



Confidentiality Requested:

Yes No

KANSAS CORPORATION COMMISSION 1118296
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 # _____

Name: _____

Address 1: _____

Address 2: _____

City: _____ State: _____ Zip: _____ + _____

Contact Person: _____

Phone: (_____) _____

CONTRACTOR: License # _____

Name: _____

Wellsite Geologist: _____

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 #: _____

Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date
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API No. 15 - _____

Spot Description: _____

_____ - _____ - _____ Sec. _____ Twp. _____ S. R. _____ East West

_____ Feet from North / South Line of Section

_____ Feet from East / West Line of Section

Footages Calculated from Nearest Outside Section Corner:

- NE NW SE SW

GPS Location: Lat: _____, Long: _____
(e.g. xx.xxxxx) (e.g. -xxx.xxxxx)

Datum: NAD27 NAD83 WGS84

County: _____

Lease Name: _____ Well #: _____

Field Name: _____

Producing Formation: _____

Elevation: Ground: _____ Kelly Bushing: _____

Total Vertical Depth: _____ Plug Back Total Depth: _____

Amount of Surface Pipe Set and Cemented at: _____ 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: _____ ppm Fluid volume: _____ bbls

Dewatering method used: _____

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: _____
- Confidential Release Date: _____
- Wireline Log Received
- Geologist Report Received
- UIC Distribution
- ALT I II III Approved by: _____ Date: _____



1118296

Operator Name: _____ Lease Name: _____ Well #: _____

Sec. _____ Twp. _____ S. R. _____ East West County: _____

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 <input type="checkbox"/> Yes <input type="checkbox"/> No <i>(Attach Additional Sheets)</i> Samples Sent to Geological Survey <input type="checkbox"/> Yes <input type="checkbox"/> No Cores Taken <input type="checkbox"/> Yes <input type="checkbox"/> No Electric Log Run <input type="checkbox"/> Yes <input type="checkbox"/> No List All E. Logs Run: _____	<input type="checkbox"/> Log Formation (Top), Depth and Datum <input type="checkbox"/> Sample Name Top Datum
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CASING RECORD <input type="checkbox"/> New <input type="checkbox"/> 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

ADDITIONAL CEMENTING / SQUEEZE RECORD				
Purpose:	Depth Top Bottom	Type of Cement	# Sacks Used	Type and Percent Additives
<input type="checkbox"/> Perforate <input type="checkbox"/> Protect Casing <input type="checkbox"/> Plug Back TD <input type="checkbox"/> 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 <i>(Amount and Kind of Material Used)</i>	Depth

TUBING RECORD:	Size:	Set At:	Packer At:	Liner Run: <input type="checkbox"/> Yes <input type="checkbox"/> No
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Date of First, Resumed Production, SWD or ENHR.	Producing Method: <input type="checkbox"/> Flowing <input type="checkbox"/> Pumping <input type="checkbox"/> Gas Lift <input type="checkbox"/> Other <i>(Explain)</i> _____
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Estimated Production Per 24 Hours	Oil Bbls.	Gas Mcf	Water Bbls.	Gas-Oil Ratio	Gravity

DISPOSITION OF GAS: <input type="checkbox"/> Vented <input type="checkbox"/> Sold <input type="checkbox"/> Used on Lease <i>(If vented, Submit ACO-18.)</i>	METHOD OF COMPLETION: <input type="checkbox"/> Open Hole <input type="checkbox"/> Perf. <input type="checkbox"/> Dually Comp. <input type="checkbox"/> Commingled <i>(Submit ACO-5)</i> <input type="checkbox"/> Other <i>(Specify)</i> _____	PRODUCTION INTERVAL: _____ _____
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Form	ACO1 - Well Completion
Operator	L & G Petroleum Operating, LLC
Well Name	Green 2 FB
Doc ID	1118296

All Electric Logs Run

Gamma Ray Neutron, Cement Bond, Completion Log
Compensated Density Log
Differential Temperature
Dual Induction Log
Density- Neutron Log

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



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

March 27, 2013

Randy Peterson
L & G Petroleum Operating, LLC
1000 CAMINO DEL OESTE
BAKERSFIELD, CA 93309-7102

