

Received

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)

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							
<input checked="" type="checkbox"/> Oil Well	<input type="checkbox"/> EOR Well	<input type="checkbox"/> Recompletion	<input type="checkbox"/> Deepened Well	<input type="checkbox"/> Added Horizontal Leg	<input type="checkbox"/> Extended Horizontal Leg		
<input type="checkbox"/> Gas Well	<input type="checkbox"/> SWD Well	<input type="checkbox"/> Water Supply Well	<input type="checkbox"/> Other:				
Well Name and Number Kline Federal 5300 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	<input type="checkbox"/> Wildcat	<input checked="" type="checkbox"/> Development	<input type="checkbox"/> Extension	

LOCATION OF WELL I

LOCATION OF WELL									
At Surface				Qtr-Qtr	Section	Township	Range	County	
434	F	S	L	LOT4	18	153	N	100	W
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)

PERFORATION & OPEN HOLE INTERVALS

PRODUCTION

Current Producing Open Hole or Perforated Interval(s), This Completion, Top and Bottom, (MD Ft) Lateral 1-11175' to 20579'							Name of Zone (If Different from Pool Name)	
Date Well Completed (SEE INSTRUCTIONS) September 1, 2015							Well Status (Producing or Shut-In) producing	
Date of Test 09/01/2015	Hours Tested 24	Choke Size 38 /64	Producing Method flowing	Pumping-Size & Type of Pump			Oil Gravity-API (Corr.) °	
			Production for Test	Oil (Bbls) 1127	Gas (MCF) 877	Water (Bbls) 3644		Disposition of Gas Sold
Flowing Tubing Pressure (PSI)		Flowing Casing Pressure (PSI)		Calculated 24-Hour Rate	Oil (Bbls) 1127	Gas (MCF) 877	Water (Bbls) 3644	Gas-Oil Ratio 778

GEOLOGICAL MARKERS

PLUG BACK INFORMATION

CORES CUT

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

Drill Stem Test

Well Specific Stimulation

Date Stimulated	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 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												

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 dbusch@oasispetroleum.com	Date 08/15/2018
Signature 	Printed Name Daniel Busch	Title 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
SFSN 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

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	F	S	L	Qtr-Qtr	Section	Township	Range
434	F	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 Oasis Petroleum North America LLC	Telephone Number 281 404-9436
Address 1001 Fannin, Suite 1500	
City Houston	State TX
Signature 	Printed Name Jennifer Swenson
Title Regulatory Specialist	Date November 19, 2015
Email Address jswenson@oasispetroleum.com	

FOR STATE USE ONLY

<input checked="" type="checkbox"/> Received	<input type="checkbox"/> Approved
Date 11-30-2015	
By Original Signed By: TAYLOR ROTH Title Engineering Technician	



AUTHORIZATION TO PURCHASE AND TRANSPORT OIL FROM LEASE - Form 8

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

Well File No.
28658
NDIC CTB No.
115699

228654

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND FOUR COPIES.

Well Name and Number KLINE FEDERAL 5300 41-18 12TX	Qtr-Qtr LOT4	Section 18	Township 153	Range 100	County McKenzie
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Operator Oasis Petroleum North America LLC	Telephone Number (281) 404-9573	Field BAKER
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Address 1001 Fannin, Suite 1500	City Houston	State TX	Zip Code 77002
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Name of First Purchaser Oasis Petroleum Marketing LLC	Telephone Number (281) 404-9627	% Purchased 100%	Date Effective September 1, 2015
Principal Place of Business 1001 Fannin, Suite 1500	City Houston	State TX	Zip Code 77002
Field Address	City	State	Zip Code
Transporter Hiland Crude, LLC	Telephone Number (580) 616-2058	% Transported 75%	Date Effective September 1, 2015
Address P.O. Box 3886	City Enid	State OK	Zip Code 73702

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

Other First Purchasers Purchasing From This Lease	% Purchased	Date Effective
Other First Purchasers Purchasing From This Lease	% Purchased	Date Effective
Other Transporters Transporting From This Lease	% Transported	Date Effective
Power Crude Transport	25%	September 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 Brianna Salines
	Title Marketing Assistant

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



FOR STATE USE ONLY	
Date Approved OCT 27 2015	By Erica Peterson
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 5898 (03-2000)



PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND FOUR COPIES.

Well Name and Number KLINE FEDERAL 5300 41-18 12TX	Qtr-Qtr LOT4	Section 18	Township 153	Range 100	County Mckenzie
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Operator Oasis Petroleum North America LLC	Telephone Number (281) 404-9573	Field BAKER
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Address 1001 Fannin, Suite 1500	City Houston	State TX	Zip Code 77002
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Name of First Purchaser Oasis Petroleum Marketing LLC	Telephone Number (281) 404-9627	% Purchased 100%	Date Effective August 22, 2015
Principal Place of Business 1001 Fannin, Suite 1500	City Houston	State TX	Zip Code 77002
Field Address	City	State	Zip Code
Transporter Hiland Crude, LLC	Telephone Number (580) 616-2058	% Transported 75%	Date Effective August 22, 2015
Address P.O. Box 3886	City Enid	State OK	Zip Code 73702
The above named producer authorizes the above named purchaser to purchase the percentage of oil stated above which is produced from the lease designated above until further notice. The oil will be transported by the above named transporter.			

Other First Purchasers Purchasing From This Lease	% Purchased	Date Effective
Other First Purchasers Purchasing From This Lease	% Purchased	Date Effective
Other Transporters Transporting From This Lease Power Crude Transport	% Transported 25%	Date Effective 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 	Printed Name Dina Barron
	Title Mktg. Contracts Administrator

Above Signature Witnessed By:	Printed Name	Title
Signature 	Jeremy Harris	Marketing Scheduler

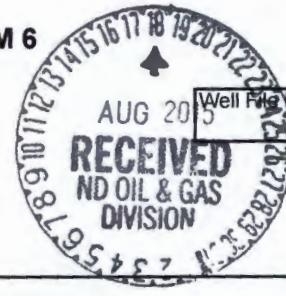
FOR STATE USE ONLY

Date Approved Sep 18, 2015
By
Title Oil & Gas Production Analyst



WELL COMPLETION OR RECOMPLETION REPORT - FORM 6

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



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PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

Designate Type of Completion

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

Well Name and Number

Kline Federal 5300 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	434 F S L	237 F WL	Qtr-Qtr LOT4	Section 18	Township 153 N	Range 100 W	County McKenzie
Spud Date	September 13, 2014	Date TD Reached	Drilling Contractor and Rig Number Nabors 486			KB Elevation (Ft) 2082	Graded Elevation (Ft) 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	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)	Kick-off Point (MD Ft)	Top of Casing Window (MD Ft)	Date Perfd 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

PLUG BACK INFORMATION

CORES CUT

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

Drill Stem Test

Well Specific Stimulation

Date Stimulated	Stimulated Formation		Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units Barrels
Type Treatment	Sand Frac	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	Sand Frac	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	Sand Frac	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	Sand Frac	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	Sand Frac	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 jswenson@oasispetroleum.com	Date 08/17/2015
Signature 	Printed Name Jennifer Swenson	Title Regulatory Specialist

Industrial Commission of North Dakota
Oil and Gas Division

Well or Facility No

28658

Verbal Approval To Purchase and Transport Oil

Tight Hole Yes

OPERATOR

Operator OASIS PETROLEUM NORTH AMERICA LL	Representative Todd Hanson	Rep Phone (701) 577-1632
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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
Footages 434 Feet From the S Line 237 Feet From the W Line	Field BAKER
	Pool BAKKEN
Date of First Production Through Permanent Wellhead	This Is Not The First Sales

PURCHASER / TRANSPORTER

Purchaser Kinder Morgan	Transporter Kinder Morgan
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TANK BATTERY

Central Tank Battery Number : 228654-01
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SALES INFORMATION This Is Not The First Sales

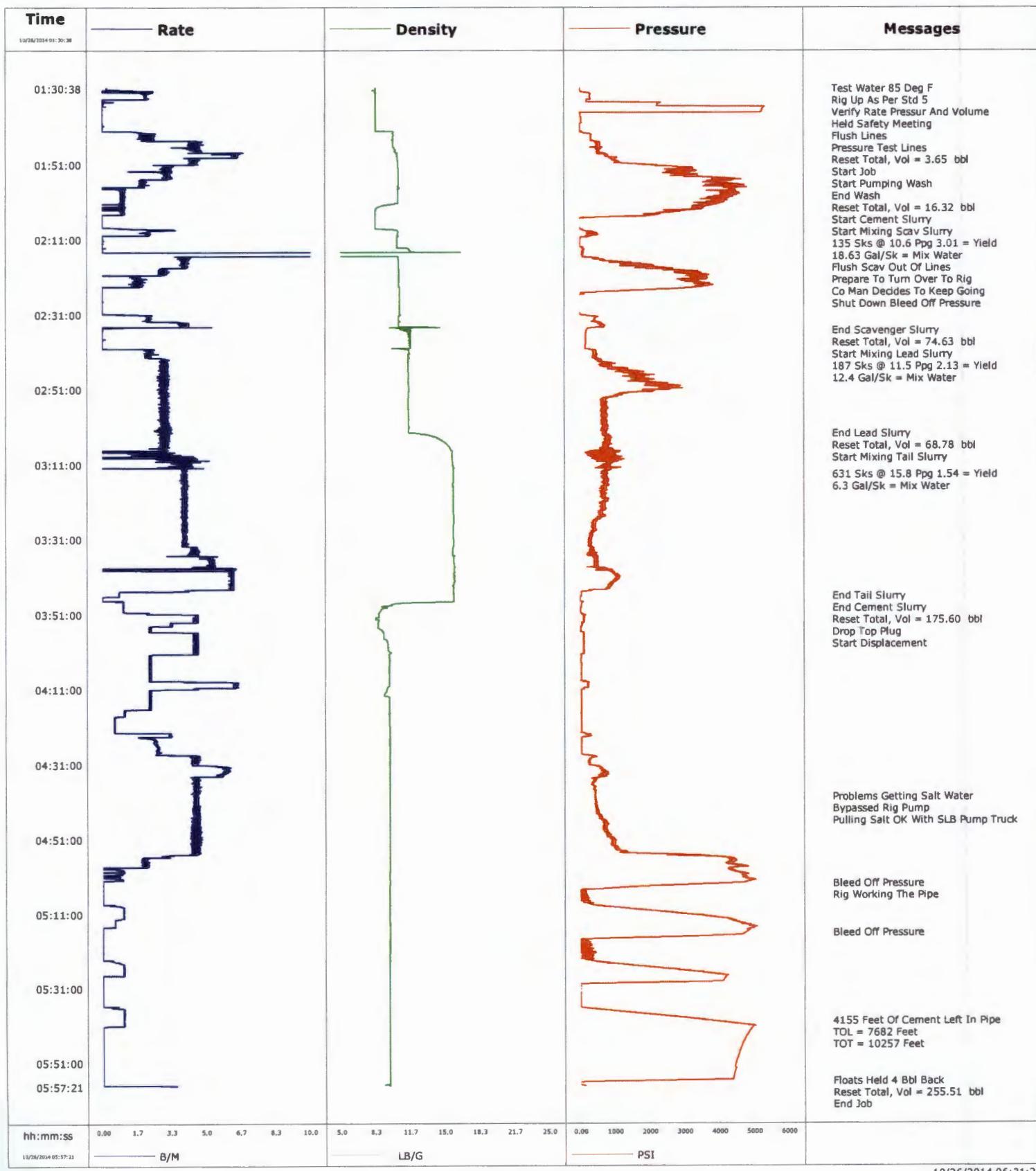
ESTIMATED BARRELS TO BE SOLD	ACTUAL BARRELS SOLD	DATE
15000	BBLS	
	BBLS	

DETAILS

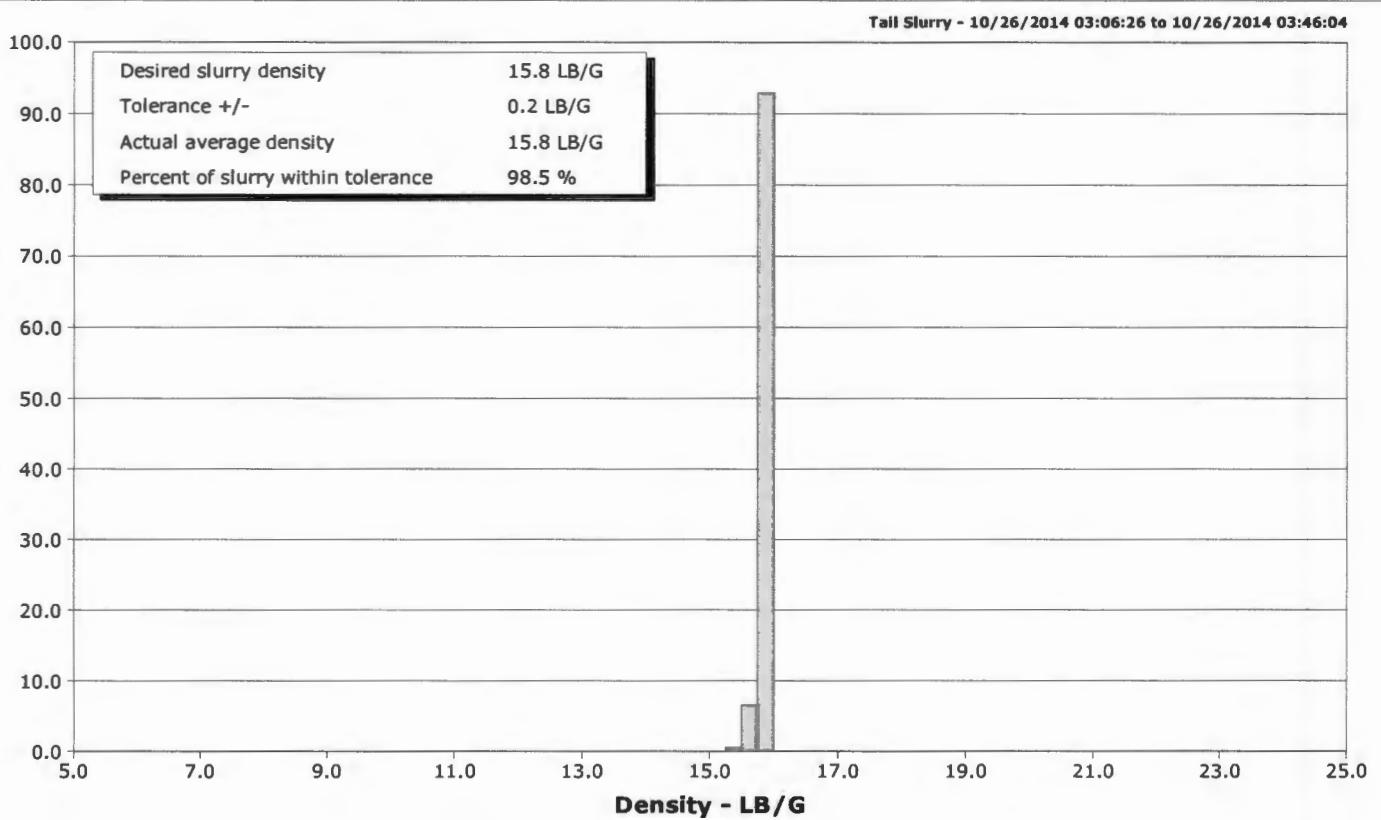
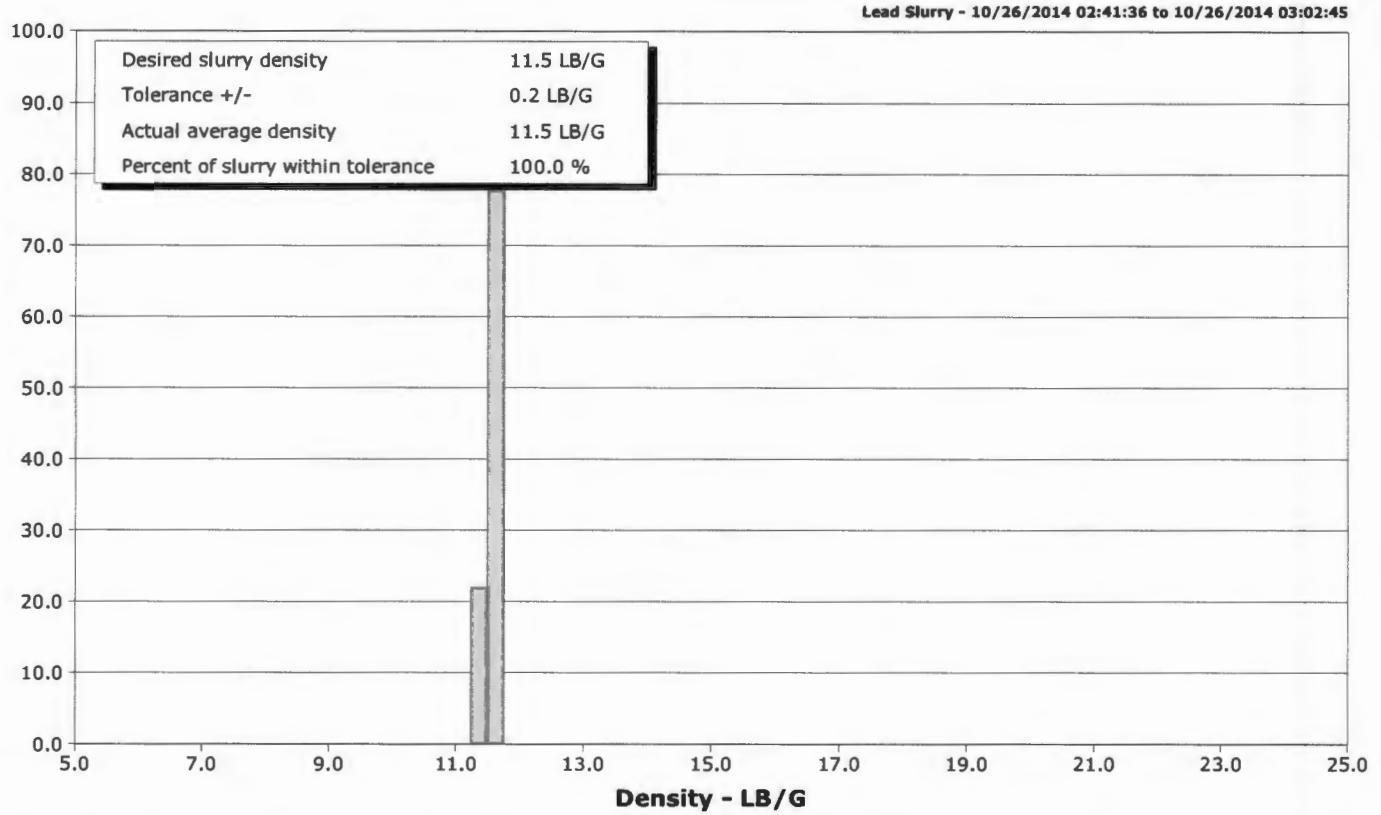
Must E-Mail or Call Inspector at 701-770-3554/rsdunn@nd.gov on first date of sales and report amount sold, date sold, and first date of production through the permanent wellhead. Must also forward Forms 6 & 8 to State prior to reaching 15000 Bbl estimate or no later than required time frame for submitting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

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

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



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



Cementing Service Report

Customer						Job Number		
Oasis						2008051		
Well Kline Federal 5300 41-18 12 TX Kline Federal 5300 41-18 12 TX			Location (legal) Nabors 684			Schlumberger Location Williston		
Field Baker		Formation Name/Type Shale		Deviation deg	Bit Size 8.8 in	Well MD 11182.0 ft	Well TVD 10832.0 ft	
County McKenzie	State/Province North Dakota			BHP psi	BHST 253 degF	BHCT 205 degF	Pore Press. Gradient lb/gal	
Well Master 0631576728	API/UWI 3305306030							
Rig Name Nabors 684	Drilled For Oil & Gas	Service Via Land		Casing/Liner				
Offshore Zone	Well Class New	Well Type Development		Depth, ft 11182.0	Size, in 7.0	Weight, lb/ft 32.0	Grade P110	
				0.0	0.0	0.0	8RD	
Drilling Fluid Type Oil Mud	Max. Density lb/gal	Plastic Viscosity cP	Tubing/Drill Pipe					
Service Line Cementing	Job Type Intermediate	T/D	Depth, ft	Size, in	Weight, lb/ft	Grade	Thread	
Max. Allowed Tub. Press psi	Max. Allowed Ann. Press psi	WH Connection Single Cement head		Top, ft ft	Bottom, ft ft	shot/ft	No. of Shots	Total Interval ft
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				ft	ft			Diameter in
				ft	ft			
				Treat Down Casing	Displacement 400.5 bbl	Packer Type	Packer Depth ft	
				Tubing Vol. bbl	Casing Vol. 403.5 bbl	Annular Vol. 181.0 bbl	Openhole Vol. 136.0 bbl	
Casing/Tubing Secured <input checked="" type="checkbox"/>		1 Hole Vol. Circulated prior to Cement <input checked="" type="checkbox"/>		Casing Tools			Squeeze Job	
Lift Pressure psi				Shoe Type	Guide	Squeeze Type		
Pipe Rotated <input type="checkbox"/>		Pipe Reciprocated <input type="checkbox"/>		Shoe Depth 11182.0 ft		Tool Type		
No. Centralizers		Top Plugs 1	Bottom Plugs	Stage Tool Type		Tool Depth ft		
Cement Head Type Single				Stage Tool Depth	ft	Tail Pipe Size in		
Job Scheduled For Oct/26/2014 07:00		Arrived on Location Oct/25/2014 07:00		Collar Type Float		Tail Pipe Depth ft		
		Leave Location Oct/26/2014 07:00		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
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
1e 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	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
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		
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					
Date	Time 24-hr clock	Treating Pressure PSI	Flow Rate B/M	Density LB/G	Volume BBL						
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
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			
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?	<input type="checkbox"/>	Volume	bbl	
%	244.0 bbl		255.5 bbl	85 degF	Washed Thru Perfs	<input type="checkbox"/>	To	ft	
Customer or Authorized Representative			Schlumberger Supervisor	Circulation Lost	<input type="checkbox"/>	Job Completed			
Mark Lawlar			Charles Pitcher / Blaine Buxton	-	<input type="checkbox"/>	-			



SUNDRY NOTICES AND REPORTS ON WELLS - FORM

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 5748 (09-2006)



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

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date June 2, 2015	<input type="checkbox"/> Drilling Prognosis	<input type="checkbox"/> Spill Report
<input type="checkbox"/> Report of Work Done	Date Work Completed	<input type="checkbox"/> Redrilling or Repair	<input type="checkbox"/> Shooting
<input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03.		<input type="checkbox"/> Casing or Liner	<input type="checkbox"/> Acidizing
Approximate Start Date		<input type="checkbox"/> Plug Well	<input type="checkbox"/> Fracture Treatment
		<input type="checkbox"/> Supplemental History	<input type="checkbox"/> Change Production Method
		<input type="checkbox"/> Temporarily Abandon	<input type="checkbox"/> Reclamation
		<input checked="" type="checkbox"/> Other	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 Baker	Pool BAKKEN	County McKenzie			

24-HOUR PRODUCTION RATE

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

Name of Contractor(s)			
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.

