### KOLAR Document ID: 1670727

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 -	DESCRIPT	NFII &	IFASE
VVELL		DESCRIPT		LEASE

OPERATOR: License #	API No.:
Name:	Spot Description:
Address 1:	
Address 2:	Feet from Dorth / South Line of Section
City: State: Zip:+	Feet from East / West Line of Section
Contact Person:	Footages Calculated from Nearest Outside Section Corner:
Phone: ()	
CONTRACTOR: License #	GPS Location: Lat:, Long:
Name:	(e.g. xx.xxxxx) (e.gxxx.xxxxx)
Wellsite Geologist:	Datum: NAD27 NAD83 WGS84
Purchaser:	County:
Designate Type of Completion:	Lease Name: Well #:
New Well Re-Entry Workover	Field Name:
	Producing Formation:
	Elevation: Ground: Kelly Bushing:
	Total Vertical Depth: Plug Back Total Depth:
CM (Coal Bed Methane)	Amount of Surface Pipe Set and Cemented at: Feet
Cathodic Other (Core, Expl., etc.):	Multiple Stage Cementing Collar Used?
If Workover/Re-entry: Old Well Info as follows:	If yes, show depth set: Feet
Operator:	If Alternate II completion, cement circulated from:
Well Name:	feet depth to:w/sx cmt.
Original Comp. Date: Original Total Depth:	
Deepening Re-perf. Conv. to EOR Conv. to SWD	Drilling Fluid Management Plan
Plug Back Liner Conv. to GSW Conv. to Producer	(Data must be collected from the Reserve Pit)
	Chloride content: ppm Fluid volume: bbls
Commingled Permit #:	Dewatering method used:
Dual Completion Permit #:	
SWD Permit #:	Location of fluid disposal if hauled offsite:
EOR Permit #:	Operator Name:
GSW Permit #:	Lease Name: License #:
Canad Data are Data Dasabad TD Completing Data are	Quarter Sec TwpS. R East West
Spud Date orDate Reached TDCompletion Date orRecompletion DateRecompletion Date	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 Drill Stem Tests Received				
Geologist Report / Mud Logs Received				
UIC Distribution				
ALT I II III Approved by: Date:				

### KOLAR Document ID: 1670727

Operator Name:	Lease Name: Well #:
Sec TwpS. R East 🗌 West	County:

Page Two

**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 (Attach Additional Sh	eets)	Y	es 🗌 No			og Formatio	n (Top), Depth	and Datum	Sample
Samples Sent to Geolog	*		és 🗌 No	Ν	lame	e		Тор	Datum
Cores Taken Electric Log Run Geologist Report / Mud List All E. Logs Run:			ies No ies No ies No						
		Repo	CASING I		] Ne	w Used rmediate, productio	on, etc.		
Purpose of String	Size Hole Drilled		ze Casing tt (In O.D.)	Weight Lbs. / Ft.		Setting Depth	Type of Cement	# Sacks Used	Type and Percent Additives
			ADDITIONAL	CEMENTING /	SQU	EEZE RECORD			
Purpose: Perforate	Depth Top Bottom	Туре	e of Cement	# Sacks Used		Type and Percent Additives			
Protect Casing Plug Back TD Plug Off Zone									
<ol> <li>Did you perform a hydra</li> <li>Does the volume of the is</li> <li>Was the hydraulic fractu</li> <li>Date of first Production/Inj</li> </ol>	total base fluid of the h ring treatment informa	nydraulic fra tion submit	acturing treatment	al disclosure regis	-	Yes Yes Yes Yes	No (If No, s	kip questions 2 ar kip question 3) ill out Page Three	
Injection:			Flowing	Pumping		Gas Lift 🗌 O	ther <i>(Explain)</i>		
Estimated Production Per 24 Hours	Oil	Bbls.	Gas	Mcf	Water Bbls. Gas-Oil Ratio Grav				Gravity
DISPOSITION	I OF GAS:		M	ETHOD OF COM	/IPLE	TION:			ON INTERVAL:
Vented Sold (If vented, Subm	Used on Lease		Open Hole		-		mingled	Тор	Bottom
	oration Perfora Top Botto		Bridge Plug Type	Bridge Plug Set At		Acid,		ementing Squeeze	
TUBING RECORD:	Size:	Set At:		Packer At:					

Form	ACO1 - Well Completion
Operator	Northern Natural Gas Co.
Well Name	ALLEY 16-44
Doc ID	1670727

All Electric Logs Run

Gamm Ray, Neutron, CCL
Caliper, Sonic, Density
Dual Induction, Radial CBL
PE,

Form	ACO1 - Well Completion
Operator	Northern Natural Gas Co.
Well Name	ALLEY 16-44
Doc ID	1670727

Tops

Name	Тор	Datum
Wellington	1020	+736
Stark Shale	3813	-2059
ВКС	3912	-2159
Mississippian	4108	-2251
Kinderhook Shale	4108	-2351
Viola	4308	-2551
Simpson Shale	4381	-2626
Simpson Sand	4394	-2636

Form	ACO1 - Well Completion
Operator	Northern Natural Gas Co.
Well Name	ALLEY 16-44
Doc ID	1670727

# Casing

	Size Hole Drilled	Size Casing Set	U U	Setting Depth	Type Of Cement		Type and Percent Additives
Conductor	30	24	94	130	А	150	0
Surface	17.5	13.375	54.5	298	H-Con	360	100%
Intermedia te	12.25	9.625	40	1687	H-Con	1005	100%
Production	8.75	7	23	4446	H-Con	1085	100%

# iCem<sup>®</sup> Service

### **TRES MANAGEMENT INC**

For: Jason Goss Date: Thursday, October 27, 2022

**TRES ALLEY 16 -44 DV PRODUCTION** Post Job Report Job Date: Tuesday, September 13, 2022

Sincerely, Manuel Teran

### Disclaimer:

All information in this report is provided subject to the terms and conditions which govern the services provided by Halliburton. Halliburton personnel use their best efforts in gathering information and their best judgment in interpreting it, but any interpretation, research, analysis or recommendation furnished by Halliburton are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and empirical relationships and assumptions are not infallible, and with respect to which professionals in the industry may differ. iCem 3D Displacement results are used to understand how fluids intermix during a cement job. Simulation and 3D displacement results are not intended as and should not be used as a replacement for bond logs in determining top of cement. Current 3D model calculations are known to model more volume than the input volume for standard cases due to known calculation improvements required. For rotational cases, the modeled volume will be impacted by the same calculations impacting the standard cases, as well as additional constraints imposed to make the calculation time required operationally feasible. Therefore, until further notice, 3D displacement results should not be used for replacement of a bond log, or used as an identifier of top of cement. HALLIBURTON IS UNABLE TO GUARANTEE THE ACCURACY OF ANY CHART INTERPRETATION, RESEARCH ANALYSIS, OR JOB RECOMMENDATION and any interpretation or recommendation is not for use of or reliance upon by any third party. The customer has full responsibility for any of its decisions which are based on the information provided in this report.

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1.0 Real-Time Job Summary

### 1.1 Job Event Log

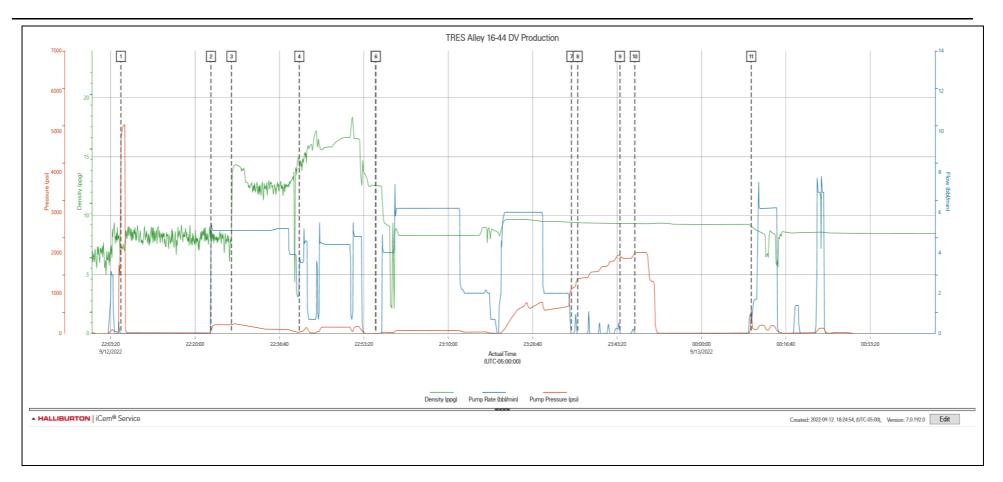
100 100		δ						
Туре	Seq	Graph Label	Date	Time	Density	Pump Rate	Pump Pressure	Comments
	No.				(ppg)	(bbl/min)	(psi)	
Event	1	Call Out	9/12/2022	08:00:00				
Event	2	Pre-Convoy Safety Meeting	9/12/2022	09:00:00				
Event	3	Depart from Service Center or Other Site	9/12/2022	09:15:00				
Event	4	Arrive at Location from Service Center	9/12/2022	16:30:00				ARRIVE ON LOCATION, RIG WAS RUNNING PIPE.
Event	5	Safety Meeting - Pre Rig-Up	9/12/2022	18:30:00				
Event	6	Rig-Up Equipment	9/12/2022	19:00:00				
Event	7	Rig-Up Completed	9/12/2022	20:00:00				
Event	8	Start Job	9/12/2022	20:54:08	5.48	0.10	26.00	
Event	9	Pre-Job Safety Meeting	9/12/2022	21:30:00	-1.67	0.00	39.00	
Event	10	Test Lines	9/12/2022	22:05:21	7.19	0.00	4856.00	LOW TEST TO 500 HIGH TEST TO 5000
Event	11	Pump Spacer 1	9/12/2022	22:23:08	7.85	3.10	19.00	PUMP 20 BBL FRESH WATER SPACER
Event	12	Pump Lead Cement	9/12/2022	22:27:11	8.75	5.10	217.00	170 SKS 12.8 PPG 1.994 YEILD 11.08 GAL/SK 60 BBL

