



# 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.  
**28744**

MAR 18 2016

## ND Oil & Gas Division

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>September 13, 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>Wade Federla 5300 41-30 9B</b>						
Footages	Qtr-Qtr	Section	Township	Range		
811 F S L	280 F W L	LOT4	30	153 N	100 W	
Field <b>Baker</b>	Pool <b>Bakken</b>	County <b>Williams</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 09/13/2015 the above referenced well is on pump.

End of Tubing: 2-7/8" L-80 tubing @ 10040.83'

Pump: ESP @ 9853.11'

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>
Signature 		Printed Name <b>Jennifer Swenson</b>
Title <b>Regulatory Specialist</b>	Date <b>March 17, 2016</b>	
Email Address <b>jswenson@oasispetroleum.com</b>		

<input checked="" type="checkbox"/> Received	<input type="checkbox"/> Approved
Date <b>4-7-2016</b>	
By 	
Title <b>JARED THUNE</b>	
Engineering Technician	



## AUTHORIZATION TO PURCHASE AND TRANSPORT OIL FROM A LEASE - Form 8

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



Well File No.  
28744  
NDIC CTB No.  
To be assigned

228394

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND FOUR COPIES.

Well Name and Number <b>WADE FEDERAL 5300 41-30 9B</b>	Qtr-Qtr LOT4	Section 30	Township 153	Range 100	County McKenzie
---	-----------------	---------------	-----------------	--------------	--------------------

Operator <b>Oasis Petroleum North America LLC</b>	Telephone Number <b>(281) 404-9573</b>	Field <b>BAKER</b>
--	---	-----------------------

Address <b>1001 Fannin, Suite 1500</b>	City <b>Houston</b>	State <b>TX</b>	Zip Code <b>77002</b>
---	------------------------	--------------------	--------------------------

Name of First Purchaser <b>Oasis Petroleum Marketing LLC</b>	Telephone Number <b>(281) 404-9627</b>	% Purchased <b>100%</b>	Date Effective <b>June 1, 2015</b>
Principal Place of Business <b>1001 Fannin, Suite 1500</b>	City <b>Houston</b>	State <b>TX</b>	Zip Code <b>77002</b>
Field Address	City	State	Zip Code
Transporter <b>Hiland Crude, LLC</b>	Telephone Number <b>(580) 616-2058</b>	% Transported <b>75%</b>	Date Effective <b>June 1, 2015</b>
Address <b>P.O. Box 3886</b>	City <b>Enid</b>	State <b>OK</b>	Zip Code <b>73702</b>

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
<b>Power Crude Transport</b>	<b>25%</b>	<b>June 1, 2015</b>
Other Transporters Transporting From This Lease	% Transported	Date Effective
		<b>June 1, 2015</b>
Comments		

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.	Date <b>September 10, 2015</b>
Signature 	Printed Name <b>Dina Barron</b> Title <b>Mktg. Contracts Administrator</b>

Above Signature Witnessed By:	Printed Name	Title
Signature 	Printed Name <b>Jeremy Harris</b>	Title <b>Marketing Scheduler</b>

FOR STATE USE ONLY		
Date Approved <b>SEP 18 2015</b>	By 	
Title <b>Oil &amp; Gas Production Analyst</b>		

# **Wade Federal 5300 41-30 9B**

## **End of Well Report**

### **Wade Federal 5300 41-30 9B**

**811' FSL - 280' FWL**

**SEC 30, T153N, R100W**

McKenzie County, ND

Prepared by:

Heather Coutts, *well-site geologist*

Columbine Logging, Inc.

2385 S. Lipan St.

Denver CO 80223



Prepared for:



Brendan Hargrove and Kellie Rasmussen

, *operations geologists*

1001 Fannin, Suite 1500

Houston, Texas 77002

## **1.0 INTRODUCTION**

Wade Federal 5200 41-30 9B is a East lateral Middle Bakken well located in SEC 30, T153N, R100W in McKenzie County, North Dakota. The primary pay zone was approximately 20' under the bottom of the Upper Bakken Shale. This pay zone was picked for its production potential and quality of reservoir rock. The objective was to steer the well within the defined pay zone and within the legal requirements of the state. Directional and MWD services were performed by Schlumberger/Pathfinder and RPM. Heather A. Coutts and Dylan E. Fowler were the primary well site geologists; providing geo-steering and mud logging from Columbine Logging, Inc.

### **Well Information**

**API #:** 33-053-06051

**Field:** Baker

**Spud Date:** 09/05//2014

**TD Date:** 12/08/2014

**Surface Location:** 811' FSL & 280' FWL SEC 30, T153N, R100W, McKenzie County, North Dakota.

**Intermediate Casing Point:** 222' FSL & 1151' FWL; SEC 30; 11,525' MD, 10,703.20' TVD

**Bottom Hole Location:** 0' FSL & 212' FEL; SEC 29; 20,650' MD, 10,814.1' TVD

**Surface Elevation:** 2045'

**KB:** 2076'

**Casing Shoe:** 11,525' MD, 10,703.20' TVD

**Total Depth Drilled:** 20,650'

**Operator:** Oasis

**Rig:** Patterson 488

**Company man:** Tyler LaClaire

**Well-site Geologist:** Heather Coutts  
Dylan E. Fowler

**Mud logging:** Columbine Logging

**DD:** RPM

**Mud Service:** Reliable

**Drilling Mud:** Invert, Brine

**MWD:** Schlumberger/Pathfinder

## **2.0 SERVICES**

### **2.1 Well site Geology (*Columbine Logging, Inc.*)**

Geological consulting and mud logging started on 09/09/2014. Services provided included; morning reports, evening reports, noon and midnight reports, sample examination, sample recording via pictures, production of vertical and horizontal mudlog, geo steering, sample collection and bagging, sample mailing and a final end of well report.

#### **2.1.1 Geosteering**

Our offset GR TVD logs were from the Wade Federal 5300 21-30H well, located on the same well pad as Wade Federal 5300 41-30 9B. Within the Middle Bakken, the primary objective was to stay near the middle gamma markers which marks the inter layering between dolomitic siltstone and limy sandstones. Gamma patterns were compared with the offset log and a TVD log was created while landing the curve to in order to land in the targeted zone. Steering in the lateral was accomplished by calculating dip from relevant gamma markers, as well as by using lithology, total gas and ROP to determine our position within the formation.

#### **2.1.2 Gamma and Surveys**

Gamma and survey MWD services were provided by Schlumberger/Pathfinder. The majority of the well was drilled within the target area of the Middle Bakken.

### **2.2 Mud Logging (*Columbine Logging, Inc.*)**

#### **2.2.1 Sample Examination**

Samples were collected every 30 ft in the straight hole and build section, and every 30 ft while drilling the lateral. Descriptions included; mineralogy, color, firmness, argillaceous content, structure, texture, allochems, porosity, oil stain, and hydrocarbon fluorescence. Carbonate identification was determined with 10% dilute HCl<sup>-</sup>, alizarin red and calcimeter. Hydrocarbon fluorescence was determined using a fluoroscope with a UV lamp.

#### **2.2.2 Gas Detection**

Gas was logged using a Bloodhound total gas/chromatograph system. The gas detection system uses an infra-red detector to measure total gas and the chromatograph separates and measures gases C1, C2, C3, iC4 and nC4. Gas was recorded in units where 1 unit equals 100 ppm. The gas detection system measured gases: C1, C2, C3, IC4, NC4, H2S, O<sub>2</sub> and CO<sub>2</sub>.

The Bloodhound Gas Detection and Chromatograph system use digital signal processing techniques and non-dispersive infrared and chemical sensors for gas detection. The system uses a proprietary chromatograph, which has the capability to detect from 0 to 10,000 gas units. This translates as 0 to 100% typical naturally-occurring hydrocarbon gas mixtures. Calibration is performed using National Institute of Standards and Technology (NIST) traceable calibration gases. Lab calibration points include 0%, 2.5%, and 100% pure methane. Complete immunity to saturation or damage in the presence of high concentrations of both light and heavy hydrocarbon gases precludes the necessity of constant re-calibration or zero referencing. This allows the Bloodhound to react to hydrocarbon based gases from zero to 100% in concentration without dilution.

Lag time was approximated from a calculation of annular velocity based on: pump output, open-hole diameter, cased hole diameter, collar diameter, drill pipe diameter and bottom hole assembly. Connection gases were monitored to confirm lag time calculations and thereby adjust lag time when needed.

### **3.0 GEOLOGY**

**3.1 Formation Tops** Formation tops were picked using ROP, lithology, and gamma ray to identify markers in the curve and lateral (Table 3.1).

FORMATION TOPS						
Formation/Marker Beds	ACTUAL				Prognosis	
Vertical Section	Top MD (ft)	Top TVD (ft)	THICKNESS (ft)	Difference (ft)	TVD KB/DF(ft)	TVDSS (ft)
Kibbey Lime	8344	8344	148	-2	8342	-6266
Charles Salt	8492	8492	684	9	8501	-6425
Base Last Salt	9176	9176	209	-16	9160	-7084
Mission Canyon	9385	9385	549	-10	9375	-7299
Lodgepole	9934	9934	731	-11	9923	-7847
False Bakken	10785	10665	9	-15	10650	-8574
Upper Bakken Shale	10808	10674	19	-11	10663	-8587
Middle Bakken	10868	10693	~41	-15	10678	-8602
Middle Bakken (Top of Target)	10868	10709	11	-19	10690	-8614
Middle Bakken (Base of target)	10868	10720		-19	10701	-8625
Lower Bakken Shale					10714	-8638

Table 3.1 Wade Federal 5300 41-30 9B Formation Tops

### **3.2 Lithology**

Sample analysis began at 8,000' MD in the Otter Formation.

### **3.3 Formation Dip**

The formation had an average dip of 89.5°.

### **3.4 Shows**

The vertical-build section was drilled with invert mud and the lateral was drilled with brine/production water. The oil-based mud contributed a background gas of 200-300 units, and saturated cuttings with oil, making all cuttings in the vertical show the same

cut and fluorescence. Gas shows were around 3500+ units during the drilling of the lateral.

### 3.5 Oil Shows

Invert mud was used in the vertical, masking any oil shows. In the lateral part of the well the oil shows were consistently a bright blue green fluorescence with a bright diffuse blue to blue green cut and a medium brown residue ring.

### 4.0 WELLBORE

The surface location is 811' FSL & 280' FWL SEC 30, T153N, R100W, McKenzie County, North Dakota. Ground elevation is 2,045' and KB elevation was 2,076', referenced to the Kelly bushing of Patterson 488. The curve was landed in the Middle Bakken at 11,525' MD, 10,703.20' TVD. The lateral was drilled to TD at 20,650' MD, 10,814.1' TVD, 994' 0'FSL & FEL; SEC 29. Figure 4.1 shows a cross-section of the lateral.

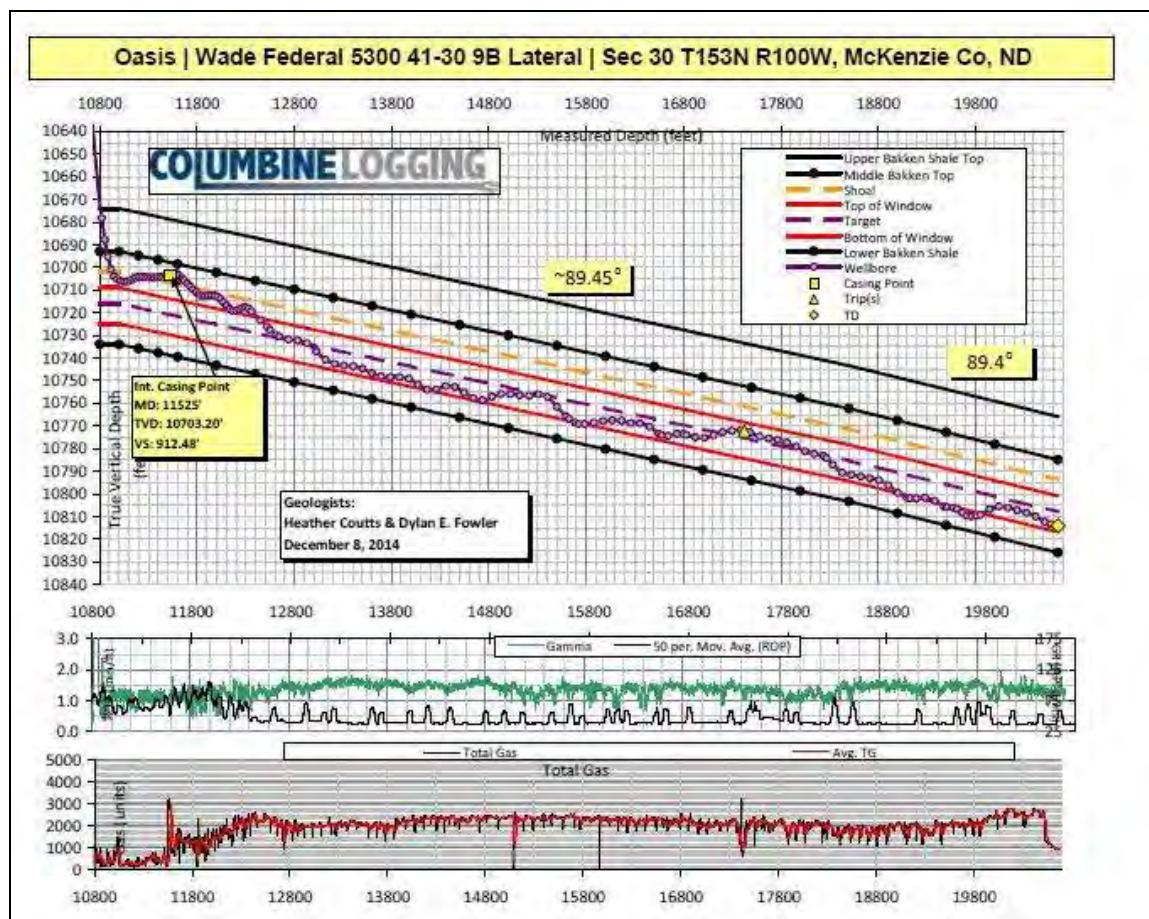


Figure 4.1 Wellbore Cross

## **5.0 SUMMARY AND CONCLUSION**

Wade Federal 5300 41-30 9B is a South lateral Middle Bakken well located in SEC 30, T153N, R100W in McKenzie County, North Dakota. The primary pay zone was 20' under the bottom of the Upper Bakken Shale. This pay zone was picked for its production potential and quality of reservoir rock. The objective was to steer the well within the defined pay zone and within the legal requirements of the state.

The primary objective was to stay near the middle gamma markers which marks the inter layering between dolomitic siltstone and limy sandstones. Gamma patterns were compared with the offset log and a TVD log was created while landing the curve to in order to land in the targeted zone. Steering in the lateral was accomplished by calculating dip from relevant gamma markers, as well as by using lithology, total gas and ROP to determine our position within the formation.

The formation had an average dip of 89.5°. (see pg. 5, fig 4.1 for a detailed formation dip profile).

Currently the well is awaiting completion.

---

Heather Coutts, Well-Site Geologist  
Columbine Logging, Inc.  
9844 Titan Ct. Unit #6  
Littleton, CO 80125-9354  
(303) 289-7764





**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. **28744**

**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 <b>Wade Federal 5300 41-30 9B</b>				Spacing Unit Description <b>Sec. 29/30/31/32 T153N R100W</b>			
Operator <b>Oasis Petroleum North America</b>		Telephone Number <b>(281) 404-9591</b>		Field <b>Baker</b>			
Address <b>1001 Fannin, Suite 1500</b>				Pool <b>Bakken</b>			
City <b>Houston</b>	State <b>TX</b>	Zip Code <b>77002</b>	Permit Type				
<input type="checkbox"/> Wildcat					<input checked="" type="checkbox"/> Development	<input type="checkbox"/> Extension	

**LOCATION OF WELL**

At Surface <b>811 F S L</b>	<b>280 F WL</b>	<b>Qtr-Qtr LOT4</b>	<b>Section 30</b>	<b>Township 153 N</b>	<b>Range 100 W</b>	<b>County Williams</b>
Spud Date <b>September 6, 2014</b>	Date TD Reached <b>December 8, 2014</b>	Drilling Contractor and Rig Number <b>Patterson 488</b>		KB Elevation (Ft) <b>2070</b>	Graded Elevation (Ft) <b>2045</b>	

**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)**

## **PERFORATION & OPEN HOLE INTERVALS**

## **PRODUCTION**

Current Producing Open Hole or Perforated Interval(s), This Completion, Top and Bottom, (MD Ft) <b>Lateral 1- 11552' to 20625'</b>								Name of Zone (If Different from Pool Name)	
Date Well Completed (SEE INSTRUCTIONS) <b>June 13, 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>06/30/2015</b>	Hours Tested <b>24</b>	Choke Size <b>26 /64</b>	Production for Test		Oil (Bbls) <b>3109</b>	Gas (MCF) <b>102</b>	Water (Bbls) <b>2982</b>	Oil Gravity-API (Corr.) °	Disposition of Gas <b>Sold</b>
Flowing Tubing Pressure (PSI) <b>1500</b>		Flowing Casing Pressure (PSI) <b>2800</b>		Calculated 24-Hour Rate	Oil (Bbls) <b>3109</b>	Gas (MCF) <b>102</b>	Water (Bbls) <b>2982</b>	Gas-Oil Ratio <b>33</b>	

## GEOLOGICAL MARKERS

#### **PLUG BACK INFORMATION**

CORES CUT

CORES CUT					
Top (Ft)	Bottom (Ft)	Formation	Top (Ft)	Bottom (Ft)	Formation

## Drill Stem Test

**Well Specific Stimulation**

Date Stimulated	Stimulated Formation Bakken	Top (Ft) 11552	Bottom (Ft) 20265	Stimulation Stages 50	Volume 171968	Volume Units Barrels
Type Treatment Sand Frac	Acid %	Lbs Proppant 9289252	Maximum Treatment Pressure (PSI) 9310		Maximum Treatment Rate (BBLS/Min) 37.0	

Details

40/70 White: 1188022

20/40 White: 6518120

20/40 RC: 1395110

100 Mesh: 188000

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**

Frac string was pulled after frac.

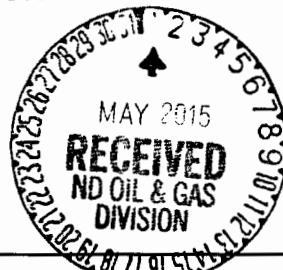
I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.	Email Address <b>jswenson@oasispetroleum.com</b>	Date <b>07/10/2015</b>
Signature 	Printed Name <b>Jennifer Swenson</b>	Title <b>Regulatory Specialist</b>



# 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.  
**28744**



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>May 1, 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 well status to CONFIDENTIAL</b>

Well Name and Number  
**Wade Federal 5300 41-30 9B**

Footages <b>811 F S L</b>	<b>280 F W L</b>	Qtr-Qtr <b>LOT4</b>	Section <b>30</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
Water	Bbls
Gas	MCF

Name of Contractor(s)

Address	City	State	Zip Code
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## DETAILS OF WORK

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

**This well has not been completed.**

*OFF CONFIDENTIAL 11/01/15.*

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>April 30, 2015</b>	
Email Address <b>jswenson@oasispetroleum.com</b>		

## FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <b>5/07/15</b>	
By 	
Title <b>Engineering Technician</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.

28976

28744

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>September 14, 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 type="checkbox"/> Drilling Diagnosis	<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 checked="" type="checkbox"/> Reclamation
<input type="checkbox"/> Other	offsite pit

Well Name and Number

**Wade Federal 5300 21-30 12T**

Footages <b>1640 F N L</b>	<b>270 F W L</b>	Qtr-Qtr <b>SWNW</b>	Section <b>30</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

Oasis Petroleum North America LLC respectfully requests to use an offsite pit for this well. The following wells will also use this pit:

Wade Federal 5300 31-30 2B - 28554  
 Wade Federal 5300 41-30 3T2 - 28555  
 Wade Federal 5300 41-30 4T - 28394  
 Wade Federal 5300 41-30 5T2 - 28556  
 Wade Federal 5300 41-30 6B - 28425 - TH  
 Wade Federal 5300 41-30 7T - 28557  
 Wade Federal 5300 41-30 8T2 - 28558 - TH  
 Wade Federal 5300 41-30 9B - 28744  
 Wade Federal 5300 21-30 13B - 28978  
 Wade Federal 5300 21-30 14T2 - 28977

Attached are the plats for the offsite pit location.

Company <b>Oasis Petroleum North America LLC</b>	Telephone Number <b>281-404-9589</b>	
Address <b>1001 Fannin, Suite 1500</b>		
City <b>Houston</b>	State <b>TX</b>	Zip Code <b>77002</b>
Signature <i>Sonja Rolfs</i>	Printed Name <b>Sonja Rolfs</b>	
Title <b>Regulatory Analyst</b>	Date <b>August 20, 2014</b>	
Email Address		

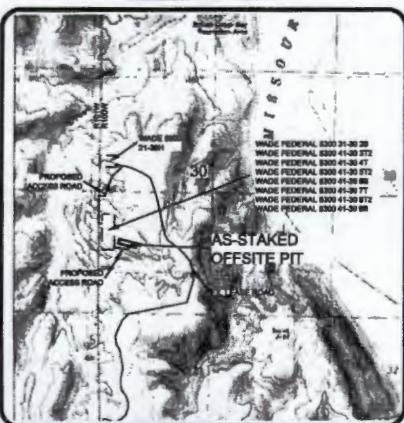
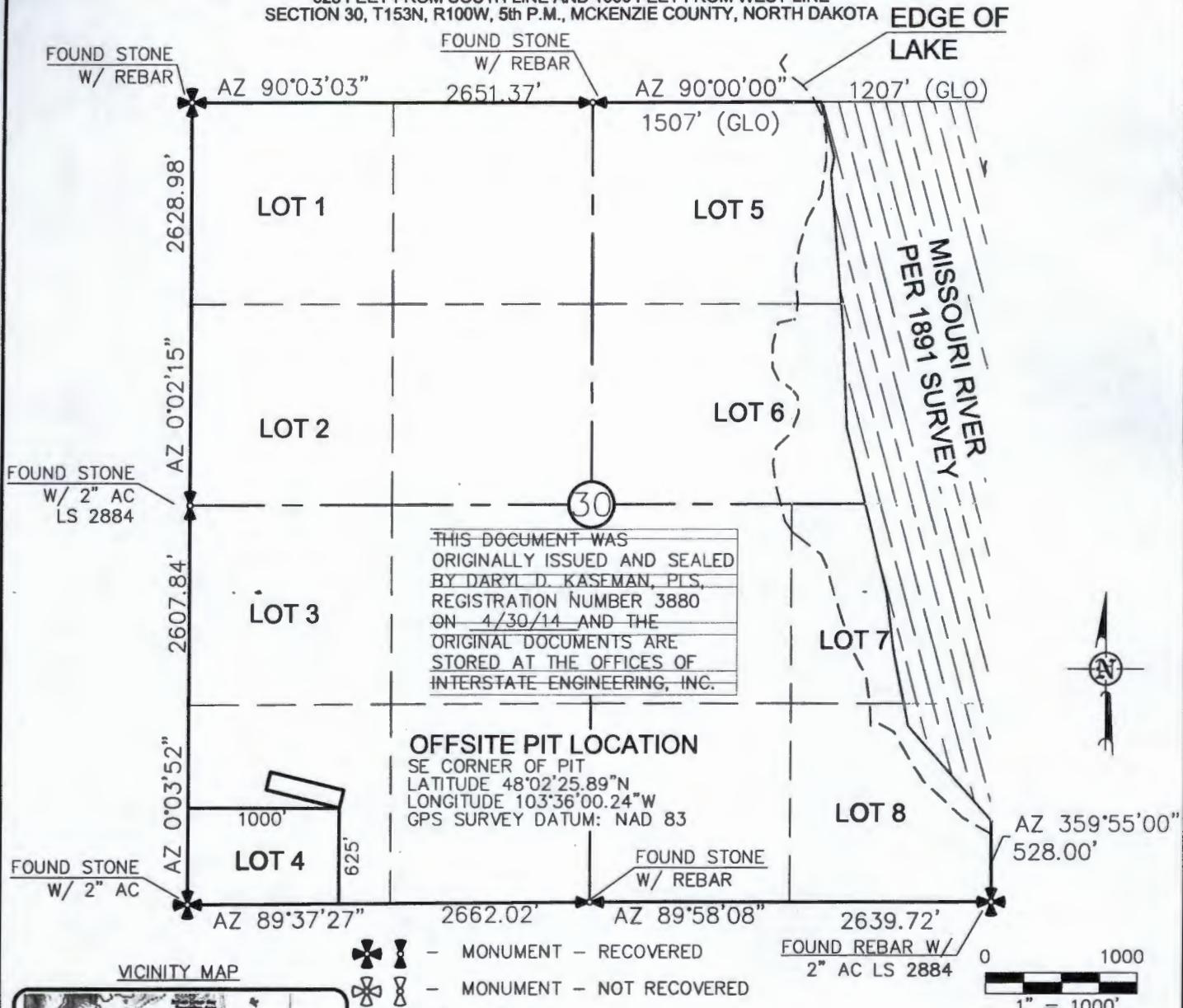
<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <b>2-9-15</b>	
By <i>WR</i>	
Title	

## **OFFSITE PIT LOCATION PLAT**

OASIS PETROLEUM NORTH AMERICA, LLC

1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

"AS-STAKED OFFSITE PIT FOR WADE FEDERAL 5300 31-30 2B, WADE FEDERAL 5300 41-30 3T2,  
WADE FEDERAL 5300 41-30 4T, WADE FEDERAL 5300 41-30 5T2, WADE FEDERAL 5300 41-30 6B,  
WADE FEDERAL 5300 41-30 7T, WADE FEDERAL 5300 41-30 8T2, & WADE FEDERAL 5300 41-30 9B"  
625 FEET FROM SOUTH LINE AND 1000 FEET FROM WEST LINE  
SECTION 30, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



© 2014, INTERSTATE ENGINEERING, INC.

DARYL D. KASEMAN LS-3880

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-  
INC.

Interstate Engineering, Inc.  
P.O. Box 648  
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Sidney, Montana 59270  
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Fax (406) 433-5618  
[www.interstateeng.com](http://www.interstateeng.com)

Other offices in Missoula, North Dakota and South Dakota

**OASIS PETROLEUM NORTH AMERICA, LLC  
OFFSITE PIT LOCATION PLAT  
SECTION 22, T15RN, R10CW**

**MCKENZIE COUNTY, NORTH DAKOTA**

OASIS PETROLEUM NORTH AMERICA, LLC OFFSITE PIT LOCATION PLAT SECTION 30, T153N, R100W			
MCKENZIE COUNTY, NORTH DAKOTA			
Drawn By:	B.H.H.	Project No.:	S13-09-361.00
Checked By:	D.D.K.	Date:	APRIL 2014
Revision No.	Date	By	Description

## PAD LAYOUT

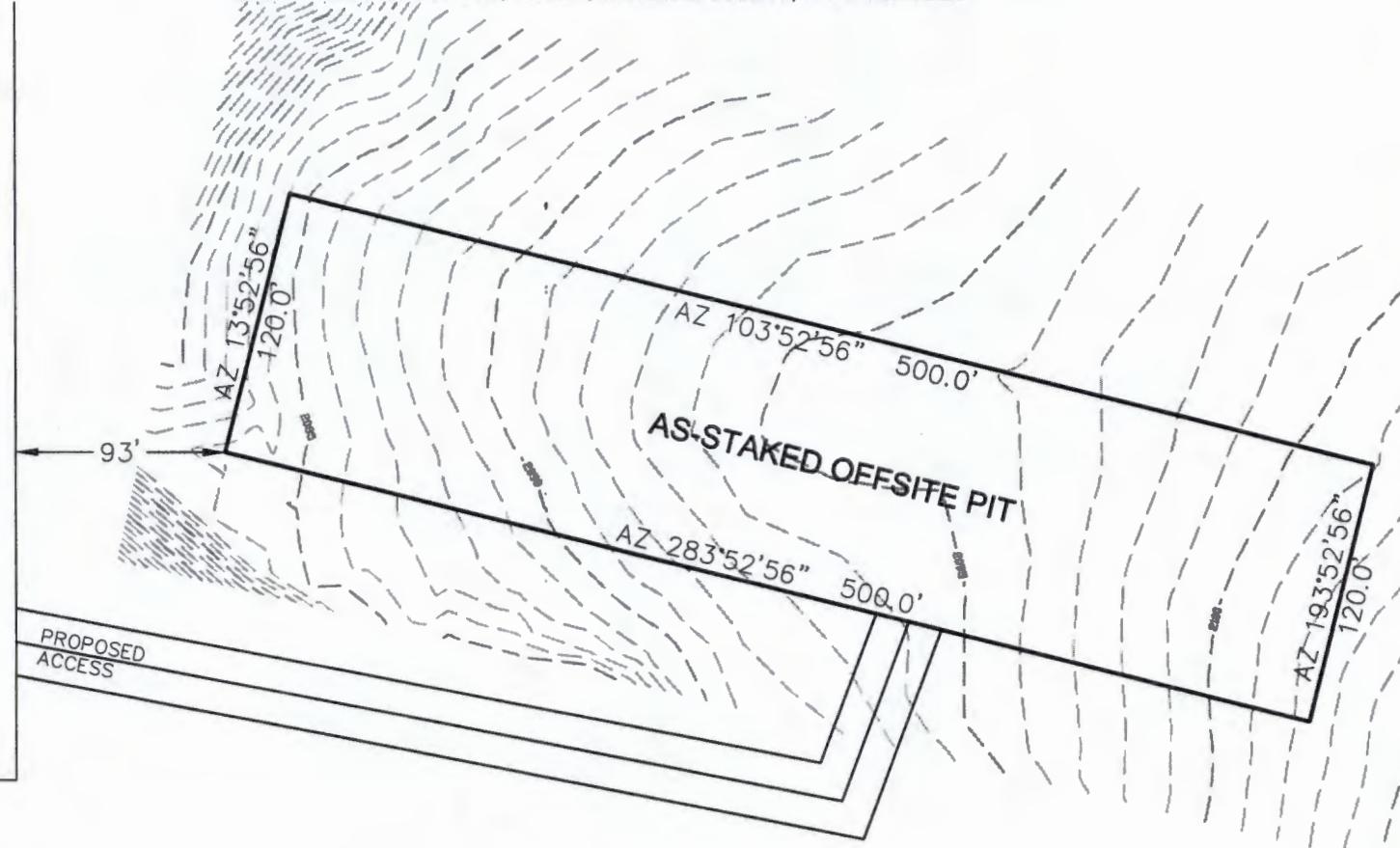
OASIS PETROLEUM NORTH AMERICA, LLC

1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

"AS-STAKED OFFSITE PIT FOR WADE FEDERAL 5300 31-30 2B, WADE FEDERAL 5300 41-30 3T2,  
WADE FEDERAL 5300 41-30 4T, WADE FEDERAL 5300 41-30 5T2, WADE FEDERAL 5300 41-30 6B,  
WADE FEDERAL 5300 41-30 7T, WADE FEDERAL 5300 41-30 8T2, & WADE FEDERAL 5300 41-30 9B"

625 FEET FROM SOUTH LINE AND 1000 FEET FROM WEST LINE  
SECTION 30, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

WADE FEDERAL  
5300 31-30 2B  
WADE FEDERAL  
5300 41-30 3T2  
WADE FEDERAL  
5300 41-30 4T  
WADE FEDERAL  
5300 41-30 5T2  
WADE FEDERAL  
5300 41-30 6B  
WADE FEDERAL  
5300 41-30 7T  
WADE FEDERAL  
5300 41-30 8T2  
WADE FEDERAL  
5300 41-30 9B



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

0 80  
1" = 80'

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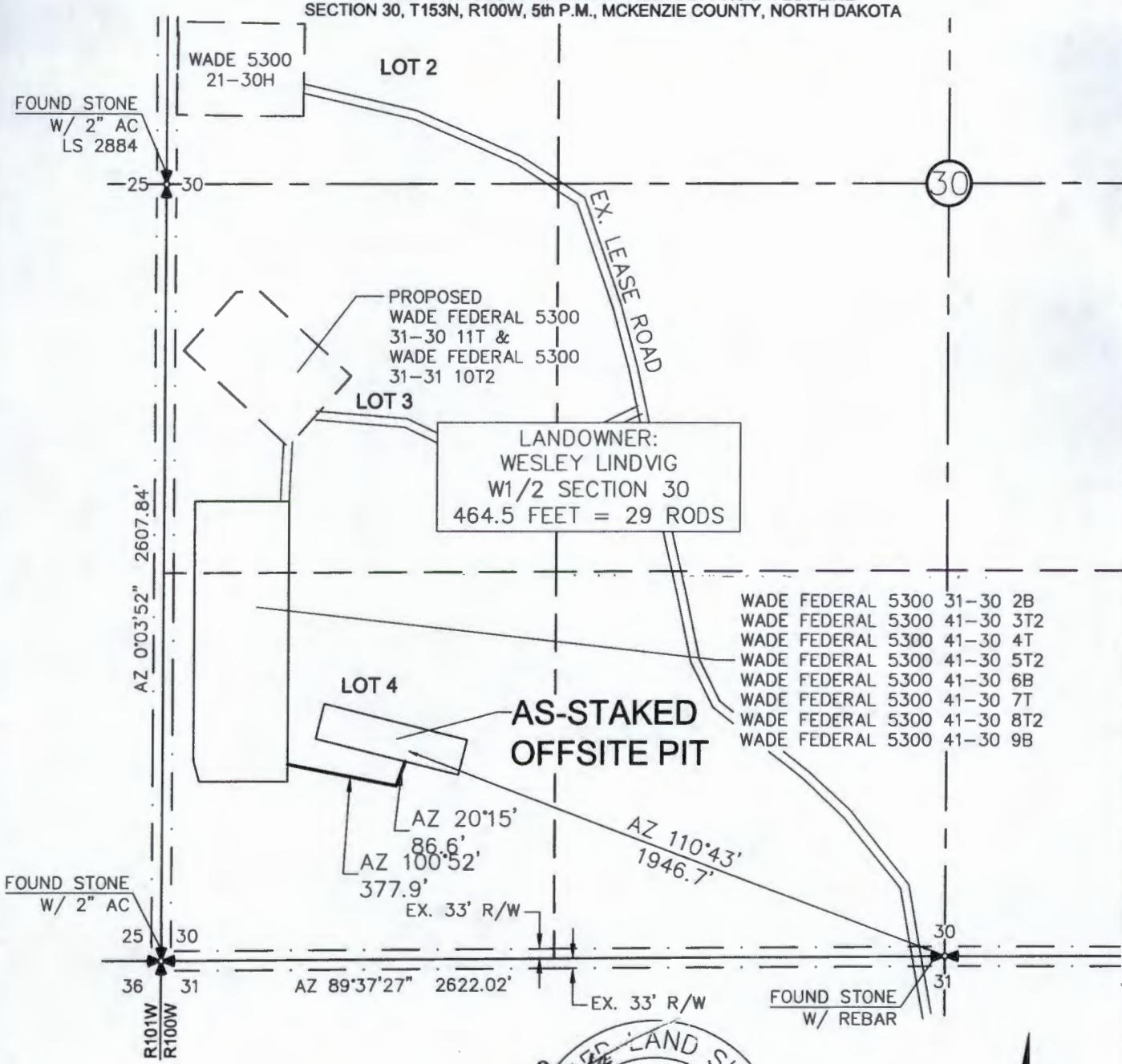
OASIS PETROLEUM NORTH AMERICA, LLC	PAD LAYOUT
SECTION 30, T153N, R100W	MCKENZIE COUNTY, NORTH DAKOTA
Project No. 513-09-38119	Date: APRIL 2014
Drawn By: B.H.	Checked By: D.D.K.