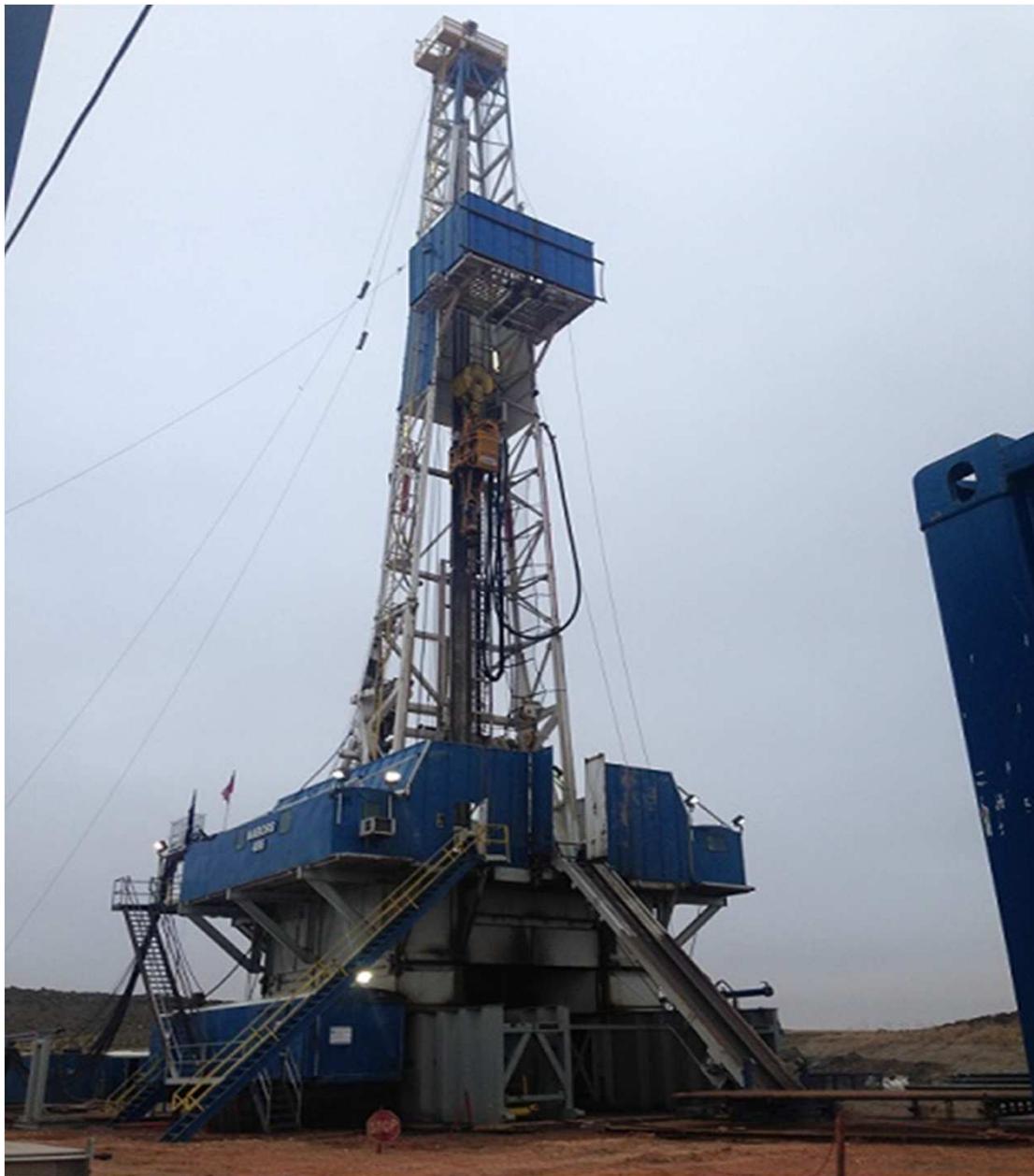
Company Oasis Petroleum North America LLC		Telephone Number 281-404-8436
Address 1001 Fannin, Suite 1500		
City Houston	State TX	Zip Code 77002
Signature 	Printed Name Jennifer Swenson	
Title Regulatory Specialist	Date June 2, 2015	
Email Address jswenson@oasispetroleum.com		

FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date 6/03/15	
By 	
Title Engineering Technician	

Oasis Petroleum North America

Kline Federal 5300 41-18 12TX



Services Performed For:

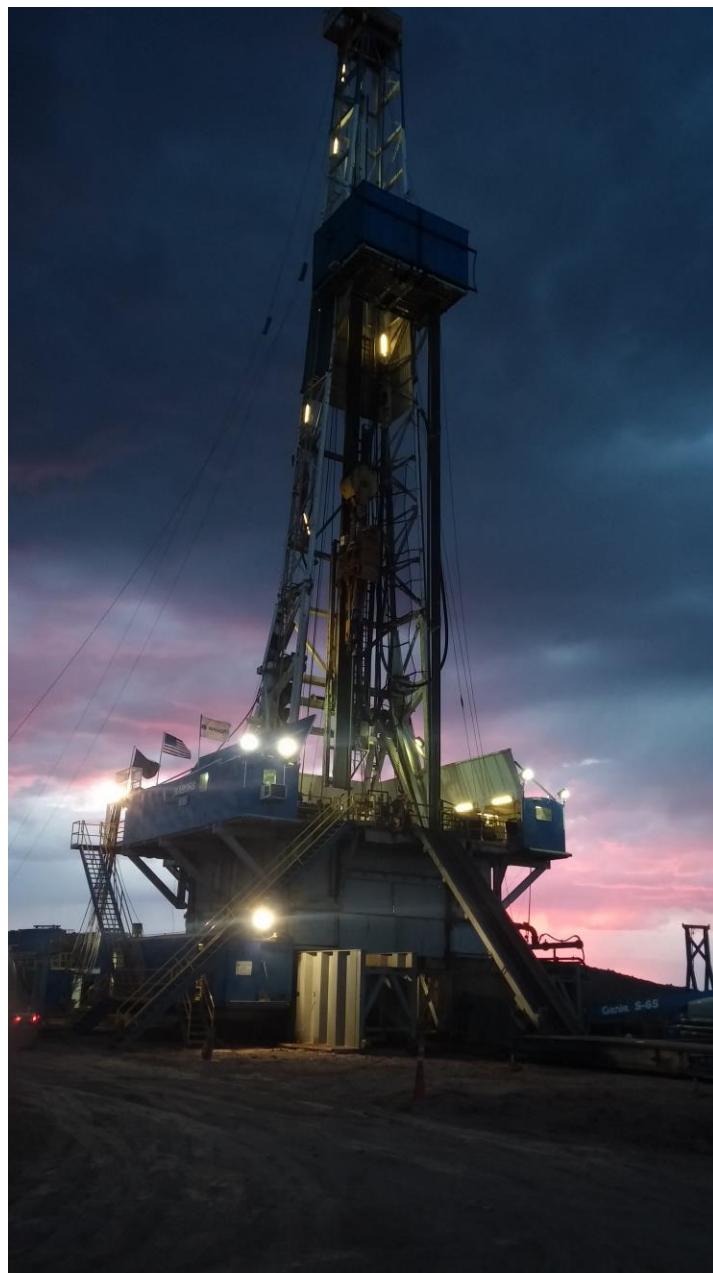
Andrew Nelson, Brendan Hargrove
Oasis Petroleum North America
1001 Fannin Suite 202
Houston, TX 77002

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.

<u>Control Well</u>				
Operator:	Oasis Petroleum			
Well Name:	<i>Kline Federal 5300 41-18 13T2X</i>			
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'

<u>Control Well</u>				
Operator:	Oasis Petroleum			
Well Name:	<i>Kline Federal 5300 41-18 14BX</i>			
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 SW SW Sec. 18 T153N, R100W McKenzie County, ND			Kline Federal 5300 41-18 13T2X SW SW Sec. 18 T153N, R100W McKenzie County, ND			Kline Federal 5300 41-18 14BX 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 1/4" 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 3/4" 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.

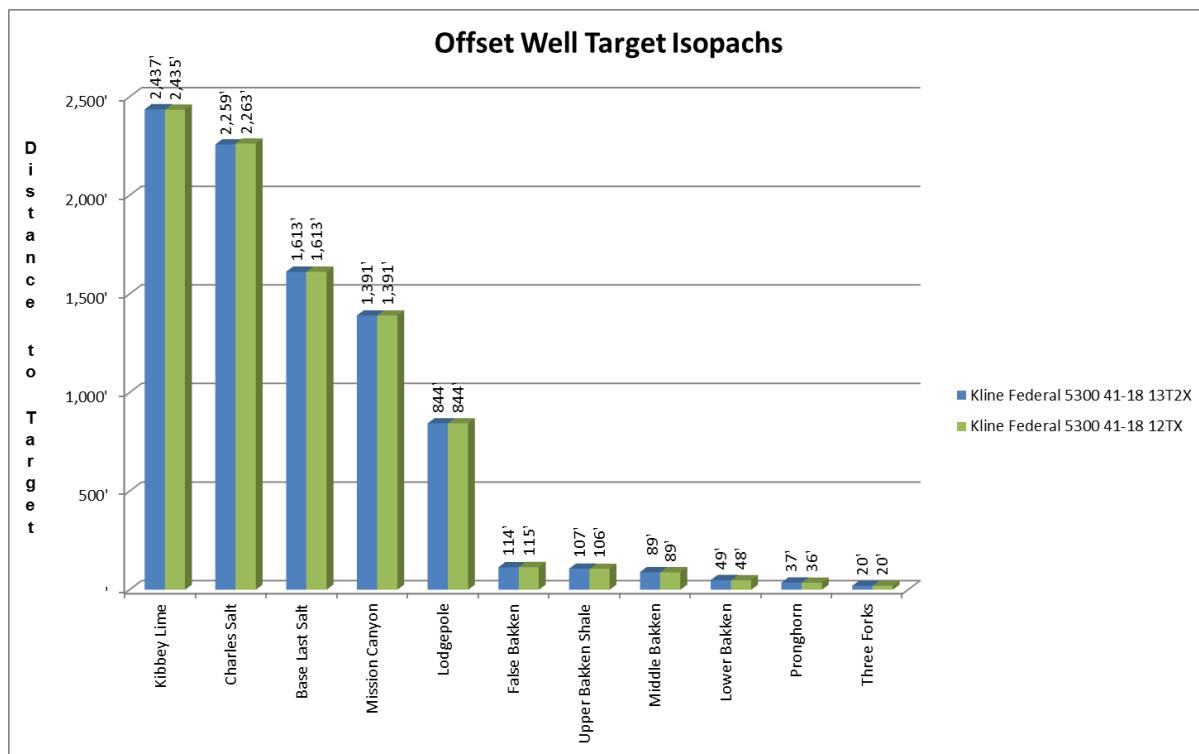


Chart 1: Comparing distances from gamma markers on the offset wells to markers in the curve.

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.

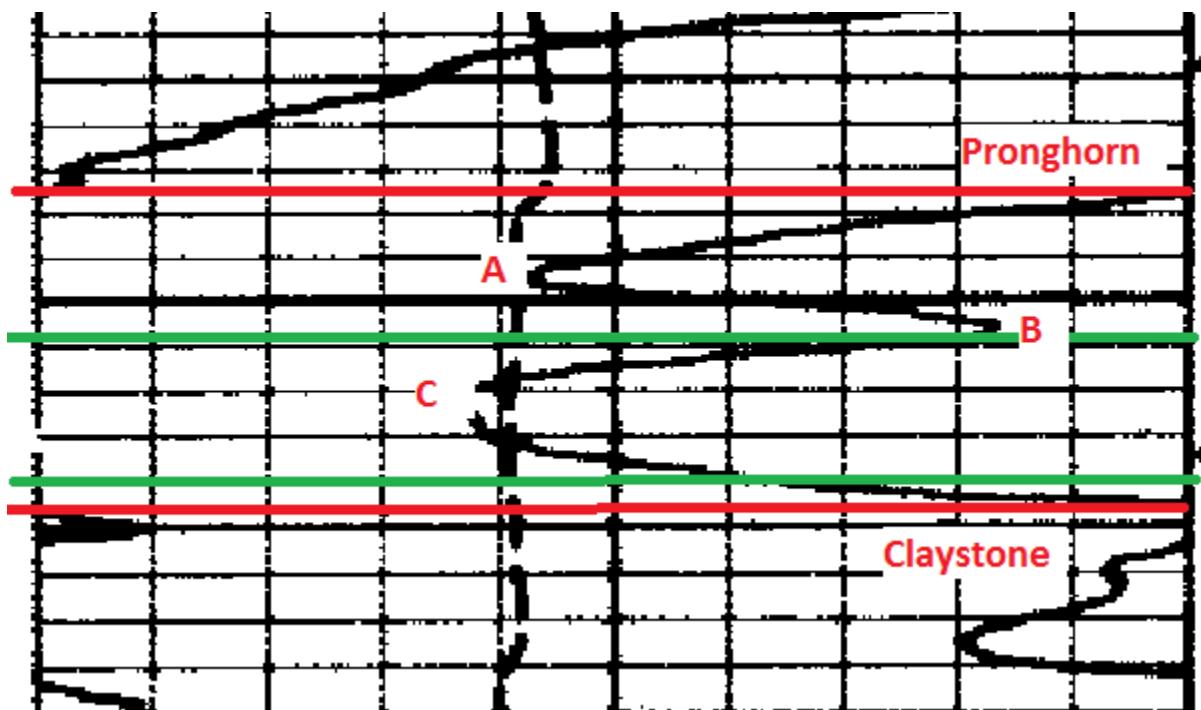


Diagram 1: Type log created from gamma log of the offset well *Kline Federal 5300 41-18 13T2X*

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 1/4" 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 3/4" Security PDC bit was used to drill out of secondary casing casing to a KOP of 10,300'. One 8 3/4" 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

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

<u>Contractor:</u>	Nabors 486	<u>Chemical Company</u>	Halliburton
<u>Toolpushers:</u>	Logan Penhollow, Tyler Schultz	<u>Mud Engineer</u>	Tim Vaira
<u>Field Supervisors:</u>	Ryan Romans/Ty Tschacher	<u>H2S MONITORING:</u>	NOV WellSight Gas Watch
<u>Directional Drilling</u>	RPM Consulting Ryan Romans Ty Tschacher	<u>MWD</u>	Gyro Data Beau Watt, Josh Elliott

<u>Wellsite Geologist</u>	Devin Wood Caleb Sperry	<u>Rock Sampling:</u>	30' from 8,350' to 11,200' MD 50' 11,200' MD to 20,583' (TD)
<u>Prospect Geologist</u>	Brendan Hargrove	<u>Gas Detector</u>	NOV WellSight Gas Watch
<u>Sample Examination:</u>	Binocular microscope & fluoroscope	<u>Sample Cuts:</u>	Acetone
<u>Horizontal Target</u>	<u>Key Offset Wells:</u>		
Oasis Petroleum. Oasis Petroleum	Kline Federal 41-18 13T2X Kline Federal 41-18 14BX	SE SE Sec. 10 T153N R100W SE SE Sec. 10 T153N R100W	McKenzie Co., ND McKenzie Co., ND

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

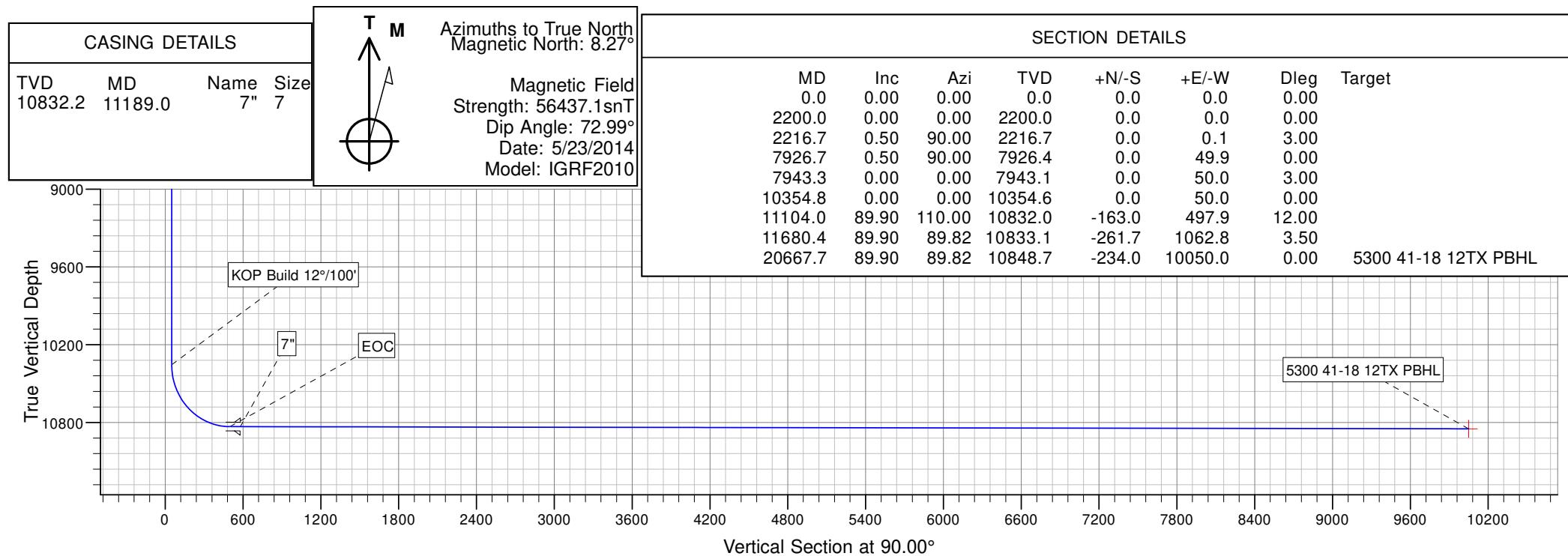
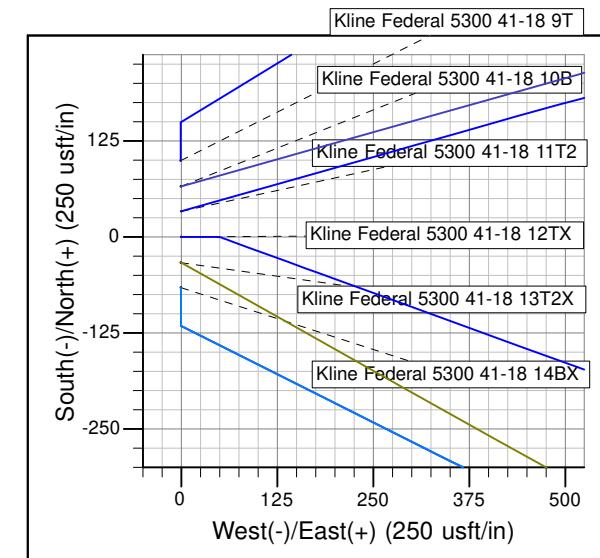
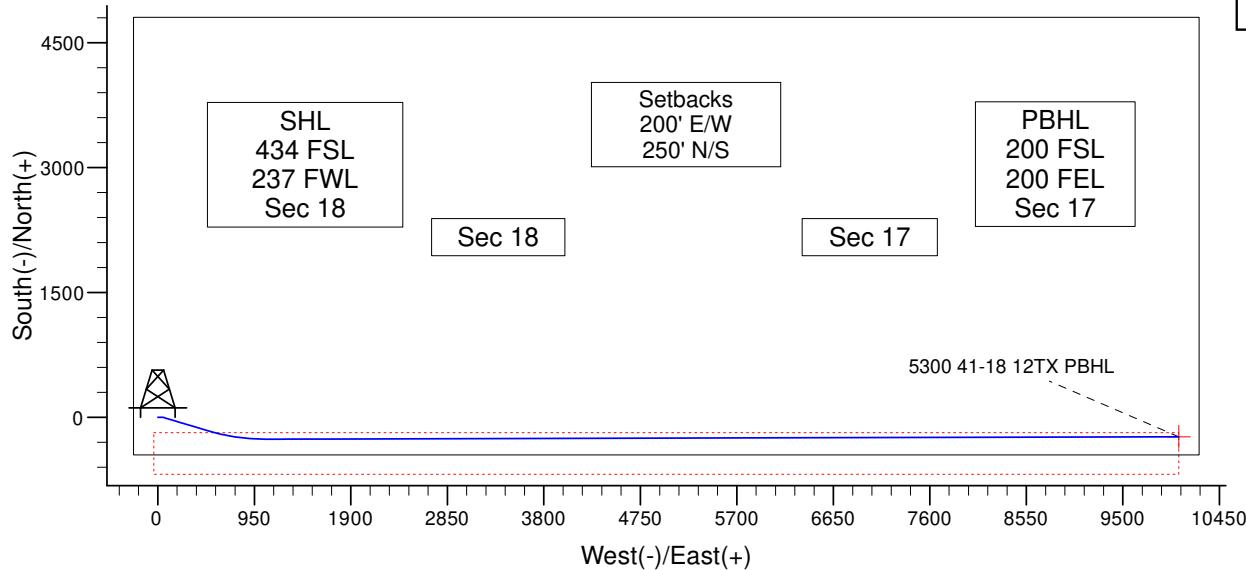
<u>Horizontal Target:</u>	<i>Three Forks B1</i>	BOTTOM HOLE LOCATION:
<u>Kick-Off Point / Date:</u>	<i>10,300' on October 23, 2014</i>	<i>235.00' S & 9994.22' E of surface, or approximately 199.00' FSL & 256.93' FEL</i>
<u>Total Depth/ Date:</u>	<i>20,583' on January 26, 2015</i>	<i>SE SE Section 17,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

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



WELL DETAILS: Kline Federal 5300 41-18 12TX

Northing 405136.64	Easting 1209968.21	Ground Level: 2057.0
		Latitude 48° 4' 7.550 N
		Longitude 103° 36' 11.950 W



Daily Activity

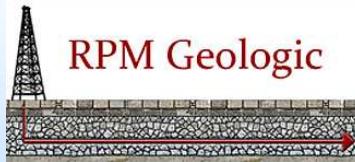
Day	Date 2014	Depth 0600 Hrs	24 Hr Footage	Bit #	WOB (Klbs) Rotate	WOB (Klbs) Slide	RPM (RT)	Pump Pressure	SPM 1	SPM 2	GPM	24 Hr Activity		Formation
1	16-Oct	2,160'	0'	-	-	-	-	-	-	-	-	skid rig, rig up, nipple up bops, test bops and casing, p/u bha, wait on bit from another rig, TIH, change rotating head/rubber, 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. Realeased 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

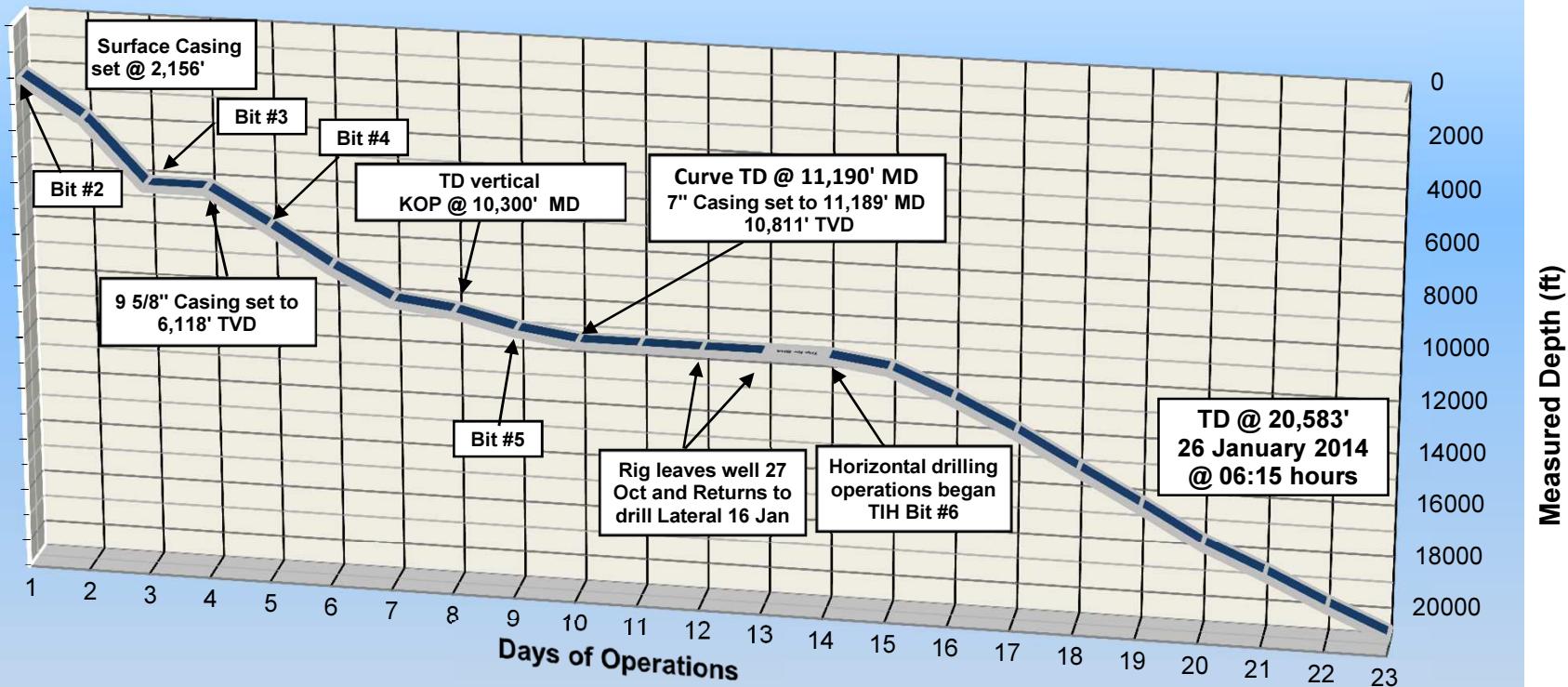
Day	Date 2014	Depth 0600 Hrs	24 Hr Footage	Bit #	WOB (Klbs) Rotate	WOB (Klbs) Slide	RPM (RT)	Pump Pressure	SPM 1	SPM 2	GPM	24 Hr Activity	Formation
20	23-Jan	17,476'	1,323'	6	20	47	45	3250	0	71	297	Drill actual F/16,175 - 17,476' // Service Rig	Three Forks
21	24-Jan	18,481'	1,005'	6	20	50	45	3250	0	71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



Daily Progress

Oasis Petroleum
Kline Federal 5300 41-18 12TX

Spud 13 September 2014



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 ft²)	Gels (lbs/100 ft²)	600/ 300	HTHP (cc/30min)	NAP/ H₂O (ratio)	Cake (APT/ HT)	Solid S (%)	pH	Alk	Cl- (mg/l)	CaCl₂	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		
EST. T.D.	20,668'		Surface Location (survey plat): 434' fsl		237' fwl	GROUND ELEV:	2057 Finished Pad Elev.
TOTAL LATERA	9,479'		KB ELEV:	2082			Sub Height: 25
PROGNOSIS:	Based on 2,082' KB(est)			LOGS:	Type	Interval	
MARKER	DEPTH (Surf Loc)	DATUM (Surf Loc)			OH Logs: Triple Combo KOP to Kirby (or min run of 1800' whichever is greater); GR/Res to BSC; GR to surf; CND through the Dakota		
Pierre	NDIC MAP	1,972	110'		CBL/GR: Above top of cement/GR to base of casing		
Greenhorn		4,646	-2,564'		MWD GR: KOP to lateral TD		
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			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	
Laterals:	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: hbader rpm 6/17/14			

