CORRECTION #1

1144563

Confidentiality Requested:
☐ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1
August 2013
Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM

WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 34654
Name: Nemaha Oil and Gas LLC
Address 1: 110 W. 7TH ST., STE 1800
Address 2:
City: TULSA State: OK Zip: 74119 + _ _ _ _
Contact Person: Stephen Bennitt
Phone: (918) 236-2600
CONTRACTOR: License # 34500
Name: Nomac Drilling, LLC
Wellsite Geologist: Mack Blackford
Purchaser:

Designate Type of Completion:
☑ New Well ☐ Re-Entry ☐ Workover
☑ Oil ☐ WSW ☐ SWD ☐ SIOW
☐ Gas ☐ D&A ☐ ENHR ☐ SIGW
☐ OG ☐ GSW ☐ Temp. Abd.
☐ CM *(Coal Bed Methane)*
☐ Cathodic ☐ Other *(Core, Expl., etc.)*:

If Workover/Re-entry: Old Well Info as follows:
Operator:
Well Name:
Original Comp. Date: Original Total Depth:
☐ Deepening ☐ Re-perf. ☐ Conv. to ENHR ☐ Conv. to SWD
☐ Plug Back ☐ Conv. to GSW ☐ Conv. to Producer

☐ Commingled Permit #:
☐ Dual Completion Permit #:
☐ SWD Permit #:
☐ ENHR Permit #:
☐ GSW Permit #:

12/13/2012	2/15/2013	3/16/2013
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-019-27279-01-00
Spot Description:
NE - NW - NE - NW Sec. 26 Twp. 34 S. R. 8 ☑ East ☐ West
125 Feet from ☑ North / ☐ South Line of Section
1780 Feet from ☐ East / ☑ West Line of Section
Footages Calculated from Nearest Outside Section Corner:
☐ NE ☑ NW ☐ SE ☐ SW
GPS Location: Lat: *(e.g. xx.xxxxx)*, Long: *(e.g. -xxx.xxxxx)*
Datum: ☐ NAD27 ☐ NAD83 ☐ WGS84
County: Chautauqua
Lease Name: Cooper Well #: 1A-26-34-8H
Field Name: Unnamed
Producing Formation: Mississippi Lime
Elevation: Ground: 1013 Kelly Bushing: 1029
Total Vertical Depth: 6393 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 700 Feet
Multiple Stage Cementing Collar Used? ☐ Yes ☑ No
If yes, show depth set: Feet
If Alternate II completion, cement circulated from:
feet depth to: w/ sx cmt.

Drilling Fluid Management Plan
(Data must be collected from the Reserve Pit)
Chloride content: 3000 ppm Fluid volume: 1500 bbls
Dewatering method used: Evaporated
Location of fluid disposal if hauled offsite:
Operator Name:
Lease Name: License #:
Quarter Sec. Twp. S. R. ☐ East ☐ West
County: Permit #:

AFFIDAVIT
I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY
☑ **Confidentiality Requested**
Date: 04/10/2013
☑ **Confidential Release Date:** 04/10/2015
☐ **Wireline Log Received**
☐ **Geologist Report Received**
☐ **UIC Distribution**
ALT ☑ **I** ☐ **II** ☐ **III** **Approved by:** NAOMI JAMES **Date:** 05/31/2013

CORRECTION #1
Page Two

1144563

Operator Name: Nemaha Oil and Gas LLC Lease Name: Cooper Well #: 1A-26-34-8H

Sec. 26 Twp. 34 S. R. 8 ☑ East ☐ West County: Chautauqua

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken ☐ Yes ☑ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☑ Yes ☐ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☐ Yes ☑ No

List All E. Logs Run:

☑ Log Formation (Top), Depth and Datum ☐ Sample

Name	Top	Datum
Attached	Attached	Attached

CASING RECORD ☑ New ☐ Used
Report all strings set-conductor, surface, intermediate, production, etc.

Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface	12.250	9.625	36	702	Class A	225	6% OWC, 2% CaCl, 2% Gel
Production	8.750	7.000	23	6393	Class A	660	2% Gel, 2% Salt, 0.8 Fluid Loss Add., 0.4

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
____ Perforate ____ Protect Casing ____ Plug Back TD ____ Plug Off Zone	-			
	-			

Did you perform a hydraulic fracturing treatment on this well? ☐ Yes ☐ No *(If No, skip questions 2 and 3)*

Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? ☐ Yes ☐ No *(If No, skip question 3)*

Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? ☐ Yes ☐ No *(If No, fill out Page Three of the ACO-1)*

Shots Per Foot	PERFORATION RECORD - Bridge Plugs Set/Type Specify Footage of Each Interval Perforated	Acid, Fracture, Shot, Cement Squeeze Record *(Amount and Kind of Material Used)*	Depth
Attached	Attached	Attached	Attached

TUBING RECORD: Size: 4.500 Set At: 2750 Packer At:

Liner Run: ☐ Yes ☑ No

Date of First, Resumed Production, SWD or ENHR. 03/16/2013

Producing Method: ☑ Flowing ☐ Pumping ☐ Gas Lift ☐ Other *(Explain)*

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
	0	0	8000	0	0

DISPOSITION OF GAS:
☐ Vented ☐ Sold ☐ Used on Lease
(If vented, Submit ACO-18.)

METHOD OF COMPLETION:
☐ Open Hole ☑ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*
☐ Other *(Specify)*

PRODUCTION INTERVAL:
4,843'
6,324'

Mail to: KCC - Conservation Division, 130 S. Market - Room 2078, Wichita, Kansas 67202

Form	ACO1 - Well Completion
Operator	Nemaha Oil and Gas LLC
Well Name	Cooper 1A-26-34-8H
Doc ID	1144563

Tops

Name	Top	Datum
Penn LS	634	395
Penn SS A	998	31
Penn SS B	1289	-260
Penn SS C	1502	-473
Penn SS D	1584	-555
Kansas City Group	1700	-671
Pawneed LS	2101	-1072
Cherokee (Penn) Shale	2247	-1218
Mississippi Lime	2631	-1602

Form	ACO1 - Well Completion
Operator	Nemaha Oil and Gas LLC
Well Name	Cooper 1A-26-34-8H
Doc ID	1144563

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
6	6323-6324,6249-6250,6175-6176,6101-6102,6027-6028,5953-5954,5879-5880	25,704 GA, 192,066 GW, 46,872# Sand	2,666' TVD
6	5805-5806,5731-5732,5657-5658,5583-5584,5509-5510,5435-5436,5361-5362	18,522 GA, 161,826 GW, 43,600# Sand	2.657' TVD
6	5287-5288.5213-5214.5139-2140.5065-5066.4991-4992.4917-4918,4843-4844	18,522 GA, 166,782 GW, 43,604# Sand	2,657' TVD
6	4643-4644,4578-4579,4513-4514,4448-4449	6,510 GA, 8,610 GW	2,652' TVD
6	4383-4384,4318-4319,4253-4254,4188-4189	5,208 GA, 9,366 GW	2,643' TVD
6	4123-4124,4058-4059,3993-3994,3928-3929	4,032 GA, 8,862 GW	2,639' TVD
6	3863-3864,3798-3799,3733-3734,3668-3669	5,040 GA, 7,182 GW	2,641' TVD

Form	ACO1 - Well Completion
Operator	Nemaha Oil and Gas LLC
Well Name	Cooper 1A-26-34-8H
Doc ID	1144563

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
6	3603-3604,3538-3539,3473-3474,3408-3409	5,460 GA, 6,804 GW	2,644' TVD
6	3343-3344,3278-3279,3213-3214,3148-3149	5,292 GA, 6,048 GW	2,638' TVD

Summary of Changes

Lease Name and Number: Cooper 1A-26-34-8H

API/Permit #: 15-019-27279-01-00

Doc ID: 1144563

Correction Number: 1

Approved By: NAOMI JAMES

Field Name	Previous Value	New Value
Approved Date	04/11/2013	05/31/2013
Perf_Depth_1	2,666' TVD	Attached
Perf_Depth_2	2.657' TVD	
Perf_Depth_3	2,657' TVD	
Perf_Material_1	25,704 GA, 192,066 GW, 46,872# Sand	Attached
Perf_Material_2	18,522 GA, 161,826 GW, 43,600# Sand	
Perf_Material_3	18,522 GA, 166,782 GW, 43,604# Sand	
Perf_Record_1	6323-6324,6249-6250,6175-6176,6101-6102,6027-6028,5953-5805-5806,5731-5732,5657-5658,5583-5584,5509-5510,5435-5287-5288.5213-5214.5139-2140.5065-5066.4991-4992.4917-	Attached
Perf_Record_2		
Perf_Record_3		

Summary of changes for correction 1 continued

Field Name	Previous Value	New Value
Perf_Shots_1	6	Attached
Perf_Shots_2	6	
Perf_Shots_3	6	
Save Link	../../kcc/detail/operatorEditDetail.cfm?docID=1132567	../../kcc/detail/operatorEditDetail.cfm?docID=1144563

1132567

CONFIDENTIAL

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1
June 2009
Form Must Be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM

WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 34654
Name: Nemaha Oil and Gas LLC
Address 1: 110 W. 7TH ST., STE 1800
Address 2:
City: TULSA State: OK Zip: 74119 + _ _ _ _
Contact Person: Stephen Bennitt
Phone: (918) 236-2600
CONTRACTOR: License # 34500
Name: Nomac Drilling, LLC
Wellsite Geologist: Mack Blackford
Purchaser:

Designate Type of Completion:

- [x] New Well
- [ ] Re-Entry
- [ ] Workover

- [x] Oil
- [ ] WSW
- [ ] SWD
- [ ] SIOW
- [ ] Gas
- [ ] D&A
- [ ] ENHR
- [ ] SIGW
- [ ] OG
- [ ] GSW
- [ ] Temp. Abd.
- [ ] CM *(Coal Bed Methane)*
- [ ] Cathodic
- [ ] Other *(Core, Expl., etc.)*:

If Workover/Re-entry: Old Well Info as follows:

Operator:
Well Name:
Original Comp. Date: Original Total Depth:

- [ ] Deepening
- [ ] Re-perf.
- [ ] Conv. to ENHR
- [ ] Conv. to SWD
- [ ] Conv. to GSW
- [ ] Plug Back: Plug Back Total Depth
- [ ] Commingled Permit #:
- [ ] Dual Completion Permit #:
- [ ] SWD Permit #:
- [ ] ENHR Permit #:
- [ ] GSW Permit #:

12/13/2012	2/15/2013	3/16/2013
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No. 15 - 15-019-27279-01-00
Spot Description:
NE - NW - NE - NW Sec. 26 Twp. 34 S. R. 8 [x] East [ ] West
125 Feet from [x] North / [ ] South Line of Section
1780 Feet from [ ] East / [x] West Line of Section

Footages Calculated from Nearest Outside Section Corner:
[ ] NE [x] NW [ ] SE [ ] SW

County: Chautauqua
Lease Name: Cooper Well #: 1A-26-34-8H
Field Name: Unnamed
Producing Formation: Mississippi Lime
Elevation: Ground: 1013 Kelly Bushing: 1029
Total Depth: 6393 Plug Back Total Depth:
Amount of Surface Pipe Set and Cemented at: 700 Feet
Multiple Stage Cementing Collar Used? [ ] Yes [x] No
If yes, show depth set: Feet
If Alternate II completion, cement circulated from:
feet depth to: w/ sx cmt.

Drilling Fluid Management Plan
(Data must be collected from the Reserve Pit)

Chloride content: 3000 ppm Fluid volume: 1500 bbls
Dewatering method used: Evaporated

Location of fluid disposal if hauled offsite:

Operator Name:
Lease Name: License #:
Quarter Sec. Twp. S. R. [ ] East [ ] West
County: Permit #:

AFFIDAVIT

I am the affiant and I hereby certify that all requirements of the statutes, rules and regulations promulgated to regulate the oil and gas industry have been fully complied with and the statements herein are complete and correct to the best of my knowledge.

