Received

FEB 8 2019

ND Oil & Gas Division

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. **28658**

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

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

Well Name and Number **Kline Federal 5300 41-18 12TX**			Spacing Unit Description **Sec. 17/18/19/20 T153N R100W**
Operator **Oasis Petroleum North America**		Telephone Number **(281) 404-9591**	Field **Baker**
Address **1001 Fannin, Suite 1500**			Pool **Bakken**
City **Houston**	State **TX**	Zip Code **77002**	Permit Type ☐ Wildcat ☑ Development ☐ Extension

LOCATION OF WELL

At Surface	Qtr-Qtr	Section	Township	Range	County
434 F S L 237 F WL	**LOT4**	**18**	**153 N**	**100 W**	**McKenzie**

Spud Date	Date TD Reached	Drilling Contractor and Rig Number	KB Elevation (Ft)	Graded Elevation (Ft)
September 13, 2014	**January 26, 2015**	**Nabors 486**	**2082**	**2057**

Type of Electric and Other Logs Run (See Instructions)
MWD/GR from KOP to TD

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

Well Bore	String Type	String Size (Inch)	Top Set (MD Ft)	Depth Set (MD Ft)	Hole Size (Inch)	Weight (Lbs/Ft)	Anchor Set (MD Ft)	Packer Set (MD Ft)	Sacks Cement	Top of Cement
Surface Hole	Surface	13 3/8	0	2158	17 1/2	54.5			950	0
Vertical Hole	Intermediate	9 5/8	0	6118	12 1/4	36			1210	0
Vertical Hole	Intermediate	7	0	11175	8 3/4	32			818	10279
Lateral1	Liner	4 1/2	10259	20579	6	13.5			509	

PERFORATION & OPEN HOLE INTERVALS

Well Bore	Well Bore TD Drillers Depth (MD Ft)	Completion Type	Open Hole/Perforated Interval (MD,Ft) Top	Bottom	Kick-off Point (MD Ft)	Top of Casing Window (MD Ft)	Date Perf'd or Drilled	Date Isolated	Isolation Method	Sacks Cement
Lateral1	20584	Perforations	11175	20579	10300		06/09/2015			

PRODUCTION

Current Producing Open Hole or Perforated Interval(s), This Completion, Top and Bottom, (MD Ft)	Name of Zone (If Different from Pool Name)
Lateral 1- 11175' to 20579'	

Date Well Completed (SEE INSTRUCTIONS)	Producing Method	Pumping-Size & Type of Pump	Well Status (Producing or Shut-In)
September 1, 2015	**flowing**		**producing**

Date of Test	Hours Tested	Choke Size	Production for Test	Oil (Bbls)	Gas (MCF)	Water (Bbls)	Oil Gravity-API (Corr.)	Disposition of Gas
09/01/2015	**24**	**38 /64**		**1127**	**877**	**3644**	**°**	**Sold**

Flowing Tubing Pressure (PSI)	Flowing Casing Pressure (PSI)	Calculated 24-Hour Rate	Oil (Bbls)	Gas (MCF)	Water (Bbls)	Gas-Oil Ratio
	1200		**1127**	**877**	**3644**	**778**

GEOLOGICAL MARKERS

Formation	MD (Ft)	TVD (Ft)
Dakota	5471	5471
Kibbey Lime	8384	8384
First Charles Salt	8556	8556
UB		
Base Last Salt	9206	9206
Ratcliffe		
Mission Canyon	9428	9428
Lodgepole	9975	9975
False Bakken	10781	10704
Scallion		
Upper Bakken	10798	10713
Middle Bakken	10829	10730
Lower Bakken	10918	10771
Pronghorn	10952	10783
Three Forks	11011	10799

PLUG BACK INFORMATION

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

CORES CUT

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

Drill Stem Test

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

Well Specific Stimulations

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
06/09/2015	Three Forks	11175	20579	50	186083	Barrels

Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)	Maximum Treatment Rate (BBLS/Min)
Sand Frac		9450980	9405	38.0

Details
100 Mesh White: 227820
20/40 White: 6562940
40/70 White: 1237840
20/40 Resin Coated: 1422380

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

This report has been amended to correct the casing information to show both the 13 3/8" and the 9 5/8" casing.

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.	Email Address	Date
	dbusch@oasispetroleum.com	08/15/2018
Signature	Printed Name	Title
	Daniel Busch	Regulatory Specialist

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)

NOV 2015 RECEIVED ND OIL & GAS DIVISION

Well File No. **28658**

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

- [ ] Notice of Intent — Approximate Start Date
- [x] Report of Work Done — Date Work Completed: **October 3, 2015**
- [ ] 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 **Well is now on pump**

Well Name and Number					
Kline Federal 5300 41-18 12TX					
Footages	Qtr-Qtr	Section	Township	Range	
434 F S L 237 F W L	LOT4	18	153 N	100 W	
Field	Pool	County			
Baker	Bakken	McKenzie			

24-HOUR PRODUCTION RATE

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

Name of Contractor(s)			
Address	City	State	Zip Code

DETAILS OF WORK

Effective 10/03/2015 the above referenced well is on pump.

End of Tubing: 2-3/8" L-80 tubing @ 9857.40'

Pump: 2-1/2" x 2.0" x 24' insert pump @ 10054.54'

Company		Telephone Number
Oasis Petroleum North America LLC		**281 404-9436**
Address		
1001 Fannin, Suite 1500		
City	State	Zip Code
Houston	**TX**	**77002**
Signature	Printed Name	
	Jennifer Swenson	
Title	Date	
Regulatory Specialist	**November 19, 2015**	
Email Address		
jswenson@oasispetroleum.com		

FOR STATE USE ONLY

- [x] Received
- [ ] Approved

Date 11-30-2015

By Original Signed By: TAYLOR ROTH

Title Engineering Technician

TH

AUTHORIZATION TO PURCHASE AND TRANSPORT OIL FROM LEASE – Form 8

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

Well File No.
28658
NDIC CTB No.
~~115699~~

228654

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

Well Name and Number	Qtr-Qtr	Section	Township	Range	County
KLINE FEDERAL 5300 41-18 12TX	LOT4	18	153	100	Mckenzie

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

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

Name of First Purchaser	Telephone Number	% Purchased	Date Effective
Oasis Petroleum Marketing LLC	(281) 404-9627	100%	September 1, 2015

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

Field Address	City	State	Zip Code

Transporter	Telephone Number	% Transported	Date Effective
Hiland Crude, LLC	(580) 616-2058	75%	September 1, 2015

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

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

Other First Purchasers Purchasing From This Lease	% Purchased	Date Effective
Other First Purchasers Purchasing From This Lease	**% Purchased**	**Date Effective**
Other Transporters Transporting From This Lease	**% Transported**	**Date Effective**
Power Crude Transport	25%	September 1, 2015
Other Transporters Transporting From This Lease	**% Transported**	**Date Effective**
		September 1, 2015

Comments

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

Above Signature Witnessed By:

Signature	Printed Name	Title
Laura Whitten	Laura Whitten	Marketing Analyst II

OCT 2015
RECEIVED
ND OIL & GAS
DIVISION

FOR STATE USE ONLY

Date Approved	OCT 27 2015
By	Evie Roberson
Title	Oil & Gas Production Analyst

AUTHORIZATION TO PURCHASE AND TRANSPORT OIL FROM LEASE – Form 8

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

RECEIVED ND OIL & GAS DIVISION SEP 2015

Well File No.
28658
NDIC CTB No.
To be assigned

TH

228654

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

Well Name and Number	Qtr-Qtr	Section	Township	Range	County
KLINE FEDERAL 5300 41-18 12TX	LOT4	18	153	100	Mckenzie

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

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

Name of First Purchaser	Telephone Number	% Purchased	Date Effective
Oasis Petroleum Marketing LLC	(281) 404-9627	100%	August 22, 2015

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

Field Address	City	State	Zip Code

Transporter	Telephone Number	% Transported	Date Effective
Hiland Crude, LLC	(580) 616-2058	75%	August 22, 2015

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

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Other First Purchasers Purchasing From This Lease	**% Purchased**	**Date Effective**
Other Transporters Transporting From This Lease	**% Transported**	**Date Effective**
Power Crude Transport	25%	August 22, 2015
Other Transporters Transporting From This Lease	**% Transported**	**Date Effective**
		August 22, 2015

Comments

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.		Date August 22, 2015
Signature Dina B	Printed Name Dina Barron	Title Mktg. Contracts Administrator

Above Signature Witnessed By:

Signature	Printed Name	Title
Jm W. H	Jeremy Harris	Marketing Scheduler

FOR STATE USE ONLY

Date Approved	SEP 18 2015
By	Evie Roberson
Title	Oil & Gas Production Analyst

TH

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)

AUG 2015 RECEIVED ND OIL & GAS DIVISION

Well File No. **28658**

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

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

Well Name and Number **Kline Federal 5300 41-18 12TX**			Spacing Unit Description **Sec. 17/18/19/20 T153N R100W**
Operator **Oasis Petroleum North America**		Telephone Number **(281) 404-9591**	Field **Baker**
Address **1001 Fannin, Suite 1500**			Pool **Bakken**
City **Houston**	State **TX**	Zip Code **77002**	Permit Type ☐ Wildcat ☑ Development ☐ Extension

LOCATION OF WELL

At Surface	Qtr-Qtr	Section	Township	Range	County
434 F **S** L **237** F **W** L	**LOT4**	**18**	**153 N**	**100 W**	**McKenzie**

Spud Date	Date TD Reached	Drilling Contractor and Rig Number	KB Elevation (Ft)	Graded Elevation (Ft)
September 13, 2014	**January 26, 2015**	**Nabors 486**	**2082**	**2057**

Type of Electric and Other Logs Run (See Instructions)
MWD/GR from KOP to TD

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

Well Bore	String Type	String Size (Inch)	Top Set (MD Ft)	Depth Set (MD Ft)	Hole Size (Inch)	Weight (Lbs/Ft)	Anchor Set (MD Ft)	Packer Set (MD Ft)	Sacks Cement	Top of Cement
Surface Hole	**Surface**	**9 5/8**	**0**	**2160**	**13 1/2**	**36**			**950**	**0**
Vertical Hole	**Intermediate**	**7**	**0**	**11175**	**8 3/4**	**32**			**1210**	
Lateral1	**Liner**	**4 1/2**	**10259**	**20579**	**6**	**13.5**			**509**	**10279**

PERFORATION & OPEN HOLE INTERVALS

Well Bore	Well Bore TD Drillers Depth (MD Ft)	Completion Type	Open Hole/Perforated Interval (MD,Ft) Top	Bottom	Kick-off Point (MD Ft)	Top of Casing Window (MD Ft)	Date Perf'd or Drilled	Date Isolated	Isolation Method	Sacks Cement
Lateral1	**20584**	**Perforations**			**10300**					

PRODUCTION

Current Producing Open Hole or Perforated Interval(s), This Completion, Top and Bottom, (MD Ft)							Name of Zone (If Different from Pool Name)
Lateral 1-							
Date Well Completed (SEE INSTRUCTIONS)		Producing Method	Pumping-Size & Type of Pump				Well Status (Producing or Shut-In)
Date of Test	Hours Tested	Choke Size **/64**	Production for Test	Oil (Bbls)	Gas (MCF)	Water (Bbls)	Oil Gravity-API (Corr.) °	Disposition of Gas
Flowing Tubing Pressure (PSI)	Flowing Casing Pressure (PSI)		Calculated 24-Hour Rate	Oil (Bbls)	Gas (MCF)	Water (Bbls)	Gas-Oil Ratio

GEOLOGICAL MARKERS

Formation	MD (Ft)	TVD (Ft)
Dakota	**5471**	**5471**
Kibbey Lime	**8384**	**8384**
First Charles Salt	**8556**	**8556**
UB		
Base Last Salt	**9206**	**9206**
Ratcliffe		
Mission Canyon	**9428**	**9428**
Lodgepole	**9975**	**9975**
False Bakken	**10781**	**10704**
Scallion		
Upper Bakken	**10798**	**10713**
Middle Bakken	**10829**	**10730**
Lower Bakken	**10918**	**10771**
Pronghorn	**10952**	**10783**
Three Forks	**11011**	**10799**

PLUG BACK INFORMATION

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

CORES CUT

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

Drill Stem Test

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

Well Specific Stimulations

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

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

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

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

This is a preliminary completion report. A supplemental report will be filed upon first production of the well.

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.	Email Address	Date
	jswenson@oasispetroleum.com	**08/17/2015**
Signature	Printed Name	Title
	Jennifer Swenson	**Regulatory Specialist**

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

Well or Facility No **28658**

Tight Hole **Yes**

OPERATOR

Operator	Representative	Rep Phone
OASIS PETROLEUM NORTH AMERICA LL	**Todd Hanson**	**(701) 577-1632**

WELL INFORMATION

Well Name
KLINE FEDERAL 5300 41-18 12TX

Inspector
Richard Dunn

Well Location	QQ	Sec	Twp		Rng	
	LOT4	**18**	**153**	**N**	**100**	**W**

County
MCKENZIE

Field
BAKER

Footages
434 Feet From the **S** Line
237 Feet From the **W** Line

Pool
BAKKEN

Date of First Production Through Permanent Wellhead **This Is Not The First Sales**

PURCHASER / TRANSPORTER

Purchaser	Transporter
Kinder Morgan	**Kinder Morgan**

TANK BATTERY

Central Tank Battery Number : 228654-01

SALES INFORMATION **This Is Not The First Sales**

ESTIMATED BARRELS TO BE SOLD	ACTUAL BARRELS SOLD	DATE
15000 BBLS	BBLS	
BBLS	BBLS	
BBLS	BBLS	
BBLS	BBLS	
BBLS	BBLS	
BBLS	BBLS	
BBLS	BBLS	
BBLS	BBLS	
BBLS	BBLS	

DETAILS

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

Start Date	**8/25/2015**
Date Approved	**8/25/2015**
Approved By	**Richard Dunn**

#28658

Schlumberger

Cementing Job Report

CemCAT v1.6

Well	Kline Federal 5300 41-18 12 TX	**Client**	Oasis
Field	Baker	**SIR No.**	2008051
Engineer	Charles Pitcher / Blaine Buxton	**Job Type**	Intermediate
Country	United States	**Job Date**	10-26-2014

10/26/2014 06:31:24

Schlumberger

Cementing Qa/Qc Density Report

Well	Kline Federal 5300 41-18 12 TX	**Client**	Oasis
Field	Baker	**SIR No.**	2008051
Engineer	Charles Pitcher / Blaine Buxton	**Job Type**	Intermediate
Country	United States	**Job Date**	10-26-2014

Schlumberger

Cementing Service Report

Customer	Job Number
Oasis	2008051

Well	Location (legal)	Schlumberger Location	Job Start
Kline Federal 5300 41-18 12 TX Kline Federal 5300 41-18 12 TX	Nabors 684	Williston	Oct/26/2014

Field	Formation Name/Type	Deviation	Bit Size	Well MD	Well TVD
Baker	Shale	deg	8.8 in	11182.0 ft	10832.0 ft

County	State/Provinc	BHP	BHST	BHCT	Pore Press. Gradient
McKenzie	North Dakota	psi	253 degF	205 degF	lb/gal
Well Master: 0631576728	API/UWI: 3305306030				

Rig Name	Drilled For	Service Via
Nabors 684	Oil & Gas	Land

Offshore Zone	Well Class	Well Type
	New	Development

Drilling Fluid Type	Max. Density	Plastic Viscosity
Oil Mud	lb/gal	cP

Service Line	Job Type
Cementing	Intermediate

Max. Allowed Tub. Press	Max. Allowed Ann. Press	WH Connection
psi	psi	Single Cement head

Casing/Liner

Depth, ft	Size, in	Weight, lb/ft	Grade	Thread
11182.0	7.0	32.0	P110	8RD
0.0	0.0	0.0		

Tubing/Drill Pipe

T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread

Perforations/Open Hole

Top, ft	Bottom, ft	shot/ft	No. of Shots	Total Interval
ft	ft			ft
ft	ft			Diameter
ft	ft			in

Service Instructions

Pressure Test: 1000/5000
Mudpush @ 10.420 Bbl
Scavenger @ 10.670 Bbl
Lead @ 11.5:71 Bbl
Tail @ 15.8:173 Bbl
SDDP
Salt Water Disp:400.5 Bbl

Treat Down	Displacement	Packer Type	Packer Depth
Casing	400.5 bbl		ft

Tubing Vol.	Casing Vol.	Annular Vol.	Openhole Vol.
bbl	403.5 bbl	181.0 bbl	136.0 bbl

Casing/Tubing Secured	[X]	1 Hole Vol. Circulated prior to Cement	[X]
Lift Pressure	psi		
Pipe Rotated	[ ]	Pipe Reciprocated	[ ]
No. Centralizers		Top Plugs	1
Bottom Plugs			
Cement Head Type	Single		

Job Scheduled For	Arrived on Location	Leave Location
Oct/26/2014 07:00	Oct/25/2014 07:00	Oct/26/2014 07:00

Casing Tools		Squeeze Job	
Shoe Type	Guide	Squeeze Type	
Shoe Depth	11182.0 ft	Tool Type	
Stage Tool Type		Tool Depth	ft
Stage Tool Depth	ft	Tail Pipe Size	in
Collar Type	Float	Tail Pipe Depth	ft
Collar Depth	11095.0 ft	Sqz. Total Vol.	bbl

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
10/26/2014	01:30:38	4	0.2	8.41	0.0	Stopped Acquisition
10/26/2014	01:30:41	4	0.2	8.41	0.0	Test Water 85 Deg F
10/26/2014	01:30:42	4	0.2	8.41	0.0	Rig Up As Per Std 5
10/26/2014	01:30:43	4	0.2	8.41	0.0	Verify Rate Pressur And Volume
10/26/2014	01:30:44	4	0.2	8.41	0.0	Flush Lines
10/26/2014	01:30:50	4	0.2	8.41	0.1	Pressure Test Lines
10/26/2014	01:31:38	62	0.5	8.40	0.6	
10/26/2014	01:32:38	304	2.1	8.40	2.3	
10/26/2014	01:33:38	317	2.2	8.40	4.5	
10/26/2014	01:34:38	2318	0.0	8.40	4.6	
10/26/2014	01:35:38	5335	0.0	8.40	4.6	
10/26/2014	01:36:38	5258	0.0	8.40	4.6	
10/26/2014	01:37:38	31	0.0	8.40	4.6	
10/26/2014	01:38:38	45	0.0	8.40	4.6	
10/26/2014	01:39:34	55	0.0	8.40	4.6	Reset Total, Vol = 3.65 bbl
10/26/2014	01:39:38	56	0.0	8.40	4.6	
10/26/2014	01:39:49	58	0.0	8.40	4.6	Start Job
10/26/2014	01:40:38	0	0.0	8.40	4.6	
10/26/2014	01:41:38	1	0.0	8.39	4.7	
10/26/2014	01:42:38	136	1.9	10.06	5.3	
10/26/2014	01:43:38	332	2.4	10.09	7.4	

Well	Field	Job Start	Customer	Job Number
ıe Federal 5300 41-18 12 TX Kline Federal 5300 41-18 12 TX	Baker	Oct/26/2014	Oasis	2008051

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
10/26/2014	01:45:38	507	4.5	10.08	13.7	
10/26/2014	01:46:38	521	4.3	10.18	18.1	
10/26/2014	01:47:14	526	4.8	10.30	20.8	End Wash
10/26/2014	01:47:16	550	4.4	10.31	21.0	Reset Total, Vol = 16.32 bbl
10/26/2014	01:47:18	529	4.7	10.30	21.1	Start Cement Slurry
10/26/2014	01:47:25	561	4.6	10.29	21.7	135 Sks @ 10.6 Ppg 3.01 = Yield
10/26/2014	01:47:38	578	4.7	10.23	22.7	
10/26/2014	01:48:38	773	6.5	10.47	28.6	
10/26/2014	01:49:38	950	4.4	10.50	34.4	
10/26/2014	01:50:38	1051	4.5	10.54	38.8	
10/26/2014	01:51:38	2720	3.1	10.56	42.6	
10/26/2014	01:52:38	3316	3.1	10.60	45.8	
10/26/2014	01:53:38	3169	3.2	10.60	48.9	
10/26/2014	01:54:38	3896	3.2	10.60	52.1	
10/26/2014	01:55:38	4165	2.0	10.59	54.5	
10/26/2014	01:56:38	4551	2.0	10.59	56.5	
10/26/2014	01:57:38	4390	0.9	10.52	57.5	
10/26/2014	01:58:38	4597	1.1	10.56	58.5	
10/26/2014	01:59:38	4381	0.9	10.55	59.5	
10/26/2014	02:00:38	4123	1.0	10.56	60.5	
10/26/2014	02:01:15	3313	1.0	10.55	61.1	Flush Scav Out Of Lines
10/26/2014	02:01:38	3688	1.0	10.10	61.5	
10/26/2014	02:02:38	3478	1.0	8.51	62.4	
10/26/2014	02:03:38	2699	1.0	8.38	63.2	
10/26/2014	02:04:38	2125	0.0	8.37	64.0	
10/26/2014	02:05:38	-11	0.0	8.37	64.0	
10/26/2014	02:06:38	-8	0.0	8.37	64.0	
10/26/2014	02:07:38	-8	0.0	8.37	64.0	
10/26/2014	02:08:38	97	3.1	10.45	65.3	
10/26/2014	02:09:38	310	2.2	10.51	67.5	
10/26/2014	02:10:38	27	0.0	10.46	68.5	
10/26/2014	02:11:38	5	0.0	10.46	68.5	
10/26/2014	02:12:38	2	0.0	10.46	68.5	
10/26/2014	02:13:38	91	0.0	11.55	68.5	
10/26/2014	02:14:38	74	25.0	0.17	70.0	
10/26/2014	02:15:38	98	3.6	9.24	94.1	
10/26/2014	02:16:38	596	4.0	10.58	98.0	
10/26/2014	02:17:38	1656	4.0	10.60	102.0	
10/26/2014	02:18:38	2027	3.7	10.59	106.0	
10/26/2014	02:19:38	3352	2.7	10.66	109.0	
10/26/2014	02:20:38	3550	0.0	10.63	111.9	
10/26/2014	02:21:38	3401	1.9	10.62	113.6	
10/26/2014	02:22:38	3353	1.6	10.61	115.4	
10/26/2014	02:23:38	3446	1.8	10.62	117.1	
10/26/2014	02:23:51	3317	0.0	10.70	117.3	Shut Down Bleed Off Pressure
10/26/2014	02:24:38	1746	0.0	10.70	117.3	
10/26/2014	02:25:38	57	0.0	10.70	117.3	
10/26/2014	02:26:38	-7	0.0	10.70	117.3	
10/26/2014	02:27:38	-5	0.0	10.69	117.3	
10/26/2014	02:28:38	-4	0.0	10.70	117.3	
10/26/2014	02:29:38	-3	0.0	10.70	117.3	
10/26/2014	02:30:38	0	0.0	10.70	117.3	
10/26/2014	02:31:38	478	2.3	10.59	118.4	
10/26/2014	02:32:38	442	2.3	10.60	120.7	

Well	Field	Job Start	Customer	Job Number
ıe Federal 5300 41-18 12 TX Kline Federal 5300 41-18 12 TX	Baker	Oct/26/2014	Oasis	2008051

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Messa...
10/26/2014	02:34:38	395	0.0	10.61	127.6	
10/26/2014	02:35:20	198	0.0	11.70	127.6	End Scavenger Slurry
10/26/2014	02:35:22	197	0.0	11.65	127.6	Reset Total, Vol = 74.63 bbl
10/26/2014	02:35:38	190	0.0	11.64	127.6	
10/26/2014	02:36:38	180	0.0	11.70	127.6	
10/26/2014	02:37:38	177	0.0	11.74	127.6	
10/26/2014	02:38:38	174	0.0	11.72	127.6	
10/26/2014	02:39:38	164	0.0	11.73	127.6	
10/26/2014	02:40:38	416	2.0	11.60	128.2	
10/26/2014	02:41:36	390	2.3	11.62	130.4	Start Mixing Lead Slurry
10/26/2014	02:41:37	453	2.3	11.62	130.5	187 Sks @ 11.5 Ppg 2.13 = Yield
10/26/2014	02:41:38	447	2.3	11.61	130.5	
10/26/2014	02:42:38	399	2.2	11.52	132.7	
10/26/2014	02:43:38	524	3.0	11.49	135.7	
10/26/2014	02:44:38	881	3.2	11.49	138.7	
10/26/2014	02:45:38	812	3.1	11.50	141.7	
10/26/2014	02:46:38	1464	3.2	11.53	144.7	
10/26/2014	02:47:38	1824	3.0	11.55	147.7	
10/26/2014	02:48:38	1715	3.1	11.53	150.7	
10/26/2014	02:49:38	1960	2.8	11.54	153.7	
10/26/2014	02:50:38	2708	3.1	11.58	156.7	
10/26/2014	02:51:38	2090	2.9	11.57	159.6	
10/26/2014	02:52:38	1061	3.1	11.54	162.7	
10/26/2014	02:53:38	772	3.1	11.52	165.7	
10/26/2014	02:54:38	626	3.2	11.50	168.7	
10/26/2014	02:55:38	709	3.1	11.49	171.7	
10/26/2014	02:56:38	684	3.1	11.52	174.8	
10/26/2014	02:57:38	721	3.0	11.55	177.8	
10/26/2014	02:58:38	736	3.0	11.56	180.8	
10/26/2014	02:59:38	679	2.8	11.57	183.9	
10/26/2014	03:00:38	647	2.8	11.57	186.9	
10/26/2014	03:01:38	635	2.9	11.57	189.9	
10/26/2014	03:02:38	732	3.0	11.56	192.9	
10/26/2014	03:02:45	700	3.2	11.62	193.3	End Lead Slurry
10/26/2014	03:03:38	740	3.1	13.81	196.0	
10/26/2014	03:03:46	892	2.9	14.02	196.4	Reset Total, Vol = 68.78 bbl
10/26/2014	03:04:38	796	3.0	14.65	199.0	
10/26/2014	03:05:38	765	3.1	15.18	202.0	
10/26/2014	03:06:26	717	3.0	15.42	204.4	Start Mixing Tail Slurry
10/26/2014	03:06:38	688	3.1	15.47	205.0	
10/26/2014	03:07:38	1181	3.0	15.72	207.6	
10/26/2014	03:08:38	230	1.8	15.70	209.7	
10/26/2014	03:09:38	750	4.4	15.72	213.1	
10/26/2014	03:10:38	885	4.3	15.76	216.9	
10/26/2014	03:11:38	849	4.2	15.81	221.1	
10/26/2014	03:12:38	776	3.9	15.84	224.9	
10/26/2014	03:13:38	733	3.8	15.83	228.9	
10/26/2014	03:13:40	681	4.0	15.82	229.0	631 Sks @ 15.8 Ppg 1.54 = Yield
10/26/2014	03:14:38	664	4.0	15.83	232.9	
10/26/2014	03:15:38	799	4.0	15.83	236.8	
10/26/2014	03:16:38	814	4.1	15.80	240.8	
10/26/2014	03:17:38	670	4.0	15.82	244.7	
10/26/2014	03:18:38	705	3.9	15.83	248.7	
10/26/2014	03:19:38	697	4.0	15.83	252.7	

Well	Field	Job Start	Customer	Job Number
e Federal 5300 41-18 12 TX Kline Federal 5300 41-18 12 TX	Baker	Oct/26/2014	Oasis	2008051

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
10/26/2014	03:21:38	615	4.0	15.82	260.6	
10/26/2014	03:22:38	688	4.0	15.82	264.6	
10/26/2014	03:23:38	649	3.9	15.83	268.6	
10/26/2014	03:24:38	661	3.9	15.86	272.5	
10/26/2014	03:25:38	529	4.0	15.87	276.5	
10/26/2014	03:26:38	412	4.0	15.86	280.5	
10/26/2014	03:27:38	398	4.1	15.85	284.5	
10/26/2014	03:28:38	449	4.1	15.84	288.5	
10/26/2014	03:29:38	359	3.9	15.84	292.4	
10/26/2014	03:30:38	340	4.0	15.85	296.4	
10/26/2014	03:31:38	304	4.0	15.87	300.4	
10/26/2014	03:32:38	277	3.9	15.88	304.4	
10/26/2014	03:33:38	369	4.4	15.80	308.7	
10/26/2014	03:34:38	341	4.5	15.80	313.1	
10/26/2014	03:35:38	493	5.0	15.88	317.5	
10/26/2014	03:36:38	479	5.3	15.88	322.8	
10/26/2014	03:37:38	504	5.4	15.91	328.1	
10/26/2014	03:38:38	752	5.1	15.92	333.3	
10/26/2014	03:39:38	935	6.2	15.95	338.0	
10/26/2014	03:40:38	1098	6.2	15.89	344.3	
10/26/2014	03:41:38	1079	6.2	15.93	350.5	
10/26/2014	03:42:38	917	6.2	15.92	356.8	
10/26/2014	03:43:38	888	6.2	15.83	363.1	
10/26/2014	03:44:38	378	4.2	15.85	369.2	
10/26/2014	03:45:38	55	0.8	15.85	371.3	
10/26/2014	03:46:04	55	0.8	15.86	371.7	End Tail Slurry
10/26/2014	03:46:09	55	0.8	15.86	371.8	End Cement Slurry
10/26/2014	03:46:38	1	0.0	15.86	372.0	
10/26/2014	03:47:32	11	0.0	15.89	372.0	Reset Total, Vol = 175.60 bbl
10/26/2014	03:47:36	20	1.0	15.88	372.0	Drop Top Plug
10/26/2014	03:47:38	35	0.7	15.88	372.0	
10/26/2014	03:47:39	48	0.6	15.88	372.1	Start Displacement
10/26/2014	03:48:38	49	1.0	9.99	373.0	
10/26/2014	03:49:38	22	1.0	9.00	374.1	
10/26/2014	03:50:38	18	1.6	8.74	375.1	
10/26/2014	03:51:38	121	4.5	8.68	378.6	
10/26/2014	03:52:38	129	4.4	8.67	383.1	
10/26/2014	03:53:38	64	3.3	8.62	387.2	
10/26/2014	03:54:38	42	2.4	8.55	390.2	
10/26/2014	03:55:38	47	2.2	9.03	392.5	
10/26/2014	03:56:38	116	4.5	9.15	396.5	
10/26/2014	03:57:38	108	4.6	9.17	401.0	
10/26/2014	03:58:38	117	4.5	9.52	405.5	
10/26/2014	03:59:38	121	4.5	9.56	410.1	
10/26/2014	04:00:38	115	4.5	9.59	414.6	
10/26/2014	04:01:38	127	4.6	9.70	419.1	
10/26/2014	04:02:38	53	2.2	9.66	421.7	
10/26/2014	04:03:38	33	2.2	9.71	424.1	
10/26/2014	04:04:38	48	2.4	9.67	426.4	
10/26/2014	04:05:38	48	2.4	9.67	428.7	
10/26/2014	04:06:38	47	2.4	9.67	431.0	
10/26/2014	04:07:38	48	2.4	9.71	433.3	
10/26/2014	04:08:38	48	2.2	9.70	435.6	
10/26/2014	04:09:38	238	6.4	9.69	440.5	

Well	Field	Job Start	Customer	Job Number
ıe Federal 5300 41-18 12 TX Kline Federal 5300 41-18 12 TX	Baker	Oct/26/2014	Oasis	2008051

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
10/26/2014	04:11:38	47	2.4	9.40	450.6	
10/26/2014	04:12:38	44	2.2	9.17	452.9	
10/26/2014	04:13:38	49	2.4	9.69	455.2	
10/26/2014	04:14:38	49	2.4	9.70	457.6	
10/26/2014	04:15:38	49	2.2	9.71	459.9	
10/26/2014	04:16:38	49	1.1	9.69	462.0	
10/26/2014	04:17:38	43	1.1	9.65	463.1	
10/26/2014	04:18:38	49	0.6	9.68	464.0	
10/26/2014	04:19:38	50	0.6	9.68	464.6	
10/26/2014	04:20:38	49	0.6	9.71	465.2	
10/26/2014	04:21:38	50	0.6	9.73	465.8	
10/26/2014	04:22:38	31	1.1	9.73	466.4	
10/26/2014	04:23:38	266	3.3	9.72	469.6	
10/26/2014	04:24:38	49	2.6	9.71	471.8	
10/26/2014	04:25:38	49	2.7	9.71	474.4	
10/26/2014	04:26:38	50	2.8	9.72	477.1	
10/26/2014	04:27:38	50	2.7	9.73	479.8	
10/26/2014	04:28:38	133	3.4	9.73	482.6	
10/26/2014	04:29:38	301	4.5	9.72	487.0	
10/26/2014	04:30:38	259	4.3	9.72	491.5	
10/26/2014	04:31:38	538	5.7	9.73	496.3	
10/26/2014	04:32:38	687	6.0	9.72	502.2	
10/26/2014	04:33:38	665	5.7	9.73	508.2	
10/26/2014	04:34:38	496	4.4	9.72	513.6	
10/26/2014	04:35:38	450	4.6	9.72	518.1	
10/26/2014	04:36:38	357	4.6	9.72	522.6	
10/26/2014	04:37:38	402	4.6	9.72	527.1	
10/26/2014	04:38:38	431	4.7	9.72	531.7	
10/26/2014	04:39:37	434	4.6	9.72	536.1	Problems Getting Salt Water
10/26/2014	04:39:38	429	4.5	9.72	536.2	
10/26/2014	04:40:38	444	4.5	9.72	540.7	
10/26/2014	04:41:38	439	4.6	9.72	545.2	
10/26/2014	04:42:38	436	4.4	9.72	549.7	
10/26/2014	04:43:38	497	4.5	9.72	554.3	
10/26/2014	04:44:38	592	4.4	9.72	558.8	
10/26/2014	04:45:38	636	4.6	9.72	563.3	
10/26/2014	04:46:38	668	4.7	9.72	567.8	
10/26/2014	04:47:38	729	4.7	9.72	572.3	
10/26/2014	04:48:38	659	4.5	9.72	576.8	
10/26/2014	04:49:38	846	4.4	9.72	581.3	
10/26/2014	04:50:38	940	4.7	9.72	585.8	
10/26/2014	04:51:38	910	4.4	9.72	590.3	
10/26/2014	04:52:38	898	4.4	9.72	594.9	
10/26/2014	04:53:38	1024	4.5	9.72	599.3	
10/26/2014	04:54:38	1348	4.4	9.72	603.8	
10/26/2014	04:55:38	3202	3.1	9.72	607.8	
10/26/2014	04:56:38	4443	2.0	9.72	610.1	
10/26/2014	04:57:38	4237	2.0	9.72	612.1	
10/26/2014	04:58:38	4532	0.0	9.72	614.0	
10/26/2014	04:59:38	4384	0.8	9.71	614.6	
10/26/2014	05:00:38	4692	0.0	9.71	615.3	
10/26/2014	05:01:38	4786	0.9	9.71	615.8	
10/26/2014	05:02:38	4752	0.0	9.72	616.2	
10/26/2014	05:02:50	4427	0.0	9.72	616.2	Bleed Off Pressure

Well	Field	Job Start	Customer	Job Number
ıe Federal 5300 41-18 12 TX Kline Federal 5300 41-18 12 TX	Baker	Oct/26/2014	Oasis	2008051

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
10/26/2014	05:04:38	91	0.0	9.71	616.2	
10/26/2014	05:05:38	119	0.0	9.71	616.2	
10/26/2014	05:06:38	71	0.0	9.71	616.2	
10/26/2014	05:07:38	15	0.0	9.71	616.2	
10/26/2014	05:08:38	316	0.5	9.71	616.3	
10/26/2014	05:09:38	1286	1.0	9.71	617.1	
10/26/2014	05:10:38	2436	1.0	9.71	618.1	
10/26/2014	05:11:38	3544	1.0	9.71	619.1	
10/26/2014	05:12:38	4314	0.7	9.71	620.1	
10/26/2014	05:13:38	4651	0.6	9.71	620.7	
10/26/2014	05:14:38	4975	0.6	9.72	621.3	
10/26/2014	05:15:38	4853	0.0	9.72	621.3	
10/26/2014	05:16:08	4772	0.0	9.72	621.3	Bleed Off Pressure
10/26/2014	05:16:38	4694	0.0	9.72	621.3	
10/26/2014	05:17:38	1339	0.0	9.72	621.3	
10/26/2014	05:18:38	0	0.0	9.71	621.3	
10/26/2014	05:19:38	13	0.0	9.71	621.3	
10/26/2014	05:20:38	95	0.0	9.72	621.3	
10/26/2014	05:21:38	225	0.0	9.71	621.3	
10/26/2014	05:22:38	146	0.0	9.71	621.3	
10/26/2014	05:23:38	264	0.4	9.71	621.4	
10/26/2014	05:24:38	1033	1.0	9.71	622.1	
10/26/2014	05:25:38	2185	1.0	9.71	623.1	
10/26/2014	05:26:38	3273	1.0	9.71	624.1	
10/26/2014	05:27:38	4098	1.0	9.71	625.2	
10/26/2014	05:28:38	4147	0.0	9.71	625.3	
10/26/2014	05:29:38	2749	0.0	9.71	625.3	
10/26/2014	05:30:38	-5	0.0	9.71	625.3	
10/26/2014	05:31:38	-4	0.0	9.71	625.3	
10/26/2014	05:32:38	-1	0.0	9.71	625.3	
10/26/2014	05:33:38	-1	0.0	9.71	625.3	
10/26/2014	05:34:38	2	0.0	9.71	625.3	
10/26/2014	05:35:38	0	0.0	9.71	625.3	
10/26/2014	05:36:38	283	1.0	9.71	625.6	
10/26/2014	05:37:38	1388	1.0	9.71	626.7	
10/26/2014	05:38:38	2442	1.0	9.71	627.7	
10/26/2014	05:39:38	3486	1.0	9.70	628.7	
10/26/2014	05:39:56	3783	1.0	9.70	629.0	4155 Feet Of Cement Left In Pipe
10/26/2014	05:40:00	3808	1.0	9.70	629.1	TOT = 10257 Feet
10/26/2014	05:40:38	4453	1.0	9.70	629.7	
10/26/2014	05:41:38	4960	0.0	9.71	630.5	
10/26/2014	05:42:38	4877	0.0	9.70	630.5	
10/26/2014	05:43:38	4807	0.0	9.71	630.5	
10/26/2014	05:44:38	4746	0.0	9.71	630.5	
10/26/2014	05:45:38	4692	0.0	9.71	630.5	
10/26/2014	05:46:38	4643	0.0	9.71	630.5	
10/26/2014	05:47:38	4601	0.0	9.71	630.5	
10/26/2014	05:48:38	4561	0.0	9.70	630.5	
10/26/2014	05:49:38	4524	0.0	9.71	630.5	
10/26/2014	05:50:38	4491	0.0	9.71	630.5	
10/26/2014	05:51:38	4460	0.0	9.71	630.5	
10/26/2014	05:52:38	4472	0.0	9.71	630.5	
10/26/2014	05:53:38	4442	0.0	9.71	630.5	
10/26/2014	05:54:38	4415	0.0	9.71	630.5	

Well	Field	Job Start	Customer	Job Number
ıe Federal 5300 41-18 12 TX Kline Federal 5300 41-18 12 TX	Baker	Oct/26/2014	Oasis	2008051

Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL	Message
10/26/2014	05:56:02	2698	0.0	9.71	630.5	Floats Held 4 Bbl Back
10/26/2014	05:56:22	292	0.0	9.71	630.5	Reset Total, Vol = 255.51 bbl
10/26/2014	05:56:30	-14	0.0	9.71	630.5	End Job

Post Job Summary

Average Pump Rates, bbl/min				Volume of Fluid Injected, bbl			
Slurry	N2	Mud	Maximum Rate	Total Slurry	Mud	Spacer	N2
3.2			6.0	244.0	0.0	19.4	

Treating Pressure Summary, psi					Breakdown Fluid		
Maximum	Final	Average	Bump Plug to	Breakdown	Type	Volume	Density
5338	0	1318				bbl	lb/gal

Avg. N2 Percent	Designed Slurry Volume	Displacement	Mix Water Temp	Cement Circulated to Surface?	Volume bbl
%	244.0 bbl	255.5 bbl	85 degF	Washed Thru Perfs	To ft

Customer or Authorized Representative	Schlumberger Supervisor	Circulation Lost	Job Completed
Mark Lawlar	Charles Pitcher / Blaine Buxton	-	-

SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4

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

JUN 2015
RECEIVED
ND OIL & GAS DIVISION

Well File No. 28658

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

☑ Notice of Intent	Approximate Start Date: June 2, 2015	☐ Drilling Prognosis	☐ Spill Report
☐ Report of Work Done	Date Work Completed:	☐ Redrilling or Repair	☐ Shooting
☐ Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03.	Approximate Start Date:	☐ Casing or Liner	☐ Acidizing
		☐ Plug Well	☐ Fracture Treatment
		☐ Supplemental History	☐ Change Production Method
		☐ Temporarily Abandon	☐ Reclamation
		☑ Other	Change well status to CONFIDENTIAL

Well Name and Number					
Kline Federal 5300 41-18 12TX					
Footages	Qtr-Qtr	Section	Township	Range	
434 F S L 237 F W L	LOT4	18	153 N	100 W	
Field	Pool	County			
Baker	BAKKEN	McKenzie			

24-HOUR PRODUCTION RATE

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

Name of Contractor(s)			
Address	City	State	Zip Code

DETAILS OF WORK

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

This well has not been completed

OFF CONFIDENTIAL 12/02/15.

Company: Oasis Petroleum North America LLC		Telephone Number: 281-404-9436
Address: 1001 Fannin, Suite 1500		
City: Houston	State: TX	Zip Code: 77002
Signature:	Printed Name: Jennifer Swenson	
Title: Regulatory Specialist	Date: June 2, 2015	
Email Address: jswenson@oasispetroleum.com		

FOR STATE USE ONLY

☐ Received	☒ Approved
Date: 6/03/15	
By: Alice D. Webber	
Title: Engineering Technician	

Oasis Petroleum North America

Kline Federal 5300 41-18 12TX

Services Performed For:
Andrew Nelson, Brendan Hargrove
Oasis Petroleum North America
1001 Fannin Suite 202
Houston, TX 77002

Onsite Geology Performed by:
Annika Tostengard, Bob Witmer
RPM Geologic
geology@rpmconsultinginc.com
(303) 595-7625

WELL EVALUATION

Oasis Petroleum
Kline Federal 5300 41-18 12TX
SW SW Sec. 18, T153N, R100W
Williams County, North Dakota

Synopsis

Oasis Petroleum *Kline Federal 5300 41-18 12TX* [SW SW Sec. 18 T153N R100W] is located ~6 miles Northwest of the town of Williston, North Dakota. *Kline Federal 5300 41-18 12TX* is situated within the Baker Field. A single lateral leg trending 90° was proposed to be drilled from the SW SW corner of Section 18 to the SE SE corner of Section 17 targeting the porous dolostone in the first bench of the **Three Forks**.

Control Wells

Two completed wells were used as the control offsets to the *Kline Federal 5300 41-18 12TX*.

The primary offset considered was the *Kline Federal 5300 41-18 13T2X* [SW SW Sec. 18 T153N, R100W] which is a horizontal well drilled by Oasis Petroleum. ***Kline Federal 5300 41-18 13T2X*** is located approximately 33 feet south of *Kline Federal 5300 41-18 12TX*.

The other offset considered was the *Kline Federal 5300 41-18 14BX* [SW SW Sec. 18 T153N, R100W] which is a horizontal well drilled by Oasis Petroleum. *Kline Federal 5300 41-18 14BX* is located approximately 66 feet south of *Kline Federal 5300 41-18 12TX*.

During the curve, the gamma ray that was produced was constantly compared to the *Kline Federal 5300 41-18 13T2X* and the *Kline Federal 5300 41-18 14BX* wells. Gamma ray was used to help determine a proper landing depth.

To assist in the choosing of the landing target, an isopach table (Table 1) was constructed to measure the distance of formation tops to the target depth determined from the *Kline Federal 5300 41-18 13T2X* and *Kline Federal 5300 41-18 14BX* offset wells. Comparison of gamma ray markers showed the most consistent isopach for up-hole formations to be the **Middle Bakken**. The same information was coalesced into a single chart (Table 2) displaying offset tops and an average of the estimated landing point based on the offset wells. This chart was used to corroborate the landing point, but isopach thickness was the main consideration in choosing a landing point.

Control Well

Operator:	**Oasis Petroleum**			
Well Name:	***Kline Federal 5300 41-18 13T2X***			
Location:	SW SW Sec. 18 T153N, R100W McKenzie Co., ND Approximately 33 ft South			
Elevation:	KB: 2,082'			
Formation/ Zone	**Est. TVD**	**MSL Datum**	**Thickness**	**Dist to target**
Kibbey Lime	8,382'	-8,382'	178'	-8,382'
Charles Salt	8,560'	-8,560'	646'	-8,560'
Base Last Salt	9,206'	-9,206'	222'	-9,206'
Mission Canyon	9,428'	-9,428'	547'	-9,428'
Lodgepole	9,975'	-9,975'	730'	-9,975'
False Bakken	10,705'	-10,705'	7'	-10,705'
Upper Bakken Shale	10,712'	-10,712'	18'	-10,712'
Middle Bakken	10,730'	-10,730'	40'	-10,730'
Lower Bakken	10,770'	-10,770'	12'	-10,770'
Pronghorn	10,782'	-10,782'	17'	-10,782'
Three Forks	10,799'	-10,799'	10,799'	-10,799'

Control Well

Operator:	**Oasis Petroleum**			
Well Name:	***Kline Federal 5300 41-18 14BX***			
Location:	SW SW Sec. 18 T153N, R100W McKenzie Co., ND Approximately 213 feet South			
Elevation:	KB: 2,082'			
Formation/ Zone	**Est. TVD**	**MSL Datum**	**Thickness**	**Dist to target**
Kibbey Lime	8,382	-6,300'	182'	2,435'
Charles Salt	8,564	-6,482'	641'	2,253'
Base Last Salt	9,205	-7,123'	223'	1,612'
Mission Canyon	9,428	-7,346'	548'	1,389'
Lodgepole	9,976	-7,894'	728'	841'
False Bakken	10,704	-8,622'	8'	113'
Upper Bakken Shale	10,712	-8,630'	16'	105'
Middle Bakken	10,728	-8,646'	27'	89'

Table 1: ***Distance from Formation tops in the control wells were utilized to determine an initial drilling target.***

Kline Federal 12TX Target Landing Chart										
Operator:	Oasis Petroleum			Oasis Petroleum			Oasis Petroleum			
Well Name:	Kline Federal 5300 41-18 12TX			Kline Federal 5300 41-18 13T2X			Kline Federal 5300 41-18 14BX			
Location:	SW SW Sec. 18 T153N, R100W McKenzie County, ND			SW SW Sec. 18 T153N, R100W McKenzie County, ND			SW SW Sec. 18 T153N, R100W McKenzie County, ND			
Elevation:			KB: 2,082'			KB: 2,082'			KB: 2,082'	
Formation / Zone	Offset Tops TVD (gamma)	Offset Tops MSL	Thickness	Offset Tops TVD (gamma)	Offset Tops MSL	Thickness	Primary Tops TVD (gamma)	Primary Tops MSL	Thickness	Proj. Target Landing
Kibbey	8,384'	-6,302'	172'	8,382'	-6,300'	178'	8,382'	-6,300'	182'	10,819'
Charles	8,556'	-6,474'	650'	8,560'	-6,478'	646'	8,564'	-6,482'	641'	10,826'
Base Last Salt	9,206'	-7,124'	222'	9,206'	-7,124'	222'	9,205'	-7,123'	223'	10,819'
Mission Canyon	9,428'	-7,346'	547'	9,428'	-7,346'	547'	9,428'	-7,346'	548'	10,820'
Lodgepole	9,975'	-7,893'	115'	9,975'	-7,893'	112'	9,976'	-7,894'	114'	10,821'
LPA	10,090'	-8,008'	75'	10,087'	-8,005'	70'	10,090'	-8,008'	74'	10,822'
LPB	10,165'	-8,083'	46'	10,157'	-8,075'	54'	10,164'	-8,082'	45'	10,823'
LPC	10,211'	-8,129'	188'	10,211'	-8,129'	186'	10,209'	-8,127'	194'	10,818'
LPD	10,399'	-8,317'	161'	10,397'	-8,315'	162'	10,403'	-8,321'	154'	10,825'
LPE	10,560'	-8,478'	65'	10,559'	-8,477'	67'	10,557'	-8,475'	68'	10,818'
LPF	10,625'	-8,543'	79'	10,626'	-8,544'	79'	10,625'	-8,543'	77'	10,820'
False Bakken	10,704'	-8,622'	9'	10,705'	-8,623'	7'	10,702'	-8,620'	10'	10,818'
Upper Bakken Shale	10,713'	-8,631'	17'	10,712'	-8,630'	18'	10,712'	-8,630'	16'	10,820'
Middle Bakken	10,730'	-8,648'	41'	10,730'	-8,648'	-	10,728'	-8,646'	-	10,818'
Lower Bakken	10,771'	-8,689'	12'	10,770'	-	-	-	-	-	-
Pronghorn	10,783'	-8,701'	16'	10,771'	-	-	-	-	-	-
Three Forks	10,799'	-8,717'	21'	10,799'	-	-	-	-	-	-
Target	10,820'	-8,738'	-10,820'	10,820'	-8,738'	-	10,817'	-8,735'	-	10,817'
									Average --->	10,820'

Table 2: ***Estimated landing point based on offset well formation tops.***

Geologic Assessment

Methods

Geologic supervision of *Kline Federal 5300 41-18 12TX* was provided by experienced RPM well site geologists. Gas and chromatograph levels were measured using NOV WellSight Gas Detection real time gas detector and chromatograph system. The WellSight gas detection system uses non-dispersive infrared and chemical sensor gas detection to evaluate gases liberated from the formation by the drill bit and carried to the surface by the drilling fluid.

The gas detector was interfaced with a RigWatch electronic data recorder system. RigWatch provided drill rate, on-off bottom and pump strokes to the gas detector and received total gas information from the gas detector for viewing on location and remotely.

Under the direction of RPM well site geologists, rig crews were instructed to catch lagged drill cutting samples at 30’ intervals in the vertical hole and curve build from 8,350’ to 11,190’ MD and 50’ samples from 11,190’ to TD (20,583’).

Sampled drill cuttings were examined wet and dry under a binocular microscope using both plain (broad spectrum) and transmitted light. Cuttings were evaluated for hydrocarbon “cut” by immersion in Acetone and inspection under a UV fluoroscope. 10% hydrochloric acid and alizarin red were used to determine the calcareous and dolomitic content of rocks and cementing.

RPM Geologic, Inc. (RPM) well site geologists also closely examined MWD gamma-ray information and penetration rates to aid in steering decisions and dip degree estimations.

Vertical Operations

Overview

The *Kline Federal 5300 41-18 12TX* was spud for surface drilling on 13 September 2014 utilizing Nabors 486 as the drilling contractor. Prior to commencement of RPM mud logging services, a 17 1/2" hole was drilled with fresh water to depth of 2,160' and isolated with 13 3/8" 36# J-55 casing cemented from 2,157' to surface. Due to uphole stability issues a second set of casing was set. Two 12 ¼" bits were used to drill to a depth of 6,138' and 9 5/8 40# HCL 80 casing was set @ 6,118'

RPM well site geologists began logging the vertical interval at 8,350'.

One PDC bit was used to drill out of secondary casing to vertical TD. PDC bit #4 (8 ¾" Security MM65D) was used to drill from 6,135' to 10,300' and averaged an ROP of 62.16 ft/hr in 67.0 hours of use.

Diesel invert drilling fluid with a mud weight ranging from 10.00-11.60 ppg was used for the remainder of the vertical hole and in the curve builds sections. The vertical interval was drilled to a kick off point (KOP) of 10,300', at which point vertical operations were ceased.

Lithology

The top of the **Kibbey Lime** [Mississippian Madison Group] was picked at 8,384' (-6,302'), 2' low to the *Kline Federal 5300 41-18 13T2X*. Samples from this interval (Figure 1) were described as:

> LIMESTONE: wackestone, medium gray, friable to hard, finely crystalline, blocky, earthy to sucrosic, trace visible porosity

*Figure 1: Photograph of Limestone seen in sample from the **Kibby Limestone** formation.*

The top of the **Charles Salt** [Mississippian Madison Group] was logged at 8,556' (-6,474'), 6' low to the *Kline Federal 5300 41-18 13T2X*. The **Base Last Salt** was drilled at 9,206' (-7,124'), flat to the *Kline Federal 5300 41-18 13T2X*. Samples from this interval (Figure 2) were described as:

> SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain
>
> LIMESTONE: mudstone, light gray to medium gray, off white to cream, microcrystalline, soft to fair, chalky to crystalline texture, trace intercrystalline porosity, slightly light brown oil stain
>
> ANHYDRITE: off white, cream, soft to firm, amorphous texture, no visible porosity

*Figure 2: Photograph of Salt seen in sample from the **Charles** formation.*

The top of the **Mission Canyon** formation of the Madison Group [Mississippian] was reached at 9,428' (-7,346'), flat to the *Kline Federal 5300 41-18 13T2X*. Samples from this interval (Figure 3) were described as:

> LIMESTONE: mudstone, light gray to medium gray, occasional off white to cream, firm to hard, microcrystalline, chalky to earthy texture, trace sparry calcite, possible intercrystalline porosity
>
> DOLOMITE LIMESTONE: mudstone, dark gray to medium gray, off white in part, firm to hard, microcrystalline, occasional sparry calcite, trace intercrystalline porosity, slightly light brown spotty oil stain

*Figure 3: Photograph of limestone and argillaceous limestone from the **Mission Canyon** formation.*

The top of the **Lodgepole** formation of the Madison Group (Mississippian) was logged at 9,975' (-7,893'), flat to the *Kline Federal 5300 41-18 13T2X*. Samples from this interval (Figure 4) were described as:

> ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcite, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

*Figure 4: Photograph of argillaceous limestone from **Lodgepole** formation.*

Directional Operations

Gyrodata provided equipment and personnel for MWD teams, while RPM Consulting provided directional personnel. RPM geologists worked closely with RPM directional as well as Gyrodata MWD teams to formulate steering decisions to maximize the footage of borehole in the pay zone.

Curve Build

Overview

One PDC bit was used to build the curve section. Bit #5 was an 8 ¾" Security MMD55L bit used to drill the curve from a measured depth of 10,300' to 11,190' in 32.0 hours, averaging 27.65 ft/hr. 7" P-110 32 lbs casing was set to 11,189' MD upon completion of the curve.

A Chart was constructed for the curve (Chart 1) that compared the isopach of certain easily recognizable gamma markers from the **Kibbey Lime** to the **Three Forks** on the control well *Kline Federal 5300 41-18 13T2X* to the *Kline Federal 5300 41-18 12TX* as marker picks were made. This chart shows the **Middle Bakken** top being the closest in thickness to target based on the offset well, and was the main point used to make changes to the target landing depth during the curve. The curve was completed at a measured depth of 11,190'and TVD of 10,812', ~12 feet below the base of the **Three Forks**.

Chart 1: ***Comparing distances from gamma markers on the offset wells to markers in gamma in the curve.***

Lithology

The top of the **"False Bakken"** was drilled at a measured depth of 10,781' (TVD 10,704') (-8,622') 1' high to the *Kline Federal 5300 41-18 13T2X*.

The *Upper Shale* of the **Bakken** formation [Mississippian – Devonian] was drilled at 10,798' MD (10,713' TVD) (-8,631') with sample returns of black, carbonaceous, and petroliferous shale (Figure 5) characterized by gamma ray values in excess of 255 API counts. The *Upper Shale* was 2' low to the *Kline Federal 5300 41-18 13T2X*. Samples were described as:

> SHALE: black, firm, earthy to waxy texture, pyrite, carbonaceous, platy, visible fracture porosity

Figure 5: Photograph sample from the ***Upper Bakken Shale.***

The *Middle Member* of the **Bakken** formation was penetrated at 10,829' MD, (10,730' TVD) (-8,648'), flat to the *Kline Federal 5300 41-18 13T2X*. The *Middle Member* contained layers of sandstone and silty sandstones with varying amounts of porosity and oil stain (Figure 6). Samples from the *Middle Member* were described as:

> SLTY SANDSTONE: common salt and pepper, occasional light gray to medium gray, visible white, very fine grained, soft to firm, moderately to well sorted, rounded to sub rounded, moderately to poorly cemented, visible calcareous filled fractures, possible fracture porosity, common intergranular porosity, visible light brown spotty to even oil stain

Figure 6: Photograph of sandstone and silty sandstone from the middle member of the ***Bakken*** *formation.*

The *Lower Member* of the **Bakken** formation was penetrated at 10,918' MD, (10,771' TVD) (-8,698'), 1' low to the *Kline Federal 5300 41-18 13T2X*. The *Lower Member* consists of a dark, petroliferous shale (Figure 7). Samples from the *Lower Member* were described as:

> SHALE: black, dark gray black, firm, sub-blocky, earthy, calcareous cement, petro, carbonaceous, abundant fine disseminated pyrite, fine laminated

Figure 7: Photograph of sandstone and silty sandstone from the lower member of the ***Bakken*** *formation. 8 3/4" Bit & Diesel Invert Drilling Fluid*

The **Pronghorn** formation was drilled at 10,952' MD, (10,783' TVD) (-8,701'), 1' low to the *Kline Federal 5300 41-18 13T2X*.

The **Three Forks** formation was drilled at 11,011' MD, (10,799' TVD) (-8,717'), flat to the *Kline Federal 5300 41-18 13T2X*. The **Three Forks** consists of a light colored, pyritic, slightly oil stained dolostone (Figure 8). Samples from the **Three Forks** were described as:

DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

*Figure 8: Photograph of dolostone from the **Three Forks** formation.*
8 3/4" Bit & Diesel Invert Drilling Fluid

Lateral

Overview

Drilling fluid consisting of open system salt water brine (9.8-9.9 ppg) was used while drilling the lateral section up to the TD of 20,584'. One 6" PDC bit was used to drill the lateral.

Bit #6 (Varel VM613DUX) was the PDC bit used to drill the start of the entire lateral from 11,190' to 20,584' in 202 hours of drilling for averaged an ROP of 46.5 ft/hr

Drilling operations were concluded at 06:15 on January 26, 2015 at a bottom hole location of 235.00' S & 9,994.22' E of surface location or approximately 199.00' FSL & 257.93' FEL of SE SE Sec. 17 T153N, R100W.

Lithology

To aid in communications while drilling the lateral, a type log was created using a common gamma signature from the original offset well for the pad, the *Kline Federal 5300 41-18 13T2X* (Diagram 1). The cool gamma "C" marker (30 api – 50 api) as well as the warm gamma signature characteristic of the claystone appeared to be reliable and served as our main markers for steering.

Diagram 1: Type log created from gamma log of the offset well Kline Federal 5300 41-18 13T2X

The target Zone of the **Three Forks** consisted of a dolostone with very apparent intergranular porosity, moderate gas, and moderate to abundant oil show (Figure 9). Samples from the target Zone were generally described as:

DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

Figure 9: Photograph of sandstone from "Target Zone" on Diagram 1
6" Bit & Salt Water Brine

Gas and hydrocarbon Shows

It was found that the gas and hydrocarbon shows were a fair indicator of placement in Zone throughout the lateral. While drilling in the target Dolomite gas levels maintained average levels of 1000 to 2200 units with peaks over approaching 4000 units. When the bit dropped in vertical position into the claystone gas levels dropped to under 500 units with peaks slightly over 1000 units.

The Bloodhound gas chromatograph showed components of all C1-C4 present through the lateral while drilling in the target zone. C1 was primarily present while drilling in the claystone below. Sample cuttings throughout the lateral showed oil stain and a fast white diffuse cut when submerged in Acetone solution and observed with a UV fluoroscope. Trace oil was observed in the sample wash water.

Summary

1) The *Kline Federal 5300 41-18 12TX* was initially spud for surface drilling on 13th of September 2014 in the Indian Hills field of McKenzie County, North Dakota. The well was spud by Nabors 486 and the vertical hole was drilled to a total depth (KOP) of 10,300'.

2) A mud program consisted of diesel invert (10.3-11.4 ppg) after surface casing through the curve build sections. The drilling mud was successful in maintaining stable hole conditions and minimizing washout through the salt intervals. Brine water with a weight of 9.8-9.9 ppg was used during lateral drilling operations to maintain hydrostatic balance until a TD of 20,548'.

3) Two 13 ¼" Security PDC bits were used to drill to a depth of 6,138. 9 5/8 40# casing was set to isolate out the upper vertical hole and maintain hole stability during curve and lateral operations

4) One 8 ¾" Security PDC bit was used to drill out of secondary casing casing to a KOP of 10,300'. One 8 ¾" PDC bits were used to drill the curve to 11,190' MD. One 6" PDC bits were used to drill the lateral to 20,584' TD.

5) The lateral was targeting the **Three Forks** member ranging from about 8' below the base of the **Pronghorn** down to approximately 1' above the **Claystone**.

6) Gas levels between 500 and 4000 units were maintained through the lateral drilling operations while in the **Three Forks**.

7) The **Three Forks** target consisted of 3 observed gross lithology. The Upper **Three Forks (Pronghorn)** was observed to be a gray immature claystone. The Middle **Three Forks** was observed to be a dolostone with lots of disseminated pyrite and apparent intergranular porosity. The Lower Three Forks was an off white to gray claystone

8) Trace to moderate oil stain was observed in zone associated with a fast, white, diffuse cut. Trace oil washed out of the samples into the wash water when they were cleaned.

9) Drilling operations were concluded at 06:15 on January 26th, 2015 at a bottom hole location of 235.00' S & 9994.22' E of surface location or approximately 199.00' FSL & 256.93' FEL of SW SE Sec. 17, T153N-R100W.

Respectfully submitted,
Devin Wood
RPM Geologic LLC

Well Information

Operator:	*Oasis Petroleum North America*	**API #:**	*33-053-06030*
Address:	*1001 Fannin Suite 1500* *Houston, TX 77002*	**NDIC Well File #:**	*28658*
		Surface Location:	*SW SW Sec. 18 T153N, R100W*
Well Name:	***Kline Federal 5300 41-18 12TX***	**Footages:**	*434' FSL & 237' FWL*
Field/ Prospect:	*Indin Hill*	**County, State:**	*McKenzie Co., ND*
Elevation:	*GL: 2,056'* *KB: 2,082'*	**Basin:**	*Williston*
Spud Date:	*13-Sep-14*	**Well Type:**	*Horizontal Three Forks B1*

Contractor:	*Nabors 486*	**Chemical Company**	*Halliburton*
Toolpushers:	*Logan Penhollow, Tyler Schultz*	**Mud Engineer**	*Tim Vaira*
Field Supervisors:	*Ryan Romans/Ty Tschacher*	**H_2S MONITORING:**	*NOV WellSight Gas Watch*
Directional Drilling	*RPM Consulting* *Ryan Romans* *Ty Tschacher*	**MWD**	*Gyro Data* *Beau Watt, Josh Elliott*

Wellsite Geologist	*Devin Wood* *Caleb Sperry*	**Rock Sampling:**	*30' from 8,350' to 11,200' MD* *50' 11,200' MD to 20,583' (TD)*
Prospect Geologist	*Brendan Hargrove*	**Gas Detector**	*NOV WellSight Gas Watch*
Sample Examination:	Binocular microscope & fluoroscope	**Sample Cuts:**	*Acetone*
Horizontal Target	*Three Forks B1*		

Key Offset Wells:

Oasis Petroleum.	***Kline Federal 41-18 13T2X***	*SE SE Sec. 10 T153N R100W*	*McKenzie Co., ND*
Oasis Petroleum	***Kline Federal 41-18 14BX***	*SE SE Sec. 10 T153N R100W*	*McKenzie Co., ND*

Pumps:	#1 & #2: HHP 1600 Triplex - 12" Stroke length Output: 0.0838 bbl/stk
Mud Type:	*Diesel invert mud 2,160'-11,190' (Curve TD)* *Salt Water Brine, 11,190' - 20,584' (TD)*
Casing:	*Surface: 13 3/8" 54# J-55 @ 2,157'* *Intermediate: 9 5/8" 40# HCL80 @ 6,118', 7" 32# P-110 @ 11,189'*
Hole Size:	*17 1/2" to 2,160' MD, 12 1/2" to 6,138', 8 3/4" to 11,190' MD 6" to 20,584'(TD)*
Total Drilling Days:	*23*

Horizontal Target:	*Three Forks B1*	***BOTTOM HOLE LOCATION:***
Kick-Off Point / Date:	*10,300' on October 23, 2014*	*235.00' S & 9994.22' E of surface, or approxmately 199.00' FSL & 256.93' FEL*
Total Depth/ Date:	*20,583' on January 26, 2015*	*SE SE Section 17, T153N, R100W*
Ending Vertical Section	*9994.22'*	
Ending Azimuth	*89.31°*	
Status of Well:	*Awaiting completion*	

Project: Indian Hills
Site: 153N-100W-17/18
Well: Kline Federal 5300 41-18 12TX
Wellbore: Kline Federal 5300 41-18 12TX
Design: Design #2

OASIS PETROLEUM

WELL DETAILS: Kline Federal 5300 41-18 12TX

Ground Level: 2057.0

Northing	Easting	Latitude	Longitude
405136.64	1209968.21	48° 4' 7.550 N	103° 36' 11.950 W

CASING DETAILS

TVD	MD	Name	Size
10832.2	11189.0	7"	7

Azimuths to True North
Magnetic North: 8.27°

Magnetic Field
Strength: 56437.1snT
Dip Angle: 72.99°
Date: 5/23/2014
Model: IGRF2010

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	
2200.0	0.00	0.00	2200.0	0.0	0.0	0.00	
2216.7	0.50	90.00	2216.7	0.0	0.1	3.00	
7926.7	0.50	90.00	7926.4	0.0	49.9	0.00	
7943.3	0.00	0.00	7943.1	0.0	50.0	3.00	
10354.8	0.00	0.00	10354.6	0.0	50.0	0.00	
11104.0	89.90	110.00	10832.0	-163.0	497.9	12.00	
11680.4	89.90	89.82	10833.1	-261.7	1062.8	3.50	
20667.7	89.90	89.82	10848.7	-234.0	10050.0	0.00	5300 41-18 12TX PBHL

Daily Activity

Day	Date 2014	Depth 0600 Hrs	24 Hr Footage	Bit #	WOB (Klbs) Rotate	WOB (Klbs) Slide	RPM (RT)	Pump Pressure	SPM 1	SPM 2	GPM	24 Hr Activity	Formation
1	16-Oct	2,160'	0'	-	-	-	-	-	-	-	-	skid rig, rig up, nipple up bops, test bops and casing, p/u bha, wait on bit from another rig, TIH, change rotating head/rubber, TIH w/ rock bit to mill broken pdc blade downhole, displace to oil base, cut drilling line, guide plate over	Surface
2	17-Oct	3,656'	1,496'	3	-	-	-	-	-	-	-	TIH, service rig, TIH, ream/wash 2052-2353, drill 2353-2522, change rotating head, drill 2522-3656	Pierre
3	18-Oct	6,138'	2,482'	3	-	-	-	-	-	-	-	drill 3656-5201, service rig, drill 5201-6138, circulate and condition, TOOH	Dakota
4	19-Oct	6,138'	0'	3	-	-	-	-	-	-	-	circulate and condition, TOH Lat down BHA, Rig up casing crew. Run casing, Cement TIH	Dakota
5	20-Oct	7,443'	1,305'	4	22	0	50	3100	65	65	451	TIH, Pressure test shoe, Reaming, Drill cement FIT test, Drill F/6138-7437	Opeche Salt
6	21-Oct	8,856'	1,413'	4	7.5	0	40	3150	65	65	451	Drill F/7443-8195, Rig service, Drill F/8195-8844	Charles Salt
7	22-Oct	10,015'	1,159'	4	31	42	40	3590	77	77	545	Drill F/8856-9421, Rig Service, Drill F/9421-10010	Lodgepole
8	23-Oct	10,300'	285'	4	35	0	45	3500	77	77	545	Drill F/10015-10300, Circulate and condition, Rig Service, TOOH, Install/remove wear bushing and install flow nipple, TOOH with HWDP and collars, Lay down BHA, Rig up loggers, Lay down tools and rig down, Pick up BHA, TIH	Lodgepole
9	24-Oct	10,860'	560'	5	24	28	30	2923	67	67	441	TIH ream and wash through salts, Drill F/10300-10545, Rig Service, Frill F/10545-10880	Middle Bakken

Daily Activity

Day	Date 2014	Depth 0600 Hrs	24 Hr Footage	Bit #	WOB (Klbs) Rotate	WOB (Klbs) Slide	RPM (RT)	Pump Pressure	SPM 1	SPM 2	GPM	24 Hr Activity	Formation
10	25-Oct	11,190'	330'	5	24	28	30	2923	67	67	441	Drill F/10860-11190, Service Rig and top drive, Circulate and condition, TOH, Fix top drive HYD transducer, TIH, Lay down BHA, Rig service, rig up casers, run casing	Three Forks
11	26-Oct	11,190'	0'	-	-	-	-	-	-	-	-	Run casing, Work stuck pipe, Rig down casers, primary cementing	Three Forks
12	27-Oct	11,190'	0'	-	-	-	-	-	-	-	-	Rig up/down casers and cementers, Nipple down BOPS, Install well head cut casing install night cap. Realesed rig at 1200 hours. Skidding rig and rigging up	Three Forks
13	16-Jan	11,190'	0'	-	-	-	-	-	-	-	-	Cement, Rig down, skid over to the 12TX, Presure test	Three Forks
14	17-Jan	11,190'	0'	5	-	-	-	-	-	-	-	TIH and tag bottom @ 7195 // Drill cement // Circulate bottoms up and condition	Three Forks
15	18-Jan	11,505'	315'	6	15	35	10	2000	75	0	314	Trip out of hole // Pick up BHA // Service Rig // Change rotating head/rubber // Trip in hole // Drill actual F/11,190' - 11,505'	Three Forks
16	19-Jan	12,470'	965'	6	13	42	45	2150	0	65	272	Drill actual F/ 11,502' - 12,470' // Service Rig	Three Forks
17	20-Jan	13,603'	1,133'	6	18	55	45	2600	0	65	272	Drill actual F/12,481 - 13,603 // Service Rig	Three Forks
18	21-Jan	14,894'	1,291'	6	15	42	45	2700	68	0	272	Drill actual F/13,610 - 14,894' // Service Rig	Three Forks
19	22-Jan	16,153'	1,259'	6	16	47	45	2700	0	71	297	Drill actual F/14,910 - 16,153' // Service Rig	Three Forks

Daily Activity

Day	Date 2014	Depth 0600 Hrs	24 Hr Footage	Bit #	WOB (Klbs) Rotate	WOB (Klbs) Slide	RPM (RT)	Pump Pressure	SPM 1	SPM 2	GPM	24 Hr Activity	Formation
20	23-Jan	17,476'	1,323'	6	20	47	45	3250	0	71	297	Drill actual F/16,175 - 17,476' // Service Rig	Three Forks
21	24-Jan	18,481'	1,005'	6	20	50	45	3250	0	71	297	Drill actual F/17,475 - 18,481' // Service Rig	Three Forks
22	25-Jan	19,578'	1,097'	6	20	45	45	2900	71	0	297	Drill actual F/18,475 - 19,578' // Service Rig	Three Forks
23	26-Jan	20,584'	1,006'	6	20	45	45	2900	71	0	297	Drill actual F/19,578 - 20,584' // Service Rig	Three Forks

RPM Geologic

Daily Progress

Oasis Petroleum
Kline Federal 5300 41-18 12TX

Bit Record

Bit #	Size	Make	Model	Serial #	Jets	Depth In	Depth Out	Footage	Hours	Mean ROP (ft/hr)	Accum. Hours
1	17 1/2	NOV	TFR6195	E163630	12x18	105'	2,160'	1,321'	11.5	114.87	11.5
2	12 1/4	Haliburton	Security	P92215	6x20	2,160'	2,353'	193'	2	96.50	13.5
3	12 1/4	Haliburton	Security	12138204	6x20	2,353'	6,138'	3,785'	30.5	124.10	44.0
4	8 3/4	Halliburton	Security	12529681	6x14	6,135'	10,300'	4,165'	285	14.61	298.5
5	8 3/4	Security DBS	Security	12560304	6x18	10,300'	11,190'	890'	32	27.81	330.5
6	6	Varel	V613DUX	4008030	6x20	11,190'	20,584'	9,394'	202	46.50	532.5

Daily Mud Data

Day	Date 2014	Depth (0600 Hrs)	Mud WT (ppg)	VIS (sec)	PV (cP)	YP (lbs/ 100 ft^2)	Gels (lbs/ 100 ft^2)	600/ 300	HTHP (cc/30min)	NAP/ H_2O (ratio)	Cake (APT/ HT)	Solids (%)	pH	Alk	Cl- (mg/l)	$CaCl_2$	ES (v)	Loss (Bbls)
1	16-Oct	2,150'	11.40	56	21	22	10/12/16	64/43	9	76.6/23.4	2	14.5	-	-	33K	-	740	-
2	17-Oct	3,656'	11.40	56	22	23	10/12/17	64/44	9	76.6/23.5	2	14.6	-	-	33K	-	741	-
3	18-Oct	6,138'	11.40	58	23	24	8/9/14	64/45	9	76.6/23.6	2	10.5	-	-	25K	-	885	-
4	19-Oct	6,138'	11.60	56	25	23	12/13/18	73/48	7	76.5/23.5	2	14.70	-	-	38K	-	740	-
5	20-Oct	7,425'	11.60	57	26	23	12/13/18	73/48	7	76.5/23.5	2	14.70	-	-	38K	-	740	-
6	21-Oct	8,844'	10.10	50	18	15	7/8/11	21/33	7	77.8/22.2	2	10.20	-	-	34K	-	710	-
7	22-Oct	10,010'	10.00	44	15	12	6/7/9	42/27	6	79.5/20.5	2	9.90	-	-	29K	-	773	-
8	23-Oct	10,300'	10.05	46	19	13	7/8/10	51/32	4	78.8/21.2	2	10.70	-	-	37K	-	780	-
9	24-Oct	10,880'	10.20	46	19	14	7/8/10	52/33	3	78.2/21.8	2	10.60	-	-	39K	-	800	-
10	25-Oct	11,190'	10.30	45	19	13	6/7/9	5/32	3	78.7/21.3	2	10.80	-	-	40K	-	820	-
11	17-Jan	11,190'	10.30	45	19	13	6/7/9	5/32	3	78.7/21.3	2	10.80	-	-	40K	-	820	-
12	18-Jan	11,190'	10.30	45	19	13	6/7/9	5/32	3	78.7/21.3	2	10.80	-	-	40K	-	820	-
13	19-Jan	12,966'	9.90	28	2	1	0/1/1	4/3	-	0/89.3	-	0.70	10	-	168k	-	-	-
14	20-Jan	12,966'	9.90	28	2	1	0/1/1	4/3	-	0/89.3	-	0.70	10	-	168k	-	-	-
15	21-Jan	15,554'	9.85	28	2	1	0/1/1	4/3	-	0/89.6	-	0.50	10	-	166k	-	-	-
16	22-Jan	15,554'	9.85	28	2	1	0/1/1	4/3	-	0/89.6	-	0.50	10	-	166k	-	-	-
17	23-Jan	17,964'	9.90	28	2	1	0/1/1	5/3	-	0/89.2	-	0.50	9	-	172k	-	-	-
18	24-Jan	17,964'	9.90	28	2	1	0/1/1	5/3	-	0/89.2	-	0.50	9	-	172k	-	-	-
19	25-Jan	17,964'	9.90	28	2	1	0/1/1	5/3	-	0/89.2	-	0.50	9	-	172k	-	-	-
20	26-Jan	17,964'	9.90	28	2	1	0/1/1	5/3	-	0/89.2	-	0.50	9	-	172k	-	-	-

DRILLING PLAN

OPERATOR	Oasis Petroleum	**COUNTY/STATE**	McKenzie Co., ND
WELL NAME	Kline Federal 5300 41-18 12TX	**RIG**	Nabors B22
WELL TYPE	Horizontal Upper Three Forks		
LOCATION	SWSW 18-153N-100W Surface Location (survey plat): 434' fsl	237' fwl	
EST. T.D.	20,668'	**GROUND ELEV:**	2057 Finished Pad Elev. **Sub Height:** 25
	TOTAL LATERA 9,479'	**KB ELEV:**	2082

PROGNOSIS: Based on 2,082' KB(est)

MARKER		DEPTH (Surf Loc)	DATUM (Surf Loc)
Pierre	NDIC MAP	1,972	110'
Greenhorn		4,646	-2,564'
Mowry		5,057	-2,975'
Dakota		5,471	-3,389'
Rierdon		6,486	-4,404'
Dunham Salt		6,814	-4,732'
Dunham Salt Base		6,929	-4,847'
Spearfish		7,024	-4,942'
Pine Salt		7,283	-5,201'
Pine Salt Base		7,318	-5,236'
Opeche Salt		7,374	-5,292'
Opeche Salt Base		7,403	-5,321'
Broom Creek (Top of Minnelusa Gp.)		7,605	-5,523'
Amsden		7,684	-5,602'
Tyler		7,853	-5,771'
Otter (Base of Minnelusa Gp.)		8,047	-5,965'
Kibbey Lime		8,390	-6,308'
Charles Salt		8,542	-6,460'
UB		9,159	-7,077'
Base Last Salt		9,238	-7,156'
Ratcliffe		9,301	-7,219'
Mission Canyon		9,454	-7,372'
Lodgepole		10,022	-7,940'
Lodgepole Fracture Zone		10,209	-8,127'
False Bakken		10,726	-8,644'
Upper Bakken		10,735	-8,653'
Middle Bakken		10,751	-8,669'
Lower Bakken		10,785	-8,703'
Pronghorn		10,791	-8,709'
Three Forks		10,813	-8,731'
TF Target Top		10,827	-8,745'
TF Target Base		10,837	-8,755'
Claystone		10,838	-8,756'

Dip Rate: -0.1

Max. Anticipated BHP: 4692

LOGS:

	Type	Interval
OH Logs:	Triple Combo KOP to Kibby (or min run of 1800' whichever is greater); GR/Res to BSC; GR to surf; CND through the Dakota	
CBL/GR:	Above top of cement/GR to base of casing	
MWD GR:	KOP to lateral TD	

DEVIATION:

Surf: 3 deg. max., 1 deg / 100'; srvy every 500'
Prod: 5 deg. max., 1 deg / 100'; srvy every 100'

DST'S:

None planned

CORES:

None planned

MUDLOGGING:

Two-Man: 8,342'
~200' above the Charles (Kibbey) to Casing point; Casing point to TD
30' samples at direction of wellsite geologist; 10' through target @ curve land

BOP:

11" 5000 psi blind, pipe & annular

Surface Formation: *Glacial till*

MUD:	Interval		Type	WT	Vis	WL	Remarks
Surface:	0' -	2,072'	FW/Gel - Lime Sweeps	8.4-9.0	28-32	NC	Circ Mud Tanks
Intermediate:	2,072' -	11,189'	Invert	9.5-10.4	40-50	30+HtHp	Circ Mud Tanks
Lateral:	11,189' -	20,668'	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"	2,072'		To Surface	12	100' into Pierre
Intermediate:	7"	29/32#	8-3/4"	11,189'		3971	24	1500' above Dakota
Production Liner:	4.5"	11.6#	6"	20,668'	TOL @ 10,305'			50' above KOP

PROBABLE PLUGS, IF REQ'D:

OTHER:

	MD	TVD	FNL/FSL	FEL/FWL	S-T-R	AZI
Surface:	2,072	2,072	434' FSL	237' FWL	SEC 18-T153N-R100W	Survey Company:
KOP:	10,355'	10,355'	434' FSL	287' FWL	SEC 18-T153N-R100W	Build Rate: 12 deg /100'
EOC:	11,104'	10,832'	306' FSL	746' FWL	SEC 18-T153N-R100W	110.00
Casing Point:	11,189'	10,832'	244' FSL	816' FWL	SEC 18-T153N-R100W	107.02
Upper Three Forks Lateral TD:	20,668'	10,849'	200' FSL	200' FEL	SEC 17-T153N-R100W	89.82

Comments:

Request a Sundry for an Open Hole Log Waiver

Exception well: Oasis Petroleum's Kline Federal 5300 11-18H (153N 100W 18 NW NW)
35 packers, 35 sleeves, no frac string

Oasis Petroleum does not use Diesel Fuel, as defined by the US EPA in the list below, in our hydraulic fracture operations.
68334-30-5 (Primary Name: Fuels, diesel) 68476-34-6 (Primary Name: Fuels, diesel, No. 2)68476-30-2 (Primary Name: Fuel oil No. 2)
68476-31-3 (Primary Name: Fuel oil, No. 4)8008-20-6 (Primary Name: Kerosene)

OASIS PETROLEUM

Geology: M.Steed 4/23/2014 **Engineering:** hlbader rpm 6/17/14

Formation Tops

Operator:	**Subject Well:** **Oasis Petroleum North America**
Well Name:	***Kline Federal 5300 41-18 12TX***
Location:	434' FSL &237' FWL SW SW Sec. 18 T153N, R100W
Elevation:	2,057 Sub: 25' KB: 2,082'

Formation/ Zone	Prog. Top	Prog. MSL Datum	Est. MD Top (Gamma)	TVD Top (Gamma)	Est. MLS Datum	Thickness	Dip To *Kline Federal 5300 41-18 13T2X*	Dist to Target
Kibbey Lime	8,382	-6,300'	8,384'	8,384'	-6,302'	172'	2' Low	2,435'
Charles Salt	8,560	-6,478'	8,556'	8,556'	-6,474'	650'	4' Low	2,263'
Base Last Salt	9,206	-7,124'	9,206'	9,206'	-7,124'	222'	Flat	1,613'
Mission Canyon	9,428	-7,346'	9,428'	9,428'	-7,346'	547'	Flat	1,391'
Lodgepole	9,975	-7,893'	9,975'	9,975'	-7,893'	729'	Flat	844'
False Bakken	10,703	-8,621'	10,781'	10,704'	-8,622'	9'	1' High	115'
Upper Bakken Shale	10,712	-8,630'	10,798'	10,713'	-8,631'	17'	1' Low	106'
Middle Bakken	10,729	-8,647'	10,829'	10,730'	-8,648'	41'	Flat	89'
Lower Bakken	10,770	-8,688'	10,918'	10,771'	-8,689'	12'	1' Low	48'
Pronghorn	10,781	-8,699'	10,952'	10,783'	-8,701'	16'	1' Low	36'
Three Forks	10,797	-8,715'	11,011'	10,799'	-8,717'	18'	Flat	20'
Target	10,817	-8,735'		10819	-8737		2' Low	'

Control Well

Operator:	**Oasis Petroleum**				**Oasis Petroleum**			
Well Name:	***Kline Federal 5300 41-18 13T2X***				***Kline Federal 5300 41-18 14BX***			
Location:	SW SW Sec. 18 T153N, R100W McKenzie Co., ND Approximately 33 ft South				SW SW Sec. 18 T153N, R100W McKenzie Co., ND Approximately 213 feet South			
Elevation:	KB: 2,082'				KB: 2,082'			
Formation/ Zone	**Est. TVD**	**MSL Datum**	**Thickness**	**Dist to Target**	**Est. TVD**	**MSL Datum**	**Thickness**	**Dist to target**
Kibbey Lime	8,382'	-6,300'	178'	2,437'	8,382	-6,300'	182'	2,435'
Charles Salt	8,560'	-6,478'	646'	2,259'	8,564	-6,482'	641'	2,253'
Base Last Salt	9,206'	-7,124'	222'	1,613'	9,205	-7,123'	223'	1,612'
Mission Canyon	9,428'	-7,346'	547'	1,391'	9,428	-7,346'	548'	1,389'
Lodgepole	9,975'	-7,893'	730'	844'	9,976	-7,894'	728'	841'
False Bakken	10,705'	-8,623'	7'	114'	10,704	-8,622'	8'	113'
Upper Bakken Shale	10,712'	-8,630'	18'	107'	10,712	-8,630'	16'	105'
Middle Bakken	10,730'	-8,648'	40'	89'	10,728	-8,646'	27'	89'
Lower Bakken	10,770'	-8,688'	12'	49'				
Pronghorn	10,782'	-8,700'	17'	37'				
Three Forks	10,799'	-8,717'	20'	20'				
Target	10,819'	-8,737'	20'	'				

Offset Well Target Isopachs
Distance to Target
2,500'
2,000'
1,500'
1,000'
500'
-
2,437'
2,435'
2,259'
2,263'
1,613'
1,613'
1,391'
1,391'
844'
844'
114'
115'
107'
106'
89'
89'
49'
48'
37'
36'
20'
20'
Kibbey Lime
Charles Salt
Base Last Salt
Mission Canyon
Lodgepole
False Bakken
Upper Bakken Shale
Middle Bakken
Lower Bakken
Pronghorn
Three Forks
Kline Federal 5300 41-18 13T2X
Kline Federal 5300 41-18 12TX

RPM Geologic

Surface Location:
434' FSL & 237' FWL
SW SW Sec. 18, T153N, R100W
McKenzie County, ND

Kline Federal 5300 41-18 12TX
Gamma Cross Section

Bottom Hole Location:
235.00' S & 9994.22' E
of surface location or approx.
199.00' FSL & 256.93' FEL
SE SE Sec. 17, T153N, R100W

Sidetrack | Base of Pronghorn | Top of Target | Bottom of Target | Top of Claystone | 2 per. Mov. Avg. (ROP) | 2 per. Mov. Avg. (Gamma) | 2 per. Mov. Avg. (Total Gas)

RPM Geologic

Surface Location:
434' FSL & 237' FWL
SW SW Sec. 18, T153N, R100W
McKenzie County, ND

Kline Federal 5300 41-18 12TX
Gamma Cross Section

Bottom Hole Location:
235.00' S & 9994.22' E
of surface location or approx.
199.00' FSL & 256.93' FEL
SE SE Sec. 17, T153N, R100W

RPM Geologic

Vertical Section View

Surface Location:
434' FSL & 237' FWL
SW SW Sec. 18, T153N, R100W
McKenzie County, ND

Bottom Hole Location
235.00' S & 9994.22' E
of surface location or approx.
199.00' FSL & 256.93' FEL
SE SE Sec. 17 T153N, R100W

WELL LOCATION PLAT

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"KLINE FEDERAL 5300 41-18 12TX"
434 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

— MONUMENT — RECOVERED

— MONUMENT — NOT RECOVERED

VICINITY MAP

THIS DOCUMENT WAS ORIGINALLY ISSUED AND SEALED BY ROBERT L. PROCIVE, PLS, REGISTRATION NUMBER 2884 ON 4/15/14 AND THE ORIGINAL DOCUMENTS ARE STORED AT THE OFFICES OF INTERSTATE ENGINEERING, INC.

0 1500
1" = 1500'

STAKED ON 4/15/14
VERTICAL CONTROL DATUM WAS BASED UPON CONTROL POINT 4 WITH AN ELEVATION OF 2090.8'

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

ROBERT L. PROCIVE 2884LS

REGISTERED LAND SURVEYOR
ROBERT L. PROCIVE
LS-2884
DATE: 4/15/14
NORTH DAKOTA

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Other offices in Minnesota, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC
WELL LOCATION PLAT
SECTION 18, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. | Project No.: S14-09-081.02
Checked By: R.L.P. | Date: APRIL 2014

Revision No.	Date	By	Description

Q:\2014\S14-09-\081.02 Oasis Petroleum - Kline Federal 5300 41-18 12TX Location\CAD\Kline Federal 5300 41-18 12TX.dwg - 4/15/2014 2:51 PM josh schmierer

SECTION BREAKDOWN

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"KLINE FEDERAL 5300 41-18 12TX"
434 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE
SECTIONS 17, 18, 19, & 20, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

– MONUMENT – RECOVERED

– MONUMENT – NOT RECOVERED

VICINITY MAP

0 1500
1" = 1500'

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

REGISTERED LAND SURVEYOR
ROBERT L. PROCIVE
LS-2884
DATE: 4/15/14
NORTH DAKOTA

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OASIS PETROLEUM NORTH AMERICA, LLC
SECTION BREAKDOWN
SECTIONS 17, 18, 19, & 20, T153N, R100W
MKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. | Project No.: S14-09-081.02
Checked By: R.L.P. | Date: APRIL 2014

Revision No.	Date	By	Description

G:\2014\S14-09-\081.02 Oasis Petroleum - Kline Federal 5300 41-18 12TX Location\CAD\Kline Federal 5300 41-18 12TX.dwg - 4/15/2014 2:51 PM josh schmierer

PAD LAYOUT

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"KLINE FEDERAL 5300 41-18 12TX"
434 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE
SECTION 18, 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.