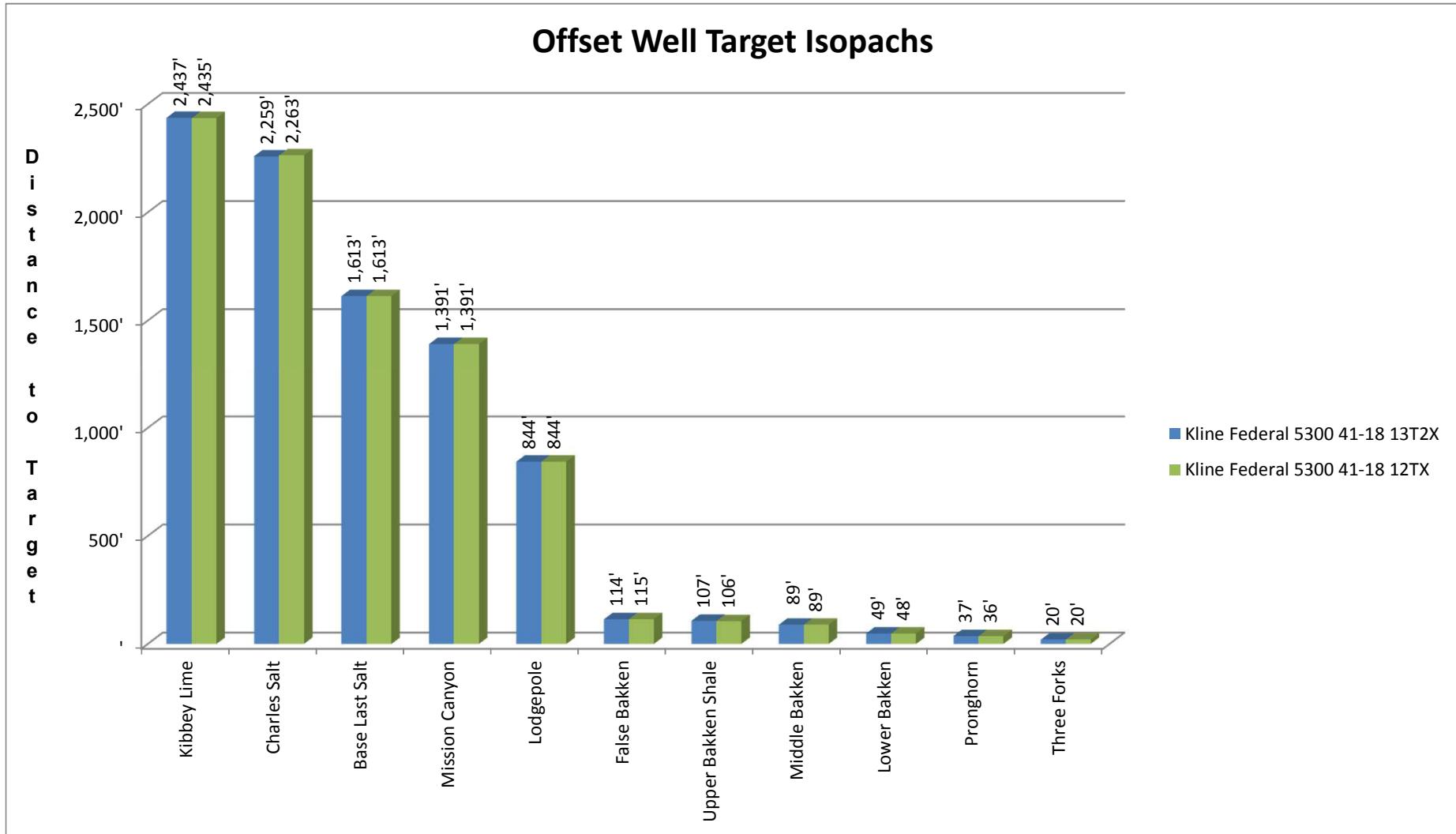
Formation Tops

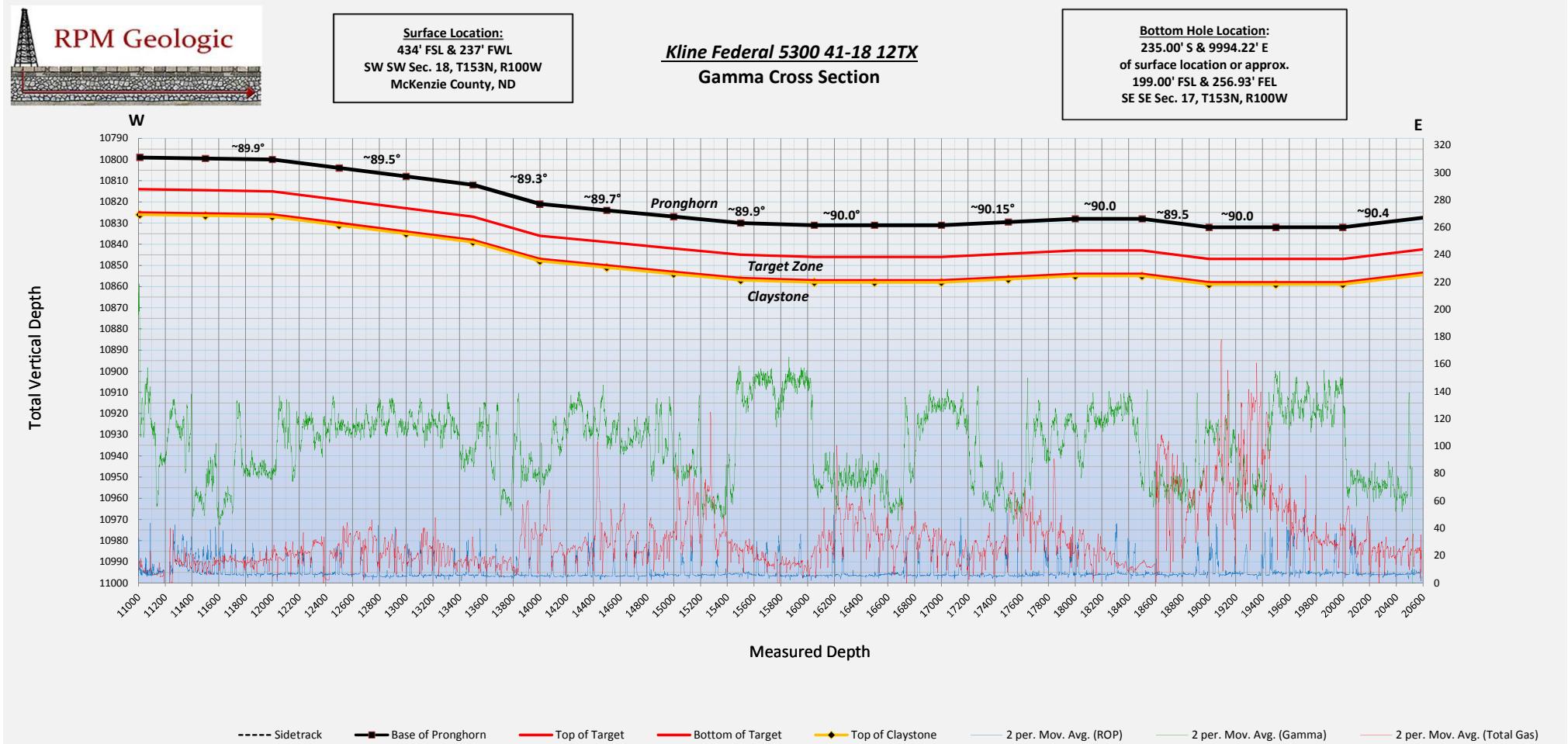
Operator: Well Name: Location: Elevation:	Subject Well: Oasis Petroleum North America <i>Kline Federal 5300 41-18 12TX</i> 434' FSL & 237' FWL SW SW Sec. 18 T153N, R100W KB: 2,082'							
	Prog. Top	Prog. MSL Datum	Est. MD Top (Gamma)	TVD Top (Gamma)	Est. MLS Datum	Thickness	Dip To <i>Kline Federal 5300 41-18 13T2X</i>	Dist to Target
	8,382	-6,300'	8,384'	8,384'	-6,302'	172'	2' Low	2,435'
	8,560	-6,478'	8,556'	8,556'	-6,474'	650'	4' Low	2,263'
Formation/ Zone								
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	'

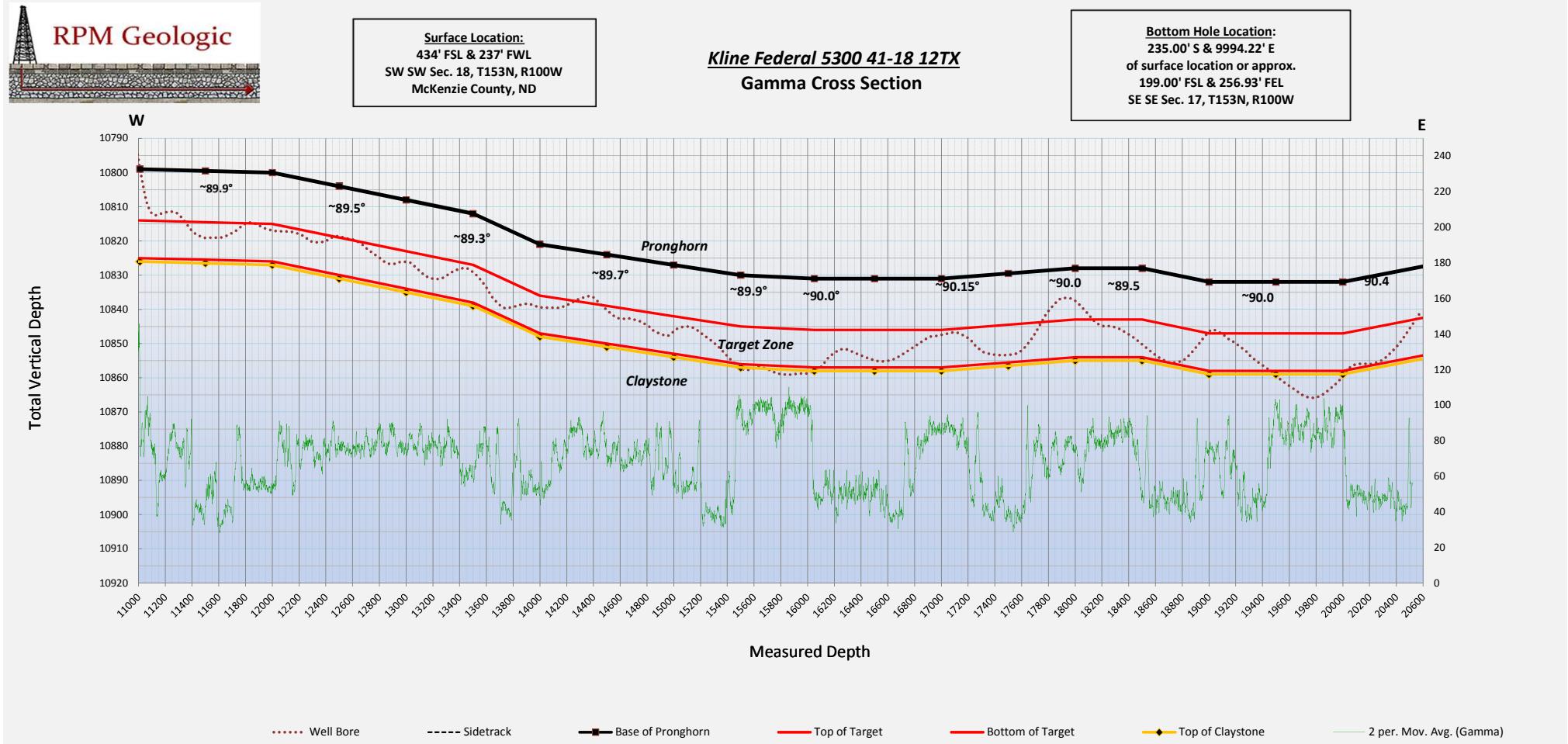
Control Well

Operator: Well Name: Location: Elevation:	Oasis Petroleum Kline Federal 5300 41-18 13T2X SW SW Sec. 18 T153N, R100W McKenzie Co., ND Approximately 33 ft South KB: 2,082'				Oasis Petroleum Kline Federal 5300 41-18 14BX SW SW Sec. 18 T153N, R100W McKenzie Co., ND Approximately 213 feet South 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









RPM Geologic



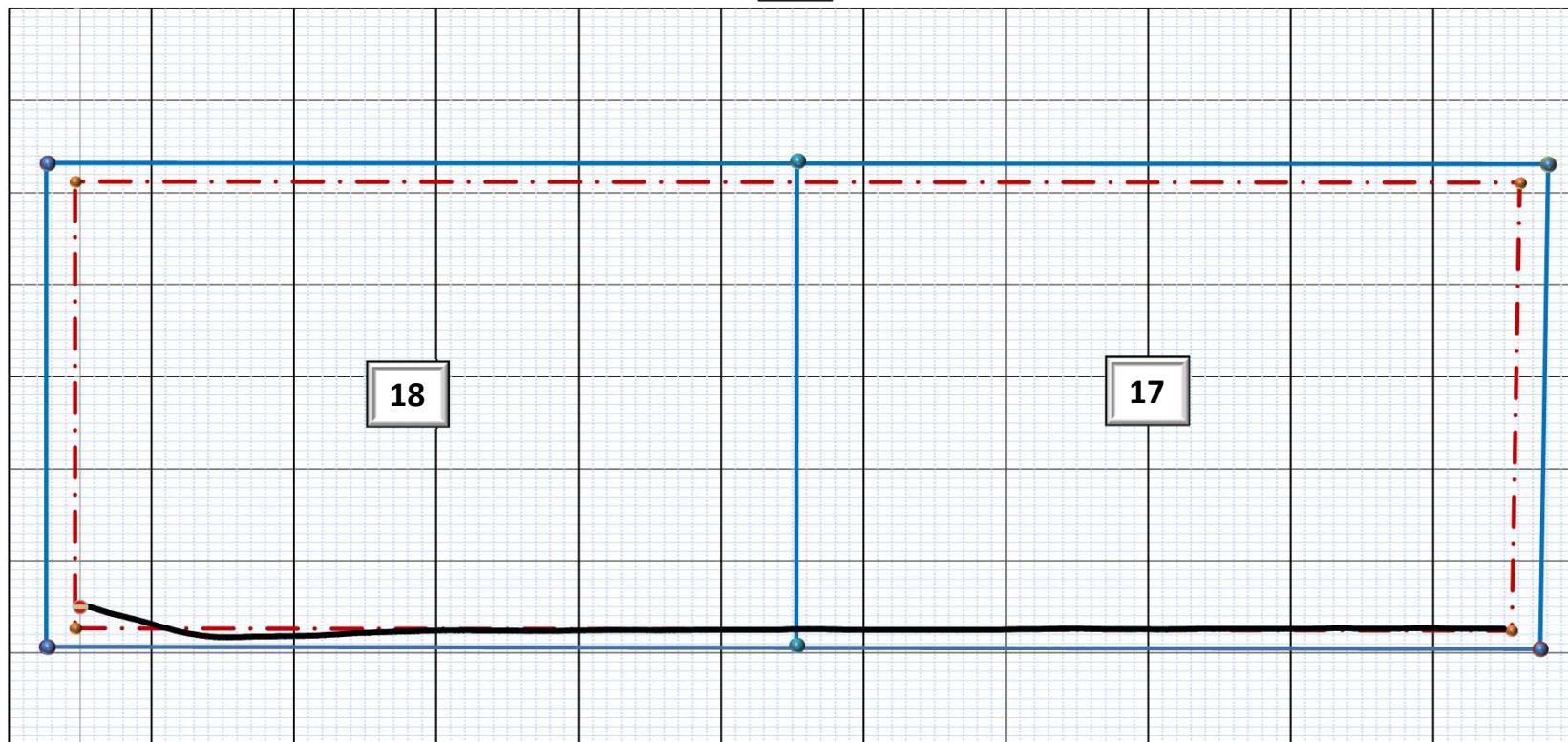
Vertical Section View

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

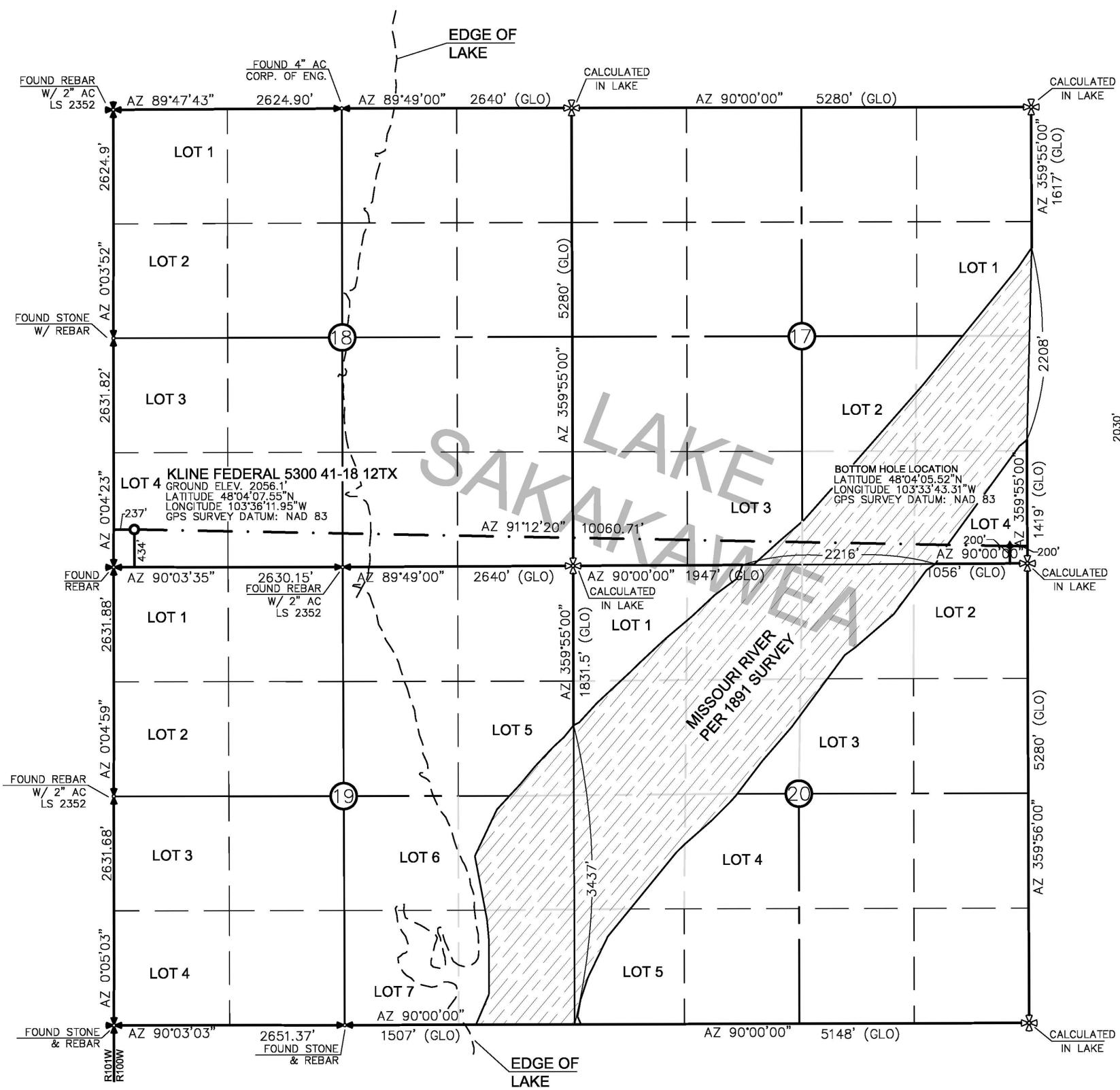
Bottom Hole Location
235.00' S & 9994.22' E
of surface location or approx.
199.00' FSL & 256.93' FEL
SE SE Sec. 17 T153N, R100W

E-W

S-N



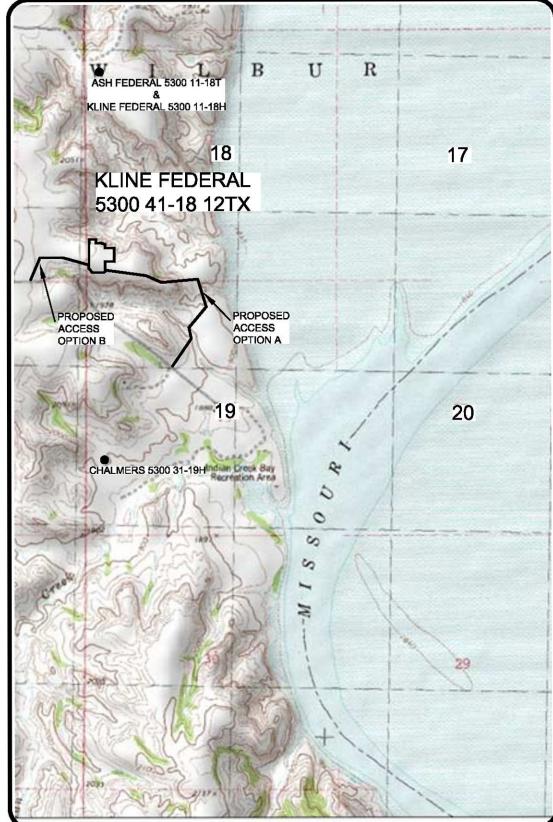
WELL LOCATION PLAT
OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"KLINE FEDERAL 5300 41-18 12TX"
434 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



- MONUMENT - RECOVER

 - 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.

A compass rose indicating North, with a scale bar below it showing 0 and 1500'.

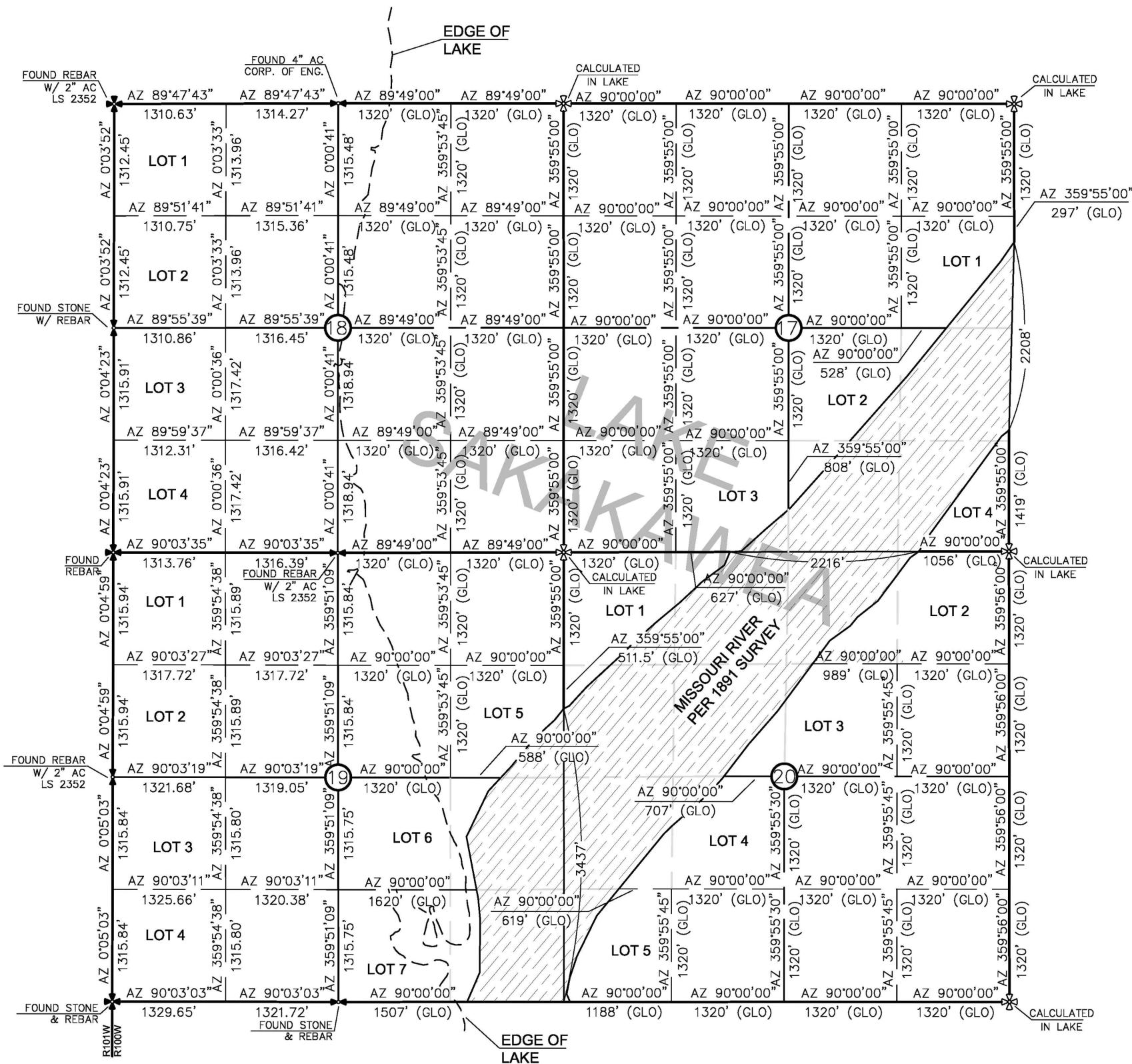
STAKED ON 4/15/14
VERTICAL CONTROL DATUM WAS BASED UPON
CONTROL POINT 4 WITH AN ELEVATION OF 2090.8'

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

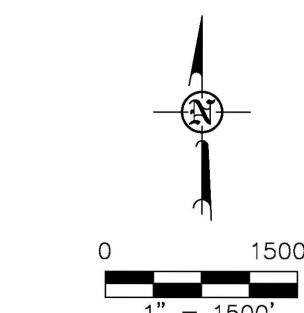
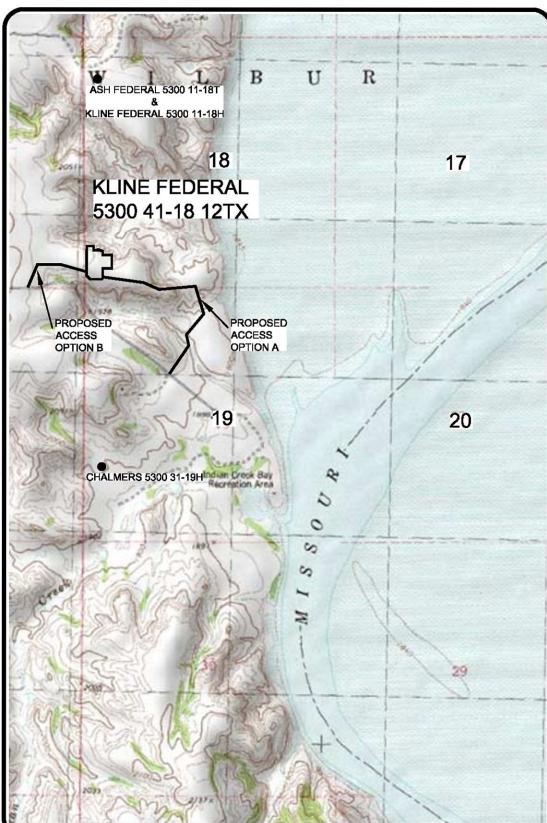
ROBERT L
PRODIVE
LS-2884
DATE: 4/15/14

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



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 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 AND ALL OTHERS ARE COMPUTED FROM
 THOSE CORNERS FOUND AND BASED ON G.L.O.
 DATA. THE MAPPING ANGLE FOR THIS AREA IS
 APPROXIMATELY 0°03'.