Submitted Electronically

KCC Office Use ONLY

- [x] **Letter of Confidentiality Received**
  Date: 04/10/2013
- [ ] **Confidential Release Date:**
- [ ] **Wireline Log Received**
- [ ] **Geologist Report Received**
- [ ] **UIC Distribution**

ALT [x] I [ ] II [ ] III **Approved by:** NAOMI JAMES **Date:** 04/11/2013

Page Two

Operator Name: Nemaha Oil and Gas LLC Lease Name: Cooper Well #: 1A-26-34-8H

Sec. 26 Twp. 34 S. R. 8 ☑ East ☐ West County: Chautauqua

INSTRUCTIONS: Show important tops of formations penetrated. Detail all cores. Report all final copies of drill stems tests giving interval tested, time tool open and closed, flowing and shut-in pressures, whether shut-in pressure reached static level, hydrostatic pressures, bottom hole temperature, fluid recovery, and flow rates if gas to surface test, along with final chart(s). Attach extra sheet if more space is needed.

Final Radioactivity Log, Final Logs run to obtain Geophysical Data and Final Electric Logs must be emailed to kcc-well-logs@kcc.ks.gov. Digital electronic log files must be submitted in LAS version 2.0 or newer AND an image file (TIFF or PDF).

Drill Stem Tests Taken ☐ Yes ☑ No
(Attach Additional Sheets)

Samples Sent to Geological Survey ☑ Yes ☐ No

Cores Taken ☐ Yes ☑ No

Electric Log Run ☐ Yes ☑ No

Geologist Report / Mud Logs ☐ Yes ☐ No

List All E. Logs Run:

☑ Log Formation (Top), Depth and Datum ☐ Sample

Name	Top	Datum
Attached	Attached	Attached

CASING RECORD ☑ New ☐ Used
Report all strings set-conductor, surface, intermediate, production, etc.

Purpose of String	Size Hole Drilled	Size Casing Set (In O.D.)	Weight Lbs. / Ft.	Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
Surface	12.250	9.625	36	702	Class A	225	6% OWC, 2% CaCl, 2% Gel
Production	8.750	7.000	23	6393	Class A	660	2% Gel, 2% Salt, 0.8 Fluid Loss Add., 0.4

ADDITIONAL CEMENTING / SQUEEZE RECORD

Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
☐ Perforate ☐ Protect Casing ☐ Plug Back TD ☐ Plug Off Zone	-			
	-			

1. Did you perform a hydraulic fracturing treatment on this well? ☐ Yes ☐ No *(If No, skip questions 2 and 3)*
2. Does the volume of the total base fluid of the hydraulic fracturing treatment exceed 350,000 gallons? ☐ Yes ☐ No *(If No, skip question 3)*
3. Was the hydraulic fracturing treatment information submitted to the chemical disclosure registry? ☐ Yes ☐ No *(If No, fill out Page Three of the ACO-1)*

Date of first Production/Injection or Resumed Production/Injection: 03/16/2013

Producing Method: ☑ Flowing ☐ Pumping ☐ Gas Lift ☐ Other *(Explain)*

Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity
	0	0	8000	0	0

DISPOSITION OF GAS:
☐ Vented ☐ Sold ☐ Used on Lease
(If vented, Submit ACO-18.)

METHOD OF COMPLETION:
☐ Open Hole ☑ Perf. ☐ Dually Comp. *(Submit ACO-5)* ☐ Commingled *(Submit ACO-4)*

PRODUCTION INTERVAL:

Top	Bottom
4,843'	
6,324'	

Shots Per Foot	Perforation Top	Perforation Bottom	Bridge Plug Type	Bridge Plug Set At	Acid, Fracture, Shot, Cementing Squeeze Record *(Amount and Kind of Material Used)*
Attached					Attached

TUBING RECORD: Size: 4.500 Set At: 2750 Packer At:

Mail to: KCC - Conservation Division, 266 N. Main, Suite 220, Wichita, Kansas 67202

Form	ACO1 - Well Completion
Operator	Nemaha Oil and Gas LLC
Well Name	Cooper 1A-26-34-8H
Doc ID	1132567

Tops

Name	Top	Datum
Penn LS	634	395
Penn SS A	998	31
Penn SS B	1289	-260
Penn SS C	1502	-473
Penn SS D	1584	-555
Kansas City Group	1700	-671
Pawneed LS	2101	-1072
Cherokee (Penn) Shale	2247	-1218
Mississippi Lime	2631	-1602

Form	ACO1 - Well Completion
Operator	Nemaha Oil and Gas LLC
Well Name	Cooper 1A-26-34-8H
Doc ID	1132567

Perforations

Shots Per Foot	Perforation Record	Material Record	Depth
6	6323-6324,6249-6250,6175-6176,6101-6102,6027-6028,5953-5954,5879-5880	25,704 GA, 192,066 GW, 46,872# Sand	2,666' TVD
6	5805-5806,5731-5732,5657-5658,5583-5584,5509-5510,5435-5436,5361-5362	18,522 GA, 161,826 GW, 43,600# Sand	2.657' TVD
6	5287-5288.5213-5214.5139-2140.5065-5066.4991-4992.4917-4918,4843-4844	18,522 GA, 166,782 GW, 43,604# Sand	2,657' TVD

Form	ACO1 - Well Completion
Operator	Nemaha Oil and Gas LLC
Well Name	Cooper 1A-26-34-8H
Doc ID	1132567

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Surface	12.250	9.625	36	702	Class A	225	6% OWC, 2% CaCl, 2% Gel
Production	8.750	7.000	23	6393	Class A	660	2% Gel, 2% Salt, 0.8 Fluid Loss Add., 0.4# Pheno

Conservation Division
Finney State Office Building
130 S. Market, Rm. 2078
Wichita, KS 67202-3802

Kansas
Corporation Commission

Phone: 316-337-6200
Fax: 316-337-6211
http://kcc.ks.gov/

Mark Sievers, Chairman
Thomas E. Wright, Commissioner
Shari Feist Albrecht, Commissioner

Sam Brownback, Governor

April 10, 2013

Stephen Bennitt
Nemaha Oil and Gas LLC
110 W. 7TH ST., STE 1800
TULSA, OK 74119

Re: ACO1
API 15-019-27279-01-00
Cooper 1A-26-34-8H
NW/4 Sec.26-34S-08E
Chautauqua County, Kansas

Dear Production Department:

We are herewith requesting that the Well Completion Form ACO-1 and attached information for the subject well be held confidential for a period of two years.

Should you have any questions or need additional information regarding subject well, please contact our office.

Respectfully,
Stephen Bennitt

12/14/2012 #255383 CONSOLIDATED Oil Well Services, LLC 2550000331

CEMENT FIELD TICKET AND TREATMENT REPORT

Customer	Nemehah	State, County	Chautauqua , Kansas	Cement Type	CLASS A
Job Type	surface	Section		Excess (%)	50
Customer Acct #	5678	TWP		Density	13.6 14.5
Well No.	cooper 1-a	RGE		Water Required	
Mailing Address		Formation		Yeild	1.47 1.5
City & State		Hole Size	12 1/4	Slurry Weight	
Zip Code		Hole Depth	701.38	Slurry Volume	
Contact		Casing Size	9 5/8INCH, 36	Displacement	54.8
Email		Casing Depth	708.99	Displacement PSI	
Cell		Drill Pipe		MIX PSI	
Dispatch Location	BARTLESVILLE	Tubing		Rate	

Code	Cement Pump Charges and Mileage	Quantity	Unit	Price per Unit	
5401S	CEMENT PUMP (SURFACE PIPE)	1	2 HRS MAX	$825.00	$ 825.00
5406	EQUIPMENT MILEAGE (ONE-WAY)	60	PER MILE	$4.00	$ 240.00
5407	MIN. BULK DELIVERY (WITHIN 50 MILES)	1	PER LOAD	$350.00	$ 350.00
0			0	$0.00	$ -
0			0	$0.00	$ -
0			0	$0.00	$ -
0			0	$0.00	$ -
0			0	$0.00	$ -
5402	FOOTAGE	709	PER FOOT	[illegible]	$ 155.98
				EQUIPMENT TOTAL	$ 1,570.98
	Cement, Chemicals and Water				
1131	60/40 POZMIX CEMENT W/ NO ADDITVES (40% POZ)	175	0	$12.55	$ 2,196.25
1107A	PHENOSEAL	120	0	$1.29	$ 154.80
1118B	PREMIUM GEL/BENTONITE (50#)	450	0	$0.21	$ 94.50
1111	GRANULATED SALT (50#) SELL BY #	200	0	$0.37	$ 74.00
3123	DIACEL FL, FLUID LOSS (50#/SX)sell by #	150	0	$13.75	$ 2,062.50
1126	)WC. CEMENT (CAL SEAL) 6%OWC. 2% CAL.CLORIDE 2% GE	50	0	$18.80	$ 940.00
1123	CITY WATER (PER 1000 GAL)	10	0	$16.50	$ 165.00
0			0	$0.00	$ -
0			0	$0.00	$ -
0			0	$0.00	$ -
0			0	$0.00	$ -
				CHEMICAL TOTAL	$ 5,687.05
	Water Transport				
5501C	WATER TRANSPORT (CEMENT)	5	ATER TRANSPORT (CEME	$112.00	$ 560.00
5501C	WATER TRANSPORT (CEMENT)	5	ATER TRANSPORT (CEME	$112.00	$ 560.00
0			0	$0.00	$ -
				TRANSPORT TOTAL	$ 1,120.00
	Cement Floating Equipment (TAXABLE)				
	Guide Shoes				
0			0	$0.00	$ -
	Centralizer				
0			0	$0.00	$ -
0			0	$0.00	$ -
	Float Shoe				
0			0	$0.00	$ -
	Float Collars				
0			0	$0.00	$ -
	Guide Shoes				
0			0	$0.00	$ -
	Baffle and Flapper Plates				
0			0	$0.00	$ -
	Packer Shoes				
0			0	$0.00	$ -
	DV Tools				
0			0	$0.00	$ -
	Ball Valves,Swedges,Clamps, Misc.				
0			0	$0.00	$ -
0			0	$0.00	$ -
0			0	$0.00	$ -
	Plugs and Ball Sealers				
4415	9 5/8" RUBBER PLUG (TOP)	1	PER UNIT	$152.00	$ 152.00
	Downhole Tools				
0			0	$0.00	$ -
				CEMENT FLOATING EQUIPMENT TOTAL	$ 152.00
				SUB TOTAL	$ 8,530.03
			8.30%	SALES TAX	$ 484.65
				TOTAL	$ 9,014.68
			10%	(-DISCOUNT)	$ 901.04
				DISCOUNTED TOTAL	$ 8,113.21

Nemaha Oil and Gas, LLC

DRIVER NAME			
492	jake	DRLG / COMP	
552T93	james b		
412T64	frank b		
402 T97	james w		

Date: 12-14-12

Well Name: Cooper 1A 26-34-8H

AFE #: 10DC12003 Cost Code: 1510-14

Field Approval: Stephen Ruth

Supervisor: Donnie Ruth

AUTHORIZATION _____ TITLE _____

DATE _____ FOREMAN _____

I ACKNOWLEDGE THAT THE PAYMENT TERMS, UNLESS SPECIFICALLY AMENDED IN WRITING ON THE FRONT OF THE FORM OR IN THE CUSTOMER'S ACCOUNT RECORDS, AT OUR OFFICE, AND CONDITIONS OF SERVICE ON THE BACK OF THIS FORM ARE IN EFFECT FOR SERVICES IDENTIFIED ON THIS FORM.

12/14/2012

CONSOLIDATED Oil Well Services, LLC

2550000331

CEMENT FIELD TICKET AND TREATMENT REPORT

Customer	Nemehah	State, County	Chautauqua , Kansas	Cement Type	CLASS A
Customer Acct #	surface	Section	0	Excess (%)	50
Well No.	0	TWP	0	Density	13.6 14.5
Mailing Address	cooper 1-a	RGE	0	Water Required	0
City & State	0	Formation	0	Yeild	1.47 1.5
Zip Code	0	Hole Size	12 1/4	Slurry Weight	0
Contact	0	Hole Depth	701.38	Slurry Volume	0
Email	0	Casing Size	9 5/8INCH, 36	Displacement	54.8
Cell	0	Casing Depth	708.99	Displacement PSI	100
Office	0	Drill Pipe	0	MIX PSI	50
Dispatch Location	BARTLESVILLE	Tubing	0	Rate	4.7

REMARKS

Washed down pipe and ran 3sks of gel established circulation. Ran 175sks 60/40 poz mix as lead and 50sks of owc class a tail.
Shut down and dropped plug displace plug to bottom at 4.7bpm for 50bbls and last 5bbls at 3bpm. Plug landed and held.
Shut plug container in and left on well. 5bbls of slurry return to pit.

