

May 7, 2020

Mr. Jonathon Travis  
Ryan, LLC  
2800 Post Oak Boulevard, Suite 4200  
Houston, TX 77056

**RE: Kline Federal #5300 11-18 2B  
Lot 1 Sec. 18, T.153N., R.100W.  
McKenzie County, North Dakota  
Baker Field  
Well File No. 29334  
STRIPPER WELL DETERMINATION**

Dear Mr. Travis:

Oasis Petroleum North America LLC (Oasis) filed with the North Dakota Industrial Commission – Oil and Gas Division (Commission) on November 19, 2019 an application for a Stripper Well Determination for the above captioned well.

Information contained in the application indicates that the above mentioned well is a stripper well pursuant to statute and rule, and Oasis has elected to designate said well as a stripper well. The well produced from a well depth greater than 10000 feet and was completed after June 30, 2013. During the qualifying period, February 1, 2018 through January 31, 2019, the well produced at a maximum efficient rate or was not capable of exceeding the production threshold. The average daily production from the well was 32.8 barrels of oil per day during this period.

It is therefore determined that the above captioned well qualifies as a “Stripper Well” pursuant to Section 57-51.1-01 of the North Dakota Century Code. This determination is applicable only to the Bakken Pool in and under said well.

The Commission shall have continuing jurisdiction, and shall have the authority to review the matter, and to amend or rescind the determination if such action is supported by additional or newly discovered information. If you have any questions, do not hesitate to contact me.

Sincerely,

David J. McCusker  
Petroleum Engineer

Cc: ND Tax Department



# 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

Well File No.  
**29334**

FEB 12 2016

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

<input type="checkbox"/> Notice of Intent	Approximate Start Date
<input checked="" type="checkbox"/> Report of Work Done	Date Work Completed <b>December 11, 2015</b>
<input type="checkbox"/> 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

<input type="checkbox"/> Drilling Prognosis	<input type="checkbox"/> Spill Report
<input type="checkbox"/> Redrilling or Repair	<input type="checkbox"/> Shooting
<input type="checkbox"/> Casing or Liner	<input type="checkbox"/> Acidizing
<input type="checkbox"/> Plug Well	<input type="checkbox"/> Fracture Treatment
<input type="checkbox"/> Supplemental History	<input checked="" type="checkbox"/> Change Production Method
<input type="checkbox"/> Temporarily Abandon	<input type="checkbox"/> Reclamation
<input type="checkbox"/> Other	<b>Well is now on pump</b>

Well Name and Number <b>Kline Federal 5300 11-18 2B</b>					
Footages <b>960 F N L</b>	Qtr-Qtr <b>318 F W L</b>	Lot 1	Section <b>18</b>	Township <b>153 N</b>	Range <b>100 W</b>
Field <b>Baker</b>	Pool <b>Bakken</b>	County <b>McKenzie</b>			

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 12/11/2015 the above referenced well is on pump.

End of Tubing: 2-7/8" L-80 tubing @ 9924'

Pump: ESP @ 9924'

Company <b>Oasis Petroleum North America LLC</b>	Telephone Number <b>281-404-9436</b>	
Address <b>1001 Fannin, Suite 1500</b>		
City <b>Houston</b>	State <b>TX</b>	Zip Code <b>77002</b>
Signature 	Printed Name <b>Jennifer Swenson</b>	
Title <b>Regulatory Specialist</b>	Date <b>February 8, 2016</b>	
Email Address <b>jswenson@oasispetroleum.com</b>		

<input checked="" type="checkbox"/> Received	<input type="checkbox"/> Approved
Date <b>3-3-2016</b>	
By 	
Title <b>TAYLOR ROTH</b>	
Engineering Technician	



## 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)

Well File No.

29334

NDIC CTB No.

0

228651

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND FOUR COPIES.

Well Name and Number KLINE FEDERAL 5300 11-18 2B	Qtr-Qtr LOT1	Section 18	Township 153	Range 100	County McKenzie
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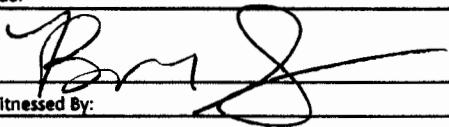
Operator Oasis Petroleum North America LLC	Telephone Number (281) 404-9573	Field BAKER
---	------------------------------------	----------------

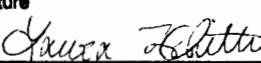
Address 1001 Fannin, Suite 1500	City Houston	State TX	Zip Code 77002
------------------------------------	-----------------	-------------	-------------------

Name of First Purchaser Oasis Petroleum Marketing LLC	Telephone Number (281) 404-9627	% Purchased 100%	Date Effective September 20, 2015
Principal Place of Business 1001 Fannin, Suite 1500	City Houston	State TX	Zip Code 77002
Field Address	City	State	Zip Code
Transporter Hiland Crude, LLC	Telephone Number (580) 616-2058	% Transported 75%	Date Effective September 20, 2015
Address P.O. Box 3886	City Enid	State OK	Zip Code 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
Power Crude Transport	25%	September 20, 2015
Other Transporters Transporting From This Lease	% Transported	Date Effective
		September 20, 2015
Comments		

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.	Date October 22, 2015
Signature 	Printed Name Brianna Salinas Title Marketing Assistant

Above Signature Witnessed By:	Printed Name	Title
Signature 	Laura Whitten	Marketing Analyst II



FOR STATE USE ONLY

Date Approved OCT 27 2015
By Erica Goberson
Title Oil & Gas Production Analyst



# 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)



Well File No.  
**29334**

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

Designate Type of Completion

- |  |                                   |  |  |   |  |
|--|-----------------------------------|--|--|---|--|
| <input checked="" type="checkbox"/> Oil Well | <input type="checkbox"/> EOR Well | <input type="checkbox"/> Recompletion      | <input type="checkbox"/> Deepened Well | <input type="checkbox"/> Added Horizontal Leg | <input type="checkbox"/> Extended Horizontal Leg |
| <input type="checkbox"/> Gas Well            | <input type="checkbox"/> SWD Well | <input type="checkbox"/> Water Supply Well | <input type="checkbox"/> Other:        |   |  |

Well Name and Number

**Kline Federal 5300 11-18 2B**

Spacing Unit Description

**Sec. 17/18 T153N R100W**

Operator

**Oasis Petroleum North America**

Telephone Number

**(281) 404-9591**

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	960 F N L	318 F N WL	Qtr-Qtr	Section	Township	Range	County
Spud Date	2.25-15	Date TD Reached	LOT1	18	153 N	100 W	McKenzie

*Spud Date 2.25-15 March 29, 2015 Date TD Reached April 16, 2015 Drilling Contractor and Rig Number Xtreme 21 KB Elevation (Ft) 2078 Graded Elevation (Ft) 2053*

Type of Electric and Other Logs Run (See Instructions)

**MWD/GR from KOP to TD; CBL from int. TD to surface**

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

Well Bore	String Type	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	13 3/8	0	2135	17 1/2	54.5			1226	0
Vertical Hole	Intermediate	7	0	11024	8 3/4	32			825	2150
Lateral1	Liner	4 1/2	10193	20445	6	13.5			500	10193

## PERFORATION & OPEN HOLE INTERVALS

Well Bore	Well Bore TD Drillers Depth (MD Ft)	Completion Type	Open Hole/Perforated Interval (MD, Ft)		Kick-off Point (MD Ft)	Top of Casing Window (MD Ft)	Date Perfd or Drilled	Date Isolated	Isolation Method	Sacks Cement
			Top	Bottom						
Lateral1	20450	Perforations	11024	20445	10225		07/16/2015			
	17597			17597						
ST 1	20450		17420	20445						

## PRODUCTION

Current Producing Open Hole or Perforated Interval(s), This Completion, Top and Bottom, (MD Ft) <b>Lateral 1- 11024' to 20445'</b>					Name of Zone (If Different from Pool Name)			
Date Well Completed (SEE INSTRUCTIONS) <b>September 20, 2015</b>		Producing Method <b>Flowing</b>		Pumping-Size & Type of Pump			Well Status (Producing or Shut-In) <b>Producing</b>	
Date of Test <b>09/20/2015</b>	Hours Tested <b>24</b>	Choke Size <b>48 /64</b>	Production for Test	Oil (Bbls) <b>661</b>	Gas (MCF) <b>498</b>	Water (Bbls) <b>4579</b>	Oil Gravity-API (Corr.) <b>42.0 °</b>	Disposition of Gas Sold
Flowing Tubing Pressure (PSI)		Flowing Casing Pressure (PSI)		Calculated 24-Hour Rate	Oil (Bbls) <b>661</b>	Gas (MCF) <b>498</b>	Water (Bbls) <b>4579</b>	Gas-Oil Ratio <b>753</b>

## GEOLOGICAL MARKERS

## **PLUG BACK INFORMATION**

## **CORES CUT**

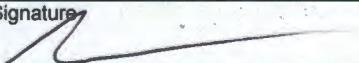
Top (Ft)	Bottom (Ft)	Formation	Top (Ft)	Bottom (Ft)	Formation

## Drill Stem Test

### Well Specific Stimulation

Date Stimulated 07/16/2015	Stimulated Formation Bakken		Top (Ft) 11024	Bottom (Ft) 20445	Stimulation Stages 36	Volume 209640	Volume Units Barrels
Type Treatment Sand Frac	Acid %	Lbs Proppant 4168220	Maximum Treatment Pressure (PSI) 9141		Maximum Treatment Rate (BBLS/Min) 73.0		
Details 100 Mesh White: 295320 40/70 white: 1555360 30/50 White: 1740010 30/50 Resin Coated: 504920 20/40 Resin Coated: 69610							
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 <a href="mailto:jswenson@oasispetroleum.com">jswenson@oasispetroleum.com</a>	Date 10/14/2015
Signature 	Printed Name Jennifer Swenson	Title Regulatory Specialist

Industrial Commission of North Dakota  
Oil and Gas Division

Well or Facility No

**29334**

Verbal Approval To Purchase and Transport Oil

Tight Hole Yes

**OPERATOR**

Operator <b>OASIS PETROLEUM NORTH AMERICA LL</b>	Representative <b>Todd Hanson</b>	Rep Phone <b>(701) 577-1632</b>
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**WELL INFORMATION**

Well Name <b>KLINE FEDERAL 5300 11-18 2B</b>	Inspector <b>Richard Dunn</b>
Well Location QQ Sec Twp Rng <b>LOT1 18 153 N 100 W</b>	County <b>MCKENZIE</b>
Footages 960 Feet From the N Line 318 Feet From the W Line	Field <b>BAKER</b>
	Pool <b>BAKKEN</b>
Date of First Production Through Permanent Wellhead	<b>This Is Not The First Sales</b>

**PURCHASER / TRANSPORTER**

Purchaser <b>Kinder Morgan</b>	Transporter <b>Kinder Morgan</b>
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**TANK BATTERY**

Single Well Tank Battery Number :
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**SALES INFORMATION This Is Not The First Sales**

ESTIMATED BARRELS TO BE SOLD	ACTUAL BARRELS SOLD	DATE
1500 BBLS	BBLS	
BBLS	BBLS	
BBLS	BBLS	
BBLS	BBLS	
BBLS	BBLS	
BBLS	BBLS	
BBLS	BBLS	
BBLS	BBLS	
BBLS	BBLS	

**DETAILS**

Must E-Mail or Call Inspector at 701-770-3554/rsdunn@nd.gov on first date of sales and report amount sold, date sold, and first date of production through the permanent wellhead. Must also forward Forms 6 & 8 to State prior to reaching 15000 Bbl estimate or no later than required time frame for submitting those forms.
---

Start Date	<b>8/25/2015</b>
Date Approved	<b>8/25/2015</b>
Approved By	<b>Richard Dunn</b>



# SUNDY 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.

29334



PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date <b>July 14, 2015</b>	<input type="checkbox"/> Drilling Prognosis	<input type="checkbox"/> Spill Report
<input type="checkbox"/> Report of Work Done	Date Work Completed	<input type="checkbox"/> Redrilling or Repair	<input type="checkbox"/> Shooting
<input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03.		<input type="checkbox"/> Casing or Liner	<input type="checkbox"/> Acidizing
Approximate Start Date		<input type="checkbox"/> Plug Well	<input type="checkbox"/> Fracture Treatment
		<input type="checkbox"/> Supplemental History	<input type="checkbox"/> Change Production Method
		<input type="checkbox"/> Temporarily Abandon	<input type="checkbox"/> Reclamation
		<input type="checkbox"/> Other	<b>Waiver from tubing/packer requirement</b>

Well Name and Number <b>Kline Federal 5300 11-18 2B</b>					
Footages <b>960 F N L</b>	<b>318 F W L</b>	<b>Qtr-Qtr LOT1</b>	<b>Section 18</b>	<b>Township 153 N</b>	<b>Range 100 W</b>
Field <b>Baker</b>	Pool <b>Bakken</b>	County <b>McKenzie</b>			

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 variance to NDAC 43-02-03-21 for the tubing/packer requirement: 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# and 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 flowback 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 <b>Oasis Petroleum North America LLC</b>		Telephone Number <b>281-404-9436</b>	
Address <b>1001 Fannin, Suite 1500</b>			
City <b>Houston</b>		State <b>TX</b>	Zip Code <b>77002</b>
Signature 		Printed Name <b>Jennifer Swenson</b>	
Title <b>Regulatory Specialist</b>		Date <b>July 14, 2015</b>	
Email Address <b>jswenson@oasispetroleum.com</b>			

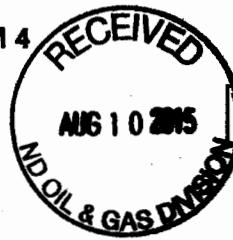
### FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <i>July 31, 2015</i>	
By <i>J.M. Swenson</i>	
Title <b>PETROLEUM ENGINEER</b>	



# SUNDY 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.  
**29334**

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

Notice of Intent

Approximate Start Date

**August 9, 2015**

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

Spill Report

Redrilling or Repair

Shooting

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

**Kline Federal 5300 11-18 2B**

Footages	Qtr-Qtr	Section	Township	Range
960 F N L	318 F W L	LOT 1	18	153 N 100 W
Field	Pool	County		
Baker	BAKKEN	McKenzie		

## 24-HOUR PRODUCTION RATE

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

## Name of Contractor(s)

Address

City

State

Zip Code

## DETAILS OF WORK

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

**This well has not been completed**

*OFF CONFIDENTIAL 2/10/16.*

Company <b>Oasis Petroleum North America LLC</b>	Telephone Number <b>281-404-9436</b>	
Address <b>1001 Fannin, Suite 1500</b>		
City <b>Houston</b>	State <b>TX</b>	Zip Code <b>77002</b>
Signature 	Printed Name <b>Jennifer Swenson</b>	
Title <b>Regulatory Specialist</b>	Date <b>August 10, 2015</b>	
Email Address <b>jswenson@oasispetroleum.com</b>		

## FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <b>8/12/15</b>	
By 	
Title <b>Engineering Technician</b>	



**Oasis Petroleum North America, LLC.**

**Kline Federal 5300 11-18 2B**

**960' FNL & 318' FWL**

**Lot 1 Section 18, T153N, R100W**

**Baker Field / Middle Bakken**

**McKenzie County, North Dakota**

**BOTTOM HOLE LOCATION:**

**111.86' south & 9,932.10' east of surface location or approx.  
1,071.86 ' FNL & 296.01' FEL, NE NE Section 17, T153N, R100W**

**Prepared for:**

Curtis Johnson  
Oasis Petroleum  
North America, LLC.  
1001 Fannin, Suite 1500  
Houston, TX 77002

**Prepared by:**

Dillon Johnson, Matt Hegland,  
Ryan O'Donnell  
PO Box 80507; Billings, MT 59108  
(406) 259-4124  
[geology@sunburstconsulting.com](mailto:geology@sunburstconsulting.com)  
[www.sunburstconsulting.com](http://www.sunburstconsulting.com)

# WELL EVALUATION

*Oasis Petroleum North America, LLC  
Kline Federal 5300 11-18 2B*



**Figure 1.** Xtreme 21 at the Oasis Petroleum North America, LLC *Kline Federal 5300 11-18 2B* well during June of 2015 in McKenzie County, North Dakota.

## INTRODUCTION

The Oasis Petroleum, North America LLC, *Kline Federal 5300 11-18 2B* well is located approximately 4 miles south of Williston in McKenzie County, North Dakota [Lot 1 Section 18, T153N, R100W]. The *Kline Federal 5300 11-18 2B* is a horizontal, Middle Bakken Member well drilled by Xtreme rig #21 (**Figure 1**). The lateral section consists of one west to east trending, 9,932' long wellbore penetrating underneath Lake Sakakawea. The surface, vertical and curve sections were previously drilled, and this evaluation will consist of primarily operations and observations made during the lateral section.

## ENGINEERING

The *Kline Federal 5300 11-18 2B* surface, vertical and curve sections were drilled earlier in 2015 by separate drilling rig. Xtreme 21 returned to location in May of 2015 to drill the laterals of the *Kline Federal 5300 11-18 2B*, 3T, 2B, and re-entered the *Kline Federal 5300 11-18 2B* on May 30, 2015.

Drilling began with a 6" Halliburton PDC bit, Ryan Directional Services MWD tools, and 1.5° adjustable Baker Hughes mud motor. This assembly drilled to 15,484' MD where a trip was made due to low penetration rates. Another complete assembly drilled to 17,597' MD, where at 23:30 CDT on June 2, 2015 the wellbore made contact with the upper Bakken shale at 17,540' MD, 10,766' TVD (-8,698'). A sidetrack was initiated at 17,420' MD, using the same assembly, and successfully kicked off. After the sidetrack, drilling continued to 20,149' MD where another trip was made due to slowing penetration rates. A new motor was picked up and the well later reached its total depth at 20,450' MD, at 08:45 CDT on June 6, 2015, generating an exposure of 9,568' linear feet of 6" hole through the Middle Bakken Member. The bottom hole location lies 111.86' south & 9,932.10' east of surface location or approximately 1,071.86' FNL & 296.01' FEL, NE NE Section 17, T153N, R100W.

## **GEOLOGY**

### **Lithology**

Sunburst Geology, Inc. was not present for the vertical and curve sections, therefore no lithology is discussed prior to the Middle Bakken Member.

### ***Middle Bakken Member***

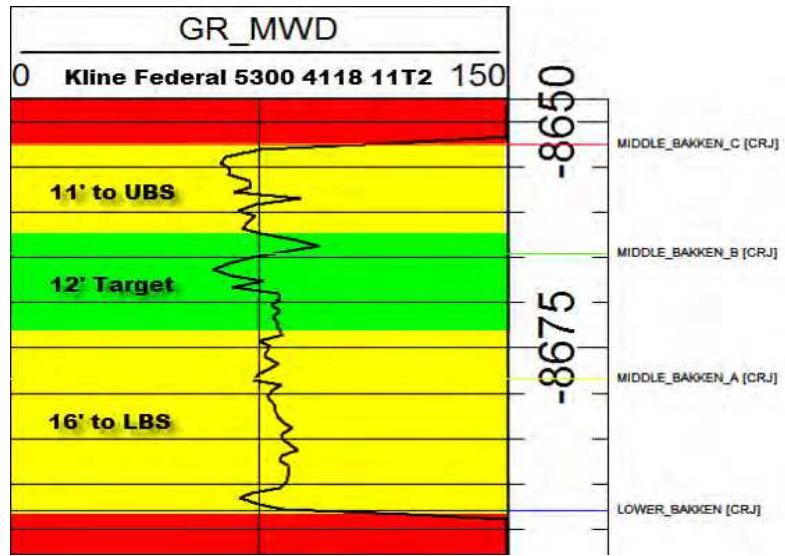
The Middle Bakken Member was penetrated at 10,882' MD, 10,727' TVD (-8,659'). The middle member in this locality is generally composed of a light gray-brown to light gray, very fine to fine grained, moderately to well cemented, calcite cemented silty sandstone. It was apparent that samples observed higher in the member were often light brown, off white to cream colored, while the lower portion of the member was predominantly darker, gray-brown. Throughout the lateral, trace amounts of both disseminated and nodular pyrite were observed. Samples also displayed *trace, poor to fair intergranular porosity* and *trace spotty and occasionally even, light brown oil staining* (**Figure 2**).



**Figure 2.** Middle Bakken silty sandstone, observed in the upper portion of the target interval.

## Geosteering

The potential pay zone for the *Kline Federal 5300 11-18 2B* was identified by evaluating gamma data collected while drilling the *Oasis Petroleum, Kline Federal 5300 41-18 11 T2*, and the steering practices from the *Oasis Petroleum, Kline Federal 5300 11-18 5B*. The target was determined to be 12' thick, and located 12' below the Upper Bakken Shale and 20' above the Lower Bakken Shale. The Middle Bakken Member displayed gamma counts ranging from 70 to 140 (API). The target was identified by having a higher gamma marker at the very top of target, moderate markers throughout the target zone and a cool marker at the base (**Figure 3**). Despite a single, upper shale strike, geologists were successful in exposing 9,568' of potentially productive Middle Bakken Member the well bore. The well was within the targeted zone for 67% of the lateral.



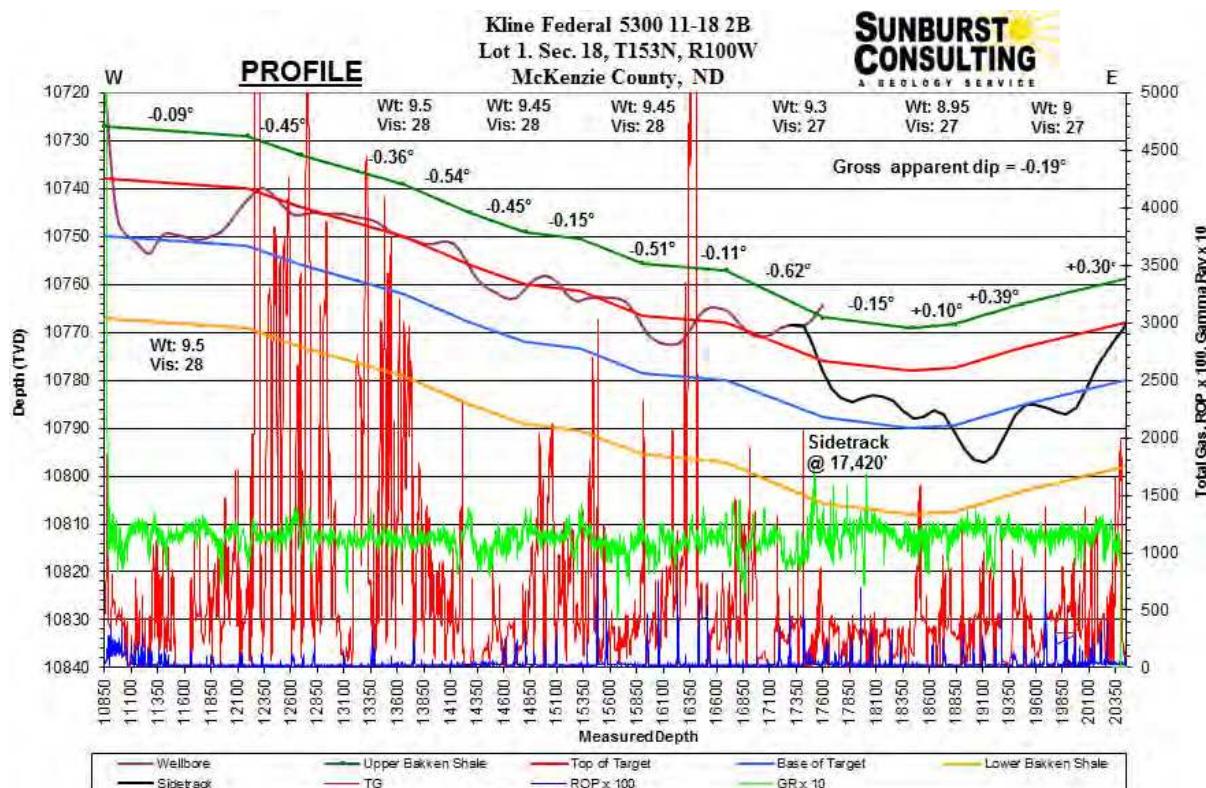
**Figure 3.** Gamma characteristics observed throughout the Middle Bakken Member while drilling the *Oasis Petroleum, Kline Federal 5300 41-18 11 T2*.

## Shale Strike Summary

At measured depths 16,750' through 16,820', erratic high gamma counts were logged. This high count anomaly was interpreted as being the warm gamma associated with being near the top of target. Given the well bore was descending at inclinations ranging from 88.9° to 88.2° (16,750' through 16,820'), it was anticipated that this higher gamma would repeat as the well bore leveled off or slowly rose in zone. As the wells descent was controlled and the inclination raised above 90° (~17,050' MD), the dip profile displayed the well bore being ~3' from the top of target (13.5' from base of UBS). From this point forward the well bore slowly rose in section and geologists did not see any great concern with the well bore position, given that we had yet to see any warm gamma signatures associated with the top of target. In addition, a majority of the wells within this two-section corridor, drilling east, had a synclinal feature after the halfway point of the lateral. Between the surveys at 17,395' and 17,489' MD, the inclination increased from 89.9° to 91.7°. While sliding down to correct the ascending inclination gamma counts rose. It was at this time that decision to stop and circulate a bottoms-up was made. Samples from the bottoms up confirmed the Upper Bakken Shale had been contacted.

## Gas and Oil Shows

Hydrocarbon shows at the beginning of the lateral were relatively low. During the first ~1,500' of lateral operations the well bore remained primarily near the base if not below the target zone. While drilling this interval background gasses rarely exceeded 1,000 units, but connection, survey and slide gasses regularly exceeded 1,000 units. Oil show throughout this period of drilling was moderate, with most cuttings reacting slowly with a *pale yellow diffuse cut fluorescence*. As the well bore reached the top of the target interval hydrocarbon shows increased. These brief periods of higher gas shows occurred three times while drilling along the upper portion of the target zone (12,250'- 12,510' MD, 13,200'-13,950' MD, and 16,300'- 16,430' MD) (**Figure 4**). Although these optimistic shows were intermittent, samples displayed a more promising oil staining than that observed in lower samples. Samples along the upper portion displayed a light to *medium brown even oil staining*. Fluorescent cuts were also slightly more promising than those observed lower in zone were. Cuts were described as: *moderate, pale yellow, streaming cut fluorescence*. While drilling from 11,510' to 11,656' MD there were issues with the gas detection, this caused low gas readings. When the system was repaired, gas shows immediately climbed. For the remainder of the well, despite of the well being high or low in zone, background gasses were low (400-1,200 units), while connection gasses occasionally exceeded 1,300 units. Unfortunately, due to heavy contamination from lubricants there were no cuts performed after 14,950' MD. Although hydrocarbon shows remained consistent despite of position within the target zone, the most promising oil staining remained in the upper most portion of the target interval.



**Figure 4.** Cross-sectional interpretation of the *Kline Federal 5300 11-18 2B* borehole with total gas units and estimated dip based on lithology, MWD data, drill rate, and regional structural data.

## **SUMMARY**

The Oasis Petroleum North America, LLC, *Kline Federal 5300 11-18 2B* lateral section was drilled by Xtreme 21, from re-entry to total depth, in 7 days. The well reached a total depth of 20,450' MD on June 6, 2015. Geologic data, hydrocarbon gas measurements, and sample examination indicate an encouraging Middle Bakken Member well. Multiple sections of higher gas were recorded through the lateral section. Positive connection and survey shows, exceeding 1,000 units, were recorded throughout the lateral. Samples from the target zone consisted of light brown to off white, silty sandstone and yielded a *moderate, pale yellow, streaming cut fluorescence* and poor to fair intergranular porosity. The well was within the targeted zone for 67% of the lateral and exposed 9,568' of potentially productive Middle Bakken Member to the well bore. The well currently awaits completion operations.

Respectfully submitted,  
Ryan O'Donnell  
Well Site Geologist  
Sunburst Consulting, Inc.  
June 6, 2015

# **WELL DATA SUMMARY**

**OPERATOR:** Oasis Petroleum North America, LLC.

**ADDRESS:** 1001 Fannin, Suite 1500  
Houston, TX 77002

**WELL NAME:** Kline Federal 5300 11-18 2B

**API #:** 33-053-06243-00-00

**WELL FILE #:** 29334

**SURFACE LOCATION:** 960' FNL & 318' FWL  
Lot 1 Section 18, T153N, R100W

**FIELD/ OBJECTIVE:** Baker Field / Middle Bakken

**COUNTY, STATE** McKenzie County, North Dakota

**BASIN:** Williston

**WELL TYPE:** Middle Bakken Horizontal

**ELEVATION:** GL: 2,052'  
KB: 2,068'

**RE-ENTRY DATE:** May 30, 2015

**BOTTOM HOLE LOCATION:** 111.86' south & 9,932.10' east of surface location or approx.  
1,071.86 ' FNL & 296.01' FEL, NE NE Section 17, T153N, R100W

**CLOSURE COORDINATES:** Closure Azimuth: 90.65°  
Closure Distance: 9,932.73'

**TOTAL DEPTH / DATE:** 20,450' on June 6, 2015  
67% within target interval

**TOTAL DRILLING DAYS:** 8 Days

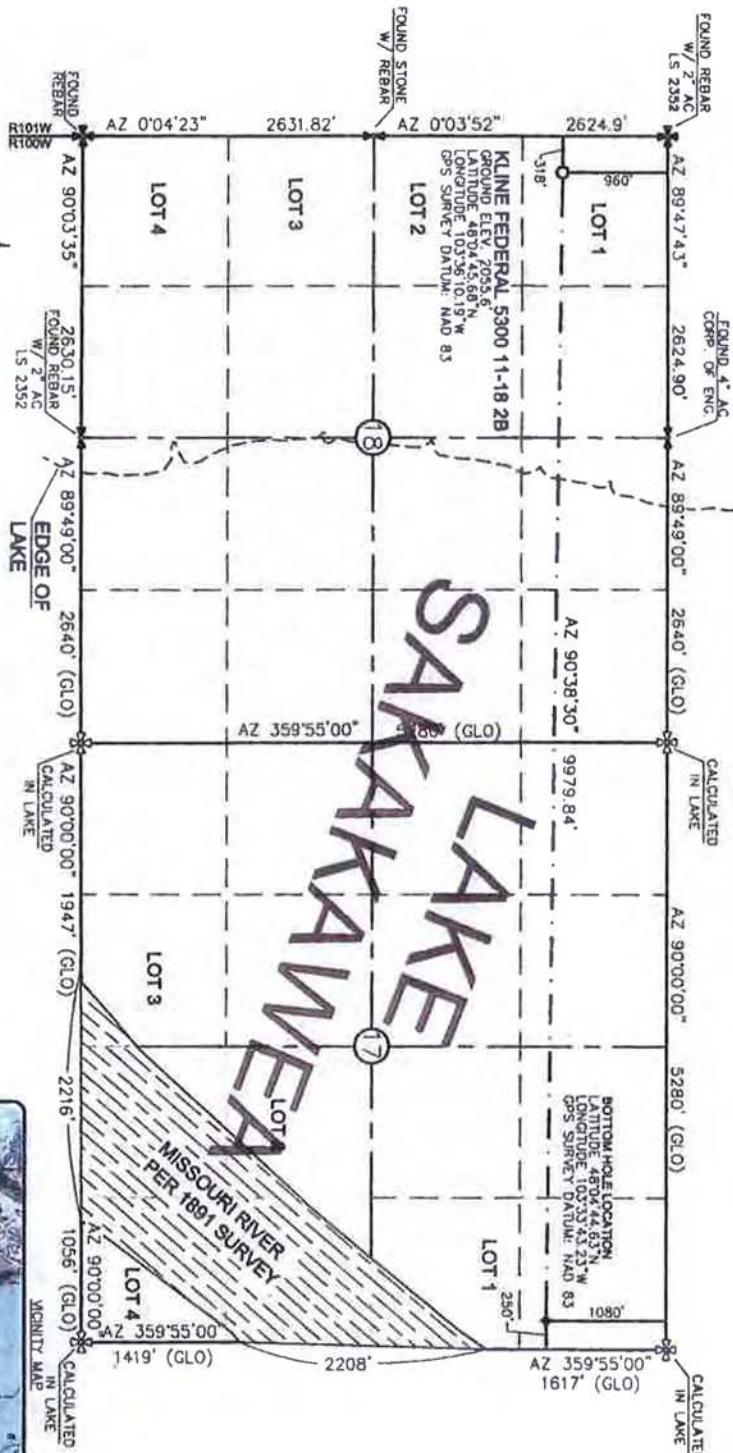
**CONTRACTOR:** Xtreme #21

<u>PUMPS:</u>	Continental-Emsco F1600 (12" stroke length; 5 1/2" liners) Output: 0.0838 bbls/stk at 95% efficiency
<u>TOOLPUSHERS:</u>	Josh Barkell, Allen Franklin
<u>FIELD SUPERVISORS:</u>	Dan Sandaker, Marty Amsbaugh, Miles Gordon
<u>CHEMICAL COMPANY:</u>	Mi Swaco
<u>MUD ENGINEER:</u>	Justin McNicholas
<u>MUD TYPE:</u>	Salt water in lateral
<u>MUD LOSSES:</u>	Not tracked
<u>PROSPECT GEOLOGIST:</u>	Curtis Johnson
<u>WELLSITE GEOLOGISTS:</u>	Dillon Johnson, Matt Hegland, Ryan O'Donnell
<u>GEOSTEERING SYSTEM:</u>	Sunburst Digital Wellsite Geological System
<u>ROCK SAMPLING:</u>	50' from 11,070' - 8,614'
<u>SAMPLE EXAMINATION:</u>	Binocular microscope & fluoroscope
<u>SAMPLE CUTS:</u>	Trichloroethylene
<u>GAS DETECTION:</u>	MSI (Mudlogging Systems, Inc.) TGC - total gas with chromatograph Serial Number(s): ML-488
<u>DIRECTIONAL DRILLERS:</u>	RPM Consulting, Inc. Marty Amsbaugh, Bruce Jorgenson, Derrick Ramsdell
<u>MWD:</u>	Gyro/data in vertical in curve Ryan Directional Service in lateral David Foley, David Unger
<u>CASING:</u>	Surface: 9 5/8" 36# J-55 set to 2,172' Intermediate: 7" 29# & 32# HCP-110 set to 11,024'
<u>SAFETY/ H<sub>2</sub>S MONITORING:</u>	Oilind Safety

**WELL LOCATION PLAT**

**WELL LOCATION FLAT**  
OASIS PETROLEUM NORTH AMERICA, LLC  
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

600 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE  
SECTION 19, TICSON ROAD, THE 9TH MILE, HOWARD COUNTY, MARYLAND.

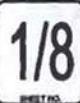


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Ph (406) 233-8917  
Fax (406) 233-8918  
[www.intertekengineering.com](http://www.intertekengineering.com)

GASIS PETROLEUM NORTH AMERICA, LLC	
WELL LOCATION PLAT	
SECTION 18, T15S, R100W	
MCKENZIE COUNTY, NORTH DAKOTA	

By	Description
1	WATER WELLS
2	ANNEED LAUNDRY
3	WATER CLOSER BY TO PWD
4	SHOWER WELL RELOCATE
5	CHANGES WILL REQUIRE A ZON

SECTION PREVIEW

SECTION BREAKDOWN

CLASS PERIODIC RENTALS, LLC  
101 EAMIN BLUFF RD., HANSTON, TX 78055

950 FEET FROM NORTH LINE AND 310 FEET FROM WEST LINE



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OBSERVATIONS. THE ORIGINAL SURVEY OF THIS  
AREA FOR THE GENERAL LAND OFFICE (G.L.O.)  
WAS 1891. THE CORNERS FOUND HERE AS  
INDICATED AND ALL OTHERS ARE COMPUTED FROM  
THOSE CORNERS FOUND AND BASED ON G.L.O.  
DATA. THE MAPPING AND FOR THIS AREA IS

**MONUMENT - NOT RECOVERED**

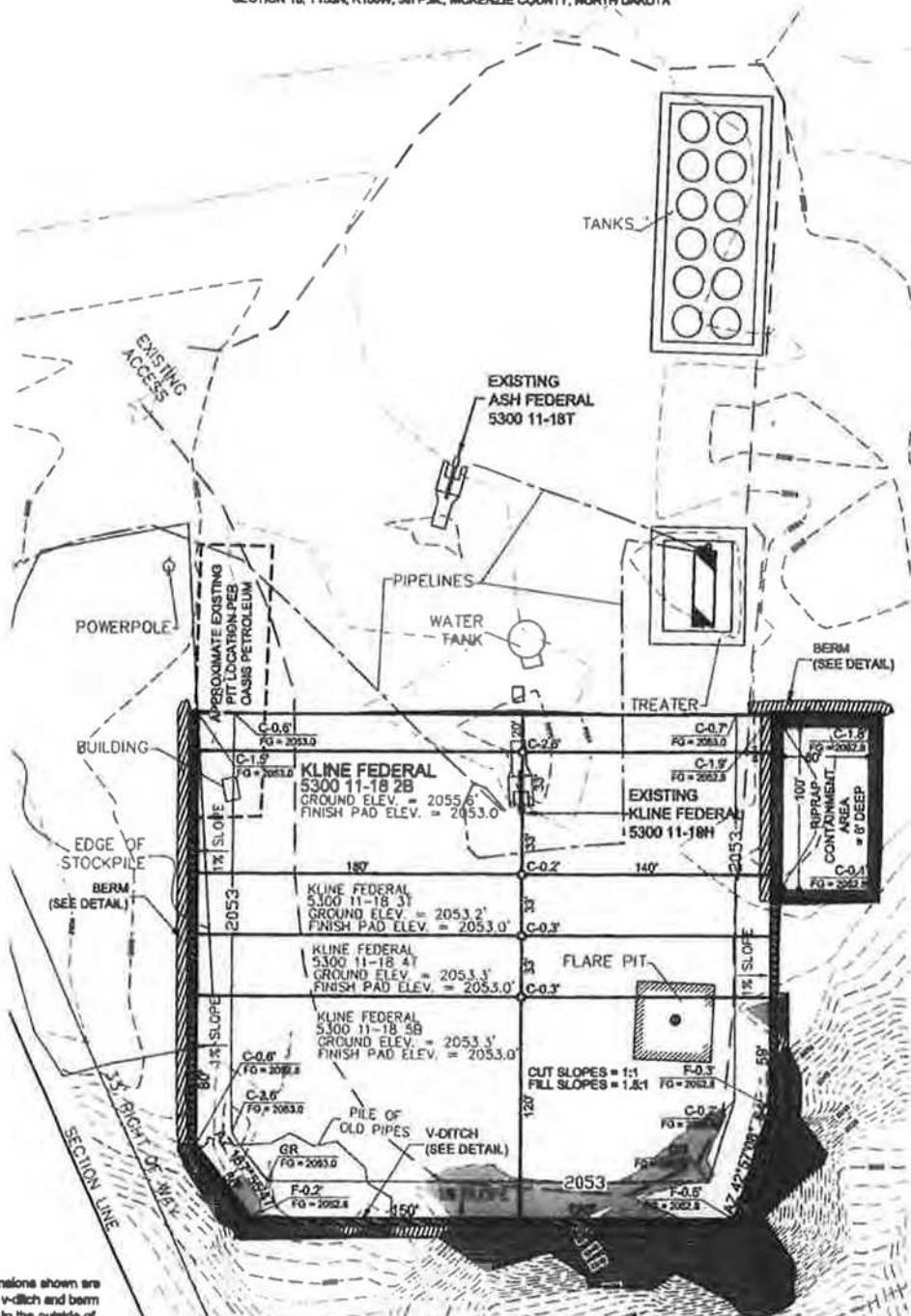
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PAD LAYOUT

OASIS PETROLEUM NORTH AMERICA, LLC  
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

"KLINE FEDERAL 5300 11-18 2B"

980 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE  
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

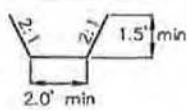


NOTE 1: Pad dimensions shown are to usable area, the v-ditch and berm areas shall be built to the outside of the pad dimensions.

NOTE 2: All existing facilities to be removed on construction expansion.

NOTE 3: Cuttings will be hauled to approved disposal site.

V-DITCH DETAIL



Proposed Contours  
Original Contours

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

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0  
1" = 50'

3/8



Interstate Engineering, Inc.  
P.O. Box 649  
428 East Main Street  
Mandan, Montana 59340  
Ph: (406) 723-8117  
Fax: (406) 723-0516  
[www.interstateengineering.com](http://www.interstateengineering.com)

OASIS PETROLEUM NORTH AMERICA, LLC

PAD LAYOUT

SECTION 18, T153N, R100W

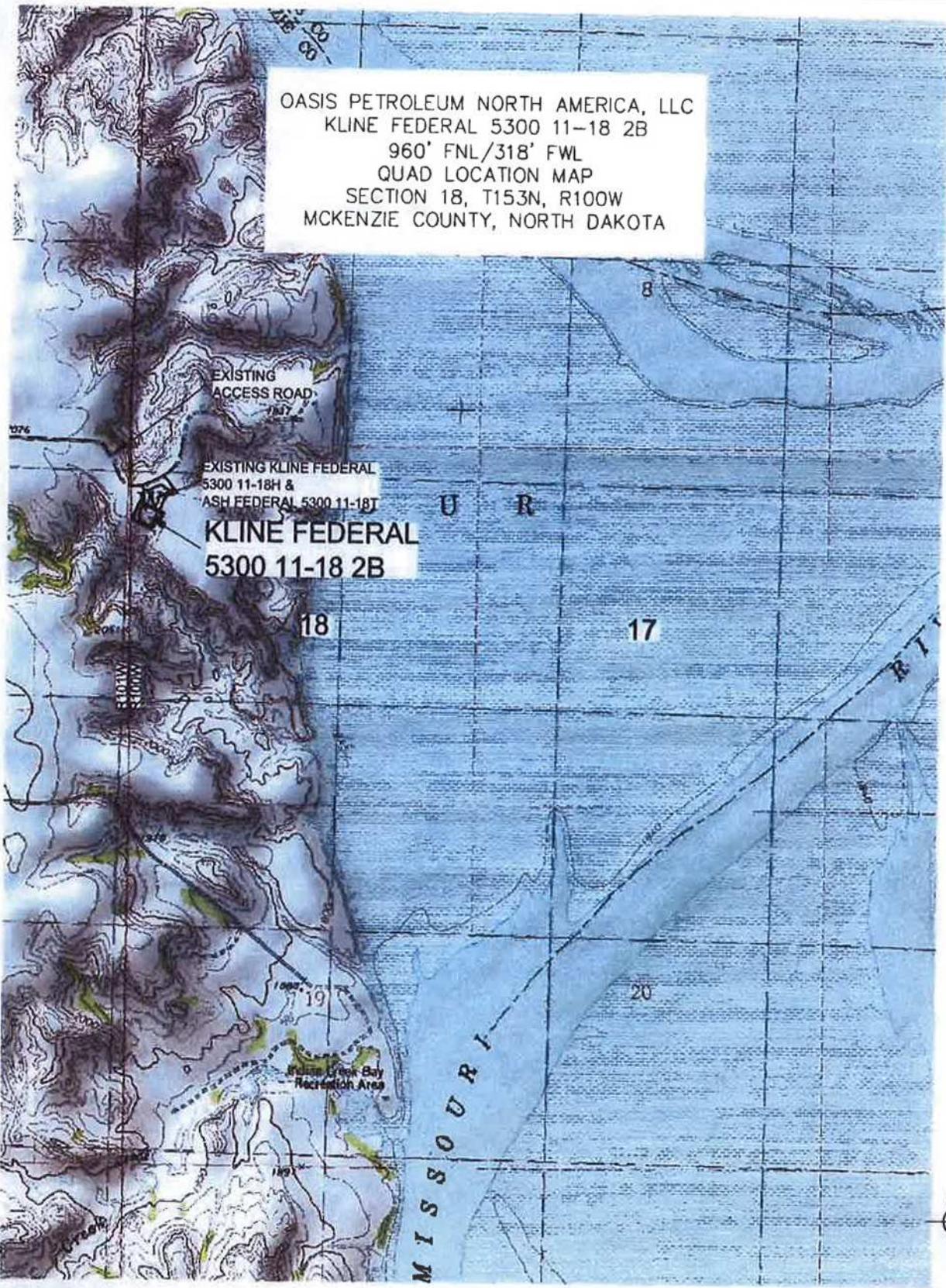
MCKENZIE COUNTY, NORTH DAKOTA

Owner Sp.: SASH  
Checked By: D.R.E.

Project No.: 204-002

Date: 1/29/15

Number	Date	By	Description
REV 1	1/29/15	DR	OWNER HILLS
REV 2	1/29/15	DR	REMOVED LAYERS
REV 3	1/29/15	DR	ADDED CUTTING HT TO PAD
REV 4	1/29/15	DR	CHANGED HILL HILLS IN DR
REV 5	1/29/15	DR	CHANGED HILL HILLS IN DR



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5/8



Professionals you need, people you trust.

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 P.O. Box 648  
 428 East Main Street  
 Sidney, Montana 59270  
 Ph: (406) 433-5617  
 Fax: (406) 433-5618  
[www.interstateeng.com](http://www.interstateeng.com)  
One office in Missoula, South Central and South Eastern Montana

OASIS PETROLEUM NORTH AMERICA, LLC  
 QUAD LOCATION MAP  
 SECTION 18, T153N, R100W  
 MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No.: S14-08-127  
 Checked By: D.D.K. Date: APRIL 2014

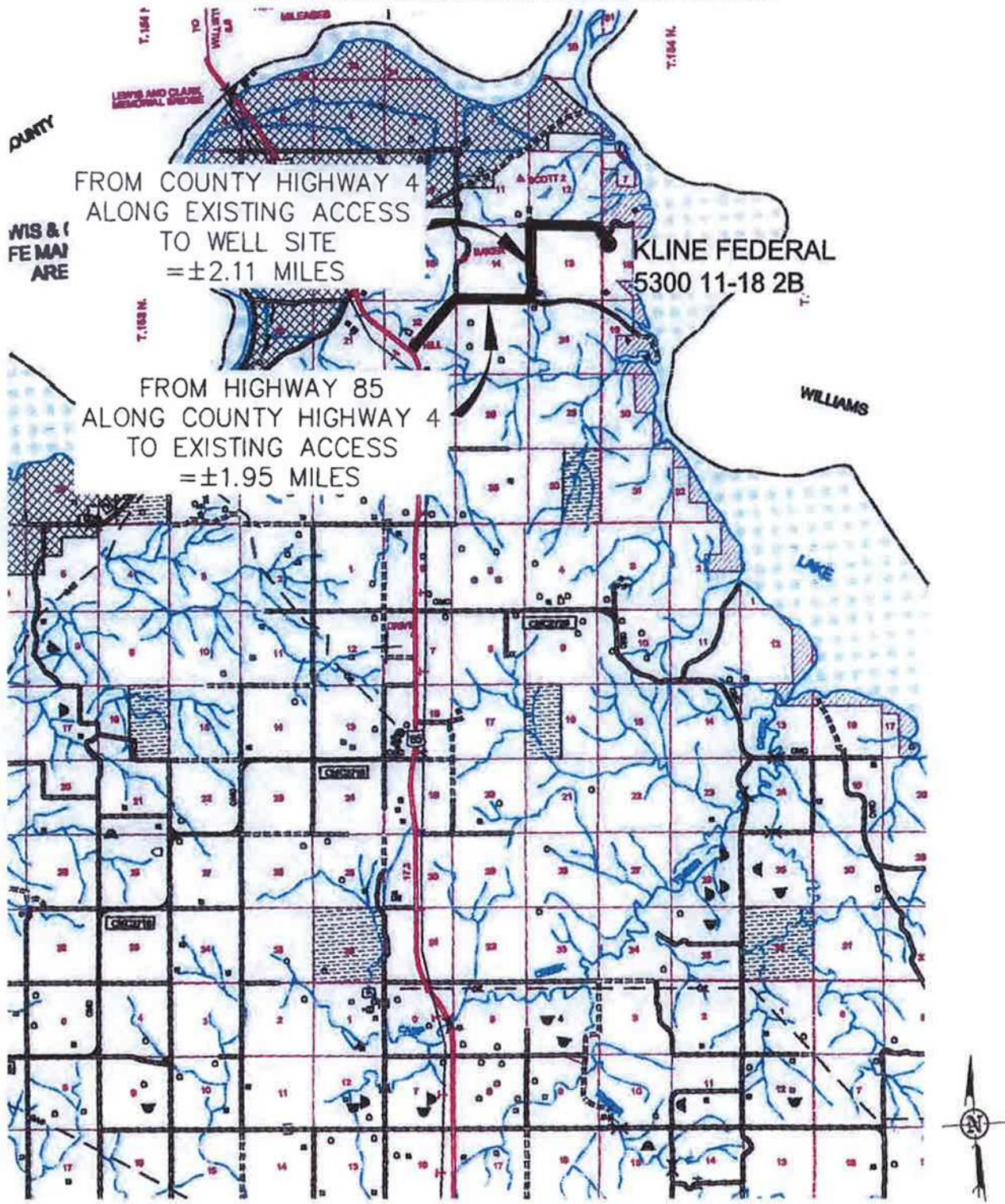
Revision No.	Date	By	Description
REV 1	4/16/14	B.H.H.	HOOD WELL
REV 2	4/29/14	AHS	REVISED LATITUDE
REV 3	5/8/14	AHS	ADDED EXISTING PVT TO PWD LAYOUT
REV 4	7/20/14	AHS	CHANGED WELL NAME & SPN
REV 5	1/27/15	B.H.H.	CHANGED WELL NAMES & SPN

# COUNTY ROAD MAP

OASIS PETROLEUM NORTH AMERICA, LLC  
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

"KLINE FEDERAL 5300 11-18 2B"

960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE  
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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[www.interstateengineering.com](http://www.interstateengineering.com)  
Other offices in Montana, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC  
COUNTY ROAD MAP  
SECTION 18, T153N, R100W  
MCKENZIE COUNTY, NORTH DAKOTA

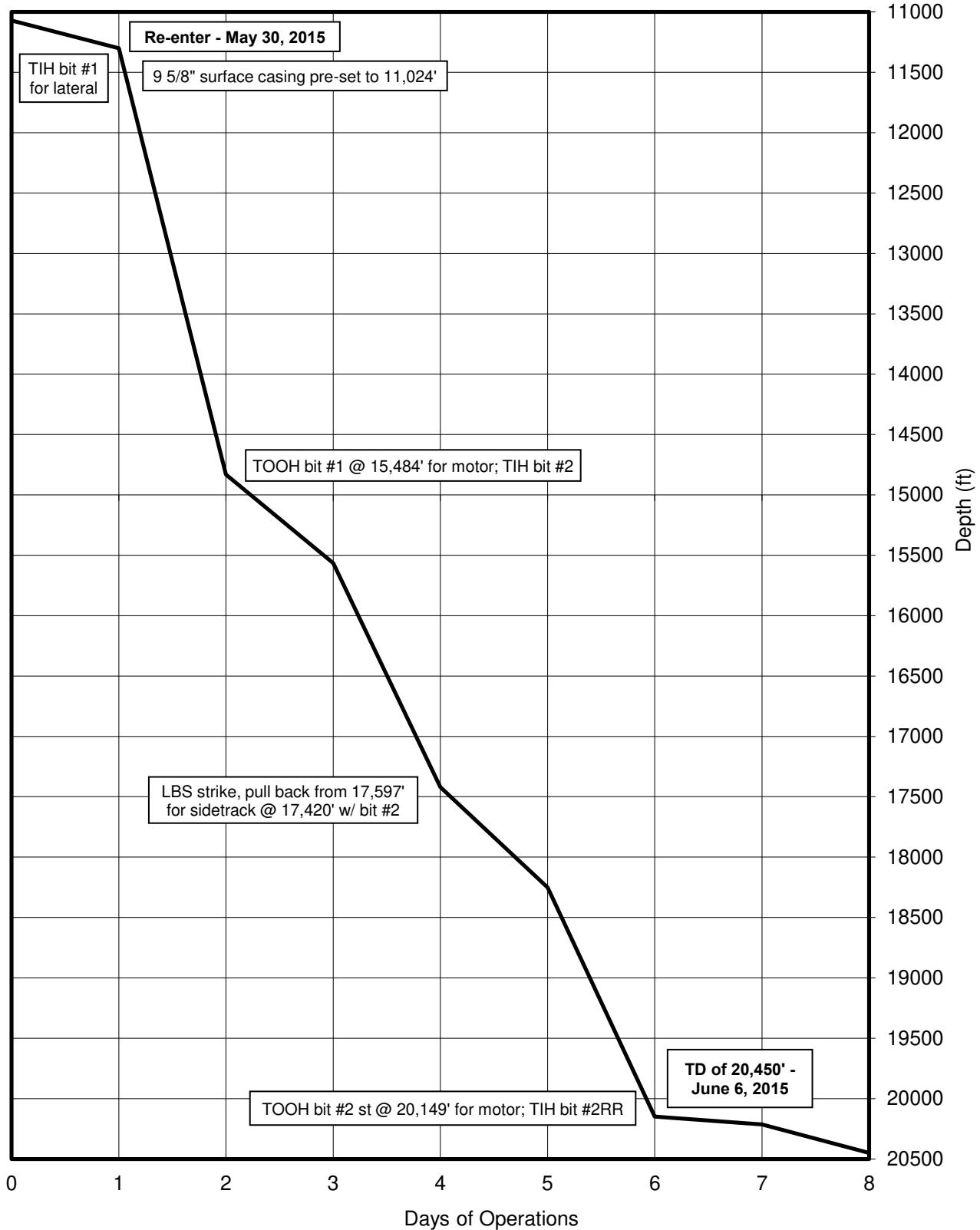
Drawn By: J.H.A. Project No.: 514-09-127  
Checked By: D.O.X. Date: APRIL 2014

Revision No.	Date	By	Description
REV 1	4/12/14	JHS	Moved wells
REV 2	4/24/14	JHS	Revised layout
REV 3	4/26/14	JHS	Moved existing RT to PWD layout
REV 4	4/26/14	JHS	Changed well name & IDs
REV 5	1/27/15	JHS	Changed well names & IDs

# TIME VS. DEPTH

Oasis Petroleum North America, LLC.

Kline Federal 5300 11-18 2B



# MORNING REPORT SUMMARY

Day	Date 2015	Depth (0600 Hrs)	24 Hr Footage	Bit #	WOB (Klbs RT)	RPM (RT)	WOB (Klbs MM)	RPM (MM)	PP	SPM 1	SPM 2	GPM	24 Hr Activity Summary		Formation
													Prep to skid rig.	Skid rig. Test BOP. Pick up BHA. TH. Slip and cut. Drill out cement. FIT test. Drill F/11,070'-11,265'.	
0	5/30	11,070'	-	-	-	-	-	-	-	-	-	-	Prepare to skid rig.	Middle Bakken	
1	5/31	11,300'	230	1	10	44	15	328	3300	0	89	318	Drill F/11,300'-12,882'. Lubricate rig. Drill F/12,882'-14,830'.	Middle Bakken	
2	6/1	14,830'	3530	1	14	45	28	334	4150	0	90	324	Drill F/11,300'-12,882'. Lubricate rig. Drill F/12,882'-14,830'.	Middle Bakken	
3	6/2	15,565'	735	2	12	44	67	334	4130	0	90	324	Drill F/14,830'-15,484'. Pump dry pill. TOOH. Pick up new BHA. TH. Drill F/15,484'-15,565'.	Middle Bakken	
4	6/3	17,420'	1855	2	11	40	26	331	3900	0	90	321	Drill F/15,565'-16,824'. Lubricate rig. Drill F/16,824'-17,597'. Pull two stands and trough at 160 left. Time drilling.	Middle Bakken	
5	6/4	18,252'	832	2	12	40	32	331	3950	0	90	321	Time drilling. Lubricate rig. Drill F/17,438'-18,252'.	Middle Bakken	
6	6/5	20,149'	1897	2	10	39	30	331	4050	89	0	321	Drill F/18,252'-19,507'. Lubricate rig. Drill F/19,507'-20,149'. Circulate. TOOH.	Middle Bakken	
7	6/6	20,214'	65	2 RR	15	40	40	143	2900	81	0	292	Ream. Verify sidetrack. Pump dry pill. TOOH. Cut & slip. Pick up BHA. TH. Circulate. Ream sidetrack. Lubricate rig. Drill F/20,149'-20,214'.	Middle Bakken	
8	6/7	20,450'	236	2 RR	15	40	50	143	2900	81	0	292	Drill F/20,214'-20,450'. Circulate bottoms up. TOOH.	Middle Bakken	

DAILY MUD SUMMARY

## BOTTOM HOLE ASSEMBLY RECORD

Bit #	Bit Data							Motor Data				Reason For Removal			
	Size (in.)	Type	Make	Model	Depth In	Depth Out	Footage	Hours	Σ hrs	Vert. Dev.	Make	Model	Bend	Rev/Gal	
1	6	PDC	Halliburton	MM64	11,070'	15,484'	4,414'	31	31	Lateral	Baker	-	1.50°	1.03	Low ROP
2	6	PDC	Halliburton	MM64	15,484'	17,597'	2,113'	17	48	Lateral	Baker	-	1.50°	1.03	-
2 RR	6	PDC	Halliburton	MM64	17,420'	20,149'	2,729'	32.5	80.5	Sidetrack	Baker	-	1.50°	1.03	Low ROP
2 RR	6	PDC	Halliburton	MM64	20,149'	20,450'	301'	3.2	83.7	Sidetrack	Baker	XLLS	1.50°	0.49	TD lateral



## PLAN VIEW

Note: 1,280 acre laydown spacing unit  
with 500' N/S & 200' E/W setbacks



Oasis Petroleum North America LLC

Kline Federal 5300 11-18 2B

Surface Location

960' FNL & 318' FWL

Lot 1, Sec. 18, T153N, R100W

Proposed lateral:

Subject Well ST1

Section Line

Kline Federal 5300 11-18H

Kline Federal 5300 31-18 6B

Kline Federal 5300 31-18 8B

Kline Federal 5300 41-18 9T

Kline Federal 5300 11-18 3T

Kline Federal 5300 31-18 15T

Kline Federal 5300 11-18 5B

Kline Federal 5300 41-18 10B

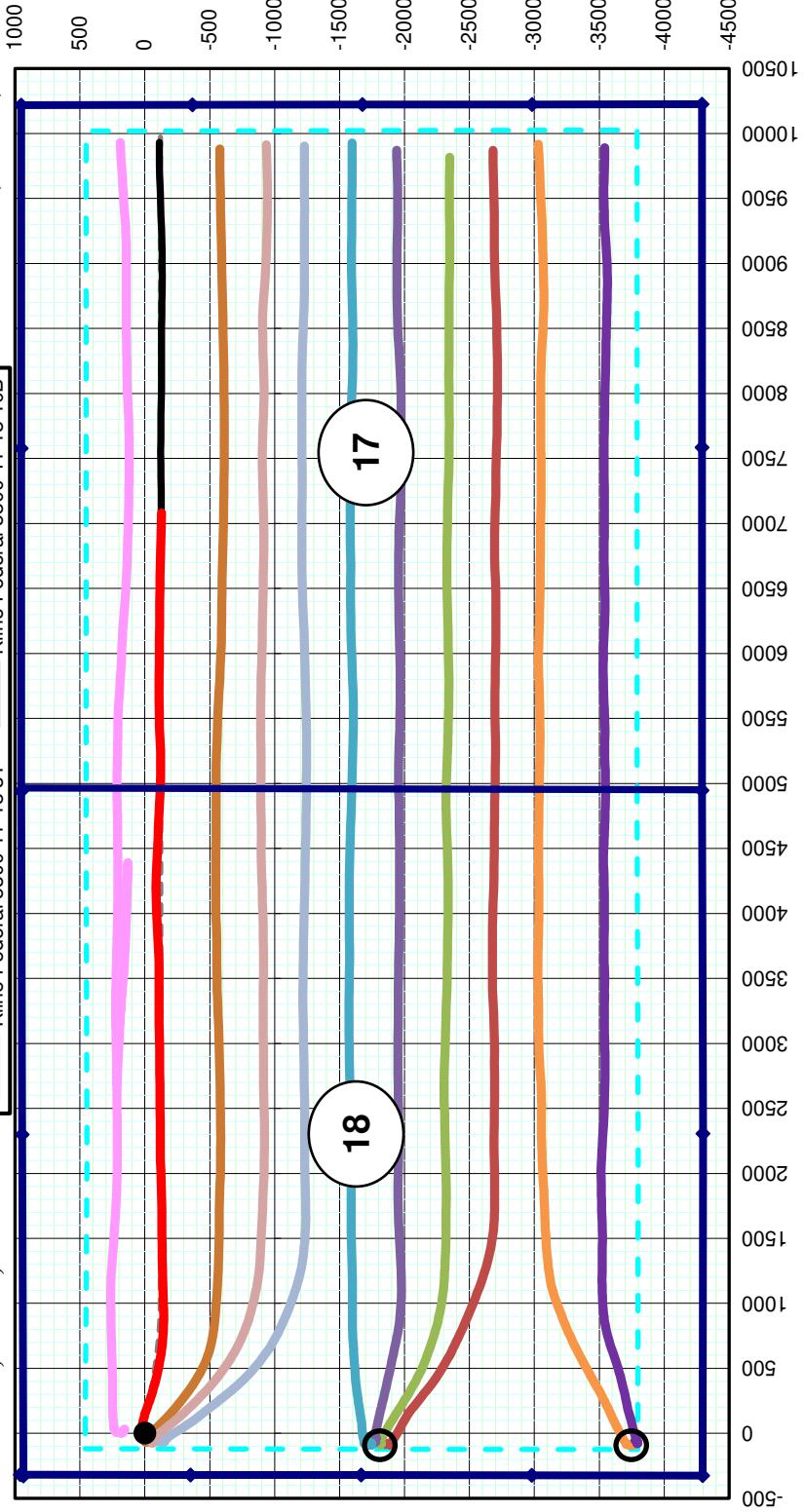
Kline Federal 5300 11-18 17T

Kline Federal 5300 31-18 10E

Bottom Hole Location

111.86' S & 9,932.10' E

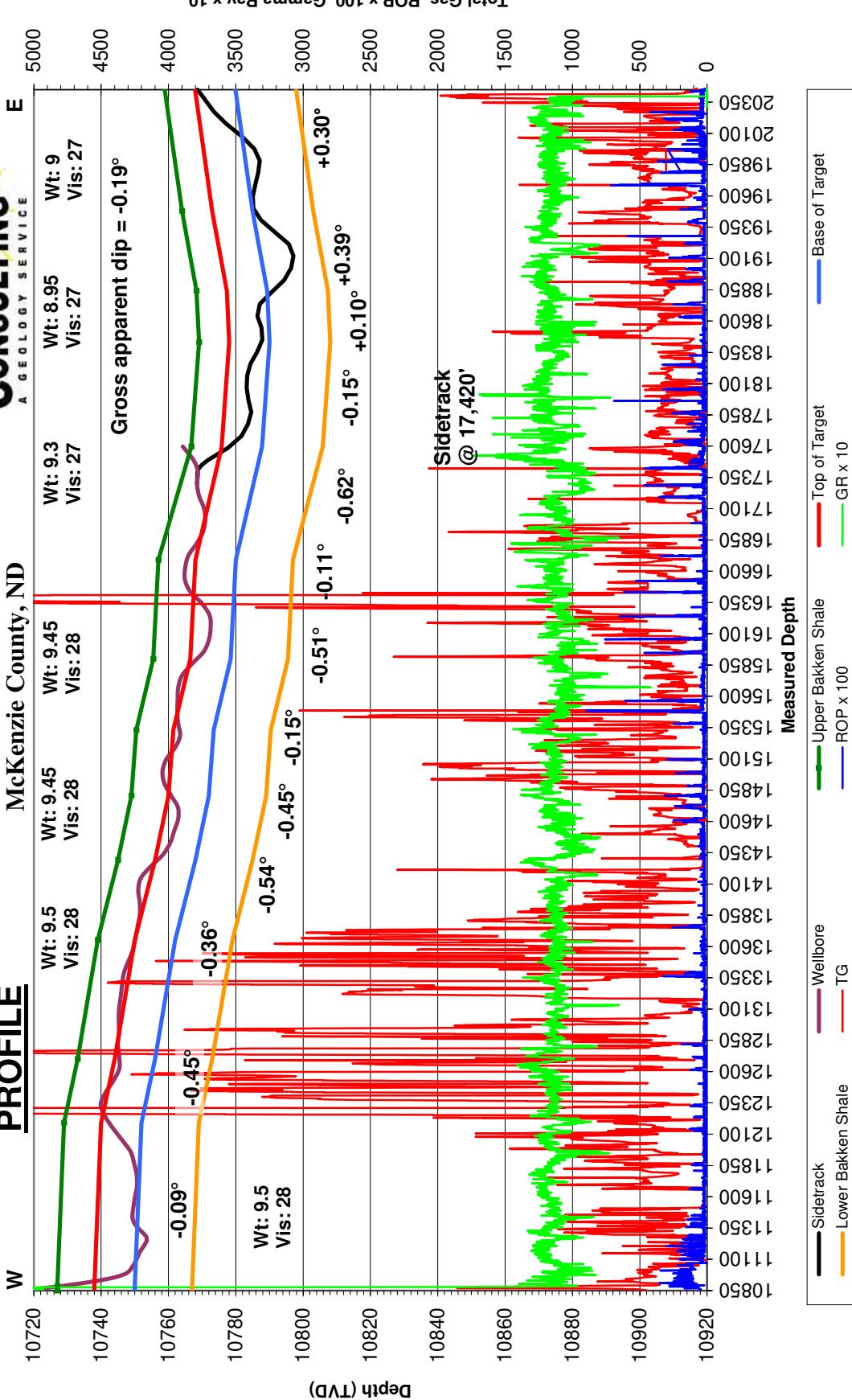
of surface location or approx.  
1,071.86' FNL & 296.01' FEL  
NE NE Sec. 17, T153N, R100W



Oasis Petroleum North America LLC  
 Kline Federal 5300 11-18 2B  
 Lot 1. Sec. 18, T153N, R100W  
 McKenzie County, ND



## PROFILE



# FORMATION MARKERS & DIP ESTIMATES

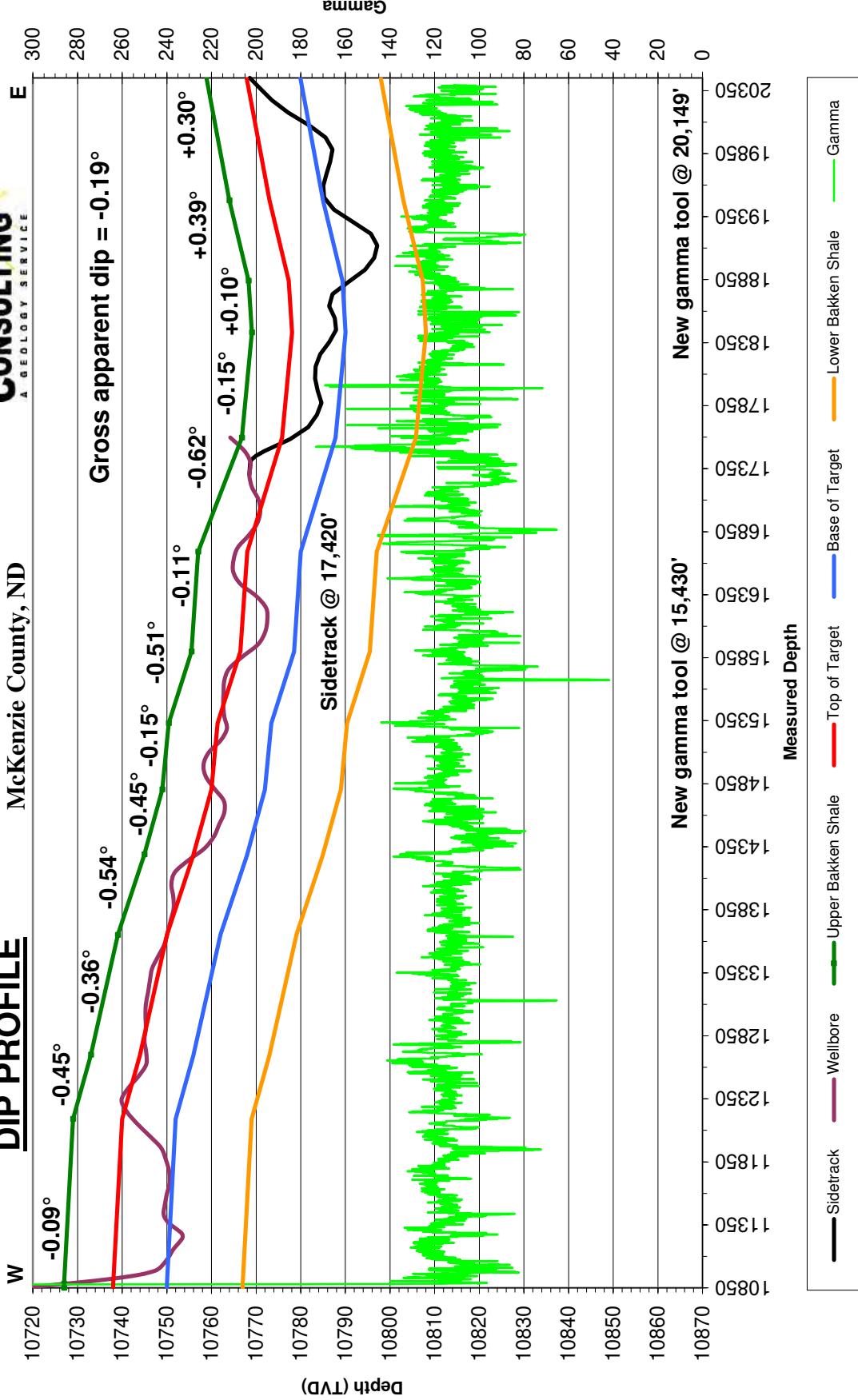
*Oasis Petroleum North America LLC - Kline Federal 5300 11-18 2B*

Dip Change Points	MD	TVD	TVD diff.	MD diff.	Dip	Dipping up/down	Type of Marker
Marker							
Middle Bakken Top	10,882'	10,727.00					
Projected Middle Bakken Top	12,190'	10,729.00	2.00	1308.00	<b>-0.09</b>	Down	Gamma
Projected Middle Bakken Top	12,700'	10,733.00	4.00	510.00	<b>-0.45</b>	Down	Gamma/Deflect
Projected Middle Bakken Top	13,650'	10,739.00	6.00	950.00	<b>-0.36</b>	Down	Gamma/Deflect
Projected Middle Bakken Top	14,290'	10,745.00	6.00	640.00	<b>-0.54</b>	Down	Gamma
Projected Middle Bakken Top	14,805'	10,749.00	4.00	515.00	<b>-0.45</b>	Down	Gamma
Projected Middle Bakken Top	15,330'	10,750.40	1.40	525.00	<b>-0.15</b>	Down	Gamma
Projected Middle Bakken Top	15,900'	10,755.50	5.10	570.00	<b>-0.51</b>	Down	Gamma
Projected Middle Bakken Top	16,690'	10,757.00	1.50	790.00	<b>-0.11</b>	Down	Gamma
Projected Middle Bakken Top	17,597'	10,766.81	9.81	907.00	<b>-0.62</b>	Down	Gamma
Projected Middle Bakken Top	18,430'	10,769.04	2.23	833.00	<b>-0.15</b>	Down	Gamma
Projected Middle Bakken Top	18,840'	10,768.33	-0.72	410.00	<b>0.10</b>	Up	Gamma
Projected Middle Bakken Top	19,478'	10,764.00	-4.33	638.00	<b>0.39</b>	Up	Gamma
Projected Middle Bakken Top	20,450'	10,758.90	-5.10	972.00	<b>0.30</b>	Up	Gamma
<b>Gross Dip</b>							
Initial Middle Bakken Top	10,882'	10,727.00					
Projected Final M. Bakken Top	20,450'	10,758.90	31.90	9568.00	<b>-0.19</b>	Down	Projection

Oasis Petroleum North America LLC  
 Kline Federal 5300 11-18 2B  
 Lot 1. Sec. 18, T153N, R100W  
 McKenzie County, ND



## DIP PROFILE



&lt;

# SUNBURST CONSULTING, INC.

&gt;

Operator:	Oasis Petroleum North America LLC	Kick-off:	5/30/2015
Well:	Kline Federal 5300 11-18 2B	Finish:	6/3/2015
Surface Coordinates:	960' FNL & 318' FWL		
Surface Location:	Lot 1, Sec. 18, T153N, R100W	Directional Supervision:	
County State:	McKenzie County, ND	RPM Directional Inc.	