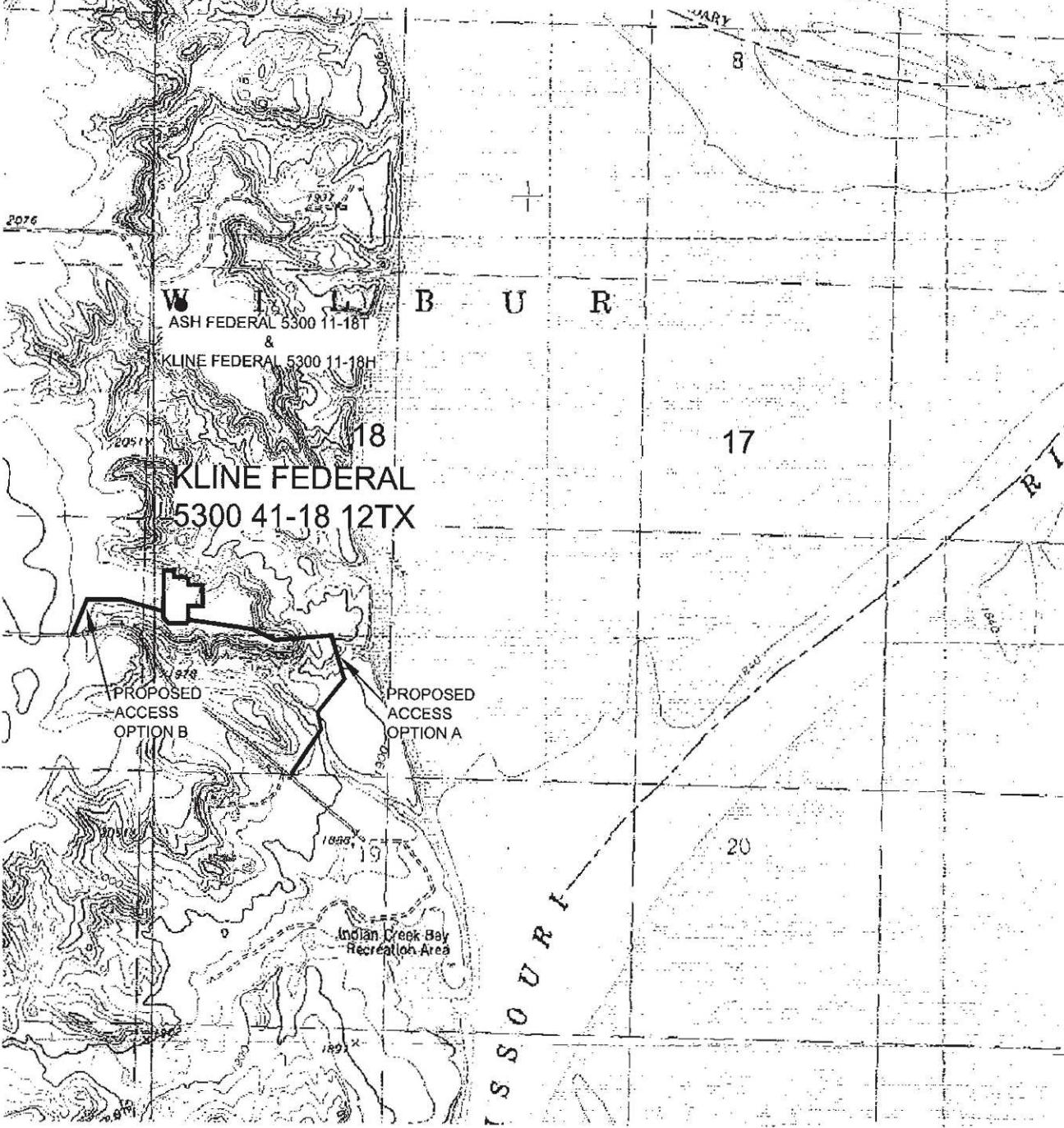


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Revision No.	Date	By	Description

WILLIAMS
MCKENZIE
CITY

OASIS PETROLEUM NORTH AMERICA, LLC
KLINE FEDERAL 5300 41-18 12TX
434' FSL/237' FWL
QUAD LOCATION MAP
SECTION 18, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA



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SHEET NO.

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Ph: (406) 433-5617
Fax: (406) 433-5618
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Other offices in Minnesota, North Dakota and South Dakota

OASIS PETROLEUM NORTH AMERICA, LLC
QUAD LOCATION MAP
SECTION 18, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA
Drawn By: B.H.H. Project No.: S14-09-081.02
Checked By: R.L.P. Date: APRIL 2014

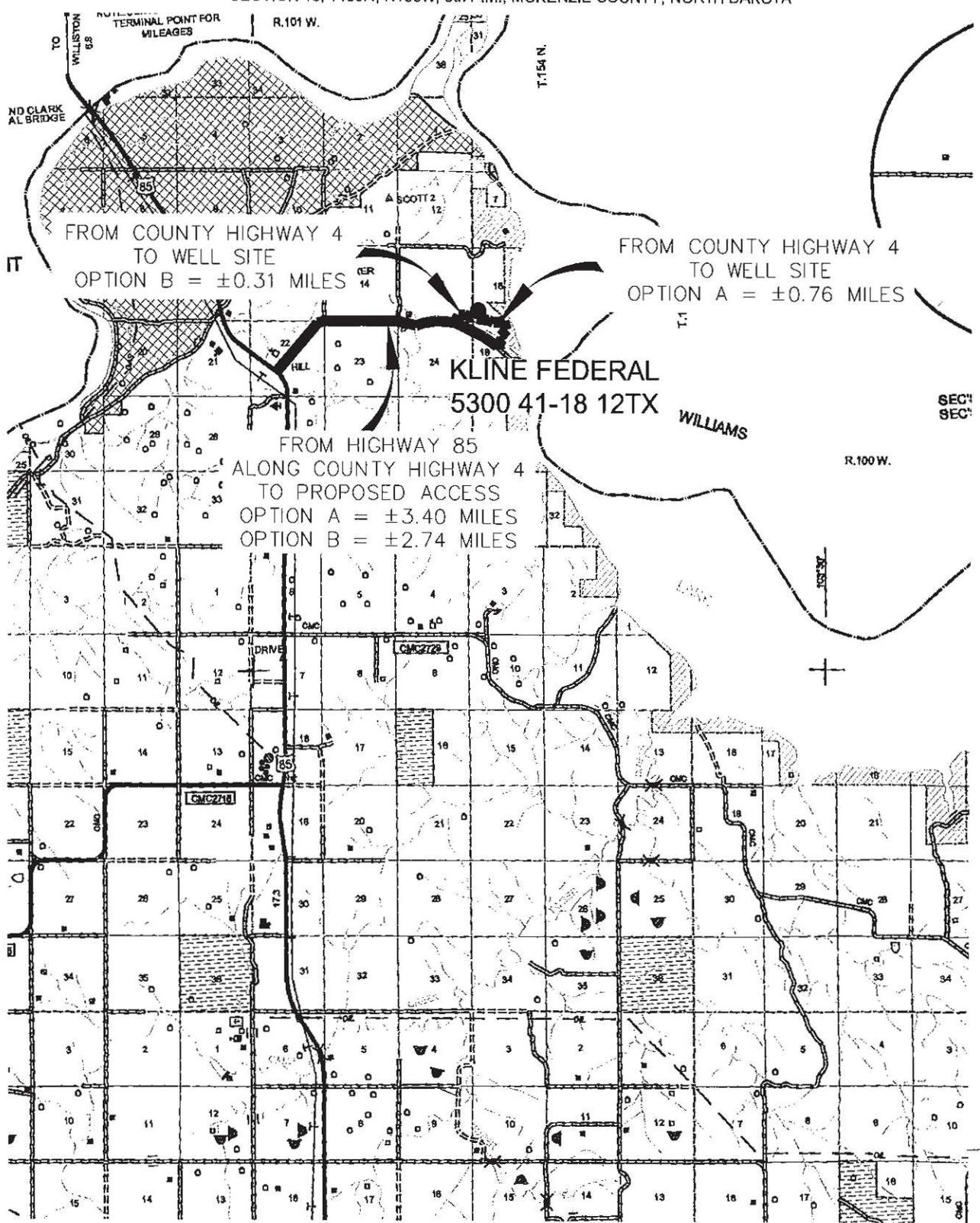
Revision No.	Date	By	Description

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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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



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**

Coordinates

#	MD	Inc.	Azm.	T.V.D.	Ver. Sect.	+N / -S	+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

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

15450-15500 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; 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

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





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,

A handwritten signature in blue ink that reads "Taylor Roth".

Taylor Roth
Engineering Technician



Gyrodta 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 20584 feet, is true and correct as determined from all available records.

Kris Bertsch
Signature

MWD Coordinator
Title

Gyrodta, Inc.
Company

*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

Proposed Well Direction: 90.000 deg

Run Date: 03 Mar 2015

Depth Reference: Rotary Table

Surveyor: Richard Bradbury

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

Calculation Method: MINIMUM CURVATURE

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

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

Vertical Section Calculated from Well Head Location

Magnetic Declination: 8.2700 deg

Closure Calculated from Well Head Location

Total Correction: 8.2700 deg

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	VERTICAL DEPTH 100 ft.	CLOSURE		HORIZONTAL COORDINATES feet	
			deg./ 100 ft.	feet	DIST. AZIMUTH feet deg.	0.00 N	0.00 E	
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

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		HORIZONTAL COORDINATES feet
					DIST.	AZIMUTH feet deg.	
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

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		HORIZONTAL COORDINATES feet	
					DIST.	AZIMUTH deg.		
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

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	VERTICAL DEPTH	CLOSURE DIST. AZIMUTH	HORIZONTAL COORDINATES feet	
			deg./ 100 ft.	feet	feet deg.		
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

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		HORIZONTAL COORDINATES feet
					DIST.	AZIMUTH deg.	
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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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		HORIZONTAL COORDINATES feet	
					DIST.	AZIMUTH deg.		
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		HORIZONTAL COORDINATES feet
					DIST.	AZIMUTH feet deg.	
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

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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		HORIZONTAL COORDINATES feet
					DIST.	AZIMUTH feet deg.	
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		HORIZONTAL COORDINATES feet	
					DIST.	AZIMUTH feet deg.		
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		HORIZONTAL COORDINATES feet
					DIST.	AZIMUTH feet deg.	
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		HORIZONTAL COORDINATES feet
					DIST.	AZIMUTH deg.	
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

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		HORIZONTAL COORDINATES feet	
					DIST.	AZIMUTH deg.	feet	deg.
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

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		HORIZONTAL COORDINATES feet
					DIST.	AZIMUTH deg.	
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		HORIZONTAL COORDINATES feet
					DIST.	AZIMUTH deg.	
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		HORIZONTAL COORDINATES feet	
					DIST.	AZIMUTH deg.		
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. AZIMUTH feet 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)



Well File No.
28658

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.

PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

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 434 F S L	Qtr-Qtr 237 F W L	Section LOT 4	Township 18	Range 153 N	100 W
Field BAKER	Pool Bakken	County MCKENZIE			

24-HOUR PRODUCTION RATE

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

Name of Contractor(s)

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

DETAILS OF WORK

Oasis Petroleum North America LLC requests a variance to NDAC 43-02-03-21 for the tubing/packer requirement:
Casing, tubing, and cementing requirements during the completion period immediately following the upcoming
fracture stimulation.

The following assurances apply:

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

Company 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 Assistant	Date December 15, 2014	
Email Address jswenson@oasispetroleum.com		

FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <i>Dec 15, 2014</i>	
By 	
Title PETROLEUM ENGINEER	



SUNDRY NOTICES AND REPORTS ON WELLS - FORM 2

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.

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date July 28, 2014
<input type="checkbox"/> Report of Work Done	Date Work Completed
<input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03.	
Approximate Start Date	

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

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 Baker	Pool Bakken		County McKenzie	

24-HOUR PRODUCTION RATE

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

Name of Contractor(s)

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 Oasis Petroleum North America LLC	Telephone Number 281-404-9563	
Address 1001 Fannin, Suite 1500		
City Houston	State TX	Zip Code 77002
Signature 	Printed Name Heather McCowan	
Title Regulatory Assistant	Date July 28, 2014	
Email Address hmccowan@oasispetroleum.com		

FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date 8-5-14	
By 	
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			Surface Location (survey plat)	434' fsl		
LOCATION	SWSW 18-153N-100W	237° fwl	GROUND ELEV:	2057	Finished Pad Elev.		
EST. T.D.	20,655'	237° fwl	KB ELEV:	2082	Sub Height: 25		
TOTAL LATERA	9,466'						
PROGNOSIS:	Based on 2,082' KB(est)			LOGS:	Type interval		
MARKER	DEPTH (Surf Loc)	DATUM (Surf Loc)			OH Logs: Triple Combo KOP to Kirby (or min run of 1800' whichever is greater); GR/Res to BSC; GR to surf; CND through the Dakota CBL/GR: Above top of cement/GR to base of casing MWD GR: KOP to lateral TD		
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			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+HHP	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 #	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#	5"	20,655'	TOL @ 10,305'		50' above KOP
PROBABLE PLUGS, IF REQ'D:							
OTHER:	MD	TVD	ENL/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	748' 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							
<u>Exception well:</u> 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: hbader 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

OASIS

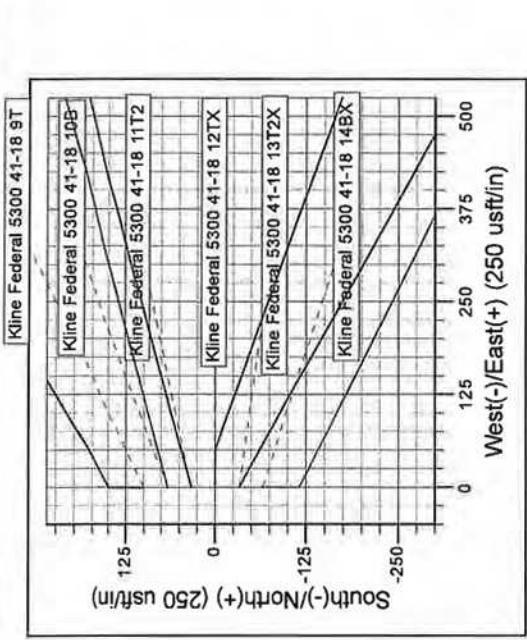
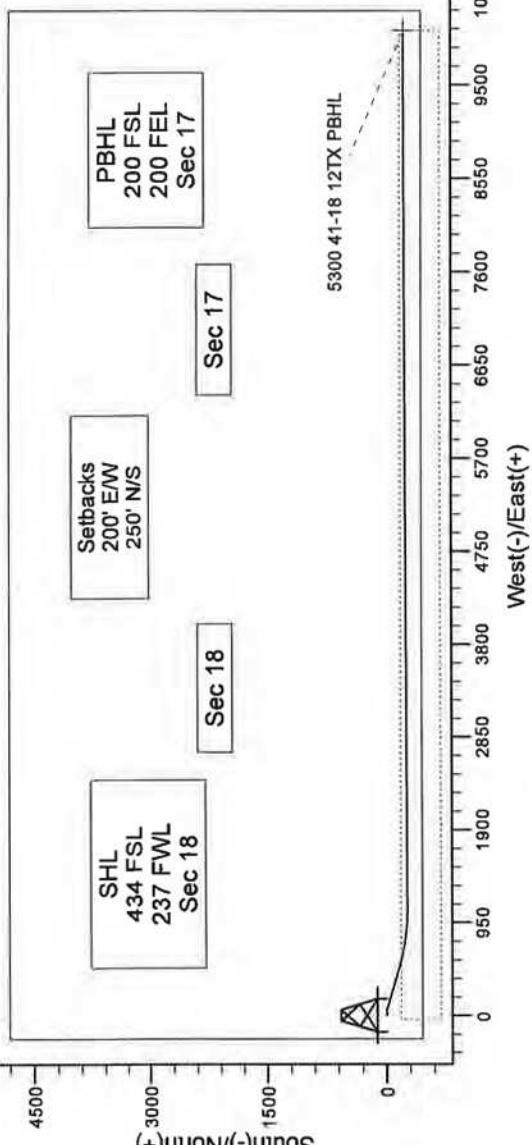
PETROLEUM

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

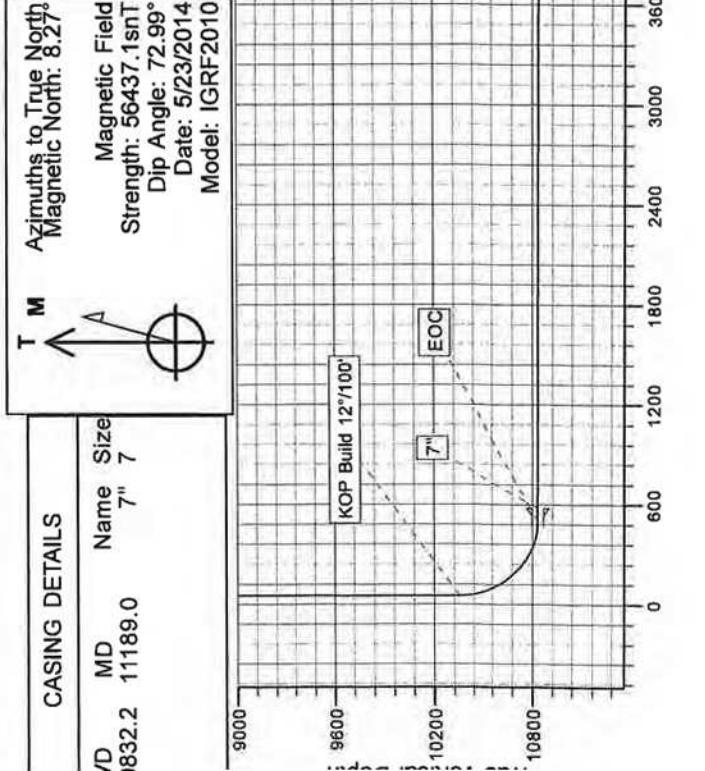
WELL DETAILS: Kline Federal 5300 41-18 12TX

Ground Level:	2057.0
Eastings:	1209968.21
Latitude:	48° 4' 7.550 N
Longitude:	103° 36' 11.950 W

Northing
405136.64



SECTION DETAILS						
	MD	Inc	Azi	TVD	+N/S	+E/W
Magnetic Field	0.0	0.00	0.0	0.0	0.0	0.0
Strength: 56437.1snT	2200.0	0.00	2200.0	0.0	0.0	0.0
Dip Angle: 72.99°	2216.7	0.50	90.00	2216.7	0.0	0.1
Date: 5/23/2014	7926.7	0.50	90.00	7926.4	0.0	49.9
Model: IGRF2010	7943.3	0.00	0.00	7943.1	0.0	50.0
	10354.8	0.00	0.00	10354.6	0.0	50.0
	11104.0	89.90	110.00	10832.0	-163.0	497.9
	11680.4	89.90	89.82	10833.1	-261.7	1062.8
	20667.7	89.90	89.82	10848.7	-234.0	10050.0





Ryan Directional Services

Planning Report



Database: EDM 5000.1 Single User Db
Company: Oasis Petroleum
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

Local Co-ordinate Reference: Well Kline Federal 5300 41-18 12TX
TVD Reference: WELL @ 2082.0usft (Original Well Elev)
MD Reference: WELL @ 2082.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project	Indian Hills	
Map System:	US State Plane 1983	System Datum:
Geo Datum:	North American Datum 1983	Mean Sea Level
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

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:			
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	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.00	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



Ryan Directional Services
Planning Report



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



Ryan Directional Services

Planning Report



Database: EDM 5000.1 Single User Db
Company: Oasis Petroleum
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

Local Co-ordinate Reference: Well Kline Federal 5300 41-18 12TX
TVD Reference: WELL @ 2082.0usft (Original Well Elev)
MD Reference: WELL @ 2082.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

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
Opecche 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
Opecche 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



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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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Minimum Curvature

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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	108.64	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



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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



Ryan Directional Services
Planning Report



Database: EDM 5000.1 Single User Db
Company: Oasis Petroleum
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

Local Co-ordinate Reference: Well Kline Federal 5300 41-18 12TX
TVD Reference: WELL @ 2082.0usft (Original Well Elev)
MD Reference: WELL @ 2082.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

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	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N-S (usft)	+E-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
5300 41-18 12TX PBHL	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
- plan hits target center									
- Point									

Casing Points

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



Ryan Directional Services

Planning Report



Database: EDM 5000.1 Single User Db
Company: Oasis Petroleum
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

Local Co-ordinate Reference: Well Kline Federal 5300 41-18 12TX
TVD Reference: WELL @ 2082.0usft (Original Well Elev)
MD Reference: WELL @ 2082.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

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)	+N/S (usft)	+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

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

Site Name	Offset Well - Wellbore - Design	Reference	Offset	Distance			Warning
		Measured Depth (usft)	Measured Depth (usft)	Between Centres (usft)	Between Ellipses (usft)	Separation Factor	
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	508.9	-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	
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Reference Toolface	Offset Wellbore Centre +N/S (usft)	+E/W (usft)	Distance			Warning	
		Measured Depth (usft)	Vertical Depth (usft)	Reference Offset (usft)	Highside (")				Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
0.0	0.0	0.0	0.0	2.0	2.0	0.01	65.9	0.0	65.9	61.9	4.00	16.450	
100.0	100.0	100.0	100.0	2.0	2.0	0.01	65.9	0.0	65.9	61.8	4.05	16.272	
200.0	200.0	200.0	200.0	2.0	2.0	0.01	65.9	0.0	65.9	61.7	4.14	15.908	
300.0	300.0	300.0	300.0	2.1	2.1	0.01	65.9	0.0	65.9	61.6	4.28	15.395	
400.0	400.0	400.0	400.0	2.1	2.1	0.01	65.9	0.0	65.9	61.4	4.46	14.775	
500.0	500.0	500.0	500.0	2.2	2.2	0.01	65.9	0.0	65.9	61.2	4.87	14.093	
600.0	600.0	600.0	600.0	2.3	2.3	0.01	65.9	0.0	65.9	60.9	4.92	13.384	
700.0	700.0	700.0	700.0	2.5	2.5	0.01	65.9	0.0	65.9	60.7	5.20	12.677	
800.0	800.0	800.0	800.0	2.6	2.6	0.01	65.9	0.0	65.9	60.4	5.49	11.989	
900.0	900.0	900.0	900.0	2.7	2.7	0.01	65.9	0.0	65.9	60.0	5.81	11.335	
1,000.0	1,000.0	1,000.0	1,000.0	2.9	2.9	0.01	65.9	0.0	65.9	59.7	6.14	10.719	
1,100.0	1,100.0	1,100.0	1,100.0	3.1	3.1	0.01	65.9	0.0	65.9	59.4	6.49	10.144	
1,200.0	1,200.0	1,200.0	1,200.0	3.2	3.2	0.01	65.9	0.0	65.9	59.0	6.85	9.612	
1,300.0	1,300.0	1,300.0	1,300.0	3.4	3.4	0.01	65.9	0.0	65.9	58.6	7.22	9.120	
1,400.0	1,400.0	1,400.0	1,400.0	3.6	3.6	0.01	65.9	0.0	65.9	58.3	7.60	8.886	
1,500.0	1,500.0	1,500.0	1,500.0	3.8	3.8	0.01	65.9	0.0	65.9	58.0			

CC - Min centre to center distance or convergent 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		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N-S (usft)	Centre +E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
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	8.8	-90.48	70.1	15.0	70.1	52.4	17.68	3.956	
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	70.5	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	2.983	
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	75.5	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 convergent 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		Distance										Offset Well Error:		2.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre (+N-S (usft))	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
6,700.0	6,899.8	6,899.8	6,899.7	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	6,899.8	6,899.8	6,899.8	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	7,099.8	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	7,199.8	15.8	15.9	-91.21	77.7	41.9	77.7	46.1	31.83	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	7,699.8	16.8	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	43.80	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		
10,282.1	10,261.8	10,282.1	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	22.6	22.7	-106.80	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	36.6	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	85.0	71.3	90.8	45.2	45.80	1.992		
10,475.0	10,473.5	10,462.6	10,458.5	22.8	23.0	-98.80	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	95.8	105.3	113.8	67.6	46.10	2.484		
10,575.0	10,567.1	10,550.0	10,538.8	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 convergent 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 10B	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	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset (usft)	Semi Major Axis	Highside Toolface (")	Offset Wellbore Centre +N/S (usft)	Offset Wellbore Centre +E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,650.0	10,631.3	10,812.3	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	10,803.0	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	10,817.1	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	181.0	47.80	4.388		
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	10,793.4	10,698.9	24.6	24.3	-82.95	143.2	274.2	244.6	198.1	48.48	5.048		
10,900.0	10,798.8	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	10,820.8	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	6.840		
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	10,784.3	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	10,766.2	30.3	27.9	-80.88	226.2	571.4	464.4	407.7	58.74	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	10,785.9	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	78.82	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	6.828		
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	10,786.9	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		
12,800.0	10,834.7	12,522.5	10,787.6	80.8	60.2	-83.35	316.3	1,982.5	579.1	469.5	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	4.082		
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	148.70	3.837		
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	10,789.4	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	10,789.6	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	10,789.7	94.0	93.3	-83.31	316.3	3,182.5	575.4	389.7	185.89	3.099		
13,900.0	10,836.9	13,822.5	10,789.9	96.8	98.1	-83.31	316.2	3,282.5	575.0	383.7	191.32	3.008		
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	196.98	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	202.81	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 convergent 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
Measured Depth (usft)	Reference		Offset		Semi Major Axis		Distance						Warning
	Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/S (usft)	Offset Wellbore Centre +E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
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	2.662	
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	2.051	
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	507.85	1.099 Level 2	

CC - Min centre to center distance or convergent 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 Offset Semi Major Axis												Distance			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre (+N/S (usft))	Offset Wellbore Centre (+E/W (usft))	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
19,500.0	10,846.7	19,422.5	10,779.7	258.8	258.1	-83.10	315.9	8,982.5	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		



Ryan Directional Services

Anticollision Report



Company: Oasis Petroleum
Project: Indian Hills
Reference Site: 153N-100W-17/18
Site Error: 0.0 usft
Reference Well: Kline Federal 5300 41-18 12TX
Well Error: 2.0 usft
Reference Wellbore: Kline Federal 5300 41-18 12TX
Reference Design: Design #2

