Confidentiality Requested:
☑ Yes ☐ No

KANSAS CORPORATION COMMISSION
OIL & GAS CONSERVATION DIVISION

Form ACO-1
January 2018
Form must be Typed
Form must be Signed
All blanks must be Filled

WELL COMPLETION FORM
WELL HISTORY - DESCRIPTION OF WELL & LEASE

OPERATOR: License # 33936
Name: Griffin, Charles N.
Address 1: 126 S MAIN ST
Address 2:
City: PRATT State: KS Zip: 67124 + 2711
Contact Person: Bryant Theis
Phone: (620) 672-9700
CONTRACTOR: License # 30606
Name: Murfin Drilling Co., Inc.
Wellsite Geologist: Eli J. Felts
Purchaser: Plains

Designate Type of Completion:
☑ New Well ☐ Re-Entry ☐ Workover
☑ Oil ☐ WSW ☐ SWD
☐ Gas ☐ DH ☐ EOR
☐ OG ☐ GSW
☐ 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 EOR ☐ Conv. to SWD
☐ Plug Back ☐ Liner ☐ Conv. to GSW ☐ Conv. to Producer

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

9/27/2023	10/2/2023	10/11/2023
Spud Date or Recompletion Date	Date Reached TD	Completion Date or Recompletion Date

API No.: 15-007-24480-00-00
Spot Description:
__ - __ - SW - SW Sec. 10 Twp. 30 S. R. 15 ☐ East ☑ West
660 Feet from ☐ North / ☑ South Line of Section
660 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: Barber
Lease Name: ANNA Well #: #1
Field Name:
Producing Formation: Ordovician
Elevation: Ground: 1920 Kelly Bushing: 1925
Total Vertical Depth: 4805 Plug Back Total Depth: 4790
Amount of Surface Pipe Set and Cemented at: 976 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: 53000 ppm Fluid volume: 5000 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: 01/24/2024
☐ **Confidential Release Date:** 01/23/2026
☐ **Wireline Log Received** ☑ **Drill Stem Tests Received**
☑ **Geologist Report / Mud Logs Received**
☐ **UIC Distribution**
ALT ☑ **I** ☐ **II** ☐ **III** **Approved by:** Todd Bryant **Date:** 01/27/2024

Page Two

Operator Name: Griffin, Charles N. Lease Name: ANNA Well #: #1

Sec. 10 Twp. 30 S. R. 15 ☐ East ☑ West County: Barber

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:

CNL/CDL
Dual Induction
Micro

☑ 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
Conductor	17.5	13.375	54.5	44	Common	75	2% Gel 3% CC
Surface	12.25	8.625	23	976	Common	390	2% Gel 3% CC
Production	7.875	5.5	17	4798	Pro C	205	10% salt, 2% gel and 5# Koseal per 1000

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: 10/17/2023

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

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

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
4620	4660

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)*
2	4620	4660			see attached

TUBING RECORD: Size: 2.875 Set At: 4603 Packer At:

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

Form	ACO1 - Well Completion
Operator	Griffin, Charles N.
Well Name	ANNA #1
Doc ID	1734462

Tops

Name	Top	Datum
Heebner	3836	-1911
Brown Lime	4011	-2086
Lansing	4031	-2106
Stark Shale	4337	-2412
B/KC	4426	-2501
Pawnee	4493	-2567
Cherokee Shale	4532	-2607
Viola	4580	-2655
Simpson Shale	4704	-2779

Form	ACO1 - Well Completion
Operator	Griffin, Charles N.
Well Name	ANNA #1
Doc ID	1734462

Casing

Purpose Of String	Size Hole Drilled	Size Casing Set	Weight	Setting Depth	Type Of Cement	Number of Sacks Used	Type and Percent Additives
Conductor	17.5	13.375	54.5	44	Common	75	2% Gel 3% CC
Surface	12.25	8.625	23	976	Common	390	2% Gel 3% CC
Production	7.875	5.5	17	4798	Pro C	205	10% salt, 2% gel and 5# Koseal per 1000#

QUALITY WELL SERVICE, INC.