Minimum Curvature Method (SPE-3362)

Proposed dir [ ] 90

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

No.	MD	INC	TRUE				SECT	DLS/ 100
			AZM	TVD	N-S	E-W		
Tie	2081.00	0.90	135.20	2080.88	5.76	-5.35	-5.35	0.38
1	2176.00	1.60	146.20	2175.86	4.13	-4.09	-4.09	0.78
2	2270.00	1.70	152.90	2269.82	1.80	-2.72	-2.72	0.23
3	2365.00	1.00	160.10	2364.79	-0.24	-1.80	-1.80	0.76
4	2459.00	0.70	163.90	2458.78	-1.56	-1.36	-1.36	0.32
5	2553.00	0.50	263.40	2552.78	-2.16	-1.61	-1.61	0.98
6	2647.00	0.80	284.50	2646.77	-2.04	-2.65	-2.65	0.40
7	2742.00	1.50	298.80	2741.75	-1.28	-4.38	-4.38	0.79
8	2836.00	1.90	300.00	2835.71	0.10	-6.81	-6.81	0.43
9	2930.00	2.30	305.70	2929.65	1.97	-9.69	-9.69	0.48
10	3024.00	1.10	321.10	3023.60	3.78	-11.79	-11.79	1.35
11	3119.00	1.40	328.70	3118.58	5.48	-12.96	-12.96	0.36
12	3213.00	1.20	34.40	3212.56	7.27	-13.00	-13.00	1.51
13	3307.00	1.20	47.50	3306.54	8.75	-11.72	-11.72	0.29
14	3401.00	0.90	36.20	3400.53	10.01	-10.56	-10.56	0.39
15	3495.00	1.00	36.90	3494.51	11.26	-9.63	-9.63	0.11
16	3590.00	0.70	43.50	3589.50	12.35	-8.74	-8.74	0.33
17	3684.00	0.80	33.50	3683.49	13.31	-7.98	-7.98	0.17
18	3778.00	0.60	41.60	3777.49	14.22	-7.29	-7.29	0.24
19	3872.00	0.50	37.40	3871.48	14.92	-6.71	-6.71	0.11
20	3966.00	0.40	14.70	3965.48	15.56	-6.38	-6.38	0.22
21	4060.00	0.30	25.70	4059.48	16.10	-6.19	-6.19	0.13
22	4154.00	0.40	346.40	4153.48	16.64	-6.16	-6.16	0.27
23	4248.00	0.50	76.80	4247.47	17.05	-5.84	-5.84	0.68
24	4343.00	0.50	84.90	4342.47	17.19	-5.02	-5.02	0.07
25	4437.00	0.40	36.40	4436.47	17.49	-4.42	-4.42	0.41
26	4531.00	0.30	48.60	4530.47	17.91	-4.04	-4.04	0.13
27	4625.00	0.40	217.00	4624.47	17.81	-4.05	-4.05	0.74
28	4720.00	0.40	225.60	4719.46	17.32	-4.49	-4.49	0.06
29	4813.00	0.40	330.20	4812.46	17.37	-4.88	-4.88	0.68
30	4907.00	0.50	128.90	4906.46	17.40	-4.73	-4.73	0.94
31	5001.00	0.60	143.20	5000.46	16.75	-4.11	-4.11	0.18
32	5095.00	0.40	207.70	5094.45	16.06	-3.97	-3.97	0.60
33	5190.00	0.30	193.10	5189.45	15.53	-4.18	-4.18	0.14
34	5284.00	0.60	181.00	5283.45	14.79	-4.25	-4.25	0.33
35	5378.00	0.80	158.90	5377.44	13.69	-4.02	-4.02	0.35
36	5472.00	0.80	177.40	5471.43	12.42	-3.75	-3.75	0.27
37	5567.00	1.10	185.80	5566.42	10.85	-3.81	-3.81	0.35

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# SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America LLC	Kick-off:	5/30/2015
Well:	Kline Federal 5300 11-18 2B	Finish:	6/3/2015
Surface Coordinates:	960' FNL & 318' FWL		
Surface Location:	Lot 1, Sec. 18, T153N, R100W	Directional Supervision:	
County State:	McKenzie County, ND	RPM Directional Inc.	

## Minimum Curvature Method (SPE-3362)

Proposed dir 90

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

No.	MD	INC	TRUE				SECT	DLS/ 100
			AZM	TVD	N-S	E-W		
38	5661.00	1.10	202.30	5660.40	9.12	-4.25	-4.25	0.34
39	5755.00	0.60	98.20	5754.40	8.22	-4.10	-4.10	1.46
40	5850.00	0.60	89.90	5849.39	8.15	-3.11	-3.11	0.09
41	5944.00	0.70	54.60	5943.39	8.48	-2.15	-2.15	0.43
42	6038.00	0.70	36.50	6037.38	9.27	-1.34	-1.34	0.23
43	6132.00	0.80	38.60	6131.37	10.25	-0.59	-0.59	0.11
44	6226.00	1.20	26.10	6225.36	11.64	0.25	0.25	0.48
45	6320.00	1.40	22.00	6319.33	13.59	1.11	1.11	0.23
46	6414.00	1.20	62.70	6413.31	15.11	2.42	2.42	0.98
47	6509.00	1.30	47.90	6508.29	16.29	4.10	4.10	0.35
48	6603.00	1.40	37.00	6602.26	17.92	5.58	5.58	0.29
49	6697.00	1.10	52.80	6696.24	19.38	6.99	6.99	0.48
50	6791.00	1.10	71.10	6790.22	20.22	8.57	8.57	0.37
51	6885.00	0.90	72.50	6884.21	20.73	10.12	10.12	0.21
52	6979.00	1.10	38.50	6978.19	21.66	11.39	11.39	0.65
53	7073.00	1.20	73.50	7072.18	22.65	12.90	12.90	0.74
54	7167.00	0.80	101.80	7166.16	22.79	14.48	14.48	0.66
55	7262.00	1.00	127.00	7261.15	22.16	15.79	15.79	0.46
56	7356.00	0.90	118.50	7355.14	21.31	17.10	17.10	0.18
57	7450.00	1.00	121.00	7449.13	20.54	18.45	18.45	0.12
58	7544.00	0.70	113.20	7543.12	19.89	19.68	19.68	0.34
59	7639.00	0.90	108.40	7638.11	19.43	20.92	20.92	0.22
60	7733.00	1.00	107.40	7732.09	18.95	22.40	22.40	0.11
61	7827.00	1.10	95.80	7826.08	18.61	24.08	24.08	0.25
62	7921.00	0.80	82.00	7920.06	18.61	25.63	25.63	0.40
63	8015.00	0.80	89.90	8014.06	18.70	26.94	26.94	0.12
64	8109.00	0.70	82.20	8108.05	18.78	28.16	28.16	0.15
65	8203.00	0.60	108.20	8202.04	18.71	29.20	29.20	0.33
66	8298.00	0.50	118.60	8297.04	18.35	30.04	30.04	0.15
67	8392.00	0.50	108.30	8391.03	18.03	30.79	30.79	0.10
68	8486.00	0.50	89.80	8485.03	17.90	31.58	31.58	0.17
69	8580.00	0.60	102.80	8579.03	17.79	32.48	32.48	0.17
70	8674.00	0.70	110.80	8673.02	17.48	33.49	33.49	0.14
71	8769.00	0.60	115.20	8768.01	17.06	34.48	34.48	0.12
72	8863.00	0.60	133.30	8862.01	16.52	35.29	35.29	0.20
73	8957.00	0.40	114.20	8956.00	16.04	35.95	35.95	0.27
74	9051.00	0.40	118.30	9050.00	15.75	36.53	36.53	0.03
75	9145.00	0.70	97.20	9144.00	15.53	37.39	37.39	0.38

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# SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America LLC	Kick-off:	5/30/2015
Well:	Kline Federal 5300 11-18 2B	Finish:	6/3/2015
Surface Coordinates:	960' FNL & 318' FWL		
Surface Location:	Lot 1, Sec. 18, T153N, R100W	Directional Supervision:	
County State:	McKenzie County, ND	RPM Directional Inc.	

Minimum Curvature Method (SPE-3362)

Proposed dir [ ] 90

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

No.	MD	INC	TRUE				DLS/ 100
			AZM	TVD	N-S	E-W	
76	9240.00	0.20	343.00	9239.00	15.61	37.92	37.92 0.85
77	9334.00	0.20	335.80	9333.00	15.92	37.80	37.80 0.03
78	9428.00	0.40	38.40	9426.99	16.32	37.94	37.94 0.38
79	9523.00	0.50	27.20	9521.99	16.95	38.34	38.34 0.14
80	9617.00	0.60	10.90	9615.99	17.80	38.62	38.62 0.20
81	9711.00	0.50	2.40	9709.98	18.69	38.73	38.73 0.14
82	9805.00	0.50	354.20	9803.98	19.51	38.70	38.70 0.08
83	9899.00	0.50	330.90	9897.98	20.28	38.46	38.46 0.21
84	9993.00	0.60	353.10	9991.97	21.13	38.20	38.20 0.25
85	10087.00	0.70	0.00	10085.97	22.19	38.14	38.14 0.13
86	10171.00	1.00	11.90	10169.96	23.42	38.30	38.30 0.41
87	10201.00	1.00	4.30	10199.95	23.94	38.37	38.37 0.44
88	10232.00	1.50	58.70	10230.94	24.42	38.74	38.74 3.96
89	10263.00	4.40	88.80	10261.90	24.65	40.27	40.27 10.30
90	10295.00	7.40	97.40	10293.73	24.41	43.54	43.54 9.75
91	10326.00	11.10	97.50	10324.32	23.77	48.48	48.48 11.94
92	10357.00	14.50	98.30	10354.55	22.82	55.28	55.28 10.98
93	10389.00	17.50	100.70	10385.30	21.34	63.98	63.98 9.60
94	10420.00	20.90	103.40	10414.58	19.20	73.94	73.94 11.33
95	10452.00	24.20	104.50	10444.12	16.23	85.85	85.85 10.40
96	10483.00	27.20	104.60	10472.06	12.85	98.86	98.86 9.68
97	10514.00	30.20	104.80	10499.24	9.07	113.25	113.25 9.68
98	10546.00	33.30	105.00	10526.45	4.74	129.52	129.52 9.69
99	10577.00	36.40	105.90	10551.89	0.02	146.59	146.59 10.14
100	10609.00	39.70	107.80	10577.09	-5.71	165.46	165.46 10.94
101	10640.00	43.20	109.50	10600.32	-12.28	184.90	184.90 11.86
102	10671.00	46.60	110.40	10622.27	-19.75	205.46	205.46 11.16
103	10703.00	50.10	110.40	10643.54	-28.08	227.87	227.87 10.94
104	10734.00	53.80	109.50	10662.64	-36.40	250.81	250.81 12.15
105	10766.00	57.80	108.00	10680.62	-44.90	275.87	275.87 13.09
106	10797.00	62.90	106.70	10695.96	-52.92	301.58	301.58 16.85
107	10828.00	67.30	106.40	10709.00	-60.93	328.53	328.53 14.22
108	10860.00	71.50	105.70	10720.26	-69.21	357.31	357.31 13.28
109	10891.00	73.50	105.60	10729.58	-77.18	385.78	385.78 6.46
110	10922.00	76.40	104.50	10737.63	-84.95	414.68	414.68 9.96
111	10954.00	81.30	103.40	10743.82	-92.52	445.14	445.14 15.68
112	10985.00	85.90	102.10	10747.27	-99.31	475.18	475.18 15.41
113	11007.00	88.40	100.60	10748.37	-103.64	496.72	496.72 13.25

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# SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America LLC	Kick-off:	5/30/2015
Well:	Kline Federal 5300 11-18 2B	Finish:	6/3/2015
Surface Coordinates:	960' FNL & 318' FWL		
Surface Location:	Lot 1, Sec. 18, T153N, R100W		
County State:	McKenzie County, ND	Directional Supervision:	RPM Directional Inc.

Minimum Curvature Method (SPE-3362)

Proposed dir 90

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

No.	MD	INC	TRUE				DLS/ 100
			AZM	TVD	N-S	E-W	
114	11032.00	88.40	101.10	10749.06	-108.34	521.27	521.27
115	11063.00	88.90	100.50	10749.79	-114.15	551.71	551.71
116	11094.00	88.80	100.70	10750.42	-119.85	582.17	582.17
117	11124.00	89.30	98.80	10750.91	-124.93	611.73	611.73
118	11155.00	88.80	97.30	10751.43	-129.27	642.42	642.42
119	11186.00	88.50	96.10	10752.16	-132.89	673.20	673.20
120	11217.00	88.70	95.40	10752.92	-135.99	704.04	704.04
121	11248.00	89.10	93.90	10753.51	-138.50	734.93	734.93
122	11279.00	91.30	93.60	10753.40	-140.53	765.86	765.86
123	11310.00	92.30	92.90	10752.43	-142.29	796.79	796.79
124	11341.00	92.10	92.80	10751.24	-143.83	827.73	827.73
125	11372.00	91.60	91.70	10750.24	-145.04	858.69	858.69
126	11403.00	90.80	90.80	10749.59	-145.72	889.68	889.68
127	11434.00	90.30	89.10	10749.29	-145.69	920.68	920.68
128	11465.00	89.60	88.10	10749.32	-144.93	951.67	951.67
129	11495.00	89.80	88.20	10749.48	-143.97	981.65	981.65
130	11588.00	89.60	87.80	10749.96	-140.72	1074.59	1074.59
131	11681.00	89.60	88.50	10750.61	-137.72	1167.54	1167.54
132	11773.00	90.50	88.30	10750.53	-135.15	1259.50	1259.50
133	11865.00	90.40	89.30	10749.81	-133.22	1351.48	1351.48
134	11960.00	90.90	89.50	10748.73	-132.23	1446.47	1446.47
135	12055.00	92.20	89.70	10746.16	-131.57	1541.43	1541.43
136	12150.00	91.10	89.80	10743.43	-131.15	1636.39	1636.39
137	12245.00	91.70	89.10	10741.11	-130.24	1731.35	1731.35
138	12340.00	89.80	89.20	10739.86	-128.83	1826.33	1826.33
139	12434.00	88.40	87.80	10741.34	-126.37	1920.28	1920.28
140	12529.00	88.80	87.60	10743.66	-122.56	2015.18	2015.18
141	12623.00	89.10	88.80	10745.38	-119.61	2109.11	2109.11
142	12719.00	90.90	90.30	10745.38	-118.85	2205.10	2205.10
143	12814.00	89.60	89.90	10744.97	-119.02	2300.10	2300.10
144	12910.00	90.00	89.50	10745.30	-118.52	2396.10	2396.10
145	13005.00	90.10	89.50	10745.22	-117.69	2491.09	2491.09
146	13100.00	89.80	89.30	10745.30	-116.69	2586.09	2586.09
147	13195.00	89.60	89.60	10745.80	-115.78	2681.08	2681.08
148	13290.00	89.90	89.60	10746.21	-115.12	2776.08	2776.08
149	13384.00	89.50	89.40	10746.71	-114.30	2870.07	2870.07
150	13480.00	88.90	89.00	10748.05	-112.96	2966.05	2966.05
151	13574.00	89.40	89.10	10749.44	-111.40	3060.03	3060.03

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# SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America LLC	Kick-off:	5/30/2015
Well:	Kline Federal 5300 11-18 2B	Finish:	6/3/2015
Surface Coordinates:	960' FNL & 318' FWL		
Surface Location:	Lot 1, Sec. 18, T153N, R100W		
County State:	McKenzie County, ND	Directional Supervision:	RPM Directional Inc.

Minimum Curvature Method (SPE-3362)

Proposed dir [ ] 90

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

No.	MD	INC	TRUE				DLS/ 100
			AZM	TVD	N-S	E-W	
152	13671.00	89.70	88.70	10750.20	-109.54	3157.01	3157.01 0.52
153	13765.00	89.50	90.30	10750.86	-108.72	3251.00	3251.00 1.72
154	13860.00	89.70	90.20	10751.52	-109.13	3346.00	3346.00 0.24
155	13956.00	90.40	90.40	10751.44	-109.63	3442.00	3442.00 0.76
156	14051.00	90.10	89.90	10751.02	-109.88	3536.99	3536.99 0.61
157	14146.00	89.00	88.00	10751.77	-108.14	3631.97	3631.97 2.31
158	14240.00	87.40	86.80	10754.72	-103.88	3725.82	3725.82 2.13
159	14335.00	88.20	87.30	10758.37	-98.99	3820.62	3820.62 0.99
160	14431.00	89.20	87.60	10760.55	-94.72	3916.50	3916.50 1.09
161	14525.00	89.40	86.90	10761.70	-90.22	4010.39	4010.39 0.77
162	14620.00	89.20	88.60	10762.86	-86.49	4105.30	4105.30 1.80
163	14714.00	90.90	90.40	10762.78	-85.67	4199.29	4199.29 2.63
164	14809.00	91.60	92.20	10760.70	-87.82	4294.24	4294.24 2.03
165	14907.00	90.70	92.60	10758.74	-91.92	4392.13	4392.13 1.00
166	15003.00	89.90	92.90	10758.23	-96.53	4488.02	4488.02 0.89
167	15099.00	88.70	92.60	10759.41	-101.13	4583.90	4583.90 1.29
168	15194.00	88.10	92.20	10762.06	-105.11	4678.78	4678.78 0.76
169	15288.00	90.20	92.80	10763.45	-109.21	4772.68	4772.68 2.32
170	15382.00	90.50	92.90	10762.88	-113.88	4866.56	4866.56 0.34
171	15478.00	89.80	92.40	10762.63	-118.32	4962.45	4962.45 0.90
172	15573.00	90.10	91.00	10762.71	-121.14	5057.41	5057.41 1.51
173	15668.00	89.70	89.80	10762.88	-121.80	5152.40	5152.40 1.33
174	15763.00	89.00	88.40	10763.95	-120.31	5247.38	5247.38 1.65
175	15859.00	87.40	87.00	10766.97	-116.46	5343.25	5343.25 2.21
176	15955.00	88.50	88.30	10770.40	-112.53	5439.11	5439.11 1.77
177	16051.00	89.60	89.40	10772.00	-110.60	5535.07	5535.07 1.62
178	16148.00	89.80	89.20	10772.50	-109.42	5632.06	5632.06 0.29
179	16244.00	90.50	90.10	10772.25	-108.83	5728.06	5728.06 1.19
180	16340.00	92.20	91.30	10769.99	-110.00	5824.02	5824.02 2.17
181	16436.00	92.00	90.80	10766.47	-111.76	5919.94	5919.94 0.56
182	16532.00	89.90	90.00	10764.88	-112.43	6015.92	6015.92 2.34
183	16628.00	90.00	90.30	10764.96	-112.68	6111.92	6111.92 0.33
184	16724.00	88.90	90.20	10765.89	-113.10	6207.91	6207.91 1.15
185	16820.00	88.20	90.30	10768.31	-113.52	6303.88	6303.88 0.74
186	16916.00	89.50	90.80	10770.24	-114.44	6399.85	6399.85 1.45
187	17012.00	89.70	90.90	10770.91	-115.87	6495.84	6495.84 0.23
188	17106.00	90.80	91.30	10770.50	-117.67	6589.82	6589.82 1.25
189	17202.00	90.90	91.10	10769.08	-119.68	6685.79	6685.79 0.23

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# SUNBURST CONSULTING, INC.

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Operator:	Oasis Petroleum North America LLC	Kick-off:	5/30/2015
Well:	Kline Federal 5300 11-18 2B	Finish:	6/3/2015
Surface Coordinates:	960' FNL & 318' FWL		
Surface Location:	Lot 1, Sec. 18, T153N, R100W		
County State:	McKenzie County, ND		
		Directional Supervision:	RPM Directional Inc.

Minimum Curvature Method (SPE-3362)

Proposed dir [ ] 90

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

No.	MD	INC	TRUE				SECT	DLS/ 100
			AZM	TVD	N-S	E-W		
190	17299.00	89.80	91.30	10768.49	-121.71	6782.76	6782.76	1.15
191	17395.00	89.90	91.30	10768.74	-123.89	6878.74	6878.74	0.10
192	17489.00	91.70	91.70	10767.42	-126.35	6972.69	6972.69	1.96
193	17597.00	91.70	91.70	10764.22	-129.55	7080.60	7080.60	0.00

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# SUNBURST CONSULTING, INC.

&gt;

Operator:	Oasis Petroleum North America LLC	Kick-off:	6/3/2015
	Sidetrack 1	Finish:	6/6/2015
Well:	Kline Federal 5300 11-18 2B	Directional Supervision:	
Surface Coordinates:	960' FNL & 318' FWL	RPM Directional Inc.	
Surface Location:	Lot 1. Sec. 18, T153N, R100W		
County State:	McKenzie County, ND		

Minimum Curvature Method (SPE-3362)

Proposed dir [ ] 90

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

No.	MD	INC	TRUE				SECT	DLS/ 100
			AZM	TVD	N-S	E-W		
Tie	17299.00	89.80	91.30	10768.49	-121.71	6782.76	6782.76	1.15
1	17394.00	90.00	91.40	10768.65	-123.95	6877.74	6877.74	0.24
2	17420.00	88.90	91.00	10768.90	-124.49	6903.73	6903.73	4.50
3	17453.00	87.30	90.90	10769.99	-125.04	6936.71	6936.71	4.86
4	17489.00	87.00	90.70	10771.78	-125.54	6972.66	6972.66	1.00
5	17584.00	86.00	90.30	10777.58	-126.37	7067.48	7067.48	1.13
6	17680.00	89.10	89.90	10781.69	-126.54	7163.38	7163.38	3.26
7	17776.00	88.60	89.50	10783.61	-126.04	7259.35	7259.35	0.67
8	17872.00	90.20	89.10	10784.62	-124.86	7355.34	7355.34	1.72
9	17969.00	90.80	89.10	10783.77	-123.34	7452.32	7452.32	0.62
10	18065.00	89.90	89.90	10783.19	-122.50	7548.32	7548.32	1.25
11	18161.00	89.90	90.20	10783.35	-122.59	7644.32	7644.32	0.31
12	18258.00	88.90	90.60	10784.37	-123.26	7741.31	7741.31	1.11
13	18354.00	88.70	90.70	10786.38	-124.35	7837.28	7837.28	0.23
14	18450.00	89.50	91.20	10787.89	-125.94	7933.25	7933.25	0.98
15	18544.00	90.80	91.10	10787.64	-127.83	8027.23	8027.23	1.39
16	18640.00	90.70	90.40	10786.39	-129.09	8123.21	8123.21	0.74
17	18735.00	88.40	89.70	10787.13	-129.17	8218.20	8218.20	2.53
18	18833.00	87.40	89.50	10790.72	-128.48	8316.13	8316.13	1.04
19	18928.00	88.20	90.10	10794.37	-128.15	8411.06	8411.06	1.05
20	19023.00	89.30	90.70	10796.44	-128.82	8506.04	8506.04	1.32
21	19120.00	89.90	90.70	10797.12	-130.00	8603.03	8603.03	0.62
22	19215.00	91.80	91.20	10795.71	-131.58	8698.00	8698.00	2.07
23	19311.00	93.20	90.90	10791.52	-133.33	8793.89	8793.89	1.49
24	19406.00	91.70	90.20	10787.46	-134.24	8888.79	8888.79	1.74
25	19502.00	91.00	89.70	10785.20	-134.16	8984.77	8984.77	0.90
26	19596.00	89.20	88.60	10785.04	-132.77	9078.75	9078.75	2.24
27	19692.00	89.90	88.50	10785.79	-130.34	9174.72	9174.72	0.74
28	19787.00	89.10	88.00	10786.62	-127.44	9269.67	9269.67	0.99
29	19882.00	90.30	88.40	10787.12	-124.45	9364.62	9364.62	1.33
30	19977.00	91.60	88.40	10785.54	-121.80	9459.56	9459.56	1.37
31	20073.00	92.70	88.00	10781.94	-118.79	9555.45	9555.45	1.22
32	20177.00	92.60	87.70	10777.13	-114.89	9659.26	9659.26	0.30
33	20273.00	91.70	89.80	10773.53	-112.80	9755.17	9755.17	2.38
34	20369.00	91.50	89.60	10770.85	-112.30	9851.13	9851.13	0.29
35	20382.00	91.60	89.70	10770.50	-112.22	9864.12	9864.12	1.09
36	20450.00	91.60	89.70	10768.60	-111.86	9932.10	9932.10	0.00

## FORMATION TOPS & STRUCTURAL RELATIONSHIPS

Subject Well:						
Operator: Well Name: Location:	Oasis Petroleum North America, LLC. Kline Federal 5300 11-18 2B 960' FNL & 318' FWL Lot 1 Section 18, T153N, R100W					
Formation/ Marker	Prog. Top	Prog. Datum (MSL)	Driller's Depth Top (MD)	Driller's Depth Top (TVD)	Datum (MSL)	Interval Thickness to Target
Kibbey Lime	8,367'	-6,289'	8,355'	8,354'	-6,276'	153'
First Charles Salts	8,517'	-6,439'	8,508'	8,507'	-6,429'	616'
Upper Berenton	9,141'	-7,063'	9,124'	9,123'	-7,045'	76'
Base Last Salt	9,216'	-7,138'	9,200'	9,199'	-7,121'	223'
Mission Canyon	9,421'	-7,343'	8,423'	9,422'	-7,344'	559'
Lodgepole	9,989'	-7,921'	9,982'	9,981'	-7,903'	721'
False Bakken	10,696'	-8,618'	10,811'	10,702'	-8,624'	8'
Upper Bakken Shale	10,708'	-8,630'	10,830'	10,710'	-8,632'	17'
Middle Bakken	10,722'	-8,644'	10,882'	10,727'	-8,649'	13'

## LITHOLOGY

*Rig crews caught lagged samples in 50' intervals under the supervision of a Sunburst geologist. A detailed list of sampling intervals is included in the well data summary page. Samples were examined wet and dry conditions under a binocular microscope and checked for hydrocarbon cut fluorescence with Entron. Sample descriptions began at re-entry point within the Middle Bakken Member. The drilling fluid was salt water solution in the lateral.*

### Middle Bakken

**10,882' MD; 10,727' TVD (-8,649')**

11,070-11,100 SILTY SANDSTONE: light to medium gray-brown, off white, occasional tan, very fine grained, firm, sub-angular, moderately to well sorted, calcite cemented, moderately cemented, occasional disseminated pyrite, occasional nodular pyrite, trace very fine to fine intergranular porosity, trace spotty brown oil stain, slow pale yellow diffuse cut fluorescence

11,100-11,150 SILTY SANDSTONE: tan, light to medium gray-brown, off white, very fine grained, firm, sub-angular, moderately to well sorted, calcite cemented, moderately cemented, occasional disseminated pyrite, occasional nodular pyrite, trace very fine to fine intergranular porosity, trace spotty brown oil stain, slow pale yellow streaming cut fluorescence

11,150-11,200 SILTY SANDSTONE: light gray, medium to dark gray, off white, light gray-brown, very fine grained, firm, rarely hard, sub-angular, moderately to well sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,200-11,250 SILTY SANDSTONE: light brown, light gray, medium to dark gray, off white, light gray-brown, very fine grained, firm, rarely hard, sub-angular, occasionally sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,250-11,300 SILTY SANDSTONE: light to medium gray, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,300-11,350 SILTY SANDSTONE: light to medium gray, light brown, light brown-gray, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,350-11,400 SILTY SANDSTONE: off white, light brown, light brown-gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,400-11,450 SILTY SANDSTONE: off white, light to medium gray, very fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,450-11,500 SILTY SANDSTONE: light brown-gray, off white, light gray, occasional dark gray, very fine grained, firm, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, moderately pale yellow diffuse cut fluorescence

11,500-11,550 SILTY SANDSTONE: light to medium gray, light brown, light brown-gray, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,550-11,600 SILTY SANDSTONE: dark gray, light to medium gray, light brown, light brown-gray, off white, very fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, moderately pale yellow diffuse cut fluorescence

11,600-11,650 SILTY SANDSTONE: light brown, light brown-gray, light gray, off white, trace dark gray, very fine grained, firm, common hard, sub-angular, occasionally sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow to moderately pale yellow diffuse cut fluorescence

11,650-11,700 SILTY SANDSTONE: light brown, light brown-gray, light gray, off white, very fine grained, firm, common hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,700-11,750 SILTY SANDSTONE: light gray, medium to dark gray, off white, light gray-brown, very fine grained, firm, rarely hard, sub-angular, moderately to well sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,750-11,800 SILTY SANDSTONE: dark gray, light gray, medium gray, off white, light brown-gray, very fine grained, firm, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,800-11,850 SILTY SANDSTONE: off white, light to medium gray, light brown, very fine grained, firm, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, moderately pale yellow diffuse trace streaming cut fluorescence

11,850-11,900 SILTY SANDSTONE: off white, light brown, light brown-gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,900-11,950 SILTY SANDSTONE: off white, light brown, light brown-gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

11,950-12,000 SILTY SANDSTONE: light to medium gray, light brown, light brown-gray, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow to moderately pale yellow diffuse cut fluorescence

12,000-12,050 SILTY SANDSTONE: light brown, light brown-gray, off white, very fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow to moderately pale yellow diffuse cut fluorescence

12,050-12,100 SILTY SANDSTONE: light brown, light brown-gray, off white, very fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow to moderately pale yellow diffuse cut fluorescence

12,100-12,150 SILTY SANDSTONE: dark gray, light brown, light brown-gray, off white, very fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, moderately pale yellow diffuse cut fluorescence

12,150-12,200 SILTY SANDSTONE: light brown, light to medium gray, off white, cream, very fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, moderately pale yellow diffuse cut fluorescence

12,200-12,250 SILTY SANDSTONE: off white, light brown, light brown-gray, very fine grained, firm, sub-angular, rarely sub-rounded, moderately to well sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, moderately pale yellow streaming cut fluorescence

12,250-12,300 SILTY SANDSTONE: light brown, light brown-gray, light gray, off white, trace dark gray, very fine grained, firm, common hard, sub-angular, occasionally sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow to moderately pale yellow diffuse cut fluorescence

12,300-12,350 SILTY SANDSTONE: light brown, light gray, off white, very fine grained, firm, common hard, sub-angular, occasionally sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow to moderately pale yellow diffuse cut fluorescence

12,350-12,400 SILTY SANDSTONE: light brown, light brown-gray, off white, very fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow to moderately pale yellow diffuse cut fluorescence

12,400-12,450 SILTY SANDSTONE: off white, light to medium gray, light brown, very fine grained, firm, moderately sorted, calcite cemented, moderately to well cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, moderately pale yellow diffuse trace streaming cut fluorescence

12,450-12,500 SILTY SANDSTONE: off white, light brown, light brown-gray, occasional dark gray, trace tan, very fine to fine grained, firm, moderately sorted, calcite cemented, moderately to well cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, moderately pale yellow diffuse trace streaming cut fluorescence

12,500-12,550 SILTY SANDSTONE: off white, light brown, light brown-gray, very fine to fine grained, firm, moderately sorted, calcite cemented, moderately to well cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, moderately pale yellow diffuse trace streaming cut fluorescence

12,550-12,600 SILTY SANDSTONE: off white, light brown, light brown-gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

12,600-12,650 SILTY SANDSTONE: off white, light brown, light brown-gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

12,650-12,700 SILTY SANDSTONE: medium brown, light gray, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, occasional nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

12,700-12,750 SILTY SANDSTONE: medium brown, medium to dark gray, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

12,750-12,800 SILTY SANDSTONE: medium brown, medium to dark gray, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, rare spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

12,800-12,850 SILTY SANDSTONE: light to medium gray, medium brown, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, rare spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

12,850-12,900 SILTY SANDSTONE: medium gray-brown, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

12,900-12,950 SILTY SANDSTONE: tan, off white, medium gray-brown, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence.

12,950-13,000 SILTY SANDSTONE: tan, off white, medium gray-brown, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, occasional nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

13,000-13,050 SILTY SANDSTONE: tan, off white, medium gray-brown, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

13,050-13,100 SILTY SANDSTONE: medium gray-brown, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence.

13,100-13,150 SILTY SANDSTONE: medium gray, medium to dark brown, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

13,150-13,200 SILTY SANDSTONE: medium gray-brown, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence.

13,200-13,250 SILTY SANDSTONE: medium gray-brown, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence.

13,250-13,300 SILTY SANDSTONE: medium gray-brown, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence.

13,300-13,350 SILTY SANDSTONE: medium to dark gray, tan-medium brown, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

13,350-13,400 SILTY SANDSTONE: light to medium brown, gray, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, occasional nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

13,400-13,450 SILTY SANDSTONE: light to medium brown, gray, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, occasional nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence.

13,450-13,500 SILTY SANDSTONE: medium brown-gray, off white, tan, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence.

13,500-13,550 SILTY SANDSTONE: light to medium brown, gray, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

13,550-13,600 SILTY SANDSTONE: off white, medium gray, light to medium brown, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

13,600-13,650 SILTY SANDSTONE: medium gray, light to medium brown, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

13,650-13,700 SILTY SANDSTONE: medium gray-brown, off white, light gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

13,700-13,750 SILTY SANDSTONE: medium gray-brown, off white, light gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

13,750-13,800 SILTY SANDSTONE: tan, light to medium gray, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

13,800-13,850 SILTY SANDSTONE: medium brown, light to medium gray, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

13,850-13,900 SILTY SANDSTONE: medium to dark gray-brown, off white, very fine grained, firm, trace hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

13,900-13,950 SILTY SANDSTONE: off white, medium brown, light to medium gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

13,950-14,000 SILTY SANDSTONE: gray, light to medium brown, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, rare spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

14,000-14,050 SILTY SANDSTONE: medium brown, light to medium gray, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow streaming cut fluorescence

14,050-14,100 SILTY SANDSTONE: tan, off white, medium brown, light to medium gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,100-14,150 SILTY SANDSTONE: medium gray-brown, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,150-14,200 SILTY SANDSTONE: medium gray-brown, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,200-14,250 SILTY SANDSTONE: off white, gray, light to medium brown, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,250-14,300 SILTY SANDSTONE: tan, off white, gray, light to medium brown, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,300-14,350 SILTY SANDSTONE: medium brown, dark gray, tan, off white, very fine grained, firm, trace hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,350-14,400 SILTY SANDSTONE: light to medium gray, tan, very fine grained, firm, trace hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,400-14,450 SILTY SANDSTONE: tan, off white, light to medium gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,450-14,500 SILTY SANDSTONE: gray-brown, cream, very fine grained, firm, trace hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,500-14,550 SILTY SANDSTONE: gray-brown, cream, very fine grained, firm, trace hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,550-14,600 SILTY SANDSTONE: off white, tan, medium gray-brown, very fine grained, firm, trace hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, occasional nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, slow pale yellow diffuse cut fluorescence

14,600-14,650 SILTY SANDSTONE: light brown, light brown-gray, light to medium gray, off white, very fine grained, firm, trace hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

14,650-14,700 SILTY SANDSTONE: medium gray-brown, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

14,700-14,750 SILTY SANDSTONE: light brown, off white, light to medium gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

14,750-14,800 SILTY SANDSTONE: medium to dark gray, tan-medium brown, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

14,800-14,850 SILTY SANDSTONE: medium gray, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

14,850-14,900 SILTY SANDSTONE: off white, light brown, light brown-gray, light to medium gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, moderately pale yellow diffuse cut fluorescence

14,900-14,950 SILTY SANDSTONE: light brown, light brown-gray, light gray, very fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, moderately pale yellow diffuse cut fluorescence

14,950-15,000 SILTY SANDSTONE: off white, light brown, gray, very fine grained, firm, rarely hard, sub-angular, common sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,000-15,050 SILTY SANDSTONE: light to medium gray, off white, light brown dark gray, tan, very fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light to medium brown oil stain, sample moderately contaminated with lube

15,050-15,100 SILTY SANDSTONE: light gray, off white, light brown dark gray, tan, very fine grained, firm, sub-angular, occasionally sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light to medium brown oil stain, sample moderately contaminated with lube

15,100-15,150 SILTY SANDSTONE: light brown, light brown-gray, cream, off white, gray, very fine grained, firm, sub-angular, occasionally sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, sample moderately contaminated with lube

15,150-15,200 SILTY SANDSTONE: cream, light brown, light brown-gray, light gray, very fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, moderately pale yellow diffuse cut fluorescence

15,200-15,250 SILTY SANDSTONE: off white, light gray, light brown, very fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, well cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty to even light brown oil stain, moderately pale yellow diffuse cut fluorescence

15,250-15,300 SILTY SANDSTONE: medium gray-brown, tan, off white, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

15,300-15,350 SILTY SANDSTONE: medium gray-brown, tan, off white, very fine grained, firm, rarely hard, sub-angular, common sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, slow pale yellow diffuse cut fluorescence

15,350-15,400 SILTY SANDSTONE: off white, light brown, gray, very fine grained, firm, rarely hard, sub-angular, common sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,400-15,450 SILTY SANDSTONE: light to medium gray, off white, cream, light brown, occasional dark gray, very fine grained, firm, sub-angular, common sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,450-15,500 SILTY SANDSTONE: light to medium gray, off white, light brown, dark gray, tan, very fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,500-15,550 SILTY SANDSTONE: light brown, light brown-gray, light to medium gray, off white, very fine grained, firm, sub-angular, occasionally sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,550-15,600 SILTY SANDSTONE: cream, light brown, light brown-gray, light to medium gray, off white, very fine grained, firm, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,600-15,650 SILTY SANDSTONE: dark gray, light to medium gray, very fine grained, firm, sub-angular, trace sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,650-15,700 SILTY SANDSTONE: medium gray-brown, off white, light gray, very fine grained, firm, rarely hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,700-15,750 SILTY SANDSTONE: cream, light brown, medium gray-brown, off white, light gray, very fine grained, firm, occasional hard, sub-angular, common sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,750-15,800 SILTY SANDSTONE: light brown-gray, off white, light to medium gray, dark gray, very fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,800-15,850 SILTY SANDSTONE: cream, off white, light gray, very fine grained, firm, sub-angular, trace sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,850-15,900 SILTY SANDSTONE: light to medium brown, medium gray-brown, light gray, very fine grained, firm, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,900-15,950 SILTY SANDSTONE: gray, medium gray, light brown-gray, occasional off white, very fine to fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

15,950-16,000 SILTY SANDSTONE: gray, medium gray, light brown-gray, occasional off white, very fine to fine grained, firm, rarely hard, sub-angular, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,000-16,050 SILTY SANDSTONE: light gray, off white, light brown dark gray, tan, very fine grained, firm, sub-angular, occasionally sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,050-16,100 SILTY SANDSTONE: cream, off white, light gray, light brown, very fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty medium brown oil stain, sample moderately contaminated with lube

16,100-16,150 SILTY SANDSTONE: light to medium gray, off white, light brown, dark gray, tan, very fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,150-16,200 SILTY SANDSTONE: light to medium gray, off white, cream, light brown, occasional dark gray, very fine grained, firm, sub-angular, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,200-16,250 SILTY SANDSTONE: cream, light brown, medium gray-brown, off white, light gray, very fine grained, firm, occasional hard, sub-angular, common sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,250-16,300 SILTY SANDSTONE: light to medium gray, cream, light brown, medium gray-brown, off white, very fine grained, firm, occasional hard, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,300-16,350 SILTY SANDSTONE: light brown, light brown-gray, very fine grained, firm, occasional hard, sub-angular, trace sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,350-16,400 SILTY SANDSTONE: light gray, light brown, light brown-gray, very fine grained, firm, occasional hard, sub-angular, trace sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,400-16,450 SILTY SANDSTONE: light to medium gray, off white, light brown, dark gray, tan, very fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,450-16,500 SILTY SANDSTONE: cream, light brown, medium gray-brown, off white, light gray, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,500-16,550 SILTY SANDSTONE: cream, light brown, medium gray-brown, off white, light gray, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,550-16,600 SILTY SANDSTONE: light to medium brown, gray, off white, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,600-16,650 SILTY SANDSTONE: tan, medium gray, off white, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,650-16,700 SILTY SANDSTONE: tan, medium gray, off white, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

16,700-16,750 SILTY SANDSTONE: tan, medium gray, off white, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube



17,400-17,450 SILTY SANDSTONE: medium to dark gray, light brown, off white, very fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

17,450-17,500 SILTY SANDSTONE: medium to dark gray, light brown, off white, very fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

17,500-17,550 SILTY SANDSTONE: medium to dark gray, light brown, off white, very fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, rare SHALE: black, dark gray-brown, firm, blocky, earthy texture, occasional disseminated pyrite, petroliferous, carbonaceous, earthy porosity, sample moderately contaminated with lube

**Upper Bakken/Middle Bakken Contact**

**17,540' MD; 10,766' TVD (-8,698')**

17,500-17,597 SHALE: black, dark gray-brown, firm, blocky, earthy texture, occasional disseminated pyrite, petroliferous, carbonaceous, earthy porosity, sample moderately contaminated with lube

**SIDETRACK INITIATED AT 17,420' MD**

17,450-17,500 SILTY SANDSTONE: light to medium gray, off white, dark gray, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

17,500-17,550 SILTY SANDSTONE: light to medium gray, blue-gray, off white, dark gray, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

17,550-17,600 SILTY SANDSTONE: light gray, blue-gray, off white, dark gray, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

17,600-17,650 SILTY SANDSTONE: medium to dark gray, blue-gray, off white, light brown, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

17,650-17,700 SILTY SANDSTONE: medium to dark gray, blue-gray, off white, light brown, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, rare disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

17,700-17,750 SILTY SANDSTONE: light to medium gray-brown, off white, tan, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

17,750-17,800 SILTY SANDSTONE: light to medium gray-brown, off white, tan, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, rare nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube

17,800-17,850 SILTY SANDSTONE: tan, off white, light blue-gray, very fine to fine grained, firm, sub-angular, rarely sub-rounded, moderately sorted, calcite cemented, moderately cemented, trace disseminated pyrite, trace nodular pyrite, trace very fine to fine intergranular porosity, trace spotty light brown oil stain, sample moderately contaminated with lube











## Directional Survey Certification

**Operator:** Oasis Petroleum LLC    **Well Name:** Kline Federal 5300 11-18 2B    **API:** 33-053-06243

**Enseco Job#:** S15090-02    **Job Type:** MWD D&I    **County, State:** McKenzie County, N. Dakota

**Well Surface Hole Location (SHL):** Lot 1, Sec. 18, T153N, R100W (960' FNL & 318 FWL)

**Latitude:** 48° 04' 45.680 N    **Longitude:** 103° 36' 10.190 W    **Datum:** Nad 83

**Final MWD Report Date:** Feb. 28, 2015    **MWD Survey Run Date:** Feb. 25, 2015 to Feb. 27, 2015

**Tied In to Surveys Provided By:** Enseco Directional Drilling D&I MWD    **MD:** Surface

**MWD Surveyed from** 00 ft to 2,081.0 ft MD    **Survey Type:** Positive Pulse D&I MWD    **Sensor to Bit:** 63 ft

**Rig Contractor:** Noble    **Rig Number:** 2    **RKB Height:** 2,056.0 ft    **GL Elevation:** 2,056.0 ft

**MWD Surveyor Name:** Brett McClain

"The data and calculations for this survey have been checked by me and conform to the calibration standards and operational procedures set forth by Enseco Energy Services USA Corp. I am authorized and qualified to review the data, calculations and this report and that the report represents a true and correct Directional Survey of this well based on the original data corrected to True North and obtained at the well site. Wellbore coordinates are calculated using the minimum curvature method."

Jonathan Hovland, Well Planner

**Enseco Representative Name, Title**

Jonathan Hovland

**Signature**

**March 5th 2015**

**Date Signed**

On this the \_\_\_ day of \_\_\_, 20\_\_\_, before me personally appeared First & Last Name, to me known as the person described in and who executed the foregoing instrument and acknowledged the (s)he executed the same as his/her free act and deed.

**Seal:** \_\_\_\_\_  
**Notary Public**

**Commission Expiry**



# Enseco Survey Report

05 March, 2015

## Oasis Petroleum LLC

McKenzie County, North Dakota  
Lot 1 Sec.18 Twp.153N Rge.100W  
Kline Federal 5300 11-18 2B  
Job # S15090-02  
API#: 33-053-06243

**Survey: Final Surveys Vertical Section**





## Survey Report



<b>Company:</b>	Oasis Petroleum LLC	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2B
<b>Project:</b>	McKenzie County, North Dakota	<b>Ground Level Elevation:</b>	2,056.00usft
<b>Site:</b>	Lot 1 Sec.18 Twp.153N Rge.100W	<b>Wellhead Elevation:</b>	WELL @ 2056.00usft (Original Well Elev)
<b>Well:</b>	Kline Federal 5300 11-18 2B	<b>North Reference:</b>	True
<b>Wellbore:</b>	Job # S15090-02	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Final Surveys Vertical Section	<b>Database:</b>	EDM5000

<b>Project</b>	McKenzie County, North Dakota		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	North Dakota Northern Zone		Using geodetic scale factor

<b>Site</b>	Lot 1 Sec.18 Twp.153N Rge.100W		
<b>Site Position:</b>		<b>Northing:</b>	408,992.30 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,210,243.30 usft
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "

<b>Well</b>	Kline Federal 5300 11-18 2B	API#: 33-053-06243				
<b>Well Position</b>	+N/-S +E/-W	0.00 usft	<b>Northing:</b> <b>Easting:</b>	408,992.30 usft 1,210,243.30 usft	<b>Latitude:</b> <b>Longitude:</b>	48° 4' 45.680 N 103° 36' 10.190 W
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	usft	<b>Grid Convergence:</b>	-2.309°
					<b>Ground Level:</b>	2,056.00usft

<b>Wellbore</b>	Job # S15090-02				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	3/5/2015	8.302	72.945	56,271

<b>Design:</b>	Final Surveys Vertical Section	<b>Survey Error Model:</b>	Standard ISCWSA MWD Tool	
<b>Audit Notes:</b>				
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>
<b>Vertical Section:</b>		<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>
		0.00	0.00	0.00
				<b>Direction (°)</b>
				317.15

<b>Company:</b>	Oasis Petroleum LLC	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2B
<b>Project:</b>	McKenzie County, North Dakota	<b>Ground Level Elevation:</b>	2,056.00usft
<b>Site:</b>	Lot 1 Sec.18 Twp.153N Rge.100W	<b>Wellhead Elevation:</b>	WELL @ 2056.00usft (Original Well Elev)
<b>Well:</b>	Kline Federal 5300 11-18 2B	<b>North Reference:</b>	True
<b>Wellbore:</b>	Job # S15090-02	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Final Surveys Vertical Section	<b>Database:</b>	EDM5000

Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (%/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
<b>Tie-in from Surface</b>										
0.00	0.00	0.00	0.00	2,056.00	0.00	0.00	0.00	0.00	0.00	0.00
132.00	0.60	215.50	132.00	1,924.00	-0.56	-0.40	-0.14	0.45	0.45	0.00
224.00	0.50	210.10	223.99	1,832.01	-1.30	-0.88	-0.35	0.12	-0.11	-5.87
314.00	0.70	269.40	313.99	1,742.01	-1.65	-1.63	-0.10	0.69	0.22	65.89
399.00	0.60	281.10	398.98	1,657.02	-1.57	-2.58	0.61	0.19	-0.12	13.76
489.00	0.50	275.00	488.98	1,567.02	-1.44	-3.44	1.28	0.13	-0.11	-6.78
579.00	0.80	278.30	578.97	1,477.03	-1.32	-4.45	2.06	0.34	0.33	3.67
663.00	0.50	268.20	662.97	1,393.03	-1.24	-5.40	2.76	0.38	-0.36	-12.02
751.00	0.60	292.30	750.96	1,305.04	-1.08	-6.21	3.43	0.28	0.11	27.39
840.00	0.40	301.00	839.96	1,216.04	-0.74	-6.91	4.15	0.24	-0.22	9.78
927.00	0.70	307.10	926.96	1,129.04	-0.27	-7.59	4.97	0.35	0.34	7.01
1,015.00	0.70	222.00	1,014.95	1,041.05	-0.34	-8.38	5.45	1.08	0.00	-96.70
1,101.00	0.60	341.60	1,100.95	955.05	-0.31	-8.87	5.81	1.31	-0.12	139.07
1,188.00	0.50	66.70	1,187.95	868.05	0.28	-8.67	6.10	0.86	-0.11	97.82
1,277.00	0.90	38.80	1,276.94	779.06	0.97	-7.87	6.07	0.58	0.45	-31.35
1,365.00	0.90	16.80	1,364.93	691.07	2.17	-7.24	6.52	0.39	0.00	-25.00
1,450.00	0.70	15.30	1,449.92	606.08	3.31	-6.91	7.13	0.24	-0.24	-1.76
1,539.00	0.80	332.70	1,538.91	517.09	4.39	-7.05	8.01	0.62	0.11	-47.87
1,628.00	1.10	343.10	1,627.90	428.10	5.76	-7.58	9.38	0.39	0.34	11.69
1,714.00	0.40	7.80	1,713.89	342.11	6.85	-7.78	10.31	0.88	-0.81	28.72
1,803.00	0.40	120.30	1,802.89	253.11	7.00	-7.47	10.21	0.75	0.00	126.40
1,889.00	0.30	96.80	1,888.89	167.11	6.82	-6.99	9.75	0.20	-0.12	-27.33
1,987.00	0.60	120.10	1,986.89	69.11	6.53	-6.29	9.07	0.35	0.31	23.78
<b>Last MWD Survey</b>										
2,081.00	0.90	135.20	2,080.88	-24.88	5.76	-5.35	7.86	0.38	0.32	16.06

Survey Annotations					
Local Coordinates					
MD (usft)	TVD (usft)	+N/S (usft)	+E/W (usft)	Comment	
0.00	0.00	0.00	0.00	Tie-in from Surface	
2,081.00	2,080.88	5.76	-5.35	Last MWD Survey	



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

Monday, June 15, 2015

State of North Dakota

Subject: **Surveys**

Re: **Oasis**  
**Kline Federal 5300 11-18 2B**  
**McKenzie, 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:

<b>Surveyor Name</b>	<b>Surveyor Title</b>	<b>Borehole Number</b>	<b>Start Depth</b>	<b>End Depth</b>	<b>Start Date</b>	<b>End Date</b>	<b>Type of</b>	<b>TD Straight Line Projection</b>
Nick Brochu	MWD Operator	O.H.	2081'	17489'	05/29/15	06/03/15	MWD	17597'
Nick Brochu	MWD Operator	ST 1	17299'	20382'	06/03/15	06/05/15	MWD	20450'

If any other information is required please contact the undersigned at the letterhead address or phone number.

---

Douglas Hudson  
Well Planner

The signature "Douglas Hudson" is handwritten in black ink. Below the signature, the name "Douglas Hudson" is printed in a standard font, followed by the title "Well Planner" in a smaller font.



**RYAN DIRECTIONAL SERVICES, INC.**  
A NABORG COMPANY

Ryan Directional Services, Inc.  
19510 Oil Center Blvd.  
Houston, Texas 77073  
Bus: 281.443.1414  
Fax: 281.443.1676

Friday, June 05, 2015

State of North Dakota  
County of McKenzie

Subject: **Survey Certification Letter**

Survey Company: Ryan Directional Services, Inc.

Job Number: 8983

Survey Job Type: Ryan MWD

Customer: Oasis Petroleum North America

Well Name: Kline Federal 5300 11-18 2B

Rig Name: Xtreme 21

Surface: 48° 4' 45.680 N / 103° 36' 10.190 W

A.P.I. No: 33-053-06243

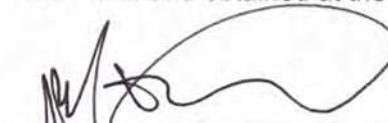
Location: McKenzie, ND

RKB Height: 2070'

Distance to Bit: 68'

<i>Surveyor Name</i>	<i>Surveyor Title</i>	<i>Borehole Number</i>	<i>Start Depth</i>	<i>End Depth</i>	<i>Start Date</i>	<i>End Date</i>	<i>Type of</i>	<i>TD Straight Line Projection</i>
Nick Brochu	MWD Supervisor	OH	11032'	17489'	05/29/15	06/03/15	MWD	17557'
Nick Brochu	MWD Supervisor	ST1	17299'	20382'	06/03/15	06/05/15	MWD	20450'

The data and calculations for this survey have been checked by me and conform to the calibration standards and operational procedures set forth by Ryan Directional Services, Inc. I am authorized and qualified to review the data, calculations and these reports; the reports represents true and correct Directional Surveys of this well based on the original data, the minimum curvature method, corrected to True North and obtained at the well site.

  
\_\_\_\_\_  
**Nick Brochu**  
MWD Supervisor  
Ryan Directional Services, Inc.



### SURVEY REPORT

Customer: **Oasis Petroleum**  
Well Name: **Kline Federal 5300 11-18 2B**  
Rig #: **Nabors B27**  
API #: **33-053-06243**  
Calculation Method: **Minimum Curvature Calculation**

MWD Operator: **D.FOLEY / D.OGDEN**  
Directional Drillers: **RPM**  
Survey Corrected To: **True North**  
Vertical Section Direction: **90**  
Total Correction: **8.30**  
Temperature Forecasting Model (Chart Only): **Logarithmic**

Survey #	MD	Inc	Azm	Temp	TVD	VS	N/S	E/W	DLS
<b>Tie in to Gyro Surveys</b>									
<b>Tie In</b>	<b>2081</b>	<b>0.90</b>	<b>135.20</b>		<b>2080.88</b>	<b>-5.35</b>	<b>5.76</b>	<b>-5.35</b>	<b>0.38</b>
1	2176	1.60	146.20	77.00	2175.86	-4.09	4.13	-4.09	0.78
2	2270	1.70	152.90	66.00	2269.82	-2.72	1.80	-2.72	0.23
3	2365	1.00	160.10	82.00	2364.79	-1.80	-0.24	-1.80	0.76
4	2459	0.70	163.90	84.00	2458.78	-1.36	-1.56	-1.36	0.32
<b>5</b>	<b>2553</b>	<b>0.50</b>	<b>263.40</b>	<b>87.00</b>	<b>2552.78</b>	<b>-1.61</b>	<b>-2.16</b>	<b>-1.61</b>	<b>0.98</b>
6	2647	0.80	284.50	89.00	2646.77	-2.65	-2.04	-2.65	0.40
7	2742	1.50	298.80	91.00	2741.75	-4.38	-1.28	-4.38	0.79
8	2836	1.90	300.00	93.00	2835.71	-6.81	0.10	-6.81	0.43
9	2930	2.30	305.70	95.00	2929.65	-9.69	1.97	-9.69	0.48
<b>10</b>	<b>3024</b>	<b>1.10</b>	<b>321.10</b>	<b>96.00</b>	<b>3023.60</b>	<b>-11.79</b>	<b>3.78</b>	<b>-11.79</b>	<b>1.35</b>
11	3119	1.40	328.70	100.00	3118.58	-12.96	5.48	-12.96	0.36
12	3213	1.20	34.40	102.00	3212.56	-13.00	7.27	-13.00	1.51
13	3307	1.20	47.50	104.00	3306.54	-11.72	8.75	-11.72	0.29
14	3401	0.90	36.20	105.00	3400.53	-10.56	10.01	-10.56	0.39
<b>15</b>	<b>3495</b>	<b>1.00</b>	<b>36.90</b>	<b>107.00</b>	<b>3494.51</b>	<b>-9.63</b>	<b>11.26</b>	<b>-9.63</b>	<b>0.11</b>
16	3590	0.70	43.50	109.00	3589.50	-8.74	12.35	-8.74	0.33
17	3684	0.80	33.50	111.00	3683.49	-7.98	13.31	-7.98	0.17
18	3778	0.60	41.60	113.00	3777.49	-7.29	14.22	-7.29	0.24
19	3872	0.50	37.40	114.00	3871.48	-6.71	14.92	-6.71	0.11
<b>20</b>	<b>3966</b>	<b>0.40</b>	<b>14.70</b>	<b>114.00</b>	<b>3965.48</b>	<b>-6.38</b>	<b>15.56</b>	<b>-6.38</b>	<b>0.22</b>
21	4060	0.30	25.70	116.00	4059.48	-6.19	16.10	-6.19	0.13
22	4154	0.40	346.40	116.00	4153.48	-6.16	16.64	-6.16	0.27
23	4248	0.50	76.80	118.00	4247.47	-5.84	17.05	-5.84	0.68
24	4343	0.50	84.90	120.00	4342.47	-5.02	17.19	-5.02	0.07
<b>25</b>	<b>4437</b>	<b>0.40</b>	<b>36.40</b>	<b>122.00</b>	<b>4436.47</b>	<b>-4.42</b>	<b>17.49</b>	<b>-4.42</b>	<b>0.41</b>
26	4531	0.30	48.60	122.00	4530.47	-4.04	17.91	-4.04	0.13
27	4625	0.40	217.00	123.00	4624.47	-4.05	17.81	-4.05	0.74
28	4720	0.40	225.60	125.00	4719.46	-4.49	17.32	-4.49	0.06
29	4813	0.40	330.20	125.00	4812.46	-4.88	17.37	-4.88	0.68
<b>30</b>	<b>4907</b>	<b>0.50</b>	<b>128.90</b>	<b>127.00</b>	<b>4906.46</b>	<b>-4.73</b>	<b>17.40</b>	<b>-4.73</b>	<b>0.94</b>
31	5001	0.60	143.20	127.00	5000.46	-4.11	16.75	-4.11	0.18
32	5095	0.40	207.70	129.00	5094.45	-3.97	16.06	-3.97	0.60
33	5190	0.30	193.10	129.00	5189.45	-4.18	15.53	-4.18	0.14
34	5284	0.60	181.00	131.00	5283.45	-4.25	14.79	-4.25	0.33
<b>35</b>	<b>5378</b>	<b>0.80</b>	<b>158.90</b>	<b>131.00</b>	<b>5377.44</b>	<b>-4.02</b>	<b>13.69</b>	<b>-4.02</b>	<b>0.35</b>
36	5472	0.80	177.40	132.00	5471.43	-3.75	12.42	-3.75	0.27
37	5567	1.10	185.80	134.00	5566.42	-3.81	10.85	-3.81	0.35
38	5661	1.10	202.30	134.00	5660.40	-4.25	9.12	-4.25	0.34
39	5755	0.60	98.20	134.00	5754.40	-4.10	8.22	-4.10	1.46
<b>40</b>	<b>5850</b>	<b>0.60</b>	<b>89.90</b>	<b>136.00</b>	<b>5849.39</b>	<b>-3.11</b>	<b>8.15</b>	<b>-3.11</b>	<b>0.09</b>
41	5944	0.70	54.60	138.00	5943.39	-2.15	8.48	-2.15	0.43
42	6038	0.70	36.50	138.00	6037.38	-1.34	9.27	-1.34	0.23
43	6132	0.80	38.60	138.00	6131.37	-0.59	10.25	-0.59	0.11
44	6226	1.20	26.10	138.00	6225.36	0.25	11.64	0.25	0.48
<b>45</b>	<b>6320</b>	<b>1.40</b>	<b>22.00</b>	<b>141.00</b>	<b>6319.33</b>	<b>1.11</b>	<b>13.59</b>	<b>1.11</b>	<b>0.23</b>
46	6414	1.20	62.70	143.00	6413.31	2.42	15.11	2.42	0.98
47	6509	1.30	47.90	145.00	6508.29	4.10	16.29	4.10	0.35
48	6603	1.40	37.00	147.00	6602.26	5.58	17.92	5.58	0.29
49	6697	1.10	52.80	147.00	6696.24	6.99	19.38	6.99	0.48
<b>50</b>	<b>6791</b>	<b>1.10</b>	<b>71.10</b>	<b>152.00</b>	<b>6790.22</b>	<b>8.57</b>	<b>20.22</b>	<b>8.57</b>	<b>0.37</b>
51	6885	0.90	72.50	154.00	6884.21	10.12	20.73	10.12	0.21
52	6979	1.10	38.50	156.00	6978.19	11.39	21.66	11.39	0.65
53	7073	1.20	73.50	158.00	7072.18	12.90	22.65	12.90	0.74
54	7167	0.80	101.80	159.00	7166.16	14.48	22.79	14.48	0.66
<b>55</b>	<b>7262</b>	<b>1.00</b>	<b>127.00</b>	<b>161.00</b>	<b>7261.15</b>	<b>15.79</b>	<b>22.16</b>	<b>15.79</b>	<b>0.46</b>
56	7356	0.90	118.50	161.00	7355.14	17.10	21.31	17.10	0.18
57	7450	1.00	121.00	163.00	7449.13	18.45	20.54	18.45	0.12
58	7544	0.70	113.20	165.00	7543.12	19.68	19.89	19.68	0.34
59	7639	0.90	108.40	165.00	7638.11	20.92	19.43	20.92	0.22
<b>60</b>	<b>7733</b>	<b>1.00</b>	<b>107.40</b>	<b>167.00</b>	<b>7732.09</b>	<b>22.40</b>	<b>18.95</b>	<b>22.40</b>	<b>0.11</b>
61	7827	1.10	95.80	167.00	7826.08	24.08	18.61	24.08	0.25
62	7921	0.80	82.00	167.00	7920.06	25.63	18.61	25.63	0.40
63	8015	0.80	89.90	167.00	8014.06	26.94	18.70	26.94	0.12
64	8109	0.70	82.20	170.00	8108.05	28.16	18.78	28.16	0.15
<b>65</b>	<b>8203</b>	<b>0.60</b>	<b>108.20</b>	<b>172.00</b>	<b>8202.04</b>	<b>29.20</b>	<b>18.71</b>	<b>29.20</b>	<b>0.33</b>

**SURVEY REPORT**

Customer: **Oasis Petroleum**  
 Well Name: **Kline Federal 5300 11-18 2B**  
 Rig #: **Nabors B27**  
 API #: **33-053-06243**  
 Calculation Method: **Minimum Curvature Calculation**

MWD Operator: **D.FOLEY / D.OGDEN**  
 Directional Drillers: **RPM**  
 Survey Corrected To: **True North**  
 Vertical Section Direction: **90**  
 Total Correction: **8.30**  
 Temperature Forecasting Model (Chart Only): **Logarithmic**

Survey #	MD	Inc	Azm	Temp	TVD	VS	N/S	E/W	DLS
66	8298	0.50	118.60	174.00	8297.04	30.04	18.35	30.04	0.15
67	8392	0.50	108.30	159.00	8391.03	30.79	18.03	30.79	0.10
68	8486	0.50	89.90	161.00	8485.03	31.58	17.90	31.58	0.17
69	8580	0.60	102.80	167.00	8579.03	32.48	17.79	32.48	0.17
<b>70</b>	<b>8674</b>	<b>0.70</b>	<b>110.80</b>	<b>168.00</b>	<b>8673.02</b>	<b>33.49</b>	<b>17.48</b>	<b>33.49</b>	<b>0.14</b>
71	8769	0.60	115.20	170.00	8768.01	34.48	17.06	34.48	0.12
72	8863	0.60	133.30	172.00	8862.01	35.29	16.51	35.29	0.20
73	8957	0.40	114.20	172.00	8956.00	35.95	16.04	35.95	0.27
74	9051	0.40	118.30	174.00	9050.00	36.53	15.75	36.53	0.03
<b>75</b>	<b>9145</b>	<b>0.70</b>	<b>97.20</b>	<b>176.00</b>	<b>9144.00</b>	<b>37.39</b>	<b>15.52</b>	<b>37.39</b>	<b>0.38</b>
76	9240	0.20	343.00	177.00	9239.00	37.92	15.61	37.92	0.85
77	9334	0.20	335.80	177.00	9333.00	37.80	15.92	37.80	0.03
78	9428	0.40	38.40	179.00	9426.99	37.94	16.32	37.94	0.38
79	9523	0.50	27.20	177.00	9521.99	38.34	16.95	38.34	0.14
<b>80</b>	<b>9617</b>	<b>0.60</b>	<b>10.90</b>	<b>177.00</b>	<b>9615.99</b>	<b>38.62</b>	<b>17.80</b>	<b>38.62</b>	<b>0.20</b>
81	9711	0.50	2.40	181.00	9709.98	38.73	18.69	38.73	0.14
82	9805	0.50	354.20	185.00	9803.98	38.70	19.51	38.70	0.08
83	9899	0.50	330.90	185.00	9897.98	38.46	20.28	38.46	0.21
84	9993	0.60	353.10	186.00	9991.97	38.20	21.12	38.20	0.25
<b>85</b>	<b>10087</b>	<b>0.70</b>	<b>0.00</b>	<b>188.00</b>	<b>10085.97</b>	<b>38.14</b>	<b>22.19</b>	<b>38.14</b>	<b>0.13</b>
86	10171	1.00	11.90	188.00	10169.96	38.30	23.42	38.30	0.41
<b>87</b>	<b>10201</b>	<b>1.00</b>	<b>4.30</b>	<b>168.00</b>	<b>10199.95</b>	<b>38.37</b>	<b>23.93</b>	<b>38.37</b>	<b>0.44</b>
88	10232	1.50	58.70	176.00	10230.94	38.74	24.42	38.74	3.96
89	10263	4.40	88.80	176.00	10261.90	40.27	24.65	40.27	10.30
<b>90</b>	<b>10295</b>	<b>7.40</b>	<b>97.40</b>	<b>176.00</b>	<b>10293.73</b>	<b>43.54</b>	<b>24.41</b>	<b>43.54</b>	<b>9.75</b>
91	10326	11.10	97.50	177.00	10324.32	48.48	23.76	48.48	11.94
92	10357	14.50	98.30	177.00	10354.55	55.28	22.81	55.28	10.98
93	10389	17.50	100.70	177.00	10385.30	63.98	21.34	63.98	9.60
94	10420	20.90	103.40	179.00	10414.58	73.94	19.19	73.94	11.33
<b>95</b>	<b>10452</b>	<b>24.20</b>	<b>104.50</b>	<b>179.00</b>	<b>10444.12</b>	<b>85.85</b>	<b>16.23</b>	<b>85.85</b>	<b>10.40</b>
96	10483	27.20	104.60	179.00	10472.06	98.86	12.85	98.86	9.68
97	10514	30.20	104.80	181.00	10499.24	113.25	9.07	113.25	9.68
98	10546	33.30	105.00	181.00	10526.45	129.52	4.74	129.52	9.69
99	10577	36.40	105.90	181.00	10551.89	146.59	0.02	146.59	10.14
<b>100</b>	<b>10609</b>	<b>39.70</b>	<b>107.80</b>	<b>183.00</b>	<b>10577.09</b>	<b>165.46</b>	<b>-5.71</b>	<b>165.46</b>	<b>10.94</b>
101	10640	43.20	109.50	183.00	10600.32	184.90	-12.28	184.90	11.86
<b>102</b>	<b>10671</b>	<b>46.60</b>	<b>110.40</b>	<b>183.00</b>	<b>10622.27</b>	<b>205.46</b>	<b>-19.75</b>	<b>205.46</b>	<b>11.16</b>
103	10703	50.10	110.40	181.00	10643.54	227.87	-28.08	227.87	10.94
104	10734	53.80	109.50	174.00	10662.64	250.81	-36.41	250.81	12.15
<b>105</b>	<b>10766</b>	<b>57.80</b>	<b>108.00</b>	<b>174.00</b>	<b>10680.62</b>	<b>275.87</b>	<b>-44.90</b>	<b>275.87</b>	<b>13.09</b>
106	10797	62.90	106.70	176.00	10695.96	301.58	-52.93	301.58	16.85
107	10828	67.30	106.40	177.00	10709.00	328.53	-60.93	328.53	14.22
108	10860	71.50	105.70	177.00	10720.26	357.31	-69.21	357.31	13.28
109	10891	73.50	105.60	179.00	10729.58	385.78	-77.18	385.78	6.46
<b>110</b>	<b>10922</b>	<b>76.40</b>	<b>104.50</b>	<b>179.00</b>	<b>10737.63</b>	<b>414.68</b>	<b>-84.96</b>	<b>414.68</b>	<b>9.96</b>
111	10954	81.30	103.40	181.00	10743.82	445.14	-92.52	445.14	15.68
112	10985	85.90	102.10	183.00	10747.27	475.18	-99.31	475.18	15.41
113	11007	88.40	100.60	183.00	10748.37	496.72	-103.64	496.72	13.25
114	11032	88.40	101.10	230.00	10749.06	521.27	-108.34	521.27	2.00
<b>115</b>	<b>11063</b>	<b>88.90</b>	<b>100.50</b>	<b>228.00</b>	<b>10749.79</b>	<b>551.71</b>	<b>-114.15</b>	<b>551.71</b>	<b>2.52</b>
116	11094	88.80	100.70	226.00	10750.42	582.17	-119.85	582.17	0.72
117	11124	89.30	98.80	226.00	10750.91	611.73	-124.93	611.73	6.55
118	11155	88.80	97.30	224.00	10751.43	642.42	-129.27	642.42	5.10
119	11186	88.50	96.10	224.00	10752.16	673.20	-132.89	673.20	3.99
<b>120</b>	<b>11217</b>	<b>88.70</b>	<b>95.40</b>	<b>224.00</b>	<b>10752.92</b>	<b>704.04</b>	<b>-135.99</b>	<b>704.04</b>	<b>2.35</b>
121	11248	89.10	93.90	224.00	10753.51	734.93	-138.50	734.93	5.01
122	11279	91.30	93.60	226.00	10753.40	765.86	-140.53	765.86	7.16
123	11310	92.30	92.90	226.00	10752.43	796.79	-142.29	796.79	3.94
124	11341	92.10	92.80	226.00	10751.24	827.73	-143.83	827.73	0.72
<b>125</b>	<b>11372</b>	<b>91.60</b>	<b>91.70</b>	<b>226.00</b>	<b>10750.24</b>	<b>858.69</b>	<b>-145.04</b>	<b>858.69</b>	<b>3.90</b>
126	11403	90.80	90.80	226.00	10749.59	889.68	-145.72	889.68	3.88
127	11434	90.30	89.10	228.00	10749.29	920.68	-145.69	920.68	5.72
128	11465	89.60	88.10	230.00	10749.32	951.67	-144.94	951.67	3.94
129	11495	89.80	88.20	231.00	10749.48	981.65	-143.97	981.65	0.75
<b>130</b>	<b>11588</b>	<b>89.60</b>	<b>87.80</b>	<b>233.00</b>	<b>10749.96</b>	<b>1074.59</b>	<b>-140.72</b>	<b>1074.59</b>	<b>0.48</b>

**SURVEY REPORT**

Customer: **Oasis Petroleum**  
 Well Name: **Kline Federal 5300 11-18 2B**  
 Rig #: **Nabors B27**  
 API #: **33-053-06243**  
 Calculation Method: **Minimum Curvature Calculation**

MWD Operator: **D.FOLEY / D.OGDEN**  
 Directional Drillers: **RPM**  
 Survey Corrected To: **True North**  
 Vertical Section Direction: **90**  
 Total Correction: **8.30**  
 Temperature Forecasting Model (Chart Only): **Logarithmic**