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Other offices in Montana, North Dakota, and South Dakota

# ACCESS APPROACH

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

"AS-STAKED OFFSITE PIT FOR WADE FEDERAL 5300 31-30 2B, WADE FEDERAL 5300 41-30 3T2,  
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SECTION 30, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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0 500  
1" = 500'

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OASIS PETROLEUM NORTH AMERICA, LLC  
ACCESS APPROACH  
SECTION 30, T153N, R100W  
MCKENZIE COUNTY, NORTH DAKOTA

Revision No.	Date	By	Description

3/3

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## OFF-SITE PIT AGREEMENT

In consideration of the sum of [REDACTED] paid by Oasis Petroleum North America LLC ("Oasis") the undersigned surface owners, Wesley Lindvig and Barbara Lindvig, for themselves and their heirs, successors, administrators and assigns, hereby acknowledge the receipt and sufficiency of said payment in full and complete settlement for and as a release of all claim for loss, damage or injury to the hereafter described surface property arising out of the off-site cuttings pit, in which the cuttings from the Wade Federal 5300 21-30 13B, Wade Federal 5300 21-30 14T2 wells will be buried, located on the approximately two (2.0) acre tract of land identified on the plat attached hereto as Exhibit "A" and which is situated on the following described real property located in McKenzie County, State of North Dakota, towit:

Township 153 North, Range 100 West, 5<sup>th</sup> P.M.  
Section 30: Lots 3 & 4 a/k/a W½SW½

The undersigned knows that Oasis Petroleum North America LLC is the operator and will be drilling the Wade Federal 5300 21-30 13B, Wade Federal 5300 21-30 14T2 wells. The undersigned further states that they are fully aware that the cuttings generated from the drilling of the Wade Federal 5300 21-30 13B; Wade Federal 5300 21-30 14T2 wells will be buried in the pit on the above described location.

Dated this 19 day of May, 2014.

### SURFACE OWNER(S)

Wesley Lindvig  
Wesley Lindvig  
Barbara J. Lindvig  
Barbara Lindvig

for W.G.L.  
*[Signature]*

*[Signature]*  
Location will be fenced after construction.  
*[Signature]* Pit will be reclaimed to owners satisfaction  
by W.G.L.



# SUNDRY NOTICE AND REPORTS ON WELLS - FORM

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

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



Well File No	28394
	28405
	28554
	28555
	28556
	28557
	28558
	28744

<input type="checkbox"/> Notice of Intent	Approximate Start Date	<input type="checkbox"/> Drilling Program	<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	

Well Name and Number <b>Wade Federal 5300 41-30 4T</b> + See Details				
Footages <b>1263 F S L</b>	Qtr-Qtr <b>240 F W L</b>	Section <b>SWSW</b>	Township <b>30</b>	Range <b>153 N 100 W</b>
Field	Pool <b>Bakken</b>	County <b>McKenzie</b>		

## 24-HOUR PRODUCTION RATE

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

Name of Contractor(s)			
Address		City	State
			Zip Code

## DETAILS OF WORK

Oasis Petroleum respectfully requests to use an offsite pit for the wells listed below. We are requesting to use an offsite pit because a pit wont fit on location with a rig anchor and the land adjacent is too rough. Attached are the plats.

Wade Federal 5300 31-30 2B - 28554  
 Wade Federal 5300 41-30 3T2 - 28555  
 Wade Federal 5300 41-30 4T - 28394  
 Wade Federal 5300 41-30 5T2 - 28556  
 Wade Federal 5300 41-30 6B - 28405  
 Wade Federal 5300 41-30 7T - 28557  
 Wade Federal 5300 41-30 8T2 - 28558  
 Wade Federal 5300 41-30 9B - 28744

Company <b>Oasis Petroleum North America LLC</b>		Telephone Number <b>281-404-9491</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>Brandi Terry</b>	
Title <b>Regulatory Specialist</b>	Date <b>May 12, 2014</b>	
Email Address <b>bterry@oasispetroleum.com</b>		

## FOR STATE USE ONLY

<input checked="" type="checkbox"/> Received	<input type="checkbox"/> Approved
Date <b>12-23-14</b>	
By 	
Title 	

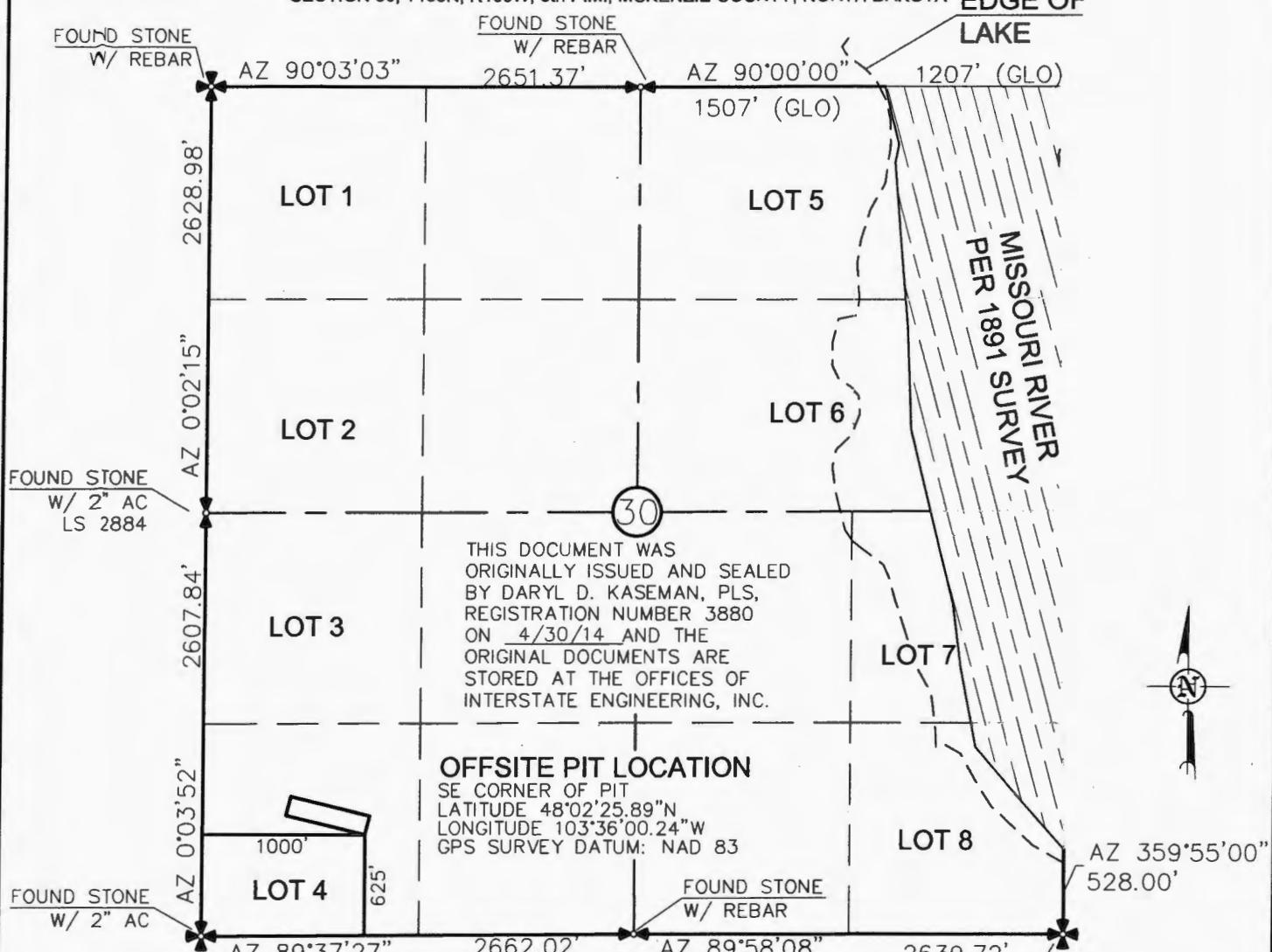
**OFFSITE PIT LOCATION PLAT**  
OASIS PETROLEUM NORTH AMERICA, LLC

1001 FANNIN, SUITE 1500, HOUSTON, TX 77002

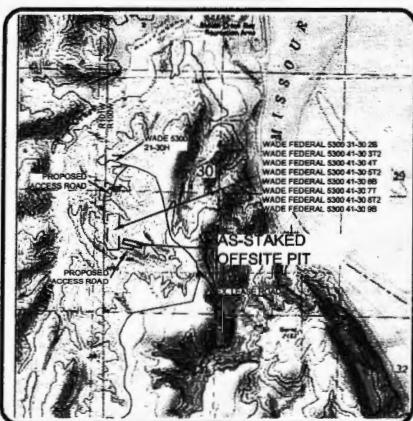
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625 FEET FROM SOUTH LINE AND 1000 FEET FROM WEST LINE

SECTION 30, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

**EDGE OF  
LAKE**



**VICINITY MAP**



DARYL D. KASEMAN LS-3880

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OFFSITE PIT LOCATION PLAT  
SECTION 30, T153N, R100W

MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H. Project No.: S13-09-381.09  
Checked By: D.D.K. Date: APRIL 2014

Revision No.	Date	By	Description

# PAD LAYOUT

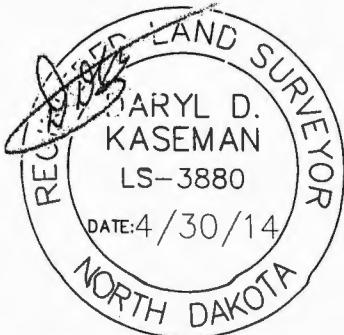
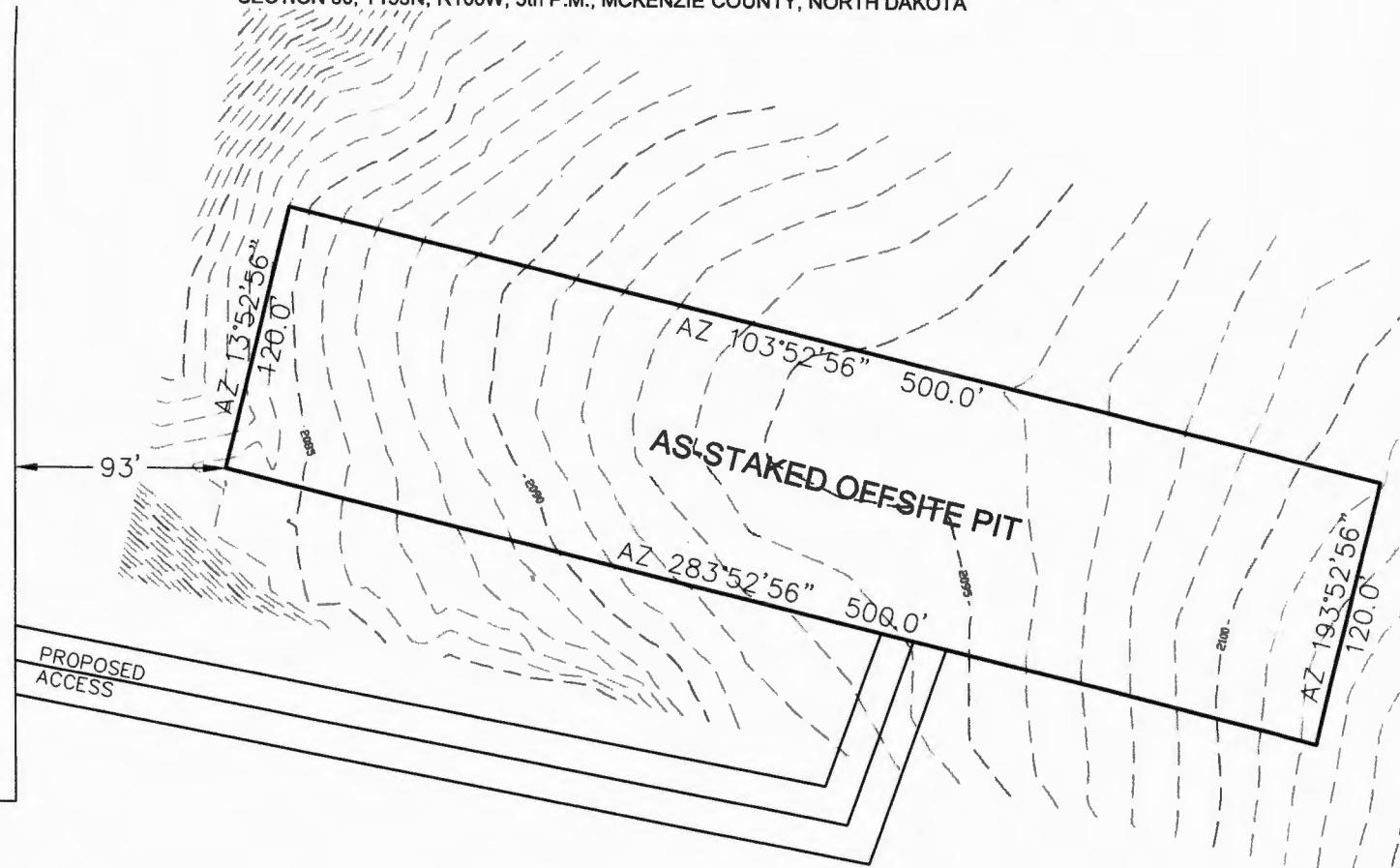
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WADE FEDERAL  
5300 41-30 9B



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0 80'  
1" = 80'

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SHEET NO.

OASIS PETROLEUM NORTH AMERICA, LLC	Project No.: S15-053-81-09
PAD LAYOUT	
SECTION 30, T153N, R100W	
MCKENZIE COUNTY, NORTH DAKOTA	
Drawn By: B.H.H.	Date: APRIL 2014
Checked By: D.D.K.	

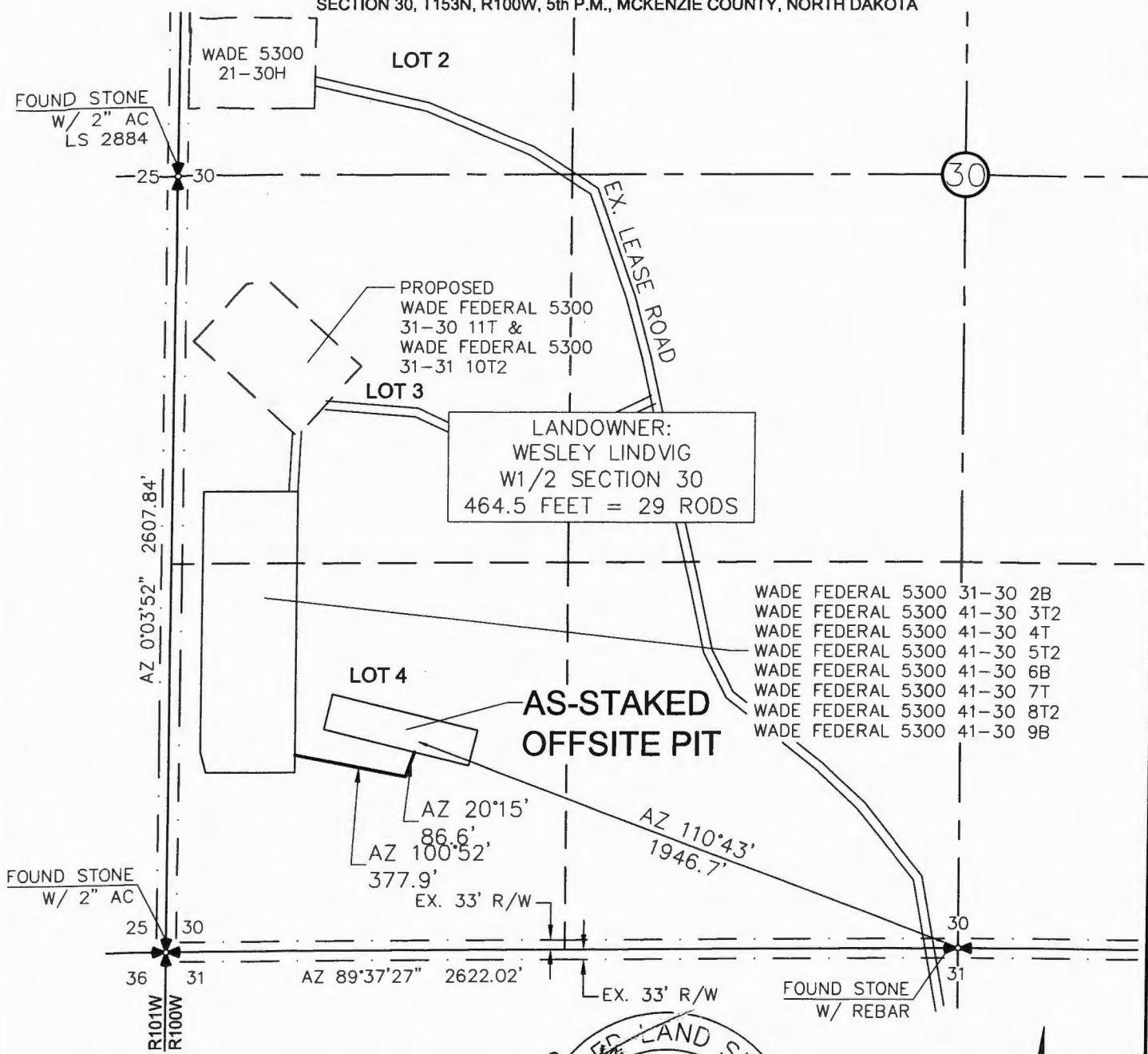
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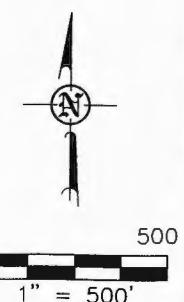
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MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No.: S13-09-381.06  
Checked By: D.D.K. Date: APRIL 2014

Revision No.	Date	By	Description

3/3

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A Schlumberger Company  
9251 E 104th Ave.  
Commerce City, CO 80640  
(303) 439-5500

## Directional Survey Certification Form

Wade Federal 5300 41-30 #9B Original

Oasis Petroleum	Hole	8-Jan-2015
Company	Well Name	Final report Date
PathFinder Job Number	ND, McKenzie County	33-053-06051
	County / State	API Number
N 48° 2' 27.67000" N 48.04101944	W 103° 36' 10.82000" W 103.60300556	811 ft FSL & 280 ft FWL Sec 30 Twn 153 N Rng 100 W
Surface Latitude	Surface Longitude	Surface Section - Township - Range
NAD83 North Dakota State Plane, NZ, Feet	Patterson 488	KB 32ft @ 2077.00 ft / GL: 2045.00 ft MSL
Datum & Coordinate System	Rig Contractor	Height Reference
Survey Depth	108.00	to
	Depth From	20577.00
		Depth To
<b>Measurement While Drilling</b>		
Type of Survey		
Survey Depth	20577.00	to
	Depth From	20650.00
		Depth To
<b>Straight line projection to Bit/TD</b>		
Type of Survey		
Site Supervisors	-	B. Feddersen - FE1
Directional Driller 1	-	MWD Surveyor 1
Directional Driller 2		J. Holt - FE
		MWD Surveyor 2

The data submitted in this report conforms to the standards and procedures as set forth by Schlumberger. This report represents a true and correct directional wellbore survey based on original survey data obtained at the well site.

*Matt VanderSchaaf*

Matt VanderSchaaf  
PathFinder Well Planner III

1/8/2015

Date



**Wade Federal 5300 41-30 #9B MWD 0' to 20650' Definitive Survey Geodetic Report**  
(Def Survey)

**PATHFINDER**  
A Schlumberger Company

<b>Report Date:</b>	January 08, 2015 - 01:18 PM	<b>Survey / DLS Computation:</b>	Minimum Curvature / Lubinski									
<b>Client:</b>	Oasis Petroleum	<b>Vertical Section Azimuth:</b>	94.623 ° (True North)									
<b>Field:</b>	ND, McKenzie County (NAD 83 NZ) Oasis 2014	<b>Vertical Section Origin:</b>	0.000 ft, 0.000 ft									
<b>Structure / Slot:</b>	Oasis 30-153N-100W (Wade Federal 5300 41-30 6-9 Pad) - Patterson 488 / Wade Federal 5300 41-30 #9B	<b>TVD Reference Datum:</b>	KB 32ft									
<b>Well:</b>	Wade Federal 5300 41-30 #9B	<b>TVD Reference Elevation:</b>	2077.000 ft above MSL									
<b>Borehole:</b>	Original Hole	<b>Seabed / Ground Elevation:</b>	2045.000 ft above MSL									
<b>UWI / API#:</b>	Unknown / Unknown	<b>Magnetic Declination:</b>	8.394 °									
<b>Survey Name:</b>	Wade Federal 5300 41-30 #9B MWD 0' to 20650' Definitive	<b>Total Gravity Field Strength:</b>	1000.0448mgn (9.80665 Based)									
<b>Survey Date:</b>	December 10, 2014	<b>Gravity Model:</b>	GARM									
<b>Tort / AHD / DDI / ERD Ratio:</b>	291.739 ° / 10262.666 ft / 6.757 / 0.949	<b>Total Magnetic Field Strength:</b>	56235.543 nT									
<b>Coordinate Reference System:</b>	NAD83 North Dakota State Plane, Northern Zone, Feet	<b>Magnetic Dip Angle:</b>	72.903 °									
<b>Location Lat / Long:</b>	N 48° 2' 27.67000", W 103° 36' 10.82000"	<b>Declination Date:</b>	December 10, 2014									
<b>Location Grid N/E Y/X:</b>	N 395022.017 ft, E 1209639.562 ft	<b>Magnetic Declination Model:</b>	BGGM 2014									
<b>CRS Grid Convergence Angle:</b>	-2.3091 °	<b>North Reference:</b>	True North									
<b>Grid Scale Factor:</b>	0.99993613	<b>Grid Convergence Used:</b>	0.0000 °									
<b>Version / Patch:</b>	2.8.572.0	<b>Total Corr Mag North-&gt;True North:</b>	8.3939 °									
		<b>Local Coord Referenced To:</b>	Well Head									
Comments	MD (ft)	Incl (°)	Azim True (°)	TVD (ft)	VSEC	NS (ft)	EW (ft)	DLS ('/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S °')	Longitude (E/W °')
Surface	0.00	0.00	180.00	0.00	0.00	0.00	0.00	N/A	395022.02	1209639.56	N 48 2 27.67	W 103 36 10.82
Begin MWD Survey	108.00	0.62	354.65	108.00	-0.10	0.58	-0.05	0.57	395022.60	1209639.53	N 48 2 27.68	W 103 36 10.82
	203.00	0.35	144.37	203.00	0.00	0.86	0.07	0.99	395022.87	1209639.66	N 48 2 27.68	W 103 36 10.82
	294.00	0.62	206.80	293.99	-0.01	0.19	0.01	0.61	395022.21	1209639.58	N 48 2 27.67	W 103 36 10.82
	386.00	0.79	162.10	385.99	0.05	-0.86	-0.02	0.61	395021.16	1209639.51	N 48 2 27.66	W 103 36 10.82
	476.00	0.97	160.44	475.98	0.60	-2.16	0.42	0.20	395019.84	1209639.90	N 48 2 27.65	W 103 36 10.81
	566.00	0.88	183.12	565.97	0.93	-3.57	0.64	0.42	395018.42	1209640.06	N 48 2 27.65	W 103 36 10.81
	657.00	0.97	175.69	656.95	1.06	-5.04	0.66	0.16	395016.96	1209640.02	N 48 2 27.62	W 103 36 10.81
	747.00	1.06	328.36	746.95	0.69	-5.09	0.28	2.19	395016.92	1209639.64	N 48 2 27.62	W 103 36 10.82
	838.00	1.41	331.83	837.93	-0.41	-3.38	-0.69	0.39	395018.66	1209638.74	N 48 2 27.64	W 103 36 10.83
	928.00	0.35	228.74	927.92	-1.21	-2.59	-1.42	1.70	395019.49	1209638.04	N 48 2 27.64	W 103 36 10.84
	1019.00	0.97	232.92	1018.91	-1.97	-3.24	-2.24	0.68	395018.87	1209637.19	N 48 2 27.65	W 103 36 10.85
	1109.00	0.88	215.20	1108.90	-2.89	-4.26	-3.25	0.33	395017.89	1209636.15	N 48 2 27.63	W 103 36 10.87
	1200.00	1.06	225.82	1199.89	-3.80	-5.42	-4.25	0.28	395016.77	1209635.09	N 48 2 27.62	W 103 36 10.88
	1290.00	1.49	1.32	1289.88	-4.42	-4.83	-4.83	2.63	395017.39	1209634.55	N 48 2 27.62	W 103 36 10.89
	1395.00	0.79	348.30	1394.86	-4.70	-2.76	-4.94	0.71	395019.46	1209634.52	N 48 2 27.64	W 103 36 10.89
	1490.00	0.62	6.01	1489.85	-4.87	-1.60	-5.02	0.29	395020.62	1209634.48	N 48 2 27.65	W 103 36 10.89
	1585.00	0.44	335.88	1584.84	-5.04	-0.76	-5.11	0.34	395021.46	1209634.42	N 48 2 27.66	W 103 36 10.90
	1680.00	0.62	26.88	1679.84	-5.02	0.03	-5.03	0.51	395022.25	1209634.54	N 48 2 27.67	W 103 36 10.89
	1775.00	0.70	18.71	1774.83	-4.68	1.04	-4.61	0.13	395023.24	1209635.00	N 48 2 27.68	W 103 36 10.89
	1870.00	0.26	353.94	1869.83	-4.58	1.80	-4.45	0.50	395024.00	1209635.19	N 48 2 27.69	W 103 36 10.89
	1966.00	0.62	76.38	1965.83	-4.13	2.14	-3.97	0.67	395024.32	1209635.68	N 48 2 27.69	W 103 36 10.88
	2061.00	0.53	8.39	2060.82	-3.61	2.70	-3.40	0.68	395024.85	1209636.27	N 48 2 27.70	W 103 36 10.87
9 5/8" Casing Point	2110.00	0.42	11.31	2109.82	-3.57	3.10	-3.34	0.23	395025.25	1209636.35	N 48 2 27.70	W 103 36 10.87
	2183.00	0.26	20.21	2182.82	-3.50	3.52	-3.23	0.23	395025.66	1209636.48	N 48 2 27.70	W 103 36 10.87
	2278.00	0.35	3.87	2277.82	-3.44	4.01	-3.13	0.13	395026.15	1209636.59	N 48 2 27.71	W 103 36 10.87
	2372.00	0.44	345.60	2371.82	-3.57	4.64	-3.20	0.16	395026.79	1209636.55	N 48 2 27.72	W 103 36 10.87
	2467.00	0.53	100.79	2466.82	-3.25	4.92	-2.86	0.86	395027.04	1209636.90	N 48 2 27.72	W 103 36 10.86
	2561.00	0.79	102.40	2560.81	-2.17	4.69	-1.80	0.28	395026.78	1209637.95	N 48 2 27.72	W 103 36 10.85
	2656.00	0.88	110.06	2655.80	-0.82	4.30	-0.48	0.15	395026.34	1209639.26	N 48 2 27.71	W 103 36 10.83
	2751.00	0.79	104.25	2750.79	0.53	3.89	0.84	0.13	395025.87	1209640.56	N 48 2 27.71	W 103 36 10.81
	2847.00	0.53	107.76	2846.78	1.61	3.59	1.91	0.27	395025.53	1209641.61	N 48 2 27.71	W 103 36 10.79
	2942.00	0.44	93.92	2941.78	2.40	3.44	2.69	0.15	395025.34	1209642.39	N 48 2 27.70	W 103 36 10.78
	3037.00	0.97	168.14	3036.77	3.00	2.62	3.22	1.00	395024.51	1209642.88	N 48 2 27.70	W 103 36 10.77
	3132.00	1.06	170.44	3131.76	3.44	0.97	3.53	0.10	395022.84	1209643.13	N 48 2 27.68	W 103 36 10.77
	3227.00	0.62	213.45	3226.75	3.41	-0.33	3.39	0.78	395021.56	1209642.94	N 48 2 27.67	W 103 36 10.77
	3322.00	0.62	211.52	3321.74	2.93	-1.19	2.84	0.02	395020.71	1209642.35	N 48 2 27.65	W 103 36 10.78
	3417.00	0.62	225.75	3416.74	2.36	-1.99	2.20	0.16	395019.94	1209641.68	N 48 2 27.65	W 103 36 10.79
	3512.00	0.70	217.39	3511.73	1.71	-2.81	1.48	0.13	395019.15	1209640.93	N 48 2 27.64	W 103 36 10.80
	3607.00	0.62	227.02	3606.73	1.04	-3.62	0.76	0.14	395018.37	1209640.17	N 48 2 27.63	W 103 36 10.81
	3702.00	0.70	216.87	3701.72	0.39	-4.44	0.03	0.15	395017.58	1209639.41	N 48 2 27.63	W 103 36 10.82
	3797.00	0.62	234.53	3796.71	-0.31	-5.20	-0.74	0.23	395016.85	1209638.62	N 48 2 27.62	W 103 36 10.83
	3892.00	0.18	274.45	3891.71	-0.86	-5.48	-1.30	0.52	395016.59	1209638.04	N 48 2 27.62	W 103 36 10.84
	3987.00	0.35	299.02	3986.71	-1.27	-5.33	-1.71	0.21	395016.76	1209637.64	N 48 2 27.62	W 103 36 10.85
	4082.00	0.09	94.55	4081.71	-1.46	-5.20	-1.89	0.46	395016.90	1209637.47	N 48 2 27.62	W 103 36 10.85
	4177.00	0.44	85.19	4176.71	-1.03	-5.17	-1.45	0.37	395016.91	1209637.91	N 48 2 27.62	W 103 36 10.84
	4272.00	0.53	89.11	4271.70	-0.23	-5.14	-0.64	0.10	395016.91	1209638.71	N 48 2 27.62	W 103 36 10.83
	4367.00	0.44	107.33	4366.70	0.56	-5.24	0.14	0.19	395016.78	1209639.49	N 48 2 27.62	W 103 36 10.82
	4462.00	0.53	94.71	4461.70	1.36	-5.38	0.93	0.15	395016.60	1209640.27	N 48 2 27.62	W 103 36 10.81
	4558.00	0.70	111.42	4557.69	2.37	-5.63	1.92	0.26	395016.31	1209641.25	N 48 2 27.61	W 103 36 10.79
	4652.00	0.79	118.50	4651.68	3.51	-6.15	3.02	0.14	395015.75	1209642.33	N 48 2 27.61	W 103 36 10.78
	4747.00	0.35	141.90	4746.68	4.30	-6.69	3.78	0.51	395015.18	1209643.07	N 48 2 27.60	W 103 36 10.76
	4842.00	0.62	177.39	4841.68	4.56	-7.43	3.98	0.41	395014.43	1209643.24	N 48 2 27.60	W 103 36 10.76
	4937.00	0.70	168.89	4936.67	4.79	-8.52	4.11	0.13	395013.34	1209643.33	N 48 2 27.59	W 103 36 10.76
	5032.00	0.88	162.36	5031.66	5.22	-9.78	4.45	0.21	395012.07	1209643.61	N 48 2 27.57	W 103 36 10.75
	5127.00	1.23	151.98	5126.65	6.05	-11.38	5.15	0.42	395010.44	1209644.25	N 48 2 27.56	W 103 36 10.74
	5222.00	1.23	170.34	5221.62	6.85	-13.28	5.80	0.41	395008.51	1209644.82	N 48 2 27.54	W 103 36 10.73
	5317.00	1.06	263.97	5316.61	6.24	-14.38	5.09	1.76	395007.45	1209644.07	N 48 2 27.53	W 103 36 10.75
	5413.00	0.62	300.59	5412.60	4.90	-14.21	3.76	0.70	395007.67	1209642.75	N 48 2 27.53	W 103 36 10.76
	5507.00	0.53	305.10	5506.60	4.07	-13.70	2.97	0.11	395008.21	1209641.98	N 48 2 27.53	W 103 36 10.78
	5602.00	0.44	314.85	5601.59	3.41	-13.19	2.35	0.13	395008.74	1209641.38	N 48 2 27.54	W 103 36 10.79
	5697.00	0.35	327.41	5696.59	2.95	-12.69	1.94	0.03	395009.26	1209640.99	N 48 2 27.55	W 103 36 10.79
	5792.00	0.18	347.03	5791.59	2.73	-12.30	1.75	0.20	395009.66	1209640.81	N 48 2 27.55	W 103 36 10.79
	5887.00	0.00	243.83	5886.59	2.69	-12.15	1.71	0.19	395009.81	1209640.79	N 48 2 27.55	W 103 36 10.7