Event	13	Pump Tail Cement	9/12/2022	22:40:35	14.42	3.20	30.00	Pump Tail Cement
Event	14	Drop Top Plug	9/12/2022	22:55:38	12.55	0.00	6.00	
Event	15	Pump Displacement	9/12/2022	22:55:42	12.55	0.00	6.00	
Event	16	Bump Plug	9/12/2022	23:34:19	9.42	0.00	1109.00	
Event	17	Set Packer	9/12/2022	23:35:34	9.39	0.00	1361.00	BEGIN PRESSURE UP TO SET THE PACKER @ 1200 PSI
Event	18	Open Packer	9/12/2022	23:43:54	9.37	0.00	1948.00	PRESSURE STARTED FALLING, PACKER IS OPEN AND TAKING FLUID
Event	19	Close Packer	9/12/2022	23:46:50	9.37	0.00	1988.00	PRESSURE UP TO 2000 PSI TO CLOSE PACKER
Event	20	Circulation	9/13/2022	00:09:50	9.04	0.60	522.00	DV TOOL OPENS @ 640 PSI CLEAN DISPLACEMENT TANKS AND TURN OVER TO RIG TO CIRCULATE FOR 4 HRS
Event	21	Start Job	9/13/2022	20:39:25	8.70	0.00	46.00	
Event	22	Test Lines	9/13/2022	22:59:50	8.36	0.00	4764.00	TEST LINES TO 5000 PSI
Event	23	Pump Spacer 1	9/13/2022	23:04:21	8.39	0.00	61.00	20 BBL FRESH WATER SPACER
Event	24	Pump Lead Cement	9/13/2022	23:10:57	12.84	4.00	266.00	280 SKS 12.8 PPG 2.009 YEILD 11.14 GAL/SK
Event	25	Pump Tail Cement	9/13/2022	23:41:36				50 SKS 15.8 PPG 1.15 YEILD 4.98 GAL/SK 10 BBL
Event	26	Drop Top Plug	9/13/2022	23:46:41				DROP 3RD PARTY CLOSING PLUG
Event	27	Pump Displacement	9/13/2022	23:46:45				PUMP 99 BBL FRESH WATER DISPLACEMENT
Event	28	Bump Plug	9/14/2022	00:17:03				BUMP PLUG @ 550 PSI AND TAKE TO 950, SHUT DOWN. THEN PRESSURE UP TO 2000 PSI TO CLOSE DV TOOL
Event	29	Check Floats	9/14/2022	00:18:15				CHECK FLOATS 1 BBL BACK TO TRUCK
Event	30	End Job	9/14/2022	00:20:39				

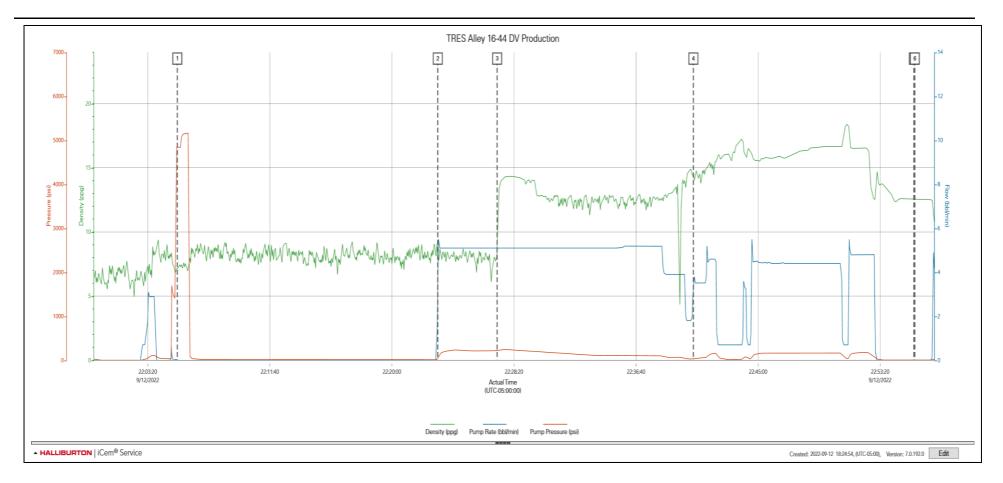
Event	31	Safety Meeting - Pre Rig-Down	9/14/2022	00:30:00
Event	32	Rig-Down Equipment	9/14/2022	00:45:00
Event	33	Pre-Convoy Safety Meeting	9/14/2022	01:30:00

2.0 Attachments

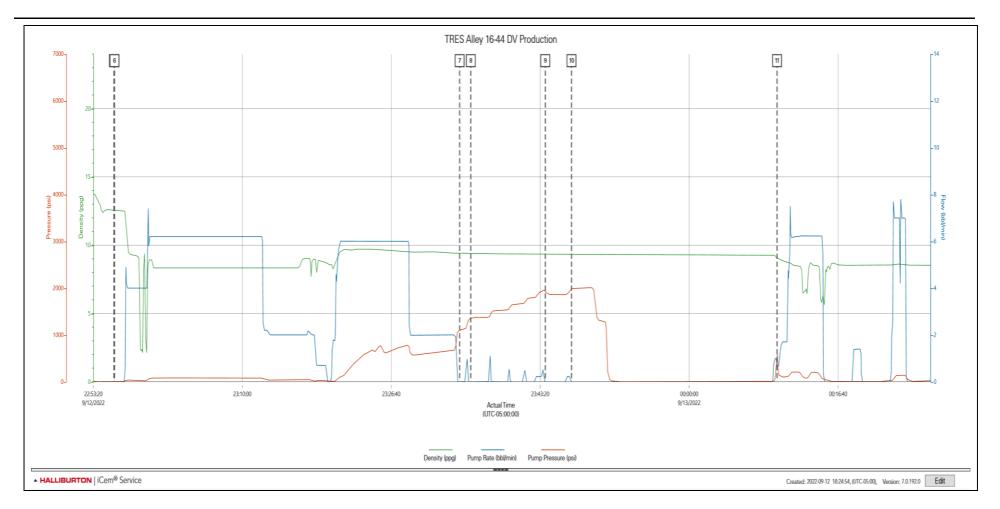
### 2.1 First Stage Job Summary.png



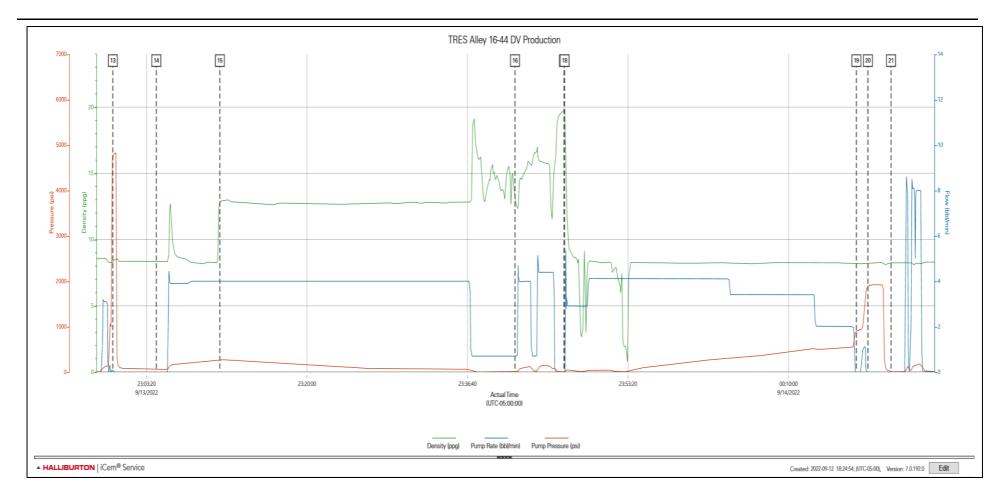
### 2.2 First Stage Spacer and Cement Summary.png



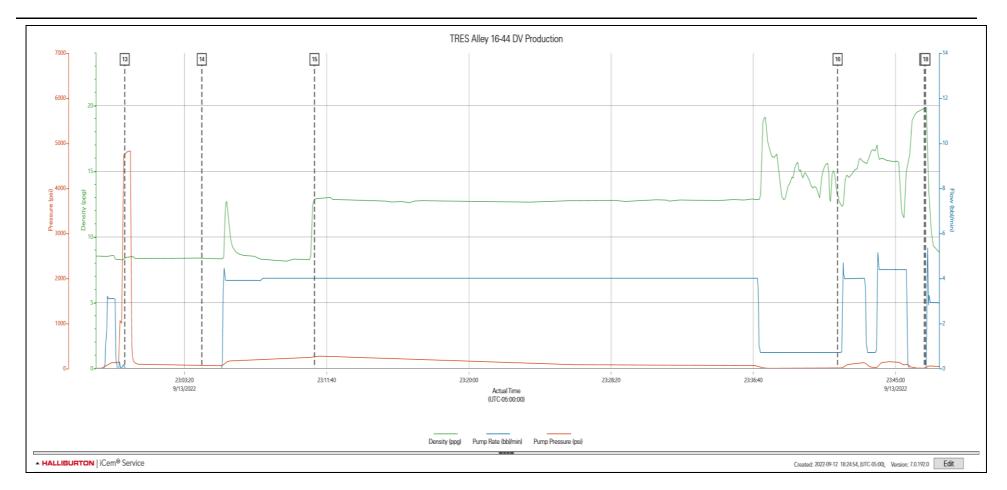
### 2.3 First Stage Displacement and DV Summary.png