Survey #	MD	Inc	Azm	Temp	TVD	VS	N/S	E/W	DLS
131	11681	89.60	88.50	233.00	10750.61	1167.54	-137.72	1167.54	0.75
132	11773	90.50	88.30	237.00	10750.53	1259.50	-135.15	1259.50	1.00
133	11865	90.40	89.30	237.00	10749.81	1351.48	-133.22	1351.48	1.09
134	11960	90.90	89.50	240.00	10748.73	1446.47	-132.23	1446.47	0.57
<b>135</b>	<b>12055</b>	<b>92.20</b>	<b>89.70</b>	<b>242.00</b>	<b>10746.16</b>	<b>1541.43</b>	<b>-131.57</b>	<b>1541.43</b>	<b>1.38</b>
136	12150	91.10	89.80	242.00	10743.43	1636.39	-131.15	1636.39	1.16
137	12245	91.70	89.10	242.00	10741.11	1731.35	-130.24	1731.35	0.97
138	12340	89.80	89.20	242.00	10739.86	1826.33	-128.83	1826.33	2.00
139	12434	88.40	87.80	246.00	10741.34	1920.28	-126.37	1920.28	2.11
<b>140</b>	<b>12529</b>	<b>88.80</b>	<b>87.60</b>	<b>248.00</b>	<b>10743.66</b>	<b>2015.18</b>	<b>-122.56</b>	<b>2015.18</b>	<b>0.47</b>
141	12623	89.10	88.80	246.00	10745.38	2109.11	-119.61	2109.11	1.32
142	12719	90.90	90.30	246.00	10745.38	2205.10	-118.85	2205.10	2.44
143	12814	89.60	89.90	246.00	10744.97	2300.10	-119.02	2300.10	1.43
144	12910	90.00	89.50	248.00	10745.30	2396.10	-118.52	2396.10	0.59
<b>145</b>	<b>13005</b>	<b>90.10</b>	<b>89.50</b>	<b>249.00</b>	<b>10745.22</b>	<b>2491.09</b>	<b>-117.69</b>	<b>2491.09</b>	<b>0.11</b>
146	13101	89.80	89.30	249.00	10745.30	2587.09	-116.68	2587.09	0.38
147	13195	89.60	89.60	251.00	10745.80	2681.08	-115.78	2681.08	0.38
148	13290	89.90	89.60	253.00	10746.21	2776.08	-115.12	2776.08	0.32
149	13384	89.50	89.40	251.00	10746.70	2870.07	-114.30	2870.07	0.48
<b>150</b>	<b>13480</b>	<b>88.90</b>	<b>89.00</b>	<b>253.00</b>	<b>10748.04</b>	<b>2966.05</b>	<b>-112.96</b>	<b>2966.05</b>	<b>0.75</b>
151	13574	89.40	89.10	255.00	10749.44	3060.03	-111.40	3060.03	0.54
<b>152</b>	<b>13671</b>	<b>89.70</b>	<b>88.70</b>	<b>257.00</b>	<b>10750.20</b>	<b>3157.01</b>	<b>-109.54</b>	<b>3157.01</b>	<b>0.52</b>
153	13765	89.50	90.30	255.00	10750.86	3251.00	-108.72	3251.00	1.72
154	13860	89.70	90.20	257.00	10751.52	3346.00	-109.13	3346.00	0.24
<b>155</b>	<b>13956</b>	<b>90.40</b>	<b>90.40</b>	<b>257.00</b>	<b>10751.43</b>	<b>3442.00</b>	<b>-109.63</b>	<b>3442.00</b>	<b>0.76</b>
156	14051	90.10	89.90	258.00	10751.02	3536.99	-109.88	3536.99	0.61
157	14146	89.00	88.00	258.00	10751.77	3631.97	-108.14	3631.97	2.31
158	14240	87.40	86.80	260.00	10754.72	3725.82	-103.88	3725.82	2.13
159	14335	88.20	87.30	260.00	10758.37	3820.62	-99.00	3820.62	0.99
<b>160</b>	<b>14431</b>	<b>89.20</b>	<b>87.60</b>	<b>262.00</b>	<b>10760.54</b>	<b>3916.50</b>	<b>-94.73</b>	<b>3916.50</b>	<b>1.09</b>
161	14525	89.40	86.90	262.00	10761.69	4010.39	-90.22	4010.39	0.77
162	14620	89.20	88.60	260.00	10762.85	4105.30	-86.49	4105.30	1.80
163	14714	90.90	90.40	260.00	10762.77	4199.29	-85.67	4199.29	2.63
164	14809	91.60	92.20	260.00	10760.70	4294.24	-87.82	4294.24	2.03
<b>165</b>	<b>14907</b>	<b>90.70</b>	<b>92.60</b>	<b>262.00</b>	<b>10758.73</b>	<b>4392.13</b>	<b>-91.92</b>	<b>4392.13</b>	<b>1.00</b>
166	15003	89.90	92.90	262.00	10758.23	4488.02	-96.53	4488.02	0.89
167	15099	88.70	92.60	262.00	10759.40	4583.90	-101.13	4583.90	1.29
168	15194	88.10	92.20	264.00	10762.05	4678.78	-105.11	4678.78	0.76
169	15288	90.20	92.80	264.00	10763.45	4772.68	-109.21	4772.68	2.32
<b>170</b>	<b>15382</b>	<b>90.50</b>	<b>92.90</b>	<b>262.00</b>	<b>10762.87</b>	<b>4866.56</b>	<b>-113.88</b>	<b>4866.56</b>	<b>0.34</b>
171	15478	89.80	92.40	255.00	10762.62	4962.45	-118.32	4962.45	0.90
172	15573	90.10	91.00	257.00	10762.71	5057.41	-121.14	5057.41	1.51
173	15668	89.70	89.80	258.00	10762.87	5152.40	-121.80	5152.40	1.33
174	15763	89.00	88.40	260.00	10763.95	5247.38	-120.31	5247.38	1.65
<b>175</b>	<b>15859</b>	<b>87.40</b>	<b>87.00</b>	<b>262.00</b>	<b>10766.96</b>	<b>5343.25</b>	<b>-116.46</b>	<b>5343.25</b>	<b>2.21</b>
176	15955	88.50	88.30	260.00	10770.40	5439.11	-112.53	5439.11	1.77
177	16051	89.60	89.40	258.00	10771.99	5535.07	-110.60	5535.07	1.62
178	16148	89.80	89.20	262.00	10772.50	5632.06	-109.42	5632.06	0.29
179	16244	90.50	90.10	260.00	10772.25	5728.06	-108.83	5728.06	1.19
<b>180</b>	<b>16340</b>	<b>92.20</b>	<b>91.30</b>	<b>262.00</b>	<b>10769.99</b>	<b>5824.02</b>	<b>-110.00</b>	<b>5824.02</b>	<b>2.17</b>
181	16436	92.00	90.80	260.00	10766.47	5919.94	-111.76	5919.94	0.56
182	16532	89.90	90.00	258.00	10764.88	6015.92	-112.43	6015.92	2.34
183	16628	90.00	90.30	260.00	10764.96	6111.92	-112.68	6111.92	0.33
184	16724	88.90	90.20	262.00	10765.88	6207.91	-113.10	6207.91	1.15
<b>185</b>	<b>16820</b>	<b>88.20</b>	<b>90.30</b>	<b>264.00</b>	<b>10768.31</b>	<b>6303.88</b>	<b>-113.52</b>	<b>6303.88</b>	<b>0.74</b>
186	16916	89.50	90.80	264.00	10770.24	6399.85	-114.44	6399.85	1.45
187	17012	89.70	90.90	266.00	10770.91	6495.84	-115.87	6495.84	0.23
188	17106	90.80	91.30	266.00	10770.50	6589.82	-117.67	6589.82	1.25
189	17202	90.90	91.10	264.00	10769.07	6685.79	-119.68	6685.79	0.23
<b>190</b>	<b>17299</b>	<b>89.80</b>	<b>91.30</b>	<b>264.00</b>	<b>10768.48</b>	<b>6782.76</b>	<b>-121.71</b>	<b>6782.76</b>	<b>1.15</b>
191	17394	89.90	91.30	266.00	10768.73	6877.74	-123.87	6877.74	0.11
192	17489	91.70	91.70	266.00	10767.40	6972.69	-126.35	6972.69	1.94
Projection	17597	91.70	91.70		10764.20	7080.60	-129.56	7080.60	0.00



### SURVEY REPORT

Customer: **Oasis Petroleum North America LLC**  
 Well Name: **Kline Federal 5300 11-18 2B**  
 Rig #: **Xtreme 21**  
 API #: **33-053-06243**  
 Calculation Method: **Minimum Curvature Calculation**

MWD Operator: **Sammy Hayman./ David Unger**  
 Directional Drillers: **RPM**  
 Survey Corrected To: **True North**  
 Vertical Section Direction: **90**  
 Total Correction: **8.30**  
 Temperature Forecasting Model (Chart Only): **Logarithmic**

Survey #	MD	Inc	Azm	Temp	TVD	VS	N/S	E/W	DLS
<b>Tie In to Gyro Surveys</b>									
<b>Tie In</b>	<b>17299</b>	<b>89.80</b>	<b>91.30</b>	<b>264.00</b>	<b>10768.48</b>	<b>6782.77</b>	<b>-121.71</b>	<b>6782.77</b>	<b>1.15</b>
1	17394	90.00	91.40	258.00	10768.65	6877.74	-123.95	6877.74	0.24
2	17420	88.90	91.00	258.00	10768.90	6903.74	-124.49	6903.74	4.50
3	17453	87.30	90.90	258.00	10769.99	6936.71	-125.04	6936.71	4.86
4	17489	87.00	90.70	260.00	10771.78	6972.66	-125.54	6972.66	1.00
5	<b>17584</b>	<b>86.00</b>	<b>90.30</b>	<b>258.00</b>	<b>10777.58</b>	<b>7067.48</b>	<b>-126.37</b>	<b>7067.48</b>	<b>1.13</b>
6	17680	89.10	89.90	262.00	10781.68	7163.38	-126.54	7163.38	3.26
7	17776	88.60	89.50	262.00	10783.61	7259.36	-126.03	7259.36	0.67
8	17872	90.20	89.10	262.00	10784.61	7355.35	-124.86	7355.35	1.72
9	17969	90.80	89.10	264.00	10783.77	7452.33	-123.34	7452.33	0.62
10	<b>18065</b>	<b>89.90</b>	<b>89.90</b>	<b>264.00</b>	<b>10783.18</b>	<b>7548.32</b>	<b>-122.50</b>	<b>7548.32</b>	<b>1.25</b>
11	18161	89.90	90.20	264.00	10783.35	7644.32	-122.58	7644.32	0.31
12	18258	88.90	90.60	264.00	10784.36	7741.31	-123.26	7741.31	1.11
13	18354	88.70	90.70	266.00	10786.38	7837.29	-124.35	7837.29	0.23
14	18450	89.50	91.20	266.00	10787.88	7933.26	-125.94	7933.26	0.98
15	<b>18544</b>	<b>90.80</b>	<b>91.10</b>	<b>267.00</b>	<b>10787.64</b>	<b>8027.24</b>	<b>-127.83</b>	<b>8027.24</b>	<b>1.39</b>
16	18640	90.70	90.40	266.00	10786.38	8123.22	-129.08	8123.22	0.74
17	18735	88.40	89.70	266.00	10787.13	8218.21	-129.17	8218.21	2.53
18	18833	87.40	89.50	267.00	10790.72	8316.14	-128.48	8316.14	1.04
19	18928	88.20	90.10	266.00	10794.36	8411.07	-128.15	8411.07	1.05
20	<b>19023</b>	<b>89.30</b>	<b>90.70</b>	<b>266.00</b>	<b>10796.44</b>	<b>8506.04</b>	<b>-128.82</b>	<b>8506.04</b>	<b>1.32</b>
21	19120	89.90	90.70	266.00	10797.11	8603.03	-130.00	8603.03	0.62
22	19215	91.80	91.20	264.00	10795.70	8698.00	-131.57	8698.00	2.07
23	19311	93.20	90.90	266.00	10791.52	8793.89	-133.33	8793.89	1.49
24	19406	91.70	90.20	266.00	10787.46	8888.80	-134.24	8888.80	1.74
25	<b>19502</b>	<b>91.00</b>	<b>89.70</b>	<b>266.00</b>	<b>10785.19</b>	<b>8984.77</b>	<b>-134.16</b>	<b>8984.77</b>	<b>0.90</b>
26	19596	89.20	88.60	267.00	10785.03	9078.76	-132.76	9078.76	2.24
27	19692	89.90	88.50	266.00	10785.78	9174.72	-130.34	9174.72	0.74
28	19787	89.10	88.00	266.00	10786.61	9269.67	-127.43	9269.67	0.99
29	19882	90.30	88.40	266.00	10787.11	9364.62	-124.45	9364.62	1.33
30	<b>19977</b>	<b>91.60</b>	<b>88.40</b>	<b>266.00</b>	<b>10785.54</b>	<b>9459.57</b>	<b>-121.80</b>	<b>9459.57</b>	<b>1.37</b>
31	20073	92.70	88.00	264.00	10781.93	9555.45	-118.79	9555.45	1.22
32	20177	92.60	87.70	253.00	10777.13	9659.27	-114.89	9659.27	0.30
33	20273	91.70	89.80	255.00	10773.52	9755.17	-112.80	9755.17	2.38
34	20369	91.50	89.60	257.00	10770.84	9851.13	-112.29	9851.13	0.29
35	<b>20382</b>	<b>91.60</b>	<b>89.70</b>	<b>257.00</b>	<b>10770.49</b>	<b>9864.13</b>	<b>-112.21</b>	<b>9864.13</b>	<b>1.09</b>
Projection	20450	91.60	89.70	257.00	10768.59	9932.10	-111.86	9932.10	0.00



## SUNDY 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  
SFSN 5749 (09-2006)



Well File No.  
**29334**

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

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date <b>April 9, 2015</b>	<input type="checkbox"/> Drilling Prognosis	<input type="checkbox"/> Spill Report
<input type="checkbox"/> Report of Work Done	Date Work Completed	<input type="checkbox"/> Redrilling or Repair	<input type="checkbox"/> Shooting
<input type="checkbox"/> 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	<input type="checkbox"/> Casing or Liner	<input type="checkbox"/> Acidizing
		<input type="checkbox"/> Plug Well	<input type="checkbox"/> Fracture Treatment
		<input type="checkbox"/> Supplemental History	<input type="checkbox"/> Change Production Method
		<input type="checkbox"/> Temporarily Abandon	<input type="checkbox"/> Reclamation
		<input checked="" type="checkbox"/> Other <b>Suspension of Drilling</b>	

Well Name and Number  
**Kline Federal 5300 11-18 2B**

Footages <b>960 F A L    318 F W L</b>	Qtr-Qtr <b>11</b>	Section <b>18</b>	Township <b>153 N</b>	Range <b>100 W</b>
Field <b>Baker</b>	Pool <b>Bakken</b>	County <b>McKenzie</b>		

### 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
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### DETAILS OF WORK

Oasis Petroleum requests permission for suspension of drilling for approximately 55 days for the referenced well under NDAC 43-02-03-055. Oasis would like to suspend drilling on this well in order to drill the approved Carson SWD 5301 12-24 (well file #90329). The current rig will move to the Carson SWD pad once the vertical well bores have been drilled for all 3 wells on the Kline 11-18 pad. Oasis will return to the Kline 11-18 pad with a second rig on approximately June 6, 2015, to drill the lateral portion of the referenced well to TD.

Company <b>Oasis Petroleum North America LLC</b>	Telephone Number <b>281-404-9575</b>	
Address <b>1001 Fannin St, Suite 1500</b>		
City <b>Houston</b>	State <b>TX</b>	Zip Code <b>77002</b>
Signature 	Printed Name <b>Michael Kukuk</b>	
Title <b>Regulatory Supervisor</b>	Date <b>March 26, 2015</b>	
Email Address <b>mkukuk@oasispetroleum.com</b>		

FOR STATE USE ONLY	
<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <b>4/6/15</b>	
By 	Title <b>Mineral Resources Permit Manager</b>

**Holweger, Todd L.**

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**From:** Michael Kukuk <mkukuk@oasispetroleum.com>  
**Sent:** Thursday, March 26, 2015 6:40 PM  
**To:** Holweger, Todd L.  
**Cc:** Regulatory; APD; Karyme Martin; Jason Swaren  
**Subject:** SOD sundries for the Kline Federal 5300 11-18 pad  
**Attachments:** Kline Federal 11-18 SOD sundries.pdf; ATT00001.txt

**Importance:** High

Good Evening Todd,

Per our conversation I have attached the SOD sundries for the 3 wells on the Kline pad. A few key points:

- 1) We will move the rig to the Carson SWD pad once we have finished drilling the vertical portions of all 3 wells on this pad.
- 2) We will finish drilling the vertical portion of the third well, the Kline Federal 5300 11-18 2B, on April 9<sup>th</sup>.
- 3) We will utilize a 2<sup>nd</sup> rig to drill the lateral portions of the 3 wells on this pad.
- 4) The 2<sup>nd</sup> rig is currently drilling wells on a different pad and is scheduled to reach TD on the final well in late May/early June, leaving a gap of approximately 55 days.
- 5) We will be able to return to the Kline Federal 5300 11-18 pad on or before June 6<sup>th</sup>.

Given the time sensitive nature of this request, expedited review of these sundries would be greatly appreciated.

Thank you for your consideration,

**Michael P. Kukuk**  
**Regulatory Supervisor**  
1001 Fannin, Suite 1500  
Houston, Texas 77002  
281-404-9575  
281-382-5877 (cell)

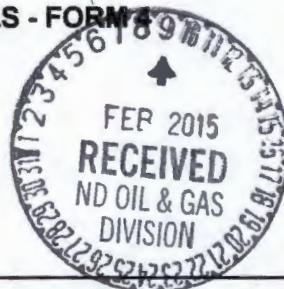
[mkukuk@oasispetroleum.com](mailto:mkukuk@oasispetroleum.com)





## SUNDRY NOTICES AND REPORTS ON WELLS - FORM 1

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.  
**29334**

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

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date <b>March 17, 2015</b>
<input type="checkbox"/> Report of Work Done	Date Work Completed
<input type="checkbox"/> 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	

- |   |   |
|---|---|
| <input type="checkbox"/> Drilling Prognosis   | <input type="checkbox"/> Spill Report             |
| <input type="checkbox"/> Redrilling or Repair | <input type="checkbox"/> Shooting                 |
| <input type="checkbox"/> Casing or Liner      | <input type="checkbox"/> Acidizing                |
| <input type="checkbox"/> Plug Well            | <input type="checkbox"/> Fracture Treatment       |
| <input type="checkbox"/> Supplemental History | <input type="checkbox"/> Change Production Method |
| <input type="checkbox"/> Temporarily Abandon  | <input type="checkbox"/> Reclamation              |
| <input checked="" type="checkbox"/> Other     | <b>Change to Original APD</b>                     |

Well Name and Number  
**Kline Federal 5300 11-18 2T2**

Footages	Qtr-Qtr	Section	Township	Range
960 F N L	318 F W L	<b>LOT1</b>	<b>18</b>	<b>153 N 100 W</b>
Field <b>Baker</b>	Pool <b>Bakken</b>	County <b>McKenzie</b>		

### 24-HOUR PRODUCTION RATE

Before	After
Oil	Bbls
Water	Bbls
Gas	MCF

Name of Contractor(s)

Address	City	State	Zip Code
---------	------	-------	----------

### DETAILS OF WORK

Oasis Petroleum respectfully requests approval to make the following changes to the original APD as follows:

**Name Change: Kline Federal 5300 11-18 2B (previously 2T2)**

**Formation Change: Bakken (previously Three Forks second bench)**

*255' NDIC calc*  
**BHL change: 1080' FNL & 250' FEL Sec 17 T153N R100W**  
(previously: 1530' FNL & 205' FEL)

**Surface casing design:**

Surface Casing of 13 3/8" set at 2068' (previously 9 5/8")

Contingency Casing of 9 5/8" set at 6450'

Intermediate Casing of 7" with weight of 32 set at 11,005' (previously set at 11,111)

Production liner of 4 1/2" set from 10,446' to 20920' (previously set from 10,313' to 20,718')

See attached supporting documents.

*CC 25.00 2-20-15 KB*

*CC 25.00*

Company <b>Oasis Petroleum North America LLC</b>	Telephone Number <b>(281) 404-9652</b>	
Address <b>1001 Fannin Suite 1500</b>		
City <b>Houston</b>	State <b>TX</b>	Zip Code <b>77002</b>
Signature <i>VS</i>	Printed Name <b>Victoria Siemieniewski</b>	
Title <b>Regulatory Specialist</b>	Date <b>February 5, 2015</b>	
Email Address <b>vsiemieniewski@oasispetroleum.com</b>		

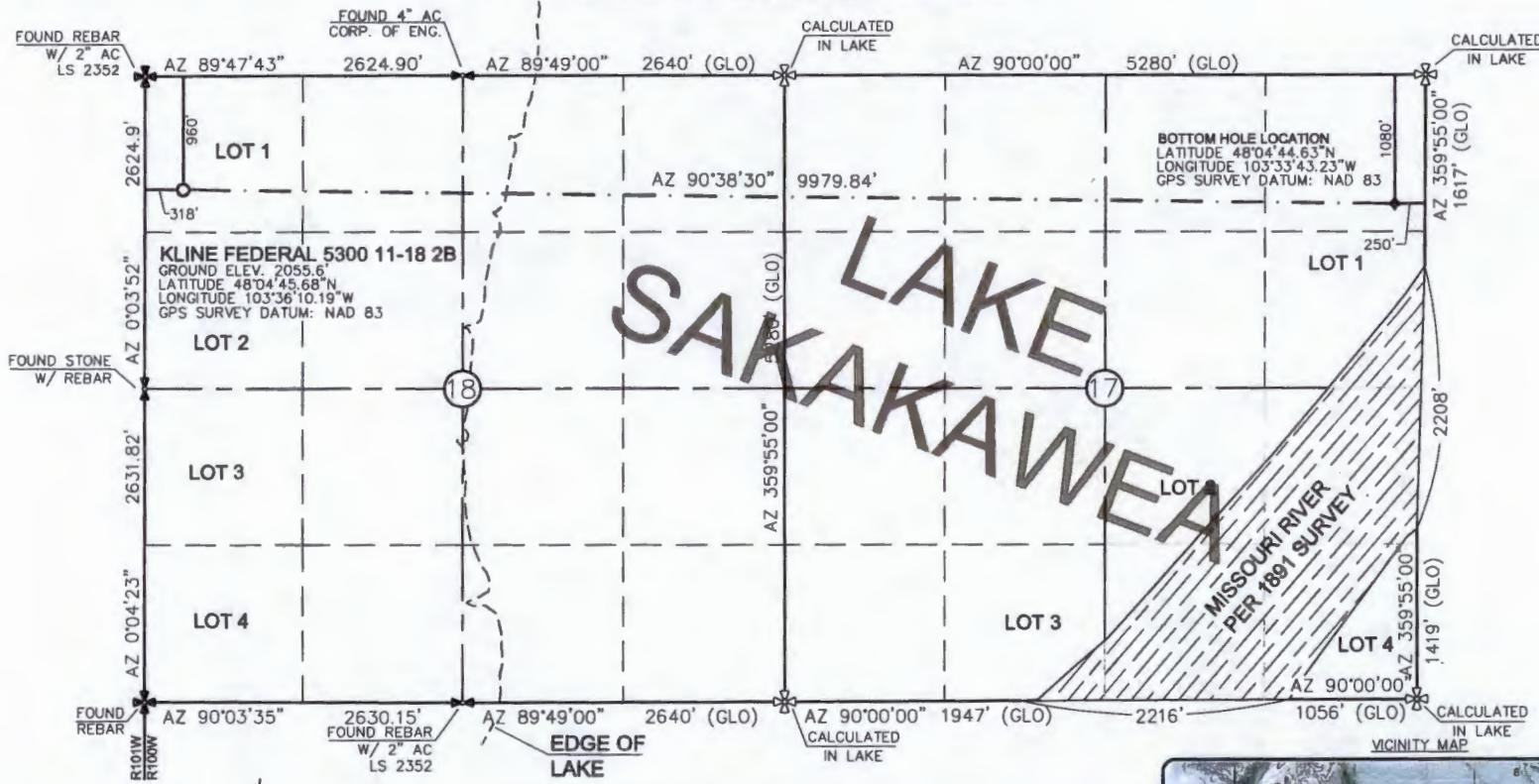
<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <i>2-12-2015</i>	
By <i>David Burns</i>	
Title <b>David Burns</b>	Engineering Tech.

## WELL LOCATION PLAT

OASIS PETROLEUM NORTH AMERICA, LLC  
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

"KLINE FEDERAL 5300 11-18 2B"

980 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE  
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



THIS DOCUMENT WAS ORIGINALLY  
ISSUED AND SEALED BY DARYL D.  
KASEMAN, PLS, REGISTRATION NUMBER  
3880 ON 1/29/15 AND THE  
ORIGINAL DOCUMENTS ARE STORED AT  
THE OFFICES OF INTERSTATE  
ENGINEERING, INC.

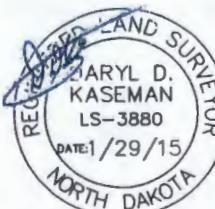


-  - MONUMENT - RECOVERED
-  - MONUMENT - NOT RECOVERED

STAKED ON 5/18/14  
VERTICAL CONTROL DATUM WAS BASED UPON  
CONTROL POINT 4 WITH AN ELEVATION OF 2090.8'

THIS SURVEY AND PLAT IS BEING PROVIDED AT THE REQUEST OF ERIC BAYES 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.

DARYL D. KASEMAN LS-3880



© 2014 INTERSTATE ENGINEERING INC.

Intermediate Engineering, Inc. P.O. Box 848 425 East Main Street Billings, Montana 59101-0270 Ph: (406) 433-0867 Fax: (406) 433-0816 <a href="http://www.interengineering.com">www.interengineering.com</a>	Project No.: B14-045-001 Drawn By: B14-N Checklist Pg.: D-05 Checklist Rev.: APR-2004	Position: Project Manager Date: 7/17/04 By: [Signature]	Description: OASIS PETROLEUM NORTH AMERICA, LLC WELL LOCATION PLAT SECTION 18, T153N, R10W MCKENZIE COUNTY, NORTH DAKOTA REV 1 7/17/04 B14-045-001 REV 2 7/17/04 B14-045-001 REV 3 7/17/04 B14-045-001 REV 4 7/17/04 B14-045-001 REV 5 7/17/04 B14-045-001
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INTERSTATE  
ENGINEERING

88

DRILLING PLAN							
OPERATOR	Oasis Petroleum			COUNTY/STATE	McKenzie Co. ND		
WELL NAME	Kline Federal 5300 11-18 2B			RIG	0		
WELL TYPE	Horizontal Middle Bakken			Surface Location (survey plat):	960' fml	318' fml	
LOCATION	NNNW 18-153N-100W			GROUND ELEV:	2053	Finished Pad Elev.	
EST. T.D.	20,462'			KB ELEV:	2078	Sub Height: 25	
TOTAL LATERA	9,457'						
PROGNOSIS:	Based on 2,078' KB(est)			LOGS:	Type	Interval	
MARKER	DEPTH (Surf Loc)	DATUM (Surf Loc)		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		
Pierre	NDIC MAP	1,988	110	CBL/GR:	Above top of cement/GR to base of casing		
Greenhorn		5,023	(2,945)	MWD GR:	KOP to lateral TD		
Mowry		5,103	(3,025)	DEVIATION:			
Dakota		5,469	(3,391)		Surf:	3 deg. max., 1 deg / 100'; svy every 500'	
Rierdon		6,450	(4,372)		Prod:	5 deg. max., 1 deg / 100'; svy every 100'	
Dunham Salt		6,785	(4,707)	DSTS:			
Dunham Salt Base		6,896	(4,818)		None planned		
Spearfish		6,993	(4,915)	CORES:			
Pine Salt		7,248	(5,170)		None planned		
Pine Salt Base		7,298	(5,218)	MUDLOGGING:			
Opeche Salt		7,341	(5,263)		Two-Man:	8,317'	
Opeche Salt Base		7,371	(5,293)			~200' above the Charles (Kibby) to Casing point; Casing point to TD	
Broom Creek (Top of Minnelusa Gp.)		7,573	(5,495)			30' samples at direction of wellsite geologist; 10' through target @ curve land	
Amsden		7,653	(5,575)	BOP:			
Tyler		7,821	(5,743)		11" 5000 psi blind, pipe & annular		
Otter (Base of Minnelusa Gp.)		8,012	(5,934)				
Kibbey Lime		8,387	(6,289)				
Charles Salt		8,517	(6,439)				
UB		9,141	(7,063)				
Base Last Salt		9,216	(7,138)				
Ratcliffe		9,284	(7,186)				
Mission Canyon		9,421	(7,343)				
Lodgepole		9,999	(7,921)				
Lodgepole Fracture Zone		10,173	(8,095)				
False Bakken		10,698	(8,620)				
Upper Bakken		10,708	(8,630)				
Middle Bakken		10,722	(8,644)				
Middle Bakken Sand Target		10,731	(8,653)				
Base Middle Bakken Sand Target		10,741	(8,663)				
Lower Bakken		10,766	(8,688)				
Three Forks		10,781	(8,703)				
Dip Rate:	0.3						
Max. Anticipated BHP:	4665			Surface Formation:	Glacial till		
MUD:	Interval	Type	WT	VIS	WL	Remarks	
Surface:	0' -	2,088' FW/Gel - Lime Sweeps	8.4-9.0	28-32	NC	Circ Mud Tanks	
Intermediate:	2,088' -	11,005' Invert	9.5-10.4	40-50	30+HHP	Circ Mud Tanks	
Lateral:	11,005' -	20,462' Salt Water	9.8-10.2	28-32	NC	Circ Mud Tanks	
CASING:	Size	WT pcf	Hole	Depth	Cement	WOC	Remarks
Surface:	13-3/8"	54.5#	17-1/2"	2,088'	To Surface	12	100' into Pierre
Dakota Contingency:	9-5/8"	36#	12-1/4"	6,450'	To Surface	12	Below Dakota
Intermediate:	7"	32#	8-3/4"	11,005'	4969	24	500' above Dakota
Production Liner:	4.5"	13.5#	6"	20,462'	TOL @ 10,208'		50' above KOP
PROBABLE PLUGS, IF REQ'D:							
OTHER:	MD	TVD	FNL/FSL	FEL/FWL	S-T-R	AZI	
Surface:	2,088	2,088	980 FNL	318 FWL	SEC 18-T153N-R100W		
KOP:	10,258'	10,258'	980 FNL	368 FWL	SEC 18-T153N-R100W		Build Rate: 12 deg /100'
EOC:	11,005'	10,735'	1039 FNL	836 FWL	SEC 18-T153N-R100W	99.80	
Casing Point:	11,005'	10,735'	1039 FNL	836 FWL	SEC 18-T153N-R100W	99.80	
Middle Bakken Lateral TD:	20,462'	10,784'	1080 FNL	250 FEL	SEC 17-T153N-R100W	90.00	
Comments:							
Request a Sundry for an Open Hole Log Waiver							
Exception well: Oasis Petroleum's Kline Federal 5300 11-18H (153N 100W 18 NW NW)							
Completion Notes: 35 packers, 35 sleeves, no frac string							
Oasis Petroleum does not use Diesel Fuel, as defined by the US EPA in the list below, in our hydraulic fracture operations.							
68334-30-5 (Primary Name: Fuel, diesel) 68476-34-6 (Primary Name: Fuel, diesel, No. 2) 68476-30-2 (Primary Name: Fuel oil No. 2)							
68476-31-3 (Primary Name: Fuel oil, No. 4) 68008-20-6 (Primary Name: Kerosene)							
<b>OASIS</b> PETROLEUM							
Geology: M. Steed 5/12/2014	Engineering: Agonzalez 1-27-2015						

**Oasis Petroleum**  
**Well Summary**  
**Kline Federal 5300 11-18 2B**  
**Section 18 T153N R100W**  
**McKenzie County, ND**

**SURFACE CASING AND CEMENT DESIGN**

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
13-3/8"	0' - 2068'	54.5	J-55	STC	12.615"	12.459"	4100	5470	6840

Interval	Description	Collapse (psi) / a	Burst (psi) / b	Tension (1000 lbs) / c
0' - 2068'	13-3/8", 54.5#, J-55, LTC, 8rd	1130 / 1.16	2730 / 1.95	514 / 2.60

**API Rating & Safety Factor**

- a) Collapse based on full casing evacuation with 9 ppg fluid on backside (2068' setting depth).
- b) Burst pressure based on 13 ppg fluid with no fluid on backside (2068' setting depth).
- c) Based on string weight in 9 ppg fluid at 2068' TVD plus 100k# overpull. (Buoyed weight equals 97k lbs.)

Cement volumes are based on 13-3/8" casing set in 17-1/2" hole with 60% excess to circulate cement back to surface.

Mix and pump the following slurry.

**Pre-flush (Spacer):**      20 bbls fresh water

**Lead Slurry:**      694 sks (358 bbls), 11.5 lb/gal, 2.97 cu. ft./sk Varicem Cement with 0.125 lb/sk Lost Circulation Additive

**Tail Slurry:**      300 sks (62 bbls), 13.0 lb/gal, 2.01 cu.ft./sk Varicem with .125 lb/sk Lost Circulation Agent

**Oasis Petroleum  
Well Summary**  
**Kline Federal 5300 11-18 2B**  
**Section 18 T153N R100W**  
**McKenzie County, ND**

**Contingency INTERMEDIATE CASING AND CEMENT DESIGN**

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
9-5/8"	0' - 6450'	36	HCL-80	LTC	8.835"	8.75"	5450	7270	9090

Interval	Description	Collapse	Burst	Tension
		(psi) / a	(psi) / b	(1000 lbs) / c
0' - 6450'	9-5/8", 36#, J-55, LTC, 8rd	2020 / 2.17	3520 / 1.28	453 / 1.53

**API Rating & Safety Factor**

- a) Collapse based on full casing evacuation with 10.4 ppg fluid on backside (6450' setting depth).
- b) Burst pressure calculated from a gas kick coming from the production zone (Bakken Pool) at 9,000psi and a subsequent breakdown at the 9-5/8" shoe, based on a 15.2#/ft fracture gradient. Backup of 9 ppg fluid..
- c) Tension based on string weight in 10.4 ppg fluid at 6450' TVD plus 100k# overpull. (Buoyed weight equals 195k lbs.)

Cement volumes are based on 9-5/8" casing set in 12-1/4 " hole with 10% excess to circulate cement back to surface.

**Pre-flush (Spacer):** 20 bbls Chem wash

**Lead Slurry:** 570 sks (295 bbls), 2.90 ft<sup>3</sup>/sk, 11.5 lb/gal Conventional system with 94 lb/sk cement, 4% D079 extender, 2% D053 expanding agent, 2% CaCl<sub>2</sub> and 0.250 lb/sk D130 lost circulation control agent.

**Tail Slurry:** 605 sks (125 bbls), 1.16 ft<sup>3</sup>/sk 15.8 lb/gal Conventional system with 94 lb/sk cement, 0.25% CaCl<sub>2</sub>, and 0.250 lb/sk lost circulation control agent

**Oasis Petroleum**  
**Well Summary**  
**Kline Federal 5300 11-18 2B**  
**Section 18 T153N R100W**  
**McKenzie County, ND**

**INTERMEDIATE CASING AND CEMENT DESIGN**

Size	Interval	Weight	Grade	Coupling	I.D.	Make-up Torque (ft-lbs)			
						Drift**	Minimum	Optimum	Max
7"	0' - 11005'	32	HCP-110	LTC	6.094"	6.000***	6730	8970	9870

\*\*Special Drift 7" 32# to 6.0"

Interval	Length	Description	Collapse (psi) a	Burst (psi) b	Tension (1000 lbs) / c
0' - 11005'	11005'	7", 32#, HCP-110, LTC, 8rd	11820 / 2.11*	12460 / 1.26	897 / 2.25
6785' - 9216'	2431'	7", 32#, HCP-110, LTC, 8rd	11820 / 1.06**	12460 / 1.30	

**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 10735' TVD.
- c) Based on string weight in 10 ppg fluid, (298k 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.

Mix and pump the following slurry

**Pre-flush (Spacer):**                    **100 bbls** Saltwater  
**20 bbls** Tuned Spacer III

**Lead Slurry:**                            **175 sks** (81 bbls), 11.8 ppg, 2.55 cu. ft./sk Econocem Cement with .3% Fe-2 and .25 lb/sk Lost Circulation Additive

**Tail Slurry:**                            **577 sks** (169 bbls), 14.0 ppg, 1.55 cu. ft./sk Extenderm System with .2% HR-5 Retarder and .25 lb/sk Lost Circulation Additive

**Oasis Petroleum**  
**Well Summary**  
**Kline Federal 5300 11-18 2B**  
**Section 18 T153N R100W**  
**McKenzie County, ND**

PRODUCTION LINER

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
4-1/2"	10208' - 20462'	13.5	P-110	BTC	3.920"	3.795"	2270	3020	3780

Interval	Length	Description	Collapse (psi) a	Burst (psi) b	Tension (1000 lbs) c
10208' - 20462'	10254	4-1/2", 13.5 lb, P-110, BTC	10670 / 2.00	12410 / 1.28	443 / 2.02

API Rating & Safety Factor

- a) Based on full casing evacuation with 9.5 ppg fluid on backside @ 10784' TVD.
- b) Burst pressure based on 9000 psi treating pressure with 10.2 ppg internal fluid gradient and 9 ppg external fluid gradient @ 10784' TVD.
- c) Based on string weight in 9.5 ppg fluid (Buoyed weight: 118k lbs.) plus 100k lbs overpull.

Project: Indian Hills  
 Site: 153N-100W-17/18  
 Well: Kline Federal 5300 11-18 2B  
 Wellbore: Kline Federal 5300 11-18 2B  
 Design: Design #5



### WELL DETAILS: Kline Federal 5300 11-18 2B

Northing  
 408992.29

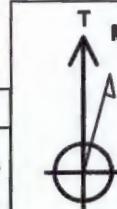
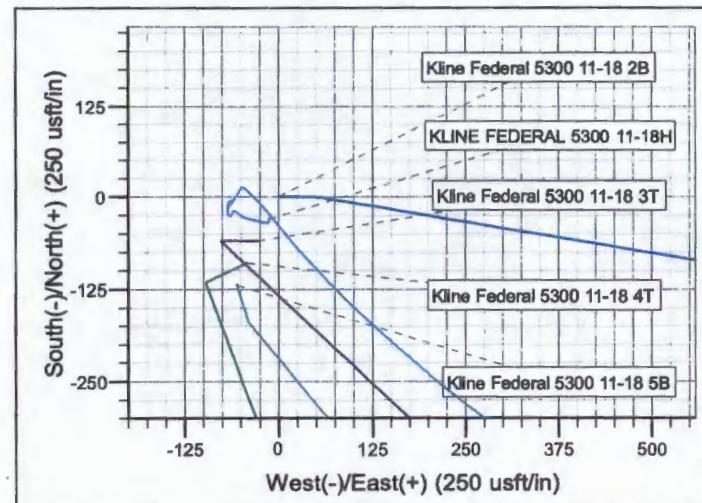
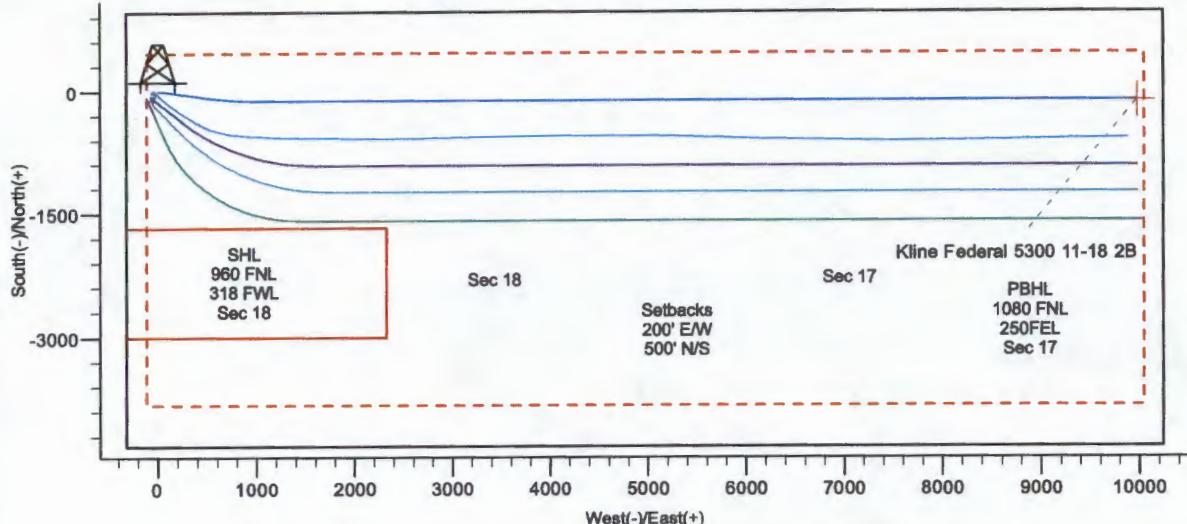
Ground Level: 2053.0

Easting  
 1210243.30

Latitude

48° 4' 45.680 N

Longitude  
 103° 36' 10.190 W



Azimuths to True North  
Magnetic North: 8.4°

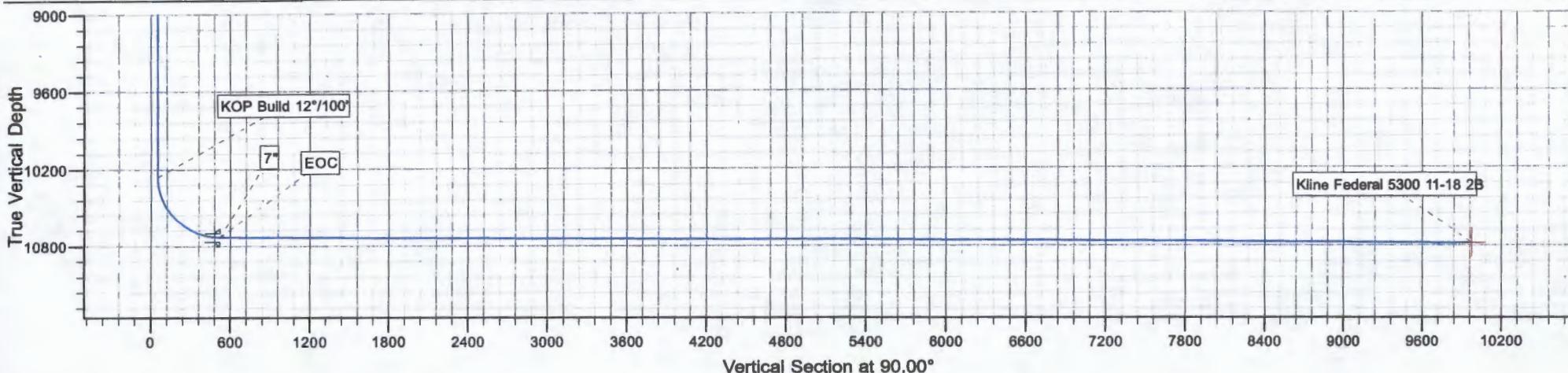
Magnetic Field  
Strength: 56376.9nT  
Dip Angle: 72.99°  
Date: 4/22/2014  
Model: IGRF2015

#### CASING DETAILS

TVD	MD	Name	Size
2068.0	2068.0	13 3/8"	13.375
6449.9	6450.0	9 5/8"	9.625
10735.0	11006.0	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	
2500.0	0.00	0.00	2500.0	0.0	0.0	0.00	
2516.7	0.50	90.00	2518.7	0.0	0.1	3.00	
8228.7	0.50	90.00	8228.4	0.0	49.9	0.00	
8243.3	0.00	0.00	8243.1	0.0	50.0	3.00	
10257.7	0.00	0.00	10257.5	0.0	50.0	0.00	
11005.2	89.70	99.60	10735.0	-79.2	518.3	12.00	
11485.0	89.70	90.00	10737.5	-119.3	995.8	2.00	
20462.3	89.70	90.00	10784.0	-120.0	9973.0	0.00	Kline Federal 5300 11-18 2B



## **Oasis**

**Indian Hills  
153N-100W-17/18  
Kline Federal 5300 11-18 2B  
T153N R100W SEC. 18**

**Plan: Design #5**

## **Standard Planning Report**

**27 January, 2015**

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2B							
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	Ref KB @ 2078.0usft							
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	Ref KB @ 2078.0usft							
<b>Site:</b>	153N-100W-17/18	<b>North Reference:</b>	True							
<b>Well:</b>	Kline Federal 5300 11-18 2B	<b>Survey Calculation Method:</b>	Minimum Curvature							
<b>Wellbore:</b>	Kline Federal 5300 11-18 2B									
<b>Design:</b>	Design #5									
<b>Project</b>	Indian Hills									
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level							
<b>Geo Datum:</b>	North American Datum 1983									
<b>Map Zone:</b>	North Dakota Northern Zone									
<b>Site</b>	153N-100W-17/18									
<b>Site Position:</b>		<b>Northing:</b>	408,982.44 usft							
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,210,229.18 usft							
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13.200 in							
			<b>Latitude:</b> 48° 4' 45.380 N							
			<b>Longitude:</b> 103° 36' 10.380 W							
			<b>Grid Convergence:</b> -2.31 °							
<b>Well</b>	Kline Federal 5300 11-18 2B									
<b>Well Position</b>	+N/S +E/W	30.4 usft 12.9 usft	<b>Northing:</b> 408,992.29 usft <b>Easting:</b> 1,210,243.30 usft							
<b>Position Uncertainty</b>	2.0 usft		<b>Latitude:</b> 48° 4' 45.680 N <b>Longitude:</b> 103° 36' 10.190 W							
			<b>Ground Level:</b> 2,053.0 usft							
<b>Wellbore</b>	Kline Federal 5300 11-18 2B									
<b>Magnetics</b>	<b>Model Name:</b>	<b>Sample Date:</b>	<b>Declination:</b> (°)	<b>Dip Angle:</b> (°)	<b>Field Strength:</b> (nT)					
	IGRF2015	4/22/2014	8.41	72.99	56,377					
<b>Design</b>	Design #5									
<b>Audit Notes:</b>										
<b>Version:</b>		<b>Phase:</b>	<b>PROTOTYPE</b>	<b>Tie On Depth:</b>	0.0					
<b>Vertical Section:</b>		<b>Depth From (TVD)</b> (usft)	<b>+N/S</b> (usft)	<b>+E/W</b> (usft)	<b>Direction</b> (°)					
		0.0	0.0	0.0	90.00					
<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	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	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00
2,516.7	0.50	90.00	2,516.7	0.0	0.1	3.00	3.00	0.00	90.00	
8,226.7	0.50	90.00	8,226.4	0.0	49.9	0.00	0.00	0.00	0.00	
8,243.3	0.00	0.00	8,243.1	0.0	50.0	3.00	-3.00	0.00	180.00	
10,257.7	0.00	0.00	10,257.5	0.0	50.0	0.00	0.00	0.00	0.00	
11,005.2	89.70	99.60	10,735.0	-79.2	518.3	12.00	12.00	0.00	99.60	
11,485.0	89.70	90.00	10,737.5	-119.3	995.8	2.00	0.00	-2.00	-90.01	
20,462.3	89.70	90.00	10,784.0	-120.0	9,973.0	0.00	0.00	0.00	0.00	Kline Federal 5300 11

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2B						
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	Ref KB @ 2078.0usft						
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	Ref KB @ 2078.0usft						
<b>Site:</b>	153N-100W-17/18	<b>North Reference:</b>	True						
<b>Well:</b>	Kline Federal 5300 11-18 2B	<b>Survey Calculation Method:</b>	Minimum Curvature						
<b>Wellbore:</b>	Kline Federal 5300 11-18 2B								
<b>Design:</b>	Design #5								
<b>Planned Survey</b>									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,516.7	0.50	90.00	2,516.7	0.0	0.1	0.1	3.00	3.00	0.00
2,600.0	0.50	90.00	2,600.0	0.0	0.8	0.8	0.00	0.00	0.00
2,700.0	0.50	90.00	2,700.0	0.0	1.7	1.7	0.00	0.00	0.00
2,800.0	0.50	90.00	2,800.0	0.0	2.5	2.5	0.00	0.00	0.00
2,900.0	0.50	90.00	2,900.0	0.0	3.4	3.4	0.00	0.00	0.00
3,000.0	0.50	90.00	3,000.0	0.0	4.3	4.3	0.00	0.00	0.00
3,100.0	0.50	90.00	3,100.0	0.0	5.2	5.2	0.00	0.00	0.00
3,200.0	0.50	90.00	3,200.0	0.0	6.0	6.0	0.00	0.00	0.00
3,300.0	0.50	90.00	3,300.0	0.0	6.9	6.9	0.00	0.00	0.00
3,400.0	0.50	90.00	3,400.0	0.0	7.8	7.8	0.00	0.00	0.00
3,500.0	0.50	90.00	3,500.0	0.0	8.7	8.7	0.00	0.00	0.00
3,600.0	0.50	90.00	3,600.0	0.0	9.5	9.5	0.00	0.00	0.00
3,700.0	0.50	90.00	3,700.0	0.0	10.4	10.4	0.00	0.00	0.00
3,800.0	0.50	90.00	3,800.0	0.0	11.3	11.3	0.00	0.00	0.00
3,900.0	0.50	90.00	3,899.9	0.0	12.1	12.1	0.00	0.00	0.00
4,000.0	0.50	90.00	3,999.9	0.0	13.0	13.0	0.00	0.00	0.00
4,100.0	0.50	90.00	4,099.9	0.0	13.9	13.9	0.00	0.00	0.00
4,200.0	0.50	90.00	4,199.9	0.0	14.8	14.8	0.00	0.00	0.00
4,300.0	0.50	90.00	4,299.9	0.0	15.6	15.6	0.00	0.00	0.00
4,400.0	0.50	90.00	4,399.9	0.0	16.5	16.5	0.00	0.00	0.00
4,500.0	0.50	90.00	4,499.9	0.0	17.4	17.4	0.00	0.00	0.00
4,600.0	0.50	90.00	4,599.9	0.0	18.3	18.3	0.00	0.00	0.00
4,700.0	0.50	90.00	4,699.9	0.0	19.1	19.1	0.00	0.00	0.00
4,800.0	0.50	90.00	4,799.9	0.0	20.0	20.0	0.00	0.00	0.00
4,900.0	0.50	90.00	4,899.9	0.0	20.9	20.9	0.00	0.00	0.00
5,000.0	0.50	90.00	4,999.9	0.0	21.7	21.7	0.00	0.00	0.00
5,100.0	0.50	90.00	5,099.9	0.0	22.6	22.6	0.00	0.00	0.00
5,200.0	0.50	90.00	5,199.9	0.0	23.5	23.5	0.00	0.00	0.00
5,300.0	0.50	90.00	5,299.9	0.0	24.4	24.4	0.00	0.00	0.00
5,400.0	0.50	90.00	5,399.9	0.0	25.2	25.2	0.00	0.00	0.00
5,500.0	0.50	90.00	5,499.9	0.0	26.1	26.1	0.00	0.00	0.00
5,600.0	0.50	90.00	5,599.9	0.0	27.0	27.0	0.00	0.00	0.00
5,700.0	0.50	90.00	5,699.9	0.0	27.9	27.9	0.00	0.00	0.00
5,800.0	0.50	90.00	5,799.9	0.0	28.7	28.7	0.00	0.00	0.00
5,900.0	0.50	90.00	5,899.9	0.0	29.6	29.6	0.00	0.00	0.00
6,000.0	0.50	90.00	5,999.9	0.0	30.5	30.5	0.00	0.00	0.00
6,100.0	0.50	90.00	6,099.9	0.0	31.3	31.3	0.00	0.00	0.00
6,200.0	0.50	90.00	6,199.9	0.0	32.2	32.2	0.00	0.00	0.00
6,300.0	0.50	90.00	6,299.9	0.0	33.1	33.1	0.00	0.00	0.00
6,400.0	0.50	90.00	6,399.9	0.0	34.0	34.0	0.00	0.00	0.00
6,450.0	0.50	90.00	6,449.8	0.0	34.4	34.4	0.00	0.00	0.00
<b>9 5/8"</b>									
6,500.0	0.50	90.00	6,499.8	0.0	34.8	34.8	0.00	0.00	0.00
6,600.0	0.50	90.00	6,599.8	0.0	35.7	35.7	0.00	0.00	0.00
6,700.0	0.50	90.00	6,699.8	0.0	36.6	36.6	0.00	0.00	0.00
6,800.0	0.50	90.00	6,799.8	0.0	37.5	37.5	0.00	0.00	0.00
6,900.0	0.50	90.00	6,899.8	0.0	38.3	38.3	0.00	0.00	0.00
7,000.0	0.50	90.00	6,999.8	0.0	39.2	39.2	0.00	0.00	0.00
7,100.0	0.50	90.00	7,099.8	0.0	40.1	40.1	0.00	0.00	0.00
7,200.0	0.50	90.00	7,199.8	0.0	40.9	40.9	0.00	0.00	0.00
7,300.0	0.50	90.00	7,299.8	0.0	41.8	41.8	0.00	0.00	0.00
7,400.0	0.50	90.00	7,399.8	0.0	42.7	42.7	0.00	0.00	0.00
7,500.0	0.50	90.00	7,499.8	0.0	43.8	43.8	0.00	0.00	0.00
7,600.0	0.50	90.00	7,599.8	0.0	44.4	44.4	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	Ref KB @ 2078.0usft
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	Ref KB @ 2078.0usft
<b>Site:</b>	153N-100W-17/18	<b>North Reference:</b>	True
<b>Well:</b>	Kline Federal 5300 11-18 2B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Kline Federal 5300 11-18 2B		
<b>Design:</b>	Design #5		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (/100ft)	Build Rate (/100ft)	Turn Rate (/100ft)	
7,700.0	0.50	90.00	7,699.8	0.0	45.3	45.3	0.00	0.00	0.00	
7,800.0	0.50	90.00	7,799.8	0.0	46.2	46.2	0.00	0.00	0.00	
7,900.0	0.50	90.00	7,899.8	0.0	47.1	47.1	0.00	0.00	0.00	
8,000.0	0.50	90.00	7,999.8	0.0	47.9	47.9	0.00	0.00	0.00	
8,100.0	0.50	90.00	8,099.8	0.0	48.8	48.8	0.00	0.00	0.00	
8,200.0	0.50	90.00	8,199.8	0.0	49.7	49.7	0.00	0.00	0.00	
8,226.7	0.50	90.00	8,226.4	0.0	49.9	49.9	0.00	0.00	0.00	
8,243.3	0.00	0.00	8,243.1	0.0	50.0	50.0	3.00	-3.00	0.00	
8,300.0	0.00	0.00	8,299.8	0.0	50.0	50.0	0.00	0.00	0.00	
8,400.0	0.00	0.00	8,399.8	0.0	50.0	50.0	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,499.8	0.0	50.0	50.0	0.00	0.00	0.00	
8,600.0	0.00	0.00	8,599.8	0.0	50.0	50.0	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,699.8	0.0	50.0	50.0	0.00	0.00	0.00	
8,800.0	0.00	0.00	8,799.8	0.0	50.0	50.0	0.00	0.00	0.00	
8,900.0	0.00	0.00	8,899.8	0.0	50.0	50.0	0.00	0.00	0.00	
9,000.0	0.00	0.00	8,999.8	0.0	50.0	50.0	0.00	0.00	0.00	
9,100.0	0.00	0.00	9,099.8	0.0	50.0	50.0	0.00	0.00	0.00	
9,200.0	0.00	0.00	9,199.8	0.0	50.0	50.0	0.00	0.00	0.00	
9,300.0	0.00	0.00	9,299.8	0.0	50.0	50.0	0.00	0.00	0.00	
9,400.0	0.00	0.00	9,399.8	0.0	50.0	50.0	0.00	0.00	0.00	
9,500.0	0.00	0.00	9,499.8	0.0	50.0	50.0	0.00	0.00	0.00	
9,600.0	0.00	0.00	9,599.8	0.0	50.0	50.0	0.00	0.00	0.00	
9,700.0	0.00	0.00	9,699.8	0.0	50.0	50.0	0.00	0.00	0.00	
9,800.0	0.00	0.00	9,799.8	0.0	50.0	50.0	0.00	0.00	0.00	
9,900.0	0.00	0.00	9,899.8	0.0	50.0	50.0	0.00	0.00	0.00	
10,000.0	0.00	0.00	9,999.8	0.0	50.0	50.0	0.00	0.00	0.00	
10,100.0	0.00	0.00	10,099.8	0.0	50.0	50.0	0.00	0.00	0.00	
10,200.0	0.00	0.00	10,199.8	0.0	50.0	50.0	0.00	0.00	0.00	
10,257.7	0.00	0.00	10,257.5	0.0	50.0	50.0	0.00	0.00	0.00	
<b>KOP Build 12°/100'</b>										
10,275.0	2.07	99.60	10,274.8	-0.1	50.3	50.3	11.98	11.98	0.00	
10,300.0	5.07	99.60	10,299.7	-0.3	51.8	51.8	12.00	12.00	0.00	
10,325.0	8.07	99.60	10,324.8	-0.8	54.6	54.6	12.00	12.00	0.00	
10,350.0	11.07	99.60	10,349.2	-1.5	58.7	58.7	12.00	12.00	0.00	
10,375.0	14.07	99.60	10,373.6	-2.4	64.1	64.1	12.00	12.00	0.00	
10,400.0	17.07	99.60	10,397.7	-3.5	70.7	70.7	12.00	12.00	0.00	
10,425.0	20.07	99.60	10,421.4	-4.8	78.6	78.6	12.00	12.00	0.00	
10,450.0	23.07	99.60	10,444.6	-6.4	87.6	87.6	12.00	12.00	0.00	
10,475.0	26.07	99.60	10,487.4	-8.1	97.9	97.9	12.00	12.00	0.00	
10,500.0	29.07	99.60	10,489.5	-10.0	109.3	109.3	12.00	12.00	0.00	
10,525.0	32.07	99.60	10,511.0	-12.2	121.8	121.8	12.00	12.00	0.00	
10,550.0	35.07	99.60	10,531.9	-14.5	135.5	135.5	12.00	12.00	0.00	
10,575.0	38.07	99.60	10,551.9	-16.9	150.1	150.1	12.00	12.00	0.00	
10,600.0	41.07	99.60	10,571.2	-19.6	165.8	185.8	12.00	12.00	0.00	
10,625.0	44.07	99.60	10,589.6	-22.4	182.5	182.5	12.00	12.00	0.00	
10,650.0	47.07	99.60	10,607.1	-25.4	200.1	200.1	12.00	12.00	0.00	
10,675.0	50.07	99.60	10,623.7	-28.5	218.6	218.6	12.00	12.00	0.00	
10,700.0	53.07	99.60	10,639.2	-31.8	237.9	237.9	12.00	12.00	0.00	
10,725.0	56.07	99.60	10,653.7	-35.2	258.0	258.0	12.00	12.00	0.00	
10,750.0	59.07	99.60	10,667.1	-38.7	278.8	278.8	12.00	12.00	0.00	
10,775.0	62.07	99.60	10,679.4	-42.3	300.3	300.3	12.00	12.00	0.00	
10,800.0	65.07	99.60	10,690.5	-46.1	322.3	322.3	12.00	12.00	0.00	
10,825.0	68.07	99.60	10,700.4	-49.9	344.9	344.9	12.00	12.00	0.00	
10,850.0	71.07	99.60	10,709.2	-53.8	368.0	368.0	12.00	12.00	0.00	
10,875.0	74.07	99.60	10,716.6	-57.8	391.6	391.6	12.00	12.00	0.00	

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	Ref KB @ 2078.0usft
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	Ref KB @ 2078.0usft
<b>Site:</b>	153N-100W-17/18	<b>North Reference:</b>	True
<b>Well:</b>	Kline Federal 5300 11-18 2B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Kline Federal 5300 11-18 2B		
<b>Design:</b>	Design #5		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
10,900.0	77.07	99.60	10,722.9	-61.8	415.4	415.4	12.00	12.00	0.00	
10,925.0	80.07	99.60	10,727.8	-65.9	439.6	439.6	12.00	12.00	0.00	
10,950.0	83.07	99.60	10,731.5	-70.0	464.0	464.0	12.00	12.00	0.00	
10,975.0	86.07	99.60	10,733.9	-74.2	488.5	488.5	12.00	12.00	0.00	
11,000.0	89.07	99.60	10,734.9	-78.3	513.1	513.1	12.00	12.00	0.00	
11,005.2	89.70	99.60	10,735.0	-79.2	518.3	518.3	12.00	12.00	0.00	
<b>EOC</b>										
11,006.0	89.70	99.58	10,735.0	-79.3	519.0	519.0	1.97	0.40	-1.93	
<b>T</b>										
11,100.0	89.70	97.70	10,735.5	-93.5	612.0	812.0	2.00	0.00	-2.00	
11,200.0	89.70	95.70	10,736.0	-105.1	711.3	711.3	2.00	0.00	-2.00	
11,300.0	89.70	93.70	10,736.5	-113.3	810.9	810.9	2.00	0.00	-2.00	
11,400.0	89.70	91.70	10,737.0	-118.1	910.8	910.8	2.00	0.00	-2.00	
11,485.0	89.70	90.00	10,737.5	-119.3	995.8	995.8	2.00	0.00	-2.00	
11,500.0	89.70	90.00	10,737.6	-119.3	1,010.8	1,010.8	0.00	0.00	0.00	
11,600.0	89.70	90.00	10,738.1	-119.3	1,110.8	1,110.8	0.00	0.00	0.00	
11,700.0	89.70	90.00	10,738.6	-119.3	1,210.8	1,210.8	0.00	0.00	0.00	
11,800.0	89.70	90.00	10,739.1	-119.3	1,310.8	1,310.8	0.00	0.00	0.00	
11,900.0	89.70	90.00	10,739.6	-119.4	1,410.8	1,410.8	0.00	0.00	0.00	
12,000.0	89.70	90.00	10,740.1	-119.4	1,510.8	1,510.8	0.00	0.00	0.00	
12,100.0	89.70	90.00	10,740.7	-119.4	1,610.8	1,810.8	0.00	0.00	0.00	
12,200.0	89.70	90.00	10,741.2	-119.4	1,710.8	1,710.8	0.00	0.00	0.00	
12,300.0	89.70	90.00	10,741.7	-119.4	1,810.8	1,810.8	0.00	0.00	0.00	
12,400.0	89.70	90.00	10,742.2	-119.4	1,910.8	1,910.8	0.00	0.00	0.00	
12,500.0	89.70	90.00	10,742.7	-119.4	2,010.8	2,010.8	0.00	0.00	0.00	
12,600.0	89.70	90.00	10,743.3	-119.4	2,110.8	2,110.8	0.00	0.00	0.00	
12,700.0	89.70	90.00	10,743.8	-119.4	2,210.8	2,210.8	0.00	0.00	0.00	
12,800.0	89.70	90.00	10,744.3	-119.4	2,310.8	2,310.8	0.00	0.00	0.00	
12,900.0	89.70	90.00	10,744.8	-119.4	2,410.8	2,410.8	0.00	0.00	0.00	
13,000.0	89.70	90.00	10,745.3	-119.4	2,510.8	2,510.8	0.00	0.00	0.00	
13,100.0	89.70	90.00	10,745.8	-119.4	2,610.8	2,610.8	0.00	0.00	0.00	
13,200.0	89.70	90.00	10,746.4	-119.5	2,710.8	2,710.8	0.00	0.00	0.00	
13,300.0	89.70	90.00	10,746.9	-119.5	2,810.8	2,810.8	0.00	0.00	0.00	
13,400.0	89.70	90.00	10,747.4	-119.5	2,910.8	2,910.8	0.00	0.00	0.00	
13,500.0	89.70	90.00	10,747.9	-119.5	3,010.8	3,010.8	0.00	0.00	0.00	
13,600.0	89.70	90.00	10,748.4	-119.5	3,110.8	3,110.8	0.00	0.00	0.00	
13,700.0	89.70	90.00	10,749.0	-119.5	3,210.8	3,210.8	0.00	0.00	0.00	
13,800.0	89.70	90.00	10,749.5	-119.5	3,310.8	3,310.8	0.00	0.00	0.00	
13,900.0	89.70	90.00	10,750.0	-119.5	3,410.8	3,410.8	0.00	0.00	0.00	
14,000.0	89.70	90.00	10,750.5	-119.5	3,510.8	3,510.8	0.00	0.00	0.00	
14,100.0	89.70	90.00	10,751.0	-119.5	3,610.8	3,810.8	0.00	0.00	0.00	
14,200.0	89.70	90.00	10,751.5	-119.5	3,710.8	3,710.8	0.00	0.00	0.00	
14,300.0	89.70	90.00	10,752.1	-119.5	3,810.8	3,810.8	0.00	0.00	0.00	
14,400.0	89.70	90.00	10,752.6	-119.5	3,910.8	3,910.8	0.00	0.00	0.00	
14,500.0	89.70	90.00	10,753.1	-119.6	4,010.8	4,010.8	0.00	0.00	0.00	
14,600.0	89.70	90.00	10,753.6	-119.6	4,110.8	4,110.8	0.00	0.00	0.00	
14,700.0	89.70	90.00	10,754.1	-119.6	4,210.8	4,210.8	0.00	0.00	0.00	
14,800.0	89.70	90.00	10,754.7	-119.6	4,310.8	4,310.8	0.00	0.00	0.00	
14,900.0	89.70	90.00	10,755.2	-119.6	4,410.8	4,410.8	0.00	0.00	0.00	
15,000.0	89.70	90.00	10,755.7	-119.6	4,510.8	4,510.8	0.00	0.00	0.00	
15,100.0	89.70	90.00	10,756.2	-119.6	4,610.8	4,610.8	0.00	0.00	0.00	
15,200.0	89.70	90.00	10,756.7	-119.6	4,710.8	4,710.8	0.00	0.00	0.00	
15,300.0	89.70	90.00	10,757.2	-119.6	4,810.8	4,810.8	0.00	0.00	0.00	
15,400.0	89.70	90.00	10,757.8	-119.6	4,910.8	4,910.8	0.00	0.00	0.00	

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	Ref KB @ 2078.0usft
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	Ref KB @ 2078.0usft
<b>Site:</b>	153N-100W-17/18	<b>North Reference:</b>	True
<b>Well:</b>	Kline Federal 5300 11-18 2B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Kline Federal 5300 11-18 2B		
<b>Design:</b>	Design #5		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
15,500.0	89.70	90.00	10,758.3	-119.6	5,010.8	5,010.8	0.00	0.00	0.00
15,600.0	89.70	90.00	10,758.8	-119.6	5,110.8	5,110.8	0.00	0.00	0.00
15,700.0	89.70	90.00	10,759.3	-119.6	5,210.8	5,210.8	0.00	0.00	0.00
15,800.0	89.70	90.00	10,759.8	-119.6	5,310.8	5,310.8	0.00	0.00	0.00
15,900.0	89.70	90.00	10,760.4	-119.7	5,410.8	5,410.8	0.00	0.00	0.00
16,000.0	89.70	90.00	10,760.9	-119.7	5,510.7	5,510.7	0.00	0.00	0.00
16,100.0	89.70	90.00	10,761.4	-119.7	5,610.7	5,810.7	0.00	0.00	0.00
16,200.0	89.70	90.00	10,761.9	-119.7	5,710.7	5,710.7	0.00	0.00	0.00
18,300.0	89.70	90.00	10,782.4	-119.7	5,810.7	5,810.7	0.00	0.00	0.00
16,400.0	89.70	90.00	10,762.9	-119.7	5,910.7	5,910.7	0.00	0.00	0.00
16,500.0	89.70	90.00	10,763.5	-119.7	6,010.7	6,010.7	0.00	0.00	0.00
18,600.0	89.70	90.00	10,764.0	-119.7	6,110.7	6,110.7	0.00	0.00	0.00
16,700.0	89.70	90.00	10,764.5	-119.7	6,210.7	6,210.7	0.00	0.00	0.00
16,800.0	89.70	90.00	10,765.0	-119.7	6,310.7	6,310.7	0.00	0.00	0.00
16,900.0	89.70	90.00	10,765.5	-119.7	6,410.7	6,410.7	0.00	0.00	0.00
17,000.0	89.70	90.00	10,766.1	-119.7	6,510.7	6,510.7	0.00	0.00	0.00
17,100.0	89.70	90.00	10,766.6	-119.7	6,610.7	6,610.7	0.00	0.00	0.00
17,200.0	89.70	90.00	10,767.1	-119.8	6,710.7	6,710.7	0.00	0.00	0.00
17,300.0	89.70	90.00	10,767.6	-119.8	6,810.7	6,810.7	0.00	0.00	0.00
17,400.0	89.70	90.00	10,768.1	-119.8	6,910.7	6,910.7	0.00	0.00	0.00
17,500.0	89.70	90.00	10,768.6	-119.8	7,010.7	7,010.7	0.00	0.00	0.00
17,600.0	89.70	90.00	10,769.2	-119.8	7,110.7	7,110.7	0.00	0.00	0.00
17,700.0	89.70	90.00	10,769.7	-119.8	7,210.7	7,210.7	0.00	0.00	0.00
17,800.0	89.70	90.00	10,770.2	-119.8	7,310.7	7,310.7	0.00	0.00	0.00
17,900.0	89.70	90.00	10,770.7	-119.8	7,410.7	7,410.7	0.00	0.00	0.00
18,000.0	89.70	90.00	10,771.2	-119.8	7,510.7	7,510.7	0.00	0.00	0.00
18,100.0	89.70	90.00	10,771.8	-119.8	7,610.7	7,610.7	0.00	0.00	0.00
18,200.0	89.70	90.00	10,772.3	-119.8	7,710.7	7,710.7	0.00	0.00	0.00
18,300.0	89.70	90.00	10,772.8	-119.8	7,810.7	7,810.7	0.00	0.00	0.00
18,400.0	89.70	90.00	10,773.3	-119.8	7,910.7	7,910.7	0.00	0.00	0.00
18,500.0	89.70	90.00	10,773.8	-119.8	8,010.7	8,010.7	0.00	0.00	0.00
18,600.0	89.70	90.00	10,774.3	-119.9	8,110.7	8,110.7	0.00	0.00	0.00
18,700.0	89.70	90.00	10,774.9	-119.9	8,210.7	8,210.7	0.00	0.00	0.00
18,800.0	89.70	90.00	10,775.4	-119.9	8,310.7	8,310.7	0.00	0.00	0.00
18,900.0	89.70	90.00	10,775.9	-119.9	8,410.7	8,410.7	0.00	0.00	0.00
19,000.0	89.70	90.00	10,776.4	-119.9	8,510.7	8,510.7	0.00	0.00	0.00
19,100.0	89.70	90.00	10,776.9	-119.9	8,610.7	8,610.7	0.00	0.00	0.00
19,200.0	89.70	90.00	10,777.5	-119.9	8,710.7	8,710.7	0.00	0.00	0.00
19,300.0	89.70	90.00	10,778.0	-119.9	8,810.7	8,810.7	0.00	0.00	0.00
19,400.0	89.70	90.00	10,778.5	-119.9	8,910.7	8,910.7	0.00	0.00	0.00
19,500.0	89.70	90.00	10,779.0	-119.9	9,010.7	9,010.7	0.00	0.00	0.00
19,600.0	89.70	90.00	10,779.5	-119.9	9,110.7	9,110.7	0.00	0.00	0.00
19,700.0	89.70	90.00	10,780.0	-119.9	9,210.7	9,210.7	0.00	0.00	0.00
19,800.0	89.70	90.00	10,780.6	-119.9	9,310.7	9,310.7	0.00	0.00	0.00
19,900.0	89.70	90.00	10,781.1	-120.0	9,410.7	9,410.7	0.00	0.00	0.00
20,000.0	89.70	90.00	10,781.6	-120.0	9,510.7	9,510.7	0.00	0.00	0.00
20,100.0	89.70	90.00	10,782.1	-120.0	9,610.7	9,610.7	0.00	0.00	0.00
20,200.0	89.70	90.00	10,782.6	-120.0	9,710.7	9,710.7	0.00	0.00	0.00
20,300.0	89.70	90.00	10,783.2	-120.0	9,810.7	9,810.7	0.00	0.00	0.00
20,400.0	89.70	90.00	10,783.7	-120.0	9,910.7	9,910.7	0.00	0.00	0.00
20,462.3	89.70	90.00	10,784.0	-120.0	9,973.0	9,973.0	0.00	0.00	0.00

Kline Federal 5300 11-18 2B

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	Ref KB @ 2078.0usft
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	Ref KB @ 2078.0usft
<b>Site:</b>	153N-100W-17/18	<b>North Reference:</b>	True
<b>Well:</b>	Kline Federal 5300 11-18 2B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Kline Federal 5300 11-18 2B		
<b>Design:</b>	Design #5		

Design Targets										
Target Name	Dip Angle	Dip Dir.	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude	
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
- Shape										
Kline Federal 5300 11-11	0.00	0.00	10,784.0	-120.0	9,973.0	408,470.60	1,220,203.37	48° 4' 44.470 N	103° 33' 43.314 W	
- plan hits target center										
- Point										

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)	Name			Casing Diameter (in)	Hole Diameter (in)
2,068.0	2,068.0	13 3/8"			13.375	17.500
6,450.0	6,449.8	9 5/8"			9.625	12.250
11,006.0	10,735.0	7"			7.000	8.750

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name		Lithology	Dip (°)	Dip Direction (°)
1,968.0	1,968.0	Pierre				
5,023.1	5,023.0	Greenhorn				
5,103.1	5,103.0	Mowry				
5,469.1	5,469.0	Dakota				
6,450.1	6,450.0	Rierdon				
6,785.2	6,785.0	Dunham Salt				
6,896.2	6,896.0	Dunham Salt Base				
6,993.2	6,993.0	Spearfish				
7,248.2	7,248.0	Pine Salt				
7,296.2	7,296.0	Pine Salt Base				
7,341.2	7,341.0	Opeche Salt				
7,371.2	7,371.0	Opeche Salt Base				
7,573.2	7,573.0	Broom Creek (Top of Minnelusa Gp.)				
7,653.2	7,653.0	Amsden				
7,821.2	7,821.0	Tyler				
8,012.2	8,012.0	Otter (Base of Minnelusa Gp.)				
8,387.2	8,367.0	Kibbey Lime				
8,517.2	8,517.0	Charles Salt				
9,141.2	9,141.0	UB				
9,216.2	9,216.0	Base Last Salt				
9,284.2	9,284.0	Ratcliffe				
9,421.2	9,421.0	Mission Canyon				
9,999.2	9,999.0	Lodgepole				
10,173.2	10,173.0	Lodgepole Fracture Zone				
10,818.6	10,698.0	False Bakken				
10,848.5	10,708.0	Upper Bakken				
10,896.2	10,722.0	Middle Bakken				
10,948.1	10,731.0	Middle Bakken Sand Target				
12,165.5	10,741.0	Base Middle Bakken Sand Target				
16,989.2	10,766.0	Lower Bakken				
19,883.5	10,761.0	Three Forks				

## Planning Report

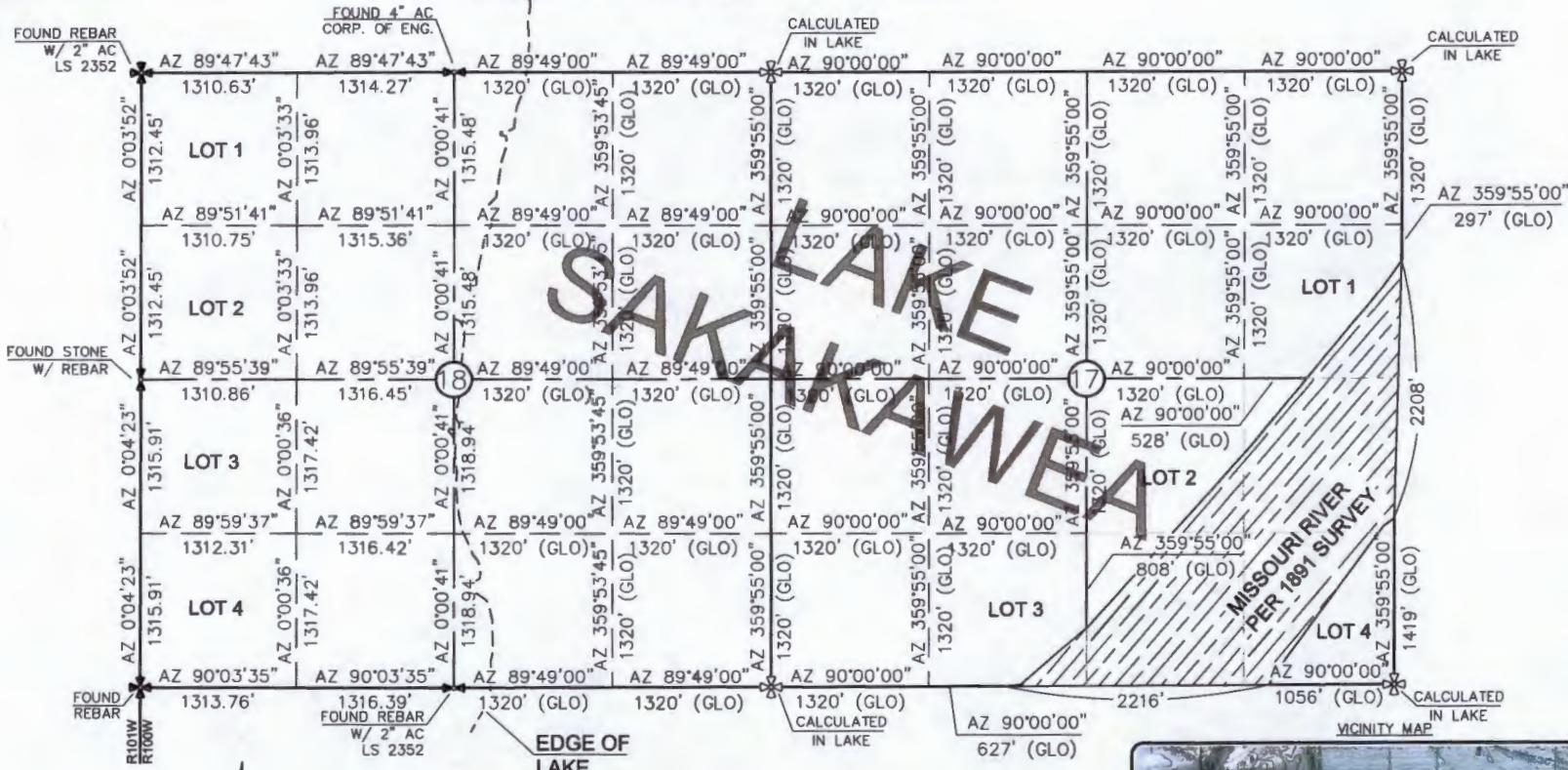
<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	Ref KB @ 2078.0usft
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	Ref KB @ 2078.0usft
<b>Site:</b>	153N-100W-17/18	<b>North Reference:</b>	True
<b>Well:</b>	Kline Federal 5300 11-18 2B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Kline Federal 5300 11-18 2B		
<b>Design:</b>	Design #5		

### Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			Comment
		+N-S (usft)	+E-W (usft)		
10,257.7	10,257.5	0.0	50.0	KOP Build 12°/100'	
11,005.2	10,735.0	-79.2	518.3	EOC	

**SECTION BREAKDOWN**  
OASIS PETROLEUM NORTH AMERICA, LLC  
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

"KLINE FEDERAL 5300 11-18 2B"  
980 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE  
SECTIONS 17 & 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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OASIS PETROLEUM NORTH AMERICA, LLC	
SECTION BREAKDOWN	
SECTIONS 17 & 18, T153N, R100W	
McKENZIE COUNTY, NORTH DAKOTA	
Drawn By:	B.A.H.
Checked By:	D.W.K.
Project No.:	1001-00-127
Date:	01/29/15

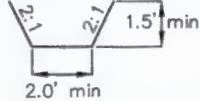
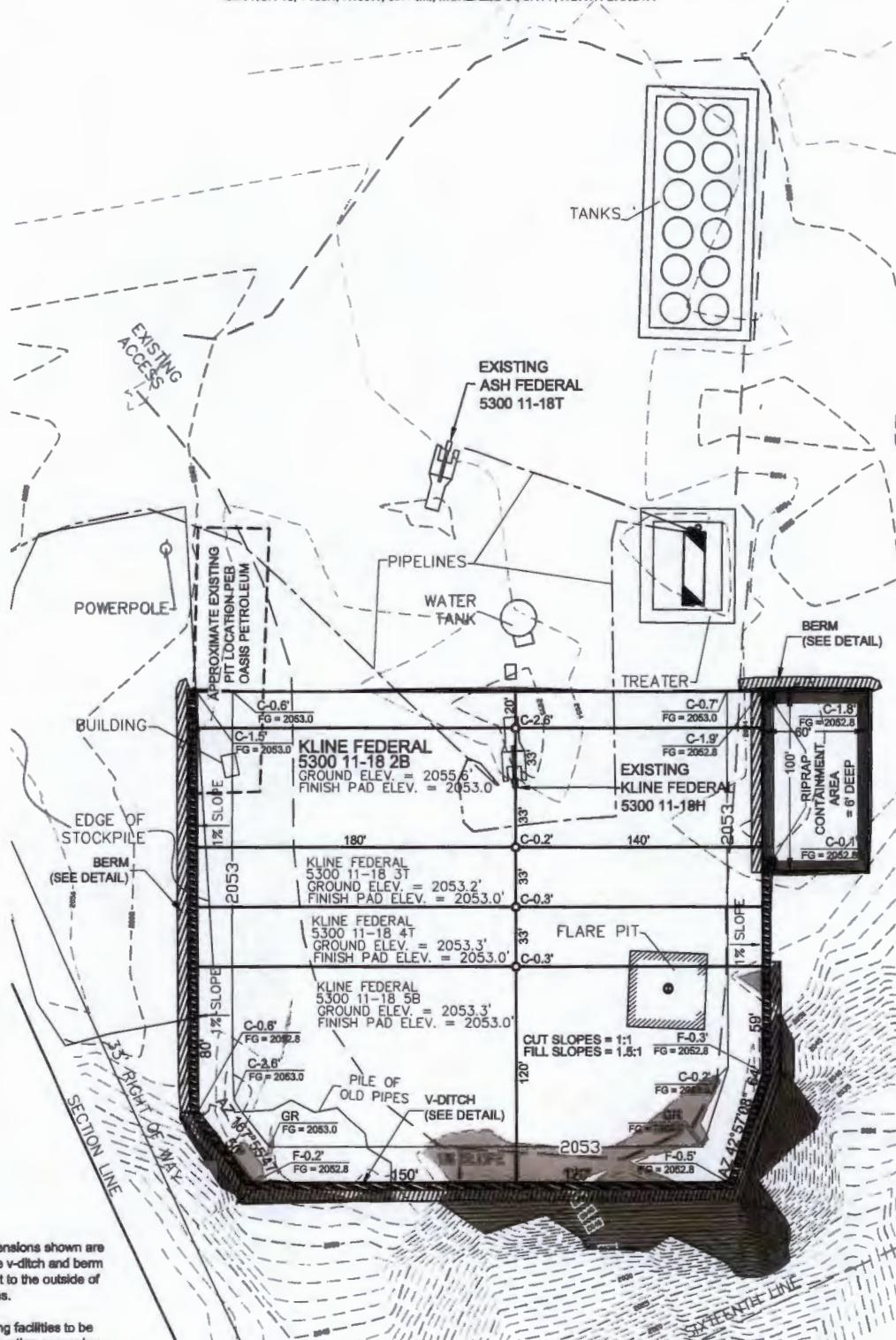
Interstate Engineering, Inc.  
P.O. Box 648  
425 East Main Street  
Sidney, Montana 59270  
Ph: (406) 433-3817  
Fax: (406) 433-3817  
[www.interstateengineering.com](http://www.interstateengineering.com)

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SHEET NO.