Comments	MD (ft)	Incl (°)	Azim True (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S ° E/W °)	Longitude (E/W ° S/N °)
	7119.00	0.62	183.07	7118.52	7.44	-22.10	5.68	0.18	394998.70	1209644.35	N 48 2 27.45	W 103 36 10.74
	7214.00	0.70	187.52	7213.52	7.43	-23.19	5.58	0.10	394998.62	1209644.20	N 48 2 27.44	W 103 36 10.74
	7310.00	0.70	179.94	7309.51	7.45	-24.36	5.50	0.10	394997.46	1209644.08	N 48 2 27.43	W 103 36 10.74
	7405.00	0.88	212.55	7404.50	7.15	-25.56	5.11	0.50	394996.28	1209643.64	N 48 2 27.42	W 103 36 10.74
	7500.00	0.79	212.90	7499.49	6.50	-26.72	4.36	0.09	394995.15	1209642.84	N 48 2 27.41	W 103 36 10.76
	7595.00	0.53	204.77	7594.48	6.04	-27.67	3.82	0.29	394994.22	1209642.27	N 48 2 27.40	W 103 36 10.76
	7690.00	0.44	205.70	7689.48	5.76	-28.40	3.48	0.10	394993.51	1209641.90	N 48 2 27.39	W 103 36 10.77
	7785.00	0.44	213.92	7784.48	5.45	-29.03	3.12	0.07	394992.89	1209641.51	N 48 2 27.38	W 103 36 10.77
	7880.00	0.44	237.18	7879.47	4.98	-29.53	2.61	0.19	394992.41	1209640.98	N 48 2 27.38	W 103 36 10.78
	7975.00	0.44	224.94	7974.47	4.45	-29.98	2.04	0.10	394991.98	1209640.40	N 48 2 27.37	W 103 36 10.79
	8070.00	0.44	260.79	8069.47	3.86	-30.30	1.43	0.29	394991.69	1209639.77	N 48 2 27.37	W 103 36 10.80
	8164.00	0.44	283.27	8163.47	3.16	-30.28	0.72	0.18	394991.74	1209639.06	N 48 2 27.37	W 103 36 10.81
	8259.00	0.44	226.75	8258.46	2.55	-30.44	0.10	0.44	394991.60	1209638.43	N 48 2 27.37	W 103 36 10.82
	8354.00	0.35	182.13	8353.46	2.32	-30.98	-0.18	0.33	394991.07	1209638.14	N 48 2 27.36	W 103 36 10.82
	8449.00	0.26	182.50	8448.46	2.34	-31.49	-0.20	0.09	394990.57	1209638.10	N 48 2 27.36	W 103 36 10.82
	8544.00	0.53	344.92	8543.46	2.20	-31.28	-0.32	0.82	394990.78	1209637.98	N 48 2 27.36	W 103 36 10.82
	8640.00	0.53	1.20	8639.46	2.02	-30.41	-0.43	0.16	394991.66	1209637.91	N 48 2 27.37	W 103 36 10.83
	8735.00	0.70	353.96	8734.45	1.89	-29.39	-0.48	0.20	394992.67	1209637.90	N 48 2 27.38	W 103 36 10.83
	8830.00	0.79	350.03	8829.44	1.62	-28.17	-0.65	0.11	394993.90	1209637.77	N 48 2 27.39	W 103 36 10.83
	8925.00	0.62	341.50	8924.43	1.25	-27.03	-0.93	0.21	394995.04	1209637.54	N 48 2 27.40	W 103 36 10.83
	9020.00	0.35	8.19	9019.43	1.07	-26.26	-1.05	0.36	394995.82	1209637.45	N 48 2 27.41	W 103 36 10.84
	9115.00	0.44	174.73	9114.43	1.15	-26.34	-0.98	0.83	394995.74	1209637.52	N 48 2 27.41	W 103 36 10.83
	9210.00	0.44	194.72	9209.43	1.15	-27.05	-1.04	0.16	394995.03	1209637.44	N 48 2 27.40	W 103 36 10.84
	9305.00	0.53	207.80	9304.42	0.91	-27.79	-1.34	0.15	394994.30	1209637.11	N 48 2 27.40	W 103 36 10.84
	9400.00	0.62	210.93	9399.42	0.51	-28.62	-1.80	0.10	394993.49	1209636.61	N 48 2 27.38	W 103 36 10.85
	9495.00	0.53	220.26	9494.42	0.02	-29.40	-2.35	0.14	394992.74	1209636.03	N 48 2 27.38	W 103 36 10.85
	9590.00	0.53	223.92	9589.41	-0.51	-30.05	-2.94	0.04	394992.11	1209635.41	N 48 2 27.37	W 103 36 10.86
	9685.00	0.70	209.58	9684.41	-1.03	-30.87	-3.53	0.24	394991.31	1209634.79	N 48 2 27.37	W 103 36 10.87
	9779.00	0.70	224.05	9778.40	-1.64	-31.78	-4.22	0.19	394990.43	1209634.07	N 48 2 27.38	W 103 36 10.88
	9874.00	0.62	210.51	9873.39	-2.23	-32.64	-4.88	0.18	394989.60	1209633.37	N 48 2 27.35	W 103 36 10.89
	9969.00	0.62	248.94	9968.39	-2.92	-33.27	-5.62	0.43	394989.00	1209632.61	N 48 2 27.34	W 103 36 10.90
	10063.00	0.70	276.29	10062.38	-3.95	-33.39	-6.67	0.34	394988.92	1209631.56	N 48 2 27.34	W 103 36 10.90
	10156.00	0.62	273.31	10155.38	-5.02	-33.30	-7.73	0.09	394988.06	1209630.50	N 48 2 27.34	W 103 36 10.93
	10188.00	0.26	210.30	10187.37	-5.23	-33.35	-7.94	1.73	394988.01	1209630.28	N 48 2 27.34	W 103 36 10.94
	10219.00	2.37	122.47	10218.37	-4.69	-33.76	-7.44	7.66	394988.59	1209630.77	N 48 2 27.34	W 103 36 10.93
	10251.00	5.45	116.65	10250.29	-2.70	-34.79	-5.52	9.69	394987.48	1209632.65	N 48 2 27.33	W 103 36 10.90
	10283.00	9.58	114.52	10282.01	1.22	-36.58	-1.74	12.93	394985.54	1209636.35	N 48 2 27.31	W 103 36 10.85
	10314.00	13.19	115.91	10312.39	6.94	-39.20	3.79	11.68	394982.70	1209641.77	N 48 2 27.28	W 103 36 10.76
	10346.00	17.15	118.21	10343.27	14.67	-43.03	11.24	12.51	394978.58	1209649.06	N 48 2 27.25	W 103 36 10.65
	10378.00	21.10	119.86	10373.50	24.21	-48.13	20.39	12.46	394973.11	1209658.00	N 48 2 27.22	W 103 36 10.52
	10409.00	24.45	121.94	10402.08	34.96	-54.30	30.68	11.11	394966.53	1209668.03	N 48 2 27.13	W 103 36 10.37
	10441.00	27.35	122.02	10430.86	47.37	-61.70	42.54	9.06	394958.65	1209679.57	N 48 2 27.06	W 103 36 10.19
	10473.00	30.51	122.96	10458.86	61.05	-70.02	55.59	9.98	394948.92	1209692.28	N 48 2 26.98	W 103 36 10.00
	10504.00	33.50	123.49	10485.15	75.47	-79.03	69.33	9.69	394940.27	1209705.65	N 48 2 26.89	W 103 36 9.80
	10536.00	36.67	123.84	10511.33	91.55	-89.22	84.63	9.93	394982.46	1209720.53	N 48 2 26.79	W 103 36 9.57
	10568.00	40.89	123.43	10536.27	109.07	-100.32	101.32	13.21	394917.70	1209736.75	N 48 2 26.68	W 103 36 9.33
	10600.00	45.02	122.68	10559.69	128.25	-112.20	119.59	13.00	394905.09	1209754.53	N 48 2 26.56	W 103 36 9.06
	10631.00	48.63	122.53	10580.89	148.21	-124.38	138.63	11.65	394892.16	1209773.06	N 48 2 26.44	W 103 36 8.78
	10663.00	51.88	122.14	10601.35	169.99	-137.54	159.42	10.20	394878.17	1209793.30	N 48 2 26.31	W 103 36 8.47
	10694.00	54.34	123.12	10619.96	191.87	-150.91	180.30	8.33	394863.97	1209813.62	N 48 2 26.18	W 103 36 8.17
	10726.00	58.30	123.40	10637.70	215.24	-165.51	202.56	12.40	394848.49	1209835.28	N 48 2 26.04	W 103 36 7.84
	10758.00	62.61	124.22	10653.48	239.54	-181.00	225.68	13.65	394832.08	1209857.76	N 48 2 25.88	W 103 36 7.50
	10790.00	66.83	124.79	10667.14	264.62	-197.39	249.52	13.29	394814.74	1209880.91	N 48 2 25.72	W 103 36 7.15
	10821.00	70.79	124.68	10678.34	289.62	-213.86	273.27	12.78	394797.34	1209903.98	N 48 2 25.56	W 103 36 6.80
	10853.00	74.83	124.99	10687.80	316.03	-231.32	298.36	12.66	394778.88	1209928.34	N 48 2 25.39	W 103 36 6.43
	10885.00	77.91	124.07	10695.34	342.98	-248.94	323.97	10.02	394760.24	1209953.22	N 48 2 25.21	W 103 36 6.05
	10917.00	81.78	123.57	10700.98	370.48	-266.47	350.14	12.19	394741.67	12097978.66	N 48 2 25.04	W 103 36 5.67
	10948.00	86.70	122.12	10704.09	397.64	-283.19	376.04	16.54	394723.92	1210003.87	N 48 2 24.88	W 103 36 5.29
	10980.00	88.99	120.40	10705.29	426.22	-299.78	403.38	8.95	394706.25	1210030.51	N 48 2 24.71	W 103 36 4.88
7" Casing Point	11000.00	88.87	119.93	10705.67	444.27	-309.83	420.66	2.42	394695.51	1210047.38	N 48 2 24.61	W 103 36 4.63
	11011.00	88.81	119.67	10705.89	454.22	-315.30	430.21	2.42	394689.66	1210056.69	N 48 2 24.56	W 103 36 4.49
	11043.00	89.78	119.10	10706.28	483.27	-331.00	458.09	3.52	394672.85	1210083.91	N 48 2 24.40	W 103 36 4.08
	11075.00	90.31	119.37	10706.26	512.37	-346.63	486.01	1.86	394656.11	1210111.18	N 48 2 24.25	W 103 36 3.67
	11107.00	90.66	119.59	10705.99	541.40	-362.37	513.87	1.29	394639.26	1210138.38	N 48 2 24.09	W 103 36 3.26
	11138.00	91.71	119.76	10705.34	569.48	-393.57	567.42	3.43	394499.15	1210164.67	N 48 2 23.94	W 103 36 2.86
	11169.00	90.84	121.79	10704.65	591.70	-510.28	752.72	1.46	394481.86	121071.07	N 48 2 22.63	W 103 35 59.74
	11200.00	90.75	122.41	10704.22	624.80	-410.05	593.68	2.02	394488.41	1210216.20	N 48 2 22.62	W 103 36 2.08
	11231.00	89.60	122.72	10704.13	652.18	-426.73	619.81	3.84	394570.69	1210241.63	N 48 2 23.46	W 103 36 1.70
	11263.00	89.60	122.52	10704.35	680.44	-443.98	646.76	0.62	394552.37	1210267.87	N 48 2 23.29	W 103 36 1.30
	11294.00	90.04	122.55									

Comments	MD (ft)	Incl (°)	Azim True (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S °')	Longitude (E/W °')
	12646.00	88.99	90.38	10730.54	1999.83	-808.93	1940.95	1.51	394135.60	1211546.22	N 48 2 19.69	W 103 35 42.26
	12741.00	89.43	90.18	10731.85	2094.55	-809.40	2035.94	0.51	394131.31	1211641.11	N 48 2 19.68	W 103 35 40.86
	12836.00	90.13	90.17	10732.22	2189.26	-809.69	2130.93	0.74	394127.19	1211736.01	N 48 2 19.68	W 103 35 39.46
	12932.00	88.29	90.37	10733.54	2284.97	-810.14	2226.92	1.93	394122.87	1211831.89	N 48 2 19.67	W 103 35 38.05
	13027.00	87.32	89.91	10737.18	2379.61	-810.37	2321.85	1.13	394118.82	1211926.73	N 48 2 19.67	W 103 35 36.65
	13122.00	88.37	89.01	10740.75	2474.15	-809.48	2416.78	1.46	394115.89	1212021.61	N 48 2 19.68	W 103 35 35.26
	13217.00	89.34	89.35	10742.65	2568.70	-808.12	2511.75	1.08	394113.42	1212116.55	N 48 2 19.69	W 103 35 33.86
	13312.00	89.78	89.40	10743.38	2663.30	-807.08	2606.74	0.47	394110.63	1212211.50	N 48 2 19.70	W 103 35 32.46
	13407.00	89.87	88.74	10743.67	2757.86	-805.54	2701.72	0.70	394108.34	1212306.47	N 48 2 19.72	W 103 35 31.06
	13503.00	88.90	87.72	10744.70	2853.25	-802.57	2797.67	1.47	394107.44	1212402.45	N 48 2 19.75	W 103 35 29.65
	13598.00	88.64	89.28	10746.74	2947.68	-800.09	2892.61	1.66	394106.10	1212497.41	N 48 2 19.77	W 103 35 28.26
	13693.00	89.60	90.67	10748.20	3042.36	-800.05	2987.60	1.78	394102.31	1212592.31	N 48 2 19.77	W 103 35 26.86
	13789.00	89.96	90.44	10748.57	3138.11	-800.98	3083.59	0.44	394097.51	1212688.18	N 48 2 19.76	W 103 35 25.45
	13884.00	90.04	89.82	10748.57	3232.82	-801.19	3178.59	0.66	394093.47	1212783.09	N 48 2 19.76	W 103 35 24.05
	13978.00	89.16	90.02	10749.22	3236.50	-801.06	3272.59	0.96	394089.82	1212877.01	N 48 2 19.76	W 103 35 22.66
	14072.00	87.67	90.39	10751.82	3420.18	-801.40	3366.55	1.63	394085.70	1212970.88	N 48 2 19.76	W 103 35 21.28
	14167.00	89.69	89.96	10754.01	3514.87	-801.69	3461.52	2.17	394081.58	1213065.75	N 48 2 19.76	W 103 35 19.88
	14262.00	90.57	89.99	10753.80	3609.55	-801.64	3556.52	0.93	394077.79	1213160.67	N 48 2 19.76	W 103 35 18.49
	14357.00	91.10	89.45	10752.41	3704.20	-801.18	3651.50	0.80	394074.43	1213255.59	N 48 2 19.76	W 103 35 17.09
	14452.00	88.46	90.04	10752.78	3798.84	-800.76	3746.49	2.85	394071.03	1213350.52	N 48 2 19.76	W 103 35 15.69
	14547.00	88.55	90.01	10755.26	3893.50	-800.80	3841.46	0.10	394067.16	1213445.40	N 48 2 19.76	W 103 35 14.29
	14642.00	88.46	89.97	10757.73	3998.16	-800.78	3936.43	0.10	394063.35	1213540.28	N 48 2 19.76	W 103 35 12.90
	14737.00	90.40	90.01	10758.68	4082.84	-800.77	4031.42	2.04	394059.54	1213635.19	N 48 2 19.76	W 103 35 11.50
	14833.00	91.45	90.02	10757.13	4178.52	-800.79	4127.41	1.09	394055.65	1213731.09	N 48 2 19.76	W 103 35 10.09
	14928.00	89.96	89.68	10755.96	4273.18	-800.54	4222.40	1.61	394052.07	1213826.01	N 48 2 19.77	W 103 35 8.69
	15023.00	90.04	89.66	10755.96	4367.82	-799.99	4317.39	0.09	394048.79	1213920.95	N 48 2 19.77	W 103 35 7.29
	15118.00	89.34	90.67	10756.47	4462.53	-800.27	4412.39	1.29	394044.69	1214015.85	N 48 2 19.77	W 103 35 5.89
	15214.00	90.31	91.23	10756.77	4558.33	-801.86	4508.38	1.17	394039.23	1214111.68	N 48 2 19.75	W 103 35 4.48
	15309.00	90.57	90.11	10756.04	4653.10	-802.97	4603.36	1.21	394034.29	1214206.55	N 48 2 19.74	W 103 35 3.08
	15404.00	87.93	89.98	10757.28	4747.78	-803.05	4698.35	2.78	394030.39	1214301.44	N 48 2 19.74	W 103 35 1.68
	15499.00	86.88	90.97	10761.58	4842.44	-803.83	4793.24	1.52	394025.78	1214396.23	N 48 2 19.73	W 103 35 0.29
	15594.00	87.93	90.82	10765.88	4937.14	-805.31	4888.13	1.12	394020.48	1214490.97	N 48 2 19.72	W 103 34 58.89
	15626.00	88.37	89.75	10766.92	4969.03	-805.47	4920.12	3.61	394019.03	1214522.92	N 48 2 19.71	W 103 34 58.42
	15689.00	88.55	89.83	10768.61	5031.78	-805.24	4983.09	0.31	394016.73	1214585.85	N 48 2 19.72	W 103 34 57.49
	15721.00	89.69	89.96	10769.10	5063.67	-805.18	5015.09	3.59	394015.50	1214617.82	N 48 2 19.72	W 103 34 57.02
	15784.00	90.04	89.88	10769.25	5126.46	-805.10	5078.09	0.57	394013.05	1214680.77	N 48 2 19.72	W 103 34 56.10
	15879.00	90.75	89.37	10768.59	5221.09	-804.47	5173.08	0.92	394009.84	1214775.71	N 48 2 19.72	W 103 34 54.70
	15974.00	90.04	89.50	10767.94	5315.70	-803.54	5268.08	0.76	394006.95	1214870.65	N 48 2 19.73	W 103 34 53.30
	16070.00	90.48	90.10	10767.50	5411.36	-803.20	5364.07	0.78	394003.42	1214966.58	N 48 2 19.74	W 103 34 51.89
	16165.00	89.25	91.44	10767.73	5506.14	-804.48	5459.06	1.91	393998.31	1215061.43	N 48 2 19.72	W 103 34 50.49
	16261.00	89.52	91.39	10768.76	5601.98	-806.85	5555.03	0.29	393992.08	1215157.22	N 48 2 19.73	W 103 34 49.08
	16355.00	90.40	90.99	10768.82	5659.81	-808.80	5649.00	1.03	393986.34	1215251.04	N 48 2 19.68	W 103 34 47.70
	16451.00	87.76	91.56	10770.37	5791.63	-810.94	5744.96	2.81	393980.34	1215346.82	N 48 2 19.66	W 103 34 46.28
	16546.00	88.46	90.35	10773.50	5886.38	-812.52	5839.89	1.47	393974.94	1215441.61	N 48 2 19.64	W 103 34 44.89
	16578.00	89.43	89.52	10774.09	5918.27	-812.48	5871.89	3.99	393973.69	1215473.57	N 48 2 19.64	W 103 34 44.42
	16642.00	90.13	89.11	10774.33	5981.99	-811.72	5935.88	1.27	393971.87	1215537.54	N 48 2 19.65	W 103 34 43.47
	16735.00	90.92	88.57	10773.48	6074.51	-809.83	6028.86	1.03	393970.01	1215630.51	N 48 2 19.67	W 103 34 42.11
	16798.00	89.08	89.56	10773.48	6137.21	-808.81	6091.84	3.32	393968.50	1215639.49	N 48 2 19.68	W 103 34 41.18
	16829.00	89.08	89.40	10773.98	6168.08	-808.53	6122.84	0.52	393967.53	1215724.47	N 48 2 19.68	W 103 34 40.72
	16923.00	89.69	89.80	10774.99	6261.72	-807.87	6216.83	0.78	393964.40	1215818.40	N 48 2 19.69	W 103 34 39.94
	17017.00	89.96	89.87	10775.28	6355.39	-807.60	6310.83	0.30	393960.88	1215912.33	N 48 2 19.63	W 103 34 37.96
	17111.00	91.36	89.68	10774.19	6449.04	-807.23	6404.82	1.50	393957.46	1216006.25	N 48 2 19.69	W 103 34 36.57
	17205.00	90.22	89.83	10772.90	6542.69	-806.83	6498.81	1.22	393954.08	1216100.18	N 48 2 19.70	W 103 34 35.19
	17299.00	90.66	89.76	10772.17	6636.36	-806.49	6592.81	0.47	393950.63	1216194.10	N 48 2 19.70	W 103 34 33.81
	17393.00	89.78	89.97	10771.81	6730.03	-806.27	6686.80	0.96	393947.06	1216288.03	N 48 2 19.70	W 103 34 32.42
	17487.00	88.90	90.89	10772.90	6823.77	-806.98	6780.79	1.35	393942.57	1216381.91	N 48 2 19.69	W 103 34 31.04
	17581.00	89.99	89.83	10774.63	6915.75	-808.39	6874.77	0.12	393937.38	1216475.74	N 48 2 19.68	W 103 34 29.66
	17676.00	89.87	90.86	10775.75	7012.34	-809.79	6969.75	0.93	393932.15	1216570.59	N 48 2 19.67	W 103 34 28.26
	17770.00	89.43	91.43	10776.15	7106.17	-811.67	7063.73	0.77	393926.49	1216664.41	N 48 2 19.65	W 103 34 26.88
	17864.00	89.16	91.94	10777.30	7204.04	-814.43	7157.68	0.61	393919.94	1216758.16	N 48 2 19.62	W 103 34 25.50
	17958.00	88.64	92.11	10779.11	7293.92	-817.75	7251.61	0.58	393912.44	1216851.87	N 48 2 19.59	W 103 34 24.11
	18051.00	88.72	91.97	10781.25	7386.80	-821.06	7344.52	0.17	393905.79	1216944.57	N 48 2 19.55	W 103 34 22.75
	18145.00	89.96	92.66	10782.33	7480.72	-824.86	7438.44	1.51	393898.21	1217038.25	N 48 2 19.52	W 103 34 21.36
	18240.00	88.90	91.83	10783.28	7575.63	-828.58	7533.36	1.42	393890.67	1217132.94	N 48 2 19.48	W 103 34 19.97
	18272.00	87.76	90.32	10784.21	7671.33	-829.18	7565.34	5.91	393888.78	1217164.87	N 48 2 19.47	W 103 34 19.50
	18336.00	86.88	91.00	10807.20	7835.81	-827.75	7829.68	1.74	393885.47	1217228.71	N 48 2 19.46	W 103 34 18.56
	18431.00	89.08	89.63	10801.76	8430.38	-826.68	8391.05	1.62	393858.01	1217998.96	N 48 2 19.49	W 103 34 7.35
	19130.00	89.87	89									

Comments	MD (ft)	Incl (°)	Azim True (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ft)	Easting (ft)	Latitude (N/S ° '")	Longitude (E/W ° '")
	1	0.000		32.000	1/98.425	30.000	30.000	SLB_MWD-STD-Depth Only	Original Hole / Wade Federal			
	1	32.000		32.000	Act Stns	30.000	30.000	SLB_MWD-STD-Depth Only	5300 41-30 #9B MWD 0' to 20650'	Original Hole / Wade Federal		
	1	32.000		20577.000	Act Stns	30.000	30.000	SLB_MWD-STD	5300 41-30 #9B MWD 0' to 20650'	Original Hole / Wade Federal		
	1	20577.000		20650.000	Act Stns	30.000	30.000	SLB_BLIND+TREND	5300 41-30 #9B MWD 0' to 20650'	Original Hole / Wade Federal		



# 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.

28744



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

 Notice of Intent

Approximate Start Date

December 9, 2014

 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 Waiver from tubing/packer requirement

## Well Name and Number

Wade Federal 5300 41-30 9B

LOT 4

Footages	Qtr-Qtr	Section	Township	Range
811 F S L	280 F W L	SWSW	30	153 N 100 W
Field Baker	Pool Bakken		County McKenzie	

## 24-HOUR PRODUCTION RATE

Before	After	Oil	Bbls
Oil	Bbls	Oil	Bbls
Water	Bbls	Water	Bbls

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 Assistant</b>	Date <b>December 9, 2014</b>	
Email Address <b>jswenson@oasispetroleum.com</b>		

## FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <i>December 11, 2014</i>	
By 	
Title <b>PETROLEUM ENGINEER</b>	

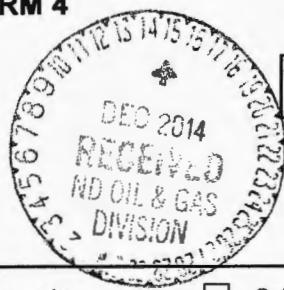


# SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4

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.

28744



PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

 Notice of Intent

Approximate Start Date

December 11, 2014

 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**Proposed Frac String & Gauge**

## Well Name and Number

**Wade Federal 5300 41-30 9B**

Footages	811 F S L	280 F W L	Qtr-Qtr Lot 4	Section 30	Township 153 N	Range 100 W
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Field <b>Baker</b>	Pool <b>Bakken</b>	County <b>McKenzie</b>
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## 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

As requested, Oasis Petroleum respectfully requests to permission to run frac string prior to performing a hydraulic fracture simulation and install a surface casing gauge to monitor pressures.

*Approved pursuant to 43-02-03-27.1 hydraulic fracturing rule*

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 	Printed Name <b>Victoria Siemieniewski</b>	
Title <b>Regulatory Specialist</b>	Date <b>December 12, 2014</b>	
Email Address <b>vsiemieniewski@oasispetroleum.com</b>		

## FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <i>12/12/14</i>	
By <i>Albert Hahn</i>	
Title <i>J. H. Lepine</i>	



# 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.  
**28744**

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>September 1, 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.	Approximate Start Date	<input checked="" 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 type="checkbox"/> Other	

Well Name and Number <b>Wade Federal 5300 41-30 9B</b>				
Footages	Qtr-Qtr	Section	Township	Range
<b>811 F S L</b>	<b>280 F W L</b>	<b>lot4</b>	<b>30</b>	<b>153 N 100 W</b>
Field	Pool	County		
	<b>Bakken</b>	<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 to revise the casing plan for the subject well as follows:

13 3/8" 54.5# surface casing will be ran to 2,050'  
Contingency 9 5/8" 40# will be ran to 6,400' in order to isolate the Dakota  
7" 32# intermediate casing will be ran to 11,529'  
4.5" 13.5# liner will be ran to 20,729'

Attached is a revised drill plan, directional plan/plot and well summary.