Local Co-ordinate Reference: Well Kline Federal 5300 41-18 12TX
TVD Reference: WELL @ 2082.0usft (Original Well Elev)
MD Reference: WELL @ 2082.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
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: O-MWD		Distance										Offset Well Error:	2.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset (usft)	Highside Toolface (*)	Offset Wellbore Centre +N-S (usft)	Centre +E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Séparation (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				
200.0	200.0	200.0	200.0	2.0	2.0	0.00	33.4	0.0	33.4				
300.0	300.0	300.0	300.0	2.1	2.1	0.00	33.4	0.0	33.4				
400.0	400.0	400.0	400.0	2.1	2.1	0.00	33.4	0.0	33.4				
500.0	500.0	500.0	500.0	2.2	2.2	0.00	33.4	0.0	33.4				
600.0	600.0	600.0	600.0	2.3	2.3	0.00	33.4	0.0	33.4				
700.0	700.0	700.0	700.0	2.5	2.5	0.00	33.4	0.0	33.4				
800.0	800.0	800.0	800.0	2.6	2.6	0.00	33.4	0.0	33.4				
900.0	900.0	900.0	900.0	2.7	2.7	0.00	33.4	0.0	33.4				
1,000.0	1,000.0	1,000.0	1,000.0	2.9	2.9	0.00	33.4	0.0	33.4				
1,100.0	1,100.0	1,100.0	1,100.0	3.1	3.1	0.00	33.4	0.0	33.4				
1,200.0	1,200.0	1,200.0	1,200.0	3.2	3.2	0.00	33.4	0.0	33.4				
1,300.0	1,300.0	1,300.0	1,300.0	3.4	3.4	0.00	33.4	0.0	33.4				
1,400.0	1,400.0	1,400.0	1,400.0	3.6	3.6	0.00	33.4	0.0	33.4				
1,500.0	1,500.0	1,500.0	1,500.0	3.8	3.8	0.00	33.4	0.0	33.4				
1,600.0	1,600.0	1,600.0	1,600.0	4.0	4.0	0.00	33.4	0.0	33.4				
1,700.0	1,700.0	1,700.0	1,700.0	4.2	4.2	0.00	33.4	0.0	33.4				
1,800.0	1,800.0	1,800.0	1,800.0	4.4	4.4	0.00	33.4	0.0	33.4				
1,900.0	1,900.0	1,900.0	1,900.0	4.6	4.6	0.00	33.4	0.0	33.4				
2,000.0	2,000.0	2,000.0	2,000.0	4.8	4.8	0.00	33.4	0.0	33.4				
2,100.0	2,100.0	2,100.0	2,100.0	5.0	5.0	0.00	33.4	0.0	33.4				
2,200.0	2,200.0	2,200.0	2,200.0	5.2	5.2	0.00	33.4	0.0	33.4				
2,200.0	2,200.0	2,200.0	2,200.0	5.2	5.2	0.00	33.4	0.0	33.4				
2,216.7	2,216.7	2,216.7	2,216.7	5.2	5.2	-90.12	33.4	0.0	33.4				
2,300.0	2,300.0	2,300.0	2,300.0	5.4	5.4	-91.37	33.4	0.0	33.4				
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	13.84	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	3,799.8	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	36.8	19.1	17.44	2.096	
4,000.0	3,899.9	3,899.9	3,899.9	8.8	9.1	-115.06	33.4	0.0	36.9	19.0	17.87	2.086	
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	38.6	18.9	19.59	1.968	
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	21.78	1.878	

CC - Min centre to center distance or convergent 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		Reference		Offset		Semi Major Axis		Distance						Offset Well Error:	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference Offset (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/S (usft)	Offset Wellbore Centre +E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
5,000.0	4,999.9	4,999.9	4,999.9	10.9	11.3	-126.07	33.4	0.0	41.4	19.2	22.20	1.884			
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	1.861			
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	-146.21	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	-146.21	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	-146.21	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	-146.21	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	-146.21	33.4	0.0	60.1	23.4	36.78	1.636			
8,400.0	8,399.8	8,399.8	8,399.8	18.4	18.8	-146.21	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	-146.21	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	-146.21	33.4	0.0	60.1	22.1	38.08	1.580			
8,700.0	8,699.8	8,699.8	8,699.8	19.0	19.5	-146.21	33.4	0.0	60.1	21.6	38.48	1.562			
8,800.0	8,799.8	8,799.8	8,799.8	19.2	19.7	-146.21	33.4	0.0	60.1	21.2	38.83	1.545			
8,900.0	8,899.8	8,899.8	8,899.8	19.4	20.0	-146.21	33.4	0.0	60.1	20.8	39.38	1.528			
9,000.0	8,999.8	8,999.8	8,999.8	19.6	20.2	-146.21	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	-146.21	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	-146.21	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	-146.21	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	-146.21	33.4	0.0	60.1	18.8	41.54	1.448 Level 3			
9,500.0	9,499.8	9,499.8	9,499.8	20.7	21.3	-146.21	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	-146.21	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	-146.21	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	-146.21	33.4	0.0	60.1	16.8	43.28	1.388 Level 3			
9,900.0	9,899.8	9,899.8	9,899.8	21.5	22.2	-146.21	33.4	0.0	60.1	16.4	43.72	1.375 Level 3			

CC - Min centre to center distance or convergent 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				Distance								Offset Well Error:	2.0 usft		
Reference		Offset		Semi Major Axis											
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (%)	Offset Wellbore Centre +N/S (usft)	Offset Wellbore Centre +E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
10,000.0	9,999.8	9,999.8	9,999.8	21.7	22.4	-56.21	33.4	0.0	60.1	15.0	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	22.8	23.3	-166.59	33.5	0.1	62.2	16.4	45.73	1.359	Level 3		
10,425.0	10,424.5	10,427.8	10,427.8	22.7	23.4	-166.38	33.8	1.2	64.4	18.7	45.66	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	1.862			
10,600.0	10,589.1	10,610.2	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	62.5	103.1	121.4	78.1	43.35	2.801			
10,725.0	10,688.8	10,743.4	10,712.7	23.8	24.2	-134.35	67.0	118.6	130.6	87.1	43.49	3.002			
10,750.0	10,708.2	10,767.8	10,730.4	23.7	24.3	-131.42	71.8	134.8	140.3	98.6	43.73	3.209			
10,775.0	10,722.6	10,791.9	10,746.9	23.8	24.4	-128.86	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	10,882.2	10,790.0	24.4	24.8	-120.59	91.4	205.0	185.3	139.8	45.56	4.088			
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	281.7	224.1	178.5	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	10,998.1	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	229.8	50.52	5.545			
11,050.0	10,828.9	11,039.6	10,858.9	26.5	26.2	-102.08	135.6	381.1	284.7	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	308.4	257.4	51.97	5.953			
11,100.0	10,832.0	11,082.9	10,866.3	27.1	26.7	-97.85	147.3	402.3	324.1	271.4	52.67	6.154			
11,104.0	10,832.0	11,086.4	10,888.7	27.2	26.7	-97.83	148.2	405.5	328.5	273.7	52.78	6.186			
11,200.0	10,832.2	11,174.3	10,870.0	26.8	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	-95.88	198.8	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	7.662			
11,500.0	10,832.7	11,499.3	10,870.6	34.1	33.2	-94.53	239.8	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	527.8	453.6	74.28	7.107			
11,700.0	10,833.1	11,739.8	10,871.0	38.4	38.2	-94.12	285.0	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	43.8	-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	5.807			
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	532.8	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 convergent 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		Offset		Semi Major Axis			Distance								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor			
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	12,875.3	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	378.1	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	276.69	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	330.80	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	342.18	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	347.96	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	1.386 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	411.89	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 convergent 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		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (*)	Offset Wellbore Centre +N/S (usft)	Offset Wellbore Centre +E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,800.0	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	546.38	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	568.68	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



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

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 Design		Survey Program: 0-MWD										Offset Well Error:	2.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Reference		Offset		Semi Major Axis		Distance				Warning	
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (*)	Offset Wellbore Centre +N-S (usft)	Centre +E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
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	7.8	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	
3,599.9	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	35.8	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	3,899.9	3,899.9	3,899.9	8.8	9.1	115.08	-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	38.0	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	38.4	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	38.9	19.0	20.80	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 convergent 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 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			Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N-S (usft)	Centre +E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,000.0	4,999.9	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	19.5	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	1.725		
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	40.82	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	41.08	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 convergent point, SF - min separation factor, ES - min ellipse separation



Ryan Directional Services

Anticollision Report



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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	
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis			Highside Toolface	Offset Wellbore Centres		Distance			Separation Factor	Warning
		Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	(")		+N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		
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	45.87	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	16.5	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	10,453.5	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	45.78	1.438	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	1.460	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	98.9	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	-98.8	112.7	87.9	43.4	44.56	1.973		
10,750.0	10,708.2	10,779.8	10,738.7	23.7	24.3	126.22	-108.3	129.8	90.6	48.0	44.62	2.031		
10,775.0	10,722.6	10,807.2	10,757.0	23.8	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	45.82	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	46.82	2.325		
10,925.0	10,798.6	10,971.1	10,839.5	25.0	25.5	116.73	-185.2	268.9	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	114.8	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	10,881.5	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	110.78	-236.8	361.3	125.1	74.8	50.29	2.488		
11,050.0	10,828.9	11,106.3	10,866.6	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	10,889.9	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	11,193.4	10,870.0	27.2	27.6	106.38	-277.7	434.5	136.4	83.3	53.08	2.570		
11,200.0	10,832.2	11,262.9	10,870.2	28.6	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	103.18	-369.6	815.8	170.4	111.0	58.35	2.870		
11,400.0	10,832.6	11,470.8	10,870.5	32.2	32.6	101.77	-411.6	711.0	181.4	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	908.5	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	3.805		
11,700.0	10,833.1	11,785.0	10,871.1	38.4	39.2	98.50	-517.0	1,008.7	269.0	196.1	73.94	3.838		
11,800.0	10,833.3	11,891.7	10,871.3	40.7	41.6	97.66	-545.4	1,108.6	295.7	217.0	78.82	3.781		
11,900.0	10,833.4	12,000.6	10,871.5	43.0	44.2	97.04	-570.4	1,215.8	318.7	235.2	83.51	3.817		
12,000.0	10,833.6	12,111.3	10,871.7	46.4	46.9	96.59	-591.8	1,324.2	338.1	249.5	88.80	3.816		
12,100.0	10,833.8	12,223.5	10,871.9	47.9	49.6	96.28	-608.9	1,435.1	363.7	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	3.882		
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	289.4	104.75	3.582		
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	266.8	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 convergent 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 13T2X - Kline Federal 5300 41-18 13T2X - Design #1												Offset Site Error:	0.0 usft	
Survey Program: 0-MWD				Distance								Offset Well Error:		2.0 usft
Measured Reference	Vertical Depth	Measured Depth	Offset	Semi Major Axis	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/S (usft)	+E/W (usft)	(usft)	(usft)				
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	125.40	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	2.658		
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	2.580		
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	10,878.9	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	28.0	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	9.5	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	197.8	198.9	95.59	-634.8	6,782.3	392.8	-1.4	393.95	0.996 Level 1		
17,500.0	10,843.2	17,671.8	10,881.4	200.8	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 convergent 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 13T2X - Kline Federal 5300 41-18 13T2X - Design #1												Offset Site Error:	0.0 usft
Survey Program: 0-MWD		Distance										Offset Well Error:	2.0 usft
Reference		Offset		Semi Major Axis									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference Offset (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/S (usft)	Offset Wellbore Centre +E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
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	396.8	-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



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		Distance											Offset Well Error:	2.0 usft	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (%)	Offset Wellbore Centre +N-S (usft)	Offset Wellbore Centre +E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
0.0	0.0	0.0	0.0	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	15.398			
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	7.882			
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	2,289.4	2,288.4	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	55.5	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	12.64	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	5.498			
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	3,398.3	3,399.3	7.6	7.3	97.76	-76.3	0.0	77.0	62.1	14.88	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	15.28	5.108			
3,600.0	3,599.9	3,598.3	3,599.3	8.0	7.7	98.84	-78.0	0.0	78.9	63.3	15.68	5.041			
3,700.0	3,699.9	3,698.3	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	3,798.3	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	3,898.3	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	3,998.3	3,999.2	8.8	8.5	100.86	-81.5	0.0	83.0	66.7	17.29	4.799			
4,100.0	4,099.9	4,098.3	4,099.2	9.0	8.7	101.33	-82.4	0.0	84.0	68.3	17.70	4.745			
4,200.0	4,199.9	4,198.3	4,199.2	9.2	8.9	101.79	-83.2	0.0	85.0	68.9	18.12	4.694			
4,300.0	4,299.9	4,298.3	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	4,398.3	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	4,498.3	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	4,598.2	4,599.2	10.1	9.7	103.53	-86.7	0.0	88.2	69.4	19.79	4.507			
4,700.0	4,699.9	4,698.2	4,699.1	10.3	9.9	103.94	-87.6	0.0	90.3	70.0	20.21	4.468			
4,800.0	4,799.9	4,798.2	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	4,898.2	4,899.1	10.7	10.3	104.72	-89.3	0.0	92.4	71.3	21.08	4.387			
5,000.0	4,999.9	4,998.2	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 convergent 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		Distance										Offset Well Error:		2.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/S (usft)	Offset Wellbore Centre +E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,100.0	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	11.8	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	6,399.0	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	6,499.0	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	6,599.0	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	6,699.0	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	6,799.0	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	6,899.0	15.1	14.8	110.97	-106.8	0.0	114.4	84.7	29.71	3.850		
7,000.0	6,999.8	6,999.1	6,999.0	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	7,099.0	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	7,199.0	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	7,299.0	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	7,399.0	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	7,499.0	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	7,599.0	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	7,699.0	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	7,799.0	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	7,899.0	17.3	16.8	113.26	-115.5	0.0	125.8	91.6	34.11	3.687		
7,926.7	7,926.4	7,926.7	7,926.4	17.4	16.9	113.32	-115.8	0.0	126.1	91.8	34.22	3.683		
7,943.3	7,943.1	7,943.1	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 convergent 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		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/S (usft)	Offset Wellbore Centre +E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
10,100.0	10,099.8	10,100.0	10,099.8	21.8	21.2	-158.66	-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	10,198.6	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	86.8	44.17	2.981	
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	43.78	4.117	
10,675.0	10,651.3	10,608.8	10,556.1	23.4	22.8	53.80	-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	10,708.2	10,666.3	10,599.9	23.7	22.9	50.64	-214.7	197.0	199.3	158.7	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	209.2	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	41.58	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	238.8	195.8	41.24	5.742	
11,025.0	10,825.4	10,871.3	10,680.4	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	25.8	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	-328.2	419.2	248.4	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	61.02	-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	11,582.1	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	4.986	
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	51.8	65.74	-630.2	1,563.6	405.3	314.8	91.52	4.440	
12,300.0	10,834.1	12,238.9	10,667.4	53.0	54.5	66.98	-633.8	1,678.4	409.5	312.7	98.78	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	106.81	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 convergent 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	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset (usft)	Semi Major Axis (usft)	Highside Toolface (")	Offset Wellbore Centre +N/S (usft)	Centre +E/W (usft)	Between Centres (usft)	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	66.05	-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	131.87	3.128		
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	141.80	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	266.4	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	226.9	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	2.093		
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	10,838.0	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	1.680		
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	268.80	1.660		
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	273.87	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	10,840.5	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	295.48	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	420.8	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	308.22	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	108.6	311.81	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	10,841.5	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	338.80	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	365.85	1.160 Level 2		
17,500.0	10,843.2	17,441.1	10,676.4	200.8	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 convergent 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		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	Centre +E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,900.0	10,843.9	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	1.089	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	228.7	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	468.03	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	267.5	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

CC - Min centre to center distance or convergent 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												Offset Site Error:	0.0 usft
Survey Program: 0-MWD		Offset										Offset Well Error:	2.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (*)	Offset Wellbore Centre +N/S (usft)	Offset Wellbore Centre +E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	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	-66.9	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	7.882	
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	6.690	
2,168.7	2,168.7	2,168.7	2,168.7	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	-160.00	-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	5.6	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	6.4	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	13.89	5.411	
3,200.0	3,200.0	3,199.3	3,199.3	7.1	6.9	96.82	-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	14.88	5.179	
3,500.0	3,500.0	3,499.3	3,499.3	7.8	7.6	98.31	-77.1	0.0	78.0	62.7	15.26	5.108	
3,600.0	3,600.0	3,599.3	3,599.3	8.0	7.7	98.84	-78.0	0.0	78.9	63.3	15.68	5.041	
3,700.0	3,700.0	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	3,800.0	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	3,900.0	3,899.3	3,899.2	8.6	8.3	100.37	-80.6	0.0	82.0	65.1	16.88	4.858	
4,000.0	4,000.0	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	4,100.0	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	4,200.0	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	4,300.0	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	4,400.0	4,399.3	4,399.2	9.7	9.3	102.88	-85.0	0.0	87.1	68.2	18.95	4.597	
4,500.0	4,500.0	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	4,600.0	4,599.2	4,599.2	10.1	9.7	103.63	-86.7	0.0	89.2	69.4	19.79	4.507	
4,700.0	4,700.0	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	4,800.0	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	4,900.0	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 convergent 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 References:	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
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis			Distance					Warning	
		Measured Depth (usft)	Vertical Depth (usft)	Reference Offset (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/S (usft)	Centre +E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
5,000.0	4,999.9	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	95.8	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	11.8	106.89	-94.6	0.0	98.9	76.2	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	78.5	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	27.95	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	-108.4	0.0	117.8	86.7	31.02	3.795	
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	31.48	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	31.80	3.763	
7,500.0	7,499.8	7,499.0	7,498.9	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	6,699.8	6,699.0	6,698.8	16.9	16.4	112.84	-113.8	0.0	123.5	90.2	33.22	3.715	
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	
7,928.7	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	3.663	
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	17.6	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	
8,800.0	8,699.8	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	8,899.8	9,000.0	8,899.8	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	3.046	
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	
9,800.0	9,899.8	9,900.0	9,899.8	21.5	20.8	-156.66	-115.8	0.0	126.2	83.9	42.28	2.986	

CC - Min centre to center distance or convergent 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												Offset Site Error:	0.0 usft	
Survey Program: 0-MWD		Distance										Offset Well Error:		2.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (*)	Offset Wellbore Centre +N/S (usft)	Offset Wellbore Centre +E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
10,000.0	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	120.2	82.4	43.76	2.883		
10,300.0	10,299.8	10,299.8	10,299.8	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	-156.70	-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	2.868		
10,400.0	10,399.7	10,396.8	10,395.8	22.8	21.8	88.56	-121.4	11.1	127.5	83.1	44.38	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	85.83	-127.2	22.7	128.4	84.8	44.58	2.893		
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	3.138		
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	10,688.6	10,695.8	10,647.7	23.6	22.7	73.89	-189.4	148.6	151.9	108.2	45.61	3.329		
10,750.0	10,705.2	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	23.8	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	-221.8	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	10,789.8	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	10,738.5	25.0	24.0	70.01	-257.1	281.6	173.9	126.8	47.08	3.694		
10,950.0	10,807.2	10,898.3	10,743.4	25.3	24.2	69.80	-268.4	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	3.765		
11,000.0	10,820.6	10,937.3	10,754.5	26.8	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	358.8	184.9	136.2	48.86	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	178.4	60.29	3.926		
11,500.0	10,832.7	11,447.2	10,765.7	34.1	33.2	74.50	-486.8	804.6	256.1	182.0	64.07	3.997		
11,600.0	10,832.9	11,554.3	10,765.9	36.2	35.6	75.67	-518.8	906.8	277.8	209.9	67.80	4.091		
11,880.4	10,833.1	11,640.7	10,766.1	38.0	37.5	76.56	-541.8	980.1	297.0	226.0	70.97	4.185		
11,700.0	10,833.1	11,681.8	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		
11,800.0	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	46.9	79.14	-609.4	1,330.5	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	278.8	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	378.5	278.6	97.89	3.848		
12,300.0	10,834.1	12,336.8	10,767.3	53.0	54.6	79.87	-633.8	1,678.2	379.9	276.5	103.42	3.873		
12,400.0	10,834.3	12,440.8	10,767.5	55.5	57.2	79.88	-634.0	1,782.5	380.4	271.7	106.72	3.409		
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	113.87	3.340		

CC - Min centre to center distance or convergent 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												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	2.0 usft
Reference		Offset		Semi/Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/S (usft)	Offset Wellbore Centre +E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
12,600.0	10,834.7	12,640.9	10,767.8	60.8	82.4	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	85.1	79.90	-634.0	2,092.5	381.3	256.7	124.60	3.060	
12,800.0	10,835.0	12,840.9	10,768.2	66.2	87.7	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	225.9	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	113.8	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	158.9	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	148.2	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	1.080 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	378.87	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	201.8	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	401.88	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 convergent 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

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		Offset		Semi Major Axis				Distance					
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N-S +E-W	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
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	424.87	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	453.48	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	80.48	-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	-152.8	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	563.08	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	10,848.5	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

CC - Min centre to center distance or convergent 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 9T - Kline Federal 5300 41-18 9T - Design #1											Offset Site Error:	0.0 usft		
Survey Program: 0-MWD		Reference		Offset		Semi Major Axis			Distance				Offset Well Error:	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/S (usft)	Offset Wellbore Centre +E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	2.0	2.0	-0.39	99.3	-0.7	99.3	95.3	4.00	24.802		
100.0	100.0	100.0	100.0	2.0	2.0	-0.39	99.3	-0.7	99.3	95.2	4.05	24.533		
200.0	200.0	200.0	200.0	2.0	2.0	-0.39	99.3	-0.7	99.3	95.2	4.14	23.984		
300.0	300.0	300.0	300.0	2.1	2.1	-0.39	99.3	-0.7	99.3	95.0	4.28	23.210		
400.0	400.0	400.0	400.0	2.1	2.1	-0.39	99.3	-0.7	99.3	94.8	4.46	22.277		
500.0	500.0	500.0	500.0	2.2	2.2	-0.39	99.3	-0.7	99.3	94.6	4.67	21.248		
600.0	600.0	600.0	600.0	2.3	2.3	-0.39	99.3	-0.7	99.3	94.4	4.92	20.179		
700.0	700.0	700.0	700.0	2.5	2.5	-0.39	99.3	-0.7	99.3	94.1	5.20	19.113		
800.0	800.0	800.0	800.0	2.6	2.6	-0.39	99.3	-0.7	99.3	93.8	5.49	18.076		
900.0	900.0	900.0	900.0	2.7	2.7	-0.39	99.3	-0.7	99.3	93.5	5.81	17.099		
1,000.0	1,000.0	1,000.0	1,000.0	2.9	2.9	-0.39	99.3	-0.7	99.3	93.2	6.14	16.161		
1,100.0	1,100.0	1,100.0	1,100.0	3.1	3.1	-0.39	99.3	-0.7	99.3	92.8	6.49	15.295		
1,200.0	1,200.0	1,200.0	1,200.0	3.2	3.2	-0.39	99.3	-0.7	99.3	92.4	6.85	14.492		
1,300.0	1,300.0	1,300.0	1,300.0	3.4	3.4	-0.39	99.3	-0.7	99.3	92.1	7.22	13.750		
1,400.0	1,400.0	1,400.0	1,400.0	3.6	3.6	-0.39	99.3	-0.7	99.3	91.7	7.60	13.065		
1,500.0	1,500.0	1,500.0	1,500.0	3.8	3.8	-0.39	99.3	-0.7	99.3	91.3	7.99	12.434		
1,600.0	1,600.0	1,600.0	1,600.0	4.0	4.0	-0.39	99.3	-0.7	99.3	90.9	8.38	11.852		
1,700.0	1,700.0	1,700.0	1,700.0	4.2	4.2	-0.39	99.3	-0.7	99.3	90.5	8.78	11.315		
1,800.0	1,800.0	1,800.0	1,800.0	4.4	4.4	-0.39	99.3	-0.7	99.3	90.1	9.18	10.819		
1,900.0	1,900.0	1,900.0	1,900.0	4.6	4.6	-0.39	99.3	-0.7	99.3	89.7	9.58	10.360		
2,000.0	2,000.0	2,000.0	2,000.0	4.8	4.8	-0.39	99.3	-0.7	99.3	89.3	9.99	9.935		
2,100.0	2,100.0	2,100.0	2,100.0	5.0	5.0	-0.39	99.3	-0.7	99.3	88.9	10.41	9.540 CC, ES		
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	10.47	9.497		
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	10.80	9.269		
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	11.19	9.022		
2,400.0	2,400.0	2,399.1	2,399.1	5.6	5.6	-91.33	101.0	-0.7	101.0	88.6	11.57	8.788		
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	8.569		
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	8.382		
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	8.262		
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	13.84	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	94.8	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	3,599.0	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	3,699.0	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	3,799.0	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	3,899.0	3,899.0	3,899.0	8.6	8.9	-97.71	114.0	-0.7	115.1	97.7	17.44	6.599		
4,000.0	3,999.0	3,999.0	3,998.0	8.8	9.1	-98.08	114.8	-0.7	116.1	98.2	17.87	6.498		
4,100.0	4,099.0	4,099.0	4,098.0	9.0	9.3	-98.44	115.8	-0.7	117.1	98.8	18.30	6.397		
4,200.0	4,199.0	4,199.0	4,198.0	9.2	9.5	-98.79	116.7	-0.7	118.1	99.3	18.73	6.303		
4,300.0	4,299.0	4,299.0	4,298.0	9.4	9.7	-99.15	117.5	-0.7	119.1	99.8	19.18	6.213		
4,400.0	4,399.0	4,399.0	4,398.0	9.7	10.0	-99.49	118.4	-0.7	120.1	100.5	19.80	6.127		
4,500.0	4,499.0	4,499.0	4,498.0	9.9	10.2	-99.83	119.3	-0.7	121.1	101.0	20.03	6.044		
4,600.0	4,599.0	4,599.0	4,598.0	10.1	10.4	-100.16	120.2	-0.7	122.1	101.6	20.46	5.965		
4,700.0	4,699.0	4,699.0	4,698.0	10.3	10.6	-100.49	121.0	-0.7	123.1	102.2	20.80	5.880		
4,800.0	4,799.0	4,799.0	4,798.0	10.5	10.8	-100.81	121.8	-0.7	124.1	102.8	21.33	5.817		
4,900.0	4,899.0	4,899.0	4,898.0	10.7	11.1	-101.13	122.6	-0.7	125.1	103.4	21.77	5.748		
5,000.0	4,999.0	4,998.0	4,998.0	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 convergent 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 9T - Kline Federal 5300 41-18 9T - Design #1												Offset Site Error:	0.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis			Distance				Offset Well Error:	2.0 usft	
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (*)	Offset Wellbore Centre +N/S (usft)	Centre +E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		
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	22.84	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	23.32	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	23.95	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	108.9	24.40	5.384	
5,600.0	5,599.9	5,598.9	5,598.8	12.2	12.6	-103.22	128.9	-0.7	132.4	107.8	24.84	5.330	
5,700.0	5,699.9	5,698.9	5,698.8	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	130.8	-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	135.8	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	111.8	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	150.8	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	-108.08	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	156.0	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	7,943.1	7,943.1	17.4	17.8	-108.74	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	-108.74	149.3	-0.7	157.8	122.2	35.43	4.449	
8,100.0	8,099.8	8,100.0	8,099.8	17.7	18.2	-108.74	149.3	-0.7	157.8	121.8	35.86	4.395	
8,200.0	8,199.8	8,200.0	8,199.8	17.9	18.4	-108.74	149.3	-0.7	157.8	121.3	36.29	4.343	
8,300.0	8,299.8	8,300.0	8,299.8	18.1	18.6	-108.74	149.3	-0.7	157.8	120.9	36.72	4.292	
8,400.0	8,399.8	8,400.0	8,399.8	18.4	18.8	-108.74	149.3	-0.7	157.8	120.5	37.18	4.242	
8,500.0	8,499.8	8,500.0	8,499.8	18.6	19.1	-108.74	149.3	-0.7	157.8	120.0	37.59	4.194	
8,600.0	8,599.8	8,600.0	8,599.8	18.8	19.3	-108.74	149.3	-0.7	157.8	119.6	38.02	4.146	
8,700.0	8,699.8	8,700.0	8,699.8	19.0	19.5	-108.74	149.3	-0.7	157.8	119.2	38.45	4.099	
8,800.0	8,799.8	8,800.0	8,799.8	19.2	19.7	-108.74	149.3	-0.7	157.8	118.7	38.89	4.053	
8,900.0	8,899.8	8,900.0	8,899.8	19.4	19.9	-108.74	149.3	-0.7	157.8	118.3	39.32	4.009	
9,000.0	8,999.8	9,000.0	8,999.8	19.6	20.2	-108.74	149.3	-0.7	157.8	117.9	39.76	3.985	
9,100.0	9,099.8	9,100.0	9,099.8	19.8	20.4	-108.74	149.3	-0.7	157.8	117.4	40.19	3.922	
9,200.0	9,199.8	9,200.0	9,199.8	20.0	20.6	-108.74	149.3	-0.7	157.8	117.0	40.63	3.880	
9,300.0	9,299.8	9,300.0	9,299.8	20.2	20.8	-108.74	149.3	-0.7	157.8	116.6	41.08	3.839	
9,400.0	9,399.8	9,400.0	9,399.8	20.5	21.1	-108.74	149.3	-0.7	157.8	116.1	41.50	3.789	
9,500.0	9,499.8	9,500.0	9,499.8	20.7	21.3	-108.74	149.3	-0.7	157.8	115.7	41.93	3.759	
9,600.0	9,599.8	9,600.0	9,599.8	20.9	21.5	-108.74	149.3	-0.7	157.8	115.3	42.37	3.720	
9,700.0	9,699.8	9,700.0	9,699.8	21.1	21.7	-108.74	149.3	-0.7	157.8	114.8	42.80	3.683	
9,800.0	9,799.8	9,800.0	9,799.8	21.3	22.0	-108.74	149.3	-0.7	157.8	114.4	43.24	3.646	
9,900.0	9,899.8	9,900.0	9,899.8	21.5	22.2	-108.74	149.3	-0.7	157.8	113.9	43.68	3.609	
10,000.0	9,999.8	10,000.0	9,999.8	21.7	22.4	-108.74	149.3	-0.7	157.8	113.5	44.11	3.573	