### PAD LAYOUT

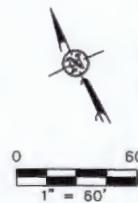
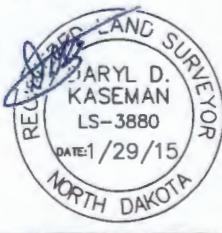
OASIS PETROLEUM NORTH AMERICA, LLC  
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002  
"KLINE FEDERAL 5300 11-18 2B"  
960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE  
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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

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Other offices in Montana, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC  
PAD LAYOUT  
SECTION 18, T153N, R100W

MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.J.H. Project No.: 814-08-127  
Checked By: D.D.K. Date: APRIL 2014

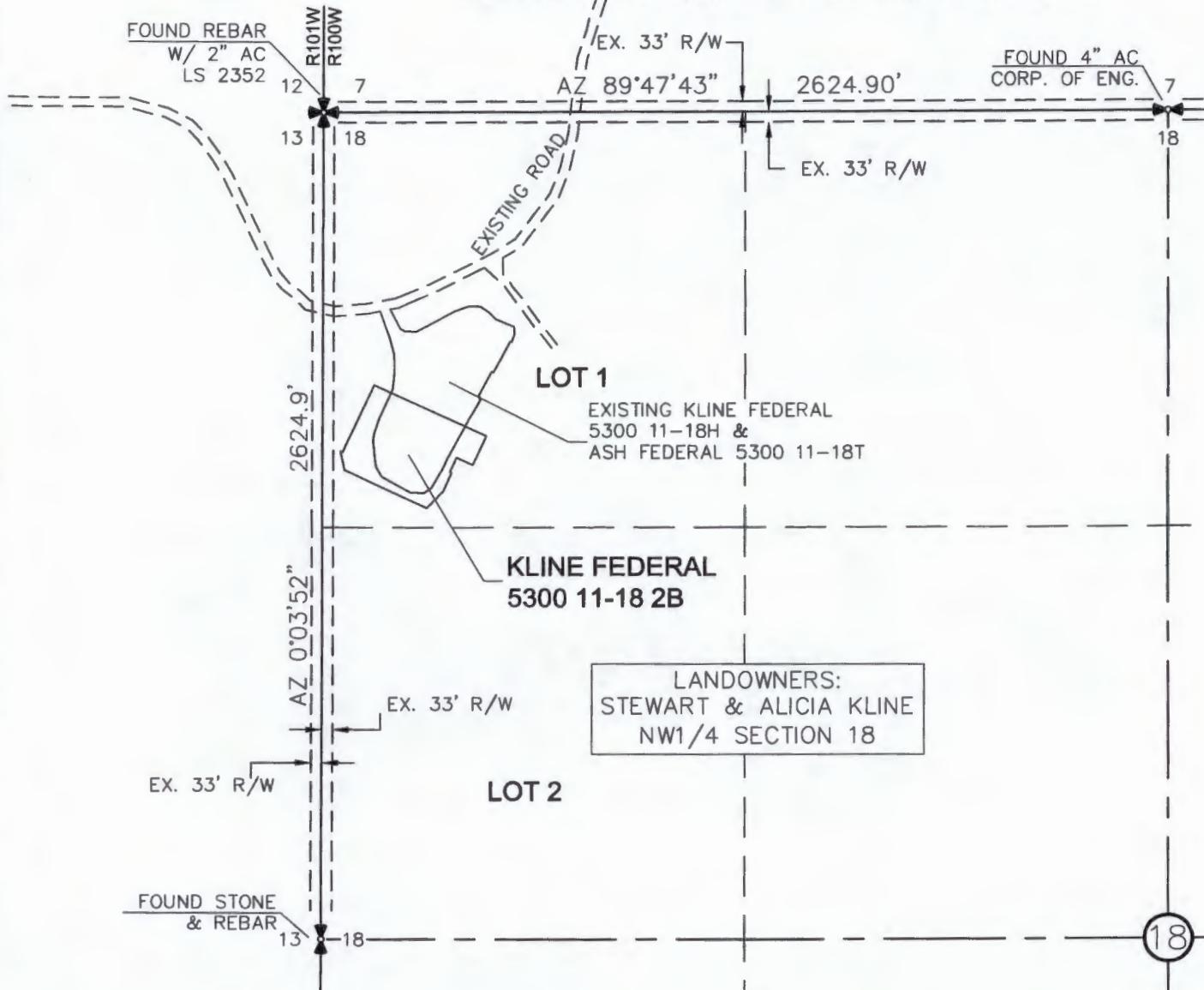
Revision No.	Date	By	Description
REV 1	5/05/14	BJM	Moved wells
REV 2	5/24/14	JJB	Revised layout
REV 3	5/29/14	JJB	Added existing pit to pad
REV 4	5/30/14	JJB	Changed well name & BH
REV 5	1/27/15	BJM	Changed well names & BH

## ACCESS APPROACH

OASIS PETROLEUM NORTH AMERICA, LLC  
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

"KLINE FEDERAL 5300 11-18 2B"

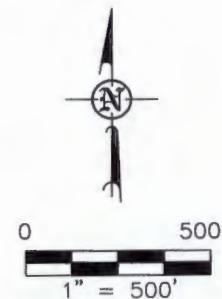
960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE  
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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



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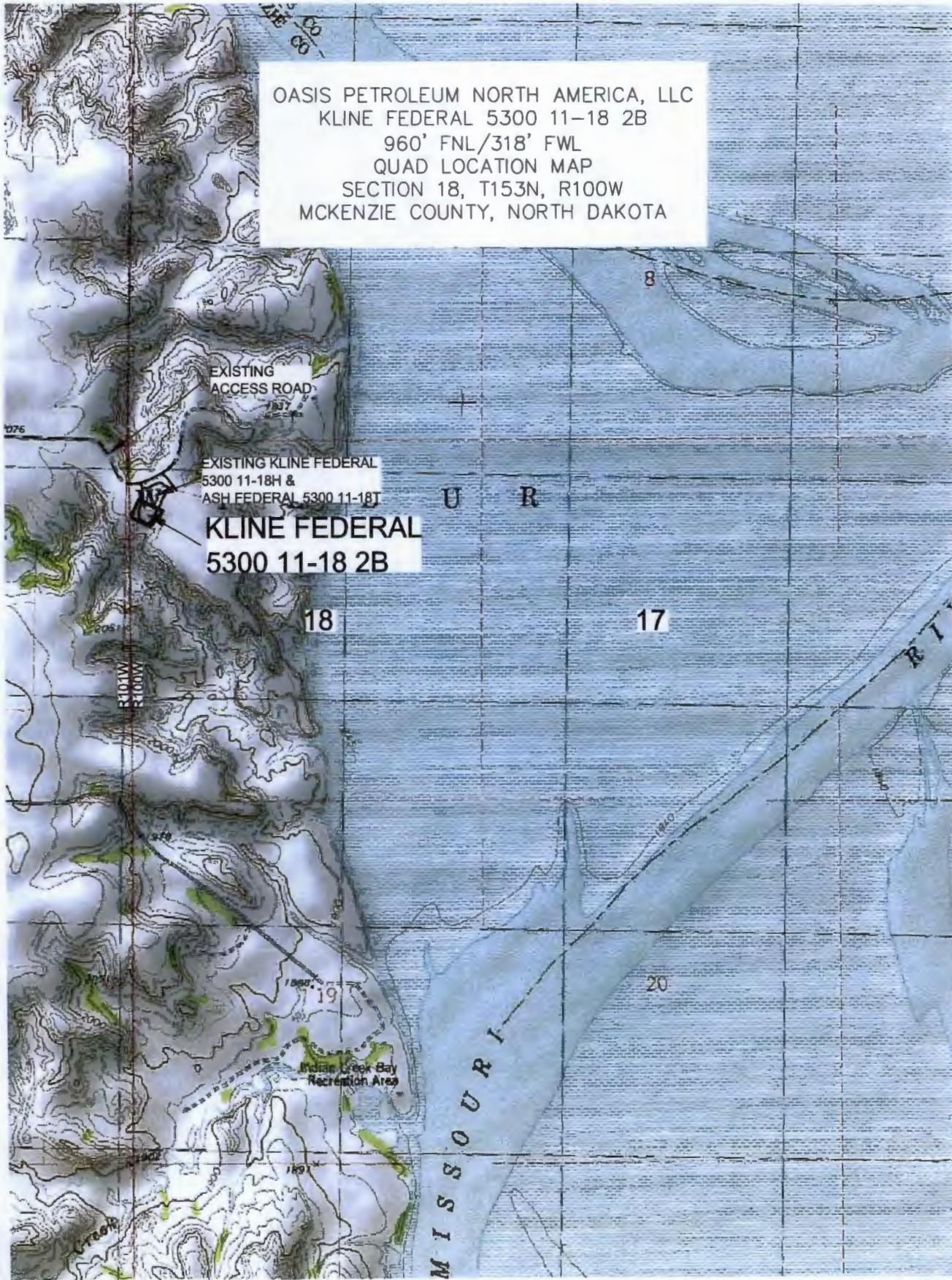
**4/8**

Interstate Engineering, Inc.  
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425 East Main Street  
Sidney, Montana 59270  
Ph. (406) 433-5617  
Fax. (406) 433-5618  
[www.interstateeng.com](http://www.interstateeng.com)  
Other offices in Missoula, Montana and Salt Lake City

Project No.	Date	By	Description
REV 1	1/19/14	BMH	Moved wells
REV 2	1/20/14	JAB	Revised latitude
REV 3	1/20/14	JAB	Added existing pt to pad layout
REV 4	1/20/14	JAB	Changed well name & BH
REV 5	1/21/15	BMH	Changed well names & BHs

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Other offices in Minnesota, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC  
QUAD LOCATION MAP  
SECTION 18, T153N, R100W  
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No.: S14-09-127  
Checked By: D.D.K. Date: APRIL 2014

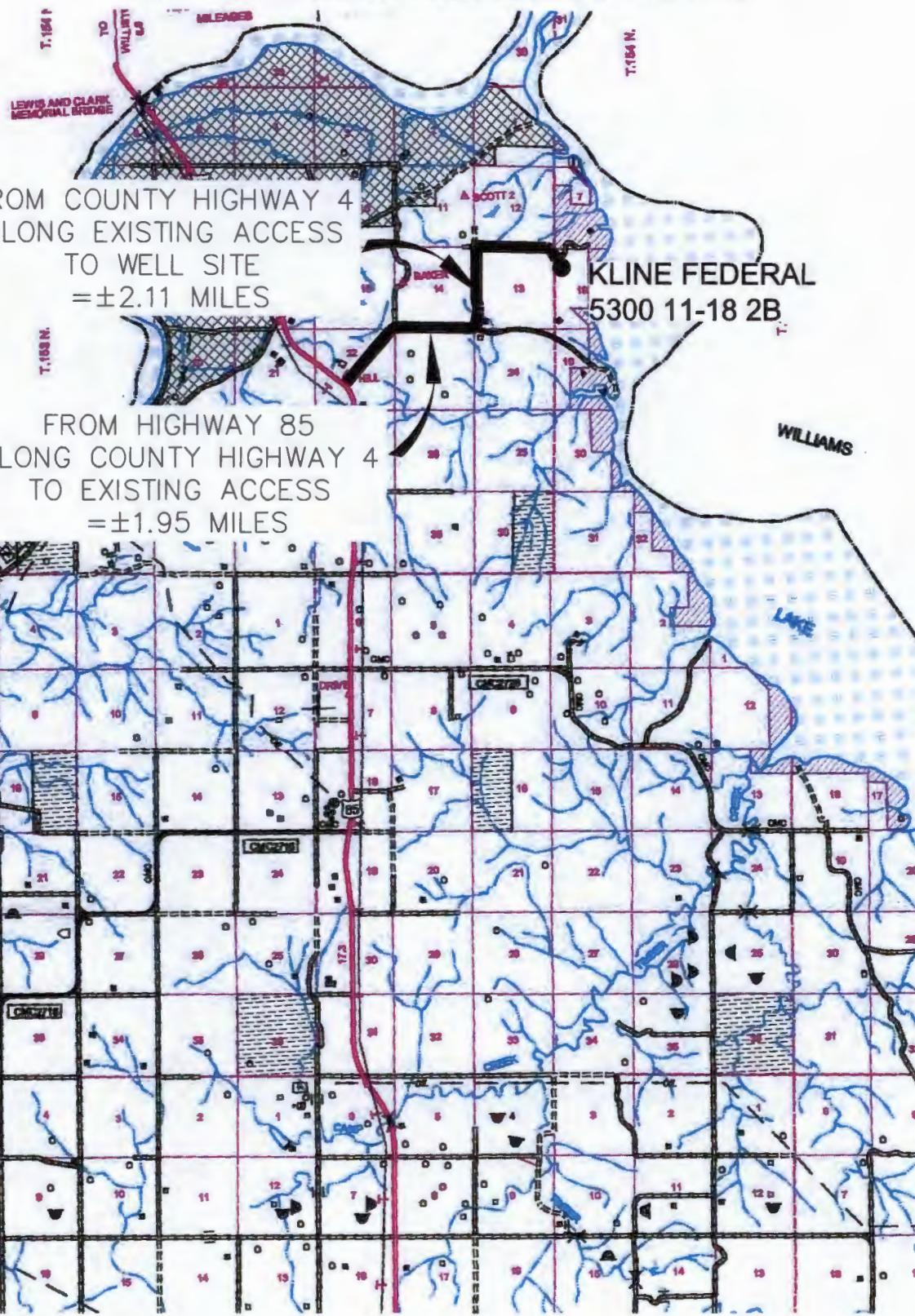
Revision No.	Date	By	Description
REV 1	6/16/14	BH	MOVED WELLS
REV 2	6/24/14	JJS	REvised LATITUDE
REV 3	8/28/14	JJS	ADDED EXISTING PIT TO PAD LAYOUT
REV 4	12/30/14	JJS	CHANGED WELL NAME & BH
REV 5	1/27/15	BH	CHANGED WELL NAMES & BH

# COUNTY ROAD MAP

OASIS PETROLEUM NORTH AMERICA, LLC  
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

"KLINE FEDERAL 5300 11-18 2B"

960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE  
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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Other offices in Minnesota, North Dakota and South Dakota

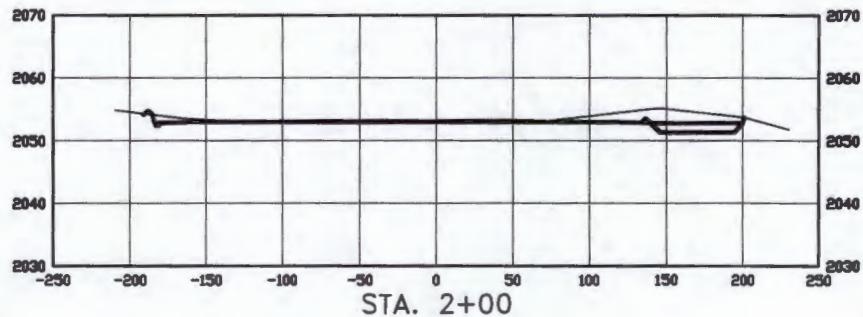
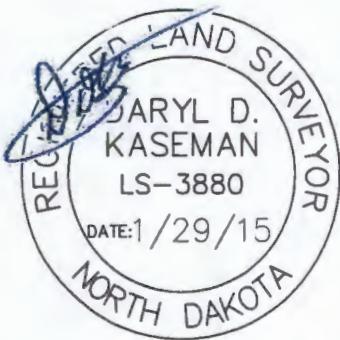
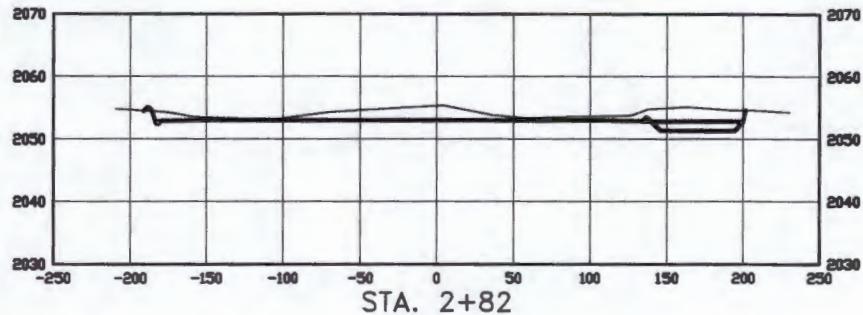
OASIS PETROLEUM NORTH AMERICA, LLC  
COUNTY ROAD MAP  
SECTION 18, T153N, R100W  
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No.: S14-09-127  
Checked By: D.D.K. Date: APRIL 2014

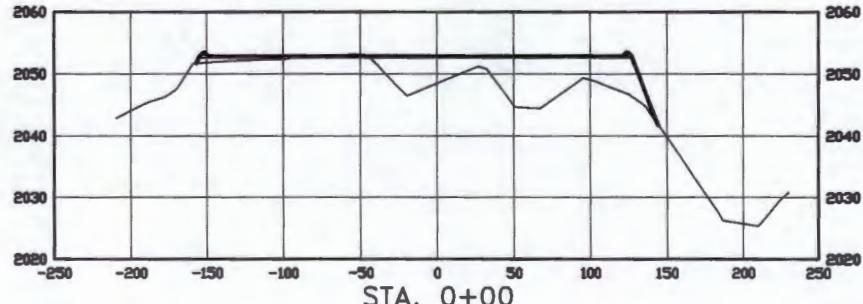
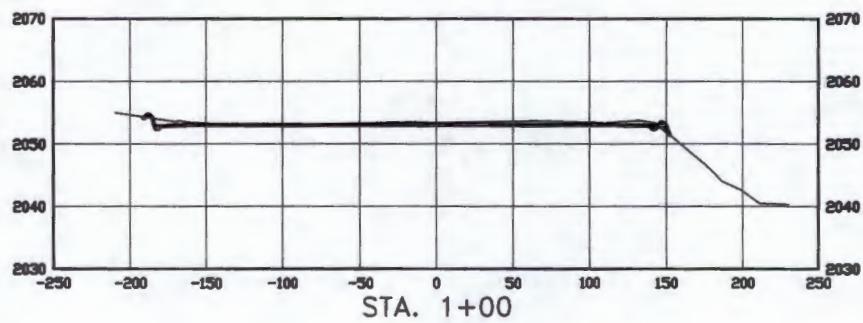
Revision No.	Date	By	Description
REV 1	8/16/14	BHH	Moved wells
REV 2	6/24/14	JBS	Revised latitude
REV 3	8/29/14	AJS	Added existing RT to pad layout
REV 4	12/30/14	JBS	Changed well name & BH
REV 5	1/27/15	BHH	Changed well names & BH

# CROSS SECTIONS

OASIS PETROLEUM NORTH AMERICA, LLC  
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002  
 "KLINE FEDERAL 5300 11-18 2B"  
 960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE  
 SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



THIS DOCUMENT WAS  
 ORIGINALLY ISSUED AND  
 SEALED BY DARYL D. KASEMAN,  
 PLS, REGISTRATION NUMBER  
 3880 ON 1/29/15 AND THE  
 ORIGINAL DOCUMENTS ARE  
 STORED AT THE OFFICES OF  
 INTERSTATE ENGINEERING, INC.



## SCALE

HORIZ 1"=120'  
 VERT 1"=30'

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

OASIS PETROLEUM NORTH AMERICA, LLC  
 PAD CROSS SECTIONS  
 SECTION 18, T153N, R100W  
 MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No.: S14-09-127  
 Checked By: D.D.K. Date: APRIL 2014

Revision No.	Date	By	Description
REV 1	6/16/14	BHH	Moved wells
REV 2	6/24/14	JHS	Revised latitude
REV 3	8/29/14	JHS	Added existing pit to pad layout
REV 4	12/30/14	JHS	Changed well name & BH
REV 5	1/27/15	BHH	Changed well names & BH

## WELL LOCATION SITE QUANTITIES

OASIS PETROLEUM NORTH AMERICA, LLC  
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

"KLINE FEDERAL 5300 11-18 2B"

960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE  
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

WELL SITE ELEVATION	2055.6
WELL PAD ELEVATION	2053.0
EXCAVATION	1,906
PLUS PIT	0
	<hr/>
EMBANKMENT	869
PLUS SHRINKAGE (30%)	261
	<hr/>
	1,130
STOCKPILE PIT	0
STOCKPILE TOP SOIL (6")	1,934
BERMS	883 LF = 286 CY
DITCHES	727 LF = 111 CY
CONTAINMENT AREA	1,112 CY
ADDITIONAL MATERIAL NEEDED	221
DISTURBED AREA FROM PAD	2.40 ACRES

NOTE: ALL QUANTITIES ARE IN CUBIC YARDS (UNLESS NOTED)

CUT END SLOPES AT 1:1

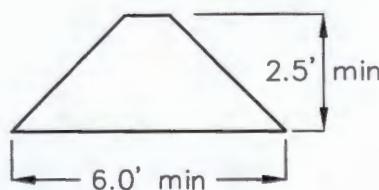
FILL END SLOPES AT 1.5:1

### WELL SITE LOCATION

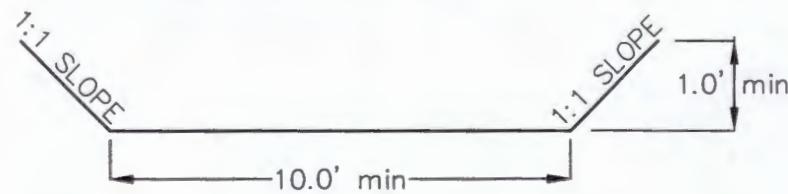
960' FNL

318' FWL

### BERM DETAIL



### DIVERSION DITCH DETAIL



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8/8



SHEET NO.

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.interstateeng.com](http://www.interstateeng.com)

OASIS PETROLEUM NORTH AMERICA, LLC  
QUANTITIES  
SECTION 18, T153N, R100W  
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By:	B.H.H.	Project No.:	S14-09-127	Revision No.:	Date:	By:	Description
Checked By:	D.D.K.	Date:	APRIL 2014	REV 1	5/16/14	B.H.H.	MOVED WELLS
				REV 2	5/24/14	J.E.	REVISED LATITUDE
				REV 3	6/29/14	J.E.	ADDED EXISTING PIT TO PAD LAYOUT
				REV 4	12/30/14	J.E.	CHANGED WELL NAME & BH
				REV 5	1/27/15	B.H.H.	CHANGED WELL NAMES & BH



# **Oil and Gas Division** 29334

Lynn D. Helms - Director

Bruce E. Hicks - Assistant Director

## **Department of Mineral Resources**

Lynn D. Helms - Director

## **North Dakota Industrial Commission**

[www.dmr.nd.gov/oilgas/](http://www.dmr.nd.gov/oilgas/)

BRANDI TERRY  
OASIS PETROLEUM NORTH AMERICA LLC  
1001 FANNIN STE 1500  
HOUSTON, TX 77002 USA

Date: 9/15/2014

**RE: CORES AND SAMPLES**

Well Name: **KLINE FEDERAL 5300 11-18 2T2** Well File No.: 29334  
Location: **LOT1 18-153-100** County: MCKENZIE  
Permit Type: **Development - HORIZONTAL**  
Field: **BAKER** Target Horizon: THREE FORKS B2

Dear BRANDI TERRY:

North Dakota Century Code 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 under North Dakota Century Code: Section 38-08-04 and North Dakota Administrative Code: Section 43-02-03-38.1.
- 2) Samples: The Operator is to begin collecting sample drill cuttings no lower than the:  
**Base of the Last Charles Salt**
  - Sample cuttings shall be collected at:
    - o 30' maximum intervals through all vertical and build sections.
    - o 100' maximum intervals through any horizontal sections.
  - Samples must be washed, dried, placed in standard sample envelopes (3" x 4.5"), packed in the correct order into standard sample boxes (3.5" x 5.25" x 15.25").
  - Samples boxes are to be carefully identified with a label that indicates the operator, well name, well file number, American Petroleum Institute (API) number, location and depth of samples; and forwarded in to the state core and sample library within 30 days of the completion of drilling operations.
- 3) Cores: Any cores cut shall be preserved in correct order, boxed in standard core boxes (4.5", 4.5", 35.75"), and the entire core forwarded to the state core and samples library within 180 days of completion of drilling operations.  
Any extension of time must have approval on a Form 4 Sundry Notice.

All cores, core chips, and samples must be shipped, prepaid, to the state core and samples library at the following address:

**ND Geological Survey Core Library  
2835 Campus Road, Stop 8156  
Grand Forks, ND 58202**

North Dakota Century Code 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

Stephen Fried  
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)

Well File No.  
29334

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date <b>July 2, 2014</b>
<input type="checkbox"/> Report of Work Done	Date Work Completed
<input type="checkbox"/> 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	

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Drilling Prognosis | <input type="checkbox"/> Spill Report             |
| <input type="checkbox"/> Redrilling or Repair          | <input type="checkbox"/> Shooting                 |
| <input type="checkbox"/> Casing or Liner               | <input type="checkbox"/> Acidizing                |
| <input type="checkbox"/> Plug Well                     | <input type="checkbox"/> Fracture Treatment       |
| <input type="checkbox"/> Supplemental History          | <input type="checkbox"/> Change Production Method |
| <input type="checkbox"/> Temporarily Abandon           | <input type="checkbox"/> Reclamation              |
| <input checked="" type="checkbox"/> Other              | <b>Waiver to rule Rule 43-02-03-31</b>            |

Well Name and Number  
**Kline Federal 5300 11-18 2T2**

Footages <b>960 F N L</b>	<b>318 F W L</b>	<b>Qtr-Qtr LOT 1</b>	<b>Section 18</b>	<b>Township 153 N</b>	<b>Range 100 W</b>
Field	Pool <b>Bakken</b>	County <b>McKenzie</b>			

## 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 Oasis Petroleum/ Kline Federal 5300 11-18H 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.

Approved Per #20275

Company <b>Oasis Petroleum North America LLC</b>	Telephone Number <b>281-404-9563</b>	
Address <b>1001 Fannin, Suite 1500</b>		
City <b>Houston</b>	State <b>TX</b>	Zip Code <b>77002</b>
Signature 	Printed Name <b>Heather McCowan</b>	
Title <b>Regulatory Assistant</b>	Date <b>July 2, 2014</b>	
Email Address <b>hmccowan@oasp petroleum.com</b>		

## FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <b>9/8/2014</b>	
By <b>Matthew Messana</b>	
Title <b>Engineering Tech</b>	



## 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.  
29334

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

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date <b>July 2, 2014</b>	<input type="checkbox"/> Drilling Prognosis	<input type="checkbox"/> Spill Report
<input type="checkbox"/> Report of Work Done	Date Work Completed	<input type="checkbox"/> Redrilling or Repair	<input type="checkbox"/> Shooting
<input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03.		<input type="checkbox"/> Casing or Liner	<input type="checkbox"/> Acidizing
Approximate Start Date		<input type="checkbox"/> Plug Well	<input type="checkbox"/> Fracture Treatment
		<input type="checkbox"/> Supplemental History	<input type="checkbox"/> Change Production Method
		<input type="checkbox"/> Temporarily Abandon	<input type="checkbox"/> Reclamation
<input checked="" type="checkbox"/> Other		<b>Suspension of Drilling</b>	

Well Name and Number <b>KLINE FEDERAL 5300 11-18 2T2</b>					
Footages	960 F N L	318 F WL	Qtr-Qtr <b>LOT 1</b>	Section <b>18</b>	Township <b>153 N</b>
Field	Pool		County <b>BAKER</b>	Range <b>100 W</b>	
		<b>BAKKEN</b>			

24-HOUR PRODUCTION RATE			
Before		After	
Oil	Bbls	Oil	Bbls
Water	Bbls	Water	Bbls
Gas	MCF	Gas	MCF

Name of Contractor(s) <b>Advanced Energy Services</b>	Address	City	State	Zip Code
--	---------	------	-------	----------

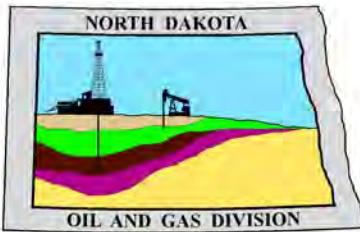
### DETAILS OF WORK

Oasis Petroleum North America LLC requests permission for suspension of drilling for up to 90 days for the referenced well under NDAC 43-02-03-55. Oasis Petroleum North America LLC 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 Petroleum North America LLC 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 Petroleum North America LLC 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.

Notify NDIC Inspector Richard Dunn at (701)770-3554 with spud and TD info

Company <b>Oasis Petroleum North America LLC</b>	Telephone Number <b>(281) 404-9563</b>	
Address <b>1001 Fannin, Suite 1500</b>		
City <b>Houston</b>	State <b>TX</b>	Zip Code <b>77002</b>
Signature 	Printed Name <b>Heather McCowan</b>	
Title <b>Regulatory Assistant</b>	Date <b>July 2, 2014</b>	
Email Address <b>hmccowan@oasispetroleum.com</b>		

FOR STATE USE ONLY	
<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <b>9/8/2014</b>	
By <b>Matthew Messana</b>	
Title <b>Engineering Tech</b>	



# 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](http://www.oilgas.nd.gov)

September 8, 2014

Heather McCowan  
Regulatory Assistant  
OASIS PETROLEUM NORTH AMERICA LLC  
1001 Fannin Suite 1500  
Houston, TX 77002

**RE: HORIZONTAL WELL  
KLINE FEDERAL 5300 11-18 2T2  
LOT1 Section 18-153N-100W  
McKenzie County  
Well File # 29334**

Dear Heather:

Pursuant to Commission Order No. 23752, 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 **500' setback** from the north & south boundaries and **200' setback** from the east & west boundaries within the 1280 acre spacing unit consisting of Sections 18 & 17, T153N R100W.

**PERMIT STIPULATIONS:** Effective June 1, 2014, a covered leak-proof container (with placard) for filter sock disposal must be maintained on the well site beginning when the well is spud, and must remain on-site during clean-out, completion, and flow-back whenever filtration operations are conducted. In addition, OASIS PETROLEUM NORTH AMERICA LLC must take into consideration NDAC 43-02-03-28 (Safety Regulation) when contemplating simultaneous operations on the above captioned location. Pursuant to NDAC 43-02-03-28 (Safety Regulation) "No boiler, portable electric lighting generator, or treater shall be placed nearer than 150 feet to any producing well or oil tank." Lastly, OASIS PETROLIUM NORTH AMERICA LLC must contact NDIC Field Inspector Richard Dunn at 701-770-3554 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. Based on the azimuth of the proposed lateral the maximum legal coordinate from the well head is: 10028' E.

### 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](mailto: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 (1) a suite of open hole logs from which formation tops and porosity zones can be determined, (2) a Gamma Ray Log run from total depth to ground level elevation of the well bore, and (3) a log from which the presence and quality of cement can be determined (Standard CBL or Ultrasonic cement evaluation log) in every well in which production or intermediate casing has been set, this log must be run prior to completing the well. All logs run must be submitted free of charge, as one digital TIFF (tagged image file format) copy and one digital LAS (log ASCII) formatted copy. Digital logs may be submitted on a standard CD, DVD, or attached to an email sent to [digitallogs@nd.gov](mailto:digitallogs@nd.gov)

Thank you for your cooperation.

Sincerely,

Matt Messana  
Engineering Technician



# 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 <b>New Location</b>	Type of Well <b>Oil &amp; Gas</b>	Approximate Date Work Will Start <b>10 / 1 / 2013</b>	Confidential Status <b>No</b>
Operator <b>OASIS PETROLEUM NORTH AMERICA LLC</b>		Telephone Number <b>281-404-9563</b>	
Address <b>1001 Fannin Suite 1500</b>		City <b>Houston</b>	State <b>TX</b> Zip Code <b>77002</b>

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 <b>KLINE FEDERAL</b>				Well Number <b>5300 11-18 2T2</b>			
Surface Footages <b>960 F N L      318 F W L</b>		Qtr-Qtr <b>LOT1</b>	Section <b>18</b>	Township <b>153 N</b>	Range <b>100 W</b>	County <b>McKenzie</b>	
Longstring Casing Point Footages <b>1198 F N L      782 F W L</b>		Qtr-Qtr <b>LOT1</b>	Section <b>18</b>	Township <b>153 N</b>	Range <b>100 W</b>	County <b>McKenzie</b>	
Longstring Casing Point Coordinates From Well Head <b>238 S From WH      464 E From WH</b>		Azimuth <b>120 °</b>	Longstring Total Depth <b>11111 Feet MD      10840 Feet TVD</b>				
Bottom Hole Footages From Nearest Section Line <b>1530 F N L      205 F E L</b>		Qtr-Qtr <b>SENE</b>	Section <b>17</b>	Township <b>153 N</b>	Range <b>100 W</b>	County <b>McKenzie</b>	
Bottom Hole Coordinates From Well Head <b>570 S From WH      10023 E From WH</b>		KOP Lateral 1 <b>10363 Feet MD</b>		Azimuth Lateral 1 <b>90 °</b>		Estimated Total Depth Lateral 1 <b>20718 Feet MD      10890 Feet TVD</b>	
Latitude of Well Head <b>48 ° 04 ' 45.68 "</b>	Longitude of Well Head <b>-103 ° 36 ' 10.19 "</b>	NAD Reference <b>NAD83</b>		Description of Spacing Unit: <b>Sections 18 &amp; 17, T153N R100W</b> (Subject to NDIC Approval)			
Ground Elevation <b>2056 Feet Above S.L.</b>	Acres in Spacing/Drilling Unit <b>1280</b>	Spacing/Drilling Unit Setback Requirement <b>500 Feet N/S      200 Feet E/W</b>		Industrial Commission Order <b>23752</b>			
North Line of Spacing/Drilling Unit <b>10544 Feet</b>	South Line of Spacing/Drilling Unit <b>10489 Feet</b>	East Line of Spacing/Drilling Unit <b>5244 Feet</b>		West Line of Spacing/Drilling Unit <b>5256 Feet</b>			
Objective Horizons <b>Three Forks B2</b>						Pierre Shale Top <b>1968</b>	
Proposed Surface Casing	Size <b>9 - 5/8 "</b>	Weight <b>36 Lb./Ft.</b>	Depth <b>2068 Feet</b>	Cement Volume <b>984 Sacks</b>	NOTE: Surface hole must be drilled with fresh water and surface casing must be cemented back to surface.		
Proposed Longstring Casing	Size <b>7 - "</b>	Weight(s) <b>29/32 Lb./Ft.</b>	Longstring Total Depth <b>11111 Feet MD      10840 Feet TVD</b>			Cement Volume <b>835 Sacks</b>	Cement Top <b>3947 Feet</b> Top Dakota Sand <b>5448 Feet</b>
Base Last Charles Salt (If Applicable) <b>9216 Feet</b>		NOTE: Intermediate or longstring casing string must be cemented above the top Dakota Group Sand.					
Proposed Logs <b>Triple Combo: KOP to Kibby GR/Res to BSC GR to surf CND through the Dakota</b>							
Drilling Mud Type (Vertical Hole - Below Surface Casing) <b>Invert</b>				Drilling Mud Type (Lateral) <b>Salt Water Gel</b>			
Survey Type in Vertical Portion of Well <b>MWD Every 100 Feet</b>		Survey Frequency: Build Section <b>30 Feet</b>		Survey Frequency: Lateral <b>90 Feet</b>		Survey Contractor <b>Ryan</b>	

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****Documents forwarded by email: Drill plan with drilling fluids, Well Summary with casing/cement plans, Directional Plan & Plot, Plots**

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		Bottom Hole Coordinates From Well Head From WH			From WH		
KOP Footages From Nearest Section Line F      L		Qtr-Qtr	Section	Township <b>N</b>	Range <b>W</b>	County	
Bottom Hole Footages From Nearest Section Line F      L		Qtr-Qtr	Section	Township <b>N</b>	Range <b>W</b>	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		Bottom Hole Coordinates From Well Head From WH			From WH		
KOP Footages From Nearest Section Line F      L		Qtr-Qtr	Section	Township <b>N</b>	Range <b>W</b>	County	
Bottom Hole Footages From Nearest Section Line F      L		Qtr-Qtr	Section	Township <b>N</b>	Range <b>W</b>	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		Bottom Hole Coordinates From Well Head From WH			From WH		
KOP Footages From Nearest Section Line F      L		Qtr-Qtr	Section	Township <b>N</b>	Range <b>W</b>	County	
Bottom Hole Footages From Nearest Section Line F      L		Qtr-Qtr	Section	Township <b>N</b>	Range <b>W</b>	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		Bottom Hole Coordinates From Well Head From WH			From WH		
KOP Footages From Nearest Section Line F      L		Qtr-Qtr	Section	Township <b>N</b>	Range <b>W</b>	County	
Bottom Hole Footages From Nearest Section Line F      L		Qtr-Qtr	Section	Township <b>N</b>	Range <b>W</b>	County	

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

Date

7 / 02 / 2014

ePermit

Printed Name  
**Heather McCowan**Title  
**Regulatory Assistant****FOR STATE USE ONLY**

Permit and File Number <b>29334</b>	API Number <b>33 - 053 - 06243</b>
Field <b>BAKER</b>	
Pool <b>BAKKEN</b>	Permit Type <b>DEVELOPMENT</b>

**FOR STATE USE ONLY**

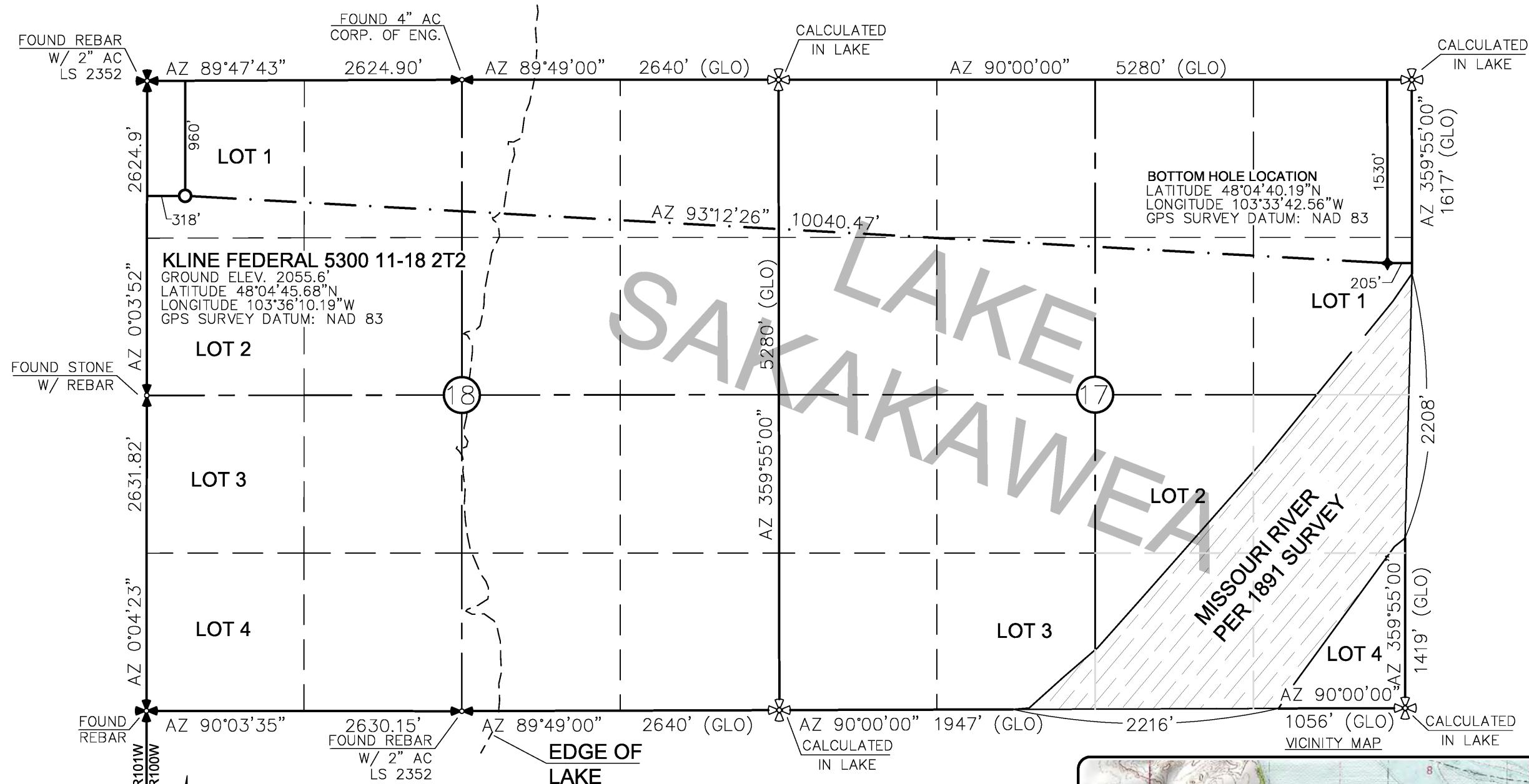
Date Approved <b>9 / 8 / 2014</b>
By <b>Matt Messana</b>
Title <b>Engineering Technician</b>

# WELL LOCATION PLAT

OASIS PETROLEUM NORTH AMERICA, LLC  
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

"KLINE FEDERAL 5300 11-18 2T2"

960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE  
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

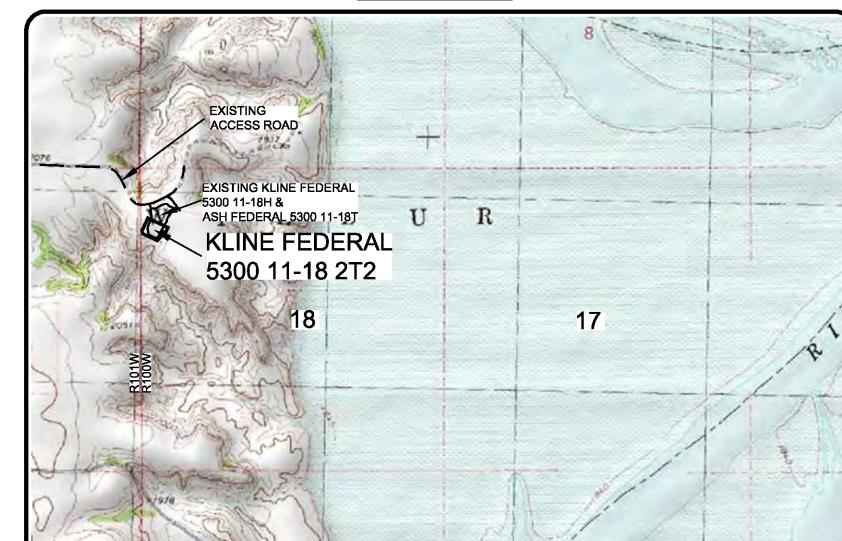
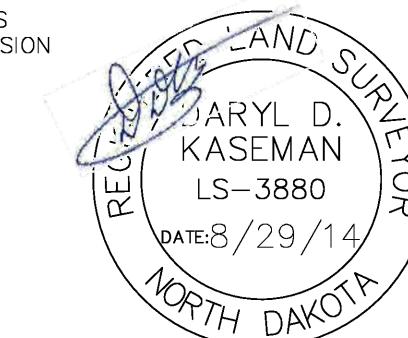


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DARYL D. KASEMAN LS-3880



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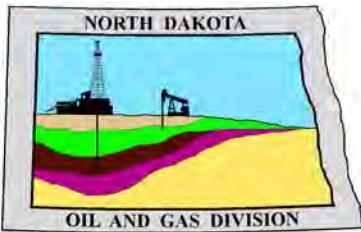
Revision No.	Date	By	Description
REV 1	6/16/14	BHH	Moved wells
REV 2	6/24/14	JJS	Revised Latitude
REV 3	6/29/14	JJS	Added Existing Pit to Pad

Project No.: S14-09-127
Date: APRIL 2014
Drawn By: BHH
Checked By: DDK

Interstate Engineering, Inc.  
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Sidney, Montana 59270  
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Other offices in Minnesota, North Dakota and South Dakota

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Well Location Plat 5300 11-18 2T2.wpg - 8/29/2014 8:17 AM



# 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](http://www.oilgas.nd.gov)

April 9, 2014

**RE: Filter Socks and Other Filter Media  
Leakproof Container Required  
Oil and Gas Wells**

Dear Operator,

North Dakota Administrative Code Section 43-02-03-19.2 states in part that all waste material associated with exploration or production of oil and gas must be properly disposed of in an authorized facility in accord with all applicable local, state, and federal laws and regulations.

Filtration systems are commonly used during oil and gas operations in North Dakota. The Commission is very concerned about the proper disposal of used filters (including filter socks) used by the oil and gas industry.

Effective June 1, 2014, a container must be maintained on each well drilled in North Dakota beginning when the well is spud and must remain on-site during clean-out, completion, and flow-back whenever filtration operations are conducted. The on-site container must be used to store filters until they can be properly disposed of in an authorized facility. Such containers must be:

- leakproof to prevent any fluids from escaping the container
- covered to prevent precipitation from entering the container
- placard to indicate only filters are to be placed in the container

If the operator will not utilize a filtration system, a waiver to the container requirement will be considered, but only upon the operator submitting a Sundry Notice (Form 4) justifying their request.

As previously stated in our March 13, 2014 letter, North Dakota Administrative Code Section 33-20-02.1-01 states in part that every person who transports solid waste (which includes oil and gas exploration and production wastes) is required to have a valid permit issued by the North Dakota Department of Health, Division of Waste Management. Please contact the Division of Waste Management at (701) 328-5166 with any questions on the solid waste program. Note oil and gas exploration and production wastes include produced water, drilling mud, invert mud, tank bottom sediment, pipe scale, filters, and fly ash.

Thank you for your cooperation.

Sincerely,

*Bruce E. Hicks*  
Assistant Director

DRILLING PLAN									
OPERATOR	Oasis Petroleum	COUNTY/STATE	McKenzie Co., ND						
WELL NAME	Kline Federal 5300 11-18 2T2	RIG	0						
WELL TYPE	Horizontal Three Forks	Surface Location (survey plat):	960' fnl 318' fwl						
LOCATION	NWWN 18-153N-100W	GROUND ELEV:	2052 Finished Pad Elev. Sub Height: 25						
EST. T.D.	20,718'	KB ELEV:	2077						
TOTAL LATERAL:	9,607' (est)	LOGS:	Type	Interval					
PROGNOSIS: Based on 2,077' KB(est)		OH Logs: Triple Combo KOP to Kirby (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							
MARKER	DEPTH (Surf Loc)	DATUM (Surf Loc)	DEVIATION:						
Pierre	NDIC MAP	1,967	Surf:	3 deg. max., 1 deg / 100'; svry every 500'					
Greenhorn		4,614	Prod:	5 deg. max., 1 deg / 100'; svry every 100'					
Mowry		5,020							
Dakota		5,447							
Rierdon		6,446							
Dunham Salt		6,784							
Dunham Salt Base		6,895							
Spearfish		6,992							
Pine Salt		7,247							
Pine Salt Base		7,295							
Opeche Salt		7,340							
Opeche Salt Base		7,370							
Broom Creek (Top of Minnelusa Gp.)		7,572							
Amsden		7,652							
Tyler		7,820							
Otter (Base of Minnelusa Gp.)		8,011							
Kibbey		8,366							
Charles Salt		8,516							
UB		9,140							
Base Last Salt		9,215							
Ratcliffe		9,263							
Mission Canyon		9,439							
Lodgepole		10,001							
Lodgepole Fracture Zone		10,207							
False Bakken		10,697							
Upper Bakken		10,707							
Middle Bakken		10,721							
Lower Bakken		10,766							
Pronghorn		10,780							
Three Forks 1st Bench		10,792							
Three Forks 1st Bench Claystone		10,815							
Three Forks 2nd Bench		10,824							
Three Forks 2nd Bench Claystone		10,852							
Three Forks 3rd Bench		10,872							
Dip Rate:	-0.3								
Max. Anticipated BHP:	4702		Surface Formation: Glacial till						
MUD:	Interval	Type	WT	Vis	WL	Remarks			
Surface:	0' -	2,068'	FW	8.4-9.0	28-32	NC Circ Mud Tanks			
Intermediate:	2,068' -	11,111'	Invert	9.5-10.4	40-50	30+HtHp Circ Mud Tanks			
Laterals:	11,111' -	20,718'	Salt Water	9.8-10.2	28-32	NC Circ Mud Tanks			
CASING:	Size	Wt ppf	Hole	Depth	Cement	WOC	Remarks		
Surface:	13-3/8"	54.5#	17-1/2"	2,068"	To Surface	12	100' into Pierre		
Inermediate (Dakota):	9-5/8"	40#	12-1/4"	6,100'	To Surface	24	Set Casing across Dakota		
Intermediate:	7"	29/32#	8-3/4"	11,111'	3,947"	24	1500' above Dakota		
Production Liner:	4-1/2"	13.5#	6"	20,718"	TOL @ 10,313'		50' above KOP		
PROBABLE PLUGS, IF REQ'D:									
OTHER:	MD	TVD	FNL/FSL	FEL/FWL	S-T-R	AZI			
Surface:	2,068	2,068	960' FNL	318' FWL	SEC 18-T153N-R100W		Survey Company: Build Rate: 12 deg /100'		
KOP:	10,363'	10,363'	960' FNL	370' FWL	SEC 18-T153N-R100W				
EOC:	11,111'	10,840'	1198' FNL	781' FWL	SEC 18-T153N-R100W	120.00			
Casing Point:	11,111'	10,840'	1198' FNL	781' FWL	SEC 18-T153N-R100W	120.00			
Three Forks Lateral TD:	20,718'	10,890"	1530' FNL	205' FEL	SEC 17-T153N-R100W	90.00			
Comments:									
<u>Request Sundry to Waive Open Hole Logs</u>									
<u>Exception well: Oasis Petroleum's Kline 5300 11-18H</u>									
Completion Notes: 35 packers, 35 sleeves, no frac string									
Oasis Petroleum does not use Diesel Fuel, as defined by the US EPA in the list below, in our hydraulic fracture operations.									
68334-30-5 (Primary Name: Fuels, diesel) 68476-34-6 (Primary Name: Fuels, diesel, No. 2) 68476-30-2 (Primary Name: Fuel oil No. 2)									
68476-31-3 (Primary Name: Fuel oil, No. 4) 8008-20-6 (Primary Name: Kerosene)									
Geology: M.Steed 4/9/2014				Engineering: hlbadger rpm 5/29/14					

**Oasis Petroleum  
Well Summary**  
**Kline Federal 5300 11-18 2T2**  
**Sec. 18 T153N R100W**  
**McKenzie County, North Dakota**

**SURFACE CASING AND CEMENT DESIGN**

Make-up Torque (ft-lbs)									
Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Minimum	Optimum	Max
13-3/8"	0' to 2,068'	54.5	J-55	STC	12.615"	12.459"	4,100	5,470	6,840

Interval	Description	Collapse	Burst	Tension
		(psi) a	(psi) b	(1000 lbs) c
0' to 2,068'	13-3/8", 54.5#, J-55, STC, 8rd	1130 / 1.17	2730 / 2.82	514 / 2.61

**API Rating & Safety Factor**

- a) Collapse pressure based on full casing evacuation with 9 ppg fluid on backside (2068' setting depth).
- b) Burst pressure based on 9 ppg fluid with no fluid on backside (2068' setting depth).
- c) Based on string weight in 9 ppg fluid at 2068' TVD plus 100k# overpull. (Buoyed weight equals 97k lbs.)

Cement volumes are based on 13-3/8" casing set in 17-1/2" hole with 50% excess to circulate cement back to surface. Mix and pump the following slurry.

**Pre-flush (Spacer): 20 bbls** fresh water

**Lead Slurry:** **635 sks** (328 bbls) 2.9 yield conventional system with 94 lb/sk cement, .25 lb/sk D130 Lost Circulation Control Agent, 2% CaCL2, 4% D079 Extender, and 2% D053 Expanding Agent.

**Tail Slurry:** **349 sks** (72 bbls) 1.16 yield conventional system with 94 lb/sk cement, .25 lb/sk Lost Circulation Control Agent, and .25% CaCL2.

**Oasis Petroleum  
Well Summary**  
**Kline Federal 5300 11-18 2T2**  
**Sec. 18 T153N R100W**  
**McKenzie County, North Dakota**

**CONTINGENCY INTERMEDIATE CASING AND CEMENT DESIGN**

Make-up Torque (ft-lbs)									
Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Minimum	Optimum	Max
9-5/8"	0' - 6101'	40	HCL-80	LTC	8.835"	8.75"**	5,450	7,270	9,090

\*\*Special Drift

Interval	Description	Collapse	Burst	Tension
		(psi) a	(psi) b	(1000 lbs) c
0' - 6101'	9-5/8", 40#, HCL-80, LTC, 8rd	4230 / 5.33	5750 / 1.23	837 / 2.73

**API Rating & Safety Factor**

- a. Collapse pressure based on 11.5ppg fluid on backside and 9ppg fluid inside of casing.
- b. Burst pressure calculated from a gas kick coming from the production zone (Bakken Pool) at 9,000psi and a subsequent breakdown at the 9-5/8" shoe, based on a 13.5#/ft fracture gradient. Backup of 9 ppg fluid.
- c. Yield based on string weight in 10 ppg fluid, (207k lbs buoied weight) plus 100k lbs overpull.

Cement volumes are estimates based on 9-5/8" casing set in a 12-1/4" hole with **10%** excess in OH and **0%** excess inside surface casing. TOC at surface.

**Pre-flush (Spacer):      20 bbls** Chem wash

**Lead Slurry:**      **598 sks (309 bbls)** Conventional system with 75 lb/sk cement, 0.5lb/sk lost circulation, 10% expanding agent, 2% extender, 2% CaCl2, 0.2% anti foam, and 0.4% fluid loss

**Tail Slurry:**      **349 sks (72 bbls)** Conventional system with 94 lb/sk cement, 0.3% anti-settling agent, 0.3% fluid loss agent, 0.3 lb/sk lost circulation control agent, 0.2% anti foam, and 0.1% retarder

**Oasis Petroleum**  
**Well Summary**  
**Kline Federal 5300 11-18 2T2**  
**Sec. 18 T153N R100W**  
**McKenzie County, North Dakota**

**INTERMEDIATE CASING AND CEMENT DESIGN**

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
7"	0' - 6634'	29	P-110	LTC	6.184"	6.059"	5980	7970	8770
7"	6634' - 10363'	32	HCP-110	LTC	6.094"	6.000***	6730	8970	9870
7"	10363' - 11111'	29	P-110	LTC	6.184"	6.059"	5980	7970	8770

\*\*Special Drift

Interval	Description	Collapse	Burst	Tension
		(psi) a	(psi) b	(1000 lbs) c
0' - 6634'	7", 29#, P-110, LTC, 8rd	8530 / 2.47*	11220 / 1.19	797 / 2.08
6634' - 10363'	7", 32#, HCP-110, LTC, 8rd	11820 / 2.19*	12460 / 1.29	
6634' - 10363'	7", 32#, HCP-110, LTC, 8rd	11820 / 1.28**	12460 / 1.29	
10363' - 11111'	7", 29#, P-110, LTC, 8rd	8530 / 1.51*	11220 / 1.15	

**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 10,840' TVD.
- c. Based on string weight in 10 ppg fluid, (301k 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):** **50 bbls Saltwater**

**40 bbls Weighted MudPush Express**

**Lead Slurry:** **207 sks (81 bbls)** 2.21 yield conventional system with 47 lb/sk cement, 37 lb/sk D035 Extender, 3.0% KCl, 3.0% D154 Extender, 0.3% D208 Viscosifier, 0.07% Retarder, 0.2% Anti Foam, 0.5lb/sk D130 LCM

**Tail Slurry:** **628 sks (172 bbls)** 1.54 yield conventional system with 94 lb/sk cement, 3.0% KCl, 35.0% Silica, 0.5% Retarder, 0.2% Fluid Loss, 0.2% Anti Foam, 0.5 lb/sk LCM

**Oasis Petroleum  
Well Summary**  
**Kline Federal 5300 11-18 2T2**  
**Sec. 18 T153N R100W**  
**McKenzie County, North Dakota**

**PRODUCTION LINER**

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Torque
4-1/2"	10,313' – 20,718'	13.5	P-110	BTC	3.92"	3.795"	4,500

Interval	Description	Collapse	Burst	Tension
		(psi) a	(psi) b	(1000 lbs) c
10,313' – 20,718'	4-1/2", 13.5 lb, P-110, BTC, 8rd	10680 / 1.99	12410 / 1.28	443 / 1.86

**API Rating & Safety Factor**

- a) Collapse pressure based on full casing evacuation with 9.5 ppg fluid on backside @ 10890' TVD.
- b) Burst pressure based on 9000 psi treating pressure with 10.2 ppg internal fluid gradient and 9 ppg external fluid gradient @ 10890' TVD.
- c) Based on string weight in 9.5 ppg fluid (Buoyed weight: 126k lbs.) plus 100k lbs overpull.

Oasis Petroleum does not use Diesel Fuel, as defined by the US EPA in the list below, in our hydraulic fracture operations.