SAFTY MEETING

2/16/2013

256983

CONSOLIDATED Oil Well Services, LLC

5000000365

CEMENT FIELD TICKET AND TREATMENT REPORT

Customer	Nemaha	State, County	Chautauqua , Kansas	Cement Type	CLASS A
Job Type	Long String	Section	26	Excess (%)	20
Customer Acct #	5679	TWP	34S	Density	13.6
Well No.	Cooper #1A H	RGE	8E	Water Required	7.2
Mailing Address		Formation		Yeild	1.47
City & State		Hole Size	8 3/4	Slurry Weight	
Zip Code		Hole Depth		Slurry Volume	660sx / 172.7bbl
Contact		Casing Size	7" 23#	Displacement	249.6
Email		Casing Depth	6397'	Displacement PSI	100-600
Cell		Shoe Joint	45.4'	MIX PSI	100
Dispatch Location	BARTLESVILLE	Tubing		Rate	5.8bpm

Code	Cement Pump Charges and Mileage	Quantity	Unit	Price per Unit	
5401D	DOUBLE PUMP (CASING JOB) 4001'-6000'	1	PER JOB	$1,590.00	$ 1,590.00
5406	EQUIPMENT MILEAGE (ONE-WAY)	60	PER MILE	$4.00	$ 240.00
5407A	TON MILEAGE DELIVERY	660	PER MILE	$1.34	$ 884.40
5407A	TON MILEAGE DELIVERY	660	PER MILE	$1.34	$ 884.40
5614	ELECTRONICS CHARGE	1	PER JOB	$500.00	$ 500.00
5619	7" CEMENT HEAD	1	PER JOB	$215.00	$ 215.00
0			0	$0.00	$ -
0			0	$0.00	$ -
5402	FOOTAGE	6,397	PER FOOT	0.22	$ 1,407.34
				EQUIPMENT TOTAL	$ 5,721.14
	Cement, Chemicals and Water				
1131	60/40 POZMIX CEMENT W/ NO ADDITVES (40% POZ)	660	0	$12.55	$ 8,283.00
1107A	PHENOSEAL	160	0	$1.29	$ 206.40
1111	GRANULATED SALT (50#) SELL BY #	800	0	$0.37	$ 296.00
1118B	PREMIUM GEL/BENTONITE (50#)	1,100	0	$0.21	$ 231.00
3123	DIACEL FL, FLUID LOSS (50#/SX)sell by #	528	0	$13.75	$ 7,260.00
1123	CITY WATER (PER 1000 GAL)	9.500	0	$16.50	$ 156.75
0	~~OIL BASE MUD SPACER~~	~~25~~	0	~~$102.76~~	$ ~~4,069.00~~
0			0	$0.00	$ -
0 1155	DIACEL WBS-200	300 lbs.	0	5.00 $0.00	$ 1500.00
0 1156	DIACEL SF-1	25 GALS.	0	102.76 $0.00	$ 2569.00
0			0	$0.00	$ -
				CHEMICAL TOTAL	$ 20,502.15
	Water Transport				
5501C	WATER TRANSPORT (CEMENT)	24	PER HOUR	$112.00	$ 2,688.00
5502C	80 BBL VACUUM TRUCK (CEMENT)	12	PER HOUR	$100.00	$ 1,200.00
5504B	FLATBED DELIVERY	12	PER HOUR	$100.00	$ 1,200.00
				TRANSPORT TOTAL	$ 5,088.00
	Cement Floating Equipment (TAXABLE)				
	Cement Basket				
0			0	$0.00	$ -
	Centralizer				
0			0	$0.00	$ -
0			0	$0.00	$ -
	Float Shoe				
0			0	$0.00	$ -
	Float Collars				
0			0	$0.00	$ -
	Guide Shoes				
0			0	$0.00	$ -
	Baffle and Flapper Plates				
0			0	$0.00	$ -
	Packer Shoes				
0			0	$0.00	$ -
	DV Tools				
0			0	$0.00	$ -
	Ball Valves,Swedges,Clamps, Misc.				
0			0	$0.00	$ -
0			0	$0.00	$ -
0			0	$0.00	$ -
	Plugs and Ball Sealers				
0			0	$0.00	$ -
	Downhole Tools				
0			0	$0.00	$ -
				CEMENT FLOATING EQUIPMENT TOTAL	$ -

	DRIVER NAME
577	Kirk Sanders
687 T225 / 73 T12	Bryan Scullawl / Matt Mickelson
699 T219 / 428	Aaron Smith / Frank Bowman
546 T111 / 403 T90	Rob Darnall / Mark Cassell
418 / 695	Anthony Sharpton / Harrison Ford

	SUB TOTAL	$ 31,311.29
8.30%	SALES TAX	$ 1,701.68
	TOTAL	$ 33,012.97
10%	(-DISCOUNT)	$ 3,301.15
	DISCOUNTED TOTAL	**$ 29,711.67**

AUTHORIZATION _____ TITLE _____

DATE _____ FOREMAN _____

I ACKNOWLEDGE THAT THE PAYMENT TERMS, UNLESS SPECIFICALLY AMENDED IN WRITING ON THE FRONT OF THE FORM OR IN THE CUSTOMER'S ACCOUNT RECORDS, AT OUR OFFICE, AND CONDITIONS OF SERVICE ON THE BACK OF THIS FORM ARE IN EFFECT FOR SERVICES IDENTIFIED ON THIS FORM.

2/16/2013

CONSOLIDATED Oil Well Services, LLC

5000000365

CEMENT FIELD TICKET AND TREATMENT REPORT

Customer	Nemaha	State, County	Chautauqua , Kansas	Cement Type	CLASS A
Customer Acct #	Long String	Section	26	Excess (%)	20
Well No.	0	TWP	34S	Density	13.6
Mailing Address	Cooper #1A H	RGE	8E	Water Required	7.2
City & State	0	Formation		Yeild	1.47
Zip Code	0	Hole Size	8 3/4	Slurry Weight	0
Contact	0	Hole Depth		Slurry Volume	660sx / 172.7bbl
Email	0	Casing Size	7" 23#	Displacement	249.6
Cell	0	Casing Depth	6397'	Displacement PSI	100-600
Office	0	Shoe Joint	45.4'	MIX PSI	100
Dispatch Location	BARTLESVILLE	Tubing		Rate	5.8bpm

Held safety meeting. Pressure tested lines to 5000#, bled off pressure. Loaded hole and shifted tool @ 2200#, waited 20 minutes. Pumped 150bbl @ 2bpm to load hole again. Dropped 1st plug and displaced to floatation collar, finished displacing to bottom (249.6bbl). Pumped 25bbl of oil base mud flush followed by 10bbl water spacer. Dropped 2nd plug, ran 660sx of 60/40 POZ w/ 2% gel, 2% salt, .8# Diacel FL, .40# pheno. Flushed pump and lines, dropped 3rd plug and displaced 249.6bbl to land plug @ 1000#. Plug held. Shut in and washed up.

Wet and dry samples taken

Arrived on location @ 6 am / Left at 6:30pm

Nemaha Oil and Gas, LLC

DRLG / COMP Date: 2/16/13

Well Name: Cooper 1A

AFE #: 101DC12003 Cost Code: 1510.14

Field Approval: Don Myers (IN)

Supervisor:

2/24/2013

256985

CONSOLIDATED Oil Well Services, LLC

3390000305

CEMENT FIELD TICKET AND TREATMENT REPORT

Customer	NEMAHA	State, County	Chautauqua , Kansas	Cement Type	CLASS A
Job Type	TOP JOB	Section	36	Excess (%)	
Customer Acct #	5678	TWP	24A	Density	13.6
Well No.	COOPER 1A-H 1	RGE	8	Water Required	
Mailing Address		Formation		Yeild	
City & State		Hole Size		Slurry Weight	
Zip Code		Hole Depth		Slurry Volume	
Contact		Casing Size		Displacement	0
Email		Casing Depth		Displacement PSI	0
Cell		Drill Pipe		MIX PSI	0
Dispatch Location	BARTLESVILLE	Tubing		Rate	2

Code	Cement Pump Charges and Mileage	Quantity	Unit	Price per Unit	
5401	CEMENT PUMP (2 HOUR MAX)	1	2 HRS MAX	$1,030.00	$ 1,030.00
5406	EQUIPMENT MILEAGE (ONE-WAY)	60	PER MILE	$4.00	$ 240.00
5407A	TON MILEAGE DELIVERY	500	PER MILE	$1.34	$ 670.00
0			0	$0.00	$ -
0			0	$0.00	$ -
0			0	$0.00	$ -
0			0	$0.00	$ -
0			0	$0.00	$ -
5402	FOOTAGE		PER FOOT	0.22	$ -
				EQUIPMENT TOTAL	$ 1,940.00
	Cement, Chemicals and Water				
1131	60/40 POZMIX CEMENT W/ NO ADDITVES (40% POZ)	500	0	$12.55	$ 6,275.00
1118B	PREMIUM GEL/BENTONITE (50#)	900	0	$0.21	$ 189.00
1111	GRANULATED SALT (50#) SELL BY #	600	0	$0.37	$ 222.00
1110A	KOL SEAL (50 # SK)	5,000	0	$0.46	$ 2,300.00
1135	FL - 110 (FLUID LOSS (sell by #)	400	0	$8.35	$ 3,340.00
1107A	PHENOSEAL	240	0	$1.29	$ 309.60
1123	CITY WATER (PER 1000 GAL)	11	0	$16.54	$ 181.50
0			0	$0.00	$ -
0			0	$0.00	$ -
0			0	$0.00	$ -
0			0	$0.00	$ -
				CHEMICAL TOTAL	$ 12,817.10
	Water Transport				
5501C	WATER TRANSPORT (CEMENT)	6	ATER TRANSPORT (CEME	$112.00	$ 672.00
5501C	WATER TRANSPORT (CEMENT)	6	ATER TRANSPORT (CEME	$112.00	$ 672.00
0			0	$0.00	$ -
				TRANSPORT TOTAL	$ 1,344.00
	Cement Floating Equipment (TAXABLE)				
	Cement Basket				
0			0	$0.00	$ -
	Centralizer				
0			0	$0.00	$ -
0			0	$0.00	$ -
	Float Shoe				
0				$0.00	$ -
	Float Collars				
0			0	$0.00	$ -
	Guide Shoes				
0			0	$0.00	$ -
	Baffle and Flapper Plates				
0			0	$0.00	$ -
	Packer Shoes				
0			0	$0.00	$ -
	DV Tools				
0			0	$0.00	$ -
	Ball Valves,Swedges,Clamps, Misc.				
0			0	$0.00	$ -
0			0	$0.00	$ -
0			0	$0.00	$ -
	Plugs and Ball Sealers				
0			0	$0.00	$ -
	Downhole Tools				
0			0	$0.00	$ -
				CEMENT FLOATING EQUIPMENT TOTAL	$
				SUB TOTAL	$ 16,101.10
			8.30%	SALES TAX	$ 1,068.83
				TOTAL	$ 17,169.93
			10%	(-DISCOUNT)	$ 1,716.76
				DISCOUNTED TOTAL	$ 15,448.44

	DRIVER NAME
674	Donnie Tate
687 T10	MATT MI
699 T219	AARON S
403 T90	JAMES W
412 T64	JEFF F
	JASON COOPER
	DENNIS

Nemaha Oil and Gas, LLC

DRLG / COMP Date: 2/24/13

Well Name: Cooper 1A-26-24-8H

AFE #: 1013-12003 Cost Code: 1570-14

Field Approval: [signature]

Supervisor: [signature]

AUTHORIZATION _____

DATE _____

TITLE _____

FOREMAN [signature]

2/24/2013

CONSOLIDATED Oil Well Services, LLC

3390000305

CEMENT FIELD TICKET AND TREATMENT REPORT

Customer	NEMAHA	State, County	Chautauqua , Kansas	Cement Type	CLASS A
Customer Acct #	TOP JOB	Section	36	Excess (%)	0
Well No.	0	TWP	24A	Density	13.6
Mailing Address	COOPER HORIZONTAL	RGE	8	Water Required	0
City & State	0	Formation	0	Yeild	0
Zip Code	0	Hole Size	0	Slurry Weight	0
Contact	0	Hole Depth	0	Slurry Volume	0
Email	0	Casing Size	0	Displacement	0
Cell	0	Casing Depth	0	Displacement PSI	0
Office	0	Drill Pipe	0	MIX PSI	0
Dispatch Location	BARTLESVILLE	Tubing	0	Rate	2

REMARKS

ARRIVE ON LOC AT 12.45PM. SAFTY MTG AND RIG UP. PREMIX AND CMT MOUSE HOLE. THEN HOOK TO BACKSIDE OF WELL AND PUMP 500SX 60/40CLASS A AND POZ.