CC - Min centre to center distance or convergent 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 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
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis			Distance					Warning	
		Reference	Offset	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/S (usft)	Centre +E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor.	
10,100.0	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	22.8	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	3.889	
10,550.0	10,544.4	10,532.1	10,527.8	23.0	23.6	-124.35	166.2	27.1	180.1	144.4	45.89	4.161	
10,575.0	10,567.1	10,553.5	10,547.6	23.0	23.8	-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	186.3	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	198.3	45.74	5.291	
10,700.0	10,670.5	10,653.4	10,634.1	23.5	23.9	-116.86	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	10,708.2	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	45.78	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	138.0	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	378.6	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	168.8	396.3	347.4	48.84	8.114	
10,950.0	10,807.2	10,818.8	10,748.9	25.3	24.8	-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	282.6	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	508.4	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	28.8	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	28.2	-89.21	356.2	338.9	671.8	616.3	55.48	12.109	
11,400.0	10,832.8	11,094.8	10,831.9	32.2	27.0	-90.02	382.8	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	60.88	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	12.985	
11,800.0	10,833.4	11,722.5	10,833.1	43.0	37.5	-90.02	680.4	984.7	974.7	897.3	77.41	12.581	
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	1,048.2	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	982.8	100.87	10.545	
12,400.0	10,834.3	12,487.9	10,834.5	55.5	53.3	-90.02	810.8	1,712.9	1,072.6	985.1	107.46	9.981	
12,500.0	10,834.5	12,647.9	10,834.8	58.2	58.3	-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	8.880	
12,700.0	10,834.8	12,857.5	10,835.2	63.5	64.5	-90.02	816.9	2,082.4	1,075.4	950.3	125.13	8.594	

CC - Min centre to center distance or convergent 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 9T - Kline Federal 5300 41-18 9T - Design #1												Offset Site Error:	0.0 usft
Survey Program: 0-MWD		Distance										Offset Well Error:	
Reference	Offset	Semi Major Axis											
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	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	7.908	
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	77.8	-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	10,836.8	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	10,838.9	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	288.85	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	368.42	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	197.8	196.5	-90.02	816.8	6,782.3	1,060.9	667.8	393.27	2.698	
17,500.0	10,843.2	17,657.4	10,843.6	200.8	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 convergent point, SF - min separation factor, ES - min ellipse separation



Ryan Directional Services

Anticollision Report



Company: Oasis Petroleum
Project: Indian Hills
Reference Site: 153N-100W-17/18
Site Error: 0.0 usft
Reference Well: Kline Federal 5300 41-18 12TX
Well Error: 2.0 usft
Reference Wellbore: Kline Federal 5300 41-18 12TX
Reference Design: Design #2

Local Co-ordinate Reference: Well Kline Federal 5300 41-18 12TX
TVD Reference: WELL @ 2082.0usft (Original Well Elev)
MD Reference: WELL @ 2082.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Single User Db
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		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/S (usft)	Offset Wellbore Centre +E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
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	10,844.8	18,457.4	10,845.0	223.8	222.6	-90.02	816.8	7,682.3	1,058.1	612.5	445.84	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	1,066.3	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	466.43	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	573.99	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	



Ryan Directional Services

Anticollision Report

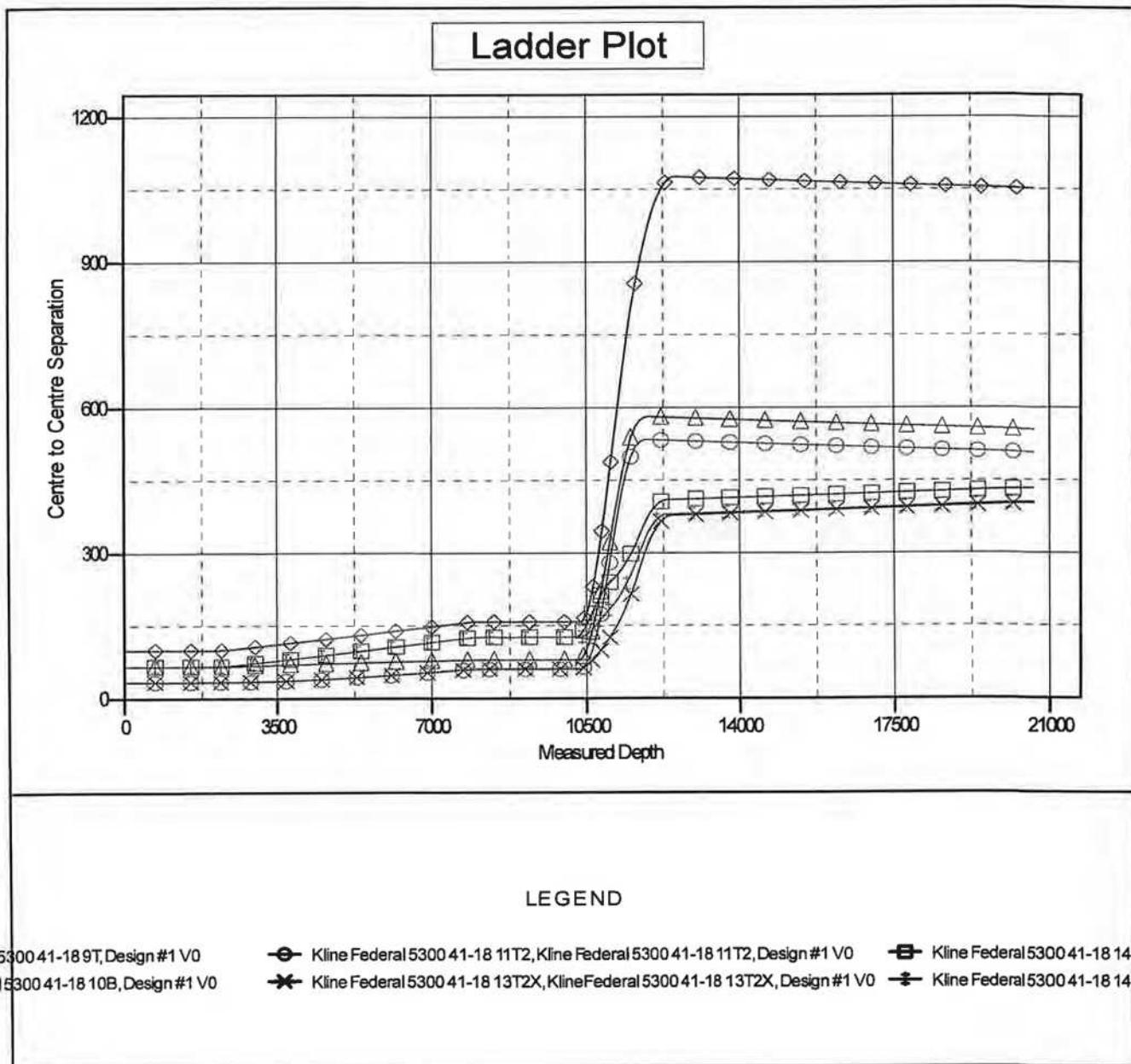


Company:	Oasis Petroleum
Project:	Indian Hills
Reference Site:	153N-100W-17/18
Site Error:	0.0 usft
Reference Well:	Kline Federal 5300 41-18 12TX
Well Error:	2.0 usft
Reference Wellbore	Kline Federal 5300 41-18 12TX
Reference Design:	Design #2

Local Co-ordinate Reference:	Well Kline Federal 5300 41-18 12TX
TVD Reference:	WELL @ 2082.0usft (Original Well Elev)
MD Reference:	WELL @ 2082.0usft (Original Well Elev)
North Reference:	True
Survey Calculation Method:	Minimum Curvature
Output errors are at	2.00 sigma
Database:	EDM 5000.1 Single User Db
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°





Ryan Directional Services

Anticollision Report



Company: Oasis Petroleum
Project: Indian Hills
Reference Site: 153N-100W-17/18
Site Error: 0.0 usft
Reference Well: Kline Federal 5300 41-18 12TX
Well Error: 2.0 usft
Reference Wellbore: Kline Federal 5300 41-18 12TX
Reference Design: Design #2

Local Co-ordinate Reference: Well Kline Federal 5300 41-18 12TX
TVD Reference: WELL @ 2082.0usft (Original Well Elev)
MD Reference: WELL @ 2082.0usft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to WELL @ 2082.0usft (Original Well Ele)

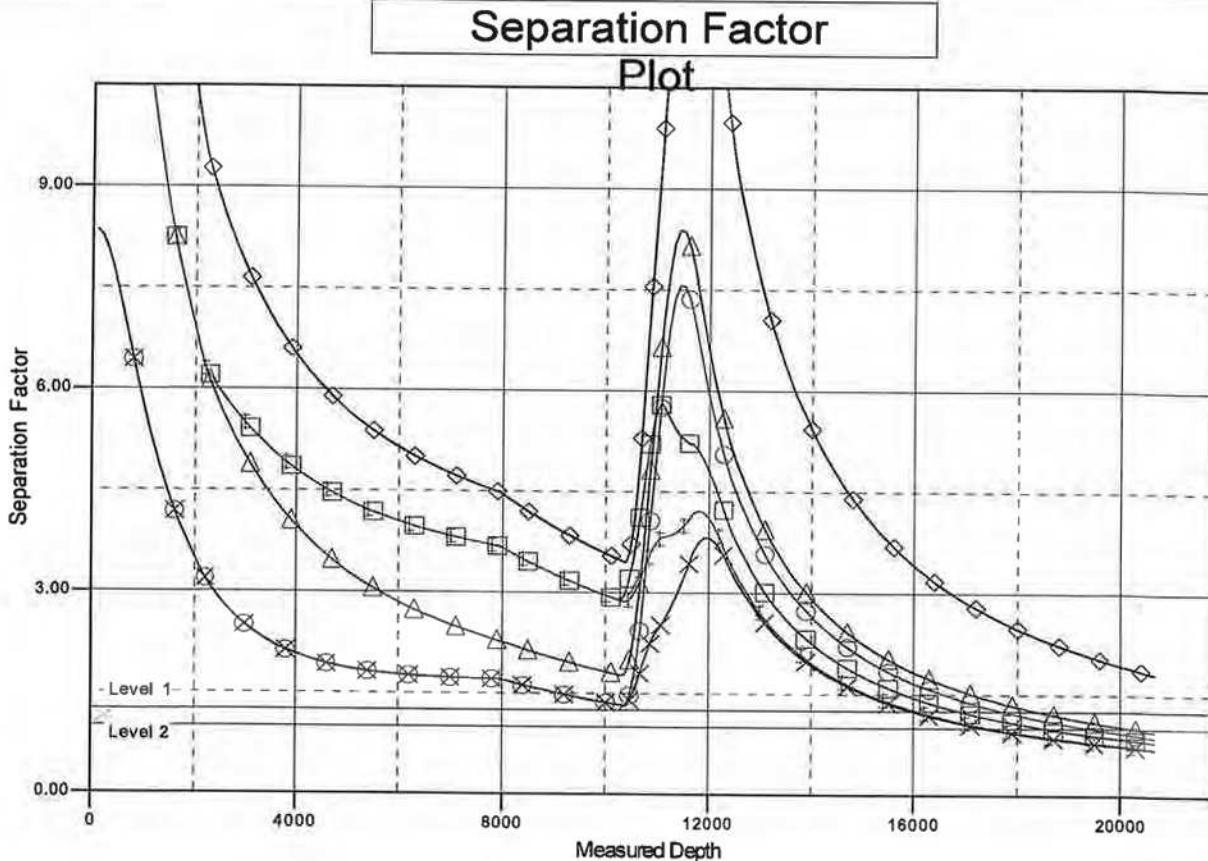
Coordinates are relative to: Kline Federal 5300 41-18 12TX

Offset Depths are relative to Offset Datum

Coordinate System is US State Plane 1983, North Dakota Northern Zone

Central Meridian is 100° 30' 0.000 W

Grid Convergence at Surface is: -2.31°



LEGEND

5300 41-18 9T, Design #1 V0
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

Oasis Petroleum
Well Summary
Kline Federal 5300 41-18 12TX
Section 18 T153N R100W
McKenzie County, ND

SURFACE CASING AND CEMENT DESIGN

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
13-3/8"	0' 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% CaCl₂, 4% D079 Extender and 2% D053 Expanding Agent.

Tail Slurry: **349 sks** (72 bbls) 1.16 yield conventional system with 94 lb/sk cement, .25% CaCl₂ 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

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							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 fracture 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% CaCl₂, 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

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							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

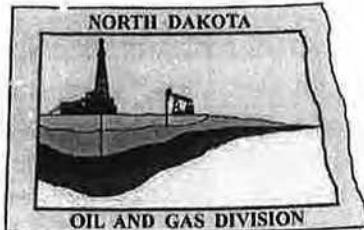
Interval	Description	Collapse	Burst	Tension
		(psi) a	(psi) b	(1000 lbs) c
10,305' – 20,655'	4-1/2", 13.5 lb, P-110, BTC, 8rd	10680 / 1.99	12410 / 1.28	443 / 2.02

API Rating & Safety Factor

- a) Based on full casing evacuation with 9.5 ppg fluid on backside @ 10,849' TVD.
 Burst pressure based on 9000 psi treating pressure with 10.2 ppg internal fluid gradient and 9 ppg external
- b) 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:
 - o 30' maximum intervals through all vertical and build sections.
 - o 100' maximum intervals through any horizontal sections.
 - Samples must be washed, dried, placed in standard sample envelopes (3" x 4.5"), packed in the correct order into standard sample boxes (3.5" x 5.25" x 15.25").
 - Samples boxes are to be carefully identified with a label that indicates the operator, well name, well file number, American Petroleum Institute (API) number, location and depth of samples; and forwarded in to the state core and sample library within 30 days of the completion of drilling operations.
- 3) Cores: Any cores cut shall be preserved in correct order, boxed in standard core boxes (4.5", 4.5", 35.75"), and the entire core forwarded to the state core and samples library within 180 days of completion of drilling operations. Any extension of time must have approval on a Form 4 Sundry Notice.

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

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

North Dakota Century Code Section 38-08-16 allows for a civil penalty for any violation of Chapter 38 08 not to exceed \$12,500 for each offense, and each day's violation is a separate offense.

Sincerely

Stephen Fried
Geologist



SUNDRY NOTICES AND REPORTS ON WELLS
 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.

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date October 1, 2014	<input type="checkbox"/> Drilling Prognosis	<input type="checkbox"/> Spill Report
<input type="checkbox"/> Report of Work Done	Date Work Completed	<input type="checkbox"/> Redrilling or Repair	<input type="checkbox"/> Shooting
<input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03. Approximate Start Date		<input type="checkbox"/> Casing or Liner	<input type="checkbox"/> Acidizing
		<input type="checkbox"/> Plug Well	<input type="checkbox"/> Fracture Treatment
		<input type="checkbox"/> Supplemental History	<input type="checkbox"/> Change Production Method
		<input type="checkbox"/> Temporarily Abandon	<input type="checkbox"/> Reclamation
		<input checked="" type="checkbox"/> Other	Waiver to rule Rule 43-02-03-31

Well Name and Number

Kline Federal 5300 41-18 12TX

Footages	434 F S L	237 F W L	Qtr-Qtr <i>Lot 4</i>	Section 18	Township 153 N	Range 100 W
Field		Pool Bakken		County McKenzie		

Name of Contractor(s)

Address

24-HOUR PRODUCTION RATE

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

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 <i>Heather McCowan</i>	Printed Name Heather McCowan	
Title Regulatory Assistant	Date May 29, 2014	
Email Address hmccowan@oasispetroleum.com		

FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> Approved
Date <i>6-17-2014</i>	
By <i>Stephen Fried</i>	
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.

<input checked="" type="checkbox"/> Notice of Intent	Approximate Start Date October 1, 2014	<input type="checkbox"/> Drilling Prognosis	<input type="checkbox"/> Spill Report
<input type="checkbox"/> Report of Work Done	Date Work Completed	<input type="checkbox"/> Redrilling or Repair	<input type="checkbox"/> Shooting
<input type="checkbox"/> Notice of Intent to Begin a Workover Project that may Qualify for a Tax Exemption Pursuant to NDCC Section 57-51.1-03.		<input type="checkbox"/> Casing or Liner	<input type="checkbox"/> Acidizing
Approximate Start Date		<input type="checkbox"/> Plug Well	<input type="checkbox"/> Fracture Treatment
		<input type="checkbox"/> Supplemental History	<input type="checkbox"/> Change Production Method
		<input type="checkbox"/> Temporarily Abandon	<input type="checkbox"/> Reclamation
		<input checked="" type="checkbox"/> Other	Suspension of Drilling

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

24-HOUR PRODUCTION RATE

Before	After
Oil	Bbls
Water	Bbls
Gas	MCF

Name of Contractor(s) Advanced Energy Services			
Address	City	State	Zip Code

DETAILS OF WORK

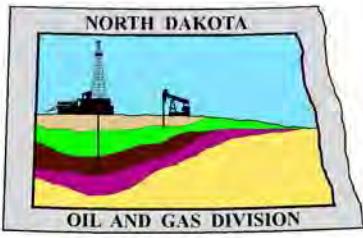
Oasis Petroleum North America LLC requests permission for suspension of drilling for up to 90 days for the referenced well under NDAC 43-02-03-55. Oasis Petroleum North America LLC intends to drill the surface hole with freshwater based drilling mud and set surface casing with a small drilling rig and 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 LLC will plug and abandon the well and reclaim the well site if the well is not drilled by the larger rotary rig within 90 days after spudding the well with the smaller drilling rig.

Notify NDIC inspector Richard Dunn at 701-770-3554 with spud and TD info.

Company Oasis Petroleum North America LLC	Telephone Number (281) 404-9563	
Address 1001 Fannin, Suite 1500		
City Houston	State TX	Zip Code 77002
Signature 	Printed Name Heather McCowan	
Title Regulatory Assistant	Date May 29, 2014	
Email Address hmccowan@oasispetroleum.com		

FOR STATE USE ONLY

<input type="checkbox"/> Received	<input checked="" type="checkbox"/> 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 Sections 17, 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 New Location	Type of Well Oil & Gas	Approximate Date Work Will Start 10 / 1 / 2013	Confidential Status No
Operator OASIS PETROLEUM NORTH AMERICA LLC		Telephone Number 281-404-9563	
Address 1001 Fannin Suite 1500		City Houston	
		State TX Zip Code 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 KLINE FEDERAL			Well Number 5300 41-18 12TX				
Surface Footages 434 F S L 237 F W L		Qtr-Qtr LOT4	Section 18	Township 153 N	Range 100 W	County McKenzie	
Longstring Casing Point Footages 244 F S L 816 F W L		Qtr-Qtr LOT4	Section 18	Township 153 N	Range 100 W	County McKenzie	
Longstring Casing Point Coordinates From Well Head 190 S From WH 579 E From WH		Azimuth 105.6 °	Longstring Total Depth 11189 Feet MD 10832 Feet TVD				
Bottom Hole Footages From Nearest Section Line 200 F S L 202 F E L		Qtr-Qtr LOT4	Section 17	Township 153 N	Range 100 W	County McKenzie	
Bottom Hole Coordinates From Well Head 234 S From WH 10050 E From WH		KOP Lateral 1 10355 Feet MD		Azimuth Lateral 1 90 °		Estimated Total Depth Lateral 1 20668 Feet MD 10849 Feet TVD	
Latitude of Well Head 48 ° 04 ' 7.55 "	Longitude of Well Head -103 ° 36 ' 11.95 "	NAD Reference NAD83		Description of Spacing Unit: Sec 17,18,19,&20 T153N-R100W (Subject to NDIC Approval)			
Ground Elevation 2056 Feet Above S.L.	Acres in Spacing/Drilling Unit 2560	Spacing/Drilling Unit Setback Requirement 0 Feet N/S 200 Feet E/W		Industrial Commission Order 23752			
North Line of Spacing/Drilling Unit 10544 Feet	South Line of Spacing/Drilling Unit 9306 Feet	East Line of Spacing/Drilling Unit 10527 Feet		West Line of Spacing/Drilling Unit 10520 Feet			
Objective Horizons Three Forks B1						Pierre Shale Top 1972	
Proposed Surface Casing	Size 9 - 5/8 "	Weight 36 Lb./Ft.	Depth 2072 Feet	Cement Volume 749 Sacks	NOTE: Surface hole must be drilled with fresh water and surface casing must be cemented back to surface.		
Proposed Longstring Casing	Size 7 - "	Weight(s) 29/32 Lb./Ft.	Longstring Total Depth 11189 Feet MD 10832 Feet TVD		Cement Volume 760 Sacks	Cement Top 3971 Feet	Top Dakota Sand 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) Invert				Drilling Mud Type (Lateral) Salt Water Gel			
Survey Type in Vertical Portion of Well MWD Every 100 Feet		Survey Frequency: Build Section 30 Feet		Survey Frequency: Lateral 90 Feet		Survey Contractor 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, Plots**

Lateral 2

KOP Lateral 2 Feet MD	Azimuth Lateral 2 °	Estimated Total Depth Lateral 2 Feet MD Feet TVD			KOP Coordinates From Well Head From WH From WH		
Formation Entry Point Coordinates From Well Head From WH		Bottom Hole Coordinates From Well Head From WH			From WH		
KOP Footages From Nearest Section Line F L		Qtr-Qtr	Section	Township N	Range W	County	
Bottom Hole Footages From Nearest Section Line 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		Bottom Hole Coordinates From Well Head From WH			From WH		
KOP Footages From Nearest Section Line F L		Qtr-Qtr	Section	Township N	Range W	County	
Bottom Hole Footages From Nearest Section Line 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		Bottom Hole Coordinates From Well Head From WH			From WH		
KOP Footages From Nearest Section Line F L		Qtr-Qtr	Section	Township N	Range W	County	
Bottom Hole Footages From Nearest Section Line 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		Bottom Hole Coordinates From Well Head From WH			From WH		
KOP Footages From Nearest Section Line F L		Qtr-Qtr	Section	Township N	Range W	County	
Bottom Hole Footages From Nearest Section Line 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 McCowanTitle
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.