**68334-30-5 (Primary Name: Fuels, diesel)**  
**68476-34-6 (Primary Name: Fuels, diesel, No. 2)**  
**68476-30-2 (Primary Name: Fuel oil No. 2)**  
**68476-31-3 (Primary Name: Fuel oil, No. 4)**  
**8008-20-6 (Primary Name: Kerosene)**



Company: Oasis Petroleum  
 Field: Indian Hills  
 Location: 153N-100W-17/18  
 Well: Kline Federal 5300 11-18 2T2  
 Wellbore #1

Plan: Design #6 (Kline Federal 5300 11-18 2T2/Wellbore #1)

**gyro**/data  
 Precision Wellbore Placement

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.0	0.0
2	2500.0	0.00	0.00	2500.0	0.0	0.0	0.0	0.00	0.0	0.0
3	2650.0	3.00	90.00	2649.9	0.0	3.9	2.00	90.00	0.0	3.9
4	3501.2	3.00	90.00	3500.0	0.0	48.5	0.00	0.00	0.0	48.4
5	3651.2	0.00	0.00	3649.9	0.0	52.4	2.00	-180.00	0.0	52.3
6	10363.3	0.00	0.00	10362.0	0.0	52.4	0.00	0.00	0.0	52.3
7	11110.8	89.70	120.00	10839.5	-237.5	463.7	12.00	120.00	0.0	476.5
8	11125.8	89.70	120.00	10839.5	-245.0	476.7	0.00	0.00	0.0	489.9
9	12110.4	89.70	90.46	10844.8	-500.8	1416.3	3.00	-90.08	1442.4	PBHL Kline Federal 5300 11-18 2T2
10	20717.6	89.70	90.46	10889.9	-570.0	10023.0	0.00	0.00	10039.2	PBHL Kline Federal 5300 11-18 2T2

WELL DETAILS: Kline Federal 5300 11-18 2T2

+N/S	+E/W	Northing	Ground Level:	Easting	Latitude	Longitude	Slot
0.0	0.0	408992.29	2053.0	1210243.30	48° 4' 45.680 N	103° 36' 10.190 W	

WELLBORE TARGET DETAILS

Name	TVD	+N/S	+E/W	Latitude	Longitude	Shape
PBHL Kline Federal 5300 11-18 2T2	20890.0	-570.0	10023.0	48° 4' 40.028 N	103° 33' 42.582 W	Point

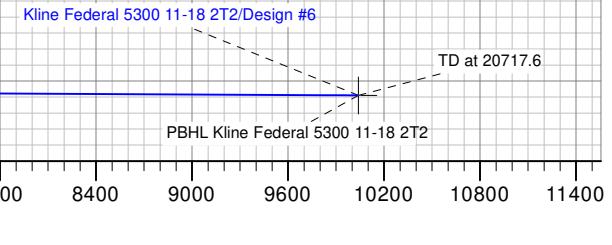
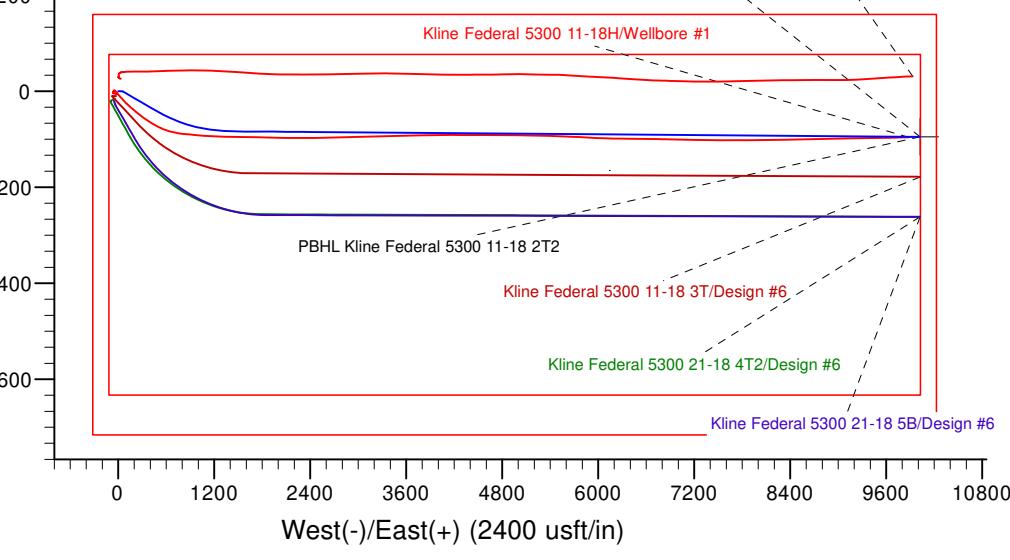
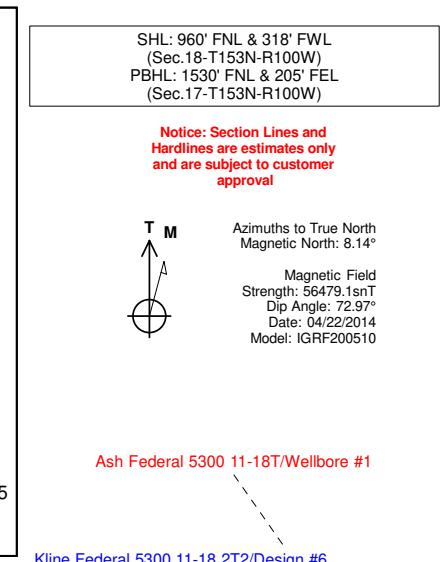
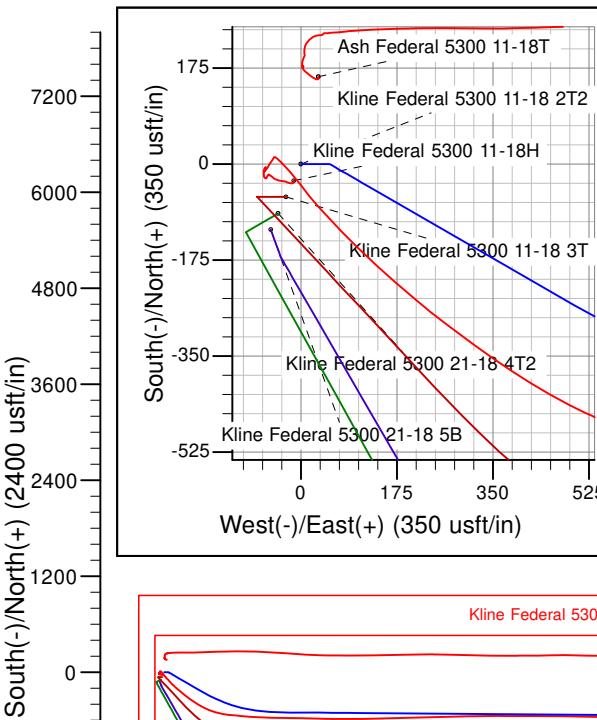
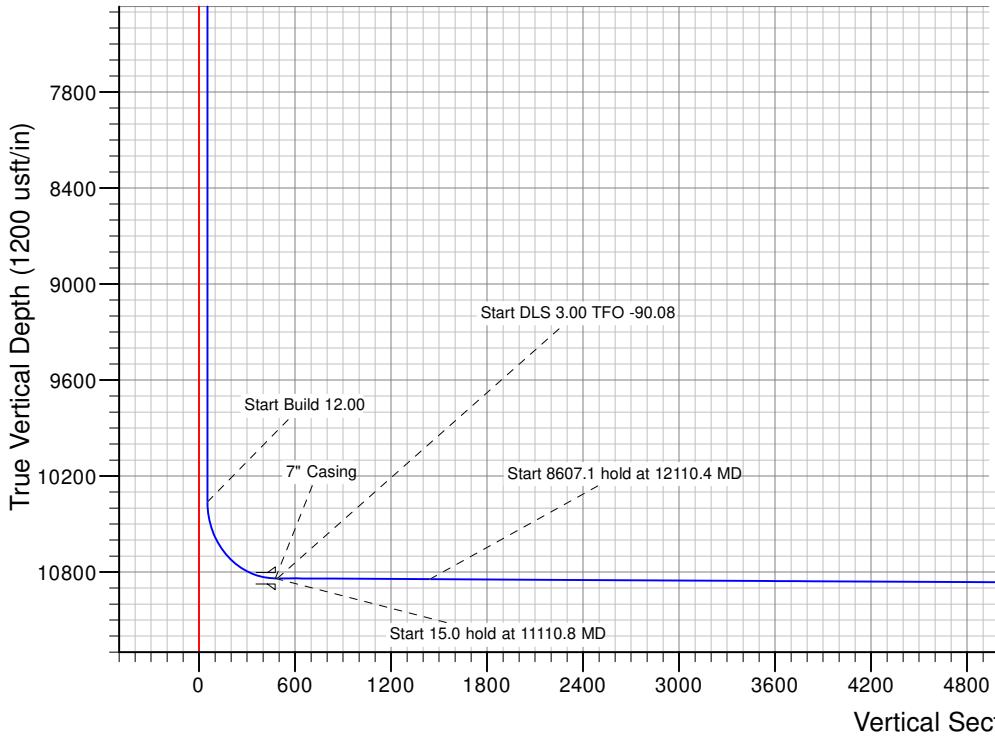
ANNOTATIONS

CASING DETAILS

TVD	MD	Annotation	TVD	MD	Name	Size
2500.0	2500.0	Start Build 2.00	2068.0	2068.0	13 3/8" Casing	13-3/8
2649.9	2650.0	Start 851.2 hold at 2650.0 MD	10839.5	11111.0	7" Casing	7
3500.0	3501.2	Start DLS 2.00 TFO -180.00	6100.0	6101.3	9 5/8" Casing	9-5/8
3649.9	3651.2	Start 6712.1 hold at 3651.2 MD				
10362.0	10363.3	Start Build 12.00				
10839.5	11110.8	Start 15.0 hold at 11110.8 MD				
10839.5	11125.8	Start DLS 3.00 TFO -90.08				
10844.8	12110.4	Start 8607.1 hold at 12110.4 MD				
10889.9	20717.6	TD at 20717.6				

Plan: Design #6 (Kline Federal 5300 11-18 2T2/Wellbore #1)

Created By: M. Loucks Date: 15:24, June 30 2014





## Oasis Petroleum

Indian Hills  
153N-100W-17/18  
Kline Federal 5300 11-18 2T2

Wellbore #1

Plan: Design #6

## Standard Planning Report

30 June, 2014

**gyro***data*  
Precision Wellbore Placement

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Company:</b>	Oasis Petroleum	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-17/18	<b>North Reference:</b>	True
<b>Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #6		

<b>Project</b>	Indian Hills	
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>
<b>Geo Datum:</b>	North American Datum 1983	Mean Sea Level
<b>Map Zone:</b>	North Dakota Northern Zone	

<b>Site</b>	153N-100W-17/18			
<b>Site Position:</b>		<b>Northing:</b>	408,992.30 usft	<b>Latitude:</b>
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,210,243.30 usft	<b>Longitude:</b>
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>

<b>Well</b>	Kline Federal 5300 11-18 2T2				
<b>Well Position</b>	+N/S +E/W	0.0 usft	<b>Northing:</b> <b>Easting:</b>	408,992.29 usft 1,210,243.30 usft	<b>Latitude:</b> <b>Longitude:</b>
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b> (°)	<b>Dip Angle</b> (°)	<b>Field Strength</b> (nT)
	IGRF200510	04/22/14	8.14	72.97	56,479

<b>Design</b>	Design #6				
<b>Audit Notes:</b>					
<b>Version:</b>		<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>		<b>Depth From (TVD)</b> (usft)	<b>+N/S</b> (usft)	<b>+E/W</b> (usft)	<b>Direction</b> (°)
		0.0	0.0	0.0	93.25

Plan Sections										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/S (usft)</b>	<b>+E/W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00
2,650.0	3.00	90.00	2,649.9	0.0	3.9	2.00	2.00	0.00	0.00	90.00
3,501.2	3.00	90.00	3,500.0	0.0	48.5	0.00	0.00	0.00	0.00	0.00
3,651.2	0.00	0.00	3,649.9	0.0	52.4	2.00	-2.00	-60.00	-180.00	
10,363.3	0.00	0.00	10,362.0	0.0	52.4	0.00	0.00	0.00	0.00	0.00
11,110.8	89.70	120.00	10,839.5	-237.5	463.7	12.00	12.00	0.00	120.00	
11,125.8	89.70	120.00	10,839.5	-245.0	476.7	0.00	0.00	0.00	0.00	
12,110.4	89.70	90.46	10,844.8	-500.8	1,416.3	3.00	0.00	-3.00	-90.08	PBHL Kline Federal 5
20,717.6	89.70	90.46	10,889.9	-570.0	10,023.0	0.00	0.00	0.00	0.00	PBHL Kline Federal 5

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Company:</b>	Oasis Petroleum	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-17/18	<b>North Reference:</b>	True
<b>Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #6		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,968.0	0.00	0.00	1,968.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Pierre</b>									
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,068.0	0.00	0.00	2,068.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>13 3/8" Casing</b>									
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
<b>Start Build 2.00</b>									
2,600.0	2.00	90.00	2,600.0	0.0	1.7	1.7	2.00	2.00	0.00
2,650.0	3.00	90.00	2,649.9	0.0	3.9	3.9	2.00	2.00	0.00
<b>Start 851.2 hold at 2650.0 MD</b>									
2,700.0	3.00	90.00	2,699.9	0.0	6.5	6.5	0.00	0.00	0.00
2,800.0	3.00	90.00	2,799.7	0.0	11.8	11.8	0.00	0.00	0.00
2,900.0	3.00	90.00	2,899.6	0.0	17.0	17.0	0.00	0.00	0.00
3,000.0	3.00	90.00	2,999.5	0.0	22.2	22.2	0.00	0.00	0.00
3,100.0	3.00	90.00	3,099.3	0.0	27.5	27.4	0.00	0.00	0.00
3,200.0	3.00	90.00	3,199.2	0.0	32.7	32.7	0.00	0.00	0.00
3,300.0	3.00	90.00	3,299.0	0.0	37.9	37.9	0.00	0.00	0.00
3,400.0	3.00	90.00	3,398.9	0.0	43.2	43.1	0.00	0.00	0.00
3,501.2	3.00	90.00	3,500.0	0.0	48.5	48.4	0.00	0.00	0.00
<b>Start DLS 2.00 TFO -180.00</b>									
3,600.0	1.02	90.00	3,598.7	0.0	51.9	51.9	2.00	-2.00	0.00
3,651.2	0.00	0.00	3,649.9	0.0	52.4	52.3	2.00	-2.00	-175.66
<b>Start 6712.1 hold at 3651.2 MD</b>									
3,700.0	0.00	0.00	3,698.7	0.0	52.4	52.3	0.00	0.00	0.00
3,800.0	0.00	0.00	3,798.7	0.0	52.4	52.3	0.00	0.00	0.00
3,900.0	0.00	0.00	3,898.7	0.0	52.4	52.3	0.00	0.00	0.00
4,000.0	0.00	0.00	3,998.7	0.0	52.4	52.3	0.00	0.00	0.00
4,100.0	0.00	0.00	4,098.7	0.0	52.4	52.3	0.00	0.00	0.00
4,200.0	0.00	0.00	4,198.7	0.0	52.4	52.3	0.00	0.00	0.00

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<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-17/18	<b>North Reference:</b>	True
<b>Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #6		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,300.0	0.00	0.00	4,298.7	0.0	52.4	52.3	0.00	0.00	0.00
4,400.0	0.00	0.00	4,398.7	0.0	52.4	52.3	0.00	0.00	0.00
4,500.0	0.00	0.00	4,498.7	0.0	52.4	52.3	0.00	0.00	0.00
4,600.0	0.00	0.00	4,598.7	0.0	52.4	52.3	0.00	0.00	0.00
4,616.3	0.00	0.00	4,615.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>Greenhorn</b>									
4,700.0	0.00	0.00	4,698.7	0.0	52.4	52.3	0.00	0.00	0.00
4,800.0	0.00	0.00	4,798.7	0.0	52.4	52.3	0.00	0.00	0.00
4,900.0	0.00	0.00	4,898.7	0.0	52.4	52.3	0.00	0.00	0.00
5,000.0	0.00	0.00	4,998.7	0.0	52.4	52.3	0.00	0.00	0.00
5,022.3	0.00	0.00	5,021.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>Mowry</b>									
5,100.0	0.00	0.00	5,098.7	0.0	52.4	52.3	0.00	0.00	0.00
5,200.0	0.00	0.00	5,198.7	0.0	52.4	52.3	0.00	0.00	0.00
5,300.0	0.00	0.00	5,298.7	0.0	52.4	52.3	0.00	0.00	0.00
5,400.0	0.00	0.00	5,398.7	0.0	52.4	52.3	0.00	0.00	0.00
5,449.3	0.00	0.00	5,448.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>Dakota</b>									
5,500.0	0.00	0.00	5,498.7	0.0	52.4	52.3	0.00	0.00	0.00
5,600.0	0.00	0.00	5,598.7	0.0	52.4	52.3	0.00	0.00	0.00
5,700.0	0.00	0.00	5,698.7	0.0	52.4	52.3	0.00	0.00	0.00
5,800.0	0.00	0.00	5,798.7	0.0	52.4	52.3	0.00	0.00	0.00
5,900.0	0.00	0.00	5,898.7	0.0	52.4	52.3	0.00	0.00	0.00
6,000.0	0.00	0.00	5,998.7	0.0	52.4	52.3	0.00	0.00	0.00
6,100.0	0.00	0.00	6,098.7	0.0	52.4	52.3	0.00	0.00	0.00
6,101.3	0.00	0.00	6,100.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>9 5/8" Casing</b>									
6,200.0	0.00	0.00	6,198.7	0.0	52.4	52.3	0.00	0.00	0.00
6,300.0	0.00	0.00	6,298.7	0.0	52.4	52.3	0.00	0.00	0.00
6,400.0	0.00	0.00	6,398.7	0.0	52.4	52.3	0.00	0.00	0.00
6,448.3	0.00	0.00	6,447.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>Rierdon</b>									
6,500.0	0.00	0.00	6,498.7	0.0	52.4	52.3	0.00	0.00	0.00
6,600.0	0.00	0.00	6,598.7	0.0	52.4	52.3	0.00	0.00	0.00
6,700.0	0.00	0.00	6,698.7	0.0	52.4	52.3	0.00	0.00	0.00
6,786.3	0.00	0.00	6,785.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>Dunham Salt</b>									
6,800.0	0.00	0.00	6,798.7	0.0	52.4	52.3	0.00	0.00	0.00
6,897.3	0.00	0.00	6,896.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>Dunham Salt Base</b>									
6,900.0	0.00	0.00	6,898.7	0.0	52.4	52.3	0.00	0.00	0.00
6,994.3	0.00	0.00	6,993.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>Spearfish</b>									
7,000.0	0.00	0.00	6,998.7	0.0	52.4	52.3	0.00	0.00	0.00
7,100.0	0.00	0.00	7,098.7	0.0	52.4	52.3	0.00	0.00	0.00
7,200.0	0.00	0.00	7,198.7	0.0	52.4	52.3	0.00	0.00	0.00
7,249.3	0.00	0.00	7,248.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>Pine Salt</b>									
7,297.3	0.00	0.00	7,296.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>Pine Salt Base</b>									
7,300.0	0.00	0.00	7,298.7	0.0	52.4	52.3	0.00	0.00	0.00
7,342.3	0.00	0.00	7,341.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>Opeche Salt</b>									

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<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-17/18	<b>North Reference:</b>	True
<b>Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #6		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
7,372.3	0.00	0.00	7,371.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>Opeche Salt Base</b>									
7,400.0	0.00	0.00	7,398.7	0.0	52.4	52.3	0.00	0.00	0.00
7,500.0	0.00	0.00	7,498.7	0.0	52.4	52.3	0.00	0.00	0.00
7,574.3	0.00	0.00	7,573.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>Broom Creek (Top of Minnelusa Gp.)</b>									
7,600.0	0.00	0.00	7,598.7	0.0	52.4	52.3	0.00	0.00	0.00
7,654.3	0.00	0.00	7,653.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>Amstden</b>									
7,700.0	0.00	0.00	7,698.7	0.0	52.4	52.3	0.00	0.00	0.00
7,800.0	0.00	0.00	7,798.7	0.0	52.4	52.3	0.00	0.00	0.00
7,822.3	0.00	0.00	7,821.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>Tyler</b>									
7,900.0	0.00	0.00	7,898.7	0.0	52.4	52.3	0.00	0.00	0.00
8,000.0	0.00	0.00	7,998.7	0.0	52.4	52.3	0.00	0.00	0.00
8,013.3	0.00	0.00	8,012.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>Otter (Base of Minnelusa Gp.)</b>									
8,100.0	0.00	0.00	8,098.7	0.0	52.4	52.3	0.00	0.00	0.00
8,200.0	0.00	0.00	8,198.7	0.0	52.4	52.3	0.00	0.00	0.00
8,300.0	0.00	0.00	8,298.7	0.0	52.4	52.3	0.00	0.00	0.00
8,368.3	0.00	0.00	8,367.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>Kibbey</b>									
8,400.0	0.00	0.00	8,398.7	0.0	52.4	52.3	0.00	0.00	0.00
8,500.0	0.00	0.00	8,498.7	0.0	52.4	52.3	0.00	0.00	0.00
8,518.3	0.00	0.00	8,517.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>Charles Salt</b>									
8,600.0	0.00	0.00	8,598.7	0.0	52.4	52.3	0.00	0.00	0.00
8,700.0	0.00	0.00	8,698.7	0.0	52.4	52.3	0.00	0.00	0.00
8,800.0	0.00	0.00	8,798.7	0.0	52.4	52.3	0.00	0.00	0.00
8,900.0	0.00	0.00	8,898.7	0.0	52.4	52.3	0.00	0.00	0.00
9,000.0	0.00	0.00	8,998.7	0.0	52.4	52.3	0.00	0.00	0.00
9,100.0	0.00	0.00	9,098.7	0.0	52.4	52.3	0.00	0.00	0.00
9,142.3	0.00	0.00	9,141.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>UB</b>									
9,200.0	0.00	0.00	9,198.7	0.0	52.4	52.3	0.00	0.00	0.00
9,217.3	0.00	0.00	9,216.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>Base Last Salt</b>									
9,265.3	0.00	0.00	9,264.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>Ratcliffe</b>									
9,300.0	0.00	0.00	9,298.7	0.0	52.4	52.3	0.00	0.00	0.00
9,400.0	0.00	0.00	9,398.7	0.0	52.4	52.3	0.00	0.00	0.00
9,441.3	0.00	0.00	9,440.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>Mission Canyon</b>									
9,500.0	0.00	0.00	9,498.7	0.0	52.4	52.3	0.00	0.00	0.00
9,600.0	0.00	0.00	9,598.7	0.0	52.4	52.3	0.00	0.00	0.00
9,700.0	0.00	0.00	9,698.7	0.0	52.4	52.3	0.00	0.00	0.00
9,800.0	0.00	0.00	9,798.7	0.0	52.4	52.3	0.00	0.00	0.00
9,900.0	0.00	0.00	9,898.7	0.0	52.4	52.3	0.00	0.00	0.00
10,000.0	0.00	0.00	9,998.7	0.0	52.4	52.3	0.00	0.00	0.00
10,003.3	0.00	0.00	10,002.0	0.0	52.4	52.3	0.00	0.00	0.00
<b>Lodgepole</b>									
10,100.0	0.00	0.00	10,098.7	0.0	52.4	52.3	0.00	0.00	0.00

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Company:</b>	Oasis Petroleum	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-17/18	<b>North Reference:</b>	True
<b>Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #6		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (/100usft)	Build Rate (/100usft)	Turn Rate (/100usft)	
10,200.0	0.00	0.00	10,198.7	0.0	52.4	52.3	0.00	0.00	0.00	0.00
10,209.3	0.00	0.00	10,208.0	0.0	52.4	52.3	0.00	0.00	0.00	0.00
<b>Lodgepole Fracture Zone</b>										
10,300.0	0.00	0.00	10,298.7	0.0	52.4	52.3	0.00	0.00	0.00	0.00
10,363.3	0.00	0.00	10,362.0	0.0	52.4	52.3	0.00	0.00	0.00	0.00
<b>Start Build 12.00</b>										
10,375.0	1.40	120.00	10,373.7	-0.1	52.5	52.4	12.00	12.00	1,025.96	
10,400.0	4.40	120.00	10,398.7	-0.7	53.6	53.6	12.00	12.00	0.00	
10,425.0	7.40	120.00	10,423.5	-2.0	55.8	55.9	12.00	12.00	0.00	
10,450.0	10.40	120.00	10,448.2	-3.9	59.2	59.3	12.00	12.00	0.00	
10,475.0	13.40	120.00	10,472.7	-6.5	63.7	63.9	12.00	12.00	0.00	
10,500.0	16.40	120.00	10,496.8	-9.7	69.2	69.7	12.00	12.00	0.00	
10,525.0	19.40	120.00	10,520.6	-13.6	75.9	76.5	12.00	12.00	0.00	
10,550.0	22.40	120.00	10,544.0	-18.0	83.6	84.5	12.00	12.00	0.00	
10,575.0	25.40	120.00	10,566.8	-23.1	92.4	93.5	12.00	12.00	0.00	
10,600.0	28.40	120.00	10,589.1	-28.7	102.2	103.6	12.00	12.00	0.00	
10,625.0	31.40	120.00	10,610.8	-35.0	113.0	114.8	12.00	12.00	0.00	
10,650.0	34.40	120.00	10,631.8	-41.8	124.7	126.9	12.00	12.00	0.00	
10,675.0	37.40	120.00	10,652.0	-49.1	137.4	140.0	12.00	12.00	0.00	
10,700.0	40.40	120.00	10,671.5	-56.9	151.0	154.0	12.00	12.00	0.00	
10,725.0	43.40	120.00	10,690.1	-65.3	165.5	168.9	12.00	12.00	0.00	
10,736.0	44.73	120.00	10,698.0	-69.1	172.1	175.8	12.00	12.00	0.00	
<b>False Bakken</b>										
10,750.0	46.40	120.00	10,707.8	-74.1	180.8	184.7	12.00	12.00	0.00	
10,750.3	46.44	120.00	10,708.0	-74.2	181.0	184.9	12.00	12.00	0.00	
<b>Upper Bakken</b>										
10,771.1	48.94	120.00	10,722.0	-81.9	194.3	198.6	12.00	12.00	0.00	
<b>Middle Bakken</b>										
10,775.0	49.40	120.00	10,724.5	-83.4	196.8	201.2	12.00	12.00	0.00	
10,800.0	52.40	120.00	10,740.3	-93.1	213.6	218.6	12.00	12.00	0.00	
10,825.0	55.40	120.00	10,755.0	-103.2	231.1	236.6	12.00	12.00	0.00	
10,846.8	58.02	120.00	10,767.0	-112.3	246.9	252.9	12.00	12.00	0.00	
<b>Lower Bakken</b>										
10,850.0	58.40	120.00	10,768.7	-113.7	249.3	255.3	12.00	12.00	0.00	
10,874.5	61.35	120.00	10,781.0	-124.3	267.6	274.3	12.00	12.00	0.00	
<b>Pronghorn</b>										
10,875.0	61.40	120.00	10,781.2	-124.5	268.0	274.6	12.00	12.00	0.00	
10,900.0	64.40	120.00	10,792.6	-135.6	287.3	294.5	12.00	12.00	0.00	
10,900.9	64.51	120.00	10,793.0	-136.0	288.0	295.2	12.00	12.00	0.00	
<b>Three Forks 1st Bench</b>										
10,925.0	67.40	120.00	10,802.8	-147.0	307.0	314.9	12.00	12.00	0.00	
10,950.0	70.40	120.00	10,811.8	-158.7	327.2	335.7	12.00	12.00	0.00	
10,963.0	71.96	120.00	10,816.0	-164.8	337.9	346.7	12.00	12.00	0.00	
<b>Three Forks 1st Bench Claystone</b>										
10,975.0	73.40	120.00	10,819.6	-170.5	347.8	356.9	12.00	12.00	0.00	
10,995.5	75.86	120.00	10,825.0	-180.4	364.9	374.5	12.00	12.00	0.00	
<b>Three Forks 2nd Bench</b>										
11,000.0	76.40	120.00	10,826.1	-182.6	368.7	378.5	12.00	12.00	0.00	
11,025.0	79.40	120.00	10,831.3	-194.8	389.9	400.3	12.00	12.00	0.00	
11,050.0	82.40	120.00	10,835.3	-207.2	411.2	422.3	12.00	12.00	0.00	
11,075.0	85.40	120.00	10,837.9	-219.6	432.8	444.5	12.00	12.00	0.00	
11,100.0	88.40	120.00	10,839.3	-232.1	454.4	466.8	12.00	12.00	0.00	

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Company:</b>	Oasis Petroleum	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-17/18	<b>North Reference:</b>	True
<b>Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #6		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (/100usft)	Build Rate (/100usft)	Turn Rate (/100usft)	
11,110.8	89.70	120.00	10,839.5	-237.5	463.7	476.5	12.00	12.00	0.00	
<b>Start 15.0 hold at 11110.8 MD</b>										
11,111.0	89.70	120.00	10,839.5	-237.6	463.9	476.6	0.00	0.00	0.00	
<b>7" Casing</b>										
11,125.8	89.70	120.00	10,839.5	-245.0	476.7	489.9	0.00	0.00	0.00	
<b>Start DLS 3.00 TFO -90.08</b>										
11,200.0	89.70	117.77	10,839.9	-280.8	541.7	556.8	3.00	0.00	-3.00	
11,300.0	89.69	114.77	10,840.5	-325.1	631.3	648.8	3.00	0.00	-3.00	
11,400.0	89.69	111.77	10,841.0	-364.6	723.2	742.7	3.00	0.00	-3.00	
11,500.0	89.69	108.77	10,841.5	-399.2	817.0	838.3	3.00	0.00	-3.00	
11,600.0	89.69	105.77	10,842.1	-428.9	912.5	935.3	3.00	0.00	-3.00	
11,700.0	89.69	102.77	10,842.6	-453.6	1,009.4	1,033.5	3.00	0.00	-3.00	
11,800.0	89.69	99.77	10,843.2	-473.1	1,107.4	1,132.5	3.00	0.00	-3.00	
11,900.0	89.69	96.77	10,843.7	-487.5	1,206.4	1,232.1	3.00	0.00	-3.00	
12,000.0	89.70	93.77	10,844.2	-496.7	1,305.9	1,332.0	3.00	0.00	-3.00	
12,100.0	89.70	90.77	10,844.8	-500.7	1,405.8	1,432.0	3.00	0.00	-3.00	
12,110.4	89.70	90.46	10,844.8	-500.8	1,416.3	1,442.4	3.00	0.00	-3.00	
<b>Start 8607.1 hold at 12110.4 MD</b>										
12,200.0	89.70	90.46	10,845.3	-501.5	1,505.8	1,531.9	0.00	0.00	0.00	
12,300.0	89.70	90.46	10,845.8	-502.3	1,605.8	1,631.8	0.00	0.00	0.00	
12,400.0	89.70	90.46	10,846.3	-503.1	1,705.8	1,731.6	0.00	0.00	0.00	
12,500.0	89.70	90.46	10,846.8	-503.9	1,805.8	1,831.5	0.00	0.00	0.00	
12,600.0	89.70	90.46	10,847.4	-504.7	1,905.8	1,931.4	0.00	0.00	0.00	
12,700.0	89.70	90.46	10,847.9	-505.5	2,005.8	2,031.3	0.00	0.00	0.00	
12,800.0	89.70	90.46	10,848.4	-506.3	2,105.8	2,131.2	0.00	0.00	0.00	
12,900.0	89.70	90.46	10,848.9	-507.1	2,205.8	2,231.0	0.00	0.00	0.00	
13,000.0	89.70	90.46	10,849.5	-507.9	2,305.8	2,330.9	0.00	0.00	0.00	
13,100.0	89.70	90.46	10,850.0	-508.7	2,405.8	2,430.8	0.00	0.00	0.00	
13,200.0	89.70	90.46	10,850.5	-509.5	2,505.8	2,530.7	0.00	0.00	0.00	
13,300.0	89.70	90.46	10,851.0	-510.4	2,605.8	2,630.6	0.00	0.00	0.00	
13,400.0	89.70	90.46	10,851.6	-511.2	2,705.8	2,730.4	0.00	0.00	0.00	
13,500.0	89.70	90.46	10,852.1	-512.0	2,805.8	2,830.3	0.00	0.00	0.00	
13,600.0	89.70	90.46	10,852.6	-512.8	2,905.8	2,930.2	0.00	0.00	0.00	
13,674.9	89.70	90.46	10,853.0	-513.4	2,980.7	3,005.1	0.00	0.00	0.00	
<b>Three Forks 2nd Bench Claystone</b>										
13,700.0	89.70	90.46	10,853.1	-513.6	3,005.8	3,030.1	0.00	0.00	0.00	
13,800.0	89.70	90.46	10,853.7	-514.4	3,105.8	3,130.0	0.00	0.00	0.00	
13,900.0	89.70	90.46	10,854.2	-515.2	3,205.8	3,229.8	0.00	0.00	0.00	
14,000.0	89.70	90.46	10,854.7	-516.0	3,305.8	3,329.7	0.00	0.00	0.00	
14,100.0	89.70	90.46	10,855.2	-516.8	3,405.7	3,429.6	0.00	0.00	0.00	
14,200.0	89.70	90.46	10,855.7	-517.6	3,505.7	3,529.5	0.00	0.00	0.00	
14,300.0	89.70	90.46	10,856.3	-518.4	3,605.7	3,629.4	0.00	0.00	0.00	
14,400.0	89.70	90.46	10,856.8	-519.2	3,705.7	3,729.2	0.00	0.00	0.00	
14,500.0	89.70	90.46	10,857.3	-520.0	3,805.7	3,829.1	0.00	0.00	0.00	
14,600.0	89.70	90.46	10,857.8	-520.8	3,905.7	3,929.0	0.00	0.00	0.00	
14,700.0	89.70	90.46	10,858.4	-521.6	4,005.7	4,028.9	0.00	0.00	0.00	
14,800.0	89.70	90.46	10,858.9	-522.4	4,105.7	4,128.8	0.00	0.00	0.00	
14,900.0	89.70	90.46	10,859.4	-523.2	4,205.7	4,228.6	0.00	0.00	0.00	
15,000.0	89.70	90.46	10,859.9	-524.0	4,305.7	4,328.5	0.00	0.00	0.00	
15,100.0	89.70	90.46	10,860.5	-524.8	4,405.7	4,428.4	0.00	0.00	0.00	
15,200.0	89.70	90.46	10,861.0	-525.6	4,505.7	4,528.3	0.00	0.00	0.00	
15,300.0	89.70	90.46	10,861.5	-526.4	4,605.7	4,628.2	0.00	0.00	0.00	
15,400.0	89.70	90.46	10,862.0	-527.2	4,705.7	4,728.0	0.00	0.00	0.00	
15,500.0	89.70	90.46	10,862.6	-528.0	4,805.7	4,827.9	0.00	0.00	0.00	

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Company:</b>	Oasis Petroleum	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-17/18	<b>North Reference:</b>	True
<b>Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #6		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
15,600.0	89.70	90.46	10,863.1	-528.8	4,905.7	4,927.8	0.00	0.00	0.00	
15,700.0	89.70	90.46	10,863.6	-529.7	5,005.7	5,027.7	0.00	0.00	0.00	
15,800.0	89.70	90.46	10,864.1	-530.5	5,105.7	5,127.5	0.00	0.00	0.00	
15,900.0	89.70	90.46	10,864.7	-531.3	5,205.7	5,227.4	0.00	0.00	0.00	
16,000.0	89.70	90.46	10,865.2	-532.1	5,305.7	5,327.3	0.00	0.00	0.00	
16,100.0	89.70	90.46	10,865.7	-532.9	5,405.7	5,427.2	0.00	0.00	0.00	
16,200.0	89.70	90.46	10,866.2	-533.7	5,505.6	5,527.1	0.00	0.00	0.00	
16,300.0	89.70	90.46	10,866.7	-534.5	5,605.6	5,626.9	0.00	0.00	0.00	
16,400.0	89.70	90.46	10,867.3	-535.3	5,705.6	5,726.8	0.00	0.00	0.00	
16,500.0	89.70	90.46	10,867.8	-536.1	5,805.6	5,826.7	0.00	0.00	0.00	
16,600.0	89.70	90.46	10,868.3	-536.9	5,905.6	5,926.6	0.00	0.00	0.00	
16,700.0	89.70	90.46	10,868.8	-537.7	6,005.6	6,026.5	0.00	0.00	0.00	
16,800.0	89.70	90.46	10,869.4	-538.5	6,105.6	6,126.3	0.00	0.00	0.00	
16,900.0	89.70	90.46	10,869.9	-539.3	6,205.6	6,226.2	0.00	0.00	0.00	
17,000.0	89.70	90.46	10,870.4	-540.1	6,305.6	6,326.1	0.00	0.00	0.00	
17,100.0	89.70	90.46	10,870.9	-540.9	6,405.6	6,426.0	0.00	0.00	0.00	
17,200.0	89.70	90.46	10,871.5	-541.7	6,505.6	6,525.9	0.00	0.00	0.00	
17,300.0	89.70	90.46	10,872.0	-542.5	6,605.6	6,625.7	0.00	0.00	0.00	
17,400.0	89.70	90.46	10,872.5	-543.3	6,705.6	6,725.6	0.00	0.00	0.00	
17,494.7	89.70	90.46	10,873.0	-544.1	6,800.3	6,820.2	0.00	0.00	0.00	
Three Forks 3rd Bench										
17,500.0	89.70	90.46	10,873.0	-544.1	6,805.6	6,825.5	0.00	0.00	0.00	
17,600.0	89.70	90.46	10,873.6	-544.9	6,905.6	6,925.4	0.00	0.00	0.00	
17,700.0	89.70	90.46	10,874.1	-545.7	7,005.6	7,025.3	0.00	0.00	0.00	
17,800.0	89.70	90.46	10,874.6	-546.5	7,105.6	7,125.1	0.00	0.00	0.00	
17,900.0	89.70	90.46	10,875.1	-547.3	7,205.6	7,225.0	0.00	0.00	0.00	
18,000.0	89.70	90.46	10,875.6	-548.1	7,305.6	7,324.9	0.00	0.00	0.00	
18,100.0	89.70	90.46	10,876.2	-549.0	7,405.6	7,424.8	0.00	0.00	0.00	
18,200.0	89.70	90.46	10,876.7	-549.8	7,505.6	7,524.7	0.00	0.00	0.00	
18,300.0	89.70	90.46	10,877.2	-550.6	7,605.6	7,624.5	0.00	0.00	0.00	
18,400.0	89.70	90.46	10,877.7	-551.4	7,705.5	7,724.4	0.00	0.00	0.00	
18,500.0	89.70	90.46	10,878.3	-552.2	7,805.5	7,824.3	0.00	0.00	0.00	
18,600.0	89.70	90.46	10,878.8	-553.0	7,905.5	7,924.2	0.00	0.00	0.00	
18,700.0	89.70	90.46	10,879.3	-553.8	8,005.5	8,024.1	0.00	0.00	0.00	
18,800.0	89.70	90.46	10,879.8	-554.6	8,105.5	8,123.9	0.00	0.00	0.00	
18,900.0	89.70	90.46	10,880.4	-555.4	8,205.5	8,223.8	0.00	0.00	0.00	
19,000.0	89.70	90.46	10,880.9	-556.2	8,305.5	8,323.7	0.00	0.00	0.00	
19,100.0	89.70	90.46	10,881.4	-557.0	8,405.5	8,423.6	0.00	0.00	0.00	
19,200.0	89.70	90.46	10,881.9	-557.8	8,505.5	8,523.5	0.00	0.00	0.00	
19,300.0	89.70	90.46	10,882.5	-558.6	8,605.5	8,623.3	0.00	0.00	0.00	
19,400.0	89.70	90.46	10,883.0	-559.4	8,705.5	8,723.2	0.00	0.00	0.00	
19,500.0	89.70	90.46	10,883.5	-560.2	8,805.5	8,823.1	0.00	0.00	0.00	
19,600.0	89.70	90.46	10,884.0	-561.0	8,905.5	8,923.0	0.00	0.00	0.00	
19,700.0	89.70	90.46	10,884.5	-561.8	9,005.5	9,022.9	0.00	0.00	0.00	
19,800.0	89.70	90.46	10,885.1	-562.6	9,105.5	9,122.7	0.00	0.00	0.00	
19,900.0	89.70	90.46	10,885.6	-563.4	9,205.5	9,222.6	0.00	0.00	0.00	
20,000.0	89.70	90.46	10,886.1	-564.2	9,305.5	9,322.5	0.00	0.00	0.00	
20,100.0	89.70	90.46	10,886.6	-565.0	9,405.5	9,422.4	0.00	0.00	0.00	
20,200.0	89.70	90.46	10,887.2	-565.8	9,505.5	9,522.3	0.00	0.00	0.00	
20,300.0	89.70	90.46	10,887.7	-566.6	9,605.5	9,622.1	0.00	0.00	0.00	
20,400.0	89.70	90.46	10,888.2	-567.4	9,705.5	9,722.0	0.00	0.00	0.00	
20,500.0	89.70	90.46	10,888.7	-568.3	9,805.5	9,821.9	0.00	0.00	0.00	
20,600.0	89.70	90.46	10,889.3	-569.1	9,905.4	9,921.8	0.00	0.00	0.00	

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Company:</b>	Oasis Petroleum	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-17/18	<b>North Reference:</b>	True
<b>Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #6		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
20,700.0	89.70	90.46	10,889.8	-569.9	10,005.4	10,021.7	0.00	0.00	0.00	
20,717.6	89.70	90.46	10,889.9	-570.0	10,023.0	10,039.2	0.00	0.00	0.00	
<b>TD at 20717.6</b>										

Design Targets										
Target Name										
- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/S (usft)	+E/W (usft)	Northing (usft)	Easting (usft)	Latitude		Longitude
- Shape										
PBHL Kline Federal 530	0.00	0.00	10,890.0	-570.0	10,023.0	408,018.95	1,220,235.20	48° 4' 40.028 N	103° 33' 42.582 W	
- plan misses target center by 0.1usft at 20717.6usft MD (10889.9 TVD, -570.0 N, 10023.0 E)										
- Point										

Casing Points										
Measured Depth (usft)	Vertical Depth (usft)	Name				Casing Diameter ("")	Hole Diameter ("")			
2,068.0	2,068.0	13 3/8" Casing				13-3/8	17-1/2			
6,101.3	6,100.0	9 5/8" Casing				9-5/8	12-1/4			
11,111.0	10,839.5	7" Casing				7	8-3/4			

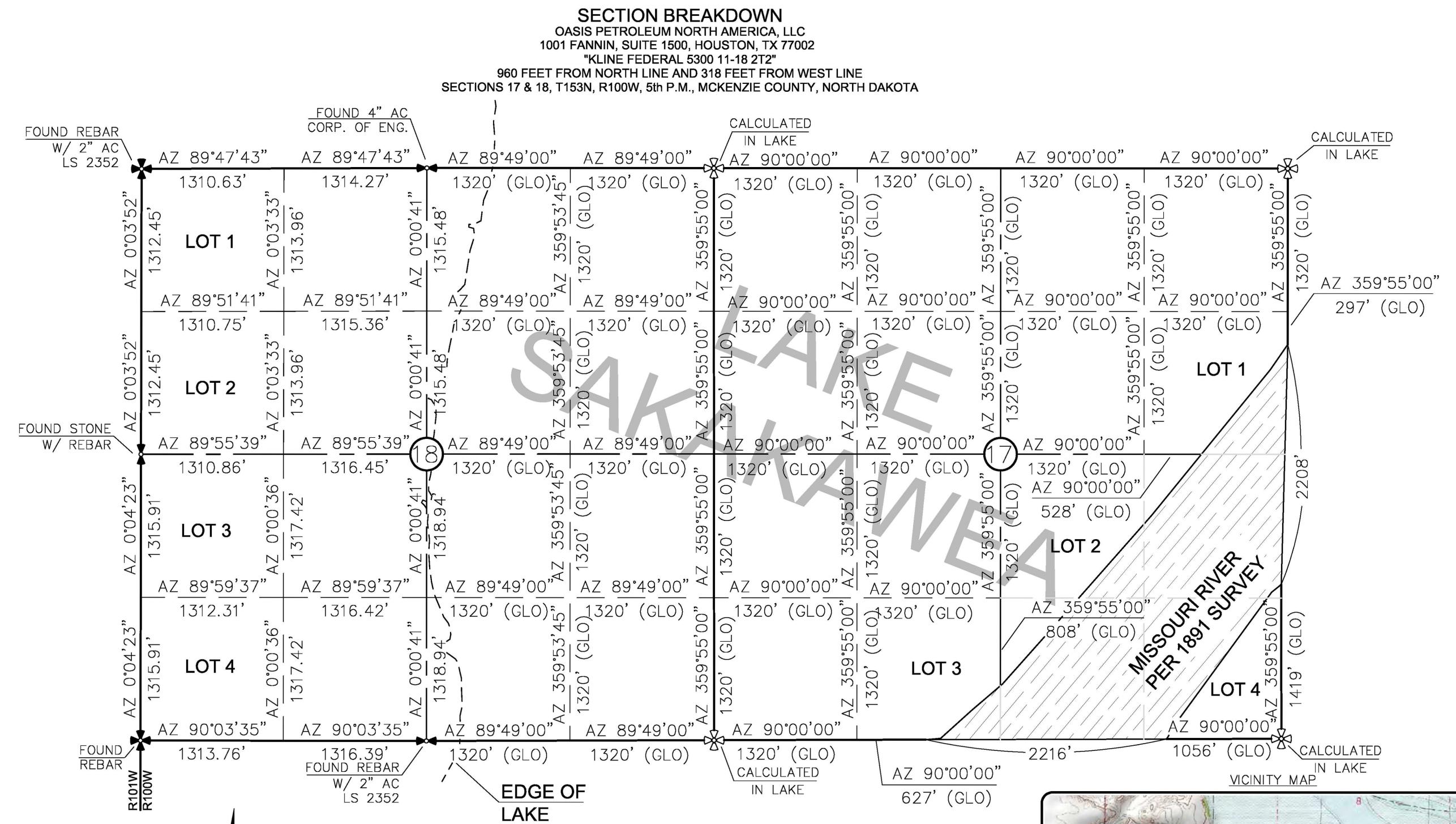
<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Company:</b>	Oasis Petroleum	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-17/18	<b>North Reference:</b>	True
<b>Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #6		

**Formations**

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,968.0	1,968.0	Pierre			
4,616.3	4,615.0	Greenhorn			
5,022.3	5,021.0	Mowry			
5,449.3	5,448.0	Dakota			
6,448.3	6,447.0	Rierdon			
6,786.3	6,785.0	Dunham Salt			
6,897.3	6,896.0	Dunham Salt Base			
6,994.3	6,993.0	Spearfish			
7,249.3	7,248.0	Pine Salt			
7,297.3	7,296.0	Pine Salt Base			
7,342.3	7,341.0	Opeche Salt			
7,372.3	7,371.0	Opeche Salt Base			
7,574.3	7,573.0	Broom Creek (Top of Minnelusa Gp.)			
7,654.3	7,653.0	Amsden			
7,822.3	7,821.0	Tyler			
8,013.3	8,012.0	Otter (Base of Minnelusa Gp.)			
8,368.3	8,367.0	Kibbey			
8,518.3	8,517.0	Charles Salt			
9,142.3	9,141.0	UB			
9,217.3	9,216.0	Base Last Salt			
9,265.3	9,264.0	Ratcliffe			
9,441.3	9,440.0	Mission Canyon			
10,003.3	10,002.0	Lodgepole			
10,209.3	10,208.0	Lodgepole Fracture Zone			
10,736.0	10,698.0	False Bakken			
10,750.3	10,708.0	Upper Bakken			
10,771.1	10,722.0	Middle Bakken			
10,846.8	10,767.0	Lower Bakken			
10,874.5	10,781.0	Pronghorn			
10,900.9	10,793.0	Three Forks 1st Bench			
10,963.0	10,816.0	Three Forks 1st Bench Claystone			
10,995.5	10,825.0	Three Forks 2nd Bench			
13,674.9	10,853.0	Three Forks 2nd Bench Claystone			
17,494.7	10,873.0	Three Forks 3rd Bench			

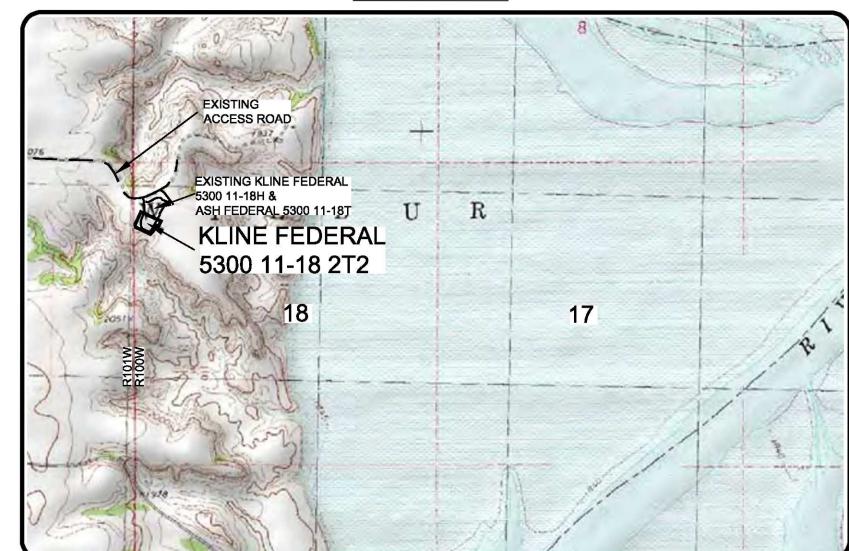
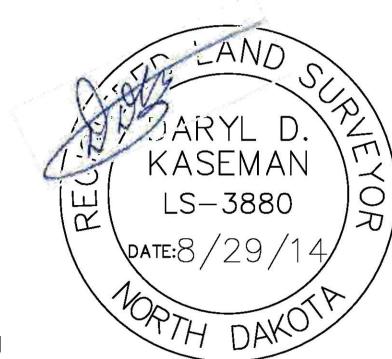
**Plan Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			Comment
		+N/S (usft)	+E/W (usft)		
2,500.0	2,500.0	0.0	0.0	Start Build 2.00	
2,650.0	2,649.9	0.0	3.9	Start 851.2 hold at 2650.0 MD	
3,501.2	3,500.0	0.0	48.5	Start DLS 2.00 TFO -180.00	
3,651.2	3,649.9	0.0	52.4	Start 6712.1 hold at 3651.2 MD	
10,363.3	10,362.0	0.0	52.4	Start Build 12.00	
11,110.8	10,839.5	-237.5	463.7	Start 15.0 hold at 11110.8 MD	
11,125.8	10,839.5	-245.0	476.7	Start DLS 3.00 TFO -90.08	
12,110.4	10,844.8	-500.8	1,416.3	Start 8607.1 hold at 12110.4 MD	
20,717.6	10,889.9	-570.0	10,023.0	TD at 20717.6	



- MONUMENT - RECOVERED
- MONUMENT - NOT RECOVERED

ALL AZIMUTHS ARE BASED ON G.P.S.  
OBSERVATIONS. THE ORIGINAL SURVEY OF THIS  
AREA FOR THE GENERAL LAND OFFICE (G.L.O.)  
WAS 1891. THE CORNERS FOUND ARE AS  
INDICATED AND ALL OTHERS ARE COMPUTED FROM  
THOSE CORNERS FOUND AND BASED ON G.L.O.  
DATA. THE MAPPING ANGLE FOR THIS AREA IS  
APPROXIMATELY 0°03'.

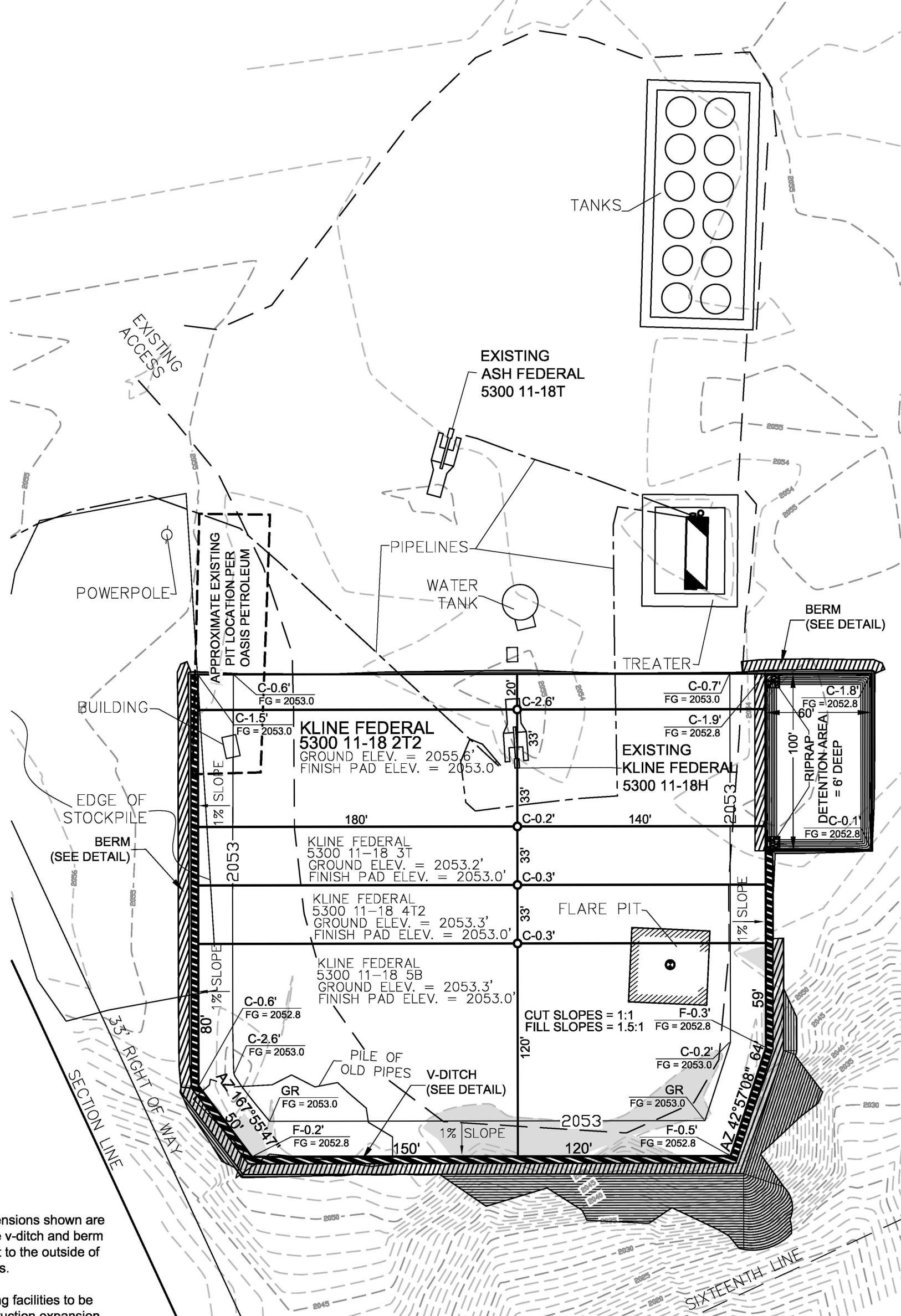


Revision No.	Date	By	Description
REV 1	6/16/14	B.H.H.	Moved wells
REV 2	6/24/14	JJS	Revised Latitude
REV 3	6/29/14	JJS	Added Existing Pit to Pad

OASIS PETROLEUM NORTH AMERICA, LLC	Project No.: S14-09-127
SECTION BREAKDOWN	
SECTIONS 17 & 18, T153N, R100W	
MCKENZIE COUNTY, NORTH DAKOTA	

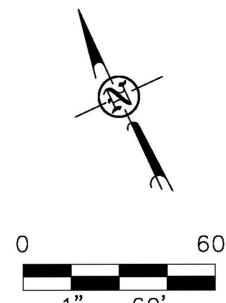
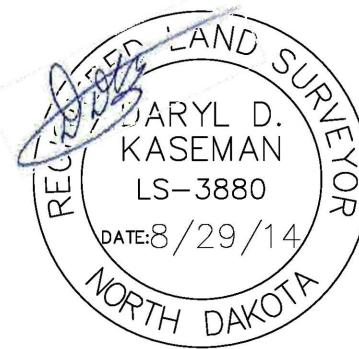
Drawn By: B.H.H.	Checked By: D.D.K.
APRIL 2014	

**PAD LAYOUT**  
 OASIS PETROLEUM NORTH AMERICA, LLC  
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002  
 "KLINE FEDERAL 5300 11-18 2T2"  
 960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE  
 SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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

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 Other offices in Minnesota, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC  
 PAD LAYOUT  
 SECTION 18, T153N, R100W  
 MCKENZIE COUNTY, NORTH DAKOTA  
 Drawn By: B.H.H. Project No.: S14-09-127  
 Checked By: D.D.K. Date: APRIL 2014

Revision No.	Date	By	Description
REV 1	6/16/14	BHH	Moved wells
REV 2	6/24/14	JJS	Revised latitude
REV 3	8/29/14	JJS	Added existing pit to pad

© 2014, INTERSTATE ENGINEERING, INC. - 1st Wall of 4 on Quad Pad for Kline Federal 5300 11-18 2T2.dwg - 8/29/2014 8:12 AM 5th schmoller

**WELL LOCATION SITE QUANTITIES**  
 OASIS PETROLEUM NORTH AMERICA, LLC  
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002  
 "KLINE FEDERAL 5300 11-18 2T2"  
 960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE  
 SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

WELL SITE ELEVATION	2055.6
WELL PAD ELEVATION	2053.0
EXCAVATION	1,906
PLUS PIT	<u>0</u>
	<u>1,906</u>
EMBANKMENT	869
PLUS SHRINKAGE (30%)	<u>261</u>
	<u>1,130</u>
STOCKPILE PIT	0
STOCKPILE TOP SOIL (6")	1,934
BERMS	883 LF = 286 CY
DITCHES	727 LF = 111 CY
DETENTION AREA	1,112 CY
ADDITIONAL MATERIAL NEEDED	221
DISTURBED AREA FROM PAD	2.40 ACRES

NOTE: ALL QUANTITIES ARE IN CUBIC YARDS (UNLESS NOTED)

CUT END SLOPES AT 1:1

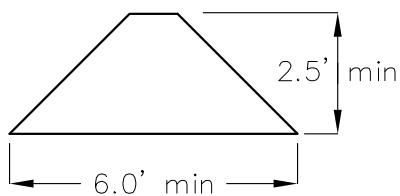
FILL END SLOPES AT 1.5:1

WELL SITE LOCATION

960' FNL

318' FWL

BERM DETAIL



DITCH DETAIL

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QUANTITIES

SECTION 18, T153N, R100W

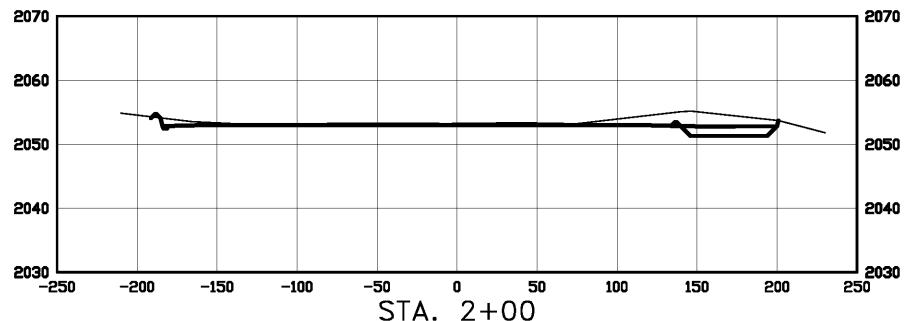
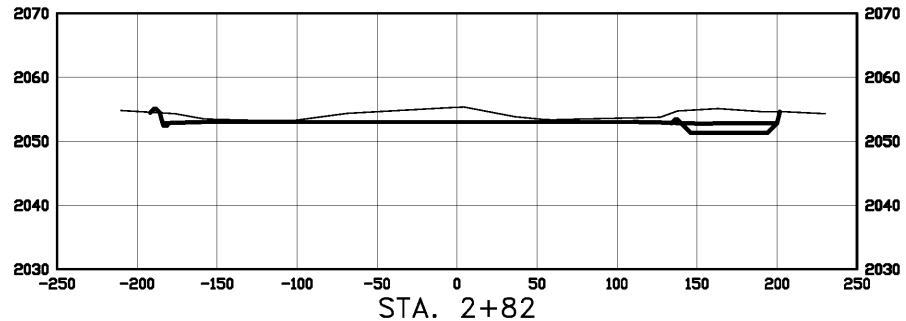
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No.: S14-09-127

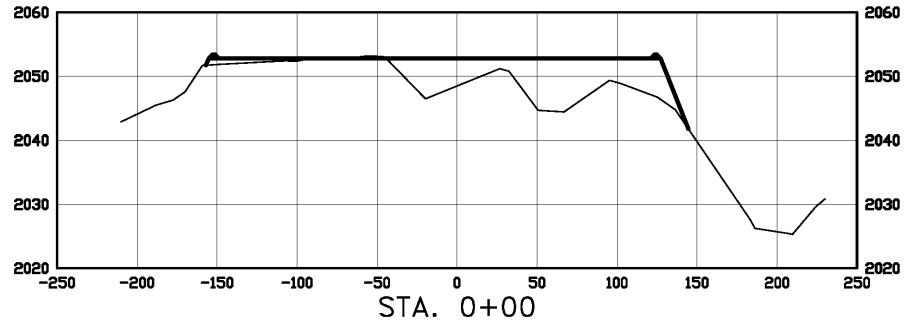
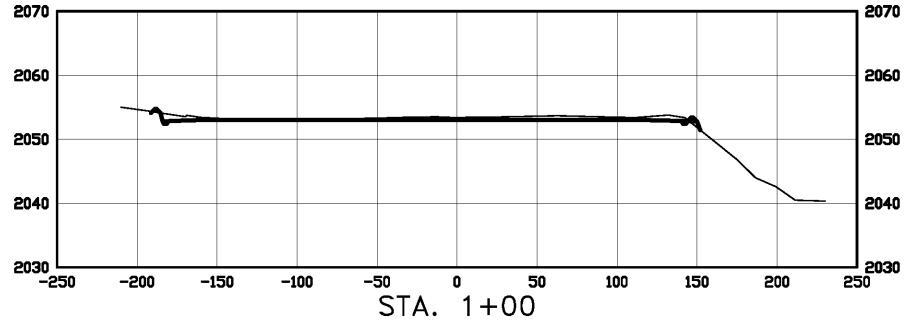
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Revision No.	Date	By	Description
REV 1	6/16/14	BHH	MOVED WELLS
REV 2	6/24/14	JJS	REVISED LATITUDE
REV 3	8/29/14	JJS	ADDED EXISTING PIT TO PAD LAYOUT

**CROSS SECTIONS**  
 OASIS PETROLEUM NORTH AMERICA, LLC  
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002  
 "KLINE FEDERAL 5300 11-18 2T2"  
 960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE  
 SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



THIS DOCUMENT WAS  
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 PLS, REGISTRATION NUMBER  
 3880 ON 8/29/14 AND THE  
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SCALE  
 HORIZ 1"=120'  
 VERT 1"=30'

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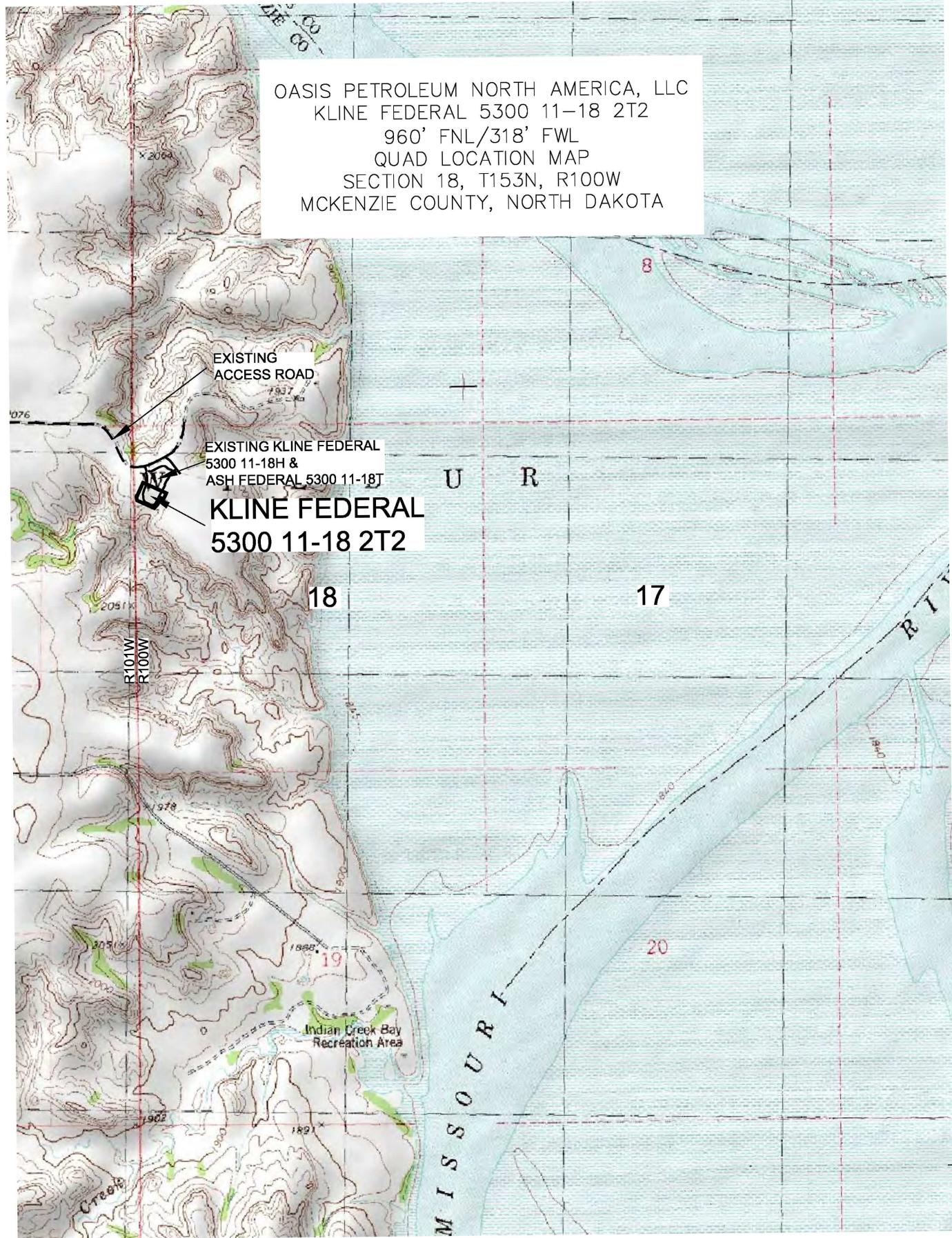
Other offices in Minnesota, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC  
 PAD CROSS SECTIONS  
 SECTION 18, T153N, R100W

MCKENZIE COUNTY, NORTH DAKOTA

Drawn By:	B.H.H.	Project No.:	S14-09-127
Checked By:	D.D.K.	Date:	APRIL 2014

Revision No.	Date	By	Description
REV 1	6/16/14	BHH	MOVED WELLS
REV 2	6/24/14	JJS	REVISED LATITUDE
REV 3	6/29/14	JJS	ADDED EXISTING PIT TO PAD LAYOUT



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OASIS PETROLEUM NORTH AMERICA, LLC  
QUAD LOCATION MAP  
SECTION 18, T153N, R100W  
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No.: S14-09-127  
Checked By: D.D.K. Date: APRIL 2014

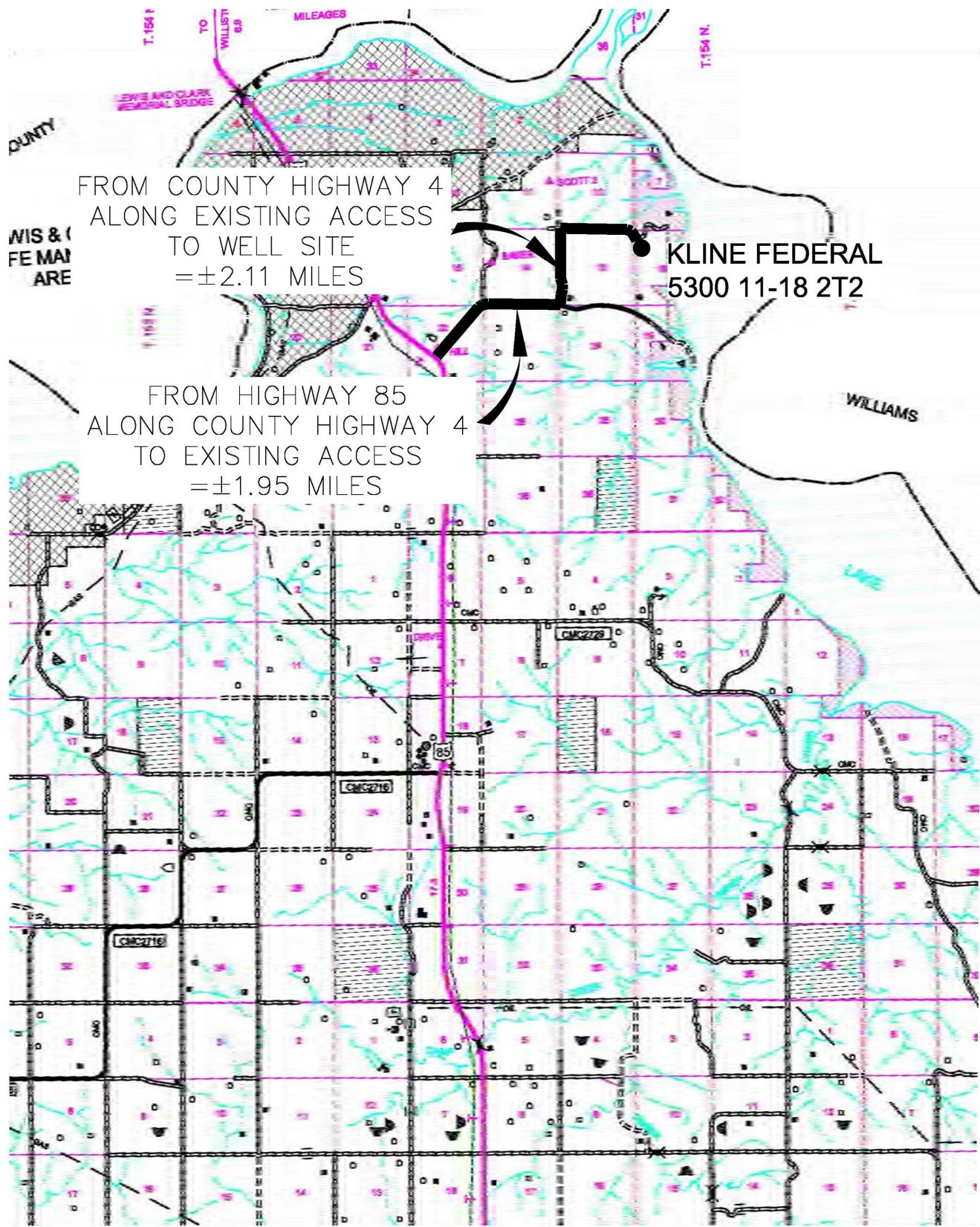
Revision No.	Date	By	Description
REV 1	6/18/14	BHH	MOVED WELLS
REV 2	6/24/14	JJS	REVISED LATITUDE
REV 3	6/28/14	JJS	ADDED EXISTING PIT TO PAD LAYOUT

# COUNTY ROAD MAP

OASIS PETROLEUM NORTH AMERICA, LLC  
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

"KLINE FEDERAL 5300 11-18 2T2"

960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE  
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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OASIS PETROLEUM NORTH AMERICA, LLC  
COUNTY ROAD MAP  
SECTION 18, T153N, R100W

MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No.: S14-09-127  
Checked By: D.D.K. Date: APRIL 2014

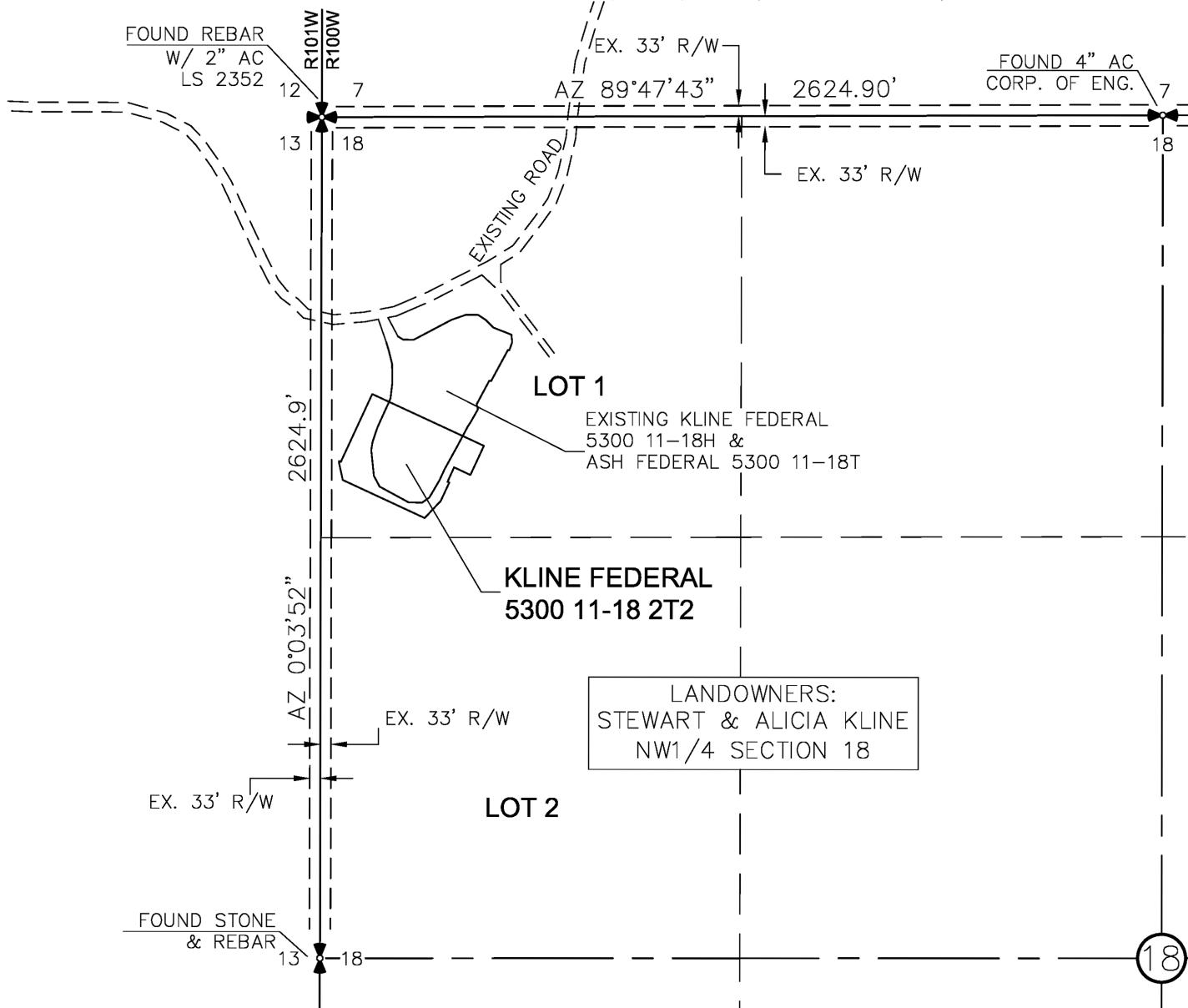
Revision No.	Date	By	Description
REV 1	6/16/14	B.H.H.	MOVED WELLS
REV 2	6/24/14	J.S.	REVISED LATITUDE
REV 3	6/29/14	J.S.	ADDED EXISTING PIT TO PAD LAYOUT

# ACCESS APPROACH

OASIS PETROLEUM NORTH AMERICA, LLC  
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

"KLINE FEDERAL 5300 11-18 2T2"

960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE  
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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



THIS DOCUMENT WAS  
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KASEMAN, PLS, REGISTRATION  
NUMBER 3880 ON 8/29/14  
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SHEET NO.

OASIS PETROLEUM NORTH AMERICA, LLC		Revision No.	Date	By	Description
ACCESS APPROACH		REV 1	8/16/14	B.H.H.	Moved wells
SECTION 18, T153N, R100W		REV 2	8/24/14	J.S.	Revised Latitude
MCKENZIE COUNTY, NORTH DAKOTA		REV 3	8/29/14	J.S.	Added Existing Pit to Pad Layout

Interstate Engineering, Inc.	P.O. Box 6468
	425 East Main Street
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	Fax (406) 433-5618
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Other offices in Minnesota, North Dakota and South Dakota	

## GAS CAPTURE PLAN AFFIDAVIT

STATE OF TEXAS                   §  
   §  
COUNTY OF HARRIS               §

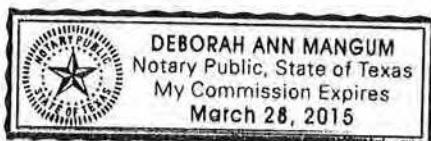
Robert Eason, being duly sworn, states as follows:

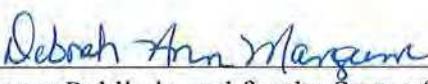
1. He is employed by Oasis Petroleum North America LLC ("Oasis") as Marketing Manager, is over the age of 21 and has personal knowledge of the matters set forth in this affidavit.
2. This affidavit is submitted in conjunction with the Application for Permit to Drill for the Kline Federal 5300 11-18 2T2 well, with a surface location in the NW NW of Section 18, Township 153 North, Range 100 West, McKenzie County, North Dakota (the "Well").
3. Oasis currently anticipates that gas to be produced from the Well will be gathered by Hiland Partners (the "Gathering Company"). Oasis has advised the Gathering Company of its intent to drill the Well and has advised the Gathering Company that it currently anticipates that the Well will be completed in May 2015, with an initial gas production rate of approximately 579 mcf/day.



\_\_\_\_\_  
Robert Eason  
Marketing Manager

Subscribed and sworn to before me this 24 day of June, 2014.