WITH 2% GEL 2 % SALT .8# CL-15, 10# KOL, AND .25# PHENO. RAN 4-40# SACKS PHENO ON FLY. RAN AT 2 BBL PER MIN WITH NO PRESSURE.

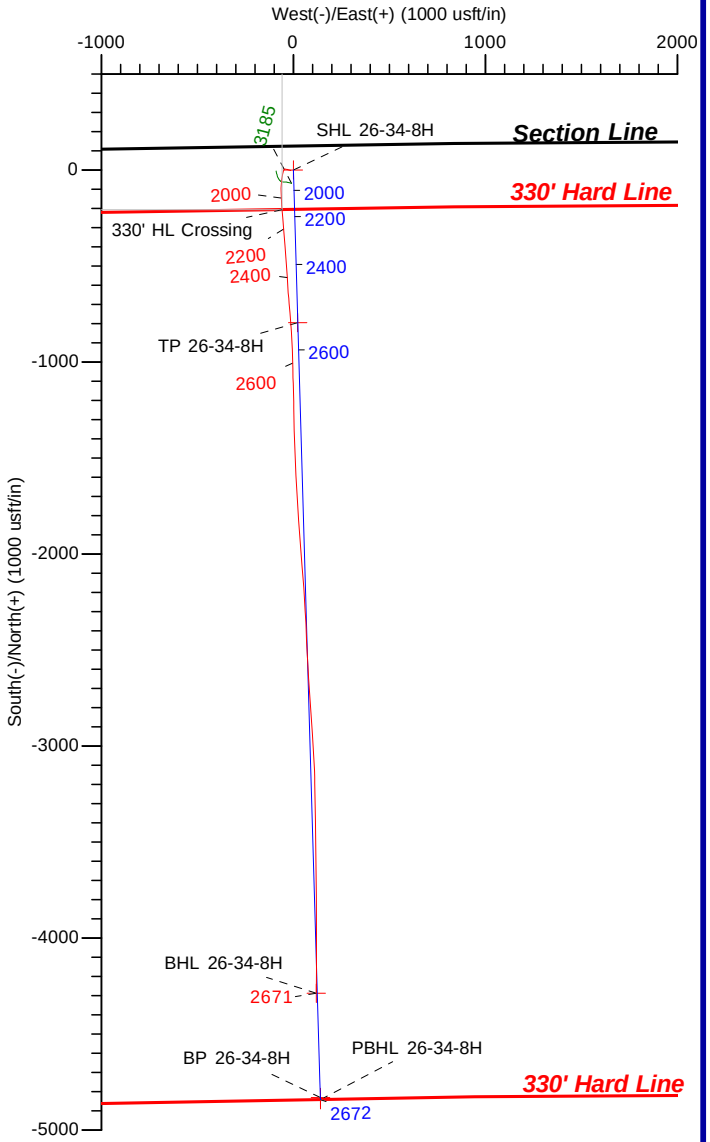
THANK YOU

NEMAHA OIL & GAS

Project: Chautaqua County, KS
Site: Cooper 1A-26-34
Well: 8H
Wellbore: OH
Design: OH

Azimuths to Grid North
True North: -1.23°
Magnetic North: 2.30°

Magnetic Field
Strength: 51863.1snT
Dip Angle: 65.36°
Date: 12/10/2012
Model: IGRF2010

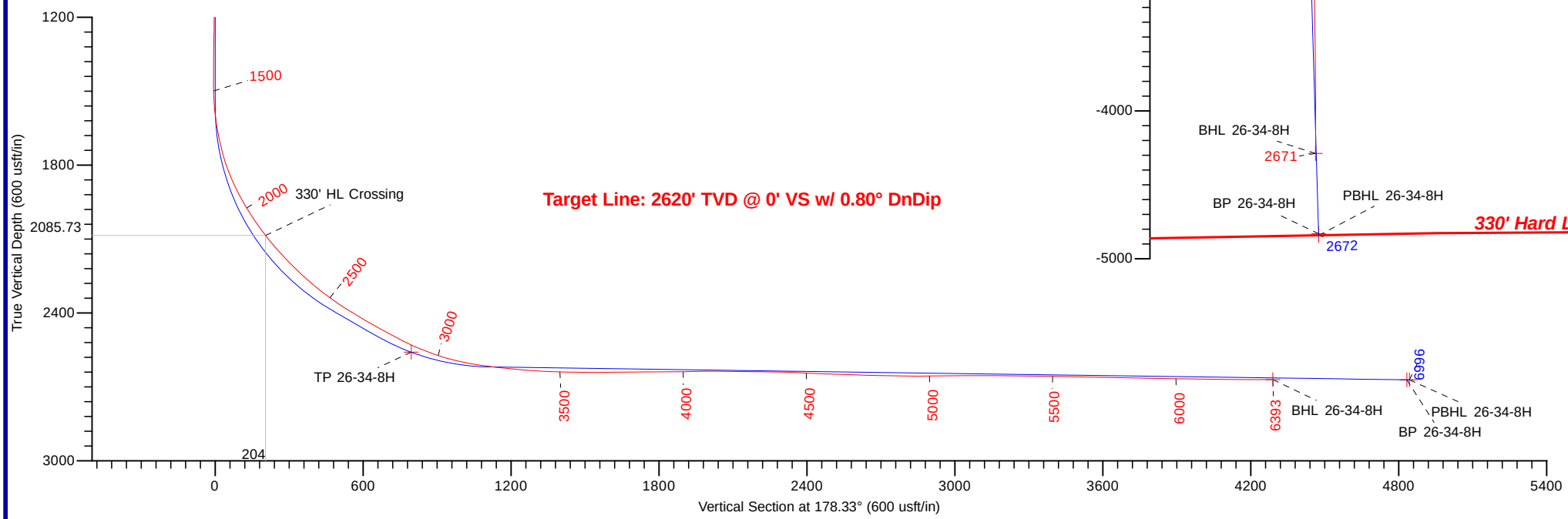


DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL 26-34-8H	-16.00	0.00	0.00	153137.00	2583206.00	37° 4' 12.228 N	96° 30' 3.925 W
TP 26-34-8H	2559.50	-795.00	23.00	152342.00	2583229.00	37° 4' 4.365 N	96° 30' 3.851 W
BHL 26-34-8H	2671.09	-4287.85	119.81	148849.15	2583325.81	37° 3' 29.818 N	96° 30' 3.581 W
BP 26-34-8H	2671.48	-4831.00	141.00	148306.00	2583347.00	37° 3' 24.445 N	96° 30' 3.463 W
PBHL 26-34-8H	2671.63	-4841.00	141.00	148296.00	2583347.00	37° 3' 24.346 N	96° 30' 3.466 W

ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation
2085.73	2135.61	37.34	175.30	-206.03	-58.49	204.24	248.88	330' HL Crossing



Target Line: 2620' TVD @ 0' VS w/ 0.80° DnDip

LEAM DRILLING SYSTEMS LLC
2010 East Davis, Conroe, Texas 77301
Phone: 936/756-7577, Fax: 936/756-7595

Design: OH (8H/OH)
Cooper 1A-26-34
Created By: David Vogler Date: 9:36, February 15 2013
Date: _____
Approved: _____ Date: _____

LEAM Drilling Systems LLC

Survey Report

Company:	NEMAHA OIL & GAS	**Local Co-ordinate Reference:**	Well 8H
Project:	Chautaqua County, KS	**TVD Reference:**	WELL @ 1010.00usft (Original Well Elev)
Site:	Cooper 1A-26-34	**MD Reference:**	WELL @ 1010.00usft (Original Well Elev)
Well:	8H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	EDM 5000.1 Single User Db

Project Chautaqua County, KS

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Kansas South 1502		

Site Cooper 1A-26-34

Site Position:		**Northing:**	153,137.00 usft	**Latitude:**	37° 4' 12.228 N
From:	Map	**Easting:**	2,583,206.00 usft	**Longitude:**	96° 30' 3.925 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	1.23 °

Well 8H

Well Position	**+N/-S**	0.00 usft	**Northing:**	153,137.00 usft	**Latitude:**	37° 4' 12.228 N
	+E/-W	0.00 usft	**Easting:**	2,583,206.00 usft	**Longitude:**	96° 30' 3.925 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	1,010.00 usft

Wellbore OH

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	12/10/12	3.53	65.36	51,863

Design OH

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.00

Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
	0.00	0.00	0.00	178.33

Survey Program **Date** 02/15/13

From (usft)	**To (usft)**	**Survey (Wellbore)**	**Tool Name**	**Description**
744.00	6,281.00	Survey #1 (OH)	LEAM MWD	MWD - Standard
6,393.00	6,393.00	Survey #2 (OH)	Project	Projection

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)**
712.00	2.10	260.30	711.84	-2.20	-12.86	1.82	0.00	0.00	0.00
744.00	2.30	286.20	743.82	-2.12	-14.05	1.71	3.14	0.63	80.94
775.00	2.50	287.60	774.79	-1.74	-15.30	1.30	0.67	0.65	4.52
807.00	2.30	288.50	806.76	-1.33	-16.57	0.84	0.64	-0.63	2.81
839.00	2.50	287.10	838.73	-0.92	-17.85	0.40	0.65	0.63	-4.38
870.00	2.60	287.80	869.70	-0.50	-19.16	-0.05	0.34	0.32	2.26
902.00	2.60	286.70	901.67	-0.07	-20.55	-0.53	0.16	0.00	-3.44
933.00	2.60	286.00	932.64	0.32	-21.90	-0.96	0.10	0.00	-2.26
965.00	2.60	286.20	964.61	0.72	-23.29	-1.40	0.03	0.00	0.63
996.00	2.70	285.30	995.57	1.11	-24.67	-1.83	0.35	0.32	-2.90

LEAM Drilling Systems LLC

Survey Report

Company:	NEMAHA OIL & GAS	**Local Co-ordinate Reference:**	Well 8H
Project:	Chautaqua County, KS	**TVD Reference:**	WELL @ 1010.00usft (Original Well Elev)
Site:	Cooper 1A-26-34	**MD Reference:**	WELL @ 1010.00usft (Original Well Elev)
Well:	8H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	EDM 5000.1 Single User Db

