SOUTH LINE AND 800 FEET FROM EAST LINE
SECTION 12, T153N, R101W, 5TH P.M., MCKENZIE COUNTY, NORTH DAKOTA

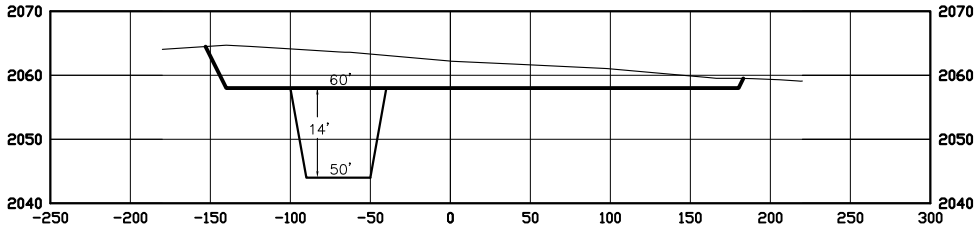
THIS DOCUMENT WAS ORIGINALLY ISSUED AND SEALED BY AARON HUMMERT, PLS, REGISTRATION NUMBER 7512 ON 2/27/12 AND THE ORIGINAL DOCUMENTS ARE STORED AT THE OFFICES OF INTERSTATE ENGINEERING, INC.



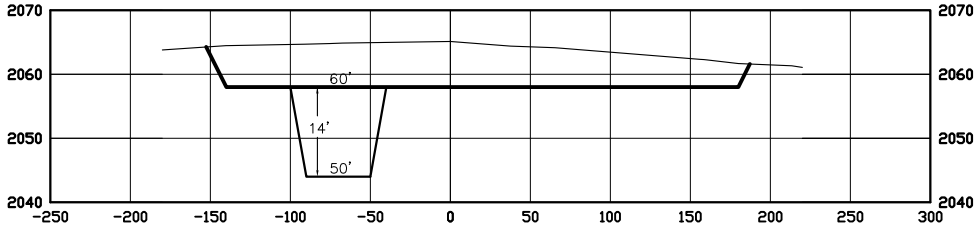
STA. 5+30



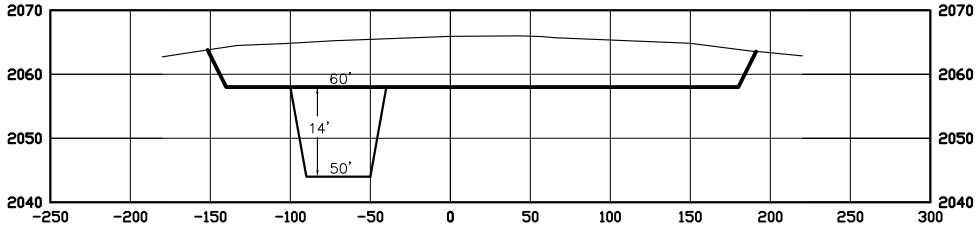
STA. 4+00



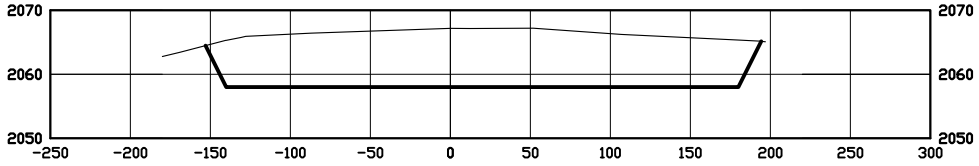
STA. 3+00



STA. 2+00



STA. 1+00



STA. 0+00

SCALE
HORIZ 1"=120'
VERT 1"=30'

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OASIS PETROLEUM NORTH AMERICA, LLC
PAD CROSS SECTIONS
SECTION 12, T153N, R101W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: H.J.G. | Project No.: S11-9-342
Checked By: C.S.V./A.J.H. | Date: NOV 2011

Revision No.	Date	By	Description
REV 1	1/23/12	JJS	CHANGED WELL NAME
REV 2	2/25/12	JJS	MOVED WELL LOCATION

WELL LOCATION SITE QUANTITIES

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"LARRY 5301 44-12B"
250 FEET FROM SOUTH LINE AND 800 FEET FROM EAST LINE
SECTION 12, T153N, R101W, 5TH P.M., MCKENZIE COUNTY, NORTH DAKOTA

WELL SITE ELEVATION	2065.1
WELL PAD ELEVATION	2058.0

EXCAVATION	29,809
PLUS PIT	3,150
	32,958
EMBANKMENT	13,914
PLUS SHRINKAGE (30%)	4,174
	18,088
STOCKPILE PIT	3,150
STOCKPILE TOP SOIL (6")	3,664
STOCKPILE FROM PAD	8,057
DISTURBED AREA FROM PAD	4.54 ACRES

NOTE: ALL QUANTITIES ARE IN CUBIC YARDS (UNLESS NOTED)
CUT END SLOPES AT 1:1
FILL END SLOPES AT 1.5:1

WELL SITE LOCATION
800' FEL
250' FSL

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OASIS PETROLEUM NORTH AMERICA, LLC
QUANTITIES
SECTION 12, T153N, R101W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: H.J.G. | Project No.: S11-09-342
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Revision No.	Date	By	Description
REV 1	1/23/12	JJS	CHANGED WELL NAME
REV 2	2/25/12	JJS	MOVED WELL LOCATION