  
\_\_\_\_\_  
Notary Public in and for the State of Texas  
My Commission expires: 3-28-2015

## GAS CAPTURE PLAN – OASIS PETROLEUM

## Kline Federal 5300 11-18 2T2

Section 18-T153N-R100W

## Baker Field

## **McKenzie County, North Dakota**

Anticipated first flow date	May-15
Gas Gatherer:	Hiland Partners
Gas to be processed at*:	Hiland Operated Watford City Plant
Maximum Daily Capacity of Existing Gas Line*:	55,000 MCFD
Current Throughput of Existing Gas Line*:	33,000 MCFD
Anticipated Daily Capacity of Existing Gas Line at Date of First Gas Sales*:	66,000 MCFD
Anticipated Throughput of Existing Gas Line at Date of First Gas Sales*:	65,000 MCFD
Gas Gatherer's Issues or Expansion Plans for the Area*:	Line looping and compression
Map:	Attached
Affidavit:	Attached

## Flowback Strategy

Total Number of Wells at Location: 10

**Multi-Well Start-up Plan:** Initial production from the 1st new well at the CTB is anticipated in May 2015 with each following well making 1<sup>st</sup> production approximately every 5th day thereafter

Estimated Flow Rate:	Kline Federal 5300 11-18 2T2 (well)		Kline DSU (10 wells)	
	MCFD	BOPD	MCFD	BOPD
30 Days:	579	643	5,100	5,646
60 Days:	497	552	6,302	6,982
180 Days:	297	330	3,543	3,918

#### Oasis Flaring Percentage

**Statewide**      **Baker Field**

Oasis % of Gas Flared: 12% 6%

*Average over the last 6 months*

10 of 10

### Alternatives to Flaring

Baker Field

6%

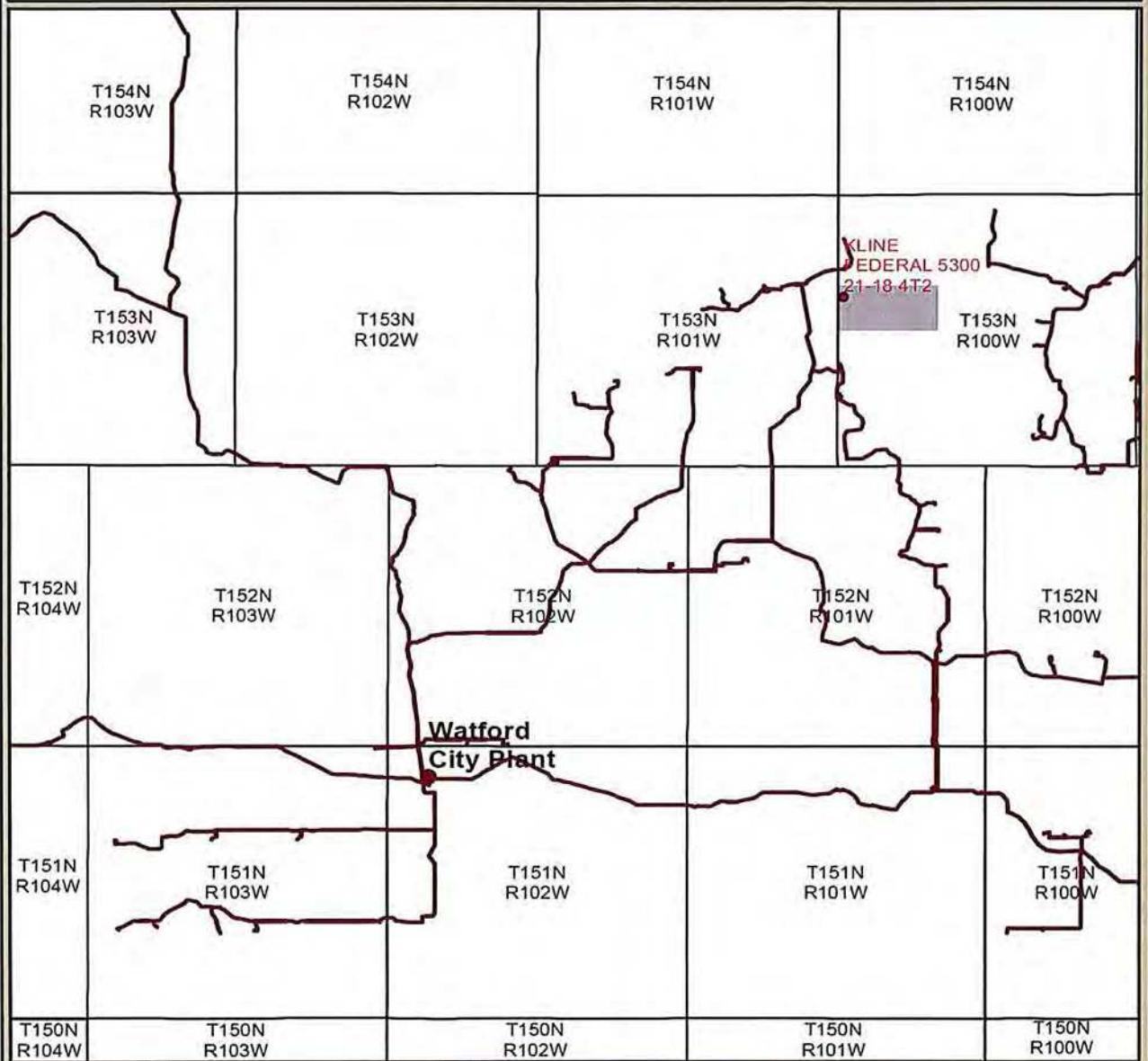
*Average over the last 6 months*

www.ijerpi.org | 2023, Vol. 11, No. 1 | ISSN: 2227-4324 | DOI: 10.5281/zenodo.7700220

**Source:** Oasis Marketing (281) 404-9435

www.ijerpi.org | 10

**Gas Capture Plan - Overview**  
KLINE FEDERAL 5300 21-18 4T2  
Section 18 T153N R100W  
McKenzie County, North Dakota

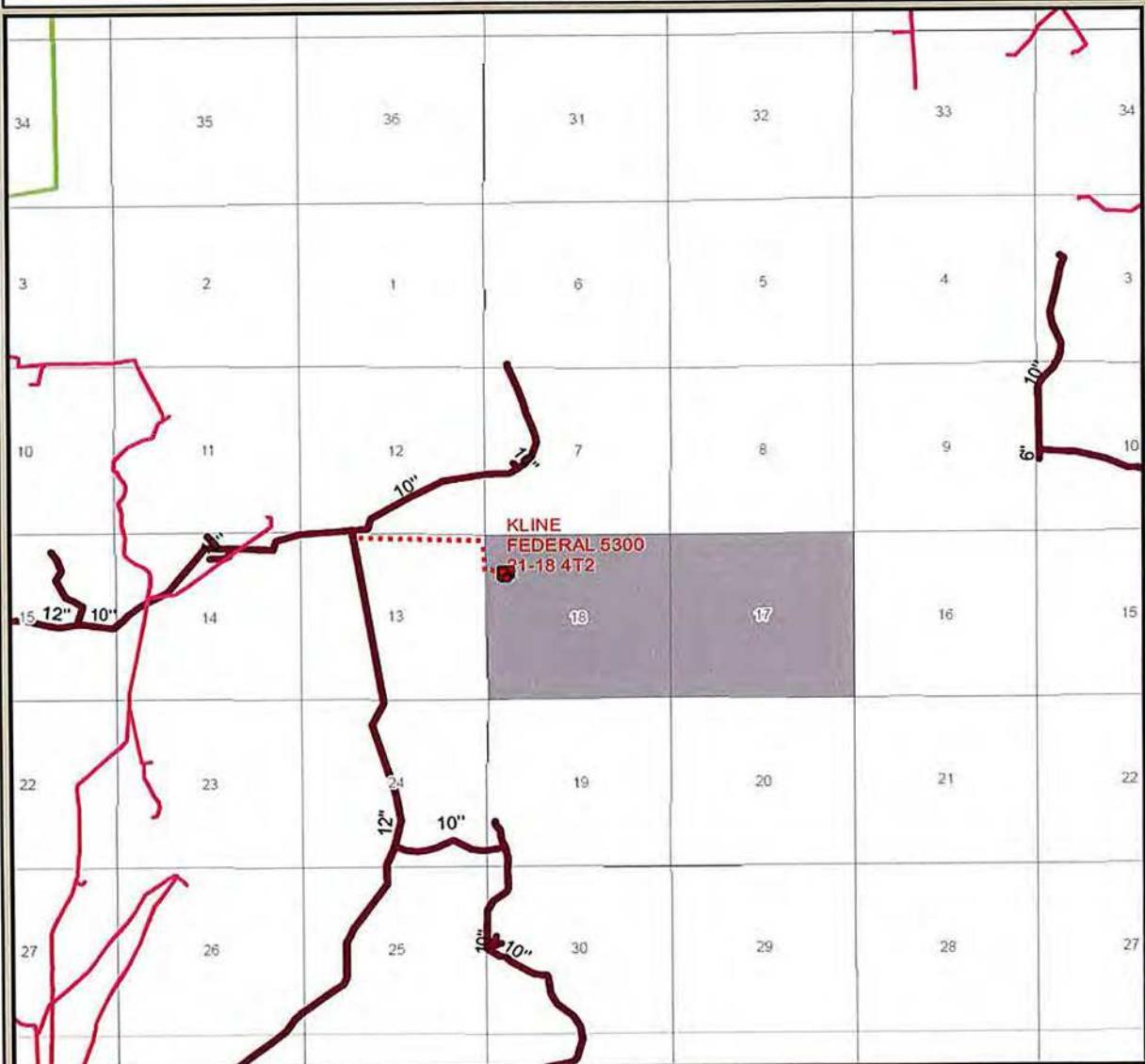


- Proposed Well
- Hiland Gas Line
- Processing Plant

Gas Gatherer: Hiland Partners, LP  
Gas to be processed at: Watford City Plant



Gas Capture Plan  
KLINE FEDERAL 5300 21-18 4T2  
Section 18 T153N R100W  
McKenzie County, North Dakota



Gas Gatherer: Hiland Partners, LP  
Gas to be processed at: Watford City Plant



- Proposed Well
- Proposed CTB
- Hiland Gas Line
- Oneok Gas Line
- Williston Basin Interstate



---

8/20/2014

Mineral Resources Permit Manager  
North Dakota Industrial Commission  
600 East Boulevard Avenue Dept. 405  
Bismarck, ND 58505-0840

RE: Kline Federal 5300 11-18 2T2  
Kline Federal 5300 11-18 3T  
Kline Federal 5300 11-18 4T2  
Kline Federal 5300 11-18 5B  
Request for a legal street address

Dear NDIC:

Oasis Petroleum has requested a physical street address for the Kline Federal 5300 11-18 2T2, Kline Federal 5300 11-18 3T, Kline Federal 5300 11-18 4T2 and Kline Federal 5300 11-18 5B. The request was made to Aaron Chisolm ([address@co.mckenzie.nd.us](mailto:address@co.mckenzie.nd.us)) in McKenzie County. Upon receiving a legal street address, Oasis will submit the address to the NDIC on a Sundry Notice (form 4) pursuant to 43-02-03-28.

Thank you for your consideration.

Respectfully,

A handwritten signature in blue ink, appearing to read "Heather McCowan".

Heather McCowan  
Regulatory Assistant  
Oasis Petroleum North America, LLC

Hello Taylor,

They will be hauled to the JMAC Resources Disposal  
5009 139th Ave NW, Williston, ND 58801  
(701) 774-8511

*Thanks,*

**Heather McCowan**

**Regulatory Assistant | 1001 Fannin, Suite 1500, Houston, Texas 77002 | 281-404-9563 Direct |  
[hmccowan@oasispetroleum.com](mailto:hmccowan@oasispetroleum.com)**



**From:** Roth, Taylor J. [<mailto:tjroth@nd.gov>]  
**Sent:** Wednesday, August 20, 2014 9:59 AM  
**To:** Heather McCowan  
**Subject:** RE: Kline Federal pad

Heather,

What will Oasis be doing with the cuttings on this pad?

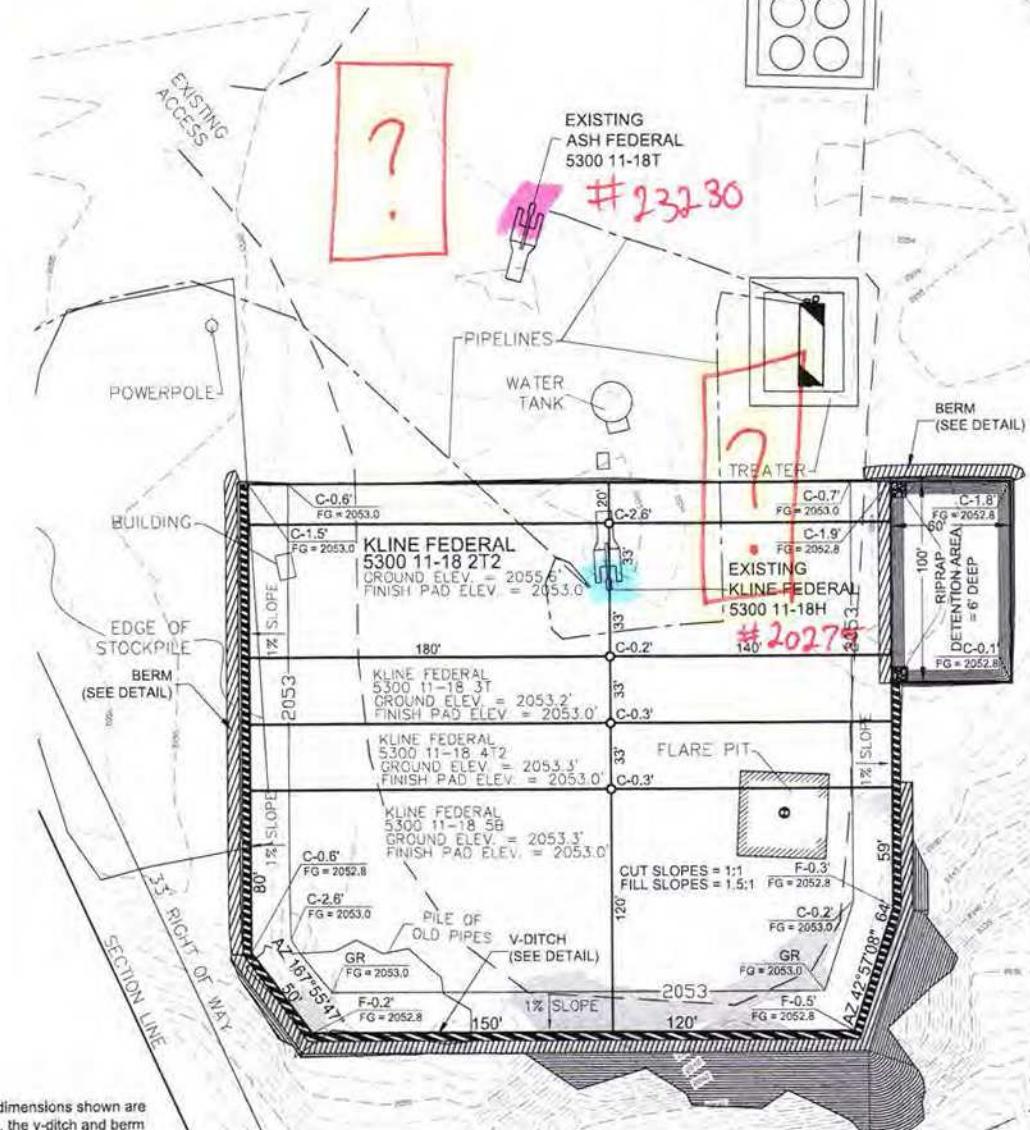
Thank you very much,

**Taylor J. Roth**  
Survey & Permitting Technician  
NDIC, Dept. Mineral Resources  
Oil and Gas Division  
701-328-1720 (direct)  
[tjroth@nd.gov](mailto:tjroth@nd.gov)



PAD LAYOUT  
 OASIS PETROLEUM NORTH AMERICA, LLC  
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002  
 "KLINE FEDERAL 5300 11-18 2T"  
 960 FEET FROM NORTH LINE AND 318 FEET FROM WEST LINE  
 SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

Pits missing  
from the pad layout

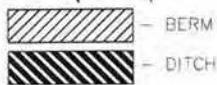
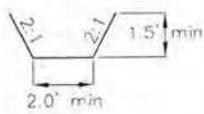


NOTE 1: Pad dimensions shown are to usable area, the v-ditch and berm areas shall be built to the outside of the pad dimensions.

NOTE 2: All existing facilities to be removed on construction expansion.

NOTE 3: Cuttings will be hauled to approved disposal site.

V-DITCH DETAIL



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

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3/8

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[www.interstateeng.com](http://www.interstateeng.com)  
Other offices in Minnesota, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC  
PAD LAYOUT  
SECTION 18, T153N, R100W

MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.K.H. Project No.: 514-09-127

Checked By: D.D.K. Date: APRIL 2014

Revision No.	Date	By	Description

# PAD LAYOUT

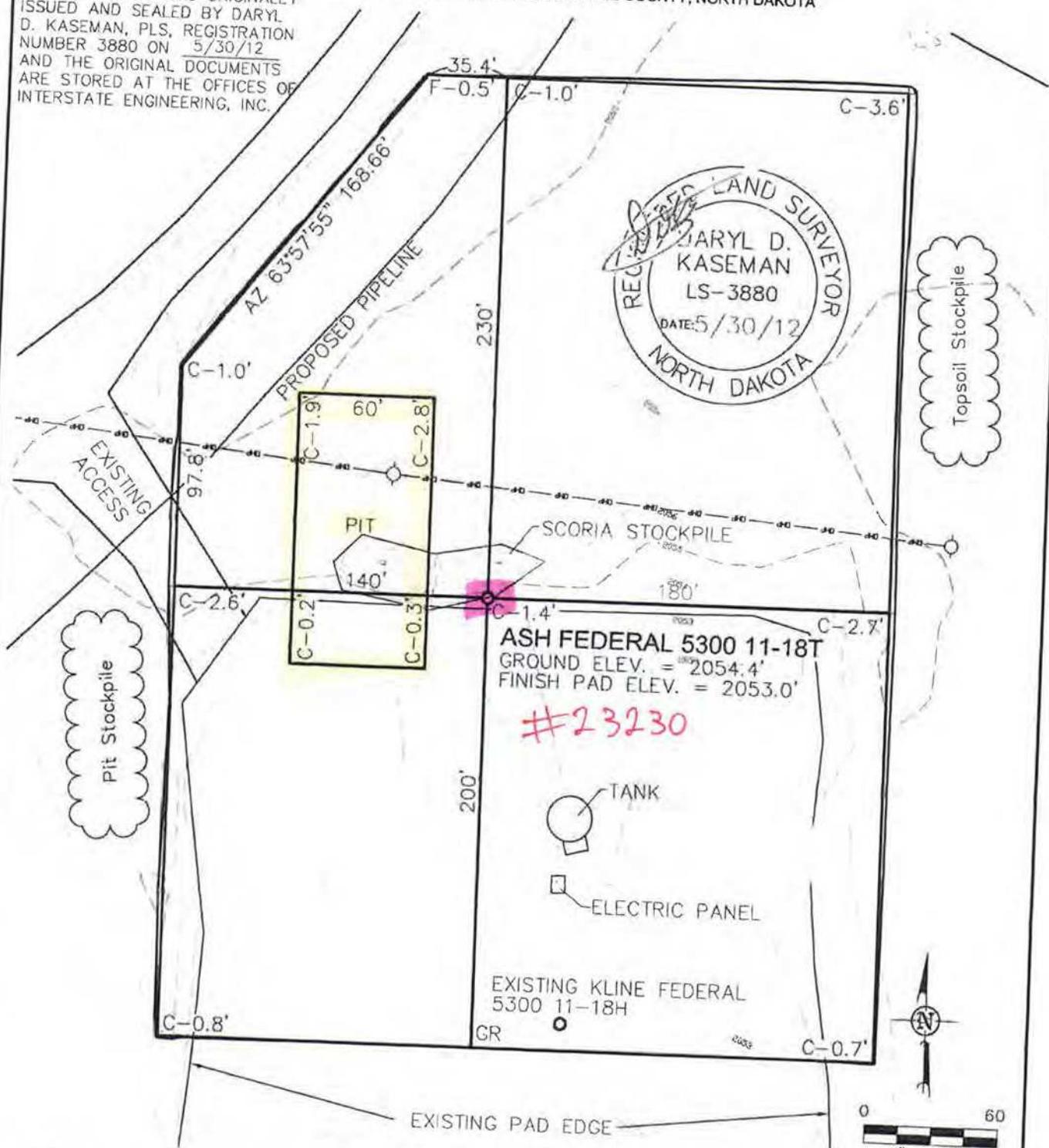
OASIS PETROLEUM NORTH AMERICA, LLC  
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

"ASH FEDERAL 5300 11-18T"

800 FEET FROM NORTH LINE AND 350 FEET FROM WEST LINE

SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

THIS DOCUMENT WAS ORIGINALLY  
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Other offices in Billings, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC  
PAD LAYOUT  
SECTION 18, T153N, R100W  
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By:	B.J.H.	Project No.:	S12-06-146
Checked By:	D.D.K.	Date:	MAY 2012

Revision No.	Date	By	Description

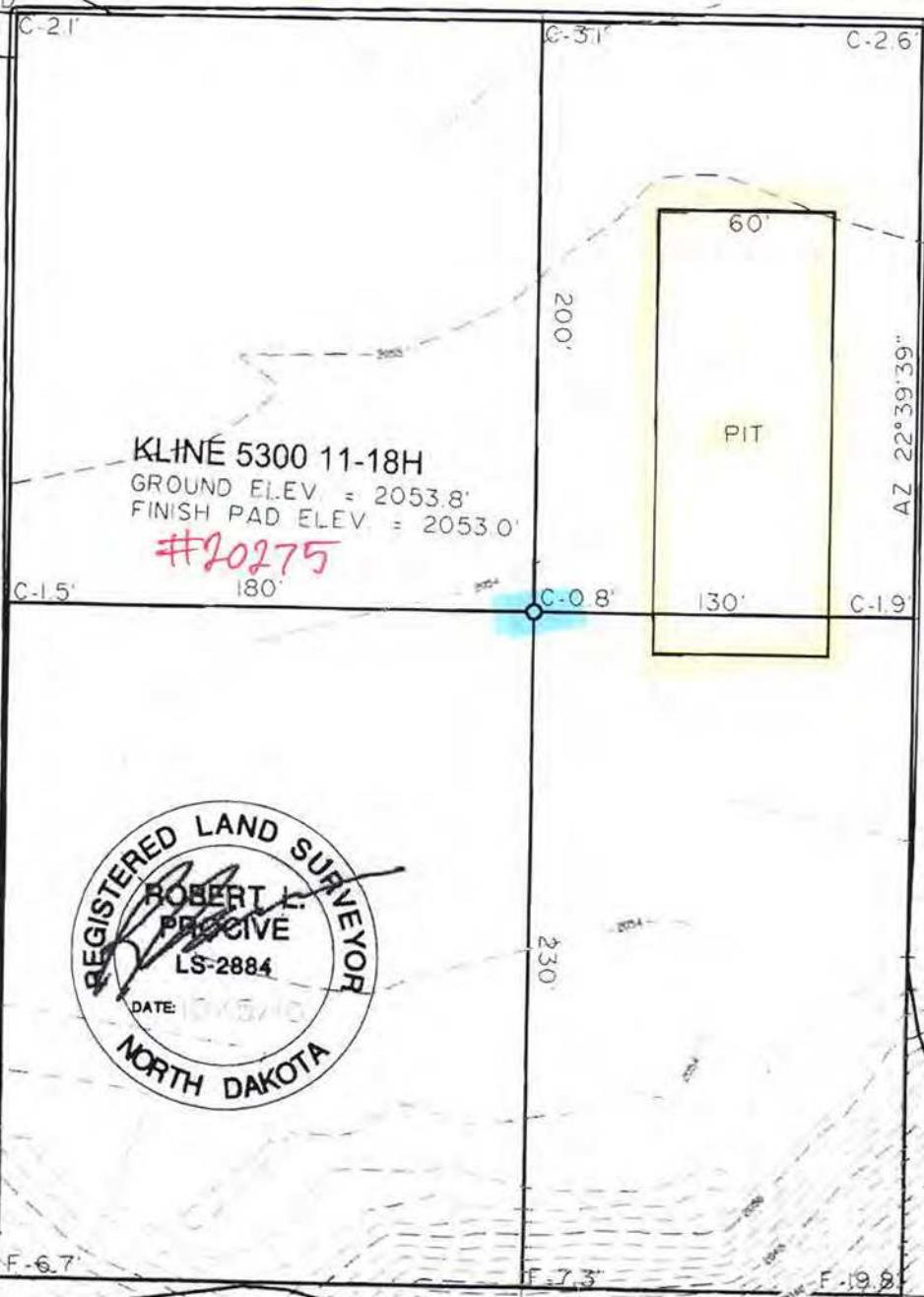
PAD LAYOUT

OASIS PETROLEUM NORTH AMERICA, LLC  
1001 FANNIN, SUITE 202 HOUSTON, TX 77002  
"KLINE 5300 11-18H"

990 FEET FROM NORTH LINE AND 305 FEET FROM WEST LINE  
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

UHP = DHP = DHP = DHP

PROPOSED  
ACCESS



AZ 22°39'39"

Pit Stockpile

Topsoil Stockpile

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Interstate Engineering, Inc.  
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425 East Main Street  
Sidney, Montana 59270  
Ph (406) 433-5617  
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Other offices in Minnesota, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC  
PAD LAYOUT  
SECTION 18, T153N, R100W  
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: J.S. Project No: S10-9-190  
Checked By: A.J.H/R.L.P. Date: OCT, 2010

Revision No.	Date	By	Description





## Oasis Petroleum

Indian Hills

153N-100W-17/18

Kline Federal 5300 11-18 2T2

Wellbore #1

Design #6

## Anticollision Report

30 June, 2014

**gyro***data*  
Precision Wellbore Placement



**Gyrodta, Inc.**  
Anticollision Report



<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Reference	Design #6		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 2,000.0 usft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

Survey Tool Program		Date	06/30/14	
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	20,717.6	Design #6 (Wellbore #1)	MWD	MWD - Standard

Summary		Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance		Separation Factor		Warning
Site Name	Offset Well - Wellbore - Design			Between Centres (usft)	Between Ellipses (usft)			
153N-100W-17/18	Ash Federal 5300 11-18T - Wellbore #1 - Wellbore #1	2,845.8	2,817.8	155.5	148.0	20.755	CC	
	Ash Federal 5300 11-18T - Wellbore #1 - Wellbore #1	2,900.0	2,871.7	155.6	147.9	20.139	ES	
	Ash Federal 5300 11-18T - Wellbore #1 - Wellbore #1	20,600.0	20,419.4	755.3	220.7	1.413	Level 3, SF	
	Kline Federal 5300 11-18 3T - Wellbore #1 - Design #6	2,500.0	2,500.0	65.7	54.7	5.993	CC	
	Kline Federal 5300 11-18 3T - Wellbore #1 - Design #6	20,717.6	21,035.1	500.4	-84.1	0.856	Level 1, ES, SF	
	Kline Federal 5300 11-18H - Wellbore #1 - Wellbore #1	2,132.6	2,108.5	33.1	28.4	7.073	CC	
	Kline Federal 5300 11-18H - Wellbore #1 - Wellbore #1	18,241.7	18,315.6	95.3	-200.2	0.323	Level 1, SF	
	Kline Federal 5300 11-18H - Wellbore #1 - Wellbore #1	18,300.0	18,372.4	95.8	-200.5	0.323	Level 1, ES	
	Kline Federal 5300 21-18 4T2 - Wellbore #1 - Design #6	2,500.0	2,500.0	99.2	88.3	9.057	CC, ES	
	Kline Federal 5300 21-18 4T2 - Wellbore #1 - Design #6	20,717.6	21,371.1	1,000.2	415.8	1.711	SF	
	Kline Federal 5300 21-18 5B - Wellbore #1 - Design #6	2,500.0	2,500.0	131.6	120.7	12.011	CC, ES	
	Kline Federal 5300 21-18 5B - Wellbore #1 - Design #6	20,717.6	21,195.2	1,003.3	421.8	1.725	SF	

Offset Design		153N-100W-17/18 - Ash Federal 5300 11-18T - Wellbore #1 - Wellbore #1										Offset Site Error:	0.0 usft
Survey Program:		2261-MWD, 13302-MWD										Offset Well Error:	0.0 usft
Reference	Offset	Semi Major Axis				Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Hightside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
300.0	300.0	2,180.0	2,183.0	0.5	0.0	11.34	159.1	31.9	1,913.9	1,913.4	0.53	3,583.932	
400.0	400.0	2,180.0	2,183.0	0.8	0.0	11.34	159.1	31.9	1,814.3	1,813.5	0.76	2,391.017	
500.0	500.0	2,180.0	2,183.0	1.0	0.0	11.34	159.1	31.9	1,714.7	1,713.7	0.98	1,743.369	
600.0	600.0	2,180.0	2,183.0	1.2	0.0	11.34	159.1	31.9	1,615.2	1,614.0	1.21	1,336.709	
700.0	700.0	2,180.0	2,183.0	1.4	0.0	11.34	159.1	31.9	1,515.7	1,514.3	1.43	1,057.655	
800.0	800.0	2,180.0	2,183.0	1.7	0.0	11.34	159.1	31.9	1,416.3	1,414.7	1.66	854.313	
900.0	900.0	2,180.0	2,183.0	1.9	0.0	11.34	159.1	31.9	1,317.0	1,315.1	1.88	699.575	
1,000.0	1,000.0	2,180.0	2,183.0	2.1	0.0	11.34	159.1	31.9	1,217.9	1,215.7	2.11	577.900	
1,100.0	1,100.0	2,180.0	2,183.0	2.3	0.0	11.34	159.1	31.9	1,118.8	1,116.5	2.33	479.741	
1,200.0	1,200.0	2,180.0	2,183.0	2.6	0.0	11.34	159.1	31.9	1,020.0	1,017.4	2.56	398.913	
1,300.0	1,300.0	2,180.0	2,183.0	2.8	0.0	11.34	159.1	31.9	921.4	918.6	2.78	331.237	
1,400.0	1,400.0	2,180.0	2,183.0	3.0	0.0	11.34	159.1	31.9	823.1	820.1	3.01	273.794	
1,500.0	1,500.0	2,180.0	2,183.0	3.2	0.0	11.34	159.1	31.9	725.4	722.1	3.23	224.491	
1,600.0	1,600.0	2,180.0	2,183.0	3.5	0.0	11.34	159.1	31.9	628.3	624.9	3.46	181.803	
1,700.0	1,700.0	2,180.0	2,183.0	3.7	0.0	11.34	159.1	31.9	532.3	528.6	3.68	144.625	
1,800.0	1,800.0	2,180.0	2,183.0	3.9	0.0	11.34	159.1	31.9	438.1	434.2	3.91	112.187	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



**Gyrodta, Inc.**  
Anticollision Report



<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Ash Federal 5300 11-18T - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 usft
Survey Program: 2261-MWD, 13302-MWD												Offset Well Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis			Distance					Warning	
		Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
1,900.0	1,900.0	2,180.0	2,183.0	4.1	0.0	11.34	159.1	31.9	347.2	343.1	4.13	84.070	
2,000.0	2,000.0	2,180.0	2,183.0	4.4	0.0	11.34	159.1	31.9	263.0	258.6	4.36	60.391	
2,100.0	2,100.0	2,180.0	2,183.0	4.6	0.0	11.34	159.1	31.9	194.3	189.8	4.58	42.436	
2,200.0	2,200.0	2,180.0	2,183.0	4.8	0.0	11.34	159.1	31.9	162.4	157.6	4.80	33.800	
2,300.0	2,300.0	2,276.1	2,279.1	5.0	0.1	11.47	157.9	32.0	161.2	156.0	5.15	31.270	
2,400.0	2,400.0	2,375.4	2,378.3	5.3	0.3	11.60	156.2	32.1	159.5	153.9	5.59	28.549	
2,500.0	2,500.0	2,474.6	2,477.5	5.5	0.5	11.55	155.0	31.7	158.2	152.2	6.02	26.270	
2,600.0	2,600.0	2,573.5	2,576.5	5.7	0.8	-79.29	154.6	31.0	157.3	150.9	6.45	24.406	
2,650.0	2,649.9	2,623.3	2,626.3	5.8	0.9	-80.27	154.5	30.5	156.8	150.1	6.66	23.558	
2,700.0	2,699.9	2,673.2	2,676.1	5.9	1.0	-81.48	154.6	29.8	156.3	149.4	6.87	22.755	
2,800.0	2,799.7	2,772.5	2,775.5	6.1	1.2	-83.99	154.7	28.1	155.6	148.3	7.30	21.326	
2,845.8	2,845.4	2,817.8	2,820.8	6.2	1.3	-85.17	154.9	27.3	155.5	148.0	7.49	20.755 CC	
2,900.0	2,899.6	2,871.7	2,874.6	6.3	1.4	-86.58	155.3	26.3	155.6	147.9	7.73	20.139 ES	
3,000.0	2,999.5	2,970.8	2,973.7	6.5	1.6	-89.21	156.2	24.3	156.2	148.1	8.16	19.144	
3,100.0	3,099.3	3,070.2	3,073.0	6.7	1.9	-91.90	157.5	22.1	157.6	149.0	8.59	18.342	
3,200.0	3,199.2	3,170.0	3,172.8	7.0	2.1	-94.47	158.9	20.2	159.4	150.4	9.01	17.692	
3,300.0	3,299.0	3,270.0	3,272.8	7.2	2.2	-96.92	160.1	18.4	161.3	151.9	9.42	17.130	
3,400.0	3,398.9	3,369.4	3,372.2	7.4	2.5	-99.25	161.4	16.7	163.6	153.7	9.84	16.625	
3,501.2	3,500.0	3,476.0	3,473.3	7.6	2.7	-101.52	162.8	15.1	166.2	155.9	10.27	16.179	
3,600.0	3,598.7	3,569.4	3,572.1	7.8	2.9	-103.15	164.0	13.6	168.5	157.8	10.68	15.781	
3,651.2	3,649.9	3,620.8	3,623.6	7.9	3.0	-13.52	164.6	12.8	169.3	158.5	10.84	15.617	
3,700.0	3,698.7	3,669.8	3,672.5	8.0	3.1	-13.71	165.1	12.1	170.0	158.9	11.05	15.389	
3,800.0	3,798.7	3,769.5	3,772.3	8.2	3.3	-14.08	166.2	10.7	171.3	159.9	11.48	14.928	
3,900.0	3,898.7	3,869.6	3,872.3	8.5	3.5	-14.41	167.3	9.4	172.8	160.9	11.92	14.500	
4,000.0	3,998.7	3,970.0	3,972.7	8.7	3.7	-14.69	168.3	8.3	174.0	161.7	12.35	14.089	
4,100.0	4,098.7	4,069.9	4,072.6	8.9	3.9	-14.93	169.3	7.3	175.2	162.4	12.79	13.702	
4,200.0	4,198.7	4,169.8	4,172.5	9.1	4.1	-15.15	170.3	6.3	176.4	163.2	13.23	13.340	
4,300.0	4,298.7	4,270.2	4,272.9	9.4	4.4	-15.33	171.3	5.5	177.6	164.0	13.66	13.000	
4,400.0	4,398.7	4,370.8	4,373.4	9.6	4.6	-15.44	172.0	4.9	178.5	164.4	14.10	12.660	
4,500.0	4,498.7	4,470.9	4,473.5	9.8	4.8	-15.52	172.6	4.5	179.1	164.6	14.53	12.328	
4,600.0	4,598.7	4,570.6	4,573.3	10.0	5.0	-15.60	173.2	4.1	179.8	164.9	14.96	12.016	
4,700.0	4,698.7	4,669.9	4,672.5	10.2	5.2	-15.69	174.0	3.5	180.8	165.4	15.40	11.741	
4,800.0	4,798.7	4,769.5	4,772.2	10.5	5.4	-15.81	175.2	2.8	182.1	166.3	15.83	11.501	
4,900.0	4,898.7	4,870.2	4,872.8	10.7	5.6	-15.78	176.4	2.5	183.3	167.1	16.27	11.267	
5,000.0	4,998.7	4,970.4	4,973.0	10.9	5.8	-15.66	177.5	2.7	184.3	167.6	16.71	11.031	
5,100.0	5,098.7	5,071.0	5,073.7	11.1	6.0	-15.44	178.4	3.1	185.0	167.9	17.14	10.794	
5,200.0	5,198.7	5,172.0	5,174.6	11.4	6.3	-15.22	178.9	3.8	185.4	167.8	17.57	10.548	
5,300.0	5,298.7	5,273.3	5,276.0	11.6	6.5	-15.18	178.6	3.9	185.0	167.0	18.00	10.280	
5,400.0	5,398.7	5,373.6	5,376.2	11.8	6.7	-15.09	177.8	4.5	184.1	165.7	18.43	9.990	
5,500.0	5,498.7	5,472.4	5,475.0	12.0	6.9	-15.04	177.4	4.8	183.7	164.8	18.86	9.739	
5,540.6	5,539.3	5,512.7	5,515.3	12.1	7.0	-15.02	177.4	4.8	183.6	164.6	19.03	9.648	
5,600.0	5,598.7	5,571.6	5,574.2	12.2	7.1	-15.00	177.5	4.9	183.7	164.4	19.29	9.525	
5,700.0	5,698.7	5,671.6	5,674.2	12.5	7.3	-15.03	177.8	4.7	184.1	164.4	19.72	9.337	
5,800.0	5,798.7	5,771.2	5,773.8	12.7	7.5	-15.19	177.9	4.1	184.4	164.2	20.15	9.150	
5,900.0	5,898.7	5,870.8	5,873.4	12.9	7.7	-15.40	178.4	3.3	185.0	164.4	20.58	8.990	
6,000.0	5,998.7	5,970.5	5,973.1	13.1	7.9	-15.52	179.0	2.7	185.8	164.8	21.02	8.839	
6,100.0	6,098.7	6,069.7	6,072.3	13.4	8.1	-15.53	180.0	2.4	186.8	165.4	21.46	8.708	
6,200.0	6,198.7	6,168.5	6,171.0	13.6	8.3	-15.47	181.6	2.2	188.4	166.5	21.89	8.608	
6,300.0	6,298.7	6,267.2	6,269.7	13.8	8.6	-15.25	183.9	2.3	190.7	168.4	22.33	8.540	
6,400.0	6,398.7	6,367.6	6,370.1	14.0	8.8	-14.95	186.6	2.6	193.2	170.4	22.77	8.486	
6,500.0	6,498.7	6,466.8	6,469.3	14.3	9.0	-14.49	189.5	3.4	195.8	172.6	23.20	8.437	
6,600.0	6,598.7	6,565.9	6,568.3	14.5	9.2	-13.89	192.8	4.7	198.8	175.1	23.64	8.406	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



**Gyrodta, Inc.**  
Anticollision Report



<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Ash Federal 5300 11-18T - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 usft	
Survey Program: 2261-MWD, 13302-MWD				Distance								Offset Well Error:	0.0 usft	
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis			Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
		Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Reference								
6,700.0	6,698.7	6,665.4	6,667.7	14.7	9.4	-13.17	196.9	6.4	202.3	178.2	24.08	8.400		
6,800.0	6,798.7	6,768.0	6,770.2	14.9	9.6	-12.85	199.8	6.8	204.9	180.4	24.52	8.359		
6,900.0	6,898.7	6,867.6	6,869.8	15.2	9.8	-12.83	201.9	6.4	207.1	182.2	24.95	8.302		
7,000.0	6,998.7	6,967.0	6,969.2	15.4	10.0	-12.70	204.5	6.3	209.7	184.3	25.38	8.262		
7,100.0	7,098.7	7,067.2	7,069.3	15.6	10.3	-12.51	207.2	6.4	212.3	186.4	25.82	8.221		
7,200.0	7,198.7	7,167.4	7,169.5	15.8	10.5	-12.33	209.7	6.6	214.8	188.5	26.25	8.181		
7,300.0	7,298.7	7,267.4	7,269.5	16.0	10.7	-12.11	212.2	6.9	217.1	190.4	26.69	8.135		
7,400.0	7,398.7	7,367.4	7,369.5	16.3	10.9	-11.83	214.8	7.4	219.5	192.4	27.13	8.093		
7,500.0	7,498.7	7,468.1	7,470.1	16.5	11.1	-11.40	217.3	8.6	221.8	194.2	27.57	8.044		
7,600.0	7,598.7	7,568.1	7,570.1	16.7	11.3	-10.91	219.7	10.1	223.8	195.8	28.00	7.992		
7,700.0	7,698.7	7,668.9	7,670.9	16.9	11.5	-10.41	221.9	11.6	225.7	197.2	28.43	7.937		
7,800.0	7,798.7	7,768.4	7,770.3	17.2	11.7	-9.88	224.1	13.4	227.5	198.6	28.87	7.881		
7,900.0	7,898.7	7,870.2	7,872.1	17.4	12.0	-9.45	225.9	14.8	229.0	199.7	29.30	7.816		
8,000.0	7,998.7	7,971.2	7,973.1	17.6	12.2	-9.15	227.0	15.9	229.9	200.2	29.73	7.733		
8,100.0	8,098.7	8,071.5	8,073.4	17.8	12.4	-8.83	227.8	17.0	230.5	200.3	30.16	7.643		
8,200.0	8,198.7	8,171.4	8,173.2	18.1	12.6	-8.53	228.6	18.1	231.1	200.5	30.59	7.556		
8,300.0	8,298.7	8,271.6	8,273.5	18.3	12.8	-8.30	229.3	18.9	231.7	200.7	31.02	7.471		
8,400.0	8,398.7	8,371.7	8,373.6	18.5	13.0	-8.11	229.9	19.6	232.2	200.8	31.45	7.384		
8,500.0	8,498.7	8,471.6	8,473.5	18.7	13.2	-7.93	230.5	20.3	232.7	200.8	31.88	7.300		
8,600.0	8,598.7	8,571.9	8,573.7	19.0	13.4	-7.69	231.1	21.2	233.2	200.9	32.31	7.217		
8,700.0	8,698.7	8,671.6	8,673.4	19.2	13.6	-7.36	231.7	22.5	233.6	200.9	32.75	7.134		
8,800.0	8,798.7	8,771.8	8,773.6	19.4	13.8	-6.99	232.4	23.9	234.2	201.0	33.19	7.057		
8,900.0	8,898.7	8,871.9	8,873.7	19.6	14.0	-6.60	233.0	25.4	234.6	201.0	33.62	6.978		
9,000.0	8,998.7	8,972.1	8,973.9	19.9	14.2	-6.27	233.6	26.7	235.0	200.9	34.05	6.901		
9,100.0	9,098.7	9,072.6	9,074.4	20.1	14.5	-5.92	233.9	28.2	235.2	200.7	34.48	6.821		
9,200.0	9,198.7	9,172.6	9,174.4	20.3	14.7	-5.56	234.2	29.6	235.3	200.4	34.91	6.741		
9,300.0	9,298.7	9,272.4	9,274.2	20.5	14.9	-5.22	234.5	31.0	235.5	200.2	35.34	6.664		
9,400.0	9,398.7	9,372.8	9,374.5	20.8	15.1	-4.89	234.8	32.3	235.7	199.9	35.77	6.588		
9,500.0	9,498.7	9,473.1	9,474.8	21.0	15.3	-4.58	234.8	33.6	235.6	199.4	36.20	6.508		
9,518.4	9,517.1	9,491.4	9,493.1	21.0	15.3	-4.52	234.9	33.8	235.6	199.3	36.28	6.494		
9,600.0	9,598.7	9,572.9	9,574.6	21.2	15.5	-4.29	235.0	34.8	235.7	199.0	36.63	6.433		
9,700.0	9,698.7	9,673.1	9,674.8	21.4	15.7	-4.02	235.0	35.9	235.6	198.5	37.06	6.357		
9,722.4	9,721.1	9,695.3	9,697.1	21.5	15.7	-3.96	235.0	36.1	235.6	198.4	37.16	6.340		
9,800.0	9,798.7	9,772.7	9,774.4	21.6	15.9	-3.73	235.1	37.1	235.6	198.1	37.50	6.284		
9,900.0	9,898.7	9,872.6	9,874.3	21.9	16.1	-3.45	235.4	38.2	235.8	197.9	37.93	6.217		
10,000.0	9,998.7	9,972.1	9,973.8	22.1	16.3	-3.25	235.6	39.0	236.0	197.7	38.36	6.153		
10,100.0	10,098.7	10,071.5	10,073.2	22.3	16.5	-3.07	236.2	39.7	236.6	197.8	38.79	6.098		
10,200.0	10,198.7	10,171.3	10,173.0	22.5	16.7	-2.87	236.9	40.5	237.2	198.0	39.23	6.048		
10,300.0	10,298.7	10,270.7	10,272.4	22.8	17.0	-2.66	237.8	41.4	238.1	198.4	39.66	6.002		
10,363.3	10,362.0	10,335.5	10,337.2	22.9	17.1	-2.45	238.4	42.2	238.6	198.7	39.94	5.975		
10,375.0	10,373.7	10,348.1	10,349.7	22.9	17.1	-122.32	238.5	42.8	238.7	198.7	40.00	5.968		
10,400.0	10,398.7	10,373.3	10,374.9	23.0	17.2	-121.93	238.5	45.3	239.4	199.3	40.09	5.972		
10,425.0	10,423.5	10,396.7	10,397.9	23.0	17.2	-121.34	238.7	49.1	240.8	200.7	40.15	5.997		
10,450.0	10,448.2	10,420.1	10,420.7	23.1	17.3	-120.51	239.1	54.7	243.1	202.9	40.20	6.046		
10,475.0	10,472.7	10,444.0	10,443.5	23.1	17.3	-119.54	239.6	61.6	246.2	205.9	40.25	6.115		
10,500.0	10,496.8	10,467.7	10,466.0	23.2	17.4	-118.64	240.2	69.0	250.0	209.7	40.30	6.204		
10,525.0	10,520.6	10,489.1	10,486.2	23.3	17.4	-117.84	240.8	76.0	254.6	214.3	40.33	6.313		
10,550.0	10,544.0	10,512.2	10,507.7	23.3	17.5	-116.99	241.8	84.4	260.2	219.8	40.38	6.443		
10,575.0	10,566.8	10,538.4	10,531.6	23.4	17.6	-116.01	242.8	95.2	266.2	225.7	40.44	6.582		
10,600.0	10,589.1	10,562.6	10,553.1	23.5	17.6	-115.02	243.6	106.2	272.6	232.1	40.50	6.731		
10,625.0	10,610.8	10,587.4	10,574.5	23.5	17.7	-113.91	244.3	118.7	279.6	239.0	40.59	6.888		
10,650.0	10,631.8	10,610.7	10,593.7	23.6	17.8	-112.67	244.9	131.9	287.1	246.4	40.71	7.053		

CC - Min centre to center distance or convergent point, SF - min ellipse separation, ES - min separation factor



**Gyrodta, Inc.**  
Anticollision Report



<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Ash Federal 5300 11-18T - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 usft
Survey Program: 2261-MWD, 13302-MWD												Offset Well Error:	0.0 usft
Reference Offset				Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,675.0	10,652.0	10,633.2	10,611.6	23.7	17.9	-111.37	245.5	145.6	295.1	254.3	40.84	7.226	
10,700.0	10,671.5	10,655.7	10,629.0	23.8	18.0	-110.09	246.1	159.8	303.7	262.7	41.00	7.407	
10,725.0	10,690.1	10,679.4	10,646.6	23.9	18.1	-108.77	246.7	175.6	312.8	271.5	41.20	7.590	
10,750.0	10,707.8	10,704.2	10,663.8	24.0	18.2	-107.32	247.1	193.4	322.1	280.7	41.45	7.772	
10,775.0	10,724.5	10,728.5	10,679.6	24.1	18.3	-105.82	247.3	211.8	331.7	290.0	41.72	7.950	
10,800.0	10,740.3	10,751.0	10,693.9	24.3	18.5	-104.42	247.4	229.3	341.6	299.6	42.02	8.131	
10,825.0	10,755.0	10,769.9	10,705.3	24.4	18.6	-103.04	247.6	244.3	352.0	309.7	42.32	8.317	
10,850.0	10,768.7	10,791.6	10,717.3	24.6	18.8	-101.56	247.9	262.4	362.8	320.2	42.67	8.503	
10,875.0	10,781.2	10,818.7	10,730.9	24.8	19.0	-100.02	247.9	285.9	373.7	330.6	43.09	8.673	
10,900.0	10,792.6	10,844.0	10,742.3	25.0	19.3	-98.50	247.5	308.4	384.6	341.1	43.53	8.836	
10,925.0	10,802.8	10,862.8	10,750.1	25.2	19.4	-97.01	247.2	325.5	395.7	351.7	43.94	9.005	
10,950.0	10,811.8	10,880.6	10,757.0	25.4	19.6	-95.53	247.0	342.0	407.1	362.8	44.36	9.178	
10,975.0	10,819.6	10,896.9	10,762.7	25.7	19.8	-94.03	247.0	357.2	418.9	374.2	44.78	9.356	
11,000.0	10,826.1	10,913.5	10,768.0	25.9	20.0	-92.53	247.2	372.9	431.2	386.0	45.21	9.537	
11,025.0	10,831.3	10,930.6	10,773.0	26.2	20.2	-91.05	247.5	389.4	443.7	398.0	45.66	9.718	
11,050.0	10,835.3	10,948.5	10,777.7	26.5	20.5	-89.61	248.0	406.6	456.4	410.3	46.12	9.897	
11,075.0	10,837.9	10,969.0	10,782.3	26.8	20.7	-88.25	248.6	426.5	469.3	422.7	46.61	10.069	
11,100.0	10,839.3	10,988.3	10,786.1	27.1	21.0	-86.92	249.2	445.5	482.2	435.1	47.11	10.237	
11,110.8	10,839.5	10,997.8	10,787.8	27.2	21.2	-86.39	249.4	454.8	487.8	440.5	47.33	10.305	
11,125.8	10,839.5	11,010.2	10,789.9	27.4	21.4	-86.71	249.8	467.0	495.5	447.9	47.68	10.394	
11,200.0	10,839.9	11,067.4	10,796.1	28.5	22.3	-87.72	251.5	523.8	533.0	483.4	49.59	10.749	
11,300.0	10,840.5	11,155.4	10,795.5	30.1	23.8	-87.84	254.9	611.7	580.7	528.0	52.66	11.028	
11,400.0	10,841.0	11,252.8	10,792.6	31.9	25.7	-87.70	257.3	709.0	622.6	566.3	56.29	11.060	
11,500.0	10,841.5	11,358.5	10,792.9	33.9	28.0	-87.84	259.0	814.7	658.7	598.2	60.46	10.894	
11,600.0	10,842.1	11,449.6	10,795.9	36.0	30.0	-88.17	259.4	905.8	688.7	624.1	64.64	10.655	
11,700.0	10,842.6	11,539.9	10,798.7	38.1	32.1	-88.43	260.8	996.0	714.8	645.8	68.97	10.364	
11,800.0	10,843.2	11,664.4	10,798.0	40.4	35.2	-88.38	261.3	1,120.5	734.9	660.7	74.23	9.901	
11,900.0	10,843.7	11,796.6	10,795.2	42.7	38.5	-88.13	255.8	1,252.5	745.2	665.4	79.81	9.337	
12,000.0	10,844.2	11,907.6	10,795.8	45.0	41.4	-88.12	247.8	1,363.2	747.1	662.2	84.87	8.803	
12,100.0	10,844.8	12,004.5	10,798.2	47.4	44.0	-88.24	240.5	1,459.8	743.5	654.0	89.46	8.311	
12,110.4	10,844.8	12,014.4	10,798.5	47.6	44.2	-88.26	239.8	1,469.7	742.9	652.9	89.93	8.260	
12,200.0	10,845.3	12,104.9	10,801.7	49.8	46.7	-88.45	233.4	1,560.0	737.1	642.6	94.60	7.793	
12,300.0	10,845.8	12,199.1	10,805.0	52.2	49.2	-88.66	226.8	1,653.8	730.9	631.2	99.69	7.332	
12,400.0	10,846.3	12,294.3	10,808.5	54.7	51.8	-88.89	221.0	1,748.8	725.5	620.6	104.88	6.918	
12,500.0	10,846.8	12,379.2	10,811.1	57.3	54.1	-89.06	216.8	1,833.5	721.3	611.5	109.83	6.568	
12,600.0	10,847.4	12,472.3	10,811.8	59.9	56.7	-89.07	213.9	1,926.6	719.0	603.9	115.05	6.249	
12,700.0	10,847.9	12,562.3	10,812.5	62.5	59.2	-89.09	211.8	2,016.6	717.5	597.3	120.22	5.968	
12,745.7	10,848.1	12,603.1	10,812.8	63.7	60.3	-89.09	211.3	2,057.4	717.3	594.7	122.59	5.852	
12,800.0	10,848.4	12,652.6	10,813.0	65.1	61.7	-89.09	211.1	2,106.8	717.5	592.1	125.43	5.720	
12,900.0	10,848.9	12,745.4	10,812.4	67.8	64.3	-89.01	211.5	2,199.7	718.7	588.0	130.74	5.498	
13,000.0	10,849.5	12,847.1	10,812.2	70.4	67.2	-88.95	212.3	2,301.3	720.4	584.1	136.32	5.285	
13,100.0	10,850.0	12,950.1	10,811.9	73.1	70.1	-88.88	212.7	2,404.3	721.6	579.6	141.98	5.083	
13,200.0	10,850.5	13,042.1	10,811.3	75.9	72.7	-88.80	213.4	2,496.3	723.1	575.8	147.33	4.908	
13,300.0	10,851.0	13,153.3	10,810.8	78.6	75.7	-88.72	214.0	2,607.5	724.6	571.4	153.17	4.731	
13,400.0	10,851.6	13,258.6	10,812.0	81.3	77.7	-88.77	213.4	2,712.8	724.8	566.8	157.96	4.589	
13,456.1	10,851.9	13,313.6	10,813.3	82.9	78.7	-88.85	212.8	2,767.8	724.6	564.2	160.47	4.516	
13,500.0	10,852.1	13,345.3	10,814.1	84.1	79.0	-88.90	212.8	2,799.5	724.9	562.9	162.02	4.474	
13,600.0	10,852.6	13,416.6	10,817.3	86.9	79.8	-89.13	215.2	2,870.7	728.9	563.3	165.59	4.402	
13,700.0	10,853.1	13,536.4	10,819.2	89.6	81.2	-89.23	219.8	2,990.4	733.6	563.8	169.79	4.321	
13,800.0	10,853.7	13,640.6	10,818.2	92.4	82.5	-89.12	221.7	3,094.5	736.2	562.3	173.91	4.233	
13,900.0	10,854.2	13,740.2	10,817.7	95.2	83.8	-89.04	223.7	3,194.1	739.0	561.0	178.07	4.150	
14,000.0	10,854.7	13,857.7	10,815.4	98.0	85.5	-88.82	224.5	3,311.6	740.7	558.1	182.57	4.057	

CC - Min centre to center distance or convergent point, SF - min ellipse separation, ES - min separation factor



**Gyrodata, Inc.**  
Anticollision Report



<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Ash Federal 5300 11-18T - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 usft
Survey Program: 2261-MWD, 13302-MWD												Offset Well Error:	0.0 usft
Reference Offset				Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
14,100.0	10,855.2	13,969.3	10,813.7	100.8	87.2	-88.64		222.6	3,423.1	739.8	552.8	187.08	3.955
14,200.0	10,855.7	14,069.0	10,814.4	103.7	88.7	-88.65		220.6	3,522.9	738.6	547.1	191.51	3.857
14,300.0	10,856.3	14,173.4	10,812.9	106.5	90.5	-88.49		217.5	3,627.1	736.4	540.4	196.07	3.756
14,400.0	10,856.8	14,265.7	10,811.9	109.3	92.1	-88.37		215.7	3,719.4	735.3	534.8	200.50	3.668
14,500.0	10,857.3	14,371.8	10,811.4	112.2	93.9	-88.28		213.1	3,825.4	733.7	528.5	205.23	3.575
14,600.0	10,857.8	14,469.4	10,812.1	115.0	95.7	-88.29		210.6	3,923.0	731.9	522.0	209.89	3.487
14,700.0	10,858.4	14,563.2	10,813.8	117.9	97.5	-88.38		209.1	4,016.8	731.0	516.5	214.53	3.408
14,800.0	10,858.9	14,661.1	10,814.7	120.7	99.4	-88.41		207.6	4,114.7	730.3	511.0	219.29	3.330
14,831.8	10,859.1	14,689.7	10,814.6	121.6	100.0	-88.40		207.3	4,143.3	730.3	509.5	220.77	3.308
14,900.0	10,859.4	14,757.4	10,813.8	123.6	101.3	-88.31		206.8	4,211.0	730.3	506.2	224.06	3.259
15,000.0	10,859.9	14,854.1	10,812.2	126.4	103.3	-88.14		206.4	4,307.7	730.9	502.0	228.87	3.193
15,100.0	10,860.5	14,942.1	10,813.8	129.3	105.1	-88.23		206.8	4,395.6	732.0	498.4	233.57	3.134
15,200.0	10,861.0	15,040.9	10,816.8	132.1	107.1	-88.43		208.8	4,494.4	734.7	496.2	238.54	3.080
15,300.0	10,861.5	15,151.6	10,818.3	135.0	109.5	-88.50		209.5	4,605.0	736.2	492.4	243.80	3.020
15,400.0	10,862.0	15,248.7	10,817.4	137.9	111.6	-88.40		209.4	4,702.2	736.9	488.1	248.78	2.962
15,500.0	10,862.6	15,333.0	10,816.9	140.7	113.5	-88.33		210.4	4,786.4	739.0	485.5	253.52	2.915
15,600.0	10,863.1	15,438.5	10,816.5	143.6	115.8	-88.26		213.7	4,891.9	743.1	484.3	258.75	2.872
15,700.0	10,863.6	15,565.3	10,816.8	146.5	118.7	-88.24		213.9	5,018.7	744.1	479.5	264.52	2.813
15,800.0	10,864.1	15,668.9	10,817.9	149.4	121.1	-88.28		211.9	5,122.2	742.9	473.1	269.80	2.753
15,900.0	10,864.7	15,766.5	10,817.8	152.3	123.4	-88.23		210.0	5,219.8	741.8	466.8	274.97	2.698
16,000.0	10,865.2	15,865.0	10,819.1	155.1	125.7	-88.29		208.1	5,318.3	740.6	460.4	280.19	2.643
16,100.0	10,865.7	15,961.6	10,821.3	158.0	128.0	-88.42		206.8	5,414.9	740.0	454.6	285.40	2.593
16,200.0	10,866.2	16,090.1	10,825.3	160.9	131.1	-88.67		204.2	5,543.3	739.0	447.6	291.42	2.536
16,300.0	10,866.7	16,200.4	10,823.8	163.8	133.8	-88.50		197.6	5,653.3	733.8	436.9	296.98	2.471
16,400.0	10,867.3	16,298.4	10,819.8	166.7	136.2	-88.13		190.9	5,751.0	728.0	425.7	302.23	2.409
16,500.0	10,867.8	16,393.8	10,819.6	169.6	138.6	-88.06		185.3	5,846.3	722.9	415.5	307.47	2.351
16,600.0	10,868.3	16,492.4	10,823.5	172.5	141.0	-88.32		180.2	5,944.6	718.4	405.5	312.86	2.296
16,700.0	10,868.8	16,582.6	10,826.2	175.4	143.3	-88.49		176.0	6,034.7	714.5	396.5	318.05	2.247
16,800.0	10,869.4	16,699.2	10,828.5	178.3	146.2	-88.62		170.2	6,151.1	710.4	386.5	323.90	2.193
16,900.0	10,869.9	16,797.8	10,827.0	181.2	148.7	-88.44		163.8	6,249.5	704.7	375.4	329.29	2.140
17,000.0	10,870.4	16,905.5	10,825.7	184.1	151.5	-88.28		156.1	6,356.9	698.4	363.4	334.92	2.085
17,100.0	10,870.9	17,001.6	10,826.7	187.0	153.9	-88.30		149.0	6,452.7	691.8	351.5	340.29	2.033
17,200.0	10,871.5	17,093.0	10,827.0	189.9	156.3	-88.28		143.5	6,543.9	686.6	341.1	345.55	1.987
17,300.0	10,872.0	17,185.6	10,827.1	192.8	158.7	-88.23		138.7	6,636.5	682.3	331.4	350.85	1.945
17,400.0	10,872.5	17,280.8	10,829.1	195.7	161.2	-88.35		135.0	6,731.5	679.1	322.8	356.25	1.906
17,500.0	10,873.0	17,374.0	10,829.8	198.6	163.6	-88.36		131.8	6,824.7	676.4	314.8	361.59	1.871
17,600.0	10,873.6	17,478.2	10,831.0	201.5	166.3	-88.41		128.6	6,928.8	674.2	306.9	367.24	1.836
17,700.0	10,874.1	17,568.5	10,831.4	204.4	168.7	-88.41		126.0	7,019.1	672.2	299.6	372.53	1.804
17,800.0	10,874.6	17,667.5	10,832.1	207.3	171.3	-88.42		124.3	7,118.1	671.2	293.1	378.05	1.775
17,900.0	10,875.1	17,764.5	10,831.1	210.2	173.9	-88.28		122.4	7,215.0	670.1	286.6	383.51	1.747
18,000.0	10,875.6	17,863.1	10,831.3	213.1	176.5	-88.25		121.3	7,313.6	669.8	280.8	389.03	1.722
18,088.9	10,876.1	17,949.5	10,830.2	215.7	178.8	-88.13		120.3	7,400.0	669.5	275.6	393.90	1.700
18,100.0	10,876.2	17,959.6	10,830.1	216.0	179.1	-88.11		120.2	7,410.1	669.5	275.1	394.49	1.697
18,200.0	10,876.7	18,053.9	10,829.1	218.9	181.6	-87.99		120.1	7,504.4	670.3	270.4	399.90	1.676
18,300.0	10,877.2	18,151.0	10,828.4	221.8	184.2	-87.89		120.2	7,601.5	671.2	265.8	405.38	1.656
18,400.0	10,877.7	18,240.3	10,827.2	224.7	186.6	-87.75		121.5	7,690.8	673.5	262.8	410.66	1.640
18,500.0	10,878.3	18,333.0	10,827.8	227.6	189.1	-87.77		123.8	7,783.4	676.8	260.8	416.06	1.627
18,600.0	10,878.8	18,420.8	10,827.5	230.5	191.4	-87.72		127.1	7,871.2	681.5	260.2	421.32	1.618
18,700.0	10,879.3	18,527.5	10,827.7	233.4	194.3	-87.71		132.6	7,977.7	687.4	260.4	427.10	1.610
18,800.0	10,879.8	18,645.1	10,830.1	236.4	197.5	-87.88		136.0	8,095.2	691.2	257.9	433.23	1.595
18,900.0	10,880.4	18,749.9	10,832.2	239.3	200.3	-88.01		137.3	8,200.0	693.1	254.1	439.02	1.579
19,000.0	10,880.9	18,847.2	10,834.9	242.2	203.0	-88.20		138.2	8,297.3	694.8	250.2	444.63	1.563

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Ash Federal 5300 11-18T - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 usft
Survey Program: 2261-MWD, 13302-MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,100.0	10,881.4	18,942.7	10,837.7	245.1	205.6	-88.39	139.7	8,392.7	697.1	246.9	450.18	1.548	
19,200.0	10,881.9	19,048.8	10,841.4	248.0	208.5	-88.65	141.3	8,498.8	699.3	243.3	456.04	1.533	
19,300.0	10,882.5	19,158.6	10,844.7	250.9	211.5	-88.87	141.5	8,608.5	700.3	238.3	462.00	1.516	
19,400.0	10,883.0	19,258.1	10,846.2	253.8	214.2	-88.95	141.1	8,708.0	700.6	233.0	467.66	1.498 Level 3	
19,500.0	10,883.5	19,356.1	10,846.2	256.7	216.9	-88.91	140.8	8,806.0	701.1	227.9	473.27	1.481 Level 3	
19,600.0	10,884.0	19,454.3	10,845.4	259.7	219.6	-88.81	140.8	8,904.2	702.0	223.1	478.88	1.466 Level 3	
19,700.0	10,884.5	19,555.0	10,843.7	262.6	222.4	-88.63	140.7	9,004.9	702.7	218.2	484.55	1.450 Level 3	
19,800.0	10,885.1	19,644.0	10,841.9	265.5	224.9	-88.44	141.1	9,093.9	704.0	214.1	489.89	1.437 Level 3	
19,900.0	10,885.6	19,730.6	10,840.8	268.4	227.3	-88.33	142.9	9,180.4	707.1	211.9	495.17	1.428 Level 3	
20,000.0	10,886.1	19,815.9	10,840.3	271.3	229.6	-88.26	146.7	9,265.6	712.4	212.0	500.43	1.424 Level 3	
20,100.0	10,886.6	19,905.8	10,840.7	274.2	232.1	-88.27	152.6	9,355.4	719.8	213.9	505.82	1.423 Level 3	
20,200.0	10,887.2	20,007.7	10,840.8	277.2	234.9	-88.26	159.6	9,457.0	727.4	215.9	511.54	1.422 Level 3	
20,300.0	10,887.7	20,112.7	10,841.0	280.1	237.8	-88.25	166.3	9,561.8	734.6	217.2	517.35	1.420 Level 3	
20,400.0	10,888.2	20,212.7	10,841.0	283.0	240.5	-88.22	172.4	9,661.6	741.5	218.4	523.03	1.418 Level 3	
20,500.0	10,888.7	20,309.1	10,840.5	285.9	243.2	-88.16	178.5	9,757.8	748.7	220.1	528.60	1.416 Level 3	
20,600.0	10,889.3	20,419.4	10,838.9	288.8	246.3	-88.01	184.8	9,868.0	755.3	220.7	534.53	1.413 Level 3, SF	
20,700.0	10,889.8	20,482.0	10,837.6	291.7	248.0	-87.90	187.9	9,930.4	762.0	222.8	539.15	1.413 Level 3	
20,717.6	10,889.9	20,482.0	10,837.6	292.3	248.0	-87.90	187.9	9,930.4	764.0	224.4	539.67	1.416 Level 3	



**Gyrodta, Inc.**  
Anticollision Report



<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 11-18 3T - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft	
Survey Program: 0-MWD												Offset Well Error:	0.0 usft	
Reference		Offset		Semi Major Axis				Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	(°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-155.57		-59.8	-27.2	65.7				
100.0	100.0	100.0	100.0	0.1	0.1	-155.57		-59.8	-27.2	65.7	65.5	0.17	389.542	
200.0	200.0	200.0	200.0	0.3	0.3	-155.57		-59.8	-27.2	65.7	65.0	0.62	106.239	
300.0	300.0	300.0	300.0	0.5	0.5	-155.57		-59.8	-27.2	65.7	64.6	1.07	61.507	
400.0	400.0	400.0	400.0	0.8	0.8	-155.57		-59.8	-27.2	65.7	64.1	1.52	43.283	
500.0	500.0	500.0	500.0	1.0	1.0	-155.57		-59.8	-27.2	65.7	63.7	1.97	33.389	
600.0	600.0	600.0	600.0	1.2	1.2	-155.57		-59.8	-27.2	65.7	63.3	2.42	27.177	
700.0	700.0	700.0	700.0	1.4	1.4	-155.57		-59.8	-27.2	65.7	62.8	2.87	22.914	
800.0	800.0	800.0	800.0	1.7	1.7	-155.57		-59.8	-27.2	65.7	62.4	3.32	19.807	
900.0	900.0	900.0	900.0	1.9	1.9	-155.57		-59.8	-27.2	65.7	61.9	3.76	17.442	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-155.57		-59.8	-27.2	65.7	61.5	4.21	15.582	
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	-155.57		-59.8	-27.2	65.7	61.0	4.66	14.080	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-155.57		-59.8	-27.2	65.7	60.6	5.11	12.842	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-155.57		-59.8	-27.2	65.7	60.1	5.56	11.804	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-155.57		-59.8	-27.2	65.7	59.7	6.01	10.922	
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.2	-155.57		-59.8	-27.2	65.7	59.2	6.46	10.162	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-155.57		-59.8	-27.2	65.7	58.8	6.91	9.501	
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	-155.57		-59.8	-27.2	65.7	58.3	7.36	8.921	
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	-155.57		-59.8	-27.2	65.7	57.9	7.81	8.407	
1,900.0	1,900.0	1,900.0	1,900.0	4.1	4.1	-155.57		-59.8	-27.2	65.7	57.4	8.26	7.950	
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	-155.57		-59.8	-27.2	65.7	57.0	8.71	7.540	
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	-155.57		-59.8	-27.2	65.7	56.5	9.16	7.170	
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	-155.57		-59.8	-27.2	65.7	56.1	9.61	6.834	
2,300.0	2,300.0	2,300.0	2,300.0	5.0	5.0	-155.57		-59.8	-27.2	65.7	55.6	10.06	6.529	
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	-155.57		-59.8	-27.2	65.7	55.2	10.51	6.249	
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	-155.57		-59.8	-27.2	65.7	54.7	10.96	5.993 CC	
2,600.0	2,600.0	2,598.9	2,598.9	5.7	5.7	117.07		-59.8	-28.9	67.2	55.8	11.38	5.904	
2,650.0	2,649.9	2,648.2	2,648.1	5.8	5.8	120.18		-59.8	-31.0	69.3	57.7	11.57	5.984	
2,700.0	2,699.9	2,697.9	2,697.8	5.9	5.9	123.76		-59.8	-33.6	72.0	60.3	11.78	6.118	
2,800.0	2,799.7	2,797.3	2,797.1	6.1	6.1	130.11		-59.8	-38.8	78.4	66.2	12.18	6.433	
2,900.0	2,899.6	2,896.8	2,896.4	6.3	6.3	135.46		-59.8	-44.0	85.5	72.9	12.59	6.792	
3,000.0	2,999.5	2,996.3	2,995.7	6.5	6.5	139.96		-59.8	-49.2	93.2	80.2	12.99	7.176	
3,100.0	3,099.3	3,095.7	3,095.0	6.7	6.7	143.75		-59.8	-54.4	101.5	88.1	13.40	7.572	
3,200.0	3,199.2	3,195.2	3,194.3	7.0	6.9	146.97		-59.8	-59.6	110.1	96.3	13.81	7.970	
3,300.0	3,299.0	3,294.6	3,293.7	7.2	7.2	149.71		-59.8	-64.8	119.0	104.8	14.23	8.365	
3,400.0	3,398.9	3,394.1	3,393.0	7.4	7.4	152.06		-59.8	-70.0	128.2	113.5	14.64	8.752	
3,501.2	3,500.0	3,494.7	3,493.5	7.6	7.6	154.13		-59.8	-75.3	137.6	122.5	15.07	9.133	
3,600.0	3,598.7	3,597.5	3,596.2	7.8	7.8	155.46		-59.8	-79.1	144.0	128.5	15.48	9.301	
3,651.2	3,649.9	3,651.2	3,649.9	7.9	7.9	-114.37		-59.8	-79.6	144.9	129.2	15.71	9.220	
3,700.0	3,698.7	3,700.0	3,698.7	8.0	8.0	-114.37		-59.8	-79.6	144.9	129.0	15.92	9.103	
3,800.0	3,798.7	3,800.0	3,798.7	8.2	8.2	-114.37		-59.8	-79.6	144.9	128.5	16.36	8.856	
3,900.0	3,898.7	3,900.0	3,898.7	8.5	8.5	-114.37		-59.8	-79.6	144.9	128.1	16.80	8.622	
4,000.0	3,998.7	4,000.0	3,998.7	8.7	8.7	-114.37		-59.8	-79.6	144.9	127.6	17.25	8.400	
4,100.0	4,098.7	4,100.0	4,098.7	8.9	8.9	-114.37		-59.8	-79.6	144.9	127.2	17.69	8.189	
4,200.0	4,198.7	4,200.0	4,198.7	9.1	9.1	-114.37		-59.8	-79.6	144.9	126.7	18.14	7.988	
4,300.0	4,298.7	4,300.0	4,298.7	9.4	9.4	-114.37		-59.8	-79.6	144.9	126.3	18.58	7.797	
4,400.0	4,398.7	4,400.0	4,398.7	9.6	9.6	-114.37		-59.8	-79.6	144.9	125.8	19.03	7.614	
4,500.0	4,498.7	4,500.0	4,498.7	9.8	9.8	-114.37		-59.8	-79.6	144.9	125.4	19.47	7.440	
4,600.0	4,598.7	4,600.0	4,598.7	10.0	10.0	-114.37		-59.8	-79.6	144.9	125.0	19.92	7.274	
4,700.0	4,698.7	4,700.0	4,698.7	10.2	10.2	-114.37		-59.8	-79.6	144.9	124.5	20.36	7.114	
4,800.0	4,798.7	4,800.0	4,798.7	10.5	10.5	-114.37		-59.8	-79.6	144.9	124.1	20.81	6.962	
4,900.0	4,898.7	4,900.0	4,898.7	10.7	10.7	-114.37		-59.8	-79.6	144.9	123.6	21.26	6.816	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