8395

Federal Tax I.D. # 481187368
Home Office 30060 N. Hwy 281, Pratt, KS 67124
Mailing Address P.O. Box 468

Office 620-786-6992
Fax 620-672-3663

Todd's Cell 620-388-4967
Brady's Cell 620-727-6964

	Sec.	Twp.	Range	County	State	On Location	Finish
Date 9-27-23	10	30S	15W	BARBER	KS		

Lease ANNA Well No. 1 Location

Contractor Murfin Drlg Rig 104		Owner	
Type Job Cond		To Quality Well Service, Inc. You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.	
Hole Size 17 1/2	T.D. 44'		
Csg. 13 3/8	Depth 44'	Charge To Griffin	
Tbg. Size	Depth	Street	
Tool	Depth	City State	
Cement Left in Csg.	Shoe Joint 10	The above was done to satisfaction and supervision of owner agent or contractor.	
Meas Line	Displace 4.9	Cement Amount Ordered 175 sx Common	

EQUIPMENT					
				USED 75 sx	
Pumptrk 3	No.			Common 75 sx	
Bulktrk 10	No.			Poz. Mix	
Bulktrk	No.			Gel. 141 lbs	
Pickup	No.			Calcium 2 1/2 lbs	

JOB SERVICES & REMARKS		
Rat Hole	Salt	
Mouse Hole	Flowseal 37.5 lbs	
Centralizers	Kol-Seal	
Baskets	Mud CLR 48	
D/V or Port Collar	CFL-117 or CD110 CAF 38	
Run 1 jt 13 3/8 54.50# csg set @ 44'	Sand	
START CSG CSG on Bottom	Handling 81	
Hook up to csg. Break Circ w/rig	Mileage 30 / 3960	
START Pumping H2O	**FLOAT EQUIPMENT**	
START MIX & Pump 75 sx Common	Guide Shoe	
2% GEL 3% CC 1/2# PS @ 14.3#/GAL	Centralizer	
START DISP	Baskets	
Close Valve on csg. 4.9 BBL total	AFU Inserts	
Good Circ thru JOB	Float Shoe	
Circ CMT TO PIT	Latch Down	
	SERVICE SUPV 1 EA	
THANK YOU	LMV 30	
PLEASE CALL AGAIN	Pumptrk Charge Cond.	
TODD MATT Arthur	Mileage 60	
	Tax	
	Discount	
X Signature	Total Charge	

QUALITY WELL SERVICE, INC.

8396

Federal Tax I.D. # 481187368
Home Office 30060 N. Hwy 281, Pratt, KS 67124
Mailing Address P.O. Box 468

Office 620-786-6992
Fax 620-672-3663

Todd's Cell 620-388-4967
Brady's Cell 620-727-6964

	Sec.	Twp.	Range	County	State	On Location	Finish
Date 9-29-23	10	30S	15W	BARBER	KS		

Lease: ANNA Well No.: #1 Location:

Contractor: Murfin Drlg Rig #104

Type Job: SURFACE

Hole Size: 12¼ T.D.: 989'

Csg.: 8⅝ 23# Depth: 976'

Tbg. Size Depth

Tool Depth

Cement Left in Csg. Shoe Joint: 42.15

Meas Line Displace: 59.77

Owner

To Quality Well Service, Inc.
You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Charge To: Griffin

Street

City State

The above was done to satisfaction and supervision of owner agent or contractor.

Cement Amount Ordered: 250sx Common 2% Gel 3% CC ½# P
425sx Common 2% Gel 3% CC ½# P

EQUIPMENT

Pumptrk 3	No.		
Bulktrk 10	No.		
Bulktrk 12	No.		
Pickup	No.		