Re: ACO1
API 15-001-30549-00-00
Green 2 FB
NW/4 Sec.11-24S-18E
Allen 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,
Randy Peterson

201 W. MADISON

P.O. BOX 805

IOLA, KS 66749

PHONE: (620) 365-2201

CUSTOMER NO.	JOB NO.	PURCHASE ORDER NO.	REFERENCE	TERMS	CLERK	DATE	TIME
*5				CASH/CHECK/BANKCARD	BE	11/26/12	1:13

**** CASH ****

**S
H
I
P
T
O**
L# @ Petroleum Operating LLC
Green 2 FB

DOCK C66794

 * INVOICE *

TAX : 001 IOLAL IOLA

SHIPPED	ORDERED	UM	SKU	DESCRIPTION	SUGG	UNITS	PRICE/PER	EXTENSION
4		EA	PC	PORTLAND CEMENT		4	9.45 /EA	37.80

** PAYMENT RECEIVED **	41.03	TAXABLE	37.80
** PAID IN FULL **		NON-TAXABLE	0.00
		SUBTOTAL	37.80
RECEIVED BY	CASH PAYMENT	41.03	TAX AMOUNT 3.23
			TOTAL AMOUNT 41.03



CONSOLIDATED
Oil Well Services, LLC

PO Box 884, Chanute, KS 66720
620-431-9210 or 800-467-8676

TICKET NUMBER 38312

Kenton Hupp 316-253-7265 LOCATION Furka KS
Randy Peterson 620-330-8421 FOREMAN Ed Strickler

FIELD TICKET & TREATMENT REPORT
CEMENT

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
12-17-12	4775	Green # 2 FB	11	245	18E	Allen
CUSTOMER L4G Petroleum Operating LLC			TRUCK # DRIVER TRUCK # DRIVER			
MAILING ADDRESS 1396 S Dakota Road			547 AB			
CITY STATE ZIP CODE Tola KS 66749			Mc Coy Water Truck Alan-G			

JOB TYPE Acid HOLE SIZE _____ HOLE DEPTH _____ CASING SIZE & WEIGHT 4 1/2 10 1/2
 CASING DEPTH _____ DRILL PIPE _____ TUBING _____ OTHER _____
 SLURRY WEIGHT _____ SLURRY VOL _____ WATER gal/sk _____ CEMENT LEFT in CASING _____
 DISPLACEMENT 20 BBLS DISPLACEMENT PSI 630 MIX PSI 7 shots RATE 3 BPM

REMARKS: Safety meeting. Rig up to 4 1/2 casing (Perfs 974-78') Spol acid on perfs 100 Gallons - Total Fluid 19 BBLS 2.4 Acid - 16.6 KCL water with Bachside - well broke 1700' pump into zone 1/2 BPM 1150' - 1 BPM 1300' - 1.5 BPM 1000' Shut down 19 BBLS Total, shut down INSP 600' - 5 mins - 100' - flood well back - went on light VAC. (Tucker zone) (middle Tucker skip) (next zone perfs 881-887 - BP 950') (13 shots) pump 400 Gallons 15% HCL acid - Follow with 20 BBLS flush. shut down 100' INSP - well went on 1/4 BBL VAC - pump into 800' 1 BPM - well broke 900' - 20 BBLS Total Fluid 2 BPM 600' AT 22 BBLS - PSI 650' 3 BPM Job complete R.G. down - BP plug - 970' & 950'

Thank you
ED-AB- Alan-G

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
5303	1	PUMP CHARGE	840.00	840.00
5306	55	MILEAGE	4.00	220.00
3107	500 Gallons	15% HCL acid	2.10	1050.00
3166	1 1/4 Gallons	Acid Inhibitor	50.00	62.50
3175B	2 1/2 Gallons	Stimoil	65.00	162.50
3129	2184 Gallons	City Water (Tax) 16.50/1000	16.50	34.07
3172	2 1/2 Gallons	KCL	33.50	83.75
3168	2 1/2 Gallons	Super Sweet - ANTI - Bacterial (Bachside)	35.00	87.50
	8	Mc Coy Water Truck 80 BBL	90.00	720.00
				3260.32
		Discount		163.02
				3097.30
				2.49
			Subtotal	3260.32
			SALES TAX 7.3%	
			ESTIMATED TOTAL	

Ravin 3737

AUTHORIZATION Randy Peterson TITLE L4G Petroleum Operating DATE _____

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.