REGISTERED LAND SURVEYOR
ROBERT L. PROCIVE
LS-2884
DATE: 4/15/14
NORTH DAKOTA

V-DITCH DETAIL

Proposed Contours
Original Contours
BERM
DITCH

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 18, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. | Project No.: S14-09-081.02
Checked By: D.D.K. | Date: APRIL 2014

Revision No.	Date	By	Description

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

Drawn By: B.H.H. | Project No.: S14-09-081.02
Checked By: R.L.P. | Date: APRIL 2014

Revision No.	Date	By	Description

COUNTY ROAD MAP

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"KLINE FEDERAL 5300 41-18 12TX"
434 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

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SCALE: 1" = 2 MILE

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

Drawn By: B.H.H.	Project No.: S14-09-081.02		
Checked By: R.L.P.	Date: APRIL 2014		

Revision No.	Date	By	Description

Co:	RPM Consulting Inc	**Units:**	Feet, °, °/100ft	**VS Az:**	90.00
Drillers:	Ceynar	**Elevation:**	2082.00	**Method:**	Minimum Curvature
Well Name:	Kline Federal 5300 41-18 12TX	**Northing:**	405137.45	**Latitude:**	48.068764
Location:	153N-100W-17/18	**Easting:**	1209970.63	**Longitude:**	-103.603319

Indian Hills: 153N-100W-17/18: Kline Fed 5300 41-18 12TX: Kline Fed 12TX Surveys

No.	MD	CL	Inc.	Azi.	TVD	VS	+N/S-	+E/W-	BR	WR	DLS
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00			
2	140.00	140.00	0.35	146.08	140.00	0.24	-0.35	0.24	0.25	104.34	0.25
3	234.00	94.00	0.66	143.09	234.00	0.72	-1.03	0.72	0.33	-3.18	0.33
4	327.00	93.00	0.57	172.80	326.99	1.10	-1.91	1.10	-0.10	31.95	0.35
5	421.00	94.00	0.48	154.78	420.99	1.33	-2.73	1.33	-0.10	-19.17	0.20
6	516.00	95.00	0.40	139.75	515.98	1.71	-3.35	1.71	-0.08	-15.82	0.15
7	607.00	91.00	0.79	150.04	606.98	2.23	-4.13	2.23	0.43	11.31	0.44
8	699.00	92.00	0.44	178.51	698.97	2.56	-5.04	2.56	-0.38	30.95	0.49
9	791.00	92.00	0.66	158.91	790.97	2.76	-5.88	2.76	0.24	-21.30	0.31
10	882.00	91.00	1.41	157.07	881.95	3.38	-7.40	3.38	0.82	-2.02	0.82
11	974.00	92.00	0.40	19.78	973.95	3.93	-8.14	3.93	-1.10	-149.23	1.88
12	1066.00	92.00	0.22	101.87	1065.94	4.21	-7.88	4.21	-0.20	89.23	0.47
13	1158.00	92.00	0.22	177.28	1157.94	4.40	-8.09	4.40	0.00	81.97	0.29
14	1250.00	92.00	0.44	325.29	1249.94	4.20	-7.98	4.20	0.24	160.88	0.69
15	1342.00	92.00	0.88	351.66	1341.94	3.90	-6.99	3.90	0.48	28.66	0.57
16	1433.00	91.00	0.92	4.14	1432.93	3.85	-5.57	3.85	0.04	13.71	0.22
17	1528.00	95.00	1.10	337.60	1527.91	3.56	-3.96	3.56	0.19	-27.94	0.52
18	1623.00	95.00	0.84	354.73	1622.90	3.15	-2.43	3.15	-0.27	18.03	0.41
19	1719.00	96.00	1.10	346.74	1718.88	2.87	-0.83	2.87	0.27	-8.32	0.30
20	1813.00	94.00	0.84	354.56	1812.87	2.60	0.74	2.60	-0.28	8.32	0.31
21	1908.00	95.00	0.63	245.43	1907.87	2.06	1.21	2.06	-0.22	-114.87	1.27
22	2003.00	95.00	0.78	267.58	2002.86	0.94	0.97	0.94	0.16	23.32	0.32
23	2097.00	94.00	0.75	283.27	2096.85	-0.30	1.08	-0.30	-0.03	16.69	0.22
24	2189.00	92.00	0.88	358.43	2188.84	-0.91	1.93	-0.91	0.14	81.70	1.09
25	2284.00	95.00	1.01	338.83	2283.83	-1.23	3.44	-1.23	0.14	-20.63	0.36
26	2378.00	94.00	0.92	101.87	2377.82	-0.79	4.05	-0.79	-0.10	-252.09	1.81
27	2471.00	93.00	1.01	107.41	2470.81	0.72	3.65	0.72	0.10	5.96	0.14
28	2566.00	95.00	1.05	106.62	2565.80	2.36	3.16	2.36	0.04	-0.83	0.04

29	2661.00	95.00	0.57	101.79	2660.79	3.65	2.81	3.65	-0.51	-5.08	0.51
30	2756.00	95.00	0.35	110.14	2755.78	4.39	2.61	4.39	-0.23	8.79	0.24
31	2851.00	95.00	0.62	130.61	2850.78	5.05	2.18	5.05	0.28	21.55	0.33
32	2944.00	93.00	0.44	137.82	2943.78	5.67	1.59	5.67	-0.19	7.75	0.21
33	3038.00	94.00	0.53	107.94	3037.77	6.33	1.19	6.33	0.10	-31.79	0.28
34	3133.00	95.00	0.44	86.40	3132.77	7.11	1.07	7.11	-0.09	-22.67	0.21
35	3227.00	94.00	0.35	115.50	3226.77	7.73	0.97	7.73	-0.10	30.96	0.23
36	3322.00	95.00	0.35	93.70	3321.77	8.28	0.83	8.28	0.00	-22.95	0.14
37	3416.00	94.00	0.26	105.21	3415.76	8.77	0.75	8.77	-0.10	12.24	0.12
38	3512.00	96.00	0.35	135.36	3511.76	9.19	0.49	9.19	0.09	31.41	0.19
39	3606.00	94.00	0.53	117.25	3605.76	9.78	0.08	9.78	0.19	-19.27	0.24
40	3700.00	94.00	0.35	125.78	3699.76	10.40	-0.28	10.40	-0.19	9.07	0.20
41	3795.00	95.00	0.44	106.88	3794.76	10.98	-0.56	10.98	0.09	-19.89	0.17
42	3889.00	94.00	0.44	123.67	3888.75	11.63	-0.86	11.63	0.00	17.86	0.14
43	3983.00	94.00	0.31	119.01	3982.75	12.15	-1.19	12.15	-0.14	-4.96	0.14
44	4078.00	95.00	0.31	103.46	4077.75	12.63	-1.37	12.63	0.00	-16.37	0.09
45	4170.00	92.00	0.13	121.47	4169.75	12.96	-1.48	12.96	-0.20	19.58	0.21
46	4265.00	95.00	0.09	117.52	4264.75	13.12	-1.57	13.12	-0.04	-4.16	0.04
47	4360.00	95.00	0.09	177.20	4359.75	13.19	-1.68	13.19	0.00	62.82	0.09
48	4455.00	95.00	0.22	137.65	4454.75	13.31	-1.89	13.31	0.14	-41.63	0.17
49	4550.00	95.00	0.04	153.11	4549.75	13.45	-2.06	13.45	-0.19	16.27	0.19
50	4644.00	94.00	0.35	25.94	4643.75	13.59	-1.83	13.59	0.33	-135.29	0.40
51	4739.00	95.00	0.40	53.80	4738.74	13.98	-1.37	13.98	0.05	29.33	0.20
52	4834.00	95.00	0.44	45.89	4833.74	14.51	-0.92	14.51	0.04	-8.33	0.07
53	4930.00	96.00	0.31	1.15	4929.74	14.78	-0.41	14.78	-0.14	-46.60	0.32
54	5024.00	94.00	0.66	10.73	5023.74	14.89	0.38	14.89	0.37	10.19	0.38
55	5119.00	95.00	0.92	49.31	5118.73	15.57	1.42	15.57	0.27	40.61	0.61
56	5213.00	94.00	0.88	65.75	5212.72	16.80	2.20	16.80	-0.04	17.49	0.28
57	5308.00	95.00	1.01	71.46	5307.70	18.26	2.77	18.26	0.14	6.01	0.17
58	5402.00	94.00	0.70	58.98	5401.69	19.54	3.33	19.54	-0.33	-13.28	0.38
59	5497.00	95.00	1.10	62.06	5496.68	20.84	4.06	20.84	0.42	3.24	0.42
60	5591.00	94.00	0.97	85.88	5590.67	22.43	4.54	22.43	-0.14	25.34	0.47
61	5686.00	95.00	0.88	81.75	5685.65	23.96	4.70	23.96	-0.09	-4.35	0.12
62	5781.00	95.00	0.88	74.54	5780.64	25.38	5.00	25.38	0.00	-7.59	0.12

63	5876.00	95.00	0.75	74.54	5875.63	26.68	5.36	26.68	-0.14	0.00	0.14
64	5970.00	94.00	0.62	74.36	5969.63	27.77	5.66	27.77	-0.14	-0.19	0.14
65	6064.00	94.00	0.66	61.62	6063.62	28.73	6.05	28.73	0.04	-13.55	0.16
66	6087.00	23.00	0.70	40.88	6086.62	28.94	6.22	28.94	0.17	-90.17	1.08
67	6161.00	74.00	0.48	42.81	6160.62	29.45	6.79	29.45	-0.30	2.61	0.30
68	6255.00	94.00	0.75	118.48	6254.61	30.26	6.79	30.26	0.29	80.50	0.83
69	6350.00	95.00	0.57	109.43	6349.60	31.25	6.33	31.25	-0.19	-9.53	0.22
70	6445.00	95.00	0.26	85.53	6444.60	31.91	6.19	31.91	-0.33	-25.16	0.37
71	6539.00	94.00	0.44	3.79	6538.60	32.14	6.57	32.14	0.19	-86.96	0.51
72	6634.00	95.00	0.53	119.72	6633.60	32.55	6.72	32.55	0.09	122.03	0.87
73	6727.00	93.00	0.26	30.51	6726.60	33.03	6.69	33.03	-0.29	-95.92	0.63
74	6823.00	96.00	0.66	12.49	6822.59	33.26	7.41	33.26	0.42	-18.77	0.44
75	6916.00	93.00	0.79	102.84	6915.59	34.00	7.79	34.00	0.14	97.15	1.11
76	7012.00	96.00	0.53	94.84	7011.58	35.09	7.61	35.09	-0.27	-8.33	0.29
77	7105.00	93.00	0.97	184.23	7104.58	35.46	6.79	35.46	0.47	96.12	1.18
78	7199.00	94.00	1.14	195.92	7198.56	35.15	5.09	35.15	0.18	12.44	0.29
79	7294.00	95.00	1.36	184.14	7293.54	34.81	3.06	34.81	0.23	-12.40	0.35
80	7388.00	94.00	0.40	72.52	7387.53	35.04	2.05	35.04	-1.02	-118.74	1.65
81	7482.00	94.00	0.53	80.69	7481.53	35.78	2.22	35.78	0.14	8.69	0.15
82	7577.00	95.00	0.62	67.95	7576.52	36.69	2.48	36.69	0.09	-13.41	0.16
83	7671.00	94.00	0.53	63.90	7670.52	37.55	2.86	37.55	-0.10	-4.31	0.11
84	7766.00	95.00	0.48	50.72	7765.51	38.25	3.31	38.25	-0.05	-13.87	0.13
85	7858.00	92.00	0.22	50.11	7857.51	38.69	3.66	38.69	-0.28	-0.66	0.28
86	7953.00	95.00	0.18	136.15	7952.51	38.93	3.67	38.93	-0.04	90.57	0.29
87	8047.00	94.00	0.04	243.55	8046.51	39.00	3.55	39.00	-0.15	114.26	0.21
88	8141.00	94.00	0.44	288.73	8140.51	38.63	3.65	38.63	0.43	48.06	0.44
89	8236.00	95.00	1.14	100.64	8235.51	39.22	3.60	39.22	0.74	-197.99	1.66
90	8330.00	94.00	1.36	98.97	8329.48	41.24	3.25	41.24	0.23	-1.78	0.24
91	8424.00	94.00	0.53	255.86	8423.48	41.92	2.97	41.92	-0.88	166.90	1.98
92	8518.00	94.00	0.62	258.76	8517.47	41.00	2.77	41.00	0.10	3.08	0.10
93	8613.00	95.00	0.57	276.95	8612.47	40.02	2.72	40.02	-0.05	19.15	0.20
94	8707.00	94.00	0.66	279.68	8706.46	39.03	2.87	39.03	0.10	2.90	0.10
95	8802.00	95.00	0.57	264.12	8801.46	38.02	2.91	38.02	-0.09	-16.38	0.20
96	8897.00	95.00	0.48	271.68	8896.45	37.15	2.88	37.15	-0.09	7.96	0.12

97	8990.00	93.00	0.92	65.31	8989.45	37.44	3.20	37.44	0.47	165.19	1.47
98	9084.00	94.00	0.88	67.07	9083.44	38.79	3.80	38.79	-0.04	1.87	0.05
99	9179.00	95.00	0.70	70.41	9178.43	40.01	4.28	40.01	-0.19	3.52	0.20
100	9273.00	94.00	0.70	67.86	9272.42	41.08	4.68	41.08	0.00	-2.71	0.03
101	9367.00	94.00	0.75	70.50	9366.41	42.19	5.11	42.19	0.05	2.81	0.06
102	9462.00	95.00	0.66	59.95	9461.41	43.25	5.59	43.25	-0.09	-11.11	0.17
103	9555.00	93.00	0.66	51.69	9554.40	44.14	6.19	44.14	0.00	-8.88	0.10
104	9649.00	94.00	0.97	117.17	9648.39	45.27	6.16	45.27	0.33	69.66	0.98
105	9743.00	94.00	0.84	119.19	9742.38	46.58	5.46	46.58	-0.14	2.15	0.14
106	9837.00	94.00	0.79	117.43	9836.37	47.75	4.83	47.75	-0.05	-1.87	0.06
107	9931.00	94.00	0.88	107.59	9930.36	49.02	4.31	49.02	0.10	-10.47	0.18
108	10024.00	93.00	0.84	101.08	10023.35	50.37	3.96	50.37	-0.04	-7.00	0.11
109	10119.00	95.00	0.62	82.19	10118.34	51.56	3.90	51.56	-0.23	-19.88	0.34
110	10214.00	95.00	0.40	77.70	10213.34	52.39	4.04	52.39	-0.23	-4.73	0.24
111	10245.00	31.00	0.40	69.44	10244.34	52.60	4.10	52.60	0.00	-26.65	0.19

RPM Geologic

Operator:	**Oasis Petroleum**
Well :	KLINE FEDERAL 5300 41-18 12TX
MWD Providers	Gyrodata
Directional Supervision:	RPM

Section:	18	QQ:	SW SW	County:	McKenzie	State:	ND
Township:	153	N/S:	N	Footages:	434	FN/SL:	S
Range:	100	E/W:	W		237	FE/WL:	W

Vertical Section Plane: **90.00**

#	MD	Inc.	Azm.	T.V.D.	Ver. Sect.	Coordinates +N / -S	Coordinates +E / -W	DLS
Tie	**10245.00**	**0.40**	**69.44**	**10244.34**	**52.60**	**4.10**	**52.60**	**0.19**
1	10277.00	0.53	87.37	10276.34	52.85	4.15	52.85	0.61
2	10309.00	2.99	112.42	10308.32	53.77	3.83	53.77	7.87
3	10340.00	8.26	114.44	10339.16	56.55	2.60	56.55	17.01
4	10372.00	12.79	113.91	10370.61	61.88	0.22	61.88	14.16
5	10404.00	16.84	111.89	10401.54	69.42	-2.95	69.42	12.76
6	10436.00	21.63	110.57	10431.75	79.25	-6.75	79.25	15.03
7	10467.00	23.78	111.89	10460.35	90.40	-11.09	90.40	7.13
8	10500.00	26.29	114.88	10490.24	103.21	-16.65	103.21	8.52
9	10531.00	29.05	118.84	10517.70	116.03	-23.17	116.03	10.69
10	10563.00	32.26	120.24	10545.22	130.22	-31.22	130.22	10.28
11	10594.00	35.16	118.66	10571.01	145.20	-39.67	145.20	9.77
12	10626.00	39.21	117.34	10596.50	162.28	-48.74	162.28	12.90
13	10657.00	43.16	114.09	10619.83	180.67	-57.57	180.67	14.49
14	10689.00	45.45	113.30	10642.73	201.14	-66.55	201.14	7.36
15	10720.00	46.59	109.52	10664.26	221.90	-74.68	221.90	9.51
16	10752.00	50.11	109.34	10685.52	244.45	-82.63	244.45	11.01
17	10783.00	54.20	109.96	10704.53	267.50	-90.87	267.50	13.29
18	10815.00	58.11	110.22	10722.35	292.45	-99.99	292.45	12.24
19	10847.00	61.63	111.28	10738.41	318.33	-109.80	318.33	11.37
20	10877.00	61.75	111.45	10752.64	342.92	-119.42	342.92	0.64
21	10909.00	65.14	112.16	10766.94	369.49	-130.06	369.49	10.78
22	10940.00	69.67	112.68	10778.85	395.94	-140.97	395.94	14.69
23	10972.00	73.58	113.30	10788.94	423.89	-152.83	423.89	12.36
24	11003.00	76.62	114.27	10796.91	451.30	-164.91	451.30	10.26
25	11035.00	78.07	114.00	10803.92	479.80	-177.68	479.80	4.61
26	11067.00	82.42	114.71	10809.34	508.52	-190.68	508.52	13.77
27	11112.00	89.89	114.18	10812.36	549.36	-209.25	549.36	16.64
28	11179.00	90.90	110.67	10811.89	611.29	-234.80	611.29	5.45
29	11211.00	90.29	112.96	10811.56	640.99	-246.69	640.99	7.41
30	11242.00	90.15	111.81	10811.44	669.65	-258.50	669.65	3.74
31	11273.00	89.32	109.44	10811.59	698.66	-269.42	698.66	8.10

32	11304.00	87.74	108.74	10812.38	727.95	-279.55	727.95	5.57
33	11336.00	87.08	106.45	10813.83	758.42	-289.22	758.42	7.44
34	11366.00	86.99	104.25	10815.38	787.31	-297.15	787.31	7.33
35	11397.00	87.30	103.64	10816.92	817.36	-304.61	817.36	2.21
36	11428.00	88.90	101.97	10817.95	847.57	-311.47	847.57	7.46
37	11459.00	88.79	99.68	10818.58	878.01	-317.29	878.01	7.39
38	11490.00	89.41	97.57	10819.06	908.65	-321.94	908.65	7.09
39	11521.00	90.37	96.17	10819.12	939.43	-325.65	939.43	5.48
40	11552.00	90.11	94.32	10818.99	970.30	-328.48	970.30	6.03
41	11584.00	89.76	92.39	10819.03	1002.24	-330.36	1002.24	6.13
42	11615.00	90.37	90.72	10818.99	1033.23	-331.20	1033.23	5.74
43	11646.00	90.81	88.61	10818.67	1064.22	-331.02	1064.22	6.95
44	11708.00	91.38	86.41	10817.49	1126.15	-328.32	1126.15	3.66
45	11740.00	91.47	87.12	10816.69	1158.09	-326.52	1158.09	2.24
46	11771.00	92.35	86.59	10815.66	1189.02	-324.82	1189.02	3.31
47	11802.00	90.55	88.96	10814.88	1219.99	-323.62	1219.99	9.60
48	11833.00	90.50	89.00	10814.59	1250.98	-323.06	1250.98	0.21
49	11864.00	88.75	89.05	10814.79	1281.97	-322.54	1281.97	5.65
50	11927.00	89.10	89.66	10815.98	1344.96	-321.83	1344.96	1.12
51	11958.00	89.05	87.29	10816.48	1375.94	-321.00	1375.94	7.65
52	12020.00	89.85	88.87	10817.07	1437.90	-318.93	1437.90	2.86
53	12113.00	89.93	89.14	10817.25	1530.89	-317.31	1530.89	0.30
54	12145.00	89.76	87.99	10817.34	1562.88	-316.51	1562.88	3.63
55	12207.00	88.92	88.35	10818.05	1624.84	-314.53	1624.84	1.47
56	12238.00	88.70	85.62	10818.70	1655.79	-312.90	1655.79	8.83
57	12301.00	88.44	85.18	10820.27	1718.56	-307.85	1718.56	0.81
58	12393.00	91.65	83.95	10820.20	1810.14	-299.14	1810.14	3.74
59	12424.00	91.43	83.34	10819.36	1840.93	-295.71	1840.93	2.09
60	12486.00	90.02	84.30	10818.58	1902.57	-289.03	1902.57	2.75
61	12518.00	89.01	87.12	10818.85	1934.47	-286.64	1934.47	9.36
62	12580.00	89.76	86.74	10819.51	1996.38	-283.32	1996.38	1.36
63	12612.00	89.49	86.59	10819.72	2028.32	-281.46	2028.32	0.97
64	12675.00	87.96	86.06	10821.13	2091.18	-277.42	2091.18	2.57
65	12707.00	87.96	86.59	10822.26	2123.09	-275.37	2123.09	1.66
66	12769.00	88.75	87.47	10824.04	2184.98	-272.16	2184.98	1.91
67	12801.00	88.13	88.61	10824.92	2216.95	-271.07	2216.95	4.05
68	12833.00	88.22	87.56	10825.93	2248.92	-270.00	2248.92	3.29
69	12864.00	89.23	86.85	10826.62	2279.87	-268.49	2279.87	3.98
70	12927.00	90.77	88.17	10826.62	2342.81	-265.75	2342.81	3.22
71	12959.00	90.95	87.64	10826.14	2374.78	-264.58	2374.78	1.75
72	13022.00	88.92	86.59	10826.22	2437.70	-261.41	2437.70	3.63
73	13053.00	88.00	87.29	10827.05	2468.64	-259.75	2468.64	3.73
74	13116.00	87.91	89.23	10829.30	2531.57	-257.84	2531.57	3.08
75	13148.00	88.48	88.43	10830.30	2563.55	-257.19	2563.55	3.07

76	13211.00	89.98	90.54	10831.15	2626.53	-256.62	2626.53	4.11
77	13242.00	90.29	90.46	10831.08	2657.53	-256.89	2657.53	1.03
78	13274.00	90.81	90.28	10830.77	2689.53	-257.10	2689.53	1.72
79	13337.00	91.96	90.90	10829.25	2752.51	-257.75	2752.51	2.07
80	13368.00	90.51	91.51	10828.58	2783.49	-258.40	2783.49	5.07
81	13431.00	90.73	90.28	10827.90	2846.48	-259.38	2846.48	1.98
82	13463.00	88.40	90.81	10828.14	2878.48	-259.69	2878.48	7.47
83	13526.00	88.22	91.16	10830.00	2941.44	-260.77	2941.44	0.62
84	13588.00	86.37	89.58	10832.93	3003.36	-261.17	3003.36	3.92
85	13620.00	86.33	90.54	10834.96	3035.30	-261.21	3035.30	3.00
86	13651.00	86.90	90.37	10836.79	3066.24	-261.45	3066.24	1.92
87	13714.00	88.75	91.07	10839.18	3129.19	-262.24	3129.19	3.14
88	13745.00	89.63	90.19	10839.62	3160.18	-262.58	3160.18	4.01
89	13808.00	91.12	89.75	10839.21	3223.18	-262.55	3223.18	2.47
90	13840.00	90.37	88.96	10838.79	3255.18	-262.19	3255.18	3.40
91	13903.00	90.42	90.02	10838.36	3318.17	-261.63	3318.17	1.68
92	13935.00	88.79	89.75	10838.58	3350.17	-261.57	3350.17	5.16
93	13998.00	89.76	88.08	10839.38	3413.15	-260.37	3413.15	3.07
94	14092.00	90.07	87.99	10839.52	3507.09	-257.15	3507.09	0.34
95	14124.00	89.58	89.31	10839.61	3539.08	-256.40	3539.08	4.40
96	14187.00	91.52	88.61	10839.01	3602.07	-255.25	3602.07	3.27
97	14281.00	90.73	88.43	10837.16	3696.02	-252.82	3696.02	0.86
98	14313.00	90.99	89.66	10836.68	3728.01	-252.29	3728.01	3.93
99	14375.00	90.07	89.49	10836.11	3790.00	-251.83	3790.00	1.51
100	14407.00	87.74	90.28	10836.72	3821.99	-251.77	3821.99	7.69
101	14470.00	87.91	91.07	10839.11	3884.94	-252.51	3884.94	1.28
102	14565.00	88.31	90.98	10842.25	3979.88	-254.21	3979.88	0.43
103	14628.00	90.77	90.63	10842.75	4042.86	-255.09	4042.86	3.94
104	14659.00	89.85	89.40	10842.58	4073.86	-255.10	4073.86	4.95
105	14722.00	89.05	88.61	10843.19	4136.85	-254.01	4136.85	1.78
106	14754.00	89.41	89.14	10843.62	4168.84	-253.38	4168.84	2.00
107	14817.00	87.96	89.66	10845.06	4231.82	-252.72	4231.82	2.45
108	14848.00	87.82	89.49	10846.21	4262.80	-252.49	4262.80	0.71
109	14943.00	90.33	88.79	10847.74	4357.76	-251.06	4357.76	2.74
110	14974.00	91.30	89.23	10847.30	4388.76	-250.53	4388.76	3.44
111	15037.00	92.04	88.52	10845.46	4451.72	-249.29	4451.72	1.63
112	15131.00	88.31	90.81	10845.18	4545.69	-248.74	4545.69	4.66
113	15225.00	88.79	90.54	10847.55	4639.66	-249.85	4639.66	0.59
114	15320.00	87.74	89.79	10850.43	4734.61	-250.12	4734.61	1.36
115	15414.00	87.60	89.66	10854.25	4828.53	-249.67	4828.53	0.20
116	15477.00	88.18	89.31	10856.57	4891.48	-249.11	4891.48	1.08
117	15509.00	88.79	87.73	10857.42	4923.46	-248.28	4923.46	5.29
118	15540.00	89.85	88.08	10857.79	4954.44	-247.15	4954.44	3.60
119	15603.00	91.21	87.82	10857.20	5017.39	-244.89	5017.39	2.20

120	15635.00	90.20	88.26	10856.81	5049.37	-243.80	5049.37	3.44
121	15698.00	88.66	88.96	10857.44	5112.35	-242.27	5112.35	2.69
122	15761.00	89.27	90.19	10858.57	5175.33	-241.80	5175.33	2.18
123	15792.00	89.58	91.95	10858.89	5206.33	-242.38	5206.33	5.76
124	15855.00	89.98	93.44	10859.13	5269.25	-245.34	5269.25	2.45
125	15887.00	90.55	91.95	10858.98	5301.22	-246.85	5301.22	4.99
126	15950.00	89.85	91.07	10858.76	5364.19	-248.51	5364.19	1.78
127	15981.00	90.07	90.19	10858.78	5395.19	-248.85	5395.19	2.93
128	16013.00	90.51	90.28	10858.62	5427.19	-248.98	5427.19	1.40
129	16076.00	91.38	89.93	10857.58	5490.18	-249.10	5490.18	1.49
130	16107.00	92.35	89.58	10856.57	5521.16	-248.96	5521.16	3.33
131	16170.00	93.01	90.54	10853.63	5584.09	-249.03	5584.09	1.85
132	16265.00	89.45	90.37	10851.59	5679.05	-249.78	5679.05	3.75
133	16359.00	89.05	90.46	10852.82	5773.04	-250.46	5773.04	0.44
134	16454.00	89.14	89.75	10854.32	5868.03	-250.64	5868.03	0.75
135	16548.00	89.76	90.72	10855.22	5962.02	-251.02	5962.02	1.22
136	16643.00	91.03	89.49	10854.56	6057.02	-251.20	6057.02	1.86
137	16737.00	91.52	90.19	10852.47	6150.99	-250.94	6150.99	0.91
138	16831.00	91.47	88.96	10850.02	6244.96	-250.24	6244.96	1.31
139	16895.00	91.43	89.49	10848.40	6308.93	-249.37	6308.93	0.83
140	16927.00	90.42	89.49	10847.88	6340.93	-249.09	6340.93	3.16
141	16958.00	89.93	90.10	10847.79	6371.92	-248.98	6371.92	2.52
142	17021.00	90.95	90.28	10847.31	6434.92	-249.19	6434.92	1.64
143	17053.00	89.93	88.08	10847.06	6466.91	-248.73	6466.91	7.58
144	17115.00	90.59	88.43	10846.78	6528.88	-246.84	6528.88	1.20
145	17210.00	87.16	88.43	10848.64	6623.82	-244.24	6623.82	3.61
146	17241.00	87.38	89.40	10850.12	6654.78	-243.65	6654.78	3.21
147	17304.00	88.79	88.79	10852.23	6717.73	-242.66	6717.73	2.44
148	17336.00	89.19	88.70	10852.79	6749.72	-241.96	6749.72	1.28
149	17399.00	89.98	87.82	10853.25	6812.69	-240.04	6812.69	1.88
150	17493.00	89.89	88.70	10853.35	6906.64	-237.19	6906.64	0.94
151	17588.00	91.30	91.60	10852.37	7001.62	-237.44	7001.62	3.39
152	17682.00	93.85	91.69	10848.14	7095.48	-240.13	7095.48	2.71
153	17777.00	93.85	90.28	10841.76	7190.25	-241.76	7190.25	1.48
154	17808.00	92.26	90.37	10840.11	7221.21	-241.94	7221.21	5.14
155	17871.00	92.62	90.02	10837.43	7284.15	-242.15	7284.15	0.80
156	17902.00	89.98	90.90	10836.73	7315.14	-242.40	7315.14	8.98
157	17933.00	90.24	91.25	10836.67	7346.13	-242.98	7346.13	1.41
158	17965.00	89.27	90.10	10836.80	7378.13	-243.36	7378.13	4.70
159	17996.00	88.62	90.63	10837.37	7409.12	-243.56	7409.12	2.71
160	18059.00	87.12	91.07	10839.72	7472.07	-244.49	7472.07	2.48
161	18153.00	87.96	91.16	10843.75	7565.96	-246.32	7565.96	0.90
162	18215.00	89.85	87.99	10844.94	7627.94	-245.86	7627.94	5.95
163	18247.00	90.37	87.99	10844.87	7659.92	-244.74	7659.92	1.63

164	18310.00	88.75	88.35	10845.36	7722.88	-242.73	7722.88	2.63
165	18341.00	89.01	87.56	10845.96	7753.86	-241.62	7753.86	2.68
166	18435.00	88.26	89.49	10848.20	7847.79	-239.20	7847.79	2.20
167	18530.00	88.13	90.10	10851.20	7942.75	-238.86	7942.75	0.66
168	18593.00	88.31	90.28	10853.15	8005.72	-239.07	8005.72	0.40
169	18624.00	88.48	90.02	10854.02	8036.70	-239.15	8036.70	1.00
170	18687.00	89.14	90.54	10855.33	8099.69	-239.46	8099.69	1.33
171	18718.00	89.80	89.66	10855.62	8130.69	-239.51	8130.69	3.55
172	18812.00	91.21	90.90	10854.79	8224.68	-239.97	8224.68	2.00
173	18906.00	93.41	88.87	10851.00	8318.59	-239.78	8318.59	3.18
174	18937.00	92.40	89.58	10849.43	8349.55	-239.37	8349.55	3.98
175	18968.00	93.14	89.84	10847.93	8380.51	-239.21	8380.51	2.53
176	19000.00	91.96	88.43	10846.51	8412.47	-238.73	8412.47	5.74
177	19031.00	90.11	90.02	10845.95	8443.46	-238.31	8443.46	7.87
178	19094.00	87.87	89.93	10847.06	8506.45	-238.28	8506.45	3.56
179	19157.00	88.57	91.25	10849.01	8569.41	-238.93	8569.41	2.37
180	19188.00	89.23	89.75	10849.61	8600.41	-239.20	8600.41	5.29
181	19282.00	87.34	87.91	10852.42	8694.34	-237.28	8694.34	2.81
182	19313.00	87.69	87.56	10853.77	8725.28	-236.06	8725.28	1.60
183	19376.00	88.79	87.03	10855.70	8788.18	-233.09	8788.18	1.94
184	19470.00	88.09	91.77	10858.26	8882.11	-232.10	8882.11	5.10
185	19501.00	87.82	93.53	10859.37	8913.06	-233.53	8913.06	5.74
186	19533.00	88.22	92.92	10860.47	8944.99	-235.33	8944.99	2.28
187	19564.00	88.35	93.27	10861.40	8975.93	-237.01	8975.93	1.20
188	19596.00	88.57	91.16	10862.26	9007.89	-238.24	9007.89	6.63
189	19659.00	88.31	88.35	10863.98	9070.86	-237.97	9070.86	4.48
190	19690.00	88.44	88.79	10864.86	9101.84	-237.20	9101.84	1.48
191	19721.00	89.27	89.23	10865.47	9132.83	-236.66	9132.83	3.03
192	19753.00	89.63	89.49	10865.78	9164.83	-236.31	9164.83	1.39
193	19784.00	90.20	90.02	10865.83	9195.83	-236.17	9195.83	2.51
194	19847.00	91.30	88.87	10865.00	9258.82	-235.56	9258.82	2.53
195	19941.00	92.35	89.66	10862.01	9352.76	-234.36	9352.76	1.40
196	19973.00	92.09	90.02	10860.77	9384.73	-234.27	9384.73	1.39
197	20004.00	92.57	90.19	10859.51	9415.71	-234.33	9415.71	1.64
198	20035.00	93.45	89.14	10857.88	9446.66	-234.14	9446.66	4.42
199	20067.00	91.38	90.02	10856.53	9478.63	-233.91	9478.63	7.03
200	20129.00	89.76	90.72	10855.92	9540.63	-234.31	9540.63	2.85
201	20193.00	90.11	91.07	10855.99	9604.62	-235.31	9604.62	0.77
202	20224.00	90.33	90.81	10855.87	9635.61	-235.82	9635.61	1.10
203	20287.00	91.30	90.81	10854.97	9698.60	-236.71	9698.60	1.54
204	20318.00	91.65	90.10	10854.18	9729.59	-236.96	9729.59	2.55
205	20413.00	92.92	89.66	10850.39	9824.51	-236.76	9824.51	1.41
206	20507.00	93.41	89.31	10845.20	9918.36	-235.91	9918.36	0.64
Proj	20583.00	93.41	89.31	10840.68	9994.22	-235.00	9994.22	0.00

Kline Federal 5300 41-18 12TX LITHOLOGY

Geologists caught lagged samples in 30' intervals in the vertical hole, from 8,350' to 10,300' MD; 30' intervals in the curve build from 10,300' to 11,190' MD; and 50' samples in the lateral from 11,190' to TD at 20,583'

Electric geophysical log, sample and/or MWD gamma ray markers and tops are included in the sample descriptions below for reference. Samples were examined wet and dry under a binocular microscope in approximately 30' to 50' intervals. Sample descriptions begin in the **Kibbey** formation. The drilling fluid was diesel invert in the vertical, curve, and lateral.

Drilling vertical hole in Dakota Formation

8350-8384 SILTSTONE: reddish brown, occasional, gray to light gray, brown to light brown gray, soft, sub-blocky, earthy texture, no visible porosity, no visible oil stain

Kibbey Lime *8,384' MD, 8,384' TVD (-6,302')*

8384-8410 SILTSTONE: reddish brown, occasional, gray to light gray, brown to light brown gray, soft, sub-blocky, earthy texture, no visible porosity, no visible oil stain; LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

8410-8440 SILTY SANDSTONE: medium gray, fine grained, firm to friable, rounded, well sorted, moderately cemented, calcite cement, possible intergranular porosity, no visible oil stain; SILTSTONE: reddish brown, occasional, gray to light gray, brown to light brown gray, soft, sub-blocky, earthy texture, no visible porosity, no visible oil stain

8440-8470 SILTY SANDSTONE: medium gray, fine grained, firm to friable, rounded, well sorted, moderately cemented, calcite cement, possible intergranular porosity, no visible oil stain; SILTSTONE: reddish brown, occasional, gray to light gray, brown to light brown gray, soft, sub-blocky, earthy texture, no visible porosity, no visible oil stain

8470-8500 SILTY SANDSTONE: medium gray, fine grained, firm to friable, rounded, well sorted, moderately cemented, calcite cement, possible intergranular porosity, no visible oil stain; SILTSTONE: reddish brown, occasional, gray to light gray, brown to light brown gray, soft, sub-blocky, earthy texture, no visible porosity, no visible oil stain

8500-8530 SILTY SANDSTONE: medium gray, fine grained, firm to friable, rounded, well sorted, moderately cemented, calcite cement, possible intergranular porosity, no visible oil stain; SILTSTONE: reddish brown, occasional, gray to light gray, brown to light brown gray, soft, sub-blocky, earthy texture, no visible porosity, no visible oil stain

8530-8556 SILTY SANDSTONE: medium gray, fine grained, firm to friable, rounded, well sorted, moderately cemented, calcite cement, possible intergranular porosity, no visible oil stain; SILTSTONE: reddish brown, occasional, gray to light gray, brown to light brown gray, soft, sub-blocky, earthy texture, no visible porosity, no visible oil stain

8556-8590 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain

8590-8620 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain

8620-8650 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

8650-8680 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain

8680-8710 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain

8710-8740 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

8740-8770 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain

8770-8800 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain

8800-8830 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

8830-8860 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

8860-8890 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

88900-8920 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

8920-8950 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

8950-8980 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

8980-9010 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9010-9040 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9040-9070 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9070-9100 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9100-9130 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9130-91760 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9160-9190 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9190-9206 SALT: translucent, trace off white, crystalline, firm, crystalline texture, no visible porosity, no visible oil stain, LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

Base Charles Salt *9,206' MD, 9,206' TVD (-7,124')*

9206-9250 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9250-9280 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9280-9310 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9310-9340 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9340-9370 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9370-9400 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9400-9428 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

Mission Canyon ***9,428' MD, 9,428' TVD (-7,346')***

9428-9460 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9460-9490 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9490-9520 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9520-9550 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9550-9580 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9580-9610 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9610-9640 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9640-9670 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9670-9700 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9700-9730 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9730-9760 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9760-9790 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9790-9820 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9820-9850 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9850-9880 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9880-9910 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9910-9940 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

9940-9975 LIMESTONE: wackestone, light gray to medium gray, light gray brown to medium gray brown, occasional off white friable to firm, crystalline to microcrystalline

Lodgepole ***9,975' MD, 9,975' TVD (-7,893')***

9975-10000 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10000-10030 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10030-10060 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10060-10090 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10090-10120 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10120-10150 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10150-10180 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10180-10210 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10210-10240 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10240-10270 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10270-10300 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10,300' Vertical TD reached @ 11:00 hours CST, 22 October 2014

Drilling curve build in the Lodgepole Formation

10300-10330 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10330-10360 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10360-10390 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10390-10420 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10420-10450 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10450-10480 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10480-10510 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10510-10540 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10540-10570 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10570-10600 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10600-10630 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10630-10660 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10660-10690 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10690-10720 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10720-10750 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

10750-10781 ARGILLACEOUS LIMESTONE: wackestone, medium gray brown to light gray brown, firm, crystalline texture, trace sparry calcareous, carbonaceous, possible intercrystalline porosity, possible slightly light brown spotty oil stain

False Bakken 10,781' MD, 10,704' TVD (-8,622')

10781-10798 SHALE: black, dark gray black, firm, sub-blocky, earthy, calcareous cement, petro, carbonaceous, abundant fine disseminated pyrite, fine laminated

Upper Bakken Shale 10,798' MD, 10,713' TVD (-8,631')

10798 – 10829 SHALE: black, dark gray black, firm, sub-blocky, earthy, calcareous cement, petro, carbonaceous, abundant fine disseminated pyrite, fine laminated

Middle Bakken 10,829' MD, 10,730' TVD (-8,648')

10829-10840 SILTY SANDSTONE: common salt and pepper, occasional light gray to medium gray, visible white, very fine grained, soft to firm, moderately to well sorted, rounded to subrounded, moderately to poorly cemented, visible calcareous filled fractures, possible fracture porosity, common intergranular porosity, visible light brown spotty to even oil stain

10840-10870 SILTY SANDSTONE: common salt and pepper, occasional light gray to medium gray, visible white, very fine grained, soft to firm, moderately to well sorted, rounded to subrounded, moderately to poorly cemented, visible calcareous filled fractures, possible fracture porosity, common intergranular porosity, visible light brown spotty to even oil stain

10870-10918 SILTY SANDSTONE: common salt and pepper, occasional light gray to medium gray, visible white, very fine grained, soft to firm, moderately to well sorted, rounded to subrounded, moderately to poorly cemented, visible calcareous filled fractures, possible fracture porosity, common intergranular porosity, visible light brown spotty to even oil stain

Lower Bakken Shale ***10,918' MD, 10,771' TVD (-8,689')***

10918-10952 SHALE: black, dark gray black, firm, sub-blocky, earthy, calcareous cement, petro, carbonaceous, abundant fine disseminated pyrite, fine laminated

Pronghorn ***10,952' MD, 10,783' TVD (-8,701')***

10952-10960 SILTSTONE: medium gray, medium gray brown, friable to firm, sub-blocky to sub platy, dolomite cement, moderately cemented, trace disseminated pyrite, possible intergranular porosity

10960-10990 SILTSTONE: medium gray, medium gray brown, friable to firm, sub-blocky to sub platy, dolomite cement, moderately cemented, trace disseminated pyrite, possible intergranular porosity

10990-11011 SILTSTONE: medium gray, medium gray brown, friable to firm, sub-blocky to sub platy, dolomite cement, moderately cemented, trace disseminated pyrite, possible intergranular porosity

Three Forks ***11,011' MD, 10,799' TVD (-8,717')***

11011-11050 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11050-11080 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11080-11110 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11110-11140 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11140-11170 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11170-11190 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

Curve TD of 11,190' @ 15:00 CST 24 October-2014

Intermediate 7" Casing Set @ 11,189' MD

11190-11250 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11250-11300 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11300-11350 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11350-11400 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11400-11450 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11450-11500 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11500-11550 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11550-11600 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11600-11650 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11650-11700 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11700-11750 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11750-11800 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11800-11850 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11850-11900 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11900-11950 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

11950-12000 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12000-12050 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12050-12100 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12100-12150 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12150-12200 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12200-12250 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12250-12300 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12300-12350 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12350-12400 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12400-12450 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12450-12500 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12500-12550 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12550-12600 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12600-12650 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12650-12700 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12700-12750 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12750-12800 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12800-12850 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12850-12900 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12900-12950 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

12950-13000 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13000-13050 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13050-13100 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13100-13150 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13150-13200 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13200-13250 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13250-13300 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13300-13350 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13350-13400 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13400-13450 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13450-13500 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13500-13550 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13550-13600 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13600-13650 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13650-13700 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13700-13750 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13750-13800 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13800-13850 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13850-13900 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13900-13950 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

13950-14000 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14000-14050 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14050-14100 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14100-14150 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14150-14200 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14200-14250 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14250-14300 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14300-14350 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14350-14400 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14400-14450 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14450-14500 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14500-14550 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14550-14600 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14600-14650 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14650-14700 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14700-14750 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14750-14800 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14800-14850 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14850-14900 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14900-14950 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

14950-15000 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15000-15050 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15050-15100 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15100-15150 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15150-15200 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15200-15250 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15250-15300 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15300-15350 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15350-15400 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15400-15450 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

15450-15500DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain; CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

15500-15550 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

15550-15600 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

15600-15650 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

15650-15700 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

15700-15750 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

15750-15800 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

15800-15850 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

15850-15900 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

15900-15950 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

15950-16000 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

16000-16050 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite; DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16050-16100 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16100-16150 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16150-16200 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16200-16250 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16250-16300 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16300-16350 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16350-16400 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16400-16450 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16450-16500 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16500-16550 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16550-16600 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16600-16650 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16650-16700 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16700-16750 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16750-16800 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16800-16850 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16850-16900 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16900-16950 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

16950-17000 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17000-17050 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17050-17100 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17100-17150 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17150-17200 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17200-17250 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17250-17300 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17300-17350 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17350-17400 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17400-17450 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17450-17500 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17500-17550 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17550-17600 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17600-17650 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17650-17700 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17700-17750 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17750-17800 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17800-17850 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17850-17900 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17900-17950 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

17950-18000 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18000-18050 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18050-18100 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18100-18150 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18150-18200 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18200-18250 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18250-18300 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18300-18350 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18350-18400 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18400-18450 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18450-18500 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18500-18550 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18550-18600 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18600-18650 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18650-18700 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18700-18750 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18750-18800 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18800-18850 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18850-18900 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18900-18950 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

18950-19000 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19000-19050 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19050-19100 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19100-19150 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19150-19200 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19200-19250 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19250-19300 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19300-19350 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19350-19400 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19400-19450 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite; DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

19450-19500 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

19500-19550 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

19550-19600 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

19600-19650 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

19650-19700 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

19700-19750 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

19750-19800 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

19800-19850 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

19850-19900 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

19900-19950 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

19950-20000 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite

20000-20050 CLAYSTONE: off white to light gray, light mint green, moderately soft, sub-blocky to sub-angular, very slightly calcareous, trace silt crystalline porosity, trace disseminated and nodular pyrite; DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

20050-20100 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

20100-20150 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

20150-20200 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

20200-20250 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

20250-20300 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

20300-20350 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

20350-20400 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

20400-20450 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

20450-20500 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

20500-20550 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

20550-20583 DOLOMITE: mudstone, light to medium gray, very fine crystalline, firm, earthy texture, trace silty, trace very fine sand, trace intercrystalline porosity, trace disseminated and nodular pyrite, trace spotty light brown oil stain

20,583' TD reached @ 06:15 hours CST, 26 January 2015

RPM Geologic

NORTH DAKOTA
OIL AND GAS DIVISION

Oil and Gas Division

28658

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

January 8, 2016

Michael Kukuk
OASIS PETRO NO AMER
1001 FANNIN ST. SUITE 1500
HOUSTON, TX 77002

RE: See Attached List of Wells
List Reference WF# 28658

Dear Michael Kukuk:

We have not received the geological reports on the referenced well list. Please submit one paper copy and one digital pdf file of this report for each well.

If you have any questions, please contact Richard Suggs at (701) 328-8020.

Sincerely,

Taylor Roth

Taylor Roth
Engineering Technician

600 E Boulevard Ave - Dept 405, Bismarck, North Dakota 58505-0840 Phone (701)328-8020 Fax (701)328-8022

Gyrodata Incorporated
301 Thelma Dr. #413
Casper, Wyoming 82601

307-472-0182
Fax: 307-472-0204

DIRECTIONAL SURVEY CERTIFICATION

RE: Oasis Petroleum (Operator)

Kline Federal #5300 41-18 12TX (Well Name & No.)

8.27 (Magnetic Declination)

Surveyor: Richard Bradbury

I, Kristopher Bertsch ,having personal knowledge of all the facts, hereby certify that the attached directional survey run from measured depth of 140 feet to a measured depth of 20507 feet and is projected to 20584feet, is true and correct as determined from all available records.

Signature	Title	Company
	MWD Coordinator	Gyrodata, Inc.

*All measurements recorded with a manned MWD Survey Tool.

A Gyrodata Directional Survey

FINAL DEFINITIVE COPY

for

OASIS PETROLEUM

Lease: Kline Federal Well: 5300 41-18 12TX, 8 3/4" Case, 6" Hole

Location: Nabors #486, McKenzie County, North Dakota

Job Number: RD0814M180

Run Date: 03 Mar 2015

Surveyor: Richard Bradbury

Calculation Method: MINIMUM CURVATURE

Survey Latitude: 48.068791 deg. N Longitude: 103.602346 deg. W

Magnetic Declination: 8.2700 deg

Total Correction: 8.2700 deg

Proposed Well Direction: 90.000 deg

Depth Reference: Rotary Table

Air Gap (RKB to Ground / RKB to MSL): 25.00

Ground Elevation (Ground to MSL / MSL to Mudline): 2057.00

Vertical Section Calculated from Well Head Location

Closure Calculated from Well Head Location

Horizontal Coordinates Calculated from Well Head Location

A Gyrodata Directional Survey

Oasis Petroleum
Lease: Kline Federal Well: 5300 41-18 12TX, 8 3/4" Case, 6" Hole
Location: Nabors #486, McKenzie County, North Dakota
Job Number: RD0814M180

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	CLOSURE AZIMUTH deg.	HORIZONTAL COORDINATES feet	
0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.00 N	0.00 E

NO TIE IN DATA PROVIDED. TIE INTO SURFACE.
ALL AZIMUTHS ARE REFERENCED TO TRUE NORTH.
ALL MEASURED DEPTHS AND COORDINATES REFERENCED TO NABORS 486 R.K.B. AT 25 FT.
140-20507 FT. MD ARE MAGNETIC MEASUREMENT WHILE DRILLING SURVEYS.
STRAIGHT LINE PROJECTION TO BIT DEPTH AT 20584 FT. MD.

140.00	0.35	146.08	0.25	140.00	0.4	146.1	0.35 S	0.24 E
234.00	0.66	143.09	0.33	234.00	1.3	144.8	1.03 S	0.72 E
327.00	0.57	172.80	0.35	326.99	2.2	150.0	1.91 S	1.10 E
421.00	0.48	154.78	0.20	420.99	3.0	154.1	2.73 S	1.33 E
516.00	0.40	139.75	0.15	515.98	3.8	152.9	3.35 S	1.71 E
607.00	0.79	150.04	0.44	606.98	4.7	151.6	4.13 S	2.23 E
699.00	0.44	178.51	0.49	698.97	5.6	153.1	5.03 S	2.56 E
791.00	0.66	158.91	0.31	790.97	6.5	154.9	5.88 S	2.76 E
882.00	1.41	157.07	0.82	881.95	8.1	155.4	7.40 S	3.38 E
974.00	0.40	19.78	1.88	973.95	9.0	154.2	8.14 S	3.93 E
1066.00	0.22	101.87	0.47	1065.94	8.9	151.9	7.88 S	4.21 E
1158.00	0.22	177.28	0.29	1157.94	9.2	151.5	8.09 S	4.40 E
1250.00	0.44	325.29	0.69	1249.94	9.0	152.2	7.98 S	4.20 E
1342.00	0.88	351.66	0.57	1341.94	8.0	150.8	6.99 S	3.90 E

A Gyrodata Directional Survey

Oasis Petroleum
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Job Number: RD0814M180

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	CLOSURE AZIMUTH deg.	HORIZONTAL COORDINATES feet	
1433.00	0.92	4.14	0.22	1432.93	6.8	145.3	5.57 S	3.85 E
1528.00	1.10	337.60	0.52	1527.91	5.3	138.1	3.96 S	3.56 E
1623.00	0.84	354.73	0.41	1622.90	4.0	127.6	2.43 S	3.15 E
1719.00	1.10	346.74	0.30	1718.88	3.0	106.1	0.83 S	2.87 E
1813.00	0.84	354.56	0.31	1812.87	2.7	74.2	0.74 N	2.60 E
1908.00	0.63	245.43	1.27	1907.87	2.4	59.5	1.21 N	2.06 E
2003.00	0.78	267.58	0.32	2002.86	1.3	44.1	0.97 N	0.94 E
2097.00	0.75	283.27	0.22	2096.85	1.1	344.4	1.08 N	0.30 W
2189.00	0.88	358.43	1.09	2188.84	2.1	334.8	1.93 N	0.91 W
2284.00	1.01	338.83	0.36	2283.83	3.6	340.3	3.44 N	1.23 W
2378.00	0.92	101.87	1.81	2377.82	4.1	349.0	4.05 N	0.79 W
2471.00	1.01	107.41	0.14	2470.81	3.7	11.2	3.65 N	0.72 E
2566.00	1.05	106.62	0.04	2565.80	3.9	36.7	3.15 N	2.36 E
2661.00	0.57	101.79	0.51	2660.79	4.6	52.4	2.81 N	3.65 E
2756.00	0.35	110.14	0.24	2755.78	5.1	59.2	2.61 N	4.39 E
2851.00	0.62	130.61	0.33	2850.78	5.5	66.7	2.18 N	5.05 E
2944.00	0.44	137.82	0.21	2943.78	5.9	74.4	1.59 N	5.67 E
3038.00	0.53	107.94	0.28	3037.77	6.4	79.4	1.19 N	6.33 E
3133.00	0.44	86.40	0.21	3132.77	7.2	81.4	1.07 N	7.11 E
3227.00	0.35	115.50	0.23	3226.77	7.8	82.8	0.97 N	7.73 E
3322.00	0.35	93.70	0.14	3321.77	8.3	84.3	0.83 N	8.28 E
3416.00	0.26	105.21	0.12	3415.76	8.8	85.1	0.75 N	8.77 E

A Gyrodata Directional Survey

Oasis Petroleum
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Location: Nabors #486, McKenzie County, North Dakota
Job Number: RD0814M180

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	CLOSURE AZIMUTH deg.	HORIZONTAL COORDINATES feet	
3512.00	0.35	135.36	0.19	3511.76	9.2	87.0	0.49 N	9.19 E
3606.00	0.53	117.25	0.24	3605.76	9.8	89.5	0.08 N	9.78 E
3700.00	0.35	125.78	0.20	3699.76	10.4	91.6	0.28 S	10.40 E
3795.00	0.44	106.88	0.17	3794.76	11.0	92.9	0.56 S	10.98 E
3889.00	0.44	123.67	0.14	3888.75	11.7	94.2	0.86 S	11.63 E
3983.00	0.31	119.01	0.14	3982.75	12.2	95.6	1.19 S	12.15 E
4078.00	0.31	103.46	0.09	4077.75	12.7	96.2	1.37 S	12.62 E
4170.00	0.13	121.47	0.21	4169.75	13.0	96.5	1.48 S	12.96 E
4265.00	0.09	117.52	0.04	4264.75	13.2	96.8	1.57 S	13.11 E
4360.00	0.09	177.20	0.09	4359.75	13.3	97.3	1.68 S	13.18 E
4455.00	0.22	137.65	0.17	4454.75	13.4	98.1	1.89 S	13.31 E
4550.00	0.04	153.11	0.19	4549.75	13.6	98.7	2.06 S	13.45 E
4644.00	0.35	25.94	0.40	4643.75	13.7	97.7	1.83 S	13.59 E
4739.00	0.40	53.80	0.20	4738.74	14.0	95.6	1.37 S	13.98 E
4834.00	0.44	45.89	0.07	4833.74	14.5	93.6	0.92 S	14.51 E
4930.00	0.31	1.15	0.32	4929.74	14.8	91.6	0.41 S	14.78 E
5024.00	0.66	10.73	0.38	5023.74	14.9	88.5	0.38 N	14.89 E
5119.00	0.92	49.31	0.61	5118.73	15.6	84.8	1.42 N	15.57 E
5213.00	0.88	65.75	0.28	5212.72	16.9	82.5	2.20 N	16.80 E
5308.00	1.01	71.46	0.17	5307.70	18.5	81.4	2.77 N	18.26 E
5402.00	0.70	58.98	0.38	5401.69	19.8	80.3	3.33 N	19.53 E
5497.00	1.10	62.06	0.42	5496.68	21.2	79.0	4.06 N	20.84 E

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5591.00	0.97	85.88	0.47	5590.67	22.9	78.6	4.54 N	22.43 E
5686.00	0.88	81.75	0.12	5685.65	24.4	78.9	4.70 N	23.95 E
5781.00	0.88	74.54	0.12	5780.64	25.9	78.9	5.00 N	25.38 E
5876.00	0.75	74.54	0.14	5875.63	27.2	78.6	5.36 N	26.68 E
5970.00	0.62	74.36	0.14	5969.63	28.3	78.5	5.66 N	27.76 E
6064.00	0.66	61.62	0.16	6063.62	29.4	78.1	6.05 N	28.73 E
6087.00	0.70	40.88	1.08	6086.62	29.6	77.9	6.22 N	28.94 E
6161.00	0.48	42.81	0.30	6160.62	30.2	77.0	6.79 N	29.44 E
6255.00	0.75	118.48	0.83	6254.61	31.0	77.4	6.79 N	30.25 E
6350.00	0.57	109.43	0.22	6349.60	31.9	78.5	6.33 N	31.24 E
6445.00	0.26	85.53	0.37	6444.60	32.5	79.0	6.19 N	31.90 E
6539.00	0.44	3.79	0.51	6538.60	32.8	78.4	6.57 N	32.14 E
6634.00	0.53	119.72	0.87	6633.60	33.2	78.3	6.72 N	32.55 E
6727.00	0.26	30.51	0.63	6726.60	33.7	78.6	6.68 N	33.03 E
6823.00	0.66	12.49	0.44	6822.59	34.1	77.4	7.41 N	33.26 E
6916.00	0.79	102.84	1.11	6915.59	34.9	77.1	7.79 N	34.00 E
7012.00	0.53	94.84	0.29	7011.58	35.9	77.8	7.61 N	35.09 E
7105.00	0.97	184.23	1.18	7104.58	36.1	79.2	6.79 N	35.46 E
7199.00	1.14	195.92	0.29	7198.56	35.5	81.8	5.09 N	35.14 E
7294.00	1.36	184.14	0.35	7293.54	34.9	85.0	3.06 N	34.80 E
7388.00	0.40	72.52	1.65	7387.53	35.1	86.7	2.05 N	35.03 E

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MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	CLOSURE AZIMUTH deg.	HORIZONTAL COORDINATES feet	
7482.00	0.53	80.69	0.15	7481.53	35.8	86.5	2.22 N	35.78 E
7577.00	0.62	67.95	0.16	7576.52	36.8	86.1	2.48 N	36.69 E
7671.00	0.53	63.90	0.10	7670.52	37.7	85.6	2.86 N	37.55 E
7766.00	0.48	50.72	0.13	7765.51	38.4	85.1	3.31 N	38.25 E
7858.00	0.22	50.11	0.28	7857.51	38.9	84.6	3.66 N	38.68 E
7953.00	0.18	136.15	0.29	7952.51	39.1	84.6	3.67 N	38.93 E
8047.00	0.04	243.55	0.21	8046.51	39.2	84.8	3.55 N	39.00 E
8141.00	0.44	288.73	0.44	8140.51	38.8	84.6	3.65 N	38.63 E
8236.00	1.14	100.64	1.66	8235.51	39.4	84.8	3.60 N	39.21 E
8330.00	1.36	98.97	0.24	8329.48	41.4	85.5	3.25 N	41.23 E
8424.00	0.53	255.86	1.98	8423.48	42.0	85.9	2.97 N	41.91 E
8518.00	0.62	258.76	0.10	8517.47	41.1	86.1	2.76 N	40.99 E
8613.00	0.57	276.95	0.20	8612.47	40.1	86.1	2.72 N	40.02 E
8707.00	0.66	279.68	0.10	8706.46	39.1	85.8	2.87 N	39.02 E
8802.00	0.57	264.12	0.20	8801.46	38.1	85.6	2.91 N	38.01 E
8897.00	0.48	271.68	0.12	8896.45	37.3	85.6	2.88 N	37.14 E
8990.00	0.92	65.31	1.47	8989.45	37.6	85.1	3.20 N	37.43 E
9084.00	0.88	67.07	0.05	9083.44	39.0	84.4	3.80 N	38.78 E
9179.00	0.70	70.41	0.20	9178.43	40.2	83.9	4.27 N	40.00 E
9273.00	0.70	67.86	0.03	9272.42	41.3	83.5	4.68 N	41.08 E
9367.00	0.75	70.50	0.06	9366.41	42.5	83.1	5.10 N	42.19 E
9462.00	0.66	59.95	0.17	9461.41	43.6	82.6	5.59 N	43.25 E

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Job Number: RD0814M180

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	CLOSURE AZIMUTH deg.	HORIZONTAL COORDINATES feet	
9555.00	0.66	51.69	0.10	9554.40	44.6	82.0	6.19 N	44.13 E
9649.00	0.97	117.17	0.98	9648.39	45.7	82.3	6.16 N	45.26 E
9743.00	0.84	119.19	0.14	9742.38	46.9	83.3	5.46 N	46.57 E
9837.00	0.79	117.43	0.06	9836.37	48.0	84.2	4.83 N	47.75 E
9931.00	0.88	107.59	0.18	9930.36	49.2	85.0	4.31 N	49.01 E
10024.00	0.84	101.08	0.11	10023.35	50.5	85.5	3.96 N	50.36 E
10119.00	0.62	82.19	0.34	10118.34	51.7	85.7	3.90 N	51.56 E
10214.00	0.40	77.70	0.24	10213.34	52.5	85.6	4.04 N	52.39 E
10246.00	0.40	69.44	0.18	10245.34	52.8	85.5	4.10 N	52.60 E
10277.00	0.53	87.37	0.62	10276.34	53.0	85.5	4.15 N	52.85 E
10309.00	2.99	112.42	7.87	10308.32	53.9	85.9	3.83 N	53.77 E
10340.00	8.26	114.44	17.01	10339.16	56.6	87.4	2.60 N	56.54 E
10372.00	12.79	113.91	14.16	10370.61	61.9	89.8	0.22 N	61.88 E
10404.00	16.84	111.89	12.76	10401.54	69.5	92.4	2.95 S	69.42 E
10436.00	21.63	110.57	15.03	10431.75	79.5	94.9	6.75 S	79.25 E
10467.00	23.78	111.89	7.13	10460.34	91.1	97.0	11.09 S	90.40 E
10500.00	26.29	114.88	8.52	10490.24	104.5	99.2	16.65 S	103.20 E
10531.00	29.05	118.84	10.69	10517.70	118.3	101.3	23.17 S	116.03 E
10563.00	32.26	120.24	10.28	10545.22	133.9	103.5	31.22 S	130.22 E
10594.00	35.16	118.66	9.77	10571.01	150.5	105.3	39.67 S	145.20 E
10626.00	39.21	117.34	12.90	10596.50	169.4	106.7	48.74 S	162.28 E
10657.00	43.16	114.09	14.49	10619.82	189.6	107.7	57.57 S	180.67 E

A Gyrodata Directional Survey

Oasis Petroleum
Lease: Kline Federal Well: 5300 41-18 12TX, 8 3/4" Case, 6" Hole
Location: Nabors #486, McKenzie County, North Dakota
Job Number: RD0814M180

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	CLOSURE AZIMUTH deg.	HORIZONTAL COORDINATES feet	
10689.00	45.45	113.30	7.36	10642.72	211.9	108.3	66.55 S	201.13 E
10720.00	46.59	109.52	9.51	10664.25	234.1	108.6	74.68 S	221.90 E
10752.00	50.11	109.34	11.01	10685.52	258.0	108.7	82.63 S	244.44 E
10783.00	54.20	109.96	13.29	10704.53	282.5	108.8	90.87 S	267.49 E
10815.00	58.11	110.22	12.24	10722.35	309.1	108.9	99.99 S	292.45 E
10847.00	61.63	111.28	11.37	10738.41	336.7	109.0	109.80 S	318.32 E
10877.00	61.76	111.45	0.66	10752.64	363.1	109.2	119.42 S	342.92 E
10909.00	65.14	112.16	10.75	10766.94	391.7	109.4	130.06 S	369.49 E
10940.00	69.67	112.68	14.69	10778.85	420.3	109.6	140.97 S	395.94 E
10972.00	73.58	113.30	12.36	10788.93	450.6	109.8	152.83 S	423.89 E
11003.00	76.62	114.27	10.26	10796.90	480.5	110.1	164.92 S	451.30 E
11035.00	78.07	114.00	4.61	10803.91	511.6	110.3	177.68 S	479.79 E
11067.00	82.42	114.71	13.77	10809.33	543.1	110.6	190.69 S	508.52 E
11112.00	89.89	114.18	16.64	10812.35	587.9	110.9	209.25 S	549.36 E
11179.00	90.90	110.67	5.45	10811.89	654.8	111.0	234.81 S	611.28 E
11211.00	90.29	112.96	7.41	10811.55	686.8	111.1	246.70 S	640.99 E
11242.00	90.15	111.81	3.74	10811.44	717.8	111.1	258.50 S	669.65 E
11273.00	89.32	109.44	8.10	10811.58	748.8	111.1	269.42 S	698.66 E
11304.00	87.74	108.74	5.57	10812.37	779.8	111.0	279.55 S	727.95 E
11336.00	87.08	106.45	7.44	10813.82	811.7	110.9	289.22 S	758.41 E
11366.00	86.99	104.25	7.33	10815.37	841.5	110.7	297.15 S	787.30 E

A Gyrodata Directional Survey

Oasis Petroleum
Lease: Kline Federal Well: 5300 41-18 12TX, 8 3/4" Case, 6" Hole
Location: Nabors #486, McKenzie County, North Dakota
Job Number: RD0814M180

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	CLOSURE AZIMUTH deg.	HORIZONTAL COORDINATES feet	
11397.00	87.30	103.64	2.21	10816.92	872.3	110.4	304.61 S	817.35 E
11428.00	88.90	101.97	7.46	10817.94	903.0	110.2	311.48 S	847.56 E
11459.00	88.79	99.68	7.39	10818.57	933.6	109.9	317.30 S	878.00 E
11490.00	89.41	97.57	7.09	10819.06	964.0	109.5	321.94 S	908.65 E
11521.00	90.37	96.17	5.48	10819.12	994.3	109.1	325.65 S	939.42 E
11552.00	90.11	94.32	6.03	10818.99	1024.4	108.7	328.49 S	970.29 E
11584.00	89.76	92.39	6.13	10819.02	1055.3	108.2	330.36 S	1002.24 E
11615.00	90.37	90.72	5.74	10818.99	1085.0	107.8	331.20 S	1033.22 E
11646.00	90.81	88.61	6.95	10818.67	1114.5	107.3	331.02 S	1064.22 E
11708.00	91.38	86.41	3.66	10817.48	1173.0	106.3	328.33 S	1126.14 E
11740.00	91.38	87.47	3.31	10816.71	1203.3	105.8	326.62 S	1158.09 E
11771.00	92.35	86.59	4.22	10815.70	1232.7	105.3	325.01 S	1189.03 E
11802.00	90.55	88.96	9.60	10814.92	1262.2	104.9	323.81 S	1219.99 E
11833.00	90.55	88.79	0.55	10814.62	1292.1	104.5	323.20 S	1250.99 E
11864.00	88.75	89.05	5.87	10814.81	1322.0	104.1	322.62 S	1281.98 E
11927.00	89.10	89.66	1.12	10815.99	1383.0	103.5	321.91 S	1344.96 E
11958.00	89.05	87.29	7.65	10816.49	1412.9	103.1	321.08 S	1375.95 E
12020.00	89.85	88.87	2.86	10817.09	1472.9	102.5	319.01 S	1437.91 E
12113.00	89.93	89.14	0.30	10817.27	1563.4	101.7	317.39 S	1530.89 E
12145.00	89.76	87.99	3.63	10817.35	1594.6	101.5	316.59 S	1562.88 E
12207.00	88.92	88.35	1.47	10818.07	1655.0	101.0	314.61 S	1624.85 E
12238.00	88.70	85.62	8.83	10818.71	1685.1	100.7	312.98 S	1655.79 E

A Gyrodata Directional Survey

Oasis Petroleum
Lease: Kline Federal Well: 5300 41-18 12TX, 8 3/4" Case, 6" Hole
Location: Nabors #486, McKenzie County, North Dakota
Job Number: RD0814M180

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	CLOSURE AZIMUTH deg.	HORIZONTAL COORDINATES feet	
12301.00	88.44	85.18	0.81	10820.28	1745.9	100.2	307.93 S	1718.57 E
12393.00	91.65	83.95	3.74	10820.21	1834.7	99.4	299.22 S	1810.14 E
12424.00	91.43	83.34	2.09	10819.38	1864.6	99.1	295.79 S	1840.94 E
12486.00	90.02	84.30	2.75	10818.59	1924.4	98.6	289.11 S	1902.57 E
12518.00	89.01	87.12	9.36	10818.86	1955.6	98.4	286.72 S	1934.48 E
12580.00	89.76	86.94	1.24	10819.53	2016.4	98.1	283.51 S	1996.39 E
12612.00	89.49	86.59	1.38	10819.74	2047.8	97.9	281.70 S	2028.34 E
12675.00	87.96	86.06	2.57	10821.14	2109.5	97.6	277.66 S	2091.19 E
12707.00	87.96	86.59	1.66	10822.28	2140.9	97.4	275.61 S	2123.11 E
12769.00	88.75	87.47	1.91	10824.06	2201.9	97.1	272.40 S	2185.00 E
12801.00	88.13	88.61	4.05	10824.93	2233.5	97.0	271.31 S	2216.97 E
12833.00	88.22	87.56	3.29	10825.95	2265.1	96.9	270.24 S	2248.93 E
12864.00	89.23	86.85	3.98	10826.64	2295.7	96.7	268.73 S	2279.89 E
12927.00	90.77	88.17	3.22	10826.64	2357.9	96.5	265.99 S	2342.82 E
12959.00	90.95	87.64	1.75	10826.16	2389.5	96.4	264.82 S	2374.80 E
13022.00	88.92	86.59	3.63	10826.23	2451.7	96.1	261.65 S	2437.71 E
13053.00	88.00	87.29	3.73	10827.06	2482.3	96.0	260.00 S	2468.66 E
13116.00	87.91	89.23	3.08	10829.31	2544.7	95.8	258.09 S	2531.59 E
13148.00	88.48	88.43	3.07	10830.32	2576.5	95.7	257.43 S	2563.56 E
13211.00	89.98	90.54	4.11	10831.17	2639.1	95.6	256.87 S	2626.55 E
13242.00	90.29	90.46	1.03	10831.09	2670.0	95.5	257.14 S	2657.55 E
13274.00	90.81	90.28	1.72	10830.79	2701.8	95.5	257.34 S	2689.55 E

A Gyrodata Directional Survey

Oasis Petroleum
Lease: Kline Federal Well: 5300 41-18 12TX, 8 3/4" Case, 6" Hole
Location: Nabors #486, McKenzie County, North Dakota
Job Number: RD0814M180

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	CLOSURE AZIMUTH deg.	HORIZONTAL COORDINATES feet	
13337.00	91.96	90.90	2.07	10829.26	2764.6	95.4	257.99 S	2752.52 E
13368.00	90.51	91.51	5.07	10828.60	2795.5	95.3	258.64 S	2783.51 E
13431.00	90.73	90.28	1.98	10827.91	2858.3	95.2	259.63 S	2846.49 E
13463.00	88.40	90.81	7.47	10828.16	2890.2	95.2	259.93 S	2878.49 E
13526.00	88.22	91.16	0.62	10830.02	2953.0	95.1	261.02 S	2941.45 E
13588.00	86.37	89.58	3.92	10832.94	3014.7	95.0	261.42 S	3003.38 E
13620.00	86.33	90.54	3.00	10834.98	3046.6	94.9	261.45 S	3035.31 E
13651.00	86.90	90.37	1.92	10836.81	3077.4	94.9	261.69 S	3066.26 E
13714.00	88.75	91.07	3.14	10839.20	3140.2	94.8	262.49 S	3129.20 E
13745.00	89.63	90.19	4.01	10839.64	3171.1	94.8	262.83 S	3160.20 E
13808.00	91.12	89.75	2.47	10839.23	3233.9	94.7	262.79 S	3223.20 E
13840.00	90.37	88.96	3.40	10838.81	3265.8	94.6	262.43 S	3255.19 E
13903.00	90.42	90.02	1.68	10838.38	3328.5	94.5	261.87 S	3318.19 E
13935.00	88.79	89.75	5.16	10838.60	3360.4	94.5	261.81 S	3350.18 E
13998.00	89.76	88.08	3.07	10839.39	3423.1	94.4	260.62 S	3413.16 E
14092.00	90.07	87.99	0.34	10839.53	3516.5	94.2	257.39 S	3507.11 E
14124.00	89.58	89.31	4.40	10839.63	3548.4	94.1	256.64 S	3539.10 E
14187.00	91.52	88.61	3.27	10839.03	3611.1	94.1	255.50 S	3602.08 E
14281.00	90.73	88.43	0.86	10837.18	3704.7	93.9	253.07 S	3696.03 E
14313.00	90.99	89.66	3.93	10836.70	3736.6	93.9	252.54 S	3728.02 E
14375.00	90.07	89.49	1.51	10836.13	3798.4	93.8	252.08 S	3790.02 E

A Gyrodata Directional Survey

Oasis Petroleum
Lease: Kline Federal Well: 5300 41-18 12TX, 8 3/4" Case, 6" Hole
Location: Nabors #486, McKenzie County, North Dakota
Job Number: RD0814M180

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	CLOSURE AZIMUTH deg.	HORIZONTAL COORDINATES feet	
14407.00	87.74	90.28	7.69	10836.74	3830.3	93.8	252.01 S	3822.01 E
14470.00	87.91	91.07	1.28	10839.13	3893.2	93.7	252.75 S	3884.96 E
14565.00	88.31	90.98	0.43	10842.26	3988.0	93.7	254.45 S	3979.89 E
14628.00	90.77	90.63	3.94	10842.77	4050.9	93.6	255.34 S	4042.88 E
14659.00	89.85	89.40	4.95	10842.60	4081.9	93.6	255.34 S	4073.88 E
14722.00	89.05	88.61	1.78	10843.20	4144.7	93.5	254.25 S	4136.86 E
14754.00	89.41	89.14	2.00	10843.63	4176.6	93.5	253.62 S	4168.85 E
14817.00	87.96	89.66	2.45	10845.08	4239.4	93.4	252.96 S	4231.83 E
14848.00	87.82	89.49	0.71	10846.22	4270.3	93.4	252.73 S	4262.81 E
14943.00	90.33	88.79	2.74	10847.76	4365.0	93.3	251.31 S	4357.78 E
14974.00	91.30	89.23	3.44	10847.31	4395.9	93.3	250.77 S	4388.77 E
15037.00	92.04	88.52	1.63	10845.48	4458.7	93.2	249.53 S	4451.73 E
15131.00	88.31	90.81	4.66	10845.19	4552.5	93.1	248.99 S	4545.71 E
15225.00	88.79	90.54	0.59	10847.57	4646.4	93.1	250.09 S	4639.67 E
15320.00	87.74	89.79	1.36	10850.45	4741.2	93.0	250.37 S	4734.62 E
15414.00	87.60	89.66	0.20	10854.27	4835.0	93.0	249.92 S	4828.55 E
15477.00	88.18	89.31	1.08	10856.59	4897.9	92.9	249.35 S	4891.50 E
15509.00	88.79	87.73	5.29	10857.43	4929.7	92.9	248.52 S	4923.48 E
15540.00	89.85	88.08	3.60	10857.80	4960.6	92.9	247.39 S	4954.45 E
15603.00	91.21	87.82	2.20	10857.22	5023.4	92.8	245.14 S	5017.41 E
15635.00	90.20	88.26	3.44	10856.82	5055.3	92.8	244.04 S	5049.39 E
15698.00	88.66	88.96	2.69	10857.45	5118.1	92.7	242.51 S	5112.36 E

A Gyrodata Directional Survey

Oasis Petroleum
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Location: Nabors #486, McKenzie County, North Dakota
Job Number: RD0814M180

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	CLOSURE AZIMUTH deg.	HORIZONTAL COORDINATES feet	
15761.00	89.27	90.19	2.18	10858.59	5181.0	92.7	242.05 S	5175.35 E
15792.00	89.58	91.95	5.76	10858.90	5212.0	92.7	242.63 S	5206.34 E
15855.00	89.98	93.44	2.45	10859.14	5275.0	92.7	245.59 S	5269.27 E
15887.00	90.55	91.95	4.99	10858.99	5307.0	92.7	247.09 S	5301.23 E
15950.00	89.85	91.07	1.78	10858.77	5370.0	92.7	248.75 S	5364.21 E
15981.00	90.07	90.19	2.93	10858.80	5401.0	92.6	249.09 S	5395.21 E
16013.00	90.51	90.28	1.40	10858.63	5432.9	92.6	249.22 S	5427.21 E
16076.00	91.38	89.93	1.49	10857.60	5495.9	92.6	249.34 S	5490.20 E
16107.00	92.35	89.58	3.33	10856.59	5526.8	92.6	249.21 S	5521.18 E
16170.00	93.01	90.54	1.85	10853.64	5589.7	92.6	249.27 S	5584.11 E
16265.00	89.45	90.37	3.75	10851.60	5684.6	92.5	250.03 S	5679.07 E
16359.00	89.05	90.46	0.44	10852.83	5778.5	92.5	250.71 S	5773.06 E
16454.00	89.14	89.75	0.75	10854.33	5873.4	92.4	250.88 S	5868.05 E
16548.00	89.76	90.72	1.22	10855.24	5967.3	92.4	251.27 S	5962.04 E
16643.00	91.03	89.49	1.86	10854.58	6062.3	92.4	251.44 S	6057.03 E
16737.00	91.52	90.19	0.91	10852.49	6156.1	92.3	251.18 S	6151.01 E
16831.00	91.47	88.96	1.31	10850.04	6250.0	92.3	250.48 S	6244.97 E
16895.00	91.43	89.49	0.83	10848.42	6313.9	92.3	249.62 S	6308.95 E
16927.00	90.42	89.49	3.16	10847.90	6345.8	92.3	249.33 S	6340.94 E
16958.00	89.93	90.10	2.52	10847.81	6376.8	92.2	249.22 S	6371.94 E
17021.00	90.95	90.28	1.64	10847.32	6439.8	92.2	249.43 S	6434.94 E
17053.00	89.93	88.08	7.58	10847.08	6471.7	92.2	248.97 S	6466.93 E

A Gyrodata Directional Survey

Oasis Petroleum
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Location: Nabors #486, McKenzie County, North Dakota
Job Number: RD0814M180

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	CLOSURE AZIMUTH deg.	HORIZONTAL COORDINATES feet	
17115.00	90.59	88.43	1.20	10846.79	6533.6	92.2	247.08 S	6528.90 E
17210.00	87.16	88.43	3.61	10848.66	6628.3	92.1	244.48 S	6623.83 E
17241.00	87.38	89.40	3.21	10850.14	6659.3	92.1	243.90 S	6654.79 E
17304.00	88.79	88.79	2.44	10852.24	6722.1	92.1	242.90 S	6717.75 E
17336.00	89.19	88.70	1.28	10852.81	6754.1	92.1	242.20 S	6749.73 E
17399.00	89.98	87.82	1.88	10853.26	6816.9	92.0	240.29 S	6812.70 E
17493.00	89.89	88.70	0.94	10853.37	6910.7	92.0	237.43 S	6906.66 E
17588.00	91.30	91.60	3.39	10852.38	7005.7	91.9	237.68 S	7001.64 E
17682.00	93.85	91.69	2.71	10848.16	7099.6	91.9	240.38 S	7095.50 E
17777.00	93.85	90.28	1.48	10841.78	7194.3	91.9	242.01 S	7190.27 E
17808.00	92.26	90.37	5.14	10840.13	7225.3	91.9	242.18 S	7221.22 E
17871.00	92.62	90.02	0.80	10837.45	7288.2	91.9	242.40 S	7284.16 E
17902.00	89.98	90.90	8.98	10836.74	7319.2	91.9	242.65 S	7315.15 E
17933.00	90.24	91.25	1.41	10836.68	7350.2	91.9	243.23 S	7346.15 E
17965.00	89.27	90.10	4.70	10836.82	7382.2	91.9	243.60 S	7378.14 E
17996.00	88.62	90.63	2.71	10837.39	7413.1	91.9	243.80 S	7409.14 E
18059.00	87.12	91.07	2.48	10839.73	7476.1	91.9	244.74 S	7472.08 E
18153.00	87.96	91.16	0.90	10843.77	7570.0	91.9	246.56 S	7565.98 E
18215.00	89.85	87.99	5.95	10844.95	7631.9	91.8	246.10 S	7627.95 E
18247.00	90.37	87.99	1.63	10844.89	7663.9	91.8	244.98 S	7659.93 E
18310.00	88.75	88.35	2.63	10845.37	7726.7	91.8	242.97 S	7722.90 E

A Gyrodata Directional Survey

Oasis Petroleum
Lease: Kline Federal Well: 5300 41-18 12TX, 8 3/4" Case, 6" Hole
Location: Nabors #486, McKenzie County, North Dakota
Job Number: RD0814M180

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	CLOSURE AZIMUTH deg.	HORIZONTAL COORDINATES feet	
18341.00	89.01	87.56	2.68	10845.98	7757.6	91.8	241.86 S	7753.87 E
18435.00	88.26	89.49	2.20	10848.22	7851.5	91.7	239.44 S	7847.81 E
18530.00	88.13	90.10	0.66	10851.21	7946.4	91.7	239.10 S	7942.76 E
18593.00	88.31	90.28	0.40	10853.17	8009.3	91.7	239.31 S	8005.73 E
18624.00	88.48	90.02	1.00	10854.04	8040.3	91.7	239.39 S	8036.72 E
18687.00	89.14	90.54	1.33	10855.34	8103.2	91.7	239.70 S	8099.70 E
18718.00	89.80	89.66	3.55	10855.63	8134.2	91.7	239.76 S	8130.70 E
18812.00	91.21	90.90	2.00	10854.80	8228.2	91.7	240.22 S	8224.69 E
18906.00	93.41	88.87	3.18	10851.01	8322.1	91.7	240.03 S	8318.61 E
18937.00	92.40	89.58	3.98	10849.44	8353.0	91.6	239.61 S	8349.56 E
18968.00	93.14	89.84	2.53	10847.95	8383.9	91.6	239.45 S	8380.53 E
19000.00	91.96	88.43	5.74	10846.52	8415.9	91.6	238.97 S	8412.49 E
19031.00	90.11	90.02	7.87	10845.96	8446.8	91.6	238.55 S	8443.48 E
19094.00	87.87	89.93	3.56	10847.07	8509.8	91.6	238.52 S	8506.46 E
19157.00	88.57	91.25	2.37	10849.03	8572.8	91.6	239.17 S	8569.43 E
19188.00	89.23	89.75	5.29	10849.62	8603.8	91.6	239.44 S	8600.42 E
19282.00	87.34	87.91	2.81	10852.44	8697.6	91.6	237.52 S	8694.35 E
19313.00	87.69	87.56	1.60	10853.78	8728.5	91.6	236.30 S	8725.30 E
19376.00	88.79	87.03	1.94	10855.72	8791.3	91.5	233.33 S	8788.20 E
19470.00	88.09	91.77	5.10	10858.28	8885.2	91.5	232.34 S	8882.13 E
19501.00	87.82	93.53	5.74	10859.38	8916.1	91.5	233.78 S	8913.08 E
19533.00	88.22	92.92	2.28	10860.49	8948.1	91.5	235.58 S	8945.01 E

A Gyrodata Directional Survey

Oasis Petroleum
Lease: Kline Federal Well: 5300 41-18 12TX, 8 3/4" Case, 6" Hole
Location: Nabors #486, McKenzie County, North Dakota
Job Number: RD0814M180

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	CLOSURE AZIMUTH deg.	HORIZONTAL COORDINATES feet	
19564.00	88.35	93.27	1.20	10861.42	8979.1	91.5	237.25 S	8975.95 E
19596.00	88.57	91.16	6.63	10862.28	9011.1	91.5	238.48 S	9007.91 E
19659.00	88.31	88.35	4.48	10863.99	9074.0	91.5	238.22 S	9070.88 E
19690.00	88.44	88.79	1.48	10864.87	9105.0	91.5	237.44 S	9101.86 E
19721.00	89.27	89.23	3.03	10865.49	9135.9	91.5	236.91 S	9132.85 E
19753.00	89.63	89.49	1.39	10865.80	9167.9	91.5	236.55 S	9164.84 E
19784.00	90.20	90.02	2.51	10865.84	9198.9	91.5	236.42 S	9195.84 E
19847.00	91.30	88.87	2.53	10865.02	9261.8	91.5	235.81 S	9258.83 E
19941.00	92.35	89.66	1.40	10862.03	9355.7	91.4	234.60 S	9352.77 E
19973.00	92.09	90.02	1.39	10860.79	9387.7	91.4	234.51 S	9384.75 E
20004.00	92.57	90.19	1.64	10859.53	9418.6	91.4	234.57 S	9415.72 E
20035.00	93.45	89.14	4.42	10857.90	9449.6	91.4	234.39 S	9446.68 E
20067.00	91.38	90.02	7.03	10856.55	9481.5	91.4	234.15 S	9478.65 E
20129.00	89.76	90.72	2.85	10855.93	9543.5	91.4	234.55 S	9540.64 E
20193.00	90.11	91.07	0.77	10856.01	9607.5	91.4	235.55 S	9604.63 E
20224.00	90.33	90.81	1.10	10855.89	9638.5	91.4	236.06 S	9635.63 E
20287.00	91.30	90.81	1.54	10854.99	9701.5	91.4	236.95 S	9698.62 E
20318.00	91.65	90.10	2.55	10854.19	9732.5	91.4	237.20 S	9729.60 E
20413.00	92.92	89.66	1.41	10850.40	9827.4	91.4	237.00 S	9824.53 E
20507.00	93.41	89.31	0.64	10845.21	9921.2	91.4	236.16 S	9918.38 E

STRAIGHT LINE PROJECTION TO BIT DEPTH AT 20584 FT. MD.

A Gyrodata Directional Survey

Oasis Petroleum
Lease: Kline Federal Well: 5300 41-18 12TX, 8 3/4" Case, 6" Hole
Location: Nabors #486, McKenzie County, North Dakota
Job Number: RD0814M180

MEASURED DEPTH feet	INCL deg.	AZIMUTH deg.	DOGLEG SEVERITY deg./ 100 ft.	VERTICAL DEPTH feet	CLOSURE DIST. feet	CLOSURE AZIMUTH deg.	HORIZONTAL COORDINATES feet	
20584.00	93.41	89.31	0.00	10840.63	9998.0	91.3	235.23 S	9995.24 E

Final Station Closure: Distance: 9998.00 ft Az: 91.35 deg.