### 2.4 Second Stage Summary.png

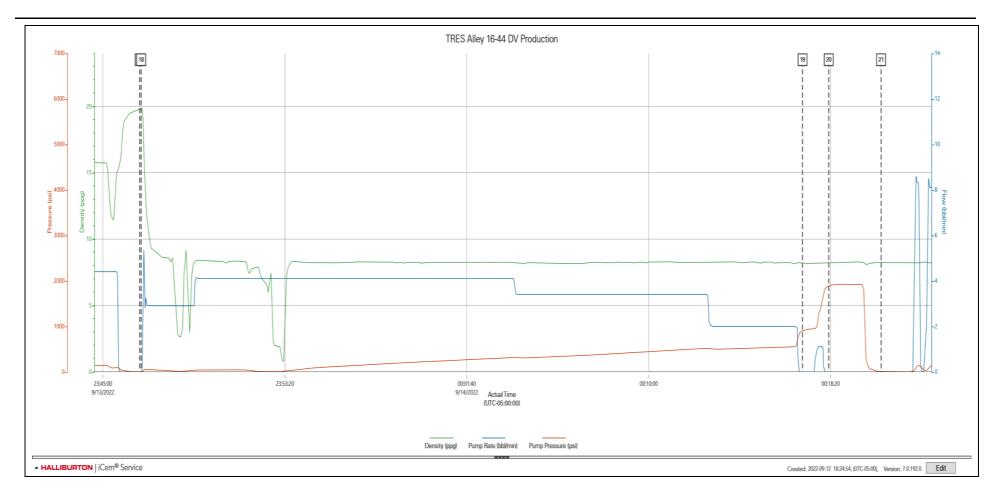


Customer: TRES MANAGEMENT INC Job: TRES ALLEY 16-44 DV PRODUCTION Case: Post Job Report



### 2.5 Second Stage Spacer and Cement Summary.png

### 2.6 Second Stage Displacement Summary.png



Customer: TRES MANAGEMENT INC Job: TRES ALLEY 16-44 DV PRODUCTION Case: Post Job Report

# iCem<sup>®</sup> Service

### **TRES MANAGEMENT INC**

El Reno District, KANSAS

For: Jason Goss Date: Thursday, October 27, 2022

#### ALLEY 16-44 Intermediate Casing

KINGMAN, ALLEY 16/44 Post Job Report Job Date: Monday, September 05, 2022

Sincerely, Manuel Teran

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1.0 Real-Time Job Summary

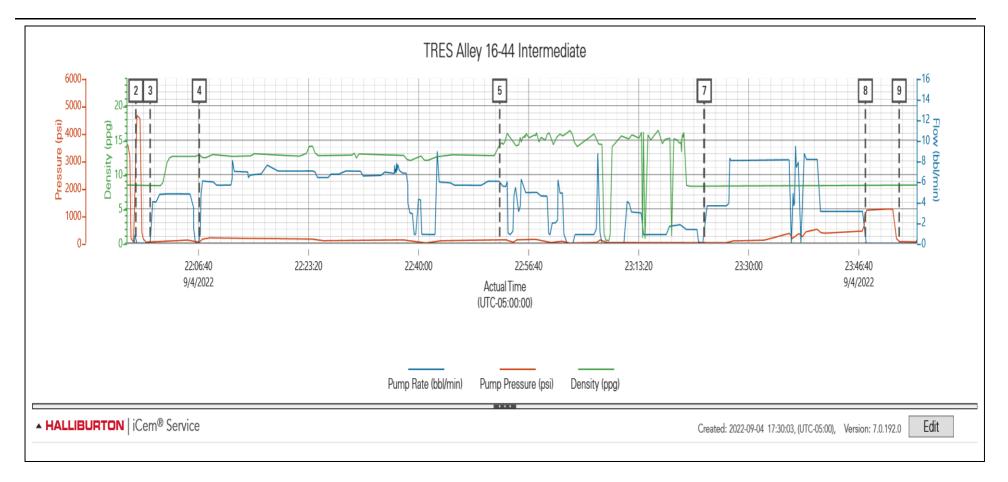
Туре	Seq No.	Graph Label	Date	Time	Pump Rate	Pump Pressure	Densit y	Comments
	NO.				(bbl/ min)	(psi)	(ppg)	
Event	1	Call Out	9/3/2022	10:00:00				CALL OUT TO BE ON LOCATION @ 23:30
Event	2	Depart Yard Safety Meeting	9/3/2022	14:30:00				GO OVER DRIVING HAZARDS, FATIGUE, WILDLIFE, RUN IN CONVOY, BE ALERT, DO JOURNEY MANAGEMENT.
Event	3	Depart from Service Center or Other Site	9/3/2022	15:00:00				
Event	4	Other	9/3/2022	17:00:00				LOCATION TIME PUSHED TO 03:00 09-04-2022 AND ORDERED MORE CEMENT.
Event	5	Arrive At Loc	9/3/2022	21:00:00				ARRIVE AT LOCATION, SPAEAK WITH CUSTOMER, GET WOC SIGHNED, TEST WATER, RIG IS CIRCULATING
Event	6	Other	9/4/2022	17:42:35				EXCESS CMT ARRIVES
Event	7	Pre-Rig Up Safety Meeting	9/4/2022	19:45:00				WATCH FOR PINCH POINTS, TEAM LIFT, WATCH FOR TRIP HAZARDS, BE AWARE OF SUROUNDINGS
Event	8	Rig-Up Equipment	9/4/2022	20:00:00				
Event	9	Safety Meeting - Pre Job	9/4/2022	21:30:00	0.00	47.32	8.49	GO OVER HAZARDS AND JOB PROCEEDURES WITH RIG CREW AND CUSTOMER
Event	10	Test Lines	9/4/2022	21:57:11	0.00	4703.93	8.49	FLOOD LINES WITH 2 BBLS FRESH WATER, LOW TEST T 500 PSI HIGH TEST TO 3000 PSI, HAD TO REPLACE 1IN VALVE DURING TEST.

Customer: TRES MANAGEMENT INC Job: Alley 16-44 Intermediate Casing Case: Post Job Report

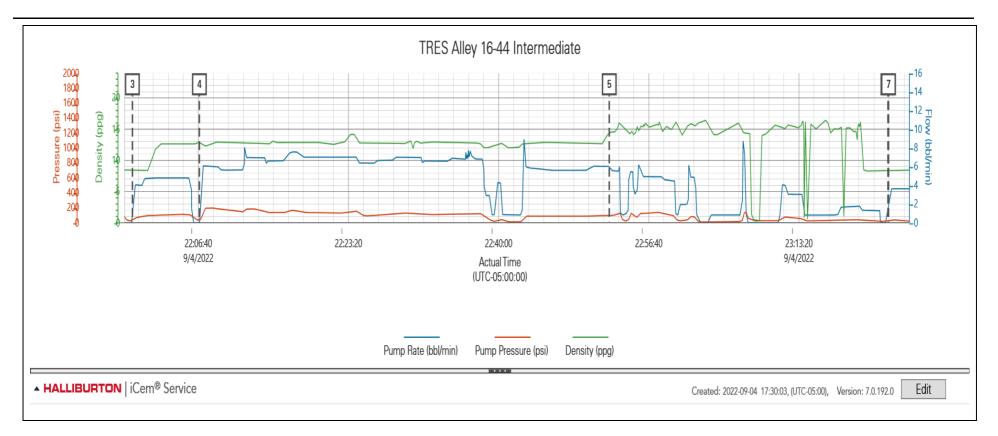
Event	11	Pump Spacer	9/4/2022	21:59:21	0.00	23.34	8.39	FRESH WATER, 30 BBLS, PUMPED @ 5 BPM @ 100 PSI
Event	12	Pump Lead Cement	9/4/2022	22:06:47	0.00	36.42	13.04	VERSACEM, 770 SKS @ 12.8 PPG, YIELD @ 2, GAL/SK @ 11.14, 1540 FT3, 274 BBLS, 205 BBLS OF WATER TO MIX, HOL-1206, TOL-0, PUMPED @ 7 BPM @ 150 PSI
Event	13	Pump Tail Cement	9/4/2022	22:52:17	6.01	98.76	14.47	HALCEM, 235 SKS @ 15.8 PPG, YIELD @ 1.213, GAL/SK @ 5.2, 285 FT3, 50 BBLS, 29 BBLS OF WATER TO MIX, PUMPED @ 5 BPM @ 125 PSI, HOT-481, TOT-1206
Event	14	Drop Top Plug	9/4/2022	23:23:13	1.81	32.48	8.47	HALLIBURTON TOP PLUG
Event	15	Pump Displacement	9/4/2022	23:23:17	1.81	34.59	8.47	FRESH WATER, 124 BBLS, PUMPED @ 8 BPM @ 300 PSI, SLOWED RATE LAST 20 BBLS TO 3 BPM @ 400 PSI, GOOD RETURNS THOUGH OUT JOB WITH 24 BBLS OF CEMENT RETURNS TO SURFACE.
Event	16	Bump Plug	9/4/2022	23:47:40	0.00	1134.18	8.46	500 OVER, BUMPED !@ 440 PSI TOOK TO 1240 PSI, HELD FOR 5 MIN, CHECKED FLOATS, FLOATS HELD WITH 1 BBL BACK TO THE TRUCK.
Event	17	End Job	9/4/2022	23:52:47	0.00	59.14	8.47	
Event	18	Pre-Rig Down Safety Meeting	9/5/2022	00:00:00				WATCH FOR PINCH POINTS, TEAM LIFT, WATCH FOR TRIP HAZARDS, BE AWARE OF SUROUNDINGS
Event	19	Rig-Down Equipment	9/5/2022	00:15:00				
Event	20	Depart Location Safety Meeting	9/5/2022	00:45:00				GO OVER DRIVING HAZARDS, FATIGUE, WILDLIFE, STAY ALERT.
Event	21	Depart Location	9/5/2022	01:00:00				THANK YOU FOR CALLING HALLIBURTON, ROBERT DAVIS AND CREW.