CONSOLIDATED
Oil Well Services, LLC

TICKET NUMBER 38980
LOCATION Oftawa KS
FOREMAN Fred Mader

PO Box 884, Chanute, KS 66720
620-431-9210 or 800-467-8676

FIELD TICKET & TREATMENT REPORT
CEMENT

DATE	CUSTOMER #	WELL NAME & NUMBER	SECTION	TOWNSHIP	RANGE	COUNTY
12/4/12		Green # 2 FB				HL

CUSTOMER <u>L & G. Petroleum Op. LLC</u>		
MAILING ADDRESS <u>1396 South Dakota Rd</u>		
CITY <u>Jola</u>	STATE <u>KS</u>	ZIP CODE <u>66749</u>

TRUCK #	DRIVER	TRUCK #	DRIVER
506	Fred Mad	Safety	Wt
495	Har. Bec	HB	
369	Der Mas	DM	
503	Ste Dau.	SD	

JOB TYPE Longstring HOLE SIZE 634 HOLE DEPTH 1088 CASING SIZE & WEIGHT 4 1/2
CASING DEPTH 10760 DRILL PIPE _____ TUBING _____ OTHER _____
SLURRY WEIGHT _____ SLURRY VOL _____ WATER gal/sk _____ CEMENT LEFT in CASING 1 1/2" Plug
DISPLACEMENT 17 BBL DISPLACEMENT PSI _____ MIX PSI _____ RATE 5 BPM

REMARKS: Wash down 5'-4 1/2" casing Mix + Pump 200# Gel Flush.
Mix + Pump 12 BBL Telltale Dye, Mix + Pump SKS
50/50 Poz Mix Cement 2% Gel 2# Pheno Seal / sk.

Customer Supplied 4 1/2" Rubber Plug.
Willis Well Service.

Fred Mader

ACCOUNT CODE	QUANTITY or UNITS	DESCRIPTION of SERVICES or PRODUCT	UNIT PRICE	TOTAL
5401	1	PUMP CHARGE	495	1030 ⁰⁰
5406	45 mi.	MILEAGE	495	180 ⁰⁰
5402	1076	Casing Footage		N/C
5407	328.95	Ton Miles	503	440 ²⁹
5502C	2 1/2 hrs	80 BBL Vac. Truck	369	225 ⁰⁰
1104	170 SKS	50/50 Poz Mix Cement		1861 ⁵⁰
1118B	436 #	Premium Gel		102 ⁰⁶
1107A	55 #	Pheno Seal		109 ⁶⁵
		Thank you		
		less 2% - 8211		
		Total	\$ 4023 ⁴³	
		7.35%	SALES TAX	156 ⁵³
			ESTIMATED TOTAL	4105 ⁵³

AUTHORIZATION Randy Petrus TITLE L & G Petroleum Operating DATE _____
Ravin 3737

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.

GEOLOGICAL REPORT

Green #2FB
1815' FNL, 330' FWL
Sec. 11 T24S R18E
S2 NW SW NW
Allen County, Kansas

Date: 12/10/12

Operator: L & G Petroleum Operating, LLC, 1396 South Dakota Rd., Iola, KS 66749

Drilling Contractor: Mokat Drilling, Tootie Smith, driller
Air Rotary Drill Rig

Wellsite Geologist: Julie Shaffer – On location from surface to TD

Dates Drilled: Set surface on 11/30/2012
Drilled on 12/3/2012

Drilling Fluid: Compressed air with injected water

Formation Tops: Formation tops were taken from density/neutron logs.

Rock Color Descr.: GSA Rock Color Chart (washed and dried cuttings)

Total Depth: 1087' **Elevation:** 962' Est.