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)

DEC 2014 RECEIVED ND OIL & GAS DIVISION

Well File No. **28658**

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

- [x] Notice of Intent — Approximate Start Date: **December 15, 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					
Kline Federal 5300 41-18 12TX					
Footages	Qtr-Qtr	Section	Township	Range	
434 F S L 237 F W L	**LOT 4**	**18**	**153 N**	**100 W**	
Field	Pool	County			
BAKER	**Bakken**	**MCKENZIE**			

24-HOUR PRODUCTION RATE

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

Name of Contractor(s)			
Address	City	State	Zip Code

DETAILS OF WORK

Oasis Petroleum North America LLC requests a 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 ise 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 montioring equipement;
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		Telephone Number
Oasis Petroleum North America LLC		**281-404-9436**
Address		
1001 Fannin, Suite 1500		
City	State	Zip Code
Houston	**TX**	**77002**
Signature	Printed Name	
	Jennifer Swenson	
Title	Date	
Regulatory Assistant	**December 15, 2014**	
Email Address		
jswenson@oasispetroleum.com		

FOR STATE USE ONLY

- [ ] Received
- [x] Approved

Date: Dec 22, 2014

By:

Title: PETROLEUM ENGINEER

SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4

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

JUL 2014 RECEIVED ND OIL & GAS DIVISION

Well File No. **28658**

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

- [x] Notice of Intent — Approximate Start Date: **July 28, 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
- [ ] Redrilling or Repair
- [x] Casing or Liner
- [ ] Plug Well
- [ ] Supplemental History
- [ ] Temporarily Abandon
- [ ] Other **Change casing**
- [ ] Spill Report
- [ ] Shooting
- [ ] Acidizing
- [ ] Fracture Treatment
- [ ] Change Production Method
- [ ] Reclamation

Well Name and Number: **Kline Federal 5300 41-18 12TX**

Footages	Qtr-Qtr	Section	Township	Range
434 F S L 237 F W L	SWSW	18	153 N	100 W

Field	Pool	County
Baker	Bakken	McKenzie

24-HOUR PRODUCTION RATE

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

Name of Contractor(s):

Address	City	State	Zip Code

DETAILS OF WORK

Oasis Petroleum respectfully requests permission to make the following changes to the above referenced well:

Surface Casing: 13-3/8, 54.5#, 17-1/2" Hole, 2,072' MD
Dakota Contingency: 9-5/8, 40#, 12-1/4" Hole, 6,101' MD

Attached are revised plats, drill plan, well summary, directional plan and plot

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

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

Signature	Printed Name
Heather McCowan	Heather McCowan
Title: Regulatory Assistant	Date: July 28, 2014
Email Address: hmccowan@oasispetroleum.com	

FOR STATE USE ONLY

- [ ] Received
- [x] Approved

Date: 8-5-14

By: Nathaniel Erbele

Title: Petroleum Resource Specialist

DRILLING PLAN

OPERATOR	Oasis Petroleum	**COUNTY/STATE**	McKenzie Co., ND
WELL NAME	Kline Federal 5300 41-18 12TX	**RIG**	Nabors B22
WELL TYPE	Horizontal Upper Three Forks		
LOCATION	SWSW 18-153N-100W **Surface Location (survey plat):** 434' fsl	237' fwl	
EST. T.D.	20,655'	**GROUND ELEV:**	2057 Finished Pad Elev. **Sub Height:** 25
	TOTAL LATERAL 9,466'	**KB ELEV:**	2082

PROGNOSIS: Based on 2,082' KB(est)

MARKER		DEPTH (Surf Loc)	DATUM (Surf Loc)
Pierre	NDIC MAP	1,972	110'
Greenhorn		4,646	-2,564'
Mowry		5,057	-2,975'
Dakota		5,471	-3,389'
Rierdon		6,486	-4,404'
Dunham Salt		6,814	-4,732'
Dunham Salt Base		6,929	-4,847'
Spearfish		7,024	-4,942'
Pine Salt		7,283	-5,201'
Pine Salt Base		7,318	-5,236'
Opeche Salt		7,374	-5,292'
Opeche Salt Base		7,403	-5,321'
Broom Creek (Top of Minnelusa Gp.)		7,605	-5,523'
Amsden		7,684	-5,602'
Tyler		7,853	-5,771'
Otter (Base of Minnelusa Gp.)		8,047	-5,965'
Kibbey Lime		8,390	-6,308'
Charles Salt		8,542	-6,460'
UB		9,159	-7,077'
Base Last Salt		9,238	-7,156'
Ratcliffe		9,301	-7,219'
Mission Canyon		9,454	-7,372'
Lodgepole		10,022	-7,940'
Lodgepole Fracture Zone		10,209	-8,127'
False Bakken		10,726	-8,644'
Upper Bakken		10,735	-8,653'
Middle Bakken		10,751	-8,669'
Lower Bakken		10,785	-8,703'
Pronghorn		10,791	-8,709'
Three Forks		10,813	-8,731'
TF Target Top		10,827	-8,745'
TF Target Base		10,837	-8,755'
Claystone		10,838	-8,756'

Dip Rate: -0.1

Max. Anticipated BHP: 4692

LOGS:

	Type	Interval
OH Logs:	Triple Combo KOP to Kibby (or min run of 1800' whichever is greater); GR/Res to BSC; GR to surf; CND through the Dakota	
CBL/GR:	Above top of cement/GR to base of casing	
MWD GR:	KOP to lateral TD	

DEVIATION:

Surf:	3 deg max., 1 deg / 100'; srvy every 500'
Prod:	5 deg max., 1 deg / 100'; srvy every 100'

DST'S: None planned

CORES: None planned

MUDLOGGING:

Two-Man: 8,342' ~200' above the Charles (Kibbey) to Casing point; Casing point to TD

30' samples at direction of wellsite geologist; 10' through target @ curve land

BOP: 11" 5000 psi blind, pipe & annular

Surface Formation: *Glacial till*

MUD:	Interval		Type	WT	Vis	WL	Remarks
Surface:	0' -	2,072'	FW/Gel - Lime Sweeps	8.4-9.0	28-32	NC	Circ Mud Tanks
Intermediate:	2,072' -	11,189'	Invert	9.5-10.4	40-50	30+HtHp	Circ Mud Tanks
Lateral:	11,189' -	20,655'	Salt Water	9.8-10.2	28-32	NC	Circ Mud Tanks

CASING:	Size	Wt ppf	Hole	Depth		Cement	WOC	Remarks
Surface:	13-3/8"	54.5#	17-1/2"	2,072'		To Surface	12	100' into Pierre
Dakota Contingency:	9-5/8"	40#	12-1/4"	6,101'		To Surface	12	Below Dakota
Intermediate:	7"	29/32#	8-3/4"	11,189'		3971	24	1500' above Dakota
Production Liner:	4.5"	13.5#	6"	20,655'	TOL @ 10,305'			50' above KOP

PROBABLE PLUGS, IF REQ'D:

OTHER:

	MD	TVD	FNL/FSL	FEL/FWL	S-T-R	AZI
Surface:	2,072	2,072	434' FSL	237' FWL	SEC 18-T153N-R100W	Survey Company:
KOP:	10,355'	10,355'	434' FSL	287' FWL	SEC 18-T153N-R100W	Build Rate: 12 deg /100'
EOC:	11,104'	10,832'	306' FSL	746' FWL	SEC 18-T153N-R100W	110.00
Casing Point:	11,189'	10,832'	244' FSL	816' FWL	SEC 18-T153N-R100W	107.02
Upper Three Forks Lateral TD:	20,655'	10,849'	200' FSL	200' FEL	SEC 17-T153N-R100W	89.82

Comments:

Request a Sundry for an Open Hole Log Waiver

Exception well: Oasis Petroleum's Kline Federal 5300 11-18H (153N 100W 18 NW NW)

35 packers, 35 sleeves, no frac string

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

68334-30-5 (Primary Name: Fuels, diesel) 68476-34-6 (Primary Name: Fuels, diesel, No. 2)68476-30-2 (Primary Name: Fuel oil No. 2)

68476-31-3 (Primary Name: Fuel oil, No. 4)8008-20-6 (Primary Name: Kerosene)

OASIS PETROLEUM

Geology: M.Steed 4/23/2014 **Engineering:** hibader rpm 7/18/14

Oasis Petroleum

Indian Hills
153N-100W-17/18
Kline Federal 5300 41-18 12TX

Kline Federal 5300 41-18 12TX

Plan: Design #2

Standard Planning Report

17 June, 2014

RYAN DIRECTIONAL SERVICES
A NABORS COMPANY

Project: Indian Hills
Site: 153N-100W-17/18
Well: Kline Federal 5300 41-18 12TX
Wellbore: Kline Federal 5300 41-18 12TX
Design: Design #2

OASIS PETROLEUM

WELL DETAILS: Kline Federal 5300 41-18 12TX

Ground Level: 2057.0

Northing	Easting	Latitude	Longitude
405136.64	1209968.21	48° 4' 7.550 N	103° 36' 11.950 W

CASING DETAILS

VD	MD	Name	Size
832.2	11189.0	7"	7

Azimuths to True North
Magnetic North: 8.27°

Magnetic Field
Strength: 56437.1snT
Dip Angle: 72.99°
Date: 5/23/2014
Model: IGRF2010

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	
2200.0	0.00	0.00	2200.0	0.0	0.0	0.00	
2216.7	0.50	90.00	2216.7	0.0	0.1	3.00	
7926.7	0.50	90.00	7926.4	0.0	49.9	0.00	
7943.3	0.00	0.00	7943.1	0.0	50.0	3.00	
10354.8	0.00	0.00	10354.6	0.0	50.0	0.00	
11104.0	89.90	110.00	10832.0	-163.0	497.9	12.00	
11680.4	89.90	89.82	10833.1	-261.7	1062.8	3.50	
20667.7	89.90	89.82	10848.7	-234.0	10050.0	0.00	5300 41-18 12TX PBHL

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Company:	Oasis Petroleum	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site:	153N-100W-17/18	**North Reference:**	True
Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Kline Federal 5300 41-18 12TX		
Design:	Design #2		

Project Indian Hills

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	North Dakota Northern Zone		

Site 153N-100W-17/18

Site Position:		**Northing:**	408,962.44 usft	**Latitude:**	48° 4' 45.380 N
From:	Lat/Long	**Easting:**	1,210,229.18 usft	**Longitude:**	103° 36' 10.380 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-2.31 °

Well Kline Federal 5300 41-18 12TX

Well Position	**+N/-S**	-3,833.2 usft	**Northing:**	405,136.63 usft	**Latitude:**	48° 4' 7.550 N
	+E/-W	-106.6 usft	**Easting:**	1,209,968.21 usft	**Longitude:**	103° 36' 11.950 W
Position Uncertainty		2.0 usft	**Wellhead Elevation:**		**Ground Level:**	2,057.0 usft

Wellbore Kline Federal 5300 41-18 12TX

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	5/23/2014	8.27	72.99	56,437

Design Design #2

Audit Notes:

Version:	**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
	0.0	0.0	0.0	90.00

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	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,216.7	0.50	90.00	2,216.7	0.0	0.1	3.00	3.00	0.00	90.00	
7,926.7	0.50	90.00	7,926.4	0.0	49.9	0.00	0.00	0.00	0.00	
7,943.3	0.00	0.00	7,943.1	0.0	50.0	3.00	-3.00	0.00	180.00	
10,354.8	0.00	0.00	10,354.6	0.0	50.0	0.00	0.00	0.00	0.00	
11,104.0	89.90	110.00	10,832.0	-163.0	497.9	12.00	12.00	0.00	110.00	
11,680.4	89.90	89.82	10,833.1	-261.7	1,062.8	3.50	0.00	-3.50	-90.02	
20,667.7	89.90	89.82	10,848.7	-234.0	10,050.0	0.00	0.00	0.00	0.00	5300 41-18 12TX PBH

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Company:	Oasis Petroleum	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site:	153N-100W-17/18	**North Reference:**	True
Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Kline Federal 5300 41-18 12TX		
Design:	Design #2		

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)
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,216.7	0.50	90.00	2,216.7	0.0	0.1	0.1	3.00	3.00	0.00
2,300.0	0.50	90.00	2,300.0	0.0	0.8	0.8	0.00	0.00	0.00
2,400.0	0.50	90.00	2,400.0	0.0	1.7	1.7	0.00	0.00	0.00
2,500.0	0.50	90.00	2,500.0	0.0	2.5	2.5	0.00	0.00	0.00
2,600.0	0.50	90.00	2,600.0	0.0	3.4	3.4	0.00	0.00	0.00
2,700.0	0.50	90.00	2,700.0	0.0	4.3	4.3	0.00	0.00	0.00
2,800.0	0.50	90.00	2,800.0	0.0	5.2	5.2	0.00	0.00	0.00
2,900.0	0.50	90.00	2,900.0	0.0	6.0	6.0	0.00	0.00	0.00
3,000.0	0.50	90.00	3,000.0	0.0	6.9	6.9	0.00	0.00	0.00
3,100.0	0.50	90.00	3,100.0	0.0	7.8	7.8	0.00	0.00	0.00
3,200.0	0.50	90.00	3,200.0	0.0	8.7	8.7	0.00	0.00	0.00
3,300.0	0.50	90.00	3,300.0	0.0	9.5	9.5	0.00	0.00	0.00
3,400.0	0.50	90.00	3,400.0	0.0	10.4	10.4	0.00	0.00	0.00
3,500.0	0.50	90.00	3,500.0	0.0	11.3	11.3	0.00	0.00	0.00
3,600.0	0.50	90.00	3,599.9	0.0	12.1	12.1	0.00	0.00	0.00
3,700.0	0.50	90.00	3,699.9	0.0	13.0	13.0	0.00	0.00	0.00
3,800.0	0.50	90.00	3,799.9	0.0	13.9	13.9	0.00	0.00	0.00
3,900.0	0.50	90.00	3,899.9	0.0	14.8	14.8	0.00	0.00	0.00
4,000.0	0.50	90.00	3,999.9	0.0	15.6	15.6	0.00	0.00	0.00
4,100.0	0.50	90.00	4,099.9	0.0	16.5	16.5	0.00	0.00	0.00
4,200.0	0.50	90.00	4,199.9	0.0	17.4	17.4	0.00	0.00	0.00
4,300.0	0.50	90.00	4,299.9	0.0	18.3	18.3	0.00	0.00	0.00
4,400.0	0.50	90.00	4,399.9	0.0	19.1	19.1	0.00	0.00	0.00
4,500.0	0.50	90.00	4,499.9	0.0	20.0	20.0	0.00	0.00	0.00
4,600.0	0.50	90.00	4,599.9	0.0	20.9	20.9	0.00	0.00	0.00
4,646.1	0.50	90.00	4,646.0	0.0	21.3	21.3	0.00	0.00	0.00
Greenhorn									
4,700.0	0.50	90.00	4,699.9	0.0	21.7	21.7	0.00	0.00	0.00
4,800.0	0.50	90.00	4,799.9	0.0	22.6	22.6	0.00	0.00	0.00
4,900.0	0.50	90.00	4,899.9	0.0	23.5	23.5	0.00	0.00	0.00
5,000.0	0.50	90.00	4,999.9	0.0	24.4	24.4	0.00	0.00	0.00
5,057.1	0.50	90.00	5,057.0	0.0	24.9	24.9	0.00	0.00	0.00
Mowry									
5,100.0	0.50	90.00	5,099.9	0.0	25.2	25.2	0.00	0.00	0.00
5,200.0	0.50	90.00	5,199.9	0.0	26.1	26.1	0.00	0.00	0.00
5,300.0	0.50	90.00	5,299.9	0.0	27.0	27.0	0.00	0.00	0.00
5,400.0	0.50	90.00	5,399.9	0.0	27.9	27.9	0.00	0.00	0.00
5,471.1	0.50	90.00	5,471.0	0.0	28.5	28.5	0.00	0.00	0.00
Dakota									
5,500.0	0.50	90.00	5,499.9	0.0	28.7	28.7	0.00	0.00	0.00
5,600.0	0.50	90.00	5,599.9	0.0	29.6	29.6	0.00	0.00	0.00
5,700.0	0.50	90.00	5,699.9	0.0	30.5	30.5	0.00	0.00	0.00
5,800.0	0.50	90.00	5,799.9	0.0	31.3	31.3	0.00	0.00	0.00
5,900.0	0.50	90.00	5,899.9	0.0	32.2	32.2	0.00	0.00	0.00
6,000.0	0.50	90.00	5,999.9	0.0	33.1	33.1	0.00	0.00	0.00
6,100.0	0.50	90.00	6,099.9	0.0	34.0	34.0	0.00	0.00	0.00
6,200.0	0.50	90.00	6,199.8	0.0	34.8	34.8	0.00	0.00	0.00
6,300.0	0.50	90.00	6,299.8	0.0	35.7	35.7	0.00	0.00	0.00
6,400.0	0.50	90.00	6,399.8	0.0	36.6	36.6	0.00	0.00	0.00
6,486.2	0.50	90.00	6,486.0	0.0	37.3	37.3	0.00	0.00	0.00
Rierdon									
6,500.0	0.50	90.00	6,499.8	0.0	37.5	37.5	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Company:	Oasis Petroleum	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site:	153N-100W-17/18	**North Reference:**	True
Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Kline Federal 5300 41-18 12TX		
Design:	Design #2		

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)
6,600.0	0.50	90.00	6,599.8	0.0	38.3	38.3	0.00	0.00	0.00
6,700.0	0.50	90.00	6,699.8	0.0	39.2	39.2	0.00	0.00	0.00
6,800.0	0.50	90.00	6,799.8	0.0	40.1	40.1	0.00	0.00	0.00
6,814.2	0.50	90.00	6,814.0	0.0	40.2	40.2	0.00	0.00	0.00
Dunham Salt									
6,900.0	0.50	90.00	6,899.8	0.0	40.9	40.9	0.00	0.00	0.00
6,929.2	0.50	90.00	6,929.0	0.0	41.2	41.2	0.00	0.00	0.00
Dunham Salt Base									
7,000.0	0.50	90.00	6,999.8	0.0	41.8	41.8	0.00	0.00	0.00
7,024.2	0.50	90.00	7,024.0	0.0	42.0	42.0	0.00	0.00	0.00
Spearfish									
7,100.0	0.50	90.00	7,099.8	0.0	42.7	42.7	0.00	0.00	0.00
7,200.0	0.50	90.00	7,199.8	0.0	43.6	43.6	0.00	0.00	0.00
7,283.2	0.50	90.00	7,283.0	0.0	44.3	44.3	0.00	0.00	0.00
Pine Salt									
7,300.0	0.50	90.00	7,299.8	0.0	44.4	44.4	0.00	0.00	0.00
7,318.2	0.50	90.00	7,318.0	0.0	44.6	44.6	0.00	0.00	0.00
Pine Salt Base									
7,374.2	0.50	90.00	7,374.0	0.0	45.1	45.1	0.00	0.00	0.00
Opeche Salt									
7,400.0	0.50	90.00	7,399.8	0.0	45.3	45.3	0.00	0.00	0.00
7,403.2	0.50	90.00	7,403.0	0.0	45.3	45.3	0.00	0.00	0.00
Opeche Salt Base									
7,500.0	0.50	90.00	7,499.8	0.0	46.2	46.2	0.00	0.00	0.00
7,600.0	0.50	90.00	7,599.8	0.0	47.1	47.1	0.00	0.00	0.00
7,605.2	0.50	90.00	7,605.0	0.0	47.1	47.1	0.00	0.00	0.00
Broom Creek (Top of Minnelusa Gp.)									
7,684.2	0.50	90.00	7,684.0	0.0	47.8	47.8	0.00	0.00	0.00
Amsden									
7,700.0	0.50	90.00	7,699.8	0.0	47.9	47.9	0.00	0.00	0.00
7,800.0	0.50	90.00	7,799.8	0.0	48.8	48.8	0.00	0.00	0.00
7,853.2	0.50	90.00	7,853.0	0.0	49.3	49.3	0.00	0.00	0.00
Tyler									
7,900.0	0.50	90.00	7,899.8	0.0	49.7	49.7	0.00	0.00	0.00
7,926.7	0.50	90.00	7,926.4	0.0	49.9	49.9	0.00	0.00	0.00
7,943.3	0.00	0.00	7,943.1	0.0	50.0	50.0	3.00	-3.00	0.00
8,000.0	0.00	0.00	7,999.8	0.0	50.0	50.0	0.00	0.00	0.00
8,047.2	0.00	0.00	8,047.0	0.0	50.0	50.0	0.00	0.00	0.00
Otter (Base of Minnelusa Gp.)									
8,100.0	0.00	0.00	8,099.8	0.0	50.0	50.0	0.00	0.00	0.00
8,200.0	0.00	0.00	8,199.8	0.0	50.0	50.0	0.00	0.00	0.00
8,300.0	0.00	0.00	8,299.8	0.0	50.0	50.0	0.00	0.00	0.00
8,390.2	0.00	0.00	8,390.0	0.0	50.0	50.0	0.00	0.00	0.00
Kibbey Lime									
8,400.0	0.00	0.00	8,399.8	0.0	50.0	50.0	0.00	0.00	0.00
8,500.0	0.00	0.00	8,499.8	0.0	50.0	50.0	0.00	0.00	0.00
8,542.2	0.00	0.00	8,542.0	0.0	50.0	50.0	0.00	0.00	0.00
Charles Salt									
8,600.0	0.00	0.00	8,599.8	0.0	50.0	50.0	0.00	0.00	0.00
8,700.0	0.00	0.00	8,699.8	0.0	50.0	50.0	0.00	0.00	0.00
8,800.0	0.00	0.00	8,799.8	0.0	50.0	50.0	0.00	0.00	0.00
8,900.0	0.00	0.00	8,899.8	0.0	50.0	50.0	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Company:	Oasis Petroleum	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site:	153N-100W-17/18	**North Reference:**	True
Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Kline Federal 5300 41-18 12TX		
Design:	Design #2		

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)
9,000.0	0.00	0.00	8,999.8	0.0	50.0	50.0	0.00	0.00	0.00
9,100.0	0.00	0.00	9,099.8	0.0	50.0	50.0	0.00	0.00	0.00
9,159.2	0.00	0.00	9,159.0	0.0	50.0	50.0	0.00	0.00	0.00
UB									
9,200.0	0.00	0.00	9,199.8	0.0	50.0	50.0	0.00	0.00	0.00
9,238.2	0.00	0.00	9,238.0	0.0	50.0	50.0	0.00	0.00	0.00
Base Last Salt									
9,300.0	0.00	0.00	9,299.8	0.0	50.0	50.0	0.00	0.00	0.00
9,301.2	0.00	0.00	9,301.0	0.0	50.0	50.0	0.00	0.00	0.00
Ratcliffe									
9,400.0	0.00	0.00	9,399.8	0.0	50.0	50.0	0.00	0.00	0.00
9,454.2	0.00	0.00	9,454.0	0.0	50.0	50.0	0.00	0.00	0.00
Mission Canyon									
9,500.0	0.00	0.00	9,499.8	0.0	50.0	50.0	0.00	0.00	0.00
9,600.0	0.00	0.00	9,599.8	0.0	50.0	50.0	0.00	0.00	0.00
9,700.0	0.00	0.00	9,699.8	0.0	50.0	50.0	0.00	0.00	0.00
9,800.0	0.00	0.00	9,799.8	0.0	50.0	50.0	0.00	0.00	0.00
9,900.0	0.00	0.00	9,899.8	0.0	50.0	50.0	0.00	0.00	0.00
10,000.0	0.00	0.00	9,999.8	0.0	50.0	50.0	0.00	0.00	0.00
10,022.2	0.00	0.00	10,022.0	0.0	50.0	50.0	0.00	0.00	0.00
Lodgepole									
10,100.0	0.00	0.00	10,099.8	0.0	50.0	50.0	0.00	0.00	0.00
10,200.0	0.00	0.00	10,199.8	0.0	50.0	50.0	0.00	0.00	0.00
10,209.2	0.00	0.00	10,209.0	0.0	50.0	50.0	0.00	0.00	0.00
Lodgepole Fracture Zone									
10,300.0	0.00	0.00	10,299.8	0.0	50.0	50.0	0.00	0.00	0.00
10,354.8	0.00	0.00	10,354.6	0.0	50.0	50.0	0.00	0.00	0.00
KOP Build 12°/100'									
10,375.0	2.42	110.00	10,374.8	-0.1	50.4	50.4	12.00	12.00	0.00
10,400.0	5.42	110.00	10,399.7	-0.7	52.0	52.0	12.00	12.00	0.00
10,425.0	8.42	110.00	10,424.5	-1.8	54.8	54.8	12.00	12.00	0.00
10,450.0	11.42	110.00	10,449.2	-3.2	58.9	58.9	12.00	12.00	0.00
10,475.0	14.42	110.00	10,473.5	-5.1	64.1	64.1	12.00	12.00	0.00
10,500.0	17.42	110.00	10,497.6	-7.5	70.6	70.6	12.00	12.00	0.00
10,525.0	20.42	110.00	10,521.2	-10.3	78.2	78.2	12.00	12.00	0.00
10,550.0	23.42	110.00	10,544.4	-13.5	86.9	86.9	12.00	12.00	0.00
10,575.0	26.42	110.00	10,567.1	-17.1	96.8	96.8	12.00	12.00	0.00
10,600.0	29.42	110.00	10,589.1	-21.1	107.8	107.8	12.00	12.00	0.00
10,625.0	32.42	110.00	10,610.6	-25.5	119.9	119.9	12.00	12.00	0.00
10,650.0	35.42	110.00	10,631.3	-30.2	133.0	133.0	12.00	12.00	0.00
10,675.0	38.42	110.00	10,651.3	-35.4	147.1	147.1	12.00	12.00	0.00
10,700.0	41.42	110.00	10,670.5	-40.9	162.2	162.2	12.00	12.00	0.00
10,725.0	44.42	110.00	10,688.8	-46.7	178.2	178.2	12.00	12.00	0.00
10,750.0	47.42	110.00	10,706.2	-52.8	195.1	195.1	12.00	12.00	0.00
10,775.0	50.42	110.00	10,722.6	-59.3	212.8	212.8	12.00	12.00	0.00
10,780.4	51.07	110.00	10,726.0	-60.7	216.7	216.7	12.00	12.00	0.00
False Bakken									
10,795.0	52.82	110.00	10,735.0	-64.6	227.5	227.5	12.00	12.00	0.00
Upper Bakken									
10,800.0	53.42	110.00	10,738.0	-66.0	231.3	231.3	12.00	12.00	0.00
10,822.5	56.13	110.00	10,751.0	-72.3	248.6	248.6	12.00	12.00	0.00
Middle Bakken									
10,825.0	56.42	110.00	10,752.4	-73.0	250.5	250.5	12.00	12.00	0.00

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Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site:	153N-100W-17/18	**North Reference:**	True
Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Kline Federal 5300 41-18 12TX		
Design:	Design #2		

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)
10,850.0	59.42	110.00	10,765.7	-80.2	270.4	270.4	12.00	12.00	0.00
10,875.0	62.42	110.00	10,777.8	-87.7	290.9	290.9	12.00	12.00	0.00
10,891.1	64.35	110.00	10,785.0	-92.6	304.4	304.4	12.00	12.00	0.00
Lower Bakken									
10,900.0	65.42	110.00	10,788.8	-95.4	312.0	312.0	12.00	12.00	0.00
10,905.4	66.07	110.00	10,791.0	-97.1	316.6	316.6	12.00	12.00	0.00
Pronghorn									
10,925.0	68.42	110.00	10,798.6	-103.3	333.7	333.7	12.00	12.00	0.00
10,950.0	71.42	110.00	10,807.2	-111.3	355.7	355.7	12.00	12.00	0.00
10,969.5	73.76	110.00	10,813.0	-117.6	373.2	373.2	12.00	12.00	0.00
Three Forks									
10,975.0	74.42	110.00	10,814.5	-119.5	378.2	378.2	12.00	12.00	0.00
11,000.0	77.42	110.00	10,820.6	-127.7	401.0	401.0	12.00	12.00	0.00
11,025.0	80.42	110.00	10,825.4	-136.1	424.0	424.0	12.00	12.00	0.00
11,035.3	81.66	110.00	10,827.0	-139.6	433.6	433.6	12.00	12.00	0.00
TF Target Top									
11,050.0	83.42	110.00	10,828.9	-144.6	447.3	447.3	12.00	12.00	0.00
11,075.0	86.42	110.00	10,831.1	-153.1	470.7	470.7	12.00	12.00	0.00
11,100.0	89.42	110.00	10,832.0	-161.7	494.1	494.1	12.00	12.00	0.00
11,104.0	89.90	110.00	10,832.0	-163.0	497.9	497.9	11.90	11.90	0.00
EOC									
11,189.0	89.90	107.02	10,832.2	-190.0	578.5	578.5	3.50	0.00	-3.50
7"									
11,200.0	89.90	106.64	10,832.2	-193.2	589.0	589.0	3.50	0.00	-3.50
11,300.0	89.90	103.14	10,832.4	-218.9	685.6	685.6	3.50	0.00	-3.50
11,400.0	89.90	99.64	10,832.6	-238.6	783.7	783.7	3.50	0.00	-3.50
11,500.0	89.90	96.14	10,832.7	-252.4	882.7	882.7	3.50	0.00	-3.50
11,600.0	89.90	92.64	10,832.9	-260.0	982.4	982.4	3.50	0.00	-3.50
11,680.4	89.90	89.82	10,833.1	-261.7	1,062.8	1,062.8	3.50	0.00	-3.50
11,700.0	89.90	89.82	10,833.1	-261.7	1,082.4	1,082.4	0.00	0.00	0.00
11,800.0	89.90	89.82	10,833.3	-261.4	1,182.4	1,182.4	0.00	0.00	0.00
11,900.0	89.90	89.82	10,833.4	-261.1	1,282.4	1,282.4	0.00	0.00	0.00
12,000.0	89.90	89.82	10,833.6	-260.7	1,382.4	1,382.4	0.00	0.00	0.00
12,100.0	89.90	89.82	10,833.8	-260.4	1,482.4	1,482.4	0.00	0.00	0.00
12,200.0	89.90	89.82	10,834.0	-260.1	1,582.4	1,582.4	0.00	0.00	0.00
12,300.0	89.90	89.82	10,834.1	-259.8	1,682.4	1,682.4	0.00	0.00	0.00
12,400.0	89.90	89.82	10,834.3	-259.5	1,782.4	1,782.4	0.00	0.00	0.00
12,500.0	89.90	89.82	10,834.5	-259.2	1,882.4	1,882.4	0.00	0.00	0.00
12,600.0	89.90	89.82	10,834.7	-258.9	1,982.4	1,982.4	0.00	0.00	0.00
12,700.0	89.90	89.82	10,834.8	-258.6	2,082.4	2,082.4	0.00	0.00	0.00
12,800.0	89.90	89.82	10,835.0	-258.3	2,182.4	2,182.4	0.00	0.00	0.00
12,900.0	89.90	89.82	10,835.2	-258.0	2,282.4	2,282.4	0.00	0.00	0.00
13,000.0	89.90	89.82	10,835.4	-257.7	2,382.4	2,382.4	0.00	0.00	0.00
13,100.0	89.90	89.82	10,835.5	-257.4	2,482.4	2,482.4	0.00	0.00	0.00
13,200.0	89.90	89.82	10,835.7	-257.0	2,582.3	2,582.3	0.00	0.00	0.00
13,300.0	89.90	89.82	10,835.9	-256.7	2,682.3	2,682.3	0.00	0.00	0.00
13,400.0	89.90	89.82	10,836.1	-256.4	2,782.3	2,782.3	0.00	0.00	0.00
13,500.0	89.90	89.82	10,836.2	-256.1	2,882.3	2,882.3	0.00	0.00	0.00
13,600.0	89.90	89.82	10,836.4	-255.8	2,982.3	2,982.3	0.00	0.00	0.00
13,700.0	89.90	89.82	10,836.6	-255.5	3,082.3	3,082.3	0.00	0.00	0.00
13,800.0	89.90	89.82	10,836.7	-255.2	3,182.3	3,182.3	0.00	0.00	0.00
13,900.0	89.90	89.82	10,836.9	-254.9	3,282.3	3,282.3	0.00	0.00	0.00
13,943.9	89.90	89.82	10,837.0	-254.7	3,326.2	3,326.2	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Company:	Oasis Petroleum	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site:	153N-100W-17/18	**North Reference:**	True
Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Kline Federal 5300 41-18 12TX		
Design:	Design #2		

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)
TF Target Base									
14,000.0	89.90	89.82	10,837.1	-254.6	3,382.3	3,382.3	0.00	0.00	0.00
14,100.0	89.90	89.82	10,837.3	-254.3	3,482.3	3,482.3	0.00	0.00	0.00
14,200.0	89.90	89.82	10,837.4	-254.0	3,582.3	3,582.3	0.00	0.00	0.00
14,300.0	89.90	89.82	10,837.6	-253.7	3,682.3	3,682.3	0.00	0.00	0.00
14,400.0	89.90	89.82	10,837.8	-253.3	3,782.3	3,782.3	0.00	0.00	0.00
14,500.0	89.90	89.82	10,838.0	-253.0	3,882.3	3,882.3	0.00	0.00	0.00
14,518.6	89.90	89.82	10,838.0	-253.0	3,900.9	3,900.9	0.00	0.00	0.00
Claystone									
14,600.0	89.90	89.82	10,838.1	-252.7	3,982.3	3,982.3	0.00	0.00	0.00
14,700.0	89.90	89.82	10,838.3	-252.4	4,082.3	4,082.3	0.00	0.00	0.00
14,800.0	89.90	89.82	10,838.5	-252.1	4,182.3	4,182.3	0.00	0.00	0.00
14,900.0	89.90	89.82	10,838.7	-251.8	4,282.3	4,282.3	0.00	0.00	0.00
15,000.0	89.90	89.82	10,838.8	-251.5	4,382.3	4,382.3	0.00	0.00	0.00
15,100.0	89.90	89.82	10,839.0	-251.2	4,482.3	4,482.3	0.00	0.00	0.00
15,200.0	89.90	89.82	10,839.2	-250.9	4,582.3	4,582.3	0.00	0.00	0.00
15,300.0	89.90	89.82	10,839.4	-250.6	4,682.3	4,682.3	0.00	0.00	0.00
15,400.0	89.90	89.82	10,839.5	-250.3	4,782.3	4,782.3	0.00	0.00	0.00
15,500.0	89.90	89.82	10,839.7	-249.9	4,882.3	4,882.3	0.00	0.00	0.00
15,600.0	89.90	89.82	10,839.9	-249.6	4,982.3	4,982.3	0.00	0.00	0.00
15,700.0	89.90	89.82	10,840.1	-249.3	5,082.3	5,082.3	0.00	0.00	0.00
15,800.0	89.90	89.82	10,840.2	-249.0	5,182.3	5,182.3	0.00	0.00	0.00
15,900.0	89.90	89.82	10,840.4	-248.7	5,282.3	5,282.3	0.00	0.00	0.00
16,000.0	89.90	89.82	10,840.6	-248.4	5,382.3	5,382.3	0.00	0.00	0.00
16,100.0	89.90	89.82	10,840.8	-248.1	5,482.3	5,482.3	0.00	0.00	0.00
16,200.0	89.90	89.82	10,840.9	-247.8	5,582.3	5,582.3	0.00	0.00	0.00
16,300.0	89.90	89.82	10,841.1	-247.5	5,682.3	5,682.3	0.00	0.00	0.00
16,400.0	89.90	89.82	10,841.3	-247.2	5,782.3	5,782.3	0.00	0.00	0.00
16,500.0	89.90	89.82	10,841.4	-246.9	5,882.3	5,882.3	0.00	0.00	0.00
16,600.0	89.90	89.82	10,841.6	-246.6	5,982.3	5,982.3	0.00	0.00	0.00
16,700.0	89.90	89.82	10,841.8	-246.2	6,082.3	6,082.3	0.00	0.00	0.00
16,800.0	89.90	89.82	10,842.0	-245.9	6,182.3	6,182.3	0.00	0.00	0.00
16,900.0	89.90	89.82	10,842.1	-245.6	6,282.3	6,282.3	0.00	0.00	0.00
17,000.0	89.90	89.82	10,842.3	-245.3	6,382.3	6,382.3	0.00	0.00	0.00
17,100.0	89.90	89.82	10,842.5	-245.0	6,482.3	6,482.3	0.00	0.00	0.00
17,200.0	89.90	89.82	10,842.7	-244.7	6,582.3	6,582.3	0.00	0.00	0.00
17,300.0	89.90	89.82	10,842.8	-244.4	6,682.3	6,682.3	0.00	0.00	0.00
17,400.0	89.90	89.82	10,843.0	-244.1	6,782.3	6,782.3	0.00	0.00	0.00
17,500.0	89.90	89.82	10,843.2	-243.8	6,882.3	6,882.3	0.00	0.00	0.00
17,600.0	89.90	89.82	10,843.4	-243.5	6,982.3	6,982.3	0.00	0.00	0.00
17,700.0	89.90	89.82	10,843.5	-243.2	7,082.3	7,082.3	0.00	0.00	0.00
17,800.0	89.90	89.82	10,843.7	-242.8	7,182.3	7,182.3	0.00	0.00	0.00
17,900.0	89.90	89.82	10,843.9	-242.5	7,282.3	7,282.3	0.00	0.00	0.00
18,000.0	89.90	89.82	10,844.1	-242.2	7,382.3	7,382.3	0.00	0.00	0.00
18,100.0	89.90	89.82	10,844.2	-241.9	7,482.3	7,482.3	0.00	0.00	0.00
18,200.0	89.90	89.82	10,844.4	-241.6	7,582.3	7,582.3	0.00	0.00	0.00
18,300.0	89.90	89.82	10,844.6	-241.3	7,682.3	7,682.3	0.00	0.00	0.00
18,400.0	89.90	89.82	10,844.8	-241.0	7,782.3	7,782.3	0.00	0.00	0.00
18,500.0	89.90	89.82	10,844.9	-240.7	7,882.3	7,882.3	0.00	0.00	0.00
18,600.0	89.90	89.82	10,845.1	-240.4	7,982.3	7,982.3	0.00	0.00	0.00
18,700.0	89.90	89.82	10,845.3	-240.1	8,082.3	8,082.3	0.00	0.00	0.00
18,800.0	89.90	89.82	10,845.4	-239.8	8,182.3	8,182.3	0.00	0.00	0.00
18,900.0	89.90	89.82	10,845.6	-239.5	8,282.3	8,282.3	0.00	0.00	0.00
19,000.0	89.90	89.82	10,845.8	-239.1	8,382.3	8,382.3	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Company:	Oasis Petroleum	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site:	153N-100W-17/18	**North Reference:**	True
Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Kline Federal 5300 41-18 12TX		
Design:	Design #2		

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	89.90	89.82	10,846.0	-238.8	8,482.3	8,482.3	0.00	0.00	0.00
19,200.0	89.90	89.82	10,846.1	-238.5	8,582.3	8,582.3	0.00	0.00	0.00
19,300.0	89.90	89.82	10,846.3	-238.2	8,682.3	8,682.3	0.00	0.00	0.00
19,400.0	89.90	89.82	10,846.5	-237.9	8,782.3	8,782.3	0.00	0.00	0.00
19,500.0	89.90	89.82	10,846.7	-237.6	8,882.3	8,882.3	0.00	0.00	0.00
19,600.0	89.90	89.82	10,846.8	-237.3	8,982.3	8,982.3	0.00	0.00	0.00
19,700.0	89.90	89.82	10,847.0	-237.0	9,082.3	9,082.3	0.00	0.00	0.00
19,800.0	89.90	89.82	10,847.2	-236.7	9,182.3	9,182.3	0.00	0.00	0.00
19,900.0	89.90	89.82	10,847.4	-236.4	9,282.3	9,282.3	0.00	0.00	0.00
20,000.0	89.90	89.82	10,847.5	-236.1	9,382.3	9,382.3	0.00	0.00	0.00
20,100.0	89.90	89.82	10,847.7	-235.8	9,482.3	9,482.3	0.00	0.00	0.00
20,200.0	89.90	89.82	10,847.9	-235.4	9,582.3	9,582.3	0.00	0.00	0.00
20,300.0	89.90	89.82	10,848.1	-235.1	9,682.3	9,682.3	0.00	0.00	0.00
20,400.0	89.90	89.82	10,848.2	-234.8	9,782.3	9,782.3	0.00	0.00	0.00
20,500.0	89.90	89.82	10,848.4	-234.5	9,882.3	9,882.3	0.00	0.00	0.00
20,600.0	89.90	89.82	10,848.6	-234.2	9,982.3	9,982.3	0.00	0.00	0.00
20,667.7	89.90	89.82	10,848.7	-234.0	10,050.0	10,050.0	0.00	0.00	0.00
5300 41-18 12TX PBHL									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
5300 41-18 12TX PBHL - plan hits target center - Point	0.00	0.00	10,848.7	-234.0	10,050.0	404,497.87	1,220,000.62	48° 4' 5.214 N	103° 33' 43.972 W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
11,189.0	10,832.2	7"	7	8-3/4

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Company:	Oasis Petroleum	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site:	153N-100W-17/18	**North Reference:**	True
Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Kline Federal 5300 41-18 12TX		
Design:	Design #2		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,972.0	1,972.0	Pierre			
4,646.1	4,646.0	Greenhorn			
5,057.1	5,057.0	Mowry			
5,471.1	5,471.0	Dakota			
6,486.2	6,486.0	Rierdon			
6,814.2	6,814.0	Dunham Salt			
6,929.2	6,929.0	Dunham Salt Base			
7,024.2	7,024.0	Spearfish			
7,283.2	7,283.0	Pine Salt			
7,318.2	7,318.0	Pine Salt Base			
7,374.2	7,374.0	Opeche Salt			
7,403.2	7,403.0	Opeche Salt Base			
7,605.2	7,605.0	Broom Creek (Top of Minnelusa Gp.)			
7,684.2	7,684.0	Amsden			
7,853.2	7,853.0	Tyler			
8,047.2	8,047.0	Otter (Base of Minnelusa Gp.)			
8,390.2	8,390.0	Kibbey Lime			
8,542.2	8,542.0	Charles Salt			
9,159.2	9,159.0	UB			
9,236.2	9,238.0	Base Last Salt			
9,301.2	9,301.0	Ratcliffe			
9,454.2	9,454.0	Mission Canyon			
10,022.2	10,022.0	Lodgepole			
10,209.2	10,209.0	Lodgepole Fracture Zone			
10,780.4	10,726.0	False Bakken			
10,795.0	10,735.0	Upper Bakken			
10,822.5	10,751.0	Middle Bakken			
10,891.1	10,785.0	Lower Bakken			
10,905.4	10,791.0	Pronghorn			
10,969.5	10,813.0	Three Forks			
11,035.3	10,827.0	TF Target Top			
13,943.9	10,837.0	TF Target Base			
14,518.6	10,838.0	Claystone			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
10,354.8	10,354.6	0.0	50.0	KOP Build 12°/100'
11,104.0	10,832.0	-163.0	497.9	EOC

Oasis Petroleum

Indian Hills
153N-100W-17/18
Kline Federal 5300 41-18 12TX

Kline Federal 5300 41-18 12TX
Design #2

Anticollision Report

17 June, 2014

RYAN DIRECTIONAL SERVICES
A NABORS COMPANY

Ryan Directional Services

Anticollision Report

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Reference Design #2

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0 usft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 6/17/2014

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	20,667.7	Design #2 (Kline Federal 5300 41-18 12TX	MWD	MWD - Standard

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
153N-100W-17/18						
Kline Federal 5300 41-18 10B - Kline Federal 5300 41-18	2,200.0	2,200.0	65.9	55.5	6.328	CC
Kline Federal 5300 41-18 10B - Kline Federal 5300 41-18	20,667.7	20,590.0	553.9	-27.2	0.953	Level 1, ES, SF
Kline Federal 5300 41-18 11T2 - Kline Federal 5300 41-1	2,200.0	2,200.0	33.4	23.0	3.213	CC
Kline Federal 5300 41-18 11T2 - Kline Federal 5300 41-1	20,667.7	20,743.0	506.9	-77.4	0.868	Level 1, ES, SF
Kline Federal 5300 41-18 13T2X - Kline Federal 5300 41	2,200.0	2,200.0	33.4	23.0	3.213	CC
Kline Federal 5300 41-18 13T2X - Kline Federal 5300 41	20,667.7	20,839.5	402.6	-181.2	0.690	Level 1, ES, SF
Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-1	2,200.0	2,200.0	65.9	55.5	6.328	CC
Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-1	20,667.7	20,608.5	433.3	-110.3	0.797	Level 1, ES, SF
Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-1	2,200.0	2,200.0	65.9	55.5	6.328	CC
Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-1	20,667.7	20,708.4	405.5	-173.0	0.701	Level 1, ES, SF
Kline Federal 5300 41-18 9T - Kline Federal 5300 41-18	2,200.0	2,200.0	99.3	88.9	9.540	CC, ES
Kline Federal 5300 41-18 9T - Kline Federal 5300 41-18	20,667.7	20,824.5	1,050.8	467.1	1.800	SF

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 10B - Kline Federal 5300 41-18 10B - Design #1

Survey Program: 0-MWD

Offset Site Error: 0.0 usft

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	2.0	2.0	0.01	65.9	0.0	65.9				
100.0	100.0	100.0	100.0	2.0	2.0	0.01	65.9	0.0	65.9	61.9	4.00	16.450	
200.0	200.0	200.0	200.0	2.0	2.0	0.01	65.9	0.0	65.9	61.8	4.05	16.272	
300.0	300.0	300.0	300.0	2.1	2.1	0.01	65.9	0.0	65.9	61.7	4.14	15.908	
400.0	400.0	400.0	400.0	2.1	2.1	0.01	65.9	0.0	65.9	61.6	4.28	15.395	
500.0	500.0	500.0	500.0	2.2	2.2	0.01	65.9	0.0	65.9	61.4	4.46	14.775	
600.0	600.0	600.0	600.0	2.3	2.3	0.01	65.9	0.0	65.9	61.2	4.67	14.093	
700.0	700.0	700.0	700.0	2.5	2.5	0.01	65.9	0.0	65.9	60.9	4.92	13.384	
800.0	800.0	800.0	800.0	2.6	2.6	0.01	65.9	0.0	65.9	60.7	5.20	12.677	
900.0	900.0	900.0	900.0	2.7	2.7	0.01	65.9	0.0	65.9	60.4	5.49	11.989	
1,000.0	1,000.0	1,000.0	1,000.0	2.9	2.9	0.01	65.9	0.0	65.9	60.0	5.81	11.335	
1,100.0	1,100.0	1,100.0	1,100.0	3.1	3.1	0.01	65.9	0.0	65.9	59.7	6.14	10.719	
1,200.0	1,200.0	1,200.0	1,200.0	3.2	3.2	0.01	65.9	0.0	65.9	59.4	6.49	10.144	
1,300.0	1,300.0	1,300.0	1,300.0	3.4	3.4	0.01	65.9	0.0	65.9	59.0	6.85	9.612	
1,400.0	1,400.0	1,400.0	1,400.0	3.6	3.6	0.01	65.9	0.0	65.9	58.6	7.22	9.120	
1,500.0	1,500.0	1,500.0	1,500.0	3.8	3.8	0.01	65.9	0.0	65.9	58.3	7.60	8.666	

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

Ryan Directional Services

Anticollision Report

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 10B - Kline Federal 5300 41-18 10B - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,600.0	1,600.0	1,600.0	1,600.0	4.0	4.0	0.01	65.9	0.0	65.9	57.9	7.99	8.247	
1,700.0	1,700.0	1,700.0	1,700.0	4.2	4.2	0.01	65.9	0.0	65.9	57.5	8.38	7.861	
1,800.0	1,800.0	1,800.0	1,800.0	4.4	4.4	0.01	65.9	0.0	65.9	57.1	8.78	7.505	
1,900.0	1,900.0	1,900.0	1,900.0	4.6	4.6	0.01	65.9	0.0	65.9	56.7	9.18	7.176	
2,000.0	2,000.0	2,000.0	2,000.0	4.8	4.8	0.01	65.9	0.0	65.9	56.3	9.58	6.872	
2,100.0	2,100.0	2,100.0	2,100.0	5.0	5.0	0.01	65.9	0.0	65.9	55.9	9.99	6.589	
2,200.0	2,200.0	2,200.0	2,200.0	5.2	5.2	0.01	65.9	0.0	65.9	55.5	10.41	6.328 CC	
2,216.7	2,216.7	2,216.5	2,216.5	5.2	5.2	-90.00	65.9	0.1	65.9	55.4	10.47	6.290	
2,300.0	2,300.0	2,299.8	2,299.8	5.4	5.4	-90.03	66.1	0.8	66.1	55.3	10.78	6.127	
2,400.0	2,400.0	2,399.8	2,399.8	5.6	5.6	-90.05	66.3	1.6	66.3	55.2	11.16	5.941	
2,500.0	2,500.0	2,499.8	2,499.8	5.8	5.8	-90.08	66.5	2.4	66.5	55.0	11.54	5.765	
2,600.0	2,600.0	2,599.8	2,599.8	6.0	6.0	-90.11	66.8	3.3	66.8	54.9	11.93	5.597	
2,700.0	2,700.0	2,699.8	2,699.8	6.1	6.2	-90.14	67.0	4.1	67.0	54.7	12.32	5.438	
2,800.0	2,800.0	2,799.8	2,799.8	6.3	6.4	-90.17	67.3	5.0	67.3	54.5	12.72	5.288	
2,900.0	2,900.0	2,899.8	2,899.8	6.5	6.6	-90.19	67.5	5.8	67.5	54.4	13.12	5.145	
3,000.0	3,000.0	2,999.8	2,999.8	6.7	6.8	-90.22	67.7	6.6	67.7	54.2	13.52	5.009	
3,100.0	3,100.0	3,099.8	3,099.8	6.9	7.0	-90.25	68.0	7.5	68.0	54.0	13.93	4.880	
3,200.0	3,200.0	3,199.8	3,199.8	7.1	7.2	-90.27	68.2	8.3	68.2	53.9	14.34	4.758	
3,300.0	3,300.0	3,299.8	3,299.8	7.3	7.4	-90.30	68.4	9.2	68.4	53.7	14.75	4.641	
3,400.0	3,400.0	3,399.8	3,399.8	7.6	7.6	-90.33	68.7	10.0	68.7	53.5	15.16	4.531	
3,500.0	3,500.0	3,499.8	3,499.8	7.8	7.8	-90.35	68.9	10.8	68.9	53.3	15.57	4.425	
3,600.0	3,599.9	3,599.8	3,599.8	8.0	8.0	-90.38	69.2	11.7	69.2	53.2	15.99	4.324	
3,700.0	3,699.9	3,699.8	3,699.8	8.2	8.2	-90.40	69.4	12.5	69.4	53.0	16.41	4.229	
3,800.0	3,799.9	3,799.8	3,799.8	8.4	8.5	-90.43	69.6	13.4	69.6	52.8	16.83	4.137	
3,900.0	3,899.9	3,899.8	3,899.8	8.6	8.7	-90.45	69.9	14.2	69.9	52.6	17.25	4.050	
4,000.0	3,999.9	3,999.8	3,999.8	8.8	8.9	-90.48	70.1	15.0	70.1	52.4	17.68	3.966	
4,100.0	4,099.9	4,099.8	4,099.8	9.0	9.1	-90.50	70.3	15.9	70.3	52.2	18.10	3.886	
4,200.0	4,199.9	4,199.8	4,199.8	9.2	9.3	-90.53	70.6	16.7	70.6	52.1	18.53	3.809	
4,300.0	4,299.9	4,299.8	4,299.8	9.4	9.5	-90.55	70.8	17.6	70.8	51.9	18.95	3.736	
4,400.0	4,399.9	4,399.8	4,399.8	9.7	9.7	-90.58	71.0	18.4	71.1	51.7	19.38	3.666	
4,500.0	4,499.9	4,499.8	4,499.8	9.9	10.0	-90.60	71.3	19.2	71.3	51.5	19.81	3.598	
4,600.0	4,599.9	4,599.8	4,599.7	10.1	10.2	-90.63	71.5	20.1	71.5	51.3	20.24	3.534	
4,700.0	4,699.9	4,699.8	4,699.7	10.3	10.4	-90.65	71.8	20.9	71.8	51.1	20.67	3.472	
4,800.0	4,799.9	4,799.8	4,799.7	10.5	10.6	-90.68	72.0	21.8	72.0	50.9	21.10	3.412	
4,900.0	4,899.9	4,899.8	4,899.7	10.7	10.8	-90.70	72.2	22.6	72.2	50.7	21.54	3.354	
5,000.0	4,999.9	4,999.8	4,999.7	10.9	11.0	-90.72	72.5	23.4	72.5	50.5	21.97	3.299	
5,100.0	5,099.9	5,099.8	5,099.7	11.2	11.3	-90.75	72.7	24.3	72.7	50.3	22.40	3.246	
5,200.0	5,199.9	5,199.8	5,199.7	11.4	11.5	-90.77	72.9	25.1	73.0	50.1	22.84	3.194	
5,300.0	5,299.9	5,299.8	5,299.7	11.6	11.7	-90.79	73.2	26.0	73.2	49.9	23.27	3.145	
5,400.0	5,399.9	5,399.8	5,399.7	11.8	11.9	-90.82	73.4	26.8	73.4	49.7	23.71	3.097	
5,500.0	5,499.9	5,499.8	5,499.7	12.0	12.1	-90.84	73.7	27.6	73.7	49.5	24.15	3.051	
5,600.0	5,599.9	5,599.8	5,599.7	12.2	12.3	-90.86	73.9	28.5	73.9	49.3	24.58	3.006	
5,700.0	5,699.9	5,699.8	5,699.7	12.5	12.6	-90.88	74.1	29.3	74.1	49.1	25.02	2.963	
5,800.0	5,799.9	5,799.8	5,799.7	12.7	12.8	-90.91	74.4	30.2	74.4	48.9	25.46	2.921	
5,900.0	5,899.9	5,899.8	5,899.7	12.9	13.0	-90.93	74.6	31.0	74.6	48.7	25.90	2.881	
6,000.0	5,999.9	5,999.8	5,999.7	13.1	13.2	-90.95	74.8	31.8	74.9	48.5	26.34	2.842	
6,100.0	6,099.9	6,099.8	6,099.7	13.3	13.4	-90.97	75.1	32.7	75.1	48.3	26.77	2.804	
6,200.0	6,199.8	6,199.8	6,199.7	13.6	13.7	-90.99	75.3	33.5	75.3	48.1	27.21	2.768	
6,300.0	6,299.8	6,299.8	6,299.7	13.8	13.9	-91.02	75.6	34.4	75.6	47.9	27.65	2.732	
6,400.0	6,399.8	6,399.8	6,399.7	14.0	14.1	-91.04	75.8	35.2	75.8	47.7	28.09	2.698	
6,500.0	6,499.8	6,499.8	6,499.7	14.2	14.3	-91.06	76.0	36.0	76.0	47.5	28.53	2.665	
6,600.0	6,599.8	6,599.8	6,599.7	14.4	14.5	-91.08	76.3	36.9	76.3	47.3	28.97	2.632	

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

Ryan Directional Services

Anticollision Report

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 10B - Kline Federal 5300 41-18 10B - Design #1

Survey Program: 0-MWD

Offset Site Error: 0.0 usft

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,700.0	6,699.8	6,699.8	6,699.7	14.7	14.8	-91.10	76.5	37.7	76.5	47.1	29.42	2.601	
6,800.0	6,799.8	6,799.8	6,799.7	14.9	15.0	-91.12	76.7	38.6	76.7	46.9	29.86	2.571	
6,900.0	6,899.8	6,899.8	6,899.7	15.1	15.2	-91.14	77.0	39.4	77.0	46.7	30.30	2.541	
7,000.0	6,999.8	6,999.8	6,999.6	15.3	15.4	-91.16	77.2	40.2	77.2	46.5	30.74	2.512	
7,100.0	7,099.8	7,099.8	7,099.6	15.5	15.7	-91.19	77.4	41.1	77.5	46.3	31.18	2.484	
7,200.0	7,199.8	7,199.8	7,199.6	15.8	15.9	-91.21	77.7	41.9	77.7	46.1	31.63	2.457	
7,300.0	7,299.8	7,299.8	7,299.6	16.0	16.1	-91.23	77.9	42.8	77.9	45.9	32.07	2.430	
7,400.0	7,399.8	7,399.8	7,399.6	16.2	16.3	-91.25	78.2	43.6	78.2	45.7	32.51	2.405	
7,500.0	7,499.8	7,499.8	7,499.6	16.4	16.5	-91.27	78.4	44.4	78.4	45.5	32.95	2.379	
7,600.0	7,599.8	7,599.8	7,599.6	16.6	16.8	-91.29	78.6	45.3	78.6	45.3	33.40	2.355	
7,700.0	7,699.8	7,699.8	7,699.6	16.9	17.0	-91.31	78.9	46.1	78.9	45.0	33.84	2.331	
7,800.0	7,799.8	7,799.8	7,799.6	17.1	17.2	-91.33	79.1	47.0	79.1	44.8	34.28	2.308	
7,900.0	7,899.8	7,899.8	7,899.6	17.3	17.4	-91.35	79.3	47.8	79.4	44.6	34.73	2.285	
7,926.7	7,926.4	7,926.5	7,926.3	17.4	17.5	-91.35	79.4	48.0	79.4	44.6	34.85	2.279	
7,943.3	7,943.1	7,943.3	7,943.1	17.4	17.5	-1.35	79.4	48.1	79.4	44.6	34.87	2.278	
8,000.0	7,999.8	8,000.0	7,999.8	17.5	17.6	-1.35	79.4	48.1	79.4	44.4	35.10	2.264	
8,100.0	8,099.8	8,100.0	8,099.8	17.7	17.8	-1.35	79.4	48.1	79.4	43.9	35.51	2.237	
8,200.0	8,199.8	8,200.0	8,199.8	17.9	18.1	-1.35	79.4	48.1	79.4	43.5	35.94	2.211	
8,300.0	8,299.8	8,300.0	8,299.8	18.1	18.3	-1.35	79.4	48.1	79.4	43.1	36.36	2.185	
8,400.0	8,399.8	8,400.0	8,399.8	18.4	18.5	-1.35	79.4	48.1	79.4	42.7	36.78	2.160	
8,500.0	8,499.8	8,500.0	8,499.8	18.6	18.7	-1.35	79.4	48.1	79.4	42.2	37.20	2.136	
8,600.0	8,599.8	8,600.0	8,599.8	18.8	18.9	-1.35	79.4	48.1	79.4	41.8	37.62	2.112	
8,700.0	8,699.8	8,700.0	8,699.8	19.0	19.1	-1.35	79.4	48.1	79.4	41.4	38.05	2.088	
8,800.0	8,799.8	8,800.0	8,799.8	19.2	19.3	-1.35	79.4	48.1	79.4	41.0	38.47	2.065	
8,900.0	8,899.8	8,900.0	8,899.8	19.4	19.6	-1.35	79.4	48.1	79.4	40.6	38.89	2.043	
9,000.0	8,999.8	9,000.0	8,999.8	19.6	19.8	-1.35	79.4	48.1	79.4	40.1	39.32	2.021	
9,100.0	9,099.8	9,100.0	9,099.8	19.8	20.0	-1.35	79.4	48.1	79.4	39.7	39.75	1.999	
9,200.0	9,199.8	9,200.0	9,199.8	20.0	20.2	-1.35	79.4	48.1	79.4	39.3	40.17	1.978	
9,300.0	9,299.8	9,300.0	9,299.8	20.2	20.4	-1.35	79.4	48.1	79.4	38.8	40.60	1.957	
9,400.0	9,399.8	9,400.0	9,399.8	20.5	20.6	-1.35	79.4	48.1	79.4	38.4	41.03	1.936	
9,500.0	9,499.8	9,500.0	9,499.8	20.7	20.8	-1.35	79.4	48.1	79.4	38.0	41.45	1.917	
9,600.0	9,599.8	9,600.0	9,599.8	20.9	21.1	-1.35	79.4	48.1	79.4	37.6	41.88	1.897	
9,700.0	9,699.8	9,700.0	9,699.8	21.1	21.3	-1.35	79.4	48.1	79.4	37.1	42.31	1.878	
9,800.0	9,799.8	9,800.0	9,799.8	21.3	21.5	-1.35	79.4	48.1	79.4	36.7	42.74	1.859	
9,900.0	9,899.8	9,900.0	9,899.8	21.5	21.7	-1.35	79.4	48.1	79.4	36.3	43.17	1.840	
10,000.0	9,999.8	10,000.0	9,999.8	21.7	21.9	-1.35	79.4	48.1	79.4	35.8	43.60	1.822	
10,100.0	10,099.8	10,100.0	10,099.8	21.9	22.1	-1.35	79.4	48.1	79.4	35.4	44.03	1.804	
10,200.0	10,199.8	10,200.0	10,199.8	22.2	22.4	-1.35	79.4	48.1	79.4	35.0	44.46	1.787	
10,262.1	10,261.8	10,262.1	10,261.8	22.3	22.5	-1.35	79.4	48.1	79.4	34.7	44.73	1.776	
10,300.0	10,299.8	10,299.5	10,299.3	22.4	22.6	-1.25	79.5	48.2	79.5	34.6	44.89	1.771	
10,354.8	10,354.6	10,351.8	10,351.3	22.5	22.7	1.59	80.6	52.2	80.7	35.6	45.12	1.788	
10,375.0	10,374.8	10,370.7	10,370.1	22.5	22.7	-106.60	81.4	55.0	81.8	36.5	45.27	1.807	
10,400.0	10,399.7	10,394.1	10,393.0	22.6	22.8	-104.41	82.6	59.4	84.0	38.6	45.37	1.850	
10,425.0	10,424.5	10,417.2	10,415.4	22.7	22.9	-102.32	84.2	64.9	87.0	41.5	45.48	1.912	
10,450.0	10,449.2	10,440.0	10,437.2	22.7	22.9	-100.38	86.0	71.3	90.8	45.2	45.60	1.992	
10,475.0	10,473.5	10,462.6	10,458.5	22.8	23.0	-98.60	88.0	78.5	95.5	49.7	45.71	2.088	
10,500.0	10,497.6	10,484.9	10,479.1	22.8	23.0	-96.96	90.3	86.7	100.8	55.0	45.84	2.200	
10,525.0	10,521.2	10,506.9	10,499.1	22.9	23.1	-95.53	92.8	95.6	106.9	60.9	45.97	2.325	
10,550.0	10,544.4	10,528.6	10,518.3	23.0	23.2	-94.21	95.6	105.3	113.6	67.5	46.10	2.464	
10,575.0	10,567.1	10,550.0	10,536.8	23.0	23.2	-93.03	98.5	115.7	120.9	74.7	46.24	2.615	
10,600.0	10,589.1	10,571.1	10,554.5	23.1	23.3	-91.96	101.6	126.6	128.8	82.4	46.39	2.777	
10,625.0	10,610.6	10,591.8	10,571.5	23.2	23.4	-90.97	104.8	138.1	137.2	90.7	46.54	2.949	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 10B - Kline Federal 5300 41-18 10B - Design #1

Survey Program: 0-MWD

Offset Site Error: 0.0 usft

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,650.0	10,631.3	10,612.3	10,587.6	23.3	23.4	-90.05	108.2	150.2	146.2	99.5	46.70	3.130	
10,675.0	10,651.3	10,632.4	10,603.0	23.4	23.5	-89.19	111.7	162.7	156.6	108.7	46.86	3.321	
10,700.0	10,670.5	10,652.2	10,617.6	23.5	23.6	-88.37	115.4	175.6	165.5	118.4	47.03	3.518	
10,725.0	10,688.8	10,671.7	10,631.5	23.6	23.7	-87.57	119.1	188.8	175.7	128.5	47.21	3.723	
10,750.0	10,706.2	10,691.0	10,644.5	23.7	23.8	-86.79	122.9	202.4	186.4	139.0	47.40	3.933	
10,775.0	10,722.6	10,709.9	10,656.8	23.9	23.9	-86.03	126.9	216.3	197.4	149.8	47.59	4.148	
10,800.0	10,738.0	10,728.7	10,668.4	24.0	24.0	-85.26	130.9	230.5	208.8	161.0	47.80	4.368	
10,825.0	10,752.4	10,747.1	10,679.3	24.2	24.1	-84.49	134.9	244.8	220.5	172.4	48.01	4.592	
10,850.0	10,765.7	10,765.4	10,689.4	24.4	24.2	-83.72	139.0	259.4	232.4	184.2	48.24	4.817	
10,875.0	10,777.8	10,783.4	10,698.9	24.6	24.3	-82.95	143.2	274.2	244.6	196.1	48.48	5.046	
10,900.0	10,788.8	10,800.0	10,707.0	24.8	24.5	-82.10	147.1	288.1	257.0	208.3	48.71	5.276	
10,925.0	10,798.6	10,818.9	10,715.7	25.0	24.6	-81.37	151.7	304.2	269.7	220.7	48.98	5.505	
10,950.0	10,807.2	10,836.4	10,723.2	25.3	24.8	-80.57	156.0	319.5	282.5	233.2	49.25	5.735	
10,975.0	10,814.5	10,853.8	10,730.0	25.6	24.9	-79.77	160.3	334.9	295.4	245.9	49.53	5.964	
11,000.0	10,820.6	10,871.1	10,736.2	25.8	25.1	-78.96	164.7	350.4	308.5	258.7	49.83	6.192	
11,025.0	10,825.4	10,888.3	10,741.8	26.1	25.2	-78.16	169.1	366.0	321.7	271.6	50.13	6.417	
11,050.0	10,828.9	10,905.4	10,746.8	26.5	25.4	-77.35	173.5	381.8	335.0	284.6	50.45	6.640	
11,075.0	10,831.1	10,922.5	10,751.2	26.8	25.6	-76.55	178.0	397.7	348.4	297.6	50.79	6.860	
11,100.0	10,832.0	10,939.6	10,755.0	27.1	25.8	-75.76	182.6	413.8	361.8	310.6	51.13	7.075	
11,104.0	10,832.0	10,942.3	10,755.5	27.2	25.8	-75.64	183.3	416.3	363.9	312.7	51.19	7.109	
11,200.0	10,832.2	11,010.8	10,764.3	28.6	26.6	-79.00	201.7	481.6	414.8	361.1	53.76	7.716	
11,300.0	10,832.4	11,103.8	10,765.2	30.3	27.9	-80.68	226.2	571.4	464.4	407.7	56.74	8.185	
11,400.0	10,832.6	11,213.0	10,765.4	32.2	29.6	-81.82	251.3	677.6	505.8	445.5	60.30	8.388	
11,500.0	10,832.7	11,328.4	10,765.6	34.1	31.7	-82.57	273.5	790.8	538.0	473.7	64.35	8.361	
11,600.0	10,832.9	11,448.6	10,765.8	36.2	34.1	-83.03	291.7	909.7	560.6	491.7	68.81	8.147	
11,680.4	10,833.1	11,547.8	10,765.9	38.0	36.2	-83.23	303.0	1,008.2	571.3	498.7	72.60	7.870	
11,700.0	10,833.1	11,572.1	10,766.0	38.4	36.7	-83.26	305.2	1,032.4	573.1	499.5	73.56	7.791	
11,800.0	10,833.3	11,696.8	10,766.2	40.7	39.5	-83.35	313.5	1,156.8	579.3	500.7	78.62	7.369	
11,900.0	10,833.4	11,822.0	10,766.4	43.0	42.5	-83.36	316.4	1,282.0	581.3	497.4	83.91	6.928	
12,000.0	10,833.6	11,922.5	10,766.6	45.4	44.9	-83.38	316.4	1,382.5	581.0	492.2	88.75	6.546	
12,100.0	10,833.8	12,022.5	10,766.8	47.9	47.3	-83.37	316.3	1,482.5	580.7	487.0	93.69	6.198	
12,200.0	10,834.0	12,122.5	10,766.9	50.4	49.8	-83.37	316.3	1,582.5	580.4	481.6	98.73	5.878	
12,300.0	10,834.1	12,222.5	10,767.1	53.0	52.4	-83.36	316.3	1,682.5	580.0	476.2	103.85	5.586	
12,400.0	10,834.3	12,322.5	10,767.3	55.5	55.0	-83.36	316.3	1,782.5	579.7	470.7	109.04	5.317	
12,500.0	10,834.5	12,422.5	10,767.5	58.2	57.6	-83.36	316.3	1,882.5	579.4	465.1	114.29	5.070	
12,600.0	10,834.7	12,522.5	10,767.6	60.8	60.2	-83.35	316.3	1,982.5	579.1	459.5	119.59	4.842	
12,700.0	10,834.8	12,622.5	10,767.8	63.5	62.9	-83.35	316.3	2,082.5	578.8	453.9	124.94	4.633	
12,800.0	10,835.0	12,722.5	10,768.0	66.2	65.6	-83.35	316.3	2,182.5	578.5	448.1	130.33	4.439	
12,900.0	10,835.2	12,822.5	10,768.2	68.9	68.3	-83.34	316.3	2,282.5	578.2	442.4	135.76	4.259	
13,000.0	10,835.4	12,922.5	10,768.3	71.7	71.0	-83.34	316.3	2,382.5	577.9	436.8	141.22	4.092	
13,100.0	10,835.5	13,022.5	10,768.5	74.4	73.8	-83.34	316.3	2,482.5	577.5	430.8	146.70	3.937	
13,200.0	10,835.7	13,122.5	10,768.7	77.2	76.5	-83.33	316.3	2,582.5	577.2	425.0	152.22	3.792	
13,300.0	10,835.9	13,222.5	10,768.9	79.9	79.3	-83.33	316.3	2,682.5	576.9	419.2	157.75	3.657	
13,400.0	10,836.1	13,322.5	10,769.0	82.7	82.1	-83.33	316.3	2,782.5	576.6	413.3	163.31	3.531	
13,500.0	10,836.2	13,422.5	10,769.2	85.5	84.9	-83.32	316.3	2,882.5	576.3	407.4	168.88	3.412	
13,600.0	10,836.4	13,522.5	10,769.4	88.3	87.7	-83.32	316.3	2,982.5	576.0	401.5	174.47	3.301	
13,700.0	10,836.6	13,622.5	10,769.6	91.1	90.5	-83.31	316.3	3,082.5	575.7	395.6	180.07	3.197	
13,800.0	10,836.7	13,722.5	10,769.7	94.0	93.3	-83.31	316.3	3,182.5	575.4	389.7	185.69	3.099	
13,900.0	10,836.9	13,822.5	10,769.9	96.8	96.1	-83.31	316.2	3,282.5	575.0	383.7	191.32	3.006	
14,000.0	10,837.1	13,922.5	10,770.1	99.6	99.0	-83.30	316.2	3,382.5	574.7	377.8	196.96	2.918	
14,100.0	10,837.3	14,022.5	10,770.3	102.5	101.8	-83.30	316.2	3,482.5	574.4	371.8	202.61	2.835	
14,200.0	10,837.4	14,122.5	10,770.4	105.3	104.7	-83.30	316.2	3,582.5	574.1	365.8	208.27	2.757	

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

Ryan Directional Services

Anticollision Report

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 10B - Kline Federal 5300 41-18 10B - Design #1

Offset Site Error: 0.0 usft

Offset Well Error: 2.0 usft

Survey Program: 0-MWD

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,300.0	10,837.6	14,222.5	10,770.6	108.2	107.5	-83.29	316.2	3,682.5	573.8	359.9	213.94	2.682	
14,400.0	10,837.8	14,322.5	10,770.8	111.0	110.4	-83.29	316.2	3,782.5	573.5	353.9	219.62	2.611	
14,500.0	10,838.0	14,422.5	10,771.0	113.9	113.2	-83.29	316.2	3,882.5	573.2	347.9	225.31	2.544	
14,600.0	10,838.1	14,522.5	10,771.1	116.7	116.1	-83.28	316.2	3,982.5	572.9	341.9	231.00	2.480	
14,700.0	10,838.3	14,622.5	10,771.3	119.6	118.9	-83.28	316.2	4,082.5	572.6	335.9	236.70	2.419	
14,800.0	10,838.5	14,722.5	10,771.5	122.5	121.8	-83.27	316.2	4,182.5	572.2	329.8	242.40	2.361	
14,900.0	10,838.7	14,822.5	10,771.7	125.3	124.7	-83.27	316.2	4,282.5	571.9	323.8	248.11	2.305	
15,000.0	10,838.8	14,922.5	10,771.8	128.2	127.5	-83.27	316.2	4,382.5	571.6	317.8	253.82	2.252	
15,100.0	10,839.0	15,022.5	10,772.0	131.1	130.4	-83.26	316.2	4,482.5	571.3	311.8	259.54	2.201	
15,200.0	10,839.2	15,122.5	10,772.2	133.9	133.3	-83.26	316.2	4,582.5	571.0	305.7	265.27	2.153	
15,300.0	10,839.4	15,222.5	10,772.3	136.8	136.2	-83.26	316.2	4,682.5	570.7	299.7	271.00	2.106	
15,400.0	10,839.5	15,322.5	10,772.5	139.7	139.0	-83.25	316.2	4,782.5	570.4	293.6	276.73	2.061	
15,500.0	10,839.7	15,422.5	10,772.7	142.6	141.9	-83.25	316.2	4,882.5	570.1	287.6	282.46	2.018	
15,600.0	10,839.9	15,522.5	10,772.9	145.5	144.8	-83.25	316.1	4,982.5	569.7	281.5	288.20	1.977	
15,700.0	10,840.1	15,622.5	10,773.0	148.4	147.7	-83.24	316.1	5,082.5	569.4	275.5	293.95	1.937	
15,800.0	10,840.2	15,722.5	10,773.2	151.3	150.6	-83.24	316.1	5,182.5	569.1	269.4	299.69	1.899	
15,900.0	10,840.4	15,822.5	10,773.4	154.1	153.5	-83.23	316.1	5,282.5	568.8	263.4	305.44	1.862	
16,000.0	10,840.6	15,922.5	10,773.6	157.0	156.4	-83.23	316.1	5,382.5	568.5	257.3	311.19	1.827	
16,100.0	10,840.8	16,022.5	10,773.7	159.9	159.3	-83.23	316.1	5,482.5	568.2	251.2	316.94	1.793	
16,200.0	10,840.9	16,122.5	10,773.9	162.8	162.2	-83.22	316.1	5,582.5	567.9	245.2	322.70	1.760	
16,300.0	10,841.1	16,222.5	10,774.1	165.7	165.1	-83.22	316.1	5,682.5	567.6	239.1	328.46	1.728	
16,400.0	10,841.3	16,322.5	10,774.3	168.6	168.0	-83.22	316.1	5,782.5	567.2	233.0	334.22	1.697	
16,500.0	10,841.4	16,422.5	10,774.4	171.5	170.9	-83.21	316.1	5,882.5	566.9	227.0	339.98	1.668	
16,600.0	10,841.6	16,522.5	10,774.6	174.4	173.8	-83.21	316.1	5,982.5	566.6	220.9	345.75	1.639	
16,700.0	10,841.8	16,622.5	10,774.8	177.3	176.7	-83.20	316.1	6,082.5	566.3	214.8	351.51	1.611	
16,800.0	10,842.0	16,722.5	10,775.0	180.2	179.6	-83.20	316.1	6,182.5	566.0	208.7	357.28	1.584	
16,900.0	10,842.1	16,822.5	10,775.1	183.1	182.5	-83.20	316.1	6,282.5	565.7	202.6	363.05	1.558	
17,000.0	10,842.3	16,922.5	10,775.3	186.0	185.4	-83.19	316.1	6,382.5	565.4	196.6	368.82	1.533	
17,100.0	10,842.5	17,022.5	10,775.5	188.9	188.3	-83.19	316.1	6,482.5	565.1	190.5	374.59	1.508	
17,200.0	10,842.7	17,122.5	10,775.7	191.8	191.2	-83.19	316.1	6,582.5	564.7	184.4	380.37	1.485	Level 3
17,300.0	10,842.8	17,222.5	10,775.8	194.7	194.1	-83.18	316.1	6,682.5	564.4	178.3	386.14	1.462	Level 3
17,400.0	10,843.0	17,322.5	10,776.0	197.6	197.0	-83.18	316.0	6,782.5	564.1	172.2	391.92	1.439	Level 3
17,500.0	10,843.2	17,422.5	10,776.2	200.6	199.9	-83.17	316.0	6,882.5	563.8	166.1	397.70	1.418	Level 3
17,600.0	10,843.4	17,522.5	10,776.4	203.5	202.8	-83.17	316.0	6,982.5	563.5	160.0	403.48	1.397	Level 3
17,700.0	10,843.5	17,622.5	10,776.5	206.4	205.7	-83.17	316.0	7,082.5	563.2	153.9	409.26	1.376	Level 3
17,800.0	10,843.7	17,722.5	10,776.7	209.3	208.6	-83.16	316.0	7,182.5	562.9	147.8	415.04	1.356	Level 3
17,900.0	10,843.9	17,822.5	10,776.9	212.2	211.5	-83.16	316.0	7,282.5	562.6	141.7	420.82	1.337	Level 3
18,000.0	10,844.1	17,922.5	10,777.1	215.1	214.4	-83.16	316.0	7,382.5	562.3	135.6	426.60	1.318	Level 3
18,100.0	10,844.2	18,022.5	10,777.2	218.0	217.3	-83.15	316.0	7,482.5	561.9	129.5	432.39	1.300	Level 3
18,200.0	10,844.4	18,122.5	10,777.4	220.9	220.3	-83.15	316.0	7,582.5	561.6	123.5	438.17	1.282	Level 3
18,300.0	10,844.6	18,222.5	10,777.6	223.8	223.2	-83.14	316.0	7,682.5	561.3	117.4	443.96	1.264	Level 3
18,400.0	10,844.8	18,322.5	10,777.7	226.7	226.1	-83.14	316.0	7,782.5	561.0	111.3	449.75	1.247	Level 2
18,500.0	10,844.9	18,422.5	10,777.9	229.7	229.0	-83.14	316.0	7,882.5	560.7	105.2	455.53	1.231	Level 2
18,600.0	10,845.1	18,522.5	10,778.1	232.6	231.9	-83.13	316.0	7,982.5	560.4	99.1	461.32	1.215	Level 2
18,700.0	10,845.3	18,622.5	10,778.3	235.5	234.8	-83.13	316.0	8,082.5	560.1	93.0	467.11	1.199	Level 2
18,800.0	10,845.4	18,722.5	10,778.4	238.4	237.7	-83.12	316.0	8,182.5	559.8	86.9	472.90	1.184	Level 2
18,900.0	10,845.6	18,822.5	10,778.6	241.3	240.7	-83.12	316.0	8,282.5	559.4	80.8	478.69	1.169	Level 2
19,000.0	10,845.8	18,922.5	10,778.8	244.2	243.6	-83.12	316.0	8,382.5	559.1	74.6	484.48	1.154	Level 2
19,100.0	10,846.0	19,022.5	10,779.0	247.1	246.5	-83.11	315.9	8,482.5	558.8	68.5	490.27	1.140	Level 2
19,200.0	10,846.1	19,122.5	10,779.1	250.1	249.4	-83.11	315.9	8,582.5	558.5	62.4	496.07	1.126	Level 2
19,300.0	10,846.3	19,222.5	10,779.3	253.0	252.3	-83.11	315.9	8,682.5	558.2	56.3	501.86	1.112	Level 2
19,400.0	10,846.5	19,322.5	10,779.5	255.9	255.2	-83.10	315.9	8,782.5	557.9	50.2	507.65	1.099	Level 2

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

Ryan Directional Services

Anticollision Report

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 10B - Kline Federal 5300 41-18 10B - Design #1

Offset Site Error: 0.0 usft

Offset Well Error: 2.0 usft

Survey Program: 0-MWD

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,500.0	10,846.7	19,422.5	10,779.7	258.8	258.1	-83.10	315.9	8,882.5	557.6	44.1	513.45	1.086	Level 2
19,600.0	10,846.8	19,522.5	10,779.8	261.7	261.1	-83.09	315.9	8,982.5	557.3	38.0	519.24	1.073	Level 2
19,700.0	10,847.0	19,622.5	10,780.0	264.6	264.0	-83.09	315.9	9,082.5	556.9	31.9	525.04	1.061	Level 2
19,800.0	10,847.2	19,722.5	10,780.2	267.6	266.9	-83.09	315.9	9,182.5	556.6	25.8	530.83	1.049	Level 2
19,900.0	10,847.4	19,822.5	10,780.4	270.5	269.8	-83.08	315.9	9,282.5	556.3	19.7	536.63	1.037	Level 2
20,000.0	10,847.5	19,922.5	10,780.5	273.4	272.7	-83.08	315.9	9,382.5	556.0	13.6	542.42	1.025	Level 2
20,100.0	10,847.7	20,022.5	10,780.7	276.3	275.7	-83.07	315.9	9,482.5	555.7	7.5	548.22	1.014	Level 2
20,200.0	10,847.9	20,122.5	10,780.9	279.2	278.6	-83.07	315.9	9,582.5	555.4	1.4	554.02	1.002	Level 2
20,300.0	10,848.1	20,222.5	10,781.1	282.1	281.5	-83.07	315.9	9,682.5	555.1	-4.7	559.81	0.992	Level 1
20,400.0	10,848.2	20,322.5	10,781.2	285.1	284.4	-83.06	315.9	9,782.5	554.8	-10.8	565.61	0.981	Level 1
20,500.0	10,848.4	20,422.5	10,781.4	288.0	287.3	-83.06	315.9	9,882.5	554.4	-17.0	571.41	0.970	Level 1
20,600.0	10,848.6	20,522.5	10,781.6	290.9	290.3	-83.06	315.9	9,982.5	554.1	-23.1	577.21	0.960	Level 1
20,667.7	10,848.7	20,590.0	10,781.7	292.9	292.2	-83.05	315.9	10,050.0	553.9	-27.2	581.13	0.953	Level 1, ES, SF

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

Ryan Directional Services

Anticollision Report

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 11T2 - Kline Federal 5300 41-18 11T2 - Design #1

Survey Program: 0-MWD

Offset Site Error: 0.0 usft

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	2.0	2.0	0.00	33.4	0.0	33.4				
100.0	100.0	100.0	100.0	2.0	2.0	0.00	33.4	0.0	33.4	29.4	4.00	8.352	
200.0	200.0	200.0	200.0	2.0	2.0	0.00	33.4	0.0	33.4	29.4	4.05	8.261	
300.0	300.0	300.0	300.0	2.1	2.1	0.00	33.4	0.0	33.4	29.3	4.14	8.077	
400.0	400.0	400.0	400.0	2.1	2.1	0.00	33.4	0.0	33.4	29.2	4.28	7.816	
500.0	500.0	500.0	500.0	2.2	2.2	0.00	33.4	0.0	33.4	29.0	4.46	7.502	
600.0	600.0	600.0	600.0	2.3	2.3	0.00	33.4	0.0	33.4	28.8	4.67	7.155	
700.0	700.0	700.0	700.0	2.5	2.5	0.00	33.4	0.0	33.4	28.5	4.92	6.795	
800.0	800.0	800.0	800.0	2.6	2.6	0.00	33.4	0.0	33.4	28.2	5.20	6.436	
900.0	900.0	900.0	900.0	2.7	2.7	0.00	33.4	0.0	33.4	27.9	5.49	6.087	
1,000.0	1,000.0	1,000.0	1,000.0	2.9	2.9	0.00	33.4	0.0	33.4	27.6	5.81	5.755	
1,100.0	1,100.0	1,100.0	1,100.0	3.1	3.1	0.00	33.4	0.0	33.4	27.3	6.14	5.442	
1,200.0	1,200.0	1,200.0	1,200.0	3.2	3.2	0.00	33.4	0.0	33.4	26.9	6.49	5.151	
1,300.0	1,300.0	1,300.0	1,300.0	3.4	3.4	0.00	33.4	0.0	33.4	26.6	6.85	4.880	
1,400.0	1,400.0	1,400.0	1,400.0	3.6	3.6	0.00	33.4	0.0	33.4	26.2	7.22	4.630	
1,500.0	1,500.0	1,500.0	1,500.0	3.8	3.8	0.00	33.4	0.0	33.4	25.8	7.60	4.400	
1,600.0	1,600.0	1,600.0	1,600.0	4.0	4.0	0.00	33.4	0.0	33.4	25.5	7.99	4.187	
1,700.0	1,700.0	1,700.0	1,700.0	4.2	4.2	0.00	33.4	0.0	33.4	25.1	8.38	3.991	
1,800.0	1,800.0	1,800.0	1,800.0	4.4	4.4	0.00	33.4	0.0	33.4	24.7	8.78	3.810	
1,900.0	1,900.0	1,900.0	1,900.0	4.6	4.6	0.00	33.4	0.0	33.4	24.3	9.18	3.643	
2,000.0	2,000.0	2,000.0	2,000.0	4.8	4.8	0.00	33.4	0.0	33.4	23.9	9.58	3.489	
2,100.0	2,100.0	2,100.0	2,100.0	5.0	5.0	0.00	33.4	0.0	33.4	23.4	9.99	3.346	
2,200.0	2,200.0	2,200.0	2,200.0	5.2	5.2	0.00	33.4	0.0	33.4	23.0	10.41	3.213	
2,200.0	2,200.0	2,200.0	2,200.0	5.2	5.2	0.00	33.4	0.0	33.4	23.0	10.41	3.213	CC
2,216.7	2,216.7	2,216.7	2,216.7	5.2	5.2	-90.12	33.4	0.0	33.4	23.0	10.48	3.192	
2,300.0	2,300.0	2,300.0	2,300.0	5.4	5.4	-91.37	33.4	0.0	33.4	22.6	10.80	3.097	
2,400.0	2,400.0	2,400.0	2,400.0	5.6	5.6	-92.86	33.4	0.0	33.5	22.3	11.20	2.990	
2,500.0	2,500.0	2,500.0	2,500.0	5.8	5.8	-94.35	33.4	0.0	33.5	21.9	11.59	2.892	
2,600.0	2,600.0	2,600.0	2,600.0	6.0	6.0	-95.84	33.4	0.0	33.6	21.6	12.00	2.802	
2,700.0	2,700.0	2,700.0	2,700.0	6.1	6.3	-97.31	33.4	0.0	33.7	21.3	12.40	2.718	
2,800.0	2,800.0	2,800.0	2,800.0	6.3	6.5	-98.78	33.4	0.0	33.8	21.0	12.81	2.641	
2,900.0	2,900.0	2,900.0	2,900.0	6.5	6.7	-100.23	33.4	0.0	34.0	20.8	13.22	2.570	
3,000.0	3,000.0	3,000.0	3,000.0	6.7	6.9	-101.67	33.4	0.0	34.1	20.5	13.64	2.504	
3,100.0	3,100.0	3,100.0	3,100.0	6.9	7.1	-103.10	33.4	0.0	34.3	20.3	14.05	2.443	
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.3	-104.51	33.4	0.0	34.5	20.1	14.47	2.387	
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.5	-105.90	33.4	0.0	34.8	19.9	14.89	2.335	
3,400.0	3,400.0	3,400.0	3,400.0	7.6	7.8	-107.27	33.4	0.0	35.0	19.7	15.31	2.287	
3,500.0	3,500.0	3,500.0	3,500.0	7.8	8.0	-108.63	33.4	0.0	35.3	19.6	15.73	2.243	
3,600.0	3,599.9	3,599.9	3,599.9	8.0	8.2	-109.96	33.4	0.0	35.6	19.4	16.16	2.202	
3,700.0	3,699.9	3,699.9	3,699.9	8.2	8.4	-111.27	33.4	0.0	35.9	19.3	16.58	2.164	
3,800.0	3,799.9	3,799.9	3,799.9	8.4	8.6	-112.56	33.4	0.0	36.2	19.2	17.01	2.129	
3,900.0	3,899.9	3,899.9	3,899.9	8.6	8.9	-113.82	33.4	0.0	36.6	19.1	17.44	2.096	
4,000.0	3,999.9	3,999.9	3,999.9	8.8	9.1	-115.06	33.4	0.0	36.9	19.0	17.87	2.066	
4,100.0	4,099.9	4,099.9	4,099.9	9.0	9.3	-116.27	33.4	0.0	37.3	19.0	18.30	2.038	
4,200.0	4,199.9	4,199.9	4,199.9	9.2	9.5	-117.46	33.4	0.0	37.7	19.0	18.73	2.012	
4,300.0	4,299.9	4,299.9	4,299.9	9.4	9.7	-118.63	33.4	0.0	38.1	18.9	19.16	1.988	
4,400.0	4,399.9	4,399.9	4,399.9	9.7	10.0	-119.77	33.4	0.0	38.5	18.9	19.59	1.966	
4,500.0	4,499.9	4,499.9	4,499.9	9.9	10.2	-120.88	33.4	0.0	39.0	18.9	20.03	1.946	
4,600.0	4,599.9	4,599.9	4,599.9	10.1	10.4	-121.97	33.4	0.0	39.4	19.0	20.46	1.927	
4,700.0	4,699.9	4,699.9	4,699.9	10.3	10.6	-123.03	33.4	0.0	39.9	19.0	20.89	1.909	
4,800.0	4,799.9	4,799.9	4,799.9	10.5	10.8	-124.07	33.4	0.0	40.4	19.0	21.33	1.893	
4,900.0	4,899.9	4,899.9	4,899.9	10.7	11.1	-125.09	33.4	0.0	40.9	19.1	21.76	1.878	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 11T2 - Kline Federal 5300 41-18 11T2 - Design #1

Survey Program: 0-MWD

Offset Site Error: 0.0 usft

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,999.9	4,999.9	4,999.9	10.9	11.3	-126.07	33.4	0.0	41.4	19.2	22.20	1.864	
5,100.0	5,099.9	5,099.9	5,099.9	11.2	11.5	-127.04	33.4	0.0	41.9	19.3	22.64	1.851	
5,200.0	5,199.9	5,199.9	5,199.9	11.4	11.7	-127.98	33.4	0.0	42.4	19.3	23.07	1.839	
5,300.0	5,299.9	5,299.9	5,299.9	11.6	11.9	-128.90	33.4	0.0	43.0	19.5	23.51	1.827	
5,400.0	5,399.9	5,399.9	5,399.9	11.8	12.2	-129.79	33.4	0.0	43.5	19.6	23.95	1.817	
5,500.0	5,499.9	5,499.9	5,499.9	12.0	12.4	-130.66	33.4	0.0	44.1	19.7	24.39	1.808	
5,600.0	5,599.9	5,599.9	5,599.9	12.2	12.6	-131.51	33.4	0.0	44.7	19.8	24.83	1.799	
5,700.0	5,699.9	5,699.9	5,699.9	12.5	12.8	-132.34	33.4	0.0	45.2	20.0	25.26	1.791	
5,800.0	5,799.9	5,799.9	5,799.9	12.7	13.0	-133.15	33.4	0.0	45.8	20.1	25.70	1.783	
5,900.0	5,899.9	5,899.9	5,899.9	12.9	13.3	-133.93	33.4	0.0	46.4	20.3	26.14	1.776	
6,000.0	5,999.9	5,999.9	5,999.9	13.1	13.5	-134.70	33.4	0.0	47.0	20.5	26.58	1.770	
6,100.0	6,099.9	6,099.9	6,099.9	13.3	13.7	-135.44	33.4	0.0	47.7	20.6	27.02	1.764	
6,200.0	6,199.8	6,199.8	6,199.8	13.6	13.9	-136.17	33.4	0.0	48.3	20.8	27.47	1.758	
6,300.0	6,299.8	6,299.8	6,299.8	13.8	14.2	-136.88	33.4	0.0	48.9	21.0	27.91	1.753	
6,400.0	6,399.8	6,399.8	6,399.8	14.0	14.4	-137.57	33.4	0.0	49.6	21.2	28.35	1.748	
6,500.0	6,499.8	6,499.8	6,499.8	14.2	14.6	-138.24	33.4	0.0	50.2	21.4	28.79	1.744	
6,600.0	6,599.8	6,599.8	6,599.8	14.4	14.8	-138.89	33.4	0.0	50.9	21.6	29.23	1.740	
6,700.0	6,699.8	6,699.8	6,699.8	14.7	15.1	-139.53	33.4	0.0	51.5	21.8	29.67	1.736	
6,800.0	6,799.8	6,799.8	6,799.8	14.9	15.3	-140.15	33.4	0.0	52.2	22.1	30.11	1.733	
6,900.0	6,899.8	6,899.8	6,899.8	15.1	15.5	-140.76	33.4	0.0	52.9	22.3	30.56	1.730	
7,000.0	6,999.8	6,999.8	6,999.8	15.3	15.7	-141.35	33.4	0.0	53.5	22.5	31.00	1.727	
7,100.0	7,099.8	7,099.8	7,099.8	15.5	15.9	-141.93	33.4	0.0	54.2	22.8	31.44	1.725	
7,200.0	7,199.8	7,199.8	7,199.8	15.8	16.2	-142.49	33.4	0.0	54.9	23.0	31.88	1.722	
7,300.0	7,299.8	7,299.8	7,299.8	16.0	16.4	-143.04	33.4	0.0	55.6	23.3	32.33	1.720	
7,400.0	7,399.8	7,399.8	7,399.8	16.2	16.6	-143.57	33.4	0.0	56.3	23.5	32.77	1.718	
7,500.0	7,499.8	7,499.8	7,499.8	16.4	16.8	-144.09	33.4	0.0	57.0	23.8	33.21	1.717	
7,600.0	7,599.8	7,599.8	7,599.8	16.6	17.1	-144.60	33.4	0.0	57.7	24.1	33.66	1.715	
7,700.0	7,699.8	7,699.8	7,699.8	16.9	17.3	-145.09	33.4	0.0	58.4	24.3	34.10	1.714	
7,800.0	7,799.8	7,799.8	7,799.8	17.1	17.5	-145.58	33.4	0.0	59.2	24.6	34.55	1.712	
7,900.0	7,899.8	7,899.8	7,899.8	17.3	17.7	-146.05	33.4	0.0	59.9	24.9	34.99	1.711	
7,926.7	7,926.4	7,926.4	7,926.4	17.4	17.8	-146.17	33.4	0.0	60.1	25.0	35.11	1.711	
7,943.3	7,943.1	7,943.1	7,943.1	17.4	17.8	-56.21	33.4	0.0	60.1	24.9	35.23	1.707	
8,000.0	7,999.8	7,999.8	7,999.8	17.5	18.0	-56.21	33.4	0.0	60.1	24.7	35.47	1.695	
8,100.0	8,099.8	8,099.8	8,099.8	17.7	18.2	-56.21	33.4	0.0	60.1	24.2	35.90	1.675	
8,200.0	8,199.8	8,199.8	8,199.8	17.9	18.4	-56.21	33.4	0.0	60.1	23.8	36.33	1.655	
8,300.0	8,299.8	8,299.8	8,299.8	18.1	18.6	-56.21	33.4	0.0	60.1	23.4	36.76	1.636	
8,400.0	8,399.8	8,399.8	8,399.8	18.4	18.8	-56.21	33.4	0.0	60.1	22.9	37.19	1.617	
8,500.0	8,499.8	8,499.8	8,499.8	18.6	19.1	-56.21	33.4	0.0	60.1	22.5	37.63	1.598	
8,600.0	8,599.8	8,599.8	8,599.8	18.8	19.3	-56.21	33.4	0.0	60.1	22.1	38.06	1.580	
8,700.0	8,699.8	8,699.8	8,699.8	19.0	19.5	-56.21	33.4	0.0	60.1	21.6	38.49	1.562	
8,800.0	8,799.8	8,799.8	8,799.8	19.2	19.7	-56.21	33.4	0.0	60.1	21.2	38.93	1.545	
8,900.0	8,899.8	8,899.8	8,899.8	19.4	20.0	-56.21	33.4	0.0	60.1	20.8	39.36	1.528	
9,000.0	8,999.8	8,999.8	8,999.8	19.6	20.2	-56.21	33.4	0.0	60.1	20.3	39.80	1.511	
9,100.0	9,099.8	9,099.8	9,099.8	19.8	20.4	-56.21	33.4	0.0	60.1	19.9	40.23	1.495	Level 3
9,200.0	9,199.8	9,199.8	9,199.8	20.0	20.6	-56.21	33.4	0.0	60.1	19.5	40.67	1.479	Level 3
9,300.0	9,299.8	9,299.8	9,299.8	20.2	20.9	-56.21	33.4	0.0	60.1	19.0	41.10	1.463	Level 3
9,400.0	9,399.8	9,399.8	9,399.8	20.5	21.1	-56.21	33.4	0.0	60.1	18.6	41.54	1.448	Level 3
9,500.0	9,499.8	9,499.8	9,499.8	20.7	21.3	-56.21	33.4	0.0	60.1	18.2	41.97	1.433	Level 3
9,600.0	9,599.8	9,599.8	9,599.8	20.9	21.5	-56.21	33.4	0.0	60.1	17.7	42.41	1.418	Level 3
9,700.0	9,699.8	9,699.8	9,699.8	21.1	21.8	-56.21	33.4	0.0	60.1	17.3	42.85	1.403	Level 3
9,800.0	9,799.8	9,799.8	9,799.8	21.3	22.0	-56.21	33.4	0.0	60.1	16.8	43.28	1.389	Level 3
9,900.0	9,899.8	9,899.8	9,899.8	21.5	22.2	-56.21	33.4	0.0	60.1	16.4	43.72	1.375	Level 3

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 11T2 - Kline Federal 5300 41-18 11T2 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,000.0	9,999.8	9,999.8	9,999.8	21.7	22.4	-56.21	33.4	0.0	60.1	16.0	44.16	1.362	Level 3
10,100.0	10,099.8	10,099.8	10,099.8	21.9	22.6	-56.21	33.4	0.0	60.1	15.5	44.60	1.348	Level 3
10,200.0	10,199.8	10,199.8	10,199.8	22.2	22.9	-56.21	33.4	0.0	60.1	15.1	45.04	1.335	Level 3
10,300.0	10,299.8	10,299.8	10,299.8	22.4	23.1	-56.21	33.4	0.0	60.1	14.7	45.47	1.322	Level 3
10,354.8	10,354.6	10,354.6	10,354.6	22.5	23.2	-56.21	33.4	0.0	60.1	14.4	45.71	1.315	Level 3
10,375.0	10,374.8	10,374.8	10,374.8	22.5	23.3	-166.30	33.4	0.0	60.5	14.8	45.73	1.324	Level 3
10,400.0	10,399.7	10,400.4	10,400.4	22.6	23.3	-166.59	33.5	0.1	62.2	16.4	45.73	1.359	Level 3
10,425.0	10,424.5	10,427.6	10,427.6	22.7	23.4	-166.38	33.8	1.2	64.4	18.7	45.65	1.410	Level 3
10,450.0	10,449.2	10,454.9	10,454.8	22.7	23.4	-165.45	34.5	3.9	66.9	21.4	45.49	1.471	Level 3
10,475.0	10,473.5	10,482.2	10,481.6	22.8	23.5	-163.88	35.7	8.1	69.8	24.6	45.26	1.543	
10,500.0	10,497.6	10,509.3	10,508.2	22.8	23.6	-161.78	37.3	13.7	73.2	28.2	44.98	1.627	
10,525.0	10,521.2	10,536.4	10,534.2	22.9	23.6	-159.25	39.3	20.7	77.0	32.3	44.66	1.724	
10,550.0	10,544.4	10,563.2	10,559.6	23.0	23.7	-156.41	41.7	29.1	81.4	37.0	44.33	1.836	
10,575.0	10,567.1	10,589.8	10,584.3	23.0	23.7	-153.35	44.4	38.7	86.3	42.3	44.01	1.962	
10,600.0	10,589.1	10,616.2	10,608.1	23.1	23.8	-150.17	47.4	49.5	92.0	48.2	43.73	2.103	
10,625.0	10,610.6	10,642.3	10,631.1	23.2	23.9	-146.93	50.8	61.5	98.3	54.8	43.51	2.259	
10,650.0	10,631.3	10,668.1	10,653.0	23.3	24.0	-143.69	54.5	74.4	105.3	61.9	43.36	2.428	
10,675.0	10,651.3	10,693.5	10,674.0	23.4	24.0	-140.50	58.4	88.3	113.0	69.7	43.31	2.610	
10,700.0	10,670.5	10,718.6	10,693.9	23.5	24.1	-137.38	62.6	103.1	121.4	78.1	43.35	2.801	
10,725.0	10,688.8	10,743.4	10,712.7	23.6	24.2	-134.35	67.0	118.6	130.6	87.1	43.49	3.002	
10,750.0	10,706.2	10,767.8	10,730.4	23.7	24.3	-131.42	71.6	134.8	140.3	96.6	43.73	3.209	
10,775.0	10,722.6	10,791.9	10,746.9	23.9	24.4	-128.58	76.3	151.6	150.7	106.7	44.07	3.421	
10,800.0	10,738.0	10,815.7	10,762.4	24.0	24.5	-125.83	81.2	168.9	161.7	117.3	44.49	3.635	
10,825.0	10,752.4	10,839.1	10,776.8	24.2	24.6	-123.17	86.3	186.7	173.3	128.3	44.99	3.852	
10,850.0	10,765.7	10,862.2	10,790.0	24.4	24.8	-120.59	91.4	205.0	185.3	139.8	45.56	4.068	
10,875.0	10,777.8	10,885.1	10,802.2	24.6	24.9	-118.08	96.7	223.6	197.8	151.7	46.18	4.284	
10,900.0	10,788.8	10,907.7	10,813.4	24.8	25.1	-115.64	102.1	242.5	210.8	163.9	46.85	4.499	
10,925.0	10,798.6	10,930.1	10,823.5	25.0	25.2	-113.25	107.5	261.7	224.1	176.5	47.56	4.712	
10,950.0	10,807.2	10,952.2	10,832.6	25.3	25.4	-110.92	113.0	281.1	237.7	189.4	48.29	4.923	
10,975.0	10,814.5	10,974.2	10,840.6	25.6	25.6	-108.64	118.6	300.8	251.6	202.6	49.03	5.132	
11,000.0	10,820.6	10,996.1	10,847.7	25.8	25.8	-106.40	124.2	320.7	265.8	216.0	49.78	5.340	
11,025.0	10,825.4	11,017.9	10,853.8	26.1	26.0	-104.22	129.9	340.8	280.2	229.6	50.52	5.545	
11,050.0	10,828.9	11,039.6	10,858.9	26.5	26.2	-102.08	135.6	361.1	294.7	243.4	51.25	5.750	
11,075.0	10,831.1	11,061.2	10,863.1	26.8	26.4	-99.99	141.4	381.6	309.4	257.4	51.97	5.953	
11,100.0	10,832.0	11,082.9	10,866.3	27.1	26.7	-97.95	147.3	402.3	324.1	271.4	52.67	6.154	
11,104.0	10,832.0	11,086.4	10,866.7	27.2	26.7	-97.63	148.2	405.5	326.5	273.7	52.78	6.186	
11,200.0	10,832.2	11,174.3	10,870.0	28.6	27.8	-96.77	171.9	490.1	380.2	325.0	55.19	6.889	
11,300.0	10,832.4	11,276.1	10,870.2	30.3	29.3	-95.69	196.8	588.8	428.5	370.2	58.29	7.351	
11,400.0	10,832.6	11,384.8	10,870.4	32.2	31.1	-94.99	219.4	695.1	468.1	406.2	61.90	7.562	
11,500.0	10,832.7	11,499.3	10,870.6	34.1	33.2	-94.53	238.9	807.9	498.3	432.4	65.98	7.553	
11,600.0	10,832.9	11,618.2	10,870.8	36.2	35.6	-94.25	254.3	925.8	518.8	448.3	70.48	7.361	
11,680.4	10,833.1	11,716.9	10,871.0	38.0	37.7	-94.14	263.3	1,023.1	527.9	453.6	74.28	7.107	
11,700.0	10,833.1	11,739.8	10,871.0	38.4	38.2	-94.12	265.0	1,047.0	529.3	454.0	75.25	7.033	
11,800.0	10,833.3	11,862.4	10,871.2	40.7	41.0	-94.08	270.6	1,169.4	533.5	453.2	80.30	6.644	
11,900.0	10,833.4	11,975.3	10,871.4	43.0	43.6	-94.08	271.5	1,282.3	533.9	448.6	85.31	6.258	
12,000.0	10,833.6	12,075.3	10,871.6	45.4	46.0	-94.08	271.5	1,382.3	533.6	443.4	90.15	5.918	
12,100.0	10,833.8	12,175.3	10,871.8	47.9	48.4	-94.08	271.5	1,482.3	533.2	438.1	95.11	5.607	
12,200.0	10,834.0	12,275.3	10,872.0	50.4	50.9	-94.09	271.5	1,582.3	532.9	432.8	100.16	5.321	
12,300.0	10,834.1	12,375.3	10,872.1	53.0	53.5	-94.09	271.5	1,682.3	532.6	427.3	105.29	5.059	
12,400.0	10,834.3	12,475.3	10,872.3	55.5	56.0	-94.09	271.5	1,782.3	532.3	421.8	110.49	4.818	
12,500.0	10,834.5	12,575.3	10,872.5	58.2	58.6	-94.09	271.5	1,882.3	532.0	416.3	115.75	4.596	
12,600.0	10,834.7	12,675.3	10,872.6	60.8	61.3	-94.10	271.5	1,982.3	531.7	410.6	121.07	4.392	