**Gyrodta, Inc.**  
Anticollision Report



<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 11-18 3T - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,998.7	5,000.0	4,998.7	10.9	10.9	-114.37	-59.8	-79.6	144.9	123.2	21.70	6.676	
5,100.0	5,098.7	5,100.0	5,098.7	11.1	11.1	-114.37	-59.8	-79.6	144.9	122.7	22.15	6.541	
5,200.0	5,198.7	5,200.0	5,198.7	11.4	11.4	-114.37	-59.8	-79.6	144.9	122.3	22.59	6.412	
5,300.0	5,298.7	5,300.0	5,298.7	11.6	11.6	-114.37	-59.8	-79.6	144.9	121.8	23.04	6.288	
5,400.0	5,398.7	5,400.0	5,398.7	11.8	11.8	-114.37	-59.8	-79.6	144.9	121.4	23.49	6.168	
5,500.0	5,498.7	5,500.0	5,498.7	12.0	12.0	-114.37	-59.8	-79.6	144.9	120.9	23.94	6.053	
5,600.0	5,598.7	5,600.0	5,598.7	12.2	12.2	-114.37	-59.8	-79.6	144.9	120.5	24.38	5.942	
5,700.0	5,698.7	5,700.0	5,698.7	12.5	12.5	-114.37	-59.8	-79.6	144.9	120.0	24.83	5.835	
5,800.0	5,798.7	5,800.0	5,798.7	12.7	12.7	-114.37	-59.8	-79.6	144.9	119.6	25.28	5.732	
5,900.0	5,898.7	5,900.0	5,898.7	12.9	12.9	-114.37	-59.8	-79.6	144.9	119.2	25.72	5.632	
6,000.0	5,998.7	6,000.0	5,998.7	13.1	13.1	-114.37	-59.8	-79.6	144.9	118.7	26.17	5.536	
6,100.0	6,098.7	6,100.0	6,098.7	13.4	13.4	-114.37	-59.8	-79.6	144.9	118.3	26.62	5.443	
6,200.0	6,198.7	6,200.0	6,198.7	13.6	13.6	-114.37	-59.8	-79.6	144.9	117.8	27.07	5.353	
6,300.0	6,298.7	6,300.0	6,298.7	13.8	13.8	-114.37	-59.8	-79.6	144.9	117.4	27.51	5.266	
6,400.0	6,398.7	6,400.0	6,398.7	14.0	14.0	-114.37	-59.8	-79.6	144.9	116.9	27.96	5.181	
6,500.0	6,498.7	6,500.0	6,498.7	14.3	14.3	-114.37	-59.8	-79.6	144.9	116.5	28.41	5.100	
6,600.0	6,598.7	6,600.0	6,598.7	14.5	14.5	-114.37	-59.8	-79.6	144.9	116.0	28.86	5.021	
6,700.0	6,698.7	6,700.0	6,698.7	14.7	14.7	-114.37	-59.8	-79.6	144.9	115.6	29.30	4.944	
6,800.0	6,798.7	6,800.0	6,798.7	14.9	14.9	-114.37	-59.8	-79.6	144.9	115.1	29.75	4.870	
6,900.0	6,898.7	6,900.0	6,898.7	15.2	15.2	-114.37	-59.8	-79.6	144.9	114.7	30.20	4.797	
7,000.0	6,998.7	7,000.0	6,998.7	15.4	15.4	-114.37	-59.8	-79.6	144.9	114.2	30.65	4.727	
7,100.0	7,098.7	7,100.0	7,098.7	15.6	15.6	-114.37	-59.8	-79.6	144.9	113.8	31.09	4.659	
7,200.0	7,198.7	7,200.0	7,198.7	15.8	15.8	-114.37	-59.8	-79.6	144.9	113.3	31.54	4.593	
7,300.0	7,298.7	7,300.0	7,298.7	16.0	16.0	-114.37	-59.8	-79.6	144.9	112.9	31.99	4.529	
7,400.0	7,398.7	7,400.0	7,398.7	16.3	16.3	-114.37	-59.8	-79.6	144.9	112.4	32.44	4.466	
7,500.0	7,498.7	7,500.0	7,498.7	16.5	16.5	-114.37	-59.8	-79.6	144.9	112.0	32.89	4.405	
7,600.0	7,598.7	7,600.0	7,598.7	16.7	16.7	-114.37	-59.8	-79.6	144.9	111.5	33.34	4.346	
7,700.0	7,698.7	7,700.0	7,698.7	16.9	16.9	-114.37	-59.8	-79.6	144.9	111.1	33.78	4.288	
7,800.0	7,798.7	7,800.0	7,798.7	17.2	17.2	-114.37	-59.8	-79.6	144.9	110.6	34.23	4.232	
7,900.0	7,898.7	7,900.0	7,898.7	17.4	17.4	-114.37	-59.8	-79.6	144.9	110.2	34.68	4.178	
8,000.0	7,998.7	8,000.0	7,998.7	17.6	17.6	-114.37	-59.8	-79.6	144.9	109.7	35.13	4.124	
8,100.0	8,098.7	8,100.0	8,098.7	17.8	17.8	-114.37	-59.8	-79.6	144.9	109.3	35.58	4.072	
8,200.0	8,198.7	8,200.0	8,198.7	18.1	18.1	-114.37	-59.8	-79.6	144.9	108.9	36.02	4.022	
8,300.0	8,298.7	8,300.0	8,298.7	18.3	18.3	-114.37	-59.8	-79.6	144.9	108.4	36.47	3.972	
8,400.0	8,398.7	8,400.0	8,398.7	18.5	18.5	-114.37	-59.8	-79.6	144.9	108.0	36.92	3.924	
8,500.0	8,498.7	8,500.0	8,498.7	18.7	18.7	-114.37	-59.8	-79.6	144.9	107.5	37.37	3.877	
8,600.0	8,598.7	8,600.0	8,598.7	19.0	19.0	-114.37	-59.8	-79.6	144.9	107.1	37.82	3.831	
8,700.0	8,698.7	8,700.0	8,698.7	19.2	19.2	-114.37	-59.8	-79.6	144.9	106.6	38.27	3.786	
8,800.0	8,798.7	8,800.0	8,798.7	19.4	19.4	-114.37	-59.8	-79.6	144.9	106.2	38.72	3.742	
8,900.0	8,898.7	8,900.0	8,898.7	19.6	19.6	-114.37	-59.8	-79.6	144.9	105.7	39.16	3.699	
9,000.0	8,998.7	9,000.0	8,998.7	19.9	19.9	-114.37	-59.8	-79.6	144.9	105.3	39.61	3.657	
9,100.0	9,098.7	9,100.0	9,098.7	20.1	20.1	-114.37	-59.8	-79.6	144.9	104.8	40.06	3.616	
9,200.0	9,198.7	9,200.0	9,198.7	20.3	20.3	-114.37	-59.8	-79.6	144.9	104.4	40.51	3.576	
9,300.0	9,298.7	9,300.0	9,298.7	20.5	20.5	-114.37	-59.8	-79.6	144.9	103.9	40.96	3.537	
9,400.0	9,398.7	9,400.0	9,398.7	20.8	20.8	-114.37	-59.8	-79.6	144.9	103.5	41.41	3.499	
9,500.0	9,498.7	9,500.0	9,498.7	21.0	21.0	-114.37	-59.8	-79.6	144.9	103.0	41.86	3.461	
9,600.0	9,598.7	9,600.0	9,598.7	21.2	21.2	-114.37	-59.8	-79.6	144.9	102.6	42.30	3.425	
9,700.0	9,698.7	9,700.0	9,698.7	21.4	21.4	-114.37	-59.8	-79.6	144.9	102.1	42.75	3.389	
9,800.0	9,798.7	9,800.0	9,798.7	21.6	21.6	-114.37	-59.8	-79.6	144.9	101.7	43.20	3.353	
9,900.0	9,898.7	9,900.0	9,898.7	21.9	21.9	-114.37	-59.8	-79.6	144.9	101.2	43.65	3.319	
10,000.0	9,998.7	10,000.0	9,998.7	22.1	22.1	-114.37	-59.8	-79.6	144.9	100.8	44.10	3.285	
10,100.0	10,098.7	10,100.0	10,098.7	22.3	22.3	-114.37	-59.8	-79.6	144.9	100.3	44.55	3.252	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



**Gyrodata, Inc.**  
Anticollision Report



<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 11-18 3T - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft
Survey Program: 0-MWD				Distance								Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
10,200.0	10,198.7	10,200.0	10,198.7	22.5	22.5	-114.37		-59.8	-79.6	144.9	99.9	45.00	3.220
10,300.0	10,298.7	10,300.0	10,298.7	22.8	22.8	-114.37		-59.8	-79.6	144.9	99.4	45.45	3.188
10,363.3	10,362.0	10,366.1	10,364.8	22.9	22.9	-114.72		-60.5	-78.9	144.6	98.9	45.72	3.163
10,375.0	10,373.7	10,379.0	10,377.7	22.9	22.9	124.99		-61.2	-78.3	144.4	98.7	45.76	3.156
10,400.0	10,398.7	10,406.5	10,404.9	23.0	23.0	124.24		-63.5	-76.1	144.3	98.4	45.83	3.148
10,400.5	10,399.1	10,407.0	10,405.4	23.0	23.0	124.22		-63.6	-76.0	144.3	98.4	45.83	3.148
10,425.0	10,423.5	10,433.8	10,431.8	23.0	23.0	123.34		-67.0	-72.8	144.4	98.5	45.87	3.148
10,450.0	10,448.2	10,461.0	10,458.3	23.1	23.1	122.29		-71.6	-68.6	144.9	99.0	45.90	3.158
10,475.0	10,472.7	10,488.0	10,484.1	23.1	23.1	121.11		-77.2	-63.3	145.8	99.9	45.91	3.176
10,500.0	10,496.8	10,514.8	10,509.4	23.2	23.2	119.82		-83.8	-57.2	147.0	101.1	45.93	3.202
10,525.0	10,520.6	10,541.4	10,533.9	23.3	23.2	118.42		-91.4	-50.1	148.7	102.7	45.94	3.236
10,550.0	10,544.0	10,567.8	10,557.6	23.3	23.3	116.94		-99.9	-42.1	150.7	104.7	45.98	3.277
10,575.0	10,566.8	10,594.0	10,580.4	23.4	23.3	115.38		-109.3	-33.4	153.1	107.1	46.03	3.326
10,600.0	10,589.1	10,620.0	10,602.3	23.5	23.4	113.77		-119.5	-23.9	155.9	109.8	46.10	3.381
10,625.0	10,610.8	10,645.7	10,623.3	23.5	23.4	112.13		-130.5	-13.7	159.1	112.9	46.21	3.443
10,650.0	10,631.8	10,671.3	10,643.2	23.6	23.5	110.45		-142.1	-2.8	162.7	116.3	46.35	3.510
10,675.0	10,652.0	10,696.6	10,662.1	23.7	23.5	108.77		-154.4	8.7	166.6	120.1	46.53	3.581
10,700.0	10,671.5	10,721.7	10,680.0	23.8	23.6	107.08		-167.3	20.7	171.0	124.2	46.74	3.658
10,725.0	10,690.1	10,746.5	10,696.7	23.9	23.7	105.41		-180.8	33.3	175.7	128.7	46.99	3.739
10,750.0	10,707.8	10,771.2	10,712.3	24.0	23.8	103.75		-194.7	46.3	180.7	133.4	47.27	3.823
10,775.0	10,724.5	10,795.6	10,726.8	24.1	23.9	102.12		-209.1	59.7	186.1	138.5	47.57	3.911
10,800.0	10,740.3	10,819.9	10,740.2	24.3	24.0	100.52		-223.9	73.5	191.7	143.8	47.91	4.002
10,825.0	10,755.0	10,843.9	10,752.4	24.4	24.1	98.95		-239.0	87.6	197.6	149.4	48.26	4.095
10,850.0	10,768.7	10,867.8	10,763.5	24.6	24.3	97.43		-254.5	102.0	203.8	155.2	48.63	4.191
10,875.0	10,781.2	10,891.5	10,773.4	24.8	24.4	95.94		-270.2	116.6	210.2	161.2	49.03	4.288
10,900.0	10,792.6	10,915.0	10,782.2	25.0	24.6	94.50		-286.1	131.5	216.9	167.4	49.43	4.387
10,925.0	10,802.8	10,938.3	10,789.9	25.2	24.8	93.11		-302.3	146.6	223.7	173.8	49.85	4.487
10,950.0	10,811.8	10,961.6	10,796.5	25.4	24.9	91.76		-318.6	161.8	230.6	180.3	50.27	4.587
10,975.0	10,819.6	10,984.7	10,801.9	25.7	25.1	90.46		-335.0	177.1	237.7	187.0	50.71	4.688
11,000.0	10,826.1	11,007.6	10,806.2	25.9	25.3	89.21		-351.5	192.5	244.9	193.7	51.15	4.788
11,025.0	10,831.3	11,030.5	10,809.5	26.2	25.6	88.00		-368.0	207.9	252.2	200.6	51.60	4.887
11,050.0	10,835.3	11,053.3	10,811.6	26.5	25.8	86.84		-384.6	223.4	259.5	207.5	52.05	4.986
11,075.0	10,837.9	11,076.0	10,812.6	26.8	26.0	85.72		-401.2	238.8	266.9	214.4	52.52	5.082
11,100.0	10,839.3	11,099.5	10,812.8	27.1	26.3	84.70		-418.4	254.9	274.3	221.3	53.00	5.175
11,110.8	10,839.5	11,111.6	10,812.9	27.2	26.4	84.36		-427.2	263.1	277.4	224.1	53.25	5.210
11,125.8	10,839.5	11,128.4	10,813.0	27.4	26.6	84.46		-439.4	274.7	281.6	228.0	53.63	5.251
11,200.0	10,839.9	11,212.5	10,813.4	28.5	27.7	84.86		-498.7	334.4	301.9	246.3	55.62	5.428
11,300.0	10,840.5	11,327.8	10,814.1	30.1	29.4	85.31		-575.7	420.2	328.7	270.0	58.69	5.601
11,400.0	10,841.0	11,445.4	10,814.7	31.9	31.4	85.69		-648.6	512.3	354.7	292.6	62.09	5.713
11,500.0	10,841.5	11,565.1	10,815.4	33.9	33.6	86.00		-717.0	610.7	379.8	314.0	65.75	5.776
11,600.0	10,842.1	11,687.2	10,816.1	36.0	36.1	86.28		-780.2	715.0	403.8	334.2	69.60	5.801
11,700.0	10,842.6	11,811.5	10,816.8	38.1	38.7	86.51		-837.6	825.3	426.6	353.0	73.62	5.795
11,800.0	10,843.2	11,938.1	10,817.5	40.4	41.5	86.71		-888.5	941.2	448.1	370.4	77.73	5.765
11,900.0	10,843.7	12,066.9	10,818.2	42.7	44.5	86.88		-932.3	1,062.3	468.3	386.4	81.88	5.719
12,000.0	10,844.2	12,197.9	10,819.0	45.0	47.6	87.03		-968.4	1,188.1	486.9	400.8	86.02	5.660
12,100.0	10,844.8	12,330.9	10,819.7	47.4	50.7	87.16		-996.2	1,318.2	503.8	413.7	90.14	5.589
12,110.4	10,844.8	12,344.9	10,819.8	47.6	51.0	87.17		-998.6	1,332.0	505.5	414.9	90.56	5.582
12,200.0	10,845.3	12,466.2	10,820.5	49.8	53.9	87.26		-1,015.0	1,452.1	516.9	421.1	95.79	5.396
12,300.0	10,845.8	12,603.3	10,821.2	52.2	57.1	87.31		-1,024.4	1,588.9	523.0	421.2	101.80	5.137
12,400.0	10,846.3	12,717.6	10,821.8	54.7	59.8	87.31		-1,025.7	1,703.2	523.2	415.9	107.33	4.875
12,500.0	10,846.8	12,817.6	10,822.3	57.3	62.2	87.31		-1,026.3	1,803.2	522.9	410.4	112.56	4.646
12,600.0	10,847.4	12,917.6	10,822.8	59.9	64.6	87.31		-1,026.8	1,903.2	522.7	404.8	117.85	4.435

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



**Gyrodata, Inc.**  
Anticollision Report



<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 11-18 3T - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft	
Survey Program: 0-MWD												Offset Well Error:	0.0 usft	
Reference		Offset		Semi Major Axis				Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	(°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,700.0	10,847.9	13,017.6	10,823.4	62.5	67.1	87.31	-1,027.3	2,003.2	522.4	399.2	123.20	4.240		
12,800.0	10,848.4	13,117.6	10,823.9	65.1	69.6	87.31	-1,027.9	2,103.2	522.1	393.5	128.59	4.060		
12,900.0	10,848.9	13,217.6	10,824.4	67.8	72.1	87.30	-1,028.4	2,203.2	521.8	387.8	134.01	3.894		
13,000.0	10,849.5	13,317.6	10,824.9	70.4	74.7	87.30	-1,028.9	2,303.2	521.6	382.1	139.47	3.740		
13,100.0	10,850.0	13,417.6	10,825.5	73.1	77.3	87.30	-1,029.5	2,403.2	521.3	376.3	144.97	3.596		
13,200.0	10,850.5	13,517.6	10,826.0	75.9	79.9	87.30	-1,030.0	2,503.2	521.0	370.5	150.49	3.462		
13,300.0	10,851.0	13,617.6	10,826.5	78.6	82.6	87.30	-1,030.5	2,603.2	520.7	364.7	156.03	3.337		
13,400.0	10,851.6	13,717.6	10,827.0	81.3	85.2	87.30	-1,031.0	2,703.2	520.5	358.9	161.60	3.221		
13,500.0	10,852.1	13,817.6	10,827.6	84.1	87.9	87.30	-1,031.6	2,803.2	520.2	353.0	167.18	3.112		
13,600.0	10,852.6	13,917.6	10,828.1	86.9	90.6	87.29	-1,032.1	2,903.1	519.9	347.1	172.79	3.009		
13,700.0	10,853.1	14,017.6	10,828.6	89.6	93.3	87.29	-1,032.6	3,003.1	519.6	341.2	178.41	2.913		
13,800.0	10,853.7	14,117.6	10,829.1	92.4	96.0	87.29	-1,033.2	3,103.1	519.4	335.3	184.04	2.822		
13,900.0	10,854.2	14,217.6	10,829.6	95.2	98.7	87.29	-1,033.7	3,203.1	519.1	329.4	189.69	2.737		
14,000.0	10,854.7	14,317.6	10,830.2	98.0	101.5	87.29	-1,034.2	3,303.1	518.8	323.5	195.35	2.656		
14,100.0	10,855.2	14,417.6	10,830.7	100.8	104.2	87.29	-1,034.7	3,403.1	518.6	317.5	201.03	2.580		
14,200.0	10,855.7	14,517.6	10,831.2	103.7	107.0	87.29	-1,035.3	3,503.1	518.3	311.6	206.71	2.507		
14,300.0	10,856.3	14,617.6	10,831.7	106.5	109.8	87.28	-1,035.8	3,603.1	518.0	305.6	212.40	2.439		
14,400.0	10,856.8	14,717.6	10,832.3	109.3	112.6	87.28	-1,036.3	3,703.1	517.7	299.6	218.10	2.374		
14,500.0	10,857.3	14,817.6	10,832.8	112.2	115.3	87.28	-1,036.9	3,803.1	517.5	293.6	223.81	2.312		
14,600.0	10,857.8	14,917.6	10,833.3	115.0	118.1	87.28	-1,037.4	3,903.1	517.2	287.7	229.52	2.253		
14,700.0	10,858.4	15,017.6	10,833.8	117.9	120.9	87.28	-1,037.9	4,003.1	516.9	281.7	235.25	2.197		
14,800.0	10,858.9	15,117.6	10,834.4	120.7	123.7	87.28	-1,038.5	4,103.1	516.6	275.7	240.98	2.144		
14,900.0	10,859.4	15,217.6	10,834.9	123.6	126.6	87.28	-1,039.0	4,203.1	516.4	269.6	246.71	2.093		
15,000.0	10,859.9	15,317.6	10,835.4	126.4	129.4	87.27	-1,039.5	4,303.1	516.1	263.6	252.45	2.044		
15,100.0	10,860.5	15,417.6	10,835.9	129.3	132.2	87.27	-1,040.0	4,403.1	515.8	257.6	258.20	1.998		
15,200.0	10,861.0	15,517.6	10,836.5	132.1	135.0	87.27	-1,040.6	4,503.1	515.5	251.6	263.95	1.953		
15,300.0	10,861.5	15,617.6	10,837.0	135.0	137.9	87.27	-1,041.1	4,603.1	515.3	245.6	269.70	1.910		
15,400.0	10,862.0	15,717.6	10,837.5	137.9	140.7	87.27	-1,041.6	4,703.1	515.0	239.5	275.46	1.870		
15,500.0	10,862.6	15,817.6	10,838.0	140.7	143.5	87.27	-1,042.2	4,803.1	514.7	233.5	281.23	1.830		
15,600.0	10,863.1	15,917.6	10,838.5	143.6	146.4	87.27	-1,042.7	4,903.1	514.4	227.4	286.99	1.792		
15,700.0	10,863.6	16,017.6	10,839.1	146.5	149.2	87.26	-1,043.2	5,003.1	514.2	221.4	292.76	1.756		
15,800.0	10,864.1	16,117.6	10,839.6	149.4	152.1	87.26	-1,043.7	5,103.1	513.9	215.3	298.54	1.721		
15,900.0	10,864.7	16,217.6	10,840.1	152.3	154.9	87.26	-1,044.3	5,203.1	513.6	209.3	304.31	1.688		
16,000.0	10,865.2	16,317.6	10,840.6	155.1	157.8	87.26	-1,044.8	5,303.1	513.3	203.2	310.09	1.655		
16,100.0	10,865.7	16,417.6	10,841.2	158.0	160.6	87.26	-1,045.3	5,403.1	513.1	197.2	315.88	1.624		
16,200.0	10,866.2	16,517.6	10,841.7	160.9	163.5	87.26	-1,045.9	5,503.1	512.8	191.1	321.66	1.594		
16,300.0	10,866.7	16,617.6	10,842.2	163.8	166.4	87.26	-1,046.4	5,603.1	512.5	185.1	327.45	1.565		
16,400.0	10,867.3	16,717.6	10,842.7	166.7	169.2	87.25	-1,046.9	5,703.1	512.2	179.0	333.24	1.537		
16,500.0	10,867.8	16,817.6	10,843.3	169.6	172.1	87.25	-1,047.5	5,803.1	512.0	172.9	339.03	1.510		
16,600.0	10,868.3	16,917.6	10,843.8	172.5	175.0	87.25	-1,048.0	5,903.1	511.7	166.9	344.83	1.484 Level 3		
16,700.0	10,868.8	17,017.6	10,844.3	175.4	177.8	87.25	-1,048.5	6,003.1	511.4	160.8	350.63	1.459 Level 3		
16,800.0	10,869.4	17,117.6	10,844.8	178.3	180.7	87.25	-1,049.0	6,103.0	511.1	154.7	356.42	1.434 Level 3		
16,900.0	10,869.9	17,217.6	10,845.4	181.2	183.6	87.25	-1,049.6	6,203.0	510.9	148.6	362.22	1.410 Level 3		
17,000.0	10,870.4	17,317.6	10,845.9	184.1	186.5	87.25	-1,050.1	6,303.0	510.6	142.6	368.03	1.387 Level 3		
17,100.0	10,870.9	17,417.6	10,846.4	187.0	189.4	87.24	-1,050.6	6,403.0	510.3	136.5	373.83	1.365 Level 3		
17,200.0	10,871.5	17,517.6	10,846.9	189.9	192.2	87.24	-1,051.2	6,503.0	510.0	130.4	379.64	1.344 Level 3		
17,300.0	10,872.0	17,617.6	10,847.4	192.8	195.1	87.24	-1,051.7	6,603.0	509.8	124.3	385.44	1.323 Level 3		
17,400.0	10,872.5	17,717.6	10,848.0	195.7	198.0	87.24	-1,052.2	6,703.0	509.5	118.2	391.25	1.302 Level 3		
17,500.0	10,873.0	17,817.6	10,848.5	198.6	200.9	87.24	-1,052.7	6,803.0	509.2	112.2	397.06	1.282 Level 3		
17,600.0	10,873.6	17,917.6	10,849.0	201.5	203.8	87.24	-1,053.3	6,903.0	508.9	106.1	402.87	1.263 Level 3		
17,700.0	10,874.1	18,017.6	10,849.5	204.4	206.7	87.23	-1,053.8	7,003.0	508.7	100.0	408.68	1.245 Level 2		
17,800.0	10,874.6	18,117.6	10,850.1	207.3	209.5	87.23	-1,054.3	7,103.0	508.4	93.9	414.50	1.227 Level 2		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 11-18 3T - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,900.0	10,875.1	18,217.6	10,850.6	210.2	212.4	87.23	-1,054.9	7,203.0	508.1	87.8	420.31	1.209	Level 2
18,000.0	10,875.6	18,317.6	10,851.1	213.1	215.3	87.23	-1,055.4	7,303.0	507.8	81.7	426.13	1.192	Level 2
18,100.0	10,876.2	18,417.6	10,851.6	216.0	218.2	87.23	-1,055.9	7,403.0	507.6	75.6	431.94	1.175	Level 2
18,200.0	10,876.7	18,517.6	10,852.2	218.9	221.1	87.23	-1,056.5	7,503.0	507.3	69.5	437.76	1.159	Level 2
18,300.0	10,877.2	18,617.6	10,852.7	221.8	224.0	87.23	-1,057.0	7,603.0	507.0	63.4	443.58	1.143	Level 2
18,400.0	10,877.7	18,717.6	10,853.2	224.7	226.9	87.22	-1,057.5	7,703.0	506.8	57.3	449.40	1.128	Level 2
18,500.0	10,878.3	18,817.6	10,853.7	227.6	229.8	87.22	-1,058.0	7,803.0	506.5	51.3	455.22	1.113	Level 2
18,600.0	10,878.8	18,917.6	10,854.3	230.5	232.7	87.22	-1,058.6	7,903.0	506.2	45.2	461.04	1.098	Level 2
18,700.0	10,879.3	19,017.6	10,854.8	233.4	235.6	87.22	-1,059.1	8,003.0	505.9	39.1	466.87	1.084	Level 2
18,800.0	10,879.8	19,117.6	10,855.3	236.4	238.5	87.22	-1,059.6	8,103.0	505.7	33.0	472.69	1.070	Level 2
18,900.0	10,880.4	19,217.6	10,855.8	239.3	241.4	87.22	-1,060.2	8,203.0	505.4	26.9	478.51	1.056	Level 2
19,000.0	10,880.9	19,317.6	10,856.3	242.2	244.3	87.22	-1,060.7	8,303.0	505.1	20.8	484.34	1.043	Level 2
19,100.0	10,881.4	19,417.6	10,856.9	245.1	247.2	87.21	-1,061.2	8,403.0	504.8	14.7	490.16	1.030	Level 2
19,200.0	10,881.9	19,517.6	10,857.4	248.0	250.1	87.21	-1,061.7	8,503.0	504.6	8.6	495.99	1.017	Level 2
19,300.0	10,882.5	19,617.6	10,857.9	250.9	253.0	87.21	-1,062.3	8,603.0	504.3	2.5	501.82	1.005	Level 2
19,400.0	10,883.0	19,717.6	10,858.4	253.8	255.9	87.21	-1,062.8	8,703.0	504.0	-3.6	507.64	0.993	Level 1
19,500.0	10,883.5	19,817.6	10,859.0	256.7	258.8	87.21	-1,063.3	8,803.0	503.7	-9.7	513.47	0.981	Level 1
19,600.0	10,884.0	19,917.6	10,859.5	259.7	261.7	87.21	-1,063.9	8,903.0	503.5	-15.8	519.30	0.969	Level 1
19,700.0	10,884.5	20,017.6	10,860.0	262.6	264.6	87.20	-1,064.4	9,003.0	503.2	-21.9	525.13	0.958	Level 1
19,800.0	10,885.1	20,117.6	10,860.5	265.5	267.5	87.20	-1,064.9	9,103.0	502.9	-28.1	530.96	0.947	Level 1
19,900.0	10,885.6	20,217.6	10,861.1	268.4	270.4	87.20	-1,065.5	9,202.9	502.6	-34.2	536.79	0.936	Level 1
20,000.0	10,886.1	20,317.6	10,861.6	271.3	273.3	87.20	-1,066.0	9,302.9	502.4	-40.3	542.62	0.926	Level 1
20,100.0	10,886.6	20,417.6	10,862.1	274.2	276.2	87.20	-1,066.5	9,402.9	502.1	-46.4	548.45	0.915	Level 1
20,200.0	10,887.2	20,517.6	10,862.6	277.2	279.2	87.20	-1,067.0	9,502.9	501.8	-52.5	554.28	0.905	Level 1
20,300.0	10,887.7	20,617.6	10,863.2	280.1	282.1	87.20	-1,067.6	9,602.9	501.5	-58.6	560.12	0.895	Level 1
20,400.0	10,888.2	20,717.6	10,863.7	283.0	285.0	87.19	-1,068.1	9,702.9	501.3	-64.7	565.95	0.886	Level 1
20,500.0	10,888.7	20,817.6	10,864.2	285.9	287.9	87.19	-1,068.6	9,802.9	501.0	-70.8	571.78	0.876	Level 1
20,600.0	10,889.3	20,917.6	10,864.7	288.8	290.8	87.19	-1,069.2	9,902.9	500.7	-76.9	577.62	0.867	Level 1
20,700.0	10,889.8	21,017.6	10,865.3	291.7	293.7	87.19	-1,069.7	10,002.9	500.4	-83.0	583.45	0.858	Level 1
20,717.6	10,889.9	21,035.1	10,865.3	292.3	294.2	87.19	-1,069.8	10,020.5	500.4	-84.1	584.47	0.856	Level 1, ES, SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 11-18H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 usft
Survey Program: 2175-MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
200.0	200.0	2,090.0	2,090.0	0.3	0.0	-157.01	-30.4	-12.9	1,914.3	1,914.0	0.31	6,190.021	
300.0	300.0	2,090.0	2,090.0	0.5	0.0	-157.01	-30.4	-12.9	1,814.3	1,813.8	0.53	3,397.443	
400.0	400.0	2,090.0	2,090.0	0.8	0.0	-157.01	-30.4	-12.9	1,714.3	1,713.6	0.76	2,259.292	
500.0	500.0	2,090.0	2,090.0	1.0	0.0	-157.01	-30.4	-12.9	1,614.3	1,613.4	0.98	1,641.335	
600.0	600.0	2,090.0	2,090.0	1.2	0.0	-157.01	-30.4	-12.9	1,514.4	1,513.2	1.21	1,253.280	
700.0	700.0	2,090.0	2,090.0	1.4	0.0	-157.01	-30.4	-12.9	1,414.4	1,413.0	1.43	986.953	
800.0	800.0	2,090.0	2,090.0	1.7	0.0	-157.01	-30.4	-12.9	1,314.4	1,312.8	1.66	792.843	
900.0	900.0	2,090.0	2,090.0	1.9	0.0	-157.01	-30.4	-12.9	1,214.4	1,212.6	1.88	645.086	
1,000.0	1,000.0	2,090.0	2,090.0	2.1	0.0	-157.01	-30.4	-12.9	1,114.5	1,112.4	2.11	528.850	
1,100.0	1,100.0	2,090.0	2,090.0	2.3	0.0	-157.01	-30.4	-12.9	1,014.5	1,012.2	2.33	435.023	
1,200.0	1,200.0	2,090.0	2,090.0	2.6	0.0	-157.01	-30.4	-12.9	914.6	912.0	2.56	357.696	
1,300.0	1,300.0	2,090.0	2,090.0	2.8	0.0	-157.01	-30.4	-12.9	814.7	811.9	2.78	292.870	
1,400.0	1,400.0	2,090.0	2,090.0	3.0	0.0	-157.01	-30.4	-12.9	714.8	711.8	3.01	237.744	
1,500.0	1,500.0	2,090.0	2,090.0	3.2	0.0	-157.01	-30.4	-12.9	614.9	611.7	3.23	190.296	
1,600.0	1,600.0	2,090.0	2,090.0	3.5	0.0	-157.01	-30.4	-12.9	515.1	511.6	3.46	149.035	
1,700.0	1,700.0	2,090.0	2,090.0	3.7	0.0	-157.01	-30.4	-12.9	415.3	411.6	3.68	112.835	
1,800.0	1,800.0	2,090.0	2,090.0	3.9	0.0	-157.01	-30.4	-12.9	315.7	311.8	3.91	80.843	
1,900.0	1,900.0	2,090.0	2,090.0	4.1	0.0	-157.01	-30.4	-12.9	216.5	212.4	4.13	52.426	
2,000.0	2,000.0	2,090.0	2,090.0	4.4	0.0	-157.01	-30.4	-12.9	118.7	114.3	4.36	27.253	
2,100.0	2,100.0	2,090.0	2,090.0	4.6	0.0	-157.01	-30.4	-12.9	35.9	31.3	4.58	7.833	
2,132.6	2,132.6	2,108.5	2,108.5	4.7	0.0	-157.04	-30.4	-12.9	33.1	28.4	4.67	7.073 CC	
2,200.0	2,200.0	2,175.5	2,175.5	4.8	0.1	-157.59	-31.2	-12.8	33.7	28.8	4.90	6.873	
2,300.0	2,300.0	2,275.5	2,275.5	5.0	0.3	-158.55	-32.8	-12.9	35.2	29.9	5.34	6.600	
2,400.0	2,400.0	2,375.5	2,375.5	5.3	0.5	-158.59	-34.1	-13.4	36.7	30.9	5.78	6.346	
2,500.0	2,500.0	2,475.6	2,475.6	5.5	0.7	-157.20	-34.9	-14.7	37.9	31.7	6.23	6.089	
2,600.0	2,600.0	2,575.7	2,575.6	5.7	1.0	117.42	-35.2	-16.5	39.7	33.0	6.65	5.963	
2,650.0	2,649.9	2,625.6	2,625.5	5.8	1.1	121.61	-35.1	-17.7	41.2	34.4	6.86	6.010	
2,700.0	2,699.9	2,675.3	2,675.2	5.9	1.2	126.36	-34.8	-19.2	43.3	36.2	7.07	6.123	
2,800.0	2,799.7	2,775.0	2,774.8	6.1	1.4	135.09	-34.3	-22.7	48.7	41.2	7.49	6.500	
2,900.0	2,899.6	2,875.5	2,875.3	6.3	1.6	141.31	-33.4	-24.8	53.5	45.6	7.90	6.776	
3,000.0	2,999.5	2,975.0	2,974.8	6.5	1.8	146.23	-32.5	-26.4	58.5	50.2	8.31	7.043	
3,100.0	3,099.3	3,074.3	3,074.1	6.7	2.0	150.31	-31.9	-28.6	64.5	55.8	8.73	7.389	
3,200.0	3,199.2	3,173.7	3,173.5	7.0	2.3	153.83	-31.4	-31.4	71.4	62.2	9.15	7.801	
3,300.0	3,299.0	3,273.6	3,273.3	7.2	2.5	156.60	-31.1	-34.1	78.5	69.0	9.56	8.213	
3,400.0	3,398.9	3,373.5	3,373.1	7.4	2.7	158.89	-30.7	-36.6	85.5	75.5	9.97	8.576	
3,501.2	3,500.0	3,474.7	3,474.3	7.6	2.9	160.89	-30.2	-38.9	92.5	82.1	10.38	8.907	
3,600.0	3,598.7	3,573.2	3,572.8	7.8	3.1	162.31	-29.6	-41.0	97.6	86.8	10.79	9.041	
3,651.2	3,649.9	3,624.4	3,624.0	7.9	3.2	-107.21	-29.3	-42.2	99.0	88.0	11.04	8.973	
3,700.0	3,698.7	3,673.3	3,672.9	8.0	3.3	-106.86	-29.0	-43.2	100.0	88.7	11.24	8.892	
3,800.0	3,798.7	3,773.8	3,773.4	8.2	3.5	-106.18	-28.3	-45.1	101.6	89.9	11.67	8.703	
3,900.0	3,898.7	3,873.6	3,873.2	8.5	3.7	-105.49	-27.5	-46.7	102.9	90.8	12.10	8.503	
4,000.0	3,998.7	3,973.9	3,973.5	8.7	3.9	-104.82	-26.7	-48.4	104.3	91.7	12.53	8.320	
4,100.0	4,098.7	4,074.2	4,073.7	8.9	4.1	-104.14	-25.7	-49.7	105.3	92.3	12.96	8.123	
4,200.0	4,198.7	4,174.5	4,174.1	9.1	4.3	-103.56	-24.9	-50.7	106.1	92.7	13.39	7.920	
4,300.0	4,298.7	4,274.2	4,273.7	9.4	4.6	-103.00	-24.0	-51.7	106.8	93.0	13.82	7.729	
4,400.0	4,398.7	4,374.3	4,373.8	9.6	4.8	-102.43	-23.2	-52.8	107.7	93.5	14.26	7.556	
4,500.0	4,498.7	4,474.5	4,474.0	9.8	5.0	-101.94	-22.5	-53.7	108.5	93.8	14.69	7.387	
4,600.0	4,598.7	4,574.7	4,574.1	10.0	5.2	-101.55	-21.8	-54.4	109.1	93.9	15.12	7.213	
4,700.0	4,698.7	4,674.5	4,674.0	10.2	5.4	-101.22	-21.3	-55.2	109.7	94.1	15.55	7.052	
4,800.0	4,798.7	4,774.5	4,774.0	10.5	5.6	-100.92	-20.9	-55.9	110.3	94.3	15.98	6.902	
4,900.0	4,898.7	4,874.6	4,874.1	10.7	5.8	-100.52	-20.3	-56.6	110.9	94.5	16.41	6.757	
5,000.0	4,998.7	4,974.7	4,974.1	10.9	6.0	-100.29	-19.9	-57.2	111.4	94.5	16.85	6.612	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



**Gyrodta, Inc.**  
Anticollision Report



<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 11-18H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 usft
Survey Program: 2175-MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,098.7	5,074.4	5,073.8	11.1	6.2	-99.95	-19.4	-58.0	112.0	94.8	17.28	6.484	
5,200.0	5,198.7	5,174.4	5,173.8	11.4	6.4	-99.72	-19.1	-58.9	112.9	95.2	17.71	6.374	
5,300.0	5,298.7	5,274.5	5,274.0	11.6	6.6	-99.95	-19.6	-59.5	113.6	95.4	18.15	6.259	
5,400.0	5,398.7	5,374.6	5,374.0	11.8	6.8	-100.24	-20.3	-60.0	114.2	95.6	18.58	6.148	
5,500.0	5,498.7	5,474.0	5,473.5	12.0	7.1	-100.62	-21.2	-60.6	114.9	95.9	19.01	6.046	
5,600.0	5,598.7	5,574.1	5,573.5	12.2	7.3	-101.26	-22.7	-61.5	116.2	96.7	19.44	5.974	
5,700.0	5,698.7	5,674.4	5,673.8	12.5	7.5	-101.98	-24.3	-62.0	117.0	97.1	19.88	5.885	
5,800.0	5,798.7	5,774.4	5,773.8	12.7	7.7	-102.48	-25.4	-62.5	117.7	97.4	20.31	5.797	
5,900.0	5,898.7	5,874.2	5,873.5	12.9	7.9	-102.68	-26.0	-63.2	118.5	97.8	20.74	5.715	
6,000.0	5,998.7	5,974.1	5,973.5	13.1	8.1	-102.57	-26.0	-64.3	119.6	98.4	21.18	5.646	
6,100.0	6,098.7	6,074.1	6,073.5	13.4	8.3	-102.09	-25.3	-65.5	120.6	99.0	21.61	5.580	
6,200.0	6,198.7	6,174.7	6,174.0	13.6	8.5	-101.50	-24.2	-66.6	121.4	99.4	22.05	5.506	
6,300.0	6,298.7	6,275.3	6,274.6	13.8	8.7	-100.79	-22.8	-67.1	121.7	99.2	22.48	5.412	
6,400.0	6,398.7	6,375.5	6,374.9	14.0	9.0	-99.92	-21.0	-67.4	121.6	98.7	22.92	5.307	
6,500.0	6,498.7	6,475.7	6,475.0	14.3	9.2	-98.97	-18.9	-67.5	121.4	98.1	23.36	5.199	
6,600.0	6,598.7	6,575.8	6,575.1	14.5	9.4	-97.78	-16.4	-67.6	121.2	97.4	23.79	5.092	
6,700.0	6,698.7	6,676.0	6,675.2	14.7	9.6	-96.47	-13.6	-67.6	120.8	96.6	24.23	4.985	
6,800.0	6,798.7	6,776.5	6,775.7	14.9	9.8	-95.00	-10.5	-67.4	120.2	95.6	24.67	4.874	
6,900.0	6,898.7	6,877.2	6,876.4	15.2	10.0	-93.90	-8.1	-66.3	119.0	93.9	25.10	4.740	
7,000.0	6,998.7	6,976.8	6,976.0	15.4	10.2	-93.04	-6.2	-65.1	117.7	92.2	25.53	4.611	
7,100.0	7,098.7	7,076.5	7,075.7	15.6	10.4	-92.89	-5.9	-64.2	116.8	90.8	25.96	4.499	
7,200.0	7,198.7	7,175.9	7,175.1	15.8	10.6	-92.85	-5.8	-63.5	116.1	89.7	26.39	4.398	
7,228.5	7,227.2	7,204.1	7,203.2	15.9	10.7	-92.96	-6.0	-63.5	116.0	89.5	26.51	4.376	
7,300.0	7,298.7	7,275.2	7,274.3	16.0	10.8	-93.47	-7.0	-63.6	116.2	89.4	26.82	4.333	
7,400.0	7,398.7	7,374.9	7,374.0	16.3	11.0	-94.22	-8.6	-63.9	116.7	89.4	27.25	4.281	
7,500.0	7,498.7	7,474.7	7,473.7	16.5	11.2	-94.97	-10.2	-64.5	117.4	89.7	27.68	4.240	
7,600.0	7,598.7	7,574.6	7,573.7	16.7	11.5	-95.60	-11.5	-65.3	118.2	90.1	28.12	4.205	
7,700.0	7,698.7	7,675.0	7,674.1	16.9	11.7	-96.08	-12.6	-65.9	119.0	90.5	28.56	4.168	
7,800.0	7,798.7	7,775.5	7,774.6	17.2	11.9	-96.38	-13.2	-66.2	119.3	90.3	28.99	4.115	
7,900.0	7,898.7	7,875.8	7,874.9	17.4	12.1	-96.52	-13.5	-66.1	119.3	89.8	29.43	4.053	
8,000.0	7,998.7	7,976.2	7,975.3	17.6	12.3	-96.37	-13.2	-65.8	119.0	89.1	29.87	3.983	
8,100.0	8,098.7	8,076.1	8,075.1	17.8	12.5	-96.14	-12.7	-65.4	118.5	88.2	30.30	3.910	
8,200.0	8,198.7	8,176.3	8,175.3	18.1	12.7	-95.84	-12.0	-65.0	118.1	87.3	30.74	3.841	
8,300.0	8,298.7	8,276.8	8,275.8	18.3	12.9	-95.44	-11.1	-64.4	117.3	86.1	31.17	3.763	
8,400.0	8,398.7	8,376.8	8,375.8	18.5	13.1	-94.96	-10.1	-63.5	116.3	84.7	31.61	3.680	
8,500.0	8,498.7	8,476.7	8,475.8	18.7	13.4	-94.46	-9.0	-62.6	115.3	83.3	32.04	3.600	
8,600.0	8,598.7	8,576.8	8,575.8	19.0	13.6	-93.96	-7.9	-61.7	114.4	81.9	32.47	3.522	
8,700.0	8,698.7	8,676.4	8,675.4	19.2	13.8	-93.45	-6.8	-61.0	113.6	80.7	32.90	3.453	
8,800.0	8,798.7	8,776.5	8,775.5	19.4	14.0	-92.93	-5.8	-60.4	112.9	79.6	33.34	3.388	
8,900.0	8,898.7	8,876.6	8,875.6	19.6	14.2	-92.37	-4.6	-59.6	112.1	78.4	33.77	3.321	
9,000.0	8,998.7	8,976.6	8,975.6	19.9	14.4	-91.62	-3.2	-58.9	111.4	77.2	34.21	3.256	
9,100.0	9,098.7	9,076.8	9,075.8	20.1	14.6	-90.89	-1.7	-58.0	110.4	75.7	34.64	3.186	
9,200.0	9,198.7	9,176.7	9,175.7	20.3	14.8	-90.12	-0.2	-57.1	109.5	74.4	35.08	3.122	
9,300.0	9,298.7	9,276.7	9,275.6	20.5	15.0	-89.47	1.0	-56.1	108.5	73.0	35.51	3.057	
9,400.0	9,398.7	9,376.7	9,375.6	20.8	15.2	-88.81	2.2	-55.3	107.8	71.8	35.94	2.999	
9,500.0	9,498.7	9,476.7	9,475.6	21.0	15.4	-88.08	3.6	-54.3	106.8	70.4	36.38	2.936	
9,600.0	9,598.7	9,576.5	9,575.4	21.2	15.6	-87.35	4.9	-53.5	106.1	69.2	36.81	2.881	
9,700.0	9,698.7	9,676.4	9,675.3	21.4	15.9	-86.69	6.1	-52.8	105.4	68.2	37.24	2.831	
9,800.0	9,798.7	9,776.5	9,775.4	21.6	16.1	-86.11	7.1	-52.1	104.8	67.1	37.67	2.782	
9,900.0	9,898.7	9,876.4	9,875.2	21.9	16.3	-85.54	8.1	-51.4	104.2	66.1	38.10	2.734	
10,000.0	9,998.7	9,976.4	9,975.3	22.1	16.5	-84.90	9.2	-50.8	103.7	65.1	38.54	2.690	
10,100.0	10,098.7	10,076.5	10,075.3	22.3	16.7	-84.17	10.5	-50.1	103.1	64.1	38.97	2.644	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



**Gyrodata, Inc.**  
Anticollision Report



<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 11-18H - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 usft
Survey Program: 2175-MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset	Wellbore Centre +N/-S (usft)	Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,200.0	10,198.7	10,176.4	10,175.3	22.5	16.9	-83.36	11.8	-49.3	102.4	63.0	39.41	2.599		
10,300.0	10,298.7	10,280.4	10,279.2	22.8	17.1	-82.66	12.9	-47.7	101.1	61.2	39.85	2.536		
10,363.3	10,362.0	10,358.0	10,355.9	22.9	17.3	-86.17	6.1	-39.0	93.4	53.2	40.15	2.325		
10,375.0	10,373.7	10,371.1	10,368.6	22.9	17.3	152.57	3.7	-36.6	91.2	51.0	40.15	2.271		
10,400.0	10,398.7	10,398.5	10,394.6	23.0	17.3	149.40	-2.3	-30.8	86.7	46.5	40.20	2.158		
10,425.0	10,423.5	10,424.8	10,419.3	23.0	17.4	145.79	-9.0	-24.4	83.0	42.8	40.21	2.064		
10,450.0	10,448.2	10,450.0	10,442.5	23.1	17.4	141.86	-16.4	-17.9	80.2	40.0	40.19	1.996		
10,475.0	10,472.7	10,475.0	10,465.0	23.1	17.5	137.54	-24.6	-11.1	78.6	38.5	40.18	1.958		
10,493.4	10,490.5	10,493.2	10,481.2	23.2	17.5	134.19	-31.1	-5.9	78.3	38.1	40.18	1.949		
10,500.0	10,496.8	10,499.7	10,486.9	23.2	17.5	133.00	-33.6	-4.1	78.3	38.2	40.19	1.949		
10,525.0	10,520.6	10,524.4	10,508.5	23.3	17.6	128.55	-43.1	3.3	79.3	39.1	40.23	1.971		
10,550.0	10,544.0	10,549.8	10,530.4	23.3	17.7	124.34	-53.3	11.2	81.2	40.9	40.31	2.015		
10,575.0	10,566.8	10,576.8	10,553.1	23.4	17.7	120.16	-64.7	20.5	83.7	43.2	40.46	2.068		
10,600.0	10,589.1	10,603.4	10,574.4	23.5	17.8	116.09	-76.5	30.9	86.3	45.7	40.65	2.124		
10,625.0	10,610.8	10,629.3	10,594.2	23.5	17.9	111.96	-89.0	42.2	89.4	48.5	40.89	2.186		
10,650.0	10,631.8	10,654.6	10,612.2	23.6	18.0	107.81	-102.0	54.2	92.8	51.7	41.18	2.254		
10,675.0	10,652.0	10,679.2	10,628.7	23.7	18.1	103.77	-115.3	66.8	96.8	55.3	41.50	2.334		
10,700.0	10,671.5	10,704.2	10,644.3	23.8	18.2	99.80	-129.4	80.3	101.3	59.5	41.83	2.421		
10,725.0	10,690.1	10,729.4	10,658.9	23.9	18.4	96.05	-143.9	94.8	106.0	63.8	42.16	2.514		
10,750.0	10,707.8	10,754.3	10,672.4	24.0	18.5	92.65	-158.5	109.8	110.8	68.3	42.48	2.609		
10,775.0	10,724.5	10,778.4	10,684.2	24.1	18.7	89.42	-172.9	125.1	115.8	73.1	42.77	2.708		
10,800.0	10,740.3	10,801.4	10,694.0	24.3	18.9	86.33	-187.0	140.3	121.2	78.1	43.03	2.816		
10,825.0	10,755.0	10,825.3	10,702.8	24.4	19.1	83.16	-201.9	156.8	126.7	83.5	43.26	2.930		
10,850.0	10,768.7	10,849.1	10,710.2	24.6	19.3	80.10	-216.8	173.8	132.3	88.9	43.44	3.046		
10,875.0	10,781.2	10,872.7	10,717.0	24.8	19.5	77.53	-231.6	190.9	138.0	94.3	43.61	3.163		
10,900.0	10,792.6	10,895.7	10,722.8	25.0	19.8	75.33	-246.0	207.8	143.5	99.8	43.78	3.279		
10,925.0	10,802.8	10,919.0	10,727.6	25.2	20.1	73.24	-260.7	225.4	149.1	105.1	43.94	3.392		
10,950.0	10,811.8	10,942.4	10,730.8	25.4	20.4	71.12	-275.2	243.4	154.4	110.4	44.06	3.505		
10,975.0	10,819.6	10,965.8	10,732.7	25.7	20.7	69.04	-289.4	261.8	159.6	115.4	44.17	3.614		
11,000.0	10,826.1	10,990.4	10,734.0	25.9	21.0	67.16	-304.3	281.5	164.5	120.1	44.32	3.710		
11,025.0	10,831.3	11,015.2	10,734.9	26.2	21.4	65.71	-319.0	301.4	168.8	124.3	44.54	3.790		
11,050.0	10,835.3	11,040.2	10,735.5	26.5	21.7	64.64	-333.7	321.6	172.6	127.8	44.85	3.849		
11,075.0	10,837.9	11,066.6	10,735.9	26.8	22.1	63.94	-349.0	343.0	175.8	130.5	45.28	3.882		
11,100.0	10,839.3	11,094.0	10,736.3	27.1	22.6	63.69	-364.6	365.6	178.0	132.2	45.88	3.880		
11,110.8	10,839.5	11,105.9	10,736.4	27.2	22.7	63.73	-371.3	375.4	178.7	132.5	46.19	3.870		
11,125.8	10,839.5	11,122.5	10,736.7	27.4	23.0	63.93	-380.5	389.3	179.5	132.8	46.65	3.847		
11,200.0	10,839.9	11,206.0	10,737.0	28.5	24.5	64.34	-423.8	460.7	182.3	133.4	48.93	3.727		
11,300.0	10,840.5	11,330.7	10,737.1	30.1	26.9	63.93	-477.0	573.3	180.9	128.6	52.30	3.459		
11,400.0	10,841.0	11,451.7	10,738.7	31.9	29.4	62.45	-512.8	688.8	171.1	115.6	55.47	3.084		
11,500.0	10,841.5	11,570.1	10,739.6	33.9	31.9	58.92	-532.1	805.5	154.4	96.7	57.74	2.674		
11,600.0	10,842.1	11,665.7	10,740.1	36.0	34.0	54.96	-541.3	900.6	137.3	78.3	59.04	2.326		
11,700.0	10,842.6	11,767.5	10,739.3	38.1	36.4	50.26	-549.9	1,002.1	125.0	65.4	59.54	2.099		
11,800.0	10,843.2	11,867.8	10,739.3	40.4	38.8	46.16	-556.7	1,102.1	115.7	55.9	59.81	1.935		
11,900.0	10,843.7	11,968.1	10,739.4	42.7	41.2	43.23	-563.1	1,202.3	110.4	49.9	60.45	1.825		
12,000.0	10,844.2	12,069.2	10,739.6	45.0	43.7	41.23	-567.3	1,303.3	107.2	45.7	61.52	1.743		
12,031.4	10,844.4	12,100.3	10,739.6	45.8	44.5	40.97	-568.6	1,334.3	107.0	44.9	62.13	1.722		
12,100.0	10,844.8	12,170.8	10,739.8	47.4	46.3	41.11	-571.3	1,404.8	107.5	43.4	64.08	1.677		
12,110.4	10,844.8	12,181.8	10,739.9	47.6	46.6	41.20	-571.6	1,415.8	107.5	43.1	64.44	1.668		
12,200.0	10,845.3	12,273.5	10,741.8	49.8	48.9	41.79	-572.5	1,507.4	106.6	38.4	68.13	1.564		
12,300.0	10,845.8	12,372.7	10,744.2	52.2	51.5	42.40	-573.1	1,606.7	105.0	32.8	72.27	1.453 Level 3		
12,400.0	10,846.3	12,473.6	10,746.1	54.7	54.1	42.82	-573.8	1,707.5	104.0	27.6	76.36	1.362 Level 3		
12,487.0	10,846.8	12,558.8	10,748.2	56.9	56.4	43.57	-574.8	1,792.7	103.0	22.6	80.40	1.281 Level 3		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



**Gyrodata, Inc.**  
Anticollision Report



<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 11-18H - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 usft
Survey Program: 2175-MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
12,500.0	10,846.8	12,571.4	10,748.4	57.3	56.7	43.75		-575.1	1,805.3	103.0	21.9	81.09	1.270 Level 3
12,600.0	10,847.4	12,669.6	10,750.2	59.9	59.4	45.43		-579.0	1,903.4	104.3	17.4	86.89	1.200 Level 2
12,700.0	10,847.9	12,772.8	10,752.1	62.5	62.2	46.74		-581.8	2,006.5	104.8	12.3	92.52	1.132 Level 2
12,760.8	10,848.2	12,832.6	10,753.1	64.1	63.8	47.12		-582.6	2,066.3	104.5	9.1	95.44	1.095 Level 2
12,800.0	10,848.4	12,871.7	10,753.5	65.1	64.9	47.29		-583.2	2,105.3	104.6	7.3	97.26	1.075 Level 2
12,900.0	10,848.9	12,972.9	10,754.6	67.8	67.7	47.60		-584.2	2,206.5	104.4	2.6	101.81	1.025 Level 2
13,000.0	10,849.5	13,074.4	10,757.1	70.4	70.5	48.09		-584.1	2,308.1	102.4	-4.3	106.67	0.960 Level 1
13,100.0	10,850.0	13,173.9	10,759.5	73.1	73.2	48.33		-583.5	2,407.5	100.1	-11.1	111.21	0.900 Level 1
13,200.0	10,850.5	13,274.3	10,760.8	75.9	76.0	47.97		-582.5	2,507.9	98.2	-16.7	114.91	0.855 Level 1
13,300.0	10,851.0	13,374.5	10,762.6	78.6	78.8	47.43		-580.5	2,608.0	95.3	-23.0	118.27	0.805 Level 1
13,400.0	10,851.6	13,473.4	10,762.4	81.3	81.5	45.72		-578.0	2,706.9	93.4	-26.2	119.58	0.781 Level 1
13,500.0	10,852.1	13,572.7	10,761.5	84.1	84.3	43.78		-575.8	2,806.2	92.3	-27.9	120.19	0.768 Level 1
13,600.0	10,852.6	13,672.4	10,760.1	86.9	87.1	41.81		-574.0	2,905.9	91.9	-28.5	120.41	0.763 Level 1
13,700.0	10,853.1	13,775.4	10,759.8	89.6	89.9	39.98		-571.8	3,008.8	90.6	-30.0	120.61	0.751 Level 1
13,800.0	10,853.7	13,873.9	10,761.2	92.4	92.7	38.15		-568.2	3,107.3	87.1	-33.3	120.43	0.723 Level 1
13,900.0	10,854.2	13,974.0	10,759.9	95.2	95.5	34.93		-564.3	3,207.3	85.8	-31.0	116.78	0.734 Level 1
14,000.0	10,854.7	14,074.1	10,759.8	98.0	98.3	32.18		-560.6	3,307.3	83.8	-29.8	113.63	0.738 Level 1
14,100.0	10,855.2	14,174.7	10,760.6	100.8	101.2	30.11		-557.8	3,407.9	81.7	-30.0	111.72	0.731 Level 1
14,165.7	10,855.6	14,238.4	10,760.9	102.7	103.0	28.88		-556.3	3,471.5	80.7	-29.8	110.57	0.730 Level 1
14,200.0	10,855.7	14,271.4	10,760.3	103.7	103.9	28.12		-555.8	3,504.5	81.0	-28.6	109.60	0.739 Level 1
14,300.0	10,856.3	14,370.7	10,757.4	106.5	106.8	25.76		-554.5	3,603.8	83.2	-23.1	106.28	0.783 Level 1
14,400.0	10,856.8	14,472.4	10,755.6	109.3	109.7	24.32		-554.1	3,705.4	84.7	-20.4	105.12	0.806 Level 1
14,500.0	10,857.3	14,573.5	10,755.5	112.2	112.5	23.06		-553.2	3,806.5	84.6	-19.7	104.30	0.811 Level 1
14,600.0	10,857.8	14,675.7	10,757.1	115.0	115.5	20.93		-550.2	3,908.7	82.2	-18.7	100.88	0.815 Level 1
14,794.1	10,858.9	14,867.1	10,760.0	120.5	120.9	17.57		-546.1	4,100.0	78.5	-17.3	95.87	0.819 Level 1
14,800.0	10,858.9	14,872.9	10,760.0	120.7	121.1	17.49		-546.0	4,105.8	78.5	-17.3	95.79	0.820 Level 1
14,900.0	10,859.4	14,971.7	10,758.9	123.6	123.9	16.77		-546.3	4,204.6	79.9	-16.0	95.89	0.833 Level 1
15,000.0	10,859.9	15,072.5	10,758.4	126.4	126.9	16.20		-546.5	4,305.4	80.7	-15.6	96.34	0.838 Level 1
15,100.0	10,860.5	15,171.8	10,757.7	129.3	129.7	15.88		-547.2	4,404.7	81.9	-15.6	97.49	0.840 Level 1
15,200.0	10,861.0	15,271.7	10,756.6	132.1	132.6	15.68		-548.2	4,504.6	83.5	-15.4	98.93	0.844 Level 1
15,300.0	10,861.5	15,372.4	10,755.7	135.0	135.5	15.29		-548.8	4,605.3	84.9	-14.9	99.80	0.850 Level 1
15,400.0	10,862.0	15,473.0	10,755.9	137.9	138.4	15.05		-549.3	4,705.9	85.0	-16.0	95.89	0.841 Level 1
15,500.0	10,862.6	15,573.0	10,756.2	140.7	141.3	14.64		-549.6	4,805.9	85.2	-16.7	101.83	0.836 Level 1
15,600.0	10,863.1	15,673.7	10,756.7	143.6	144.2	13.93		-549.3	4,906.6	84.9	-16.7	101.60	0.836 Level 1
15,700.0	10,863.6	15,774.5	10,758.3	146.5	147.1	13.40		-549.0	5,007.4	83.6	-18.3	101.91	0.821 Level 1
15,793.8	10,864.1	15,866.9	10,759.9	149.2	149.8	13.41		-549.5	5,099.8	82.4	-21.3	103.71	0.795 Level 1
15,800.0	10,864.1	15,872.9	10,759.9	149.4	150.0	13.44		-549.6	5,105.8	82.4	-21.5	103.90	0.794 Level 1
15,900.0	10,864.7	15,972.6	10,759.9	152.3	152.9	14.21		-551.7	5,205.4	83.3	-25.0	108.27	0.769 Level 1
16,000.0	10,865.2	16,072.2	10,760.3	155.1	155.8	15.61		-554.7	5,305.0	84.0	-31.0	115.00	0.730 Level 1
16,100.0	10,865.7	16,172.3	10,760.4	158.0	158.7	17.23		-558.1	5,405.1	85.1	-37.8	122.94	0.692 Level 1
16,200.0	10,866.2	16,273.7	10,761.6	160.9	161.6	19.17		-561.7	5,506.4	85.4	-47.2	132.57	0.644 Level 1
16,300.0	10,866.7	16,373.8	10,764.3	163.8	164.6	22.04		-566.3	5,606.3	84.7	-61.8	146.50	0.578 Level 1
16,400.0	10,867.3	16,474.1	10,767.7	166.7	167.5	25.80		-571.8	5,706.4	84.0	-80.9	164.94	0.509 Level 1
16,442.4	10,867.5	16,515.9	10,769.1	167.9	168.7	27.43		-574.2	5,748.1	83.8	-89.3	173.12	0.484 Level 1
16,500.0	10,867.8	16,572.9	10,770.4	169.6	170.4	29.31		-577.3	5,805.0	84.1	-98.9	182.97	0.460 Level 1
16,600.0	10,868.3	16,672.9	10,772.1	172.5	173.3	31.83		-581.7	5,904.9	85.0	-112.1	197.15	0.431 Level 1
16,700.0	10,868.8	16,773.1	10,774.0	175.4	176.2	34.31		-586.0	6,004.9	85.8	-125.6	211.41	0.406 Level 1
16,800.0	10,869.4	16,872.5	10,774.8	178.3	179.1	35.88		-589.5	6,104.3	87.1	-134.7	221.79	0.393 Level 1
16,900.0	10,869.9	16,973.4	10,774.8	181.2	182.0	36.24		-591.4	6,205.2	88.1	-138.9	227.03	0.388 Level 1
17,000.0	10,870.4	17,074.0	10,775.3	184.1	185.0	36.10		-592.0	6,305.7	88.0	-142.0	230.02	0.383 Level 1
17,016.0	10,870.5	17,089.8	10,775.4	184.5	185.4	36.10		-592.1	6,321.6	88.0	-142.6	230.57	0.382 Level 1

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 11-18H - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 usft
Survey Program: 2175-MWD													Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	Offset	Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,100.0	10,870.9	17,173.5	10,775.8	187.0	187.9	36.30	-593.2	6,405.3	88.3	-146.3	234.55	0.376	Level 1	
17,200.0	10,871.5	17,274.1	10,776.8	189.9	190.8	36.75	-594.5	6,505.9	88.2	-152.1	240.29	0.367	Level 1	
17,300.0	10,872.0	17,373.8	10,778.0	192.8	193.7	37.22	-595.7	6,605.6	87.8	-158.3	246.15	0.357	Level 1	
17,302.9	10,872.0	17,376.7	10,778.1	192.8	193.8	37.24	-595.7	6,608.4	87.8	-158.5	246.34	0.357	Level 1	
17,400.0	10,872.5	17,473.2	10,779.0	195.7	196.6	38.05	-597.7	6,704.9	88.2	-165.6	253.79	0.348	Level 1	
17,500.0	10,873.0	17,572.7	10,779.4	198.6	199.5	38.72	-599.9	6,804.4	89.2	-171.5	260.74	0.342	Level 1	
17,600.0	10,873.6	17,672.4	10,779.6	201.5	202.4	39.49	-602.6	6,904.0	90.7	-177.6	268.29	0.338	Level 1	
17,700.0	10,874.1	17,772.5	10,779.5	204.4	205.3	40.07	-605.1	7,004.2	92.3	-182.7	274.99	0.336	Level 1	
17,800.0	10,874.6	17,872.4	10,779.3	207.3	208.2	40.40	-607.2	7,104.0	93.7	-186.8	280.46	0.334	Level 1	
17,900.0	10,875.1	17,973.5	10,778.7	210.2	211.2	40.29	-608.7	7,205.1	95.0	-188.9	283.87	0.334	Level 1	
18,000.0	10,875.6	18,073.5	10,779.1	213.1	214.1	40.24	-609.6	7,305.1	95.1	-192.5	287.56	0.331	Level 1	
18,100.0	10,876.2	18,173.5	10,779.6	216.0	217.0	40.59	-611.1	7,405.0	95.6	-197.7	293.23	0.326	Level 1	
18,200.0	10,876.7	18,274.5	10,779.6	218.9	219.9	40.08	-611.3	7,506.1	95.5	-199.0	294.55	0.324	Level 1	
18,241.7	10,876.9	18,315.6	10,779.8	220.1	221.1	39.96	-611.3	7,547.1	95.3	-200.2	295.53	0.323	Level 1, SF	
18,300.0	10,877.2	18,372.4	10,779.5	221.8	222.8	39.67	-611.7	7,604.0	95.8	-200.5	296.23	0.323	Level 1, ES	
18,400.0	10,877.7	18,472.5	10,777.7	224.7	225.7	38.67	-612.2	7,704.0	97.4	-197.3	294.70	0.330	Level 1	
18,500.0	10,878.3	18,573.6	10,776.2	227.6	228.6	37.44	-611.9	7,805.1	98.3	-193.3	291.66	0.337	Level 1	
18,600.0	10,878.8	18,675.0	10,776.1	230.5	231.6	36.48	-611.2	7,906.6	97.9	-192.1	289.98	0.338	Level 1	
18,700.0	10,879.3	18,775.0	10,776.6	233.4	234.5	35.60	-610.2	8,006.5	96.8	-191.7	288.53	0.336	Level 1	
18,800.0	10,879.8	18,874.6	10,777.0	236.4	237.4	34.87	-609.5	8,106.1	96.1	-191.7	287.77	0.334	Level 1	
18,900.0	10,880.4	18,975.1	10,777.0	239.3	240.3	33.54	-608.0	8,206.6	95.2	-188.1	283.26	0.336	Level 1	
19,000.0	10,880.9	19,075.3	10,777.2	242.2	243.2	31.90	-605.8	8,306.8	93.9	-182.7	276.57	0.339	Level 1	
19,100.0	10,881.4	19,175.1	10,777.4	245.1	246.1	30.46	-604.0	8,406.5	92.8	-178.0	270.83	0.343	Level 1	
19,200.0	10,881.9	19,275.0	10,777.8	248.0	249.0	29.01	-602.2	8,506.4	91.6	-173.1	264.73	0.346	Level 1	
19,300.0	10,882.5	19,374.6	10,777.5	250.9	251.9	27.47	-600.7	8,606.0	91.2	-166.6	257.80	0.354	Level 1	
19,400.0	10,883.0	19,475.1	10,777.5	253.8	254.9	25.62	-598.5	8,706.5	90.4	-158.2	248.62	0.364	Level 1	
19,500.0	10,883.5	19,574.8	10,777.6	256.7	257.8	23.63	-596.1	8,806.2	89.4	-148.8	238.25	0.375	Level 1	
19,600.0	10,884.0	19,674.7	10,777.4	259.7	260.7	21.96	-594.3	8,906.1	89.1	-140.7	229.84	0.388	Level 1	
19,700.0	10,884.5	19,775.1	10,777.7	262.6	263.6	20.28	-592.5	9,006.5	88.4	-132.9	221.25	0.399	Level 1	
19,800.0	10,885.1	19,874.7	10,777.9	265.5	266.5	18.27	-590.1	9,106.1	87.6	-122.9	210.48	0.416	Level 1	
19,900.0	10,885.6	19,975.0	10,777.9	268.4	269.4	16.42	-588.1	9,206.3	87.2	-113.6	200.81	0.434	Level 1	
20,000.0	10,886.1	20,074.9	10,778.3	271.3	272.3	14.36	-585.7	9,306.1	86.5	-103.7	190.21	0.455	Level 1	
20,076.0	10,886.5	20,150.5	10,778.4	273.5	274.5	12.97	-584.2	9,381.8	86.3	-97.1	183.47	0.471	Level 1	
20,100.0	10,886.6	20,174.4	10,778.3	274.2	275.2	12.53	-583.8	9,405.6	86.4	-95.0	181.38	0.476	Level 1	
20,200.0	10,887.2	20,274.0	10,777.9	277.2	278.1	10.71	-582.0	9,505.2	86.8	-86.5	173.29	0.501	Level 1	
20,300.0	10,887.7	20,374.3	10,777.4	280.1	281.0	9.01	-580.3	9,605.5	87.4	-79.2	166.55	0.525	Level 1	
20,400.0	10,888.2	20,473.8	10,777.0	283.0	283.9	7.37	-578.7	9,705.0	87.9	-73.1	161.02	0.546	Level 1	
20,500.0	10,888.7	20,572.7	10,775.8	285.9	286.8	5.95	-577.5	9,803.9	89.4	-67.8	157.23	0.569	Level 1	
20,542.0	10,889.0	20,614.4	10,774.9	287.1	288.0	5.49	-577.2	9,845.6	90.5	-65.9	156.35	0.579	Level 1	
20,600.0	10,889.3	20,650.0	10,774.2	288.8	289.0	5.13	-577.0	9,881.2	94.6	-61.4	155.98	0.606	Level 1	
20,700.0	10,889.8	20,650.0	10,774.2	291.7	289.0	5.13	-577.0	9,881.2	154.6	-2.2	156.74	0.986	Level 1	
20,717.6	10,889.9	20,650.0	10,774.2	292.3	289.0	5.13	-577.0	9,881.2	169.0	12.2	156.87	1.078	Level 2	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



**Gyrodata, Inc.**  
Anticollision Report



<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 21-18 4T2 - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-155.33	-90.2	-41.4	99.2				
100.0	100.0	100.0	100.0	0.1	0.1	-155.33	-90.2	-41.4	99.2	99.1	0.17	588.711	
200.0	200.0	200.0	200.0	0.3	0.3	-155.33	-90.2	-41.4	99.2	98.6	0.62	160.558	
300.0	300.0	300.0	300.0	0.5	0.5	-155.33	-90.2	-41.4	99.2	98.2	1.07	92.954	
400.0	400.0	400.0	400.0	0.8	0.8	-155.33	-90.2	-41.4	99.2	97.7	1.52	65.412	
500.0	500.0	500.0	500.0	1.0	1.0	-155.33	-90.2	-41.4	99.2	97.3	1.97	50.461	
600.0	600.0	600.0	600.0	1.2	1.2	-155.33	-90.2	-41.4	99.2	96.8	2.42	41.073	
700.0	700.0	700.0	700.0	1.4	1.4	-155.33	-90.2	-41.4	99.2	96.4	2.87	34.630	
800.0	800.0	800.0	800.0	1.7	1.7	-155.33	-90.2	-41.4	99.2	95.9	3.32	29.934	
900.0	900.0	900.0	900.0	1.9	1.9	-155.33	-90.2	-41.4	99.2	95.5	3.76	26.360	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-155.33	-90.2	-41.4	99.2	95.0	4.21	23.548	
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	-155.33	-90.2	-41.4	99.2	94.6	4.66	21.279	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-155.33	-90.2	-41.4	99.2	94.1	5.11	19.408	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-155.33	-90.2	-41.4	99.2	93.7	5.56	17.840	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-155.33	-90.2	-41.4	99.2	93.2	6.01	16.506	
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.2	-155.33	-90.2	-41.4	99.2	92.8	6.46	15.358	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-155.33	-90.2	-41.4	99.2	92.3	6.91	14.359	
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	-155.33	-90.2	-41.4	99.2	91.9	7.36	13.482	
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	-155.33	-90.2	-41.4	99.2	91.4	7.81	12.706	
1,900.0	1,900.0	1,900.0	1,900.0	4.1	4.1	-155.33	-90.2	-41.4	99.2	91.0	8.26	12.015	
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	-155.33	-90.2	-41.4	99.2	90.5	8.71	11.394	
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	-155.33	-90.2	-41.4	99.2	90.1	9.16	10.835	
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	-155.33	-90.2	-41.4	99.2	89.6	9.61	10.328	
2,300.0	2,300.0	2,300.0	2,300.0	5.0	5.0	-155.33	-90.2	-41.4	99.2	89.2	10.06	9.867	
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	-155.33	-90.2	-41.4	99.2	88.7	10.51	9.445	
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	-155.33	-90.2	-41.4	99.2	88.3	10.96	9.057 CC, ES	
2,600.0	2,600.0	2,597.1	2,597.1	5.7	5.7	116.04	-91.0	-42.8	101.4	90.0	11.37	8.920	
2,650.0	2,649.9	2,645.5	2,645.5	5.8	5.8	117.66	-92.0	-44.6	104.1	92.6	11.56	9.013	
2,700.0	2,699.9	2,695.1	2,695.0	5.9	5.9	119.63	-93.3	-46.9	107.6	95.9	11.75	9.161	
2,800.0	2,799.7	2,794.6	2,794.3	6.1	6.1	123.20	-95.9	-51.4	115.0	102.8	12.14	9.470	
2,900.0	2,899.6	2,894.1	2,893.7	6.3	6.2	126.34	-98.5	-55.9	122.7	110.2	12.54	9.789	
3,000.0	2,999.5	2,993.6	2,993.1	6.5	6.4	129.10	-101.1	-60.4	130.8	117.8	12.93	10.110	
3,100.0	3,099.3	3,093.1	3,092.4	6.7	6.6	131.53	-103.7	-64.9	139.1	125.7	13.34	10.429	
3,200.0	3,199.2	3,192.6	3,191.8	7.0	6.9	133.69	-106.3	-69.4	147.6	133.9	13.74	10.743	
3,300.0	3,299.0	3,292.1	3,291.1	7.2	7.1	135.61	-108.9	-73.9	156.4	142.2	14.15	11.050	
3,400.0	3,398.9	3,391.5	3,390.5	7.4	7.3	137.33	-111.6	-78.4	165.2	150.7	14.56	11.349	
3,501.2	3,500.0	3,492.3	3,491.0	7.6	7.5	138.88	-114.2	-83.0	174.4	159.4	14.98	11.642	
3,600.0	3,598.7	3,590.7	3,589.3	7.8	7.7	140.01	-116.8	-87.5	182.1	166.7	15.38	11.835	
3,651.2	3,649.9	3,641.8	3,640.4	7.9	7.8	129.72	-118.1	-89.8	185.1	169.5	15.59	11.872	
3,700.0	3,698.7	3,690.5	3,689.0	8.0	7.9	129.58	-119.4	-92.0	187.6	171.8	15.79	11.877	
3,800.0	3,798.7	3,790.4	3,788.7	8.2	8.1	129.33	-122.0	-96.5	192.8	176.5	16.23	11.875	
3,900.0	3,898.7	3,896.7	3,895.0	8.5	8.4	129.14	-124.0	-100.0	196.5	179.8	16.68	11.780	
4,000.0	3,998.7	4,000.4	3,998.7	8.7	8.6	129.11	-124.2	-100.4	197.0	179.8	17.11	11.508	
4,100.0	4,098.7	4,100.4	4,098.7	8.9	8.8	129.11	-124.2	-100.4	197.0	179.4	17.55	11.220	
4,200.0	4,198.7	4,200.4	4,198.7	9.1	9.0	129.11	-124.2	-100.4	197.0	179.0	18.00	10.945	
4,300.0	4,298.7	4,300.4	4,298.7	9.4	9.2	129.11	-124.2	-100.4	197.0	178.5	18.44	10.683	
4,400.0	4,398.7	4,400.4	4,398.7	9.6	9.4	129.11	-124.2	-100.4	197.0	178.1	18.88	10.433	
4,500.0	4,498.7	4,500.4	4,498.7	9.8	9.7	129.11	-124.2	-100.4	197.0	177.6	19.32	10.195	
4,600.0	4,598.7	4,600.4	4,598.7	10.0	9.9	129.11	-124.2	-100.4	197.0	177.2	19.76	9.966	
4,700.0	4,698.7	4,700.4	4,698.7	10.2	10.1	129.11	-124.2	-100.4	197.0	176.8	20.20	9.748	
4,800.0	4,798.7	4,800.4	4,798.7	10.5	10.3	129.11	-124.2	-100.4	197.0	176.3	20.65	9.539	
4,900.0	4,898.7	4,900.4	4,898.7	10.7	10.5	129.11	-124.2	-100.4	197.0	175.9	21.09	9.339	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