Status: OIL WELL

Oil Shows:	Squirrel Sandstone	644-650'	Good oil show
	Cattleman Sandstone	749-760'	Poor oil show
	Bartlesville Sandstone	849-862'	Excellent oil show
	Bartlesville Sandstone	866-872'	Excellent oil show
	Bartlesville Sandstone	879-900'	Excellent oil show
	Bartlesville Sandstone	922-927'	Good oil show
	Tucker Sandstone	957-961'	Fair to Good oil show
	Tucker Sandstone	963-969'	Fair to Good oil show
	Tucker Sandstone	1005-1012'	Fair oil show

Notes: Well cuttings were examined at the drill rig and discarded. Select samples of zones of interest were saved and examined in the laboratory with a binocular microscope and blacklight.

** - Indicates worthy oil show. There were several intervals throughout the Lower Bartlesville and Tucker sandstones that had fair to good oil shows; however, after careful review of the cuttings and logs and input from experienced logging professionals these lower sand intervals are uneconomical. They have water saturation levels in the 70-80% range and respective resistivity is reading as though the formations are taking fluids from about 927-1012'.

FIELD and LABORATORY SAMPLE EXAMINATION

0-450' Samples not examined

450-470' Shale, light green

470-472' Shale, dark gray

Top of the Altamont Limestone at 472' (+490')

472-482' Limestone

482-485' Shale, grayish-black

485-492' Shale, dark gray

492-500' Weiser Sandstone, light gray, clean, 20% porosity, no petroliferous odor/show

500-540' Shale, medium to medium-dark gray, laminated with silt/sand in part

540-542' Limestone, dark brownish-gray, hard

542-544' Shale, grayish-black

544-547' Shale, medium gray

Top of the Pawnee Limestone at 547' (+415')

547-559' Limestone

559-569' Shale, medium-dark gray

569-573' Limestone, dark brown, fossiliferous

573-576' Lexington Shale, black, carbonaceous

576-590' Shale, medium-dark gray

Top of the Oswego Limestone at 590' (+372')

590-622' Limestone, light olive gray

622-624' Shale, medium gray

624-627' Summit Shale, black, carbonaceous

627-628' Shale, light gray, mucky

628-633'	Limestone, tan/off-white
633-634'	Shale, medium-light gray
634-637'	Mulky Shale
637-638'	Shale, light gray, mucky
638-642'	Shale, medium-light gray, silty, pyritic
642-644'	Shale, medium gray
**644-650'	Squirrel Sandstone, moderate yellowish-brown oil stained cuttings, 18-20% porosity, friable, well sorted, sub-rounded, very fine grained sandstone, little to no silt, well saturated, strong petroliferous odor, 90-95% uniform medium-bright yellow hydrocarbon fluorescence, fair oil show, live oil bleed
650-702'	Shale, medium gray, silty at top
702-710'	Shale, black
710-712'	Bevier Coal
712-722'	Shale, medium gray

Top of the Verdigris Limestone at 722' (+240')

722-723'	Limestone, dark brownish-gray, hard
723-725.5'	Croweburg Shale, black, carbonaceous
725.5-726'	Croweburg Coal, thin
726-749'	Shale, medium-light gray
749-755'	Cattleman Sandstone, medium dark gray due to heavy black oil speckling, good saturation, petroliferous odor, no oil show on pit, 16-20% porosity, micaceous, little silt, 75% heavily mottled to uniform medium-bright/bright yellow hydrocarbon fluorescence, trace coal cuttings
755-760'	Shale, dark grayish-black
760-769.7'	Shale, light gray, lime streaks
769.7-770'	Coal, thin
770-780.5'	Shale, light gray
781.5-782'	Coal, thin

- 782-804' Shale, medium gray, silty/sandy in part
- 804-806' Weir Shale, black, carbonaceous
- 806-826' Shale, medium-dark to dark gray
- 826-827' Coal
- 827-839' Shale, medium-dark gray
- 839-843' Shale, light gray, sandy

***Note:** The sandstone intervals for the next 170'+/- have a good amount of medium-dark and dark gray shale cuttings mixed in, high pressure air and water were likely moving shale from the borehole to surface during drilling of these high porosity formations. Also of note, the oil shows in this well were so significant that oil was carried out the blooey pipe from the top of the Bartlesville sand down through the Mississippi, making it hard to describe oil shows when new oil was observed.