SURFACE DAMAGE SETTLEMENT AND RELEASE

In consideration for the sum of _____ Dollars ($ _____) paid by Oasis Petroleum North America LLC ("Oasis") to the undersigned surface owners, Larry P. Heen, a married man dealing in his sole & separate property _____ ("Owners," and together with Oasis, the "Parties") for themselves and their heirs, successors, administrators and assigns, hereby acknowledge the receipt and sufficiency of said payment as a full and complete settlement for and as a release of all claims for loss, damage or injury to the Subject Lands (as defined herein) arising out of the Operations (as defined herein) of the Linda 5301 44-12B & Larry 5301 44-12B _____ the "Well(s)" located on the approximately (6) six acre tract of land identified on the plat attached hereto as Exhibit "A" (the "Subject Lands") and which is situated on the following described real property located in McKenzie County, State of North Dakota ,to wit:

Township 153 North, Range 101 West, 5th P.M.
Section 12: SE4SE4

The Owner grant Oasis a perpetual 25 foot easement for the installation of a single pipeline from the Linda 5301 44-12B & Larry 5301 44-12B to the Kline/Bray/Foley Battery site.

This pad shall accommodate the drilling of the Linda 5301 44-12B well and the Larry 5300 44-12B well on the same location. The undersigned is fully aware that the cuttings generated from the drilling of the above described wells will be buried on site on the above described location.

The Parties agree that the settlement and release described herein does not include any claims by any third party against the Owners for personal injury or property damage arising directly out of Oasis's Operations, and Oasis agrees to indemnify, defend and hold harmless Owners against all liabilities arising from such claim (except as such claim arises from the gross negligence or willful misconduct of the Owners).

In further consideration of the payments specified herein, Oasis is hereby specifically granted the right to construct, install and operate, replace or remove pads, pits, pumps, compressors, tanks, roads, pipelines, equipment or other facilities on the above described tract of land necessary for its drilling, completion, operation and/or plugging and abandonment of the Well(s) (the "Operations"), and to the extent such facilities are maintained by Oasis for use on the Subject Lands, this agreement shall permit Oasis's use of such facilities for the Operations on the Subject Lands.

Should commercial production be established from the Well(s), Oasis agrees to pay Owners an annual amount of $ _____ per year beginning one year after the completion of the Wells and to be paid annually until the Wells is plugged and abandoned.

The Parties expressly agree and acknowledge that the payments described herein to be made by Oasis to the Owners constitute full satisfaction of the requirements of Chapter 38.11.1 of the North Dakota Century Code and, once in effect, the amended Chapter 38.11.1 of the North Dakota Century Code enacted by House Bill 1241. The Parties further expressly agree and acknowledge that the $ payment set forth above constitutes full and adequate consideration for damage and disruption required under Section 38.11.1-04 of the North Dakota Century Code, and that the payment set forth above constitutes full and adequate consideration for loss of production payments under Section 38.11.1-08.1 of the North Dakota Century Code.

Oasis shall keep the Site free of noxious weeds, and shall take reasonable steps to control erosion and washouts on the Site. Oasis shall restore the Site to a condition as near to the original condition of the Site as is reasonably possible, including the re-contouring, replacing of topsoil and re-seeding of the Site (such actions, the "Restoration").

The surface owners grant Oasis access to the Wells in the location(s) shown on the plats attached hereto as Exhibit "A".

Upon written request and the granting of a full release by the Owners of further Restoration by Oasis with respect to the affected area described in this paragraph, Oasis shall leave in place any road built by it in its Operations for the benefit of the Owners after abandoning its Operations, and shall have no further maintenance obligations with respect to any such road.

This agreement shall apply to the Parties and their respective its successors, assigns, parent and subsidiary companies, affiliates and related companies, trusts and partnerships, as well as their contractors, subcontractors, officers, directors, agents and employees.

This agreement may be executed in multiple counterparts, each of which shall be an original, but all of which shall constitute one instrument.

[Signature Page Follows.]

DATED this 4 day of April 2012

SURFACE OWNERS

Larry P. Heen

Larry P. Heen

Address: 14033 45th Street NW

Williston, ND 58801

Phone: 701-572-6991

STATE OF North Dakota }
} SS.
COUNTY OF McKenzie }

ACKNOWLEDGMENT INDIVIDUAL

BE IT REMEMBERED, That on this 4 day of April, 2012 before me, a Notary Public, in and for said County and State, personally appeared Larry P. Heen, to me known to be the identical person described in and who executed the within and foregoing instrument and acknowledged to me that he executed the same as his free and voluntary act and deed for the uses and purposes therein set forth.

IN WITNESS WHEREOF, I have hereunto set my official signature and affixed my notarial seal, the day and year first above written.

My commission expires: April 9, 2013

Thomas A. Lenihan

Notary Public

NOTARY STAMP

THOMAS A LENIHAN
Notary Public
State of North Dakota
My Commission Expires April 9, 2013

STATE OF _____)

COUNTY OF _____)

ACKNOWLEDGMENT CORPORATION

Before me the undersigned, a Notary Public, in and for said County and State, on this ____ day of _____, 2012, personally appeared _____, to me known to be the identical person who subscribed the name of the maker thereof to the foregoing instrument as its _____ and acknowledged to me that _____ executed the same as _____ free and voluntary act and deed and as the free and voluntary act and deed of such corporation, for the uses and purposes therein set forth.

Given under my hand and seal of office the day and year last above written.

My commission expires: _____

_____

Notary Public

NOTARY STAMP