**Gyrodata, Inc.**  
Anticollision Report



<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 21-18 4T2 - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft
Survey Program: 0-MWD				Distance								Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
5,000.0	4,998.7	5,000.4	4,998.7	10.9	10.8	-129.11		-124.2	-100.4	197.0	175.4	21.53	9.146
5,100.0	5,098.7	5,100.4	5,098.7	11.1	11.0	-129.11		-124.2	-100.4	197.0	175.0	21.98	8.962
5,200.0	5,198.7	5,200.4	5,198.7	11.4	11.2	-129.11		-124.2	-100.4	197.0	174.5	22.42	8.784
5,300.0	5,298.7	5,300.4	5,298.7	11.6	11.4	-129.11		-124.2	-100.4	197.0	174.1	22.87	8.614
5,400.0	5,398.7	5,400.4	5,398.7	11.8	11.6	-129.11		-124.2	-100.4	197.0	173.6	23.31	8.449
5,500.0	5,498.7	5,500.4	5,498.7	12.0	11.9	-129.11		-124.2	-100.4	197.0	173.2	23.75	8.291
5,600.0	5,598.7	5,600.4	5,598.7	12.2	12.1	-129.11		-124.2	-100.4	197.0	172.8	24.20	8.139
5,700.0	5,698.7	5,700.4	5,698.7	12.5	12.3	-129.11		-124.2	-100.4	197.0	172.3	24.64	7.992
5,800.0	5,798.7	5,800.4	5,798.7	12.7	12.5	-129.11		-124.2	-100.4	197.0	171.9	25.09	7.850
5,900.0	5,898.7	5,900.4	5,898.7	12.9	12.8	-129.11		-124.2	-100.4	197.0	171.4	25.53	7.713
6,000.0	5,998.7	6,000.4	5,998.7	13.1	13.0	-129.11		-124.2	-100.4	197.0	171.0	25.98	7.581
6,100.0	6,098.7	6,100.4	6,098.7	13.4	13.2	-129.11		-124.2	-100.4	197.0	170.5	26.42	7.453
6,200.0	6,198.7	6,200.4	6,198.7	13.6	13.4	-129.11		-124.2	-100.4	197.0	170.1	26.87	7.330
6,300.0	6,298.7	6,300.4	6,298.7	13.8	13.6	-129.11		-124.2	-100.4	197.0	169.6	27.32	7.210
6,400.0	6,398.7	6,400.4	6,398.7	14.0	13.9	-129.11		-124.2	-100.4	197.0	169.2	27.76	7.094
6,500.0	6,498.7	6,500.4	6,498.7	14.3	14.1	-129.11		-124.2	-100.4	197.0	168.7	28.21	6.982
6,600.0	6,598.7	6,600.4	6,598.7	14.5	14.3	-129.11		-124.2	-100.4	197.0	168.3	28.65	6.874
6,700.0	6,698.7	6,700.4	6,698.7	14.7	14.5	-129.11		-124.2	-100.4	197.0	167.9	29.10	6.768
6,800.0	6,798.7	6,800.4	6,798.7	14.9	14.7	-129.11		-124.2	-100.4	197.0	167.4	29.55	6.666
6,900.0	6,898.7	6,900.4	6,898.7	15.2	15.0	-129.11		-124.2	-100.4	197.0	167.0	29.99	6.567
7,000.0	6,998.7	7,000.4	6,998.7	15.4	15.2	-129.11		-124.2	-100.4	197.0	166.5	30.44	6.470
7,100.0	7,098.7	7,100.4	7,098.7	15.6	15.4	-129.11		-124.2	-100.4	197.0	166.1	30.89	6.377
7,200.0	7,198.7	7,200.4	7,198.7	15.8	15.6	-129.11		-124.2	-100.4	197.0	165.6	31.33	6.286
7,300.0	7,298.7	7,300.4	7,298.7	16.0	15.9	-129.11		-124.2	-100.4	197.0	165.2	31.78	6.198
7,400.0	7,398.7	7,400.4	7,398.7	16.3	16.1	-129.11		-124.2	-100.4	197.0	164.7	32.23	6.112
7,500.0	7,498.7	7,500.4	7,498.7	16.5	16.3	-129.11		-124.2	-100.4	197.0	164.3	32.67	6.028
7,600.0	7,598.7	7,600.4	7,598.7	16.7	16.5	-129.11		-124.2	-100.4	197.0	163.8	33.12	5.947
7,700.0	7,698.7	7,700.4	7,698.7	16.9	16.7	-129.11		-124.2	-100.4	197.0	163.4	33.57	5.867
7,800.0	7,798.7	7,800.4	7,798.7	17.2	17.0	-129.11		-124.2	-100.4	197.0	162.9	34.01	5.790
7,900.0	7,898.7	7,900.4	7,898.7	17.4	17.2	-129.11		-124.2	-100.4	197.0	162.5	34.46	5.715
8,000.0	7,998.7	8,000.4	7,998.7	17.6	17.4	-129.11		-124.2	-100.4	197.0	162.0	34.91	5.642
8,100.0	8,098.7	8,100.4	8,098.7	17.8	17.6	-129.11		-124.2	-100.4	197.0	161.6	35.36	5.571
8,200.0	8,198.7	8,200.4	8,198.7	18.1	17.9	-129.11		-124.2	-100.4	197.0	161.2	35.80	5.501
8,300.0	8,298.7	8,300.4	8,298.7	18.3	18.1	-129.11		-124.2	-100.4	197.0	160.7	36.25	5.433
8,400.0	8,398.7	8,400.4	8,398.7	18.5	18.3	-129.11		-124.2	-100.4	197.0	160.3	36.70	5.367
8,500.0	8,498.7	8,500.4	8,498.7	18.7	18.5	-129.11		-124.2	-100.4	197.0	159.8	37.15	5.302
8,600.0	8,598.7	8,600.4	8,598.7	19.0	18.8	-129.11		-124.2	-100.4	197.0	159.4	37.59	5.239
8,700.0	8,698.7	8,700.4	8,698.7	19.2	19.0	-129.11		-124.2	-100.4	197.0	158.9	38.04	5.177
8,800.0	8,798.7	8,800.4	8,798.7	19.4	19.2	-129.11		-124.2	-100.4	197.0	158.5	38.49	5.117
8,900.0	8,898.7	8,900.4	8,898.7	19.6	19.4	-129.11		-124.2	-100.4	197.0	158.0	38.94	5.058
9,000.0	8,998.7	9,000.4	8,998.7	19.9	19.6	-129.11		-124.2	-100.4	197.0	157.6	39.38	5.001
9,100.0	9,098.7	9,100.4	9,098.7	20.1	19.9	-129.11		-124.2	-100.4	197.0	157.1	39.83	4.945
9,200.0	9,198.7	9,200.4	9,198.7	20.3	20.1	-129.11		-124.2	-100.4	197.0	156.7	40.28	4.890
9,300.0	9,298.7	9,300.4	9,298.7	20.5	20.3	-129.11		-124.2	-100.4	197.0	156.2	40.73	4.836
9,400.0	9,398.7	9,400.4	9,398.7	20.8	20.5	-129.11		-124.2	-100.4	197.0	155.8	41.18	4.783
9,500.0	9,498.7	9,500.4	9,498.7	21.0	20.8	-129.11		-124.2	-100.4	197.0	155.3	41.62	4.732
9,600.0	9,598.7	9,600.4	9,598.7	21.2	21.0	-129.11		-124.2	-100.4	197.0	154.9	42.07	4.681
9,700.0	9,698.7	9,700.4	9,698.7	21.4	21.2	-129.11		-124.2	-100.4	197.0	154.4	42.52	4.632
9,800.0	9,798.7	9,800.4	9,798.7	21.6	21.4	-129.11		-124.2	-100.4	197.0	154.0	42.97	4.584
9,900.0	9,898.7	9,900.4	9,898.7	21.9	21.7	-129.11		-124.2	-100.4	197.0	153.5	43.42	4.537
10,000.0	9,998.7	10,000.4	9,998.7	22.1	21.9	-129.11		-124.2	-100.4	197.0	153.1	43.86	4.490
10,100.0	10,098.7	10,100.4	10,098.7	22.3	22.1	-129.11		-124.2	-100.4	197.0	152.6	44.31	4.445

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



**Gyrodata, Inc.**  
Anticollision Report



<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 21-18 4T2 - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft
Survey Program: 0-MWD				Distance								Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
10,200.0	10,198.7	10,200.4	10,198.7	22.5	22.3	-129.11		-124.2	-100.4	197.0	152.2	44.76	4.400
10,300.0	10,298.7	10,300.4	10,298.7	22.8	22.6	-129.11		-124.2	-100.4	197.0	151.7	45.21	4.357
10,342.0	10,340.9	10,342.6	10,340.9	22.9	22.7	-129.11		-124.2	-100.4	197.0	151.6	45.40	4.339
10,363.3	10,362.0	10,363.7	10,362.0	22.9	22.7	-129.11		-124.2	-100.4	197.0	151.5	45.49	4.329
10,375.0	10,373.7	10,375.0	10,373.3	22.9	22.7	110.88		-124.4	-100.4	197.0	151.5	45.55	4.325
10,400.0	10,398.7	10,397.9	10,396.2	23.0	22.8	110.81		-125.3	-99.8	197.7	152.1	45.63	4.332
10,425.0	10,423.5	10,421.2	10,419.3	23.0	22.8	110.67		-127.3	-98.7	199.0	153.3	45.70	4.355
10,450.0	10,448.2	10,444.4	10,442.3	23.1	22.8	110.47		-130.2	-97.1	201.0	155.3	45.76	4.393
10,475.0	10,472.7	10,467.5	10,465.0	23.1	22.9	110.19		-134.1	-95.0	203.7	157.9	45.81	4.447
10,500.0	10,496.8	10,490.6	10,487.4	23.2	22.9	109.85		-138.9	-92.3	207.0	161.2	45.86	4.515
10,525.0	10,520.6	10,513.5	10,509.4	23.3	23.0	109.45		-144.6	-89.1	211.0	165.1	45.91	4.597
10,550.0	10,544.0	10,536.4	10,530.9	23.3	23.0	108.99		-151.2	-85.4	215.6	169.7	45.96	4.692
10,575.0	10,566.8	10,559.0	10,551.9	23.4	23.0	108.47		-158.7	-81.3	220.9	174.9	46.01	4.801
10,600.0	10,589.1	10,581.6	10,572.4	23.5	23.1	107.89		-167.0	-76.7	226.7	180.6	46.07	4.921
10,625.0	10,610.8	10,603.9	10,592.2	23.5	23.1	107.27		-176.0	-71.7	233.1	187.0	46.15	5.052
10,650.0	10,631.8	10,626.1	10,611.4	23.6	23.2	106.59		-185.7	-66.3	240.1	193.9	46.24	5.193
10,675.0	10,652.0	10,648.1	10,629.9	23.7	23.2	105.87		-196.2	-60.6	247.6	201.3	46.34	5.343
10,700.0	10,671.5	10,670.0	10,647.7	23.8	23.2	105.10		-207.2	-54.4	255.7	209.2	46.47	5.501
10,725.0	10,690.1	10,691.6	10,664.7	23.9	23.3	104.29		-218.9	-47.9	264.2	217.6	46.62	5.667
10,750.0	10,707.8	10,713.1	10,681.0	24.0	23.3	103.44		-231.2	-41.2	273.2	226.4	46.80	5.838
10,775.0	10,724.5	10,734.4	10,696.6	24.1	23.4	102.55		-243.9	-34.1	282.6	235.6	47.00	6.013
10,800.0	10,740.3	10,755.6	10,711.3	24.3	23.4	101.63		-257.2	-26.7	292.5	245.2	47.23	6.193
10,825.0	10,755.0	10,776.6	10,725.3	24.4	23.5	100.68		-270.9	-19.1	302.7	255.2	47.48	6.376
10,850.0	10,768.7	10,797.4	10,738.5	24.6	23.6	99.70		-285.0	-11.3	313.3	265.6	47.76	6.561
10,875.0	10,781.2	10,818.2	10,750.9	24.8	23.7	98.69		-299.5	-3.3	324.3	276.2	48.06	6.747
10,900.0	10,792.6	10,838.7	10,762.5	25.0	23.8	97.65		-314.4	5.0	335.5	287.1	48.38	6.935
10,925.0	10,802.8	10,859.2	10,773.2	25.2	23.9	96.60		-329.7	13.5	347.0	298.3	48.72	7.122
10,950.0	10,811.8	10,879.7	10,783.2	25.4	24.0	95.53		-345.2	22.1	358.8	309.7	49.08	7.310
10,975.0	10,819.6	10,900.0	10,792.4	25.7	24.1	94.45		-361.1	30.9	370.8	321.3	49.46	7.497
11,000.0	10,826.1	10,920.3	10,800.8	25.9	24.2	93.35		-377.3	39.8	383.0	333.1	49.85	7.683
11,025.0	10,831.3	10,940.6	10,808.4	26.2	24.3	92.25		-393.7	49.0	395.3	345.1	50.25	7.868
11,050.0	10,835.3	10,960.9	10,815.2	26.5	24.5	91.15		-410.5	58.2	407.8	357.2	50.65	8.052
11,075.0	10,837.9	10,981.2	10,821.2	26.8	24.6	90.05		-427.4	67.6	420.5	369.4	51.06	8.234
11,100.0	10,839.3	11,001.6	10,826.4	27.1	24.8	88.96		-444.7	77.2	433.2	381.7	51.48	8.414
11,110.8	10,839.5	11,010.4	10,828.3	27.2	24.8	88.49		-452.2	81.4	438.7	387.0	51.66	8.491
11,125.8	10,839.5	11,022.8	10,830.8	27.4	24.9	88.88		-462.8	87.2	446.3	394.4	51.94	8.594
11,200.0	10,839.9	11,084.6	10,838.6	28.5	25.5	90.01		-516.4	116.9	485.7	432.4	53.33	9.107
11,300.0	10,840.5	11,182.7	10,839.8	30.1	26.5	90.13		-601.8	165.2	542.0	486.5	55.50	9.766
11,400.0	10,841.0	11,300.5	10,840.5	31.9	27.9	90.15		-701.2	228.5	598.4	540.3	58.05	10.308
11,500.0	10,841.5	11,424.4	10,841.2	33.9	29.7	90.16		-801.3	301.4	653.8	592.9	60.88	10.739
11,600.0	10,842.1	11,555.0	10,841.9	36.0	31.8	90.18		-901.4	385.2	708.0	644.1	63.95	11.071
11,700.0	10,842.6	11,693.1	10,842.7	38.1	34.3	90.20		-1,000.9	481.0	760.7	693.5	67.23	11.315
11,800.0	10,843.2	11,839.6	10,843.6	40.4	37.1	90.21		-1,098.4	590.1	811.5	740.8	70.75	11.470
11,900.0	10,843.7	11,995.1	10,844.5	42.7	40.4	90.23		-1,192.6	713.9	860.0	785.6	74.47	11.549
12,000.0	10,844.2	12,160.6	10,845.5	45.0	44.0	90.24		-1,281.4	853.5	905.8	827.3	78.43	11.548
12,100.0	10,844.8	12,336.7	10,846.6	47.4	47.9	90.25		-1,362.2	1,009.8	948.1	865.5	82.61	11.477
12,110.4	10,844.8	12,355.7	10,846.7	47.6	48.4	90.26		-1,370.0	1,027.1	952.3	869.3	83.06	11.466
12,200.0	10,845.3	12,525.2	10,847.7	49.8	52.3	90.25		-1,432.3	1,184.8	984.6	895.7	88.89	11.077
12,300.0	10,845.8	12,727.1	10,848.9	52.2	56.9	90.25		-1,488.0	1,378.8	1,011.5	915.3	96.12	10.523
12,400.0	10,846.3	12,938.9	10,850.1	54.7	61.8	90.24		-1,524.0	1,587.4	1,027.7	923.7	103.97	9.885
12,500.0	10,846.8	13,153.6	10,851.3	57.3	66.6	90.24		-1,536.7	1,801.6	1,032.8	920.7	112.12	9.211
12,600.0	10,847.4	13,253.6	10,851.8	59.9	68.8	90.24		-1,537.1	1,901.6	1,032.4	915.0	117.41	8.793

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



**Gyrodata, Inc.**  
Anticollision Report



<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 21-18 4T2 - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft	
Survey Program: 0-MWD												Offset Well Error:	0.0 usft	
Reference		Offset		Semi Major Axis				Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	(°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,700.0	10,847.9	13,353.6	10,852.3	62.5	71.1	90.24	-1,537.5	2,001.6	1,032.0	909.2	122.74	8.408		
12,800.0	10,848.4	13,453.6	10,852.8	65.1	73.4	90.24	-1,537.9	2,101.6	1,031.6	903.5	128.13	8.051		
12,900.0	10,848.9	13,553.6	10,853.4	67.8	75.8	90.24	-1,538.3	2,201.6	1,031.2	897.7	133.55	7.721		
13,000.0	10,849.5	13,653.6	10,853.9	70.4	78.2	90.24	-1,538.7	2,301.6	1,030.8	891.8	139.01	7.415		
13,100.0	10,850.0	13,753.6	10,854.4	73.1	80.6	90.24	-1,539.1	2,401.6	1,030.4	885.9	144.50	7.131		
13,200.0	10,850.5	13,853.6	10,854.9	75.9	83.1	90.24	-1,539.5	2,501.6	1,030.0	880.0	150.02	6.866		
13,300.0	10,851.0	13,953.6	10,855.5	78.6	85.6	90.24	-1,539.9	2,601.6	1,029.6	874.1	155.56	6.619		
13,400.0	10,851.6	14,053.6	10,856.0	81.3	88.2	90.24	-1,540.4	2,701.6	1,029.2	868.1	161.13	6.388		
13,500.0	10,852.1	14,153.6	10,856.5	84.1	90.7	90.25	-1,540.8	2,801.6	1,028.8	862.1	166.71	6.171		
13,600.0	10,852.6	14,253.6	10,857.0	86.9	93.3	90.25	-1,541.2	2,901.6	1,028.4	856.1	172.32	5.968		
13,700.0	10,853.1	14,353.6	10,857.6	89.6	95.9	90.25	-1,541.6	3,001.5	1,028.0	850.1	177.94	5.777		
13,800.0	10,853.7	14,453.6	10,858.1	92.4	98.5	90.25	-1,542.0	3,101.5	1,027.6	844.1	183.58	5.598		
13,900.0	10,854.2	14,553.6	10,858.6	95.2	101.1	90.25	-1,542.4	3,201.5	1,027.2	838.0	189.23	5.429		
14,000.0	10,854.7	14,653.6	10,859.1	98.0	103.8	90.25	-1,542.8	3,301.5	1,026.8	831.9	194.89	5.269		
14,100.0	10,855.2	14,753.6	10,859.6	100.8	106.5	90.25	-1,543.2	3,401.5	1,026.4	825.9	200.57	5.118		
14,200.0	10,855.7	14,853.6	10,860.2	103.7	109.1	90.25	-1,543.6	3,501.5	1,026.0	819.8	206.25	4.975		
14,300.0	10,856.3	14,953.6	10,860.7	106.5	111.8	90.25	-1,544.0	3,601.5	1,025.7	813.7	211.95	4.839		
14,400.0	10,856.8	15,053.6	10,861.2	109.3	114.5	90.25	-1,544.4	3,701.5	1,025.3	807.6	217.65	4.711		
14,500.0	10,857.3	15,153.6	10,861.7	112.2	117.3	90.25	-1,544.8	3,801.5	1,024.9	801.5	223.36	4.588		
14,600.0	10,857.8	15,253.6	10,862.3	115.0	120.0	90.25	-1,545.2	3,901.5	1,024.5	795.4	229.08	4.472		
14,700.0	10,858.4	15,353.6	10,862.8	117.9	122.7	90.25	-1,545.7	4,001.5	1,024.1	789.3	234.81	4.361		
14,800.0	10,858.9	15,453.6	10,863.3	120.7	125.5	90.25	-1,546.1	4,101.5	1,023.7	783.1	240.54	4.256		
14,900.0	10,859.4	15,553.6	10,863.8	123.6	128.2	90.25	-1,546.5	4,201.5	1,023.3	777.0	246.28	4.155		
15,000.0	10,859.9	15,653.6	10,864.4	126.4	131.0	90.25	-1,546.9	4,301.5	1,022.9	770.8	252.03	4.059		
15,100.0	10,860.5	15,753.6	10,864.9	129.3	133.7	90.25	-1,547.3	4,401.5	1,022.5	764.7	257.78	3.967		
15,200.0	10,861.0	15,853.6	10,865.4	132.1	136.5	90.25	-1,547.7	4,501.5	1,022.1	758.5	263.53	3.878		
15,300.0	10,861.5	15,953.6	10,865.9	135.0	139.3	90.25	-1,548.1	4,601.5	1,021.7	752.4	269.29	3.794		
15,400.0	10,862.0	16,053.6	10,866.5	137.9	142.1	90.25	-1,548.5	4,701.5	1,021.3	746.2	275.06	3.713		
15,500.0	10,862.6	16,153.6	10,867.0	140.7	144.9	90.25	-1,548.9	4,801.5	1,020.9	740.1	280.83	3.635		
15,600.0	10,863.1	16,253.6	10,867.5	143.6	147.7	90.25	-1,549.3	4,901.5	1,020.5	733.9	286.60	3.561		
15,700.0	10,863.6	16,353.6	10,868.0	146.5	150.5	90.25	-1,549.7	5,001.5	1,020.1	727.7	292.38	3.489		
15,800.0	10,864.1	16,453.6	10,868.5	149.4	153.3	90.25	-1,550.1	5,101.5	1,019.7	721.5	298.15	3.420		
15,900.0	10,864.7	16,553.6	10,869.1	152.3	156.1	90.25	-1,550.5	5,201.5	1,019.3	715.4	303.94	3.354		
16,000.0	10,865.2	16,653.6	10,869.6	155.1	158.9	90.25	-1,551.0	5,301.5	1,018.9	709.2	309.72	3.290		
16,100.0	10,865.7	16,753.6	10,870.1	158.0	161.7	90.25	-1,551.4	5,401.5	1,018.5	703.0	315.51	3.228		
16,200.0	10,866.2	16,853.6	10,870.6	160.9	164.6	90.25	-1,551.8	5,501.5	1,018.1	696.8	321.30	3.169		
16,300.0	10,866.7	16,953.6	10,871.2	163.8	167.4	90.25	-1,552.2	5,601.5	1,017.7	690.6	327.10	3.111		
16,400.0	10,867.3	17,053.6	10,871.7	166.7	170.2	90.25	-1,552.6	5,701.5	1,017.3	684.4	332.89	3.056		
16,500.0	10,867.8	17,153.6	10,872.2	169.6	173.1	90.25	-1,553.0	5,801.5	1,016.9	678.2	338.69	3.003		
16,600.0	10,868.3	17,253.6	10,872.7	172.5	175.9	90.25	-1,553.4	5,901.5	1,016.5	672.0	344.49	2.951		
16,700.0	10,868.8	17,353.6	10,873.3	175.4	178.8	90.25	-1,553.8	6,001.5	1,016.1	665.8	350.29	2.901		
16,800.0	10,869.4	17,453.6	10,873.8	178.3	181.6	90.25	-1,554.2	6,101.5	1,015.7	659.6	356.10	2.852		
16,900.0	10,869.9	17,553.6	10,874.3	181.2	184.4	90.25	-1,554.6	6,201.5	1,015.3	653.4	361.91	2.806		
17,000.0	10,870.4	17,653.6	10,874.8	184.1	187.3	90.25	-1,555.0	6,301.5	1,014.9	647.2	367.71	2.760		
17,100.0	10,870.9	17,753.6	10,875.4	187.0	190.1	90.25	-1,555.4	6,401.4	1,014.6	641.0	373.52	2.716		
17,200.0	10,871.5	17,853.6	10,875.9	189.9	193.0	90.25	-1,555.9	6,501.4	1,014.2	634.8	379.34	2.674		
17,300.0	10,872.0	17,953.6	10,876.4	192.8	195.9	90.25	-1,556.3	6,601.4	1,013.8	628.6	385.15	2.632		
17,400.0	10,872.5	18,053.6	10,876.9	195.7	198.7	90.25	-1,556.7	6,701.4	1,013.4	622.4	390.96	2.592		
17,500.0	10,873.0	18,153.6	10,877.4	198.6	201.6	90.25	-1,557.1	6,801.4	1,013.0	616.2	396.78	2.553		
17,600.0	10,873.6	18,253.6	10,878.0	201.5	204.4	90.25	-1,557.5	6,901.4	1,012.6	610.0	402.60	2.515		
17,700.0	10,874.1	18,353.6	10,878.5	204.4	207.3	90.25	-1,557.9	7,001.4	1,012.2	603.8	408.42	2.478		
17,800.0	10,874.6	18,453.6	10,879.0	207.3	210.2	90.25	-1,558.3	7,101.4	1,011.8	597.5	414.24	2.443		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 21-18 4T2 - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
17,900.0	10,875.1	18,553.6	10,879.5	210.2	213.0	90.25		-1,558.7	7,201.4	1,011.4	591.3	420.06	2.408
18,000.0	10,875.6	18,653.6	10,880.1	213.1	215.9	90.25		-1,559.1	7,301.4	1,011.0	585.1	425.88	2.374
18,100.0	10,876.2	18,753.6	10,880.6	216.0	218.8	90.25		-1,559.5	7,401.4	1,010.6	578.9	431.70	2.341
18,200.0	10,876.7	18,853.6	10,881.1	218.9	221.7	90.25		-1,559.9	7,501.4	1,010.2	572.7	437.53	2.309
18,300.0	10,877.2	18,953.6	10,881.6	221.8	224.5	90.25		-1,560.3	7,601.4	1,009.8	566.4	443.35	2.278
18,400.0	10,877.7	19,053.6	10,882.2	224.7	227.4	90.25		-1,560.7	7,701.4	1,009.4	560.2	449.18	2.247
18,500.0	10,878.3	19,153.6	10,882.7	227.6	230.3	90.25		-1,561.2	7,801.4	1,009.0	554.0	455.01	2.218
18,600.0	10,878.8	19,253.6	10,883.2	230.5	233.2	90.25		-1,561.6	7,901.4	1,008.6	547.8	460.84	2.189
18,700.0	10,879.3	19,353.6	10,883.7	233.4	236.1	90.25		-1,562.0	8,001.4	1,008.2	541.5	466.67	2.160
18,800.0	10,879.8	19,453.6	10,884.3	236.4	238.9	90.25		-1,562.4	8,101.4	1,007.8	535.3	472.50	2.133
18,900.0	10,880.4	19,553.6	10,884.8	239.3	241.8	90.25		-1,562.8	8,201.4	1,007.4	529.1	478.33	2.106
19,000.0	10,880.9	19,653.6	10,885.3	242.2	244.7	90.25		-1,563.2	8,301.4	1,007.0	522.9	484.16	2.080
19,100.0	10,881.4	19,753.6	10,885.8	245.1	247.6	90.25		-1,563.6	8,401.4	1,006.6	516.6	489.99	2.054
19,200.0	10,881.9	19,853.6	10,886.3	248.0	250.5	90.25		-1,564.0	8,501.4	1,006.2	510.4	495.82	2.029
19,300.0	10,882.5	19,953.6	10,886.9	250.9	253.4	90.25		-1,564.4	8,601.4	1,005.8	504.2	501.66	2.005
19,400.0	10,883.0	20,053.6	10,887.4	253.8	256.3	90.25		-1,564.8	8,701.4	1,005.4	497.9	507.49	1.981
19,500.0	10,883.5	20,153.6	10,887.9	256.7	259.1	90.25		-1,565.2	8,801.4	1,005.0	491.7	513.33	1.958
19,600.0	10,884.0	20,253.6	10,888.4	259.7	262.0	90.25		-1,565.6	8,901.4	1,004.6	485.5	519.16	1.935
19,700.0	10,884.5	20,353.6	10,889.0	262.6	264.9	90.25		-1,566.0	9,001.4	1,004.2	479.2	525.00	1.913
19,800.0	10,885.1	20,453.6	10,889.5	265.5	267.8	90.25		-1,566.5	9,101.4	1,003.8	473.0	530.84	1.891
19,900.0	10,885.6	20,553.6	10,890.0	268.4	270.7	90.25		-1,566.9	9,201.4	1,003.5	466.8	536.68	1.870
20,000.0	10,886.1	20,653.6	10,890.5	271.3	273.6	90.25		-1,567.3	9,301.4	1,003.1	460.5	542.51	1.849
20,100.0	10,886.6	20,753.6	10,891.1	274.2	276.5	90.25		-1,567.7	9,401.4	1,002.7	454.3	548.35	1.828
20,200.0	10,887.2	20,853.6	10,891.6	277.2	279.4	90.25		-1,568.1	9,501.4	1,002.3	448.1	554.19	1.809
20,300.0	10,887.7	20,953.6	10,892.1	280.1	282.3	90.25		-1,568.5	9,601.4	1,001.9	441.8	560.03	1.789
20,400.0	10,888.2	21,053.6	10,892.6	283.0	285.2	90.25		-1,568.9	9,701.3	1,001.5	435.6	565.87	1.770
20,500.0	10,888.7	21,153.6	10,893.2	285.9	288.1	90.25		-1,569.3	9,801.3	1,001.1	429.4	571.71	1.751
20,600.0	10,889.3	21,253.6	10,893.7	288.8	291.0	90.25		-1,569.7	9,901.3	1,000.7	423.1	577.55	1.733
20,700.0	10,889.8	21,353.6	10,894.2	291.7	293.9	90.25		-1,570.1	10,001.3	1,000.3	416.9	583.39	1.715
20,717.6	10,889.9	21,371.1	10,894.3	292.3	294.4	90.25		-1,570.2	10,018.9	1,000.2	415.8	584.42	1.711 SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



**Gyrodata, Inc.**  
Anticollision Report



<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 21-18 5B - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-155.30	-119.6	-55.0	131.6				
100.0	100.0	100.0	100.0	0.1	0.1	-155.30	-119.6	-55.0	131.6	131.4	0.17	780.729	
200.0	200.0	200.0	200.0	0.3	0.3	-155.30	-119.6	-55.0	131.6	131.0	0.62	212.926	
300.0	300.0	300.0	300.0	0.5	0.5	-155.30	-119.6	-55.0	131.6	130.5	1.07	123.273	
400.0	400.0	400.0	400.0	0.8	0.8	-155.30	-119.6	-55.0	131.6	130.1	1.52	86.748	
500.0	500.0	500.0	500.0	1.0	1.0	-155.30	-119.6	-55.0	131.6	129.6	1.97	66.920	
600.0	600.0	600.0	600.0	1.2	1.2	-155.30	-119.6	-55.0	131.6	129.2	2.42	54.470	
700.0	700.0	700.0	700.0	1.4	1.4	-155.30	-119.6	-55.0	131.6	128.7	2.87	45.925	
800.0	800.0	800.0	800.0	1.7	1.7	-155.30	-119.6	-55.0	131.6	128.3	3.32	39.698	
900.0	900.0	900.0	900.0	1.9	1.9	-155.30	-119.6	-55.0	131.6	127.8	3.76	34.958	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-155.30	-119.6	-55.0	131.6	127.4	4.21	31.229	
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	-155.30	-119.6	-55.0	131.6	126.9	4.66	28.219	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-155.30	-119.6	-55.0	131.6	126.5	5.11	25.738	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-155.30	-119.6	-55.0	131.6	126.0	5.56	23.658	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-155.30	-119.6	-55.0	131.6	125.6	6.01	21.890	
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.2	-155.30	-119.6	-55.0	131.6	125.1	6.46	20.367	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-155.30	-119.6	-55.0	131.6	124.7	6.91	19.042	
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	-155.30	-119.6	-55.0	131.6	124.3	7.36	17.879	
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	-155.30	-119.6	-55.0	131.6	123.8	7.81	16.850	
1,900.0	1,900.0	1,900.0	1,900.0	4.1	4.1	-155.30	-119.6	-55.0	131.6	123.4	8.26	15.933	
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	-155.30	-119.6	-55.0	131.6	122.9	8.71	15.111	
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	-155.30	-119.6	-55.0	131.6	122.5	9.16	14.369	
2,200.0	2,200.0	2,200.0	2,200.0	4.8	4.8	-155.30	-119.6	-55.0	131.6	122.0	9.61	13.697	
2,300.0	2,300.0	2,300.0	2,300.0	5.0	5.0	-155.30	-119.6	-55.0	131.6	121.6	10.06	13.085	
2,400.0	2,400.0	2,400.0	2,400.0	5.3	5.3	-155.30	-119.6	-55.0	131.6	121.1	10.51	12.525	
2,500.0	2,500.0	2,500.0	2,500.0	5.5	5.5	-155.30	-119.6	-55.0	131.6	120.7	10.96	12.011 CC, ES	
2,600.0	2,600.0	2,596.8	2,596.8	5.7	5.7	114.83	-121.1	-54.4	133.5	122.2	11.36	11.757	
2,650.0	2,649.9	2,645.1	2,645.1	5.8	5.8	114.99	-123.0	-53.7	136.0	124.4	11.54	11.779	
2,700.0	2,699.9	2,694.9	2,694.7	5.9	5.8	115.20	-125.5	-52.9	138.9	127.2	11.73	11.842	
2,800.0	2,799.7	2,794.7	2,794.4	6.1	6.0	115.61	-130.4	-51.1	144.8	132.7	12.11	11.958	
2,900.0	2,899.6	2,894.5	2,894.1	6.3	6.2	115.98	-135.3	-49.3	150.8	138.3	12.50	12.060	
3,000.0	2,999.5	2,994.3	2,993.8	6.5	6.4	116.32	-140.2	-47.5	156.7	143.8	12.89	12.151	
3,100.0	3,099.3	3,094.2	3,093.5	6.7	6.6	116.64	-145.1	-45.7	162.6	149.3	13.30	12.231	
3,200.0	3,199.2	3,194.0	3,193.2	7.0	6.8	116.93	-150.0	-43.9	168.6	154.9	13.70	12.301	
3,300.0	3,299.0	3,293.8	3,292.8	7.2	7.0	117.21	-154.9	-42.1	174.5	160.4	14.11	12.364	
3,400.0	3,398.9	3,393.6	3,392.5	7.4	7.2	117.46	-159.8	-40.3	180.4	165.9	14.53	12.419	
3,501.2	3,500.0	3,494.7	3,493.4	7.6	7.4	117.71	-164.8	-38.5	186.5	171.5	14.96	12.468	
3,600.0	3,598.7	3,597.6	3,596.3	7.8	7.6	117.90	-168.3	-37.2	190.5	175.1	15.38	12.389	
3,651.2	3,649.9	3,651.2	3,649.9	7.9	7.7	-152.07	-168.8	-37.1	191.1	175.5	15.51	12.315	
3,700.0	3,698.7	3,700.0	3,698.7	8.0	7.8	-152.07	-168.8	-37.1	191.1	175.3	15.72	12.153	
3,800.0	3,798.7	3,800.0	3,798.7	8.2	8.0	-152.07	-168.8	-37.1	191.1	174.9	16.16	11.821	
3,900.0	3,898.7	3,900.0	3,898.7	8.5	8.2	-152.07	-168.8	-37.1	191.1	174.5	16.60	11.507	
4,000.0	3,998.7	4,000.0	3,998.7	8.7	8.5	-152.07	-168.8	-37.1	191.1	174.0	17.04	11.209	
4,100.0	4,098.7	4,100.0	4,098.7	8.9	8.7	-152.07	-168.8	-37.1	191.1	173.6	17.49	10.926	
4,200.0	4,198.7	4,200.0	4,198.7	9.1	8.9	-152.07	-168.8	-37.1	191.1	173.1	17.93	10.657	
4,300.0	4,298.7	4,300.0	4,298.7	9.4	9.1	-152.07	-168.8	-37.1	191.1	172.7	18.37	10.400	
4,400.0	4,398.7	4,400.0	4,398.7	9.6	9.3	-152.07	-168.8	-37.1	191.1	172.2	18.81	10.155	
4,500.0	4,498.7	4,500.0	4,498.7	9.8	9.6	-152.07	-168.8	-37.1	191.1	171.8	19.26	9.922	
4,600.0	4,598.7	4,600.0	4,598.7	10.0	9.8	-152.07	-168.8	-37.1	191.1	171.4	19.70	9.698	
4,700.0	4,698.7	4,700.0	4,698.7	10.2	10.0	-152.07	-168.8	-37.1	191.1	170.9	20.14	9.485	
4,800.0	4,798.7	4,800.0	4,798.7	10.5	10.2	-152.07	-168.8	-37.1	191.1	170.5	20.59	9.280	
4,900.0	4,898.7	4,900.0	4,898.7	10.7	10.4	-152.07	-168.8	-37.1	191.1	170.0	21.03	9.084	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



**Gyrodata, Inc.**  
Anticollision Report



<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 21-18 5B - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft
Survey Program: 0-MWD				Distance								Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
5,000.0	4,998.7	5,000.0	4,998.7	10.9	10.7	-152.07		-168.8	-37.1	191.1	169.6	21.48	8.896
5,100.0	5,098.7	5,100.0	5,098.7	11.1	10.9	-152.07		-168.8	-37.1	191.1	169.1	21.92	8.716
5,200.0	5,198.7	5,200.0	5,198.7	11.4	11.1	-152.07		-168.8	-37.1	191.1	168.7	22.37	8.542
5,300.0	5,298.7	5,300.0	5,298.7	11.6	11.3	-152.07		-168.8	-37.1	191.1	168.2	22.81	8.376
5,400.0	5,398.7	5,400.0	5,398.7	11.8	11.6	-152.07		-168.8	-37.1	191.1	167.8	23.26	8.215
5,500.0	5,498.7	5,500.0	5,498.7	12.0	11.8	-152.07		-168.8	-37.1	191.1	167.4	23.70	8.061
5,600.0	5,598.7	5,600.0	5,598.7	12.2	12.0	-152.07		-168.8	-37.1	191.1	166.9	24.15	7.912
5,700.0	5,698.7	5,700.0	5,698.7	12.5	12.2	-152.07		-168.8	-37.1	191.1	166.5	24.59	7.769
5,800.0	5,798.7	5,800.0	5,798.7	12.7	12.4	-152.07		-168.8	-37.1	191.1	166.0	25.04	7.631
5,900.0	5,898.7	5,900.0	5,898.7	12.9	12.7	-152.07		-168.8	-37.1	191.1	165.6	25.48	7.497
6,000.0	5,998.7	6,000.0	5,998.7	13.1	12.9	-152.07		-168.8	-37.1	191.1	165.1	25.93	7.368
6,100.0	6,098.7	6,100.0	6,098.7	13.4	13.1	-152.07		-168.8	-37.1	191.1	164.7	26.38	7.243
6,200.0	6,198.7	6,200.0	6,198.7	13.6	13.3	-152.07		-168.8	-37.1	191.1	164.2	26.82	7.123
6,300.0	6,298.7	6,300.0	6,298.7	13.8	13.6	-152.07		-168.8	-37.1	191.1	163.8	27.27	7.006
6,400.0	6,398.7	6,400.0	6,398.7	14.0	13.8	-152.07		-168.8	-37.1	191.1	163.3	27.72	6.893
6,500.0	6,498.7	6,500.0	6,498.7	14.3	14.0	-152.07		-168.8	-37.1	191.1	162.9	28.16	6.784
6,600.0	6,598.7	6,600.0	6,598.7	14.5	14.2	-152.07		-168.8	-37.1	191.1	162.4	28.61	6.678
6,700.0	6,698.7	6,700.0	6,698.7	14.7	14.4	-152.07		-168.8	-37.1	191.1	162.0	29.06	6.576
6,800.0	6,798.7	6,800.0	6,798.7	14.9	14.7	-152.07		-168.8	-37.1	191.1	161.6	29.50	6.476
6,900.0	6,898.7	6,900.0	6,898.7	15.2	14.9	-152.07		-168.8	-37.1	191.1	161.1	29.95	6.379
7,000.0	6,998.7	7,000.0	6,998.7	15.4	15.1	-152.07		-168.8	-37.1	191.1	160.7	30.40	6.286
7,100.0	7,098.7	7,100.0	7,098.7	15.6	15.3	-152.07		-168.8	-37.1	191.1	160.2	30.84	6.194
7,200.0	7,198.7	7,200.0	7,198.7	15.8	15.6	-152.07		-168.8	-37.1	191.1	159.8	31.29	6.106
7,300.0	7,298.7	7,300.0	7,298.7	16.0	15.8	-152.07		-168.8	-37.1	191.1	159.3	31.74	6.020
7,400.0	7,398.7	7,400.0	7,398.7	16.3	16.0	-152.07		-168.8	-37.1	191.1	158.9	32.19	5.936
7,500.0	7,498.7	7,500.0	7,498.7	16.5	16.2	-152.07		-168.8	-37.1	191.1	158.4	32.63	5.855
7,600.0	7,598.7	7,600.0	7,598.7	16.7	16.5	-152.07		-168.8	-37.1	191.1	158.0	33.08	5.776
7,700.0	7,698.7	7,700.0	7,698.7	16.9	16.7	-152.07		-168.8	-37.1	191.1	157.5	33.53	5.699
7,800.0	7,798.7	7,800.0	7,798.7	17.2	16.9	-152.07		-168.8	-37.1	191.1	157.1	33.98	5.623
7,900.0	7,898.7	7,900.0	7,898.7	17.4	17.1	-152.07		-168.8	-37.1	191.1	156.6	34.42	5.550
8,000.0	7,998.7	8,000.0	7,998.7	17.6	17.3	-152.07		-168.8	-37.1	191.1	156.2	34.87	5.479
8,100.0	8,098.7	8,100.0	8,098.7	17.8	17.6	-152.07		-168.8	-37.1	191.1	155.7	35.32	5.410
8,200.0	8,198.7	8,200.0	8,198.7	18.1	17.8	-152.07		-168.8	-37.1	191.1	155.3	35.77	5.342
8,300.0	8,298.7	8,300.0	8,298.7	18.3	18.0	-152.07		-168.8	-37.1	191.1	154.8	36.21	5.276
8,400.0	8,398.7	8,400.0	8,398.7	18.5	18.2	-152.07		-168.8	-37.1	191.1	154.4	36.66	5.211
8,500.0	8,498.7	8,500.0	8,498.7	18.7	18.5	-152.07		-168.8	-37.1	191.1	153.9	37.11	5.149
8,600.0	8,598.7	8,600.0	8,598.7	19.0	18.7	-152.07		-168.8	-37.1	191.1	153.5	37.56	5.087
8,700.0	8,698.7	8,700.0	8,698.7	19.2	18.9	-152.07		-168.8	-37.1	191.1	153.1	38.01	5.027
8,800.0	8,798.7	8,800.0	8,798.7	19.4	19.1	-152.07		-168.8	-37.1	191.1	152.6	38.45	4.969
8,900.0	8,898.7	8,900.0	8,898.7	19.6	19.4	-152.07		-168.8	-37.1	191.1	152.2	38.90	4.911
9,000.0	8,998.7	9,000.0	8,998.7	19.9	19.6	-152.07		-168.8	-37.1	191.1	151.7	39.35	4.855
9,100.0	9,098.7	9,100.0	9,098.7	20.1	19.8	-152.07		-168.8	-37.1	191.1	151.3	39.80	4.801
9,200.0	9,198.7	9,200.0	9,198.7	20.3	20.0	-152.07		-168.8	-37.1	191.1	150.8	40.25	4.747
9,300.0	9,298.7	9,300.0	9,298.7	20.5	20.3	-152.07		-168.8	-37.1	191.1	150.4	40.69	4.695
9,400.0	9,398.7	9,400.0	9,398.7	20.8	20.5	-152.07		-168.8	-37.1	191.1	149.9	41.14	4.644
9,500.0	9,498.7	9,500.0	9,498.7	21.0	20.7	-152.07		-168.8	-37.1	191.1	149.5	41.59	4.594
9,600.0	9,598.7	9,600.0	9,598.7	21.2	20.9	-152.07		-168.8	-37.1	191.1	149.0	42.04	4.545
9,700.0	9,698.7	9,700.0	9,698.7	21.4	21.2	-152.07		-168.8	-37.1	191.1	148.6	42.49	4.497
9,800.0	9,798.7	9,800.0	9,798.7	21.6	21.4	-152.07		-168.8	-37.1	191.1	148.1	42.93	4.450
9,900.0	9,898.7	9,900.0	9,898.7	21.9	21.6	-152.07		-168.8	-37.1	191.1	147.7	43.38	4.404
10,000.0	9,998.7	10,000.0	9,998.7	22.1	21.8	-152.07		-168.8	-37.1	191.1	147.2	43.83	4.359
10,100.0	10,098.7	10,100.0	10,098.7	22.3	22.0	-152.07		-168.8	-37.1	191.1	146.8	44.28	4.315

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



**Gyrodata, Inc.**  
Anticollision Report



<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 21-18 5B - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft
Survey Program: 0-MWD				Distance								Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
10,200.0	10,198.7	10,200.0	10,198.7	22.5	22.3	-152.07		-168.8	-37.1	191.1	146.3	44.73	4.272
10,259.7	10,258.4	10,259.7	10,258.4	22.7	22.4	-152.07		-168.8	-37.1	191.1	146.1	45.00	4.246
10,300.0	10,298.7	10,295.4	10,294.0	22.8	22.5	-152.20		-169.2	-36.8	191.4	146.2	45.16	4.238
10,363.3	10,362.0	10,347.0	10,345.4	22.9	22.6	-153.48		-173.7	-34.3	194.8	149.4	45.39	4.292
10,375.0	10,373.7	10,356.4	10,354.7	22.9	22.6	86.05		-175.0	-33.5	195.9	150.4	45.52	4.303
10,400.0	10,398.7	10,375.0	10,372.9	23.0	22.6	85.13		-178.1	-31.7	198.5	152.9	45.60	4.353
10,425.0	10,423.5	10,396.3	10,393.6	23.0	22.7	84.19		-182.4	-29.2	201.7	156.0	45.70	4.414
10,450.0	10,448.2	10,416.0	10,412.6	23.1	22.7	83.36		-187.1	-26.5	205.3	159.5	45.78	4.485
10,475.0	10,472.7	10,435.6	10,431.2	23.1	22.8	82.59		-192.4	-23.5	209.4	163.6	45.87	4.566
10,500.0	10,496.8	10,455.1	10,449.4	23.2	22.8	81.88		-198.3	-20.0	214.0	168.0	45.96	4.656
10,525.0	10,520.6	10,475.0	10,467.8	23.3	22.8	81.23		-205.1	-16.2	218.9	172.9	46.05	4.755
10,550.0	10,544.0	10,493.5	10,484.5	23.3	22.9	80.64		-211.9	-12.2	224.3	178.2	46.13	4.862
10,575.0	10,566.8	10,512.4	10,501.3	23.4	22.9	80.10		-219.5	-7.8	230.0	183.8	46.21	4.977
10,600.0	10,589.1	10,531.2	10,517.6	23.5	23.0	79.61		-227.5	-3.2	236.1	189.8	46.29	5.100
10,625.0	10,610.8	10,550.0	10,533.5	23.5	23.0	79.17		-236.2	1.8	242.5	196.1	46.38	5.229
10,650.0	10,631.8	10,568.3	10,548.6	23.6	23.1	78.76		-245.1	7.0	249.3	202.8	46.46	5.365
10,675.0	10,652.0	10,586.6	10,563.3	23.7	23.1	78.38		-254.5	12.4	256.3	209.8	46.55	5.506
10,700.0	10,671.5	10,604.7	10,577.5	23.8	23.2	78.03		-264.3	18.1	263.7	217.0	46.64	5.653
10,725.0	10,690.1	10,625.0	10,592.8	23.9	23.3	77.78		-275.8	24.7	271.3	224.6	46.75	5.803
10,750.0	10,707.8	10,640.5	10,604.1	24.0	23.3	77.38		-285.0	30.0	279.2	232.3	46.85	5.960
10,775.0	10,724.5	10,658.2	10,616.6	24.1	23.4	77.09		-295.8	36.3	287.3	240.4	46.96	6.119
10,800.0	10,740.3	10,675.0	10,628.1	24.3	23.5	76.77		-306.5	42.4	295.7	248.7	47.08	6.281
10,825.0	10,755.0	10,693.1	10,639.9	24.4	23.5	76.52		-318.4	49.3	304.4	257.1	47.23	6.445
10,850.0	10,768.7	10,710.4	10,650.7	24.6	23.6	76.24		-330.1	56.0	313.2	265.8	47.38	6.611
10,875.0	10,781.2	10,725.0	10,659.4	24.8	23.7	75.83		-340.2	61.9	322.3	274.8	47.53	6.781
10,900.0	10,792.6	10,744.6	10,670.6	25.0	23.8	75.69		-354.2	70.0	331.5	283.8	47.74	6.945
10,925.0	10,802.8	10,761.6	10,679.7	25.2	23.9	75.42		-366.6	77.1	341.0	293.0	47.94	7.112
10,950.0	10,811.8	10,778.5	10,688.2	25.4	24.0	75.14		-379.3	84.4	350.5	302.4	48.16	7.278
10,975.0	10,819.6	10,795.4	10,696.2	25.7	24.1	74.86		-392.1	91.8	360.3	311.9	48.41	7.443
11,000.0	10,826.1	10,812.2	10,703.7	25.9	24.2	74.58		-405.1	99.4	370.2	321.5	48.67	7.606
11,025.0	10,831.3	10,828.9	10,710.6	26.2	24.3	74.30		-418.3	107.0	380.2	331.2	48.95	7.767
11,050.0	10,835.3	10,845.7	10,717.0	26.5	24.4	74.02		-431.8	114.7	390.3	341.1	49.26	7.924
11,075.0	10,837.9	10,862.4	10,722.8	26.8	24.6	73.74		-445.3	122.6	400.5	351.0	49.58	8.078
11,100.0	10,839.3	10,879.2	10,728.1	27.1	24.7	73.46		-459.1	130.5	410.8	360.9	49.93	8.228
11,110.8	10,839.5	10,886.4	10,730.2	27.2	24.8	73.34		-465.1	134.0	415.3	365.2	50.09	8.292
11,125.8	10,839.5	10,896.6	10,733.0	27.4	24.8	73.94		-473.6	138.9	421.6	371.2	50.45	8.357
11,200.0	10,839.9	10,947.6	10,743.7	28.5	25.3	76.13		-516.8	163.8	455.8	403.6	52.15	8.740
11,300.0	10,840.5	11,016.9	10,749.7	30.1	26.0	77.72		-576.5	198.3	508.9	454.5	54.36	9.362
11,400.0	10,841.0	11,121.3	10,750.3	31.9	27.2	78.93		-665.9	252.1	566.5	509.6	56.92	9.952
11,500.0	10,841.5	11,239.1	10,750.9	33.9	28.8	80.04		-763.2	318.5	623.8	564.0	59.76	10.438
11,600.0	10,842.1	11,363.2	10,751.6	36.0	30.7	80.98		-861.1	394.8	680.3	617.5	62.79	10.835
11,700.0	10,842.6	11,494.4	10,752.4	38.1	32.9	81.78		-958.9	482.3	735.7	669.7	65.99	11.149
11,800.0	10,843.2	11,633.6	10,753.2	40.4	35.6	82.47		-1,055.8	582.1	789.7	720.3	69.39	11.381
11,900.0	10,843.7	11,781.7	10,754.1	42.7	38.6	83.07		-1,150.7	695.7	841.8	768.8	72.95	11.539
12,000.0	10,844.2	11,939.6	10,755.0	45.0	42.0	83.60		-1,241.8	824.6	891.5	814.8	76.71	11.623
12,100.0	10,844.8	12,108.2	10,756.0	47.4	45.7	84.07		-1,327.1	970.1	938.4	857.8	80.65	11.637
12,110.4	10,844.8	12,126.5	10,756.2	47.6	46.1	84.11		-1,335.5	986.3	943.1	862.1	81.08	11.632
12,200.0	10,845.3	12,290.1	10,757.1	49.8	49.9	84.56		-1,404.2	1,134.7	980.0	893.4	86.62	11.314
12,300.0	10,845.8	12,487.1	10,758.3	52.2	54.5	84.93		-1,469.7	1,320.4	1,012.4	918.8	93.56	10.821
12,400.0	10,846.3	12,696.3	10,759.5	54.7	59.3	85.17		-1,517.9	1,523.9	1,034.6	933.4	101.20	10.224
12,500.0	10,846.8	12,913.7	10,760.7	57.3	64.3	85.29		-1,544.1	1,739.5	1,045.9	936.5	109.34	9.565
12,600.0	10,847.4	13,077.7	10,761.6	59.9	68.0	85.30		-1,548.2	1,903.5	1,047.0	930.7	116.26	9.005

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



**Gyrodata, Inc.**  
Anticollision Report



<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 21-18 5B - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference				Offset		Semi Major Axis		Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	Offset	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
12,700.0	10,847.9	13,177.7	10,762.1	62.5	70.2	85.30	-1,548.4	2,003.5	1,046.4	924.8	121.57	8.608	
12,800.0	10,848.4	13,277.7	10,762.6	65.1	72.6	85.29	-1,548.7	2,103.5	1,045.9	918.9	126.93	8.240	
12,900.0	10,848.9	13,377.7	10,763.2	67.8	74.9	85.29	-1,548.9	2,203.5	1,045.3	913.0	132.33	7.900	
13,000.0	10,849.5	13,477.7	10,763.7	70.4	77.3	85.29	-1,549.2	2,303.5	1,044.8	907.0	137.76	7.584	
13,100.0	10,850.0	13,577.7	10,764.2	73.1	79.8	85.29	-1,549.5	2,403.5	1,044.3	901.0	143.23	7.291	
13,200.0	10,850.5	13,677.7	10,764.7	75.9	82.2	85.28	-1,549.7	2,503.5	1,043.7	895.0	148.73	7.018	
13,300.0	10,851.0	13,777.7	10,765.3	78.6	84.7	85.28	-1,550.0	2,603.5	1,043.2	888.9	154.25	6.763	
13,400.0	10,851.6	13,877.7	10,765.8	81.3	87.3	85.28	-1,550.3	2,703.5	1,042.6	882.9	159.79	6.525	
13,500.0	10,852.1	13,977.7	10,766.3	84.1	89.8	85.28	-1,550.5	2,803.5	1,042.1	876.8	165.36	6.302	
13,600.0	10,852.6	14,077.7	10,766.8	86.9	92.4	85.27	-1,550.8	2,903.5	1,041.6	870.6	170.94	6.093	
13,700.0	10,853.1	14,177.7	10,767.3	89.6	95.0	85.27	-1,551.1	3,003.5	1,041.0	864.5	176.54	5.897	
13,800.0	10,853.7	14,277.7	10,767.9	92.4	97.6	85.27	-1,551.3	3,103.5	1,040.5	858.3	182.15	5.712	
13,900.0	10,854.2	14,377.7	10,768.4	95.2	100.2	85.27	-1,551.6	3,203.5	1,040.0	852.2	187.78	5.538	
14,000.0	10,854.7	14,477.7	10,768.9	98.0	102.9	85.26	-1,551.9	3,303.5	1,039.4	846.0	193.42	5.374	
14,100.0	10,855.2	14,577.7	10,769.4	100.8	105.5	85.26	-1,552.1	3,403.5	1,038.9	839.8	199.08	5.218	
14,200.0	10,855.7	14,677.7	10,770.0	103.7	108.2	85.26	-1,552.4	3,503.5	1,038.3	833.6	204.74	5.071	
14,300.0	10,856.3	14,777.7	10,770.5	106.5	110.9	85.26	-1,552.6	3,603.5	1,037.8	827.4	210.41	4.932	
14,400.0	10,856.8	14,877.7	10,771.0	109.3	113.6	85.25	-1,552.9	3,703.5	1,037.3	821.2	216.10	4.800	
14,500.0	10,857.3	14,977.7	10,771.5	112.2	116.3	85.25	-1,553.2	3,803.4	1,036.7	814.9	221.79	4.674	
14,600.0	10,857.8	15,077.7	10,772.1	115.0	119.0	85.25	-1,553.4	3,903.4	1,036.2	808.7	227.49	4.555	
14,700.0	10,858.4	15,177.7	10,772.6	117.9	121.8	85.25	-1,553.7	4,003.4	1,035.7	802.5	233.19	4.441	
14,800.0	10,858.9	15,277.7	10,773.1	120.7	124.5	85.24	-1,554.0	4,103.4	1,035.1	796.2	238.90	4.333	
14,900.0	10,859.4	15,377.7	10,773.6	123.6	127.3	85.24	-1,554.2	4,203.4	1,034.6	790.0	244.62	4.229	
15,000.0	10,859.9	15,477.7	10,774.2	126.4	130.0	85.24	-1,554.5	4,303.4	1,034.0	783.7	250.34	4.130	
15,100.0	10,860.5	15,577.7	10,774.7	129.3	132.8	85.24	-1,554.8	4,403.4	1,033.5	777.4	256.07	4.036	
15,200.0	10,861.0	15,677.7	10,775.2	132.1	135.6	85.23	-1,555.0	4,503.4	1,033.0	771.2	261.81	3.946	
15,300.0	10,861.5	15,777.7	10,775.7	135.0	138.3	85.23	-1,555.3	4,603.4	1,032.4	764.9	267.55	3.859	
15,400.0	10,862.0	15,877.7	10,776.3	137.9	141.1	85.23	-1,555.5	4,703.4	1,031.9	758.6	273.29	3.776	
15,500.0	10,862.6	15,977.7	10,776.8	140.7	143.9	85.23	-1,555.8	4,803.4	1,031.3	752.3	279.04	3.696	
15,600.0	10,863.1	16,077.7	10,777.3	143.6	146.7	85.22	-1,556.1	4,903.4	1,030.8	746.0	284.79	3.620	
15,700.0	10,863.6	16,177.7	10,777.8	146.5	149.5	85.22	-1,556.3	5,003.4	1,030.3	739.7	290.54	3.546	
15,800.0	10,864.1	16,277.7	10,778.3	149.4	152.3	85.22	-1,556.6	5,103.4	1,029.7	733.4	296.30	3.475	
15,900.0	10,864.7	16,377.7	10,778.9	152.3	155.1	85.22	-1,556.9	5,203.4	1,029.2	727.1	302.06	3.407	
16,000.0	10,865.2	16,477.7	10,779.4	155.1	158.0	85.21	-1,557.1	5,303.4	1,028.7	720.8	307.82	3.342	
16,100.0	10,865.7	16,577.7	10,779.9	158.0	160.8	85.21	-1,557.4	5,403.4	1,028.1	714.5	313.59	3.279	
16,200.0	10,866.2	16,677.7	10,780.4	160.9	163.6	85.21	-1,557.7	5,503.4	1,027.6	708.2	319.36	3.218	
16,300.0	10,866.7	16,777.7	10,781.0	163.8	166.4	85.21	-1,557.9	5,603.4	1,027.0	701.9	325.13	3.159	
16,400.0	10,867.3	16,877.7	10,781.5	166.7	169.3	85.20	-1,558.2	5,703.4	1,026.5	695.6	330.90	3.102	
16,500.0	10,867.8	16,977.7	10,782.0	169.6	172.1	85.20	-1,558.5	5,803.4	1,026.0	689.3	336.68	3.047	
16,600.0	10,868.3	17,077.7	10,782.5	172.5	174.9	85.20	-1,558.7	5,903.4	1,025.4	683.0	342.46	2.994	
16,700.0	10,868.8	17,177.7	10,783.1	175.4	177.8	85.20	-1,559.0	6,003.4	1,024.9	676.6	348.24	2.943	
16,800.0	10,869.4	17,277.7	10,783.6	178.3	180.6	85.19	-1,559.2	6,103.4	1,024.3	670.3	354.02	2.893	
16,900.0	10,869.9	17,377.7	10,784.1	181.2	183.5	85.19	-1,559.5	6,203.4	1,023.8	664.0	359.81	2.845	
17,000.0	10,870.4	17,477.7	10,784.6	184.1	186.3	85.19	-1,559.8	6,303.4	1,023.3	657.7	365.59	2.799	
17,100.0	10,870.9	17,577.7	10,785.2	187.0	189.2	85.19	-1,560.0	6,403.4	1,022.7	651.4	371.38	2.754	
17,200.0	10,871.5	17,677.7	10,785.7	189.9	192.0	85.18	-1,560.3	6,503.4	1,022.2	645.0	377.17	2.710	
17,300.0	10,872.0	17,777.7	10,786.2	192.8	194.9	85.18	-1,560.6	6,603.4	1,021.7	638.7	382.96	2.668	
17,400.0	10,872.5	17,877.7	10,786.7	195.7	197.8	85.18	-1,560.8	6,703.4	1,021.1	632.4	388.75	2.627	
17,500.0	10,873.0	17,977.7	10,787.2	198.6	200.6	85.18	-1,561.1	6,803.4	1,020.6	626.0	394.55	2.587	
17,600.0	10,873.6	18,077.7	10,787.8	201.5	203.5	85.17	-1,561.4	6,903.3	1,020.0	619.7	400.34	2.548	
17,700.0	10,874.1	18,177.7	10,788.3	204.4	206.3	85.17	-1,561.6	7,003.3	1,019.5	613.4	406.14	2.510	
17,800.0	10,874.6	18,277.7	10,788.8	207.3	209.2	85.17	-1,561.9	7,103.3	1,019.0	607.0	411.94	2.474	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

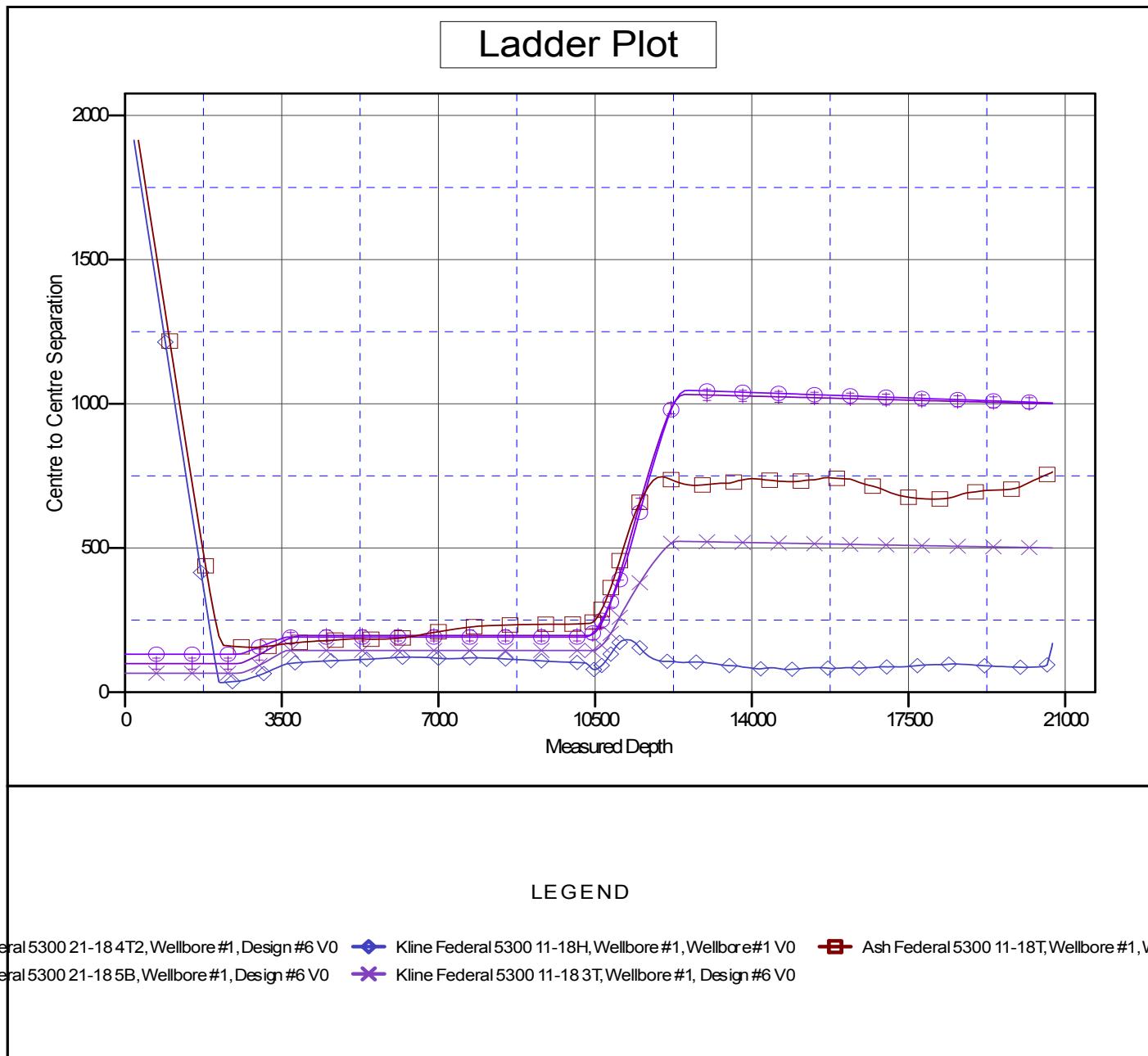
Offset Design 153N-100W-17/18 - Kline Federal 5300 21-18 5B - Wellbore #1 - Design #6												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	0.0 usft
Reference		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
17,900.0	10,875.1	18,377.7	10,789.3	210.2	212.1	85.17		-1,562.2	7,203.3	1,018.4	600.7	417.74	2.438
18,000.0	10,875.6	18,477.7	10,789.9	213.1	215.0	85.16		-1,562.4	7,303.3	1,017.9	594.4	423.54	2.403
18,100.0	10,876.2	18,577.7	10,790.4	216.0	217.8	85.16		-1,562.7	7,403.3	1,017.4	588.0	429.34	2.370
18,200.0	10,876.7	18,677.7	10,790.9	218.9	220.7	85.16		-1,562.9	7,503.3	1,016.8	581.7	435.14	2.337
18,300.0	10,877.2	18,777.7	10,791.4	221.8	223.6	85.16		-1,563.2	7,603.3	1,016.3	575.3	440.94	2.305
18,400.0	10,877.7	18,877.7	10,792.0	224.7	226.5	85.15		-1,563.5	7,703.3	1,015.7	569.0	446.75	2.274
18,500.0	10,878.3	18,977.7	10,792.5	227.6	229.3	85.15		-1,563.7	7,803.3	1,015.2	562.7	452.55	2.243
18,600.0	10,878.8	19,077.7	10,793.0	230.5	232.2	85.15		-1,564.0	7,903.3	1,014.7	556.3	458.36	2.214
18,700.0	10,879.3	19,177.7	10,793.5	233.4	235.1	85.15		-1,564.3	8,003.3	1,014.1	550.0	464.16	2.185
18,800.0	10,879.8	19,277.7	10,794.1	236.4	238.0	85.14		-1,564.5	8,103.3	1,013.6	543.6	469.97	2.157
18,900.0	10,880.4	19,377.7	10,794.6	239.3	240.9	85.14		-1,564.8	8,203.3	1,013.0	537.3	475.78	2.129
19,000.0	10,880.9	19,477.7	10,795.1	242.2	243.7	85.14		-1,565.1	8,303.3	1,012.5	530.9	481.59	2.102
19,100.0	10,881.4	19,577.7	10,795.6	245.1	246.6	85.14		-1,565.3	8,403.3	1,012.0	524.6	487.40	2.076
19,200.0	10,881.9	19,677.7	10,796.1	248.0	249.5	85.13		-1,565.6	8,503.3	1,011.4	518.2	493.21	2.051
19,300.0	10,882.5	19,777.7	10,796.7	250.9	252.4	85.13		-1,565.8	8,603.3	1,010.9	511.9	499.02	2.026
19,400.0	10,883.0	19,877.6	10,797.2	253.8	255.3	85.13		-1,566.1	8,703.3	1,010.4	505.5	504.83	2.001
19,500.0	10,883.5	19,977.6	10,797.7	256.7	258.2	85.13		-1,566.4	8,803.3	1,009.8	499.2	510.64	1.978
19,600.0	10,884.0	20,077.6	10,798.2	259.7	261.1	85.12		-1,566.6	8,903.3	1,009.3	492.8	516.45	1.954
19,700.0	10,884.5	20,177.6	10,798.8	262.6	264.0	85.12		-1,566.9	9,003.3	1,008.7	486.5	522.27	1.931
19,800.0	10,885.1	20,277.6	10,799.3	265.5	266.9	85.12		-1,567.2	9,103.3	1,008.2	480.1	528.08	1.909
19,900.0	10,885.6	20,377.6	10,799.8	268.4	269.7	85.11		-1,567.4	9,203.3	1,007.7	473.8	533.89	1.887
20,000.0	10,886.1	20,477.6	10,800.3	271.3	272.6	85.11		-1,567.7	9,303.3	1,007.1	467.4	539.71	1.866
20,100.0	10,886.6	20,577.6	10,800.9	274.2	275.5	85.11		-1,568.0	9,403.3	1,006.6	461.1	545.52	1.845
20,200.0	10,887.2	20,677.6	10,801.4	277.2	278.4	85.11		-1,568.2	9,503.3	1,006.1	454.7	551.34	1.825
20,300.0	10,887.7	20,777.6	10,801.9	280.1	281.3	85.10		-1,568.5	9,603.3	1,005.5	448.4	557.15	1.805
20,400.0	10,888.2	20,877.6	10,802.4	283.0	284.2	85.10		-1,568.8	9,703.3	1,005.0	442.0	562.97	1.785
20,500.0	10,888.7	20,977.6	10,803.0	285.9	287.1	85.10		-1,569.0	9,803.3	1,004.4	435.7	568.79	1.766
20,600.0	10,889.3	21,077.6	10,803.5	288.8	290.0	85.10		-1,569.3	9,903.3	1,003.9	429.3	574.61	1.747
20,700.0	10,889.8	21,177.6	10,804.0	291.7	292.9	85.09		-1,569.5	10,003.3	1,003.4	422.9	580.42	1.729
20,717.6	10,889.9	21,195.2	10,804.1	292.3	293.4	85.09		-1,569.6	10,020.8	1,003.3	421.8	581.44	1.725 SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	Oasis Petroleum	<b>Local Co-ordinate Reference:</b>	Well Kline Federal 5300 11-18 2T2
<b>Project:</b>	Indian Hills	<b>TVD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Reference Site:</b>	153N-100W-17/18	<b>MD Reference:</b>	WELL @ 2078.0usft (Original Well Elev)
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 5000.1 Single User Db
<b>Reference Design:</b>	Design #6	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 2078.0usft (Original Well Ele  
Offset Depths are relative to Offset Datum  
Central Meridian is 100° 30' 0.000 W

Coordinates are relative to: Kline Federal 5300 11-18 2T2  
Coordinate System is US State Plane 1983, North Dakota Northern Zone  
Grid Convergence at Surface is: -2.31°



<b>Company:</b>	Oasis Petroleum
<b>Project:</b>	Indian Hills
<b>Reference Site:</b>	153N-100W-17/18
<b>Site Error:</b>	0.0 usft
<b>Reference Well:</b>	Kline Federal 5300 11-18 2T2
<b>Well Error:</b>	0.0 usft
<b>Reference Wellbore</b>	Wellbore #1
<b>Reference Design:</b>	Design #6

<b>Local Co-ordinate Reference:</b>
<b>TVD Reference:</b>
<b>MD Reference:</b>
<b>North Reference:</b>
<b>Survey Calculation Method:</b>
<b>Output errors are at</b>
<b>Database:</b>
<b>Offset TVD Reference:</b>

Well Kline Federal 5300 11-18 2T2
WELL @ 2078.0usft (Original Well Elev)
WELL @ 2078.0usft (Original Well Elev)
True
Minimum Curvature
2.00 sigma
EDM 5000.1 Single User Db
Offset Datum

Reference Depths are relative to WELL @ 2078.0usft (Original Well Ele  
 Offset Depths are relative to Offset Datum  
 Central Meridian is 100° 30' 0.000 W

Coordinates are relative to: Kline Federal 5300 11-18 2T2  
 Coordinate System is US State Plane 1983, North Dakota Northern Zone  
 Grid Convergence at Surface is: -2.31°