Company <b>Oasis Petroleum North America LLC</b>	Telephone Number <b>281-404-9491</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>Brandi Terry</b>	
Title <b>Regulatory Specialist</b>	Date <b>July 30, 2014</b>	
Email Address <b>bterry@oasispetroleum.com</b>		

FOR STATE USE ONLY	
<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <b>8-18-14</b>	
By 	
Title <b>Petroleum Resource Specialist</b>	

DRILLING PLAN								
OPERATOR	Oasis Petroleum			COUNTY/STATE	McKenzie Co., ND			
WELL NAME	Wade Federal 5300 41-30 9B			RIG	B22			
WELL TYPE	Horizontal Middle Bakken			LOCATION	SW SW 30-153N-100W			
EST. T.D.	20,729'			Surface Location (survey plan)	811' FSL	280' FWL		
TOTAL LATERAL:	9,200'			GROUND ELEV:	2,045'	Sub Height: 25'		
MARKER	TVD	Subsea TVD	LOGS:	Type	Interval			
Pierre	NDIC MAP	1,920		OH Logs: Request Log waiver based on the Wade Federal 5300 21-30H 2,150' N of surface location				
Greenhorn		4,566	-2,496	CBL/GR: Above top of cement/GR to base of casing				
Mowry		4,869	-2,899	MWD GR: KOP to lateral TD				
Dakota		5,391	-3,321					
Rierdon		6,407	-4,337	DEVIATION: Surf: 3 deg. max., 1 deg / 100'; svry every 500'				
Dunham Salt		6,896	-4,826	Prod: 5 deg. max., 1 deg / 100'; svry every 100'				
Dunham Salt Base		6,942	-4,872					
Pine Salt		7,205	-5,135					
Pine Salt Base		7,229	-5,159					
Opeche Salt		7,291	-5,221					
Opeche Salt Base		7,371	-5,301					
Armsden		7,815	-5,545					
Tyler		7,771	-5,701					
Otter/Base Minnelusa		7,994	-5,924					
Kibbey Lime		8,336	-6,266					
Charles Salt		8,484	-6,414					
Base Last Salt		9,163	-7,093					
Mission Canyon		9,377	-7,307					
Lodgepole		9,926	-7,856					
False Bakken		10,658	-8,586					
Upper Bakken Shale		10,666	-8,598					
Middle Bakken (Top of Target)		10,695	-8,625					
Middle Bakken (Base of target)		10,706	-8,636					
Lower Bakken Shale		10,719	-8,649					
Threeforks		10,744	-8,674					
<b>DEVIATION:</b> Surf: 3 deg. max., 1 deg / 100'; svry every 500' Prod: 5 deg. max., 1 deg / 100'; svry every 100'								
<b>SETS:</b> None planned								
<b>CORES:</b> None planned								
<b>MUDLOGGING:</b> Two-Man: Begin 200' above Kibbey 30' samples in curve and lateral								
<b>BOP:</b> 11" 5000 psi blind, pipe & annular								
Est. Dip Rate:	0.11							
Max. Anticipated BHP:	4845			Surface Formation: Glacial till				
<b>MUD:</b>	<b>Interval</b>	<b>Type</b>	<b>WT</b>	<b>Vis</b>	<b>WL</b>	<b>Remarks</b>		
Surface:	0' -	2,050' FW/Gel - Lime Sweeps	8.4-9.0	28-32	NC	Circ Mud Tanks		
Intermediate:	2,050' -	11,529' Invert	9.5-10.4	40-50	30+HtHp	Circ Mud Tanks		
Laterai:	11,529' -	20,729' Salt Water	9.8-10.2	28-32	NC	Circ Mud Tanks		
<b>CASING:</b>	<b>Size</b>	<b>Wt pcf</b>	<b>Hole</b>	<b>Depth</b>	<b>Cement</b>	<b>WOC</b>	<b>Remarks</b>	
Surface:	13-3/8"	54.5#	17-1/2"	2,050'	To Surface	12	100' into Pierre	
Intermediate (Dakota):	9-5/8"	40#	12-1/4"	6,400'	To Surface	24	Set Casing across Dakota	
Intermediate:	7"	32#	8-3/4"	11,529'	4891	24	500' above Dakota	
Production Liner:	4.5"	13.5#	6"	20,729'	TOL @ 10.17"		50' above KOP	
<b>PROBABLE PLUGS, IF REQ'D:</b>								
<b>OTHER:</b>	<b>MD</b>	<b>TVD</b>	<b>FN/FSL</b>	<b>FEL/FWL</b>	<b>S-T-R</b>	<b>AZI</b>		
Surface:	2,050	2,050	811' FSL	280' FWL	S 30 T153N R100W			
KOP:	10,229	10,229	766' FSL	280' FWL	S 30 T153N R100W			
EOC:	10,979	10,706	513' FSL	685' FWL	S 30 T153N R100W			
Casing Point:	11,529'	10,706'	222' FSL	1151' FWL	S 30 T153N R100W			
Middle Bakken Lateral TD:	20,729'	10,706'	0' FSL	210' FEL	S 29 T153N R100W			
<b>Comments:</b>								
<b>Request Log waiver based on the Wade Federal 5300 21-30H 2,150' N of surface location</b>								
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)								
<b>OASIS</b> PETROLEUM PETROLEUM								
Geology: N. Gabelman	1/20/2014			Engineering: DAD	5/19/14			

**Oasis Petroleum  
Well Summary**  
**Wade Federal 5300 41-30 9B**  
**Section 30 T153N R100W**  
**McKenzie County, ND**

**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 2,050'	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 2,050'	13-3/8", 54.5#, J-55, STC, 8rd	1130 / 1.18	2730 / 2.84	514 / 2.62

**API Rating & Safety Factor**

- a) Based on full casing evacuation with 9 ppg fluid on backside (2,050' setting depth).
- b) Burst pressure based on 9 ppg fluid with no fluid on backside (2,050' setting depth).
- c) Based on string weight in 9 ppg fluid at 2,050' TVD plus 100k# overpull. (Buoyed weight equals 96k 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:**                **596 sks** (308 bbls) 2.9 yield conventional system with 94 lb/sk cement, .25 lb/sk D130 Lost Circulation Control Agent, 2% CaCl<sub>2</sub>, 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% CaCl<sub>2</sub> and 0.25 lb/sk Lost Circulation Control Agent

**Oasis Petroleum  
Well Summary**  
**Wade Federal 5300 41-30 9B**  
**Section 30 T153N R100W**  
**McKenzie County, ND**

**CONTINGENCY SURFACE CASING AND CEMENT DESIGN**

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
9-5/8"	0' to 6,400'	40	L-80	LTC	8.835"	8.75"	5,450	7,270	9,090

Interval	Description	Collapse	Burst	Tension
		(psi) a	(psi) b	(1000 lbs) c
0' to 6,400'	9-5/8", 40#, L-80, LTC, 8rd	3090 / 3.71	5750 / 1.24	837 / 3.86

**API Rating & Safety Factor**

- a) Collapse pressure based on 11.5 ppg fluid on the backside and 9 ppg fluid inside of casing.
- b) Burst pressure calculated from a gas kick coming from the production zone (Bakken Pool) at 9,000 psi 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, (217k lbs buoyed weight) plus 100k lbs overpull.

Cement volumes are based on 9-5/8" casing set in 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:**                **592 sks** (210 bbls) Conventional system with 75 lb/sk cement, 0.5 lb/sk lost circulation, 10% expanding agent, 2% extender, 2% CaCl<sub>2</sub>, 0.2% anti-foam and 0.4% fluid loss agent.

**Tail Slurry:**                **521 sks** (108 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**  
**Wade Federal 5300 41-30 9B**  
**Section 30 T153N R100W**  
**McKenzie County, ND**

**INTERMEDIATE CASING AND CEMENT DESIGN**

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
7"	0' – 11,529'	32	HCP-110	LTC	6.094"	6.000"	6730	8970	9870

\*\*\*Special drift

Interval	Length	Description	Collapse	Burst	Tension
			(psi) a	(psi) b	(1000 lbs) c
0' – 11,529'	11,529'	7", 32#, HCP-110, LTC, 8rd	11820 / 2.12*	12460 / 1.29	897 / 2.30
6,896' – 10,229'	3,333'	7", 32#, HCP-110, LTC, 8rd	11820 / 1.45*	12460 / 1.29	

**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 10,706' TVD.
- c) Based on string weight in 10 ppg fluid, (290k lbs buoyed weight) plus 100k

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:**      **189 sks** (87 bbls) 2.59 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, 0.5 lb/sk, D130 LCM.

**Tail Slurry:**      **592 sks** (184 bbls) 1.55 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 and 0.5 lb/sk LCM.

**Oasis Petroleum  
Well Summary**  
**Wade Federal 5300 41-30 9B**  
**Section 30 T153N R100W**  
**McKenzie County, ND**

**PRODUCTION LINER**

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Estimated Torque
4-1/2"	10,179' – 20,729'	13.5	P-110	BTC	3.92"	3.795"	4,500

Interval	Description	Collapse	Burst	Tension
		(psi) a	(psi) b	(1000 lbs) c
10,179' – 20,729'	4-1/2", 13.5 lb, P-110, BTC, 8rd	10670 / 2.02	12410 / 1.28	443 / 1.98

**API Rating & Safety Factor**

- a) Based on full casing evacuation with 9.5 ppg fluid on backside @ 10,706' TVD.  
Burst pressure based on 9000 psi treating pressure with 10.2 ppg internal fluid gradient and 9 ppg external
- b) fluid gradient @ 10,706' TVD.
- c) Based on string weight in 9.5 ppg fluid (Buoyed weight: 124k 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)**

## **Oasis**

**Indian Hills**

**153N-100W-29/30**

**Wade Federal 5300 41-30 9B**

**Wade Federal 5300 41-30 9B**

**Plan: Plan #1**

## **Standard Planning Report**

**27 June, 2014**

# Oasis Petroleum

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well Wade Federal 5300 41-30 9B							
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)							
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)							
<b>Site:</b>	153N-100W-29/30	<b>North Reference:</b>	True							
<b>Well:</b>	Wade Federal 5300 41-30 9B	<b>Survey Calculation Method:</b>	Minimum Curvature							
<b>Wellbore:</b>	Wade Federal 5300 41-30 9B									
<b>Design:</b>	Plan #1									
<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-29/30									
<b>Site Position:</b>		<b>Northing:</b>	395,519.95 usft							
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,209,617.13 usft							
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "							
			<b>Latitude:</b> 48° 2' 32.580 N							
			<b>Longitude:</b> 103° 36' 11.410 W							
			<b>Grid Convergence:</b> -2.31 °							
<b>Well</b>	Wade Federal 5300 41-30 9B									
<b>Well Position</b>	+N-S +E-W	-497.5 usft 40.1 usft	<b>Northing:</b> 395,021.22 usft <b>Easting:</b> 1,209,637.14 usft							
<b>Position Uncertainty</b>	0.0 usft		<b>Latitude:</b> 48° 2' 27.670 N <b>Longitude:</b> 103° 36' 10.820 W							
			<b>Wellhead Elevation:</b> Ground Level: 2,045.0 usft							
<b>Wellbore</b>	Wade Federal 5300 41-30 9B									
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b> (°)	<b>Dip Angle</b> (°)	<b>Field Strength</b> (nT)					
	IGRF200510	3/6/2014	8.17	72.95	56,478					
<b>Design</b>	Plan #1									
<b>Audit Notes:</b>										
<b>Version:</b>		<b>Phase:</b>	PROTOTYPE	<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	94.62					
<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E/W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00
10,225.0	0.50	180.00	10,224.8	-44.6	0.0	0.00	0.00	0.00	0.00	180.00
10,229.0	0.00	0.00	10,228.8	-44.6	0.0	12.50	-12.50	0.00	0.00	180.00
10,979.0	90.00	122.00	10,706.3	-297.6	404.9	12.00	12.00	0.00	0.00	122.00
11,529.0	90.00	122.00	10,706.3	-589.1	871.3	0.00	0.00	0.00	0.00	0.00
12,344.7	90.00	90.00	10,706.3	-811.0	1,645.3	3.92	0.00	-3.92	0.00	270.00
20,729.4	90.00	90.00	10,706.3	-811.0	10,030.0	0.00	0.00	0.00	0.00	WADE 9B PBHL

# Oasis Petroleum

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well Wade Federal 5300 41-30 9B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-29/30	<b>North Reference:</b>	True
<b>Well:</b>	Wade Federal 5300 41-30 9B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wade Federal 5300 41-30 9B		
<b>Design:</b>	Plan #1		

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	180.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.01	180.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	0.01	180.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	0.02	180.00	400.0	-0.1	0.0	0.0	0.00	0.00	0.00	
500.0	0.02	180.00	500.0	-0.1	0.0	0.0	0.00	0.00	0.00	
600.0	0.03	180.00	600.0	-0.2	0.0	0.0	0.00	0.00	0.00	
700.0	0.03	180.00	700.0	-0.2	0.0	0.0	0.00	0.00	0.00	
800.0	0.04	180.00	800.0	-0.3	0.0	0.0	0.00	0.00	0.00	
900.0	0.04	180.00	900.0	-0.3	0.0	0.0	0.00	0.00	0.00	
1,000.0	0.05	180.00	1,000.0	-0.4	0.0	0.0	0.00	0.00	0.00	
1,100.0	0.05	180.00	1,100.0	-0.5	0.0	0.0	0.00	0.00	0.00	
1,200.0	0.06	180.00	1,200.0	-0.6	0.0	0.0	0.00	0.00	0.00	
1,300.0	0.06	180.00	1,300.0	-0.7	0.0	0.1	0.00	0.00	0.00	
1,400.0	0.07	180.00	1,400.0	-0.8	0.0	0.1	0.00	0.00	0.00	
1,500.0	0.07	180.00	1,500.0	-1.0	0.0	0.1	0.00	0.00	0.00	
1,600.0	0.08	180.00	1,600.0	-1.1	0.0	0.1	0.00	0.00	0.00	
1,700.0	0.08	180.00	1,700.0	-1.2	0.0	0.1	0.00	0.00	0.00	
1,800.0	0.09	180.00	1,800.0	-1.4	0.0	0.1	0.00	0.00	0.00	
1,900.0	0.09	180.00	1,900.0	-1.5	0.0	0.1	0.00	0.00	0.00	
1,920.0	0.08	180.00	1,920.0	-1.6	0.0	0.1	0.05	-0.05	0.00	
<b>Pierre</b>										
2,000.0	0.10	180.00	2,000.0	-1.7	0.0	0.1	0.02	0.02	0.00	
2,050.0	0.10	180.00	2,050.0	-1.8	0.0	0.1	0.00	0.00	0.00	
<b>9 5/8"</b>										
2,100.0	0.10	180.00	2,100.0	-1.9	0.0	0.2	0.00	0.00	0.00	
2,200.0	0.11	180.00	2,200.0	-2.1	0.0	0.2	0.00	0.00	0.00	
2,300.0	0.11	180.00	2,300.0	-2.3	0.0	0.2	0.00	0.00	0.00	
2,400.0	0.12	180.00	2,400.0	-2.5	0.0	0.2	0.00	0.00	0.00	
2,500.0	0.12	180.00	2,500.0	-2.7	0.0	0.2	0.00	0.00	0.00	
2,600.0	0.13	180.00	2,600.0	-2.9	0.0	0.2	0.00	0.00	0.00	
2,700.0	0.13	180.00	2,700.0	-3.1	0.0	0.3	0.00	0.00	0.00	
2,800.0	0.14	180.00	2,800.0	-3.3	0.0	0.3	0.00	0.00	0.00	
2,900.0	0.14	180.00	2,900.0	-3.6	0.0	0.3	0.00	0.00	0.00	
3,000.0	0.15	180.00	3,000.0	-3.8	0.0	0.3	0.00	0.00	0.00	
3,100.0	0.15	180.00	3,100.0	-4.1	0.0	0.3	0.00	0.00	0.00	
3,200.0	0.16	180.00	3,200.0	-4.4	0.0	0.4	0.00	0.00	0.00	
3,300.0	0.16	180.00	3,300.0	-4.6	0.0	0.4	0.00	0.00	0.00	
3,400.0	0.17	180.00	3,400.0	-4.9	0.0	0.4	0.00	0.00	0.00	
3,500.0	0.17	180.00	3,500.0	-5.2	0.0	0.4	0.00	0.00	0.00	
3,600.0	0.18	180.00	3,600.0	-5.5	0.0	0.4	0.00	0.00	0.00	
3,700.0	0.18	180.00	3,700.0	-5.8	0.0	0.5	0.00	0.00	0.00	
3,800.0	0.19	180.00	3,800.0	-6.2	0.0	0.5	0.00	0.00	0.00	
3,900.0	0.19	180.00	3,900.0	-6.5	0.0	0.5	0.00	0.00	0.00	
4,000.0	0.20	180.00	4,000.0	-6.8	0.0	0.6	0.00	0.00	0.00	
4,100.0	0.20	180.00	4,100.0	-7.2	0.0	0.6	0.00	0.00	0.00	
4,200.0	0.21	180.00	4,200.0	-7.5	0.0	0.6	0.00	0.00	0.00	
4,300.0	0.21	180.00	4,300.0	-7.9	0.0	0.6	0.00	0.00	0.00	
4,400.0	0.22	180.00	4,400.0	-8.3	0.0	0.7	0.00	0.00	0.00	
4,500.0	0.22	180.00	4,500.0	-8.6	0.0	0.7	0.00	0.00	0.00	
4,566.0	0.22	180.00	4,566.0	-8.9	0.0	0.7	0.00	0.00	0.00	
<b>Greenhorn</b>										
4,600.0	0.22	180.00	4,600.0	-9.0	0.0	0.7	0.01	0.01	0.00	
4,700.0	0.23	180.00	4,700.0	-9.4	0.0	0.8	0.00	0.00	0.00	
4,800.0	0.23	180.00	4,800.0	-9.8	0.0	0.8	0.00	0.00	0.00	

# Oasis Petroleum

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well Wade Federal 5300 41-30 9B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-29/30	<b>North Reference:</b>	True
<b>Well:</b>	Wade Federal 5300 41-30 9B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wade Federal 5300 41-30 9B		
<b>Design:</b>	Plan #1		

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)	
4,900.0	0.24	180.00	4,900.0	-10.2	0.0	0.8	0.00	0.00	0.00	0.00
4,969.0	0.24	180.00	4,969.0	-10.5	0.0	0.8	0.00	0.00	0.00	0.00
<b>Mowry</b>										
5,000.0	0.24	180.00	5,000.0	-10.7	0.0	0.9	0.02	0.02	0.00	0.00
5,100.0	0.25	180.00	5,100.0	-11.1	0.0	0.9	0.00	0.00	0.00	0.00
5,200.0	0.25	180.00	5,200.0	-11.5	0.0	0.9	0.00	0.00	0.00	0.00
5,300.0	0.26	180.00	5,300.0	-12.0	0.0	1.0	0.00	0.00	0.00	0.00
5,391.0	0.28	180.00	5,391.0	-12.4	0.0	1.0	0.03	0.03	0.00	0.00
<b>Dakota</b>										
5,400.0	0.26	180.00	5,400.0	-12.4	0.0	1.0	0.21	-0.21	0.00	0.00
5,500.0	0.27	180.00	5,500.0	-12.9	0.0	1.0	0.00	0.00	0.00	0.00
5,600.0	0.27	180.00	5,600.0	-13.4	0.0	1.1	0.00	0.00	0.00	0.00
5,700.0	0.28	180.00	5,700.0	-13.9	0.0	1.1	0.00	0.00	0.00	0.00
5,800.0	0.28	180.00	5,800.0	-14.4	0.0	1.2	0.00	0.00	0.00	0.00
5,900.0	0.29	180.00	5,900.0	-14.9	0.0	1.2	0.00	0.00	0.00	0.00
6,000.0	0.29	180.00	6,000.0	-15.4	0.0	1.2	0.00	0.00	0.00	0.00
6,100.0	0.30	180.00	6,100.0	-15.9	0.0	1.3	0.00	0.00	0.00	0.00
6,200.0	0.30	180.00	6,200.0	-16.4	0.0	1.3	0.00	0.00	0.00	0.00
6,300.0	0.31	180.00	6,300.0	-16.9	0.0	1.4	0.00	0.00	0.00	0.00
6,400.0	0.31	180.00	6,400.0	-17.5	0.0	1.4	0.00	0.00	0.00	0.00
6,407.0	0.27	180.00	6,407.0	-17.5	0.0	1.4	0.62	-0.62	0.00	0.00
<b>Rierdon</b>										
6,500.0	0.32	180.00	6,500.0	-18.0	0.0	1.5	0.05	0.05	0.00	0.00
6,600.0	0.32	180.00	6,600.0	-18.6	0.0	1.5	0.00	0.00	0.00	0.00
6,700.0	0.33	180.00	6,700.0	-19.2	0.0	1.5	0.00	0.00	0.00	0.00
6,800.0	0.33	180.00	6,800.0	-19.7	0.0	1.6	0.00	0.00	0.00	0.00
6,896.0	0.33	180.00	6,896.0	-20.3	0.0	1.6	0.00	0.00	0.00	0.00
<b>Dunham Salt</b>										
6,900.0	0.34	180.00	6,900.0	-20.3	0.0	1.6	0.08	0.08	0.00	0.00
6,942.0	0.33	180.00	6,942.0	-20.6	0.0	1.7	0.01	-0.01	0.00	0.00
<b>Dunham Salt Base</b>										
7,000.0	0.34	180.00	7,000.0	-20.9	0.0	1.7	0.02	0.02	0.00	0.00
7,100.0	0.35	180.00	7,100.0	-21.5	0.0	1.7	0.00	0.00	0.00	0.00
7,200.0	0.35	180.00	7,200.0	-22.1	0.0	1.8	0.00	0.00	0.00	0.00
7,205.0	0.29	180.00	7,205.0	-22.1	0.0	1.8	1.21	-1.21	0.00	0.00
<b>Pine Salt</b>										
7,229.0	0.34	180.00	7,229.0	-22.3	0.0	1.8	0.22	0.22	0.00	0.00
<b>Pine Salt Base</b>										
7,291.0	0.35	180.00	7,291.0	-22.7	0.0	1.8	0.01	0.01	0.00	0.00
<b>Opecche Salt</b>										
7,300.0	0.36	180.00	7,300.0	-22.7	0.0	1.8	0.05	0.05	0.00	0.00
7,371.0	0.38	180.00	7,371.0	-23.2	0.0	1.9	0.04	0.04	0.00	0.00
<b>Opecche Salt Base</b>										
7,400.0	0.36	180.00	7,400.0	-23.4	0.0	1.9	0.08	-0.08	0.00	0.00
7,500.0	0.37	180.00	7,499.9	-24.0	0.0	1.9	0.00	0.00	0.00	0.00
7,600.0	0.37	180.00	7,599.9	-24.6	0.0	2.0	0.00	0.00	0.00	0.00
7,615.0	0.35	180.00	7,615.0	-24.7	0.0	2.0	0.12	-0.12	0.00	0.00
<b>Amsden</b>										
7,700.0	0.38	180.00	7,699.9	-25.3	0.0	2.0	0.03	0.03	0.00	0.00
7,771.0	0.38	180.00	7,771.0	-25.8	0.0	2.1	0.00	0.00	0.00	0.00
<b>Tyler</b>										
7,800.0	0.38	180.00	7,799.9	-26.0	0.0	2.1	0.02	0.02	0.00	0.00
7,900.0	0.39	180.00	7,899.9	-26.6	0.0	2.1	0.00	0.00	0.00	0.00
7,994.0	0.39	180.00	7,994.0	-27.3	0.0	2.2	0.00	0.00	0.00	0.00

# Oasis Petroleum

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well Wade Federal 5300 41-30 9B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-29/30	<b>North Reference:</b>	True
<b>Well:</b>	Wade Federal 5300 41-30 9B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wade Federal 5300 41-30 9B		
<b>Design:</b>	Plan #1		

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)	
<b>Otter/Base Minnelusa</b>										
8,000.0	0.39	180.00	7,999.9	-27.3	0.0	2.2	0.08	0.08	0.08	0.00
8,100.0	0.40	180.00	8,099.9	-28.0	0.0	2.3	0.00	0.00	0.00	0.00
8,200.0	0.40	180.00	8,199.9	-28.7	0.0	2.3	0.00	0.00	0.00	0.00
8,300.0	0.41	180.00	8,299.9	-29.4	0.0	2.4	0.00	0.00	0.00	0.00
8,336.1	0.40	180.00	8,336.0	-29.7	0.0	2.4	0.02	-0.02	0.00	0.00
<b>Kibbey Lime</b>										
8,400.0	0.41	180.00	8,399.9	-30.1	0.0	2.4	0.02	0.02	0.02	0.00
8,484.1	0.41	180.00	8,484.0	-30.7	0.0	2.5	0.00	0.00	0.00	0.00
<b>Charles Salt</b>										
8,500.0	0.42	180.00	8,499.9	-30.8	0.0	2.5	0.03	0.03	0.03	0.00
8,600.0	0.42	180.00	8,599.9	-31.6	0.0	2.5	0.00	0.00	0.00	0.00
8,700.0	0.43	180.00	8,699.9	-32.3	0.0	2.6	0.00	0.00	0.00	0.00
8,800.0	0.43	180.00	8,799.9	-33.0	0.0	2.7	0.00	0.00	0.00	0.00
8,900.0	0.44	180.00	8,899.9	-33.8	0.0	2.7	0.00	0.00	0.00	0.00
9,000.0	0.44	180.00	8,999.9	-34.6	0.0	2.8	0.00	0.00	0.00	0.00
9,100.0	0.44	180.00	9,099.9	-35.3	0.0	2.8	0.00	0.00	0.00	0.00
9,163.1	0.44	180.00	9,163.0	-35.8	0.0	2.9	0.00	0.00	0.00	0.00
<b>Base Last Salt</b>										
9,200.0	0.45	180.00	9,199.9	-36.1	0.0	2.9	0.02	0.02	0.02	0.00
9,300.0	0.45	180.00	9,299.9	-36.9	0.0	3.0	0.00	0.00	0.00	0.00
9,377.1	0.45	180.00	9,377.0	-37.5	0.0	3.0	0.00	0.00	0.00	0.00
<b>Mission Canyon</b>										
9,400.0	0.46	180.00	9,399.9	-37.7	0.0	3.0	0.02	0.02	0.02	0.00
9,500.0	0.46	180.00	9,499.9	-38.5	0.0	3.1	0.00	0.00	0.00	0.00
9,600.0	0.47	180.00	9,599.9	-39.3	0.0	3.2	0.00	0.00	0.00	0.00
9,700.0	0.47	180.00	9,699.9	-40.2	0.0	3.2	0.00	0.00	0.00	0.00
9,800.0	0.48	180.00	9,799.9	-41.0	0.0	3.3	0.00	0.00	0.00	0.00
9,900.0	0.48	180.00	9,899.9	-41.8	0.0	3.4	0.00	0.00	0.00	0.00
9,926.1	0.47	180.00	9,926.0	-42.0	0.0	3.4	0.04	-0.04	0.00	0.00
<b>Lodgepole</b>										
10,000.0	0.49	180.00	9,999.9	-42.7	0.0	3.4	0.02	0.02	0.02	0.00
10,100.0	0.49	180.00	10,099.9	-43.5	0.0	3.5	0.00	0.00	0.00	0.00
10,200.0	0.50	180.00	10,199.9	-44.4	0.0	3.6	0.00	0.00	0.00	0.00
10,225.0	0.50	180.00	10,224.8	-44.6	0.0	3.6	0.00	0.00	0.00	0.00
<b>Start Drop -12.50</b>										
10,229.0	0.00	0.00	10,228.8	-44.6	0.0	3.6	12.50	-12.50	0.00	
<b>Start Build 12.00</b>										
10,250.0	2.52	122.00	10,249.9	-44.9	0.4	4.0	12.00	12.00	12.00	0.00
10,275.0	5.52	122.00	10,274.8	-45.8	1.9	5.6	12.00	12.00	12.00	0.00
10,300.0	8.52	122.00	10,299.6	-47.4	4.5	8.3	12.00	12.00	12.00	0.00
10,325.0	11.52	122.00	10,324.2	-49.7	8.2	12.1	12.00	12.00	12.00	0.00
10,350.0	14.52	122.00	10,348.6	-52.7	12.9	17.1	12.00	12.00	12.00	0.00
10,375.0	17.52	122.00	10,372.6	-56.4	18.8	23.3	12.00	12.00	12.00	0.00
10,400.0	20.52	122.00	10,396.2	-60.7	25.7	30.5	12.00	12.00	12.00	0.00
10,425.0	23.52	122.00	10,419.4	-65.7	33.6	38.8	12.00	12.00	12.00	0.00
10,450.0	26.52	122.00	10,442.1	-71.3	42.6	48.2	12.00	12.00	12.00	0.00
10,475.0	29.52	122.00	10,464.1	-77.5	52.6	58.6	12.00	12.00	12.00	0.00
10,500.0	32.52	122.00	10,485.5	-84.3	63.5	70.1	12.00	12.00	12.00	0.00
10,525.0	35.52	122.00	10,506.3	-91.7	75.4	82.5	12.00	12.00	12.00	0.00
10,550.0	38.52	122.00	10,526.2	-99.7	88.1	95.9	12.00	12.00	12.00	0.00
10,575.0	41.52	122.00	10,545.4	-108.2	101.8	110.1	12.00	12.00	12.00	0.00
10,600.0	44.52	122.00	10,563.6	-117.3	116.2	125.3	12.00	12.00	12.00	0.00
10,625.0	47.52	122.00	10,581.0	-126.8	131.5	141.3	12.00	12.00	12.00	0.00

# Oasis Petroleum

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well Wade Federal 5300 41-30 9B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-29/30	<b>North Reference:</b>	True
<b>Well:</b>	Wade Federal 5300 41-30 9B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wade Federal 5300 41-30 9B		
<b>Design:</b>	Plan #1		

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)	
10,650.0	50.52	122.00	10,597.4	-136.8	147.5	158.0	12.00	12.00	0.00	
10,675.0	53.52	122.00	10,612.8	-147.2	164.2	175.5	12.00	12.00	0.00	
10,700.0	56.52	122.00	10,627.1	-158.1	181.6	193.7	12.00	12.00	0.00	
10,725.0	59.52	122.00	10,640.3	-169.3	199.5	212.5	12.00	12.00	0.00	
10,750.0	62.52	122.00	10,652.5	-180.9	218.1	232.0	12.00	12.00	0.00	
10,757.8	63.45	122.00	10,656.0	-184.6	224.0	238.1	12.00	12.00	0.00	
<b>False Bakken</b>										
10,775.0	65.52	122.00	10,663.4	-192.8	237.1	251.9	12.00	12.00	0.00	
10,786.3	66.88	122.00	10,668.0	-198.3	245.9	261.1	12.00	12.00	0.00	
<b>Upper Bakken Shale</b>										
10,800.0	68.52	122.00	10,673.2	-205.0	256.7	272.3	12.00	12.00	0.00	
10,825.0	71.52	122.00	10,681.7	-217.5	276.6	293.2	12.00	12.00	0.00	
10,850.0	74.52	122.00	10,689.0	-230.1	296.9	314.4	12.00	12.00	0.00	
10,874.7	77.49	122.00	10,695.0	-242.8	317.2	335.7	12.00	12.00	0.00	
<b>Middle Bakken (Top of Target)</b>										
10,875.0	77.52	122.00	10,695.0	-243.0	317.4	336.0	12.00	12.00	0.00	
10,900.0	80.52	122.00	10,699.8	-256.0	338.2	357.8	12.00	12.00	0.00	
10,925.0	83.52	122.00	10,703.3	-269.1	359.2	379.8	12.00	12.00	0.00	
10,950.0	86.52	122.00	10,705.4	-282.3	380.4	401.9	12.00	12.00	0.00	
10,961.1	87.85	122.00	10,706.0	-288.2	389.7	411.7	12.00	12.00	0.00	
<b>Middle Bakken (Base of target)</b>										
10,975.0	89.52	122.00	10,706.3	-295.5	401.5	424.1	12.00	12.00	0.00	
10,979.0	90.00	122.00	10,706.3	-297.6	404.9	427.6	12.00	12.00	0.00	
<b>Start 550.0 hold at 10979.0 MD</b>										
11,000.0	90.00	122.00	10,706.3	-308.8	422.7	446.3	0.00	0.00	0.00	
11,100.0	90.00	122.00	10,706.3	-361.8	507.5	535.1	0.00	0.00	0.00	
11,200.0	90.00	122.00	10,706.3	-414.8	592.3	623.9	0.00	0.00	0.00	
11,300.0	90.00	122.00	10,706.3	-467.8	677.2	712.7	0.00	0.00	0.00	
11,400.0	90.00	122.00	10,706.3	-520.8	762.0	801.5	0.00	0.00	0.00	
11,500.0	90.00	122.00	10,706.3	-573.7	846.8	890.3	0.00	0.00	0.00	
11,529.0	90.00	122.00	10,706.3	-589.1	871.3	916.0	0.00	0.00	0.00	
<b>Start DLS 3.92 TFO 270.00 - 7"</b>										
11,600.0	90.00	119.21	10,706.3	-625.3	932.5	979.8	3.92	0.00	-3.92	
11,700.0	90.00	115.29	10,706.3	-671.0	1,021.3	1,072.1	3.92	0.00	-3.92	
11,800.0	90.00	111.37	10,706.3	-710.6	1,113.1	1,166.8	3.92	0.00	-3.92	
11,900.0	90.00	107.44	10,706.3	-743.9	1,207.4	1,263.5	3.92	0.00	-3.92	
12,000.0	90.00	103.52	10,706.3	-770.5	1,303.8	1,361.7	3.92	0.00	-3.92	
12,100.0	90.00	99.60	10,706.3	-790.6	1,401.8	1,460.9	3.92	0.00	-3.92	
12,200.0	90.00	95.68	10,706.3	-803.9	1,500.8	1,560.8	3.92	0.00	-3.92	
12,300.0	90.00	91.75	10,706.3	-810.3	1,600.6	1,660.7	3.92	0.00	-3.92	
12,344.7	90.00	90.00	10,706.3	-811.0	1,645.3	1,705.3	3.92	0.00	-3.92	
<b>Start 8384.7 hold at 12344.7 MD</b>										
12,400.0	90.00	90.00	10,706.3	-811.0	1,700.6	1,760.4	0.00	0.00	0.00	
12,500.0	90.00	90.00	10,706.3	-811.0	1,800.6	1,860.1	0.00	0.00	0.00	
12,600.0	90.00	90.00	10,706.3	-811.0	1,900.6	1,959.8	0.00	0.00	0.00	
12,700.0	90.00	90.00	10,706.3	-811.0	2,000.6	2,059.5	0.00	0.00	0.00	
12,800.0	90.00	90.00	10,706.3	-811.0	2,100.6	2,159.1	0.00	0.00	0.00	
12,900.0	90.00	90.00	10,706.3	-811.0	2,200.6	2,258.8	0.00	0.00	0.00	
13,000.0	90.00	90.00	10,706.3	-811.0	2,300.6	2,358.5	0.00	0.00	0.00	
13,100.0	90.00	90.00	10,706.3	-811.0	2,400.6	2,458.2	0.00	0.00	0.00	
13,200.0	90.00	90.00	10,706.3	-811.0	2,500.6	2,557.8	0.00	0.00	0.00	
13,300.0	90.00	90.00	10,706.3	-811.0	2,600.6	2,657.5	0.00	0.00	0.00	
13,400.0	90.00	90.00	10,706.3	-811.0	2,700.6	2,757.2	0.00	0.00	0.00	
13,500.0	90.00	90.00	10,706.3	-811.0	2,800.6	2,856.9	0.00	0.00	0.00	