JOB SERVICES & REMARKS

Rat Hole

Mouse Hole

Centralizers: 5 - 15

Baskets: 5 - 10

D/V or Port Collar

Run 23 Jt's 8⅝ 23# CSG SET @ 976
START CSG CSG on Bottom DROP BALL
Hook up to CSG & Break Circ W/RIG
No Circ
START Pumping H2O
START MIX & Pump 250 sx Common
2% Gel 3% CC ½# PS @ 14.8#/GAL
SHUT DOWN RELEASE 8⅝ TOP Rubber Plug
START DISP
Plug Down 60 Bbl, at 450#
Close Valve on CSG NO CIRC
Pump 105 sx 13⅜ CIRC OUT TO PIT
WOC 2 HR & 8' Pump 35sx CIRC OUT TO PIT
WOC 1 HR DIDN'T FALL
THANK YOU
PLEASE CALL AGAIN TODD MATT

Common	390 sx
Poz. Mix	
Gel.	733 lbs
Calcium	1100 lbs
Hulls	
Salt	
Flowseal	195 lbs
Kol-Seal	
Mud CLR 48	
CFL-117 or CD110 CAF 38	
Sand	
Handling	424
Mileage	30 / 12720

FLOAT EQUIPMENT 8⅝

Guide Shoe	H.M 1 EA
Centralizer	2 EA
Baskets	2 EA
AFU Inserts	1 EA
Float Shoe	TOP RUBBER PLUG 1 EA
Latch Down	
	SERVICE SUP 1 EA
	LMV 30
Pumptrk Charge	SURFACE
Mileage	66
Tax	
Discount	
Total Charge	

X Signature: Jason Arthur

Taylor Printing, Inc.

QUALITY WELL SERVICE, INC.

8398

Federal Tax I.D. # 481187368
Home Office 30060 N. Hwy 281, Pratt, KS 67124
Mailing Address P.O. Box 468
Office 620-786-6992
Fax 620-672-3663
Todd's Cell 620-388-4967
Brady's Cell 620-727-6964

	Sec.	Twp.	Range	County	State	On Location	Finish
Date 10-3-23	10	30S	15W	Barber	Ks		

Lease: Anna | Well No.: 1 | Location:

Contractor: Murfin Drlg Rig 104

Owner:

To Quality Well Service, Inc.
You are hereby requested to rent cementing equipment and furnish cementer and helper to assist owner or contractor to do work as listed.

Type Job	5½ LS		
Hole Size	7⅞	T.D.	4805
Csg.	5½	Depth	4799
Tbg. Size		Depth	
Tool		Depth	
Cement Left in Csg.		Shoe Joint	3.07
Meas Line		Displace	113.3

Charge To: Griffin

Street:

City: State:

The above was done to satisfaction and supervision of owner agent or contractor.

Cement Amount Ordered: 205sx Pro C 2% Gel 10% Salt 3#/sx Kolseal .6% CL6A .25% CAIP 25#/sx Pl

EQUIPMENT

	No.	
Pumptrk	3	
Bulktrk	10	
Bulktrk		
Pickup		

Common	205sx
Poz. Mix	
Gel.	385 lbs
Calcium	
Hulls	
Salt	1129 lbs
Flowseal	51 lbs
Kol-Seal	1025 lbs
Mud CLR 48	500 Gal
CFL-117 or CD110 CAF 38	CL6A 116 lbs
Sand	CC-1 9 Gal CAIP 49 lbs
Handling	276
Mileage	30 / 8280

JOB SERVICES & REMARKS

Rat Hole	30sx
Mouse Hole	
Centralizers	1-2-3-4-5-6-7
Baskets	
D/V or Port Collar	USED

Run 119 Jts 5½ 17# CSG SET @ 4798
START CSG CSG on Bottom: TAG Dry Ball
Hook up to CSG: BREAK CIRC W/RIG
START Pumping 10 Bbls H2O 12 Bbls MF 10 Bbls H2O
START Plug R-H 30sx
START MIX: Pump 175sx Pro C & CSG @ 14.8#/Gal
SHUT DOWN Wash up Tk RELEASE 5½ LD Plug
START Disp W/ 2% KCL
LIFT PSI 91½ out 550'
Plug Down 1300' 113.3 out
Bi up on CSG 1700#
~~Good Circ~~ RELEASE: HELD ½ Bbl BACK
Good Circ thru JOB
THANK YOU
PLEASE CALL AGAIN
TODD MATT HELMAN

FLOAT EQUIPMENT

Guide Shoe	H.M 1 EA
Centralizer	7 EA
Baskets	
AFU Inserts	
Float Shoe	
Latch Down	1 EA
Service Spv	1 EA
LMV	3
Pumptrk Charge	LS
Mileage	60
Tax	
Discount	
Total Charge	

X Signature

Taylor Printing, Inc.