Top of the Bartlesville Sandstone at 843' (+119')

- 843-849' Bartlesville Sandstone, pale yellowish-brown oil stained cuttings, fair saturations, very fine grained, no silt, friable, 18-20% porosity, strong petroliferous odor, trace oil on cuttings, gas cap, 25% uniform bright yellowish-brown hydrocarbon fluorescence
- **849-862' Bartlesville Sandstone, dark to dusky yellowish-brown oil stained cuttings, fully saturated, well sorted, very fine grained, no silt, very friable, 18-22% porosity, pyritic at top, strong petroliferous odor, excellent oil show, uniform bright yellowish-brown hydrocarbon fluorescence
- 862-866' Shale, medium-light gray
- **866-872' Bartlesville Sandstone, dusky yellowish-brown oil stained cuttings, 18+% porosity, slightly friable, fair cementation, (few light olive-gray, calcareous pieces have little to no staining and are tight), sub-angular to sub-rounded, very fine to fine grained, poorly sorted, little silt, well saturated, strong petroliferous odor, excellent oil show, 60-75% uniform very bright mustard yellow hydrocarbon fluorescence
- 872-879' Limestone, light olive-gray, fine grained, hard, no petroliferous odor/show, trace medium yellow fluorescence
- **879-892' Bartlesville Sandstone. This interval looks excellent on the log, great resistivity (10-50 Ohms) down to 892'. However, this may have been so soft and permeable that it was pulverized, the only cuttings that were seen through 879-900' were shale cuttings, very poor returns. The few sand chips that were collected amongst shale are well saturated with dark brown oil and display a bright mustard yellow hydrocarbon fluorescence.
- 892-900' Bartlesville Sandstone. This interval looks wet on the log. This interval was so soft and permeable that it was pulverized, the only cuttings that were seen through 879-900' were shale cuttings, very poor returns.

***Note:** At 900' a fracture was hit and a large surge of water followed. These high water volumes were seen at every joint change down to T.D.

- 900-905' Limestone, light olive-gray, mottled pale yellowish-brown oil stain, fine grained, hard, slight petroliferous odor, heavily mottled bright yellow to yellowish-brown hydrocarbon fluorescence
- 905-914' Bartlesville Sandstone, light gray with medium yellowish-brown and speckled black heavier oil staining, 18-20% porosity, slightly friable, well cemented, pyritic, sub-angular to sub-rounded, fine grains, little to no silt, poorly saturated, petroliferous odor, heavily mottled bright greenish-yellow hydrocarbon fluorescence
- 914-922' Bartlesville Sandstone (75%), light gray, 18-20% porosity, medium yellowish-brown and black heavier oil staining, 20-25% of samples have a thick tar-like, sticky, black oil coating, majority of coated chips are coal (<5%) that are bubbling gas through the tar oil four days after drilling (thin coal seam within BV sand), also within this interval is a limestone (20-25%), light olive-gray, very fine grained, no visible porosity, strong petroliferous odor, live bleed on cuttings, fair oil show (changed to a heavier dark brown/black oil on pit), heavily mottled bright yellowish-brown hydrocarbon fluorescence
- 922-927' Bartlesville Sandstone, medium yellowish-brown stained cuttings, well saturated, medium-fine, sub-angular to sub-rounded, well sorted grains, 26-28% porosity, friable, little to no silt, slight petroliferous odor, uniform bright yellowish-brown hydrocarbon fluorescence (when washed in laboratory, samples exhibited additional light brown oil show on water bucket)
- 927-934' Limestone, light olive-gray/yellowish-gray, fine grained, locally medium crystalline, no visible porosity, hard, trace medium yellow fluorescence
- 934-948' Bartlesville Sandstone, medium-dark to pale yellowish-brown stained cuttings, poorly saturated, very fine, sub-angular grains, 18+% porosity, friable, very silty from 934-937', then fine grained, very friable, live bleed on cuttings, fair oil show, petroliferous odor, heavily mottled to uniform bright yellowish-brown to yellow hydrocarbon fluorescence
- 948-954' Shale, medium-light gray