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

Ryan Directional Services

Anticollision Report

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 11T2 - Kline Federal 5300 41-18 11T2 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,700.0	10,834.8	12,775.3	10,872.8	63.5	64.0	-94.10	271.5	2,082.3	531.4	405.0	126.44	4.203	
12,800.0	10,835.0	12,875.3	10,873.0	66.2	66.6	-94.10	271.5	2,182.3	531.1	399.3	131.84	4.028	
12,900.0	10,835.2	12,975.3	10,873.2	68.9	69.4	-94.10	271.5	2,282.3	530.8	393.5	137.28	3.866	
13,000.0	10,835.4	13,075.3	10,873.3	71.7	72.1	-94.11	271.5	2,382.3	530.5	387.7	142.76	3.716	
13,100.0	10,835.5	13,175.3	10,873.5	74.4	74.8	-94.11	271.5	2,482.3	530.2	381.9	148.26	3.576	
13,200.0	10,835.7	13,275.3	10,873.7	77.2	77.6	-94.11	271.5	2,582.3	529.9	376.1	153.78	3.445	
13,300.0	10,835.9	13,375.3	10,873.9	79.9	80.3	-94.11	271.5	2,682.3	529.6	370.2	159.33	3.324	
13,400.0	10,836.1	13,475.3	10,874.0	82.7	83.1	-94.12	271.5	2,782.3	529.2	364.3	164.90	3.209	
13,500.0	10,836.2	13,575.3	10,874.2	85.5	85.9	-94.12	271.5	2,882.3	528.9	358.4	170.49	3.102	
13,600.0	10,836.4	13,675.3	10,874.4	88.3	88.7	-94.12	271.5	2,982.3	528.6	352.5	176.10	3.002	
13,700.0	10,836.6	13,775.3	10,874.6	91.1	91.5	-94.12	271.5	3,082.3	528.3	346.6	181.72	2.907	
13,800.0	10,836.7	13,875.3	10,874.7	94.0	94.3	-94.13	271.5	3,182.3	528.0	340.7	187.35	2.818	
13,900.0	10,836.9	13,975.3	10,874.9	96.8	97.2	-94.13	271.5	3,282.3	527.7	334.7	193.00	2.734	
14,000.0	10,837.1	14,075.3	10,875.1	99.6	100.0	-94.13	271.5	3,382.3	527.4	328.7	198.66	2.655	
14,100.0	10,837.3	14,175.3	10,875.3	102.5	102.8	-94.13	271.5	3,482.3	527.1	322.8	204.33	2.580	
14,200.0	10,837.4	14,275.3	10,875.4	105.3	105.7	-94.14	271.5	3,582.3	526.8	316.8	210.01	2.508	
14,300.0	10,837.6	14,375.3	10,875.6	108.2	108.5	-94.14	271.5	3,682.3	526.5	310.8	215.69	2.441	
14,400.0	10,837.8	14,475.3	10,875.8	111.0	111.3	-94.14	271.5	3,782.3	526.2	304.8	221.39	2.377	
14,500.0	10,838.0	14,575.3	10,876.0	113.9	114.2	-94.14	271.5	3,882.3	525.9	298.8	227.09	2.316	
14,600.0	10,838.1	14,675.3	10,876.1	116.7	117.1	-94.15	271.5	3,982.3	525.6	292.7	232.80	2.257	
14,700.0	10,838.3	14,775.3	10,876.3	119.6	119.9	-94.15	271.5	4,082.3	525.2	286.7	238.52	2.202	
14,800.0	10,838.5	14,875.3	10,876.5	122.5	122.8	-94.15	271.5	4,182.3	524.9	280.7	244.24	2.149	
14,900.0	10,838.7	14,975.3	10,876.7	125.3	125.6	-94.15	271.5	4,282.3	524.6	274.7	249.97	2.099	
15,000.0	10,838.8	15,075.3	10,876.8	128.2	128.5	-94.16	271.5	4,382.3	524.3	268.6	255.71	2.050	
15,100.0	10,839.0	15,175.3	10,877.0	131.1	131.4	-94.16	271.5	4,482.3	524.0	262.6	261.44	2.004	
15,200.0	10,839.2	15,275.3	10,877.2	133.9	134.3	-94.16	271.5	4,582.3	523.7	256.5	267.19	1.960	
15,300.0	10,839.4	15,375.3	10,877.4	136.8	137.1	-94.16	271.5	4,682.3	523.4	250.5	272.94	1.918	
15,400.0	10,839.5	15,475.3	10,877.5	139.7	140.0	-94.17	271.5	4,782.3	523.1	244.4	278.69	1.877	
15,500.0	10,839.7	15,575.3	10,877.7	142.6	142.9	-94.17	271.5	4,882.3	522.8	238.3	284.44	1.838	
15,600.0	10,839.9	15,675.3	10,877.9	145.5	145.8	-94.17	271.5	4,982.3	522.5	232.3	290.20	1.800	
15,700.0	10,840.1	15,775.3	10,878.1	148.4	148.7	-94.17	271.5	5,082.3	522.2	226.2	295.96	1.764	
15,800.0	10,840.2	15,875.3	10,878.2	151.3	151.6	-94.18	271.5	5,182.3	521.9	220.1	301.73	1.730	
15,900.0	10,840.4	15,975.3	10,878.4	154.1	154.4	-94.18	271.5	5,282.3	521.6	214.1	307.50	1.696	
16,000.0	10,840.6	16,075.3	10,878.6	157.0	157.3	-94.18	271.5	5,382.3	521.2	208.0	313.27	1.664	
16,100.0	10,840.8	16,175.3	10,878.8	159.9	160.2	-94.18	271.5	5,482.3	520.9	201.9	319.04	1.633	
16,200.0	10,840.9	16,275.3	10,878.9	162.8	163.1	-94.19	271.5	5,582.3	520.6	195.8	324.82	1.603	
16,300.0	10,841.1	16,375.3	10,879.1	165.7	166.0	-94.19	271.5	5,682.3	520.3	189.7	330.60	1.574	
16,400.0	10,841.3	16,475.3	10,879.3	168.6	168.9	-94.19	271.5	5,782.3	520.0	183.6	336.38	1.546	
16,500.0	10,841.4	16,575.3	10,879.5	171.5	171.8	-94.19	271.5	5,882.3	519.7	177.5	342.16	1.519	
16,600.0	10,841.6	16,675.3	10,879.6	174.4	174.7	-94.20	271.5	5,982.3	519.4	171.5	347.95	1.493	Level 3
16,700.0	10,841.8	16,775.3	10,879.8	177.3	177.6	-94.20	271.5	6,082.3	519.1	165.4	353.73	1.467	Level 3
16,800.0	10,842.0	16,875.3	10,880.0	180.2	180.5	-94.20	271.5	6,182.3	518.8	159.3	359.52	1.443	Level 3
16,900.0	10,842.1	16,975.3	10,880.2	183.1	183.4	-94.20	271.5	6,282.3	518.5	153.2	365.31	1.419	Level 3
17,000.0	10,842.3	17,075.3	10,880.3	186.0	186.3	-94.21	271.5	6,382.3	518.2	147.1	371.11	1.396	Level 3
17,100.0	10,842.5	17,175.3	10,880.5	188.9	189.2	-94.21	271.5	6,482.3	517.9	141.0	376.90	1.374	Level 3
17,200.0	10,842.7	17,275.3	10,880.7	191.8	192.1	-94.21	271.5	6,582.3	517.6	134.9	382.70	1.352	Level 3
17,300.0	10,842.8	17,375.3	10,880.9	194.7	195.0	-94.21	271.5	6,682.3	517.2	128.8	388.49	1.331	Level 3
17,400.0	10,843.0	17,475.3	10,881.0	197.6	197.9	-94.22	271.5	6,782.3	516.9	122.6	394.29	1.311	Level 3
17,500.0	10,843.2	17,575.3	10,881.2	200.6	200.8	-94.22	271.5	6,882.3	516.6	116.5	400.09	1.291	Level 3
17,600.0	10,843.4	17,675.3	10,881.4	203.5	203.7	-94.22	271.5	6,982.3	516.3	110.4	405.89	1.272	Level 3
17,700.0	10,843.5	17,775.3	10,881.6	206.4	206.6	-94.22	271.5	7,082.3	516.0	104.3	411.69	1.253	Level 3
17,800.0	10,843.7	17,875.3	10,881.7	209.3	209.6	-94.23	271.5	7,182.3	515.7	98.2	417.50	1.235	Level 2

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 11T2 - Kline Federal 5300 41-18 11T2 - Design #1

Survey Program: 0-MWD

Offset Site Error: 0.0 usft

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,900.0	10,843.9	17,975.3	10,881.9	212.2	212.5	-94.23	271.5	7,282.3	515.4	92.1	423.30	1.218	Level 2
18,000.0	10,844.1	18,075.3	10,882.1	215.1	215.4	-94.23	271.5	7,382.3	515.1	86.0	429.11	1.200	Level 2
18,100.0	10,844.2	18,175.3	10,882.2	218.0	218.3	-94.23	271.5	7,482.3	514.8	79.9	434.91	1.184	Level 2
18,200.0	10,844.4	18,275.3	10,882.4	220.9	221.2	-94.24	271.5	7,582.3	514.5	73.8	440.72	1.167	Level 2
18,300.0	10,844.6	18,375.3	10,882.6	223.8	224.1	-94.24	271.5	7,682.3	514.2	67.6	446.53	1.151	Level 2
18,400.0	10,844.8	18,475.3	10,882.8	226.7	227.0	-94.24	271.5	7,782.3	513.9	61.5	452.34	1.136	Level 2
18,500.0	10,844.9	18,575.3	10,882.9	229.7	229.9	-94.25	271.5	7,882.3	513.6	55.4	458.15	1.121	Level 2
18,600.0	10,845.1	18,675.3	10,883.1	232.6	232.8	-94.25	271.5	7,982.2	513.2	49.3	463.96	1.106	Level 2
18,700.0	10,845.3	18,775.3	10,883.3	235.5	235.8	-94.25	271.5	8,082.2	512.9	43.2	469.77	1.092	Level 2
18,800.0	10,845.4	18,875.3	10,883.5	238.4	238.7	-94.25	271.5	8,182.2	512.6	37.0	475.58	1.078	Level 2
18,900.0	10,845.6	18,975.3	10,883.6	241.3	241.6	-94.26	271.5	8,282.2	512.3	30.9	481.39	1.064	Level 2
19,000.0	10,845.8	19,075.3	10,883.8	244.2	244.5	-94.26	271.5	8,382.2	512.0	24.8	487.21	1.051	Level 2
19,100.0	10,846.0	19,175.3	10,884.0	247.1	247.4	-94.26	271.5	8,482.2	511.7	18.7	493.02	1.038	Level 2
19,200.0	10,846.1	19,275.3	10,884.2	250.1	250.3	-94.26	271.5	8,582.2	511.4	12.6	498.84	1.025	Level 2
19,300.0	10,846.3	19,375.3	10,884.3	253.0	253.2	-94.27	271.5	8,682.2	511.1	6.4	504.65	1.013	Level 2
19,400.0	10,846.5	19,475.3	10,884.5	255.9	256.2	-94.27	271.5	8,782.2	510.8	0.3	510.47	1.001	Level 2
19,500.0	10,846.7	19,575.3	10,884.7	258.8	259.1	-94.27	271.5	8,882.2	510.5	-5.8	516.29	0.989	Level 1
19,600.0	10,846.8	19,675.3	10,884.9	261.7	262.0	-94.27	271.5	8,982.2	510.2	-11.9	522.10	0.977	Level 1
19,700.0	10,847.0	19,775.3	10,885.0	264.6	264.9	-94.28	271.5	9,082.2	509.9	-18.1	527.92	0.966	Level 1
19,800.0	10,847.2	19,875.3	10,885.2	267.6	267.8	-94.28	271.5	9,182.2	509.6	-24.2	533.74	0.955	Level 1
19,900.0	10,847.4	19,975.3	10,885.4	270.5	270.7	-94.28	271.5	9,282.2	509.2	-30.3	539.56	0.944	Level 1
20,000.0	10,847.5	20,075.3	10,885.6	273.4	273.7	-94.28	271.5	9,382.2	508.9	-36.4	545.38	0.933	Level 1
20,100.0	10,847.7	20,175.3	10,885.7	276.3	276.6	-94.29	271.5	9,482.2	508.6	-42.6	551.20	0.923	Level 1
20,200.0	10,847.9	20,275.3	10,885.9	279.2	279.5	-94.29	271.5	9,582.2	508.3	-48.7	557.02	0.913	Level 1
20,300.0	10,848.1	20,375.3	10,886.1	282.1	282.4	-94.29	271.5	9,682.2	508.0	-54.8	562.84	0.903	Level 1
20,400.0	10,848.2	20,475.3	10,886.3	285.1	285.3	-94.30	271.5	9,782.2	507.7	-61.0	568.66	0.893	Level 1
20,500.0	10,848.4	20,575.3	10,886.4	288.0	288.3	-94.30	271.5	9,882.2	507.4	-67.1	574.48	0.883	Level 1
20,600.0	10,848.6	20,675.3	10,886.6	290.9	291.2	-94.30	271.5	9,982.2	507.1	-73.2	580.30	0.874	Level 1
20,667.7	10,848.7	20,743.0	10,886.7	292.9	293.2	-94.30	271.5	10,049.9	506.9	-77.4	584.25	0.868	Level 1, ES, SF

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 13T2X - Kline Federal 5300 41-18 13T2X - Design #1

Offset Site Error: 0.0 usft
Offset Well Error: 2.0 usft

Survey Program: 0-MWD

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	2.0	2.0	-180.00	-33.4	0.0	33.4				
100.0	100.0	100.0	100.0	2.0	2.0	-180.00	-33.4	0.0	33.4	29.4	4.00	8.352	
200.0	200.0	200.0	200.0	2.0	2.0	-180.00	-33.4	0.0	33.4	29.4	4.05	8.261	
300.0	300.0	300.0	300.0	2.1	2.1	-180.00	-33.4	0.0	33.4	29.3	4.14	8.077	
400.0	400.0	400.0	400.0	2.1	2.1	-180.00	-33.4	0.0	33.4	29.2	4.28	7.816	
500.0	500.0	500.0	500.0	2.2	2.2	-180.00	-33.4	0.0	33.4	29.0	4.46	7.502	
600.0	600.0	600.0	600.0	2.3	2.3	-180.00	-33.4	0.0	33.4	28.8	4.67	7.155	
700.0	700.0	700.0	700.0	2.5	2.5	-180.00	-33.4	0.0	33.4	28.5	4.92	6.795	
800.0	800.0	800.0	800.0	2.6	2.6	-180.00	-33.4	0.0	33.4	28.2	5.20	6.436	
900.0	900.0	900.0	900.0	2.7	2.7	-180.00	-33.4	0.0	33.4	27.9	5.49	6.087	
1,000.0	1,000.0	1,000.0	1,000.0	2.9	2.9	-180.00	-33.4	0.0	33.4	27.6	5.81	5.755	
1,100.0	1,100.0	1,100.0	1,100.0	3.1	3.1	-180.00	-33.4	0.0	33.4	27.3	6.14	5.442	
1,200.0	1,200.0	1,200.0	1,200.0	3.2	3.2	-180.00	-33.4	0.0	33.4	26.9	6.49	5.151	
1,300.0	1,300.0	1,300.0	1,300.0	3.4	3.4	-180.00	-33.4	0.0	33.4	26.6	6.85	4.880	
1,400.0	1,400.0	1,400.0	1,400.0	3.6	3.6	-180.00	-33.4	0.0	33.4	26.2	7.22	4.630	
1,500.0	1,500.0	1,500.0	1,500.0	3.8	3.8	-180.00	-33.4	0.0	33.4	25.8	7.60	4.400	
1,600.0	1,600.0	1,600.0	1,600.0	4.0	4.0	-180.00	-33.4	0.0	33.4	25.5	7.99	4.187	
1,700.0	1,700.0	1,700.0	1,700.0	4.2	4.2	-180.00	-33.4	0.0	33.4	25.1	8.38	3.991	
1,800.0	1,800.0	1,800.0	1,800.0	4.4	4.4	-180.00	-33.4	0.0	33.4	24.7	8.78	3.810	
1,900.0	1,900.0	1,900.0	1,900.0	4.6	4.6	-180.00	-33.4	0.0	33.4	24.3	9.18	3.643	
2,000.0	2,000.0	2,000.0	2,000.0	4.8	4.8	-180.00	-33.4	0.0	33.4	23.9	9.58	3.489	
2,100.0	2,100.0	2,100.0	2,100.0	5.0	5.0	-180.00	-33.4	0.0	33.4	23.4	9.99	3.346	
2,200.0	2,200.0	2,200.0	2,200.0	5.2	5.2	-180.00	-33.4	0.0	33.4	23.0	10.41	3.213	
2,200.0	2,200.0	2,200.0	2,200.0	5.2	5.2	-180.00	-33.4	0.0	33.4	23.0	10.41	3.213	CC
2,216.7	2,216.7	2,216.7	2,216.7	5.2	5.2	90.12	-33.4	0.0	33.4	23.0	10.48	3.192	
2,300.0	2,300.0	2,300.0	2,300.0	5.4	5.4	91.37	-33.4	0.0	33.4	22.6	10.80	3.097	
2,400.0	2,400.0	2,400.0	2,400.0	5.6	5.6	92.86	-33.4	0.0	33.5	22.3	11.20	2.990	
2,500.0	2,500.0	2,500.0	2,500.0	5.8	5.8	94.35	-33.4	0.0	33.5	21.9	11.59	2.892	
2,600.0	2,600.0	2,600.0	2,600.0	6.0	6.0	95.84	-33.4	0.0	33.6	21.6	12.00	2.802	
2,700.0	2,700.0	2,700.0	2,700.0	6.1	6.3	97.31	-33.4	0.0	33.7	21.3	12.40	2.718	
2,800.0	2,800.0	2,800.0	2,800.0	6.3	6.5	98.78	-33.4	0.0	33.8	21.0	12.81	2.641	
2,900.0	2,900.0	2,900.0	2,900.0	6.5	6.7	100.23	-33.4	0.0	34.0	20.8	13.22	2.569	
3,000.0	3,000.0	3,000.0	3,000.0	6.7	6.9	101.67	-33.4	0.0	34.1	20.5	13.64	2.504	
3,100.0	3,100.0	3,100.0	3,100.0	6.9	7.1	103.10	-33.4	0.0	34.3	20.3	14.05	2.443	
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.3	104.51	-33.4	0.0	34.5	20.1	14.47	2.387	
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.5	105.90	-33.4	0.0	34.8	19.9	14.89	2.335	
3,400.0	3,400.0	3,400.0	3,400.0	7.6	7.8	107.27	-33.4	0.0	35.0	19.7	15.31	2.287	
3,500.0	3,500.0	3,500.0	3,500.0	7.8	8.0	108.63	-33.4	0.0	35.3	19.5	15.74	2.242	
3,600.0	3,599.9	3,599.9	3,599.9	8.0	8.2	109.96	-33.4	0.0	35.6	19.4	16.16	2.201	
3,700.0	3,699.9	3,699.9	3,699.9	8.2	8.4	111.27	-33.4	0.0	35.9	19.3	16.59	2.163	
3,800.0	3,799.9	3,799.9	3,799.9	8.4	8.6	112.56	-33.4	0.0	36.2	19.2	17.02	2.128	
3,900.0	3,899.9	3,899.9	3,899.9	8.6	8.9	113.82	-33.4	0.0	36.6	19.1	17.44	2.095	
4,000.0	3,999.9	3,999.9	3,999.9	8.8	9.1	115.06	-33.4	0.0	36.9	19.0	17.87	2.065	
4,100.0	4,099.9	4,099.9	4,099.9	9.0	9.3	116.27	-33.4	0.0	37.3	19.0	18.30	2.037	
4,200.0	4,199.9	4,199.9	4,199.9	9.2	9.5	117.46	-33.4	0.0	37.7	18.9	18.74	2.011	
4,300.0	4,299.9	4,299.9	4,299.9	9.4	9.7	118.63	-33.4	0.0	38.1	18.9	19.17	1.987	
4,400.0	4,399.9	4,399.9	4,399.9	9.7	10.0	119.77	-33.4	0.0	38.5	18.9	19.60	1.965	
4,500.0	4,499.9	4,499.9	4,499.9	9.9	10.2	120.88	-33.4	0.0	39.0	18.9	20.04	1.945	
4,600.0	4,599.9	4,599.9	4,599.9	10.1	10.4	121.97	-33.4	0.0	39.4	18.9	20.47	1.926	
4,700.0	4,699.9	4,699.9	4,699.9	10.3	10.6	123.03	-33.4	0.0	39.9	19.0	20.90	1.908	
4,800.0	4,799.9	4,799.9	4,799.9	10.5	10.8	124.07	-33.4	0.0	40.4	19.0	21.34	1.892	
4,900.0	4,899.9	4,899.9	4,899.9	10.7	11.1	125.09	-33.4	0.0	40.9	19.1	21.78	1.876	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 13T2X - Kline Federal 5300 41-18 13T2X - Design #1

Survey Program: 0-MWD

Offset Site Error: 0.0 usft
Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,999.9	4,999.9	4,999.9	10.9	11.3	126.07	-33.4	0.0	41.4	19.2	22.21	1.862	
5,100.0	5,099.9	5,099.9	5,099.9	11.2	11.5	127.04	-33.4	0.0	41.9	19.2	22.65	1.849	
5,200.0	5,199.9	5,199.9	5,199.9	11.4	11.7	127.98	-33.4	0.0	42.4	19.3	23.09	1.837	
5,300.0	5,299.9	5,299.9	5,299.9	11.6	11.9	128.90	-33.4	0.0	43.0	19.4	23.53	1.826	
5,400.0	5,399.9	5,399.9	5,399.9	11.8	12.2	129.79	-33.4	0.0	43.5	19.6	23.97	1.816	
5,500.0	5,499.9	5,499.9	5,499.9	12.0	12.4	130.66	-33.4	0.0	44.1	19.7	24.41	1.806	
5,600.0	5,599.9	5,599.9	5,599.9	12.2	12.6	131.51	-33.4	0.0	44.7	19.8	24.85	1.797	
5,700.0	5,699.9	5,699.9	5,699.9	12.5	12.8	132.34	-33.4	0.0	45.2	20.0	25.28	1.789	
5,800.0	5,799.9	5,799.9	5,799.9	12.7	13.0	133.15	-33.4	0.0	45.8	20.1	25.73	1.782	
5,900.0	5,899.9	5,899.9	5,899.9	12.9	13.3	133.93	-33.4	0.0	46.4	20.3	26.17	1.775	
6,000.0	5,999.9	5,999.9	5,999.9	13.1	13.5	134.70	-33.4	0.0	47.0	20.4	26.61	1.768	
6,100.0	6,099.9	6,099.9	6,099.9	13.3	13.7	135.44	-33.4	0.0	47.7	20.6	27.05	1.762	
6,200.0	6,199.8	6,199.8	6,199.8	13.6	13.9	136.17	-33.4	0.0	48.3	20.8	27.49	1.757	
6,300.0	6,299.8	6,299.8	6,299.8	13.8	14.2	136.88	-33.4	0.0	48.9	21.0	27.93	1.751	
6,400.0	6,399.8	6,399.8	6,399.8	14.0	14.4	137.57	-33.4	0.0	49.6	21.2	28.37	1.747	
6,500.0	6,499.8	6,499.8	6,499.8	14.2	14.6	138.24	-33.4	0.0	50.2	21.4	28.81	1.742	
6,600.0	6,599.8	6,599.8	6,599.8	14.4	14.8	138.89	-33.4	0.0	50.9	21.6	29.26	1.738	
6,700.0	6,699.8	6,699.8	6,699.8	14.7	15.1	139.53	-33.4	0.0	51.5	21.8	29.70	1.735	
6,800.0	6,799.8	6,799.8	6,799.8	14.9	15.3	140.15	-33.4	0.0	52.2	22.0	30.14	1.731	
6,900.0	6,899.8	6,899.8	6,899.8	15.1	15.5	140.76	-33.4	0.0	52.9	22.3	30.59	1.728	
7,000.0	6,999.8	6,999.8	6,999.8	15.3	15.7	141.35	-33.4	0.0	53.5	22.5	31.03	1.726	
7,100.0	7,099.8	7,099.8	7,099.8	15.5	15.9	141.93	-33.4	0.0	54.2	22.8	31.47	1.723	
7,200.0	7,199.8	7,199.8	7,199.8	15.8	16.2	142.49	-33.4	0.0	54.9	23.0	31.92	1.721	
7,300.0	7,299.8	7,299.8	7,299.8	16.0	16.4	143.04	-33.4	0.0	55.6	23.2	32.36	1.718	
7,400.0	7,399.8	7,399.8	7,399.8	16.2	16.6	143.57	-33.4	0.0	56.3	23.5	32.80	1.717	
7,500.0	7,499.8	7,499.8	7,499.8	16.4	16.8	144.09	-33.4	0.0	57.0	23.8	33.25	1.715	
7,600.0	7,599.8	7,599.8	7,599.8	16.6	17.1	144.60	-33.4	0.0	57.7	24.0	33.69	1.713	
7,700.0	7,699.8	7,699.8	7,699.8	16.9	17.3	145.09	-33.4	0.0	58.4	24.3	34.14	1.712	
7,800.0	7,799.8	7,799.8	7,799.8	17.1	17.5	145.58	-33.4	0.0	59.2	24.6	34.58	1.711	
7,900.0	7,899.8	7,899.8	7,899.8	17.3	17.7	146.05	-33.4	0.0	59.9	24.9	35.02	1.710	
7,926.7	7,926.4	7,926.4	7,926.4	17.4	17.8	146.17	-33.4	0.0	60.1	24.9	35.14	1.709	
7,943.3	7,943.1	7,943.1	7,943.1	17.4	17.8	-123.79	-33.4	0.0	60.1	24.9	35.18	1.709	
8,000.0	7,999.8	7,999.8	7,999.8	17.5	18.0	-123.79	-33.4	0.0	60.1	24.7	35.42	1.698	
8,100.0	8,099.8	8,099.8	8,099.8	17.7	18.2	-123.79	-33.4	0.0	60.1	24.3	35.85	1.677	
8,200.0	8,199.8	8,199.8	8,199.8	17.9	18.4	-123.79	-33.4	0.0	60.1	23.8	36.28	1.657	
8,300.0	8,299.8	8,299.8	8,299.8	18.1	18.6	-123.79	-33.4	0.0	60.1	23.4	36.72	1.638	
8,400.0	8,399.8	8,399.8	8,399.8	18.4	18.8	-123.79	-33.4	0.0	60.1	23.0	37.15	1.619	
8,500.0	8,499.8	8,499.8	8,499.8	18.6	19.1	-123.79	-33.4	0.0	60.1	22.5	37.58	1.600	
8,600.0	8,599.8	8,599.8	8,599.8	18.8	19.3	-123.79	-33.4	0.0	60.1	22.1	38.01	1.582	
8,700.0	8,699.8	8,699.8	8,699.8	19.0	19.5	-123.79	-33.4	0.0	60.1	21.7	38.45	1.564	
8,800.0	8,799.8	8,799.8	8,799.8	19.2	19.7	-123.79	-33.4	0.0	60.1	21.2	38.88	1.546	
8,900.0	8,899.8	8,899.8	8,899.8	19.4	20.0	-123.79	-33.4	0.0	60.1	20.8	39.32	1.529	
9,000.0	8,999.8	8,999.8	8,999.8	19.6	20.2	-123.79	-33.4	0.0	60.1	20.4	39.75	1.513	
9,100.0	9,099.8	9,099.8	9,099.8	19.8	20.4	-123.79	-33.4	0.0	60.1	19.9	40.19	1.496	Level 3
9,200.0	9,199.8	9,199.8	9,199.8	20.0	20.6	-123.79	-33.4	0.0	60.1	19.5	40.62	1.480	Level 3
9,300.0	9,299.8	9,299.8	9,299.8	20.2	20.9	-123.79	-33.4	0.0	60.1	19.1	41.06	1.465	Level 3
9,400.0	9,399.8	9,399.8	9,399.8	20.5	21.1	-123.79	-33.4	0.0	60.1	18.6	41.49	1.449	Level 3
9,500.0	9,499.8	9,499.8	9,499.8	20.7	21.3	-123.79	-33.4	0.0	60.1	18.2	41.93	1.434	Level 3
9,600.0	9,599.8	9,599.8	9,599.8	20.9	21.5	-123.79	-33.4	0.0	60.1	17.8	42.37	1.419	Level 3
9,700.0	9,699.8	9,699.8	9,699.8	21.1	21.8	-123.79	-33.4	0.0	60.1	17.3	42.80	1.405	Level 3
9,800.0	9,799.8	9,799.8	9,799.8	21.3	22.0	-123.79	-33.4	0.0	60.1	16.9	43.24	1.391	Level 3
9,900.0	9,899.8	9,899.8	9,899.8	21.5	22.2	-123.79	-33.4	0.0	60.1	16.5	43.68	1.377	Level 3

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 13T2X - Kline Federal 5300 41-18 13T2X - Design #1

Survey Program: 0-MWD

Offset Site Error: 0.0 usft

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,000.0	9,999.8	9,999.8	9,999.8	21.7	22.4	-123.79	-33.4	0.0	60.1	16.0	44.11	1.363	Level 3
10,100.0	10,099.8	10,099.8	10,099.8	21.9	22.6	-123.79	-33.4	0.0	60.1	15.6	44.55	1.350	Level 3
10,200.0	10,199.8	10,199.8	10,199.8	22.2	22.9	-123.79	-33.4	0.0	60.1	15.1	44.99	1.336	Level 3
10,300.0	10,299.8	10,299.8	10,299.8	22.4	23.1	-123.79	-33.4	0.0	60.1	14.7	45.43	1.324	Level 3
10,354.8	10,354.6	10,354.6	10,354.6	22.5	23.2	-123.79	-33.4	0.0	60.1	14.5	45.67	1.317	Level 3
10,375.0	10,374.8	10,374.8	10,374.8	22.5	23.3	126.52	-33.4	0.0	60.4	14.6	45.78	1.319	Level 3
10,400.0	10,399.7	10,400.2	10,400.2	22.6	23.3	127.68	-33.5	0.1	61.4	15.5	45.84	1.339	Level 3
10,425.0	10,424.6	10,426.8	10,426.8	22.7	23.4	128.94	-34.0	1.1	62.7	16.9	45.88	1.368	Level 3
10,450.0	10,449.2	10,453.5	10,453.3	22.7	23.4	129.94	-35.3	3.4	64.2	18.4	45.84	1.401	Level 3
10,475.0	10,473.5	10,480.3	10,479.8	22.8	23.5	130.70	-37.4	7.0	65.9	20.1	45.79	1.439	Level 3
10,500.0	10,497.6	10,507.2	10,506.1	22.8	23.5	131.22	-40.2	12.0	67.6	22.0	45.69	1.480	Level 3
10,525.0	10,521.2	10,534.3	10,532.2	22.9	23.6	131.51	-43.7	18.2	69.5	24.0	45.56	1.526	
10,550.0	10,544.4	10,561.3	10,557.8	23.0	23.6	131.58	-47.9	25.8	71.5	26.1	45.41	1.575	
10,575.0	10,567.1	10,588.5	10,583.0	23.0	23.7	131.45	-52.9	34.6	73.6	28.4	45.24	1.627	
10,600.0	10,589.1	10,615.7	10,607.7	23.1	23.8	131.14	-58.6	44.7	75.8	30.7	45.07	1.681	
10,625.0	10,610.6	10,643.0	10,631.7	23.2	23.8	130.66	-64.9	56.0	78.0	33.1	44.90	1.738	
10,650.0	10,631.3	10,670.3	10,654.9	23.3	23.9	130.02	-71.9	68.5	80.4	35.6	44.76	1.796	
10,675.0	10,651.3	10,697.7	10,677.3	23.4	24.0	129.25	-79.6	82.1	82.8	38.2	44.64	1.855	
10,700.0	10,670.5	10,725.0	10,698.8	23.5	24.1	128.34	-87.9	96.9	85.3	40.8	44.57	1.914	
10,725.0	10,688.8	10,752.4	10,719.3	23.6	24.2	127.33	-96.8	112.7	87.9	43.4	44.56	1.973	
10,750.0	10,706.2	10,779.8	10,738.7	23.7	24.3	126.22	-106.3	129.6	90.6	46.0	44.62	2.031	
10,775.0	10,722.6	10,807.2	10,757.0	23.9	24.4	125.03	-116.3	147.3	93.4	48.6	44.74	2.087	
10,800.0	10,738.0	10,834.6	10,774.1	24.0	24.5	123.76	-126.8	166.0	96.2	51.3	44.95	2.140	
10,825.0	10,752.4	10,861.9	10,789.9	24.2	24.7	122.44	-137.7	185.5	99.1	53.9	45.24	2.191	
10,850.0	10,765.7	10,889.3	10,804.4	24.4	24.9	121.06	-149.1	205.7	102.1	56.5	45.62	2.239	
10,875.0	10,777.8	10,916.6	10,817.5	24.6	25.0	119.64	-160.8	226.5	105.2	59.1	46.08	2.283	
10,900.0	10,788.8	10,943.8	10,829.2	24.8	25.2	118.20	-172.9	248.0	108.4	61.8	46.62	2.325	
10,925.0	10,798.6	10,971.1	10,839.5	25.0	25.5	116.73	-185.2	269.9	111.6	64.4	47.24	2.363	
10,950.0	10,807.2	10,998.2	10,848.3	25.3	25.7	115.24	-197.8	292.3	114.9	67.0	47.92	2.398	
10,975.0	10,814.5	11,025.3	10,855.7	25.6	26.0	113.75	-210.6	315.1	118.3	69.6	48.66	2.430	
11,000.0	10,820.6	11,052.4	10,861.5	25.8	26.2	112.25	-223.6	338.1	121.7	72.2	49.46	2.460	
11,025.0	10,825.4	11,079.4	10,865.8	26.1	26.5	110.76	-236.6	361.3	125.1	74.8	50.29	2.488	
11,050.0	10,828.9	11,106.3	10,868.6	26.5	26.9	109.28	-249.8	384.7	128.6	77.5	51.16	2.514	
11,075.0	10,831.1	11,133.2	10,869.9	26.8	27.2	107.81	-262.9	408.1	132.2	80.1	52.05	2.539	
11,100.0	10,832.0	11,159.3	10,870.0	27.1	27.5	106.51	-275.7	430.9	135.8	82.9	52.93	2.566	
11,104.0	10,832.0	11,163.4	10,870.0	27.2	27.6	106.36	-277.7	434.5	136.4	83.3	53.08	2.570	
11,200.0	10,832.2	11,262.9	10,870.2	28.8	29.0	104.72	-324.2	522.4	151.8	95.8	56.01	2.711	
11,300.0	10,832.4	11,366.8	10,870.4	30.3	30.7	103.16	-369.6	615.8	170.4	111.0	59.35	2.870	
11,400.0	10,832.6	11,470.8	10,870.5	32.2	32.6	101.77	-411.6	711.0	191.4	128.5	62.89	3.043	
11,500.0	10,832.7	11,575.2	10,870.7	34.1	34.7	100.54	-450.2	807.9	214.9	148.4	66.51	3.231	
11,600.0	10,832.9	11,679.9	10,870.9	36.2	36.9	99.47	-486.4	906.5	240.8	170.6	70.16	3.432	
11,680.4	10,833.1	11,764.4	10,871.1	38.0	38.7	98.70	-511.1	987.0	263.4	190.3	73.08	3.605	
11,700.0	10,833.1	11,785.0	10,871.1	38.4	39.2	98.50	-517.0	1,006.7	269.0	195.1	73.94	3.638	
11,800.0	10,833.3	11,891.7	10,871.3	40.7	41.6	97.66	-545.4	1,109.6	295.7	217.0	78.62	3.761	
11,900.0	10,833.4	12,000.6	10,871.5	43.0	44.2	97.04	-570.4	1,215.6	318.7	235.2	83.51	3.817	
12,000.0	10,833.6	12,111.3	10,871.7	45.4	46.9	96.59	-591.6	1,324.2	338.1	249.5	88.60	3.816	
12,100.0	10,833.8	12,223.5	10,871.9	47.9	49.6	96.26	-608.9	1,435.1	353.7	259.8	93.85	3.768	
12,200.0	10,834.0	12,337.0	10,872.1	50.4	52.4	96.03	-621.9	1,547.8	365.4	266.1	99.24	3.682	
12,300.0	10,834.1	12,451.3	10,872.3	53.0	55.3	95.89	-630.4	1,661.8	373.1	268.4	104.75	3.562	
12,400.0	10,834.3	12,566.2	10,872.5	55.5	58.2	95.82	-634.5	1,776.7	376.9	266.6	110.33	3.416	
12,500.0	10,834.5	12,671.8	10,872.7	58.2	60.9	95.81	-634.8	1,882.3	377.5	261.8	115.73	3.262	
12,600.0	10,834.7	12,771.8	10,872.9	60.8	63.4	95.80	-634.8	1,982.3	377.8	256.8	121.04	3.121	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 13T2X - Kline Federal 5300 41-18 13T2X - Design #1

Survey Program: 0-MWD

Offset Site Error: 0.0 usft

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,700.0	10,834.8	12,871.8	10,873.0	63.5	66.0	95.80	-634.8	2,082.3	378.1	251.7	126.40	2.991	
12,800.0	10,835.0	12,971.8	10,873.2	66.2	68.7	95.79	-634.8	2,182.3	378.4	246.6	131.80	2.871	
12,900.0	10,835.2	13,071.8	10,873.4	68.9	71.3	95.79	-634.8	2,282.3	378.7	241.5	137.24	2.760	
13,000.0	10,835.4	13,171.8	10,873.6	71.7	74.0	95.79	-634.8	2,382.3	379.0	236.3	142.70	2.656	
13,100.0	10,835.5	13,271.8	10,873.7	74.4	76.7	95.78	-634.8	2,482.3	379.3	231.2	148.20	2.560	
13,200.0	10,835.7	13,371.8	10,873.9	77.2	79.4	95.78	-634.8	2,582.3	379.7	225.9	153.72	2.470	
13,300.0	10,835.9	13,471.8	10,874.1	79.9	82.1	95.77	-634.8	2,682.3	380.0	220.7	159.26	2.386	
13,400.0	10,836.1	13,571.8	10,874.3	82.7	84.8	95.77	-634.8	2,782.3	380.3	215.4	164.82	2.307	
13,500.0	10,836.2	13,671.8	10,874.4	85.5	87.6	95.76	-634.8	2,882.3	380.6	210.2	170.40	2.233	
13,600.0	10,836.4	13,771.8	10,874.6	88.3	90.3	95.76	-634.8	2,982.3	380.9	204.9	176.00	2.164	
13,700.0	10,836.6	13,871.8	10,874.8	91.1	93.1	95.75	-634.8	3,082.3	381.2	199.6	181.61	2.099	
13,800.0	10,836.7	13,971.8	10,875.0	94.0	95.9	95.75	-634.8	3,182.3	381.5	194.3	187.24	2.037	
13,900.0	10,836.9	14,071.8	10,875.1	96.8	98.7	95.74	-634.8	3,282.3	381.8	188.9	192.88	1.979	
14,000.0	10,837.1	14,171.8	10,875.3	99.6	101.5	95.74	-634.8	3,382.3	382.1	183.6	198.53	1.925	
14,100.0	10,837.3	14,271.8	10,875.5	102.5	104.3	95.74	-634.8	3,482.3	382.4	178.2	204.19	1.873	
14,200.0	10,837.4	14,371.8	10,875.7	105.3	107.1	95.73	-634.8	3,582.3	382.7	172.9	209.86	1.824	
14,300.0	10,837.6	14,471.8	10,875.8	108.2	109.9	95.73	-634.8	3,682.3	383.0	167.5	215.54	1.777	
14,400.0	10,837.8	14,571.8	10,876.0	111.0	112.7	95.72	-634.8	3,782.3	383.3	162.1	221.23	1.733	
14,500.0	10,838.0	14,671.8	10,876.2	113.9	115.6	95.72	-634.8	3,882.3	383.6	156.7	226.93	1.691	
14,600.0	10,838.1	14,771.8	10,876.4	116.7	118.4	95.71	-634.8	3,982.3	384.0	151.3	232.63	1.650	
14,700.0	10,838.3	14,871.8	10,876.5	119.6	121.2	95.71	-634.8	4,082.3	384.3	145.9	238.34	1.612	
14,800.0	10,838.5	14,971.8	10,876.7	122.5	124.1	95.70	-634.8	4,182.3	384.6	140.5	244.06	1.576	
14,900.0	10,838.7	15,071.8	10,876.9	125.3	126.9	95.70	-634.8	4,282.3	384.9	135.1	249.78	1.541	
15,000.0	10,838.8	15,171.8	10,877.1	128.2	129.8	95.69	-634.8	4,382.3	385.2	129.7	255.51	1.508	
15,100.0	10,839.0	15,271.8	10,877.2	131.1	132.6	95.69	-634.8	4,482.3	385.5	124.3	261.24	1.476	Level 3
15,200.0	10,839.2	15,371.8	10,877.4	133.9	135.5	95.69	-634.8	4,582.3	385.8	118.8	266.98	1.445	Level 3
15,300.0	10,839.4	15,471.8	10,877.6	136.8	138.3	95.68	-634.8	4,682.3	386.1	113.4	272.72	1.416	Level 3
15,400.0	10,839.5	15,571.8	10,877.8	139.7	141.2	95.68	-634.8	4,782.3	386.4	108.0	278.46	1.388	Level 3
15,500.0	10,839.7	15,671.8	10,877.9	142.6	144.1	95.67	-634.8	4,882.3	386.7	102.5	284.21	1.361	Level 3
15,600.0	10,839.9	15,771.8	10,878.1	145.5	146.9	95.67	-634.8	4,982.3	387.0	97.1	289.96	1.335	Level 3
15,700.0	10,840.1	15,871.8	10,878.3	148.4	149.8	95.66	-634.8	5,082.3	387.3	91.6	295.72	1.310	Level 3
15,800.0	10,840.2	15,971.8	10,878.5	151.3	152.7	95.66	-634.8	5,182.3	387.6	86.2	301.48	1.286	Level 3
15,900.0	10,840.4	16,071.8	10,878.6	154.1	155.5	95.65	-634.8	5,282.3	387.9	80.7	307.24	1.263	Level 3
16,000.0	10,840.6	16,171.8	10,878.8	157.0	158.4	95.65	-634.8	5,382.3	388.3	75.2	313.01	1.240	Level 2
16,100.0	10,840.8	16,271.8	10,879.0	159.9	161.3	95.65	-634.8	5,482.3	388.6	69.8	318.77	1.219	Level 2
16,200.0	10,840.9	16,371.8	10,879.1	162.8	164.2	95.64	-634.8	5,582.3	388.9	64.3	324.54	1.198	Level 2
16,300.0	10,841.1	16,471.8	10,879.3	165.7	167.1	95.64	-634.8	5,682.3	389.2	58.9	330.32	1.178	Level 2
16,400.0	10,841.3	16,571.8	10,879.5	168.6	169.9	95.63	-634.8	5,782.3	389.5	53.4	336.09	1.159	Level 2
16,500.0	10,841.4	16,671.8	10,879.7	171.5	172.8	95.63	-634.8	5,882.3	389.8	47.9	341.87	1.140	Level 2
16,600.0	10,841.6	16,771.8	10,879.8	174.4	175.7	95.62	-634.8	5,982.3	390.1	42.4	347.65	1.122	Level 2
16,700.0	10,841.8	16,871.8	10,880.0	177.3	178.6	95.62	-634.8	6,082.3	390.4	37.0	353.43	1.105	Level 2
16,800.0	10,842.0	16,971.8	10,880.2	180.2	181.5	95.62	-634.8	6,182.3	390.7	31.5	359.22	1.088	Level 2
16,900.0	10,842.1	17,071.8	10,880.4	183.1	184.4	95.61	-634.8	6,282.3	391.0	26.0	365.00	1.071	Level 2
17,000.0	10,842.3	17,171.8	10,880.5	186.0	187.3	95.61	-634.8	6,382.3	391.3	20.5	370.79	1.055	Level 2
17,100.0	10,842.5	17,271.8	10,880.7	188.9	190.2	95.60	-634.8	6,482.3	391.6	15.1	376.58	1.040	Level 2
17,200.0	10,842.7	17,371.8	10,880.9	191.8	193.1	95.60	-634.8	6,582.3	391.9	9.6	382.37	1.025	Level 2
17,300.0	10,842.8	17,471.8	10,881.1	194.7	196.0	95.59	-634.8	6,682.3	392.2	4.1	388.16	1.011	Level 2
17,400.0	10,843.0	17,571.8	10,881.2	197.6	198.9	95.59	-634.8	6,782.3	392.6	-1.4	393.95	0.996	Level 1
17,500.0	10,843.2	17,671.8	10,881.4	200.6	201.8	95.58	-634.8	6,882.3	392.9	-6.9	399.75	0.983	Level 1
17,600.0	10,843.4	17,771.8	10,881.6	203.5	204.7	95.58	-634.8	6,982.3	393.2	-12.4	405.55	0.969	Level 1
17,700.0	10,843.5	17,871.8	10,881.8	206.4	207.6	95.58	-634.8	7,082.3	393.5	-17.9	411.34	0.957	Level 1
17,800.0	10,843.7	17,971.8	10,881.9	209.3	210.5	95.57	-634.8	7,182.3	393.8	-23.4	417.14	0.944	Level 1

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 13T2X - Kline Federal 5300 41-18 13T2X - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,900.0	10,843.9	18,071.8	10,882.1	212.2	213.4	95.57	-634.8	7,282.3	394.1	-28.9	422.94	0.932	Level 1
18,000.0	10,844.1	18,171.8	10,882.3	215.1	216.3	95.56	-634.8	7,382.3	394.4	-34.3	428.74	0.920	Level 1
18,100.0	10,844.2	18,271.8	10,882.5	218.0	219.2	95.56	-634.8	7,482.3	394.7	-39.8	434.55	0.908	Level 1
18,200.0	10,844.4	18,371.8	10,882.6	220.9	222.1	95.55	-634.8	7,582.3	395.0	-45.3	440.35	0.897	Level 1
18,300.0	10,844.6	18,471.8	10,882.8	223.8	225.0	95.55	-634.8	7,682.3	395.3	-50.8	446.15	0.886	Level 1
18,400.0	10,844.8	18,571.8	10,883.0	226.7	227.9	95.55	-634.8	7,782.3	395.6	-56.3	451.96	0.875	Level 1
18,500.0	10,844.9	18,671.8	10,883.2	229.7	230.8	95.54	-634.8	7,882.2	395.9	-61.8	457.77	0.865	Level 1
18,600.0	10,845.1	18,771.8	10,883.3	232.6	233.7	95.54	-634.8	7,982.2	396.2	-67.3	463.57	0.855	Level 1
18,700.0	10,845.3	18,871.8	10,883.5	235.5	236.6	95.53	-634.8	8,082.2	396.5	-72.8	469.38	0.845	Level 1
18,800.0	10,845.4	18,971.8	10,883.7	238.4	239.5	95.53	-634.8	8,182.2	396.9	-78.3	475.19	0.835	Level 1
18,900.0	10,845.6	19,071.8	10,883.9	241.3	242.4	95.53	-634.8	8,282.2	397.2	-83.8	481.00	0.826	Level 1
19,000.0	10,845.8	19,171.8	10,884.0	244.2	245.3	95.52	-634.8	8,382.2	397.5	-89.3	486.81	0.816	Level 1
19,100.0	10,846.0	19,271.8	10,884.2	247.1	248.2	95.52	-634.8	8,482.2	397.8	-94.8	492.62	0.807	Level 1
19,200.0	10,846.1	19,371.8	10,884.4	250.1	251.1	95.51	-634.8	8,582.2	398.1	-100.4	498.44	0.799	Level 1
19,300.0	10,846.3	19,471.8	10,884.6	253.0	254.1	95.51	-634.8	8,682.2	398.4	-105.9	504.25	0.790	Level 1
19,400.0	10,846.5	19,571.8	10,884.7	255.9	257.0	95.50	-634.8	8,782.2	398.7	-111.4	510.06	0.782	Level 1
19,500.0	10,846.7	19,671.8	10,884.9	258.8	259.9	95.50	-634.8	8,882.2	399.0	-116.9	515.88	0.773	Level 1
19,600.0	10,846.8	19,771.8	10,885.1	261.7	262.8	95.50	-634.8	8,982.2	399.3	-122.4	521.69	0.765	Level 1
19,700.0	10,847.0	19,871.8	10,885.3	264.6	265.7	95.49	-634.8	9,082.2	399.6	-127.9	527.51	0.758	Level 1
19,800.0	10,847.2	19,971.8	10,885.4	267.6	268.6	95.49	-634.8	9,182.2	399.9	-133.4	533.32	0.750	Level 1
19,900.0	10,847.4	20,071.8	10,885.6	270.5	271.5	95.48	-634.8	9,282.2	400.2	-138.9	539.14	0.742	Level 1
20,000.0	10,847.5	20,171.8	10,885.8	273.4	274.4	95.48	-634.8	9,382.2	400.5	-144.4	544.96	0.735	Level 1
20,100.0	10,847.7	20,271.8	10,886.0	276.3	277.4	95.48	-634.8	9,482.2	400.9	-149.9	550.78	0.728	Level 1
20,200.0	10,847.9	20,371.8	10,886.1	279.2	280.3	95.47	-634.8	9,582.2	401.2	-155.4	556.60	0.721	Level 1
20,300.0	10,848.1	20,471.8	10,886.3	282.1	283.2	95.47	-634.8	9,682.2	401.5	-161.0	562.41	0.714	Level 1
20,400.0	10,848.2	20,571.8	10,886.5	285.1	286.1	95.46	-634.8	9,782.2	401.8	-166.5	568.23	0.707	Level 1
20,500.0	10,848.4	20,671.8	10,886.7	288.0	289.0	95.46	-634.8	9,882.2	402.1	-172.0	574.05	0.700	Level 1
20,600.0	10,848.6	20,771.8	10,886.8	290.9	291.9	95.45	-634.8	9,982.2	402.4	-177.5	579.86	0.694	Level 1
20,667.7	10,848.7	20,839.5	10,886.9	292.9	293.9	95.45	-634.8	10,049.9	402.6	-181.2	583.82	0.690	Level 1, ES, SF

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-18 14BX - Design #1

Offset Site Error: 0.0 usft

Offset Well Error: 2.0 usft

Survey Program: 0-MWD

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	2.0	2.0	-180.00	-65.9	0.0	65.9				
100.0	100.0	100.0	100.0	2.0	2.0	-180.00	-65.9	0.0	65.9	61.8	4.00	16.452	
200.0	200.0	200.0	200.0	2.0	2.0	-180.00	-65.9	0.0	65.9	61.8	4.05	16.273	
300.0	300.0	300.0	300.0	2.1	2.1	-180.00	-65.9	0.0	65.9	61.7	4.14	15.909	
400.0	400.0	400.0	400.0	2.1	2.1	-180.00	-65.9	0.0	65.9	61.6	4.28	15.396	
500.0	500.0	500.0	500.0	2.2	2.2	-180.00	-65.9	0.0	65.9	61.4	4.48	14.777	
600.0	600.0	600.0	600.0	2.3	2.3	-180.00	-65.9	0.0	65.9	61.2	4.67	14.094	
700.0	700.0	700.0	700.0	2.5	2.5	-180.00	-65.9	0.0	65.9	60.9	4.92	13.385	
800.0	800.0	800.0	800.0	2.6	2.6	-180.00	-65.9	0.0	65.9	60.7	5.20	12.678	
900.0	900.0	900.0	900.0	2.7	2.7	-180.00	-65.9	0.0	65.9	60.4	5.49	11.990	
1,000.0	1,000.0	1,000.0	1,000.0	2.9	2.9	-180.00	-65.9	0.0	65.9	60.1	5.81	11.336	
1,100.0	1,100.0	1,100.0	1,100.0	3.1	3.1	-180.00	-65.9	0.0	65.9	59.7	6.14	10.720	
1,200.0	1,200.0	1,200.0	1,200.0	3.2	3.2	-180.00	-65.9	0.0	65.9	59.4	6.49	10.145	
1,300.0	1,300.0	1,300.0	1,300.0	3.4	3.4	-180.00	-65.9	0.0	65.9	59.0	6.85	9.613	
1,400.0	1,400.0	1,400.0	1,400.0	3.6	3.6	-180.00	-65.9	0.0	65.9	58.6	7.22	9.121	
1,500.0	1,500.0	1,500.0	1,500.0	3.8	3.8	-180.00	-65.9	0.0	65.9	58.3	7.60	8.667	
1,600.0	1,600.0	1,600.0	1,600.0	4.0	4.0	-180.00	-65.9	0.0	65.9	57.9	7.99	8.248	
1,700.0	1,700.0	1,700.0	1,700.0	4.2	4.2	-180.00	-65.9	0.0	65.9	57.5	8.38	7.862	
1,800.0	1,800.0	1,800.0	1,800.0	4.4	4.4	-180.00	-65.9	0.0	65.9	57.1	8.78	7.506	
1,900.0	1,900.0	1,900.0	1,900.0	4.6	4.6	-180.00	-65.9	0.0	65.9	56.7	9.18	7.177	
2,000.0	2,000.0	2,000.0	2,000.0	4.8	4.8	-180.00	-65.9	0.0	65.9	56.3	9.58	6.872	
2,100.0	2,100.0	2,100.0	2,100.0	5.0	5.0	-180.00	-65.9	0.0	65.9	55.9	9.99	6.590	
2,200.0	2,200.0	2,200.0	2,200.0	5.2	5.2	-180.00	-65.9	0.0	65.9	55.5	10.41	6.328	CC
2,216.7	2,216.7	2,216.1	2,216.1	5.2	5.2	90.06	-65.9	0.0	65.9	55.5	10.47	6.298	
2,300.0	2,300.0	2,299.4	2,299.4	5.4	5.4	90.68	-66.7	0.0	66.7	55.9	10.75	6.201	
2,400.0	2,400.0	2,399.4	2,399.4	5.6	5.5	91.41	-67.5	0.0	67.6	56.5	11.10	6.088	
2,500.0	2,500.0	2,499.4	2,499.4	5.8	5.7	92.13	-68.4	0.0	68.5	57.0	11.45	5.979	
2,600.0	2,600.0	2,599.4	2,599.4	6.0	5.9	92.82	-69.3	0.0	69.4	57.6	11.81	5.874	
2,700.0	2,700.0	2,699.4	2,699.4	6.1	6.0	93.50	-70.1	0.0	70.3	58.1	12.17	5.773	
2,800.0	2,800.0	2,799.4	2,799.4	6.3	6.2	94.15	-71.0	0.0	71.2	58.7	12.54	5.677	
2,900.0	2,900.0	2,899.4	2,899.3	6.5	6.4	94.79	-71.9	0.0	72.2	59.2	12.92	5.584	
3,000.0	3,000.0	2,999.4	2,999.3	6.7	6.6	95.42	-72.8	0.0	73.1	59.8	13.30	5.496	
3,100.0	3,100.0	3,099.4	3,099.3	6.9	6.7	96.03	-73.6	0.0	74.1	60.4	13.69	5.411	
3,200.0	3,200.0	3,199.3	3,199.3	7.1	6.9	96.62	-74.5	0.0	75.0	60.9	14.07	5.330	
3,300.0	3,300.0	3,299.3	3,299.3	7.3	7.1	97.20	-75.4	0.0	76.0	61.5	14.47	5.253	
3,400.0	3,400.0	3,399.3	3,399.3	7.6	7.3	97.76	-76.3	0.0	77.0	62.1	14.86	5.179	
3,500.0	3,500.0	3,499.3	3,499.3	7.8	7.5	98.31	-77.1	0.0	78.0	62.7	15.26	5.108	
3,600.0	3,599.9	3,599.3	3,599.3	8.0	7.7	98.84	-78.0	0.0	78.9	63.3	15.66	5.041	
3,700.0	3,699.9	3,699.3	3,699.3	8.2	7.9	99.37	-78.9	0.0	79.9	63.9	16.07	4.976	
3,800.0	3,799.9	3,799.3	3,799.2	8.4	8.1	99.88	-79.7	0.0	81.0	64.5	16.47	4.915	
3,900.0	3,899.9	3,899.3	3,899.2	8.6	8.3	100.37	-80.6	0.0	82.0	65.1	16.88	4.856	
4,000.0	3,999.9	3,999.3	3,999.2	8.8	8.5	100.86	-81.5	0.0	83.0	65.7	17.29	4.799	
4,100.0	4,099.9	4,099.3	4,099.2	9.0	8.7	101.33	-82.4	0.0	84.0	66.3	17.70	4.745	
4,200.0	4,199.9	4,199.3	4,199.2	9.2	8.9	101.79	-83.2	0.0	85.0	66.9	18.12	4.694	
4,300.0	4,299.9	4,299.3	4,299.2	9.4	9.1	102.24	-84.1	0.0	86.1	67.5	18.53	4.644	
4,400.0	4,399.9	4,399.3	4,399.2	9.7	9.3	102.68	-85.0	0.0	87.1	68.2	18.95	4.597	
4,500.0	4,499.9	4,499.3	4,499.2	9.9	9.5	103.11	-85.9	0.0	88.2	68.8	19.37	4.551	
4,600.0	4,599.9	4,599.2	4,599.2	10.1	9.7	103.53	-86.7	0.0	89.2	69.4	19.79	4.507	
4,700.0	4,699.9	4,699.2	4,699.1	10.3	9.9	103.94	-87.6	0.0	90.3	70.0	20.21	4.466	
4,800.0	4,799.9	4,799.2	4,799.1	10.5	10.1	104.33	-88.5	0.0	91.3	70.7	20.64	4.425	
4,900.0	4,899.9	4,899.2	4,899.1	10.7	10.3	104.72	-89.3	0.0	92.4	71.3	21.06	4.387	
5,000.0	4,999.9	4,999.2	4,999.1	10.9	10.6	105.11	-90.2	0.0	93.5	72.0	21.49	4.350	

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

Ryan Directional Services

Anticollision Report

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-18 14BX - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,099.9	5,099.2	5,099.1	11.2	10.8	105.48	-91.1	0.0	94.5	72.6	21.91	4.314	
5,200.0	5,199.9	5,199.2	5,199.1	11.4	11.0	105.84	-92.0	0.0	95.6	73.3	22.34	4.280	
5,300.0	5,299.9	5,299.2	5,299.1	11.6	11.2	106.20	-92.8	0.0	96.7	73.9	22.77	4.246	
5,400.0	5,399.9	5,399.2	5,399.1	11.8	11.4	106.55	-93.7	0.0	97.8	74.6	23.20	4.215	
5,500.0	5,499.9	5,499.2	5,499.0	12.0	11.6	106.89	-94.6	0.0	98.9	75.2	23.63	4.184	
5,600.0	5,599.9	5,599.2	5,599.0	12.2	11.8	107.22	-95.5	0.0	99.9	75.9	24.06	4.154	
5,700.0	5,699.9	5,699.2	5,699.0	12.5	12.0	107.55	-96.3	0.0	101.0	76.5	24.49	4.126	
5,800.0	5,799.9	5,799.2	5,799.0	12.7	12.3	107.87	-97.2	0.0	102.1	77.2	24.92	4.098	
5,900.0	5,899.9	5,899.1	5,899.0	12.9	12.5	108.18	-98.1	0.0	103.2	77.9	25.35	4.072	
6,000.0	5,999.9	5,999.1	5,999.0	13.1	12.7	108.49	-98.9	0.0	104.3	78.5	25.79	4.046	
6,100.0	6,099.9	6,099.1	6,099.0	13.3	12.9	108.79	-99.8	0.0	105.4	79.2	26.22	4.021	
6,200.0	6,199.8	6,199.1	6,199.0	13.6	13.1	109.08	-100.7	0.0	106.5	79.9	26.65	3.997	
6,300.0	6,299.8	6,299.1	6,299.0	13.8	13.3	109.37	-101.6	0.0	107.7	80.6	27.09	3.974	
6,400.0	6,399.8	6,399.1	6,398.9	14.0	13.6	109.65	-102.4	0.0	108.8	81.2	27.53	3.952	
6,500.0	6,499.8	6,499.1	6,498.9	14.2	13.8	109.92	-103.3	0.0	109.9	81.9	27.96	3.930	
6,600.0	6,599.8	6,599.1	6,598.9	14.4	14.0	110.19	-104.2	0.0	111.0	82.6	28.40	3.909	
6,700.0	6,699.8	6,699.1	6,698.9	14.7	14.2	110.46	-105.1	0.0	112.1	83.3	28.83	3.889	
6,800.0	6,799.8	6,799.1	6,798.9	14.9	14.4	110.72	-105.9	0.0	113.3	84.0	29.27	3.869	
6,900.0	6,899.8	6,899.1	6,898.9	15.1	14.6	110.97	-106.8	0.0	114.4	84.7	29.71	3.850	
7,000.0	6,999.8	6,999.1	6,998.9	15.3	14.9	111.22	-107.7	0.0	115.5	85.4	30.15	3.831	
7,100.0	7,099.8	7,099.1	7,098.9	15.5	15.1	111.46	-108.5	0.0	116.6	86.1	30.59	3.813	
7,200.0	7,199.8	7,199.0	7,198.9	15.8	15.3	111.70	-109.4	0.0	117.8	86.7	31.02	3.796	
7,300.0	7,299.8	7,299.0	7,298.8	16.0	15.5	111.94	-110.3	0.0	118.9	87.4	31.46	3.779	
7,400.0	7,399.8	7,399.0	7,398.8	16.2	15.7	112.17	-111.2	0.0	120.0	88.1	31.90	3.763	
7,500.0	7,499.8	7,499.0	7,498.8	16.4	16.0	112.40	-112.0	0.0	121.2	88.8	32.34	3.747	
7,600.0	7,599.8	7,599.0	7,598.8	16.6	16.2	112.62	-112.9	0.0	122.3	89.5	32.78	3.731	
7,700.0	7,699.8	7,699.0	7,698.8	16.9	16.4	112.84	-113.8	0.0	123.5	90.2	33.22	3.716	
7,800.0	7,799.8	7,799.0	7,798.8	17.1	16.6	113.05	-114.7	0.0	124.6	90.9	33.66	3.701	
7,900.0	7,899.8	7,899.0	7,898.8	17.3	16.8	113.26	-115.5	0.0	125.8	91.6	34.11	3.687	
7,926.7	7,926.4	7,925.7	7,925.4	17.4	16.9	113.32	-115.8	0.0	126.1	91.8	34.22	3.683	
7,943.3	7,943.1	7,943.3	7,943.1	17.4	16.9	-156.66	-115.8	0.0	126.2	91.9	34.30	3.679	
8,000.0	7,999.8	8,000.0	7,999.8	17.5	17.1	-156.66	-115.8	0.0	126.2	91.6	34.52	3.654	
8,100.0	8,099.8	8,100.0	8,099.8	17.7	17.2	-156.66	-115.8	0.0	126.2	91.2	34.92	3.613	
8,200.0	8,199.8	8,200.0	8,199.8	17.9	17.4	-156.66	-115.8	0.0	126.2	90.8	35.32	3.572	
8,300.0	8,299.8	8,300.0	8,299.8	18.1	17.6	-156.66	-115.8	0.0	126.2	90.4	35.72	3.532	
8,400.0	8,399.8	8,400.0	8,399.8	18.4	17.8	-156.66	-115.8	0.0	126.2	90.0	36.12	3.493	
8,500.0	8,499.8	8,500.0	8,499.8	18.6	18.0	-156.66	-115.8	0.0	126.2	89.6	36.52	3.454	
8,600.0	8,599.8	8,600.0	8,599.8	18.8	18.2	-156.66	-115.8	0.0	126.2	89.2	36.93	3.416	
8,700.0	8,699.8	8,700.0	8,699.8	19.0	18.4	-156.66	-115.8	0.0	126.2	88.8	37.33	3.379	
8,800.0	8,799.8	8,800.0	8,799.8	19.2	18.6	-156.66	-115.8	0.0	126.2	88.4	37.74	3.343	
8,900.0	8,899.8	8,900.0	8,899.8	19.4	18.8	-156.66	-115.8	0.0	126.2	88.0	38.14	3.307	
9,000.0	8,999.8	9,000.0	8,999.8	19.6	19.0	-156.66	-115.8	0.0	126.2	87.6	38.56	3.273	
9,100.0	9,099.8	9,100.0	9,099.8	19.8	19.2	-156.66	-115.8	0.0	126.2	87.2	38.96	3.238	
9,200.0	9,199.8	9,200.0	9,199.8	20.0	19.4	-156.66	-115.8	0.0	126.2	86.8	39.37	3.205	
9,300.0	9,299.8	9,300.0	9,299.8	20.2	19.6	-156.66	-115.8	0.0	126.2	86.4	39.78	3.172	
9,400.0	9,399.8	9,400.0	9,399.8	20.5	19.8	-156.66	-115.8	0.0	126.2	86.0	40.19	3.139	
9,500.0	9,499.8	9,500.0	9,499.8	20.7	20.0	-156.66	-115.8	0.0	126.2	85.6	40.60	3.107	
9,600.0	9,599.8	9,600.0	9,599.8	20.9	20.2	-156.66	-115.8	0.0	126.2	85.1	41.01	3.076	
9,700.0	9,699.8	9,700.0	9,699.8	21.1	20.4	-156.66	-115.8	0.0	126.2	84.7	41.43	3.045	
9,800.0	9,799.8	9,800.0	9,799.8	21.3	20.6	-156.66	-115.8	0.0	126.2	84.3	41.84	3.015	
9,900.0	9,899.8	9,900.0	9,899.8	21.5	20.8	-156.66	-115.8	0.0	126.2	83.9	42.26	2.986	
10,000.0	9,999.8	10,000.0	9,999.8	21.7	21.0	-156.66	-115.8	0.0	126.2	83.5	42.67	2.956	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-18 14BX - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,100.0	10,099.8	10,100.0	10,099.8	21.9	21.2	-156.66	-115.8	0.0	126.2	83.1	43.09	2.928	
10,162.1	10,161.9	10,162.1	10,161.9	22.1	21.3	-156.66	-115.8	0.0	126.2	82.8	43.35	2.910	
10,200.0	10,199.8	10,199.8	10,199.6	22.2	21.4	-156.73	-115.9	0.1	126.2	82.7	43.50	2.900	
10,300.0	10,299.8	10,296.4	10,295.2	22.4	21.6	-162.19	-121.4	11.0	127.5	83.6	43.93	2.903	
10,354.8	10,354.6	10,346.2	10,343.1	22.5	21.7	-168.17	-127.5	23.3	130.8	86.6	44.17	2.961	
10,375.0	10,374.8	10,363.9	10,359.7	22.5	21.8	79.20	-130.2	28.7	132.7	88.5	44.24	3.000	
10,400.0	10,399.7	10,385.5	10,379.7	22.6	21.8	76.08	-133.9	36.1	135.6	91.3	44.34	3.059	
10,425.0	10,424.5	10,406.9	10,399.1	22.7	21.9	73.14	-138.0	44.1	139.0	94.6	44.42	3.129	
10,450.0	10,449.2	10,428.0	10,417.8	22.7	21.9	70.38	-142.4	52.9	142.8	98.3	44.49	3.209	
10,475.0	10,473.5	10,450.0	10,436.8	22.8	22.0	67.70	-147.3	62.7	146.9	102.3	44.53	3.298	
10,500.0	10,497.6	10,469.5	10,453.2	22.8	22.0	65.43	-152.0	72.1	151.2	106.7	44.53	3.395	
10,525.0	10,521.2	10,489.9	10,469.9	22.9	22.1	63.24	-157.3	82.6	155.8	111.3	44.51	3.500	
10,550.0	10,544.4	10,510.1	10,486.0	23.0	22.2	61.22	-162.8	93.6	160.5	116.1	44.44	3.612	
10,575.0	10,567.1	10,530.2	10,501.4	23.0	22.2	59.39	-168.6	105.1	165.4	121.0	44.32	3.731	
10,600.0	10,589.1	10,550.0	10,516.0	23.1	22.3	57.72	-174.6	117.0	170.3	126.1	44.17	3.855	
10,625.0	10,610.6	10,569.8	10,530.1	23.2	22.4	56.20	-180.8	129.4	175.2	131.2	43.98	3.983	
10,650.0	10,631.3	10,589.3	10,543.4	23.3	22.5	54.83	-187.2	142.2	180.1	136.4	43.76	4.117	
10,675.0	10,651.3	10,608.8	10,556.1	23.4	22.6	53.60	-193.8	155.4	185.1	141.5	43.51	4.253	
10,700.0	10,670.5	10,628.1	10,568.1	23.5	22.7	52.49	-200.6	168.9	189.9	146.7	43.23	4.392	
10,725.0	10,688.8	10,647.2	10,579.3	23.6	22.8	51.51	-207.6	182.8	194.7	151.7	42.94	4.533	
10,750.0	10,706.2	10,666.3	10,589.9	23.7	22.9	50.64	-214.7	197.0	199.3	156.7	42.65	4.673	
10,775.0	10,722.6	10,685.3	10,599.8	23.9	23.1	49.87	-221.9	211.4	203.8	161.5	42.35	4.813	
10,800.0	10,738.0	10,704.2	10,609.0	24.0	23.2	49.20	-229.3	226.2	208.2	166.1	42.07	4.950	
10,825.0	10,752.4	10,725.0	10,618.4	24.2	23.4	48.60	-237.7	242.8	212.4	170.6	41.81	5.082	
10,850.0	10,765.7	10,741.7	10,625.3	24.4	23.5	48.13	-244.5	256.4	216.5	174.9	41.56	5.208	
10,875.0	10,777.8	10,760.3	10,632.4	24.6	23.7	47.72	-252.2	271.8	220.4	179.0	41.37	5.327	
10,900.0	10,788.8	10,778.9	10,638.9	24.8	23.9	47.39	-260.1	287.4	224.1	182.8	41.22	5.436	
10,925.0	10,798.6	10,800.0	10,645.3	25.0	24.1	47.14	-269.0	305.3	227.6	186.4	41.15	5.530	
10,950.0	10,807.2	10,816.0	10,649.6	25.3	24.3	46.94	-276.0	319.1	230.9	189.7	41.11	5.616	
10,975.0	10,814.5	10,834.5	10,653.9	25.6	24.5	46.82	-284.0	335.1	233.9	192.8	41.16	5.684	
11,000.0	10,820.6	10,850.0	10,657.0	25.8	24.6	46.72	-290.8	348.7	236.8	195.6	41.24	5.742	
11,025.0	10,825.4	10,871.3	10,660.4	26.1	24.9	46.77	-300.3	367.5	239.5	198.0	41.49	5.772	
11,050.0	10,828.9	10,889.7	10,662.6	26.5	25.1	46.83	-308.5	383.8	241.9	200.1	41.78	5.790	
11,075.0	10,831.1	10,908.1	10,664.1	26.8	25.4	46.96	-316.7	400.2	244.1	202.0	42.16	5.791	
11,100.0	10,832.0	10,926.0	10,664.9	27.1	25.6	47.11	-324.3	415.3	246.2	203.6	42.60	5.778	
11,104.0	10,832.0	10,929.4	10,665.0	27.2	25.7	47.18	-326.2	419.2	246.4	203.7	42.71	5.770	
11,200.0	10,832.2	11,027.9	10,665.2	28.6	27.1	48.96	-369.1	507.9	255.8	210.3	45.46	5.626	
11,300.0	10,832.4	11,134.2	10,665.4	30.3	28.9	51.02	-412.0	605.2	267.7	218.8	48.83	5.482	
11,400.0	10,832.6	11,240.7	10,665.6	32.2	30.9	53.17	-451.2	704.2	281.8	229.2	52.57	5.361	
11,500.0	10,832.7	11,347.5	10,665.8	34.1	33.1	55.36	-486.9	804.8	298.2	241.7	56.57	5.272	
11,600.0	10,832.9	11,454.6	10,666.0	36.2	35.4	57.51	-518.9	907.0	317.1	256.4	60.73	5.222	
11,680.4	10,833.1	11,541.0	10,666.1	38.0	37.3	59.20	-541.8	990.3	334.1	269.9	64.11	5.210	
11,700.0	10,833.1	11,562.1	10,666.2	38.4	37.8	59.67	-547.1	1,010.7	338.3	273.2	65.13	5.195	
11,800.0	10,833.3	11,671.0	10,666.4	40.7	40.4	61.73	-571.7	1,116.9	358.4	288.1	70.34	5.095	
11,900.0	10,833.4	11,781.8	10,666.6	43.0	43.1	63.28	-592.6	1,225.7	375.5	299.9	75.60	4.966	
12,000.0	10,833.6	11,894.1	10,666.8	45.4	45.8	64.43	-609.4	1,336.7	389.2	308.3	80.90	4.811	
12,100.0	10,833.8	12,007.7	10,667.0	47.9	48.7	65.23	-622.0	1,449.5	399.6	313.4	86.21	4.635	
12,200.0	10,834.0	12,122.0	10,667.2	50.4	51.6	65.74	-630.2	1,563.6	406.3	314.8	91.52	4.440	
12,300.0	10,834.1	12,236.9	10,667.4	53.0	54.5	65.96	-633.8	1,678.4	409.5	312.7	96.78	4.231	
12,400.0	10,834.3	12,341.1	10,667.5	55.5	57.2	65.99	-634.0	1,782.6	409.9	308.2	101.72	4.030	
12,500.0	10,834.5	12,441.1	10,667.7	58.2	59.7	66.01	-634.0	1,882.6	410.2	303.6	106.61	3.848	
12,600.0	10,834.7	12,541.1	10,667.9	60.8	62.4	66.03	-634.0	1,982.6	410.5	298.9	111.55	3.680	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-18 14BX - Design #1

Offset Site Error: 0.0 usft
Offset Well Error: 2.0 usft

Survey Program: 0-MWD

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,700.0	10,834.8	12,641.1	10,668.1	63.5	65.0	66.05	-634.0	2,082.6	410.8	294.2	116.53	3.525	
12,800.0	10,835.0	12,741.1	10,668.2	66.2	67.7	66.06	-634.0	2,182.6	411.0	289.5	121.54	3.382	
12,900.0	10,835.2	12,841.1	10,668.4	68.9	70.4	66.08	-634.0	2,282.6	411.3	284.7	126.59	3.249	
13,000.0	10,835.4	12,941.1	10,668.6	71.7	73.1	66.10	-634.0	2,382.6	411.6	279.9	131.67	3.126	
13,100.0	10,835.5	13,041.1	10,668.8	74.4	75.8	66.12	-634.0	2,482.6	411.9	275.1	136.77	3.012	
13,200.0	10,835.7	13,141.1	10,668.9	77.2	78.5	66.13	-634.0	2,582.6	412.2	270.3	141.90	2.905	
13,300.0	10,835.9	13,241.1	10,669.1	79.9	81.3	66.15	-634.0	2,682.6	412.5	265.4	147.05	2.805	
13,400.0	10,836.1	13,341.1	10,669.3	82.7	84.1	66.17	-634.0	2,782.6	412.7	260.5	152.21	2.712	
13,500.0	10,836.2	13,441.1	10,669.5	85.5	86.8	66.19	-634.0	2,882.6	413.0	255.6	157.40	2.624	
13,600.0	10,836.4	13,541.1	10,669.6	88.3	89.6	66.20	-634.0	2,982.6	413.3	250.7	162.60	2.542	
13,700.0	10,836.6	13,641.1	10,669.8	91.1	92.4	66.22	-634.0	3,082.6	413.6	245.8	167.81	2.465	
13,800.0	10,836.7	13,741.1	10,670.0	94.0	95.2	66.24	-634.0	3,182.6	413.9	240.8	173.04	2.392	
13,900.0	10,836.9	13,841.1	10,670.2	96.8	98.0	66.25	-634.0	3,282.6	414.1	235.9	178.28	2.323	
14,000.0	10,837.1	13,941.1	10,670.3	99.6	100.9	66.27	-634.0	3,382.6	414.4	230.9	183.53	2.258	
14,100.0	10,837.3	14,041.1	10,670.5	102.5	103.7	66.29	-634.0	3,482.6	414.7	225.9	188.79	2.197	
14,200.0	10,837.4	14,141.1	10,670.7	105.3	106.5	66.31	-634.0	3,582.6	415.0	220.9	194.06	2.138	
14,300.0	10,837.6	14,241.1	10,670.9	108.2	109.3	66.32	-634.0	3,682.6	415.3	215.9	199.35	2.083	
14,400.0	10,837.8	14,341.1	10,671.0	111.0	112.2	66.34	-634.0	3,782.6	415.6	210.9	204.63	2.031	
14,500.0	10,838.0	14,441.1	10,671.2	113.9	115.0	66.36	-634.0	3,882.6	415.8	205.9	209.93	1.981	
14,600.0	10,838.1	14,541.1	10,671.4	116.7	117.9	66.38	-634.0	3,982.6	416.1	200.9	215.24	1.933	
14,700.0	10,838.3	14,641.1	10,671.6	119.6	120.7	66.39	-634.0	4,082.6	416.4	195.9	220.55	1.888	
14,800.0	10,838.5	14,741.1	10,671.7	122.5	123.6	66.41	-634.0	4,182.6	416.7	190.8	225.86	1.845	
14,900.0	10,838.7	14,841.1	10,671.9	125.3	126.4	66.43	-634.0	4,282.6	417.0	185.8	231.19	1.804	
15,000.0	10,838.8	14,941.1	10,672.1	128.2	129.3	66.44	-634.0	4,382.6	417.3	180.7	236.52	1.764	
15,100.0	10,839.0	15,041.1	10,672.3	131.1	132.2	66.46	-634.0	4,482.6	417.5	175.7	241.86	1.726	
15,200.0	10,839.2	15,141.1	10,672.4	133.9	135.0	66.48	-634.0	4,582.6	417.8	170.6	247.19	1.690	
15,300.0	10,839.4	15,241.1	10,672.6	136.8	137.9	66.49	-634.0	4,682.6	418.1	165.6	252.54	1.656	
15,400.0	10,839.5	15,341.1	10,672.8	139.7	140.8	66.51	-634.0	4,782.6	418.4	160.5	257.89	1.622	
15,500.0	10,839.7	15,441.1	10,673.0	142.6	143.7	66.53	-634.0	4,882.6	418.7	155.4	263.24	1.590	
15,600.0	10,839.9	15,541.1	10,673.1	145.5	146.6	66.54	-634.0	4,982.6	419.0	150.3	268.60	1.560	
15,700.0	10,840.1	15,641.1	10,673.3	148.4	149.4	66.56	-634.0	5,082.6	419.2	145.3	273.97	1.530	
15,800.0	10,840.2	15,741.1	10,673.5	151.3	152.3	66.58	-634.0	5,182.6	419.5	140.2	279.33	1.502	
15,900.0	10,840.4	15,841.1	10,673.6	154.1	155.2	66.60	-634.0	5,282.6	419.8	135.1	284.70	1.475	Level 3
16,000.0	10,840.6	15,941.1	10,673.8	157.0	158.1	66.61	-634.0	5,382.6	420.1	130.0	290.08	1.448	Level 3
16,100.0	10,840.8	16,041.1	10,674.0	159.9	161.0	66.63	-634.0	5,482.6	420.4	124.9	295.46	1.423	Level 3
16,200.0	10,840.9	16,141.1	10,674.2	162.8	163.9	66.65	-634.0	5,582.6	420.6	119.8	300.84	1.398	Level 3
16,300.0	10,841.1	16,241.1	10,674.3	165.7	166.8	66.66	-634.0	5,682.6	420.9	114.7	306.22	1.375	Level 3
16,400.0	10,841.3	16,341.1	10,674.5	168.6	169.6	66.68	-634.0	5,782.6	421.2	109.6	311.61	1.352	Level 3
16,500.0	10,841.4	16,441.1	10,674.7	171.5	172.5	66.70	-634.0	5,882.6	421.5	104.5	317.00	1.330	Level 3
16,600.0	10,841.6	16,541.1	10,674.9	174.4	175.4	66.71	-634.0	5,982.6	421.8	99.4	322.40	1.308	Level 3
16,700.0	10,841.8	16,641.1	10,675.0	177.3	178.3	66.73	-634.0	6,082.6	422.1	94.3	327.80	1.288	Level 3
16,800.0	10,842.0	16,741.1	10,675.2	180.2	181.2	66.75	-634.0	6,182.6	422.3	89.2	333.20	1.268	Level 3
16,900.0	10,842.1	16,841.1	10,675.4	183.1	184.1	66.76	-634.0	6,282.6	422.6	84.0	338.60	1.248	Level 2
17,000.0	10,842.3	16,941.1	10,675.6	186.0	187.0	66.78	-634.0	6,382.6	422.9	78.9	344.00	1.229	Level 2
17,100.0	10,842.5	17,041.1	10,675.7	188.9	189.9	66.80	-634.0	6,482.6	423.2	73.8	349.41	1.211	Level 2
17,200.0	10,842.7	17,141.1	10,675.9	191.8	192.8	66.81	-634.0	6,582.6	423.5	68.7	354.82	1.194	Level 2
17,300.0	10,842.8	17,241.1	10,676.1	194.7	195.7	66.83	-634.0	6,682.6	423.8	63.5	360.23	1.176	Level 2
17,400.0	10,843.0	17,341.1	10,676.3	197.6	198.6	66.84	-634.0	6,782.6	424.0	58.4	365.65	1.160	Level 2
17,500.0	10,843.2	17,441.1	10,676.4	200.6	201.5	66.86	-634.0	6,882.6	424.3	53.3	371.07	1.144	Level 2
17,600.0	10,843.4	17,541.1	10,676.6	203.5	204.4	66.88	-634.0	6,982.6	424.6	48.1	376.49	1.128	Level 2
17,700.0	10,843.5	17,641.1	10,676.8	206.4	207.3	66.89	-634.0	7,082.6	424.9	43.0	381.91	1.113	Level 2
17,800.0	10,843.7	17,741.1	10,677.0	209.3	210.3	66.91	-634.0	7,182.6	425.2	37.8	387.33	1.098	Level 2

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-18 14BX - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,900.0	10,843.9	17,841.1	10,677.1	212.2	213.2	66.93	-634.0	7,282.6	425.5	32.7	392.76	1.083	Level 2
18,000.0	10,844.1	17,941.1	10,677.3	215.1	216.1	66.94	-634.0	7,382.6	425.8	27.6	398.19	1.069	Level 2
18,100.0	10,844.2	18,041.1	10,677.5	218.0	219.0	66.96	-634.0	7,482.6	426.0	22.4	403.62	1.056	Level 2
18,200.0	10,844.4	18,141.1	10,677.7	220.9	221.9	66.98	-634.0	7,582.6	426.3	17.3	409.05	1.042	Level 2
18,300.0	10,844.6	18,241.1	10,677.8	223.8	224.8	66.99	-634.0	7,682.6	426.6	12.1	414.49	1.029	Level 2
18,400.0	10,844.8	18,341.1	10,678.0	226.7	227.7	67.01	-634.0	7,782.6	426.9	7.0	419.92	1.017	Level 2
18,500.0	10,844.9	18,441.1	10,678.2	229.7	230.6	67.02	-634.0	7,882.6	427.2	1.8	425.36	1.004	Level 2
18,600.0	10,845.1	18,541.1	10,678.4	232.6	233.5	67.04	-634.0	7,982.6	427.5	-3.3	430.80	0.992	Level 1
18,700.0	10,845.3	18,641.1	10,678.5	235.5	236.4	67.06	-634.0	8,082.6	427.7	-8.5	436.24	0.981	Level 1
18,800.0	10,845.4	18,741.1	10,678.7	238.4	239.3	67.07	-634.0	8,182.6	428.0	-13.7	441.69	0.969	Level 1
18,900.0	10,845.6	18,841.1	10,678.9	241.3	242.3	67.09	-634.0	8,282.6	428.3	-18.8	447.13	0.958	Level 1
19,000.0	10,845.8	18,941.1	10,679.1	244.2	245.2	67.11	-634.0	8,382.6	428.6	-24.0	452.58	0.947	Level 1
19,100.0	10,846.0	19,041.1	10,679.2	247.1	248.1	67.12	-634.0	8,482.6	428.9	-29.2	458.03	0.936	Level 1
19,200.0	10,846.1	19,141.1	10,679.4	250.1	251.0	67.14	-634.0	8,582.6	429.2	-34.3	463.48	0.926	Level 1
19,300.0	10,846.3	19,241.1	10,679.6	253.0	253.9	67.15	-634.0	8,682.6	429.4	-39.5	468.93	0.916	Level 1
19,400.0	10,846.5	19,341.1	10,679.8	255.9	256.8	67.17	-634.0	8,782.6	429.7	-44.7	474.39	0.906	Level 1
19,500.0	10,846.7	19,441.1	10,679.9	258.8	259.7	67.19	-634.0	8,882.6	430.0	-49.8	479.84	0.896	Level 1
19,600.0	10,846.8	19,541.1	10,680.1	261.7	262.7	67.20	-634.0	8,982.6	430.3	-55.0	485.30	0.887	Level 1
19,700.0	10,847.0	19,641.1	10,680.3	264.6	265.6	67.22	-634.0	9,082.6	430.6	-60.2	490.76	0.877	Level 1
19,800.0	10,847.2	19,741.1	10,680.5	267.6	268.5	67.23	-634.0	9,182.6	430.9	-65.4	496.22	0.868	Level 1
19,900.0	10,847.4	19,841.1	10,680.6	270.5	271.4	67.25	-634.0	9,282.6	431.1	-70.5	501.68	0.859	Level 1
20,000.0	10,847.5	19,941.1	10,680.8	273.4	274.3	67.27	-634.0	9,382.6	431.4	-75.7	507.14	0.851	Level 1
20,100.0	10,847.7	20,041.1	10,681.0	276.3	277.2	67.28	-634.0	9,482.6	431.7	-80.9	512.61	0.842	Level 1
20,200.0	10,847.9	20,141.1	10,681.2	279.2	280.2	67.30	-634.0	9,582.6	432.0	-86.1	518.08	0.834	Level 1
20,300.0	10,848.1	20,241.1	10,681.3	282.1	283.1	67.31	-634.0	9,682.6	432.3	-91.3	523.54	0.826	Level 1
20,400.0	10,848.2	20,341.1	10,681.5	285.1	286.0	67.33	-634.0	9,782.6	432.6	-96.4	529.01	0.818	Level 1
20,500.0	10,848.4	20,441.1	10,681.7	288.0	288.9	67.34	-634.0	9,882.6	432.9	-101.6	534.49	0.810	Level 1
20,600.0	10,848.6	20,541.1	10,681.9	290.9	291.8	67.36	-634.0	9,982.6	433.1	-106.8	539.96	0.802	Level 1
20,667.7	10,848.7	20,608.5	10,682.0	292.9	293.8	67.37	-634.0	10,050.0	433.3	-110.3	543.66	0.797	Level 1, ES, SF