Griffin Management LLC

Anna #1

9/27/23
MI and RU Murfin 104.
Drilled 50’ 17 ¼” hole and run 1 jt 13 3/8” conductor pipe. Set at 44’

9/28/23
Drilled 989’ 12 ¼” hole. Lost circulation at 787’ Dry drilled to 989’. Ran 23 jts 8 5/8” surface pipe and set at 976’. Cemented with350’ sks common cement.

10/3/23
Logging at midnight
Laying down drill pipe at 3:00 am
Started running casing at 10:00 am
Ran 119 jts 5 ½” 17# casing. Total length 4799.41’. Landed casing at 4798’. PBTD 4790’

Circulated 1 hr. RU Quality and cemented with 175 sks Pro C cement with 10% salt, 2% gel and 5# Koseal per 1000#. Plug down at 2:30 pm
Plug rathole with 30 sks. Release rig.

10/11/23
RU CCWS (Reyes). RU Log Tech. Ran CBL/GR log and perforated 4620'- 4660' 2 spft. PU packer and 143 jts 2 7/8" tubing. Set packer at 4598'
RU to swab. IFL surface. Swabbed down and recovered 26 bbls. Shut in well

10/12/23
TP0#
Made 1 swab recovered 200' TOB oil
Released packer and pick up 2 jt tubing (4663' 145 jt)
RU Tiger Chemical. Circulated spot to bottom
Pulled 3 jts and set packer at 4565'. Tiger Chemical pumped 2000 gals 15% MCA acid, 9 bbls KCL spacer water, 28.5 bbls KCL flush water and 50 perf balls. Breakdown 500#. Treated 3.5

bpm at 600#. After balls hit pressure climbed to 750#. ISIP 300#. 15 mins Totl acid load 86.5 bbls. Flowed back 5 bbls
PU swab and start swabbing. IFL surface
Swabbed down and recovered 54 bbls 10% OC
1st hr. FL 4000' swabbed 12 bbls 20% OC
2nd hr FL 4200' swabbed 6 bbls 20% OC
Total Swabbed back 72 bbls. Released packer
Picked up 3 jts to clear per balls off perfs
Swabbed 56 bbls off casing. TOOH. Shut in
Will frack Friday

10/13/23
RU Gore N2 to frack with
8,798 bbls slick water
100,227# 20/40 mesh sand
8,319# Resin coated 20/40 mesh sand
Frack pressures Avg 61 bpm at 1662#
ISIP 1445#. 15 mins 1166#
Shut in well

10/14/23
11:20 pm. CP 115#. Open well Up
12:20 pm. CP 65# flowed 35 bbls
3:50 pm. CP 8# flowed 65 bbls
Well flowed 95 bbls today

10/15/23
Well dead

10/16/23
Well dead. ND frack valve. RU to run in tubing as follows:

1)	2 7/8” mud anchor.	15.00’
1)	2 7/8” seating nipple.	1.10’
143)	Jts 2 7/8” tubing.	4587.44’

Bottom of tubing landed at 4603.54’
Tagged sand at
R/O to run pump and rods

1) 2 ½” x 2” x 18’ RWB insert pump
1) 2’ x 7/8” pony rod
6) 1.25” x 25’ sinker bars
175) 7/8” rods

1) 8’ x 7/8” pony rod
1) 6’ x 7/8” pony rod
1) 26’ polished rod

Loaded hole and rigged down

Will set pumping unit in morning

GRIFFIN MANAGEMENT, LLC

126 S. Main, Pratt, KS 67124
620.672.9700

Scale 1:240 (5"=100') Imperial
Measured Depth Log

Well Name:	Anna #1		
API:	15-007-24480		
Location:	T30S R15W Sec 10		
License Number:	33936	Region:	Barber County, KS
Spud Date:	9/27/2023	Drilling Completed:	10/03/2023
Surface Coordinates:	1130' FSL & 380' FEL		
Bottom Hole Coordinates:	Vertical Wellbore		
Ground Elevation (ft):	1920'	K.B. Elevation (ft):	1925'
Logged Interval (ft):	3800' To: 4800'	Total Depth (ft):	4800'
Formation:	Ordovician (Simpson) @ RTD		
Type of Drilling Fluid:	Mud-Co. Chemical Drispac - Displaced @ 2802'-34'		