Top of the Tucker Sandstone at 954' (+8')

- 954-957' Tucker Sandstone, light gray, pale yellowish-brown stained cuttings, 16-18% porosity, slightly friable, sub-angular to sub-rounded, fine to medium-fine grain sandstone, poorly saturated, slightly silty cementation, uniform bright greenish-yellow hydrocarbon fluorescence, no petroliferous odor/show
- 957-961' Tucker Sandstone, light gray, pale yellowish-brown stained cuttings (staining looks washed), 18-20+% porosity, very friable, medium-fine, sub-angular to sub-rounded, well sorted grains, little to no silt, uniform bright greenish-yellow hydrocarbon fluorescence, saltwater odor
- 961-963' Shale, medium gray

- 963-969' Tucker Sandstone, pale yellowish-brown stained cuttings (staining looks washed), 18-22% porosity, very friable, fine, sub-rounded, well sorted grains, little silt, good saturation, live oil bleed, good oil show/odor, uniform bright yellow hydrocarbon fluorescence
- 969-972' Limestone, light olive-gray, fine grained, hard, pyritic, no petroliferous odor/show, well increased in water production along this zonal boundary
- 972-1005' Tucker Sandstone, light gray, minor mottled pale yellowish-brown stained cuttings, 18-20+% porosity, very friable, fine, sub-angular to sub-rounded grains, little to no silt, trace of uniform medium-bright greenish-yellow hydrocarbon fluorescence, saltwater odor, very few cuttings returns, thin pyrite, lime streaks
- 1005-1008' Tucker Sandstone, mottled pale yellowish-brown stained cuttings (staining looks washed), 20% porosity, very friable, fine, sub-rounded grains, little silt, fair saturation over 65-75% of cuttings, live oil bleed, fair oil show/odor, uniform bright yellowish-green hydrocarbon fluorescence
- 1008-1012' Tucker Sandstone (90%), medium-dark yellowish-brown heavy oil stained cuttings, 18-22% porosity, fine to medium-fine, sub-angular to sub-rounded, well sorted grains, little silt, fair cementation, fair saturation, good live oil bleed, fair oil show/odor, heavily mottled bright yellowish-green hydrocarbon fluorescence; Coal (10%), trace limestone and pyrite (horizontal permeability may be an issue....localized??)
- 1012-1032' Shale, medium-light gray, silty, few sandstone laminations, no petroliferous odor/show
- 1032-1040' Shale, dark gray
- Top of the Mississippi at 1040' (-78')
- 1040-1043' Chert, white/light gray, chalky and siliceous, good vugular porosity, no petroliferous odor/show, trace heavy black oil in pore spaces, 5-10% mottled medium-bright green hydrocarbon fluorescence
- 1043-1048' Shale, greenish-gray
- 1048-1056' Chert, light gray, flinty, pyritic, minor vugular porosity, hard, no petroliferous odor/show, 10% mottled medium-bright green hydrocarbon fluorescence
- 1056-1062' Limestone (80%), tan, fine to very fine grained, silty to sandy appearance on 20% of limestone chips (potentially the drilling break that was seen at 1058' drill stem depth), no visible vugular porosity; however, there may be some minor inter-crystalline porosity, chips are medium-soft, scattered pyrite fleks; Chert (20%), white/light bluish-gray, flinty with minimal weathering, no petroliferous odor/show, overall a 20% uniform medium-bright flat yellow hydrocarbon fluorescence from the sandy pieces. Samples exhibited slow, faint yellowish-blue oil cut ring when observed under black light, no residual oil show in white light.
- 1062-1087' Limestone (80%), tan, fine to very fine grained, monor visible vugular porosity, chips are medium-hard, scattered pyrite fleks, variegated Chert (20%), white/light bluish-gray,

flinty, minor weathering, no petroliferous odor/show, mottled dull yellow hydrocarbon fluorescence from the lime chips. Samples exhibited slow, faint yellowish-blue oil cut ring when observed under black light, no residual oil show in white light.

T.D. = 1087'

Julie Shaffer
Geologist