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-18 14BX - Design #2

Survey Program: 0-MWD

Offset Site Error: 0.0 usft

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	2.0	2.0	-180.00	-65.9	0.0	65.9				
100.0	100.0	100.0	100.0	2.0	2.0	-180.00	-65.9	0.0	65.9	61.9	4.00	16.452	
200.0	200.0	200.0	200.0	2.0	2.0	-180.00	-65.9	0.0	65.9	61.8	4.05	16.273	
300.0	300.0	300.0	300.0	2.1	2.1	-180.00	-65.9	0.0	65.9	61.7	4.14	15.909	
400.0	400.0	400.0	400.0	2.1	2.1	-180.00	-65.9	0.0	65.9	61.6	4.28	15.396	
500.0	500.0	500.0	500.0	2.2	2.2	-180.00	-65.9	0.0	65.9	61.4	4.48	14.777	
600.0	600.0	600.0	600.0	2.3	2.3	-180.00	-65.9	0.0	65.9	61.2	4.67	14.094	
700.0	700.0	700.0	700.0	2.5	2.5	-180.00	-65.9	0.0	65.9	60.9	4.92	13.385	
800.0	800.0	800.0	800.0	2.6	2.6	-180.00	-65.9	0.0	65.9	60.7	5.20	12.678	
900.0	900.0	900.0	900.0	2.7	2.7	-180.00	-65.9	0.0	65.9	60.4	5.49	11.990	
1,000.0	1,000.0	1,000.0	1,000.0	2.9	2.9	-180.00	-65.9	0.0	65.9	60.1	5.81	11.336	
1,100.0	1,100.0	1,100.0	1,100.0	3.1	3.1	-180.00	-65.9	0.0	65.9	59.7	6.14	10.720	
1,200.0	1,200.0	1,200.0	1,200.0	3.2	3.2	-180.00	-65.9	0.0	65.9	59.4	6.49	10.145	
1,300.0	1,300.0	1,300.0	1,300.0	3.4	3.4	-180.00	-65.9	0.0	65.9	59.0	6.85	9.613	
1,400.0	1,400.0	1,400.0	1,400.0	3.6	3.6	-180.00	-65.9	0.0	65.9	58.6	7.22	9.121	
1,500.0	1,500.0	1,500.0	1,500.0	3.8	3.8	-180.00	-65.9	0.0	65.9	58.3	7.60	8.667	
1,600.0	1,600.0	1,600.0	1,600.0	4.0	4.0	-180.00	-65.9	0.0	65.9	57.9	7.99	8.248	
1,700.0	1,700.0	1,700.0	1,700.0	4.2	4.2	-180.00	-65.9	0.0	65.9	57.5	8.38	7.862	
1,800.0	1,800.0	1,800.0	1,800.0	4.4	4.4	-180.00	-65.9	0.0	65.9	57.1	8.78	7.506	
1,900.0	1,900.0	1,900.0	1,900.0	4.6	4.6	-180.00	-65.9	0.0	65.9	56.7	9.18	7.177	
2,000.0	2,000.0	2,000.0	2,000.0	4.8	4.8	-180.00	-65.9	0.0	65.9	56.3	9.58	6.872	
2,100.0	2,100.0	2,100.0	2,100.0	5.0	5.0	-180.00	-65.9	0.0	65.9	55.9	9.99	6.590	
2,166.7	2,166.7	2,166.7	2,166.7	5.1	5.1	-180.00	-65.9	0.0	65.9	55.6	10.27	6.413	
2,200.0	2,200.0	2,200.0	2,200.0	5.2	5.2	-180.00	-65.9	0.0	65.9	55.5	10.41	6.328	CC
2,216.7	2,216.7	2,216.1	2,216.1	5.2	5.2	90.06	-65.9	0.0	65.9	55.5	10.47	6.298	
2,300.0	2,300.0	2,299.4	2,299.4	5.4	5.4	90.88	-66.7	0.0	66.7	55.9	10.75	6.201	
2,400.0	2,400.0	2,399.4	2,399.4	5.6	5.5	91.41	-67.5	0.0	67.6	56.5	11.10	6.088	
2,500.0	2,500.0	2,499.4	2,499.4	5.8	5.7	92.13	-68.4	0.0	68.5	57.0	11.45	5.979	
2,600.0	2,600.0	2,599.4	2,599.4	6.0	5.9	92.82	-69.3	0.0	69.4	57.6	11.81	5.874	
2,700.0	2,700.0	2,699.4	2,699.4	6.1	6.0	93.50	-70.1	0.0	70.3	58.1	12.17	5.773	
2,800.0	2,800.0	2,799.4	2,799.4	6.3	6.2	94.15	-71.0	0.0	71.2	58.7	12.54	5.677	
2,900.0	2,900.0	2,899.4	2,899.3	6.5	6.4	94.79	-71.9	0.0	72.2	59.2	12.92	5.584	
3,000.0	3,000.0	2,999.4	2,999.3	6.7	6.6	95.42	-72.8	0.0	73.1	59.8	13.30	5.496	
3,100.0	3,100.0	3,099.4	3,099.3	6.9	6.7	96.03	-73.6	0.0	74.1	60.4	13.69	5.411	
3,200.0	3,200.0	3,199.3	3,199.3	7.1	6.9	96.62	-74.5	0.0	75.0	60.9	14.07	5.330	
3,300.0	3,300.0	3,299.3	3,299.3	7.3	7.1	97.20	-75.4	0.0	76.0	61.5	14.47	5.253	
3,400.0	3,400.0	3,399.3	3,399.3	7.6	7.3	97.76	-76.3	0.0	77.0	62.1	14.86	5.179	
3,500.0	3,500.0	3,499.3	3,499.3	7.8	7.5	98.31	-77.1	0.0	78.0	62.7	15.26	5.108	
3,600.0	3,599.9	3,599.3	3,599.3	8.0	7.7	98.84	-78.0	0.0	78.9	63.3	15.66	5.041	
3,700.0	3,699.9	3,699.3	3,699.3	8.2	7.9	99.37	-78.9	0.0	79.9	63.9	16.07	4.976	
3,800.0	3,799.9	3,799.3	3,799.2	8.4	8.1	99.88	-79.7	0.0	81.0	64.5	16.47	4.915	
3,900.0	3,899.9	3,899.3	3,899.2	8.6	8.3	100.37	-80.6	0.0	82.0	65.1	16.88	4.856	
4,000.0	3,999.9	3,999.3	3,999.2	8.8	8.5	100.86	-81.5	0.0	83.0	65.7	17.29	4.799	
4,100.0	4,099.9	4,099.3	4,099.2	9.0	8.7	101.33	-82.4	0.0	84.0	66.3	17.70	4.745	
4,200.0	4,199.9	4,199.3	4,199.2	9.2	8.9	101.79	-83.2	0.0	85.0	66.9	18.12	4.694	
4,300.0	4,299.9	4,299.3	4,299.2	9.4	9.1	102.24	-84.1	0.0	86.1	67.5	18.53	4.644	
4,400.0	4,399.9	4,399.3	4,399.2	9.7	9.3	102.68	-85.0	0.0	87.1	68.2	18.95	4.597	
4,500.0	4,499.9	4,499.3	4,499.2	9.9	9.5	103.11	-85.9	0.0	88.2	68.8	19.37	4.551	
4,600.0	4,599.9	4,599.2	4,599.2	10.1	9.7	103.53	-86.7	0.0	89.2	69.4	19.79	4.507	
4,700.0	4,699.9	4,699.2	4,699.1	10.3	9.9	103.94	-87.6	0.0	90.3	70.0	20.21	4.466	
4,800.0	4,799.9	4,799.2	4,799.1	10.5	10.1	104.33	-88.5	0.0	91.3	70.7	20.64	4.425	
4,900.0	4,899.9	4,899.2	4,899.1	10.7	10.3	104.72	-89.3	0.0	92.4	71.3	21.06	4.387	

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

Ryan Directional Services

Anticollision Report

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-18 14BX - Design #2

Survey Program: 0-MWD

Offset Site Error: 0.0 usft

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,999.9	4,999.2	4,999.1	10.9	10.6	105.11	-90.2	0.0	93.5	72.0	21.49	4.350	
5,100.0	5,099.9	5,099.2	5,099.1	11.2	10.8	105.48	-91.1	0.0	94.5	72.6	21.91	4.314	
5,200.0	5,199.9	5,199.2	5,199.1	11.4	11.0	105.84	-92.0	0.0	95.6	73.3	22.34	4.280	
5,300.0	5,299.9	5,299.2	5,299.1	11.6	11.2	106.20	-92.8	0.0	96.7	73.9	22.77	4.246	
5,400.0	5,399.9	5,399.2	5,399.1	11.8	11.4	106.55	-93.7	0.0	97.8	74.6	23.20	4.215	
5,500.0	5,499.9	5,499.2	5,499.0	12.0	11.6	106.89	-94.6	0.0	98.9	75.2	23.63	4.184	
5,600.0	5,599.9	5,599.2	5,599.0	12.2	11.8	107.22	-95.5	0.0	99.9	75.9	24.06	4.154	
5,700.0	5,699.9	5,699.2	5,699.0	12.5	12.0	107.55	-96.3	0.0	101.0	76.5	24.49	4.126	
5,800.0	5,799.9	5,799.2	5,799.0	12.7	12.3	107.87	-97.2	0.0	102.1	77.2	24.92	4.098	
5,900.0	5,899.9	5,899.1	5,899.0	12.9	12.5	108.18	-98.1	0.0	103.2	77.8	25.35	4.072	
6,000.0	5,999.9	5,999.1	5,999.0	13.1	12.7	108.49	-98.9	0.0	104.3	78.5	25.79	4.046	
6,100.0	6,099.9	6,099.1	6,099.0	13.3	12.9	108.79	-99.8	0.0	105.4	79.2	26.22	4.021	
6,200.0	6,199.8	6,199.1	6,199.0	13.6	13.1	109.08	-100.7	0.0	106.5	79.9	26.65	3.997	
6,300.0	6,299.8	6,299.1	6,299.0	13.8	13.3	109.37	-101.6	0.0	107.7	80.6	27.09	3.974	
6,400.0	6,399.8	6,399.1	6,398.9	14.0	13.6	109.65	-102.4	0.0	108.8	81.2	27.53	3.952	
6,500.0	6,499.8	6,499.1	6,498.9	14.2	13.8	109.92	-103.3	0.0	109.9	81.9	27.96	3.930	
6,600.0	6,599.8	6,599.1	6,598.9	14.4	14.0	110.19	-104.2	0.0	111.0	82.6	28.40	3.909	
6,700.0	6,699.8	6,699.1	6,698.9	14.7	14.2	110.46	-105.1	0.0	112.1	83.3	28.83	3.889	
6,800.0	6,799.8	6,799.1	6,798.9	14.9	14.4	110.72	-105.9	0.0	113.3	84.0	29.27	3.869	
6,900.0	6,899.8	6,899.1	6,898.9	15.1	14.6	110.97	-106.8	0.0	114.4	84.7	29.71	3.850	
7,000.0	6,999.8	6,999.1	6,998.9	15.3	14.9	111.22	-107.7	0.0	115.5	85.4	30.15	3.831	
7,100.0	7,099.8	7,099.1	7,098.9	15.5	15.1	111.46	-108.5	0.0	116.6	86.1	30.59	3.813	
7,200.0	7,199.8	7,199.0	7,198.9	15.8	15.3	111.70	-109.4	0.0	117.8	86.7	31.02	3.796	
7,300.0	7,299.8	7,299.0	7,298.8	16.0	15.5	111.94	-110.3	0.0	118.9	87.4	31.46	3.779	
7,400.0	7,399.8	7,399.0	7,398.8	16.2	15.7	112.17	-111.2	0.0	120.0	88.1	31.90	3.763	
7,500.0	7,499.8	7,499.0	7,498.8	16.4	16.0	112.40	-112.0	0.0	121.2	88.8	32.34	3.747	
7,600.0	7,599.8	7,599.0	7,598.8	16.6	16.2	112.62	-112.9	0.0	122.3	89.5	32.78	3.731	
7,700.0	7,699.8	7,699.0	7,698.8	16.9	16.4	112.84	-113.8	0.0	123.5	90.2	33.22	3.716	
7,800.0	7,799.8	7,799.0	7,798.8	17.1	16.6	113.05	-114.7	0.0	124.6	90.9	33.66	3.701	
7,900.0	7,899.8	7,899.0	7,898.8	17.3	16.8	113.26	-115.5	0.0	125.8	91.6	34.11	3.687	
7,926.7	7,926.4	7,925.7	7,925.4	17.4	16.9	113.32	-115.8	0.0	126.1	91.8	34.22	3.683	
7,943.3	7,943.1	7,943.3	7,943.1	17.4	16.9	-156.66	-115.8	0.0	126.2	91.9	34.30	3.679	
8,000.0	7,999.8	8,000.0	7,999.8	17.5	17.1	-156.66	-115.8	0.0	126.2	91.6	34.52	3.654	
8,100.0	8,099.8	8,100.0	8,099.8	17.7	17.2	-156.66	-115.8	0.0	126.2	91.2	34.92	3.613	
8,200.0	8,199.8	8,200.0	8,199.8	17.9	17.4	-156.66	-115.8	0.0	126.2	90.8	35.32	3.572	
8,300.0	8,299.8	8,300.0	8,299.8	18.1	17.6	-156.66	-115.8	0.0	126.2	90.4	35.72	3.532	
8,400.0	8,399.8	8,400.0	8,399.8	18.4	17.8	-156.66	-115.8	0.0	126.2	90.0	36.12	3.493	
8,500.0	8,499.8	8,500.0	8,499.8	18.6	18.0	-156.66	-115.8	0.0	126.2	89.6	36.52	3.454	
8,600.0	8,599.8	8,600.0	8,599.8	18.8	18.2	-156.66	-115.8	0.0	126.2	89.2	36.93	3.416	
8,700.0	8,699.8	8,700.0	8,699.8	19.0	18.4	-156.66	-115.8	0.0	126.2	88.8	37.33	3.379	
8,800.0	8,799.8	8,800.0	8,799.8	19.2	18.6	-156.66	-115.8	0.0	126.2	88.4	37.74	3.343	
8,900.0	8,899.8	8,900.0	8,899.8	19.4	18.8	-156.66	-115.8	0.0	126.2	88.0	38.14	3.307	
9,000.0	8,999.8	9,000.0	8,999.8	19.6	19.0	-156.66	-115.8	0.0	126.2	87.6	38.55	3.273	
9,100.0	9,099.8	9,100.0	9,099.8	19.8	19.2	-156.66	-115.8	0.0	126.2	87.2	38.96	3.238	
9,200.0	9,199.8	9,200.0	9,199.8	20.0	19.4	-156.66	-115.8	0.0	126.2	86.8	39.37	3.205	
9,300.0	9,299.8	9,300.0	9,299.8	20.2	19.6	-156.66	-115.8	0.0	126.2	86.4	39.78	3.172	
9,400.0	9,399.8	9,400.0	9,399.8	20.5	19.8	-156.66	-115.8	0.0	126.2	86.0	40.19	3.139	
9,500.0	9,499.8	9,500.0	9,499.8	20.7	20.0	-156.66	-115.8	0.0	126.2	85.6	40.60	3.107	
9,600.0	9,599.8	9,600.0	9,599.8	20.9	20.2	-156.66	-115.8	0.0	126.2	85.1	41.01	3.076	
9,700.0	9,699.8	9,700.0	9,699.8	21.1	20.4	-156.66	-115.8	0.0	126.2	84.7	41.43	3.045	
9,800.0	9,799.8	9,800.0	9,799.8	21.3	20.6	-156.66	-115.8	0.0	126.2	84.3	41.84	3.015	
9,900.0	9,899.8	9,900.0	9,899.8	21.5	20.8	-156.66	-115.8	0.0	126.2	83.9	42.26	2.986	

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

Ryan Directional Services

Anticollision Report

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-18 14BX - Design #2

Survey Program: 0-MWD

Offset Site Error: 0.0 usft

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,000.0	9,999.8	10,000.0	9,999.8	21.7	21.0	-156.66	-115.8	0.0	126.2	83.5	42.67	2.956	
10,100.0	10,099.8	10,100.0	10,099.8	21.9	21.2	-156.66	-115.8	0.0	126.2	83.1	43.09	2.928	
10,200.0	10,199.8	10,200.0	10,199.8	22.2	21.4	-156.66	-115.8	0.0	126.2	82.7	43.50	2.900	
10,262.1	10,261.8	10,262.1	10,261.8	22.3	21.5	-156.66	-115.8	0.0	126.2	82.4	43.76	2.883	
10,300.0	10,299.8	10,299.8	10,299.6	22.4	21.6	-156.73	-115.9	0.1	126.2	82.2	43.92	2.873	
10,354.8	10,354.6	10,353.4	10,352.9	22.5	21.7	-158.70	-117.9	4.0	126.5	82.4	44.18	2.865	
10,375.0	10,374.8	10,372.8	10,372.2	22.5	21.7	90.06	-119.2	6.8	126.8	82.6	44.26	2.866	
10,400.0	10,399.7	10,396.8	10,395.8	22.6	21.8	88.56	-121.4	11.1	127.5	83.1	44.36	2.873	
10,425.0	10,424.5	10,420.6	10,418.7	22.7	21.9	87.07	-124.1	16.4	128.3	83.9	44.47	2.886	
10,450.0	10,449.2	10,444.2	10,441.2	22.7	21.9	85.63	-127.2	22.7	129.4	84.8	44.58	2.903	
10,475.0	10,473.5	10,467.7	10,463.3	22.8	22.0	84.23	-130.9	30.0	130.7	86.0	44.69	2.924	
10,500.0	10,497.6	10,491.1	10,484.8	22.8	22.0	82.88	-135.0	38.1	132.2	87.4	44.79	2.950	
10,525.0	10,521.2	10,514.3	10,505.7	22.9	22.1	81.59	-139.5	47.1	133.8	88.9	44.90	2.981	
10,550.0	10,544.4	10,537.4	10,525.9	23.0	22.1	80.37	-144.5	57.0	135.6	90.6	44.99	3.014	
10,575.0	10,567.1	10,560.3	10,545.6	23.0	22.2	79.20	-149.8	67.7	137.6	92.5	45.09	3.052	
10,600.0	10,589.1	10,583.2	10,564.5	23.1	22.3	78.11	-155.5	79.1	139.7	94.5	45.18	3.093	
10,625.0	10,610.6	10,605.9	10,582.7	23.2	22.3	77.09	-161.7	91.3	141.9	96.7	45.26	3.136	
10,650.0	10,631.3	10,628.5	10,600.1	23.3	22.4	76.13	-168.1	104.2	144.3	98.9	45.35	3.182	
10,675.0	10,651.3	10,650.0	10,616.0	23.4	22.5	75.27	-174.6	117.1	146.7	101.3	45.43	3.230	
10,700.0	10,670.5	10,673.5	10,632.6	23.5	22.6	74.43	-182.0	131.9	149.3	103.7	45.52	3.279	
10,725.0	10,688.8	10,695.8	10,647.7	23.6	22.7	73.69	-189.4	146.6	151.9	106.2	45.61	3.329	
10,750.0	10,706.2	10,718.1	10,661.9	23.7	22.8	73.01	-197.1	161.9	154.5	108.8	45.72	3.380	
10,775.0	10,722.6	10,740.2	10,675.3	23.9	23.0	72.40	-205.0	177.7	157.2	111.4	45.83	3.430	
10,800.0	10,738.0	10,762.3	10,687.7	24.0	23.1	71.85	-213.2	194.0	160.0	114.0	45.97	3.480	
10,825.0	10,752.4	10,784.4	10,699.3	24.2	23.3	71.37	-221.6	210.8	162.7	116.6	46.13	3.528	
10,850.0	10,765.7	10,806.3	10,710.0	24.4	23.4	70.94	-230.2	227.9	165.5	119.2	46.32	3.574	
10,875.0	10,777.8	10,828.3	10,719.8	24.6	23.6	70.58	-239.0	245.5	168.3	121.8	46.54	3.617	
10,900.0	10,788.8	10,850.0	10,728.5	24.8	23.8	70.26	-247.9	263.2	171.1	124.3	46.79	3.658	
10,925.0	10,798.6	10,872.0	10,736.5	25.0	24.0	70.01	-257.1	281.6	173.9	126.8	47.06	3.694	
10,950.0	10,807.2	10,893.8	10,743.4	25.3	24.2	69.80	-266.4	300.0	176.7	129.3	47.42	3.727	
10,975.0	10,814.5	10,915.6	10,749.4	25.6	24.4	69.64	-275.8	318.7	179.5	131.7	47.79	3.755	
11,000.0	10,820.6	10,937.3	10,754.5	25.8	24.7	69.54	-285.3	337.7	182.2	134.0	48.21	3.779	
11,025.0	10,825.4	10,959.1	10,758.5	26.1	24.9	69.47	-294.9	356.8	184.9	136.2	48.66	3.799	
11,050.0	10,828.9	10,980.8	10,761.6	26.5	25.2	69.45	-304.5	376.0	187.6	138.4	49.19	3.814	
11,075.0	10,831.1	11,002.6	10,763.7	26.8	25.5	69.46	-314.3	395.4	190.2	140.5	49.74	3.824	
11,100.0	10,832.0	11,025.0	10,764.8	27.1	25.8	69.55	-324.3	415.4	192.8	142.5	50.35	3.829	
11,104.0	10,832.0	11,027.8	10,764.9	27.2	25.8	69.55	-325.5	417.9	193.2	142.8	50.43	3.831	
11,200.0	10,832.2	11,127.7	10,765.1	28.6	27.3	70.73	-369.1	507.8	205.0	151.7	53.31	3.845	
11,300.0	10,832.4	11,233.9	10,765.3	30.3	29.1	72.00	-411.9	605.0	219.7	163.0	56.67	3.876	
11,400.0	10,832.6	11,340.4	10,765.5	32.2	31.0	73.27	-451.2	704.0	236.7	176.4	60.29	3.925	
11,500.0	10,832.7	11,447.2	10,765.7	34.1	33.2	74.50	-486.8	804.6	256.1	192.0	64.07	3.997	
11,600.0	10,832.9	11,554.3	10,765.9	36.2	35.5	75.67	-518.8	906.8	277.8	209.9	67.90	4.091	
11,660.4	10,833.1	11,640.7	10,766.1	38.0	37.5	76.56	-541.8	990.1	297.0	226.0	70.97	4.185	
11,700.0	10,833.1	11,661.8	10,766.1	38.4	38.0	76.80	-547.0	1,010.5	301.8	229.9	71.90	4.197	
11,800.0	10,833.3	11,770.8	10,766.3	40.7	40.5	77.83	-571.7	1,116.7	324.2	247.4	76.78	4.222	
11,900.0	10,833.4	11,881.6	10,766.5	43.0	43.2	78.59	-592.5	1,225.5	342.9	261.1	81.84	4.190	
12,000.0	10,833.6	11,993.9	10,766.7	45.4	45.9	79.14	-609.4	1,336.5	358.0	270.9	87.07	4.111	
12,100.0	10,833.8	12,107.4	10,766.9	47.9	48.8	79.52	-622.0	1,449.3	369.2	276.8	92.43	3.994	
12,200.0	10,834.0	12,221.8	10,767.1	50.4	51.7	79.76	-630.2	1,563.4	376.5	278.6	97.89	3.846	
12,300.0	10,834.1	12,336.6	10,767.3	53.0	54.6	79.87	-633.8	1,678.2	379.9	276.5	103.42	3.673	
12,400.0	10,834.3	12,440.9	10,767.5	55.5	57.2	79.88	-634.0	1,782.5	380.4	271.7	108.72	3.499	
12,500.0	10,834.5	12,540.9	10,767.6	58.2	59.8	79.89	-634.0	1,882.5	380.7	266.7	113.97	3.340	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-18 14BX - Design #2

Survey Program: 0-MWD

Offset Site Error: 0.0 usft

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,600.0	10,834.7	12,640.9	10,767.8	60.8	62.4	79.90	-634.0	1,982.5	381.0	261.7	119.27	3.194	
12,700.0	10,834.8	12,740.9	10,768.0	63.5	65.1	79.90	-634.0	2,082.5	381.3	256.7	124.60	3.060	
12,800.0	10,835.0	12,840.9	10,768.2	66.2	67.7	79.91	-634.0	2,182.5	381.6	251.6	129.98	2.936	
12,900.0	10,835.2	12,940.9	10,768.3	68.9	70.4	79.92	-634.0	2,282.5	381.9	246.5	135.39	2.821	
13,000.0	10,835.4	13,040.9	10,768.5	71.7	73.1	79.93	-634.0	2,382.5	382.2	241.4	140.83	2.714	
13,100.0	10,835.5	13,140.9	10,768.7	74.4	75.9	79.94	-634.0	2,482.5	382.5	236.2	146.29	2.615	
13,200.0	10,835.7	13,240.9	10,768.9	77.2	78.6	79.95	-634.0	2,582.5	382.8	231.0	151.78	2.522	
13,300.0	10,835.9	13,340.9	10,769.0	79.9	81.3	79.95	-634.0	2,682.5	383.1	225.8	157.29	2.436	
13,400.0	10,836.1	13,440.9	10,769.2	82.7	84.1	79.96	-634.0	2,782.5	383.4	220.6	162.82	2.355	
13,500.0	10,836.2	13,540.9	10,769.4	85.5	86.9	79.97	-634.0	2,882.5	383.7	215.4	168.36	2.279	
13,600.0	10,836.4	13,640.9	10,769.6	88.3	89.7	79.98	-634.0	2,982.5	384.0	210.1	173.93	2.208	
13,700.0	10,836.6	13,740.9	10,769.7	91.1	92.5	79.99	-634.0	3,082.5	384.3	204.8	179.50	2.141	
13,800.0	10,836.7	13,840.9	10,769.9	94.0	95.3	79.99	-634.0	3,182.5	384.6	199.5	185.09	2.078	
13,900.0	10,836.9	13,940.9	10,770.1	96.8	98.1	80.00	-634.0	3,282.5	384.9	194.2	190.69	2.019	
14,000.0	10,837.1	14,040.9	10,770.3	99.6	100.9	80.01	-634.0	3,382.5	385.2	188.9	196.30	1.963	
14,100.0	10,837.3	14,140.9	10,770.4	102.5	103.7	80.02	-634.0	3,482.5	385.5	183.6	201.92	1.909	
14,200.0	10,837.4	14,240.9	10,770.6	105.3	106.5	80.03	-634.0	3,582.5	385.8	178.3	207.55	1.859	
14,300.0	10,837.6	14,340.9	10,770.8	108.2	109.4	80.03	-634.0	3,682.5	386.1	173.0	213.19	1.811	
14,400.0	10,837.8	14,440.9	10,771.0	111.0	112.2	80.04	-634.0	3,782.5	386.5	167.6	218.83	1.766	
14,500.0	10,838.0	14,540.9	10,771.1	113.9	115.1	80.05	-634.0	3,882.5	386.8	162.3	224.48	1.723	
14,600.0	10,838.1	14,640.9	10,771.3	116.7	117.9	80.06	-634.0	3,982.5	387.1	156.9	230.14	1.682	
14,700.0	10,838.3	14,740.9	10,771.5	119.6	120.8	80.07	-634.0	4,082.5	387.4	151.6	235.81	1.643	
14,800.0	10,838.5	14,840.9	10,771.7	122.5	123.6	80.07	-634.0	4,182.5	387.7	146.2	241.48	1.605	
14,900.0	10,838.7	14,940.9	10,771.8	125.3	126.5	80.08	-634.0	4,282.5	388.0	140.8	247.15	1.570	
15,000.0	10,838.8	15,040.9	10,772.0	128.2	129.3	80.09	-634.0	4,382.5	388.3	135.4	252.84	1.536	
15,100.0	10,839.0	15,140.9	10,772.2	131.1	132.2	80.10	-634.0	4,482.5	388.6	130.1	258.52	1.503	
15,200.0	10,839.2	15,240.9	10,772.4	133.9	135.1	80.11	-634.0	4,582.5	388.9	124.7	264.21	1.472	Level 3
15,300.0	10,839.4	15,340.9	10,772.5	136.8	137.9	80.11	-634.0	4,682.5	389.2	119.3	269.91	1.442	Level 3
15,400.0	10,839.5	15,440.9	10,772.7	139.7	140.8	80.12	-634.0	4,782.5	389.5	113.9	275.61	1.413	Level 3
15,500.0	10,839.7	15,540.9	10,772.9	142.6	143.7	80.13	-634.0	4,882.5	389.8	108.5	281.31	1.386	Level 3
15,600.0	10,839.9	15,640.9	10,773.1	145.5	146.6	80.14	-634.0	4,982.5	390.1	103.1	287.02	1.359	Level 3
15,700.0	10,840.1	15,740.9	10,773.2	148.4	149.5	80.14	-634.0	5,082.5	390.4	97.7	292.73	1.334	Level 3
15,800.0	10,840.2	15,840.9	10,773.4	151.3	152.3	80.15	-634.0	5,182.5	390.7	92.3	298.44	1.309	Level 3
15,900.0	10,840.4	15,940.9	10,773.6	154.1	155.2	80.16	-634.0	5,282.4	391.0	86.9	304.15	1.286	Level 3
16,000.0	10,840.6	16,040.9	10,773.8	157.0	158.1	80.17	-634.0	5,382.4	391.3	81.4	309.87	1.263	Level 3
16,100.0	10,840.8	16,140.9	10,773.9	159.9	161.0	80.18	-634.0	5,482.4	391.6	76.0	315.59	1.241	Level 2
16,200.0	10,840.9	16,240.9	10,774.1	162.8	163.9	80.18	-634.0	5,582.4	391.9	70.6	321.32	1.220	Level 2
16,300.0	10,841.1	16,340.9	10,774.3	165.7	166.8	80.19	-634.0	5,682.4	392.2	65.2	327.04	1.199	Level 2
16,400.0	10,841.3	16,440.9	10,774.5	168.6	169.7	80.20	-634.0	5,782.4	392.5	59.8	332.77	1.180	Level 2
16,500.0	10,841.4	16,540.9	10,774.6	171.5	172.6	80.21	-634.0	5,882.4	392.8	54.3	338.50	1.161	Level 2
16,600.0	10,841.6	16,640.9	10,774.8	174.4	175.5	80.21	-634.0	5,982.4	393.1	48.9	344.23	1.142	Level 2
16,700.0	10,841.8	16,740.9	10,775.0	177.3	178.4	80.22	-634.0	6,082.4	393.4	43.5	349.97	1.124	Level 2
16,800.0	10,842.0	16,840.9	10,775.2	180.2	181.2	80.23	-634.0	6,182.4	393.7	38.0	355.70	1.107	Level 2
16,900.0	10,842.1	16,940.9	10,775.3	183.1	184.1	80.24	-634.0	6,282.4	394.1	32.6	361.44	1.090	Level 2
17,000.0	10,842.3	17,040.9	10,775.5	186.0	187.0	80.25	-634.0	6,382.4	394.4	27.2	367.18	1.074	Level 2
17,100.0	10,842.5	17,140.9	10,775.7	188.9	189.9	80.25	-634.0	6,482.4	394.7	21.7	372.93	1.058	Level 2
17,200.0	10,842.7	17,240.9	10,775.9	191.8	192.8	80.26	-634.0	6,582.4	395.0	16.3	378.67	1.043	Level 2
17,300.0	10,842.8	17,340.9	10,776.0	194.7	195.7	80.27	-634.0	6,682.4	395.3	10.9	384.41	1.028	Level 2
17,400.0	10,843.0	17,440.9	10,776.2	197.6	198.7	80.28	-634.0	6,782.4	395.6	5.4	390.16	1.014	Level 2
17,500.0	10,843.2	17,540.9	10,776.4	200.6	201.6	80.28	-634.0	6,882.4	395.9	0.0	395.91	1.000	Level 1
17,600.0	10,843.4	17,640.9	10,776.5	203.5	204.5	80.29	-634.0	6,982.4	396.2	-5.5	401.66	0.986	Level 1
17,700.0	10,843.5	17,740.9	10,776.7	206.4	207.4	80.30	-634.0	7,082.4	396.5	-10.9	407.41	0.973	Level 1

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-18 14BX - Design #2

Survey Program: 0-MWD

Offset Site Error: 0.0 usft

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,800.0	10,843.7	17,840.9	10,776.9	209.3	210.3	80.31	-634.0	7,182.4	398.8	-16.4	413.16	0.960	Level 1
17,900.0	10,843.9	17,940.9	10,777.1	212.2	213.2	80.31	-634.0	7,282.4	397.1	-21.8	418.91	0.948	Level 1
18,000.0	10,844.1	18,040.9	10,777.2	215.1	216.1	80.32	-634.0	7,382.4	397.4	-27.3	424.67	0.936	Level 1
18,100.0	10,844.2	18,140.9	10,777.4	218.0	219.0	80.33	-634.0	7,482.4	397.7	-32.7	430.42	0.924	Level 1
18,200.0	10,844.4	18,240.9	10,777.6	220.9	221.9	80.34	-634.0	7,582.4	398.0	-38.2	436.18	0.912	Level 1
18,300.0	10,844.6	18,340.9	10,777.8	223.8	224.8	80.34	-634.0	7,682.4	398.3	-43.6	441.94	0.901	Level 1
18,400.0	10,844.8	18,440.9	10,777.9	226.7	227.7	80.35	-634.0	7,782.4	398.6	-49.1	447.70	0.890	Level 1
18,500.0	10,844.9	18,540.9	10,778.1	229.7	230.6	80.36	-634.0	7,882.4	398.9	-54.5	453.46	0.880	Level 1
18,600.0	10,845.1	18,640.9	10,778.3	232.6	233.5	80.37	-634.0	7,982.4	399.2	-60.0	459.22	0.869	Level 1
18,700.0	10,845.3	18,740.9	10,778.5	235.5	236.5	80.37	-634.0	8,082.4	399.5	-65.5	464.98	0.859	Level 1
18,800.0	10,845.4	18,840.9	10,778.6	238.4	239.4	80.38	-634.0	8,182.4	399.8	-70.9	470.74	0.849	Level 1
18,900.0	10,845.6	18,940.9	10,778.8	241.3	242.3	80.39	-634.0	8,282.4	400.1	-76.4	476.51	0.840	Level 1
19,000.0	10,845.8	19,040.9	10,779.0	244.2	245.2	80.40	-634.0	8,382.4	400.4	-81.8	482.27	0.830	Level 1
19,100.0	10,846.0	19,140.9	10,779.2	247.1	248.1	80.40	-634.0	8,482.4	400.7	-87.3	488.04	0.821	Level 1
19,200.0	10,846.1	19,240.9	10,779.3	250.1	251.0	80.41	-634.0	8,582.4	401.0	-92.8	493.81	0.812	Level 1
19,300.0	10,846.3	19,340.9	10,779.5	253.0	253.9	80.42	-634.0	8,682.4	401.3	-98.2	499.57	0.803	Level 1
19,400.0	10,846.5	19,440.9	10,779.7	255.9	256.8	80.43	-634.0	8,782.4	401.7	-103.7	505.34	0.795	Level 1
19,500.0	10,846.7	19,540.9	10,779.9	258.8	259.8	80.43	-634.0	8,882.4	402.0	-109.2	511.11	0.786	Level 1
19,600.0	10,846.8	19,640.9	10,780.0	261.7	262.7	80.44	-634.0	8,982.4	402.3	-114.6	516.88	0.778	Level 1
19,700.0	10,847.0	19,740.9	10,780.2	264.6	265.6	80.45	-634.0	9,082.4	402.6	-120.1	522.65	0.770	Level 1
19,800.0	10,847.2	19,840.9	10,780.4	267.6	268.5	80.46	-634.0	9,182.4	402.9	-125.6	528.42	0.762	Level 1
19,900.0	10,847.4	19,940.9	10,780.6	270.5	271.4	80.46	-634.0	9,282.4	403.2	-131.0	534.19	0.755	Level 1
20,000.0	10,847.5	20,040.9	10,780.7	273.4	274.3	80.47	-634.0	9,382.4	403.5	-136.5	539.97	0.747	Level 1
20,100.0	10,847.7	20,140.9	10,780.9	276.3	277.3	80.48	-634.0	9,482.4	403.8	-142.0	545.74	0.740	Level 1
20,200.0	10,847.9	20,240.9	10,781.1	279.2	280.2	80.49	-634.0	9,582.4	404.1	-147.4	551.51	0.733	Level 1
20,300.0	10,848.1	20,340.9	10,781.3	282.1	283.1	80.49	-634.0	9,682.4	404.4	-152.9	557.29	0.726	Level 1
20,400.0	10,848.2	20,440.9	10,781.4	285.1	286.0	80.50	-634.0	9,782.4	404.7	-158.4	563.06	0.719	Level 1
20,500.0	10,848.4	20,540.9	10,781.6	288.0	288.9	80.51	-634.0	9,882.4	405.0	-163.8	568.84	0.712	Level 1
20,600.0	10,848.6	20,640.9	10,781.8	290.9	291.8	80.51	-634.0	9,982.4	405.3	-169.3	574.61	0.705	Level 1
20,667.7	10,848.7	20,708.4	10,781.9	292.9	293.8	80.52	-634.0	10,050.0	405.5	-173.0	578.52	0.701	Level 1, ES, SF

Ryan Directional Services

Anticollision Report

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 9T - Kline Federal 5300 41-18 9T - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	2.0	2.0	-0.39	99.3	-0.7	99.3				
100.0	100.0	100.0	100.0	2.0	2.0	-0.39	99.3	-0.7	99.3	95.3	4.00	24.802	
200.0	200.0	200.0	200.0	2.0	2.0	-0.39	99.3	-0.7	99.3	95.2	4.05	24.533	
300.0	300.0	300.0	300.0	2.1	2.1	-0.39	99.3	-0.7	99.3	95.2	4.14	23.984	
400.0	400.0	400.0	400.0	2.1	2.1	-0.39	99.3	-0.7	99.3	95.0	4.28	23.210	
500.0	500.0	500.0	500.0	2.2	2.2	-0.39	99.3	-0.7	99.3	94.8	4.46	22.277	
600.0	600.0	600.0	600.0	2.3	2.3	-0.39	99.3	-0.7	99.3	94.6	4.67	21.248	
700.0	700.0	700.0	700.0	2.5	2.5	-0.39	99.3	-0.7	99.3	94.4	4.92	20.179	
800.0	800.0	800.0	800.0	2.6	2.6	-0.39	99.3	-0.7	99.3	94.1	5.20	19.113	
900.0	900.0	900.0	900.0	2.7	2.7	-0.39	99.3	-0.7	99.3	93.8	5.49	18.076	
1,000.0	1,000.0	1,000.0	1,000.0	2.9	2.9	-0.39	99.3	-0.7	99.3	93.5	5.81	17.089	
1,100.0	1,100.0	1,100.0	1,100.0	3.1	3.1	-0.39	99.3	-0.7	99.3	93.2	6.14	16.161	
1,200.0	1,200.0	1,200.0	1,200.0	3.2	3.2	-0.39	99.3	-0.7	99.3	92.8	6.49	15.295	
1,300.0	1,300.0	1,300.0	1,300.0	3.4	3.4	-0.39	99.3	-0.7	99.3	92.4	6.85	14.492	
1,400.0	1,400.0	1,400.0	1,400.0	3.6	3.6	-0.39	99.3	-0.7	99.3	92.1	7.22	13.750	
1,500.0	1,500.0	1,500.0	1,500.0	3.8	3.8	-0.39	99.3	-0.7	99.3	91.7	7.60	13.065	
1,600.0	1,600.0	1,600.0	1,600.0	4.0	4.0	-0.39	99.3	-0.7	99.3	91.3	7.99	12.434	
1,700.0	1,700.0	1,700.0	1,700.0	4.2	4.2	-0.39	99.3	-0.7	99.3	90.9	8.38	11.852	
1,800.0	1,800.0	1,800.0	1,800.0	4.4	4.4	-0.39	99.3	-0.7	99.3	90.5	8.78	11.315	
1,900.0	1,900.0	1,900.0	1,900.0	4.6	4.6	-0.39	99.3	-0.7	99.3	90.1	9.18	10.819	
2,000.0	2,000.0	2,000.0	2,000.0	4.8	4.8	-0.39	99.3	-0.7	99.3	89.7	9.58	10.360	
2,100.0	2,100.0	2,100.0	2,100.0	5.0	5.0	-0.39	99.3	-0.7	99.3	89.3	9.99	9.935	
2,200.0	2,200.0	2,200.0	2,200.0	5.2	5.2	-0.39	99.3	-0.7	99.3	88.9	10.41	9.540	CC, ES
2,216.7	2,216.7	2,215.8	2,215.8	5.2	5.2	-90.43	99.4	-0.7	99.4	88.9	10.47	9.487	
2,300.0	2,300.0	2,299.1	2,299.1	5.4	5.4	-90.84	100.1	-0.7	100.1	88.3	10.80	9.269	
2,400.0	2,400.0	2,399.1	2,399.1	5.6	5.6	-91.33	101.0	-0.7	101.0	89.8	11.19	9.022	
2,500.0	2,500.0	2,499.1	2,499.1	5.8	5.8	-91.81	101.8	-0.7	101.9	90.3	11.59	8.788	
2,600.0	2,600.0	2,599.1	2,599.1	6.0	6.0	-92.28	102.7	-0.7	102.8	90.8	12.00	8.569	
2,700.0	2,700.0	2,699.1	2,699.1	6.1	6.3	-92.74	103.6	-0.7	103.7	91.3	12.40	8.362	
2,800.0	2,800.0	2,799.1	2,799.1	6.3	6.5	-93.20	104.4	-0.7	104.6	91.8	12.81	8.167	
2,900.0	2,900.0	2,899.1	2,899.1	6.5	6.7	-93.64	105.3	-0.7	105.5	92.3	13.22	7.982	
3,000.0	3,000.0	2,999.1	2,999.0	6.7	6.9	-94.08	106.2	-0.7	106.5	92.8	13.64	7.808	
3,100.0	3,100.0	3,099.1	3,099.0	6.9	7.1	-94.51	107.1	-0.7	107.4	93.4	14.05	7.644	
3,200.0	3,200.0	3,199.1	3,199.0	7.1	7.3	-94.94	107.9	-0.7	108.3	93.9	14.47	7.488	
3,300.0	3,300.0	3,299.1	3,299.0	7.3	7.5	-95.35	108.8	-0.7	109.3	94.4	14.89	7.340	
3,400.0	3,400.0	3,399.0	3,399.0	7.6	7.8	-95.76	109.7	-0.7	110.2	94.9	15.31	7.200	
3,500.0	3,500.0	3,499.0	3,499.0	7.8	8.0	-96.17	110.6	-0.7	111.2	95.5	15.73	7.068	
3,600.0	3,599.9	3,599.0	3,599.0	8.0	8.2	-96.56	111.4	-0.7	112.2	96.0	16.16	6.942	
3,700.0	3,699.9	3,699.0	3,699.0	8.2	8.4	-96.95	112.3	-0.7	113.1	96.6	16.58	6.822	
3,800.0	3,799.9	3,799.0	3,799.0	8.4	8.6	-97.33	113.2	-0.7	114.1	97.1	17.01	6.708	
3,900.0	3,899.9	3,899.0	3,898.9	8.6	8.9	-97.71	114.0	-0.7	115.1	97.7	17.44	6.599	
4,000.0	3,999.9	3,999.0	3,998.9	8.8	9.1	-98.08	114.9	-0.7	116.1	98.2	17.87	6.496	
4,100.0	4,099.9	4,099.0	4,098.9	9.0	9.3	-98.44	115.8	-0.7	117.1	98.8	18.30	6.397	
4,200.0	4,199.9	4,199.0	4,198.9	9.2	9.5	-98.79	116.7	-0.7	118.1	99.3	18.73	6.303	
4,300.0	4,299.9	4,299.0	4,298.9	9.4	9.7	-99.15	117.5	-0.7	119.1	99.9	19.16	6.213	
4,400.0	4,399.9	4,399.0	4,398.9	9.7	10.0	-99.49	118.4	-0.7	120.1	100.5	19.60	6.127	
4,500.0	4,499.9	4,499.0	4,498.9	9.9	10.2	-99.83	119.3	-0.7	121.1	101.0	20.03	6.044	
4,600.0	4,599.9	4,599.0	4,598.9	10.1	10.4	-100.16	120.2	-0.7	122.1	101.6	20.46	5.965	
4,700.0	4,699.9	4,698.9	4,698.8	10.3	10.6	-100.49	121.0	-0.7	123.1	102.2	20.90	5.890	
4,800.0	4,799.9	4,798.9	4,798.8	10.5	10.8	-100.81	121.9	-0.7	124.1	102.8	21.33	5.817	
4,900.0	4,899.9	4,898.9	4,898.8	10.7	11.1	-101.13	122.8	-0.7	125.1	103.4	21.77	5.748	
5,000.0	4,999.9	4,998.9	4,998.8	10.9	11.3	-101.44	123.6	-0.7	126.2	104.0	22.21	5.681	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 9T - Kline Federal 5300 41-18 9T - Design #1

Survey Program: 0-MWD

Offset Site Error: 0.0 usft

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,099.9	5,098.9	5,098.8	11.2	11.5	-101.75	124.5	-0.7	127.2	104.5	22.64	5.617	
5,200.0	5,199.9	5,198.9	5,198.8	11.4	11.7	-102.05	125.4	-0.7	128.2	105.1	23.08	5.555	
5,300.0	5,299.9	5,298.9	5,298.8	11.6	11.9	-102.35	126.3	-0.7	129.3	105.7	23.52	5.496	
5,400.0	5,399.9	5,398.9	5,398.8	11.8	12.2	-102.64	127.1	-0.7	130.3	106.3	23.96	5.439	
5,500.0	5,499.9	5,498.9	5,498.8	12.0	12.4	-102.93	128.0	-0.7	131.3	106.9	24.40	5.384	
5,600.0	5,599.9	5,598.9	5,598.7	12.2	12.6	-103.22	128.9	-0.7	132.4	107.6	24.84	5.330	
5,700.0	5,699.9	5,698.9	5,698.7	12.5	12.8	-103.49	129.8	-0.7	133.4	108.2	25.28	5.279	
5,800.0	5,799.9	5,798.9	5,798.7	12.7	13.0	-103.77	130.6	-0.7	134.5	108.8	25.72	5.230	
5,900.0	5,899.9	5,898.9	5,898.7	12.9	13.3	-104.04	131.5	-0.7	135.6	109.4	26.16	5.182	
6,000.0	5,999.9	5,998.8	5,998.7	13.1	13.5	-104.31	132.4	-0.7	136.6	110.0	26.60	5.136	
6,100.0	6,099.9	6,098.8	6,098.7	13.3	13.7	-104.57	133.2	-0.7	137.7	110.6	27.04	5.092	
6,200.0	6,199.8	6,198.8	6,198.7	13.6	13.9	-104.83	134.1	-0.7	138.7	111.3	27.48	5.049	
6,300.0	6,299.8	6,298.8	6,298.7	13.8	14.2	-105.08	135.0	-0.7	139.8	111.9	27.92	5.007	
6,400.0	6,399.8	6,398.8	6,398.7	14.0	14.4	-105.33	135.9	-0.7	140.9	112.5	28.36	4.967	
6,500.0	6,499.8	6,498.8	6,498.6	14.2	14.6	-105.58	136.7	-0.7	142.0	113.2	28.81	4.928	
6,600.0	6,599.8	6,598.8	6,598.6	14.4	14.8	-105.82	137.6	-0.7	143.0	113.8	29.25	4.890	
6,700.0	6,699.8	6,698.8	6,698.6	14.7	15.1	-106.06	138.5	-0.7	144.1	114.4	29.69	4.854	
6,800.0	6,799.8	6,798.8	6,798.6	14.9	15.3	-106.30	139.4	-0.7	145.2	115.1	30.13	4.818	
6,900.0	6,899.8	6,898.8	6,898.6	15.1	15.5	-106.53	140.2	-0.7	146.3	115.7	30.58	4.784	
7,000.0	6,999.8	6,998.8	6,998.6	15.3	15.7	-106.76	141.1	-0.7	147.4	116.3	31.02	4.751	
7,100.0	7,099.8	7,098.8	7,098.6	15.5	15.9	-106.98	142.0	-0.7	148.5	117.0	31.46	4.718	
7,200.0	7,199.8	7,198.8	7,198.6	15.8	16.2	-107.20	142.8	-0.7	149.5	117.6	31.91	4.687	
7,300.0	7,299.8	7,298.7	7,298.6	16.0	16.4	-107.42	143.7	-0.7	150.6	118.3	32.35	4.657	
7,400.0	7,399.8	7,398.7	7,398.5	16.2	16.6	-107.64	144.6	-0.7	151.7	118.9	32.79	4.627	
7,500.0	7,499.8	7,498.7	7,498.5	16.4	16.8	-107.85	145.5	-0.7	152.8	119.6	33.24	4.598	
7,600.0	7,599.8	7,598.7	7,598.5	16.6	17.1	-108.06	146.3	-0.7	153.9	120.2	33.68	4.570	
7,700.0	7,699.8	7,698.7	7,698.5	16.9	17.3	-108.27	147.2	-0.7	155.0	120.9	34.12	4.543	
7,800.0	7,799.8	7,798.7	7,798.5	17.1	17.5	-108.47	148.1	-0.7	156.1	121.6	34.57	4.517	
7,900.0	7,899.8	7,898.7	7,898.5	17.3	17.7	-108.67	149.0	-0.7	157.2	122.2	35.01	4.491	
7,926.7	7,926.4	7,925.4	7,925.1	17.4	17.8	-108.72	149.2	-0.7	157.5	122.4	35.13	4.484	
7,943.3	7,943.1	7,943.3	7,943.1	17.4	17.8	-18.74	149.3	-0.7	157.6	122.4	35.21	4.477	
8,000.0	7,999.8	8,000.0	7,999.8	17.5	17.9	-18.74	149.3	-0.7	157.6	122.2	35.43	4.449	
8,100.0	8,099.8	8,100.0	8,099.8	17.7	18.2	-18.74	149.3	-0.7	157.6	121.8	35.86	4.395	
8,200.0	8,199.8	8,200.0	8,199.8	17.9	18.4	-18.74	149.3	-0.7	157.6	121.3	36.29	4.343	
8,300.0	8,299.8	8,300.0	8,299.8	18.1	18.6	-18.74	149.3	-0.7	157.6	120.9	36.72	4.292	
8,400.0	8,399.8	8,400.0	8,399.8	18.4	18.8	-18.74	149.3	-0.7	157.6	120.5	37.16	4.242	
8,500.0	8,499.8	8,500.0	8,499.8	18.6	19.1	-18.74	149.3	-0.7	157.6	120.0	37.59	4.194	
8,600.0	8,599.8	8,600.0	8,599.8	18.8	19.3	-18.74	149.3	-0.7	157.6	119.6	38.02	4.146	
8,700.0	8,699.8	8,700.0	8,699.8	19.0	19.5	-18.74	149.3	-0.7	157.6	119.2	38.45	4.099	
8,800.0	8,799.8	8,800.0	8,799.8	19.2	19.7	-18.74	149.3	-0.7	157.6	118.7	38.89	4.053	
8,900.0	8,899.8	8,900.0	8,899.8	19.4	19.9	-18.74	149.3	-0.7	157.6	118.3	39.32	4.009	
9,000.0	8,999.8	9,000.0	8,999.8	19.6	20.2	-18.74	149.3	-0.7	157.6	117.9	39.76	3.965	
9,100.0	9,099.8	9,100.0	9,099.8	19.8	20.4	-18.74	149.3	-0.7	157.6	117.4	40.19	3.922	
9,200.0	9,199.8	9,200.0	9,199.8	20.0	20.6	-18.74	149.3	-0.7	157.6	117.0	40.63	3.880	
9,300.0	9,299.8	9,300.0	9,299.8	20.2	20.8	-18.74	149.3	-0.7	157.6	116.6	41.06	3.839	
9,400.0	9,399.8	9,400.0	9,399.8	20.5	21.1	-18.74	149.3	-0.7	157.6	116.1	41.50	3.799	
9,500.0	9,499.8	9,500.0	9,499.8	20.7	21.3	-18.74	149.3	-0.7	157.6	115.7	41.93	3.759	
9,600.0	9,599.8	9,600.0	9,599.8	20.9	21.5	-18.74	149.3	-0.7	157.6	115.3	42.37	3.720	
9,700.0	9,699.8	9,700.0	9,699.8	21.1	21.7	-18.74	149.3	-0.7	157.6	114.8	42.80	3.683	
9,800.0	9,799.8	9,800.0	9,799.8	21.3	22.0	-18.74	149.3	-0.7	157.6	114.4	43.24	3.645	
9,900.0	9,899.8	9,900.0	9,899.8	21.5	22.2	-18.74	149.3	-0.7	157.6	113.9	43.68	3.609	
10,000.0	9,999.8	10,000.0	9,999.8	21.7	22.4	-18.74	149.3	-0.7	157.6	113.5	44.11	3.573	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 9T - Kline Federal 5300 41-18 9T - Design #1

Survey Program: 0-MWD

Offset Site Error: 0.0 usft

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,100.0	10,099.8	10,100.0	10,099.8	21.9	22.6	-18.74	149.3	-0.7	157.6	113.1	44.55	3.538	
10,200.0	10,199.8	10,200.0	10,199.8	22.2	22.9	-18.74	149.3	-0.7	157.6	112.6	44.99	3.504	
10,300.0	10,299.8	10,300.0	10,299.8	22.4	23.1	-18.74	149.3	-0.7	157.6	112.2	45.43	3.470	
10,354.8	10,354.6	10,354.8	10,354.6	22.5	23.2	-18.74	149.3	-0.7	157.6	112.0	45.67	3.452	
10,375.0	10,374.8	10,373.6	10,373.4	22.5	23.2	-128.69	149.5	-0.4	158.0	112.2	45.74	3.454	
10,400.0	10,399.7	10,396.9	10,396.6	22.6	23.3	-128.49	150.2	0.9	159.4	113.6	45.80	3.480	
10,425.0	10,424.5	10,420.0	10,419.6	22.7	23.3	-128.13	151.6	3.1	161.9	116.1	45.83	3.533	
10,450.0	10,449.2	10,443.0	10,442.3	22.7	23.4	-127.62	153.5	6.3	165.5	119.6	45.83	3.610	
10,475.0	10,473.5	10,465.7	10,464.5	22.8	23.4	-126.98	156.0	10.3	170.1	124.3	45.81	3.713	
10,500.0	10,497.6	10,488.2	10,486.3	22.8	23.5	-126.21	158.9	15.1	175.8	130.0	45.78	3.839	
10,525.0	10,521.2	10,510.3	10,507.4	22.9	23.5	-125.34	162.3	20.8	182.4	136.7	45.73	3.989	
10,550.0	10,544.4	10,532.1	10,527.8	23.0	23.6	-124.35	166.2	27.1	190.1	144.4	45.69	4.161	
10,575.0	10,567.1	10,553.5	10,547.6	23.0	23.6	-123.28	170.5	34.1	198.7	153.1	45.66	4.353	
10,600.0	10,589.1	10,575.0	10,567.1	23.1	23.7	-122.11	175.2	41.9	208.3	162.6	45.64	4.564	
10,625.0	10,610.6	10,594.9	10,584.7	23.2	23.8	-120.87	180.0	49.8	218.7	173.1	45.64	4.792	
10,650.0	10,631.3	10,614.9	10,602.0	23.3	23.8	-119.54	185.3	58.3	230.0	184.3	45.67	5.035	
10,675.0	10,651.3	10,634.4	10,618.5	23.4	23.9	-118.14	190.7	67.2	242.0	196.3	45.74	5.291	
10,700.0	10,670.5	10,653.4	10,634.1	23.5	23.9	-116.66	196.3	76.5	254.8	209.0	45.85	5.557	
10,725.0	10,688.8	10,672.0	10,648.9	23.6	24.0	-115.11	202.2	86.0	268.3	222.3	46.01	5.832	
10,750.0	10,706.2	10,690.1	10,663.0	23.7	24.0	-113.47	208.1	95.7	282.5	236.3	46.22	6.113	
10,775.0	10,722.6	10,707.7	10,676.2	23.9	24.1	-111.76	214.1	105.6	297.3	250.8	46.47	6.397	
10,800.0	10,738.0	10,725.0	10,688.8	24.0	24.2	-109.98	220.3	115.8	312.6	265.9	46.78	6.684	
10,825.0	10,752.4	10,741.5	10,700.4	24.2	24.2	-108.11	226.5	125.8	328.5	281.4	47.13	6.971	
10,850.0	10,765.7	10,757.7	10,711.4	24.4	24.3	-106.17	232.7	136.0	344.9	297.3	47.52	7.257	
10,875.0	10,777.8	10,775.0	10,722.6	24.6	24.4	-104.20	239.5	147.2	361.6	313.7	47.94	7.544	
10,900.0	10,788.8	10,789.0	10,731.4	24.8	24.5	-102.05	245.2	156.6	378.8	330.4	48.38	7.829	
10,925.0	10,798.6	10,804.1	10,740.4	25.0	24.5	-99.89	251.5	166.8	396.3	347.4	48.84	8.114	
10,950.0	10,807.2	10,818.8	10,748.9	25.3	24.6	-97.67	257.8	177.1	414.1	364.8	49.30	8.400	
10,975.0	10,814.5	10,833.2	10,756.9	25.6	24.7	-95.39	264.0	187.4	432.2	382.4	49.74	8.688	
11,000.0	10,820.6	10,847.3	10,764.3	25.8	24.8	-93.06	270.2	197.8	450.5	400.3	50.17	8.980	
11,025.0	10,825.4	10,861.1	10,771.2	26.1	24.9	-90.70	276.5	207.8	469.0	418.4	50.55	9.276	
11,050.0	10,828.9	10,875.0	10,777.8	26.5	25.0	-88.34	282.8	218.2	487.6	436.7	50.90	9.579	
11,075.0	10,831.1	10,888.0	10,783.7	26.8	25.1	-85.92	288.9	228.1	506.4	455.2	51.20	9.890	
11,100.0	10,832.0	10,900.0	10,788.8	27.1	25.1	-83.43	294.6	237.4	525.3	473.8	51.44	10.211	
11,104.0	10,832.0	10,903.2	10,790.1	27.2	25.2	-83.14	296.0	239.8	528.3	476.8	51.48	10.260	
11,200.0	10,832.2	10,957.3	10,809.4	28.6	25.6	-88.90	322.3	283.0	600.0	546.6	53.38	11.240	
11,300.0	10,832.4	11,022.3	10,824.9	30.3	26.2	-89.21	355.2	336.9	671.8	616.3	55.48	12.109	
11,400.0	10,832.6	11,094.8	10,831.9	32.2	27.0	-90.02	392.8	398.4	739.7	681.8	57.83	12.791	
11,500.0	10,832.7	11,198.8	10,832.2	34.1	28.2	-90.03	445.6	487.9	801.8	741.1	60.68	13.214	
11,600.0	10,832.9	11,317.2	10,832.4	36.2	30.0	-90.02	501.7	592.2	855.9	791.8	64.10	13.352	
11,680.4	10,833.1	11,420.0	10,832.6	38.0	31.7	-90.01	547.0	684.5	892.8	825.5	67.25	13.276	
11,700.0	10,833.1	11,445.9	10,832.7	38.4	32.1	-90.01	557.8	708.0	900.9	832.9	68.07	13.235	
11,800.0	10,833.3	11,581.5	10,832.9	40.7	34.7	-90.02	611.2	832.7	940.0	867.5	72.51	12.965	
11,900.0	10,833.4	11,722.5	10,833.1	43.0	37.5	-90.02	660.4	964.7	974.7	897.3	77.41	12.591	
12,000.0	10,833.6	11,868.3	10,833.4	45.4	40.6	-90.02	704.4	1,103.7	1,004.6	921.8	82.73	12.142	
12,100.0	10,833.8	12,018.4	10,833.7	47.9	44.0	-90.02	742.3	1,249.0	1,029.5	941.0	88.44	11.640	
12,200.0	10,834.0	12,172.3	10,834.0	50.4	47.6	-90.02	773.1	1,399.7	1,049.2	954.7	94.51	11.102	
12,300.0	10,834.1	12,329.1	10,834.2	53.0	51.4	-90.02	798.1	1,554.8	1,063.6	962.8	100.87	10.545	
12,400.0	10,834.3	12,487.9	10,834.5	55.5	55.3	-90.02	810.8	1,712.9	1,072.6	965.1	107.48	9.981	
12,500.0	10,834.5	12,647.9	10,834.8	58.2	59.3	-90.02	816.7	1,872.7	1,075.9	961.7	114.24	9.418	
12,600.0	10,834.7	12,757.5	10,835.0	60.8	62.0	-90.02	816.8	1,982.4	1,075.7	955.9	119.79	8.980	
12,700.0	10,834.8	12,857.5	10,835.2	63.5	64.5	-90.02	816.8	2,082.4	1,075.4	950.3	125.13	8.594	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 9T - Kline Federal 5300 41-18 9T - Design #1

Offset Site Error: 0.0 usft
Offset Well Error: 2.0 usft

Survey Program: 0-MWD

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,800.0	10,835.0	12,957.5	10,835.4	66.2	67.1	-90.02	816.8	2,182.4	1,075.1	944.6	130.52	8.237	
12,900.0	10,835.2	13,057.5	10,835.5	68.9	69.7	-90.02	816.8	2,282.4	1,074.8	938.8	135.94	7.906	
13,000.0	10,835.4	13,157.5	10,835.7	71.7	72.3	-90.02	816.8	2,382.4	1,074.5	933.1	141.40	7.599	
13,100.0	10,835.5	13,257.5	10,835.9	74.4	75.0	-90.02	816.8	2,482.4	1,074.2	927.3	146.89	7.313	
13,200.0	10,835.7	13,357.5	10,836.0	77.2	77.6	-90.02	816.8	2,582.3	1,073.9	921.4	152.41	7.046	
13,300.0	10,835.9	13,457.5	10,836.2	79.9	80.3	-90.02	816.8	2,682.3	1,073.5	915.6	157.95	6.797	
13,400.0	10,836.1	13,557.5	10,836.4	82.7	83.0	-90.02	816.8	2,782.3	1,073.2	909.7	163.52	6.563	
13,500.0	10,836.2	13,657.5	10,836.6	85.5	85.7	-90.02	816.8	2,882.3	1,072.9	903.8	169.11	6.345	
13,600.0	10,836.4	13,757.5	10,836.7	88.3	88.4	-90.02	816.8	2,982.3	1,072.6	897.9	174.71	6.139	
13,700.0	10,836.6	13,857.5	10,836.9	91.1	91.2	-90.02	816.8	3,082.3	1,072.3	892.0	180.33	5.946	
13,800.0	10,836.7	13,957.5	10,837.1	94.0	93.9	-90.02	816.8	3,182.3	1,072.0	886.0	185.97	5.765	
13,900.0	10,836.9	14,057.5	10,837.3	96.8	96.7	-90.02	816.8	3,282.3	1,071.7	880.1	191.61	5.593	
14,000.0	10,837.1	14,157.5	10,837.4	99.6	99.5	-90.02	816.8	3,382.3	1,071.4	874.1	197.28	5.431	
14,100.0	10,837.3	14,257.5	10,837.6	102.5	102.2	-90.02	816.8	3,482.3	1,071.1	868.1	202.95	5.278	
14,200.0	10,837.4	14,357.5	10,837.8	105.3	105.0	-90.02	816.8	3,582.3	1,070.8	862.1	208.63	5.132	
14,300.0	10,837.6	14,457.5	10,838.0	108.2	107.8	-90.02	816.8	3,682.3	1,070.5	856.1	214.32	4.995	
14,400.0	10,837.8	14,557.5	10,838.1	111.0	110.6	-90.02	816.8	3,782.3	1,070.2	850.1	220.03	4.864	
14,500.0	10,838.0	14,657.5	10,838.3	113.9	113.5	-90.02	816.8	3,882.3	1,069.8	844.1	225.73	4.739	
14,600.0	10,838.1	14,757.5	10,838.5	116.7	116.3	-90.02	816.8	3,982.3	1,069.5	838.1	231.45	4.621	
14,700.0	10,838.3	14,857.5	10,838.7	119.6	119.1	-90.02	816.8	4,082.3	1,069.2	832.0	237.18	4.508	
14,800.0	10,838.5	14,957.5	10,838.8	122.5	121.9	-90.02	816.8	4,182.3	1,068.9	826.0	242.91	4.401	
14,900.0	10,838.7	15,057.5	10,839.0	125.3	124.7	-90.02	816.8	4,282.3	1,068.6	820.0	248.64	4.298	
15,000.0	10,838.8	15,157.5	10,839.2	128.2	127.6	-90.02	816.8	4,382.3	1,068.3	813.9	254.39	4.199	
15,100.0	10,839.0	15,257.5	10,839.4	131.1	130.4	-90.02	816.8	4,482.3	1,068.0	807.9	260.14	4.106	
15,200.0	10,839.2	15,357.5	10,839.5	133.9	133.3	-90.02	816.8	4,582.3	1,067.7	801.8	265.89	4.016	
15,300.0	10,839.4	15,457.5	10,839.7	136.8	136.1	-90.02	816.8	4,682.3	1,067.4	795.7	271.65	3.929	
15,400.0	10,839.5	15,557.5	10,839.9	139.7	139.0	-90.02	816.8	4,782.3	1,067.1	789.7	277.41	3.847	
15,500.0	10,839.7	15,657.5	10,840.1	142.6	141.8	-90.02	816.8	4,882.3	1,066.8	783.6	283.18	3.767	
15,600.0	10,839.9	15,757.5	10,840.2	145.5	144.7	-90.02	816.8	4,982.3	1,066.4	777.5	288.95	3.691	
15,700.0	10,840.1	15,857.5	10,840.4	148.4	147.5	-90.02	816.8	5,082.3	1,066.1	771.4	294.72	3.617	
15,800.0	10,840.2	15,957.5	10,840.6	151.3	150.4	-90.02	816.8	5,182.3	1,065.8	765.3	300.50	3.547	
15,900.0	10,840.4	16,057.5	10,840.8	154.1	153.3	-90.02	816.8	5,282.3	1,065.5	759.2	306.28	3.479	
16,000.0	10,840.6	16,157.5	10,840.9	157.0	156.1	-90.02	816.8	5,382.3	1,065.2	753.2	312.06	3.413	
16,100.0	10,840.8	16,257.5	10,841.1	159.9	159.0	-90.02	816.8	5,482.3	1,064.9	747.1	317.85	3.350	
16,200.0	10,840.9	16,357.5	10,841.3	162.8	161.9	-90.02	816.8	5,582.3	1,064.6	741.0	323.63	3.290	
16,300.0	10,841.1	16,457.5	10,841.5	165.7	164.8	-90.02	816.8	5,682.3	1,064.3	734.9	329.43	3.231	
16,400.0	10,841.3	16,557.5	10,841.6	168.6	167.6	-90.02	816.8	5,782.3	1,064.0	728.8	335.22	3.174	
16,500.0	10,841.4	16,657.5	10,841.8	171.5	170.5	-90.02	816.8	5,882.3	1,063.7	722.7	341.02	3.119	
16,600.0	10,841.6	16,757.5	10,842.0	174.4	173.4	-90.02	816.8	5,982.3	1,063.4	716.5	346.81	3.066	
16,700.0	10,841.8	16,857.5	10,842.2	177.3	176.3	-90.02	816.8	6,082.3	1,063.1	710.4	352.62	3.015	
16,800.0	10,842.0	16,957.5	10,842.3	180.2	179.2	-90.02	816.8	6,182.3	1,062.7	704.3	358.42	2.965	
16,900.0	10,842.1	17,057.5	10,842.5	183.1	182.1	-90.02	816.8	6,282.3	1,062.4	698.2	364.22	2.917	
17,000.0	10,842.3	17,157.5	10,842.7	186.0	184.9	-90.02	816.8	6,382.3	1,062.1	692.1	370.03	2.870	
17,100.0	10,842.5	17,257.5	10,842.9	188.9	187.8	-90.02	816.8	6,482.3	1,061.8	686.0	375.84	2.825	
17,200.0	10,842.7	17,357.5	10,843.0	191.8	190.7	-90.02	816.8	6,582.3	1,061.5	679.9	381.65	2.781	
17,300.0	10,842.8	17,457.5	10,843.2	194.7	193.6	-90.02	816.8	6,682.3	1,061.2	673.7	387.46	2.739	
17,400.0	10,843.0	17,557.4	10,843.4	197.6	196.5	-90.02	816.8	6,782.3	1,060.9	667.6	393.27	2.698	
17,500.0	10,843.2	17,657.4	10,843.6	200.6	199.4	-90.02	816.8	6,882.3	1,060.6	661.5	399.08	2.658	
17,600.0	10,843.4	17,757.4	10,843.7	203.5	202.3	-90.02	816.8	6,982.3	1,060.3	655.4	404.90	2.619	
17,700.0	10,843.5	17,857.4	10,843.9	206.4	205.2	-90.02	816.8	7,082.3	1,060.0	649.3	410.72	2.581	
17,800.0	10,843.7	17,957.4	10,844.1	209.3	208.1	-90.02	816.8	7,182.3	1,059.7	643.1	416.54	2.544	
17,900.0	10,843.9	18,057.4	10,844.3	212.2	211.0	-90.02	816.8	7,282.3	1,059.4	637.0	422.35	2.508	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 9T - Kline Federal 5300 41-18 9T - Design #1

Survey Program: 0-MWD

Offset Site Error: 0.0 usft

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
18,000.0	10,844.1	18,157.4	10,844.4	215.1	213.9	-90.02	816.8	7,382.3	1,059.0	630.9	428.17	2.473	
18,100.0	10,844.2	18,257.4	10,844.6	218.0	216.8	-90.02	816.8	7,482.3	1,058.7	624.7	434.00	2.439	
18,200.0	10,844.4	18,357.4	10,844.8	220.9	219.7	-90.02	816.8	7,582.3	1,058.4	618.6	439.82	2.406	
18,300.0	10,844.6	18,457.4	10,845.0	223.8	222.6	-90.02	816.8	7,682.3	1,058.1	612.5	445.64	2.374	
18,400.0	10,844.8	18,557.4	10,845.1	226.7	225.5	-90.02	816.8	7,782.3	1,057.8	606.3	451.47	2.343	
18,500.0	10,844.9	18,657.4	10,845.3	229.7	228.4	-90.02	816.8	7,882.3	1,057.5	600.2	457.29	2.313	
18,600.0	10,845.1	18,757.4	10,845.5	232.6	231.3	-90.02	816.8	7,982.3	1,057.2	594.1	463.12	2.283	
18,700.0	10,845.3	18,857.4	10,845.6	235.5	234.2	-90.02	816.8	8,082.3	1,056.9	587.9	468.95	2.254	
18,800.0	10,845.4	18,957.4	10,845.8	238.4	237.1	-90.02	816.8	8,182.3	1,056.6	581.8	474.78	2.225	
18,900.0	10,845.6	19,057.4	10,846.0	241.3	240.0	-90.02	816.8	8,282.3	1,056.3	575.7	480.60	2.198	
19,000.0	10,845.8	19,157.4	10,846.2	244.2	242.9	-90.02	816.8	8,382.3	1,056.0	569.5	486.43	2.171	
19,100.0	10,846.0	19,257.4	10,846.3	247.1	245.8	-90.02	816.8	8,482.3	1,055.6	563.4	492.26	2.144	
19,200.0	10,846.1	19,357.4	10,846.5	250.1	248.7	-90.02	816.8	8,582.3	1,055.3	557.2	498.10	2.119	
19,300.0	10,846.3	19,457.4	10,846.7	253.0	251.6	-90.02	816.8	8,682.3	1,055.0	551.1	503.93	2.094	
19,400.0	10,846.5	19,557.4	10,846.9	255.9	254.5	-90.02	816.8	8,782.3	1,054.7	545.0	509.76	2.069	
19,500.0	10,846.7	19,657.4	10,847.0	258.8	257.4	-90.02	816.8	8,882.3	1,054.4	538.8	515.59	2.045	
19,600.0	10,846.8	19,757.4	10,847.2	261.7	260.4	-90.02	816.8	8,982.3	1,054.1	532.7	521.43	2.022	
19,700.0	10,847.0	19,857.4	10,847.4	264.6	263.3	-90.02	816.8	9,082.3	1,053.8	526.5	527.26	1.999	
19,800.0	10,847.2	19,957.4	10,847.6	267.6	266.2	-90.02	816.8	9,182.3	1,053.5	520.4	533.10	1.976	
19,900.0	10,847.4	20,057.4	10,847.7	270.5	269.1	-90.02	816.8	9,282.3	1,053.2	514.2	538.93	1.954	
20,000.0	10,847.5	20,157.4	10,847.9	273.4	272.0	-90.02	816.8	9,382.3	1,052.9	508.1	544.77	1.933	
20,100.0	10,847.7	20,257.4	10,848.1	276.3	274.9	-90.02	816.8	9,482.3	1,052.6	502.0	550.61	1.912	
20,200.0	10,847.9	20,357.4	10,848.3	279.2	277.8	-90.02	816.8	9,582.3	1,052.3	495.8	556.45	1.891	
20,300.0	10,848.1	20,457.4	10,848.4	282.1	280.7	-90.02	816.8	9,682.3	1,051.9	489.7	562.28	1.871	
20,400.0	10,848.2	20,557.4	10,848.6	285.1	283.6	-90.02	816.8	9,782.3	1,051.6	483.5	568.12	1.851	
20,500.0	10,848.4	20,657.4	10,848.8	288.0	286.6	-90.02	816.8	9,882.3	1,051.3	477.4	573.96	1.832	
20,600.0	10,848.6	20,757.4	10,849.0	290.9	289.5	-90.02	816.8	9,982.3	1,051.0	471.2	579.80	1.813	
20,667.7	10,848.7	20,824.5	10,849.1	292.9	291.4	-90.02	816.8	10,049.3	1,050.8	467.1	583.73	1.800	SF

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 2082.0usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is 100° 30' 0.000 W

Coordinates are relative to: Kline Federal 5300 41-18 12TX
Coordinate System is US State Plane 1983, North Dakota Northern Zone
Grid Convergence at Surface is: -2.31°

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 2082.0usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is 100° 30' 0.000 W

Coordinates are relative to: Kline Federal 5300 41-18 12TX
Coordinate System is US State Plane 1983, North Dakota Northern Zone
Grid Convergence at Surface is: -2.31°

LEGEND

5300 41-18 9T, Design #1 V0
l 5300 41-18 10B, Design #1 V0
Kline Federal 5300 41-18 11T2, Kline Federal 5300 41-18 11T2, Design #1 V0
Kline Federal 5300 41-18 13T2X, Kline Federal 5300 41-18 13T2X, Design #1 V0
Kline Federal 5300 41-18 14BX
Kline Federal 5300 41-18 14BX

Oasis Petroleum
Well Summary
Kline Federal 5300 41-18 12TX
Section 18 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 2,072'	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 2,072'	13-3/8", 54.5#, J-55, STC, 8rd	1130 / 1.17	2730 / 2.82	514 / 2.61

API Rating & Safety Factor

a) Based on full casing evacuation with 9 ppg fluid on backside (2,072' setting depth).

b) Burst pressure based on 9 ppg fluid with no fluid on backside (2,072' setting depth).

c) Based on string weight in 9 ppg fluid at 2,072' TVD plus 100k# overpull. (Buoyed weight equals 97k lbs.)

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

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

Lead Slurry: **635 sks** (328 bbls) 2.9 yield conventional system with 94 lb/sk cement, .25 lb/sk D130 Lost Circulation Control Agent, 2% $CaCl_2$, 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% $CaCl_2$ and 0.25 lb/sk Lost Circulation Control Agent

Oasis Petroleum
Well Summary
Kline Federal 5300 31-18 12TX
Section 18 T153N R100W
McKenzie County, ND

CONTINGENCY SURFACE CASING AND CEMENT DESIGN

							Make-up Torque (ft-lbs)		
Size	**Interval**	**Weight**	**Grade**	**Coupling**	**I.D.**	**Drift**	**Minimum**	**Optimum**	**Max**
9-5/8"	0' to 6,101'	40	HCL-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 6,101'	9-5/8", 40#, HCL-80, LTC, 8rd	4230 / 2.13	5750 / 3.72	837 / 2.78

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 facture gradient. Backup of 9 ppg fluid.

c) Yield based on string weight in 10 ppg fluid, (207k 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: **598 sks** (309 bbls) Conventional system with 75 lb/sk cement, 0.5 lb/sk lost circulation, 10% expanding agent, 2% extender, 2% $CaCl_2$, 0.2% anti-foam and 0.4% fluid loss agent.

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

Oasis Petroleum
Well Summary
Kline Federal 5300 41-18 12TX
Section 18 T153N R100W
McKenzie County, ND

INTERMEDIATE CASING AND CEMENT DESIGN

							Make-up Torque (ft-lbs)		
Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Minimum	Optimum	Max
7"	0' – 6,664'	29	P-110	LTC	6.184"	6.059"	5,980	7,970	8,770
7"	6,664' – 10,355'	32	HCP-110	LTC	6.094"	6.000***	6,730	8,970	9,870
7"	10,355' – 11,189'	29	P-110	LTC	6.184"	6.059"	5,980	7,970	8,770

***Special drift

Interval	Length	Description	Collapse	Burst	Tension
			(psi) a	(psi) b	(1000 lbs) c
0' – 6,664'	6,664'	7", 29#, P-110, LTC, 8rd	8530 / 2.46*	11220 / 1.19	797 / 2.07
6,664' – 10,355'	3,691'	7", 32#, HCP-110, LTC, 8rd	11820 / 2.19*	12460 / 1.29	
6,664' – 10,355'	3,691'	7", 32#, HCP-110, LTC, 8rd	11820 / 1.07**	12460 / 1.29	
10,355' – 11,189'	834'	7", 29 lb, P-110, LTC, 8rd	8530 / 1.51*	11220 / 1.15	

API Rating & Safety Factor

a) *Assume full casing evacuation with 10 ppg fluid on backside. **Assume full casing evacuation with 1.2 psi/ft equivalent fluid gradient across salt intervals.

b) Burst pressure based on 9000 psig max press for stimulation plus 10.2 ppg fluid in casing and 9 ppg fluid on backside-to 10,832' TVD.

c) Based on string weight in 10 ppg fluid, (284k 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: **157 sks** (72 bbls) 2.21 yield conventional system with 47 lb/sk cement, 37 lb/sk D035 extender, 3.0% KCl, 3.0% D154 extender, 0.3% D208 viscosifier, 0.07% retarder, 0.2% anti-foam, 0.5 lb/sk, D130 LCM.

Tail Slurry: **627 sks** (173 bbls) 1.54 yield conventional system with 94 lb/sk cement, 3.0% KCl, 35.0% Silica, 0.5% retarder, 0.2% fluid loss, 0.2% anti-foam and 0.5 lb/sk LCM.

Oasis Petroleum
Well Summary
Kline Federal 5300 41-18 12TX
Section 18 T153N R100W
McKenzie County, ND

PRODUCTION LINER

Size	**Interval**	**Weight**	**Grade**	**Coupling**	**I.D.**	**Drift**	**Estimated Torque**
4-1/2"	10,305' – 20,655'	13.5	P-110	BTC	3.92"	3.795"	4,500

Interval	**Description**	**Collapse**	**Burst**	**Tension**
		(psi) **a**	(psi) **b**	(1000 lbs) **c**
10,305' – 20,655'	4-1/2", 13.5 lb, P-110, BTC, 8rd	10680 / 1.99	12410 / 1.28	443 / 2.02

API Rating & Safety Factor

a) Based on full casing evacuation with 9.5 ppg fluid on backside @ 10,849' TVD.

b) Burst pressure based on 9000 psi treating pressure with 10.2 ppg internal fluid gradient and 9 ppg external fluid gradient @ 10,849' TVD.

c) Based on string weight in 9.5 ppg fluid (Buoyed weight: 119k 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)

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

28658

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

Date: **6/23/2014**

RE: CORES AND SAMPLES

Well Name: **KLINE FEDERAL 5300 41-18 12TX** Well File No.: **28658**
Location: **LOT4 18-153-100** County: MCKENZIE
Permit Type: **Development - HORIZONTAL**
Field: **BAKER** Target Horizon: THREE FORKS B1

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:
  - 30' maximum intervals through all vertical and build sections.
  - 100' maximum intervals through any horizontal sections.
- Samples must be washed, dried, placed in standard sample envelopes (3" x 4.5"), packed in the correct order into standard sample boxes (3.5" x 5.25" x 15.25").
- Samples boxes are to be carefully identified with a label that indicates the operator, well name, well file number, American Petroleum Institute (API) number, location and depth of samples; and forwarded in to the state core and sample library within 30 days of the completion of drilling operations.

3) Cores: Any cores cut shall be preserved in correct order, boxed in standard core boxes (4.5", 4.5", 35.75"), and the entire core forwarded to the state core and samples library within 180 days of completion of drilling operations. Any extension of time must have approval on a Form 4 Sundry Notice.

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

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

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

Sincerely

Stephen Fried
Geologist

SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4

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

JUN 2014
RECEIVED
ND OIL & GAS DIVISION

Well File No. 28658

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

☑ Notice of Intent	Approximate Start Date: October 1, 2014	☐ Drilling Prognosis	☐ Spill Report
☐ Report of Work Done	Date Work Completed:	☐ Redrilling or Repair	☐ Shooting
☐ Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03.	Approximate Start Date:	☐ Casing or Liner	☐ Acidizing
		☐ Plug Well	☐ Fracture Treatment
		☐ Supplemental History	☐ Change Production Method
		☐ Temporarily Abandon	☐ Reclamation
		☑ Other	Waiver to rule Rule 43-02-03-31

Well Name and Number					
Kline Federal 5300 41-18 12TX					
Footages	Qtr-Qtr	Section	Township	Range	
434 F S L 237 F W L	Lot 4	18	153 N	100 W	
Field	Pool	County			
	Bakken	McKenzie			

24-HOUR PRODUCTION RATE

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

Name of Contractor(s)			
Address	City	State	Zip Code

DETAILS OF WORK

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

#20275

The Oasis Petroleum's Kline Federal 5300 11-18H (153N 100W 18 NW NW) located within a mile of the subject well

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

Company: Oasis Petroleum North America LLC			Telephone Number: 281-404-9563
Address: 1001 Fannin, Suite 1500			
City: Houston	State: TX	Zip Code: 77002	
Signature: Heather McCowan	Printed Name: Heather McCowan		
Title: Regulatory Assistant	Date: May 29, 2014		
Email Address: hmccowan@oasispetroleum.com			

FOR STATE USE ONLY

☐ Received	☒ Approved
Date: 6-17-2014	
By:	
Title: Stephen Fried, Geologist	

SUNDRY NOTICES AND REPORTS ON WELLS - FORM 4

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

Well File No. 28658

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

☑ Notice of Intent — Approximate Start Date: **October 1, 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 **Suspension of Drilling**

Well Name and Number					
Kline Federal 5300 41-18 12TX					
Footages	Qtr-Qtr	Section	Township	Range	
434 F S L 237 F WL	**SWSW**	**18**	**153 N**	**100 W**	
Field	Pool	County			
	Bakken	**McKenzie**			

24-HOUR PRODUCTION RATE

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

Name of Contractor(s)			
Advanced Energy Services			
Address	City	State	Zip Code

DETAILS OF WORK

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

Notify NDIC inspector Richard Dunn at 701-770-3554 with spud and TD info.

Company		Telephone Number
Oasis Petroleum North America LLC		**(281) 404-9563**
Address		
1001 Fannin, Suite 1500		
City	State	Zip Code
Houston	**TX**	**77002**
Signature: Heather McCowan	Printed Name: **Heather McCowan**	
Title: **Regulatory Assistant**	Date: **May 29, 2014**	
Email Address: **hmccowan@oasispetroleum.com**		

FOR STATE USE ONLY

☐ Received	☒ Approved
Date: 6/17/14	
By: Nathaniel Erbele	
Title: Petroleum Resource Specialist	

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

June 17, 2014

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

RE: HORIZONTAL WELL
KLINE FEDERAL 5300 41-18 12TX
LOT4 Section 18-153N-100W
McKenzie County
Well File # 28658

Dear Heather:

Pursuant to Commission Order No. 23752, approval to drill the above captioned well is hereby given. The approval is granted on the condition that all portions of the well bore not isolated by cement shall be located approximately down the east-west axis (within 250' of the section line per Commission policy) and no closer than 200 feet to the east or west boundary within the 2560 acre spacing unit consisting of Sections17, 18, 19, & 20 T153N-R100W.

PERMIT STIPULATIONS: Due to the proximity of Lake Sakakawea to the well site, a dike is required surrounding the entire location. 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. 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: 184' south. Also, based on the azimuth of the proposed lateral the maximum legal coordinate from the well head is: 10052' east.

Location Construction Commencement (Three Day Waiting Period)

Operators shall not commence operations on a drill site until the 3rd business day following publication of the approved drilling permit on the NDIC - OGD Daily Activity Report. If circumstances require operations to commence before the 3rd business day following publication on the Daily Activity Report, the waiting period may be waived by the Director. Application for a waiver must be by sworn affidavit providing the information necessary to evaluate the extenuating circumstances, the factors of NDAC 43-02-03-16.2 (1), (a)-(f), and any other information that would allow the Director to conclude that in the event another owner seeks revocation of the drilling permit, the applicant should retain the permit.

Permit Fee & Notification

Payment was received in the amount of $100 via credit card .The permit fee has been received. It is requested that notification be given immediately upon the spudding of the well. This information should be relayed to the Oil & Gas Division, Bismarck, via telephone. The following information must be included: Well name, legal location, permit number, drilling contractor, company representative, date and time of spudding. Office hours are 8:00 a.m. to 12:00 p.m. and 1:00 p.m. to 5:00 p.m. Central Time. Our telephone number is (701) 328-8020, leave a message if after hours or on the weekend.

Survey Requirements for Horizontal, Horizontal Re-entry, and Directional Wells

NDAC Section 43-02-03-25 (Deviation Tests and Directional Surveys) states in part (that) the survey contractor shall file a certified copy of all surveys with the director free of charge within thirty days of completion. Surveys must be submitted as one electronic copy, or in a form approved by the director. However, the director may require the directional survey to be filed immediately after completion if the survey is needed to conduct the operation of the director's office in a timely manner. Certified surveys must be submitted via email in one adobe document, with a certification cover page to certsurvey@nd.gov.
Survey points shall be of such frequency to accurately determine the entire location of the well bore.
Specifically, the Horizontal and Directional well survey frequency is 100 feet in the vertical, 30 feet in the curve (or when sliding) and 90 feet in the lateral.

Surface casing cement

Tail cement utilized on surface casing must have a minimum compressive strength of 500 psi within 12 hours, and tail cement utilized on production casing must have a minimum compressive strength of 500 psi before drilling the plug or initiating tests.

Logs

NDAC Section 43-02-03-31 requires the running of (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
Thank you for your cooperation.

Sincerely,

Nathaniel Erbele
Petroleum Resource Specialist

APPLICATION FOR PERMIT TO DRILL HORIZONTAL WELL - FORM 1H

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 54269 (08-2005)

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

Type of Work	Type of Well	Approximate Date Work Will Start	Confidential Status
New Location	Oil & Gas	10 / 1 / 2013	No

Operator	Telephone Number
OASIS PETROLEUM NORTH AMERICA LLC	281-404-9563

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

☑ Notice has been provided to the owner of any permanently occupied dwelling within 1,320 feet.

☑ This well is not located within five hundred feet of an occupied dwelling.

WELL INFORMATION (If more than one lateral proposed, enter data for additional laterals on page 2)

Well Name	Well Number
KLINE FEDERAL	5300 41-18 12TX

Surface Footages	Qtr-Qtr	Section	Township	Range	County
434 F S L 237 F W L	LOT4	18	153 N	100 W	McKenzie

Longstring Casing Point Footages	Qtr-Qtr	Section	Township	Range	County
244 F S L 816 F W L	LOT4	18	153 N	100 W	McKenzie

Longstring Casing Point Coordinates From Well Head	Azimuth	Longstring Total Depth
190 S From WH 579 E From WH	105.6 º	11189 Feet MD 10832 Feet TVD

Bottom Hole Footages From Nearest Section Line	Qtr-Qtr	Section	Township	Range	County
200 F S L 202 F E L	LOT4	17	153 N	100 W	McKenzie

Bottom Hole Coordinates From Well Head	KOP Lateral 1	Azimuth Lateral 1	Estimated Total Depth Lateral 1
234 S From WH 10050 E From WH	10355 Feet MD	90 º	20668 Feet MD 10849 Feet TVD

Latitude of Well Head	Longitude of Well Head	NAD Reference	Description of (Subject to NDIC Approval)
48 ° 04 ' 7.55 "	-103 ° 36 ' 11.95 "	NAD83	Spacing Unit: Sec 17,18,19,&20 T153N-R100W

Ground Elevation	Acres in Spacing/Drilling Unit	Spacing/Drilling Unit Setback Requirement	Industrial Commission Order
2056 Feet Above S.L.	2560	0 Feet N/S 200 Feet E/W	23752

North Line of Spacing/Drilling Unit	South Line of Spacing/Drilling Unit	East Line of Spacing/Drilling Unit	West Line of Spacing/Drilling Unit
10544 Feet	9306 Feet	10527 Feet	10520 Feet

Objective Horizons	Pierre Shale Top
Three Forks B1	1972

Proposed	Size	Weight	Depth	Cement Volume	
Surface Casing	9 - 5/8 "	36 Lb./Ft.	2072 Feet	749 Sacks	NOTE: Surface hole must be drilled with fresh water and surface casing must be cemented back to surface.

Proposed	Size	Weight(s)	Longstring Total Depth	Cement Volume	Cement Top	Top Dakota Sand
Longstring Casing	7 - "	29/32 Lb./Ft.	11189 Feet MD 10832 Feet TVD	760 Sacks	3971 Feet	5471 Feet

Base Last Charles Salt (If Applicable)	
9238 Feet	NOTE: Intermediate or longstring casing string must be cemented above the top Dakota Group Sand.

Proposed Logs
Triple Combo: KOP to Kibby GR/Res to BSC GR to surf CND through the Dakota

Drilling Mud Type (Vertical Hole - Below Surface Casing)	Drilling Mud Type (Lateral)
Invert	Salt Water Gel

Survey Type in Vertical Portion of Well	Survey Frequency: Build Section	Survey Frequency: Lateral	Survey Contractor
MWD Every 100 Feet	30 Feet	90 Feet	Ryan

NOTE: A Gamma Ray log must be run to ground surface and a CBL must be run on intermediate or longstring casing string if set.

Surveys are required at least every 30 feet in the build section and every 90 feet in the lateral section of a horizontal well. Measurement inaccuracies are not considered when determining compliance with the spacing/drilling unit boundary setback requirement except in the following scenarios: 1) When the angle between the well bore and the respective boundary is 10 degrees or less; or 2) If Industry standard methods and equipment are not utilized. Consult the applicable field order for exceptions.

If measurement inaccuracies are required to be considered, a 2° MWD measurement inaccuracy will be applied to the horizontal portion of the well bore. This measurement inaccuracy is applied to the well bore from KOP to TD.

REQUIRED ATTACHMENTS: Certified surveyor's plat, horizontal section plat, estimated geological tops, proposed mud/cementing plan, directional plot/plan, $100 fee.

See Page 2 for Comments section and signature block.

COMMENTS, ADDITIONAL INFORMATION, AND/OR LIST OF ATTACHMENTS

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

Lateral 2

KOP Lateral 2 Feet MD	Azimuth Lateral 2 °	Estimated Total Depth Lateral 2 Feet MD / Feet TVD	KOP Coordinates From Well Head From WH / From WH				
Formation Entry Point Coordinates From Well Head From WH / From WH		Bottom Hole Coordinates From Well Head From WH / From WH					
KOP Footages From Nearest Section Line F L / F L		Qtr-Qtr	Section	Township N	Range W	County	
Bottom Hole Footages From Nearest Section Line F L / F L		Qtr-Qtr	Section	Township N	Range W	County	

Lateral 3

KOP Lateral 3 Feet MD	Azimuth Lateral 3 °	Estimated Total Depth Lateral 3 Feet MD / Feet TVD	KOP Coordinates From Well Head From WH / From WH				
Formation Entry Point Coordinates From Well Head From WH / From WH		Bottom Hole Coordinates From Well Head From WH / From WH					
KOP Footages From Nearest Section Line F L / F L		Qtr-Qtr	Section	Township N	Range W	County	
Bottom Hole Footages From Nearest Section Line F L / F L		Qtr-Qtr	Section	Township N	Range W	County	

Lateral 4

KOP Lateral 4 Feet MD	Azimuth Lateral 4 °	Estimated Total Depth Lateral 4 Feet MD / Feet TVD	KOP Coordinates From Well Head From WH / From WH				
Formation Entry Point Coordinates From Well Head From WH / From WH		Bottom Hole Coordinates From Well Head From WH / From WH					
KOP Footages From Nearest Section Line F L / F L		Qtr-Qtr	Section	Township N	Range W	County	
Bottom Hole Footages From Nearest Section Line F L / F L		Qtr-Qtr	Section	Township N	Range W	County	

Lateral 5

KOP Lateral 5 Feet MD	Azimuth Lateral 5 °	Estimated Total Depth Lateral 5 Feet MD / Feet TVD	KOP Coordinates From Well Head From WH / From WH				
Formation Entry Point Coordinates From Well Head From WH / From WH		Bottom Hole Coordinates From Well Head From WH / From WH					
KOP Footages From Nearest Section Line F L / F L		Qtr-Qtr	Section	Township N	Range W	County	
Bottom Hole Footages From Nearest Section Line F L / F L		Qtr-Qtr	Section	Township N	Range W	County	

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

Date **5 / 29 / 2014**

ePermit	Printed Name **Heather McCowan**	Title **Regulatory Assistant**

FOR STATE USE ONLY

Permit and File Number **28658**	API Number **33 - 053 - 06030**
Field **BAKER**	
Pool **BAKKEN**	Permit Type **DEVELOPMENT**

FOR STATE USE ONLY

Date Approved **6 / 17 / 2014**
By **Nathaniel Erbele**
Title **Petroleum Resource Specialist**

Oil and Gas Division

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

Department of Mineral Resources

Lynn D. Helms - Director

North Dakota Industrial Commission

www.oilgas.nd.gov

April 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

600 E Boulevard Ave - Dept 405, Bismarck, North Dakota 58505-0840 Phone (701)328-8020 Fax (701)328-8022

WELL LOCATION PLAT

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"KLINE FEDERAL 5300 41-18 12TX"
434 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

- MONUMENT – RECOVERED
- MONUMENT – NOT RECOVERED

VICINITY MAP

THIS DOCUMENT WAS ORIGINALLY ISSUED AND SEALED BY ROBERT L. PROCIVE, PLS, REGISTRATION NUMBER 2884 ON 4/15/14 AND THE ORIGINAL DOCUMENTS ARE STORED AT THE OFFICES OF INTERSTATE ENGINEERING, INC.