Printed by MudLog from WellSight Systems 1-800-447-1534 www.WellSight.com

OPERATOR

Company: Griffin Management, LLC
Address: 126 S. Main
Pratt, KS 67124

GEOLOGIST

Name: Eli J. Felts
Company: Griffin Management, LLC
Address: 126 S. Main
Pratt, KS 67124

Drilling Report

9/27/2023
Spud @ 3:30 PM
Set 44' Conductor

9/28/2023
Drilling @ 195'

9/29/2023
WOC @ 989'

9/30/2023
Drilling @ 2175'

10/01/2023
Drilling @ 3692'

10/02/2023
Drilling @ 4646'

10/03/2023
LDDP @ 4805'

10/04/2023
Done

Problems

Lost circ at 787', dry drill to 989', Wiper trip at 989-15 stands in 1 1/4 hr.

Pipe Setting

13.375" set at 44' w/75 sxs. Common 2%Gel 3%CC
8 5/8 set at 976' w/390 sxs.Common 2%Gel 3%CC
5 1/2" set at 4798' w/205 sxs Griffin blend

Lithology | MD | Circulating Stops | Rate of Penetration (ROP (min/ft) 0–5; Gas (units) 10–1000) | Oil Shows | Geological Descriptions | DSTs/Mud/Surveys, etc.

3750 — 3800 — 3850 — 3900 — 3950 — 4000 — 4050 — 4100 — 4150 — 4200 — 4250 — 4300 — 4350 — 4400 — 4450 — 4500 — 4550 — 4600 — 4650 — 4700 — 4750 — 4800

SH - flood deep brown to black; smooth oa w/ well compacted appearance & break; some visible laminations; soft to firm; fissile-brittle in some; trace show gas bubbles along break

SH - increasing darker shades; fissile earthy carbonaceous shales; laminations visible; flakey chips on break w/ sl visible gas bubbles along break; LS - white in mst, few crm; pred fine xln w/smooth to partly chalky txture; lithographic; no odor, no show

LS - cream to white, caramel/tan; fine xl in most w/ smooth surface in most/ some visble dissolution on surface w/ some staining & residual film/clingy in fractures along porous sections of some; getting pale green - grey soilty shales showing in

SH - flood in with Shales take over and clearly visible with naked eye - sample to sample; blue-grey silty to sl sandy txture; black speckled mineral fragments imbedded & visible throughout much of sample; clay minerals poss micaceous; no visble porosity; no shows

Silty to sand-txtured SH - light grey w/ pale blue-green hue; black mineral inclusions persist; v. fine grain sand throughout w/ shaley-claybound clusters robbed of any porosity w/ shale impregnations

SH - lt to medium grey, smooth silty w/ speckled darker grey to black inclusions & abdt lt grey w/ highly sandy txture; fine grained, sb round, well sorted; shalebound w/ sl fissile break; porosity negated w/ clays; sl stainining in some; few dark mineral & larger fragments included; no odor, ns

SH - mostly medium grey w/ fair % dark speckled inclustions & few loose dark shale fragments; most solid w/ darker speckled incls; shales & clay minerals; micaceous apppearance shimmery to glittery; v. fine grained qtz sand cluster shalebound; stringers LS - cream to tan; brown, fn xln fossiliferous txture; well compacted & v. dense

SH - varishades grey, lt to medium w/ few sl bluish green shales; abdt sandy stringers remain w/ some visible white-pale grey clusters; increasing stringers LS - cream to tn w/ some dolomitic appearance, sandy w/ stained appearance & scattered fluores; no live shows visible; fluor noted from rocks

LS - white to cream, tan-brown; fn-med xln w/ heavily fossiliferous, oolitic, ooc porosity dev in part; partial dissolved oolites/cast remains in some; partially stained w/ slight fluor throughout tray; no live shows visible