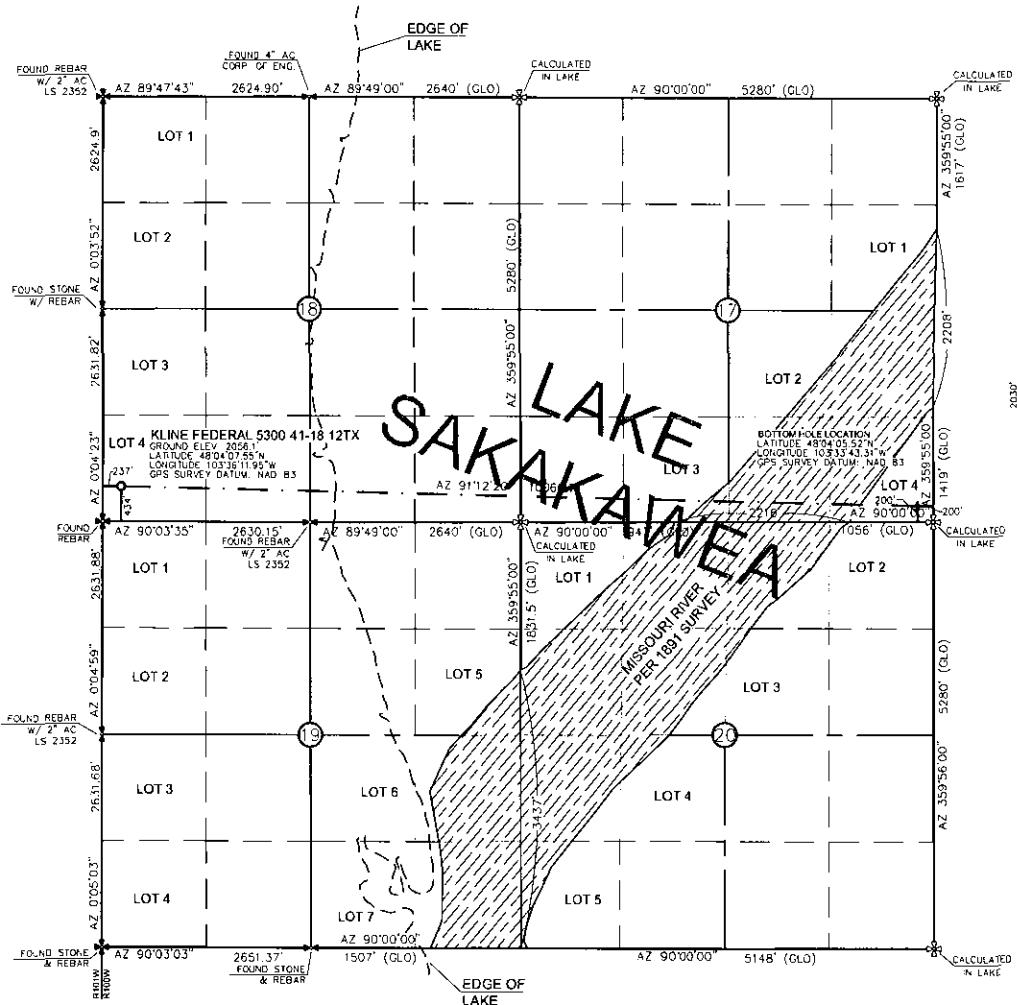
As previously stated in our March 13, 2014 letter, North Dakota Administrative Code Section 33-20-02.1-01 states in part that every person who transports solid waste (which includes oil and gas exploration and production wastes) is required to have a valid permit issued by the North Dakota Department 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

WELL LOCATION PLAT
 OASIS PETROLEUM NORTH AMERICA, LLC
 1001 FANNIN, SUITE 1600, 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

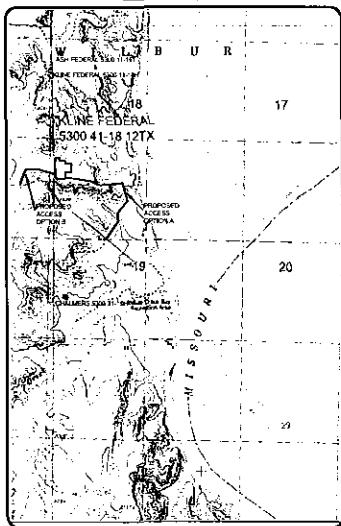


- MONUMENT - RECOVERED



- MONUMENT - NOT RECOVERED

VICINITY MAP



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4/15/14 AND THE ORIGINAL
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 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

ROBERT L. PROCIVE 2884LS

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1/8



SHEET NO.

Interstate Engineering, Inc.
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 Sidney, NE 69162-0648
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 Other offices in Montana, 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.C. Project No.: S14-06-061-02
 Checked By: B.H.C. 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.	
	TOTAL LATERA		TOTAL LATERA	9,479'	KB ELEV:	2082	
PROGNOSIS:	Based on 2,082' KB(est)		LOGS:	Type	Interval		
MARKER	DEPTH (Surf Loc)	DATUM (Surf Loc)		OH Logs: Triple Combo KOP to Kirby (or min run of 1800' whichever is greater); GR/Res to BSC; GR to surf; CND through the Dakota			
				CBL/GR: Above top of cement/GR to base of casing			
				MWD GR: KOP to lateral TD			
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		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	
Laterals:	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

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							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% CaCl₂ 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

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							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

Size	Interval	Weight	Grade	Coupling	I.D.	Drift	Make-up Torque (ft-lbs)		
							Minimum	Optimum	Max
4-1/2"	10,305' – 20,668'	11.6	P-110	BTC	4.000"	3.875"			

Interval	Description	Collapse (psi) a	Burst (psi) b	Tension (1000 lbs) c	Cost per ft
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.
 Burst pressure based on 9000 psi treating pressure with 10.2 ppg internal fluid gradient and 9 ppg external fluid gradient @ 10,832' TVD.
- b) Based on string weight in 9.5 ppg fluid (Buoyed weight: 103k lbs.) plus 100k lbs overpull.
- 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

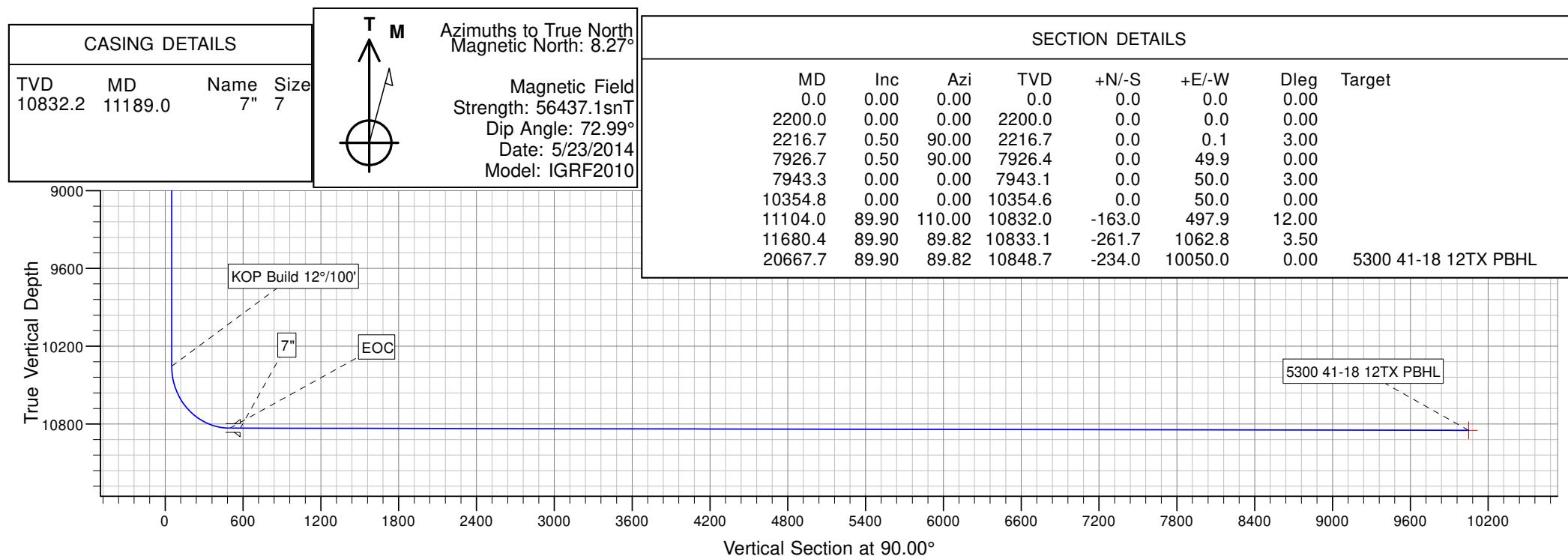
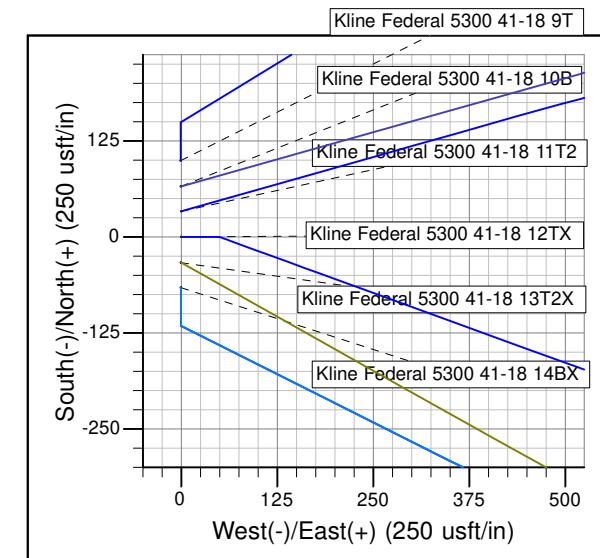
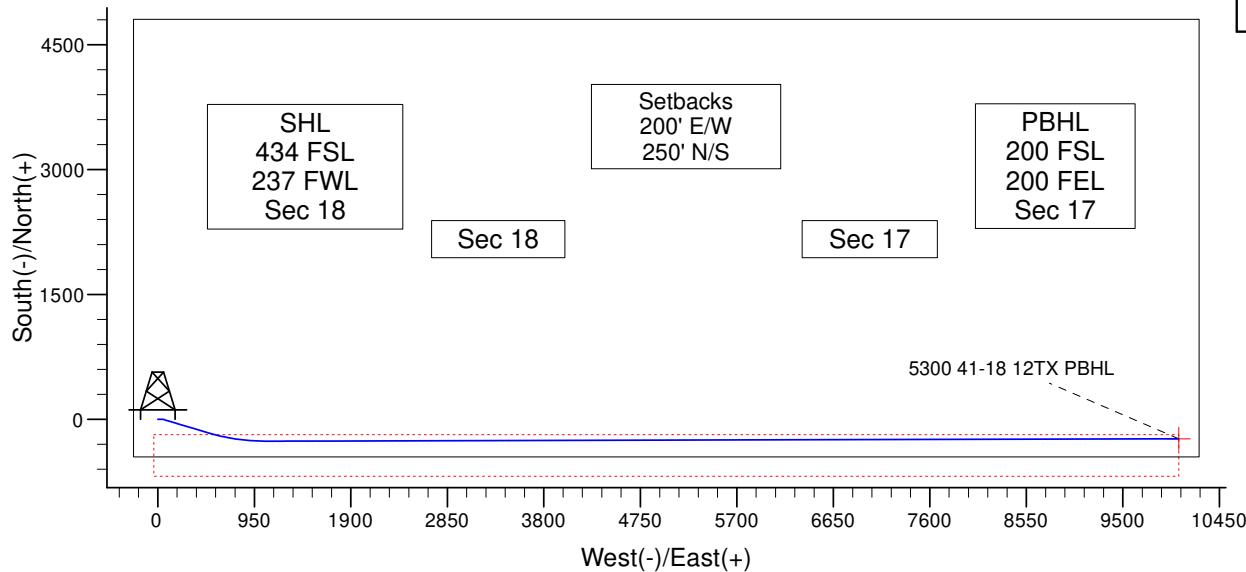


Project: Indian Hills
 Site: 153N-100W-17/18
 Well: Kline Federal 5300 41-18 12TX
 Wellbore: Kline Federal 5300 41-18 12TX
 Design: Design #2



WELL DETAILS: Kline Federal 5300 41-18 12TX

Northing 405136.64	Easting 1209968.21	Ground Level: 2057.0
		Latitude 48° 4' 7.550 N
		Longitude 103° 36' 11.950 W





Ryan Directional Services

Planning Report



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
Geo Datum:	North American Datum 1983
Map Zone:	North Dakota Northern Zone

Site	153N-100W-17/18
Site Position:	Northing:
From: Lat/Long	Easting:
Position Uncertainty: 0.0 usft	Slot Radius: 13-3/16 "

System Datum:

Mean Sea Level

Latitude:

48° 4' 45.380 N

Longitude:

103° 36' 10.380 W

Grid Convergence:

-2.31 °

Well	Kline Federal 5300 41-18 12TX
Well Position	+N/-S -3,833.2 usft
	+E/-W -106.6 usft
Position Uncertainty	2.0 usft

Northing:

408,962.44 usft

Easting:

1,210,229.18 usft

Slot Radius:

13-3/16 "

Latitude:

48° 4' 45.380 N

Longitude:

103° 36' 10.380 W

Grid Convergence:

-2.31 °

Wellhead Elevation:

405,136.63 usft

Latitude:

48° 4' 7.550 N

Longitude:

103° 36' 11.950 W

Ground Level:

2,057.0 usft

Wellbore	Kline Federal 5300 41-18 12TX
Magnetics	Model Name
	IGRF2010
Sample Date	5/23/2014
Declination (°)	8.27
Dip Angle (°)	72.99
Field Strength (nT)	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	

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 (°)
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 PB#



Ryan Directional Services

Planning Report



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



Ryan Directional Services

Planning Report



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



Ryan Directional Services

Planning Report



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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)
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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



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Design:	Design #2		

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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



Ryan Directional Services

Planning Report



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	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		



Ryan Directional Services

Planning Report



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			Comment
		+N/S (usft)	+E/W (usft)		
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

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		Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance			Separation Factor	Warning
Site Name	Offset Well - Wellbore - Design			Between Centres (usft)	Between Ellipses (usft)			
153N-100W-17/18	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											Offset Site Error:	0.0 usft	
153N-100W-17/18 - Kline Federal 5300 41-18 10B - Kline Federal 5300 41-18 10B - Design #1											Offset Well Error:	2.0 usft	
Survey Program:		0-MWD	Reference		Offset		Semi Major Axis			Distance			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Hightside Toolface (°)	Offset Wellbore Centre +N/S (usft)	+E/W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
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 convergent 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		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
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 convergent 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				Distance								Offset Well Error:	2.0 usft
Reference		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
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 convergent 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				Distance								Offset Well Error:	2.0 usft
Reference		Offset		Semi Major Axis									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
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 convergent 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				Offset		Semi Major Axis		Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	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 convergent 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		Offset		Semi Major Axis		Distance								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset	Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
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 convergent 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		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	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 convergent 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		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	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	-146.21	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	-146.21	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	-146.21	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	-146.21	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	-146.21	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	-146.21	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	-146.21	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	-146.21	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	-146.21	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	-146.21	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	-146.21	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	-146.21	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	-146.21	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	-146.21	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	-146.21	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	-146.21	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	-146.21	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	-146.21	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	-146.21	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	-146.21	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	-146.21	33.4	0.0	60.1	16.4	43.72	1.375 Level 3	

CC - Min centre to center distance or convergent 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				Distance								Offset Well Error:	2.0 usft	
Reference		Offset		Semi Major Axis										
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	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 convergent 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		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	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 convergent 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		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	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

CC - Min centre to center distance or convergent 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 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		Offset		Semi Major Axis		Distance								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset	Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	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 convergent 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 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		Offset		Semi Major Axis		Distance								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset	Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,000.0	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 convergent 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 13T2X - Kline Federal 5300 41-18 13T2X - Design #1												Offset Site Error:	0.0 usft
Survey Program: 0-MWD				Distance								Offset Well Error:	2.0 usft
Reference		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
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 convergent 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 13T2X - Kline Federal 5300 41-18 13T2X - Design #1												Offset Site Error:	0.0 usft		
Survey Program: 0-MWD		Distance												Offset Well Error:	2.0 usft
Reference		Offset		Semi Major Axis				Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	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 convergent 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 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		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,900.0	10,843.9	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

CC - Min centre to center distance or convergent 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		Offset		Semi Major Axis				Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
0.0	0.0	0.0	0.0	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 convergent 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		Offset		Semi Major Axis				Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,100.0	5,099.9	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 convergent 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				Distance								Offset Well Error:	2.0 usft
Reference		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
10,100.0	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 convergent 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		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	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 convergent 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		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,900.0	10,843.9	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

CC - Min centre to center distance or convergent 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												Offset Site Error:	0.0 usft	
Survey Program: 0-MWD												Offset Well Error:	2.0 usft	
Reference		Offset		Semi Major Axis		Distance								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset	Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	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	3,600.0	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	3,700.0	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	3,800.0	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	3,900.0	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	4,000.0	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	4,100.0	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	4,200.0	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	4,300.0	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	4,400.0	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	4,500.0	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	4,600.0	4,599.3	4,599.2	10.1	9.7	103.53	-86.7	0.0	89.2	69.4	19.79	4.507		
4,700.0	4,700.0	4,699.3	4,699.2	10.3	9.9	103.94	-87.6	0.0	90.3	70.0	20.21	4.466		
4,800.0	4,800.0	4,799.3	4,799.2	10.5	10.1	104.33	-88.5	0.0	91.3	70.7	20.64	4.425		
4,900.0	4,900.0	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 convergent 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												Offset Site Error:	0.0 usft		
Survey Program: 0-MWD		Distance												Offset Well Error:	2.0 usft
Reference		Offset		Semi Major Axis				Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,000.0	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	7,998.9	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 convergent 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												Offset Site Error:	0.0 usft		
Survey Program: 0-MWD		Distance												Offset Well Error:	2.0 usft
Reference		Offset		Semi Major Axis				Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
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 convergent 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												Offset Site Error:	0.0 usft		
Survey Program: 0-MWD		Distance												Offset Well Error:	2.0 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Semi Major Axis Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	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 convergent 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												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	2.0 usft
Reference				Offset		Semi Major Axis		Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
17,800.0	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

CC - Min centre to center distance or convergent 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 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		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	2.0	2.0	-0.39	99.3	-0.7	99.3	95.3	4.00	24.802	
100.0	100.0	100.0	100.0	2.0	2.0	-0.39	99.3	-0.7	99.3	95.2	4.05	24.533	
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 convergent 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 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		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.0	5,099.9	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	7,943.1	7,943.1	17.4	17.8	-108.74	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 convergent 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 9T - Kline Federal 5300 41-18 9T - Design #1												Offset Site Error:	0.0 usft
Survey Program: 0-MWD				Distance								Offset Well Error:	2.0 usft
Reference		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface		Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor
10,100.0	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	10,880.0	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 convergent 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 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		Offset		Semi Major Axis				Distance					
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	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	1,069.3	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 convergent 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

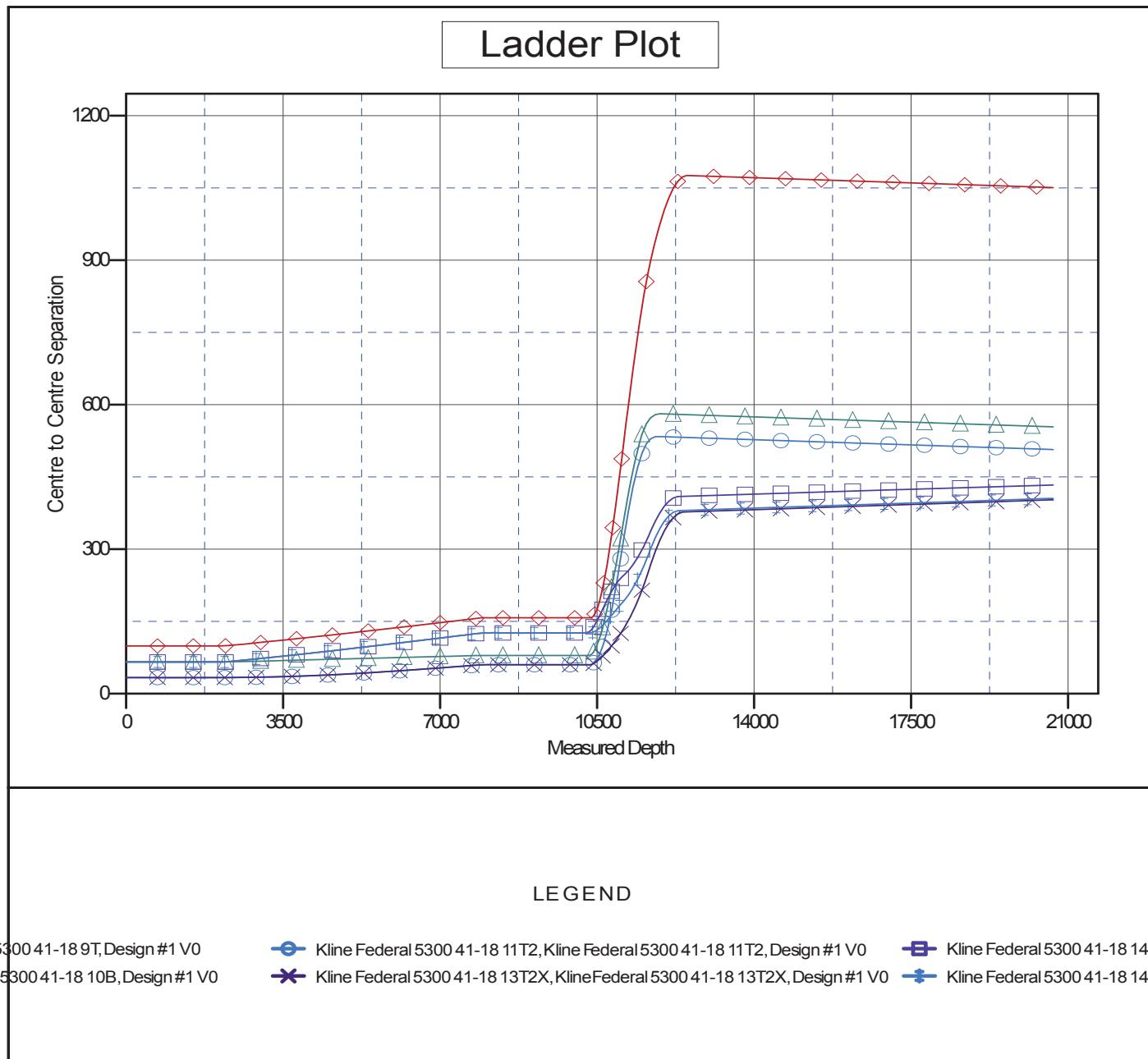
Offset Design 153N-100W-17/18 - Kline Federal 5300 41-18 9T - Kline Federal 5300 41-18 9T - Design #1												Offset Site Error:	0.0 usft
Survey Program: 0-MWD												Offset Well Error:	2.0 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	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	

CC - Min centre to center distance or convergent 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

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

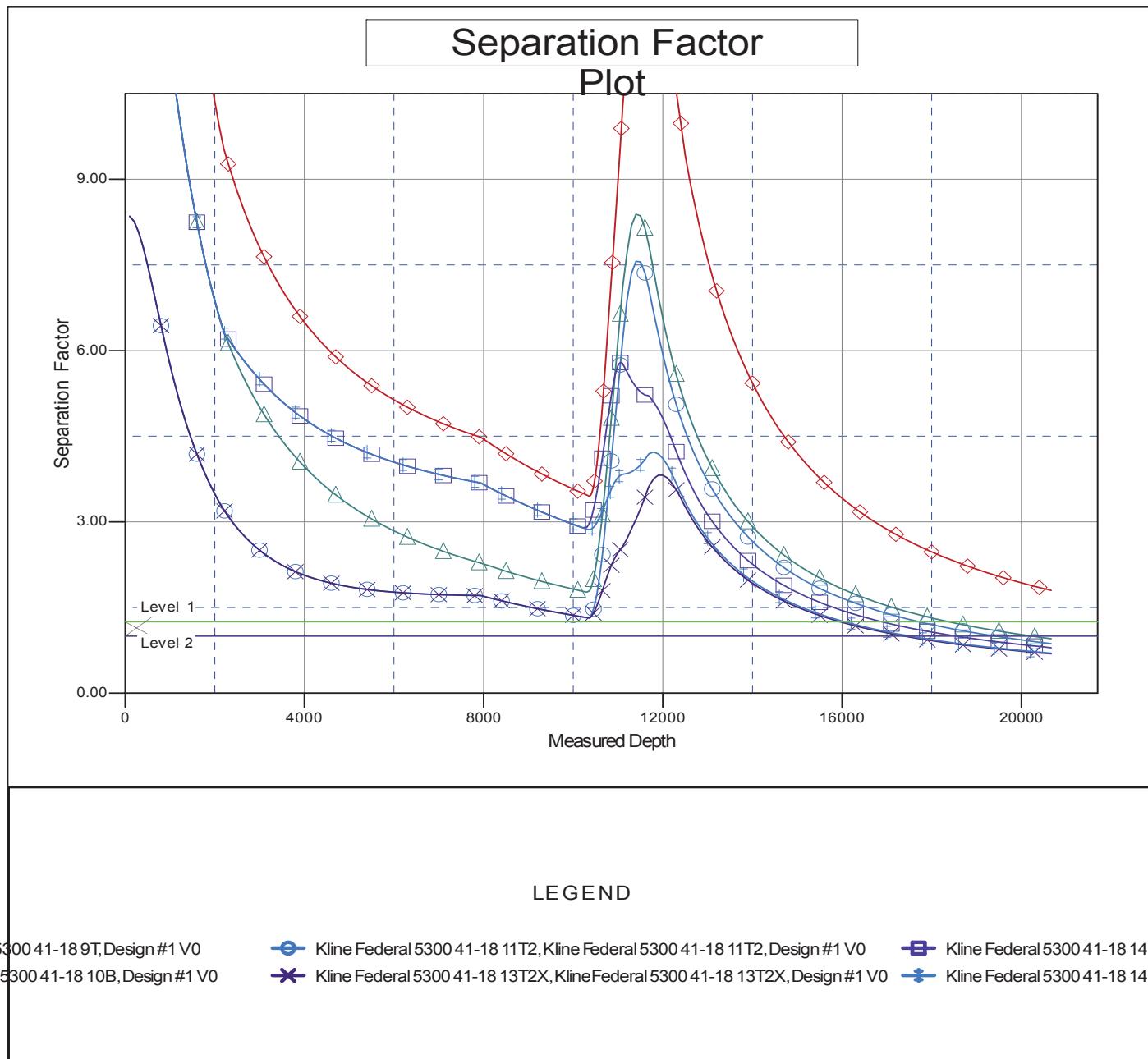
Coordinates are relative to: Kline Federal 5300 41-18 12TX
Coordinate System is US State Plane 1983, North Dakota Northern Zone
Grid Convergence at Surface is: -2.31°



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

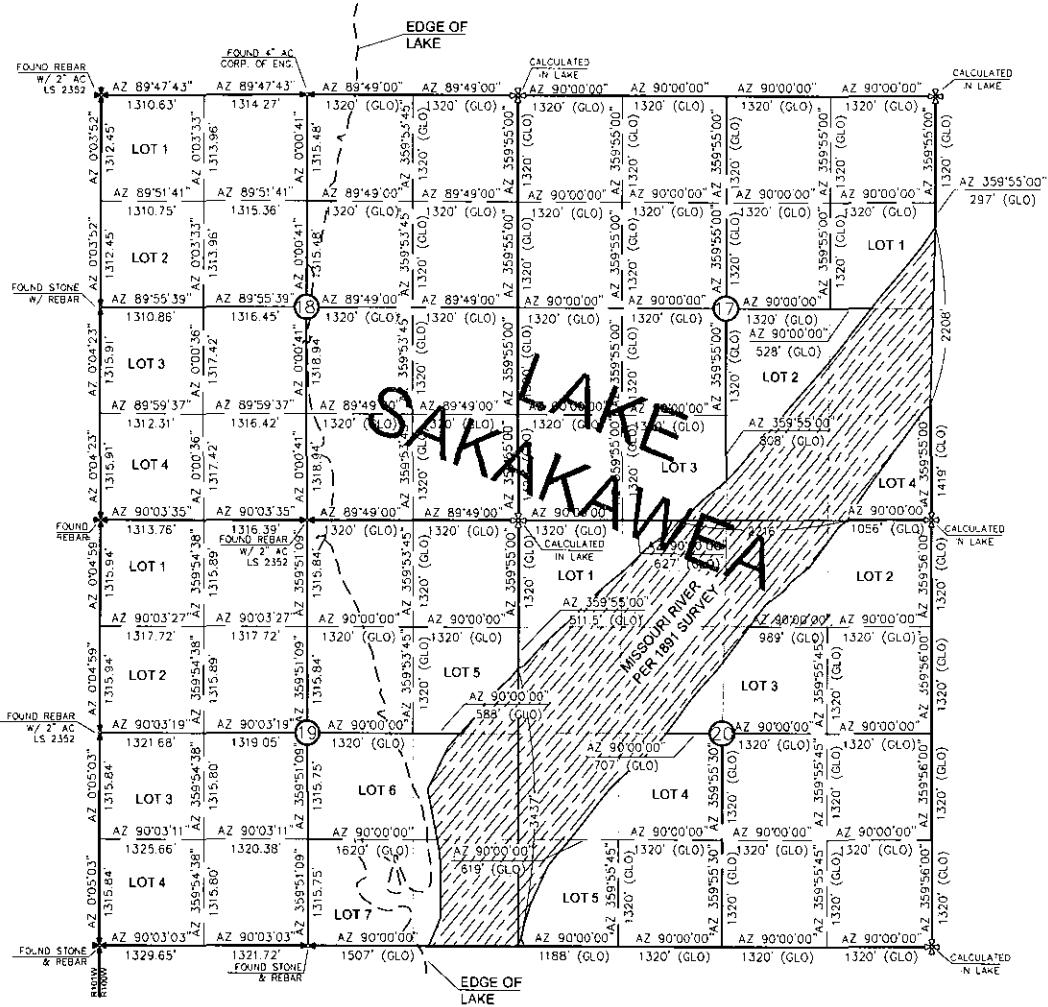
Reference Depths are relative to WELL @ 2082.0usft (Original Well Ele
 Offset Depths are relative to Offset Datum
 Central Meridian is 100° 30' 0.000 W

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°

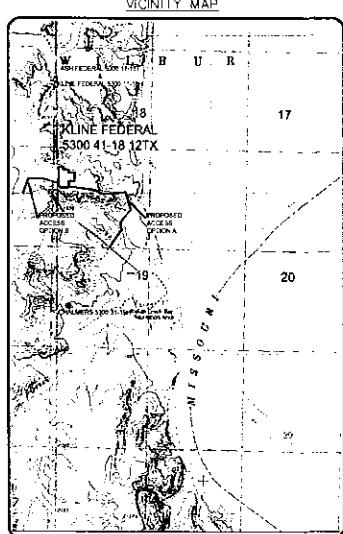


SECTION BREAKDOWN
SIS PETROLEUM NORTH AMERICA, LLC
FANNIN, SUITE 1500, HOUSTON, TX 77002

"KLINE FEDERAL 5300 41-18 12Z"
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



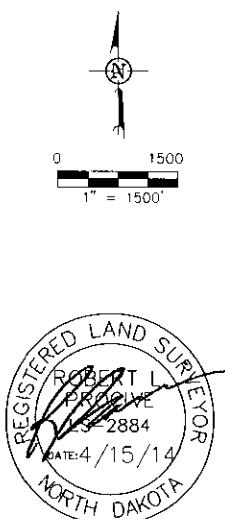
 - MONUMENT - RECOVERED
 - MONUMENT - NOT RECOVERED



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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 AND ALL OTHERS ARE COMPUTED FROM
THOSE CORNERS FOUND AND BASED ON G.L.O.
DATA. THE MAPPING ANGLE FOR THIS AREA IS
APPROXIMATELY 00'3".