0 1500
1" = 1500'

STAKED ON 4/15/14
VERTICAL CONTROL DATUM WAS BASED UPON CONTROL POINT 4 WITH AN ELEVATION OF 2090.8'

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

ROBERT L. PROCIVE 2884LS

REGISTERED LAND SURVEYOR ROBERT L. PROCIVE 2884 DATE: 4/15/14 NORTH DAKOTA

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INTERSTATE ENGINEERING
Professionals you need, people you trust

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

OASIS PETROLEUM NORTH AMERICA, LLC
WELL LOCATION PLAT
SECTION 18, T153N, R100W

MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H.	Project No.: S14-09-081.02		
Checked By: R.L.P.	Date: APRIL 2014		

Revision No.	Date	By	Description

DRILLING PLAN

OPERATOR	Oasis Petroleum	**COUNTY/STATE**	McKenzie Co., ND
WELL NAME	Kline Federal 5300 41-18 12TX	**RIG**	Nabors B22
WELL TYPE	Horizontal Upper Three Forks		
LOCATION	SWSW 18-153N-100W Surface Location (survey plat): 434' fsl	237' fwl	
EST. T.D.	20,668'	**GROUND ELEV:**	2057 Finished Pad Elev. **Sub Height:** 25
	TOTAL LATERA 9,479'	**KB ELEV:**	2082

PROGNOSIS: Based on 2,082' KB(est)

MARKER		DEPTH (Surf Loc)	DATUM (Surf Loc)
Pierre	NDIC MAP	1,972	110'
Greenhorn		4,646	-2,564'
Mowry		5,057	-2,975'
Dakota		5,471	-3,389'
Rierdon		6,486	-4,404'
Dunham Salt		6,814	-4,732'
Dunham Salt Base		6,929	-4,847'
Spearfish		7,024	-4,942'
Pine Salt		7,283	-5,201'
Pine Salt Base		7,318	-5,236'
Opeche Salt		7,374	-5,292'
Opeche Salt Base		7,403	-5,321'
Broom Creek (Top of Minnelusa Gp.)		7,605	-5,523'
Amsden		7,684	-5,602'
Tyler		7,853	-5,771'
Otter (Base of Minnelusa Gp.)		8,047	-5,965'
Kibbey Lime		8,390	-6,308'
Charles Salt		8,542	-6,460'
UB		9,159	-7,077'
Base Last Salt		9,238	-7,156'
Ratcliffe		9,301	-7,219'
Mission Canyon		9,454	-7,372'
Lodgepole		10,022	-7,940'
Lodgepole Fracture Zone		10,209	-8,127'
False Bakken		10,726	-8,644'
Upper Bakken		10,735	-8,653'
Middle Bakken		10,751	-8,669'
Lower Bakken		10,785	-8,703'
Pronghorn		10,791	-8,709'
Three Forks		10,813	-8,731'
TF Target Top		10,827	-8,745'
TF Target Base		10,837	-8,755'
Claystone		10,838	-8,756'

Dip Rate: -0.1

LOGS:

	Type	Interval
OH Logs:	Triple Combo KOP to Kibby (or min run of 1800' whichever is greater); GR/Res to BSC; GR to surf; CND through the Dakota	
CBL/GR:	Above top of cement/GR to base of casing	
MWD GR:	KOP to lateral TD	

DEVIATION:

Surf: 3 deg. max., 1 deg / 100'; srvy every 500'
Prod: 5 deg. max., 1 deg / 100'; srvy every 100'

DST'S: None planned

CORES: None planned

MUDLOGGING:

Two-Man: 8,342' ~200' above the Charles (Kibbey) to Casing point; Casing point to TD

30' samples at direction of wellsite geologist; 10' through target @ curve land

BOP: 11" 5000 psi blind, pipe & annular

Max. Anticipated BHP: 4692

Surface Formation: *Glacial till*

MUD:	Interval		Type	WT	Vis	WL	Remarks
Surface:	0' -	2,072'	FW/Gel - Lime Sweeps	8.4-9.0	28-32	NC	Circ Mud Tanks
Intermediate:	2,072' -	11,189'	Invert	9.5-10.4	40-50	30+HtHp	Circ Mud Tanks
Lateral:	11,189' -	20,668'	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"	2,072'		To Surface	12	100' into Pierre
Intermediate:	7"	29/32#	8-3/4"	11,189'		3971	24	1500' above Dakota
Production Liner:	4.5"	11.6#	6"	20,668'	TOL @ 10,305'			50' above KOP

PROBABLE PLUGS, IF REQ'D:

OTHER:

	MD	TVD	FNL/FSL	FEL/FWL	S-T-R	AZI
Surface:	2,072	2,072	434' FSL	237' FWL	SEC 18-T153N-R100W	Survey Company:
KOP:	10,355'	10,355'	434' FSL	287' FWL	SEC 18-T153N-R100W	Build Rate: 12 deg /100'
EOC:	11,104'	10,832'	306' FSL	746' FWL	SEC 18-T153N-R100W	110.00
Casing Point:	11,189'	10,832'	244' FSL	816' FWL	SEC 18-T153N-R100W	107.02
Upper Three Forks Lateral TD:	20,668'	10,849'	200' FSL	200' FEL	SEC 17-T153N-R100W	89.82

Comments:

Request a Sundry for an Open Hole Log Waiver

Exception well: Oasis Petroleum's Kline Federal 5300 11-18H (153N 100W 18 NW NW)

35 packers, 35 sleeves, no frac string

Oasis Petroleum does not use Diesel Fuel, as defined by the US EPA in the list below, in our hydraulic fracture operations.
68334-30-5 (Primary Name: Fuels, diesel) 68476-34-6 (Primary Name: Fuels, diesel, No. 2)68476-30-2 (Primary Name: Fuel oil No. 2)
68476-31-3 (Primary Name: Fuel oil, No. 4)8008-20-6 (Primary Name: Kerosene)

Geology: M.Steed 4/23/2014 **Engineering:** hlbader rpm 6/17/14

Oasis Petroleum
Well Summary
Kline Federal 5300 41-18 12TX
Section 18 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**
9-5/8”	0’ to 2,072’	36	J-55	LTC	8.921"	8.765"	3400	4530	5660

Interval	Description	Collapse	Burst	Tension	Cost per ft
		(psi) a	(psi) b	(1000 lbs) c	
0’ to 2,072’	9-5/8", 36#, J-55, LTC, 8rd	2020 / 2.08	3520 / 3.63	453 / 2.76	

API Rating & Safety Factor

a) Based on full casing evacuation with 9 ppg fluid on backside (2,072' setting depth).

b) Burst pressure based on 9 ppg fluid with no fluid on backside (2,072' setting depth).

c) Based on string weight in 9 ppg fluid at 2,072' TVD plus 100k# overpull. (Buoyed weight equals 64k 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: **449 sks** (232 bbls) Conventional system with 94 lb/sk cement, 4% extender, 2% expanding agent, 2% $CaCl_2$ and 0.25 lb/sk lost circulation control agent

Tail Slurry: **300 sks** (62 bbls) Conventional system with 94 lb/sk cement, 3% NaCl, and 0.25 lb/sk lost circulation control agent

Oasis Petroleum
Well Summary
Kline Federal 5300 41-18 12TX
Section 18 T153N R100W
McKenzie County, ND

INTERMEDIATE CASING AND CEMENT DESIGN

							Make-up Torque (ft-lbs)		
Size	**Interval**	**Weight**	**Grade**	**Coupling**	**I.D.**	**Drift**	**Minimum**	**Optimum**	**Max**
7”	0' – 6,614'	29	P-110	LTC	6.184”	6.059”	5,980	7,970	8,770
7”	6,614' – 10,355'	32	HCP-110	LTC	6.094”	6.000***	6,730	8,970	9,870
7”	10,355' – 11,189'	29	P-110	LTC	6.184”	6.059”	5,980	7,970	8,770

***Special drift

Interval	Length	Description	Collapse	Burst	Tension
			(psi) a	(psi) b	(1000 lbs) c
0' – 6,614'	6,614’	7”, 29#, P-110, LTC, 8rd	8530 / 2.48*	11220 / 1.19	797 / 2.08
6,614' – 10,355'	3,741’	7”, 32#, HCP-110, LTC, 8rd	11820 / 2.19*	12460 / 1.29	
6,614' – 10,355'	3,741’	7”, 32#, HCP-110, LTC, 8rd	11820 / 1.07**	12460 / 1.29	
10,355' – 11,189'	834’	7”, 29 lb, P-110, LTC, 8rd	8530 / 1.51*	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. (Bottom of last salt 9,238’ TVD)

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 10,832' TVD.

c) Based on string weight in 10 ppg fluid, (284k 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): **170 bbls** Saltwater
20 bbls CW8 System
10 bbls Fresh Water

Lead Slurry: **177 sks** (82 bbls) Conventional system with 47 lb/sk cement, 10% NaCl, 34 lb/sk extender, 10% D020 extender, 1% D079 extender, 1% anti-settling agent, 1% fluid loss agent, 0.2% anti-foam agent, 0.7% retarder, 0.125 lb/sk lost circulation control agent, and 0.3% dispersant

Tail Slurry: **593 sks** (173 bbls) Conventional system with 94 lb/sk cement, 10% NaCl, 35% Silica, 0.2% fluid loss agent, 0.8% dispersant, 0.125 lb/sk lost circulation control agent and 0.3% retarder

Oasis Petroleum
Well Summary
Kline Federal 5300 41-18 12TX
Section 18 T153N R100W
McKenzie County, ND

PRODUCTION LINER

							Make-up Torque (ft-lbs)		
Size	**Interval**	**Weight**	**Grade**	**Coupling**	**I.D.**	**Drift**	**Minimum**	**Optimum**	**Max**
4-1/2”	10,305' – 20,668'	11.6	P-110	BTC	4.000"	3.875"			

Interval	Description	Collapse	Burst	Tension	Cost per ft
		(psi) **a**	(psi) **b**	(1000 lbs) **c**	
10,305' – 20,668'	4-1/2”, 11.6 lb, P-110, BTC, 8rd	7560 / 1.41	10690 / 1.10	385 / 1.90	

API Rating & Safety Factor

a) Based on full casing evacuation with 9.5 ppg fluid on backside @ 10,832' TVD.

b) Burst pressure based on 9000 psi treating pressure with 10.2 ppg internal fluid gradient and 9 ppg external fluid gradient @ 10,832' TVD.

c) Based on string weight in 9.5 ppg fluid (Buoyed weight: 103k lbs.) plus 100k lbs overpull.

Oasis Petroleum

Indian Hills
153N-100W-17/18
Kline Federal 5300 41-18 12TX

Kline Federal 5300 41-18 12TX

Plan: Design #2

Standard Planning Report

17 June, 2014

RYAN DIRECTIONAL SERVICES
A NABORS COMPANY

Project: Indian Hills
Site: 153N-100W-17/18
Well: Kline Federal 5300 41-18 12TX
Wellbore: Kline Federal 5300 41-18 12TX
Design: Design #2

OASIS PETROLEUM

WELL DETAILS: Kline Federal 5300 41-18 12TX

Ground Level: 2057.0

Northing	Easting	Latitude	Longitude
405136.64	1209968.21	48° 4' 7.550 N	103° 36' 11.950 W

CASING DETAILS

TVD	MD	Name	Size
10832.2	11189.0	7"	7

Azimuths to True North
Magnetic North: 8.27°

Magnetic Field
Strength: 56437.1snT
Dip Angle: 72.99°
Date: 5/23/2014
Model: IGRF2010

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	
2200.0	0.00	0.00	2200.0	0.0	0.0	0.00	
2216.7	0.50	90.00	2216.7	0.0	0.1	3.00	
7926.7	0.50	90.00	7926.4	0.0	49.9	0.00	
7943.3	0.00	0.00	7943.1	0.0	50.0	3.00	
10354.8	0.00	0.00	10354.6	0.0	50.0	0.00	
11104.0	89.90	110.00	10832.0	-163.0	497.9	12.00	
11680.4	89.90	89.82	10833.1	-261.7	1062.8	3.50	
20667.7	89.90	89.82	10848.7	-234.0	10050.0	0.00	5300 41-18 12TX PBHL

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Company:	Oasis Petroleum	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site:	153N-100W-17/18	**North Reference:**	True
Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Kline Federal 5300 41-18 12TX		
Design:	Design #2		

Project Indian Hills

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	North Dakota Northern Zone		

Site 153N-100W-17/18

Site Position:		**Northing:**	408,962.44 usft	**Latitude:**	48° 4' 45.380 N
From:	Lat/Long	**Easting:**	1,210,229.18 usft	**Longitude:**	103° 36' 10.380 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	-2.31 °

Well Kline Federal 5300 41-18 12TX

Well Position	**+N/-S**	-3,833.2 usft	**Northing:**	405,136.63 usft	**Latitude:**	48° 4' 7.550 N
	+E/-W	-106.6 usft	**Easting:**	1,209,968.21 usft	**Longitude:**	103° 36' 11.950 W
Position Uncertainty		2.0 usft	**Wellhead Elevation:**		**Ground Level:**	2,057.0 usft

Wellbore Kline Federal 5300 41-18 12TX

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/23/2014	8.27	72.99	56,437

Design Design #2

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	90.00

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	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,216.7	0.50	90.00	2,216.7	0.0	0.1	3.00	3.00	0.00	90.00	
7,926.7	0.50	90.00	7,926.4	0.0	49.9	0.00	0.00	0.00	0.00	
7,943.3	0.00	0.00	7,943.1	0.0	50.0	3.00	-3.00	0.00	180.00	
10,354.8	0.00	0.00	10,354.6	0.0	50.0	0.00	0.00	0.00	0.00	
11,104.0	89.90	110.00	10,832.0	-163.0	497.9	12.00	12.00	0.00	110.00	
11,680.4	89.90	89.82	10,833.1	-261.7	1,062.8	3.50	0.00	-3.50	-90.02	
20,667.7	89.90	89.82	10,848.7	-234.0	10,050.0	0.00	0.00	0.00	0.00	5300 41-18 12TX PBI

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Company:	Oasis Petroleum	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site:	153N-100W-17/18	**North Reference:**	True
Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Kline Federal 5300 41-18 12TX		
Design:	Design #2		

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)
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,216.7	0.50	90.00	2,216.7	0.0	0.1	0.1	3.00	3.00	0.00
2,300.0	0.50	90.00	2,300.0	0.0	0.8	0.8	0.00	0.00	0.00
2,400.0	0.50	90.00	2,400.0	0.0	1.7	1.7	0.00	0.00	0.00
2,500.0	0.50	90.00	2,500.0	0.0	2.5	2.5	0.00	0.00	0.00
2,600.0	0.50	90.00	2,600.0	0.0	3.4	3.4	0.00	0.00	0.00
2,700.0	0.50	90.00	2,700.0	0.0	4.3	4.3	0.00	0.00	0.00
2,800.0	0.50	90.00	2,800.0	0.0	5.2	5.2	0.00	0.00	0.00
2,900.0	0.50	90.00	2,900.0	0.0	6.0	6.0	0.00	0.00	0.00
3,000.0	0.50	90.00	3,000.0	0.0	6.9	6.9	0.00	0.00	0.00
3,100.0	0.50	90.00	3,100.0	0.0	7.8	7.8	0.00	0.00	0.00
3,200.0	0.50	90.00	3,200.0	0.0	8.7	8.7	0.00	0.00	0.00
3,300.0	0.50	90.00	3,300.0	0.0	9.5	9.5	0.00	0.00	0.00
3,400.0	0.50	90.00	3,400.0	0.0	10.4	10.4	0.00	0.00	0.00
3,500.0	0.50	90.00	3,500.0	0.0	11.3	11.3	0.00	0.00	0.00
3,600.0	0.50	90.00	3,599.9	0.0	12.1	12.1	0.00	0.00	0.00
3,700.0	0.50	90.00	3,699.9	0.0	13.0	13.0	0.00	0.00	0.00
3,800.0	0.50	90.00	3,799.9	0.0	13.9	13.9	0.00	0.00	0.00
3,900.0	0.50	90.00	3,899.9	0.0	14.8	14.8	0.00	0.00	0.00
4,000.0	0.50	90.00	3,999.9	0.0	15.6	15.6	0.00	0.00	0.00
4,100.0	0.50	90.00	4,099.9	0.0	16.5	16.5	0.00	0.00	0.00
4,200.0	0.50	90.00	4,199.9	0.0	17.4	17.4	0.00	0.00	0.00
4,300.0	0.50	90.00	4,299.9	0.0	18.3	18.3	0.00	0.00	0.00
4,400.0	0.50	90.00	4,399.9	0.0	19.1	19.1	0.00	0.00	0.00
4,500.0	0.50	90.00	4,499.9	0.0	20.0	20.0	0.00	0.00	0.00
4,600.0	0.50	90.00	4,599.9	0.0	20.9	20.9	0.00	0.00	0.00
4,646.1	0.50	90.00	4,646.0	0.0	21.3	21.3	0.00	0.00	0.00
Greenhorn									
4,700.0	0.50	90.00	4,699.9	0.0	21.7	21.7	0.00	0.00	0.00
4,800.0	0.50	90.00	4,799.9	0.0	22.6	22.6	0.00	0.00	0.00
4,900.0	0.50	90.00	4,899.9	0.0	23.5	23.5	0.00	0.00	0.00
5,000.0	0.50	90.00	4,999.9	0.0	24.4	24.4	0.00	0.00	0.00
5,057.1	0.50	90.00	5,057.0	0.0	24.9	24.9	0.00	0.00	0.00
Mowry									
5,100.0	0.50	90.00	5,099.9	0.0	25.2	25.2	0.00	0.00	0.00
5,200.0	0.50	90.00	5,199.9	0.0	26.1	26.1	0.00	0.00	0.00
5,300.0	0.50	90.00	5,299.9	0.0	27.0	27.0	0.00	0.00	0.00
5,400.0	0.50	90.00	5,399.9	0.0	27.9	27.9	0.00	0.00	0.00
5,471.1	0.50	90.00	5,471.0	0.0	28.5	28.5	0.00	0.00	0.00
Dakota									
5,500.0	0.50	90.00	5,499.9	0.0	28.7	28.7	0.00	0.00	0.00
5,600.0	0.50	90.00	5,599.9	0.0	29.6	29.6	0.00	0.00	0.00
5,700.0	0.50	90.00	5,699.9	0.0	30.5	30.5	0.00	0.00	0.00
5,800.0	0.50	90.00	5,799.9	0.0	31.3	31.3	0.00	0.00	0.00
5,900.0	0.50	90.00	5,899.9	0.0	32.2	32.2	0.00	0.00	0.00
6,000.0	0.50	90.00	5,999.9	0.0	33.1	33.1	0.00	0.00	0.00
6,100.0	0.50	90.00	6,099.9	0.0	34.0	34.0	0.00	0.00	0.00
6,200.0	0.50	90.00	6,199.8	0.0	34.8	34.8	0.00	0.00	0.00
6,300.0	0.50	90.00	6,299.8	0.0	35.7	35.7	0.00	0.00	0.00
6,400.0	0.50	90.00	6,399.8	0.0	36.6	36.6	0.00	0.00	0.00
6,486.2	0.50	90.00	6,486.0	0.0	37.3	37.3	0.00	0.00	0.00
Rierdon									
6,500.0	0.50	90.00	6,499.8	0.0	37.5	37.5	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Company:	Oasis Petroleum	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site:	153N-100W-17/18	**North Reference:**	True
Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Kline Federal 5300 41-18 12TX		
Design:	Design #2		

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)
6,600.0	0.50	90.00	6,599.8	0.0	38.3	38.3	0.00	0.00	0.00
6,700.0	0.50	90.00	6,699.8	0.0	39.2	39.2	0.00	0.00	0.00
6,800.0	0.50	90.00	6,799.8	0.0	40.1	40.1	0.00	0.00	0.00
6,814.2	0.50	90.00	6,814.0	0.0	40.2	40.2	0.00	0.00	0.00
Dunham Salt									
6,900.0	0.50	90.00	6,899.8	0.0	40.9	40.9	0.00	0.00	0.00
6,929.2	0.50	90.00	6,929.0	0.0	41.2	41.2	0.00	0.00	0.00
Dunham Salt Base									
7,000.0	0.50	90.00	6,999.8	0.0	41.8	41.8	0.00	0.00	0.00
7,024.2	0.50	90.00	7,024.0	0.0	42.0	42.0	0.00	0.00	0.00
Spearfish									
7,100.0	0.50	90.00	7,099.8	0.0	42.7	42.7	0.00	0.00	0.00
7,200.0	0.50	90.00	7,199.8	0.0	43.6	43.6	0.00	0.00	0.00
7,283.2	0.50	90.00	7,283.0	0.0	44.3	44.3	0.00	0.00	0.00
Pine Salt									
7,300.0	0.50	90.00	7,299.8	0.0	44.4	44.4	0.00	0.00	0.00
7,318.2	0.50	90.00	7,318.0	0.0	44.6	44.6	0.00	0.00	0.00
Pine Salt Base									
7,374.2	0.50	90.00	7,374.0	0.0	45.1	45.1	0.00	0.00	0.00
Opeche Salt									
7,400.0	0.50	90.00	7,399.8	0.0	45.3	45.3	0.00	0.00	0.00
7,403.2	0.50	90.00	7,403.0	0.0	45.3	45.3	0.00	0.00	0.00
Opeche Salt Base									
7,500.0	0.50	90.00	7,499.8	0.0	46.2	46.2	0.00	0.00	0.00
7,600.0	0.50	90.00	7,599.8	0.0	47.1	47.1	0.00	0.00	0.00
7,605.2	0.50	90.00	7,605.0	0.0	47.1	47.1	0.00	0.00	0.00
Broom Creek (Top of Minnelusa Gp.)									
7,684.2	0.50	90.00	7,684.0	0.0	47.8	47.8	0.00	0.00	0.00
Amsden									
7,700.0	0.50	90.00	7,699.8	0.0	47.9	47.9	0.00	0.00	0.00
7,800.0	0.50	90.00	7,799.8	0.0	48.8	48.8	0.00	0.00	0.00
7,853.2	0.50	90.00	7,853.0	0.0	49.3	49.3	0.00	0.00	0.00
Tyler									
7,900.0	0.50	90.00	7,899.8	0.0	49.7	49.7	0.00	0.00	0.00
7,926.7	0.50	90.00	7,926.4	0.0	49.9	49.9	0.00	0.00	0.00
7,943.3	0.00	0.00	7,943.1	0.0	50.0	50.0	3.00	-3.00	0.00
8,000.0	0.00	0.00	7,999.8	0.0	50.0	50.0	0.00	0.00	0.00
8,047.2	0.00	0.00	8,047.0	0.0	50.0	50.0	0.00	0.00	0.00
Otter (Base of Minnelusa Gp.)									
8,100.0	0.00	0.00	8,099.8	0.0	50.0	50.0	0.00	0.00	0.00
8,200.0	0.00	0.00	8,199.8	0.0	50.0	50.0	0.00	0.00	0.00
8,300.0	0.00	0.00	8,299.8	0.0	50.0	50.0	0.00	0.00	0.00
8,390.2	0.00	0.00	8,390.0	0.0	50.0	50.0	0.00	0.00	0.00
Kibbey Lime									
8,400.0	0.00	0.00	8,399.8	0.0	50.0	50.0	0.00	0.00	0.00
8,500.0	0.00	0.00	8,499.8	0.0	50.0	50.0	0.00	0.00	0.00
8,542.2	0.00	0.00	8,542.0	0.0	50.0	50.0	0.00	0.00	0.00
Charles Salt									
8,600.0	0.00	0.00	8,599.8	0.0	50.0	50.0	0.00	0.00	0.00
8,700.0	0.00	0.00	8,699.8	0.0	50.0	50.0	0.00	0.00	0.00
8,800.0	0.00	0.00	8,799.8	0.0	50.0	50.0	0.00	0.00	0.00
8,900.0	0.00	0.00	8,899.8	0.0	50.0	50.0	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
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Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site:	153N-100W-17/18	**North Reference:**	True
Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Kline Federal 5300 41-18 12TX		
Design:	Design #2		

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)
9,000.0	0.00	0.00	8,999.8	0.0	50.0	50.0	0.00	0.00	0.00
9,100.0	0.00	0.00	9,099.8	0.0	50.0	50.0	0.00	0.00	0.00
9,159.2	0.00	0.00	9,159.0	0.0	50.0	50.0	0.00	0.00	0.00
UB									
9,200.0	0.00	0.00	9,199.8	0.0	50.0	50.0	0.00	0.00	0.00
9,238.2	0.00	0.00	9,238.0	0.0	50.0	50.0	0.00	0.00	0.00
Base Last Salt									
9,300.0	0.00	0.00	9,299.8	0.0	50.0	50.0	0.00	0.00	0.00
9,301.2	0.00	0.00	9,301.0	0.0	50.0	50.0	0.00	0.00	0.00
Ratcliffe									
9,400.0	0.00	0.00	9,399.8	0.0	50.0	50.0	0.00	0.00	0.00
9,454.2	0.00	0.00	9,454.0	0.0	50.0	50.0	0.00	0.00	0.00
Mission Canyon									
9,500.0	0.00	0.00	9,499.8	0.0	50.0	50.0	0.00	0.00	0.00
9,600.0	0.00	0.00	9,599.8	0.0	50.0	50.0	0.00	0.00	0.00
9,700.0	0.00	0.00	9,699.8	0.0	50.0	50.0	0.00	0.00	0.00
9,800.0	0.00	0.00	9,799.8	0.0	50.0	50.0	0.00	0.00	0.00
9,900.0	0.00	0.00	9,899.8	0.0	50.0	50.0	0.00	0.00	0.00
10,000.0	0.00	0.00	9,999.8	0.0	50.0	50.0	0.00	0.00	0.00
10,022.2	0.00	0.00	10,022.0	0.0	50.0	50.0	0.00	0.00	0.00
Lodgepole									
10,100.0	0.00	0.00	10,099.8	0.0	50.0	50.0	0.00	0.00	0.00
10,200.0	0.00	0.00	10,199.8	0.0	50.0	50.0	0.00	0.00	0.00
10,209.2	0.00	0.00	10,209.0	0.0	50.0	50.0	0.00	0.00	0.00
Lodgepole Fracture Zone									
10,300.0	0.00	0.00	10,299.8	0.0	50.0	50.0	0.00	0.00	0.00
10,354.8	0.00	0.00	10,354.6	0.0	50.0	50.0	0.00	0.00	0.00
KOP Build 12°/100'									
10,375.0	2.42	110.00	10,374.8	-0.1	50.4	50.4	12.00	12.00	0.00
10,400.0	5.42	110.00	10,399.7	-0.7	52.0	52.0	12.00	12.00	0.00
10,425.0	8.42	110.00	10,424.5	-1.8	54.8	54.8	12.00	12.00	0.00
10,450.0	11.42	110.00	10,449.2	-3.2	58.9	58.9	12.00	12.00	0.00
10,475.0	14.42	110.00	10,473.5	-5.1	64.1	64.1	12.00	12.00	0.00
10,500.0	17.42	110.00	10,497.6	-7.5	70.6	70.6	12.00	12.00	0.00
10,525.0	20.42	110.00	10,521.2	-10.3	78.2	78.2	12.00	12.00	0.00
10,550.0	23.42	110.00	10,544.4	-13.5	86.9	86.9	12.00	12.00	0.00
10,575.0	26.42	110.00	10,567.1	-17.1	96.8	96.8	12.00	12.00	0.00
10,600.0	29.42	110.00	10,589.1	-21.1	107.8	107.8	12.00	12.00	0.00
10,625.0	32.42	110.00	10,610.6	-25.5	119.9	119.9	12.00	12.00	0.00
10,650.0	35.42	110.00	10,631.3	-30.2	133.0	133.0	12.00	12.00	0.00
10,675.0	38.42	110.00	10,651.3	-35.4	147.1	147.1	12.00	12.00	0.00
10,700.0	41.42	110.00	10,670.5	-40.9	162.2	162.2	12.00	12.00	0.00
10,725.0	44.42	110.00	10,688.8	-46.7	178.2	178.2	12.00	12.00	0.00
10,750.0	47.42	110.00	10,706.2	-52.8	195.1	195.1	12.00	12.00	0.00
10,775.0	50.42	110.00	10,722.6	-59.3	212.8	212.8	12.00	12.00	0.00
10,780.4	51.07	110.00	10,726.0	-60.7	216.7	216.7	12.00	12.00	0.00
False Bakken									
10,795.0	52.82	110.00	10,735.0	-64.6	227.5	227.5	12.00	12.00	0.00
Upper Bakken									
10,800.0	53.42	110.00	10,738.0	-66.0	231.3	231.3	12.00	12.00	0.00
10,822.5	56.13	110.00	10,751.0	-72.3	248.6	248.6	12.00	12.00	0.00
Middle Bakken									
10,825.0	56.42	110.00	10,752.4	-73.0	250.5	250.5	12.00	12.00	0.00

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Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site:	153N-100W-17/18	**North Reference:**	True
Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Kline Federal 5300 41-18 12TX		
Design:	Design #2		

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)
10,850.0	59.42	110.00	10,765.7	-80.2	270.4	270.4	12.00	12.00	0.00
10,875.0	62.42	110.00	10,777.8	-87.7	290.9	290.9	12.00	12.00	0.00
10,891.1	64.35	110.00	10,785.0	-92.6	304.4	304.4	12.00	12.00	0.00
Lower Bakken									
10,900.0	65.42	110.00	10,788.8	-95.4	312.0	312.0	12.00	12.00	0.00
10,905.4	66.07	110.00	10,791.0	-97.1	316.6	316.6	12.00	12.00	0.00
Pronghorn									
10,925.0	68.42	110.00	10,798.6	-103.3	333.7	333.7	12.00	12.00	0.00
10,950.0	71.42	110.00	10,807.2	-111.3	355.7	355.7	12.00	12.00	0.00
10,969.5	73.76	110.00	10,813.0	-117.6	373.2	373.2	12.00	12.00	0.00
Three Forks									
10,975.0	74.42	110.00	10,814.5	-119.5	378.2	378.2	12.00	12.00	0.00
11,000.0	77.42	110.00	10,820.6	-127.7	401.0	401.0	12.00	12.00	0.00
11,025.0	80.42	110.00	10,825.4	-136.1	424.0	424.0	12.00	12.00	0.00
11,035.3	81.66	110.00	10,827.0	-139.6	433.6	433.6	12.00	12.00	0.00
TF Target Top									
11,050.0	83.42	110.00	10,828.9	-144.6	447.3	447.3	12.00	12.00	0.00
11,075.0	86.42	110.00	10,831.1	-153.1	470.7	470.7	12.00	12.00	0.00
11,100.0	89.42	110.00	10,832.0	-161.7	494.1	494.1	12.00	12.00	0.00
11,104.0	89.90	110.00	10,832.0	-163.0	497.9	497.9	11.90	11.90	0.00
EOC									
11,189.0	89.90	107.02	10,832.2	-190.0	578.5	578.5	3.50	0.00	-3.50
7"									
11,200.0	89.90	106.64	10,832.2	-193.2	589.0	589.0	3.50	0.00	-3.50
11,300.0	89.90	103.14	10,832.4	-218.9	685.6	685.6	3.50	0.00	-3.50
11,400.0	89.90	99.64	10,832.6	-238.6	783.7	783.7	3.50	0.00	-3.50
11,500.0	89.90	96.14	10,832.7	-252.4	882.7	882.7	3.50	0.00	-3.50
11,600.0	89.90	92.64	10,832.9	-260.0	982.4	982.4	3.50	0.00	-3.50
11,680.4	89.90	89.82	10,833.1	-261.7	1,062.8	1,062.8	3.50	0.00	-3.50
11,700.0	89.90	89.82	10,833.1	-261.7	1,082.4	1,082.4	0.00	0.00	0.00
11,800.0	89.90	89.82	10,833.3	-261.4	1,182.4	1,182.4	0.00	0.00	0.00
11,900.0	89.90	89.82	10,833.4	-261.1	1,282.4	1,282.4	0.00	0.00	0.00
12,000.0	89.90	89.82	10,833.6	-260.7	1,382.4	1,382.4	0.00	0.00	0.00
12,100.0	89.90	89.82	10,833.8	-260.4	1,482.4	1,482.4	0.00	0.00	0.00
12,200.0	89.90	89.82	10,834.0	-260.1	1,582.4	1,582.4	0.00	0.00	0.00
12,300.0	89.90	89.82	10,834.1	-259.8	1,682.4	1,682.4	0.00	0.00	0.00
12,400.0	89.90	89.82	10,834.3	-259.5	1,782.4	1,782.4	0.00	0.00	0.00
12,500.0	89.90	89.82	10,834.5	-259.2	1,882.4	1,882.4	0.00	0.00	0.00
12,600.0	89.90	89.82	10,834.7	-258.9	1,982.4	1,982.4	0.00	0.00	0.00
12,700.0	89.90	89.82	10,834.8	-258.6	2,082.4	2,082.4	0.00	0.00	0.00
12,800.0	89.90	89.82	10,835.0	-258.3	2,182.4	2,182.4	0.00	0.00	0.00
12,900.0	89.90	89.82	10,835.2	-258.0	2,282.4	2,282.4	0.00	0.00	0.00
13,000.0	89.90	89.82	10,835.4	-257.7	2,382.4	2,382.4	0.00	0.00	0.00
13,100.0	89.90	89.82	10,835.5	-257.4	2,482.4	2,482.4	0.00	0.00	0.00
13,200.0	89.90	89.82	10,835.7	-257.0	2,582.3	2,582.3	0.00	0.00	0.00
13,300.0	89.90	89.82	10,835.9	-256.7	2,682.3	2,682.3	0.00	0.00	0.00
13,400.0	89.90	89.82	10,836.1	-256.4	2,782.3	2,782.3	0.00	0.00	0.00
13,500.0	89.90	89.82	10,836.2	-256.1	2,882.3	2,882.3	0.00	0.00	0.00
13,600.0	89.90	89.82	10,836.4	-255.8	2,982.3	2,982.3	0.00	0.00	0.00
13,700.0	89.90	89.82	10,836.6	-255.5	3,082.3	3,082.3	0.00	0.00	0.00
13,800.0	89.90	89.82	10,836.7	-255.2	3,182.3	3,182.3	0.00	0.00	0.00
13,900.0	89.90	89.82	10,836.9	-254.9	3,282.3	3,282.3	0.00	0.00	0.00
13,943.9	89.90	89.82	10,837.0	-254.7	3,326.2	3,326.2	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Company:	Oasis Petroleum	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site:	153N-100W-17/18	**North Reference:**	True
Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Kline Federal 5300 41-18 12TX		
Design:	Design #2		

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)
TF Target Base									
14,000.0	89.90	89.82	10,837.1	-254.6	3,382.3	3,382.3	0.00	0.00	0.00
14,100.0	89.90	89.82	10,837.3	-254.3	3,482.3	3,482.3	0.00	0.00	0.00
14,200.0	89.90	89.82	10,837.4	-254.0	3,582.3	3,582.3	0.00	0.00	0.00
14,300.0	89.90	89.82	10,837.6	-253.7	3,682.3	3,682.3	0.00	0.00	0.00
14,400.0	89.90	89.82	10,837.8	-253.3	3,782.3	3,782.3	0.00	0.00	0.00
14,500.0	89.90	89.82	10,838.0	-253.0	3,882.3	3,882.3	0.00	0.00	0.00
14,518.6	89.90	89.82	10,838.0	-253.0	3,900.9	3,900.9	0.00	0.00	0.00
Claystone									
14,600.0	89.90	89.82	10,838.1	-252.7	3,982.3	3,982.3	0.00	0.00	0.00
14,700.0	89.90	89.82	10,838.3	-252.4	4,082.3	4,082.3	0.00	0.00	0.00
14,800.0	89.90	89.82	10,838.5	-252.1	4,182.3	4,182.3	0.00	0.00	0.00
14,900.0	89.90	89.82	10,838.7	-251.8	4,282.3	4,282.3	0.00	0.00	0.00
15,000.0	89.90	89.82	10,838.8	-251.5	4,382.3	4,382.3	0.00	0.00	0.00
15,100.0	89.90	89.82	10,839.0	-251.2	4,482.3	4,482.3	0.00	0.00	0.00
15,200.0	89.90	89.82	10,839.2	-250.9	4,582.3	4,582.3	0.00	0.00	0.00
15,300.0	89.90	89.82	10,839.4	-250.6	4,682.3	4,682.3	0.00	0.00	0.00
15,400.0	89.90	89.82	10,839.5	-250.3	4,782.3	4,782.3	0.00	0.00	0.00
15,500.0	89.90	89.82	10,839.7	-249.9	4,882.3	4,882.3	0.00	0.00	0.00
15,600.0	89.90	89.82	10,839.9	-249.6	4,982.3	4,982.3	0.00	0.00	0.00
15,700.0	89.90	89.82	10,840.1	-249.3	5,082.3	5,082.3	0.00	0.00	0.00
15,800.0	89.90	89.82	10,840.2	-249.0	5,182.3	5,182.3	0.00	0.00	0.00
15,900.0	89.90	89.82	10,840.4	-248.7	5,282.3	5,282.3	0.00	0.00	0.00
16,000.0	89.90	89.82	10,840.6	-248.4	5,382.3	5,382.3	0.00	0.00	0.00
16,100.0	89.90	89.82	10,840.8	-248.1	5,482.3	5,482.3	0.00	0.00	0.00
16,200.0	89.90	89.82	10,840.9	-247.8	5,582.3	5,582.3	0.00	0.00	0.00
16,300.0	89.90	89.82	10,841.1	-247.5	5,682.3	5,682.3	0.00	0.00	0.00
16,400.0	89.90	89.82	10,841.3	-247.2	5,782.3	5,782.3	0.00	0.00	0.00
16,500.0	89.90	89.82	10,841.4	-246.9	5,882.3	5,882.3	0.00	0.00	0.00
16,600.0	89.90	89.82	10,841.6	-246.6	5,982.3	5,982.3	0.00	0.00	0.00
16,700.0	89.90	89.82	10,841.8	-246.2	6,082.3	6,082.3	0.00	0.00	0.00
16,800.0	89.90	89.82	10,842.0	-245.9	6,182.3	6,182.3	0.00	0.00	0.00
16,900.0	89.90	89.82	10,842.1	-245.6	6,282.3	6,282.3	0.00	0.00	0.00
17,000.0	89.90	89.82	10,842.3	-245.3	6,382.3	6,382.3	0.00	0.00	0.00
17,100.0	89.90	89.82	10,842.5	-245.0	6,482.3	6,482.3	0.00	0.00	0.00
17,200.0	89.90	89.82	10,842.7	-244.7	6,582.3	6,582.3	0.00	0.00	0.00
17,300.0	89.90	89.82	10,842.8	-244.4	6,682.3	6,682.3	0.00	0.00	0.00
17,400.0	89.90	89.82	10,843.0	-244.1	6,782.3	6,782.3	0.00	0.00	0.00
17,500.0	89.90	89.82	10,843.2	-243.8	6,882.3	6,882.3	0.00	0.00	0.00
17,600.0	89.90	89.82	10,843.4	-243.5	6,982.3	6,982.3	0.00	0.00	0.00
17,700.0	89.90	89.82	10,843.5	-243.2	7,082.3	7,082.3	0.00	0.00	0.00
17,800.0	89.90	89.82	10,843.7	-242.8	7,182.3	7,182.3	0.00	0.00	0.00
17,900.0	89.90	89.82	10,843.9	-242.5	7,282.3	7,282.3	0.00	0.00	0.00
18,000.0	89.90	89.82	10,844.1	-242.2	7,382.3	7,382.3	0.00	0.00	0.00
18,100.0	89.90	89.82	10,844.2	-241.9	7,482.3	7,482.3	0.00	0.00	0.00
18,200.0	89.90	89.82	10,844.4	-241.6	7,582.3	7,582.3	0.00	0.00	0.00
18,300.0	89.90	89.82	10,844.6	-241.3	7,682.3	7,682.3	0.00	0.00	0.00
18,400.0	89.90	89.82	10,844.8	-241.0	7,782.3	7,782.3	0.00	0.00	0.00
18,500.0	89.90	89.82	10,844.9	-240.7	7,882.3	7,882.3	0.00	0.00	0.00
18,600.0	89.90	89.82	10,845.1	-240.4	7,982.3	7,982.3	0.00	0.00	0.00
18,700.0	89.90	89.82	10,845.3	-240.1	8,082.3	8,082.3	0.00	0.00	0.00
18,800.0	89.90	89.82	10,845.4	-239.8	8,182.3	8,182.3	0.00	0.00	0.00
18,900.0	89.90	89.82	10,845.6	-239.5	8,282.3	8,282.3	0.00	0.00	0.00
19,000.0	89.90	89.82	10,845.8	-239.1	8,382.3	8,382.3	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Company:	Oasis Petroleum	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site:	153N-100W-17/18	**North Reference:**	True
Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Kline Federal 5300 41-18 12TX		
Design:	Design #2		

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	89.90	89.82	10,846.0	-238.8	8,482.3	8,482.3	0.00	0.00	0.00
19,200.0	89.90	89.82	10,846.1	-238.5	8,582.3	8,582.3	0.00	0.00	0.00
19,300.0	89.90	89.82	10,846.3	-238.2	8,682.3	8,682.3	0.00	0.00	0.00
19,400.0	89.90	89.82	10,846.5	-237.9	8,782.3	8,782.3	0.00	0.00	0.00
19,500.0	89.90	89.82	10,846.7	-237.6	8,882.3	8,882.3	0.00	0.00	0.00
19,600.0	89.90	89.82	10,846.8	-237.3	8,982.3	8,982.3	0.00	0.00	0.00
19,700.0	89.90	89.82	10,847.0	-237.0	9,082.3	9,082.3	0.00	0.00	0.00
19,800.0	89.90	89.82	10,847.2	-236.7	9,182.3	9,182.3	0.00	0.00	0.00
19,900.0	89.90	89.82	10,847.4	-236.4	9,282.3	9,282.3	0.00	0.00	0.00
20,000.0	89.90	89.82	10,847.5	-236.1	9,382.3	9,382.3	0.00	0.00	0.00
20,100.0	89.90	89.82	10,847.7	-235.8	9,482.3	9,482.3	0.00	0.00	0.00
20,200.0	89.90	89.82	10,847.9	-235.4	9,582.3	9,582.3	0.00	0.00	0.00
20,300.0	89.90	89.82	10,848.1	-235.1	9,682.3	9,682.3	0.00	0.00	0.00
20,400.0	89.90	89.82	10,848.2	-234.8	9,782.3	9,782.3	0.00	0.00	0.00
20,500.0	89.90	89.82	10,848.4	-234.5	9,882.3	9,882.3	0.00	0.00	0.00
20,600.0	89.90	89.82	10,848.6	-234.2	9,982.3	9,982.3	0.00	0.00	0.00
20,667.7	89.90	89.82	10,848.7	-234.0	10,050.0	10,050.0	0.00	0.00	0.00
5300 41-18 12TX PBHL									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
5300 41-18 12TX PBHL - plan hits target center - Point	0.00	0.00	10,848.7	-234.0	10,050.0	404,497.87	1,220,000.62	48° 4' 5.214 N	103° 33' 43.972 W

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
11,189.0	10,832.2	7"	7	8-3/4

Database:	EDM 5000.1 Single User Db	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Company:	Oasis Petroleum	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Project:	Indian Hills	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site:	153N-100W-17/18	**North Reference:**	True
Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Kline Federal 5300 41-18 12TX		
Design:	Design #2		

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,972.0	1,972.0	Pierre			
4,646.1	4,646.0	Greenhorn			
5,057.1	5,057.0	Mowry			
5,471.1	5,471.0	Dakota			
6,486.2	6,486.0	Rierdon			
6,814.2	6,814.0	Dunham Salt			
6,929.2	6,929.0	Dunham Salt Base			
7,024.2	7,024.0	Spearfish			
7,283.2	7,283.0	Pine Salt			
7,318.2	7,318.0	Pine Salt Base			
7,374.2	7,374.0	Opeche Salt			
7,403.2	7,403.0	Opeche Salt Base			
7,605.2	7,605.0	Broom Creek (Top of Minnelusa Gp.)			
7,684.2	7,684.0	Amsden			
7,853.2	7,853.0	Tyler			
8,047.2	8,047.0	Otter (Base of Minnelusa Gp.)			
8,390.2	8,390.0	Kibbey Lime			
8,542.2	8,542.0	Charles Salt			
9,159.2	9,159.0	UB			
9,238.2	9,238.0	Base Last Salt			
9,301.2	9,301.0	Ratcliffe			
9,454.2	9,454.0	Mission Canyon			
10,022.2	10,022.0	Lodgepole			
10,209.2	10,209.0	Lodgepole Fracture Zone			
10,780.4	10,726.0	False Bakken			
10,795.0	10,735.0	Upper Bakken			
10,822.5	10,751.0	Middle Bakken			
10,891.1	10,785.0	Lower Bakken			
10,905.4	10,791.0	Pronghorn			
10,969.5	10,813.0	Three Forks			
11,035.3	10,827.0	TF Target Top			
13,943.9	10,837.0	TF Target Base			
14,518.6	10,838.0	Claystone			

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
10,354.8	10,354.6	0.0	50.0	KOP Build 12°/100'
11,104.0	10,832.0	-163.0	497.9	EOC

Oasis Petroleum

Indian Hills
153N-100W-17/18
Kline Federal 5300 41-18 12TX

Kline Federal 5300 41-18 12TX
Design #2

Anticollision Report

17 June, 2014

RYAN DIRECTIONAL SERVICES
A NABORS COMPANY

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Reference Design #2

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0 usft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 6/17/2014

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	20,667.7	Design #2 (Kline Federal 5300 41-18 12TX	MWD	MWD - Standard

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
153N-100W-17/18						
Kline Federal 5300 41-18 10B - Kline Federal 5300 41-18	2,200.0	2,200.0	65.9	55.5	6.328	CC
Kline Federal 5300 41-18 10B - Kline Federal 5300 41-18	20,667.7	20,590.0	553.9	-27.2	0.953	Level 1, ES, SF
Kline Federal 5300 41-18 11T2 - Kline Federal 5300 41-1	2,200.0	2,200.0	33.4	23.0	3.213	CC
Kline Federal 5300 41-18 11T2 - Kline Federal 5300 41-1	20,667.7	20,743.0	506.9	-77.4	0.868	Level 1, ES, SF
Kline Federal 5300 41-18 13T2X - Kline Federal 5300 41	2,200.0	2,200.0	33.4	23.0	3.213	CC
Kline Federal 5300 41-18 13T2X - Kline Federal 5300 41	20,667.7	20,839.5	402.6	-181.2	0.690	Level 1, ES, SF
Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-1	2,200.0	2,200.0	65.9	55.5	6.328	CC
Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-1	20,667.7	20,608.5	433.3	-110.3	0.797	Level 1, ES, SF
Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-1	2,200.0	2,200.0	65.9	55.5	6.328	CC
Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-1	20,667.7	20,708.4	405.5	-173.0	0.701	Level 1, ES, SF
Kline Federal 5300 41-18 9T - Kline Federal 5300 41-18	2,200.0	2,200.0	99.3	88.9	9.540	CC, ES
Kline Federal 5300 41-18 9T - Kline Federal 5300 41-18	20,667.7	20,824.5	1,050.8	467.1	1.800	SF

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 10B - Kline Federal 5300 41-18 10B - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD **Offset Well Error:** 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	2.0	2.0	0.01	65.9	0.0	65.9				
100.0	100.0	100.0	100.0	2.0	2.0	0.01	65.9	0.0	65.9	61.9	4.00	16.450	
200.0	200.0	200.0	200.0	2.0	2.0	0.01	65.9	0.0	65.9	61.8	4.05	16.272	
300.0	300.0	300.0	300.0	2.1	2.1	0.01	65.9	0.0	65.9	61.7	4.14	15.908	
400.0	400.0	400.0	400.0	2.1	2.1	0.01	65.9	0.0	65.9	61.6	4.28	15.395	
500.0	500.0	500.0	500.0	2.2	2.2	0.01	65.9	0.0	65.9	61.4	4.46	14.775	
600.0	600.0	600.0	600.0	2.3	2.3	0.01	65.9	0.0	65.9	61.2	4.67	14.093	
700.0	700.0	700.0	700.0	2.5	2.5	0.01	65.9	0.0	65.9	60.9	4.92	13.384	
800.0	800.0	800.0	800.0	2.6	2.6	0.01	65.9	0.0	65.9	60.7	5.20	12.677	
900.0	900.0	900.0	900.0	2.7	2.7	0.01	65.9	0.0	65.9	60.4	5.49	11.989	
1,000.0	1,000.0	1,000.0	1,000.0	2.9	2.9	0.01	65.9	0.0	65.9	60.0	5.81	11.335	
1,100.0	1,100.0	1,100.0	1,100.0	3.1	3.1	0.01	65.9	0.0	65.9	59.7	6.14	10.719	
1,200.0	1,200.0	1,200.0	1,200.0	3.2	3.2	0.01	65.9	0.0	65.9	59.4	6.49	10.144	
1,300.0	1,300.0	1,300.0	1,300.0	3.4	3.4	0.01	65.9	0.0	65.9	59.0	6.85	9.612	
1,400.0	1,400.0	1,400.0	1,400.0	3.6	3.6	0.01	65.9	0.0	65.9	58.6	7.22	9.120	
1,500.0	1,500.0	1,500.0	1,500.0	3.8	3.8	0.01	65.9	0.0	65.9	58.3	7.60	8.666	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 10B - Kline Federal 5300 41-18 10B - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
1,600.0	1,600.0	1,600.0	1,600.0	4.0	4.0	0.01	65.9	0.0	65.9	57.9	7.99	8.247	
1,700.0	1,700.0	1,700.0	1,700.0	4.2	4.2	0.01	65.9	0.0	65.9	57.5	8.38	7.861	
1,800.0	1,800.0	1,800.0	1,800.0	4.4	4.4	0.01	65.9	0.0	65.9	57.1	8.78	7.505	
1,900.0	1,900.0	1,900.0	1,900.0	4.6	4.6	0.01	65.9	0.0	65.9	56.7	9.18	7.176	
2,000.0	2,000.0	2,000.0	2,000.0	4.8	4.8	0.01	65.9	0.0	65.9	56.3	9.58	6.872	
2,100.0	2,100.0	2,100.0	2,100.0	5.0	5.0	0.01	65.9	0.0	65.9	55.9	9.99	6.589	
2,200.0	2,200.0	2,200.0	2,200.0	5.2	5.2	0.01	65.9	0.0	65.9	55.5	10.41	6.328	CC
2,216.7	2,216.7	2,216.5	2,216.5	5.2	5.2	-90.00	65.9	0.1	65.9	55.4	10.47	6.290	
2,300.0	2,300.0	2,299.8	2,299.8	5.4	5.4	-90.03	66.1	0.8	66.1	55.3	10.78	6.127	
2,400.0	2,400.0	2,399.8	2,399.8	5.6	5.6	-90.05	66.3	1.6	66.3	55.2	11.16	5.941	
2,500.0	2,500.0	2,499.8	2,499.8	5.8	5.8	-90.08	66.5	2.4	66.5	55.0	11.54	5.765	
2,600.0	2,600.0	2,599.8	2,599.8	6.0	6.0	-90.11	66.8	3.3	66.8	54.9	11.93	5.597	
2,700.0	2,700.0	2,699.8	2,699.8	6.1	6.2	-90.14	67.0	4.1	67.0	54.7	12.32	5.438	
2,800.0	2,800.0	2,799.8	2,799.8	6.3	6.4	-90.17	67.3	5.0	67.3	54.5	12.72	5.288	
2,900.0	2,900.0	2,899.8	2,899.8	6.5	6.6	-90.19	67.5	5.8	67.5	54.4	13.12	5.145	
3,000.0	3,000.0	2,999.8	2,999.8	6.7	6.8	-90.22	67.7	6.6	67.7	54.2	13.52	5.009	
3,100.0	3,100.0	3,099.8	3,099.8	6.9	7.0	-90.25	68.0	7.5	68.0	54.0	13.93	4.880	
3,200.0	3,200.0	3,199.8	3,199.8	7.1	7.2	-90.27	68.2	8.3	68.2	53.9	14.34	4.758	
3,300.0	3,300.0	3,299.8	3,299.8	7.3	7.4	-90.30	68.4	9.2	68.4	53.7	14.75	4.641	
3,400.0	3,400.0	3,399.8	3,399.8	7.6	7.6	-90.33	68.7	10.0	68.7	53.5	15.16	4.531	
3,500.0	3,500.0	3,499.8	3,499.8	7.8	7.8	-90.35	68.9	10.8	68.9	53.3	15.57	4.425	
3,600.0	3,599.9	3,599.8	3,599.8	8.0	8.0	-90.38	69.2	11.7	69.2	53.2	15.99	4.324	
3,700.0	3,699.9	3,699.8	3,699.8	8.2	8.2	-90.40	69.4	12.5	69.4	53.0	16.41	4.229	
3,800.0	3,799.9	3,799.8	3,799.8	8.4	8.5	-90.43	69.6	13.4	69.6	52.8	16.83	4.137	
3,900.0	3,899.9	3,899.8	3,899.8	8.6	8.7	-90.45	69.9	14.2	69.9	52.6	17.25	4.050	
4,000.0	3,999.9	3,999.8	3,999.8	8.8	8.9	-90.48	70.1	15.0	70.1	52.4	17.68	3.966	
4,100.0	4,099.9	4,099.8	4,099.8	9.0	9.1	-90.50	70.3	15.9	70.3	52.2	18.10	3.886	
4,200.0	4,199.9	4,199.8	4,199.8	9.2	9.3	-90.53	70.6	16.7	70.6	52.1	18.53	3.809	
4,300.0	4,299.9	4,299.8	4,299.8	9.4	9.5	-90.55	70.8	17.6	70.8	51.9	18.95	3.736	
4,400.0	4,399.9	4,399.8	4,399.8	9.7	9.7	-90.58	71.0	18.4	71.1	51.7	19.38	3.666	
4,500.0	4,499.9	4,499.8	4,499.8	9.9	10.0	-90.60	71.3	19.2	71.3	51.5	19.81	3.598	
4,600.0	4,599.9	4,599.8	4,599.7	10.1	10.2	-90.63	71.5	20.1	71.5	51.3	20.24	3.534	
4,700.0	4,699.9	4,699.8	4,699.7	10.3	10.4	-90.65	71.8	20.9	71.8	51.1	20.67	3.472	
4,800.0	4,799.9	4,799.8	4,799.7	10.5	10.6	-90.68	72.0	21.8	72.0	50.9	21.10	3.412	
4,900.0	4,899.9	4,899.8	4,899.7	10.7	10.8	-90.70	72.2	22.6	72.2	50.7	21.54	3.354	
5,000.0	4,999.9	4,999.8	4,999.7	10.9	11.0	-90.72	72.5	23.4	72.5	50.5	21.97	3.299	
5,100.0	5,099.9	5,099.8	5,099.7	11.2	11.3	-90.75	72.7	24.3	72.7	50.3	22.40	3.246	
5,200.0	5,199.9	5,199.8	5,199.7	11.4	11.5	-90.77	72.9	25.1	73.0	50.1	22.84	3.194	
5,300.0	5,299.9	5,299.8	5,299.7	11.6	11.7	-90.79	73.2	26.0	73.2	49.9	23.27	3.145	
5,400.0	5,399.9	5,399.8	5,399.7	11.8	11.9	-90.82	73.4	26.8	73.4	49.7	23.71	3.097	
5,500.0	5,499.9	5,499.8	5,499.7	12.0	12.1	-90.84	73.7	27.6	73.7	49.5	24.15	3.051	
5,600.0	5,599.9	5,599.8	5,599.7	12.2	12.3	-90.86	73.9	28.5	73.9	49.3	24.58	3.006	
5,700.0	5,699.9	5,699.8	5,699.7	12.5	12.6	-90.88	74.1	29.3	74.1	49.1	25.02	2.963	
5,800.0	5,799.9	5,799.8	5,799.7	12.7	12.8	-90.91	74.4	30.2	74.4	48.9	25.46	2.921	
5,900.0	5,899.9	5,899.8	5,899.7	12.9	13.0	-90.93	74.6	31.0	74.6	48.7	25.90	2.881	
6,000.0	5,999.9	5,999.8	5,999.7	13.1	13.2	-90.95	74.8	31.8	74.9	48.5	26.34	2.842	
6,100.0	6,099.9	6,099.8	6,099.7	13.3	13.4	-90.97	75.1	32.7	75.1	48.3	26.77	2.804	
6,200.0	6,199.8	6,199.8	6,199.7	13.6	13.7	-90.99	75.3	33.5	75.3	48.1	27.21	2.768	
6,300.0	6,299.8	6,299.8	6,299.7	13.8	13.9	-91.02	75.6	34.4	75.6	47.9	27.65	2.732	
6,400.0	6,399.8	6,399.8	6,399.7	14.0	14.1	-91.04	75.8	35.2	75.8	47.7	28.09	2.698	
6,500.0	6,499.8	6,499.8	6,499.7	14.2	14.3	-91.06	76.0	36.0	76.0	47.5	28.53	2.665	
6,600.0	6,599.8	6,599.8	6,599.7	14.4	14.5	-91.08	76.3	36.9	76.3	47.3	28.97	2.632	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 10B - Kline Federal 5300 41-18 10B - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
6,700.0	6,699.8	6,699.8	6,699.7	14.7	14.8	-91.10	76.5	37.7	76.5	47.1	29.42	2.601	
6,800.0	6,799.8	6,799.8	6,799.7	14.9	15.0	-91.12	76.7	38.6	76.7	46.9	29.86	2.571	
6,900.0	6,899.8	6,899.8	6,899.7	15.1	15.2	-91.14	77.0	39.4	77.0	46.7	30.30	2.541	
7,000.0	6,999.8	6,999.8	6,999.6	15.3	15.4	-91.16	77.2	40.2	77.2	46.5	30.74	2.512	
7,100.0	7,099.8	7,099.8	7,099.6	15.5	15.7	-91.19	77.4	41.1	77.5	46.3	31.18	2.484	
7,200.0	7,199.8	7,199.8	7,199.6	15.8	15.9	-91.21	77.7	41.9	77.7	46.1	31.63	2.457	
7,300.0	7,299.8	7,299.8	7,299.6	16.0	16.1	-91.23	77.9	42.8	77.9	45.9	32.07	2.430	
7,400.0	7,399.8	7,399.8	7,399.6	16.2	16.3	-91.25	78.2	43.6	78.2	45.7	32.51	2.405	
7,500.0	7,499.8	7,499.8	7,499.6	16.4	16.5	-91.27	78.4	44.4	78.4	45.5	32.95	2.379	
7,600.0	7,599.8	7,599.8	7,599.6	16.6	16.8	-91.29	78.6	45.3	78.6	45.3	33.40	2.355	
7,700.0	7,699.8	7,699.8	7,699.6	16.9	17.0	-91.31	78.9	46.1	78.9	45.0	33.84	2.331	
7,800.0	7,799.8	7,799.8	7,799.6	17.1	17.2	-91.33	79.1	47.0	79.1	44.8	34.28	2.308	
7,900.0	7,899.8	7,899.8	7,899.6	17.3	17.4	-91.35	79.3	47.8	79.4	44.6	34.73	2.285	
7,926.7	7,926.4	7,926.5	7,926.3	17.4	17.5	-91.35	79.4	48.0	79.4	44.6	34.85	2.279	
7,943.3	7,943.1	7,943.3	7,943.1	17.4	17.5	-1.35	79.4	48.1	79.4	44.6	34.87	2.278	
8,000.0	7,999.8	8,000.0	7,999.8	17.5	17.6	-1.35	79.4	48.1	79.4	44.4	35.10	2.264	
8,100.0	8,099.8	8,100.0	8,099.8	17.7	17.8	-1.35	79.4	48.1	79.4	43.9	35.51	2.237	
8,200.0	8,199.8	8,200.0	8,199.8	17.9	18.1	-1.35	79.4	48.1	79.4	43.5	35.94	2.211	
8,300.0	8,299.8	8,300.0	8,299.8	18.1	18.3	-1.35	79.4	48.1	79.4	43.1	36.36	2.185	
8,400.0	8,399.8	8,400.0	8,399.8	18.4	18.5	-1.35	79.4	48.1	79.4	42.7	36.78	2.160	
8,500.0	8,499.8	8,500.0	8,499.8	18.6	18.7	-1.35	79.4	48.1	79.4	42.2	37.20	2.136	
8,600.0	8,599.8	8,600.0	8,599.8	18.8	18.9	-1.35	79.4	48.1	79.4	41.8	37.62	2.112	
8,700.0	8,699.8	8,700.0	8,699.8	19.0	19.1	-1.35	79.4	48.1	79.4	41.4	38.05	2.088	
8,800.0	8,799.8	8,800.0	8,799.8	19.2	19.3	-1.35	79.4	48.1	79.4	41.0	38.47	2.065	
8,900.0	8,899.8	8,900.0	8,899.8	19.4	19.6	-1.35	79.4	48.1	79.4	40.6	38.89	2.043	
9,000.0	8,999.8	9,000.0	8,999.8	19.6	19.8	-1.35	79.4	48.1	79.4	40.1	39.32	2.021	
9,100.0	9,099.8	9,100.0	9,099.8	19.8	20.0	-1.35	79.4	48.1	79.4	39.7	39.75	1.999	
9,200.0	9,199.8	9,200.0	9,199.8	20.0	20.2	-1.35	79.4	48.1	79.4	39.3	40.17	1.978	
9,300.0	9,299.8	9,300.0	9,299.8	20.2	20.4	-1.35	79.4	48.1	79.4	38.8	40.60	1.957	
9,400.0	9,399.8	9,400.0	9,399.8	20.5	20.6	-1.35	79.4	48.1	79.4	38.4	41.03	1.936	
9,500.0	9,499.8	9,500.0	9,499.8	20.7	20.8	-1.35	79.4	48.1	79.4	38.0	41.45	1.917	
9,600.0	9,599.8	9,600.0	9,599.8	20.9	21.1	-1.35	79.4	48.1	79.4	37.6	41.88	1.897	
9,700.0	9,699.8	9,700.0	9,699.8	21.1	21.3	-1.35	79.4	48.1	79.4	37.1	42.31	1.878	
9,800.0	9,799.8	9,800.0	9,799.8	21.3	21.5	-1.35	79.4	48.1	79.4	36.7	42.74	1.859	
9,900.0	9,899.8	9,900.0	9,899.8	21.5	21.7	-1.35	79.4	48.1	79.4	36.3	43.17	1.840	
10,000.0	9,999.8	10,000.0	9,999.8	21.7	21.9	-1.35	79.4	48.1	79.4	35.8	43.60	1.822	
10,100.0	10,099.8	10,100.0	10,099.8	21.9	22.1	-1.35	79.4	48.1	79.4	35.4	44.03	1.804	
10,200.0	10,199.8	10,200.0	10,199.8	22.2	22.4	-1.35	79.4	48.1	79.4	35.0	44.46	1.787	
10,262.1	10,261.8	10,262.1	10,261.8	22.3	22.5	-1.35	79.4	48.1	79.4	34.7	44.73	1.776	
10,300.0	10,299.8	10,299.5	10,299.3	22.4	22.6	-1.25	79.5	48.2	79.5	34.6	44.89	1.771	
10,354.8	10,354.6	10,351.8	10,351.3	22.5	22.7	1.59	80.6	52.2	80.7	35.6	45.12	1.788	
10,375.0	10,374.8	10,370.7	10,370.1	22.5	22.7	-106.60	81.4	55.0	81.8	36.5	45.27	1.807	
10,400.0	10,399.7	10,394.1	10,393.0	22.6	22.8	-104.41	82.6	59.4	84.0	38.6	45.37	1.850	
10,425.0	10,424.5	10,417.2	10,415.4	22.7	22.9	-102.32	84.2	64.9	87.0	41.5	45.48	1.912	
10,450.0	10,449.2	10,440.0	10,437.2	22.7	22.9	-100.38	86.0	71.3	90.8	45.2	45.60	1.992	
10,475.0	10,473.5	10,462.6	10,458.5	22.8	23.0	-98.60	88.0	78.5	95.5	49.7	45.71	2.088	
10,500.0	10,497.6	10,484.9	10,479.1	22.8	23.0	-96.98	90.3	86.7	100.8	55.0	45.84	2.200	
10,525.0	10,521.2	10,506.9	10,499.1	22.9	23.1	-95.53	92.8	95.6	106.9	60.9	45.97	2.325	
10,550.0	10,544.4	10,528.6	10,518.3	23.0	23.2	-94.21	95.6	105.3	113.6	67.5	46.10	2.464	
10,575.0	10,567.1	10,550.0	10,536.8	23.0	23.2	-93.03	98.5	115.7	120.9	74.7	46.24	2.615	
10,600.0	10,589.1	10,571.1	10,554.5	23.1	23.3	-91.96	101.6	126.6	128.8	82.4	46.39	2.777	
10,625.0	10,610.6	10,591.8	10,571.5	23.2	23.4	-90.97	104.8	138.1	137.2	90.7	46.54	2.949	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 10B - Kline Federal 5300 41-18 10B - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,650.0	10,631.3	10,612.3	10,587.6	23.3	23.4	-90.05	108.2	150.2	146.2	99.5	46.70	3.130	
10,675.0	10,651.3	10,632.4	10,603.0	23.4	23.5	-89.19	111.7	162.7	155.6	108.7	46.86	3.321	
10,700.0	10,670.5	10,652.2	10,617.6	23.5	23.6	-88.37	115.4	175.6	165.5	118.4	47.03	3.518	
10,725.0	10,688.8	10,671.7	10,631.5	23.6	23.7	-87.57	119.1	188.8	175.7	128.5	47.21	3.723	
10,750.0	10,706.2	10,691.0	10,644.5	23.7	23.8	-86.79	122.9	202.4	186.4	139.0	47.40	3.933	
10,775.0	10,722.6	10,709.9	10,656.8	23.9	23.9	-86.03	126.9	216.3	197.4	149.8	47.59	4.148	
10,800.0	10,738.0	10,728.7	10,668.4	24.0	24.0	-85.26	130.9	230.5	208.8	161.0	47.80	4.368	
10,825.0	10,752.4	10,747.1	10,679.3	24.2	24.1	-84.49	134.9	244.8	220.5	172.4	48.01	4.592	
10,850.0	10,765.7	10,765.4	10,689.4	24.4	24.2	-83.72	139.0	259.4	232.4	184.2	48.24	4.817	
10,875.0	10,777.8	10,783.4	10,698.9	24.6	24.3	-82.95	143.2	274.2	244.6	196.1	48.48	5.046	
10,900.0	10,788.8	10,800.0	10,707.0	24.8	24.5	-82.10	147.1	288.1	257.0	208.3	48.71	5.276	
10,925.0	10,798.6	10,818.9	10,715.7	25.0	24.6	-81.37	151.7	304.2	269.7	220.7	48.98	5.505	
10,950.0	10,807.2	10,836.4	10,723.2	25.3	24.8	-80.57	156.0	319.5	282.5	233.2	49.25	5.735	
10,975.0	10,814.5	10,853.8	10,730.0	25.6	24.9	-79.77	160.3	334.9	295.4	245.9	49.53	5.964	
11,000.0	10,820.6	10,871.1	10,736.2	25.8	25.1	-78.96	164.7	350.4	308.5	258.7	49.83	6.192	
11,025.0	10,825.4	10,888.3	10,741.8	26.1	25.2	-78.16	169.1	366.0	321.7	271.6	50.13	6.417	
11,050.0	10,828.9	10,905.4	10,746.8	26.5	25.4	-77.35	173.5	381.8	335.0	284.6	50.45	6.640	
11,075.0	10,831.1	10,922.5	10,751.2	26.8	25.6	-76.55	178.0	397.7	348.4	297.6	50.79	6.860	
11,100.0	10,832.0	10,939.6	10,755.0	27.1	25.8	-75.76	182.6	413.8	361.8	310.6	51.13	7.075	
11,104.0	10,832.0	10,942.3	10,755.5	27.2	25.8	-75.64	183.3	416.3	363.9	312.7	51.19	7.109	
11,200.0	10,832.2	11,010.8	10,764.3	28.6	26.6	-79.00	201.7	481.6	414.8	361.1	53.76	7.716	
11,300.0	10,832.4	11,103.8	10,765.2	30.3	27.9	-80.68	226.2	571.4	464.4	407.7	56.74	8.185	
11,400.0	10,832.6	11,213.0	10,765.4	32.2	29.6	-81.82	251.3	677.6	505.8	445.5	60.30	8.388	
11,500.0	10,832.7	11,328.4	10,765.6	34.1	31.7	-82.57	273.5	790.8	538.0	473.7	64.35	8.361	
11,600.0	10,832.9	11,448.6	10,765.8	36.2	34.1	-83.03	291.7	909.7	560.6	491.7	68.81	8.147	
11,680.4	10,833.1	11,547.8	10,765.9	38.0	36.2	-83.23	303.0	1,008.2	571.3	498.7	72.60	7.870	
11,700.0	10,833.1	11,572.1	10,766.0	38.4	36.7	-83.26	305.2	1,032.4	573.1	499.5	73.56	7.791	
11,800.0	10,833.3	11,696.8	10,766.2	40.7	39.5	-83.35	313.5	1,156.8	579.3	500.7	78.62	7.369	
11,900.0	10,833.4	11,822.0	10,766.4	43.0	42.5	-83.38	316.4	1,282.0	581.3	497.4	83.91	6.928	
12,000.0	10,833.6	11,922.5	10,766.6	45.4	44.9	-83.38	316.4	1,382.5	581.0	492.2	88.75	6.546	
12,100.0	10,833.8	12,022.5	10,766.8	47.9	47.3	-83.37	316.3	1,482.5	580.7	487.0	93.69	6.198	
12,200.0	10,834.0	12,122.5	10,766.9	50.4	49.8	-83.37	316.3	1,582.5	580.4	481.6	98.73	5.878	
12,300.0	10,834.1	12,222.5	10,767.1	53.0	52.4	-83.36	316.3	1,682.5	580.0	476.2	103.85	5.586	
12,400.0	10,834.3	12,322.5	10,767.3	55.5	55.0	-83.36	316.3	1,782.5	579.7	470.7	109.04	5.317	
12,500.0	10,834.5	12,422.5	10,767.5	58.2	57.6	-83.36	316.3	1,882.5	579.4	465.1	114.29	5.070	
12,600.0	10,834.7	12,522.5	10,767.6	60.8	60.2	-83.35	316.3	1,982.5	579.1	459.5	119.59	4.842	
12,700.0	10,834.8	12,622.5	10,767.8	63.5	62.9	-83.35	316.3	2,082.5	578.8	453.9	124.94	4.633	
12,800.0	10,835.0	12,722.5	10,768.0	66.2	65.6	-83.35	316.3	2,182.5	578.5	448.1	130.33	4.439	
12,900.0	10,835.2	12,822.5	10,768.2	68.9	68.3	-83.34	316.3	2,282.5	578.2	442.4	135.76	4.259	
13,000.0	10,835.4	12,922.5	10,768.3	71.7	71.0	-83.34	316.3	2,382.5	577.9	436.6	141.22	4.092	
13,100.0	10,835.5	13,022.5	10,768.5	74.4	73.8	-83.34	316.3	2,482.5	577.5	430.8	146.70	3.937	
13,200.0	10,835.7	13,122.5	10,768.7	77.2	76.5	-83.33	316.3	2,582.5	577.2	425.0	152.22	3.792	
13,300.0	10,835.9	13,222.5	10,768.9	79.9	79.3	-83.33	316.3	2,682.5	576.9	419.2	157.75	3.657	
13,400.0	10,836.1	13,322.5	10,769.0	82.7	82.1	-83.33	316.3	2,782.5	576.6	413.3	163.31	3.531	
13,500.0	10,836.2	13,422.5	10,769.2	85.5	84.9	-83.32	316.3	2,882.5	576.3	407.4	168.88	3.412	
13,600.0	10,836.4	13,522.5	10,769.4	88.3	87.7	-83.32	316.3	2,982.5	576.0	401.5	174.47	3.301	
13,700.0	10,836.6	13,622.5	10,769.6	91.1	90.5	-83.31	316.3	3,082.5	575.7	395.6	180.07	3.197	
13,800.0	10,836.7	13,722.5	10,769.7	94.0	93.3	-83.31	316.3	3,182.5	575.4	389.7	185.69	3.099	
13,900.0	10,836.9	13,822.5	10,769.9	96.8	96.1	-83.31	316.2	3,282.5	575.0	383.7	191.32	3.006	
14,000.0	10,837.1	13,922.5	10,770.1	99.6	99.0	-83.30	316.2	3,382.5	574.7	377.8	196.96	2.918	
14,100.0	10,837.3	14,022.5	10,770.3	102.5	101.8	-83.30	316.2	3,482.5	574.4	371.8	202.61	2.835	
14,200.0	10,837.4	14,122.5	10,770.4	105.3	104.7	-83.30	316.2	3,582.5	574.1	365.8	208.27	2.757	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 10B - Kline Federal 5300 41-18 10B - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,300.0	10,837.6	14,222.5	10,770.6	108.2	107.5	-83.29	316.2	3,682.5	573.8	359.9	213.94	2.682	
14,400.0	10,837.8	14,322.5	10,770.8	111.0	110.4	-83.29	316.2	3,782.5	573.5	353.9	219.62	2.611	
14,500.0	10,838.0	14,422.5	10,771.0	113.9	113.2	-83.29	316.2	3,882.5	573.2	347.9	225.31	2.544	
14,600.0	10,838.1	14,522.5	10,771.1	116.7	116.1	-83.28	316.2	3,982.5	572.9	341.9	231.00	2.480	
14,700.0	10,838.3	14,622.5	10,771.3	119.6	118.9	-83.28	316.2	4,082.5	572.6	335.9	236.70	2.419	
14,800.0	10,838.5	14,722.5	10,771.5	122.5	121.8	-83.27	316.2	4,182.5	572.2	329.8	242.40	2.361	
14,900.0	10,838.7	14,822.5	10,771.7	125.3	124.7	-83.27	316.2	4,282.5	571.9	323.8	248.11	2.305	
15,000.0	10,838.8	14,922.5	10,771.8	128.2	127.5	-83.27	316.2	4,382.5	571.6	317.8	253.82	2.252	
15,100.0	10,839.0	15,022.5	10,772.0	131.1	130.4	-83.26	316.2	4,482.5	571.3	311.8	259.54	2.201	
15,200.0	10,839.2	15,122.5	10,772.2	133.9	133.3	-83.26	316.2	4,582.5	571.0	305.7	265.27	2.153	
15,300.0	10,839.4	15,222.5	10,772.3	136.8	136.2	-83.26	316.2	4,682.5	570.7	299.7	271.00	2.106	
15,400.0	10,839.5	15,322.5	10,772.5	139.7	139.0	-83.25	316.2	4,782.5	570.4	293.6	276.73	2.061	
15,500.0	10,839.7	15,422.5	10,772.7	142.6	141.9	-83.25	316.2	4,882.5	570.1	287.6	282.46	2.018	
15,600.0	10,839.9	15,522.5	10,772.9	145.5	144.8	-83.25	316.1	4,982.5	569.7	281.5	288.20	1.977	
15,700.0	10,840.1	15,622.5	10,773.0	148.4	147.7	-83.24	316.1	5,082.5	569.4	275.5	293.95	1.937	
15,800.0	10,840.2	15,722.5	10,773.2	151.3	150.6	-83.24	316.1	5,182.5	569.1	269.4	299.69	1.899	
15,900.0	10,840.4	15,822.5	10,773.4	154.1	153.5	-83.23	316.1	5,282.5	568.8	263.4	305.44	1.862	
16,000.0	10,840.6	15,922.5	10,773.6	157.0	156.4	-83.23	316.1	5,382.5	568.5	257.3	311.19	1.827	
16,100.0	10,840.8	16,022.5	10,773.7	159.9	159.3	-83.23	316.1	5,482.5	568.2	251.2	316.94	1.793	
16,200.0	10,840.9	16,122.5	10,773.9	162.8	162.2	-83.22	316.1	5,582.5	567.9	245.2	322.70	1.760	
16,300.0	10,841.1	16,222.5	10,774.1	165.7	165.1	-83.22	316.1	5,682.5	567.6	239.1	328.46	1.728	
16,400.0	10,841.3	16,322.5	10,774.3	168.6	168.0	-83.22	316.1	5,782.5	567.2	233.0	334.22	1.697	
16,500.0	10,841.4	16,422.5	10,774.4	171.5	170.9	-83.21	316.1	5,882.5	566.9	227.0	339.98	1.668	
16,600.0	10,841.6	16,522.5	10,774.6	174.4	173.8	-83.21	316.1	5,982.5	566.6	220.9	345.75	1.639	
16,700.0	10,841.8	16,622.5	10,774.8	177.3	176.7	-83.20	316.1	6,082.5	566.3	214.8	351.51	1.611	
16,800.0	10,842.0	16,722.5	10,775.0	180.2	179.6	-83.20	316.1	6,182.5	566.0	208.7	357.28	1.584	
16,900.0	10,842.1	16,822.5	10,775.1	183.1	182.5	-83.20	316.1	6,282.5	565.7	202.6	363.05	1.558	
17,000.0	10,842.3	16,922.5	10,775.3	186.0	185.4	-83.19	316.1	6,382.5	565.4	196.6	368.82	1.533	
17,100.0	10,842.5	17,022.5	10,775.5	188.9	188.3	-83.19	316.1	6,482.5	565.1	190.5	374.59	1.508	
17,200.0	10,842.7	17,122.5	10,775.7	191.8	191.2	-83.19	316.1	6,582.5	564.7	184.4	380.37	1.485	Level 3
17,300.0	10,842.8	17,222.5	10,775.8	194.7	194.1	-83.18	316.1	6,682.5	564.4	178.3	386.14	1.462	Level 3
17,400.0	10,843.0	17,322.5	10,776.0	197.6	197.0	-83.18	316.0	6,782.5	564.1	172.2	391.92	1.439	Level 3
17,500.0	10,843.2	17,422.5	10,776.2	200.6	199.9	-83.17	316.0	6,882.5	563.8	166.1	397.70	1.418	Level 3
17,600.0	10,843.4	17,522.5	10,776.4	203.5	202.8	-83.17	316.0	6,982.5	563.5	160.0	403.48	1.397	Level 3
17,700.0	10,843.5	17,622.5	10,776.5	206.4	205.7	-83.17	316.0	7,082.5	563.2	153.9	409.26	1.376	Level 3
17,800.0	10,843.7	17,722.5	10,776.7	209.3	208.6	-83.16	316.0	7,182.5	562.9	147.8	415.04	1.356	Level 3
17,900.0	10,843.9	17,822.5	10,776.9	212.2	211.5	-83.16	316.0	7,282.5	562.6	141.7	420.82	1.337	Level 3
18,000.0	10,844.1	17,922.5	10,777.1	215.1	214.4	-83.16	316.0	7,382.5	562.3	135.6	426.60	1.318	Level 3
18,100.0	10,844.2	18,022.5	10,777.2	218.0	217.3	-83.15	316.0	7,482.5	561.9	129.5	432.39	1.300	Level 3
18,200.0	10,844.4	18,122.5	10,777.4	220.9	220.3	-83.15	316.0	7,582.5	561.6	123.5	438.17	1.282	Level 3
18,300.0	10,844.6	18,222.5	10,777.6	223.8	223.2	-83.14	316.0	7,682.5	561.3	117.4	443.96	1.264	Level 3
18,400.0	10,844.8	18,322.5	10,777.7	226.7	226.1	-83.14	316.0	7,782.5	561.0	111.3	449.75	1.247	Level 2
18,500.0	10,844.9	18,422.5	10,777.9	229.7	229.0	-83.14	316.0	7,882.5	560.7	105.2	455.53	1.231	Level 2
18,600.0	10,845.1	18,522.5	10,778.1	232.6	231.9	-83.13	316.0	7,982.5	560.4	99.1	461.32	1.215	Level 2
18,700.0	10,845.3	18,622.5	10,778.3	235.5	234.8	-83.13	316.0	8,082.5	560.1	93.0	467.11	1.199	Level 2
18,800.0	10,845.4	18,722.5	10,778.4	238.4	237.7	-83.12	316.0	8,182.5	559.8	86.9	472.90	1.184	Level 2
18,900.0	10,845.6	18,822.5	10,778.6	241.3	240.7	-83.12	316.0	8,282.5	559.4	80.8	478.69	1.169	Level 2
19,000.0	10,845.8	18,922.5	10,778.8	244.2	243.6	-83.12	316.0	8,382.5	559.1	74.6	484.48	1.154	Level 2
19,100.0	10,846.0	19,022.5	10,779.0	247.1	246.5	-83.11	315.9	8,482.5	558.8	68.5	490.27	1.140	Level 2
19,200.0	10,846.1	19,122.5	10,779.1	250.1	249.4	-83.11	315.9	8,582.5	558.5	62.4	496.07	1.126	Level 2
19,300.0	10,846.3	19,222.5	10,779.3	253.0	252.3	-83.11	315.9	8,682.5	558.2	56.3	501.86	1.112	Level 2
19,400.0	10,846.5	19,322.5	10,779.5	255.9	255.2	-83.10	315.9	8,782.5	557.9	50.2	507.65	1.099	Level 2

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 10B - Kline Federal 5300 41-18 10B - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
19,500.0	10,846.7	19,422.5	10,779.7	258.8	258.1	-83.10	315.9	8,882.5	557.6	44.1	513.45	1.086	Level 2
19,600.0	10,846.8	19,522.5	10,779.8	261.7	261.1	-83.09	315.9	8,982.5	557.3	38.0	519.24	1.073	Level 2
19,700.0	10,847.0	19,622.5	10,780.0	264.6	264.0	-83.09	315.9	9,082.5	556.9	31.9	525.04	1.061	Level 2
19,800.0	10,847.2	19,722.5	10,780.2	267.6	266.9	-83.09	315.9	9,182.5	556.6	25.8	530.83	1.049	Level 2
19,900.0	10,847.4	19,822.5	10,780.4	270.5	269.8	-83.08	315.9	9,282.5	556.3	19.7	536.63	1.037	Level 2
20,000.0	10,847.5	19,922.5	10,780.5	273.4	272.7	-83.08	315.9	9,382.5	556.0	13.6	542.42	1.025	Level 2
20,100.0	10,847.7	20,022.5	10,780.7	276.3	275.7	-83.07	315.9	9,482.5	555.7	7.5	548.22	1.014	Level 2
20,200.0	10,847.9	20,122.5	10,780.9	279.2	278.6	-83.07	315.9	9,582.5	555.4	1.4	554.02	1.002	Level 2
20,300.0	10,848.1	20,222.5	10,781.1	282.1	281.5	-83.07	315.9	9,682.5	555.1	-4.7	559.81	0.992	Level 1
20,400.0	10,848.2	20,322.5	10,781.2	285.1	284.4	-83.06	315.9	9,782.5	554.8	-10.8	565.61	0.981	Level 1
20,500.0	10,848.4	20,422.5	10,781.4	288.0	287.3	-83.06	315.9	9,882.5	554.4	-17.0	571.41	0.970	Level 1
20,600.0	10,848.6	20,522.5	10,781.6	290.9	290.3	-83.06	315.9	9,982.5	554.1	-23.1	577.21	0.960	Level 1
20,667.7	10,848.7	20,590.0	10,781.7	292.9	292.2	-83.05	315.9	10,050.0	553.9	-27.2	581.13	0.953	Level 1, ES, SF