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)
1,028.00	2.60	285.80	1,027.54	1.51	-26.10	-2.27	0.32	-0.31	1.56
1,059.00	2.60	285.30	1,058.51	1.89	-27.45	-2.69	0.07	0.00	-1.61
1,091.00	2.60	286.20	1,090.47	2.28	-28.85	-3.12	0.13	0.00	2.81
1,123.00	2.60	283.60	1,122.44	2.65	-30.25	-3.53	0.37	0.00	-8.13
1,155.00	2.60	284.30	1,154.41	3.00	-31.66	-3.93	0.10	0.00	2.19
1,186.00	2.60	281.80	1,185.38	3.32	-33.03	-4.28	0.37	0.00	-8.06
1,218.00	2.70	282.10	1,217.34	3.63	-34.48	-4.63	0.32	0.31	0.94
1,250.00	2.70	282.00	1,249.31	3.94	-35.95	-4.99	0.01	0.00	-0.31
1,313.00	2.60	281.60	1,312.24	4.54	-38.80	-5.67	0.16	-0.16	-0.63
1,376.00	2.50	279.70	1,375.18	5.06	-41.56	-6.27	0.21	-0.16	-3.02
1,439.00	2.30	278.80	1,438.12	5.48	-44.16	-6.77	0.32	-0.32	-1.43
1,503.00	2.30	249.30	1,502.07	5.22	-46.63	-6.58	1.83	0.00	-46.09
1,566.00	5.50	202.70	1,564.93	1.99	-48.98	-3.42	6.76	5.08	-73.97
1,598.00	7.70	196.50	1,596.72	-1.48	-50.18	0.02	7.22	6.88	-19.38
1,630.00	9.20	196.50	1,628.37	-5.99	-51.52	4.48	4.69	4.69	0.00
1,661.00	10.60	194.10	1,658.91	-11.13	-52.91	9.58	4.71	4.52	-7.74
1,692.00	11.70	192.80	1,689.32	-16.96	-54.31	15.37	3.64	3.55	-4.19
1,724.00	13.60	192.30	1,720.54	-23.80	-55.83	22.16	5.95	5.94	-1.56
1,756.00	15.40	190.40	1,751.52	-31.66	-57.39	29.97	5.82	5.63	-5.94
1,787.00	17.60	188.50	1,781.24	-40.34	-58.83	38.61	7.31	7.10	-6.13
1,818.00	20.00	187.60	1,810.59	-50.23	-60.22	48.46	7.80	7.74	-2.90
1,850.00	22.50	185.50	1,840.41	-61.75	-61.54	59.93	8.17	7.81	-6.56
1,882.00	24.40	186.90	1,869.77	-74.41	-62.92	72.55	6.19	5.94	4.38
1,914.00	26.20	181.60	1,898.70	-88.04	-63.91	86.14	9.04	5.63	-16.56
1,945.00	28.00	180.00	1,926.29	-102.16	-64.10	100.25	6.26	5.81	-5.16
1,977.00	29.80	178.40	1,954.31	-117.62	-63.88	115.71	6.12	5.63	-5.00
2,009.00	31.70	177.70	1,981.81	-133.97	-63.32	132.07	6.04	5.94	-2.19
2,041.00	33.40	176.70	2,008.78	-151.16	-62.47	149.28	5.57	5.31	-3.13
2,072.00	35.00	176.00	2,034.42	-168.55	-61.36	166.69	5.31	5.16	-2.26
2,104.00	36.30	175.60	2,060.42	-187.15	-59.99	185.32	4.13	4.06	-1.25
2,135.00	37.30	175.30	2,085.24	-205.66	-58.52	203.87	3.28	3.23	-0.97
2,167.00	39.20	175.30	2,110.37	-225.41	-56.90	223.65	5.94	5.94	0.00
2,198.00	41.00	175.30	2,134.09	-245.31	-55.26	243.59	5.81	5.81	0.00
2,230.00	42.80	175.80	2,157.90	-266.61	-53.61	264.94	5.72	5.63	1.56
2,262.00	44.10	175.60	2,181.13	-288.56	-51.96	286.92	4.09	4.06	-0.63
2,293.00	45.10	175.30	2,203.21	-310.25	-50.23	308.66	3.30	3.23	-0.97
2,325.00	45.50	174.90	2,225.71	-332.92	-48.28	331.37	1.53	1.25	-1.25
2,357.00	47.10	174.90	2,247.82	-355.96	-46.23	354.46	5.00	5.00	0.00
2,388.00	48.80	174.70	2,268.58	-378.88	-44.14	377.44	5.50	5.48	-0.65
2,420.00	50.60	175.40	2,289.28	-403.20	-42.04	401.80	5.87	5.63	2.19
2,452.00	51.80	175.80	2,309.33	-428.06	-40.13	426.71	3.87	3.75	1.25
2,484.00	53.00	176.50	2,328.86	-453.36	-38.42	452.04	4.13	3.75	2.19
2,515.00	54.50	176.00	2,347.19	-478.30	-36.79	477.03	5.01	4.84	-1.61

LEAM Drilling Systems LLC

Survey Report

Company:	NEMAHA OIL & GAS	**Local Co-ordinate Reference:**	Well 8H
Project:	Chautaqua County, KS	**TVD Reference:**	WELL @ 1010.00usft (Original Well Elev)
Site:	Cooper 1A-26-34	**MD Reference:**	WELL @ 1010.00usft (Original Well Elev)
Well:	8H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	EDM 5000.1 Single User Db

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)
2,547.00	56.30	176.30	2,365.36	-504.58	-35.02	503.35	5.68	5.63	0.94
2,579.00	57.90	176.10	2,382.74	-531.39	-33.24	530.20	5.03	5.00	-0.63
2,611.00	58.60	176.30	2,399.58	-558.54	-31.44	557.39	2.25	2.19	0.63
2,642.00	59.20	176.30	2,415.59	-585.03	-29.72	583.91	1.94	1.94	0.00
2,674.00	59.80	176.30	2,431.83	-612.54	-27.94	611.47	1.88	1.88	0.00
2,705.00	60.40	175.60	2,447.28	-639.35	-26.05	638.32	2.75	1.94	-2.26
2,737.00	61.00	175.30	2,462.94	-667.17	-23.83	666.19	2.05	1.88	-0.94
2,769.00	61.60	175.30	2,478.31	-695.14	-21.53	694.22	1.88	1.88	0.00
2,801.00	62.10	175.10	2,493.41	-723.26	-19.17	722.39	1.66	1.56	-0.63
2,832.00	62.50	175.10	2,507.82	-750.61	-16.83	749.80	1.29	1.29	0.00
2,864.00	64.20	175.30	2,522.17	-779.10	-14.43	778.35	5.34	5.31	0.63
2,896.00	66.10	175.60	2,535.62	-808.05	-12.13	807.35	6.00	5.94	0.94
2,927.00	68.00	176.00	2,547.70	-836.52	-10.04	835.87	6.24	6.13	1.29
2,959.00	69.60	177.00	2,559.28	-866.29	-8.22	865.69	5.79	5.00	3.13
2,990.00	71.20	177.60	2,569.68	-895.46	-6.85	894.88	5.47	5.16	1.94
3,022.00	73.10	177.90	2,579.48	-925.90	-5.65	925.34	6.00	5.94	0.94
3,054.00	75.10	177.90	2,588.25	-956.65	-4.52	956.11	6.25	6.25	0.00
3,086.00	76.90	178.60	2,595.99	-987.69	-3.58	987.16	6.01	5.63	2.19
3,117.00	79.00	178.60	2,602.46	-1,017.99	-2.83	1,017.48	6.77	6.77	0.00
3,149.00	80.90	178.80	2,608.05	-1,049.49	-2.12	1,048.98	5.97	5.94	0.63
3,181.00	82.00	178.10	2,612.80	-1,081.12	-1.26	1,080.63	4.06	3.44	-2.19
3,212.00	82.50	178.40	2,616.98	-1,111.83	-0.33	1,111.34	1.88	1.61	0.97
3,244.00	82.90	178.10	2,621.05	-1,143.55	0.64	1,143.09	1.56	1.25	-0.94
3,276.00	84.00	178.60	2,624.70	-1,175.33	1.56	1,174.88	3.77	3.44	1.56
3,307.00	84.90	179.10	2,627.70	-1,206.18	2.18	1,205.73	3.32	2.90	1.61
3,339.00	85.50	178.80	2,630.38	-1,238.06	2.76	1,237.61	2.09	1.88	-0.94
3,371.00	85.80	179.00	2,632.80	-1,269.96	3.37	1,269.52	1.13	0.94	0.63
3,403.00	86.20	178.60	2,635.04	-1,301.88	4.04	1,301.44	1.77	1.25	-1.25
3,434.00	87.20	178.40	2,636.82	-1,332.81	4.85	1,332.39	3.29	3.23	-0.65
3,466.00	87.90	178.60	2,638.19	-1,364.77	5.69	1,364.36	2.27	2.19	0.63
3,498.00	88.50	177.90	2,639.19	-1,396.74	6.67	1,396.34	2.88	1.88	-2.19
3,529.00	88.60	177.90	2,639.98	-1,427.71	7.80	1,427.33	0.32	0.32	0.00
3,561.00	89.00	178.10	2,640.65	-1,459.69	8.92	1,459.33	1.40	1.25	0.63
3,592.00	89.30	178.10	2,641.11	-1,490.66	9.95	1,490.32	0.97	0.97	0.00
3,624.00	89.60	178.10	2,641.42	-1,522.65	11.01	1,522.32	0.94	0.94	0.00
3,655.00	90.00	177.40	2,641.52	-1,553.62	12.22	1,553.32	2.60	1.29	-2.26
3,687.00	90.20	177.90	2,641.47	-1,585.59	13.54	1,585.32	1.68	0.63	1.56
3,719.00	90.70	177.70	2,641.22	-1,617.57	14.77	1,617.31	1.68	1.56	-0.63
3,751.00	91.10	177.00	2,640.71	-1,649.53	16.24	1,649.30	2.52	1.25	-2.19
3,782.00	91.10	176.90	2,640.12	-1,680.48	17.89	1,680.29	0.32	0.00	-0.32
3,814.00	91.50	177.00	2,639.39	-1,712.43	19.60	1,712.27	1.29	1.25	0.31
3,845.00	90.30	176.10	2,638.91	-1,743.37	21.46	1,743.25	4.84	-3.87	-2.90
3,877.00	89.60	175.80	2,638.93	-1,775.29	23.72	1,775.22	2.38	-2.19	-0.94

LEAM Drilling Systems LLC

Survey Report

Company:	NEMAHA OIL & GAS	**Local Co-ordinate Reference:**	Well 8H
Project:	Chautaqua County, KS	**TVD Reference:**	WELL @ 1010.00usft (Original Well Elev)
Site:	Cooper 1A-26-34	**MD Reference:**	WELL @ 1010.00usft (Original Well Elev)
Well:	8H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	EDM 5000.1 Single User Db