2.0 Attachments

#### 2.1 Job Summary.png



### 2.2 Spacer and Cement Summary.png



### 2.3 Displacement Summary.png



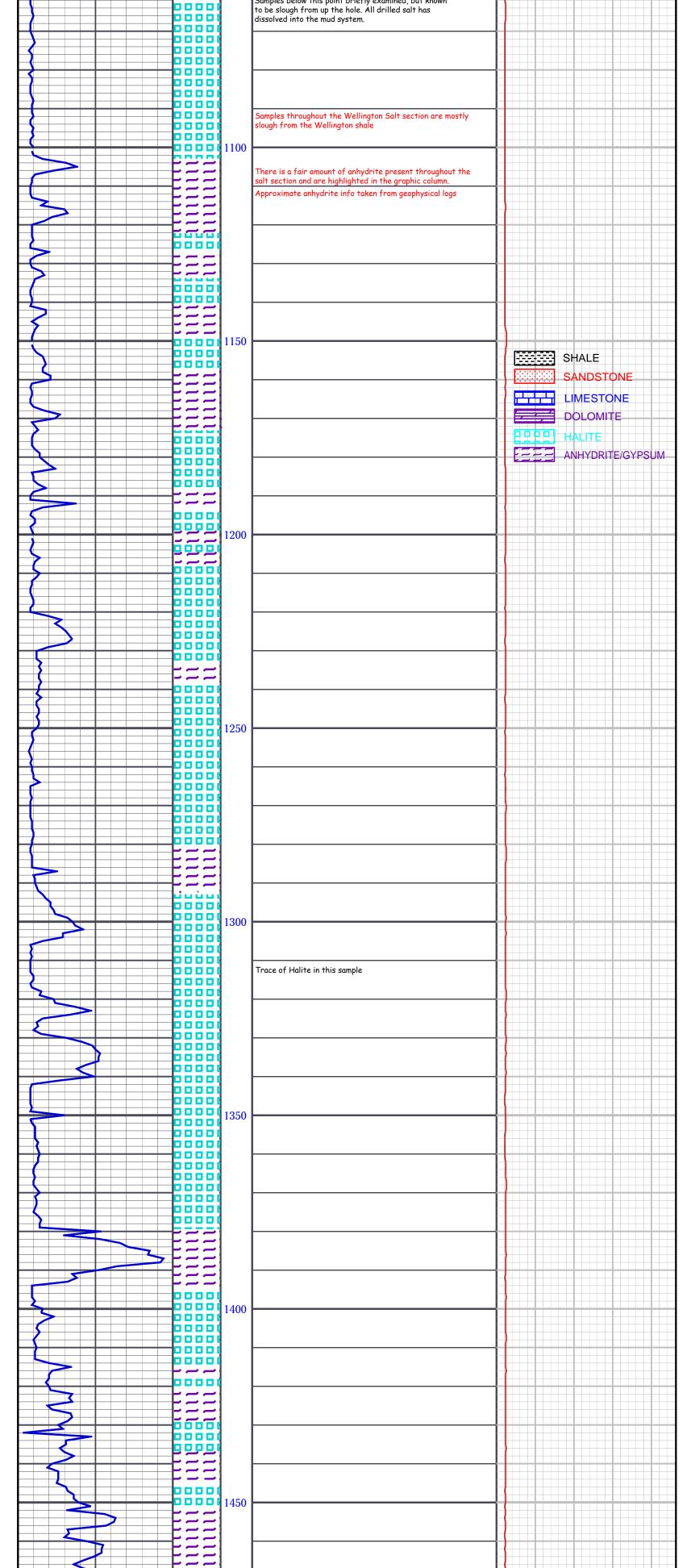
# **Casing and Cementing Report**

Well Name <sup>.</sup>		Alley	16-44		Date <sup>.</sup>	8/27	/2022	-	TRFS
Operator:		Northern N	latural Gas		KB Height:	<u> </u>	feet	-	NEERING
Cooling Com	nononto 9	Hele Dete	ile					LINGI	
Casing, Com Previous Casing	-	Hole Deta	lis						
0	24	inches		Weight:	87.5	ppf	Set At:	112	feet (MD)
Current Casing						_FF.			,
Size:	13.375	inches		Weight:	54.5	ppf	Set At:	294	feet (MD)
Pre Cement Hole				••••••			. " .		
	17.5 294			Mud Weight:	9.5	ppg	VIS:	45 0	sec
Casing String Co		ieel		LOIVI.	4	ppg	666	0	units
				Thread	Weight	Material	Connection	Condition	Made-Up
Item		Description		Locked?	(ppf)	Grade	Thread	(New/Used)	Length
1		SHOE 54.5# J-55 BTC	CASING	Compound Compound	212 54.5	K55/J55 J-55	BTC BTC	New New	1.80 42.06
1		FLOAT		Compound	308	K55/J55	BTC	New	1.53
6	13.375 5	54.5# J-55 BTC	CASING	No	54.5	J-55	BTC	New	252.51
								Total:	297.90
Stick	Up above KB:	3.9	feet					5	
	sing Not Run:				feet Bow Spring		d Compound:	Bestolit	e 2000
	f Centralizers: ers Placed At:		units	i ype.	Bow Spring				
Contrainz									
Casing Crew:	Offshore Ene	ergy Services	Supervisor:	JAEL E	LLIOTT	Ma	ke Up Torque:	9,000	ft-lbs
	ue Recorded?	Yes	(y/n)	Thread Rep	p & Company:		O	ES	
String Weight									
On Bottom:	20,000	lbs	Aft	ter Plug Bump:	N/A	lbs	Set on Slips:	N/A	lbs
Cement Deta	ils								
	Hallib	ourton	Cementer:	D. H	lahn	No. of	Pump Trucks	1	
Pre-Cement Space		First Stage:		0	_		Second Stage:		
	Water Source:	-	On site water we	ell		Mix Water pH:		7	
Mix W	ater pH Tester:		Brad Bortz		- pH le	ster Company:		MudCo	
First Stage Ceme	ent								
	Slurry	Weight	Sacks	Yield	Water	Volume		Additives	
Lead	Type H-CON	(lbs/gal) 12.2	(number) 70	(ft³/sack) 2.34	(gal/sack) 13.53	(bbls) 29.1		100 % HalCem	1
Tail									
Job Details:	Reduced return of the job.	ns @ 45 bbls c	ement pumped	, slowed pump	rate to 3 bpm a	and maintained	full returns thro	oughout the rem	ainder
	Displacement:		bbls		Cement Rate:		bpm	150	
	Displacement: acement Fluid:		bbls ater		Displace Rate: Plug Bump?		bpm (y/n)	128 375	
Dispi	Floats Hold?:		(y/n)		r iug bump:		ent to Surface:	5	bbls
Full Circulatio	n During Job?:	Yes	(y/n)	l	f 2 stage job, C	ement to Surfa	ce off DV Tool:	n/a	bbls
Second Stage Ce	ement								
-	Slurry	Weight	Sacks	Yield	Water	Volume		Additives	
Lead	Туре	(lbs/gal)	(number)	(ft³/sack)	(gal/sack)	(bbls)			
Tail									
Job Details:									
	Displacement:		bbls		Cement Rate:		bpm		psi
	Displacement: acement Fluid:		bbls		Displace Rate: Plug Bump?		bpm		psi psi
	n During Job?:		(y/n)		Find Drub?		(y/n) ient to Surface:		psi bbls
Diverter '	Valve Supplier:				_	DV	Open Pressure:		psi
Diverter Valve	e Service Tech:				-	DV C	Close Pressure:		psi
Additional Comm	nents:								