LS - cream to white; sm peachy to yellow/orange mineral staining; tan & brown in some; mst fn-med xln; xln to chalky txture in most; sl foss in some; stringers shale medium grey & some pale green, soft silty

LS - cream to buff, white, fine xln in most; chalky appearance w/ mostly typical chalky lime; few pcs w/ slight txture appearing dolomitic, v. fine xln sucrosic txture w/discrete saturated staining giving slightly darker color; - black light indicating live fluor w/ pp drops free on break and floating in tray; ~5% or so carry show

LS - cream to white, some caramel; tan to brown; varying txtured from loose chalky & gummy to v. well compacted fn-v. fine xln micritic-sl cherty; transitional zone w/ abdt marbled pcs w/ poor consistency in development; dark shale contacts visible along edges in several w/ some loose black carb shales

LS - cream to lt tan, sm grey, fn to med xln w/ fair vis xln dev; partly foss; staining in part; intrafossiliferous & some fractured porosity developed; slight shows light golden free oil w/ scattered bright yellow fluor & some more amber to dull orange aura; weak to fair show

LS - crm to buff & grey xln development & foss/intrafoss in part oa poorly developed; loose chalky fragments appearing and clouding some visibility; shales grey & pale green-blue increasing

LS - cream to buff, peachy in some (mineral staining) fine to med xln w/ some vis disolution - pinpoint to fractured appear porosity; lt brown to amber staining; few dark gils stained fractures in pcs (chalky) no visible live shows; chalky throughout; some shale stringers; no odor

LS - cream to buff; sm lt tan fn, med xln w/ some v. fine to micritic; sm sl sucrosic xln dev w/ barren to partly chalky txture; dull lifeless fluor; scattered CH - smooth vitreous - grey to brown in most; marbled to interbedded in some; no odor, ns

LS - cream to white - lt grey; fn to med xln; granular xln txture w/ sl oatmeal txture; fossiliferous txture in part; influx SH - grey; shades greys w/ sl green hue; slight speckled to partly mottled w/darker inclusions (carb); loose fragments CH - wht to cream vitreous; smooth & dense

SH - flood pale blue/green smooth silty w/ fossiliferous & LS - cream & white to buff; grey spots & streaks w/ predominantly chalky txture; some visible xln dev others smooth & firm; few pcs dark, black carb shales

LS - cream to buff w/ some greys; fine-med xln txture w/ mostly granular to xln txture; some w/ stained appearance giving v. mildly darker color, mostly w/ dull weak fluor & barren porosity; few pcs w/slight shows hiding w/ dark & sl clingy txture; likely residual trapped and non-viable

LS - cream, white, fine xln w/ chalky appearance in most; sl xln pors visible w/ highly chalkybound & impregnated porosity; weak traces clingy gold-amber specs on break in few; stringers green-grey shale

LS - wht to cream, appears dull grey in most; fn-med xln w/ oa chalky txture; lithographic & non-discript oa

LS - white to cream; mostly fine xln w/ med xln ip; mst lithographic; no signs reservoir; chalky lime - increasing dark earthy shales

LS - crm to tan & caramel; most of sample cream fine xln w/ sl granular txture w/ poorly developed xln porosity; chalky break; med soft to sl powdery; some tan to caramel w/ fn to v. fine xln smooth well compacted & dense; no vis pors; ~10% black shales

SH- grey to dark brown/black earthy SH fragments; medium soft w/ well formed laminations visible; soft easy break; questionable gas bubble slowly weep when broken- LS - cream to white & light tan, fine xln to sl med xln in most; v. poorly vis xln porosity; highly chalky txture overall lithographic

LS - cream to tan, brown, fn & med xln marbled txture w/ oatmeal to smooth glassy marbled; abdt stringers dark earthy carbonaceous shales; increasing

SH - flood deep brown & darker; earthy organic rich carb shales; soft to med firm; abdt chalky LS w/ baby urp film floating

SH - flood medium to dark grey shales w/ abdt green shales mottled & interbedded throughout; fair % brown colored micritic fossil nodules; no vis shows