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)
3,909.00	89.80	176.00	2,639.10	-1,807.20	26.01	1,807.20	0.88	0.63	0.63
3,941.00	90.20	175.60	2,639.10	-1,839.12	28.35	1,839.16	1.77	1.25	-1.25
3,972.00	91.10	175.60	2,638.75	-1,870.02	30.73	1,870.13	2.90	2.90	0.00
4,004.00	90.70	175.10	2,638.25	-1,901.92	33.32	1,902.08	2.00	-1.25	-1.56
4,036.00	90.90	174.90	2,637.80	-1,933.79	36.11	1,934.02	0.88	0.63	-0.63
4,068.00	91.50	175.10	2,637.13	-1,965.66	38.90	1,965.96	1.98	1.88	0.63
4,099.00	90.00	175.30	2,636.72	-1,996.55	41.50	1,996.91	4.88	-4.84	0.65
4,129.00	90.20	175.30	2,636.67	-2,026.45	43.95	2,026.87	0.67	0.67	0.00
4,159.00	89.00	175.60	2,636.88	-2,056.35	46.33	2,056.83	4.12	-4.00	1.00
4,188.00	88.90	176.00	2,637.41	-2,085.27	48.46	2,085.80	1.42	-0.34	1.38
4,217.00	89.20	176.10	2,637.89	-2,114.20	50.45	2,114.77	1.09	1.03	0.34
4,248.00	89.90	175.80	2,638.14	-2,145.12	52.64	2,145.74	2.46	2.26	-0.97
4,278.00	88.80	176.30	2,638.48	-2,175.04	54.71	2,175.72	4.03	-3.67	1.67
4,338.00	89.70	176.50	2,639.26	-2,234.92	58.48	2,235.68	1.54	1.50	0.33
4,399.00	88.90	176.90	2,640.01	-2,295.81	61.99	2,296.65	1.47	-1.31	0.66
4,460.00	87.10	177.20	2,642.14	-2,356.69	65.13	2,357.59	2.99	-2.95	0.49
4,520.00	87.30	177.60	2,645.07	-2,416.56	67.84	2,417.51	0.74	0.33	0.67
4,581.00	87.70	177.20	2,647.73	-2,477.44	70.61	2,478.44	0.93	0.66	-0.66
4,642.00	88.10	177.00	2,649.96	-2,538.32	73.69	2,539.39	0.73	0.66	-0.33
4,702.00	88.40	176.70	2,651.80	-2,598.20	76.99	2,599.34	0.71	0.50	-0.50
4,765.00	88.80	176.70	2,653.34	-2,661.08	80.61	2,662.30	0.63	0.63	0.00
4,825.00	88.80	176.10	2,654.59	-2,720.95	84.38	2,722.25	1.00	0.00	-1.00
4,887.00	89.10	175.80	2,655.73	-2,782.78	88.76	2,784.19	0.68	0.48	-0.48
4,950.00	90.00	176.10	2,656.22	-2,845.62	93.21	2,847.13	1.51	1.43	0.48
5,013.00	91.00	176.30	2,655.67	-2,908.48	97.38	2,910.08	1.62	1.59	0.32
5,077.00	90.10	176.10	2,655.06	-2,972.33	101.62	2,974.03	1.44	-1.41	-0.31
5,140.00	90.30	176.70	2,654.84	-3,035.21	105.58	3,037.00	1.00	0.32	0.95
5,203.00	90.20	177.40	2,654.56	-3,098.13	108.82	3,099.98	1.12	-0.16	1.11
5,266.00	89.60	178.40	2,654.67	-3,161.08	111.13	3,162.98	1.85	-0.95	1.59
5,329.00	89.20	179.50	2,655.33	-3,224.07	112.29	3,225.97	1.86	-0.63	1.75
5,392.00	89.00	179.10	2,656.32	-3,287.05	113.05	3,288.95	0.71	-0.32	-0.63
5,456.00	89.70	178.60	2,657.05	-3,351.04	114.34	3,352.95	1.34	1.09	-0.78
5,519.00	89.50	179.00	2,657.49	-3,414.02	115.66	3,415.94	0.71	-0.32	0.63
5,583.00	88.20	179.30	2,658.77	-3,478.00	116.61	3,479.92	2.08	-2.03	0.47
5,646.00	89.00	179.50	2,660.31	-3,540.98	117.27	3,542.89	1.31	1.27	0.32
5,710.00	89.40	179.10	2,661.21	-3,604.97	118.05	3,606.87	0.88	0.63	-0.63
5,773.00	88.20	179.50	2,662.53	-3,667.95	118.82	3,669.85	2.01	-1.90	0.63
5,837.00	88.30	179.30	2,664.48	-3,731.91	119.49	3,733.81	0.35	0.16	-0.31
5,900.00	88.90	179.80	2,666.02	-3,794.89	119.98	3,796.78	1.24	0.95	0.79
5,963.00	89.10	179.80	2,667.12	-3,857.88	120.20	3,859.75	0.32	0.32	0.00
6,026.00	89.30	179.70	2,668.00	-3,920.87	120.48	3,922.72	0.35	0.32	-0.16
6,090.00	90.00	179.70	2,668.39	-3,984.87	120.81	3,986.70	1.09	1.09	0.00
6,153.00	88.60	180.20	2,669.16	-4,047.87	120.87	4,049.67	2.36	-2.22	0.79
6,217.00	89.20	180.40	2,670.39	-4,111.85	120.53	4,113.62	0.99	0.94	0.31

LEAM Drilling Systems LLC

Survey Report

Company:	NEMAHA OIL & GAS	**Local Co-ordinate Reference:**	Well 8H
Project:	Chautaqua County, KS	**TVD Reference:**	WELL @ 1010.00usft (Original Well Elev)
Site:	Cooper 1A-26-34	**MD Reference:**	WELL @ 1010.00usft (Original Well Elev)
Well:	8H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	EDM 5000.1 Single User Db

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)
6,281.00	89.90	180.20	2,670.89	-4,175.85	120.20	4,177.58	1.14	1.09	-0.31
6,393.00	89.90	180.20	2,671.09	-4,287.85	119.81	4,289.52	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL 26-34-8H	0.00	0.00	-16.00	0.00	0.00	153,137.00	2,583,206.00	37° 4' 12.228 N	96° 30' 3.925 W
- actual wellpath misses target center by 727.96usft at 712.00usft MD (711.84 TVD, -2.20 N, -12.86 E)									
- Point									
TP 26-34-8H	0.00	0.00	2,559.50	-795.00	23.00	152,342.00	2,583,229.00	37° 4' 4.365 N	96° 30' 3.851 W
- actual wellpath misses target center by 44.44usft at 2896.00usft MD (2535.62 TVD, -808.05 N, -12.13 E)									
- Point									
BHL 26-34-8H	0.00	0.00	2,671.09	-4,287.85	119.81	148,849.15	2,583,325.81	37° 3' 29.818 N	96° 30' 3.581 W
- actual wellpath misses target center by 0.01usft at 6393.00usft MD (2671.09 TVD, -4287.85 N, 119.81 E)									
- Point									
BP 26-34-8H	0.00	0.00	2,671.48	-4,831.00	141.00	148,306.00	2,583,347.00	37° 3' 24.445 N	96° 30' 3.463 W
- actual wellpath misses target center by 543.57usft at 6393.00usft MD (2671.09 TVD, -4287.85 N, 119.81 E)									
- Point									
PBHL 26-34-8H	0.00	0.00	2,671.63	-4,841.00	141.00	148,296.00	2,583,347.00	37° 3' 24.346 N	96° 30' 3.466 W
- actual wellpath misses target center by 553.56usft at 6393.00usft MD (2671.09 TVD, -4287.85 N, 119.81 E)									
- Point									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
2,135.61	2,085.73	-206.03	-58.49	330' HL Crossing

LEAM Drilling Systems LLC

Survey Report - Geographic

Company:	NEMAHA OIL & GAS	**Local Co-ordinate Reference:**	Well 8H
Project:	Chautaqua County, KS	**TVD Reference:**	WELL @ 1010.00usft (Original Well Elev)
Site:	Cooper 1A-26-34	**MD Reference:**	WELL @ 1010.00usft (Original Well Elev)
Well:	8H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	EDM 5000.1 Single User Db

Project Chautaqua County, KS

Map System:	US State Plane 1927 (Exact solution)	**System Datum:**	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Kansas South 1502		

Site Cooper 1A-26-34

Site Position:		**Northing:**	153,137.00 usft	**Latitude:**	37° 4' 12.228 N
From:	Map	**Easting:**	2,583,206.00 usft	**Longitude:**	96° 30' 3.925 W
Position Uncertainty:	0.00 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	1.23 °

Well 8H

Well Position	**+N/-S**	0.00 usft	**Northing:**	153,137.00 usft	**Latitude:**	37° 4' 12.228 N
	+E/-W	0.00 usft	**Easting:**	2,583,206.00 usft	**Longitude:**	96° 30' 3.925 W
Position Uncertainty		0.00 usft	**Wellhead Elevation:**	usft	**Ground Level:**	1,010.00 usft

Wellbore OH

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010	12/10/12	3.53	65.36	51,863

Design OH

Audit Notes:

Version:	1.0	**Phase:**	ACTUAL	**Tie On Depth:**	0.00

Vertical Section:	**Depth From (TVD) (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Direction (°)**
	0.00	0.00	0.00	178.33

Survey Program **Date** 02/15/13

From (usft)	**To (usft)**	**Survey (Wellbore)**	**Tool Name**	**Description**
744.00	6,281.00	Survey #1 (OH)	LEAM MWD	MWD - Standard
6,393.00	6,393.00	Survey #2 (OH)	Project	Projection

Survey

Measured Depth (usft)	**Inclination (°)**	**Azimuth (°)**	**Vertical Depth (usft)**	**+N/-S (usft)**	**+E/-W (usft)**	**Map Northing (usft)**	**Map Easting (usft)**	**Latitude**	**Longitude**
712.00	2.10	260.30	711.84	-2.20	-12.86	153,134.80	2,583,193.14	37° 4' 12.209 N	96° 30' 4.084 W
744.00	2.30	286.20	743.82	-2.12	-14.05	153,134.88	2,583,191.94	37° 4' 12.210 N	96° 30' 4.098 W
775.00	2.50	287.60	774.79	-1.74	-15.30	153,135.26	2,583,190.70	37° 4' 12.214 N	96° 30' 4.114 W
807.00	2.30	288.50	806.76	-1.33	-16.57	153,135.68	2,583,189.43	37° 4' 12.219 N	96° 30' 4.129 W
839.00	2.50	287.10	838.73	-0.92	-17.85	153,136.09	2,583,188.15	37° 4' 12.223 N	96° 30' 4.145 W
870.00	2.60	287.80	869.70	-0.50	-19.16	153,136.50	2,583,186.84	37° 4' 12.227 N	96° 30' 4.161 W
902.00	2.60	286.70	901.67	-0.07	-20.55	153,136.93	2,583,185.45	37° 4' 12.232 N	96° 30' 4.178 W
933.00	2.60	286.00	932.64	0.32	-21.90	153,137.33	2,583,184.10	37° 4' 12.236 N	96° 30' 4.195 W
965.00	2.60	286.20	964.61	0.72	-23.29	153,137.73	2,583,182.71	37° 4' 12.240 N	96° 30' 4.212 W
996.00	2.70	285.30	995.57	1.11	-24.67	153,138.12	2,583,181.33	37° 4' 12.245 N	96° 30' 4.229 W
1,028.00	2.60	285.80	1,027.54	1.51	-26.10	153,138.51	2,583,179.90	37° 4' 12.249 N	96° 30' 4.246 W