Lansing Stark Shale BKC Mississippian Kinderhook Shale Viola Simpson Shale Simpson Sand RTD RTD A. B.	Wellington Salt Herrington/Krider Towanda Topeka Heebner Douglas	COMPANY LEASE FIELD LOCATION SEC16 SEC16 COUNTYKi COUNTRACTOR SPUD SAMPLES SAV REPORT PR	GEO
$\begin{array}{r} 33333 \\ 3813 \\ 3912 \\ 4108 \\ 4394 \\ 44394 \\ 44445 \end{array}$	1020 1608 1702 3019 3354 3393		
		Northern Natural Gas         Alley #16-44         Cunningham Storage Fi         205' FSL & 488' FWL         1WSP27SRGE1         ngman       STATEKa         Ngman       STATEKa         Sterling Drilling, Rig         7-22COMP9-12-2         ZOF FROM_G.LTOR         VED FROM_G.LTOR         SAMPLE       ELOG	
33338 3913 4007 4307 4382 4382 4382 4446 ₹€₽€1	1020 1608 1702 3019 3354 3393 3393		
-1/64 -2059 -2159 -2251 -2551 -2626 -2636 -2692 RENCE WE	+736 +148 +52 -1263 -1598 -1639	atural Gas         16-44         Storage Field         488' FWL         PGE         PGE         Illing, Rig #1         9-12-22         L. TO         NIZE/GEOLOGIST         VK S. MIZE/GEOLOGIST	<b>Northern</b> <b>Natural Gas</b> BERKSHIRE HATHAWAY ENERGY COMPANY BERKSHIRE HATHAWAY ENERGY COMPANY BERKSHIRE HATHAWAY ENERGY COMPANY
		ELEVATION         K.B.       1754'         G.L.       1739'       casing         DEPTH MEASURED FROM KB         Log       Drilling       ✓         Conductor       24" @ 127'         Surface       13 3/8" @ 294'         Intermediate       9 5/8" @ 1683'         Production       7" @ 4442'         Geophysical Logs       CNL/CBL/BHCS         DT/CBL       DT/CBL	API#: 15-095-22,349
Penetration Rate Min/Ft 1 2 3 4 5 6 7 8 9 1	0	Samples taken in conductor section corrected to depth from Kelly Bushing	Gas Units 50 100 150 200
No drilling time recorded in the loss as it was drilled w/an auger/ water well rig.	50 100	Sand: light beige, very fine, well rounded well sorted, no cement, fair amount red to beige clay Sand: clear to light red, fine to medium grained, rounded to sub anguler, fairly sorted, no cement, mostly quartz, fair amount orthoclase. Sand: clear to light red, medium to large grained, rounded to sub anguler, fairly sorted, no cement, mostly quartz, fair amount orthoclase. Sand: clear to light red, fine to medium grained, rounded to sub anguler, fairly sorted, no cement, mostly quartz, fair amount orthoclase. Sand: clear to light red, medium to large grained, rounded to sub anguler, fairly sorted, no cement, mostly quartz, fair amount orthoclase. Sand: clear to light red, fine to medium grained, rounded to sub anguler, fairly sorted, no cement, mostly quartz, fair amount orthoclase, some large chert & quartz pebbles Sand: clear to light red, fine to medium grained, rounded to sub anguler, fairly sorted, no cement, mostly quartz, fair amount orthoclase. Sand: clear to light red, fine to medium grained, rounded to sub anguler, fairly sorted, no cement, mostly quartz, fair amount orthoclase. Sand: clear to light red, extremely fine grained, rounded to sub anguler, well sorted, no cement, mostly quartz, fair amount orthoclase Clay: red Sand: clear to light red, extremely fine grained, rounded to sub anguler, well sorted, no cement, mostly quartz, fair amount orthoclase Sand: clear to light red, extremely fine grained, rounded to sub anguler, well sorted, no cement, mostly quartz, fair amount orthoclase Clay: red Clay: red	
	150	Sand: off white to light red, very large grains, sub rounded, well sorted, not cement, much orthoclase with quartz Sand: off white to light red, very large grains, sub rounded, well sorted, not cement, much orthoclase with quartz Sand: off white to light red, medium to very large grains, sub rounded to rounded, fairly sorted, not cement, much orthoclase with quartz Sand: off white to light red, medium to very large grains, sub rounded to rounded, fairly sorted, not cement, much orthoclase with quartz Sand: off white to light red, medium to very large grains, sub rounded to rounded, fairly sorted, not cement, much orthoclase with quartz Sand: off white to light red, medium to very large grains, sub rounded to rounded, fairly sorted, not cement, much orthoclase with quartz	
	200	Sand: off white to light red, small to very large grains, sub rounded to rounded, poorly sorted, not cement, much orthoclase with quartz Sandstone: red, very fine grained, angular to sub angular well sorted, good silicacement, poor to fair intergranular porosity much red clay filled Sandstone: red, very fine grained w/some very large grains, poor to fair intergranular porosity, much red	
		shale Sandstone: red, very fine grained w/some very large grains, poor to fair intergranular porosity, much red shale Shale: red, highly arrenaceous with very fine angular grains	
	250	Shale: red, highly arrenaceous with very fine angular grains Shale: red, highly arrenaceous with very fine angular grains Shale: red, highly arrenaceous with very fine angular grains	
		grains Shale: red, highly arrenaceous with very fine angular grains Shale: red, highly arrenaceous with very fine angular	

	<						Shale: red, highly arrenaceous with very fine angular grains							
		2					Shale: red, highly arrenaceous with very fine angular grains							
		5					Shale: red, highly arrenaceous with very fine angular	K						
			F			300	grains Sand: red, iron stained very fine angular grained, washed red,							
			E				excellent intergranular porosity							
			F				Sand: red, iron stained very fine angular grained, washed red, excellent intergranular porosity, few small clear rounded grains							
							Sand: red, very fine angular grained, washed red, excellent intergranular porosity, few small clear rounded grains							
							Sand: red, very fine angular grained, washed red, excellent intergranular porosity, few small clear rounded grains							
							Sand: red, very fine angular grained, washed red, excellent intergranular porosity, few small clear rounded grains							
						350	Clay: red							
	5						Clay: red							
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							Clay: red							
						400	Clay: red							
			E				Shale: red							
			E				Sandstone: red extremely fine angular grains, well sorted, poorly cemented, good intergranular porosity							
							Shale: red							
			F				Shale: red, highly arrenaceous w/very fine angular grains, w/few small clear rounded grains							
							Shale: red, highly arrenaceous w/very fine angular grains, w/few small clear rounded grains							
			F			450	Siltstone: red, much red shale							
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							Shale: red to green, arrenaceous							
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				Base Wellington 1593 +163
			Lag time (bottoms up time) obviously misleading due to wash	
	1999	1600	out in the salt section	
			Top Herrington/Krider	Herrington/Krider 1608 +148
			Limestone: gray to dark gray, fine grained, dolomitic, little visible porosity, much dark gray shale, much slough from up hole	
			Limestone: gray to dark gray, fine grained, dolomitic, little visible porosity, much dark gray shale, much slough from up hole	
	<u> </u>		shale, much slough from up hole	
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			Limestone: gray to dark gray, fine grained, dolomitic, little visible porosity, much dark gray	
			dolomitic, little visible porosity, much dark gray shale, much slough from up hole	
		1050	Trip for bit and bond log surface pipe	
	╬╍╧╍╬	1650		
	┝╍┶╍┷		Limestone: gray to dark gray, fine grained, dolomitic, little visible porosity, much dark gray shale, much slough from up hole	
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	╬╍┿╍╬			
			Limestone: gray to dark gray, fine grained, highly dolomitic, little visible porosity, much dark gray shale	
			Limestone: gray to dark gray, medium crystalline, little visible porosity, slightly dolomitic	
	╺╾┰┶┓		Limestone: gray to dark gray, medium crystalline, little visible porosity, slightly dolomitic	
		1700		
	-17-27-27-21			
			Limestone: off white to aroy fine crystalline samples	Towanda 1702 +52
			Limestone: off white to gray, fine crystalline, samples pulverized	Towanda 1702 +52
			Limestone: off white to gray, fine crystalline, samples pulverized	Towanda 1702 +52
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		1750	pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized	Towanda 1702 +52
		1750	pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized	Towanda 1702 +52
		1750	pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized	Towanda 1702 +52
		1750	pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         Limestone: off white to gray, fine crystalline, samples         Limestone: off white to gray, fine crystalline, samples	Towanda 1702 +52
		1750	pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         Limestone: off white to gray, fine crystalline, samples         Limestone: off white to gray, fine crystalline, samples	Towanda 1702 +52
		1750	pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         Limestone: off white to gray, fine crystalline, samples         Limestone: off white to gray, fine crystalline, samples	Towanda 1702 +52
		1750	pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized	Towanda 1702 +52
		1750	pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized	Towanda 1702 +52
		1750	pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized	Towanda 1702 +52
		1750	pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized         Limestone: off white to gray, fine crystalline, samples         pulverized	Towanda 1702 +52
		1750	pulverized Limestone: off white to gray, fine crystalline, samples pulverized Limestone: off white to gray, fine crystalline, samples pulverized Limestone: off white to gray, fine crystalline, samples pulverized Limestone: off white to gray, fine crystalline, samples pulverized Limestone: off white to gray, fine crystalline, samples pulverized Limestone: off white to gray, fine crystalline, samples pulverized Limestone: off white to gray, fine crystalline, samples pulverized Limestone: off white to gray, fine crystalline, samples pulverized Limestone: off white to gray, fine crystalline, samples pulverized Limestone: off white to gray, fine crystalline, samples pulverized Limestone: off white to gray, fine crystalline, samples pulverized Limestone: off white to gray, fine crystalline, samples pulverized Limestone: off white to gray, fine crystalline, samples pulverized	Towanda 1702 +52
		1750	pulverized Limestone: off white to gray, fine crystalline, samples pulverized Limestone: off white to gray, fine crystalline, samples pulverized Limestone: off white to gray, fine crystalline, samples pulverized Limestone: off white to gray, fine crystalline, samples pulverized Limestone: off white to gray, fine crystalline, samples pulverized Limestone: off white to gray, fine crystalline, samples pulverized Limestone: off white to gray, fine crystalline, samples pulverized Limestone: off white to gray, fine crystalline, samples pulverized Limestone: off white to gray, fine crystalline, samples pulverized Limestone: off white to gray, fine crystalline, samples pulverized	Towanda 1702 +52

			Limestone: off white to light gray, fine crystalline, samples pulverized	
	┢╍┶╍			
		1900		
		1300	Limestone: off white to light gray, fine crystalline, samples pulverized	
			F	
			Limestone: off white, fine crystalline, samples pulverized	
	┝╴╴		Limestone: off white, fine crystalline, samples	
	┱┿┱┿┱		pulverized	
			Limestone: off white to beige, fine crystalline, samples pulverized	
			Limestone: beige, fine crystalline, samples	
	┝┎╧┰╧┰		pulverized	
		1950	Limestone: dull gray , fine crystalline, samples	
			pulverized	
	┍┿╍┿╍		Limestone: off white to gray, fine crystalline, samples pulverized	
			Limestone: off white to gray, fine crystalline, samples pulverized	
	╈		Limestone: off white to gray, fine crystalline, little visible	
			porosity, much lcm	
		2000	Shale: gray Limestone: off white, fine to medium crystalline, no	
	╞╍┯╍╡		visible porosity	
			Limestone: off white, fine to medium crystalline, no	
			visible porosity, much gray shale	
			Shale: gray to green	
			Shale: gray to green	
			Shale. gray to green	
			Shale: gray, fair amount gray, fine grained limestone	
		2050		
		2030	Shale: gray, fair amount gray, fine grained to medium crystalline limestone	
	<mark> ┶┰┷┰┷</mark>			
			Shale: gray to black	
			Limestone: off white, medium crystalline, little	
	┝┻┯┹┯┻ ┍╺╵╸┸╺		visible porosity	
			Limestone: off white to gray, fine crystalline, samples pulverized	
5				
			Limestone: off white to gray, fine crystalline, samples pulverized	
	┲┿╍┿	2100	Limestone: off white to gray, sample pulverized	
			Limestone: off white to gray, sample pulverized	
			Limestone: off white to gray, sample pulverized,	
			trace pyrite	
			Limestone: off white to gray, sample pulverized	
$\mathbf{\lambda}$				
			Limestone: off white to gray, sample pulverized, much gray to green shale	
		2150		
			Shale: gray to green, much coarsely crystalline limestone with no visible porosity	
			Shale: gray to green, much coarsely crystalline limestone with no visible porosity	
			Shale: red to black	
			Limestone: dull gray, coarsely crystalline, very dense,	
			no porosity	
$\lambda$	┝╴╴		Limestone: dull gray, coarsely crystalline, very dense, no porosity, fair amount gray shale, trace chert	
		2200		
			Limestone: dull gray, coarsely crystalline, very dense, no porosity, fair amount gray shale, trace chert	
	╞╾┿┯		Limestone: dull gray, coarsely crystalline, verv dense.	
			Limestone: dull gray, coarsely crystalline, very dense, no porosity, fair amount gray shale, trace chert	
			Limestone: dull gray, coarsely crystalline, some fine grained, very dense, no porosity, fair amount gray shale	
	<mark>┟┰╋┲┺</mark>		Limestone: dull gray, coarsely crystalline, some fine grained,	
			very dense, no porosity, fair amount gray shale	
			Limestone: off white to gray, fine to medium crystalline,	
		2250	Limestone: off white to gray, fine to medium crystalline, sample pulverized, much dark gray shale	
		2250	Limestone: off white to gray, fine to medium crystalline, sample pulverized, much dark gray shale Limestone: off white to gray, fine to medium crystalline, sample pulverized, much dark gray shale	
		2250	sample pulverized, much dark gray shale Limestone: off white to gray, fine to medium crystalline,	