# Oasis Petroleum

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well Wade Federal 5300 41-30 9B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-29/30	<b>North Reference:</b>	True
<b>Well:</b>	Wade Federal 5300 41-30 9B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wade Federal 5300 41-30 9B		
<b>Design:</b>	Plan #1		

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)	
13,600.0	90.00	90.00	10,706.3	-811.0	2,900.6	2,956.5	0.00	0.00	0.00	
13,700.0	90.00	90.00	10,706.3	-811.0	3,000.6	3,056.2	0.00	0.00	0.00	
13,800.0	90.00	90.00	10,706.3	-811.0	3,100.6	3,155.9	0.00	0.00	0.00	
13,900.0	90.00	90.00	10,706.3	-811.0	3,200.6	3,255.6	0.00	0.00	0.00	
14,000.0	90.00	90.00	10,706.3	-811.0	3,300.6	3,355.2	0.00	0.00	0.00	
14,100.0	90.00	90.00	10,706.3	-811.0	3,400.6	3,454.9	0.00	0.00	0.00	
14,200.0	90.00	90.00	10,706.3	-811.0	3,500.6	3,554.6	0.00	0.00	0.00	
14,300.0	90.00	90.00	10,706.3	-811.0	3,600.6	3,654.3	0.00	0.00	0.00	
14,400.0	90.00	90.00	10,706.3	-811.0	3,700.6	3,753.9	0.00	0.00	0.00	
14,500.0	90.00	90.00	10,706.3	-811.0	3,800.6	3,853.6	0.00	0.00	0.00	
14,600.0	90.00	90.00	10,706.3	-811.0	3,900.6	3,953.3	0.00	0.00	0.00	
14,700.0	90.00	90.00	10,706.3	-811.0	4,000.6	4,053.0	0.00	0.00	0.00	
14,800.0	90.00	90.00	10,706.3	-811.0	4,100.6	4,152.6	0.00	0.00	0.00	
14,900.0	90.00	90.00	10,706.3	-811.0	4,200.6	4,252.3	0.00	0.00	0.00	
15,000.0	90.00	90.00	10,706.3	-811.0	4,300.6	4,352.0	0.00	0.00	0.00	
15,100.0	90.00	90.00	10,706.3	-811.0	4,400.6	4,451.7	0.00	0.00	0.00	
15,200.0	90.00	90.00	10,706.3	-811.0	4,500.6	4,551.3	0.00	0.00	0.00	
15,300.0	90.00	90.00	10,706.3	-811.0	4,600.6	4,651.0	0.00	0.00	0.00	
15,400.0	90.00	90.00	10,706.3	-811.0	4,700.6	4,750.7	0.00	0.00	0.00	
15,500.0	90.00	90.00	10,706.3	-811.0	4,800.6	4,850.4	0.00	0.00	0.00	
15,600.0	90.00	90.00	10,706.3	-811.0	4,900.6	4,950.0	0.00	0.00	0.00	
15,700.0	90.00	90.00	10,706.3	-811.0	5,000.6	5,049.7	0.00	0.00	0.00	
15,800.0	90.00	90.00	10,706.3	-811.0	5,100.6	5,149.4	0.00	0.00	0.00	
15,900.0	90.00	90.00	10,706.3	-811.0	5,200.6	5,249.1	0.00	0.00	0.00	
16,000.0	90.00	90.00	10,706.3	-811.0	5,300.6	5,348.7	0.00	0.00	0.00	
16,100.0	90.00	90.00	10,706.3	-811.0	5,400.6	5,448.4	0.00	0.00	0.00	
16,200.0	90.00	90.00	10,706.3	-811.0	5,500.6	5,548.1	0.00	0.00	0.00	
16,300.0	90.00	90.00	10,706.3	-811.0	5,600.6	5,647.8	0.00	0.00	0.00	
16,400.0	90.00	90.00	10,706.3	-811.0	5,700.6	5,747.4	0.00	0.00	0.00	
16,500.0	90.00	90.00	10,706.3	-811.0	5,800.6	5,847.1	0.00	0.00	0.00	
16,600.0	90.00	90.00	10,706.3	-811.0	5,900.6	5,946.8	0.00	0.00	0.00	
16,700.0	90.00	90.00	10,706.3	-811.0	6,000.6	6,046.5	0.00	0.00	0.00	
16,800.0	90.00	90.00	10,706.3	-811.0	6,100.6	6,146.1	0.00	0.00	0.00	
16,900.0	90.00	90.00	10,706.3	-811.0	6,200.6	6,245.8	0.00	0.00	0.00	
17,000.0	90.00	90.00	10,706.3	-811.0	6,300.6	6,345.5	0.00	0.00	0.00	
17,100.0	90.00	90.00	10,706.3	-811.0	6,400.6	6,445.2	0.00	0.00	0.00	
17,200.0	90.00	90.00	10,706.3	-811.0	6,500.6	6,544.8	0.00	0.00	0.00	
17,300.0	90.00	90.00	10,706.3	-811.0	6,600.6	6,644.5	0.00	0.00	0.00	
17,400.0	90.00	90.00	10,706.3	-811.0	6,700.6	6,744.2	0.00	0.00	0.00	
17,500.0	90.00	90.00	10,706.3	-811.0	6,800.6	6,843.9	0.00	0.00	0.00	
17,600.0	90.00	90.00	10,706.3	-811.0	6,900.6	6,943.5	0.00	0.00	0.00	
17,700.0	90.00	90.00	10,706.3	-811.0	7,000.6	7,043.2	0.00	0.00	0.00	
17,800.0	90.00	90.00	10,706.3	-811.0	7,100.6	7,142.9	0.00	0.00	0.00	
17,900.0	90.00	90.00	10,706.3	-811.0	7,200.6	7,242.6	0.00	0.00	0.00	
18,000.0	90.00	90.00	10,706.3	-811.0	7,300.6	7,342.2	0.00	0.00	0.00	
18,100.0	90.00	90.00	10,706.3	-811.0	7,400.6	7,441.9	0.00	0.00	0.00	
18,200.0	90.00	90.00	10,706.3	-811.0	7,500.6	7,541.6	0.00	0.00	0.00	
18,300.0	90.00	90.00	10,706.3	-811.0	7,600.6	7,641.3	0.00	0.00	0.00	
18,400.0	90.00	90.00	10,706.3	-811.0	7,700.6	7,740.9	0.00	0.00	0.00	
18,500.0	90.00	90.00	10,706.3	-811.0	7,800.6	7,840.6	0.00	0.00	0.00	
18,600.0	90.00	90.00	10,706.3	-811.0	7,900.6	7,940.3	0.00	0.00	0.00	
18,700.0	90.00	90.00	10,706.3	-811.0	8,000.6	8,039.9	0.00	0.00	0.00	
18,800.0	90.00	90.00	10,706.3	-811.0	8,100.6	8,139.6	0.00	0.00	0.00	
18,900.0	90.00	90.00	10,706.3	-811.0	8,200.6	8,239.3	0.00	0.00	0.00	
19,000.0	90.00	90.00	10,706.3	-811.0	8,300.6	8,339.0	0.00	0.00	0.00	

# Oasis Petroleum

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well Wade Federal 5300 41-30 9B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-29/30	<b>North Reference:</b>	True
<b>Well:</b>	Wade Federal 5300 41-30 9B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wade Federal 5300 41-30 9B		
<b>Design:</b>	Plan #1		

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)	
19,100.0	90.00	90.00	10,706.3	-811.0	8,400.6	8,438.6	0.00	0.00	0.00	0.00
19,200.0	90.00	90.00	10,706.3	-811.0	8,500.6	8,538.3	0.00	0.00	0.00	0.00
19,300.0	90.00	90.00	10,706.3	-811.0	8,600.6	8,638.0	0.00	0.00	0.00	0.00
19,400.0	90.00	90.00	10,706.3	-811.0	8,700.6	8,737.7	0.00	0.00	0.00	0.00
19,500.0	90.00	90.00	10,706.3	-811.0	8,800.6	8,837.3	0.00	0.00	0.00	0.00
19,600.0	90.00	90.00	10,706.3	-811.0	8,900.6	8,937.0	0.00	0.00	0.00	0.00
19,700.0	90.00	90.00	10,706.3	-811.0	9,000.6	9,036.7	0.00	0.00	0.00	0.00
19,800.0	90.00	90.00	10,706.3	-811.0	9,100.6	9,136.4	0.00	0.00	0.00	0.00
19,900.0	90.00	90.00	10,706.3	-811.0	9,200.6	9,236.0	0.00	0.00	0.00	0.00
20,000.0	90.00	90.00	10,706.3	-811.0	9,300.6	9,335.7	0.00	0.00	0.00	0.00
20,100.0	90.00	90.00	10,706.3	-811.0	9,400.6	9,435.4	0.00	0.00	0.00	0.00
20,200.0	90.00	90.00	10,706.3	-811.0	9,500.6	9,535.1	0.00	0.00	0.00	0.00
20,300.0	90.00	90.00	10,706.3	-811.0	9,600.6	9,634.7	0.00	0.00	0.00	0.00
20,400.0	90.00	90.00	10,706.3	-811.0	9,700.6	9,734.4	0.00	0.00	0.00	0.00
20,500.0	90.00	90.00	10,706.3	-811.0	9,800.6	9,834.1	0.00	0.00	0.00	0.00
20,600.0	90.00	90.00	10,706.3	-811.0	9,900.6	9,933.8	0.00	0.00	0.00	0.00
20,700.0	90.00	90.00	10,706.3	-811.0	10,000.6	10,033.4	0.00	0.00	0.00	0.00
20,729.4	90.00	90.00	10,706.3	-811.0	10,030.0	10,062.7	0.00	0.00	0.00	0.00
TD at 20729.4										

Design Targets										
Target Name		Dip Angle (°)	Dip Dir.	TVD (usft)	+N/S (usft)	+E/W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target	- Shape	0.00	0.00	10,706.3	-811.0	10,030.0	393,806.78	1,219,626.30	48° 2' 19.840 N	103° 33' 43.220 W
WADE 9B PBHL - plan hits target center - Point										

Casing Points										
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter ("")	Hole Diameter ("")						
2,050.0	2,050.0 13 3/8"		13-3/8	17 1/2						
11,529.0	10,706.3 7"		7	8-3/4						

# Oasis Petroleum

## Planning Report

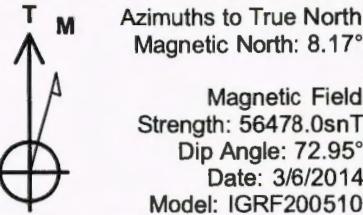
<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well Wade Federal 5300 41-30 9B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-29/30	<b>North Reference:</b>	True
<b>Well:</b>	Wade Federal 5300 41-30 9B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wade Federal 5300 41-30 9B		
<b>Design:</b>	Plan #1		

### Formations

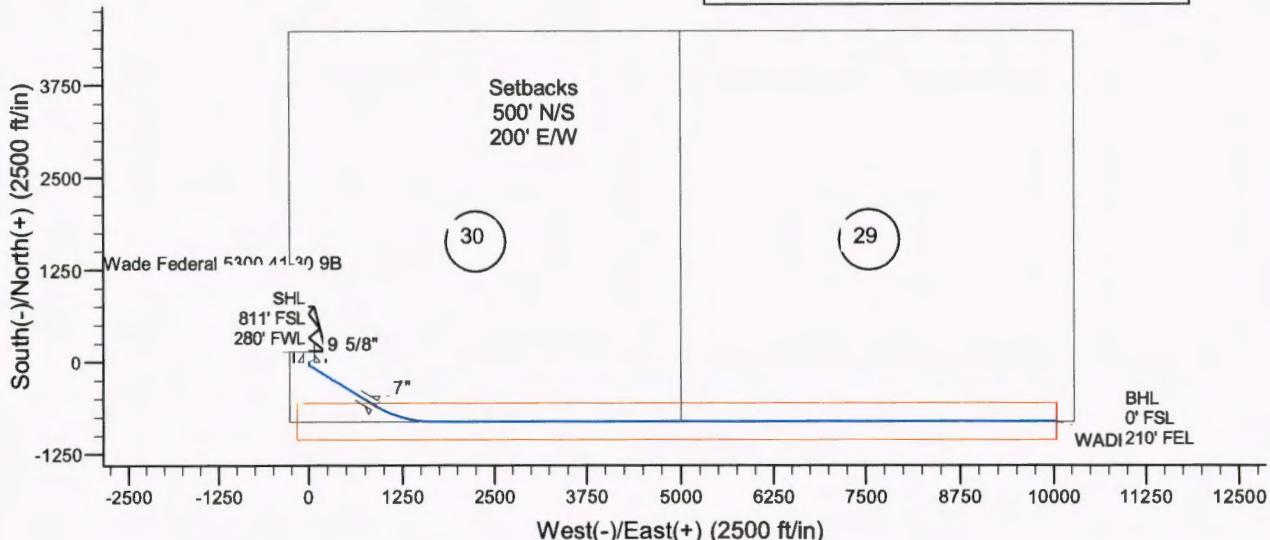
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,920.0	1,920.0	Pierre			
4,566.0	4,566.0	Greenhorn			
4,969.0	4,969.0	Mowry			
5,391.0	5,391.0	Dakota			
6,407.0	6,407.0	Rierdon			
6,896.0	6,896.0	Dunham Salt			
6,942.0	6,942.0	Dunham Salt Base			
7,205.0	7,205.0	Pine Salt			
7,229.0	7,229.0	Pine Salt Base			
7,291.0	7,291.0	Opecche Salt			
7,371.0	7,371.0	Opecche Salt Base			
7,615.0	7,615.0	Amsden			
7,771.0	7,771.0	Tyler			
7,994.0	7,994.0	Otter/Base Minnelusa			
8,336.1	8,336.0	Kibbey Lime			
8,484.1	8,484.0	Charles Salt			
9,163.1	9,163.0	Base Last Salt			
9,377.1	9,377.0	Mission Canyon			
9,926.1	9,926.0	Lodgepole			
10,757.8	10,656.0	False Bakken			
10,786.3	10,668.0	Upper Bakken Shale			
10,874.7	10,695.0	Middle Bakken (Top of Target)			
10,961.1	10,706.0	Middle Bakken (Base of target)			

### Plan Annotations

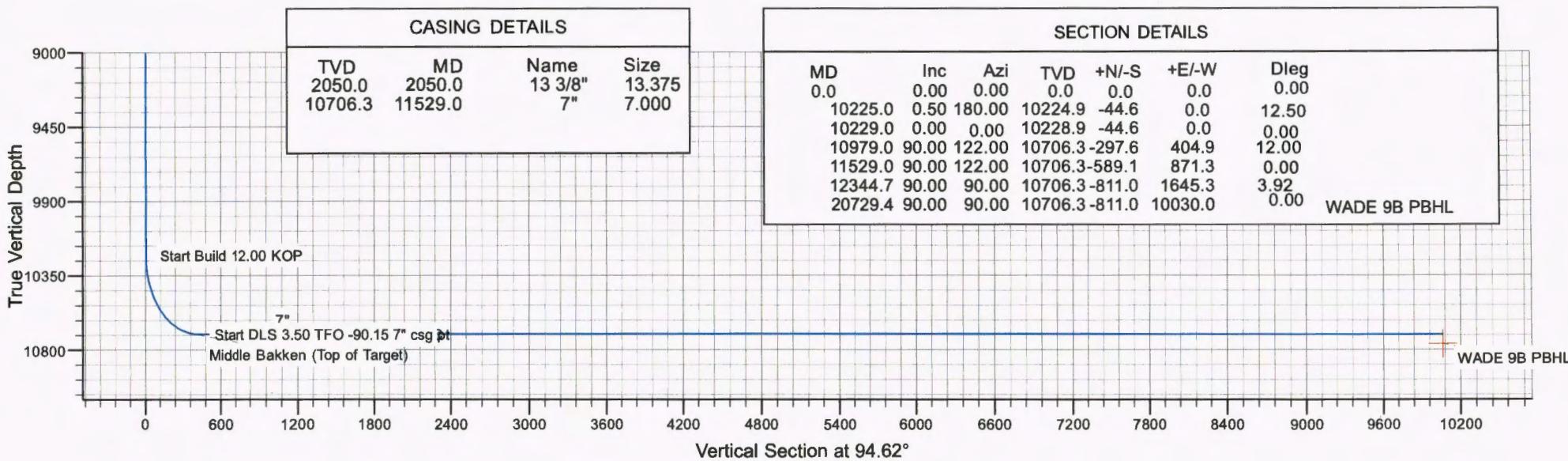
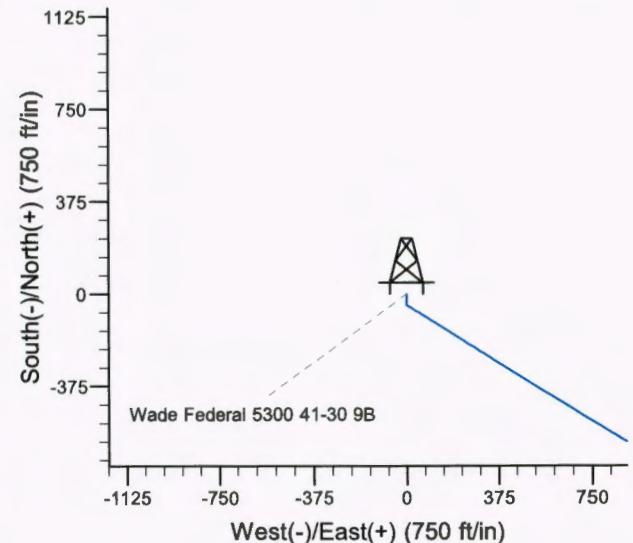
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/S (usft)	+E/W (usft)	Comment	
10,225.0	10,224.8	-44.6	0.0	Start Drop -12.50	
10,229.0	10,228.8	-44.6	0.0	Start Build 12.00	
10,979.0	10,706.3	-297.6	404.9	Start 550.0 hold at 10979.0 MD	
11,529.0	10,706.3	-589.1	871.3	Start DLS 3.92 TFO 270.00	
12,344.7	10,706.3	-811.0	1,645.3	Start 8384.7 hold at 12344.7 MD	
20,729.4	10,706.3	-811.0	10,030.0	TD at 20729.4	



Project: Indian Hills  
Site: 153N-100W-29/30  
Well: Wade Federal 5300 41-30 9B  
Wellbore: Wade Federal 5300 41-30 9B  
Design: Plan #1



SITE DETAILS: 153N-100W-29/30
Site Centre Latitude: 48° 2' 27.670 N Longitude: 103° 36' 10.820 W
Positional Uncertainty: 0.0 Convergence: -2.31
Local North: True





# **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.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: 6/30/2014

**RE: CORES AND SAMPLES**

Well Name: **WADE FEDERAL 5300 41-30 9B** Well File No.: **28744**  
Location: **LOT4 30-153-100** County: **MCKENZIE**  
Permit Type: **Development - HORIZONTAL**  
Field: **BAKER** Target Horizon: **BAKKEN**

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



# 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.  
**78744**

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>October 1, 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. 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>Waiver to rule Rule 43-02-03-31</b>	

Well Name and Number  
**Wade Federal 5300 41-30 9B**

Footages	811 F S L	280 F W L	Qtr-Qtr <b>SWSW</b>	Section <b>30</b>	Township <b>153 N</b>	Range <b>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/Wade Federal 5300 21-30H located within a mile of subject location

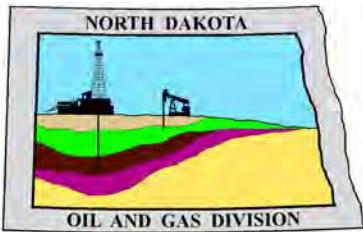
# 20197

If this exception is approved, Oasis Petroleum will run a CBL on the intermediate string, and we will also run GR to surface. Oasis Petroleum will also submit two digital copies of each cased hole log and a copy of the mud log containing MWD gamma ray.

Company <b>Oasis Petroleum North America LLC</b>	Telephone Number <b>281-404-9491</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>Brandi Terry</b>	
Title <b>Regulatory Specialist</b>	Date <b>March 31, 2014</b>	
Email Address <b>bterry@oasispetroleum.com</b>		

## FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <b>6-27-2014</b>	
By 	
Title <b>Stephen Fried</b>	
Geologist	



# Oil and Gas Division

Lynn D. Helms - Director

Bruce E. Hicks - Assistant Director

## Department of Mineral Resources

Lynn D. Helms - Director

## North Dakota Industrial Commission

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

June 27, 2014

Brandi Terry  
REGULATORY SPECIALIST  
OASIS PETROLEUM NORTH AMERICA LLC  
1001 Fannin Street, Suite 1500  
Houston, TX 77002

**RE: HORIZONTAL WELL  
WADE FEDERAL 5300 41-30 9B  
LOT4 Section 30-153N-100W  
McKenzie County  
Well File # 28744**

Dear Brandi:

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 located approximately down the east-west axis (500' drilling corridor, per Commission policy) and no closer than 200 feet to the east or west boundary within the 2560 acre spacing unit consisting of Sections 29, 30, 31 & 32 T153N R100W. **Tool error is not required pursuant to order.**

**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. Due to drainage adjacent to the well site, a dike is required surrounding the entire location. 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." OASIS PETRO NO AMER 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. The minimum legal coordinate from the well head at casing point is: 561'S. Also, based on the azimuth of the proposed lateral the maximum legal coordinate from the well head is: 1061'S and 10042'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,

Alice Webber  
Engineering Tech



# 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 / 01 / 2014</b>	Confidential Status <b>No</b>
Operator <b>OASIS PETROLEUM NORTH AMERICA LLC</b>		Telephone Number <b>281-404-9491</b>	
Address <b>1001 Fannin Street, 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>WADE FEDERAL</b>			Well Number <b>5300 41-30 9B</b>				
Surface Footages <b>811 F S L      280 F W L</b>		Qtr-Qtr <b>LOT4</b>	Section <b>30</b>	Township <b>153 N</b>	Range <b>100 W</b>	County <b>McKenzie</b>	
Longstring Casing Point Footages <b>222 F S L      1151 F W L</b>		Qtr-Qtr <b>LOT4</b>	Section <b>30</b>	Township <b>153 N</b>	Range <b>100 W</b>	County <b>McKenzie</b>	
Longstring Casing Point Coordinates From Well Head <b>589 S From WH      871 E From WH</b>		Azimuth <b>122 °</b>	Longstring Total Depth <b>11529 Feet MD      10706 Feet TVD</b>				
Bottom Hole Footages From Nearest Section Line <b>0 F S L      212 F E L</b>		Qtr-Qtr <b>LOT6</b>	Section <b>29</b>	Township <b>153 N</b>	Range <b>100 W</b>	County <b>Williams</b>	
Bottom Hole Coordinates From Well Head <b>811 S From WH      10030 E From WH</b>		KOP Lateral 1 <b>10229 Feet MD</b>	Azimuth Lateral 1 <b>90 °</b>	Estimated Total Depth Lateral 1 <b>20729 Feet MD      10706 Feet TVD</b>			
Latitude of Well Head <b>48 ° 02 ' 27.67 "</b>	Longitude of Well Head <b>-103 ° 36 ' 10.82 "</b>	NAD Reference <b>NAD83</b>		Description of Spacing Unit: (Subject to NDIC Approval) <b>Secs 29,30,31&amp;32 T153N R100W</b>			
Ground Elevation <b>2058 Feet Above S.L.</b>	Acres in Spacing/Drilling Unit <b>2560</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>10513 Feet</b>	South Line of Spacing/Drilling Unit <b>10535 Feet</b>	East Line of Spacing/Drilling Unit <b>10362 Feet</b>		West Line of Spacing/Drilling Unit <b>10485 Feet</b>			
Objective Horizons <b>BAKKEN</b>						Pierre Shale Top <b>1920</b>	
Proposed Surface Casing	Size <b>9 - 5/8 "</b>	Weight <b>36 Lb./Ft.</b>	Depth <b>2050 Feet</b>	Cement Volume <b>735 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>11529 Feet MD      10706 Feet TVD</b>		Cement Volume <b>781 Sacks</b>	Cement Top <b>4891 Feet</b>	Top Dakota Sand <b>5391 Feet</b>
Base Last Charles Salt (If Applicable) <b>9163 Feet</b>		NOTE: Intermediate or longstring casing string must be cemented above the top Dakota Group Sand.					
Proposed Logs <b>TRIPLE COMBO: KOP TO KIBBEY 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**

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

03 / 31 / 2014

ePermit

Printed Name  
**Brandi Terry**

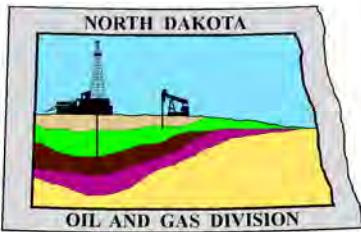
Title

**REGULATORY SPECIALIST****FOR STATE USE ONLY**

Permit and File Number <b>28744</b>	API Number <b>33 - 053 - 06051</b>
Field <b>BAKER</b>	
Pool <b>BAKKEN</b>	Permit Type <b>DEVELOPMENT</b>

**FOR STATE USE ONLY**

Date Approved <b>6 / 27 / 2014</b>
By <b>Alice Webber</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)

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.

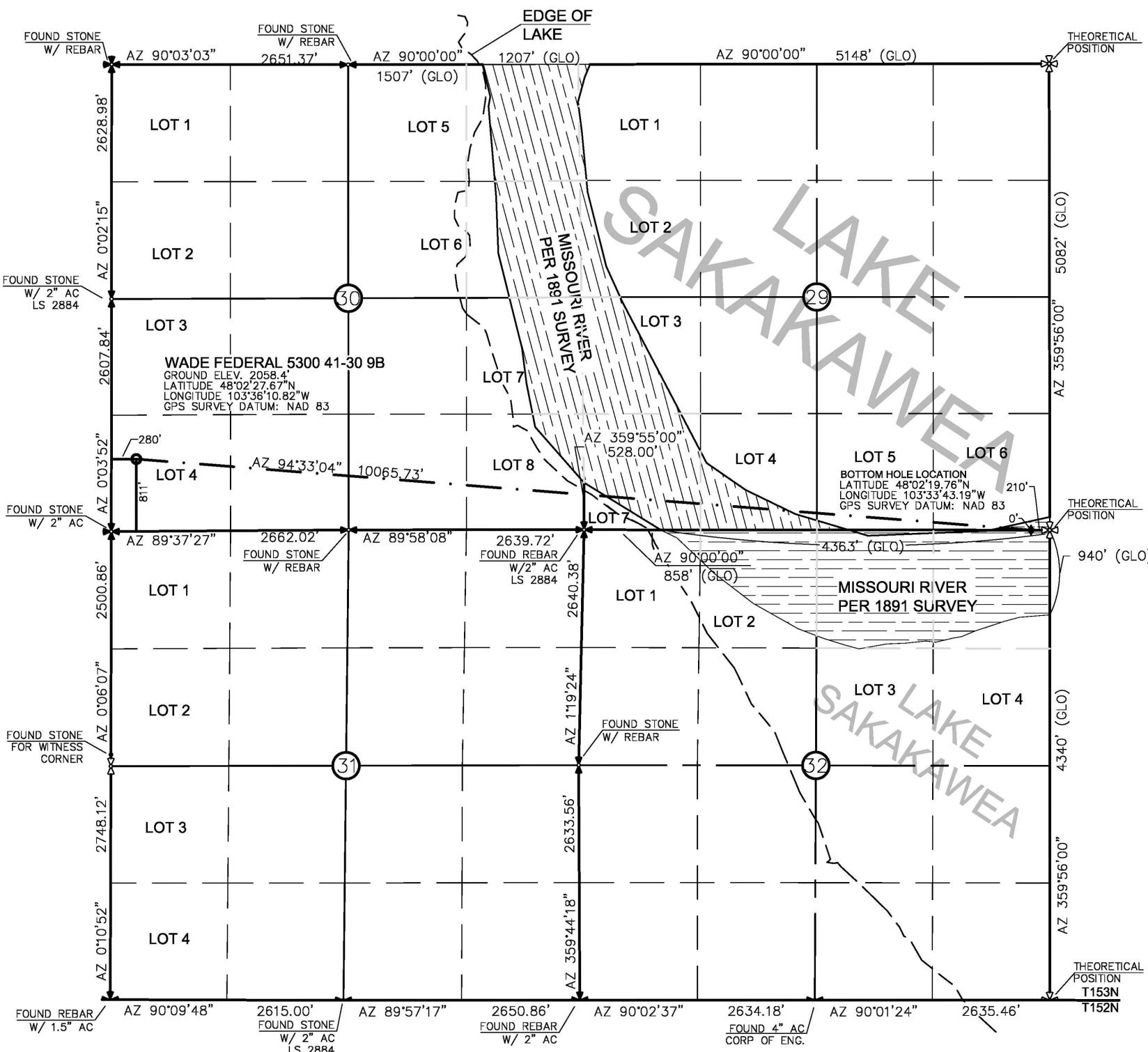
Thank you for your cooperation.