SH - abdt greens & greys w/interbedded tan to brown micritic LS - v. well compacted & dense w/ chert-like appearance in some

very poor sample; heavy fines and appears blended/contaminated multiple depths/bucket sampleSH & abdt LS stained pale green w/ some maroon to purple hue; some dark speckled inclusions; predominantly silty shales w/ medium body loose, firm break; remnant red to maroon stringers

LS - white to cream w/ amber to tan spotted staining; fn-med xln w/ vis xln & fractured porosity; transitional pinpoint to fractured & poss 2ndary xln dev w/ staining & slight show on break; lt amber/brown sl clingy oil; scattered pinhead fluoresc; abdt shales; lt blue-green; dark streaks & speckled inclusins

SH -flood dark green to black; earthy & organic; pyritic xln dev in part, abdt pale blue-green fines makeup majority; 2-3 clusters SS - fine grained sb md well std clear qtz w/ good friab & saturated stain; v. good fluor showing bright pp drops; limited to very small % sample;

60" w/ several additional clusters SS - med grained sb md-sl anglr; translucent qtz w/ good vis pors & friab; saturated stain w/ live show on break; 1/3 w/ bright ylw fluor; no odor

SS - off white to grey w/ saturate stain giving some cream appearance; fn-med grained sl frosted, sb rounded fair sorted clusters w/ saturated stain & good odor; large clusters clean w/ good friability & shows; bright yellow fluor w/ abdt pinpoint droplets in tray; edge pcs transition CH - bone white w/ trippolitic & dark staining/sl shows; abdt shales - pale green - Hulk Mode Gas kick

SS increasing % in 60" sample; oil floating in cup & odor increasing; highest % sand w/ cream appearance due to significant saturation; good porosity & friability; fluorescence persists

CH - bone white vitreous w/ smooth txture w/ visible staining along edges; some partially dolomitized sucrosic to cottony txture; dense to partly friable; poorly dv pors overall; abdt pale green hue in shales & limey dolo/CH fragments

*Dolomite - cream to white, buff, some lt grey & CH w/ abdt Dolomitic LS & weathered CH ; varicolored blue-green staining; some sucrosic dolomite shows in 5-10% ?

Dolomite - cream to buff, fn xln sucrosic in most w/ sm med xln; good vis xln pors & sm sl dissolution/re-xln devel; scattered partial staining w/surface show in ~15% gd friab w/ show lt brn-gld free oil (pp-scattered w/ oa 25% of sample fluor) good yellow fluor w/ fair-gd cup odor; fair % CH vitreous to weathered in part

Dol- cream to buff w/ staining & surface shows live oil increasing; fine xln sucrosic in most w/ more consistent xln development thruoughout; well saturated porous dolomite w/ increasing % fluor and quantity of cuttings w/ live shows; sl visible gas bubbles

Dol - cream to buff w/ mst sucrosic xln dev w/ fair vis porosity & partially saturated stain; decreasing pieces w/ heavy staining & quantity of shows overall %; some bone white to semi-translucent chert - vitreous w/ sharp glassy edges

LS - cream to buff, some pale green & pink hue; varying composition w/ marbled cherty dolomite; dolomitic LS & abdt cherty to chalky dolomitic limestone; trace pcs carry shows, likely cavings; sample chalked out

SH - flood green shales; smooth waxxxy to slightly sandy txture; brittle & med firm - Simpson type shale; stringers w/ sandy txture w/ no clean sand appearing yet

Sandy Shale - flood simpson SS w/ shalebound clusters; appear green to grey w/ clear to frosted qtz; med grains well md & std; poorly friable & completely locked in shale; abdt pyrite w/ no visible "clean" clusters

SS - pale grey to cream w/ dark staining & speckled inclusions; lt to med brown & some darker inclusions; fragmented

SH - flood blue green/turquoise shale; smooth waxy txture w/ limited sand content; blocky w/ med-firm break; sl friable to brittle in some

Dolomite - cream to lt tan, v. fine xln w/ smooth porosity; well cemented, v. dense break; lithographic

Dolomite - flood cherty dolomite; cream to orange, smooth to ooc rough surface, polished appearance, some imbedded CH in part appears in few pcs w/ oolitic foss w/ CH replacement; semi-translucent in some; dense overall; well compacted; poor vis porosity; no odor, no shows