			Limestone: off white to gray, fine to medium crystalline, sample pulverized, much dark gray shale									
			Limestone: off white to gray, fine to medium crystalline, sample pulverized, much dark gray shale									
3			Limestone: off white to gray, fine crystalline, sample pulverized, much dark gray shale									
		2300	Shale: vari-colored, mostly red-dk gray-green, fair amount									
			off white fine crystalline limestone, sample ground fine Shale: vari-colored, mostly red-dk gray-green, fair amount									
			off white fine crystalline limestone, sample ground fine Shale: vari-colored, mostly red-dk gray-green, fair amount									
			off white fine crystalline limestone, sample ground fine Shale: red to dark gray									
			Shale: red to dark gray									
	2 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	2350	Limestone: gray, fine grained, dense, much red to gray shale									
			Limestone: gray, fine grained, dense, much red to gray shale									
			Limestone: gray, fine crystalline, much red to gray shale, sample ground fine									
2			Limestone: gray, fine crystalline, much red to gray shale, sample ground fine									
3			Shale: red to dark gray									
		2400	Shale: red to dark gray	5	)							
			Limestone: gray, fine crystalline, much red to gray shale, sample ground fine									
			Shale: red to dark gray									
			Shale: gray		)							
	2	2450	Shale: red to gray		Ì							
			Shale: red to gray Shale: red to gray to black, fair amount gray argillaceous									
			limestone Shale: red to gray to black, fair amount gray argillaceous		}							
			limestone Shale: red to gray to black, fair amount gray argillaceous limestone									
			limestone Shale: red to gray									
		2500	Shale: red to gray									
			Shale: red to gray									
			Shale: red to gray									
			Shale: red to gray , fair amount off white fine crystalline limestone, no visible porosity									
			Shale: gray									
	2 2 4 4 4 4	2550	Limestone: gray, fine grained, little visible porosity, much red to gray shale									
			Limestone: gray, fine grained, little visible porosity, much red to gray shale									
			Limestone: gray, fine grained, little visible porosity, much red to gray to green shale	Í								
			Limestone: gray, fine grained, little visible porosity, much red to gray to green shale, trace pyrite									
depth correction		2600	Shale: dark gray, slightly calcareous	þ								
			Shale: dark gray, slightly calcareous									
			Shale: dark gray, slightly calcareous									
			Limestone: light beige, coarsely crystalline, dense, no visible porosity Limestone: light beige, coarsely crystalline, dense,									
			Limestone: light beige, coarsely crystalline, dense, no visible porosity Limestone:off white, medium to coarsely crystalline, dense, no visible porosity, much dark gray shale									
	2	2650	Limestone:off white, medium to coarsely crystalline, dense, no visible porosity, much varicolored shale									
			Limestone:off white, medium to coarsely crystalline, dense, no visible porosity, much varicolored shale Siltstone: gray									
			Siltstone: gray									
			Siltstone: gray									
			Limestone: beige, argillaceous, no visible porosity, much dark gray shale									
		2700	Shale: dark gray, trace beige limestone									
			Shale: dark gray, trace beige limestone									
			Limestone: dull gray, fine grainded, dense, trace echinoids, no visible porosity, much gray shale									
			Limestone: dull gray, fine grainded, dense, no visible porosity, much gray shale									
			Limestone: dull gray, fine grainded, dense, no visible porosity, much gray shale									
		2750	Limestone: off white to gray to beige, medium crystalline, dense, no visible porosity									
			Limestone: off white to gray to beige, medium crystalline, dense, no visible porosity									
			Limestone: off white to gray, medium crystalline, dense, no visible porosity									
			Limestone: off white to gray, fine grained to medium crystalline, dense, no visible porosity									
		2800	Limestone: off white to gray, fine grained to medium crystalline, dense, no visible porosity									
			Limestone: off white to gray, coarsely crystalline, no visible porosity									
			Limestone: off white to gray to beige, coarsely crystalline, no visible porosity									
			Limestone: light beige, coarsely crystalline, no visible porosity									
			Limestone: light beige, coarsely crystalline, no visible porosity, much gray shale Limestone: light beige, coarsely crystalline, no visible									
	2	2850	porosity, much gray shale									
			Shale: gray to black, trace mica Shale: gray to black, trace beige medium crystalline									
			Shale: greenish gray, slightly fossiliferous w/pelecypod shell hash									
			Limestone: beige to light gray, argillaceous, no visible									
			porosity, much gray shale Limestone: beige to light gray, fine grained, dense, slightly argillaceous, much gray shale									
		2900	argillaceous, much gray shale Shale: greenish gray to grayslough?									
			TFB & MWD tool @ 2913' Shale: gray, with fair amount light off white, fine grained									
			Shale: gray, with fair amount light off white, fine grained limestone Shale: gray, with fair amount light off white, fine grained limestone									
			Shale: gray, with fair amount light light gray, fine grained limestone									
			Shale: gray to black									
	2	2950	Shale: gray to black					НA				
			Shale: gray to black				LI	ME		ONE		
			Shale: gray to black				H	ALI				
	17		Shale: gray to dark gray, fair amount fine grained limestone with no visible porosity				14	NH,	YDRI	ſE/G	YP	SUM
			Shale: gray to dark gray, fair amount fine grained limestone with no visible porosity									
	3	3000	Shale: gray to dark gray, fair amount fine grained limestone with no visible porosity									
			Shale: gray to dark gray, fair amount fine grained limestone with no visible porosity		For	oeka 301	9 -	12	63			
			Limestone: light gray, fine grained to medium crystalline, little visible porosity									
			Limestone: light gray, fine grained to medium crystalline, little visible porosity									
			Limestone: off white to beige, fine grained, no visible porosity		<pre></pre>							
		3050	Limestone: off white to beige, fine grained, no visible porosity									
			Limestone: off white to beige, fine grained, no visible	нŤ	11		L E	. T	- CT	. 1		1.1