Sincerely,

*Bruce E. Hicks*

Assistant Director

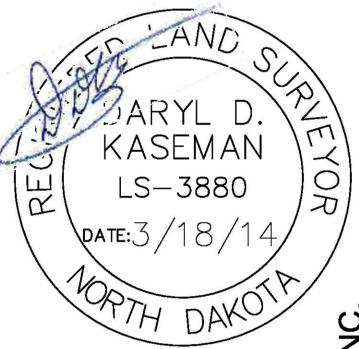
**WELL LOCATION PLAT**  
 OASIS PETROLEUM NORTH AMERICA, LLC  
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002  
 "WADE FEDERAL 5300 41-30 9B"  
 811 FEET FROM SOUTH LINE AND 280 FEET FROM WEST LINE  
 SECTION 30, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



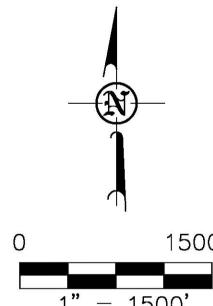
STAKED ON 1/10/14  
 VERTICAL CONTROL DATUM WAS BASED UPON  
 CONTROL POINT 705 WITH AN ELEVATION OF 2158.3'

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

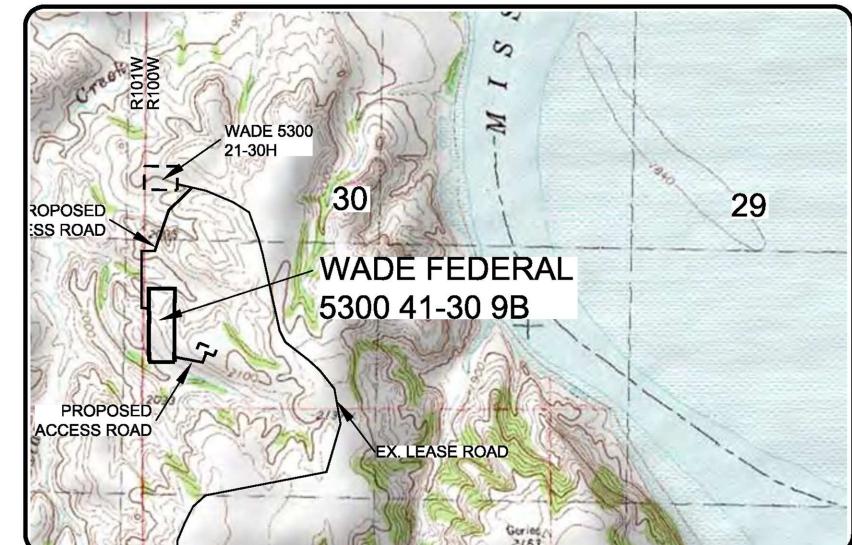


THIS DOCUMENT WAS ORIGINALLY  
 ISSUED AND SEALED BY DARYL D.  
 KASEMAN, PLS, REGISTRATION NUMBER  
 3880 ON 3/18/14, AND THE  
 ORIGINAL DOCUMENTS ARE STORED AT  
 THE OFFICES OF INTERSTATE  
 ENGINEERING, INC.



- MONUMENT - RECOVERED
- MONUMENT - NOT RECOVERED

VICINITY MAP



DRILLING PLAN							
OPERATOR	Oasis Petroleum			COUNTY/STATE	McKenzie Co., ND		
WELL NAME	Wade Federal 5300 41-30 9B			RIG	B22		
WELL TYPE	Horizontal Middle Bakken						
LOCATION	SW SW 30-153N-100W	Surface Location (survey plat): 811' FSL		280' FWL			
EST. T.D.	20,729'			GROUND ELEV:	2,045'	Sub Height: 25'	
TOTAL LATERAL:	9,200'			KB ELEV:	2,070'		
MARKER		TVD	Subsea TVD	LOGS:	Type	Interval	
Pierre	NDIC MAP	1,920	150	OH Logs: Request Log waiver based on the Wade Federal 5300 21-30H 2,150' N of surface location			
Greenhorn		4,566	-2,496	CBL/GR: Above top of cement/GR to base of casing			
Mowry		4,969	-2,899	MWD GR: KOP to lateral TD			
Dakota		5,391	-3,321				
Rierdon		6,407	-4,337	DEVIATION:	Surf: 3 deg. max., 1 deg / 100'; svry every 500' Prod: 5 deg. max., 1 deg / 100'; svry every 100'		
Dunham Salt		6,896	-4,826				
Dunham Salt Base		6,942	-4,872				
Pine Salt		7,205	-5,135				
Pine Salt Base		7,229	-5,159				
Opeche Salt		7,291	-5,221				
Opeche Salt Base		7,371	-5,301				
Amsden		7,615	-5,545				
Tyler		7,771	-5,701				
Otter/Base Minnelusa		7,994	-5,924	DST'S:	None planned		
Kibbey Lime		8,336	-6,266				
Charles Salt		8,484	-6,414	CORES:	None planned		
Base Last Salt		9,163	-7,093				
Mission Canyon		9,377	-7,307				
Lodgepole		9,926	-7,856				
False Bakken		10,656	-8,586				
Upper Bakken Shale		10,668	-8,598	MUDLOGGING:	Two-Man: Begin 200' above Kibbey 30' samples in curve and lateral		
Middle Bakken (Top of Target)		10,695	-8,625				
Middle Bakken (Base of target)		10,706	-8,636				
Lower Bakken Shale		10,719	-8,649				
Threeforks		10,744	-8,674				
Est. Dip Rate:	-0.35			BOP:	11" 5000 psi blind, pipe & annular		
Max. Anticipated BHP:	4645			Surface Formation: Glacial till			
MUD:	Interval	Type	WT	Vis	WL	Remarks	
Surface:	0' -	2,050' FW/Gel - Lime Sweeps	8.4-9.0	28-32	NC	Circ Mud Tanks	
Intermediate:	2,050' -	11,529' Invert	9.5-10.4	40-50	30+HtHp	Circ Mud Tanks	
Laterals:	11,529' -	20,729' Salt Water	9.8-10.2	28-32	NC	Circ Mud Tanks	
CASING:	Size	Wt ppf	Hole	Depth	Cement	WOC	Remarks
Surface:	9-5/8"	36#	13-1/2"	2,050'	To Surface	12	100' into Pierre
Intermediate:	7"	29/32#	8-3/4"	11,529'	4891	24	500' above Dakota
Production Liner:	4.5"	11.6#	6"	20,729'	TOL @ 10,179'		50' above KOP
PROBABLE PLUGS, IF REQ'D:							
OTHER:	MD	TVD	FNL/FSL	FEL/FWL	S-T-R	AZI	Survey Company: Build Rate: 12 deg /100'
Surface:	2,020	2,020	811' FSL	280' FWL	S 30 T153N R100W		
KOP:	10,229'	10,229'	766' FSL	280' FWL	S 30 T153N R100W		
EOC:	10,979'	10,706'	513' FSL	685' FWL	S 30 T153N R100W		
Casing Point:	11,529'	10,706'	222' FSL	1151' FWL	S 30 T153N R100W		
Middle Bakken Lateral TD:	20,729'	10,706'	0' FSL	210' FEL	S 29 T153N R100W		
<b>Comments:</b>							
<b>Request Log waiver based on the Wade Federal 5300 21-30H 2,150' N of surface location</b>							
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)							
 35 Packers; 35 Sleeves No Frac String Planned							
Geology: N. Gabelman	1/20/2014			Engineering: DAD 5/19/14			

**Oasis Petroleum**  
**Well Summary**  
**Wade Federal 5300 4130 9B**  
**Sec. 30 T153N R100W**  
**McKenzie County, North Dakota**

**SURFACE CASING AND CEMENT DESIGN**

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
9-5/8"	0' to 2,050'	36	J-55	LTC	8.921"	8.765"	3400	4530	5660

Interval	Description	Collapse (psi) a	Burst (psi) b	Tension (1000 lbs) c	Cost per ft
0' to 2,050'	9-5/8", 36#, J-55, LTC, 8rd	2020 / 2.13	3520 / 3.72	453 / 2.78	

**API Rating & Safety Factor**

- a) Based on full casing evacuation with 9 ppg fluid on backside (2,050' setting depth).
- b) Burst pressure based on 9 ppg fluid with no fluid on backside (2050' setting depth).
- c) Based on string weight in 9 ppg fluid at 2050' TVD plus 100k# overpull. (Buoyed weight equals 63k lbs.)

Cement volumes are based on 9-5/8" casing set in 13-1/2" hole with 60% excess to circulate cement back to surface. Mix and pump the following slurry.

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

**Lead Slurry:**      **435 sks** (225 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:**      **300 sks** (62 bbls) 1.16 yield conventional system with 94 lb/sk cement, .25 lb/sk Lost Circulation Control Agent, and .25% CaCL2.

**Displacement:**      **153 bbl** OBM

**Oasis Petroleum**  
**Well Summary**  
**Wade Federal 5300 4130 9B**  
**Sec. 30 T153N R100W**  
**McKenzie County, North Dakota**

**INTERMEDIATE CASING AND CEMENT DESIGN**

<b>Size</b>	<b>Interval</b>	<b>Weight</b>	<b>Grade</b>	<b>Coupling</b>	<b>I.D.</b>	<b>Drift</b>	<b>Make-up Torque (ft-lbs)</b>		
							<b>Minimum</b>	<b>Optimum</b>	<b>Max</b>
7"	0' - 6896'	29	P-110	LTC	6.184"	6.059"	5,980	7,970	8,770
7"	6896' - 10229'	32	HCP-110	LTC	6.094"	6.000***	6,730	8,970	9,870
7"	10229' - 11529'	29	P-110	LTC	6.184"	6.059"	5,980	7,970	8,770

\*\*Special Drift

<b>Interval</b>	<b>Description</b>	<b>Collapse</b>		<b>Burst</b>	<b>Tension</b>
		(psi) a	(psi) b		
0' - 6896'	7", 29#, HCP-110, LTC, 8rd	8530 / 2.37*	11220 / 1.18	797 / 2.14	
6896' - 10229'	7", 32#, HCP-110, LTC, 8rd	11820 / 2.22*	12460 / 1.29		
6896' - 10229'	7", 32#, HCP-110, LTC, 8rd	11820 / 1.07**	12460 / 1.29		
10229' - 11529'	7", 32#, HCP-110, LTC, 8rd	8530 / 1.53*	11220 / 1.16		

**API Rating & Safety Factor**

- a. \*Assume full casing evacuation with 10 ppg fluid on backside. \*\*Assume full casing evacuation with 1.2 psi/ft equivalent fluid gradient across salt intervals.
- b. Burst pressure based on 9,000 psig max press for stimulation plus 10.2 ppg fluid in casing and 9.0 ppg fluid on backside—to 10,706' TVD.
- c. Based on string weight in 10 ppg fluid, (271k 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:**      **189 sks** (87 bbls) 2.59 yield conventional system with 61 lb/sk cement, 23 lb/sk D035 Extender, .250 lb/sk D130 Lost Circulation Control Agent, 10% NaCl, .15% D208 Viscosifier, .20% D046 Anti Foamer, .8% D112 Fluid Loss Agent, and 6% D154 Extender.

**Tail Slurry:**      **592 sks** (184 bbls) 1.55 yield conventional system with 94 lb/sk cement, .250 lb/sk D130 Lost Circulation Control Agent, 3% KCL, 35% Silica, .2% D167 Fluid Loss Agent, .5% D065 Dispersant, .2%D198 Retarder, .2% D046 Anti Foamer, and .25% D153 Anti-Settling Agent.

**Displacement:**      **401 bbl** brine

**Oasis Petroleum**  
**Well Summary**  
**Wade Federal 5300 4130 9B**  
**Sec. 30 T153N R100W**  
**McKenzie County, North Dakota**

**PRODUCTION LINER**

<b>Size</b>	<b>Interval</b>	<b>Weight</b>	<b>Grade</b>	<b>Coupling</b>	<b>I.D.</b>	<b>Drift</b>	<b>Make-up Torque (ft-lbs)</b>		
							<b>Minimum</b>	<b>Optimum</b>	<b>Max</b>
4-1/2"	10179' - 20729'	11.6	P-110	BTC	4.000"	3.875"	2,270	3,020	3,780

<b>Interval</b>	<b>Length</b>	<b>Description</b>	<b>Collapse</b>	<b>Burst</b>	<b>Tension</b>	<b>Condition</b>
10179' - 20729'	10,550'	4-1/2", 11.6 lb, P-110, BTC, 8rd	(psi) a	(psi) b	(1000 lbs) c	New

**API Rating & Safety Factor**

- a) Based on full casing evacuation with 9.5 ppg fluid on backside @ 9,950' TVD.
- b) Burst pressure based on 9,000 psi treating pressure with 10.2 ppg internal fluid gradient and 9.0 ppg external fluid gradient @ 10,763' TVD.
- c) Based on string weight in 9.5 ppg fluid (Buoyed weight: 105k lbs.) plus 100k lbs overpull.



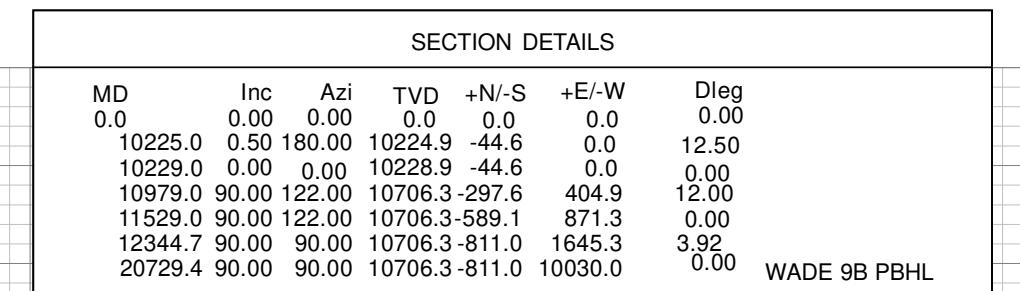
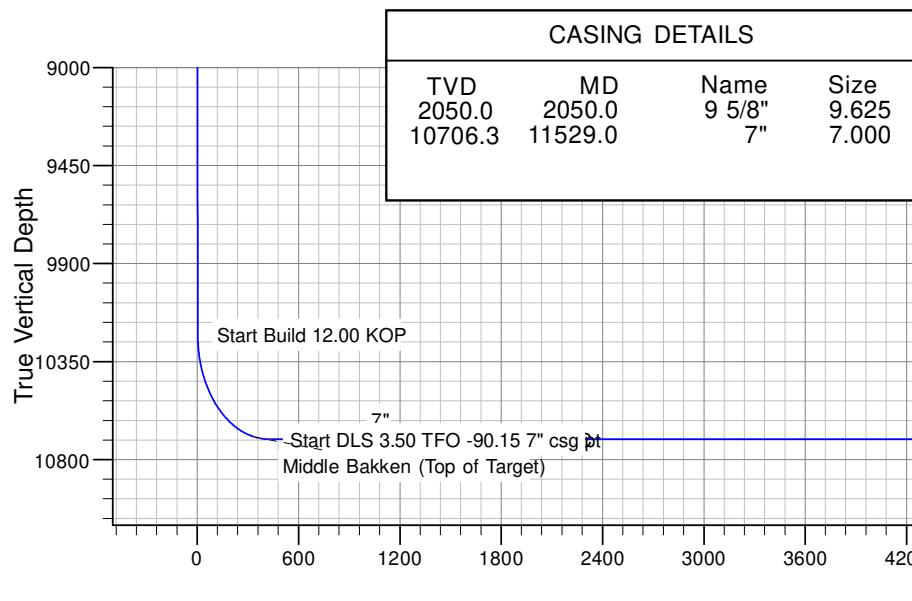
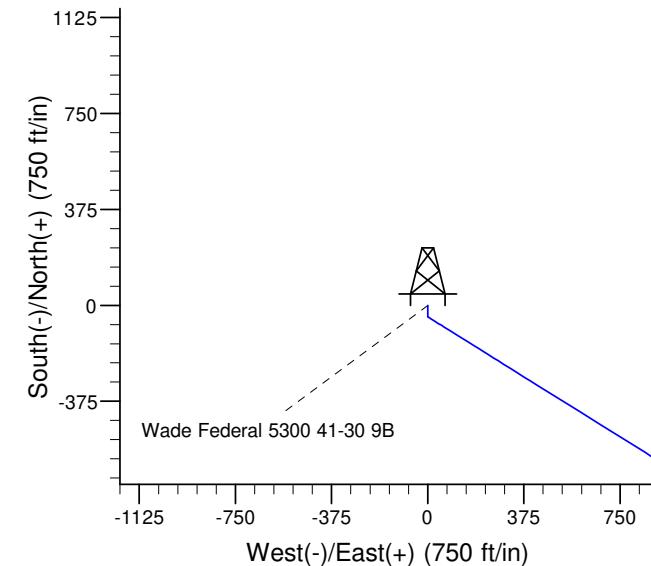
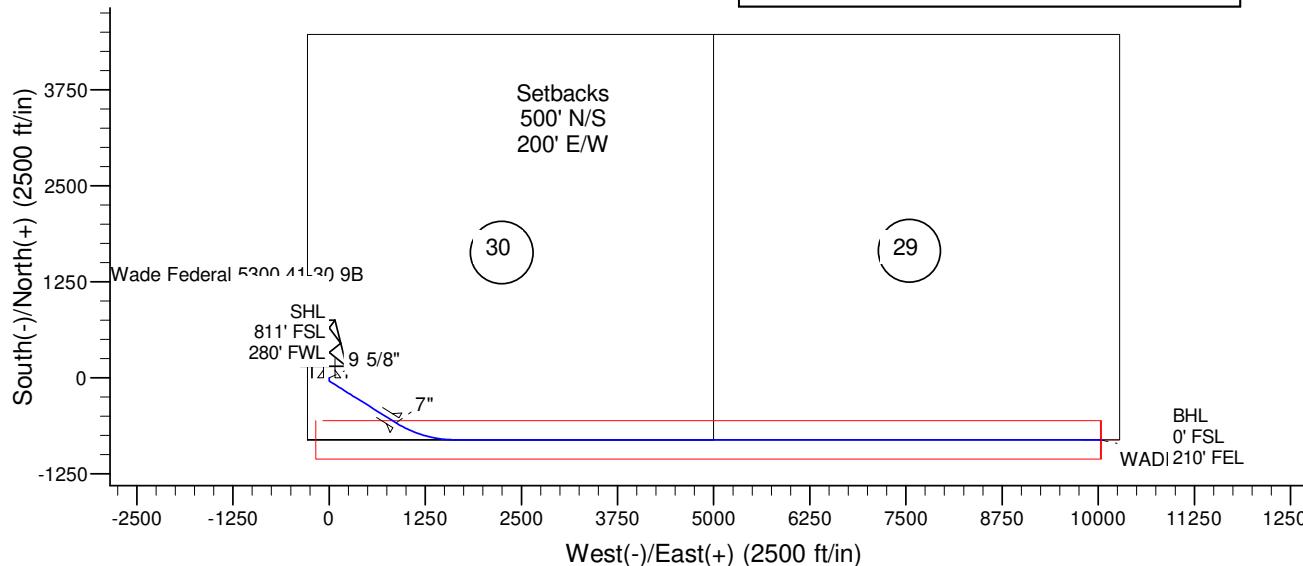
Azimuths to True North  
Magnetic North: 8.17°  
  
Magnetic Field  
Strength: 56478.0snT  
Dip Angle: 72.95°  
Date: 3/6/2014  
Model: IGRF200510



Project: Indian Hills  
Site: 153N-100W-29/30  
Well: Wade Federal 5300 41-30 9B  
Wellbore: Wade Federal 5300 41-30 9B  
Design: Plan #1

SITE DETAILS: 153N-100W-29/30

Site Centre Latitude: 48° 2' 27.670 N  
Longitude: 103° 36' 10.820 W  
  
Positional Uncertainty: 0.0  
Convergence: -2.31  
Local North: True



# **Oasis**

**Indian Hills  
153N-100W-29/30  
Wade Federal 5300 41-30 9B**

**Wade Federal 5300 41-30 9B**

**Plan: Plan #1**

# **Standard Planning Report**

**27 June, 2014**

# Oasis Petroleum

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well Wade Federal 5300 41-30 9B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-29/30	<b>North Reference:</b>	True
<b>Well:</b>	Wade Federal 5300 41-30 9B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wade Federal 5300 41-30 9B		
<b>Design:</b>	Plan #1		

<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-29/30			
<b>Site Position:</b>		<b>Northing:</b>	395,519.95 usft	<b>Latitude:</b>
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,209,617.13 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>	Wade Federal 5300 41-30 9B				
<b>Well Position</b>	+N/-S +E/-W	-497.5 usft 40.1 usft	<b>Northing:</b> <b>Easting:</b>	395,021.22 usft 1,209,637.14 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>	Wade Federal 5300 41-30 9B				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b> (°)	<b>Dip Angle</b> (°)	<b>Field Strength</b> (nT)
	IGRF200510	3/6/2014	8.17	72.95	56,478

<b>Design</b>	Plan #1				
<b>Audit Notes:</b>					
<b>Version:</b>		<b>Phase:</b>	PROTOTYPE	<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	94.62

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	0.00
10,225.0	0.50	180.00	10,224.8	-44.6	0.0	0.00	0.00	0.00	0.00	180.00
10,229.0	0.00	0.00	10,228.8	-44.6	0.0	12.50	-12.50	0.00	0.00	180.00
10,979.0	90.00	122.00	10,706.3	-297.6	404.9	12.00	12.00	0.00	0.00	122.00
11,529.0	90.00	122.00	10,706.3	-589.1	871.3	0.00	0.00	0.00	0.00	0.00
12,344.7	90.00	90.00	10,706.3	-811.0	1,645.3	3.92	0.00	-3.92	0.00	270.00
20,729.4	90.00	90.00	10,706.3	-811.0	10,030.0	0.00	0.00	0.00	0.00	WADE 9B PBHL

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<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-29/30	<b>North Reference:</b>	True
<b>Well:</b>	Wade Federal 5300 41-30 9B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wade Federal 5300 41-30 9B		
<b>Design:</b>	Plan #1		

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	180.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.01	180.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.01	180.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.02	180.00	400.0	-0.1	0.0	0.0	0.00	0.00	0.00
500.0	0.02	180.00	500.0	-0.1	0.0	0.0	0.00	0.00	0.00
600.0	0.03	180.00	600.0	-0.2	0.0	0.0	0.00	0.00	0.00
700.0	0.03	180.00	700.0	-0.2	0.0	0.0	0.00	0.00	0.00
800.0	0.04	180.00	800.0	-0.3	0.0	0.0	0.00	0.00	0.00
900.0	0.04	180.00	900.0	-0.3	0.0	0.0	0.00	0.00	0.00
1,000.0	0.05	180.00	1,000.0	-0.4	0.0	0.0	0.00	0.00	0.00
1,100.0	0.05	180.00	1,100.0	-0.5	0.0	0.0	0.00	0.00	0.00
1,200.0	0.06	180.00	1,200.0	-0.6	0.0	0.0	0.00	0.00	0.00
1,300.0	0.06	180.00	1,300.0	-0.7	0.0	0.1	0.00	0.00	0.00
1,400.0	0.07	180.00	1,400.0	-0.8	0.0	0.1	0.00	0.00	0.00
1,500.0	0.07	180.00	1,500.0	-1.0	0.0	0.1	0.00	0.00	0.00
1,600.0	0.08	180.00	1,600.0	-1.1	0.0	0.1	0.00	0.00	0.00
1,700.0	0.08	180.00	1,700.0	-1.2	0.0	0.1	0.00	0.00	0.00
1,800.0	0.09	180.00	1,800.0	-1.4	0.0	0.1	0.00	0.00	0.00
1,900.0	0.09	180.00	1,900.0	-1.5	0.0	0.1	0.00	0.00	0.00
1,920.0	0.08	180.00	1,920.0	-1.6	0.0	0.1	0.05	-0.05	0.00
<b>Pierre</b>									
2,000.0	0.10	180.00	2,000.0	-1.7	0.0	0.1	0.02	0.02	0.00
2,050.0	0.10	180.00	2,050.0	-1.8	0.0	0.1	0.00	0.00	0.00
<b>9 5/8"</b>									
2,100.0	0.10	180.00	2,100.0	-1.9	0.0	0.2	0.00	0.00	0.00
2,200.0	0.11	180.00	2,200.0	-2.1	0.0	0.2	0.00	0.00	0.00
2,300.0	0.11	180.00	2,300.0	-2.3	0.0	0.2	0.00	0.00	0.00
2,400.0	0.12	180.00	2,400.0	-2.5	0.0	0.2	0.00	0.00	0.00
2,500.0	0.12	180.00	2,500.0	-2.7	0.0	0.2	0.00	0.00	0.00
2,600.0	0.13	180.00	2,600.0	-2.9	0.0	0.2	0.00	0.00	0.00
2,700.0	0.13	180.00	2,700.0	-3.1	0.0	0.3	0.00	0.00	0.00
2,800.0	0.14	180.00	2,800.0	-3.3	0.0	0.3	0.00	0.00	0.00
2,900.0	0.14	180.00	2,900.0	-3.6	0.0	0.3	0.00	0.00	0.00
3,000.0	0.15	180.00	3,000.0	-3.8	0.0	0.3	0.00	0.00	0.00
3,100.0	0.15	180.00	3,100.0	-4.1	0.0	0.3	0.00	0.00	0.00
3,200.0	0.16	180.00	3,200.0	-4.4	0.0	0.4	0.00	0.00	0.00
3,300.0	0.16	180.00	3,300.0	-4.6	0.0	0.4	0.00	0.00	0.00
3,400.0	0.17	180.00	3,400.0	-4.9	0.0	0.4	0.00	0.00	0.00
3,500.0	0.17	180.00	3,500.0	-5.2	0.0	0.4	0.00	0.00	0.00
3,600.0	0.18	180.00	3,600.0	-5.5	0.0	0.4	0.00	0.00	0.00
3,700.0	0.18	180.00	3,700.0	-5.8	0.0	0.5	0.00	0.00	0.00
3,800.0	0.19	180.00	3,800.0	-6.2	0.0	0.5	0.00	0.00	0.00
3,900.0	0.19	180.00	3,900.0	-6.5	0.0	0.5	0.00	0.00	0.00
4,000.0	0.20	180.00	4,000.0	-6.8	0.0	0.6	0.00	0.00	0.00
4,100.0	0.20	180.00	4,100.0	-7.2	0.0	0.6	0.00	0.00	0.00
4,200.0	0.21	180.00	4,200.0	-7.5	0.0	0.6	0.00	0.00	0.00
4,300.0	0.21	180.00	4,300.0	-7.9	0.0	0.6	0.00	0.00	0.00
4,400.0	0.22	180.00	4,400.0	-8.3	0.0	0.7	0.00	0.00	0.00
4,500.0	0.22	180.00	4,500.0	-8.6	0.0	0.7	0.00	0.00	0.00
4,566.0	0.22	180.00	4,566.0	-8.9	0.0	0.7	0.00	0.00	0.00
<b>Greenhorn</b>									
4,600.0	0.22	180.00	4,600.0	-9.0	0.0	0.7	0.01	0.01	0.00
4,700.0	0.23	180.00	4,700.0	-9.4	0.0	0.8	0.00	0.00	0.00
4,800.0	0.23	180.00	4,800.0	-9.8	0.0	0.8	0.00	0.00	0.00

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<b>Well:</b>	Wade Federal 5300 41-30 9B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wade Federal 5300 41-30 9B		
<b>Design:</b>	Plan #1		

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)
4,900.0	0.24	180.00	4,900.0	-10.2	0.0	0.8	0.00	0.00	0.00
4,969.0	0.24	180.00	4,969.0	-10.5	0.0	0.8	0.00	0.00	0.00
<b>Mowry</b>									
5,000.0	0.24	180.00	5,000.0	-10.7	0.0	0.9	0.02	0.02	0.00
5,100.0	0.25	180.00	5,100.0	-11.1	0.0	0.9	0.00	0.00	0.00
5,200.0	0.25	180.00	5,200.0	-11.5	0.0	0.9	0.00	0.00	0.00
5,300.0	0.26	180.00	5,300.0	-12.0	0.0	1.0	0.00	0.00	0.00
5,391.0	0.28	180.00	5,391.0	-12.4	0.0	1.0	0.03	0.03	0.00
<b>Dakota</b>									
5,400.0	0.26	180.00	5,400.0	-12.4	0.0	1.0	0.21	-0.21	0.00
5,500.0	0.27	180.00	5,500.0	-12.9	0.0	1.0	0.00	0.00	0.00
5,600.0	0.27	180.00	5,600.0	-13.4	0.0	1.1	0.00	0.00	0.00
5,700.0	0.28	180.00	5,700.0	-13.9	0.0	1.1	0.00	0.00	0.00
5,800.0	0.28	180.00	5,800.0	-14.4	0.0	1.2	0.00	0.00	0.00
5,900.0	0.29	180.00	5,900.0	-14.9	0.0	1.2	0.00	0.00	0.00
6,000.0	0.29	180.00	6,000.0	-15.4	0.0	1.2	0.00	0.00	0.00
6,100.0	0.30	180.00	6,100.0	-15.9	0.0	1.3	0.00	0.00	0.00
6,200.0	0.30	180.00	6,200.0	-16.4	0.0	1.3	0.00	0.00	0.00
6,300.0	0.31	180.00	6,300.0	-16.9	0.0	1.4	0.00	0.00	0.00
6,400.0	0.31	180.00	6,400.0	-17.5	0.0	1.4	0.00	0.00	0.00
6,407.0	0.27	180.00	6,407.0	-17.5	0.0	1.4	0.62	-0.62	0.00
<b>Rierdon</b>									
6,500.0	0.32	180.00	6,500.0	-18.0	0.0	1.5	0.05	0.05	0.00
6,600.0	0.32	180.00	6,600.0	-18.6	0.0	1.5	0.00	0.00	0.00
6,700.0	0.33	180.00	6,700.0	-19.2	0.0	1.5	0.00	0.00	0.00
6,800.0	0.33	180.00	6,800.0	-19.7	0.0	1.6	0.00	0.00	0.00
6,896.0	0.33	180.00	6,896.0	-20.3	0.0	1.6	0.00	0.00	0.00
<b>Dunham Salt</b>									
6,900.0	0.34	180.00	6,900.0	-20.3	0.0	1.6	0.08	0.08	0.00
6,942.0	0.33	180.00	6,942.0	-20.6	0.0	1.7	0.01	-0.01	0.00
<b>Dunham Salt Base</b>									
7,000.0	0.34	180.00	7,000.0	-20.9	0.0	1.7	0.02	0.02	0.00
7,100.0	0.35	180.00	7,100.0	-21.5	0.0	1.7	0.00	0.00	0.00
7,200.0	0.35	180.00	7,200.0	-22.1	0.0	1.8	0.00	0.00	0.00
7,205.0	0.29	180.00	7,205.0	-22.1	0.0	1.8	1.21	-1.21	0.00
<b>Pine Salt</b>									
7,229.0	0.34	180.00	7,229.0	-22.3	0.0	1.8	0.22	0.22	0.00
<b>Pine Salt Base</b>									
7,291.0	0.35	180.00	7,291.0	-22.7	0.0	1.8	0.01	0.01	0.00
<b>Opeche Salt</b>									
7,300.0	0.36	180.00	7,300.0	-22.7	0.0	1.8	0.05	0.05	0.00
7,371.0	0.38	180.00	7,371.0	-23.2	0.0	1.9	0.04	0.04	0.00
<b>Opeche Salt Base</b>									
7,400.0	0.36	180.00	7,400.0	-23.4	0.0	1.9	0.08	-0.08	0.00
7,500.0	0.37	180.00	7,499.9	-24.0	0.0	1.9	0.00	0.00	0.00
7,600.0	0.37	180.00	7,599.9	-24.6	0.0	2.0	0.00	0.00	0.00
7,615.0	0.35	180.00	7,615.0	-24.7	0.0	2.0	0.12	-0.12	0.00
<b>Amsden</b>									
7,700.0	0.38	180.00	7,699.9	-25.3	0.0	2.0	0.03	0.03	0.00
7,771.0	0.38	180.00	7,771.0	-25.8	0.0	2.1	0.00	0.00	0.00
<b>Tyler</b>									
7,800.0	0.38	180.00	7,799.9	-26.0	0.0	2.1	0.02	0.02	0.00
7,900.0	0.39	180.00	7,899.9	-26.6	0.0	2.1	0.00	0.00	0.00
7,994.0	0.39	180.00	7,994.0	-27.3	0.0	2.2	0.00	0.00	0.00

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<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
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<b>Well:</b>	Wade Federal 5300 41-30 9B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wade Federal 5300 41-30 9B		
<b>Design:</b>	Plan #1		