LEAM Drilling Systems LLC

Survey Report - Geographic

Company:	NEMAHA OIL & GAS	**Local Co-ordinate Reference:**	Well 8H
Project:	Chautaqua County, KS	**TVD Reference:**	WELL @ 1010.00usft (Original Well Elev)
Site:	Cooper 1A-26-34	**MD Reference:**	WELL @ 1010.00usft (Original Well Elev)
Well:	8H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,059.00	2.60	285.30	1,058.51	1.89	-27.45	153,138.89	2,583,178.55	37° 4' 12.253 N	96° 30' 4.263 W
1,091.00	2.60	286.20	1,090.47	2.28	-28.85	153,139.28	2,583,177.15	37° 4' 12.257 N	96° 30' 4.280 W
1,123.00	2.60	283.60	1,122.44	2.65	-30.25	153,139.66	2,583,175.75	37° 4' 12.261 N	96° 30' 4.297 W
1,155.00	2.60	284.30	1,154.41	3.00	-31.66	153,140.01	2,583,174.34	37° 4' 12.265 N	96° 30' 4.314 W
1,186.00	2.60	281.80	1,185.38	3.32	-33.03	153,140.32	2,583,172.97	37° 4' 12.268 N	96° 30' 4.331 W
1,218.00	2.70	282.10	1,217.34	3.63	-34.48	153,140.63	2,583,171.52	37° 4' 12.271 N	96° 30' 4.349 W
1,250.00	2.70	282.00	1,249.31	3.94	-35.95	153,140.95	2,583,170.05	37° 4' 12.275 N	96° 30' 4.367 W
1,313.00	2.60	281.60	1,312.24	4.54	-38.80	153,141.54	2,583,167.19	37° 4' 12.281 N	96° 30' 4.402 W
1,376.00	2.50	279.70	1,375.18	5.06	-41.56	153,142.06	2,583,164.44	37° 4' 12.287 N	96° 30' 4.436 W
1,439.00	2.30	278.80	1,438.12	5.48	-44.16	153,142.49	2,583,161.84	37° 4' 12.292 N	96° 30' 4.468 W
1,503.00	2.30	249.30	1,502.07	5.22	-46.63	153,142.23	2,583,159.37	37° 4' 12.290 N	96° 30' 4.498 W
1,566.00	5.50	202.70	1,564.93	1.99	-48.98	153,138.99	2,583,157.02	37° 4' 12.258 N	96° 30' 4.528 W
1,598.00	7.70	196.50	1,596.72	-1.48	-50.18	153,135.52	2,583,155.82	37° 4' 12.224 N	96° 30' 4.544 W
1,630.00	9.20	196.50	1,628.37	-5.99	-51.52	153,131.02	2,583,154.48	37° 4' 12.180 N	96° 30' 4.562 W
1,661.00	10.60	194.10	1,658.91	-11.13	-52.91	153,125.87	2,583,153.08	37° 4' 12.129 N	96° 30' 4.580 W
1,692.00	11.70	192.80	1,689.32	-16.96	-54.31	153,120.04	2,583,151.69	37° 4' 12.072 N	96° 30' 4.599 W
1,724.00	13.60	192.30	1,720.54	-23.80	-55.83	153,113.20	2,583,150.17	37° 4' 12.005 N	96° 30' 4.619 W
1,756.00	15.40	190.40	1,751.52	-31.66	-57.39	153,105.35	2,583,148.60	37° 4' 11.928 N	96° 30' 4.641 W
1,787.00	17.60	188.50	1,781.24	-40.34	-58.83	153,096.66	2,583,147.17	37° 4' 11.842 N	96° 30' 4.661 W
1,818.00	20.00	187.60	1,810.59	-50.23	-60.22	153,086.77	2,583,145.77	37° 4' 11.745 N	96° 30' 4.681 W
1,850.00	22.50	185.50	1,840.41	-61.75	-61.54	153,075.25	2,583,144.46	37° 4' 11.631 N	96° 30' 4.700 W
1,882.00	24.40	186.90	1,869.77	-74.41	-62.92	153,062.59	2,583,143.08	37° 4' 11.506 N	96° 30' 4.720 W
1,914.00	26.20	181.60	1,898.70	-88.04	-63.91	153,048.97	2,583,142.09	37° 4' 11.372 N	96° 30' 4.736 W
1,945.00	28.00	180.00	1,926.29	-102.16	-64.10	153,034.85	2,583,141.90	37° 4' 11.232 N	96° 30' 4.742 W
1,977.00	29.80	178.40	1,954.31	-117.62	-63.88	153,019.39	2,583,142.12	37° 4' 11.079 N	96° 30' 4.744 W
2,009.00	31.70	177.70	1,981.81	-133.97	-63.32	153,003.03	2,583,142.68	37° 4' 10.917 N	96° 30' 4.741 W
2,041.00	33.40	176.70	2,008.78	-151.16	-62.47	152,985.84	2,583,143.52	37° 4' 10.747 N	96° 30' 4.735 W
2,072.00	35.00	176.00	2,034.42	-168.55	-61.36	152,968.45	2,583,144.64	37° 4' 10.575 N	96° 30' 4.726 W
2,104.00	36.30	175.60	2,060.42	-187.15	-59.99	152,949.85	2,583,146.00	37° 4' 10.391 N	96° 30' 4.714 W
2,135.00	37.30	175.30	2,085.24	-205.66	-58.52	152,931.34	2,583,147.48	37° 4' 10.208 N	96° 30' 4.701 W
2,167.00	39.20	175.30	2,110.37	-225.41	-56.90	152,911.60	2,583,149.10	37° 4' 10.012 N	96° 30' 4.686 W
2,198.00	41.00	175.30	2,134.09	-245.31	-55.26	152,891.70	2,583,150.74	37° 4' 9.815 N	96° 30' 4.671 W
2,230.00	42.80	175.80	2,157.90	-266.61	-53.61	152,870.39	2,583,152.39	37° 4' 9.604 N	96° 30' 4.656 W
2,262.00	44.10	175.60	2,181.13	-288.56	-51.96	152,848.45	2,583,154.04	37° 4' 9.387 N	96° 30' 4.642 W
2,293.00	45.10	175.30	2,203.21	-310.25	-50.23	152,826.75	2,583,155.77	37° 4' 9.172 N	96° 30' 4.626 W
2,325.00	45.50	174.90	2,225.71	-332.92	-48.28	152,804.09	2,583,157.71	37° 4' 8.948 N	96° 30' 4.608 W
2,357.00	47.10	174.90	2,247.82	-355.96	-46.23	152,781.04	2,583,159.77	37° 4' 8.719 N	96° 30' 4.589 W
2,388.00	48.80	174.70	2,268.58	-378.88	-44.14	152,758.12	2,583,161.86	37° 4' 8.492 N	96° 30' 4.569 W
2,420.00	50.60	175.40	2,289.28	-403.20	-42.04	152,733.81	2,583,163.96	37° 4' 8.252 N	96° 30' 4.550 W
2,452.00	51.80	175.80	2,309.33	-428.06	-40.13	152,708.94	2,583,165.87	37° 4' 8.005 N	96° 30' 4.533 W
2,484.00	53.00	176.50	2,328.86	-453.36	-38.42	152,683.65	2,583,167.57	37° 4' 7.755 N	96° 30' 4.518 W
2,515.00	54.50	176.00	2,347.19	-478.30	-36.79	152,658.70	2,583,169.21	37° 4' 7.508 N	96° 30' 4.505 W
2,547.00	56.30	176.30	2,365.36	-504.58	-35.02	152,632.42	2,583,170.98	37° 4' 7.248 N	96° 30' 4.490 W
2,579.00	57.90	176.10	2,382.74	-531.39	-33.24	152,605.61	2,583,172.76	37° 4' 6.983 N	96° 30' 4.475 W
2,611.00	58.60	176.30	2,399.58	-558.54	-31.44	152,578.46	2,583,174.56	37° 4' 6.714 N	96° 30' 4.460 W
2,642.00	59.20	176.30	2,415.59	-585.03	-29.72	152,551.97	2,583,176.27	37° 4' 6.452 N	96° 30' 4.446 W
2,674.00	59.80	176.30	2,431.83	-612.54	-27.94	152,524.46	2,583,178.05	37° 4' 6.179 N	96° 30' 4.431 W
2,705.00	60.40	175.60	2,447.28	-639.35	-26.05	152,497.65	2,583,179.95	37° 4' 5.914 N	96° 30' 4.415 W
2,737.00	61.00	175.30	2,462.94	-667.17	-23.83	152,469.83	2,583,182.17	37° 4' 5.638 N	96° 30' 4.395 W
2,769.00	61.60	175.30	2,478.31	-695.14	-21.53	152,441.86	2,583,184.47	37° 4' 5.361 N	96° 30' 4.374 W
2,801.00	62.10	175.10	2,493.41	-723.26	-19.17	152,413.74	2,583,186.83	37° 4' 5.083 N	96° 30' 4.352 W
2,832.00	62.50	175.10	2,507.82	-750.61	-16.83	152,386.40	2,583,189.17	37° 4' 4.812 N	96° 30' 4.331 W
2,864.00	64.20	175.30	2,522.17	-779.10	-14.43	152,357.90	2,583,191.56	37° 4' 4.530 N	96° 30' 4.309 W
2,896.00	66.10	175.60	2,535.62	-808.05	-12.13	152,328.95	2,583,193.87	37° 4' 4.243 N	96° 30' 4.288 W
2,927.00	68.00	176.00	2,547.70	-836.52	-10.04	152,300.49	2,583,195.96	37° 4' 3.962 N	96° 30' 4.270 W

LEAM Drilling Systems LLC

Survey Report - Geographic

Company:	NEMAHA OIL & GAS	**Local Co-ordinate Reference:**	Well 8H
Project:	Chautaqua County, KS	**TVD Reference:**	WELL @ 1010.00usft (Original Well Elev)
Site:	Cooper 1A-26-34	**MD Reference:**	WELL @ 1010.00usft (Original Well Elev)
Well:	8H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
2,959.00	69.60	177.00	2,559.28	-866.29	-8.22	152,270.71	2,583,197.78	37° 4' 3.667 N	96° 30' 4.255 W
2,990.00	71.20	177.60	2,569.68	-895.46	-6.85	152,241.54	2,583,199.15	37° 4' 3.378 N	96° 30' 4.246 W
3,022.00	73.10	177.90	2,579.48	-925.90	-5.65	152,211.10	2,583,200.35	37° 4' 3.077 N	96° 30' 4.239 W
3,054.00	75.10	177.90	2,588.25	-956.65	-4.52	152,180.35	2,583,201.47	37° 4' 2.773 N	96° 30' 4.233 W
3,086.00	76.90	178.60	2,595.99	-987.69	-3.58	152,149.32	2,583,202.42	37° 4' 2.466 N	96° 30' 4.230 W
3,117.00	79.00	178.60	2,602.46	-1,017.99	-2.83	152,119.01	2,583,203.16	37° 4' 2.166 N	96° 30' 4.229 W
3,149.00	80.90	178.80	2,608.05	-1,049.49	-2.12	152,087.51	2,583,203.88	37° 4' 1.855 N	96° 30' 4.228 W
3,181.00	82.00	178.10	2,612.80	-1,081.12	-1.26	152,055.88	2,583,204.73	37° 4' 1.542 N	96° 30' 4.226 W
3,212.00	82.50	178.40	2,616.98	-1,111.83	-0.33	152,025.18	2,583,205.67	37° 4' 1.238 N	96° 30' 4.223 W
3,244.00	82.90	178.10	2,621.05	-1,143.55	0.64	151,993.45	2,583,206.64	37° 4' 0.924 N	96° 30' 4.219 W
3,276.00	84.00	178.60	2,624.70	-1,175.33	1.56	151,961.67	2,583,207.56	37° 4' 0.610 N	96° 30' 4.216 W
3,307.00	84.90	179.10	2,627.70	-1,206.18	2.18	151,930.83	2,583,208.18	37° 4' 0.305 N	96° 30' 4.217 W
3,339.00	85.50	178.80	2,630.38	-1,238.06	2.76	151,898.94	2,583,208.76	37° 3' 59.990 N	96° 30' 4.218 W
3,371.00	85.80	179.00	2,632.80	-1,269.96	3.37	151,867.04	2,583,209.37	37° 3' 59.674 N	96° 30' 4.219 W
3,403.00	86.20	178.60	2,635.04	-1,301.88	4.04	151,835.13	2,583,210.04	37° 3' 59.359 N	96° 30' 4.219 W
3,434.00	87.20	178.40	2,636.82	-1,332.81	4.85	151,804.19	2,583,210.85	37° 3' 59.053 N	96° 30' 4.217 W
3,466.00	87.90	178.60	2,638.19	-1,364.77	5.69	151,772.23	2,583,211.69	37° 3' 58.737 N	96° 30' 4.215 W
3,498.00	88.50	177.90	2,639.19	-1,396.74	6.67	151,740.26	2,583,212.66	37° 3' 58.420 N	96° 30' 4.212 W
3,529.00	88.60	177.90	2,639.98	-1,427.71	7.80	151,709.29	2,583,213.80	37° 3' 58.114 N	96° 30' 4.206 W
3,561.00	89.00	178.10	2,640.65	-1,459.69	8.92	151,677.32	2,583,214.92	37° 3' 57.798 N	96° 30' 4.201 W
3,592.00	89.30	178.10	2,641.11	-1,490.66	9.95	151,646.34	2,583,215.94	37° 3' 57.491 N	96° 30' 4.196 W
3,624.00	89.60	178.10	2,641.42	-1,522.65	11.01	151,614.36	2,583,217.01	37° 3' 57.175 N	96° 30' 4.191 W
3,655.00	90.00	177.40	2,641.52	-1,553.62	12.22	151,583.38	2,583,218.22	37° 3' 56.868 N	96° 30' 4.185 W
3,687.00	90.20	177.90	2,641.47	-1,585.59	13.54	151,551.41	2,583,219.53	37° 3' 56.552 N	96° 30' 4.177 W
3,719.00	90.70	177.70	2,641.22	-1,617.57	14.77	151,519.43	2,583,220.76	37° 3' 56.236 N	96° 30' 4.170 W
3,751.00	91.10	177.00	2,640.71	-1,649.53	16.24	151,487.47	2,583,222.24	37° 3' 55.920 N	96° 30' 4.160 W
3,782.00	91.10	176.90	2,640.12	-1,680.48	17.89	151,456.52	2,583,223.89	37° 3' 55.613 N	96° 30' 4.148 W
3,814.00	91.50	177.00	2,639.39	-1,712.43	19.60	151,424.58	2,583,225.59	37° 3' 55.297 N	96° 30' 4.136 W
3,845.00	90.30	176.10	2,638.91	-1,743.37	21.46	151,393.64	2,583,227.46	37° 3' 54.991 N	96° 30' 4.121 W
3,877.00	89.60	175.80	2,638.93	-1,775.29	23.72	151,361.72	2,583,229.72	37° 3' 54.675 N	96° 30' 4.101 W
3,909.00	89.80	176.00	2,639.10	-1,807.20	26.01	151,329.80	2,583,232.01	37° 3' 54.359 N	96° 30' 4.082 W
3,941.00	90.20	175.60	2,639.10	-1,839.12	28.35	151,297.88	2,583,234.35	37° 3' 54.043 N	96° 30' 4.061 W
3,972.00	91.10	175.60	2,638.75	-1,870.02	30.73	151,266.98	2,583,236.73	37° 3' 53.737 N	96° 30' 4.040 W
4,004.00	90.70	175.10	2,638.25	-1,901.92	33.32	151,235.09	2,583,239.32	37° 3' 53.421 N	96° 30' 4.017 W
4,036.00	90.90	174.90	2,637.80	-1,933.79	36.11	151,203.21	2,583,242.11	37° 3' 53.105 N	96° 30' 3.991 W
4,068.00	91.50	175.10	2,637.13	-1,965.66	38.90	151,171.34	2,583,244.90	37° 3' 52.790 N	96° 30' 3.965 W
4,099.00	90.00	175.30	2,636.72	-1,996.55	41.50	151,140.45	2,583,247.49	37° 3' 52.484 N	96° 30' 3.941 W
4,129.00	90.20	175.30	2,636.67	-2,026.45	43.95	151,110.55	2,583,249.95	37° 3' 52.188 N	96° 30' 3.918 W
4,159.00	89.00	175.60	2,636.88	-2,056.35	46.33	151,080.65	2,583,252.33	37° 3' 51.892 N	96° 30' 3.897 W
4,188.00	88.90	176.00	2,637.41	-2,085.27	48.46	151,051.73	2,583,254.45	37° 3' 51.606 N	96° 30' 3.878 W
4,217.00	89.20	176.10	2,637.89	-2,114.20	50.45	151,022.81	2,583,256.45	37° 3' 51.319 N	96° 30' 3.861 W
4,248.00	89.90	175.80	2,638.14	-2,145.12	52.64	150,991.89	2,583,258.64	37° 3' 51.013 N	96° 30' 3.843 W
4,278.00	88.80	176.30	2,638.48	-2,175.04	54.71	150,961.96	2,583,260.71	37° 3' 50.717 N	96° 30' 3.825 W
4,338.00	89.70	176.50	2,639.26	-2,234.92	58.48	150,902.08	2,583,264.47	37° 3' 50.124 N	96° 30' 3.794 W
4,399.00	88.90	176.90	2,640.01	-2,295.81	61.99	150,841.19	2,583,267.99	37° 3' 49.521 N	96° 30' 3.767 W
4,460.00	87.10	177.20	2,642.14	-2,356.69	65.13	150,780.31	2,583,271.12	37° 3' 48.919 N	96° 30' 3.745 W
4,520.00	87.30	177.60	2,645.07	-2,416.56	67.84	150,720.44	2,583,273.84	37° 3' 48.327 N	96° 30' 3.727 W
4,581.00	87.70	177.20	2,647.73	-2,477.44	70.61	150,659.56	2,583,276.61	37° 3' 47.724 N	96° 30' 3.709 W
4,642.00	88.10	177.00	2,649.96	-2,538.32	73.69	150,598.68	2,583,279.69	37° 3' 47.122 N	96° 30' 3.687 W
4,702.00	88.40	176.70	2,651.80	-2,598.20	76.99	150,538.80	2,583,282.99	37° 3' 46.529 N	96° 30' 3.662 W
4,765.00	88.80	176.70	2,653.34	-2,661.08	80.61	150,475.93	2,583,286.61	37° 3' 45.907 N	96° 30' 3.634 W
4,825.00	88.80	176.10	2,654.59	-2,720.95	84.38	150,416.06	2,583,290.38	37° 3' 45.314 N	96° 30' 3.603 W
4,887.00	89.10	175.80	2,655.73	-2,782.78	88.76	150,354.22	2,583,294.76	37° 3' 44.702 N	96° 30' 3.566 W
4,950.00	90.00	176.10	2,656.22	-2,845.62	93.21	150,291.38	2,583,299.21	37° 3' 44.080 N	96° 30' 3.528 W
5,013.00	91.00	176.30	2,655.67	-2,908.48	97.38	150,228.52	2,583,303.38	37° 3' 43.458 N	96° 30' 3.493 W