		sample of dark gray to black shalelook out of place	
		sample of dark gray to black shalelook out of place Limestone: off white to beige, sample pulverized Limestone: off white to beige, sample pulverized	
depth correction		Limestone: off white to beige, sample pulverized Limestone: off white to beige, sample pulverized	
		Limestone: off white to beige, sample pulverized Limestone: off white to beige, sample pulverized Limestone: off white to beige, sample pulverized	
		Limestone: off white to beige, sample pulverized Limestone: off white to beige, sample pulverized Limestone: off white to beige, sample pulverized	
	3200	Limestone: off white, fine grained, little visible porosity, trace gray shale Limestone: off white, fine grained, little visible porosity, trace gray shale	
		Limestone: off white, fine grained, little visible porosity, trace gray shale and pyrite Limestone: off white, fine grained, little visible porosity, trace gray shale	
		Limestone: off white, fine grained, little visible porosity, trace gray shale Limestone: off white, fine grained, little visible porosity, trace gray shale	
		Limestone: off white, fine grained, little visible porosity, trace gray shale Limestone: off white, sample pulverized Limestone: off white, sample pulverized	
		Limestone: off white, sample pulverized Limestone: off white, sample pulverized	
		Limestone: off white to beige, fine to medium crystalline, some fine grained, little visible porosity, fair amount dark gray shale Limestone: off white to beige, fine to medium crystalline, some fine grained, little visible porosity, fair amount dark gray shale Limestone: beige to light brown, fine to medium crystalline, some	
		fine grained, little visible porosity, fair amount dark gray shale Limestone: beige to light brown, fine to medium crystalline, some fine grained, little visible porosity, fair amount black shale Limestone: beige, sample pulverized	
	3350	Shale: black, w/fair amount beige limestone Limestone: light gray, pulverized	Heebner 3354 -1598
		Limestone: light gray, pulverized Limestone: light gray, pulverized, much gray shale Limestone: light gray, pulverized, much gray shale	Douglas 3393 -1639
	3400	Shale: gray Shale: gray	
		Shale: gray Shale: gray	
	3450	Limestone: gray, pulverized, much dark gray shale Limestone: gray, pulverized, much dark gray shale	
		Shale: gray to black Shale: gray to black Shale: gray to black	
	3500	Shale: gray to black Shale: gray to black	
		Shale: gray to black Limestone: light gray, pulverized Limestone: light gray, pulverized	
	3550	Limestone: light gray, pulverized Limestone: off white, medium to coarsely crystalline, dense, little visible porosity Limestone: off white, medium to coarsely crystalline, dense, little visible porosity	Lansing 3539 -1785
		dense, little visible porosity Limestone: off white, medium to coarsely crystalline, dense, little visible porosity, fair amount dark gray shale Limestone: off white, medium to coarsely crystalline, dense, little visible porosity, fair amount dark gray shale	
		Limestone: off white, medium to coarsely crystalline, dense, little visible porosity, fair amount dark gray shale Limestone: off white to light gray, medium to coarsely crystalline, dense, little visible porosity, trace dark gray shale	
		Limestone: off white to light gray, medium to coarsely crystalline, dense, little visible porosity, trace dark gray shale Limestone: off white to light gray, medium to coarsely crystalline, dense, little visible porosity, trace dark gray shale Limestone: off white to light gray, medium to coarsely crystalline, dense, little visible porosity, trace dark gray shale	
		Limestone: off white to light gray, medium to coarsely crystalline, dense, little visible porosity, trace dark gray shale Limestone: off white to light gray, medium to coarsely crystalline, dense, little visible porosity, trace dark gray shale Limestone: off white to light gray, medium to coarsely crystalline, dense, little visible porosity, trace dark gray and green shale, trace pyrite	
		Limestone: off white to gray, medium crystalline, soft, little visible porosity, much gray shale Limestone: off white to gray, medium crystalline, soft, little visible porosity, much gray shale	
		Limestone: off white to gray, medium crystalline, soft, little visible porosity, much gray trace red shale Limestone: off white to gray, medium crystalline, soft, little visible porosity, much gray trace red shale Shale: gray, fair amount medium crystalline limestone	
		Shale: gray, fair amount medium crystalline limestone Shale: gray, fair amount medium crystalline limestone	
		Limestone: off white, medium crystalline, little visible porosity, sample ground fairly fine, fair amount gray shale Limestone: off white, medium crystalline, little visible porosity, sample ground fairly fine	
		Limestone: off white, coarsely crystalline, little visible porosity, trace gray shale Limestone: off white, coarsely crystalline, little visible porosity, trace gray shale Limestone: off white, coarsely crystalline, little visible	
		Limestone: off white, coarsely crystalline, little visible porosity, trace black shale, trace pyrite Limestone: off white, coarsely crystalline, little visible porosity, trace black shale, trace pyrite	
		Limestone: off white to beige, coarsely crystalline, little visible porosity, trace gray shale Limestone: off white to beige, coarsely crystalline, little visible porosity, trace gray shale	
		Limestone: off white to beige, coarsely crystalline, little visible porosity, trace black shale Limestone: off white to beige, coarsely crystalline, little visible porosity, trace gray shale Limestone: off white to beige, coarsely crystalline, little visible	Stark 3813 -2059
		porosity, much gray to black shale Limestone: off white to beige, coarsely crystalline, little visible porosity, much gray pyritic to black shale Limestone: light gray, fine grained, no visible porosity,	Hushpuckney 3847 -2093
		trace pyrite and black shale Limestone: light gray, fine grained, no visible porosity, trace pyrite Limestone: light beige, fine grained, no visible porosity, trace pyrite	
		Limestone: light beige, fine grained, no visible porosity, trace pyrite Limestone: light gray to beige, fine grained, no visible porosity, much dark gray shale Limestone: light gray to beige, fine grained, no visible porosity, much dark gray shale	
		porosity, much dark gray shale Shale: dark gray Limestone: light gray to beige, fine grained, no visible porosity, much dark gray shale	ВКС 3912 -2158
		Limestone: light gray, fine grained, no visible porosity, much dark gray shale Shale: dark gray	
		Limestone: light gray, fine grained, no visible porosity, much dark gray shale Limestone: light gray, fine grained, no visible porosity, trace dark gray shale Limestone: light gray, fine grained, no visible porosity, trace dark gray shale	Image: Shale       SANDSTONE         Image: Shale       SANDSTONE <td< th=""></td<>
		Limestone: light gray, fine grained, no visible porosity, trace pyrite, much gray shale Limestone: light gray, fine grained, no visible porosity, trace pyrite, much gray shale	ANHYDRITE/GYPSUM
		Shale: gray to black <u>Chert: white to off white, tripolitic, very good intergranular</u> porosity, no stain, no odor Chert: white to off white, tripolitic, very good intergranular porosity, no stain, no odor Chert: white to off white, tripolitic, fair intergranular	Mississippian 4009 -2253
		Chert: white to off white, tripolitic, fair intergranular and trace pin point porosity, very slight show free oil, no odor Chert: white to off white tripolitic w/fair tripolitic porosity, no show Chert: white to off white tripolitic w/fair tripolitic porosity, no show	
		no show Chert: white to off white tripolitic to fresh off white to pale light brown, no show Chert: white to off white tripolitic to fresh off white to pale light brown, no show	
depth correction		Chert: white to off white tripolitic to fresh off white to pale light brown, no show Chert: white to off white tripolitic to fresh off white to pale light brown, no show	
		Shale: dark gray Shale: dark gray Shale: dark gray	Kinderhook 4108 -2352
		Shale: dark gray Shale: dark gray	
	4150	Shale: dark gray Shale: dark gray Shale: dark gray	
		Shale: dark gray Shale: gray to dark gray Shale: gray to dark gray	
	4200	Shale: gray to dark gray Shale: gray to dark gray	
		Shale: gray to dark gray Shale: gray to dark gray Shale: gray to dark gray	
	4250	Shale: gray to dark gray Shale: dark gray, calcareous Shale: dark gray	4330 ×17
		Shale: dark gray Shale: dark gray	
	4300	Shale: dark gray Shale: dark gray Shale: dark gray to black	4340 x25 Viola 4308 -2552
		Shale: dark gray to black Dolomite: gray to beige, fine to coarsely crystalline, no visible porosity, much dark gray shale Dolomite: gray to beige, fine to coarsely crystalline, no visible porosity, much dark gray shale	Viola 4308 -2552
	4350	Dolomite: gray to beige, fine to coarsely crystalline, no visible porosity Dolomite: gray to beige, fine to coarsely crystalline, no visible porosity	4370 ×17
	4350	Dolomite: off white to light brown, fine to medium crystalline, no visible porosity, much dark gray shale (slough) Dolomite: off white to light brown, fine to medium crystalline, no visible porosity, much dark gray shale (slough)trace gray chert Dolomite: gray, coarsely crystalline, no visible porosity, trace brown dolomitic sandstone very poor intergrapular	4380 ×19
		Bit balled up right at the top of the Simpson Shale         Dolomite: gray, coarsely crystalline, no visible porosity,         Trace brown dolomitic sandstone, very poor intergranular         Dolomite: gray, coarsely crystalline, no visible porosity,         Trace brown dolomitic sandstone, very poor intergranular         porosity, fair amount pyrite         Shale: gray to blue green, fair amount pyrite	4380 x19 Simpson Sh 4381 -2625 Simpson SS 4394 -2638
	4400	Shale: gray to blue green, fair amount pyrite Shale: gray to blue green, trace dolomitic sandstone w/ little visible porosity much gray shale slough from up the hole (Kinderhook), fair amount pyrite Shale: gray to blue green, still carrying many free sand grains	Base Simpson SS 4410 -2656
	RTD	Shale: gray to blue green, still carrying many free sand grains Shale: gray to blue green, still carrying many free sand grains Shale: gray to blue green	Chert 4390 x8
	RTD 4445' 4450		Chert 4390 x8
Comments:			

# iCem<sup>®</sup> Service

### **TRES MANAGEMENT INC**

For: Jason Goss Date: Friday, October 28, 2022

**TRES ALLEY 16-44 SURFACE 908081978** Post Job Report Job Date: Sunday, August 28, 2022

Sincerely,

**Manuel Teran** 

### Disclaimer:

All information in this report is provided subject to the terms and conditions which govern the services provided by Halliburton. Halliburton personnel use their best efforts in gathering information and their best judgment in interpreting it, but any interpretation, research, analysis or recommendation furnished by Halliburton are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and empirical relationships and assumptions are not infallible, and with respect to which professionals in the industry may differ. iCem 3D Displacement results are used to understand how fluids intermix during a cement job. Simulation and 3D displacement results are not intended as and should not be used as a replacement for bond logs in determining top of cement. Current 3D model calculations are known to model more volume than the input volume for standard cases due to known calculation improvements required. For rotational cases, the modeled volume will be impacted by the same calculations impacting the standard cases, as well as additional constraints imposed to make the calculation time required operationally feasible. Therefore, until further notice, 3D displacement results should not be used for replacement of a bond log, or used as an identifier of top of cement. HALLIBURTON IS UNABLE TO GUARANTEE THE ACCURACY OF ANY CHART INTERPRETATION, RESEARCH ANALYSIS, OR JOB RECOMMENDATION and any interpretation or recommendation is not for use of or reliance upon by any third party. The customer has full responsibility for any of its decisions which are based on the information provided in this report.