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)
<b>Otter/Base Minnelusa</b>									
8,000.0	0.39	180.00	7,999.9	-27.3	0.0	2.2	0.08	0.08	0.00
8,100.0	0.40	180.00	8,099.9	-28.0	0.0	2.3	0.00	0.00	0.00
8,200.0	0.40	180.00	8,199.9	-28.7	0.0	2.3	0.00	0.00	0.00
8,300.0	0.41	180.00	8,299.9	-29.4	0.0	2.4	0.00	0.00	0.00
8,336.1	0.40	180.00	8,336.0	-29.7	0.0	2.4	0.02	-0.02	0.00
<b>Kibbey Lime</b>									
8,400.0	0.41	180.00	8,399.9	-30.1	0.0	2.4	0.02	0.02	0.00
8,484.1	0.41	180.00	8,484.0	-30.7	0.0	2.5	0.00	0.00	0.00
<b>Charles Salt</b>									
8,500.0	0.42	180.00	8,499.9	-30.8	0.0	2.5	0.03	0.03	0.00
8,600.0	0.42	180.00	8,599.9	-31.6	0.0	2.5	0.00	0.00	0.00
8,700.0	0.43	180.00	8,699.9	-32.3	0.0	2.6	0.00	0.00	0.00
8,800.0	0.43	180.00	8,799.9	-33.0	0.0	2.7	0.00	0.00	0.00
8,900.0	0.44	180.00	8,899.9	-33.8	0.0	2.7	0.00	0.00	0.00
9,000.0	0.44	180.00	8,999.9	-34.6	0.0	2.8	0.00	0.00	0.00
9,100.0	0.44	180.00	9,099.9	-35.3	0.0	2.8	0.00	0.00	0.00
9,163.1	0.44	180.00	9,163.0	-35.8	0.0	2.9	0.00	0.00	0.00
<b>Base Last Salt</b>									
9,200.0	0.45	180.00	9,199.9	-36.1	0.0	2.9	0.02	0.02	0.00
9,300.0	0.45	180.00	9,299.9	-36.9	0.0	3.0	0.00	0.00	0.00
9,377.1	0.45	180.00	9,377.0	-37.5	0.0	3.0	0.00	0.00	0.00
<b>Mission Canyon</b>									
9,400.0	0.46	180.00	9,399.9	-37.7	0.0	3.0	0.02	0.02	0.00
9,500.0	0.46	180.00	9,499.9	-38.5	0.0	3.1	0.00	0.00	0.00
9,600.0	0.47	180.00	9,599.9	-39.3	0.0	3.2	0.00	0.00	0.00
9,700.0	0.47	180.00	9,699.9	-40.2	0.0	3.2	0.00	0.00	0.00
9,800.0	0.48	180.00	9,799.9	-41.0	0.0	3.3	0.00	0.00	0.00
9,900.0	0.48	180.00	9,899.9	-41.8	0.0	3.4	0.00	0.00	0.00
9,926.1	0.47	180.00	9,926.0	-42.0	0.0	3.4	0.04	-0.04	0.00
<b>Lodgepole</b>									
10,000.0	0.49	180.00	9,999.9	-42.7	0.0	3.4	0.02	0.02	0.00
10,100.0	0.49	180.00	10,099.9	-43.5	0.0	3.5	0.00	0.00	0.00
10,200.0	0.50	180.00	10,199.9	-44.4	0.0	3.6	0.00	0.00	0.00
10,225.0	0.50	180.00	10,224.8	-44.6	0.0	3.6	0.00	0.00	0.00
<b>Start Drop -12.50</b>									
10,229.0	0.00	0.00	10,228.8	-44.6	0.0	3.6	12.50	-12.50	0.00
<b>Start Build 12.00</b>									
10,250.0	2.52	122.00	10,249.9	-44.9	0.4	4.0	12.00	12.00	0.00
10,275.0	5.52	122.00	10,274.8	-45.8	1.9	5.6	12.00	12.00	0.00
10,300.0	8.52	122.00	10,299.6	-47.4	4.5	8.3	12.00	12.00	0.00
10,325.0	11.52	122.00	10,324.2	-49.7	8.2	12.1	12.00	12.00	0.00
10,350.0	14.52	122.00	10,348.6	-52.7	12.9	17.1	12.00	12.00	0.00
10,375.0	17.52	122.00	10,372.6	-56.4	18.8	23.3	12.00	12.00	0.00
10,400.0	20.52	122.00	10,396.2	-60.7	25.7	30.5	12.00	12.00	0.00
10,425.0	23.52	122.00	10,419.4	-65.7	33.6	38.8	12.00	12.00	0.00
10,450.0	26.52	122.00	10,442.1	-71.3	42.6	48.2	12.00	12.00	0.00
10,475.0	29.52	122.00	10,464.1	-77.5	52.6	58.6	12.00	12.00	0.00
10,500.0	32.52	122.00	10,485.5	-84.3	63.5	70.1	12.00	12.00	0.00
10,525.0	35.52	122.00	10,506.3	-91.7	75.4	82.5	12.00	12.00	0.00
10,550.0	38.52	122.00	10,526.2	-99.7	88.1	95.9	12.00	12.00	0.00
10,575.0	41.52	122.00	10,545.4	-108.2	101.8	110.1	12.00	12.00	0.00
10,600.0	44.52	122.00	10,563.6	-117.3	116.2	125.3	12.00	12.00	0.00
10,625.0	47.52	122.00	10,581.0	-126.8	131.5	141.3	12.00	12.00	0.00

# Oasis Petroleum

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well Wade Federal 5300 41-30 9B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-29/30	<b>North Reference:</b>	True
<b>Well:</b>	Wade Federal 5300 41-30 9B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wade Federal 5300 41-30 9B		
<b>Design:</b>	Plan #1		

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)
10,650.0	50.52	122.00	10,597.4	-136.8	147.5	158.0	12.00	12.00	0.00
10,675.0	53.52	122.00	10,612.8	-147.2	164.2	175.5	12.00	12.00	0.00
10,700.0	56.52	122.00	10,627.1	-158.1	181.6	193.7	12.00	12.00	0.00
10,725.0	59.52	122.00	10,640.3	-169.3	199.5	212.5	12.00	12.00	0.00
10,750.0	62.52	122.00	10,652.5	-180.9	218.1	232.0	12.00	12.00	0.00
10,757.8	63.45	122.00	10,656.0	-184.6	224.0	238.1	12.00	12.00	0.00
<b>False Bakken</b>									
10,775.0	65.52	122.00	10,663.4	-192.8	237.1	251.9	12.00	12.00	0.00
10,786.3	66.88	122.00	10,668.0	-198.3	245.9	261.1	12.00	12.00	0.00
<b>Upper Bakken Shale</b>									
10,800.0	68.52	122.00	10,673.2	-205.0	256.7	272.3	12.00	12.00	0.00
10,825.0	71.52	122.00	10,681.7	-217.5	276.6	293.2	12.00	12.00	0.00
10,850.0	74.52	122.00	10,689.0	-230.1	296.9	314.4	12.00	12.00	0.00
10,874.7	77.49	122.00	10,695.0	-242.8	317.2	335.7	12.00	12.00	0.00
<b>Middle Bakken (Top of Target)</b>									
10,875.0	77.52	122.00	10,695.0	-243.0	317.4	336.0	12.00	12.00	0.00
10,900.0	80.52	122.00	10,699.8	-256.0	338.2	357.8	12.00	12.00	0.00
10,925.0	83.52	122.00	10,703.3	-269.1	359.2	379.8	12.00	12.00	0.00
10,950.0	86.52	122.00	10,705.4	-282.3	380.4	401.9	12.00	12.00	0.00
10,961.1	87.85	122.00	10,706.0	-288.2	389.7	411.7	12.00	12.00	0.00
<b>Middle Bakken (Base of target)</b>									
10,975.0	89.52	122.00	10,706.3	-295.5	401.5	424.1	12.00	12.00	0.00
10,979.0	90.00	122.00	10,706.3	-297.6	404.9	427.6	12.00	12.00	0.00
<b>Start 550.0 hold at 10979.0 MD</b>									
11,000.0	90.00	122.00	10,706.3	-308.8	422.7	446.3	0.00	0.00	0.00
11,100.0	90.00	122.00	10,706.3	-361.8	507.5	535.1	0.00	0.00	0.00
11,200.0	90.00	122.00	10,706.3	-414.8	592.3	623.9	0.00	0.00	0.00
11,300.0	90.00	122.00	10,706.3	-467.8	677.2	712.7	0.00	0.00	0.00
11,400.0	90.00	122.00	10,706.3	-520.8	762.0	801.5	0.00	0.00	0.00
11,500.0	90.00	122.00	10,706.3	-573.7	846.8	890.3	0.00	0.00	0.00
11,529.0	90.00	122.00	10,706.3	-589.1	871.3	916.0	0.00	0.00	0.00
<b>Start DLS 3.92 TFO 270.00 - 7"</b>									
11,600.0	90.00	119.21	10,706.3	-625.3	932.5	979.8	3.92	0.00	-3.92
11,700.0	90.00	115.29	10,706.3	-671.0	1,021.3	1,072.1	3.92	0.00	-3.92
11,800.0	90.00	111.37	10,706.3	-710.6	1,113.1	1,166.8	3.92	0.00	-3.92
11,900.0	90.00	107.44	10,706.3	-743.9	1,207.4	1,263.5	3.92	0.00	-3.92
12,000.0	90.00	103.52	10,706.3	-770.5	1,303.8	1,361.7	3.92	0.00	-3.92
12,100.0	90.00	99.60	10,706.3	-790.6	1,401.8	1,460.9	3.92	0.00	-3.92
12,200.0	90.00	95.68	10,706.3	-803.9	1,500.8	1,560.8	3.92	0.00	-3.92
12,300.0	90.00	91.75	10,706.3	-810.3	1,600.6	1,660.7	3.92	0.00	-3.92
12,344.7	90.00	90.00	10,706.3	-811.0	1,645.3	1,705.3	3.92	0.00	-3.92
<b>Start 8384.7 hold at 12344.7 MD</b>									
12,400.0	90.00	90.00	10,706.3	-811.0	1,700.6	1,760.4	0.00	0.00	0.00
12,500.0	90.00	90.00	10,706.3	-811.0	1,800.6	1,860.1	0.00	0.00	0.00
12,600.0	90.00	90.00	10,706.3	-811.0	1,900.6	1,959.8	0.00	0.00	0.00
12,700.0	90.00	90.00	10,706.3	-811.0	2,000.6	2,059.5	0.00	0.00	0.00
12,800.0	90.00	90.00	10,706.3	-811.0	2,100.6	2,159.1	0.00	0.00	0.00
12,900.0	90.00	90.00	10,706.3	-811.0	2,200.6	2,258.8	0.00	0.00	0.00
13,000.0	90.00	90.00	10,706.3	-811.0	2,300.6	2,358.5	0.00	0.00	0.00
13,100.0	90.00	90.00	10,706.3	-811.0	2,400.6	2,458.2	0.00	0.00	0.00
13,200.0	90.00	90.00	10,706.3	-811.0	2,500.6	2,557.8	0.00	0.00	0.00
13,300.0	90.00	90.00	10,706.3	-811.0	2,600.6	2,657.5	0.00	0.00	0.00
13,400.0	90.00	90.00	10,706.3	-811.0	2,700.6	2,757.2	0.00	0.00	0.00
13,500.0	90.00	90.00	10,706.3	-811.0	2,800.6	2,856.9	0.00	0.00	0.00

# Oasis Petroleum

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well Wade Federal 5300 41-30 9B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-29/30	<b>North Reference:</b>	True
<b>Well:</b>	Wade Federal 5300 41-30 9B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wade Federal 5300 41-30 9B		
<b>Design:</b>	Plan #1		

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)
13,600.0	90.00	90.00	10,706.3	-811.0	2,900.6	2,956.5	0.00	0.00	0.00
13,700.0	90.00	90.00	10,706.3	-811.0	3,000.6	3,056.2	0.00	0.00	0.00
13,800.0	90.00	90.00	10,706.3	-811.0	3,100.6	3,155.9	0.00	0.00	0.00
13,900.0	90.00	90.00	10,706.3	-811.0	3,200.6	3,255.6	0.00	0.00	0.00
14,000.0	90.00	90.00	10,706.3	-811.0	3,300.6	3,355.2	0.00	0.00	0.00
14,100.0	90.00	90.00	10,706.3	-811.0	3,400.6	3,454.9	0.00	0.00	0.00
14,200.0	90.00	90.00	10,706.3	-811.0	3,500.6	3,554.6	0.00	0.00	0.00
14,300.0	90.00	90.00	10,706.3	-811.0	3,600.6	3,654.3	0.00	0.00	0.00
14,400.0	90.00	90.00	10,706.3	-811.0	3,700.6	3,753.9	0.00	0.00	0.00
14,500.0	90.00	90.00	10,706.3	-811.0	3,800.6	3,853.6	0.00	0.00	0.00
14,600.0	90.00	90.00	10,706.3	-811.0	3,900.6	3,953.3	0.00	0.00	0.00
14,700.0	90.00	90.00	10,706.3	-811.0	4,000.6	4,053.0	0.00	0.00	0.00
14,800.0	90.00	90.00	10,706.3	-811.0	4,100.6	4,152.6	0.00	0.00	0.00
14,900.0	90.00	90.00	10,706.3	-811.0	4,200.6	4,252.3	0.00	0.00	0.00
15,000.0	90.00	90.00	10,706.3	-811.0	4,300.6	4,352.0	0.00	0.00	0.00
15,100.0	90.00	90.00	10,706.3	-811.0	4,400.6	4,451.7	0.00	0.00	0.00
15,200.0	90.00	90.00	10,706.3	-811.0	4,500.6	4,551.3	0.00	0.00	0.00
15,300.0	90.00	90.00	10,706.3	-811.0	4,600.6	4,651.0	0.00	0.00	0.00
15,400.0	90.00	90.00	10,706.3	-811.0	4,700.6	4,750.7	0.00	0.00	0.00
15,500.0	90.00	90.00	10,706.3	-811.0	4,800.6	4,850.4	0.00	0.00	0.00
15,600.0	90.00	90.00	10,706.3	-811.0	4,900.6	4,950.0	0.00	0.00	0.00
15,700.0	90.00	90.00	10,706.3	-811.0	5,000.6	5,049.7	0.00	0.00	0.00
15,800.0	90.00	90.00	10,706.3	-811.0	5,100.6	5,149.4	0.00	0.00	0.00
15,900.0	90.00	90.00	10,706.3	-811.0	5,200.6	5,249.1	0.00	0.00	0.00
16,000.0	90.00	90.00	10,706.3	-811.0	5,300.6	5,348.7	0.00	0.00	0.00
16,100.0	90.00	90.00	10,706.3	-811.0	5,400.6	5,448.4	0.00	0.00	0.00
16,200.0	90.00	90.00	10,706.3	-811.0	5,500.6	5,548.1	0.00	0.00	0.00
16,300.0	90.00	90.00	10,706.3	-811.0	5,600.6	5,647.8	0.00	0.00	0.00
16,400.0	90.00	90.00	10,706.3	-811.0	5,700.6	5,747.4	0.00	0.00	0.00
16,500.0	90.00	90.00	10,706.3	-811.0	5,800.6	5,847.1	0.00	0.00	0.00
16,600.0	90.00	90.00	10,706.3	-811.0	5,900.6	5,946.8	0.00	0.00	0.00
16,700.0	90.00	90.00	10,706.3	-811.0	6,000.6	6,046.5	0.00	0.00	0.00
16,800.0	90.00	90.00	10,706.3	-811.0	6,100.6	6,146.1	0.00	0.00	0.00
16,900.0	90.00	90.00	10,706.3	-811.0	6,200.6	6,245.8	0.00	0.00	0.00
17,000.0	90.00	90.00	10,706.3	-811.0	6,300.6	6,345.5	0.00	0.00	0.00
17,100.0	90.00	90.00	10,706.3	-811.0	6,400.6	6,445.2	0.00	0.00	0.00
17,200.0	90.00	90.00	10,706.3	-811.0	6,500.6	6,544.8	0.00	0.00	0.00
17,300.0	90.00	90.00	10,706.3	-811.0	6,600.6	6,644.5	0.00	0.00	0.00
17,400.0	90.00	90.00	10,706.3	-811.0	6,700.6	6,744.2	0.00	0.00	0.00
17,500.0	90.00	90.00	10,706.3	-811.0	6,800.6	6,843.9	0.00	0.00	0.00
17,600.0	90.00	90.00	10,706.3	-811.0	6,900.6	6,943.5	0.00	0.00	0.00
17,700.0	90.00	90.00	10,706.3	-811.0	7,000.6	7,043.2	0.00	0.00	0.00
17,800.0	90.00	90.00	10,706.3	-811.0	7,100.6	7,142.9	0.00	0.00	0.00
17,900.0	90.00	90.00	10,706.3	-811.0	7,200.6	7,242.6	0.00	0.00	0.00
18,000.0	90.00	90.00	10,706.3	-811.0	7,300.6	7,342.2	0.00	0.00	0.00
18,100.0	90.00	90.00	10,706.3	-811.0	7,400.6	7,441.9	0.00	0.00	0.00
18,200.0	90.00	90.00	10,706.3	-811.0	7,500.6	7,541.6	0.00	0.00	0.00
18,300.0	90.00	90.00	10,706.3	-811.0	7,600.6	7,641.3	0.00	0.00	0.00
18,400.0	90.00	90.00	10,706.3	-811.0	7,700.6	7,740.9	0.00	0.00	0.00
18,500.0	90.00	90.00	10,706.3	-811.0	7,800.6	7,840.6	0.00	0.00	0.00
18,600.0	90.00	90.00	10,706.3	-811.0	7,900.6	7,940.3	0.00	0.00	0.00
18,700.0	90.00	90.00	10,706.3	-811.0	8,000.6	8,039.9	0.00	0.00	0.00
18,800.0	90.00	90.00	10,706.3	-811.0	8,100.6	8,139.6	0.00	0.00	0.00
18,900.0	90.00	90.00	10,706.3	-811.0	8,200.6	8,239.3	0.00	0.00	0.00
19,000.0	90.00	90.00	10,706.3	-811.0	8,300.6	8,339.0	0.00	0.00	0.00

# Oasis Petroleum

## Planning Report

<b>Database:</b> <b>Company:</b> <b>Project:</b> <b>Site:</b> <b>Well:</b> <b>Wellbore:</b> <b>Design:</b>	OpenWellsCompass - EDM Prod Oasis Indian Hills 153N-100W-29/30 Wade Federal 5300 41-30 9B Wade Federal 5300 41-30 9B Plan #1	<b>Local Co-ordinate Reference:</b> <b>TVD Reference:</b> <b>MD Reference:</b> <b>North Reference:</b> <b>Survey Calculation Method:</b>	Well Wade Federal 5300 41-30 9B WELL @ 2070.0usft (Original Well Elev) WELL @ 2070.0usft (Original Well Elev) True Minimum Curvature
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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)
19,100.0	90.00	90.00	10,706.3	-811.0	8,400.6	8,438.6	0.00	0.00	0.00
19,200.0	90.00	90.00	10,706.3	-811.0	8,500.6	8,538.3	0.00	0.00	0.00
19,300.0	90.00	90.00	10,706.3	-811.0	8,600.6	8,638.0	0.00	0.00	0.00
19,400.0	90.00	90.00	10,706.3	-811.0	8,700.6	8,737.7	0.00	0.00	0.00
19,500.0	90.00	90.00	10,706.3	-811.0	8,800.6	8,837.3	0.00	0.00	0.00
19,600.0	90.00	90.00	10,706.3	-811.0	8,900.6	8,937.0	0.00	0.00	0.00
19,700.0	90.00	90.00	10,706.3	-811.0	9,000.6	9,036.7	0.00	0.00	0.00
19,800.0	90.00	90.00	10,706.3	-811.0	9,100.6	9,136.4	0.00	0.00	0.00
19,900.0	90.00	90.00	10,706.3	-811.0	9,200.6	9,236.0	0.00	0.00	0.00
20,000.0	90.00	90.00	10,706.3	-811.0	9,300.6	9,335.7	0.00	0.00	0.00
20,100.0	90.00	90.00	10,706.3	-811.0	9,400.6	9,435.4	0.00	0.00	0.00
20,200.0	90.00	90.00	10,706.3	-811.0	9,500.6	9,535.1	0.00	0.00	0.00
20,300.0	90.00	90.00	10,706.3	-811.0	9,600.6	9,634.7	0.00	0.00	0.00
20,400.0	90.00	90.00	10,706.3	-811.0	9,700.6	9,734.4	0.00	0.00	0.00
20,500.0	90.00	90.00	10,706.3	-811.0	9,800.6	9,834.1	0.00	0.00	0.00
20,600.0	90.00	90.00	10,706.3	-811.0	9,900.6	9,933.8	0.00	0.00	0.00
20,700.0	90.00	90.00	10,706.3	-811.0	10,000.6	10,033.4	0.00	0.00	0.00
20,729.4	90.00	90.00	10,706.3	-811.0	10,030.0	10,062.7	0.00	0.00	0.00
<b>TD at 20729.4</b>									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/S (usft)	+E/W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
WADE 9B PBHL - plan hits target center - Point	0.00	0.00	10,706.3	-811.0	10,030.0	393,806.78	1,219,626.30	48° 2' 19.640 N	103° 33' 43.220 W

Casing Points									
Measured Depth (usft)	Vertical Depth (usft)	Name				Casing Diameter ("")	Hole Diameter ("")		
2,050.0	2,050.0 9 5/8"					9-5/8	13-1/2		
11,529.0	10,706.3 7"					7	8-3/4		

# Oasis Petroleum

## Planning Report

<b>Database:</b>	OpenWellsCompass - EDM Prod	<b>Local Co-ordinate Reference:</b>	Well Wade Federal 5300 41-30 9B
<b>Company:</b>	Oasis	<b>TVD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Project:</b>	Indian Hills	<b>MD Reference:</b>	WELL @ 2070.0usft (Original Well Elev)
<b>Site:</b>	153N-100W-29/30	<b>North Reference:</b>	True
<b>Well:</b>	Wade Federal 5300 41-30 9B	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wade Federal 5300 41-30 9B		
<b>Design:</b>	Plan #1		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,920.0	1,920.0	Pierre			
4,566.0	4,566.0	Greenhorn			
4,969.0	4,969.0	Mowry			
5,391.0	5,391.0	Dakota			
6,407.0	6,407.0	Rierdon			
6,896.0	6,896.0	Dunham Salt			
6,942.0	6,942.0	Dunham Salt Base			
7,205.0	7,205.0	Pine Salt			
7,229.0	7,229.0	Pine Salt Base			
7,291.0	7,291.0	Opeche Salt			
7,371.0	7,371.0	Opeche Salt Base			
7,615.0	7,615.0	Amsden			
7,771.0	7,771.0	Tyler			
7,994.0	7,994.0	Otter/Base Minnelusa			
8,336.1	8,336.0	Kibbey Lime			
8,484.1	8,484.0	Charles Salt			
9,163.1	9,163.0	Base Last Salt			
9,377.1	9,377.0	Mission Canyon			
9,926.1	9,926.0	Lodgepole			
10,757.8	10,656.0	False Bakken			
10,786.3	10,668.0	Upper Bakken Shale			
10,874.7	10,695.0	Middle Bakken (Top of Target)			
10,961.1	10,706.0	Middle Bakken (Base of target)			

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/S (usft)	+E/W (usft)		
10,225.0	10,224.8	-44.6	0.0	Start Drop -12.50	
10,229.0	10,228.8	-44.6	0.0	Start Build 12.00	
10,979.0	10,706.3	-297.6	404.9	Start 550.0 hold at 10979.0 MD	
11,529.0	10,706.3	-589.1	871.3	Start DLS 3.92 TFO 270.00	
12,344.7	10,706.3	-811.0	1,645.3	Start 8384.7 hold at 12344.7 MD	
20,729.4	10,706.3	-811.0	10,030.0	TD at 20729.4	

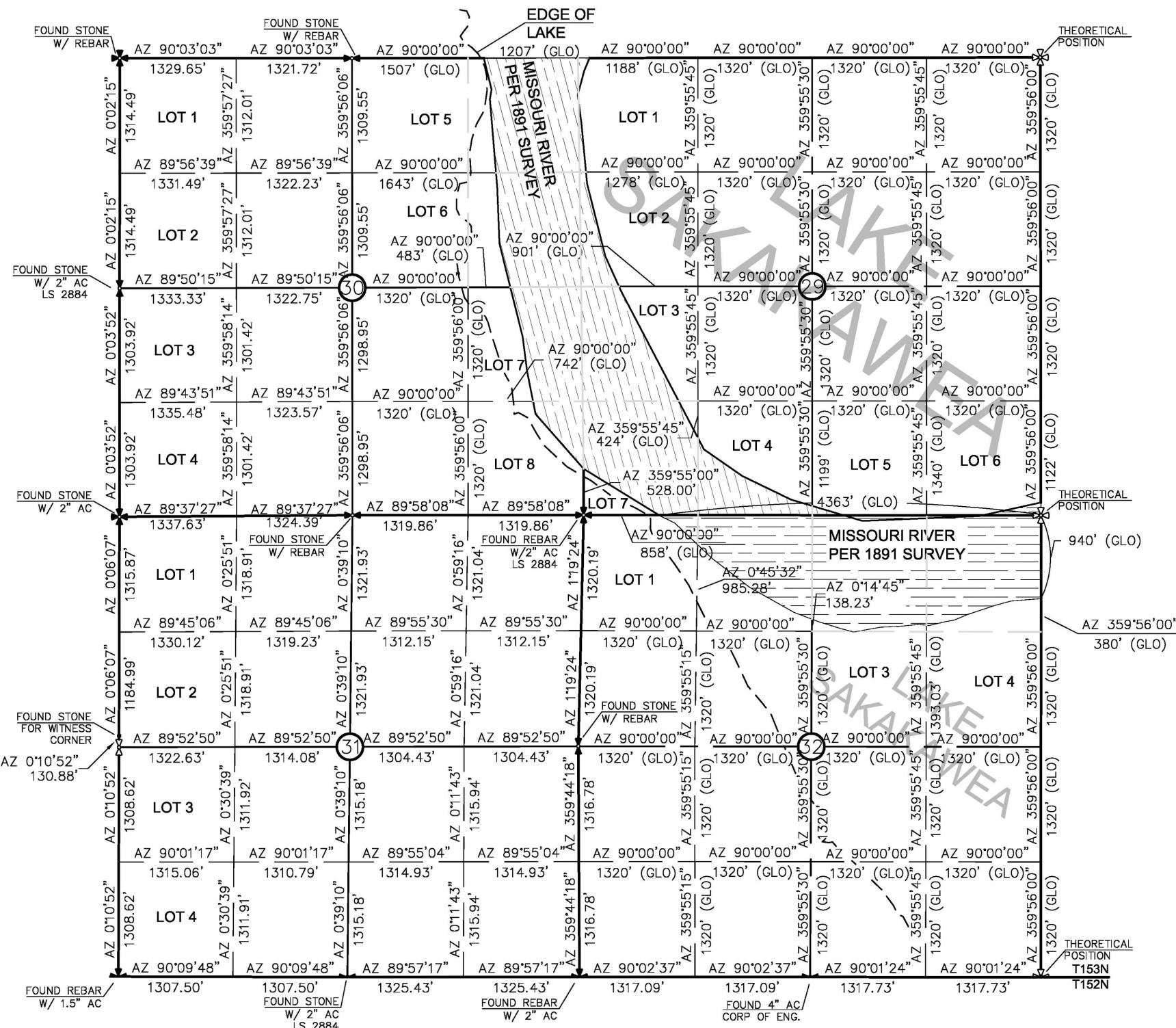
## SECTION BREAKDOWN

OASIS PETROLEUM NORTH AMERICA, LLC

FANNIN, SUITE 1500, HOUSTON, TX 77002

WADE FEDERAL 5300 41-30 9B"

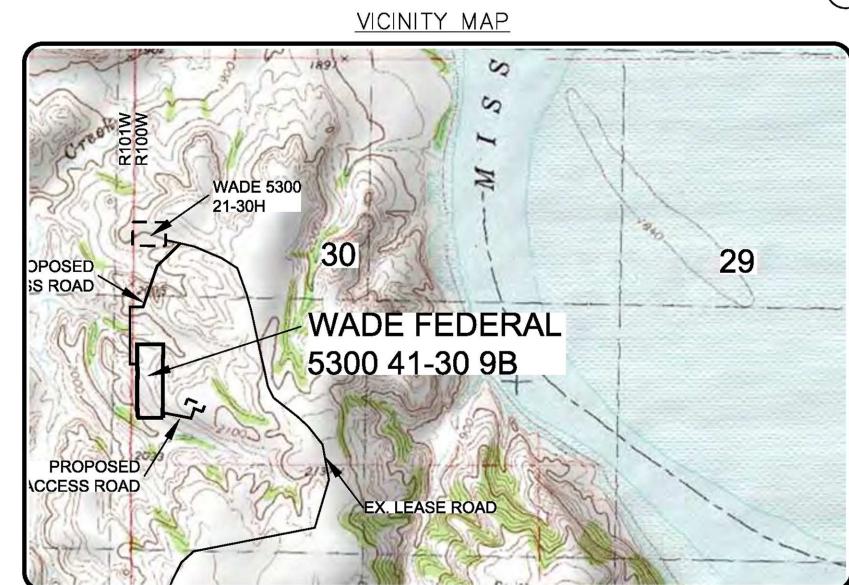
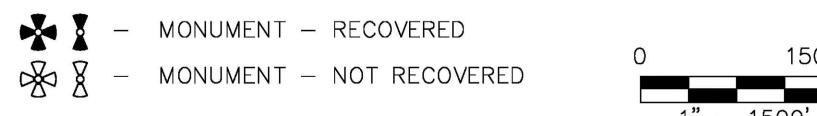
WADE FEDERAL 3300 41-30 3B  
811 FEET FROM SOUTH LINE AND 280 FEET FROM WEST LINE  
SECTIONS 29 & 30, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



ALL AZIMUTHS ARE BASED ON G.P.S. OBSERVATIONS. THE ORIGINAL SURVEY OF THIS AREA FOR THE GENERAL LAND OFFICE (G.L.O.) WAS 1897. 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'.



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**H AMERICA, LLC**  
DOWN  
53N, R100W  
**ERTH DAKOTA**

RE: NO.: S13-09-38108

JAN 2014

OASIS PETROLEUM NORTH  
SECTION BREAK  
SECTIONS 29 & 30, T1  
MCKENZIE COUNTY, NO.  
Project No: \_\_\_\_\_  
Owner By: B.H.H. \_\_\_\_\_ Date: \_\_\_\_\_  
Deelected By: D.D.K.