LEAM Drilling Systems LLC

Survey Report - Geographic

Company:	NEMAHA OIL & GAS	**Local Co-ordinate Reference:**	Well 8H
Project:	Chautaqua County, KS	**TVD Reference:**	WELL @ 1010.00usft (Original Well Elev)
Site:	Cooper 1A-26-34	**MD Reference:**	WELL @ 1010.00usft (Original Well Elev)
Well:	8H	**North Reference:**	Grid
Wellbore:	OH	**Survey Calculation Method:**	Minimum Curvature
Design:	OH	**Database:**	EDM 5000.1 Single User Db

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,077.00	90.10	176.10	2,655.06	-2,972.33	101.62	150,164.67	2,583,307.62	37° 3' 42.826 N	96° 30' 3.457 W
5,140.00	90.30	176.70	2,654.84	-3,035.21	105.58	150,101.79	2,583,311.58	37° 3' 42.203 N	96° 30' 3.425 W
5,203.00	90.20	177.40	2,654.56	-3,098.13	108.82	150,038.88	2,583,314.82	37° 3' 41.581 N	96° 30' 3.402 W
5,266.00	89.60	178.40	2,654.67	-3,161.08	111.13	149,975.92	2,583,317.13	37° 3' 40.958 N	96° 30' 3.390 W
5,329.00	89.20	179.50	2,655.33	-3,224.07	112.29	149,912.94	2,583,318.28	37° 3' 40.335 N	96° 30' 3.392 W
5,392.00	89.00	179.10	2,656.32	-3,287.05	113.05	149,849.95	2,583,319.05	37° 3' 39.712 N	96° 30' 3.399 W
5,456.00	89.70	178.60	2,657.05	-3,351.04	114.34	149,785.97	2,583,320.34	37° 3' 39.080 N	96° 30' 3.401 W
5,519.00	89.50	179.00	2,657.49	-3,414.02	115.66	149,722.98	2,583,321.66	37° 3' 38.457 N	96° 30' 3.401 W
5,583.00	88.20	179.30	2,658.77	-3,478.00	116.61	149,659.00	2,583,322.61	37° 3' 37.824 N	96° 30' 3.406 W
5,646.00	89.00	179.50	2,660.31	-3,540.98	117.27	149,596.03	2,583,323.26	37° 3' 37.202 N	96° 30' 3.415 W
5,710.00	89.40	179.10	2,661.21	-3,604.97	118.05	149,532.04	2,583,324.05	37° 3' 36.569 N	96° 30' 3.422 W
5,773.00	88.20	179.50	2,662.53	-3,667.95	118.82	149,469.06	2,583,324.82	37° 3' 35.946 N	96° 30' 3.429 W
5,837.00	88.30	179.30	2,664.48	-3,731.91	119.49	149,405.09	2,583,325.49	37° 3' 35.314 N	96° 30' 3.438 W
5,900.00	88.90	179.80	2,666.02	-3,794.89	119.98	149,342.11	2,583,325.98	37° 3' 34.691 N	96° 30' 3.448 W
5,963.00	89.10	179.80	2,667.12	-3,857.88	120.20	149,279.12	2,583,326.20	37° 3' 34.068 N	96° 30' 3.462 W
6,026.00	89.30	179.70	2,668.00	-3,920.87	120.48	149,216.13	2,583,326.48	37° 3' 33.446 N	96° 30' 3.476 W
6,090.00	90.00	179.70	2,668.39	-3,984.87	120.81	149,152.13	2,583,326.81	37° 3' 32.813 N	96° 30' 3.488 W
6,153.00	88.60	180.20	2,669.16	-4,047.87	120.87	149,089.14	2,583,326.87	37° 3' 32.190 N	96° 30' 3.504 W
6,217.00	89.20	180.40	2,670.39	-4,111.85	120.53	149,025.15	2,583,326.53	37° 3' 31.558 N	96° 30' 3.525 W
6,281.00	89.90	180.20	2,670.89	-4,175.85	120.20	148,961.15	2,583,326.20	37° 3' 30.925 N	96° 30' 3.546 W
6,393.00	89.90	180.20	2,671.09	-4,287.85	119.81	148,849.16	2,583,325.80	37° 3' 29.818 N	96° 30' 3.581 W

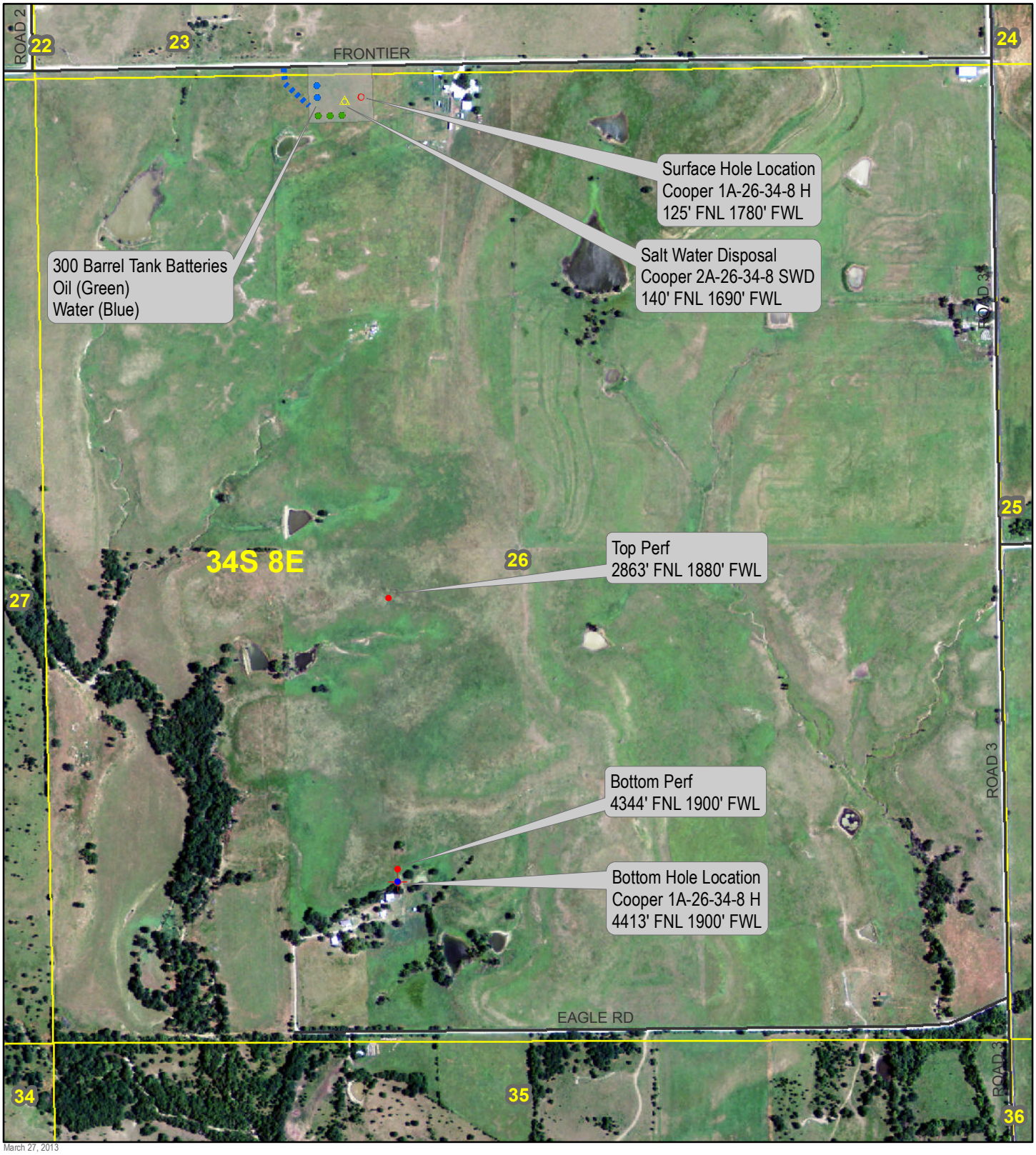
Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
2,135.61	2,085.73	-206.03	-58.49	330' HL Crossing

Cooper 1A-26-34-8 H
Cooper 2A-26-34-8 SWD

Chautauqua County, KS

Section 26 T34S R8E



March 27, 2013

NEMAHA OIL AND GAS

Proposed Electric Line

Paved Road

Gravel/Dirt Road

N

0 437.5 875 1,750 Feet