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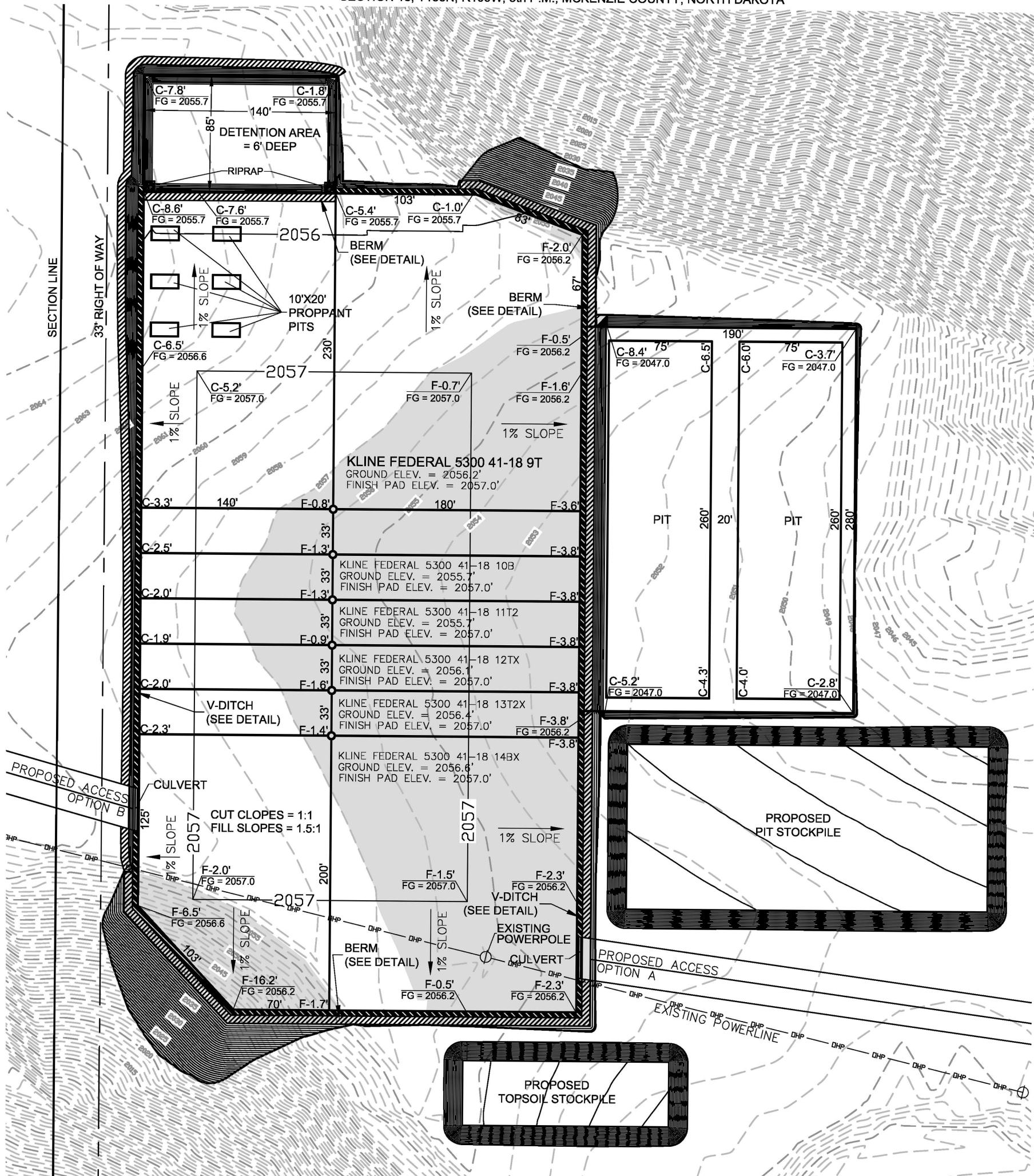
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OASIS PETROLEUM NORTH AMERICA, LLC
SECTION BREAKDOWN
SECTIONS 17, 18, 19, & 20, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA

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

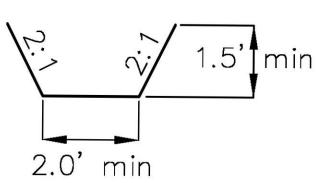


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NOTE: Pad dimensions shown are to
usable area, the v-ditch and berm
areas shall be built to the outside of
the pad dimensions.



V-DITCH DETAIL



Proposed Contours
Original Contours

BERM
DITCH

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

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0 80
1" = 80'

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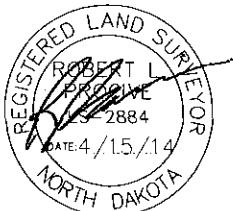
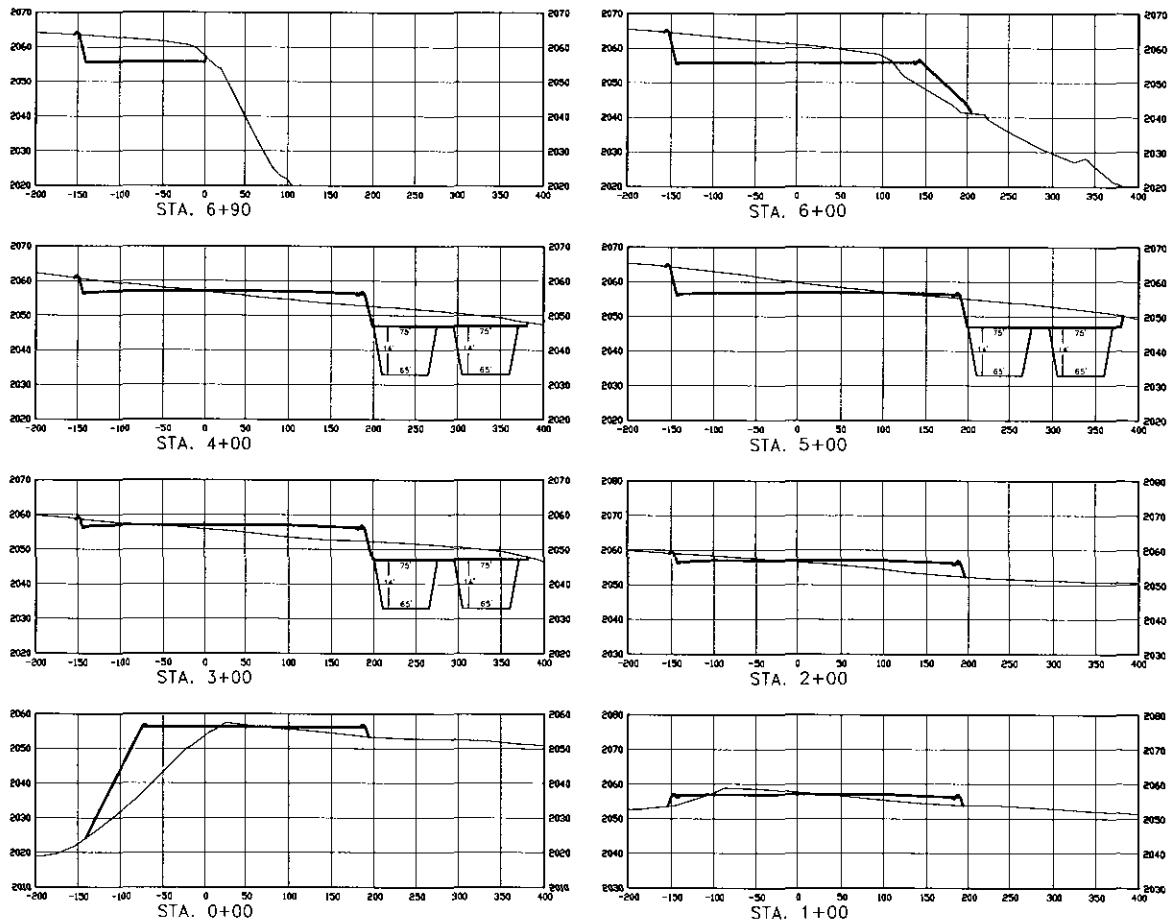
OASIS PETROLEUM NORTH AMERICA, LLC
PAD LAYOUT
SECTION 18, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.H.H. Project No.: S14-09-081.05
Checked By: D.D.K. Date: APRIL 2014

Revision No.	Date	By	Description

O:\V10\14\5300-09-081.05\Oasis Petroleum - Kline Federal 5300 41-18 9T.dwg - 4/15/2014 3:59 PM John Schmid

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



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SCALE
 HORIZ 1"=140'
 VERT 1"=35'

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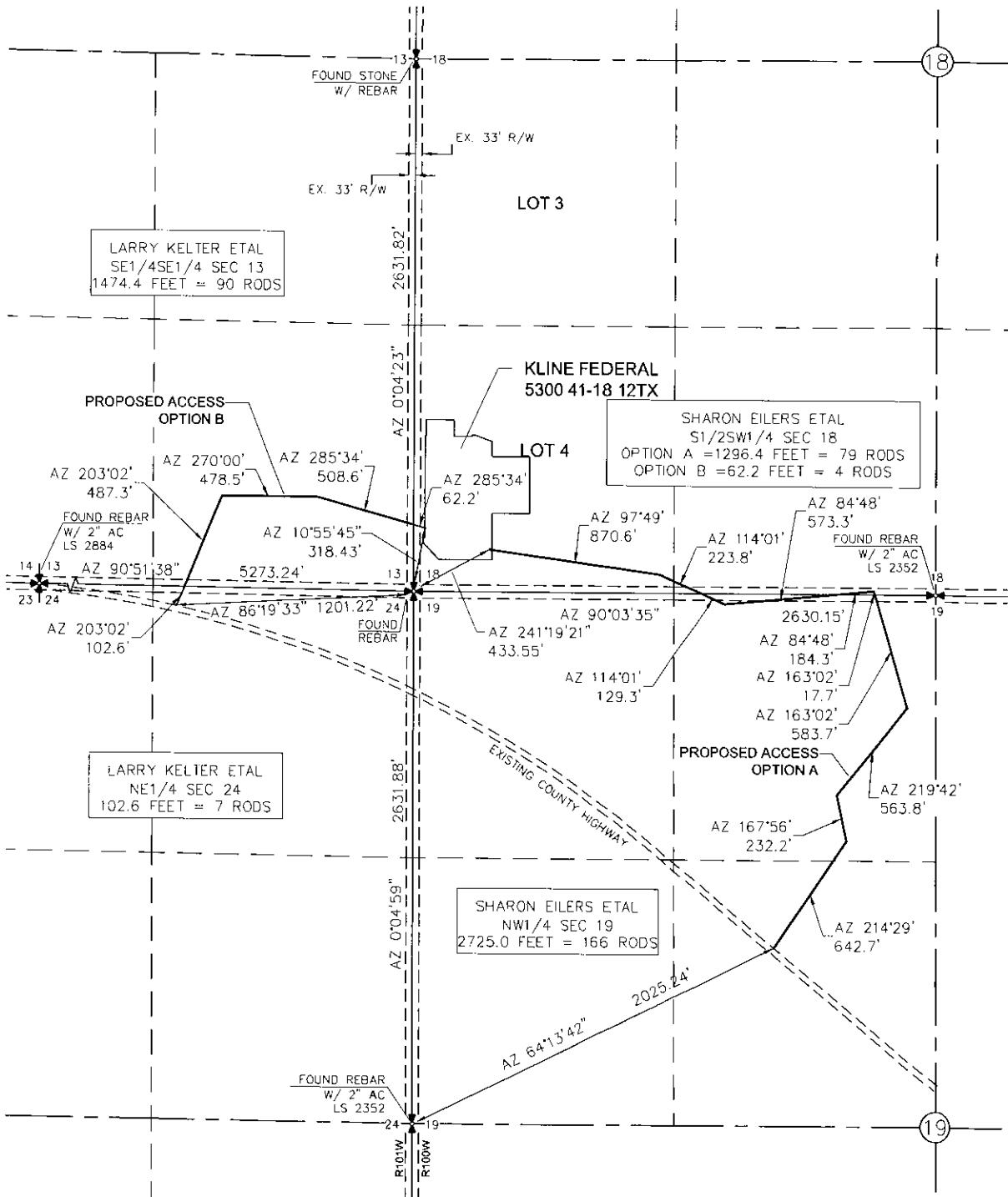
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OASIS PETROLEUM NORTH AMERICA, LLC
CROSS SECTIONS
 SECTION 18, T153N, R100W
 MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: B.K.H. Project No: 514-09-061.02
 Checked By: R.L.P. Date: APRIL 2014

Revisor No.	Date	By	Description

ACCESS APPROACH
OASIS PETROLEUM NORTH AMERICA, LLC
1001 FANNIN, SUITE 1500, HOUSTON, TX 77002
"KLINE FEDERAL, 5300 41-18 127X"
434 FEET FROM SOUTH LINE AND 237 FEET FROM WEST LINE
SECTION 18, T153N, R100W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

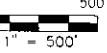


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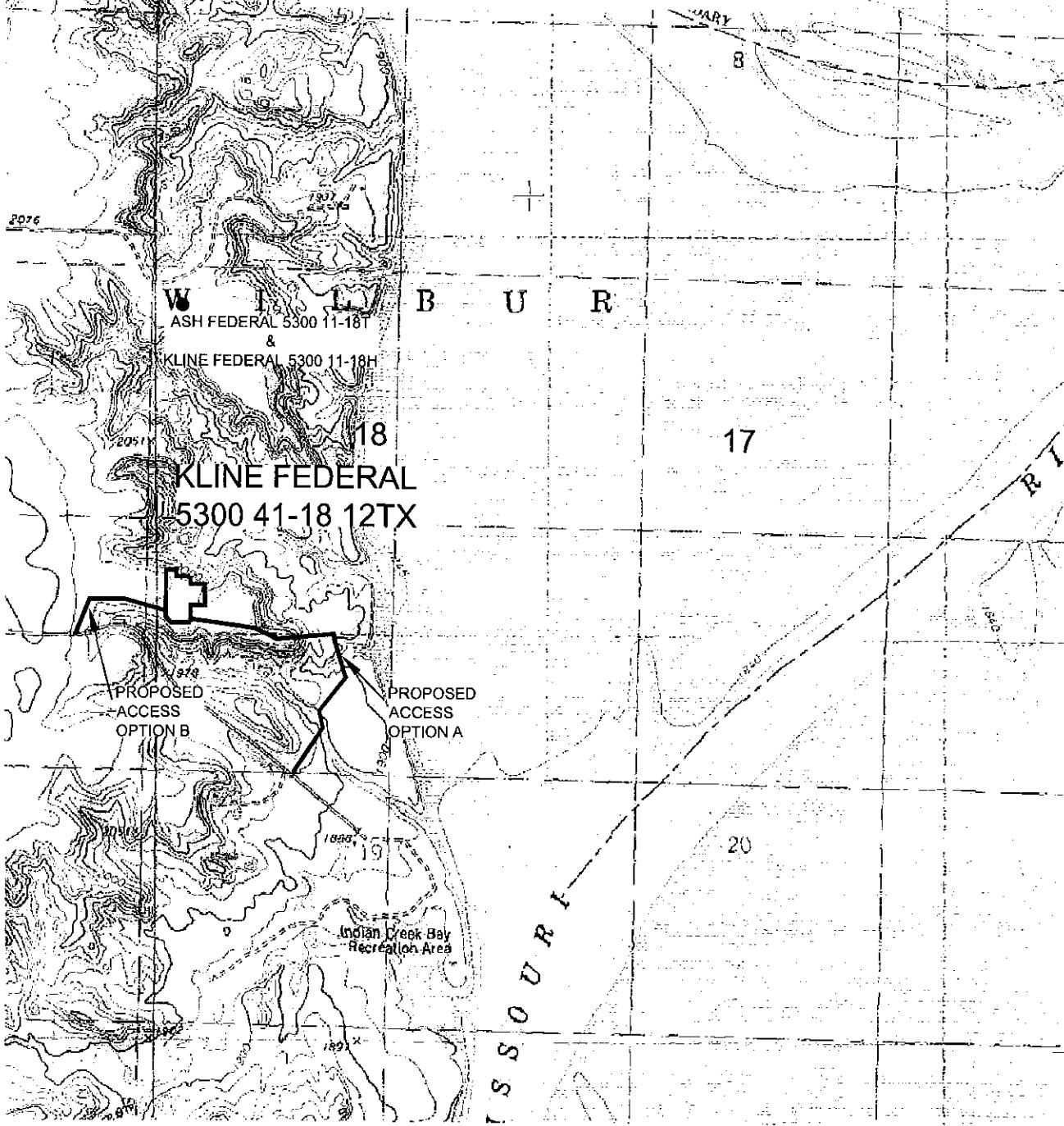
NOTE: All utilities shown are preliminary only, a complete utilities location is recommended before construction.

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WILLIAMS
FRENZIE
C.R.

OASIS PETROLEUM NORTH AMERICA, LLC
KLINE FEDERAL 5300 41-18 12TX
434' FSL/237' FWL
QUAD LOCATION MAP
SECTION 18, T153N, R100W
MCKENZIE COUNTY, NORTH DAKOTA



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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

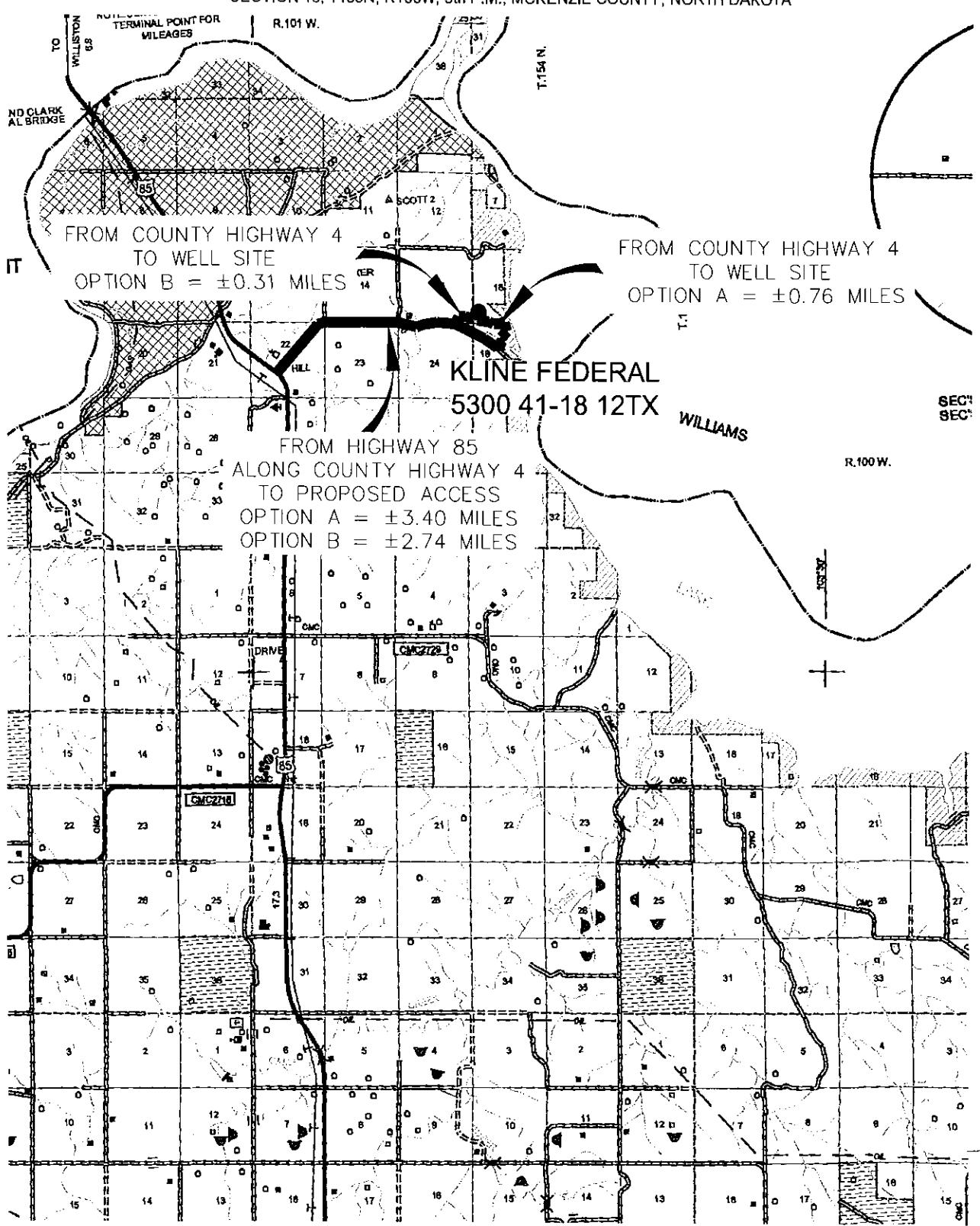
Revision No.	Date	By	Description

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



SCALE: 1" = 2 MILE

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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	<u>18,900</u>
	39,582
EMBANKMENT	11,538
PLUS SHRINKAGE (30%)	<u>3,461</u>
	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

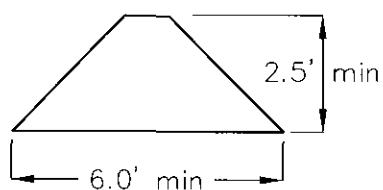
FILL END SLOPES AT 1.5:1

WELL SITE LOCATION

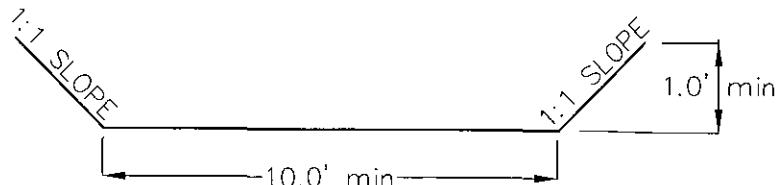
434' FSL

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.I.P. Date: APRIL 2014

Revision No.	Date	By	Description



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,

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

Heather McCowan
Regulatory Assistant
Oasis Petroleum North America, LLC

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 SW $\frac{1}{4}$ SW $\frac{1}{4}$, Township 153 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

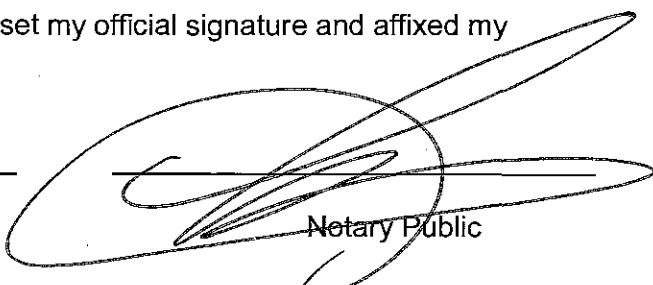
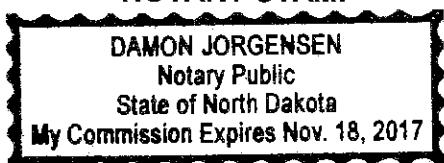
STATE OF NORTH DAKOTA }
 }
) SS.
COUNTY OF WILLIAMS }

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 STAMP


Notary Public