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 11T2 - Kline Federal 5300 41-18 11T2 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	2.0	2.0	0.00	33.4	0.0	33.4				
100.0	100.0	100.0	100.0	2.0	2.0	0.00	33.4	0.0	33.4	29.4	4.00	8.352	
200.0	200.0	200.0	200.0	2.0	2.0	0.00	33.4	0.0	33.4	29.4	4.05	8.261	
300.0	300.0	300.0	300.0	2.1	2.1	0.00	33.4	0.0	33.4	29.3	4.14	8.077	
400.0	400.0	400.0	400.0	2.1	2.1	0.00	33.4	0.0	33.4	29.2	4.28	7.816	
500.0	500.0	500.0	500.0	2.2	2.2	0.00	33.4	0.0	33.4	29.0	4.46	7.502	
600.0	600.0	600.0	600.0	2.3	2.3	0.00	33.4	0.0	33.4	28.8	4.67	7.155	
700.0	700.0	700.0	700.0	2.5	2.5	0.00	33.4	0.0	33.4	28.5	4.92	6.795	
800.0	800.0	800.0	800.0	2.6	2.6	0.00	33.4	0.0	33.4	28.2	5.20	6.436	
900.0	900.0	900.0	900.0	2.7	2.7	0.00	33.4	0.0	33.4	27.9	5.49	6.087	
1,000.0	1,000.0	1,000.0	1,000.0	2.9	2.9	0.00	33.4	0.0	33.4	27.6	5.81	5.755	
1,100.0	1,100.0	1,100.0	1,100.0	3.1	3.1	0.00	33.4	0.0	33.4	27.3	6.14	5.442	
1,200.0	1,200.0	1,200.0	1,200.0	3.2	3.2	0.00	33.4	0.0	33.4	26.9	6.49	5.151	
1,300.0	1,300.0	1,300.0	1,300.0	3.4	3.4	0.00	33.4	0.0	33.4	26.6	6.85	4.880	
1,400.0	1,400.0	1,400.0	1,400.0	3.6	3.6	0.00	33.4	0.0	33.4	26.2	7.22	4.630	
1,500.0	1,500.0	1,500.0	1,500.0	3.8	3.8	0.00	33.4	0.0	33.4	25.8	7.60	4.400	
1,600.0	1,600.0	1,600.0	1,600.0	4.0	4.0	0.00	33.4	0.0	33.4	25.5	7.99	4.187	
1,700.0	1,700.0	1,700.0	1,700.0	4.2	4.2	0.00	33.4	0.0	33.4	25.1	8.38	3.991	
1,800.0	1,800.0	1,800.0	1,800.0	4.4	4.4	0.00	33.4	0.0	33.4	24.7	8.78	3.810	
1,900.0	1,900.0	1,900.0	1,900.0	4.6	4.6	0.00	33.4	0.0	33.4	24.3	9.18	3.643	
2,000.0	2,000.0	2,000.0	2,000.0	4.8	4.8	0.00	33.4	0.0	33.4	23.9	9.58	3.489	
2,100.0	2,100.0	2,100.0	2,100.0	5.0	5.0	0.00	33.4	0.0	33.4	23.4	9.99	3.346	
2,200.0	2,200.0	2,200.0	2,200.0	5.2	5.2	0.00	33.4	0.0	33.4	23.0	10.41	3.213	
2,200.0	2,200.0	2,200.0	2,200.0	5.2	5.2	0.00	33.4	0.0	33.4	23.0	10.41	3.213	CC
2,216.7	2,216.7	2,216.7	2,216.7	5.2	5.2	-90.12	33.4	0.0	33.4	23.0	10.48	3.192	
2,300.0	2,300.0	2,300.0	2,300.0	5.4	5.4	-91.37	33.4	0.0	33.4	22.6	10.80	3.097	
2,400.0	2,400.0	2,400.0	2,400.0	5.6	5.6	-92.86	33.4	0.0	33.5	22.3	11.20	2.990	
2,500.0	2,500.0	2,500.0	2,500.0	5.8	5.8	-94.35	33.4	0.0	33.5	21.9	11.59	2.892	
2,600.0	2,600.0	2,600.0	2,600.0	6.0	6.0	-95.84	33.4	0.0	33.6	21.6	12.00	2.802	
2,700.0	2,700.0	2,700.0	2,700.0	6.1	6.3	-97.31	33.4	0.0	33.7	21.3	12.40	2.718	
2,800.0	2,800.0	2,800.0	2,800.0	6.3	6.5	-98.78	33.4	0.0	33.8	21.0	12.81	2.641	
2,900.0	2,900.0	2,900.0	2,900.0	6.5	6.7	-100.23	33.4	0.0	34.0	20.8	13.22	2.570	
3,000.0	3,000.0	3,000.0	3,000.0	6.7	6.9	-101.67	33.4	0.0	34.1	20.5	13.64	2.504	
3,100.0	3,100.0	3,100.0	3,100.0	6.9	7.1	-103.10	33.4	0.0	34.3	20.3	14.05	2.443	
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.3	-104.51	33.4	0.0	34.5	20.1	14.47	2.387	
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.5	-105.90	33.4	0.0	34.8	19.9	14.89	2.335	
3,400.0	3,400.0	3,400.0	3,400.0	7.6	7.8	-107.27	33.4	0.0	35.0	19.7	15.31	2.287	
3,500.0	3,500.0	3,500.0	3,500.0	7.8	8.0	-108.63	33.4	0.0	35.3	19.6	15.73	2.243	
3,600.0	3,599.9	3,599.9	3,599.9	8.0	8.2	-109.96	33.4	0.0	35.6	19.4	16.16	2.202	
3,700.0	3,699.9	3,699.9	3,699.9	8.2	8.4	-111.27	33.4	0.0	35.9	19.3	16.58	2.164	
3,800.0	3,799.9	3,799.9	3,799.9	8.4	8.6	-112.56	33.4	0.0	36.2	19.2	17.01	2.129	
3,900.0	3,899.9	3,899.9	3,899.9	8.6	8.9	-113.82	33.4	0.0	36.6	19.1	17.44	2.096	
4,000.0	3,999.9	3,999.9	3,999.9	8.8	9.1	-115.06	33.4	0.0	36.9	19.0	17.87	2.066	
4,100.0	4,099.9	4,099.9	4,099.9	9.0	9.3	-116.27	33.4	0.0	37.3	19.0	18.30	2.038	
4,200.0	4,199.9	4,199.9	4,199.9	9.2	9.5	-117.46	33.4	0.0	37.7	19.0	18.73	2.012	
4,300.0	4,299.9	4,299.9	4,299.9	9.4	9.7	-118.63	33.4	0.0	38.1	18.9	19.16	1.988	
4,400.0	4,399.9	4,399.9	4,399.9	9.7	10.0	-119.77	33.4	0.0	38.5	18.9	19.59	1.966	
4,500.0	4,499.9	4,499.9	4,499.9	9.9	10.2	-120.88	33.4	0.0	39.0	18.9	20.03	1.946	
4,600.0	4,599.9	4,599.9	4,599.9	10.1	10.4	-121.97	33.4	0.0	39.4	19.0	20.46	1.927	
4,700.0	4,699.9	4,699.9	4,699.9	10.3	10.6	-123.03	33.4	0.0	39.9	19.0	20.89	1.909	
4,800.0	4,799.9	4,799.9	4,799.9	10.5	10.8	-124.07	33.4	0.0	40.4	19.0	21.33	1.893	
4,900.0	4,899.9	4,899.9	4,899.9	10.7	11.1	-125.09	33.4	0.0	40.9	19.1	21.76	1.878	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 11T2 - Kline Federal 5300 41-18 11T2 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,999.9	4,999.9	4,999.9	10.9	11.3	-126.07	33.4	0.0	41.4	19.2	22.20	1.864	
5,100.0	5,099.9	5,099.9	5,099.9	11.2	11.5	-127.04	33.4	0.0	41.9	19.3	22.64	1.851	
5,200.0	5,199.9	5,199.9	5,199.9	11.4	11.7	-127.98	33.4	0.0	42.4	19.3	23.07	1.839	
5,300.0	5,299.9	5,299.9	5,299.9	11.6	11.9	-128.90	33.4	0.0	43.0	19.5	23.51	1.827	
5,400.0	5,399.9	5,399.9	5,399.9	11.8	12.2	-129.79	33.4	0.0	43.5	19.6	23.95	1.817	
5,500.0	5,499.9	5,499.9	5,499.9	12.0	12.4	-130.66	33.4	0.0	44.1	19.7	24.39	1.808	
5,600.0	5,599.9	5,599.9	5,599.9	12.2	12.6	-131.51	33.4	0.0	44.7	19.8	24.83	1.799	
5,700.0	5,699.9	5,699.9	5,699.9	12.5	12.8	-132.34	33.4	0.0	45.2	20.0	25.26	1.791	
5,800.0	5,799.9	5,799.9	5,799.9	12.7	13.0	-133.15	33.4	0.0	45.8	20.1	25.70	1.783	
5,900.0	5,899.9	5,899.9	5,899.9	12.9	13.3	-133.93	33.4	0.0	46.4	20.3	26.14	1.776	
6,000.0	5,999.9	5,999.9	5,999.9	13.1	13.5	-134.70	33.4	0.0	47.0	20.5	26.58	1.770	
6,100.0	6,099.9	6,099.9	6,099.9	13.3	13.7	-135.44	33.4	0.0	47.7	20.6	27.02	1.764	
6,200.0	6,199.8	6,199.8	6,199.8	13.6	13.9	-136.17	33.4	0.0	48.3	20.8	27.47	1.758	
6,300.0	6,299.8	6,299.8	6,299.8	13.8	14.2	-136.88	33.4	0.0	48.9	21.0	27.91	1.753	
6,400.0	6,399.8	6,399.8	6,399.8	14.0	14.4	-137.57	33.4	0.0	49.6	21.2	28.35	1.748	
6,500.0	6,499.8	6,499.8	6,499.8	14.2	14.6	-138.24	33.4	0.0	50.2	21.4	28.79	1.744	
6,600.0	6,599.8	6,599.8	6,599.8	14.4	14.8	-138.89	33.4	0.0	50.9	21.6	29.23	1.740	
6,700.0	6,699.8	6,699.8	6,699.8	14.7	15.1	-139.53	33.4	0.0	51.5	21.8	29.67	1.736	
6,800.0	6,799.8	6,799.8	6,799.8	14.9	15.3	-140.15	33.4	0.0	52.2	22.1	30.11	1.733	
6,900.0	6,899.8	6,899.8	6,899.8	15.1	15.5	-140.76	33.4	0.0	52.9	22.3	30.56	1.730	
7,000.0	6,999.8	6,999.8	6,999.8	15.3	15.7	-141.35	33.4	0.0	53.5	22.5	31.00	1.727	
7,100.0	7,099.8	7,099.8	7,099.8	15.5	15.9	-141.93	33.4	0.0	54.2	22.8	31.44	1.725	
7,200.0	7,199.8	7,199.8	7,199.8	15.8	16.2	-142.49	33.4	0.0	54.9	23.0	31.88	1.722	
7,300.0	7,299.8	7,299.8	7,299.8	16.0	16.4	-143.04	33.4	0.0	55.6	23.3	32.33	1.720	
7,400.0	7,399.8	7,399.8	7,399.8	16.2	16.6	-143.57	33.4	0.0	56.3	23.5	32.77	1.718	
7,500.0	7,499.8	7,499.8	7,499.8	16.4	16.8	-144.09	33.4	0.0	57.0	23.8	33.21	1.717	
7,600.0	7,599.8	7,599.8	7,599.8	16.6	17.1	-144.60	33.4	0.0	57.7	24.1	33.66	1.715	
7,700.0	7,699.8	7,699.8	7,699.8	16.9	17.3	-145.09	33.4	0.0	58.4	24.3	34.10	1.714	
7,800.0	7,799.8	7,799.8	7,799.8	17.1	17.5	-145.58	33.4	0.0	59.2	24.6	34.55	1.712	
7,900.0	7,899.8	7,899.8	7,899.8	17.3	17.7	-146.05	33.4	0.0	59.9	24.9	34.99	1.711	
7,926.7	7,926.4	7,926.4	7,926.4	17.4	17.8	-146.17	33.4	0.0	60.1	25.0	35.11	1.711	
7,943.3	7,943.1	7,943.1	7,943.1	17.4	17.8	-56.21	33.4	0.0	60.1	24.9	35.23	1.707	
8,000.0	7,999.8	7,999.8	7,999.8	17.5	18.0	-56.21	33.4	0.0	60.1	24.7	35.47	1.695	
8,100.0	8,099.8	8,099.8	8,099.8	17.7	18.2	-56.21	33.4	0.0	60.1	24.2	35.90	1.675	
8,200.0	8,199.8	8,199.8	8,199.8	17.9	18.4	-56.21	33.4	0.0	60.1	23.8	36.33	1.655	
8,300.0	8,299.8	8,299.8	8,299.8	18.1	18.6	-56.21	33.4	0.0	60.1	23.4	36.76	1.636	
8,400.0	8,399.8	8,399.8	8,399.8	18.4	18.8	-56.21	33.4	0.0	60.1	22.9	37.19	1.617	
8,500.0	8,499.8	8,499.8	8,499.8	18.6	19.1	-56.21	33.4	0.0	60.1	22.5	37.63	1.598	
8,600.0	8,599.8	8,599.8	8,599.8	18.8	19.3	-56.21	33.4	0.0	60.1	22.1	38.06	1.580	
8,700.0	8,699.8	8,699.8	8,699.8	19.0	19.5	-56.21	33.4	0.0	60.1	21.6	38.49	1.562	
8,800.0	8,799.8	8,799.8	8,799.8	19.2	19.7	-56.21	33.4	0.0	60.1	21.2	38.93	1.545	
8,900.0	8,899.8	8,899.8	8,899.8	19.4	20.0	-56.21	33.4	0.0	60.1	20.8	39.36	1.528	
9,000.0	8,999.8	8,999.8	8,999.8	19.6	20.2	-56.21	33.4	0.0	60.1	20.3	39.80	1.511	
9,100.0	9,099.8	9,099.8	9,099.8	19.8	20.4	-56.21	33.4	0.0	60.1	19.9	40.23	1.495	Level 3
9,200.0	9,199.8	9,199.8	9,199.8	20.0	20.6	-56.21	33.4	0.0	60.1	19.5	40.67	1.479	Level 3
9,300.0	9,299.8	9,299.8	9,299.8	20.2	20.9	-56.21	33.4	0.0	60.1	19.0	41.10	1.463	Level 3
9,400.0	9,399.8	9,399.8	9,399.8	20.5	21.1	-56.21	33.4	0.0	60.1	18.6	41.54	1.448	Level 3
9,500.0	9,499.8	9,499.8	9,499.8	20.7	21.3	-56.21	33.4	0.0	60.1	18.2	41.97	1.433	Level 3
9,600.0	9,599.8	9,599.8	9,599.8	20.9	21.5	-56.21	33.4	0.0	60.1	17.7	42.41	1.418	Level 3
9,700.0	9,699.8	9,699.8	9,699.8	21.1	21.8	-56.21	33.4	0.0	60.1	17.3	42.85	1.403	Level 3
9,800.0	9,799.8	9,799.8	9,799.8	21.3	22.0	-56.21	33.4	0.0	60.1	16.8	43.28	1.389	Level 3
9,900.0	9,899.8	9,899.8	9,899.8	21.5	22.2	-56.21	33.4	0.0	60.1	16.4	43.72	1.375	Level 3

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 11T2 - Kline Federal 5300 41-18 11T2 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,000.0	9,999.8	9,999.8	9,999.8	21.7	22.4	-56.21	33.4	0.0	60.1	16.0	44.16	1.362	Level 3
10,100.0	10,099.8	10,099.8	10,099.8	21.9	22.6	-56.21	33.4	0.0	60.1	15.5	44.60	1.348	Level 3
10,200.0	10,199.8	10,199.8	10,199.8	22.2	22.9	-56.21	33.4	0.0	60.1	15.1	45.04	1.335	Level 3
10,300.0	10,299.8	10,299.8	10,299.8	22.4	23.1	-56.21	33.4	0.0	60.1	14.7	45.47	1.322	Level 3
10,354.8	10,354.6	10,354.6	10,354.6	22.5	23.2	-56.21	33.4	0.0	60.1	14.4	45.71	1.315	Level 3
10,375.0	10,374.8	10,374.8	10,374.8	22.5	23.3	-166.30	33.4	0.0	60.5	14.8	45.73	1.324	Level 3
10,400.0	10,399.7	10,400.4	10,400.4	22.6	23.3	-166.59	33.5	0.1	62.2	16.4	45.73	1.359	Level 3
10,425.0	10,424.5	10,427.6	10,427.6	22.7	23.4	-166.38	33.8	1.2	64.4	18.7	45.65	1.410	Level 3
10,450.0	10,449.2	10,454.9	10,454.8	22.7	23.4	-165.45	34.5	3.9	66.9	21.4	45.49	1.471	Level 3
10,475.0	10,473.5	10,482.2	10,481.6	22.8	23.5	-163.88	35.7	8.1	69.8	24.6	45.26	1.543	
10,500.0	10,497.6	10,509.3	10,508.2	22.8	23.6	-161.78	37.3	13.7	73.2	28.2	44.98	1.627	
10,525.0	10,521.2	10,536.4	10,534.2	22.9	23.6	-159.25	39.3	20.7	77.0	32.3	44.66	1.724	
10,550.0	10,544.4	10,563.2	10,559.6	23.0	23.7	-156.41	41.7	29.1	81.4	37.0	44.33	1.836	
10,575.0	10,567.1	10,589.8	10,584.3	23.0	23.7	-153.35	44.4	38.7	86.3	42.3	44.01	1.962	
10,600.0	10,589.1	10,616.2	10,608.1	23.1	23.8	-150.17	47.4	49.5	92.0	48.2	43.73	2.103	
10,625.0	10,610.6	10,642.3	10,631.1	23.2	23.9	-146.93	50.8	61.5	98.3	54.8	43.51	2.259	
10,650.0	10,631.3	10,668.1	10,653.0	23.3	24.0	-143.69	54.5	74.4	105.3	61.9	43.36	2.428	
10,675.0	10,651.3	10,693.5	10,674.0	23.4	24.0	-140.50	58.4	88.3	113.0	69.7	43.31	2.610	
10,700.0	10,670.5	10,718.6	10,693.9	23.5	24.1	-137.38	62.6	103.1	121.4	78.1	43.35	2.801	
10,725.0	10,688.8	10,743.4	10,712.7	23.6	24.2	-134.35	67.0	118.6	130.6	87.1	43.49	3.002	
10,750.0	10,706.2	10,767.8	10,730.4	23.7	24.3	-131.42	71.6	134.8	140.3	96.6	43.73	3.209	
10,775.0	10,722.6	10,791.9	10,746.9	23.9	24.4	-128.58	76.3	151.6	150.7	106.7	44.07	3.421	
10,800.0	10,738.0	10,815.7	10,762.4	24.0	24.5	-125.83	81.2	168.9	161.7	117.3	44.49	3.635	
10,825.0	10,752.4	10,839.1	10,776.8	24.2	24.6	-123.17	86.3	186.7	173.3	128.3	44.99	3.852	
10,850.0	10,765.7	10,862.2	10,790.0	24.4	24.8	-120.59	91.4	205.0	185.3	139.8	45.56	4.068	
10,875.0	10,777.8	10,885.1	10,802.2	24.6	24.9	-118.08	96.7	223.6	197.8	151.7	46.18	4.284	
10,900.0	10,788.8	10,907.7	10,813.4	24.8	25.1	-115.64	102.1	242.5	210.8	163.9	46.85	4.499	
10,925.0	10,798.6	10,930.1	10,823.5	25.0	25.2	-113.25	107.5	261.7	224.1	176.5	47.56	4.712	
10,950.0	10,807.2	10,952.2	10,832.6	25.3	25.4	-110.92	113.0	281.1	237.7	189.4	48.29	4.923	
10,975.0	10,814.5	10,974.2	10,840.6	25.6	25.6	-108.64	118.6	300.8	251.6	202.6	49.03	5.132	
11,000.0	10,820.6	10,996.1	10,847.7	25.8	25.8	-106.40	124.2	320.7	265.8	216.0	49.78	5.340	
11,025.0	10,825.4	11,017.9	10,853.8	26.1	26.0	-104.22	129.9	340.8	280.2	229.6	50.52	5.545	
11,050.0	10,828.9	11,039.6	10,858.9	26.5	26.2	-102.08	135.6	361.1	294.7	243.4	51.25	5.750	
11,075.0	10,831.1	11,061.2	10,863.1	26.8	26.4	-99.99	141.4	381.6	309.4	257.4	51.97	5.953	
11,100.0	10,832.0	11,082.9	10,866.3	27.1	26.7	-97.95	147.3	402.3	324.1	271.4	52.67	6.154	
11,104.0	10,832.0	11,086.4	10,866.7	27.2	26.7	-97.63	148.2	405.5	326.5	273.7	52.78	6.186	
11,200.0	10,832.2	11,174.3	10,870.0	28.6	27.8	-96.77	171.9	490.1	380.2	325.0	55.19	6.889	
11,300.0	10,832.4	11,276.1	10,870.2	30.3	29.3	-95.69	196.8	588.8	428.5	370.2	58.29	7.351	
11,400.0	10,832.6	11,384.8	10,870.4	32.2	31.1	-94.99	219.4	695.1	468.1	406.2	61.90	7.562	
11,500.0	10,832.7	11,499.3	10,870.6	34.1	33.2	-94.53	238.9	807.9	498.3	432.4	65.98	7.553	
11,600.0	10,832.9	11,618.2	10,870.8	36.2	35.6	-94.25	254.3	925.8	518.8	448.3	70.48	7.361	
11,680.4	10,833.1	11,715.9	10,871.0	38.0	37.7	-94.14	263.3	1,023.1	527.9	453.6	74.28	7.107	
11,700.0	10,833.1	11,739.8	10,871.0	38.4	38.2	-94.12	265.0	1,047.0	529.3	454.0	75.25	7.033	
11,800.0	10,833.3	11,862.4	10,871.2	40.7	41.0	-94.08	270.6	1,169.4	533.5	453.2	80.30	6.644	
11,900.0	10,833.4	11,975.3	10,871.4	43.0	43.6	-94.08	271.5	1,282.3	533.9	448.6	85.31	6.258	
12,000.0	10,833.6	12,075.3	10,871.6	45.4	46.0	-94.08	271.5	1,382.3	533.6	443.4	90.15	5.918	
12,100.0	10,833.8	12,175.3	10,871.8	47.9	48.4	-94.08	271.5	1,482.3	533.2	438.1	95.11	5.607	
12,200.0	10,834.0	12,275.3	10,872.0	50.4	50.9	-94.09	271.5	1,582.3	532.9	432.8	100.16	5.321	
12,300.0	10,834.1	12,375.3	10,872.1	53.0	53.5	-94.09	271.5	1,682.3	532.6	427.3	105.29	5.059	
12,400.0	10,834.3	12,475.3	10,872.3	55.5	56.0	-94.09	271.5	1,782.3	532.3	421.8	110.49	4.818	
12,500.0	10,834.5	12,575.3	10,872.5	58.2	58.6	-94.09	271.5	1,882.3	532.0	416.3	115.75	4.596	
12,600.0	10,834.7	12,675.3	10,872.6	60.8	61.3	-94.10	271.5	1,982.3	531.7	410.6	121.07	4.392	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 11T2 - Kline Federal 5300 41-18 11T2 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,700.0	10,834.8	12,775.3	10,872.8	63.5	64.0	-94.10	271.5	2,082.3	531.4	405.0	126.44	4.203	
12,800.0	10,835.0	12,875.3	10,873.0	66.2	66.6	-94.10	271.5	2,182.3	531.1	399.3	131.84	4.028	
12,900.0	10,835.2	12,975.3	10,873.2	68.9	69.4	-94.10	271.5	2,282.3	530.8	393.5	137.28	3.866	
13,000.0	10,835.4	13,075.3	10,873.3	71.7	72.1	-94.11	271.5	2,382.3	530.5	387.7	142.76	3.716	
13,100.0	10,835.5	13,175.3	10,873.5	74.4	74.8	-94.11	271.5	2,482.3	530.2	381.9	148.26	3.576	
13,200.0	10,835.7	13,275.3	10,873.7	77.2	77.6	-94.11	271.5	2,582.3	529.9	376.1	153.78	3.445	
13,300.0	10,835.9	13,375.3	10,873.9	79.9	80.3	-94.11	271.5	2,682.3	529.6	370.2	159.33	3.324	
13,400.0	10,836.1	13,475.3	10,874.0	82.7	83.1	-94.12	271.5	2,782.3	529.2	364.3	164.90	3.209	
13,500.0	10,836.2	13,575.3	10,874.2	85.5	85.9	-94.12	271.5	2,882.3	528.9	358.4	170.49	3.102	
13,600.0	10,836.4	13,675.3	10,874.4	88.3	88.7	-94.12	271.5	2,982.3	528.6	352.5	176.10	3.002	
13,700.0	10,836.6	13,775.3	10,874.6	91.1	91.5	-94.12	271.5	3,082.3	528.3	346.6	181.72	2.907	
13,800.0	10,836.7	13,875.3	10,874.7	94.0	94.3	-94.13	271.5	3,182.3	528.0	340.7	187.35	2.818	
13,900.0	10,836.9	13,975.3	10,874.9	96.8	97.2	-94.13	271.5	3,282.3	527.7	334.7	193.00	2.734	
14,000.0	10,837.1	14,075.3	10,875.1	99.6	100.0	-94.13	271.5	3,382.3	527.4	328.7	198.66	2.655	
14,100.0	10,837.3	14,175.3	10,875.3	102.5	102.8	-94.13	271.5	3,482.3	527.1	322.8	204.33	2.580	
14,200.0	10,837.4	14,275.3	10,875.4	105.3	105.7	-94.14	271.5	3,582.3	526.8	316.8	210.01	2.508	
14,300.0	10,837.6	14,375.3	10,875.6	108.2	108.5	-94.14	271.5	3,682.3	526.5	310.8	215.69	2.441	
14,400.0	10,837.8	14,475.3	10,875.8	111.0	111.3	-94.14	271.5	3,782.3	526.2	304.8	221.39	2.377	
14,500.0	10,838.0	14,575.3	10,876.0	113.9	114.2	-94.14	271.5	3,882.3	525.9	298.8	227.09	2.316	
14,600.0	10,838.1	14,675.3	10,876.1	116.7	117.1	-94.15	271.5	3,982.3	525.6	292.7	232.80	2.257	
14,700.0	10,838.3	14,775.3	10,876.3	119.6	119.9	-94.15	271.5	4,082.3	525.2	286.7	238.52	2.202	
14,800.0	10,838.5	14,875.3	10,876.5	122.5	122.8	-94.15	271.5	4,182.3	524.9	280.7	244.24	2.149	
14,900.0	10,838.7	14,975.3	10,876.7	125.3	125.6	-94.15	271.5	4,282.3	524.6	274.7	249.97	2.099	
15,000.0	10,838.8	15,075.3	10,876.8	128.2	128.5	-94.16	271.5	4,382.3	524.3	268.6	255.71	2.050	
15,100.0	10,839.0	15,175.3	10,877.0	131.1	131.4	-94.16	271.5	4,482.3	524.0	262.6	261.44	2.004	
15,200.0	10,839.2	15,275.3	10,877.2	133.9	134.3	-94.16	271.5	4,582.3	523.7	256.5	267.19	1.960	
15,300.0	10,839.4	15,375.3	10,877.4	136.8	137.1	-94.16	271.5	4,682.3	523.4	250.5	272.94	1.918	
15,400.0	10,839.5	15,475.3	10,877.5	139.7	140.0	-94.17	271.5	4,782.3	523.1	244.4	278.69	1.877	
15,500.0	10,839.7	15,575.3	10,877.7	142.6	142.9	-94.17	271.5	4,882.3	522.8	238.3	284.44	1.838	
15,600.0	10,839.9	15,675.3	10,877.9	145.5	145.8	-94.17	271.5	4,982.3	522.5	232.3	290.20	1.800	
15,700.0	10,840.1	15,775.3	10,878.1	148.4	148.7	-94.17	271.5	5,082.3	522.2	226.2	295.96	1.764	
15,800.0	10,840.2	15,875.3	10,878.2	151.3	151.6	-94.18	271.5	5,182.3	521.9	220.1	301.73	1.730	
15,900.0	10,840.4	15,975.3	10,878.4	154.1	154.4	-94.18	271.5	5,282.3	521.6	214.1	307.50	1.696	
16,000.0	10,840.6	16,075.3	10,878.6	157.0	157.3	-94.18	271.5	5,382.3	521.2	208.0	313.27	1.664	
16,100.0	10,840.8	16,175.3	10,878.8	159.9	160.2	-94.18	271.5	5,482.3	520.9	201.9	319.04	1.633	
16,200.0	10,840.9	16,275.3	10,878.9	162.8	163.1	-94.19	271.5	5,582.3	520.6	195.8	324.82	1.603	
16,300.0	10,841.1	16,375.3	10,879.1	165.7	166.0	-94.19	271.5	5,682.3	520.3	189.7	330.60	1.574	
16,400.0	10,841.3	16,475.3	10,879.3	168.6	168.9	-94.19	271.5	5,782.3	520.0	183.6	336.38	1.546	
16,500.0	10,841.4	16,575.3	10,879.5	171.5	171.8	-94.19	271.5	5,882.3	519.7	177.5	342.16	1.519	
16,600.0	10,841.6	16,675.3	10,879.6	174.4	174.7	-94.20	271.5	5,982.3	519.4	171.5	347.95	1.493	Level 3
16,700.0	10,841.8	16,775.3	10,879.8	177.3	177.6	-94.20	271.5	6,082.3	519.1	165.4	353.73	1.467	Level 3
16,800.0	10,842.0	16,875.3	10,880.0	180.2	180.5	-94.20	271.5	6,182.3	518.8	159.3	359.52	1.443	Level 3
16,900.0	10,842.1	16,975.3	10,880.2	183.1	183.4	-94.20	271.5	6,282.3	518.5	153.2	365.31	1.419	Level 3
17,000.0	10,842.3	17,075.3	10,880.3	186.0	186.3	-94.21	271.5	6,382.3	518.2	147.1	371.11	1.396	Level 3
17,100.0	10,842.5	17,175.3	10,880.5	188.9	189.2	-94.21	271.5	6,482.3	517.9	141.0	376.90	1.374	Level 3
17,200.0	10,842.7	17,275.3	10,880.7	191.8	192.1	-94.21	271.5	6,582.3	517.6	134.9	382.70	1.352	Level 3
17,300.0	10,842.8	17,375.3	10,880.9	194.7	195.0	-94.21	271.5	6,682.3	517.2	128.8	388.49	1.331	Level 3
17,400.0	10,843.0	17,475.3	10,881.0	197.6	197.9	-94.22	271.5	6,782.3	516.9	122.6	394.29	1.311	Level 3
17,500.0	10,843.2	17,575.3	10,881.2	200.6	200.8	-94.22	271.5	6,882.3	516.6	116.5	400.09	1.291	Level 3
17,600.0	10,843.4	17,675.3	10,881.4	203.5	203.7	-94.22	271.5	6,982.3	516.3	110.4	405.89	1.272	Level 3
17,700.0	10,843.5	17,775.3	10,881.6	206.4	206.6	-94.22	271.5	7,082.3	516.0	104.3	411.69	1.253	Level 3
17,800.0	10,843.7	17,875.3	10,881.7	209.3	209.6	-94.23	271.5	7,182.3	515.7	98.2	417.50	1.235	Level 2

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 11T2 - Kline Federal 5300 41-18 11T2 - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,900.0	10,843.9	17,975.3	10,881.9	212.2	212.5	-94.23	271.5	7,282.3	515.4	92.1	423.30	1.218	Level 2
18,000.0	10,844.1	18,075.3	10,882.1	215.1	215.4	-94.23	271.5	7,382.3	515.1	86.0	429.11	1.200	Level 2
18,100.0	10,844.2	18,175.3	10,882.2	218.0	218.3	-94.23	271.5	7,482.3	514.8	79.9	434.91	1.184	Level 2
18,200.0	10,844.4	18,275.3	10,882.4	220.9	221.2	-94.24	271.5	7,582.3	514.5	73.8	440.72	1.167	Level 2
18,300.0	10,844.6	18,375.3	10,882.6	223.8	224.1	-94.24	271.5	7,682.3	514.2	67.6	446.53	1.151	Level 2
18,400.0	10,844.8	18,475.3	10,882.8	226.7	227.0	-94.24	271.5	7,782.3	513.9	61.5	452.34	1.136	Level 2
18,500.0	10,844.9	18,575.3	10,882.9	229.7	229.9	-94.25	271.5	7,882.3	513.6	55.4	458.15	1.121	Level 2
18,600.0	10,845.1	18,675.3	10,883.1	232.6	232.8	-94.25	271.5	7,982.2	513.2	49.3	463.96	1.106	Level 2
18,700.0	10,845.3	18,775.3	10,883.3	235.5	235.8	-94.25	271.5	8,082.2	512.9	43.2	469.77	1.092	Level 2
18,800.0	10,845.4	18,875.3	10,883.5	238.4	238.7	-94.25	271.5	8,182.2	512.6	37.0	475.58	1.078	Level 2
18,900.0	10,845.6	18,975.3	10,883.6	241.3	241.6	-94.26	271.5	8,282.2	512.3	30.9	481.39	1.064	Level 2
19,000.0	10,845.8	19,075.3	10,883.8	244.2	244.5	-94.26	271.5	8,382.2	512.0	24.8	487.21	1.051	Level 2
19,100.0	10,846.0	19,175.3	10,884.0	247.1	247.4	-94.26	271.5	8,482.2	511.7	18.7	493.02	1.038	Level 2
19,200.0	10,846.1	19,275.3	10,884.2	250.1	250.3	-94.26	271.5	8,582.2	511.4	12.6	498.84	1.025	Level 2
19,300.0	10,846.3	19,375.3	10,884.3	253.0	253.2	-94.27	271.5	8,682.2	511.1	6.4	504.65	1.013	Level 2
19,400.0	10,846.5	19,475.3	10,884.5	255.9	256.2	-94.27	271.5	8,782.2	510.8	0.3	510.47	1.001	Level 2
19,500.0	10,846.7	19,575.3	10,884.7	258.8	259.1	-94.27	271.5	8,882.2	510.5	-5.8	516.29	0.989	Level 1
19,600.0	10,846.8	19,675.3	10,884.9	261.7	262.0	-94.27	271.5	8,982.2	510.2	-11.9	522.10	0.977	Level 1
19,700.0	10,847.0	19,775.3	10,885.0	264.6	264.9	-94.28	271.5	9,082.2	509.9	-18.1	527.92	0.966	Level 1
19,800.0	10,847.2	19,875.3	10,885.2	267.6	267.8	-94.28	271.5	9,182.2	509.6	-24.2	533.74	0.955	Level 1
19,900.0	10,847.4	19,975.3	10,885.4	270.5	270.7	-94.28	271.5	9,282.2	509.2	-30.3	539.56	0.944	Level 1
20,000.0	10,847.5	20,075.3	10,885.6	273.4	273.7	-94.28	271.5	9,382.2	508.9	-36.4	545.38	0.933	Level 1
20,100.0	10,847.7	20,175.3	10,885.7	276.3	276.6	-94.29	271.5	9,482.2	508.6	-42.6	551.20	0.923	Level 1
20,200.0	10,847.9	20,275.3	10,885.9	279.2	279.5	-94.29	271.5	9,582.2	508.3	-48.7	557.02	0.913	Level 1
20,300.0	10,848.1	20,375.3	10,886.1	282.1	282.4	-94.29	271.5	9,682.2	508.0	-54.8	562.84	0.903	Level 1
20,400.0	10,848.2	20,475.3	10,886.3	285.1	285.3	-94.30	271.5	9,782.2	507.7	-61.0	568.66	0.893	Level 1
20,500.0	10,848.4	20,575.3	10,886.4	288.0	288.3	-94.30	271.5	9,882.2	507.4	-67.1	574.48	0.883	Level 1
20,600.0	10,848.6	20,675.3	10,886.6	290.9	291.2	-94.30	271.5	9,982.2	507.1	-73.2	580.30	0.874	Level 1
20,667.7	10,848.7	20,743.0	10,886.7	292.9	293.2	-94.30	271.5	10,049.9	506.9	-77.4	584.25	0.868	Level 1, ES, SF

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 13T2X - Kline Federal 5300 41-18 13T2X - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	2.0	2.0	-180.00	-33.4	0.0	33.4				
100.0	100.0	100.0	100.0	2.0	2.0	-180.00	-33.4	0.0	33.4	29.4	4.00	8.352	
200.0	200.0	200.0	200.0	2.0	2.0	-180.00	-33.4	0.0	33.4	29.4	4.05	8.261	
300.0	300.0	300.0	300.0	2.1	2.1	-180.00	-33.4	0.0	33.4	29.3	4.14	8.077	
400.0	400.0	400.0	400.0	2.1	2.1	-180.00	-33.4	0.0	33.4	29.2	4.28	7.816	
500.0	500.0	500.0	500.0	2.2	2.2	-180.00	-33.4	0.0	33.4	29.0	4.46	7.502	
600.0	600.0	600.0	600.0	2.3	2.3	-180.00	-33.4	0.0	33.4	28.8	4.67	7.155	
700.0	700.0	700.0	700.0	2.5	2.5	-180.00	-33.4	0.0	33.4	28.5	4.92	6.795	
800.0	800.0	800.0	800.0	2.6	2.6	-180.00	-33.4	0.0	33.4	28.2	5.20	6.436	
900.0	900.0	900.0	900.0	2.7	2.7	-180.00	-33.4	0.0	33.4	27.9	5.49	6.087	
1,000.0	1,000.0	1,000.0	1,000.0	2.9	2.9	-180.00	-33.4	0.0	33.4	27.6	5.81	5.755	
1,100.0	1,100.0	1,100.0	1,100.0	3.1	3.1	-180.00	-33.4	0.0	33.4	27.3	6.14	5.442	
1,200.0	1,200.0	1,200.0	1,200.0	3.2	3.2	-180.00	-33.4	0.0	33.4	26.9	6.49	5.151	
1,300.0	1,300.0	1,300.0	1,300.0	3.4	3.4	-180.00	-33.4	0.0	33.4	26.6	6.85	4.880	
1,400.0	1,400.0	1,400.0	1,400.0	3.6	3.6	-180.00	-33.4	0.0	33.4	26.2	7.22	4.630	
1,500.0	1,500.0	1,500.0	1,500.0	3.8	3.8	-180.00	-33.4	0.0	33.4	25.8	7.60	4.400	
1,600.0	1,600.0	1,600.0	1,600.0	4.0	4.0	-180.00	-33.4	0.0	33.4	25.5	7.99	4.187	
1,700.0	1,700.0	1,700.0	1,700.0	4.2	4.2	-180.00	-33.4	0.0	33.4	25.1	8.38	3.991	
1,800.0	1,800.0	1,800.0	1,800.0	4.4	4.4	-180.00	-33.4	0.0	33.4	24.7	8.78	3.810	
1,900.0	1,900.0	1,900.0	1,900.0	4.6	4.6	-180.00	-33.4	0.0	33.4	24.3	9.18	3.643	
2,000.0	2,000.0	2,000.0	2,000.0	4.8	4.8	-180.00	-33.4	0.0	33.4	23.9	9.58	3.489	
2,100.0	2,100.0	2,100.0	2,100.0	5.0	5.0	-180.00	-33.4	0.0	33.4	23.4	9.99	3.346	
2,200.0	2,200.0	2,200.0	2,200.0	5.2	5.2	-180.00	-33.4	0.0	33.4	23.0	10.41	3.213	
2,200.0	2,200.0	2,200.0	2,200.0	5.2	5.2	-180.00	-33.4	0.0	33.4	23.0	10.41	3.213	CC
2,216.7	2,216.7	2,216.7	2,216.7	5.2	5.2	90.12	-33.4	0.0	33.4	23.0	10.48	3.192	
2,300.0	2,300.0	2,300.0	2,300.0	5.4	5.4	91.37	-33.4	0.0	33.4	22.6	10.80	3.097	
2,400.0	2,400.0	2,400.0	2,400.0	5.6	5.6	92.86	-33.4	0.0	33.5	22.3	11.20	2.990	
2,500.0	2,500.0	2,500.0	2,500.0	5.8	5.8	94.35	-33.4	0.0	33.5	21.9	11.59	2.892	
2,600.0	2,600.0	2,600.0	2,600.0	6.0	6.0	95.84	-33.4	0.0	33.6	21.6	12.00	2.802	
2,700.0	2,700.0	2,700.0	2,700.0	6.1	6.3	97.31	-33.4	0.0	33.7	21.3	12.40	2.718	
2,800.0	2,800.0	2,800.0	2,800.0	6.3	6.5	98.78	-33.4	0.0	33.8	21.0	12.81	2.641	
2,900.0	2,900.0	2,900.0	2,900.0	6.5	6.7	100.23	-33.4	0.0	34.0	20.8	13.22	2.569	
3,000.0	3,000.0	3,000.0	3,000.0	6.7	6.9	101.67	-33.4	0.0	34.1	20.5	13.64	2.504	
3,100.0	3,100.0	3,100.0	3,100.0	6.9	7.1	103.10	-33.4	0.0	34.3	20.3	14.05	2.443	
3,200.0	3,200.0	3,200.0	3,200.0	7.1	7.3	104.51	-33.4	0.0	34.5	20.1	14.47	2.387	
3,300.0	3,300.0	3,300.0	3,300.0	7.3	7.5	105.90	-33.4	0.0	34.8	19.9	14.89	2.335	
3,400.0	3,400.0	3,400.0	3,400.0	7.6	7.8	107.27	-33.4	0.0	35.0	19.7	15.31	2.287	
3,500.0	3,500.0	3,500.0	3,500.0	7.8	8.0	108.63	-33.4	0.0	35.3	19.5	15.74	2.242	
3,600.0	3,599.9	3,599.9	3,599.9	8.0	8.2	109.96	-33.4	0.0	35.6	19.4	16.16	2.201	
3,700.0	3,699.9	3,699.9	3,699.9	8.2	8.4	111.27	-33.4	0.0	35.9	19.3	16.59	2.163	
3,800.0	3,799.9	3,799.9	3,799.9	8.4	8.6	112.56	-33.4	0.0	36.2	19.2	17.02	2.128	
3,900.0	3,899.9	3,899.9	3,899.9	8.6	8.9	113.82	-33.4	0.0	36.6	19.1	17.44	2.095	
4,000.0	3,999.9	3,999.9	3,999.9	8.8	9.1	115.06	-33.4	0.0	36.9	19.0	17.87	2.065	
4,100.0	4,099.9	4,099.9	4,099.9	9.0	9.3	116.27	-33.4	0.0	37.3	19.0	18.30	2.037	
4,200.0	4,199.9	4,199.9	4,199.9	9.2	9.5	117.46	-33.4	0.0	37.7	18.9	18.74	2.011	
4,300.0	4,299.9	4,299.9	4,299.9	9.4	9.7	118.63	-33.4	0.0	38.1	18.9	19.17	1.987	
4,400.0	4,399.9	4,399.9	4,399.9	9.7	10.0	119.77	-33.4	0.0	38.5	18.9	19.60	1.965	
4,500.0	4,499.9	4,499.9	4,499.9	9.9	10.2	120.88	-33.4	0.0	39.0	18.9	20.04	1.945	
4,600.0	4,599.9	4,599.9	4,599.9	10.1	10.4	121.97	-33.4	0.0	39.4	18.9	20.47	1.926	
4,700.0	4,699.9	4,699.9	4,699.9	10.3	10.6	123.03	-33.4	0.0	39.9	19.0	20.90	1.908	
4,800.0	4,799.9	4,799.9	4,799.9	10.5	10.8	124.07	-33.4	0.0	40.4	19.0	21.34	1.892	
4,900.0	4,899.9	4,899.9	4,899.9	10.7	11.1	125.09	-33.4	0.0	40.9	19.1	21.78	1.876	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 13T2X - Kline Federal 5300 41-18 13T2X - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,999.9	4,999.9	4,999.9	10.9	11.3	126.07	-33.4	0.0	41.4	19.2	22.21	1.862	
5,100.0	5,099.9	5,099.9	5,099.9	11.2	11.5	127.04	-33.4	0.0	41.9	19.2	22.65	1.849	
5,200.0	5,199.9	5,199.9	5,199.9	11.4	11.7	127.98	-33.4	0.0	42.4	19.3	23.09	1.837	
5,300.0	5,299.9	5,299.9	5,299.9	11.6	11.9	128.90	-33.4	0.0	43.0	19.4	23.53	1.826	
5,400.0	5,399.9	5,399.9	5,399.9	11.8	12.2	129.79	-33.4	0.0	43.5	19.6	23.97	1.816	
5,500.0	5,499.9	5,499.9	5,499.9	12.0	12.4	130.66	-33.4	0.0	44.1	19.7	24.41	1.806	
5,600.0	5,599.9	5,599.9	5,599.9	12.2	12.6	131.51	-33.4	0.0	44.7	19.8	24.85	1.797	
5,700.0	5,699.9	5,699.9	5,699.9	12.5	12.8	132.34	-33.4	0.0	45.2	20.0	25.28	1.789	
5,800.0	5,799.9	5,799.9	5,799.9	12.7	13.0	133.15	-33.4	0.0	45.8	20.1	25.73	1.782	
5,900.0	5,899.9	5,899.9	5,899.9	12.9	13.3	133.93	-33.4	0.0	46.4	20.3	26.17	1.775	
6,000.0	5,999.9	5,999.9	5,999.9	13.1	13.5	134.70	-33.4	0.0	47.0	20.4	26.61	1.768	
6,100.0	6,099.9	6,099.9	6,099.9	13.3	13.7	135.44	-33.4	0.0	47.7	20.6	27.05	1.762	
6,200.0	6,199.8	6,199.8	6,199.8	13.6	13.9	136.17	-33.4	0.0	48.3	20.8	27.49	1.757	
6,300.0	6,299.8	6,299.8	6,299.8	13.8	14.2	136.88	-33.4	0.0	48.9	21.0	27.93	1.751	
6,400.0	6,399.8	6,399.8	6,399.8	14.0	14.4	137.57	-33.4	0.0	49.6	21.2	28.37	1.747	
6,500.0	6,499.8	6,499.8	6,499.8	14.2	14.6	138.24	-33.4	0.0	50.2	21.4	28.81	1.742	
6,600.0	6,599.8	6,599.8	6,599.8	14.4	14.8	138.89	-33.4	0.0	50.9	21.6	29.26	1.738	
6,700.0	6,699.8	6,699.8	6,699.8	14.7	15.1	139.53	-33.4	0.0	51.5	21.8	29.70	1.735	
6,800.0	6,799.8	6,799.8	6,799.8	14.9	15.3	140.15	-33.4	0.0	52.2	22.0	30.14	1.731	
6,900.0	6,899.8	6,899.8	6,899.8	15.1	15.5	140.76	-33.4	0.0	52.9	22.3	30.59	1.728	
7,000.0	6,999.8	6,999.8	6,999.8	15.3	15.7	141.35	-33.4	0.0	53.5	22.5	31.03	1.726	
7,100.0	7,099.8	7,099.8	7,099.8	15.5	15.9	141.93	-33.4	0.0	54.2	22.8	31.47	1.723	
7,200.0	7,199.8	7,199.8	7,199.8	15.8	16.2	142.49	-33.4	0.0	54.9	23.0	31.92	1.721	
7,300.0	7,299.8	7,299.8	7,299.8	16.0	16.4	143.04	-33.4	0.0	55.6	23.2	32.36	1.718	
7,400.0	7,399.8	7,399.8	7,399.8	16.2	16.6	143.57	-33.4	0.0	56.3	23.5	32.80	1.717	
7,500.0	7,499.8	7,499.8	7,499.8	16.4	16.8	144.09	-33.4	0.0	57.0	23.8	33.25	1.715	
7,600.0	7,599.8	7,599.8	7,599.8	16.6	17.1	144.60	-33.4	0.0	57.7	24.0	33.69	1.713	
7,700.0	7,699.8	7,699.8	7,699.8	16.9	17.3	145.09	-33.4	0.0	58.4	24.3	34.14	1.712	
7,800.0	7,799.8	7,799.8	7,799.8	17.1	17.5	145.58	-33.4	0.0	59.2	24.6	34.58	1.711	
7,900.0	7,899.8	7,899.8	7,899.8	17.3	17.7	146.05	-33.4	0.0	59.9	24.9	35.02	1.710	
7,926.7	7,926.4	7,926.4	7,926.4	17.4	17.8	146.17	-33.4	0.0	60.1	24.9	35.14	1.709	
7,943.3	7,943.1	7,943.1	7,943.1	17.4	17.8	-123.79	-33.4	0.0	60.1	24.9	35.18	1.709	
8,000.0	7,999.8	7,999.8	7,999.8	17.5	18.0	-123.79	-33.4	0.0	60.1	24.7	35.42	1.698	
8,100.0	8,099.8	8,099.8	8,099.8	17.7	18.2	-123.79	-33.4	0.0	60.1	24.3	35.85	1.677	
8,200.0	8,199.8	8,199.8	8,199.8	17.9	18.4	-123.79	-33.4	0.0	60.1	23.8	36.28	1.657	
8,300.0	8,299.8	8,299.8	8,299.8	18.1	18.6	-123.79	-33.4	0.0	60.1	23.4	36.72	1.638	
8,400.0	8,399.8	8,399.8	8,399.8	18.4	18.8	-123.79	-33.4	0.0	60.1	23.0	37.15	1.619	
8,500.0	8,499.8	8,499.8	8,499.8	18.6	19.1	-123.79	-33.4	0.0	60.1	22.5	37.58	1.600	
8,600.0	8,599.8	8,599.8	8,599.8	18.8	19.3	-123.79	-33.4	0.0	60.1	22.1	38.01	1.582	
8,700.0	8,699.8	8,699.8	8,699.8	19.0	19.5	-123.79	-33.4	0.0	60.1	21.7	38.45	1.564	
8,800.0	8,799.8	8,799.8	8,799.8	19.2	19.7	-123.79	-33.4	0.0	60.1	21.2	38.88	1.546	
8,900.0	8,899.8	8,899.8	8,899.8	19.4	20.0	-123.79	-33.4	0.0	60.1	20.8	39.32	1.529	
9,000.0	8,999.8	8,999.8	8,999.8	19.6	20.2	-123.79	-33.4	0.0	60.1	20.4	39.75	1.513	
9,100.0	9,099.8	9,099.8	9,099.8	19.8	20.4	-123.79	-33.4	0.0	60.1	19.9	40.19	1.496	Level 3
9,200.0	9,199.8	9,199.8	9,199.8	20.0	20.6	-123.79	-33.4	0.0	60.1	19.5	40.62	1.480	Level 3
9,300.0	9,299.8	9,299.8	9,299.8	20.2	20.9	-123.79	-33.4	0.0	60.1	19.1	41.06	1.465	Level 3
9,400.0	9,399.8	9,399.8	9,399.8	20.5	21.1	-123.79	-33.4	0.0	60.1	18.6	41.49	1.449	Level 3
9,500.0	9,499.8	9,499.8	9,499.8	20.7	21.3	-123.79	-33.4	0.0	60.1	18.2	41.93	1.434	Level 3
9,600.0	9,599.8	9,599.8	9,599.8	20.9	21.5	-123.79	-33.4	0.0	60.1	17.8	42.37	1.419	Level 3
9,700.0	9,699.8	9,699.8	9,699.8	21.1	21.8	-123.79	-33.4	0.0	60.1	17.3	42.80	1.405	Level 3
9,800.0	9,799.8	9,799.8	9,799.8	21.3	22.0	-123.79	-33.4	0.0	60.1	16.9	43.24	1.391	Level 3
9,900.0	9,899.8	9,899.8	9,899.8	21.5	22.2	-123.79	-33.4	0.0	60.1	16.5	43.68	1.377	Level 3

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 13T2X - Kline Federal 5300 41-18 13T2X - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,000.0	9,999.8	9,999.8	9,999.8	21.7	22.4	-123.79	-33.4	0.0	60.1	16.0	44.11	1.363	Level 3
10,100.0	10,099.8	10,099.8	10,099.8	21.9	22.6	-123.79	-33.4	0.0	60.1	15.6	44.55	1.350	Level 3
10,200.0	10,199.8	10,199.8	10,199.8	22.2	22.9	-123.79	-33.4	0.0	60.1	15.1	44.99	1.336	Level 3
10,300.0	10,299.8	10,299.8	10,299.8	22.4	23.1	-123.79	-33.4	0.0	60.1	14.7	45.43	1.324	Level 3
10,354.8	10,354.6	10,354.6	10,354.6	22.5	23.2	-123.79	-33.4	0.0	60.1	14.5	45.67	1.317	Level 3
10,375.0	10,374.8	10,374.8	10,374.8	22.5	23.3	126.52	-33.4	0.0	60.4	14.6	45.78	1.319	Level 3
10,400.0	10,399.7	10,400.2	10,400.2	22.6	23.3	127.68	-33.5	0.1	61.4	15.5	45.84	1.339	Level 3
10,425.0	10,424.5	10,426.8	10,426.8	22.7	23.4	128.94	-34.0	1.1	62.7	16.9	45.86	1.368	Level 3
10,450.0	10,449.2	10,453.5	10,453.3	22.7	23.4	129.94	-35.3	3.4	64.2	18.4	45.84	1.401	Level 3
10,475.0	10,473.5	10,480.3	10,479.8	22.8	23.5	130.70	-37.4	7.0	65.9	20.1	45.79	1.439	Level 3
10,500.0	10,497.6	10,507.2	10,506.1	22.8	23.5	131.22	-40.2	12.0	67.6	22.0	45.69	1.480	Level 3
10,525.0	10,521.2	10,534.3	10,532.2	22.9	23.6	131.51	-43.7	18.2	69.5	24.0	45.56	1.526	
10,550.0	10,544.4	10,561.3	10,557.8	23.0	23.6	131.58	-47.9	25.8	71.5	26.1	45.41	1.575	
10,575.0	10,567.1	10,588.5	10,583.0	23.0	23.7	131.45	-52.9	34.6	73.6	28.4	45.24	1.627	
10,600.0	10,589.1	10,615.7	10,607.7	23.1	23.8	131.14	-58.6	44.7	75.8	30.7	45.07	1.681	
10,625.0	10,610.6	10,643.0	10,631.7	23.2	23.8	130.66	-64.9	56.0	78.0	33.1	44.90	1.738	
10,650.0	10,631.3	10,670.3	10,654.9	23.3	23.9	130.02	-71.9	68.5	80.4	35.6	44.76	1.796	
10,675.0	10,651.3	10,697.7	10,677.3	23.4	24.0	129.25	-79.6	82.1	82.8	38.2	44.64	1.855	
10,700.0	10,670.5	10,725.0	10,698.8	23.5	24.1	128.34	-87.9	96.9	85.3	40.8	44.57	1.914	
10,725.0	10,688.8	10,752.4	10,719.3	23.6	24.2	127.33	-96.8	112.7	87.9	43.4	44.56	1.973	
10,750.0	10,706.2	10,779.8	10,738.7	23.7	24.3	126.22	-106.3	129.6	90.6	46.0	44.62	2.031	
10,775.0	10,722.6	10,807.2	10,757.0	23.9	24.4	125.03	-116.3	147.3	93.4	48.6	44.74	2.087	
10,800.0	10,738.0	10,834.6	10,774.1	24.0	24.5	123.76	-126.8	166.0	96.2	51.3	44.95	2.140	
10,825.0	10,752.4	10,861.9	10,789.9	24.2	24.7	122.44	-137.7	185.5	99.1	53.9	45.24	2.191	
10,850.0	10,765.7	10,889.3	10,804.4	24.4	24.9	121.06	-149.1	205.7	102.1	56.5	45.62	2.239	
10,875.0	10,777.8	10,916.6	10,817.5	24.6	25.0	119.64	-160.8	226.5	105.2	59.1	46.08	2.283	
10,900.0	10,788.8	10,943.8	10,829.2	24.8	25.2	118.20	-172.9	248.0	108.4	61.8	46.62	2.325	
10,925.0	10,798.6	10,971.1	10,839.5	25.0	25.5	116.73	-185.2	269.9	111.6	64.4	47.24	2.363	
10,950.0	10,807.2	10,998.2	10,848.3	25.3	25.7	115.24	-197.8	292.3	114.9	67.0	47.92	2.398	
10,975.0	10,814.5	11,025.3	10,855.7	25.6	26.0	113.75	-210.6	315.1	118.3	69.6	48.66	2.430	
11,000.0	10,820.6	11,052.4	10,861.5	25.8	26.2	112.25	-223.6	338.1	121.7	72.2	49.46	2.460	
11,025.0	10,825.4	11,079.4	10,865.8	26.1	26.5	110.76	-236.6	361.3	125.1	74.8	50.29	2.488	
11,050.0	10,828.9	11,106.3	10,868.6	26.5	26.9	109.28	-249.8	384.7	128.6	77.5	51.16	2.514	
11,075.0	10,831.1	11,133.2	10,869.9	26.8	27.2	107.81	-262.9	408.1	132.2	80.1	52.05	2.539	
11,100.0	10,832.0	11,159.3	10,870.0	27.1	27.5	106.51	-275.7	430.9	135.8	82.9	52.93	2.566	
11,104.0	10,832.0	11,163.4	10,870.0	27.2	27.6	106.36	-277.7	434.5	136.4	83.3	53.06	2.570	
11,200.0	10,832.2	11,262.9	10,870.2	28.6	29.0	104.72	-324.2	522.4	151.8	95.8	56.01	2.711	
11,300.0	10,832.4	11,366.8	10,870.4	30.3	30.7	103.16	-369.6	615.8	170.4	111.0	59.35	2.870	
11,400.0	10,832.6	11,470.8	10,870.5	32.2	32.6	101.77	-411.6	711.0	191.4	128.5	62.89	3.043	
11,500.0	10,832.7	11,575.2	10,870.7	34.1	34.7	100.54	-450.2	807.9	214.9	148.4	66.51	3.231	
11,600.0	10,832.9	11,679.9	10,870.9	36.2	36.9	99.47	-485.4	906.5	240.8	170.6	70.16	3.432	
11,680.4	10,833.1	11,764.4	10,871.1	38.0	38.7	98.70	-511.1	987.0	263.4	190.3	73.06	3.605	
11,700.0	10,833.1	11,785.0	10,871.1	38.4	39.2	98.50	-517.0	1,006.7	269.0	195.1	73.94	3.638	
11,800.0	10,833.3	11,891.7	10,871.3	40.7	41.6	97.66	-545.4	1,109.6	295.7	217.0	78.62	3.761	
11,900.0	10,833.4	12,000.6	10,871.5	43.0	44.2	97.04	-570.4	1,215.6	318.7	235.2	83.51	3.817	
12,000.0	10,833.6	12,111.3	10,871.7	45.4	46.9	96.59	-591.6	1,324.2	338.1	249.5	88.60	3.816	
12,100.0	10,833.8	12,223.5	10,871.9	47.9	49.6	96.26	-608.9	1,435.1	353.7	259.8	93.85	3.768	
12,200.0	10,834.0	12,337.0	10,872.1	50.4	52.4	96.03	-621.9	1,547.8	365.4	266.1	99.24	3.682	
12,300.0	10,834.1	12,451.3	10,872.3	53.0	55.3	95.89	-630.4	1,661.8	373.1	268.4	104.75	3.562	
12,400.0	10,834.3	12,566.2	10,872.5	55.5	58.2	95.82	-634.5	1,776.7	376.9	266.6	110.33	3.416	
12,500.0	10,834.5	12,671.8	10,872.7	58.2	60.9	95.81	-634.8	1,882.3	377.5	261.8	115.73	3.262	
12,600.0	10,834.7	12,771.8	10,872.9	60.8	63.4	95.80	-634.8	1,982.3	377.8	256.8	121.04	3.121	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 13T2X - Kline Federal 5300 41-18 13T2X - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,700.0	10,834.8	12,871.8	10,873.0	63.5	66.0	95.80	-634.8	2,082.3	378.1	251.7	126.40	2.991	
12,800.0	10,835.0	12,971.8	10,873.2	66.2	68.7	95.79	-634.8	2,182.3	378.4	246.6	131.80	2.871	
12,900.0	10,835.2	13,071.8	10,873.4	68.9	71.3	95.79	-634.8	2,282.3	378.7	241.5	137.24	2.760	
13,000.0	10,835.4	13,171.8	10,873.6	71.7	74.0	95.79	-634.8	2,382.3	379.0	236.3	142.70	2.656	
13,100.0	10,835.5	13,271.8	10,873.7	74.4	76.7	95.78	-634.8	2,482.3	379.3	231.2	148.20	2.560	
13,200.0	10,835.7	13,371.8	10,873.9	77.2	79.4	95.78	-634.8	2,582.3	379.7	225.9	153.72	2.470	
13,300.0	10,835.9	13,471.8	10,874.1	79.9	82.1	95.77	-634.8	2,682.3	380.0	220.7	159.26	2.386	
13,400.0	10,836.1	13,571.8	10,874.3	82.7	84.8	95.77	-634.8	2,782.3	380.3	215.4	164.82	2.307	
13,500.0	10,836.2	13,671.8	10,874.4	85.5	87.6	95.76	-634.8	2,882.3	380.6	210.2	170.40	2.233	
13,600.0	10,836.4	13,771.8	10,874.6	88.3	90.3	95.76	-634.8	2,982.3	380.9	204.9	176.00	2.164	
13,700.0	10,836.6	13,871.8	10,874.8	91.1	93.1	95.75	-634.8	3,082.3	381.2	199.6	181.61	2.099	
13,800.0	10,836.7	13,971.8	10,875.0	94.0	95.9	95.75	-634.8	3,182.3	381.5	194.3	187.24	2.037	
13,900.0	10,836.9	14,071.8	10,875.1	96.8	98.7	95.74	-634.8	3,282.3	381.8	188.9	192.88	1.979	
14,000.0	10,837.1	14,171.8	10,875.3	99.6	101.5	95.74	-634.8	3,382.3	382.1	183.6	198.53	1.925	
14,100.0	10,837.3	14,271.8	10,875.5	102.5	104.3	95.74	-634.8	3,482.3	382.4	178.2	204.19	1.873	
14,200.0	10,837.4	14,371.8	10,875.7	105.3	107.1	95.73	-634.8	3,582.3	382.7	172.9	209.86	1.824	
14,300.0	10,837.6	14,471.8	10,875.8	108.2	109.9	95.73	-634.8	3,682.3	383.0	167.5	215.54	1.777	
14,400.0	10,837.8	14,571.8	10,876.0	111.0	112.7	95.72	-634.8	3,782.3	383.3	162.1	221.23	1.733	
14,500.0	10,838.0	14,671.8	10,876.2	113.9	115.6	95.72	-634.8	3,882.3	383.6	156.7	226.93	1.691	
14,600.0	10,838.1	14,771.8	10,876.4	116.7	118.4	95.71	-634.8	3,982.3	384.0	151.3	232.63	1.650	
14,700.0	10,838.3	14,871.8	10,876.5	119.6	121.2	95.71	-634.8	4,082.3	384.3	145.9	238.34	1.612	
14,800.0	10,838.5	14,971.8	10,876.7	122.5	124.1	95.70	-634.8	4,182.3	384.6	140.5	244.06	1.576	
14,900.0	10,838.7	15,071.8	10,876.9	125.3	126.9	95.70	-634.8	4,282.3	384.9	135.1	249.78	1.541	
15,000.0	10,838.8	15,171.8	10,877.1	128.2	129.8	95.69	-634.8	4,382.3	385.2	129.7	255.51	1.508	
15,100.0	10,839.0	15,271.8	10,877.2	131.1	132.6	95.69	-634.8	4,482.3	385.5	124.3	261.24	1.476	Level 3
15,200.0	10,839.2	15,371.8	10,877.4	133.9	135.5	95.69	-634.8	4,582.3	385.8	118.8	266.98	1.445	Level 3
15,300.0	10,839.4	15,471.8	10,877.6	136.8	138.3	95.68	-634.8	4,682.3	386.1	113.4	272.72	1.416	Level 3
15,400.0	10,839.5	15,571.8	10,877.8	139.7	141.2	95.68	-634.8	4,782.3	386.4	108.0	278.46	1.388	Level 3
15,500.0	10,839.7	15,671.8	10,877.9	142.6	144.1	95.67	-634.8	4,882.3	386.7	102.5	284.21	1.361	Level 3
15,600.0	10,839.9	15,771.8	10,878.1	145.5	146.9	95.67	-634.8	4,982.3	387.0	97.1	289.96	1.335	Level 3
15,700.0	10,840.1	15,871.8	10,878.3	148.4	149.8	95.66	-634.8	5,082.3	387.3	91.6	295.72	1.310	Level 3
15,800.0	10,840.2	15,971.8	10,878.5	151.3	152.7	95.66	-634.8	5,182.3	387.6	86.2	301.48	1.286	Level 3
15,900.0	10,840.4	16,071.8	10,878.6	154.1	155.5	95.65	-634.8	5,282.3	387.9	80.7	307.24	1.263	Level 3
16,000.0	10,840.6	16,171.8	10,878.8	157.0	158.4	95.65	-634.8	5,382.3	388.3	75.2	313.01	1.240	Level 2
16,100.0	10,840.8	16,271.8	10,879.0	159.9	161.3	95.65	-634.8	5,482.3	388.6	69.8	318.77	1.219	Level 2
16,200.0	10,840.9	16,371.8	10,879.1	162.8	164.2	95.64	-634.8	5,582.3	388.9	64.3	324.54	1.198	Level 2
16,300.0	10,841.1	16,471.8	10,879.3	165.7	167.1	95.64	-634.8	5,682.3	389.2	58.9	330.32	1.178	Level 2
16,400.0	10,841.3	16,571.8	10,879.5	168.6	169.9	95.63	-634.8	5,782.3	389.5	53.4	336.09	1.159	Level 2
16,500.0	10,841.4	16,671.8	10,879.7	171.5	172.8	95.63	-634.8	5,882.3	389.8	47.9	341.87	1.140	Level 2
16,600.0	10,841.6	16,771.8	10,879.8	174.4	175.7	95.62	-634.8	5,982.3	390.1	42.4	347.65	1.122	Level 2
16,700.0	10,841.8	16,871.8	10,880.0	177.3	178.6	95.62	-634.8	6,082.3	390.4	37.0	353.43	1.105	Level 2
16,800.0	10,842.0	16,971.8	10,880.2	180.2	181.5	95.62	-634.8	6,182.3	390.7	31.5	359.22	1.088	Level 2
16,900.0	10,842.1	17,071.8	10,880.4	183.1	184.4	95.61	-634.8	6,282.3	391.0	26.0	365.00	1.071	Level 2
17,000.0	10,842.3	17,171.8	10,880.5	186.0	187.3	95.61	-634.8	6,382.3	391.3	20.5	370.79	1.055	Level 2
17,100.0	10,842.5	17,271.8	10,880.7	188.9	190.2	95.60	-634.8	6,482.3	391.6	15.1	376.58	1.040	Level 2
17,200.0	10,842.7	17,371.8	10,880.9	191.8	193.1	95.60	-634.8	6,582.3	391.9	9.6	382.37	1.025	Level 2
17,300.0	10,842.8	17,471.8	10,881.1	194.7	196.0	95.59	-634.8	6,682.3	392.2	4.1	388.16	1.011	Level 2
17,400.0	10,843.0	17,571.8	10,881.2	197.6	198.9	95.59	-634.8	6,782.3	392.6	-1.4	393.95	0.996	Level 1
17,500.0	10,843.2	17,671.8	10,881.4	200.6	201.8	95.58	-634.8	6,882.3	392.9	-6.9	399.75	0.983	Level 1
17,600.0	10,843.4	17,771.8	10,881.6	203.5	204.7	95.58	-634.8	6,982.3	393.2	-12.4	405.55	0.969	Level 1
17,700.0	10,843.5	17,871.8	10,881.8	206.4	207.6	95.58	-634.8	7,082.3	393.5	-17.9	411.34	0.957	Level 1
17,800.0	10,843.7	17,971.8	10,881.9	209.3	210.5	95.57	-634.8	7,182.3	393.8	-23.4	417.14	0.944	Level 1

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 13T2X - Kline Federal 5300 41-18 13T2X - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,900.0	10,843.9	18,071.8	10,882.1	212.2	213.4	95.57	-634.8	7,282.3	394.1	-28.9	422.94	0.932	Level 1
18,000.0	10,844.1	18,171.8	10,882.3	215.1	216.3	95.56	-634.8	7,382.3	394.4	-34.3	428.74	0.920	Level 1
18,100.0	10,844.2	18,271.8	10,882.5	218.0	219.2	95.56	-634.8	7,482.3	394.7	-39.8	434.55	0.908	Level 1
18,200.0	10,844.4	18,371.8	10,882.6	220.9	222.1	95.55	-634.8	7,582.3	395.0	-45.3	440.35	0.897	Level 1
18,300.0	10,844.6	18,471.8	10,882.8	223.8	225.0	95.55	-634.8	7,682.3	395.3	-50.8	446.15	0.886	Level 1
18,400.0	10,844.8	18,571.8	10,883.0	226.7	227.9	95.55	-634.8	7,782.3	395.6	-56.3	451.96	0.875	Level 1
18,500.0	10,844.9	18,671.8	10,883.2	229.7	230.8	95.54	-634.8	7,882.2	395.9	-61.8	457.77	0.865	Level 1
18,600.0	10,845.1	18,771.8	10,883.3	232.6	233.7	95.54	-634.8	7,982.2	396.2	-67.3	463.57	0.855	Level 1
18,700.0	10,845.3	18,871.8	10,883.5	235.5	236.6	95.53	-634.8	8,082.2	396.5	-72.8	469.38	0.845	Level 1
18,800.0	10,845.4	18,971.8	10,883.7	238.4	239.5	95.53	-634.8	8,182.2	396.9	-78.3	475.19	0.835	Level 1
18,900.0	10,845.6	19,071.8	10,883.9	241.3	242.4	95.53	-634.8	8,282.2	397.2	-83.8	481.00	0.826	Level 1
19,000.0	10,845.8	19,171.8	10,884.0	244.2	245.3	95.52	-634.8	8,382.2	397.5	-89.3	486.81	0.816	Level 1
19,100.0	10,846.0	19,271.8	10,884.2	247.1	248.2	95.52	-634.8	8,482.2	397.8	-94.8	492.62	0.807	Level 1
19,200.0	10,846.1	19,371.8	10,884.4	250.1	251.1	95.51	-634.8	8,582.2	398.1	-100.4	498.44	0.799	Level 1
19,300.0	10,846.3	19,471.8	10,884.6	253.0	254.1	95.51	-634.8	8,682.2	398.4	-105.9	504.25	0.790	Level 1
19,400.0	10,846.5	19,571.8	10,884.7	255.9	257.0	95.50	-634.8	8,782.2	398.7	-111.4	510.06	0.782	Level 1
19,500.0	10,846.7	19,671.8	10,884.9	258.8	259.9	95.50	-634.8	8,882.2	399.0	-116.9	515.88	0.773	Level 1
19,600.0	10,846.8	19,771.8	10,885.1	261.7	262.8	95.50	-634.8	8,982.2	399.3	-122.4	521.69	0.765	Level 1
19,700.0	10,847.0	19,871.8	10,885.3	264.6	265.7	95.49	-634.8	9,082.2	399.6	-127.9	527.51	0.758	Level 1
19,800.0	10,847.2	19,971.8	10,885.4	267.6	268.6	95.49	-634.8	9,182.2	399.9	-133.4	533.32	0.750	Level 1
19,900.0	10,847.4	20,071.8	10,885.6	270.5	271.5	95.48	-634.8	9,282.2	400.2	-138.9	539.14	0.742	Level 1
20,000.0	10,847.5	20,171.8	10,885.8	273.4	274.4	95.48	-634.8	9,382.2	400.5	-144.4	544.96	0.735	Level 1
20,100.0	10,847.7	20,271.8	10,886.0	276.3	277.4	95.48	-634.8	9,482.2	400.9	-149.9	550.78	0.728	Level 1
20,200.0	10,847.9	20,371.8	10,886.1	279.2	280.3	95.47	-634.8	9,582.2	401.2	-155.4	556.60	0.721	Level 1
20,300.0	10,848.1	20,471.8	10,886.3	282.1	283.2	95.47	-634.8	9,682.2	401.5	-161.0	562.41	0.714	Level 1
20,400.0	10,848.2	20,571.8	10,886.5	285.1	286.1	95.46	-634.8	9,782.2	401.8	-166.5	568.23	0.707	Level 1
20,500.0	10,848.4	20,671.8	10,886.7	288.0	289.0	95.46	-634.8	9,882.2	402.1	-172.0	574.05	0.700	Level 1
20,600.0	10,848.6	20,771.8	10,886.8	290.9	291.9	95.45	-634.8	9,982.2	402.4	-177.5	579.88	0.694	Level 1
20,667.7	10,848.7	20,839.5	10,886.9	292.9	293.9	95.45	-634.8	10,049.9	402.6	-181.2	583.82	0.690	Level 1, ES, SF

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-18 14BX - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	2.0	2.0	-180.00	-65.9	0.0	65.9				
100.0	100.0	100.0	100.0	2.0	2.0	-180.00	-65.9	0.0	65.9	61.9	4.00	16.452	
200.0	200.0	200.0	200.0	2.0	2.0	-180.00	-65.9	0.0	65.9	61.8	4.05	16.273	
300.0	300.0	300.0	300.0	2.1	2.1	-180.00	-65.9	0.0	65.9	61.7	4.14	15.909	
400.0	400.0	400.0	400.0	2.1	2.1	-180.00	-65.9	0.0	65.9	61.6	4.28	15.396	
500.0	500.0	500.0	500.0	2.2	2.2	-180.00	-65.9	0.0	65.9	61.4	4.46	14.777	
600.0	600.0	600.0	600.0	2.3	2.3	-180.00	-65.9	0.0	65.9	61.2	4.67	14.094	
700.0	700.0	700.0	700.0	2.5	2.5	-180.00	-65.9	0.0	65.9	60.9	4.92	13.385	
800.0	800.0	800.0	800.0	2.6	2.6	-180.00	-65.9	0.0	65.9	60.7	5.20	12.678	
900.0	900.0	900.0	900.0	2.7	2.7	-180.00	-65.9	0.0	65.9	60.4	5.49	11.990	
1,000.0	1,000.0	1,000.0	1,000.0	2.9	2.9	-180.00	-65.9	0.0	65.9	60.1	5.81	11.336	
1,100.0	1,100.0	1,100.0	1,100.0	3.1	3.1	-180.00	-65.9	0.0	65.9	59.7	6.14	10.720	
1,200.0	1,200.0	1,200.0	1,200.0	3.2	3.2	-180.00	-65.9	0.0	65.9	59.4	6.49	10.145	
1,300.0	1,300.0	1,300.0	1,300.0	3.4	3.4	-180.00	-65.9	0.0	65.9	59.0	6.85	9.613	
1,400.0	1,400.0	1,400.0	1,400.0	3.6	3.6	-180.00	-65.9	0.0	65.9	58.6	7.22	9.121	
1,500.0	1,500.0	1,500.0	1,500.0	3.8	3.8	-180.00	-65.9	0.0	65.9	58.3	7.60	8.667	
1,600.0	1,600.0	1,600.0	1,600.0	4.0	4.0	-180.00	-65.9	0.0	65.9	57.9	7.99	8.248	
1,700.0	1,700.0	1,700.0	1,700.0	4.2	4.2	-180.00	-65.9	0.0	65.9	57.5	8.38	7.862	
1,800.0	1,800.0	1,800.0	1,800.0	4.4	4.4	-180.00	-65.9	0.0	65.9	57.1	8.78	7.506	
1,900.0	1,900.0	1,900.0	1,900.0	4.6	4.6	-180.00	-65.9	0.0	65.9	56.7	9.18	7.177	
2,000.0	2,000.0	2,000.0	2,000.0	4.8	4.8	-180.00	-65.9	0.0	65.9	56.3	9.58	6.872	
2,100.0	2,100.0	2,100.0	2,100.0	5.0	5.0	-180.00	-65.9	0.0	65.9	55.9	9.99	6.590	
2,200.0	2,200.0	2,200.0	2,200.0	5.2	5.2	-180.00	-65.9	0.0	65.9	55.5	10.41	6.328	CC
2,216.7	2,216.7	2,216.1	2,216.1	5.2	5.2	90.06	-65.9	0.0	65.9	55.5	10.47	6.298	
2,300.0	2,300.0	2,299.4	2,299.4	5.4	5.4	90.68	-66.7	0.0	66.7	55.9	10.75	6.201	
2,400.0	2,400.0	2,399.4	2,399.4	5.6	5.5	91.41	-67.5	0.0	67.6	56.5	11.10	6.088	
2,500.0	2,500.0	2,499.4	2,499.4	5.8	5.7	92.13	-68.4	0.0	68.5	57.0	11.45	5.979	
2,600.0	2,600.0	2,599.4	2,599.4	6.0	5.9	92.82	-69.3	0.0	69.4	57.6	11.81	5.874	
2,700.0	2,700.0	2,699.4	2,699.4	6.1	6.0	93.50	-70.1	0.0	70.3	58.1	12.17	5.773	
2,800.0	2,800.0	2,799.4	2,799.4	6.3	6.2	94.15	-71.0	0.0	71.2	58.7	12.54	5.677	
2,900.0	2,900.0	2,899.4	2,899.3	6.5	6.4	94.79	-71.9	0.0	72.2	59.2	12.92	5.584	
3,000.0	3,000.0	2,999.4	2,999.3	6.7	6.6	95.42	-72.8	0.0	73.1	59.8	13.30	5.496	
3,100.0	3,100.0	3,099.4	3,099.3	6.9	6.7	96.03	-73.6	0.0	74.1	60.4	13.69	5.411	
3,200.0	3,200.0	3,199.3	3,199.3	7.1	6.9	96.62	-74.5	0.0	75.0	60.9	14.07	5.330	
3,300.0	3,300.0	3,299.3	3,299.3	7.3	7.1	97.20	-75.4	0.0	76.0	61.5	14.47	5.253	
3,400.0	3,400.0	3,399.3	3,399.3	7.6	7.3	97.76	-76.3	0.0	77.0	62.1	14.86	5.179	
3,500.0	3,500.0	3,499.3	3,499.3	7.8	7.5	98.31	-77.1	0.0	78.0	62.7	15.26	5.108	
3,600.0	3,599.9	3,599.3	3,599.3	8.0	7.7	98.84	-78.0	0.0	78.9	63.3	15.66	5.041	
3,700.0	3,699.9	3,699.3	3,699.3	8.2	7.9	99.37	-78.9	0.0	79.9	63.9	16.07	4.976	
3,800.0	3,799.9	3,799.3	3,799.2	8.4	8.1	99.88	-79.7	0.0	81.0	64.5	16.47	4.915	
3,900.0	3,899.9	3,899.3	3,899.2	8.6	8.3	100.37	-80.6	0.0	82.0	65.1	16.88	4.856	
4,000.0	3,999.9	3,999.3	3,999.2	8.8	8.5	100.86	-81.5	0.0	83.0	65.7	17.29	4.799	
4,100.0	4,099.9	4,099.3	4,099.2	9.0	8.7	101.33	-82.4	0.0	84.0	66.3	17.70	4.745	
4,200.0	4,199.9	4,199.3	4,199.2	9.2	8.9	101.79	-83.2	0.0	85.0	66.9	18.12	4.694	
4,300.0	4,299.9	4,299.3	4,299.2	9.4	9.1	102.24	-84.1	0.0	86.1	67.5	18.53	4.644	
4,400.0	4,399.9	4,399.3	4,399.2	9.7	9.3	102.68	-85.0	0.0	87.1	68.2	18.95	4.597	
4,500.0	4,499.9	4,499.3	4,499.2	9.9	9.5	103.11	-85.9	0.0	88.2	68.8	19.37	4.551	
4,600.0	4,599.9	4,599.2	4,599.2	10.1	9.7	103.53	-86.7	0.0	89.2	69.4	19.79	4.507	
4,700.0	4,699.9	4,699.2	4,699.1	10.3	9.9	103.94	-87.6	0.0	90.3	70.0	20.21	4.466	
4,800.0	4,799.9	4,799.2	4,799.1	10.5	10.1	104.33	-88.5	0.0	91.3	70.7	20.64	4.425	
4,900.0	4,899.9	4,899.2	4,899.1	10.7	10.3	104.72	-89.3	0.0	92.4	71.3	21.06	4.387	
5,000.0	4,999.9	4,999.2	4,999.1	10.9	10.6	105.11	-90.2	0.0	93.5	72.0	21.49	4.350	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-18 14BX - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,099.9	5,099.2	5,099.1	11.2	10.8	105.48	-91.1	0.0	94.5	72.6	21.91	4.314	
5,200.0	5,199.9	5,199.2	5,199.1	11.4	11.0	105.84	-92.0	0.0	95.6	73.3	22.34	4.280	
5,300.0	5,299.9	5,299.2	5,299.1	11.6	11.2	106.20	-92.8	0.0	96.7	73.9	22.77	4.246	
5,400.0	5,399.9	5,399.2	5,399.1	11.8	11.4	106.55	-93.7	0.0	97.8	74.6	23.20	4.215	
5,500.0	5,499.9	5,499.2	5,499.0	12.0	11.6	106.89	-94.6	0.0	98.9	75.2	23.63	4.184	
5,600.0	5,599.9	5,599.2	5,599.0	12.2	11.8	107.22	-95.5	0.0	99.9	75.9	24.06	4.154	
5,700.0	5,699.9	5,699.2	5,699.0	12.5	12.0	107.55	-96.3	0.0	101.0	76.5	24.49	4.126	
5,800.0	5,799.9	5,799.2	5,799.0	12.7	12.3	107.87	-97.2	0.0	102.1	77.2	24.92	4.098	
5,900.0	5,899.9	5,899.1	5,899.0	12.9	12.5	108.18	-98.1	0.0	103.2	77.9	25.35	4.072	
6,000.0	5,999.9	5,999.1	5,999.0	13.1	12.7	108.49	-98.9	0.0	104.3	78.5	25.79	4.046	
6,100.0	6,099.9	6,099.1	6,099.0	13.3	12.9	108.79	-99.8	0.0	105.4	79.2	26.22	4.021	
6,200.0	6,199.8	6,199.1	6,199.0	13.6	13.1	109.08	-100.7	0.0	106.5	79.9	26.65	3.997	
6,300.0	6,299.8	6,299.1	6,299.0	13.8	13.3	109.37	-101.6	0.0	107.7	80.6	27.09	3.974	
6,400.0	6,399.8	6,399.1	6,398.9	14.0	13.6	109.65	-102.4	0.0	108.8	81.2	27.53	3.952	
6,500.0	6,499.8	6,499.1	6,498.9	14.2	13.8	109.92	-103.3	0.0	109.9	81.9	27.96	3.930	
6,600.0	6,599.8	6,599.1	6,598.9	14.4	14.0	110.19	-104.2	0.0	111.0	82.6	28.40	3.909	
6,700.0	6,699.8	6,699.1	6,698.9	14.7	14.2	110.46	-105.1	0.0	112.1	83.3	28.83	3.889	
6,800.0	6,799.8	6,799.1	6,798.9	14.9	14.4	110.72	-105.9	0.0	113.3	84.0	29.27	3.869	
6,900.0	6,899.8	6,899.1	6,898.9	15.1	14.6	110.97	-106.8	0.0	114.4	84.7	29.71	3.850	
7,000.0	6,999.8	6,999.1	6,998.9	15.3	14.9	111.22	-107.7	0.0	115.5	85.4	30.15	3.831	
7,100.0	7,099.8	7,099.1	7,098.9	15.5	15.1	111.46	-108.5	0.0	116.6	86.1	30.59	3.813	
7,200.0	7,199.8	7,199.0	7,198.9	15.8	15.3	111.70	-109.4	0.0	117.8	86.7	31.02	3.796	
7,300.0	7,299.8	7,299.0	7,298.8	16.0	15.5	111.94	-110.3	0.0	118.9	87.4	31.46	3.779	
7,400.0	7,399.8	7,399.0	7,398.8	16.2	15.7	112.17	-111.2	0.0	120.0	88.1	31.90	3.763	
7,500.0	7,499.8	7,499.0	7,498.8	16.4	16.0	112.40	-112.0	0.0	121.2	88.8	32.34	3.747	
7,600.0	7,599.8	7,599.0	7,598.8	16.6	16.2	112.62	-112.9	0.0	122.3	89.5	32.78	3.731	
7,700.0	7,699.8	7,699.0	7,698.8	16.9	16.4	112.84	-113.8	0.0	123.5	90.2	33.22	3.716	
7,800.0	7,799.8	7,799.0	7,798.8	17.1	16.6	113.05	-114.7	0.0	124.6	90.9	33.66	3.701	
7,900.0	7,899.8	7,899.0	7,898.8	17.3	16.8	113.26	-115.5	0.0	125.8	91.6	34.11	3.687	
7,926.7	7,926.4	7,925.7	7,925.4	17.4	16.9	113.32	-115.8	0.0	126.1	91.8	34.22	3.683	
7,943.3	7,943.1	7,943.3	7,943.1	17.4	16.9	-156.66	-115.8	0.0	126.2	91.9	34.30	3.679	
8,000.0	7,999.8	8,000.0	7,999.8	17.5	17.1	-156.66	-115.8	0.0	126.2	91.6	34.52	3.654	
8,100.0	8,099.8	8,100.0	8,099.8	17.7	17.2	-156.66	-115.8	0.0	126.2	91.2	34.92	3.613	
8,200.0	8,199.8	8,200.0	8,199.8	17.9	17.4	-156.66	-115.8	0.0	126.2	90.8	35.32	3.572	
8,300.0	8,299.8	8,300.0	8,299.8	18.1	17.6	-156.66	-115.8	0.0	126.2	90.4	35.72	3.532	
8,400.0	8,399.8	8,400.0	8,399.8	18.4	17.8	-156.66	-115.8	0.0	126.2	90.0	36.12	3.493	
8,500.0	8,499.8	8,500.0	8,499.8	18.6	18.0	-156.66	-115.8	0.0	126.2	89.6	36.52	3.454	
8,600.0	8,599.8	8,600.0	8,599.8	18.8	18.2	-156.66	-115.8	0.0	126.2	89.2	36.93	3.416	
8,700.0	8,699.8	8,700.0	8,699.8	19.0	18.4	-156.66	-115.8	0.0	126.2	88.8	37.33	3.379	
8,800.0	8,799.8	8,800.0	8,799.8	19.2	18.6	-156.66	-115.8	0.0	126.2	88.4	37.74	3.343	
8,900.0	8,899.8	8,900.0	8,899.8	19.4	18.8	-156.66	-115.8	0.0	126.2	88.0	38.14	3.307	
9,000.0	8,999.8	9,000.0	8,999.8	19.6	19.0	-156.66	-115.8	0.0	126.2	87.6	38.55	3.273	
9,100.0	9,099.8	9,100.0	9,099.8	19.8	19.2	-156.66	-115.8	0.0	126.2	87.2	38.96	3.238	
9,200.0	9,199.8	9,200.0	9,199.8	20.0	19.4	-156.66	-115.8	0.0	126.2	86.8	39.37	3.205	
9,300.0	9,299.8	9,300.0	9,299.8	20.2	19.6	-156.66	-115.8	0.0	126.2	86.4	39.78	3.172	
9,400.0	9,399.8	9,400.0	9,399.8	20.5	19.8	-156.66	-115.8	0.0	126.2	86.0	40.19	3.139	
9,500.0	9,499.8	9,500.0	9,499.8	20.7	20.0	-156.66	-115.8	0.0	126.2	85.6	40.60	3.107	
9,600.0	9,599.8	9,600.0	9,599.8	20.9	20.2	-156.66	-115.8	0.0	126.2	85.1	41.01	3.076	
9,700.0	9,699.8	9,700.0	9,699.8	21.1	20.4	-156.66	-115.8	0.0	126.2	84.7	41.43	3.045	
9,800.0	9,799.8	9,800.0	9,799.8	21.3	20.6	-156.66	-115.8	0.0	126.2	84.3	41.84	3.015	
9,900.0	9,899.8	9,900.0	9,899.8	21.5	20.8	-156.66	-115.8	0.0	126.2	83.9	42.26	2.986	
10,000.0	9,999.8	10,000.0	9,999.8	21.7	21.0	-156.66	-115.8	0.0	126.2	83.5	42.67	2.956	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-18 14BX - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,100.0	10,099.8	10,100.0	10,099.8	21.9	21.2	-156.66	-115.8	0.0	126.2	83.1	43.09	2.928	
10,162.1	10,161.9	10,162.1	10,161.9	22.1	21.3	-156.66	-115.8	0.0	126.2	82.8	43.35	2.910	
10,200.0	10,199.8	10,199.8	10,199.6	22.2	21.4	-156.73	-115.9	0.1	126.2	82.7	43.50	2.900	
10,300.0	10,299.8	10,296.4	10,295.2	22.4	21.6	-162.19	-121.4	11.0	127.5	83.6	43.93	2.903	
10,354.8	10,354.6	10,346.2	10,343.1	22.5	21.7	-168.17	-127.5	23.3	130.8	86.6	44.17	2.961	
10,375.0	10,374.8	10,363.9	10,359.7	22.5	21.8	79.20	-130.2	28.7	132.7	88.5	44.24	3.000	
10,400.0	10,399.7	10,385.5	10,379.7	22.6	21.8	76.08	-133.9	36.1	135.6	91.3	44.34	3.059	
10,425.0	10,424.5	10,406.9	10,399.1	22.7	21.9	73.14	-138.0	44.1	139.0	94.6	44.42	3.129	
10,450.0	10,449.2	10,428.0	10,417.8	22.7	21.9	70.38	-142.4	52.9	142.8	98.3	44.49	3.209	
10,475.0	10,473.5	10,450.0	10,436.8	22.8	22.0	67.70	-147.3	62.7	146.9	102.3	44.53	3.298	
10,500.0	10,497.6	10,469.5	10,453.2	22.8	22.0	65.43	-152.0	72.1	151.2	106.7	44.53	3.395	
10,525.0	10,521.2	10,489.9	10,469.9	22.9	22.1	63.24	-157.3	82.6	155.8	111.3	44.51	3.500	
10,550.0	10,544.4	10,510.1	10,486.0	23.0	22.2	61.22	-162.8	93.6	160.5	116.1	44.44	3.612	
10,575.0	10,567.1	10,530.2	10,501.4	23.0	22.2	59.39	-168.6	105.1	165.4	121.0	44.32	3.731	
10,600.0	10,589.1	10,550.0	10,516.0	23.1	22.3	57.72	-174.6	117.0	170.3	126.1	44.17	3.855	
10,625.0	10,610.6	10,569.8	10,530.1	23.2	22.4	56.20	-180.8	129.4	175.2	131.2	43.98	3.983	
10,650.0	10,631.3	10,589.3	10,543.4	23.3	22.5	54.83	-187.2	142.2	180.1	136.4	43.76	4.117	
10,675.0	10,651.3	10,608.8	10,556.1	23.4	22.6	53.60	-193.8	155.4	185.1	141.5	43.51	4.253	
10,700.0	10,670.5	10,628.1	10,568.1	23.5	22.7	52.49	-200.6	168.9	189.9	146.7	43.23	4.392	
10,725.0	10,688.8	10,647.2	10,579.3	23.6	22.8	51.51	-207.6	182.8	194.7	151.7	42.94	4.533	
10,750.0	10,706.2	10,666.3	10,589.9	23.7	22.9	50.64	-214.7	197.0	199.3	156.7	42.65	4.673	
10,775.0	10,722.6	10,685.3	10,599.8	23.9	23.1	49.87	-221.9	211.4	203.8	161.5	42.35	4.813	
10,800.0	10,738.0	10,704.2	10,609.0	24.0	23.2	49.20	-229.3	226.2	208.2	166.1	42.07	4.950	
10,825.0	10,752.4	10,725.0	10,618.4	24.2	23.4	48.60	-237.7	242.8	212.4	170.6	41.81	5.082	
10,850.0	10,765.7	10,741.7	10,625.3	24.4	23.5	48.13	-244.5	256.4	216.5	174.9	41.56	5.208	
10,875.0	10,777.8	10,760.3	10,632.4	24.6	23.7	47.72	-252.2	271.8	220.4	179.0	41.37	5.327	
10,900.0	10,788.8	10,778.9	10,638.9	24.8	23.9	47.39	-260.1	287.4	224.1	182.8	41.22	5.436	
10,925.0	10,798.6	10,800.0	10,645.3	25.0	24.1	47.14	-269.0	305.3	227.6	186.4	41.15	5.530	
10,950.0	10,807.2	10,816.0	10,649.6	25.3	24.3	46.94	-276.0	319.1	230.9	189.7	41.11	5.616	
10,975.0	10,814.5	10,834.5	10,653.9	25.6	24.5	46.82	-284.0	335.1	233.9	192.8	41.16	5.684	
11,000.0	10,820.6	10,850.0	10,657.0	25.8	24.6	46.72	-290.8	348.7	236.8	195.6	41.24	5.742	
11,025.0	10,825.4	10,871.3	10,660.4	26.1	24.9	46.77	-300.3	367.5	239.5	198.0	41.49	5.772	
11,050.0	10,828.9	10,889.7	10,662.6	26.5	25.1	46.83	-308.5	383.8	241.9	200.1	41.78	5.790	
11,075.0	10,831.1	10,908.1	10,664.1	26.8	25.4	46.96	-316.7	400.2	244.1	202.0	42.16	5.791	
11,100.0	10,832.0	10,925.0	10,664.9	27.1	25.6	47.11	-324.3	415.3	246.2	203.6	42.60	5.778	
11,104.0	10,832.0	10,929.4	10,665.0	27.2	25.7	47.18	-326.2	419.2	246.4	203.7	42.71	5.770	
11,200.0	10,832.2	11,027.9	10,665.2	28.6	27.1	48.96	-369.1	507.9	255.8	210.3	45.46	5.626	
11,300.0	10,832.4	11,134.2	10,665.4	30.3	28.9	51.02	-412.0	605.2	267.7	218.8	48.83	5.482	
11,400.0	10,832.6	11,240.7	10,665.6	32.2	30.9	53.17	-451.2	704.2	281.8	229.2	52.57	5.361	
11,500.0	10,832.7	11,347.5	10,665.8	34.1	33.1	55.36	-486.9	804.8	298.2	241.7	56.57	5.272	
11,600.0	10,832.9	11,454.6	10,666.0	36.2	35.4	57.51	-518.9	907.0	317.1	256.4	60.73	5.222	
11,680.4	10,833.1	11,541.0	10,666.1	38.0	37.3	59.20	-541.8	990.3	334.1	269.9	64.11	5.210	
11,700.0	10,833.1	11,562.1	10,666.2	38.4	37.8	59.67	-547.1	1,010.7	338.3	273.2	65.13	5.195	
11,800.0	10,833.3	11,671.0	10,666.4	40.7	40.4	61.73	-571.7	1,116.9	358.4	288.1	70.34	5.095	
11,900.0	10,833.4	11,781.8	10,666.6	43.0	43.1	63.28	-592.6	1,225.7	375.5	299.9	75.60	4.966	
12,000.0	10,833.6	11,894.1	10,666.8	45.4	45.8	64.43	-609.4	1,336.7	389.2	308.3	80.90	4.811	
12,100.0	10,833.8	12,007.7	10,667.0	47.9	48.7	65.23	-622.0	1,449.5	399.6	313.4	86.21	4.635	
12,200.0	10,834.0	12,122.0	10,667.2	50.4	51.6	65.74	-630.2	1,563.6	406.3	314.8	91.52	4.440	
12,300.0	10,834.1	12,236.9	10,667.4	53.0	54.5	65.96	-633.8	1,678.4	409.5	312.7	96.78	4.231	
12,400.0	10,834.3	12,341.1	10,667.5	55.5	57.2	65.99	-634.0	1,782.6	409.9	308.2	101.72	4.030	
12,500.0	10,834.5	12,441.1	10,667.7	58.2	59.7	66.01	-634.0	1,882.6	410.2	303.6	106.61	3.848	
12,600.0	10,834.7	12,541.1	10,667.9	60.8	62.4	66.03	-634.0	1,982.6	410.5	298.9	111.55	3.680	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-18 14BX - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,700.0	10,834.8	12,641.1	10,668.1	63.5	65.0	66.05	-634.0	2,082.6	410.8	294.2	116.53	3.525	
12,800.0	10,835.0	12,741.1	10,668.2	66.2	67.7	66.06	-634.0	2,182.6	411.0	289.5	121.54	3.382	
12,900.0	10,835.2	12,841.1	10,668.4	68.9	70.4	66.08	-634.0	2,282.6	411.3	284.7	126.59	3.249	
13,000.0	10,835.4	12,941.1	10,668.6	71.7	73.1	66.10	-634.0	2,382.6	411.6	279.9	131.67	3.126	
13,100.0	10,835.5	13,041.1	10,668.8	74.4	75.8	66.12	-634.0	2,482.6	411.9	275.1	136.77	3.012	
13,200.0	10,835.7	13,141.1	10,668.9	77.2	78.5	66.13	-634.0	2,582.6	412.2	270.3	141.90	2.905	
13,300.0	10,835.9	13,241.1	10,669.1	79.9	81.3	66.15	-634.0	2,682.6	412.5	265.4	147.05	2.805	
13,400.0	10,836.1	13,341.1	10,669.3	82.7	84.1	66.17	-634.0	2,782.6	412.7	260.5	152.21	2.712	
13,500.0	10,836.2	13,441.1	10,669.5	85.5	86.8	66.19	-634.0	2,882.6	413.0	255.6	157.40	2.624	
13,600.0	10,836.4	13,541.1	10,669.6	88.3	89.6	66.20	-634.0	2,982.6	413.3	250.7	162.60	2.542	
13,700.0	10,836.6	13,641.1	10,669.8	91.1	92.4	66.22	-634.0	3,082.6	413.6	245.8	167.81	2.465	
13,800.0	10,836.7	13,741.1	10,670.0	94.0	95.2	66.24	-634.0	3,182.6	413.9	240.8	173.04	2.392	
13,900.0	10,836.9	13,841.1	10,670.2	96.8	98.0	66.25	-634.0	3,282.6	414.1	235.9	178.28	2.323	
14,000.0	10,837.1	13,941.1	10,670.3	99.6	100.9	66.27	-634.0	3,382.6	414.4	230.9	183.53	2.258	
14,100.0	10,837.3	14,041.1	10,670.5	102.5	103.7	66.29	-634.0	3,482.6	414.7	225.9	188.79	2.197	
14,200.0	10,837.4	14,141.1	10,670.7	105.3	106.5	66.31	-634.0	3,582.6	415.0	220.9	194.06	2.138	
14,300.0	10,837.6	14,241.1	10,670.9	108.2	109.3	66.32	-634.0	3,682.6	415.3	215.9	199.35	2.083	
14,400.0	10,837.8	14,341.1	10,671.0	111.0	112.2	66.34	-634.0	3,782.6	415.6	210.9	204.63	2.031	
14,500.0	10,838.0	14,441.1	10,671.2	113.9	115.0	66.36	-634.0	3,882.6	415.8	205.9	209.93	1.981	
14,600.0	10,838.1	14,541.1	10,671.4	116.7	117.9	66.38	-634.0	3,982.6	416.1	200.9	215.24	1.933	
14,700.0	10,838.3	14,641.1	10,671.6	119.6	120.7	66.39	-634.0	4,082.6	416.4	195.9	220.55	1.888	
14,800.0	10,838.5	14,741.1	10,671.7	122.5	123.6	66.41	-634.0	4,182.6	416.7	190.8	225.86	1.845	
14,900.0	10,838.7	14,841.1	10,671.9	125.3	126.4	66.43	-634.0	4,282.6	417.0	185.8	231.19	1.804	
15,000.0	10,838.8	14,941.1	10,672.1	128.2	129.3	66.44	-634.0	4,382.6	417.3	180.7	236.52	1.764	
15,100.0	10,839.0	15,041.1	10,672.3	131.1	132.2	66.46	-634.0	4,482.6	417.5	175.7	241.85	1.726	
15,200.0	10,839.2	15,141.1	10,672.4	133.9	135.0	66.48	-634.0	4,582.6	417.8	170.6	247.19	1.690	
15,300.0	10,839.4	15,241.1	10,672.6	136.8	137.9	66.49	-634.0	4,682.6	418.1	165.6	252.54	1.656	
15,400.0	10,839.5	15,341.1	10,672.8	139.7	140.8	66.51	-634.0	4,782.6	418.4	160.5	257.89	1.622	
15,500.0	10,839.7	15,441.1	10,673.0	142.6	143.7	66.53	-634.0	4,882.6	418.7	155.4	263.24	1.590	
15,600.0	10,839.9	15,541.1	10,673.1	145.5	146.6	66.54	-634.0	4,982.6	419.0	150.3	268.60	1.560	
15,700.0	10,840.1	15,641.1	10,673.3	148.4	149.4	66.56	-634.0	5,082.6	419.2	145.3	273.97	1.530	
15,800.0	10,840.2	15,741.1	10,673.5	151.3	152.3	66.58	-634.0	5,182.6	419.5	140.2	279.33	1.502	
15,900.0	10,840.4	15,841.1	10,673.6	154.1	155.2	66.60	-634.0	5,282.6	419.8	135.1	284.70	1.475	Level 3
16,000.0	10,840.6	15,941.1	10,673.8	157.0	158.1	66.61	-634.0	5,382.6	420.1	130.0	290.08	1.448	Level 3
16,100.0	10,840.8	16,041.1	10,674.0	159.9	161.0	66.63	-634.0	5,482.6	420.4	124.9	295.46	1.423	Level 3
16,200.0	10,840.9	16,141.1	10,674.2	162.8	163.9	66.65	-634.0	5,582.6	420.6	119.8	300.84	1.398	Level 3
16,300.0	10,841.1	16,241.1	10,674.3	165.7	166.8	66.66	-634.0	5,682.6	420.9	114.7	306.22	1.375	Level 3
16,400.0	10,841.3	16,341.1	10,674.5	168.6	169.6	66.68	-634.0	5,782.6	421.2	109.6	311.61	1.352	Level 3
16,500.0	10,841.4	16,441.1	10,674.7	171.5	172.5	66.70	-634.0	5,882.6	421.5	104.5	317.00	1.330	Level 3
16,600.0	10,841.6	16,541.1	10,674.9	174.4	175.4	66.71	-634.0	5,982.6	421.8	99.4	322.40	1.308	Level 3
16,700.0	10,841.8	16,641.1	10,675.0	177.3	178.3	66.73	-634.0	6,082.6	422.1	94.3	327.80	1.288	Level 3
16,800.0	10,842.0	16,741.1	10,675.2	180.2	181.2	66.75	-634.0	6,182.6	422.3	89.2	333.20	1.268	Level 3
16,900.0	10,842.1	16,841.1	10,675.4	183.1	184.1	66.76	-634.0	6,282.6	422.6	84.0	338.60	1.248	Level 2
17,000.0	10,842.3	16,941.1	10,675.6	186.0	187.0	66.78	-634.0	6,382.6	422.9	78.9	344.00	1.229	Level 2
17,100.0	10,842.5	17,041.1	10,675.7	188.9	189.9	66.80	-634.0	6,482.6	423.2	73.8	349.41	1.211	Level 2
17,200.0	10,842.7	17,141.1	10,675.9	191.8	192.8	66.81	-634.0	6,582.6	423.5	68.7	354.82	1.194	Level 2
17,300.0	10,842.8	17,241.1	10,676.1	194.7	195.7	66.83	-634.0	6,682.6	423.8	63.5	360.23	1.176	Level 2
17,400.0	10,843.0	17,341.1	10,676.3	197.6	198.6	66.84	-634.0	6,782.6	424.0	58.4	365.65	1.160	Level 2
17,500.0	10,843.2	17,441.1	10,676.4	200.6	201.5	66.86	-634.0	6,882.6	424.3	53.3	371.07	1.144	Level 2
17,600.0	10,843.4	17,541.1	10,676.6	203.5	204.4	66.88	-634.0	6,982.6	424.6	48.1	376.49	1.128	Level 2
17,700.0	10,843.5	17,641.1	10,676.8	206.4	207.3	66.89	-634.0	7,082.6	424.9	43.0	381.91	1.113	Level 2
17,800.0	10,843.7	17,741.1	10,677.0	209.3	210.3	66.91	-634.0	7,182.6	425.2	37.8	387.33	1.098	Level 2