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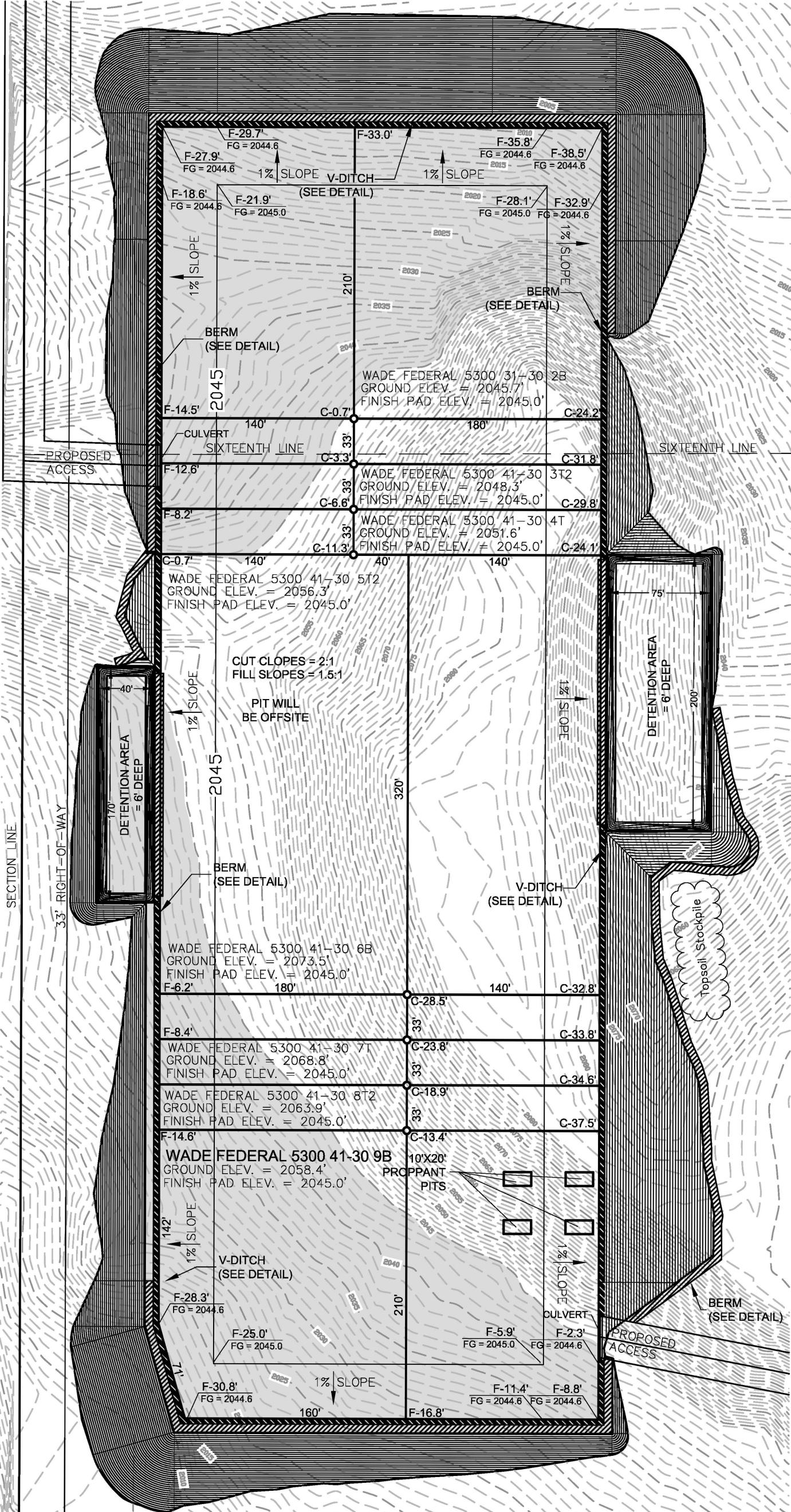
## PAD LAYOUT

OASIS PETROLEUM NORTH AMERICA, LLC  
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002  
"WADE FEDERAL 5300 41 30 9B"

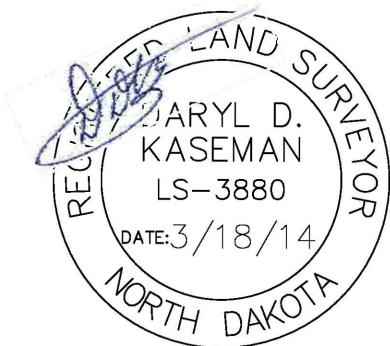
"WADE FEDERAL 5300 41-30 9B"

M SOUTH LINE AND 280 FEET EB

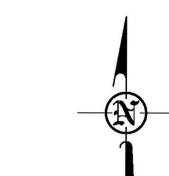
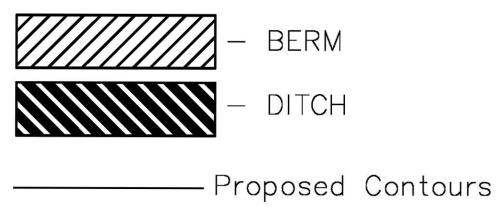
811 FEET FROM SOUTH LINE AND 280 FEET FROM WEST LINE  
SECTION 30, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



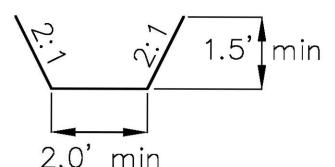
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**NOTE:** Pad dimensions shown are to usable area, the v-ditch and berm areas shall be built to the outside of the pad dimensions.



## V-DITCH DETAIL



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

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OASIS PETROLEUM NORTH AMERICA, LLC  
PAD LAYOUT  
SECTION 30, T153N, R100W

Revision No.	Date	By	Description
REV 1	3/17/14	JJS	MOVED WELLS ON PAD & ACCESS ROAD

42 W013W013-06 - Vessel 001 - Oshkosh Petroleum - Made 5/30/14 - 30' 98' Well Location  
Well Test and Remodel, made on 5/30/2014

**WELL LOCATION SITE QUANTITIES**  
 OASIS PETROLEUM NORTH AMERICA, LLC  
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002  
 "WADE FEDERAL 5300 41-30 9B"  
 811 FEET FROM SOUTH LINE AND 280 FEET FROM WEST LINE  
 SECTION 30, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

WELL SITE ELEVATION	2058.4
WELL PAD ELEVATION	2045.0
EXCAVATION	149,966
PLUS PIT	0
	<u>149,966</u>
EMBANKMENT	113,402
PLUS SHRINKAGE (25%)	28,351
	<u>141,753</u>
STOCKPILE PIT	0
STOCKPILE TOP SOIL (6")	7,955
BERMS	2,533 LF = 821 CY
DITCHES	1,655 LF = 253 CY
DETENTION AREA	4,219 CY
STOCKPILE MATERIAL	3,909
DISTURBED AREA FROM PAD	10.18 ACRES

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

CUT END SLOPES AT 2:1

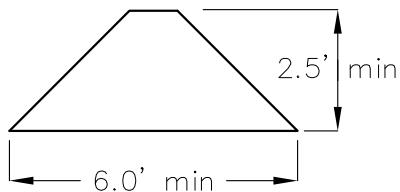
FILL END SLOPES AT 1.5:1

WELL SITE LOCATION

811' FSL

280' FWL

BERM DETAIL



DITCH DETAIL



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OASIS PETROLEUM NORTH AMERICA, LLC  
 QUANTITIES  
 SECTION 30, T153N, R100W  
 MCKENZIE COUNTY, NORTH DAKOTA  
 Drawn By: B.H.H. Project No.: S13-09-381.08  
 Checked By: D.D.K. Date: JAN. 2014

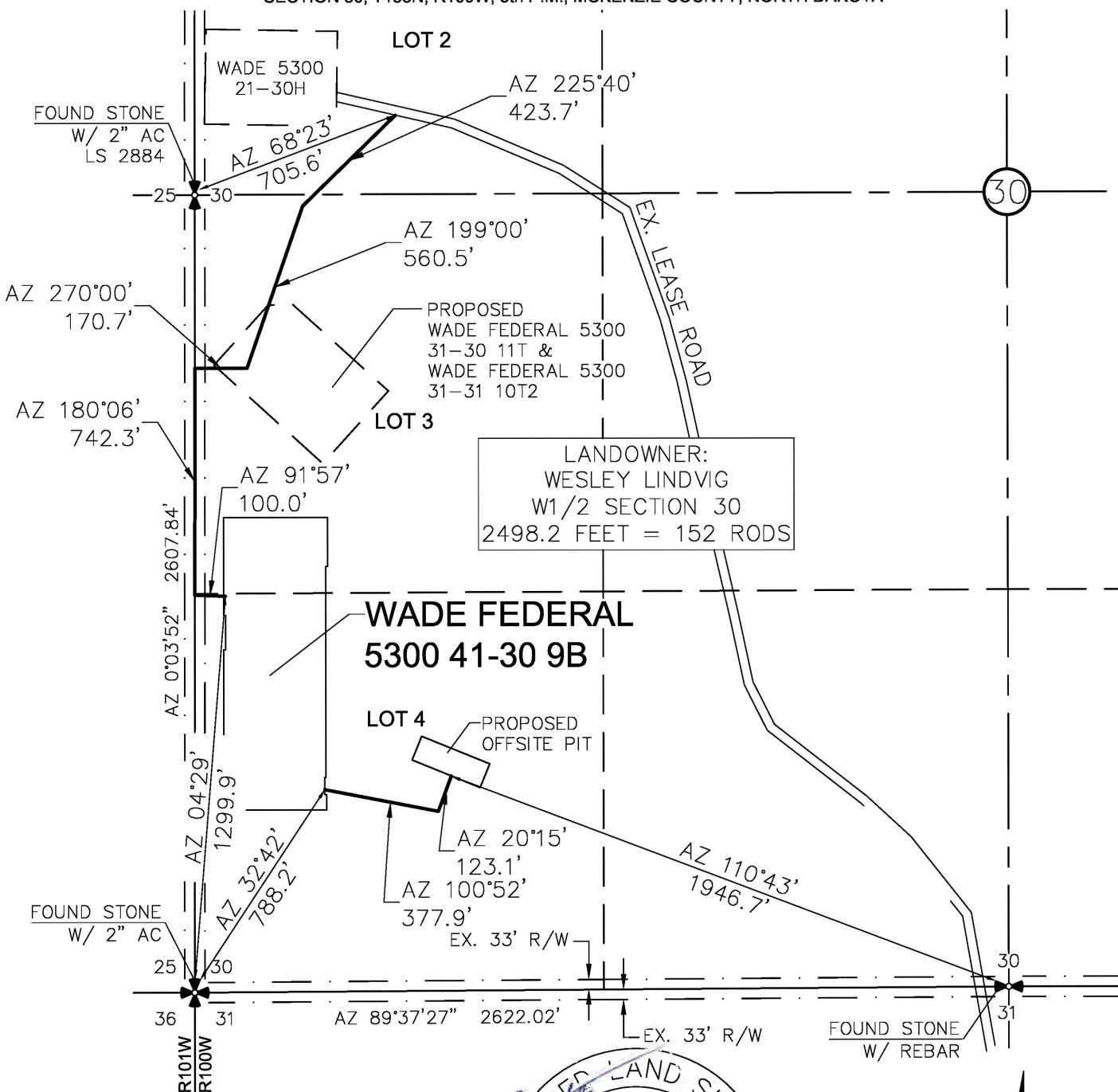
Revision No.	Date	By	Description
REV 1	3/17/14	JJS	MOVED WELLS ON PAD & ACCESS ROAD

# ACCESS APPROACH

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

"WADE FEDERAL 5300 41-30 9B"

811 FEET FROM SOUTH LINE AND 280 FEET FROM WEST LINE  
SECTION 30, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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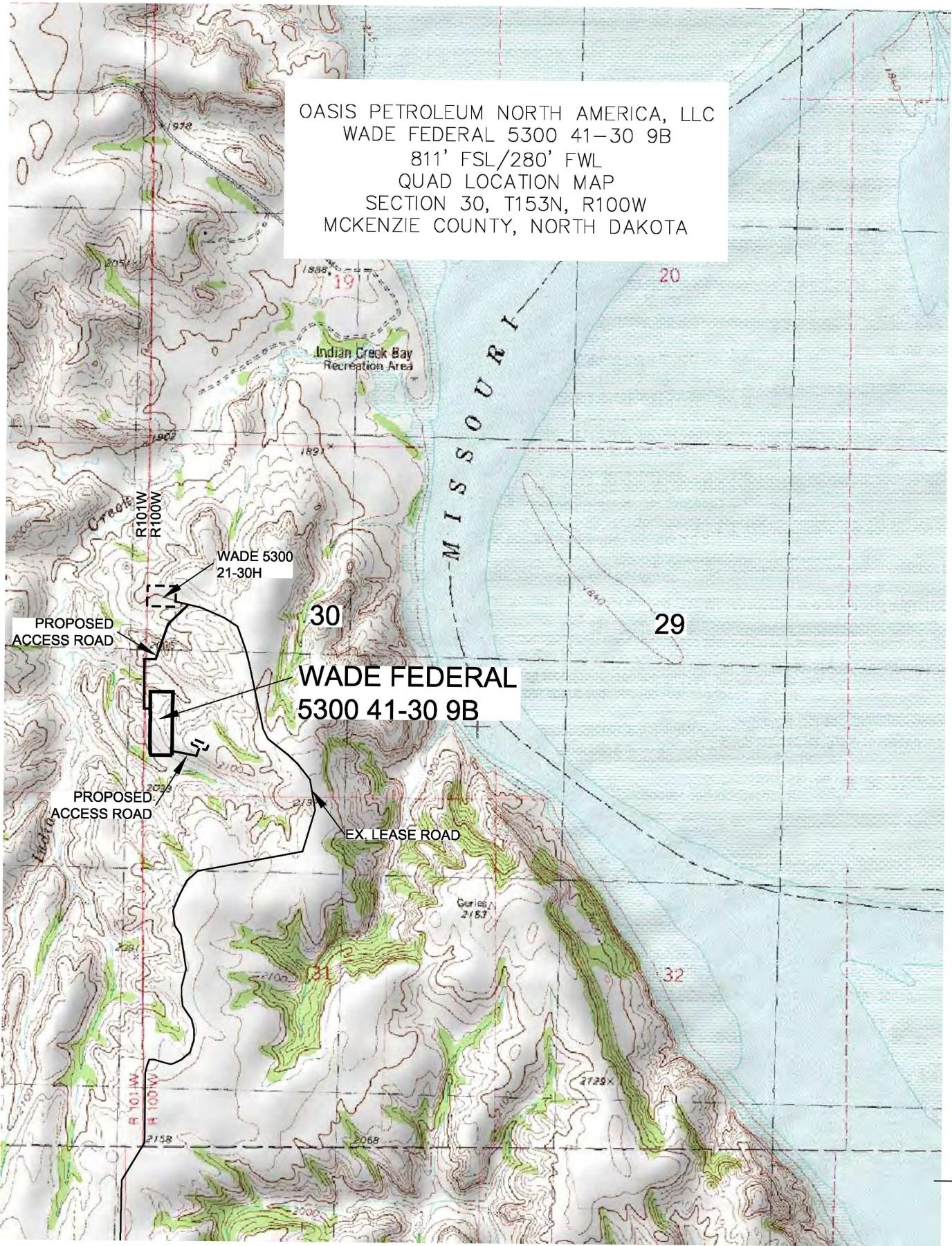
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OASIS PETROLEUM NORTH AMERICA, LLC  
ACCESS APPROACH  
SECTION 30, T153N, R100W  
MCKENZIE COUNTY, NORTH DAKOTA

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Revision No.	Date	By	Description
REV 1	3/17/14	JJS	MOVED WELLS ON PAD & ACCESS ROAD



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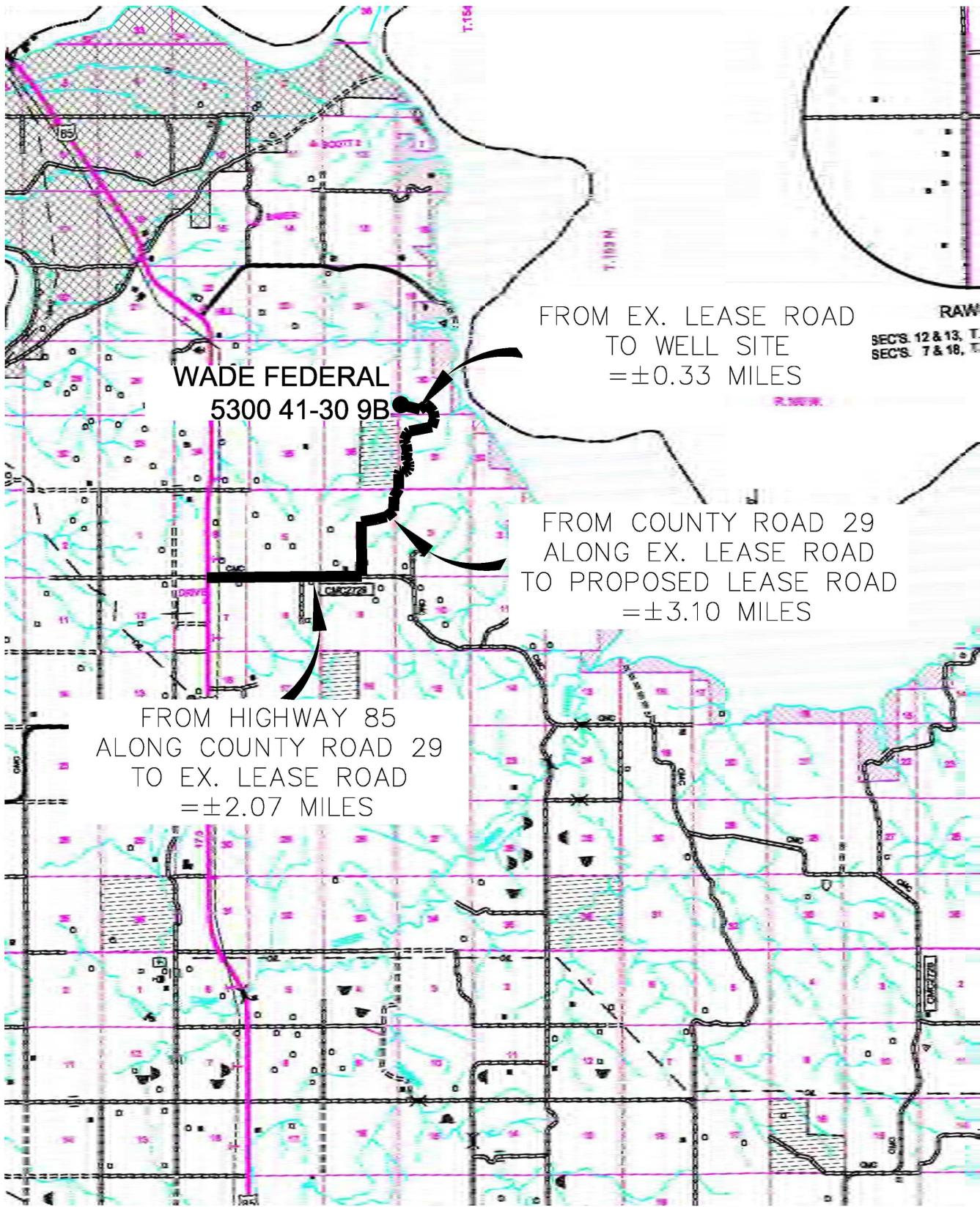
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OASIS PETROLEUM NORTH AMERICA, LLC  
 QUAD LOCATION MAP  
 SECTION 30, T153N, R100W  
 MCKENZIE COUNTY, NORTH DAKOTA

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Revision No.	Date	By	Description
REV 1	3/17/14	JJS	MOVED WELLS ON PAD & ACCESS ROAD

**COUNTY ROAD MAP**  
 OASIS PETROLEUM NORTH AMERICA, LLC  
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002  
 "WADE FEDERAL 5300 41-30 9B"  
 811 FEET FROM SOUTH LINE AND 280 FEET FROM WEST LINE  
 SECTION 30, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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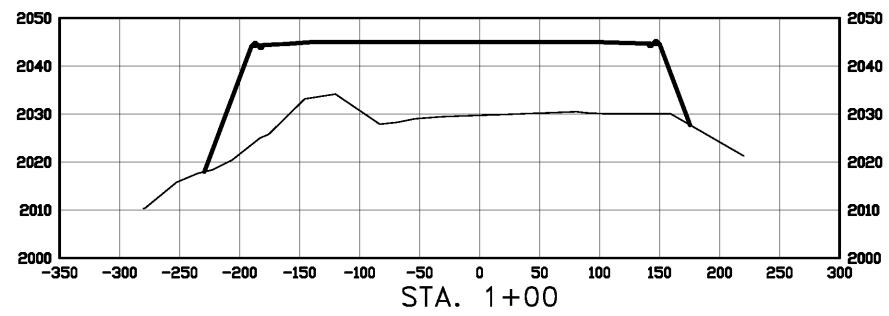
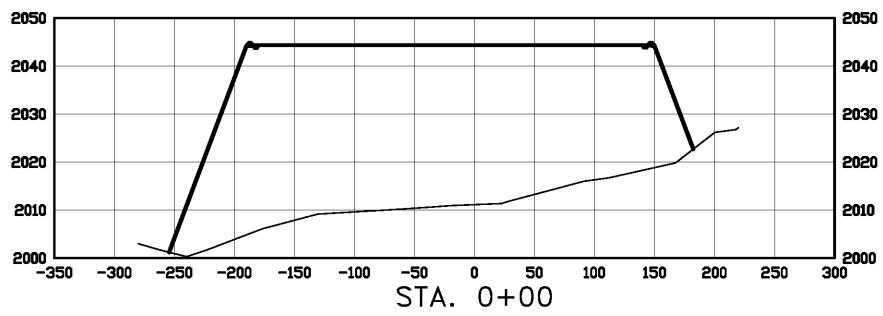
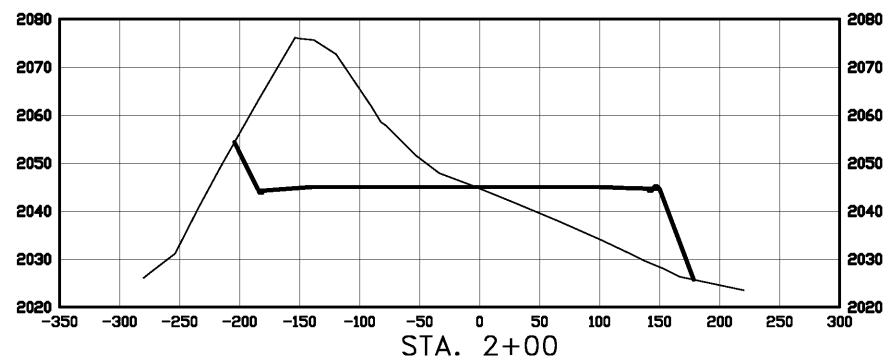
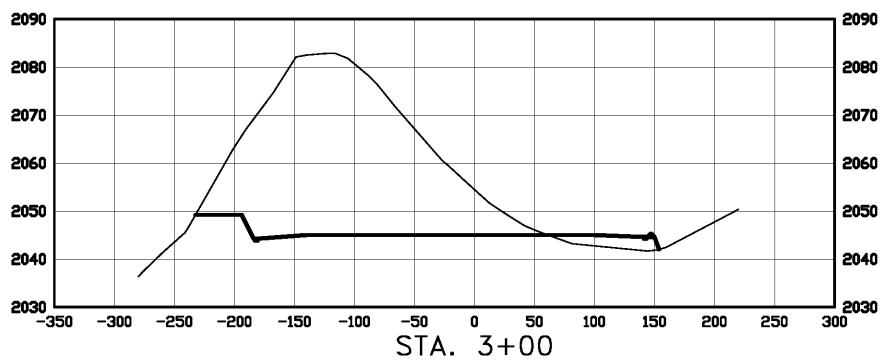
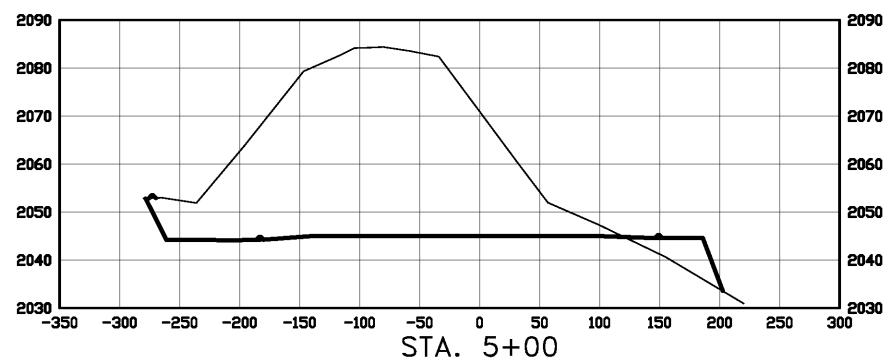
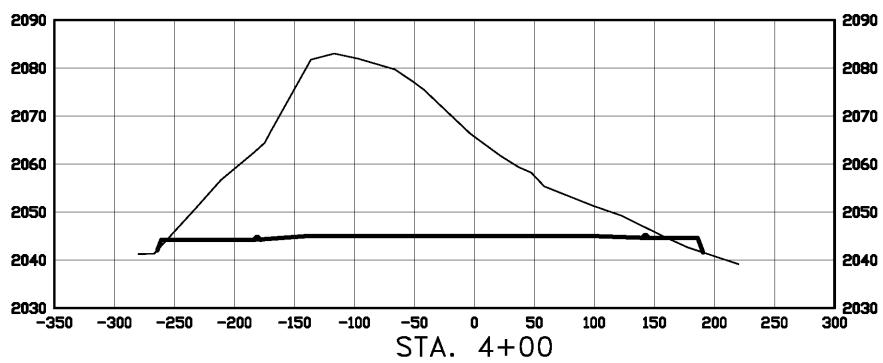
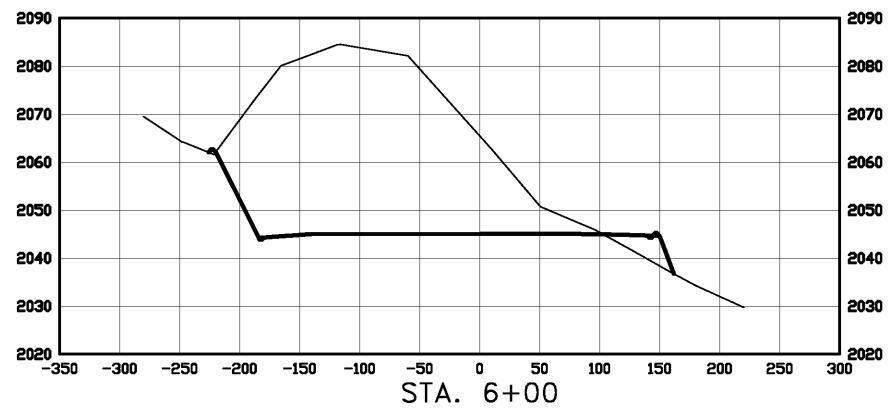
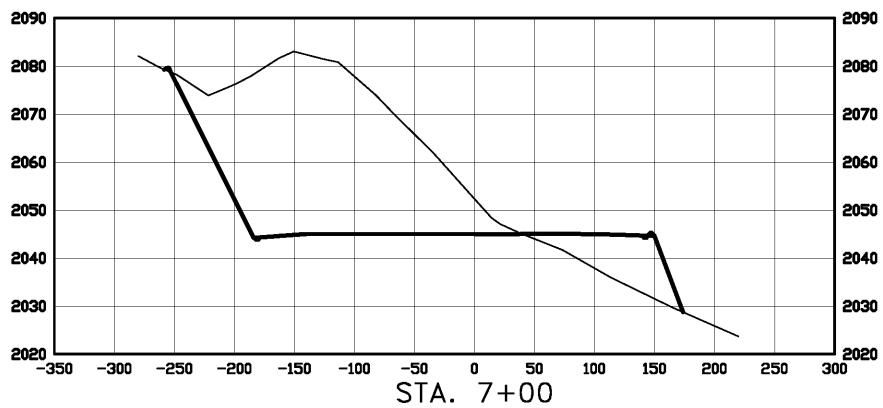
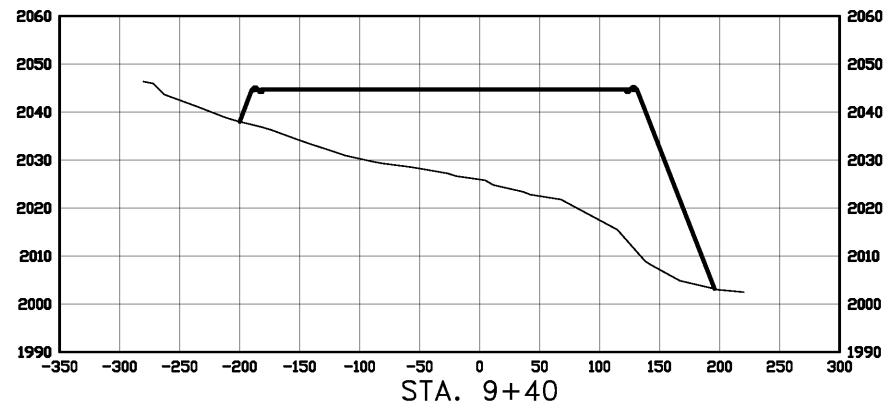
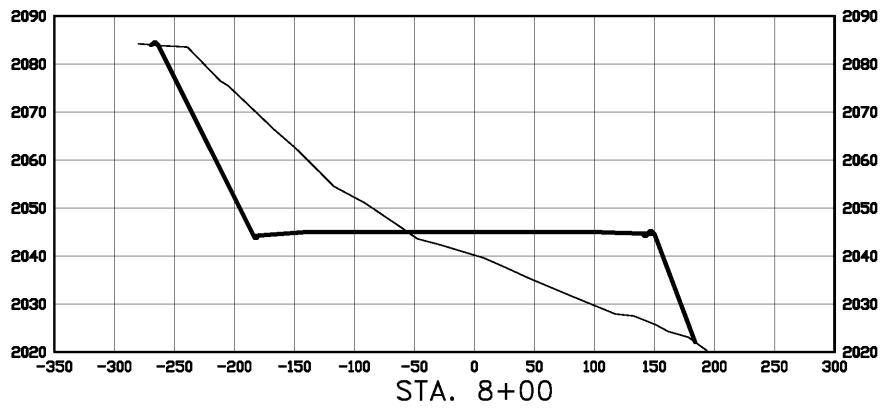
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OASIS PETROLEUM NORTH AMERICA, LLC  
COUNTY ROAD MAP  
SECTION 30, T153N, R100W  
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No.: S13-09-381.08  
Checked By: D.D.K. Date: JAN. 2014

Revision No.	Date	By	Description
REV 1	3/17/14	JJS	MOVED WELLS ON PAD & ACCESS ROAD

**CROSS SECTIONS**  
 OASIS PETROLEUM NORTH AMERICA, LLC  
 1001 FANNIN, SUITE 1500, HOUSTON, TX 77002  
 "WADE FEDERAL 5300 41-30 9B"  
 811 FEET FROM SOUTH LINE AND 280 FEET FROM WEST LINE  
 SECTION 30, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



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SCALE  
 HORIZ 1"=160'  
 VERT 1"=40'

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MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No.: S13-09-381.08  
 Checked By: D.D.K. Date: JAN, 2014

Revision No.	Date	By	Description
REV 1	3/17/14	JJS	MOVED WELLS ON PAD & ACCESS ROAD

O:\2013\513-09\8108 Oasis Petroleum - Wade 5300 41-30 9B Well Location  
 E-Well Pos\CAD\REVISED WADE 9B.dwg - 3/19/2014 7:12 AM josh schmierer



### **STATEMENT**

This statement is being sent in order to comply with NDAC 43-02-03-16 (Application for permit to drill and recomplete) which states (in part that) "confirmation that a legal street address has been requested for the well site, and well facility if separate from the well site, and the proposed road access to the nearest existing public road". On the date noted below a legal street address was requested from the appropriate county office.

McKenzie County  
Aaron Chisolm – McKenzie County Dept.

Wade Federal 5300 31-30 2B  
Wade Federal 5300 31-30 3T2  
Wade Federal 5300 41-30 4T  
Wade Federal 5300 41-30 5T2  
Wade Federal 5300 41-30 6B  
Wade Federal 5300 41-30 7T  
Wade Federal 5300 41-30 8T2  
Wade Federal 5300 41-30 9B

Brandi Terry

**Brandi Terry**  
Regulatory Specialist  
Oasis Petroleum North America, LLC

From: [Heather McCowan](#)  
To: [Webber, Alice D.](#); [Chelsea Covington](#); [Brandi Terry](#)  
Subject: RE: Wade Federal 8 Well Pad  
Date: Thursday, June 05, 2014 9:25:20 AM  
Attachments: [image002.png](#)

---

Hell Alice,

The cuttings will be buried offsite for this well. I believe a sundry was sent in.

*Thanks,*

***Heather McCowan***

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



---

**From:** Webber, Alice D. [mailto:[adwebber@nd.gov](mailto:adwebber@nd.gov)]  
**Sent:** Thursday, June 05, 2014 9:12 AM  
**To:** Chelsea Covington; Brandi Terry; Heather McCowan  
**Subject:** RE: Wade Federal 8 Well Pad

Good morning Ladies,

Just checking in to see if we know where the cuttings are being hauled to for this pad. That is the only thing we are waiting for and I would like to get these permitted for Oasis today.

Thanks,  
Alice

---