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-18 14BX - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,900.0	10,843.9	17,841.1	10,677.1	212.2	213.2	66.93	-634.0	7,282.6	425.5	32.7	392.76	1.083	Level 2
18,000.0	10,844.1	17,941.1	10,677.3	215.1	216.1	66.94	-634.0	7,382.6	425.8	27.6	398.19	1.069	Level 2
18,100.0	10,844.2	18,041.1	10,677.5	218.0	219.0	66.96	-634.0	7,482.6	426.0	22.4	403.62	1.056	Level 2
18,200.0	10,844.4	18,141.1	10,677.7	220.9	221.9	66.98	-634.0	7,582.6	426.3	17.3	409.05	1.042	Level 2
18,300.0	10,844.6	18,241.1	10,677.8	223.8	224.8	66.99	-634.0	7,682.6	426.6	12.1	414.49	1.029	Level 2
18,400.0	10,844.8	18,341.1	10,678.0	226.7	227.7	67.01	-634.0	7,782.6	426.9	7.0	419.92	1.017	Level 2
18,500.0	10,844.9	18,441.1	10,678.2	229.7	230.6	67.02	-634.0	7,882.6	427.2	1.8	425.36	1.004	Level 2
18,600.0	10,845.1	18,541.1	10,678.4	232.6	233.5	67.04	-634.0	7,982.6	427.5	-3.3	430.80	0.992	Level 1
18,700.0	10,845.3	18,641.1	10,678.5	235.5	236.4	67.06	-634.0	8,082.6	427.7	-8.5	436.24	0.981	Level 1
18,800.0	10,845.4	18,741.1	10,678.7	238.4	239.3	67.07	-634.0	8,182.6	428.0	-13.7	441.69	0.969	Level 1
18,900.0	10,845.6	18,841.1	10,678.9	241.3	242.3	67.09	-634.0	8,282.6	428.3	-18.8	447.13	0.958	Level 1
19,000.0	10,845.8	18,941.1	10,679.1	244.2	245.2	67.11	-634.0	8,382.6	428.6	-24.0	452.58	0.947	Level 1
19,100.0	10,846.0	19,041.1	10,679.2	247.1	248.1	67.12	-634.0	8,482.6	428.9	-29.2	458.03	0.936	Level 1
19,200.0	10,846.1	19,141.1	10,679.4	250.1	251.0	67.14	-634.0	8,582.6	429.2	-34.3	463.48	0.926	Level 1
19,300.0	10,846.3	19,241.1	10,679.6	253.0	253.9	67.15	-634.0	8,682.6	429.4	-39.5	468.93	0.916	Level 1
19,400.0	10,846.5	19,341.1	10,679.8	255.9	256.8	67.17	-634.0	8,782.6	429.7	-44.7	474.39	0.906	Level 1
19,500.0	10,846.7	19,441.1	10,679.9	258.8	259.7	67.19	-634.0	8,882.6	430.0	-49.8	479.84	0.896	Level 1
19,600.0	10,846.8	19,541.1	10,680.1	261.7	262.7	67.20	-634.0	8,982.6	430.3	-55.0	485.30	0.887	Level 1
19,700.0	10,847.0	19,641.1	10,680.3	264.6	265.6	67.22	-634.0	9,082.6	430.6	-60.2	490.76	0.877	Level 1
19,800.0	10,847.2	19,741.1	10,680.5	267.6	268.5	67.23	-634.0	9,182.6	430.9	-65.4	496.22	0.868	Level 1
19,900.0	10,847.4	19,841.1	10,680.6	270.5	271.4	67.25	-634.0	9,282.6	431.1	-70.5	501.68	0.859	Level 1
20,000.0	10,847.5	19,941.1	10,680.8	273.4	274.3	67.27	-634.0	9,382.6	431.4	-75.7	507.14	0.851	Level 1
20,100.0	10,847.7	20,041.1	10,681.0	276.3	277.2	67.28	-634.0	9,482.6	431.7	-80.9	512.61	0.842	Level 1
20,200.0	10,847.9	20,141.1	10,681.2	279.2	280.2	67.30	-634.0	9,582.6	432.0	-86.1	518.08	0.834	Level 1
20,300.0	10,848.1	20,241.1	10,681.3	282.1	283.1	67.31	-634.0	9,682.6	432.3	-91.3	523.54	0.826	Level 1
20,400.0	10,848.2	20,341.1	10,681.5	285.1	286.0	67.33	-634.0	9,782.6	432.6	-96.4	529.01	0.818	Level 1
20,500.0	10,848.4	20,441.1	10,681.7	288.0	288.9	67.34	-634.0	9,882.6	432.9	-101.6	534.49	0.810	Level 1
20,600.0	10,848.6	20,541.1	10,681.9	290.9	291.8	67.36	-634.0	9,982.6	433.1	-106.8	539.96	0.802	Level 1
20,667.7	10,848.7	20,608.5	10,682.0	292.9	293.8	67.37	-634.0	10,050.0	433.3	-110.3	543.66	0.797	Level 1, ES, SF

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-18 14BX - Design #2

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	2.0	2.0	-180.00	-65.9	0.0	65.9				
100.0	100.0	100.0	100.0	2.0	2.0	-180.00	-65.9	0.0	65.9	61.9	4.00	16.452	
200.0	200.0	200.0	200.0	2.0	2.0	-180.00	-65.9	0.0	65.9	61.8	4.05	16.273	
300.0	300.0	300.0	300.0	2.1	2.1	-180.00	-65.9	0.0	65.9	61.7	4.14	15.909	
400.0	400.0	400.0	400.0	2.1	2.1	-180.00	-65.9	0.0	65.9	61.6	4.28	15.396	
500.0	500.0	500.0	500.0	2.2	2.2	-180.00	-65.9	0.0	65.9	61.4	4.46	14.777	
600.0	600.0	600.0	600.0	2.3	2.3	-180.00	-65.9	0.0	65.9	61.2	4.67	14.094	
700.0	700.0	700.0	700.0	2.5	2.5	-180.00	-65.9	0.0	65.9	60.9	4.92	13.385	
800.0	800.0	800.0	800.0	2.6	2.6	-180.00	-65.9	0.0	65.9	60.7	5.20	12.678	
900.0	900.0	900.0	900.0	2.7	2.7	-180.00	-65.9	0.0	65.9	60.4	5.49	11.990	
1,000.0	1,000.0	1,000.0	1,000.0	2.9	2.9	-180.00	-65.9	0.0	65.9	60.1	5.81	11.336	
1,100.0	1,100.0	1,100.0	1,100.0	3.1	3.1	-180.00	-65.9	0.0	65.9	59.7	6.14	10.720	
1,200.0	1,200.0	1,200.0	1,200.0	3.2	3.2	-180.00	-65.9	0.0	65.9	59.4	6.49	10.145	
1,300.0	1,300.0	1,300.0	1,300.0	3.4	3.4	-180.00	-65.9	0.0	65.9	59.0	6.85	9.613	
1,400.0	1,400.0	1,400.0	1,400.0	3.6	3.6	-180.00	-65.9	0.0	65.9	58.6	7.22	9.121	
1,500.0	1,500.0	1,500.0	1,500.0	3.8	3.8	-180.00	-65.9	0.0	65.9	58.3	7.60	8.667	
1,600.0	1,600.0	1,600.0	1,600.0	4.0	4.0	-180.00	-65.9	0.0	65.9	57.9	7.99	8.248	
1,700.0	1,700.0	1,700.0	1,700.0	4.2	4.2	-180.00	-65.9	0.0	65.9	57.5	8.38	7.862	
1,800.0	1,800.0	1,800.0	1,800.0	4.4	4.4	-180.00	-65.9	0.0	65.9	57.1	8.78	7.506	
1,900.0	1,900.0	1,900.0	1,900.0	4.6	4.6	-180.00	-65.9	0.0	65.9	56.7	9.18	7.177	
2,000.0	2,000.0	2,000.0	2,000.0	4.8	4.8	-180.00	-65.9	0.0	65.9	56.3	9.58	6.872	
2,100.0	2,100.0	2,100.0	2,100.0	5.0	5.0	-180.00	-65.9	0.0	65.9	55.9	9.99	6.590	
2,166.7	2,166.7	2,166.7	2,166.7	5.1	5.1	-180.00	-65.9	0.0	65.9	55.6	10.27	6.413	
2,200.0	2,200.0	2,200.0	2,200.0	5.2	5.2	-180.00	-65.9	0.0	65.9	55.5	10.41	6.328	CC
2,216.7	2,216.7	2,216.1	2,216.1	5.2	5.2	90.06	-65.9	0.0	65.9	55.5	10.47	6.298	
2,300.0	2,300.0	2,299.4	2,299.4	5.4	5.4	90.68	-66.7	0.0	66.7	55.9	10.75	6.201	
2,400.0	2,400.0	2,399.4	2,399.4	5.6	5.5	91.41	-67.5	0.0	67.6	56.5	11.10	6.088	
2,500.0	2,500.0	2,499.4	2,499.4	5.8	5.7	92.13	-68.4	0.0	68.5	57.0	11.45	5.979	
2,600.0	2,600.0	2,599.4	2,599.4	6.0	5.9	92.82	-69.3	0.0	69.4	57.6	11.81	5.874	
2,700.0	2,700.0	2,699.4	2,699.4	6.1	6.0	93.50	-70.1	0.0	70.3	58.1	12.17	5.773	
2,800.0	2,800.0	2,799.4	2,799.4	6.3	6.2	94.15	-71.0	0.0	71.2	58.7	12.54	5.677	
2,900.0	2,900.0	2,899.4	2,899.3	6.5	6.4	94.79	-71.9	0.0	72.2	59.2	12.92	5.584	
3,000.0	3,000.0	2,999.4	2,999.3	6.7	6.6	95.42	-72.8	0.0	73.1	59.8	13.30	5.496	
3,100.0	3,100.0	3,099.4	3,099.3	6.9	6.7	96.03	-73.6	0.0	74.1	60.4	13.69	5.411	
3,200.0	3,200.0	3,199.3	3,199.3	7.1	6.9	96.62	-74.5	0.0	75.0	60.9	14.07	5.330	
3,300.0	3,300.0	3,299.3	3,299.3	7.3	7.1	97.20	-75.4	0.0	76.0	61.5	14.47	5.253	
3,400.0	3,400.0	3,399.3	3,399.3	7.6	7.3	97.76	-76.3	0.0	77.0	62.1	14.86	5.179	
3,500.0	3,500.0	3,499.3	3,499.3	7.8	7.5	98.31	-77.1	0.0	78.0	62.7	15.26	5.108	
3,600.0	3,599.9	3,599.3	3,599.3	8.0	7.7	98.84	-78.0	0.0	78.9	63.3	15.66	5.041	
3,700.0	3,699.9	3,699.3	3,699.3	8.2	7.9	99.37	-78.9	0.0	79.9	63.9	16.07	4.976	
3,800.0	3,799.9	3,799.3	3,799.2	8.4	8.1	99.88	-79.7	0.0	81.0	64.5	16.47	4.915	
3,900.0	3,899.9	3,899.3	3,899.2	8.6	8.3	100.37	-80.6	0.0	82.0	65.1	16.88	4.856	
4,000.0	3,999.9	3,999.3	3,999.2	8.8	8.5	100.86	-81.5	0.0	83.0	65.7	17.29	4.799	
4,100.0	4,099.9	4,099.3	4,099.2	9.0	8.7	101.33	-82.4	0.0	84.0	66.3	17.70	4.745	
4,200.0	4,199.9	4,199.3	4,199.2	9.2	8.9	101.79	-83.2	0.0	85.0	66.9	18.12	4.694	
4,300.0	4,299.9	4,299.3	4,299.2	9.4	9.1	102.24	-84.1	0.0	86.1	67.5	18.53	4.644	
4,400.0	4,399.9	4,399.3	4,399.2	9.7	9.3	102.68	-85.0	0.0	87.1	68.2	18.95	4.597	
4,500.0	4,499.9	4,499.3	4,499.2	9.9	9.5	103.11	-85.9	0.0	88.2	68.8	19.37	4.551	
4,600.0	4,599.9	4,599.2	4,599.2	10.1	9.7	103.53	-86.7	0.0	89.2	69.4	19.79	4.507	
4,700.0	4,699.9	4,699.2	4,699.1	10.3	9.9	103.94	-87.6	0.0	90.3	70.0	20.21	4.466	
4,800.0	4,799.9	4,799.2	4,799.1	10.5	10.1	104.33	-88.5	0.0	91.3	70.7	20.64	4.425	
4,900.0	4,899.9	4,899.2	4,899.1	10.7	10.3	104.72	-89.3	0.0	92.4	71.3	21.06	4.387	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-18 14BX - Design #2

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	4,999.9	4,999.2	4,999.1	10.9	10.6	105.11	-90.2	0.0	93.5	72.0	21.49	4.350	
5,100.0	5,099.9	5,099.2	5,099.1	11.2	10.8	105.48	-91.1	0.0	94.5	72.6	21.91	4.314	
5,200.0	5,199.9	5,199.2	5,199.1	11.4	11.0	105.84	-92.0	0.0	95.6	73.3	22.34	4.280	
5,300.0	5,299.9	5,299.2	5,299.1	11.6	11.2	106.20	-92.8	0.0	96.7	73.9	22.77	4.246	
5,400.0	5,399.9	5,399.2	5,399.1	11.8	11.4	106.55	-93.7	0.0	97.8	74.6	23.20	4.215	
5,500.0	5,499.9	5,499.2	5,499.0	12.0	11.6	106.89	-94.6	0.0	98.9	75.2	23.63	4.184	
5,600.0	5,599.9	5,599.2	5,599.0	12.2	11.8	107.22	-95.5	0.0	99.9	75.9	24.06	4.154	
5,700.0	5,699.9	5,699.2	5,699.0	12.5	12.0	107.55	-96.3	0.0	101.0	76.5	24.49	4.126	
5,800.0	5,799.9	5,799.2	5,799.0	12.7	12.3	107.87	-97.2	0.0	102.1	77.2	24.92	4.098	
5,900.0	5,899.9	5,899.1	5,899.0	12.9	12.5	108.18	-98.1	0.0	103.2	77.9	25.35	4.072	
6,000.0	5,999.9	5,999.1	5,999.0	13.1	12.7	108.49	-98.9	0.0	104.3	78.5	25.79	4.046	
6,100.0	6,099.9	6,099.1	6,099.0	13.3	12.9	108.79	-99.8	0.0	105.4	79.2	26.22	4.021	
6,200.0	6,199.8	6,199.1	6,199.0	13.6	13.1	109.08	-100.7	0.0	106.5	79.9	26.65	3.997	
6,300.0	6,299.8	6,299.1	6,299.0	13.8	13.3	109.37	-101.6	0.0	107.7	80.6	27.09	3.974	
6,400.0	6,399.8	6,399.1	6,398.9	14.0	13.6	109.65	-102.4	0.0	108.8	81.2	27.53	3.952	
6,500.0	6,499.8	6,499.1	6,498.9	14.2	13.8	109.92	-103.3	0.0	109.9	81.9	27.96	3.930	
6,600.0	6,599.8	6,599.1	6,598.9	14.4	14.0	110.19	-104.2	0.0	111.0	82.6	28.40	3.909	
6,700.0	6,699.8	6,699.1	6,698.9	14.7	14.2	110.46	-105.1	0.0	112.1	83.3	28.83	3.889	
6,800.0	6,799.8	6,799.1	6,798.9	14.9	14.4	110.72	-105.9	0.0	113.3	84.0	29.27	3.869	
6,900.0	6,899.8	6,899.1	6,898.9	15.1	14.6	110.97	-106.8	0.0	114.4	84.7	29.71	3.850	
7,000.0	6,999.8	6,999.1	6,998.9	15.3	14.9	111.22	-107.7	0.0	115.5	85.4	30.15	3.831	
7,100.0	7,099.8	7,099.1	7,098.9	15.5	15.1	111.46	-108.5	0.0	116.6	86.1	30.59	3.813	
7,200.0	7,199.8	7,199.0	7,198.9	15.8	15.3	111.70	-109.4	0.0	117.8	86.7	31.02	3.796	
7,300.0	7,299.8	7,299.0	7,298.8	16.0	15.5	111.94	-110.3	0.0	118.9	87.4	31.46	3.779	
7,400.0	7,399.8	7,399.0	7,398.8	16.2	15.7	112.17	-111.2	0.0	120.0	88.1	31.90	3.763	
7,500.0	7,499.8	7,499.0	7,498.8	16.4	16.0	112.40	-112.0	0.0	121.2	88.8	32.34	3.747	
7,600.0	7,599.8	7,599.0	7,598.8	16.6	16.2	112.62	-112.9	0.0	122.3	89.5	32.78	3.731	
7,700.0	7,699.8	7,699.0	7,698.8	16.9	16.4	112.84	-113.8	0.0	123.5	90.2	33.22	3.716	
7,800.0	7,799.8	7,799.0	7,798.8	17.1	16.6	113.05	-114.7	0.0	124.6	90.9	33.66	3.701	
7,900.0	7,899.8	7,899.0	7,898.8	17.3	16.8	113.26	-115.5	0.0	125.8	91.6	34.11	3.687	
7,926.7	7,926.4	7,925.7	7,925.4	17.4	16.9	113.32	-115.8	0.0	126.1	91.8	34.22	3.683	
7,943.3	7,943.1	7,943.3	7,943.1	17.4	16.9	-156.66	-115.8	0.0	126.2	91.9	34.30	3.679	
8,000.0	7,999.8	8,000.0	7,999.8	17.5	17.1	-156.66	-115.8	0.0	126.2	91.6	34.52	3.654	
8,100.0	8,099.8	8,100.0	8,099.8	17.7	17.2	-156.66	-115.8	0.0	126.2	91.2	34.92	3.613	
8,200.0	8,199.8	8,200.0	8,199.8	17.9	17.4	-156.66	-115.8	0.0	126.2	90.8	35.32	3.572	
8,300.0	8,299.8	8,300.0	8,299.8	18.1	17.6	-156.66	-115.8	0.0	126.2	90.4	35.72	3.532	
8,400.0	8,399.8	8,400.0	8,399.8	18.4	17.8	-156.66	-115.8	0.0	126.2	90.0	36.12	3.493	
8,500.0	8,499.8	8,500.0	8,499.8	18.6	18.0	-156.66	-115.8	0.0	126.2	89.6	36.52	3.454	
8,600.0	8,599.8	8,600.0	8,599.8	18.8	18.2	-156.66	-115.8	0.0	126.2	89.2	36.93	3.416	
8,700.0	8,699.8	8,700.0	8,699.8	19.0	18.4	-156.66	-115.8	0.0	126.2	88.8	37.33	3.379	
8,800.0	8,799.8	8,800.0	8,799.8	19.2	18.6	-156.66	-115.8	0.0	126.2	88.4	37.74	3.343	
8,900.0	8,899.8	8,900.0	8,899.8	19.4	18.8	-156.66	-115.8	0.0	126.2	88.0	38.14	3.307	
9,000.0	8,999.8	9,000.0	8,999.8	19.6	19.0	-156.66	-115.8	0.0	126.2	87.6	38.55	3.273	
9,100.0	9,099.8	9,100.0	9,099.8	19.8	19.2	-156.66	-115.8	0.0	126.2	87.2	38.96	3.238	
9,200.0	9,199.8	9,200.0	9,199.8	20.0	19.4	-156.66	-115.8	0.0	126.2	86.8	39.37	3.205	
9,300.0	9,299.8	9,300.0	9,299.8	20.2	19.6	-156.66	-115.8	0.0	126.2	86.4	39.78	3.172	
9,400.0	9,399.8	9,400.0	9,399.8	20.5	19.8	-156.66	-115.8	0.0	126.2	86.0	40.19	3.139	
9,500.0	9,499.8	9,500.0	9,499.8	20.7	20.0	-156.66	-115.8	0.0	126.2	85.6	40.60	3.107	
9,600.0	9,599.8	9,600.0	9,599.8	20.9	20.2	-156.66	-115.8	0.0	126.2	85.1	41.01	3.076	
9,700.0	9,699.8	9,700.0	9,699.8	21.1	20.4	-156.66	-115.8	0.0	126.2	84.7	41.43	3.045	
9,800.0	9,799.8	9,800.0	9,799.8	21.3	20.6	-156.66	-115.8	0.0	126.2	84.3	41.84	3.015	
9,900.0	9,899.8	9,900.0	9,899.8	21.5	20.8	-156.66	-115.8	0.0	126.2	83.9	42.26	2.986	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-18 14BX - Design #2

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,000.0	9,999.8	10,000.0	9,999.8	21.7	21.0	-156.66	-115.8	0.0	126.2	83.5	42.67	2.956	
10,100.0	10,099.8	10,100.0	10,099.8	21.9	21.2	-156.66	-115.8	0.0	126.2	83.1	43.09	2.928	
10,200.0	10,199.8	10,200.0	10,199.8	22.2	21.4	-156.66	-115.8	0.0	126.2	82.7	43.50	2.900	
10,262.1	10,261.8	10,262.1	10,261.8	22.3	21.5	-156.66	-115.8	0.0	126.2	82.4	43.76	2.883	
10,300.0	10,299.8	10,299.8	10,299.6	22.4	21.6	-156.73	-115.9	0.1	126.2	82.2	43.92	2.873	
10,354.8	10,354.6	10,353.4	10,352.9	22.5	21.7	-158.70	-117.9	4.0	126.5	82.4	44.16	2.865	
10,375.0	10,374.8	10,372.8	10,372.2	22.5	21.7	90.06	-119.2	6.8	126.8	82.6	44.26	2.866	
10,400.0	10,399.7	10,396.8	10,395.6	22.6	21.8	88.56	-121.4	11.1	127.5	83.1	44.36	2.873	
10,425.0	10,424.5	10,420.6	10,418.7	22.7	21.9	87.07	-124.1	16.4	128.3	83.9	44.47	2.886	
10,450.0	10,449.2	10,444.2	10,441.2	22.7	21.9	85.63	-127.2	22.7	129.4	84.8	44.58	2.903	
10,475.0	10,473.5	10,467.7	10,463.3	22.8	22.0	84.23	-130.9	30.0	130.7	86.0	44.69	2.924	
10,500.0	10,497.6	10,491.1	10,484.8	22.8	22.0	82.88	-135.0	38.1	132.2	87.4	44.79	2.950	
10,525.0	10,521.2	10,514.3	10,505.7	22.9	22.1	81.59	-139.5	47.1	133.8	88.9	44.90	2.981	
10,550.0	10,544.4	10,537.4	10,525.9	23.0	22.1	80.37	-144.5	57.0	135.6	90.6	44.99	3.014	
10,575.0	10,567.1	10,560.3	10,545.6	23.0	22.2	79.20	-149.8	67.7	137.6	92.5	45.09	3.052	
10,600.0	10,589.1	10,583.2	10,564.5	23.1	22.3	78.11	-155.5	79.1	139.7	94.5	45.18	3.093	
10,625.0	10,610.6	10,605.9	10,582.7	23.2	22.3	77.09	-161.7	91.3	141.9	96.7	45.26	3.136	
10,650.0	10,631.3	10,628.5	10,600.1	23.3	22.4	76.13	-168.1	104.2	144.3	98.9	45.35	3.182	
10,675.0	10,651.3	10,650.0	10,616.0	23.4	22.5	75.27	-174.6	117.1	146.7	101.3	45.43	3.230	
10,700.0	10,670.5	10,673.5	10,632.6	23.5	22.6	74.43	-182.0	131.9	149.3	103.7	45.52	3.279	
10,725.0	10,688.8	10,695.8	10,647.7	23.6	22.7	73.69	-189.4	146.6	151.9	106.2	45.61	3.329	
10,750.0	10,706.2	10,718.1	10,661.9	23.7	22.8	73.01	-197.1	161.9	154.5	108.8	45.72	3.380	
10,775.0	10,722.6	10,740.2	10,675.3	23.9	23.0	72.40	-205.0	177.7	157.2	111.4	45.83	3.430	
10,800.0	10,738.0	10,762.3	10,687.7	24.0	23.1	71.85	-213.2	194.0	160.0	114.0	45.97	3.480	
10,825.0	10,752.4	10,784.4	10,699.3	24.2	23.3	71.37	-221.6	210.8	162.7	116.6	46.13	3.528	
10,850.0	10,765.7	10,806.3	10,710.0	24.4	23.4	70.94	-230.2	227.9	165.5	119.2	46.32	3.574	
10,875.0	10,777.8	10,828.3	10,719.8	24.6	23.6	70.58	-239.0	245.5	168.3	121.8	46.54	3.617	
10,900.0	10,788.8	10,850.0	10,728.5	24.8	23.8	70.26	-247.9	263.2	171.1	124.3	46.79	3.658	
10,925.0	10,798.6	10,872.0	10,736.5	25.0	24.0	70.01	-257.1	281.6	173.9	126.8	47.08	3.694	
10,950.0	10,807.2	10,893.8	10,743.4	25.3	24.2	69.80	-266.4	300.0	176.7	129.3	47.42	3.727	
10,975.0	10,814.5	10,915.6	10,749.4	25.6	24.4	69.64	-275.8	318.7	179.5	131.7	47.79	3.755	
11,000.0	10,820.6	10,937.3	10,754.5	25.8	24.7	69.54	-285.3	337.7	182.2	134.0	48.21	3.779	
11,025.0	10,825.4	10,959.1	10,758.5	26.1	24.9	69.47	-294.9	356.8	184.9	136.2	48.68	3.799	
11,050.0	10,828.9	10,980.8	10,761.6	26.5	25.2	69.45	-304.5	376.0	187.6	138.4	49.19	3.814	
11,075.0	10,831.1	11,002.6	10,763.7	26.8	25.5	69.48	-314.3	395.4	190.2	140.5	49.74	3.824	
11,100.0	10,832.0	11,025.0	10,764.8	27.1	25.8	69.55	-324.3	415.4	192.8	142.5	50.35	3.829	
11,104.0	10,832.0	11,027.8	10,764.9	27.2	25.8	69.55	-325.5	417.9	193.2	142.8	50.43	3.831	
11,200.0	10,832.2	11,127.7	10,765.1	28.6	27.3	70.73	-369.1	507.8	205.0	151.7	53.31	3.845	
11,300.0	10,832.4	11,233.9	10,765.3	30.3	29.1	72.00	-411.9	605.0	219.7	163.0	56.67	3.876	
11,400.0	10,832.6	11,340.4	10,765.5	32.2	31.0	73.27	-451.2	704.0	236.7	176.4	60.29	3.925	
11,500.0	10,832.7	11,447.2	10,765.7	34.1	33.2	74.50	-486.8	804.6	256.1	192.0	64.07	3.997	
11,600.0	10,832.9	11,554.3	10,765.9	36.2	35.5	75.67	-518.8	906.8	277.8	209.9	67.90	4.091	
11,680.4	10,833.1	11,640.7	10,766.1	38.0	37.5	76.56	-541.8	990.1	297.0	226.0	70.97	4.185	
11,700.0	10,833.1	11,661.8	10,766.1	38.4	38.0	76.80	-547.0	1,010.5	301.8	229.9	71.90	4.197	
11,800.0	10,833.3	11,770.8	10,766.3	40.7	40.5	77.83	-571.7	1,116.7	324.2	247.4	76.78	4.222	
11,900.0	10,833.4	11,881.6	10,766.5	43.0	43.2	78.59	-592.5	1,225.5	342.9	261.1	81.84	4.190	
12,000.0	10,833.6	11,993.9	10,766.7	45.4	45.9	79.14	-609.4	1,336.5	358.0	270.9	87.07	4.111	
12,100.0	10,833.8	12,107.4	10,766.9	47.9	48.8	79.52	-622.0	1,449.3	369.2	276.8	92.43	3.994	
12,200.0	10,834.0	12,221.8	10,767.1	50.4	51.7	79.76	-630.2	1,563.4	376.5	278.6	97.89	3.846	
12,300.0	10,834.1	12,336.6	10,767.3	53.0	54.6	79.87	-633.8	1,678.2	379.9	276.5	103.42	3.673	
12,400.0	10,834.3	12,440.9	10,767.5	55.5	57.2	79.88	-634.0	1,782.5	380.4	271.7	108.72	3.499	
12,500.0	10,834.5	12,540.9	10,767.6	58.2	59.8	79.89	-634.0	1,882.5	380.7	266.7	113.97	3.340	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-18 14BX - Design #2

Survey Program: 0-MWD

Offset Site Error: 0.0 usft

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,600.0	10,834.7	12,640.9	10,767.8	60.8	62.4	79.90	-634.0	1,982.5	381.0	261.7	119.27	3.194	
12,700.0	10,834.8	12,740.9	10,768.0	63.5	65.1	79.90	-634.0	2,082.5	381.3	256.7	124.60	3.060	
12,800.0	10,835.0	12,840.9	10,768.2	66.2	67.7	79.91	-634.0	2,182.5	381.6	251.6	129.98	2.936	
12,900.0	10,835.2	12,940.9	10,768.3	68.9	70.4	79.92	-634.0	2,282.5	381.9	246.5	135.39	2.821	
13,000.0	10,835.4	13,040.9	10,768.5	71.7	73.1	79.93	-634.0	2,382.5	382.2	241.4	140.83	2.714	
13,100.0	10,835.5	13,140.9	10,768.7	74.4	75.9	79.94	-634.0	2,482.5	382.5	236.2	146.29	2.615	
13,200.0	10,835.7	13,240.9	10,768.9	77.2	78.6	79.95	-634.0	2,582.5	382.8	231.0	151.78	2.522	
13,300.0	10,835.9	13,340.9	10,769.0	79.9	81.3	79.95	-634.0	2,682.5	383.1	225.8	157.29	2.436	
13,400.0	10,836.1	13,440.9	10,769.2	82.7	84.1	79.96	-634.0	2,782.5	383.4	220.6	162.82	2.355	
13,500.0	10,836.2	13,540.9	10,769.4	85.5	86.9	79.97	-634.0	2,882.5	383.7	215.4	168.36	2.279	
13,600.0	10,836.4	13,640.9	10,769.6	88.3	89.7	79.98	-634.0	2,982.5	384.0	210.1	173.93	2.208	
13,700.0	10,836.6	13,740.9	10,769.7	91.1	92.5	79.99	-634.0	3,082.5	384.3	204.8	179.50	2.141	
13,800.0	10,836.7	13,840.9	10,769.9	94.0	95.3	79.99	-634.0	3,182.5	384.6	199.5	185.09	2.078	
13,900.0	10,836.9	13,940.9	10,770.1	96.8	98.1	80.00	-634.0	3,282.5	384.9	194.2	190.69	2.019	
14,000.0	10,837.1	14,040.9	10,770.3	99.6	100.9	80.01	-634.0	3,382.5	385.2	188.9	196.30	1.963	
14,100.0	10,837.3	14,140.9	10,770.4	102.5	103.7	80.02	-634.0	3,482.5	385.5	183.6	201.92	1.909	
14,200.0	10,837.4	14,240.9	10,770.6	105.3	106.5	80.03	-634.0	3,582.5	385.8	178.3	207.55	1.859	
14,300.0	10,837.6	14,340.9	10,770.8	108.2	109.4	80.03	-634.0	3,682.5	386.1	173.0	213.19	1.811	
14,400.0	10,837.8	14,440.9	10,771.0	111.0	112.2	80.04	-634.0	3,782.5	386.5	167.6	218.83	1.766	
14,500.0	10,838.0	14,540.9	10,771.1	113.9	115.1	80.05	-634.0	3,882.5	386.8	162.3	224.48	1.723	
14,600.0	10,838.1	14,640.9	10,771.3	116.7	117.9	80.06	-634.0	3,982.5	387.1	156.9	230.14	1.682	
14,700.0	10,838.3	14,740.9	10,771.5	119.6	120.8	80.07	-634.0	4,082.5	387.4	151.6	235.81	1.643	
14,800.0	10,838.5	14,840.9	10,771.7	122.5	123.6	80.07	-634.0	4,182.5	387.7	146.2	241.48	1.605	
14,900.0	10,838.7	14,940.9	10,771.8	125.3	126.5	80.08	-634.0	4,282.5	388.0	140.8	247.15	1.570	
15,000.0	10,838.8	15,040.9	10,772.0	128.2	129.3	80.09	-634.0	4,382.5	388.3	135.4	252.84	1.536	
15,100.0	10,839.0	15,140.9	10,772.2	131.1	132.2	80.10	-634.0	4,482.5	388.6	130.1	258.52	1.503	
15,200.0	10,839.2	15,240.9	10,772.4	133.9	135.1	80.11	-634.0	4,582.5	388.9	124.7	264.21	1.472	Level 3
15,300.0	10,839.4	15,340.9	10,772.5	136.8	137.9	80.11	-634.0	4,682.5	389.2	119.3	269.91	1.442	Level 3
15,400.0	10,839.5	15,440.9	10,772.7	139.7	140.8	80.12	-634.0	4,782.5	389.5	113.9	275.61	1.413	Level 3
15,500.0	10,839.7	15,540.9	10,772.9	142.6	143.7	80.13	-634.0	4,882.5	389.8	108.5	281.31	1.386	Level 3
15,600.0	10,839.9	15,640.9	10,773.1	145.5	146.6	80.14	-634.0	4,982.5	390.1	103.1	287.02	1.359	Level 3
15,700.0	10,840.1	15,740.9	10,773.2	148.4	149.5	80.14	-634.0	5,082.5	390.4	97.7	292.73	1.334	Level 3
15,800.0	10,840.2	15,840.9	10,773.4	151.3	152.3	80.15	-634.0	5,182.5	390.7	92.3	298.44	1.309	Level 3
15,900.0	10,840.4	15,940.9	10,773.6	154.1	155.2	80.16	-634.0	5,282.4	391.0	86.9	304.15	1.286	Level 3
16,000.0	10,840.6	16,040.9	10,773.8	157.0	158.1	80.17	-634.0	5,382.4	391.3	81.4	309.87	1.263	Level 3
16,100.0	10,840.8	16,140.9	10,773.9	159.9	161.0	80.18	-634.0	5,482.4	391.6	76.0	315.59	1.241	Level 2
16,200.0	10,840.9	16,240.9	10,774.1	162.8	163.9	80.18	-634.0	5,582.4	391.9	70.6	321.32	1.220	Level 2
16,300.0	10,841.1	16,340.9	10,774.3	165.7	166.8	80.19	-634.0	5,682.4	392.2	65.2	327.04	1.199	Level 2
16,400.0	10,841.3	16,440.9	10,774.5	168.6	169.7	80.20	-634.0	5,782.4	392.5	59.8	332.77	1.180	Level 2
16,500.0	10,841.4	16,540.9	10,774.6	171.5	172.6	80.21	-634.0	5,882.4	392.8	54.3	338.50	1.161	Level 2
16,600.0	10,841.6	16,640.9	10,774.8	174.4	175.5	80.21	-634.0	5,982.4	393.1	48.9	344.23	1.142	Level 2
16,700.0	10,841.8	16,740.9	10,775.0	177.3	178.4	80.22	-634.0	6,082.4	393.4	43.5	349.97	1.124	Level 2
16,800.0	10,842.0	16,840.9	10,775.2	180.2	181.2	80.23	-634.0	6,182.4	393.7	38.0	355.70	1.107	Level 2
16,900.0	10,842.1	16,940.9	10,775.3	183.1	184.1	80.24	-634.0	6,282.4	394.1	32.6	361.44	1.090	Level 2
17,000.0	10,842.3	17,040.9	10,775.5	186.0	187.0	80.25	-634.0	6,382.4	394.4	27.2	367.18	1.074	Level 2
17,100.0	10,842.5	17,140.9	10,775.7	188.9	189.9	80.25	-634.0	6,482.4	394.7	21.7	372.93	1.058	Level 2
17,200.0	10,842.7	17,240.9	10,775.9	191.8	192.8	80.26	-634.0	6,582.4	395.0	16.3	378.67	1.043	Level 2
17,300.0	10,842.8	17,340.9	10,776.0	194.7	195.7	80.27	-634.0	6,682.4	395.3	10.9	384.41	1.028	Level 2
17,400.0	10,843.0	17,440.9	10,776.2	197.6	198.7	80.28	-634.0	6,782.4	395.6	5.4	390.16	1.014	Level 2
17,500.0	10,843.2	17,540.9	10,776.4	200.6	201.6	80.28	-634.0	6,882.4	395.9	0.0	395.91	1.000	Level 1
17,600.0	10,843.4	17,640.9	10,776.5	203.5	204.5	80.29	-634.0	6,982.4	396.2	-5.5	401.66	0.986	Level 1
17,700.0	10,843.5	17,740.9	10,776.7	206.4	207.4	80.30	-634.0	7,082.4	396.5	-10.9	407.41	0.973	Level 1

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 14BX - Kline Federal 5300 41-18 14BX - Design #2

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,800.0	10,843.7	17,840.9	10,776.9	209.3	210.3	80.31	-634.0	7,182.4	396.8	-16.4	413.16	0.960	Level 1
17,900.0	10,843.9	17,940.9	10,777.1	212.2	213.2	80.31	-634.0	7,282.4	397.1	-21.8	418.91	0.948	Level 1
18,000.0	10,844.1	18,040.9	10,777.2	215.1	216.1	80.32	-634.0	7,382.4	397.4	-27.3	424.67	0.936	Level 1
18,100.0	10,844.2	18,140.9	10,777.4	218.0	219.0	80.33	-634.0	7,482.4	397.7	-32.7	430.42	0.924	Level 1
18,200.0	10,844.4	18,240.9	10,777.6	220.9	221.9	80.34	-634.0	7,582.4	398.0	-38.2	436.18	0.912	Level 1
18,300.0	10,844.6	18,340.9	10,777.8	223.8	224.8	80.34	-634.0	7,682.4	398.3	-43.6	441.94	0.901	Level 1
18,400.0	10,844.8	18,440.9	10,777.9	226.7	227.7	80.35	-634.0	7,782.4	398.6	-49.1	447.70	0.890	Level 1
18,500.0	10,844.9	18,540.9	10,778.1	229.7	230.6	80.36	-634.0	7,882.4	398.9	-54.5	453.46	0.880	Level 1
18,600.0	10,845.1	18,640.9	10,778.3	232.6	233.5	80.37	-634.0	7,982.4	399.2	-60.0	459.22	0.869	Level 1
18,700.0	10,845.3	18,740.9	10,778.5	235.5	236.5	80.37	-634.0	8,082.4	399.5	-65.5	464.98	0.859	Level 1
18,800.0	10,845.4	18,840.9	10,778.6	238.4	239.4	80.38	-634.0	8,182.4	399.8	-70.9	470.74	0.849	Level 1
18,900.0	10,845.6	18,940.9	10,778.8	241.3	242.3	80.39	-634.0	8,282.4	400.1	-76.4	476.51	0.840	Level 1
19,000.0	10,845.8	19,040.9	10,779.0	244.2	245.2	80.40	-634.0	8,382.4	400.4	-81.8	482.27	0.830	Level 1
19,100.0	10,846.0	19,140.9	10,779.2	247.1	248.1	80.40	-634.0	8,482.4	400.7	-87.3	488.04	0.821	Level 1
19,200.0	10,846.1	19,240.9	10,779.3	250.1	251.0	80.41	-634.0	8,582.4	401.0	-92.8	493.81	0.812	Level 1
19,300.0	10,846.3	19,340.9	10,779.5	253.0	253.9	80.42	-634.0	8,682.4	401.3	-98.2	499.57	0.803	Level 1
19,400.0	10,846.5	19,440.9	10,779.7	255.9	256.8	80.43	-634.0	8,782.4	401.7	-103.7	505.34	0.795	Level 1
19,500.0	10,846.7	19,540.9	10,779.9	258.8	259.8	80.43	-634.0	8,882.4	402.0	-109.2	511.11	0.786	Level 1
19,600.0	10,846.8	19,640.9	10,780.0	261.7	262.7	80.44	-634.0	8,982.4	402.3	-114.6	516.88	0.778	Level 1
19,700.0	10,847.0	19,740.9	10,780.2	264.6	265.6	80.45	-634.0	9,082.4	402.6	-120.1	522.65	0.770	Level 1
19,800.0	10,847.2	19,840.9	10,780.4	267.6	268.5	80.46	-634.0	9,182.4	402.9	-125.6	528.42	0.762	Level 1
19,900.0	10,847.4	19,940.9	10,780.6	270.5	271.4	80.46	-634.0	9,282.4	403.2	-131.0	534.19	0.755	Level 1
20,000.0	10,847.5	20,040.9	10,780.7	273.4	274.3	80.47	-634.0	9,382.4	403.5	-136.5	539.97	0.747	Level 1
20,100.0	10,847.7	20,140.9	10,780.9	276.3	277.3	80.48	-634.0	9,482.4	403.8	-142.0	545.74	0.740	Level 1
20,200.0	10,847.9	20,240.9	10,781.1	279.2	280.2	80.49	-634.0	9,582.4	404.1	-147.4	551.51	0.733	Level 1
20,300.0	10,848.1	20,340.9	10,781.3	282.1	283.1	80.49	-634.0	9,682.4	404.4	-152.9	557.29	0.726	Level 1
20,400.0	10,848.2	20,440.9	10,781.4	285.1	286.0	80.50	-634.0	9,782.4	404.7	-158.4	563.06	0.719	Level 1
20,500.0	10,848.4	20,540.9	10,781.6	288.0	288.9	80.51	-634.0	9,882.4	405.0	-163.8	568.84	0.712	Level 1
20,600.0	10,848.6	20,640.9	10,781.8	290.9	291.8	80.51	-634.0	9,982.4	405.3	-169.3	574.61	0.705	Level 1
20,667.7	10,848.7	20,708.4	10,781.9	292.9	293.8	80.52	-634.0	10,050.0	405.5	-173.0	578.52	0.701	Level 1, ES, SF

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 9T - Kline Federal 5300 41-18 9T - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	2.0	2.0	-0.39	99.3	-0.7	99.3				
100.0	100.0	100.0	100.0	2.0	2.0	-0.39	99.3	-0.7	99.3	95.3	4.00	24.802	
200.0	200.0	200.0	200.0	2.0	2.0	-0.39	99.3	-0.7	99.3	95.2	4.05	24.533	
300.0	300.0	300.0	300.0	2.1	2.1	-0.39	99.3	-0.7	99.3	95.2	4.14	23.984	
400.0	400.0	400.0	400.0	2.1	2.1	-0.39	99.3	-0.7	99.3	95.0	4.28	23.210	
500.0	500.0	500.0	500.0	2.2	2.2	-0.39	99.3	-0.7	99.3	94.8	4.46	22.277	
600.0	600.0	600.0	600.0	2.3	2.3	-0.39	99.3	-0.7	99.3	94.6	4.67	21.248	
700.0	700.0	700.0	700.0	2.5	2.5	-0.39	99.3	-0.7	99.3	94.4	4.92	20.179	
800.0	800.0	800.0	800.0	2.6	2.6	-0.39	99.3	-0.7	99.3	94.1	5.20	19.113	
900.0	900.0	900.0	900.0	2.7	2.7	-0.39	99.3	-0.7	99.3	93.8	5.49	18.076	
1,000.0	1,000.0	1,000.0	1,000.0	2.9	2.9	-0.39	99.3	-0.7	99.3	93.5	5.81	17.089	
1,100.0	1,100.0	1,100.0	1,100.0	3.1	3.1	-0.39	99.3	-0.7	99.3	93.2	6.14	16.161	
1,200.0	1,200.0	1,200.0	1,200.0	3.2	3.2	-0.39	99.3	-0.7	99.3	92.8	6.49	15.295	
1,300.0	1,300.0	1,300.0	1,300.0	3.4	3.4	-0.39	99.3	-0.7	99.3	92.4	6.85	14.492	
1,400.0	1,400.0	1,400.0	1,400.0	3.6	3.6	-0.39	99.3	-0.7	99.3	92.1	7.22	13.750	
1,500.0	1,500.0	1,500.0	1,500.0	3.8	3.8	-0.39	99.3	-0.7	99.3	91.7	7.60	13.065	
1,600.0	1,600.0	1,600.0	1,600.0	4.0	4.0	-0.39	99.3	-0.7	99.3	91.3	7.99	12.434	
1,700.0	1,700.0	1,700.0	1,700.0	4.2	4.2	-0.39	99.3	-0.7	99.3	90.9	8.38	11.852	
1,800.0	1,800.0	1,800.0	1,800.0	4.4	4.4	-0.39	99.3	-0.7	99.3	90.5	8.78	11.315	
1,900.0	1,900.0	1,900.0	1,900.0	4.6	4.6	-0.39	99.3	-0.7	99.3	90.1	9.18	10.819	
2,000.0	2,000.0	2,000.0	2,000.0	4.8	4.8	-0.39	99.3	-0.7	99.3	89.7	9.58	10.360	
2,100.0	2,100.0	2,100.0	2,100.0	5.0	5.0	-0.39	99.3	-0.7	99.3	89.3	9.99	9.935	
2,200.0	2,200.0	2,200.0	2,200.0	5.2	5.2	-0.39	99.3	-0.7	99.3	88.9	10.41	9.540	CC, ES
2,216.7	2,216.7	2,215.8	2,215.8	5.2	5.2	-90.43	99.4	-0.7	99.4	88.9	10.47	9.487	
2,300.0	2,300.0	2,299.1	2,299.1	5.4	5.4	-90.84	100.1	-0.7	100.1	89.3	10.80	9.269	
2,400.0	2,400.0	2,399.1	2,399.1	5.6	5.6	-91.33	101.0	-0.7	101.0	89.8	11.19	9.022	
2,500.0	2,500.0	2,499.1	2,499.1	5.8	5.8	-91.81	101.8	-0.7	101.9	90.3	11.59	8.788	
2,600.0	2,600.0	2,599.1	2,599.1	6.0	6.0	-92.28	102.7	-0.7	102.8	90.8	12.00	8.569	
2,700.0	2,700.0	2,699.1	2,699.1	6.1	6.3	-92.74	103.6	-0.7	103.7	91.3	12.40	8.362	
2,800.0	2,800.0	2,799.1	2,799.1	6.3	6.5	-93.20	104.4	-0.7	104.6	91.8	12.81	8.167	
2,900.0	2,900.0	2,899.1	2,899.1	6.5	6.7	-93.64	105.3	-0.7	105.5	92.3	13.22	7.982	
3,000.0	3,000.0	2,999.1	2,999.0	6.7	6.9	-94.08	106.2	-0.7	106.5	92.8	13.64	7.808	
3,100.0	3,100.0	3,099.1	3,099.0	6.9	7.1	-94.51	107.1	-0.7	107.4	93.4	14.05	7.644	
3,200.0	3,200.0	3,199.1	3,199.0	7.1	7.3	-94.94	107.9	-0.7	108.3	93.9	14.47	7.488	
3,300.0	3,300.0	3,299.1	3,299.0	7.3	7.5	-95.35	108.8	-0.7	109.3	94.4	14.89	7.340	
3,400.0	3,400.0	3,399.0	3,399.0	7.6	7.8	-95.76	109.7	-0.7	110.2	94.9	15.31	7.200	
3,500.0	3,500.0	3,499.0	3,499.0	7.8	8.0	-96.17	110.6	-0.7	111.2	95.5	15.73	7.068	
3,600.0	3,599.9	3,599.0	3,599.0	8.0	8.2	-96.56	111.4	-0.7	112.2	96.0	16.16	6.942	
3,700.0	3,699.9	3,699.0	3,699.0	8.2	8.4	-96.95	112.3	-0.7	113.1	96.6	16.58	6.822	
3,800.0	3,799.9	3,799.0	3,799.0	8.4	8.6	-97.33	113.2	-0.7	114.1	97.1	17.01	6.708	
3,900.0	3,899.9	3,899.0	3,898.9	8.6	8.9	-97.71	114.0	-0.7	115.1	97.7	17.44	6.599	
4,000.0	3,999.9	3,999.0	3,998.9	8.8	9.1	-98.08	114.9	-0.7	116.1	98.2	17.87	6.496	
4,100.0	4,099.9	4,099.0	4,098.9	9.0	9.3	-98.44	115.8	-0.7	117.1	98.8	18.30	6.397	
4,200.0	4,199.9	4,199.0	4,198.9	9.2	9.5	-98.79	116.7	-0.7	118.1	99.3	18.73	6.303	
4,300.0	4,299.9	4,299.0	4,298.9	9.4	9.7	-99.15	117.5	-0.7	119.1	99.9	19.16	6.213	
4,400.0	4,399.9	4,399.0	4,398.9	9.7	10.0	-99.49	118.4	-0.7	120.1	100.5	19.60	6.127	
4,500.0	4,499.9	4,499.0	4,498.9	9.9	10.2	-99.83	119.3	-0.7	121.1	101.0	20.03	6.044	
4,600.0	4,599.9	4,599.0	4,598.9	10.1	10.4	-100.16	120.2	-0.7	122.1	101.6	20.46	5.965	
4,700.0	4,699.9	4,698.9	4,698.8	10.3	10.6	-100.49	121.0	-0.7	123.1	102.2	20.90	5.890	
4,800.0	4,799.9	4,798.9	4,798.8	10.5	10.8	-100.81	121.9	-0.7	124.1	102.8	21.33	5.817	
4,900.0	4,899.9	4,898.9	4,898.8	10.7	11.1	-101.13	122.8	-0.7	125.1	103.4	21.77	5.748	
5,000.0	4,999.9	4,998.9	4,998.8	10.9	11.3	-101.44	123.6	-0.7	126.2	104.0	22.21	5.681	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 9T - Kline Federal 5300 41-18 9T - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,099.9	5,098.9	5,098.8	11.2	11.5	-101.75	124.5	-0.7	127.2	104.5	22.64	5.617	
5,200.0	5,199.9	5,198.9	5,198.8	11.4	11.7	-102.05	125.4	-0.7	128.2	105.1	23.08	5.555	
5,300.0	5,299.9	5,298.9	5,298.8	11.6	11.9	-102.35	126.3	-0.7	129.3	105.7	23.52	5.496	
5,400.0	5,399.9	5,398.9	5,398.8	11.8	12.2	-102.64	127.1	-0.7	130.3	106.3	23.96	5.439	
5,500.0	5,499.9	5,498.9	5,498.8	12.0	12.4	-102.93	128.0	-0.7	131.3	106.9	24.40	5.384	
5,600.0	5,599.9	5,598.9	5,598.7	12.2	12.6	-103.22	128.9	-0.7	132.4	107.6	24.84	5.330	
5,700.0	5,699.9	5,698.9	5,698.7	12.5	12.8	-103.49	129.8	-0.7	133.4	108.2	25.28	5.279	
5,800.0	5,799.9	5,798.9	5,798.7	12.7	13.0	-103.77	130.6	-0.7	134.5	108.8	25.72	5.230	
5,900.0	5,899.9	5,898.9	5,898.7	12.9	13.3	-104.04	131.5	-0.7	135.6	109.4	26.16	5.182	
6,000.0	5,999.9	5,998.8	5,998.7	13.1	13.5	-104.31	132.4	-0.7	136.6	110.0	26.60	5.136	
6,100.0	6,099.9	6,098.8	6,098.7	13.3	13.7	-104.57	133.2	-0.7	137.7	110.6	27.04	5.092	
6,200.0	6,199.8	6,198.8	6,198.7	13.6	13.9	-104.83	134.1	-0.7	138.7	111.3	27.48	5.049	
6,300.0	6,299.8	6,298.8	6,298.7	13.8	14.2	-105.08	135.0	-0.7	139.8	111.9	27.92	5.007	
6,400.0	6,399.8	6,398.8	6,398.7	14.0	14.4	-105.33	135.9	-0.7	140.9	112.5	28.36	4.967	
6,500.0	6,499.8	6,498.8	6,498.6	14.2	14.6	-105.58	136.7	-0.7	142.0	113.2	28.81	4.928	
6,600.0	6,599.8	6,598.8	6,598.6	14.4	14.8	-105.82	137.6	-0.7	143.0	113.8	29.25	4.890	
6,700.0	6,699.8	6,698.8	6,698.6	14.7	15.1	-106.06	138.5	-0.7	144.1	114.4	29.69	4.854	
6,800.0	6,799.8	6,798.8	6,798.6	14.9	15.3	-106.30	139.4	-0.7	145.2	115.1	30.13	4.818	
6,900.0	6,899.8	6,898.8	6,898.6	15.1	15.5	-106.53	140.2	-0.7	146.3	115.7	30.58	4.784	
7,000.0	6,999.8	6,998.8	6,998.6	15.3	15.7	-106.76	141.1	-0.7	147.4	116.3	31.02	4.751	
7,100.0	7,099.8	7,098.8	7,098.6	15.5	15.9	-106.98	142.0	-0.7	148.5	117.0	31.46	4.718	
7,200.0	7,199.8	7,198.8	7,198.6	15.8	16.2	-107.20	142.8	-0.7	149.5	117.6	31.91	4.687	
7,300.0	7,299.8	7,298.7	7,298.6	16.0	16.4	-107.42	143.7	-0.7	150.6	118.3	32.35	4.657	
7,400.0	7,399.8	7,398.7	7,398.5	16.2	16.6	-107.64	144.6	-0.7	151.7	118.9	32.79	4.627	
7,500.0	7,499.8	7,498.7	7,498.5	16.4	16.8	-107.85	145.5	-0.7	152.8	119.6	33.24	4.598	
7,600.0	7,599.8	7,598.7	7,598.5	16.6	17.1	-108.06	146.3	-0.7	153.9	120.2	33.68	4.570	
7,700.0	7,699.8	7,698.7	7,698.5	16.9	17.3	-108.27	147.2	-0.7	155.0	120.9	34.12	4.543	
7,800.0	7,799.8	7,798.7	7,798.5	17.1	17.5	-108.47	148.1	-0.7	156.1	121.6	34.57	4.517	
7,900.0	7,899.8	7,898.7	7,898.5	17.3	17.7	-108.67	149.0	-0.7	157.2	122.2	35.01	4.491	
7,926.7	7,926.4	7,925.4	7,925.1	17.4	17.8	-108.72	149.2	-0.7	157.5	122.4	35.13	4.484	
7,943.3	7,943.1	7,943.3	7,943.1	17.4	17.8	-18.74	149.3	-0.7	157.6	122.4	35.21	4.477	
8,000.0	7,999.8	8,000.0	7,999.8	17.5	17.9	-18.74	149.3	-0.7	157.6	122.2	35.43	4.449	
8,100.0	8,099.8	8,100.0	8,099.8	17.7	18.2	-18.74	149.3	-0.7	157.6	121.8	35.86	4.395	
8,200.0	8,199.8	8,200.0	8,199.8	17.9	18.4	-18.74	149.3	-0.7	157.6	121.3	36.29	4.343	
8,300.0	8,299.8	8,300.0	8,299.8	18.1	18.6	-18.74	149.3	-0.7	157.6	120.9	36.72	4.292	
8,400.0	8,399.8	8,400.0	8,399.8	18.4	18.8	-18.74	149.3	-0.7	157.6	120.5	37.16	4.242	
8,500.0	8,499.8	8,500.0	8,499.8	18.6	19.1	-18.74	149.3	-0.7	157.6	120.0	37.59	4.194	
8,600.0	8,599.8	8,600.0	8,599.8	18.8	19.3	-18.74	149.3	-0.7	157.6	119.6	38.02	4.146	
8,700.0	8,699.8	8,700.0	8,699.8	19.0	19.5	-18.74	149.3	-0.7	157.6	119.2	38.45	4.099	
8,800.0	8,799.8	8,800.0	8,799.8	19.2	19.7	-18.74	149.3	-0.7	157.6	118.7	38.89	4.053	
8,900.0	8,899.8	8,900.0	8,899.8	19.4	19.9	-18.74	149.3	-0.7	157.6	118.3	39.32	4.009	
9,000.0	8,999.8	9,000.0	8,999.8	19.6	20.2	-18.74	149.3	-0.7	157.6	117.9	39.76	3.965	
9,100.0	9,099.8	9,100.0	9,099.8	19.8	20.4	-18.74	149.3	-0.7	157.6	117.4	40.19	3.922	
9,200.0	9,199.8	9,200.0	9,199.8	20.0	20.6	-18.74	149.3	-0.7	157.6	117.0	40.63	3.880	
9,300.0	9,299.8	9,300.0	9,299.8	20.2	20.8	-18.74	149.3	-0.7	157.6	116.6	41.06	3.839	
9,400.0	9,399.8	9,400.0	9,399.8	20.5	21.1	-18.74	149.3	-0.7	157.6	116.1	41.50	3.799	
9,500.0	9,499.8	9,500.0	9,499.8	20.7	21.3	-18.74	149.3	-0.7	157.6	115.7	41.93	3.759	
9,600.0	9,599.8	9,600.0	9,599.8	20.9	21.5	-18.74	149.3	-0.7	157.6	115.3	42.37	3.720	
9,700.0	9,699.8	9,700.0	9,699.8	21.1	21.7	-18.74	149.3	-0.7	157.6	114.8	42.80	3.683	
9,800.0	9,799.8	9,800.0	9,799.8	21.3	22.0	-18.74	149.3	-0.7	157.6	114.4	43.24	3.645	
9,900.0	9,899.8	9,900.0	9,899.8	21.5	22.2	-18.74	149.3	-0.7	157.6	113.9	43.68	3.609	
10,000.0	9,999.8	10,000.0	9,999.8	21.7	22.4	-18.74	149.3	-0.7	157.6	113.5	44.11	3.573	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 9T - Kline Federal 5300 41-18 9T - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,100.0	10,099.8	10,100.0	10,099.8	21.9	22.6	-18.74	149.3	-0.7	157.6	113.1	44.55	3.538	
10,200.0	10,199.8	10,200.0	10,199.8	22.2	22.9	-18.74	149.3	-0.7	157.6	112.6	44.99	3.504	
10,300.0	10,299.8	10,300.0	10,299.8	22.4	23.1	-18.74	149.3	-0.7	157.6	112.2	45.43	3.470	
10,354.8	10,354.6	10,354.8	10,354.6	22.5	23.2	-18.74	149.3	-0.7	157.6	112.0	45.67	3.452	
10,375.0	10,374.8	10,373.6	10,373.4	22.5	23.2	-128.69	149.5	-0.4	158.0	112.2	45.74	3.454	
10,400.0	10,399.7	10,396.9	10,396.6	22.6	23.3	-128.49	150.2	0.9	159.4	113.6	45.80	3.480	
10,425.0	10,424.5	10,420.0	10,419.6	22.7	23.3	-128.13	151.6	3.1	161.9	116.1	45.83	3.533	
10,450.0	10,449.2	10,443.0	10,442.3	22.7	23.4	-127.62	153.5	6.3	165.5	119.6	45.83	3.610	
10,475.0	10,473.5	10,465.7	10,464.5	22.8	23.4	-126.98	156.0	10.3	170.1	124.3	45.81	3.713	
10,500.0	10,497.6	10,488.2	10,486.3	22.8	23.5	-126.21	158.9	15.1	175.8	130.0	45.78	3.839	
10,525.0	10,521.2	10,510.3	10,507.4	22.9	23.5	-125.34	162.3	20.8	182.4	136.7	45.73	3.989	
10,550.0	10,544.4	10,532.1	10,527.8	23.0	23.6	-124.35	166.2	27.1	190.1	144.4	45.69	4.161	
10,575.0	10,567.1	10,553.5	10,547.6	23.0	23.6	-123.28	170.5	34.1	198.7	153.1	45.66	4.353	
10,600.0	10,589.1	10,575.0	10,567.1	23.1	23.7	-122.11	175.2	41.9	208.3	162.6	45.64	4.564	
10,625.0	10,610.6	10,594.9	10,584.7	23.2	23.8	-120.87	180.0	49.8	218.7	173.1	45.64	4.792	
10,650.0	10,631.3	10,614.9	10,602.0	23.3	23.8	-119.54	185.3	58.3	230.0	184.3	45.67	5.035	
10,675.0	10,651.3	10,634.4	10,618.5	23.4	23.9	-118.14	190.7	67.2	242.0	196.3	45.74	5.291	
10,700.0	10,670.5	10,653.4	10,634.1	23.5	23.9	-116.66	196.3	76.5	254.8	209.0	45.85	5.557	
10,725.0	10,688.8	10,672.0	10,648.9	23.6	24.0	-115.11	202.2	86.0	268.3	222.3	46.01	5.832	
10,750.0	10,706.2	10,690.1	10,663.0	23.7	24.0	-113.47	208.1	95.7	282.5	236.3	46.22	6.113	
10,775.0	10,722.6	10,707.7	10,676.2	23.9	24.1	-111.76	214.1	105.6	297.3	250.8	46.47	6.397	
10,800.0	10,738.0	10,725.0	10,688.8	24.0	24.2	-109.98	220.3	115.8	312.6	265.9	46.78	6.684	
10,825.0	10,752.4	10,741.5	10,700.4	24.2	24.2	-108.11	226.5	125.8	328.5	281.4	47.13	6.971	
10,850.0	10,765.7	10,757.7	10,711.4	24.4	24.3	-106.17	232.7	136.0	344.9	297.3	47.52	7.257	
10,875.0	10,777.8	10,775.0	10,722.6	24.6	24.4	-104.20	239.5	147.2	361.6	313.7	47.94	7.544	
10,900.0	10,788.8	10,789.0	10,731.4	24.8	24.5	-102.05	245.2	156.6	378.8	330.4	48.38	7.829	
10,925.0	10,798.6	10,804.1	10,740.4	25.0	24.5	-99.89	251.5	166.8	396.3	347.4	48.84	8.114	
10,950.0	10,807.2	10,818.8	10,748.9	25.3	24.6	-97.67	257.8	177.1	414.1	364.8	49.30	8.400	
10,975.0	10,814.5	10,833.2	10,756.9	25.6	24.7	-95.39	264.0	187.4	432.2	382.4	49.74	8.688	
11,000.0	10,820.6	10,847.3	10,764.3	25.8	24.8	-93.06	270.2	197.6	450.5	400.3	50.17	8.980	
11,025.0	10,825.4	10,861.1	10,771.2	26.1	24.9	-90.70	276.5	207.8	469.0	418.4	50.55	9.276	
11,050.0	10,828.9	10,875.0	10,777.8	26.5	25.0	-88.34	282.8	218.2	487.6	436.7	50.90	9.579	
11,075.0	10,831.1	10,888.0	10,783.7	26.8	25.1	-85.92	288.9	228.1	506.4	455.2	51.20	9.890	
11,100.0	10,832.0	10,900.0	10,788.8	27.1	25.1	-83.43	294.5	237.4	525.3	473.8	51.44	10.211	
11,104.0	10,832.0	10,903.2	10,790.1	27.2	25.2	-83.14	296.0	239.8	528.3	476.8	51.48	10.260	
11,200.0	10,832.2	10,957.3	10,809.4	28.6	25.6	-86.90	322.3	283.0	600.0	546.6	53.38	11.240	
11,300.0	10,832.4	11,022.3	10,824.9	30.3	26.2	-89.21	355.2	336.9	671.8	616.3	55.48	12.109	
11,400.0	10,832.6	11,094.8	10,831.9	32.2	27.0	-90.02	392.8	398.4	739.7	681.8	57.83	12.791	
11,500.0	10,832.7	11,198.8	10,832.2	34.1	28.2	-90.03	445.6	487.9	801.8	741.1	60.68	13.214	
11,600.0	10,832.9	11,317.2	10,832.4	36.2	30.0	-90.02	501.7	592.2	855.9	791.8	64.10	13.352	
11,680.4	10,833.1	11,420.0	10,832.6	38.0	31.7	-90.01	547.0	684.5	892.8	825.5	67.25	13.276	
11,700.0	10,833.1	11,445.9	10,832.7	38.4	32.1	-90.01	557.8	708.0	900.9	832.9	68.07	13.235	
11,800.0	10,833.3	11,581.5	10,832.9	40.7	34.7	-90.02	611.2	832.7	940.0	867.5	72.51	12.965	
11,900.0	10,833.4	11,722.5	10,833.1	43.0	37.5	-90.02	660.4	964.7	974.7	897.3	77.41	12.591	
12,000.0	10,833.6	11,868.3	10,833.4	45.4	40.6	-90.02	704.4	1,103.7	1,004.6	921.8	82.73	12.142	
12,100.0	10,833.8	12,018.4	10,833.7	47.9	44.0	-90.02	742.3	1,249.0	1,029.5	941.0	88.44	11.640	
12,200.0	10,834.0	12,172.3	10,834.0	50.4	47.6	-90.02	773.1	1,399.7	1,049.2	954.7	94.51	11.102	
12,300.0	10,834.1	12,329.1	10,834.2	53.0	51.4	-90.02	796.1	1,554.8	1,063.6	962.8	100.87	10.545	
12,400.0	10,834.3	12,487.9	10,834.5	55.5	55.3	-90.02	810.8	1,712.9	1,072.6	965.1	107.46	9.981	
12,500.0	10,834.5	12,647.9	10,834.8	58.2	59.3	-90.02	816.7	1,872.7	1,075.9	961.7	114.24	9.418	
12,600.0	10,834.7	12,757.5	10,835.0	60.8	62.0	-90.02	816.8	1,982.4	1,075.7	955.9	119.79	8.980	
12,700.0	10,834.8	12,857.5	10,835.2	63.5	64.5	-90.02	816.8	2,082.4	1,075.4	950.3	125.13	8.594	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 9T - Kline Federal 5300 41-18 9T - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
12,800.0	10,835.0	12,957.5	10,835.4	66.2	67.1	-90.02	816.8	2,182.4	1,075.1	944.6	130.52	8.237	
12,900.0	10,835.2	13,057.5	10,835.5	68.9	69.7	-90.02	816.8	2,282.4	1,074.8	938.8	135.94	7.906	
13,000.0	10,835.4	13,157.5	10,835.7	71.7	72.3	-90.02	816.8	2,382.4	1,074.5	933.1	141.40	7.599	
13,100.0	10,835.5	13,257.5	10,835.9	74.4	75.0	-90.02	816.8	2,482.4	1,074.2	927.3	146.89	7.313	
13,200.0	10,835.7	13,357.5	10,836.0	77.2	77.6	-90.02	816.8	2,582.3	1,073.9	921.4	152.41	7.046	
13,300.0	10,835.9	13,457.5	10,836.2	79.9	80.3	-90.02	816.8	2,682.3	1,073.5	915.6	157.95	6.797	
13,400.0	10,836.1	13,557.5	10,836.4	82.7	83.0	-90.02	816.8	2,782.3	1,073.2	909.7	163.52	6.563	
13,500.0	10,836.2	13,657.5	10,836.6	85.5	85.7	-90.02	816.8	2,882.3	1,072.9	903.8	169.11	6.345	
13,600.0	10,836.4	13,757.5	10,836.7	88.3	88.4	-90.02	816.8	2,982.3	1,072.6	897.9	174.71	6.139	
13,700.0	10,836.6	13,857.5	10,836.9	91.1	91.2	-90.02	816.8	3,082.3	1,072.3	892.0	180.33	5.946	
13,800.0	10,836.7	13,957.5	10,837.1	94.0	93.9	-90.02	816.8	3,182.3	1,072.0	886.0	185.97	5.765	
13,900.0	10,836.9	14,057.5	10,837.3	96.8	96.7	-90.02	816.8	3,282.3	1,071.7	880.1	191.61	5.593	
14,000.0	10,837.1	14,157.5	10,837.4	99.6	99.5	-90.02	816.8	3,382.3	1,071.4	874.1	197.28	5.431	
14,100.0	10,837.3	14,257.5	10,837.6	102.5	102.2	-90.02	816.8	3,482.3	1,071.1	868.1	202.95	5.278	
14,200.0	10,837.4	14,357.5	10,837.8	105.3	105.0	-90.02	816.8	3,582.3	1,070.8	862.1	208.63	5.132	
14,300.0	10,837.6	14,457.5	10,838.0	108.2	107.8	-90.02	816.8	3,682.3	1,070.5	856.1	214.32	4.995	
14,400.0	10,837.8	14,557.5	10,838.1	111.0	110.6	-90.02	816.8	3,782.3	1,070.2	850.1	220.03	4.864	
14,500.0	10,838.0	14,657.5	10,838.3	113.9	113.5	-90.02	816.8	3,882.3	1,069.8	844.1	225.73	4.739	
14,600.0	10,838.1	14,757.5	10,838.5	116.7	116.3	-90.02	816.8	3,982.3	1,069.5	838.1	231.45	4.621	
14,700.0	10,838.3	14,857.5	10,838.7	119.6	119.1	-90.02	816.8	4,082.3	1,069.2	832.0	237.18	4.508	
14,800.0	10,838.5	14,957.5	10,838.8	122.5	121.9	-90.02	816.8	4,182.3	1,068.9	826.0	242.91	4.401	
14,900.0	10,838.7	15,057.5	10,839.0	125.3	124.7	-90.02	816.8	4,282.3	1,068.6	820.0	248.64	4.298	
15,000.0	10,838.8	15,157.5	10,839.2	128.2	127.6	-90.02	816.8	4,382.3	1,068.3	813.9	254.39	4.199	
15,100.0	10,839.0	15,257.5	10,839.4	131.1	130.4	-90.02	816.8	4,482.3	1,068.0	807.9	260.14	4.106	
15,200.0	10,839.2	15,357.5	10,839.5	133.9	133.3	-90.02	816.8	4,582.3	1,067.7	801.8	265.89	4.016	
15,300.0	10,839.4	15,457.5	10,839.7	136.8	136.1	-90.02	816.8	4,682.3	1,067.4	795.7	271.65	3.929	
15,400.0	10,839.5	15,557.5	10,839.9	139.7	139.0	-90.02	816.8	4,782.3	1,067.1	789.7	277.41	3.847	
15,500.0	10,839.7	15,657.5	10,840.1	142.6	141.8	-90.02	816.8	4,882.3	1,066.8	783.6	283.18	3.767	
15,600.0	10,839.9	15,757.5	10,840.2	145.5	144.7	-90.02	816.8	4,982.3	1,066.4	777.5	288.95	3.691	
15,700.0	10,840.1	15,857.5	10,840.4	148.4	147.5	-90.02	816.8	5,082.3	1,066.1	771.4	294.72	3.617	
15,800.0	10,840.2	15,957.5	10,840.6	151.3	150.4	-90.02	816.8	5,182.3	1,065.8	765.3	300.50	3.547	
15,900.0	10,840.4	16,057.5	10,840.8	154.1	153.3	-90.02	816.8	5,282.3	1,065.5	759.2	306.28	3.479	
16,000.0	10,840.6	16,157.5	10,840.9	157.0	156.1	-90.02	816.8	5,382.3	1,065.2	753.2	312.06	3.413	
16,100.0	10,840.8	16,257.5	10,841.1	159.9	159.0	-90.02	816.8	5,482.3	1,064.9	747.1	317.85	3.350	
16,200.0	10,840.9	16,357.5	10,841.3	162.8	161.9	-90.02	816.8	5,582.3	1,064.6	741.0	323.63	3.290	
16,300.0	10,841.1	16,457.5	10,841.5	165.7	164.8	-90.02	816.8	5,682.3	1,064.3	734.9	329.43	3.231	
16,400.0	10,841.3	16,557.5	10,841.6	168.6	167.6	-90.02	816.8	5,782.3	1,064.0	728.8	335.22	3.174	
16,500.0	10,841.4	16,657.5	10,841.8	171.5	170.5	-90.02	816.8	5,882.3	1,063.7	722.7	341.02	3.119	
16,600.0	10,841.6	16,757.5	10,842.0	174.4	173.4	-90.02	816.8	5,982.3	1,063.4	716.5	346.81	3.066	
16,700.0	10,841.8	16,857.5	10,842.2	177.3	176.3	-90.02	816.8	6,082.3	1,063.1	710.4	352.62	3.015	
16,800.0	10,842.0	16,957.5	10,842.3	180.2	179.2	-90.02	816.8	6,182.3	1,062.7	704.3	358.42	2.965	
16,900.0	10,842.1	17,057.5	10,842.5	183.1	182.1	-90.02	816.8	6,282.3	1,062.4	698.2	364.22	2.917	
17,000.0	10,842.3	17,157.5	10,842.7	186.0	184.9	-90.02	816.8	6,382.3	1,062.1	692.1	370.03	2.870	
17,100.0	10,842.5	17,257.5	10,842.9	188.9	187.8	-90.02	816.8	6,482.3	1,061.8	686.0	375.84	2.825	
17,200.0	10,842.7	17,357.5	10,843.0	191.8	190.7	-90.02	816.8	6,582.3	1,061.5	679.9	381.65	2.781	
17,300.0	10,842.8	17,457.5	10,843.2	194.7	193.6	-90.02	816.8	6,682.3	1,061.2	673.7	387.46	2.739	
17,400.0	10,843.0	17,557.4	10,843.4	197.6	196.5	-90.02	816.8	6,782.3	1,060.9	667.6	393.27	2.698	
17,500.0	10,843.2	17,657.4	10,843.6	200.6	199.4	-90.02	816.8	6,882.3	1,060.6	661.5	399.08	2.658	
17,600.0	10,843.4	17,757.4	10,843.7	203.5	202.3	-90.02	816.8	6,982.3	1,060.3	655.4	404.90	2.619	
17,700.0	10,843.5	17,857.4	10,843.9	206.4	205.2	-90.02	816.8	7,082.3	1,060.0	649.3	410.72	2.581	
17,800.0	10,843.7	17,957.4	10,844.1	209.3	208.1	-90.02	816.8	7,182.3	1,059.7	643.1	416.54	2.544	
17,900.0	10,843.9	18,057.4	10,844.3	212.2	211.0	-90.02	816.8	7,282.3	1,059.4	637.0	422.35	2.508	

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

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 9T - Kline Federal 5300 41-18 9T - Design #1

Offset Site Error: 0.0 usft

Survey Program: 0-MWD

Offset Well Error: 2.0 usft

Reference Measured Depth (usft)	Reference Vertical Depth (usft)	Offset Measured Depth (usft)	Offset Vertical Depth (usft)	Semi Major Axis Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
18,000.0	10,844.1	18,157.4	10,844.4	215.1	213.9	-90.02	816.8	7,382.3	1,059.0	630.9	428.17	2.473	
18,100.0	10,844.2	18,257.4	10,844.6	218.0	216.8	-90.02	816.8	7,482.3	1,058.7	624.7	434.00	2.439	
18,200.0	10,844.4	18,357.4	10,844.8	220.9	219.7	-90.02	816.8	7,582.3	1,058.4	618.6	439.82	2.406	
18,300.0	10,844.6	18,457.4	10,845.0	223.8	222.6	-90.02	816.8	7,682.3	1,058.1	612.5	445.64	2.374	
18,400.0	10,844.8	18,557.4	10,845.1	226.7	225.5	-90.02	816.8	7,782.3	1,057.8	606.3	451.47	2.343	
18,500.0	10,844.9	18,657.4	10,845.3	229.7	228.4	-90.02	816.8	7,882.3	1,057.5	600.2	457.29	2.313	
18,600.0	10,845.1	18,757.4	10,845.5	232.6	231.3	-90.02	816.8	7,982.3	1,057.2	594.1	463.12	2.283	
18,700.0	10,845.3	18,857.4	10,845.6	235.5	234.2	-90.02	816.8	8,082.3	1,056.9	587.9	468.95	2.254	
18,800.0	10,845.4	18,957.4	10,845.8	238.4	237.1	-90.02	816.8	8,182.3	1,056.6	581.8	474.78	2.225	
18,900.0	10,845.6	19,057.4	10,846.0	241.3	240.0	-90.02	816.8	8,282.3	1,056.3	575.7	480.60	2.198	
19,000.0	10,845.8	19,157.4	10,846.2	244.2	242.9	-90.02	816.8	8,382.3	1,056.0	569.5	486.43	2.171	
19,100.0	10,846.0	19,257.4	10,846.3	247.1	245.8	-90.02	816.8	8,482.3	1,055.6	563.4	492.26	2.144	
19,200.0	10,846.1	19,357.4	10,846.5	250.1	248.7	-90.02	816.8	8,582.3	1,055.3	557.2	498.10	2.119	
19,300.0	10,846.3	19,457.4	10,846.7	253.0	251.6	-90.02	816.8	8,682.3	1,055.0	551.1	503.93	2.094	
19,400.0	10,846.5	19,557.4	10,846.9	255.9	254.5	-90.02	816.8	8,782.3	1,054.7	545.0	509.76	2.069	
19,500.0	10,846.7	19,657.4	10,847.0	258.8	257.4	-90.02	816.8	8,882.3	1,054.4	538.8	515.59	2.045	
19,600.0	10,846.8	19,757.4	10,847.2	261.7	260.4	-90.02	816.8	8,982.3	1,054.1	532.7	521.43	2.022	
19,700.0	10,847.0	19,857.4	10,847.4	264.6	263.3	-90.02	816.8	9,082.3	1,053.8	526.5	527.26	1.999	
19,800.0	10,847.2	19,957.4	10,847.6	267.6	266.2	-90.02	816.8	9,182.3	1,053.5	520.4	533.10	1.976	
19,900.0	10,847.4	20,057.4	10,847.7	270.5	269.1	-90.02	816.8	9,282.3	1,053.2	514.2	538.93	1.954	
20,000.0	10,847.5	20,157.4	10,847.9	273.4	272.0	-90.02	816.8	9,382.3	1,052.9	508.1	544.77	1.933	
20,100.0	10,847.7	20,257.4	10,848.1	276.3	274.9	-90.02	816.8	9,482.3	1,052.6	502.0	550.61	1.912	
20,200.0	10,847.9	20,357.4	10,848.3	279.2	277.8	-90.02	816.8	9,582.3	1,052.3	495.8	556.45	1.891	
20,300.0	10,848.1	20,457.4	10,848.4	282.1	280.7	-90.02	816.8	9,682.3	1,051.9	489.7	562.28	1.871	
20,400.0	10,848.2	20,557.4	10,848.6	285.1	283.6	-90.02	816.8	9,782.3	1,051.6	483.5	568.12	1.851	
20,500.0	10,848.4	20,657.4	10,848.8	288.0	286.6	-90.02	816.8	9,882.3	1,051.3	477.4	573.96	1.832	
20,600.0	10,848.6	20,757.4	10,849.0	290.9	289.5	-90.02	816.8	9,982.3	1,051.0	471.2	579.80	1.813	
20,667.7	10,848.7	20,824.5	10,849.1	292.9	291.4	-90.02	816.8	10,049.3	1,050.8	467.1	583.73	1.800 SF	

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 2082.0usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is 100° 30' 0.000 W

Coordinates are relative to: Kline Federal 5300 41-18 12TX
Coordinate System is US State Plane 1983, North Dakota Northern Zone
Grid Convergence at Surface is: -2.31°

Ladder Plot

LEGEND

5300 41-18 9T, Design #1 V0
l 5300 41-18 10B, Design #1 V0
Kline Federal 5300 41-18 11T2, Kline Federal 5300 41-18 11T2, Design #1 V0
Kline Federal 5300 41-18 13T2X, Kline Federal 5300 41-18 13T2X, Design #1 V0
Kline Federal 5300 41-18 14BX
Kline Federal 5300 41-18 14BX

Company:	Oasis Petroleum	**Local Co-ordinate Reference:**	Well Kline Federal 5300 41-18 12TX
Project:	Indian Hills	**TVD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Reference Site:	153N-100W-17/18	**MD Reference:**	WELL @ 2082.0usft (Original Well Elev)
Site Error:	0.0 usft	**North Reference:**	True
Reference Well:	Kline Federal 5300 41-18 12TX	**Survey Calculation Method:**	Minimum Curvature
Well Error:	2.0 usft	**Output errors are at**	2.00 sigma
Reference Wellbore	Kline Federal 5300 41-18 12TX	**Database:**	EDM 5000.1 Single User Db
Reference Design:	Design #2	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 2082.0usft (Original Well Ele
Offset Depths are relative to Offset Datum
Central Meridian is 100° 30' 0.000 W

Coordinates are relative to: Kline Federal 5300 41-18 12TX
Coordinate System is US State Plane 1983, North Dakota Northern Zone
Grid Convergence at Surface is: -2.31°

LEGEND

5300 41-18 9T, Design #1 V0
l 5300 41-18 10B, Design #1 V0
Kline Federal 5300 41-18 11T2, Kline Federal 5300 41-18 11T2, Design #1 V0
Kline Federal 5300 41-18 13T2X, Kline Federal 5300 41-18 13T2X, Design #1 V0
Kline Federal 5300 41-18 14BX
Kline Federal 5300 41-18 14BX

SECTION BREAKDOWN

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"KLINE FEDERAL 5300 41-18 12TX"
434 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE
SECTIONS 17, 18, 19, & 20, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

- MONUMENT – RECOVERED
- MONUMENT – NOT RECOVERED

VICINITY MAP

THIS DOCUMENT WAS ORIGINALLY ISSUED AND SEALED BY ROBERT L. PROCIVE, PLS, REGISTRATION NUMBER 2884 ON 4/15/14 AND THE ORIGINAL DOCUMENTS ARE STORED AT THE OFFICES OF INTERSTATE ENGINEERING, INC.

ALL AZIMUTHS ARE BASED ON G.P.S. OBSERVATIONS. THE ORIGINAL SURVEY OF THIS AREA FOR THE GENERAL LAND OFFICE (G.L.O.) WAS 1891. THE CORNERS FOUND ARE AS INDICATED ANB 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'.

REGISTERED LAND SURVEYOR
ROBERT L. PROCIVE
LS-2884
DATE: 4/15/14
NORTH DAKOTA

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OASIS PETROLEUM NORTH AMERICA, LLC
SECTION BREAKDOWN
SECTIONS 17, 18, 19, & 20, T153N, R100W
MKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H.	Project No.: S14-09-081.02
Checked By: R.L.P.	Date: APRIL 2014

Revision No.	Date	By	Description

PAD LAYOUT

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"KLINE FEDERAL 5300 41-18 9T"
533 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE
SECTION 18, 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.

REGISTERED LAND SURVEYOR
ROBERT L. PROCIVE
LS-2884
DATE: 4/15/14
NORTH DAKOTA

V-DITCH DETAIL

Proposed Contours
Original Contours
BERM
DITCH

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 18, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. | Project No.: S14-09-081.05
Checked By: D.D.K. | Date: APRIL 2014

Revision No.	Date	By	Description

Q:\2014\S14-09-\081.05 Oasis Petroleum - Kline Federal 5300 41-18 9T Location\CAD\Kline Federal 5300 41-18 9T.dwg - 4/15/2014 3:59 PM josh schmierer

CROSS SECTIONS

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"KLINE FEDERAL 5300 41-18 12TX"
434 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

REGISTERED LAND SURVEYOR
ROBERT L. PROCIVE
LS-2884
DATE: 4/15/14
NORTH DAKOTA

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SCALE
HORIZ 1"=140'
VERT 1"=35'

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

Drawn By: B.H.H. | Project No.: S14-09-081.02
Checked By: R.L.P. | Date: APRIL 2014

Revision No.	Date	By	Description

ACCESS APPROACH

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"KLINE FEDERAL 5300 41-18 12TX"
434 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

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REGISTERED LAND SURVEYOR
ROBERT L. PROCIVE
LS-2884
DATE: 4/15/14
NORTH DAKOTA

0 500
1" = 500'

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

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

Drawn By: B.H.H. | Project No.: S14-09-061.02
Checked By: R.L.P. | Date: APRIL 2014

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

Drawn By: B.H.H.	Project No.: S14-09-081.02
Checked By: R.L.P.	Date: APRIL 2014

Revision No.	Date	By	Description

COUNTY ROAD MAP

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"KLINE FEDERAL 5300 41-18 12TX"
434 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

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SCALE: 1" = 2 MILE

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

Drawn By: B.H.H.	Project No.: S14-09-081.02		
Checked By: R.L.P.	Date: APRIL 2014		

Revision No.	Date	By	Description

WELL LOCATION SITE QUANTITIES

OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"KLINE FEDERAL 5300 41-18 12TX"
434 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

WELL SITE ELEVATION	2056.1
WELL PAD ELEVATION	2057.0

EXCAVATION	20,682
PLUS PIT	18,900
	39,582
EMBANKMENT	11,538
PLUS SHRINKAGE (30%)	3,461
	14,999
STOCKPILE PIT	18,900
STOCKPILE TOP SOIL (6")	5,261
BERMS	1,889 LF = 612 CY
DITCHES	1,649 LF = 252 CY
DETENTION AREA	2,341 CY
STOCKPILE MATERIAL	2,403
DISTURBED AREA FROM PAD	6.52 ACRES

NOTE: ALL QUANTITIES ARE IN CUBIC YARDS (UNLESS NOTED)
CUT END SLOPES AT 1:1
FILL END SLOPES AT 1.5:1

WELL SITE LOCATION
434' FSL
237' FWL

BERM DETAIL

DITCH DETAIL

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

Drawn By: B.H.H. | Project No.: S14-09-081.02
Checked By: R.L.P. | Date: APRIL 2014

Revision No.	Date	By	Description

OASIS PETROLEUM

5/29/2014

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

RE: **Kline Federal 5300 41-18 9T**
Kline Federal 5300 41-18 10B
Kline Federal 5300 41-18 11T2
Kline Federal 5300 41-18 12TX
Kline Federal 5300 41-18 13T2X
Kline Federal 5300 41-18 14BX
Request for a legal street address

Dear NDIC:

Oasis Petroleum has requested a physical street address for the Kline Federal 5300 41-18 9T, Kline Federal 5300 41-18 10B, Kline Federal 5300 41-18 11T2, Kline Federal 5300 41-18 12TX, Kline Federal 5300 41-18 13T2X, and Kline Federal 5300 41-18 14BX. The request was made to Aaron Chisolm, in McKenzie County. Upon receiving a legal street address, Oasis will submit the address to the NDIC on a Sundry Notice (form 4) pursuant to 43-02-03-28.

Thank you for your consideration.

Respectfully,

Heather McCowan

Heather McCowan
Regulatory Assistant
Oasis Petroleum North America, LLC

1001 Fannin, Suite 1500 • Houston, Texas 77002 • Phone (281) 404-9500 - Fax: (281) 404-9501

Surface Damage Affidavit

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

James DeMorrett, being duly sworn, states as follows:

The below described lands are not located in a wellhead protection/source water protection area per the website provided by the NDIC

and the adjacent landowner is fully aware that Oasis Petroleum will be drilling and operating multiple wells on spacing unit from a surface location in Section 18: Lot 4 a/k/a SW¼SW¼, Township153 North, Range 100 West, 5th P.M., McKenzie County, North Dakota. (totaling 6.52 acres). The adjacent surface landowner is fully aware that the above referenced location will consist of the well bores and pumping units only and will not have cuttings pits, storage tanks or flare pits.

Dated this 16th day of June, 2014

James DeMorrett

STATE OF NORTH DAKOTA }
} SS.
COUNTY OF WILLIAMS }

BE IT REMEMBERED, That on this 16 day of June, 2014 before me, a Notary Public, in and for said County and State, personally appeared James DeMorrett, to me known to be the identical persons described in and who executed the within and foregoing instrument and acknowledged to me that he executed the same as his free and voluntary act and deed for the uses and purposes therein set forth.

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

My commission expires: Nov 18, 2017

Notary Public

NOTARY STAMP

DAMON JORGENSEN
Notary Public
State of North Dakota
My Commission Expires Nov. 18, 2017