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1.0 Real-Time Job Summary

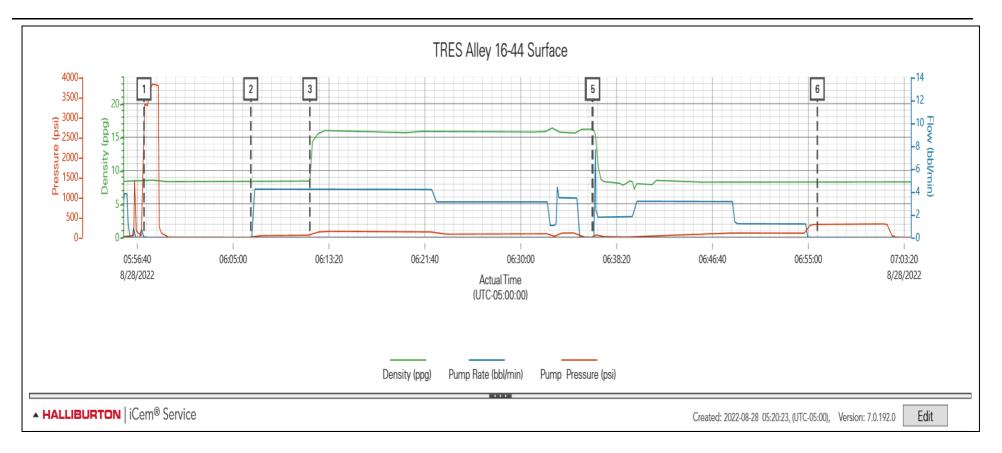
1.1	Job Ev	ent Log
-----	--------	---------

100 546		8						
Туре	Seq	Graph Label	Date	Time	Density	Pump Rate	Pump Pressure	Comments
	No.				(ppg)	(bbl/mi n)	(psi)	
Event	1	Call Out	8/27/2022	08:00:00				
Event	2	Pre-Convoy Safety Meeting	8/27/2022	08:30:00				
Event	3	Depart from Service Center or Other Site	8/27/2022	09:00:00				
Event	4	Arrive at Location from Service Center	8/27/2022	18:00:00				
Event	5	Safety Meeting - Pre Rig-Up	8/28/2022	05:00:00				
Event	6	Rig-Up Equipment	8/28/2022	05:15:00				
Event	7	Rig-Up Completed	8/28/2022	05:30:00	7.58	0.00	-0.17	
Event	8	Pre-Job Safety Meeting	8/28/2022	05:45:00	8.30	0.00	-1.61	
Event	9	Test Lines	8/28/2022	05:57:15	8.52	0.00	3332.89	LOW TEST TO 500 HIGH TEST TO 3000
Event	10	Pump Spacer 1	8/28/2022	06:06:32	8.30	0.00	0.22	20 BBL FRESH WATER SPACER
Event	11	Pump Cement	8/28/2022	06:11:40	8.33	4.19	49.11	360 SKS 15.8PPG 1.17 YEILD 4.99 GAL/SK 75 BBL 421 CF
Event	12	Drop Top Plug	8/28/2022	06:36:13	16.21	0.00	0.66	DROP 3RD PARTY NR TOP PLUG

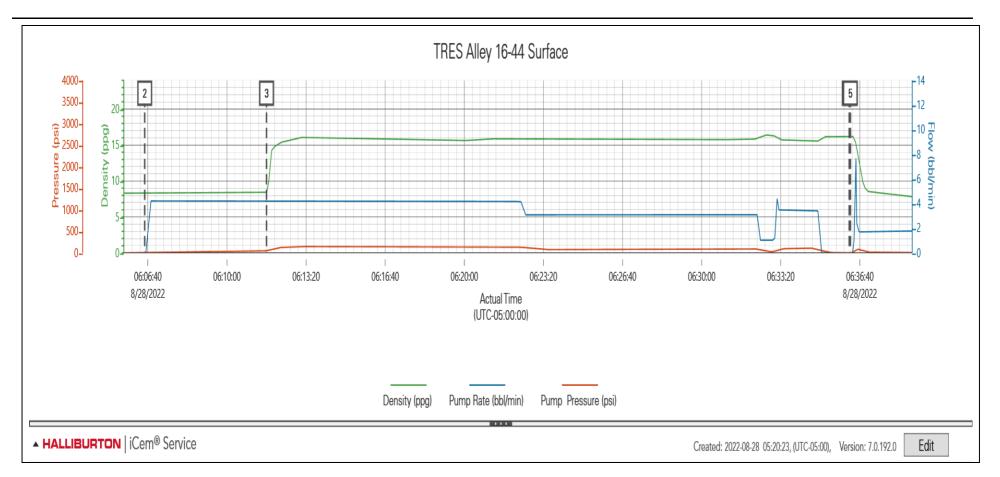
Event	13	Pump Displacement	8/28/2022	06:36:16	16.22	0.00	0.05	PUMP 39 BBL FRESH WATER DISPLACEMENT
Event	14	Bump Plug	8/28/2022	06:55:47	8.30	0.00	323.95	BUMP PLUG @ 140 PSI TAKE TO 360 PSI, 5 BBL CEMENT TO SURFACE
Event	15	End Job	8/28/2022	07:05:13	8.28	0.00	-3.21	CHECK FLOATS 1/2 BBL BACK TO TRUCK WITH FLOATS HOLDING, RIG WANTS TO HOLD CEMENT HEAD
Event	16	Safety Meeting - Pre Rig-Down	8/28/2022	07:15:00				
Event	17	Rig-Down Equipment	8/28/2022	07:30:00				
Event	18	Pre-Convoy Safety Meeting	8/28/2022	08:00:00				

2.0 Attachments

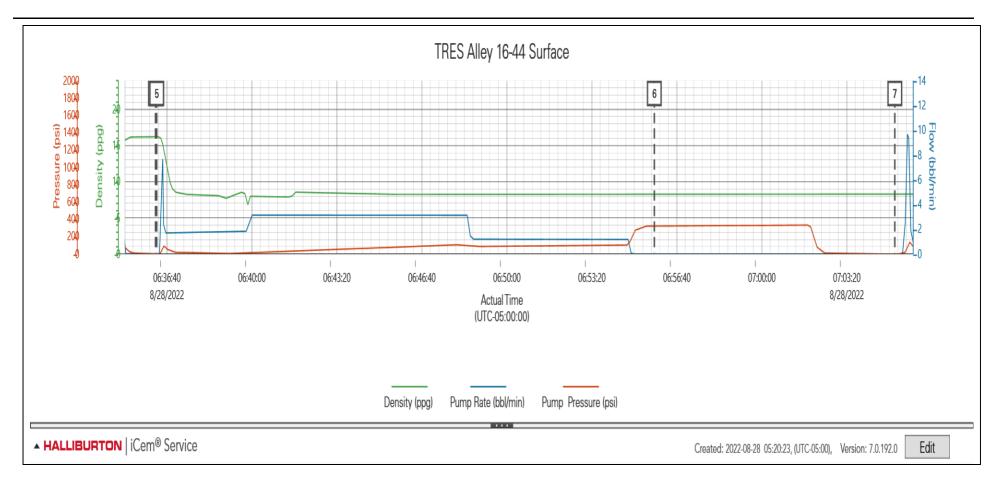
### 2.1 Job Summary.png



#### 2.2 Spacer and Cement Summary.png



#### 2.3 Displacement Summary.png



Customer: TRES MANAGEMENT INC Job: TRES ALLEY 16-44 SURFACE Case: Post Job report

# iCem<sup>®</sup> Service

#### **TRES MANAGEMENT INC**

For: Jason Goss Date: Friday, October 28, 2022

**TRES ALLEY 16-44 SURFACE 908081978** Post Job Report Job Date: Sunday, August 28, 2022

Sincerely,

**Manuel Teran** 

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1.0 Real-Time Job Summary

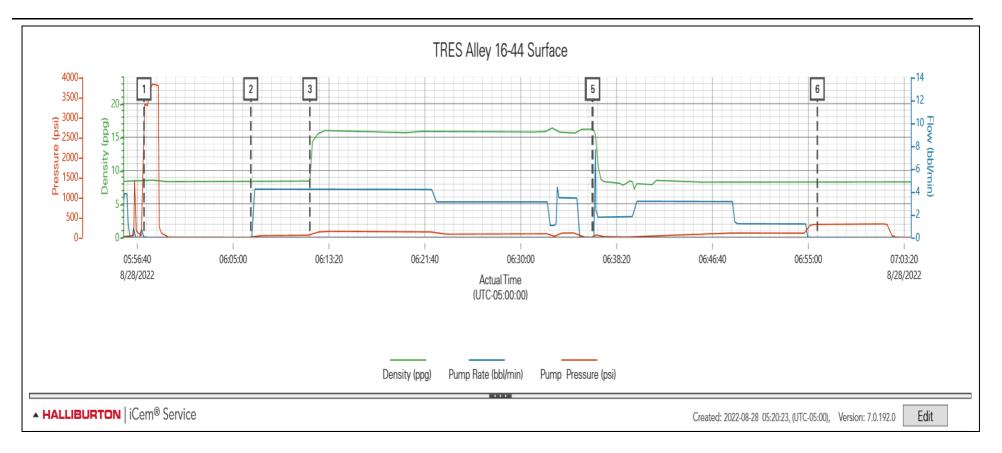
1.1	Job	Event	Log
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100 146		0						
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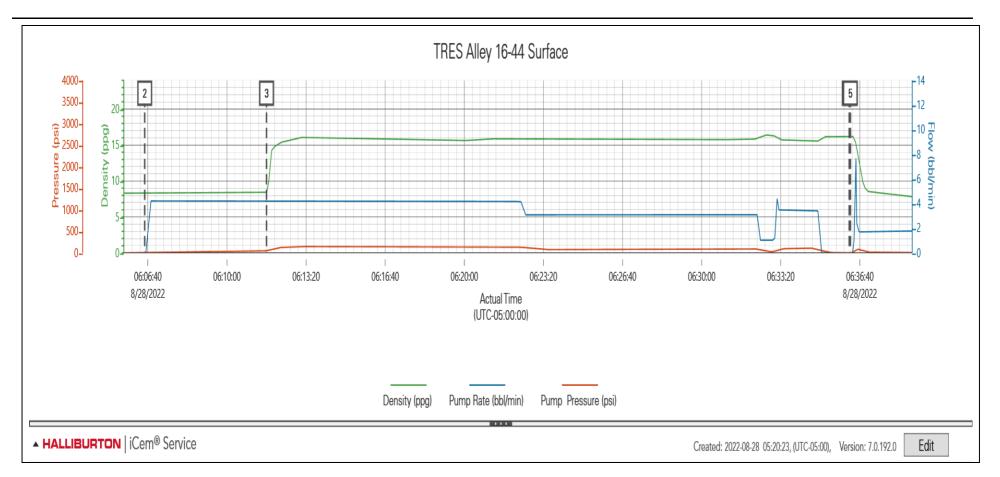
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2.0 Attachments

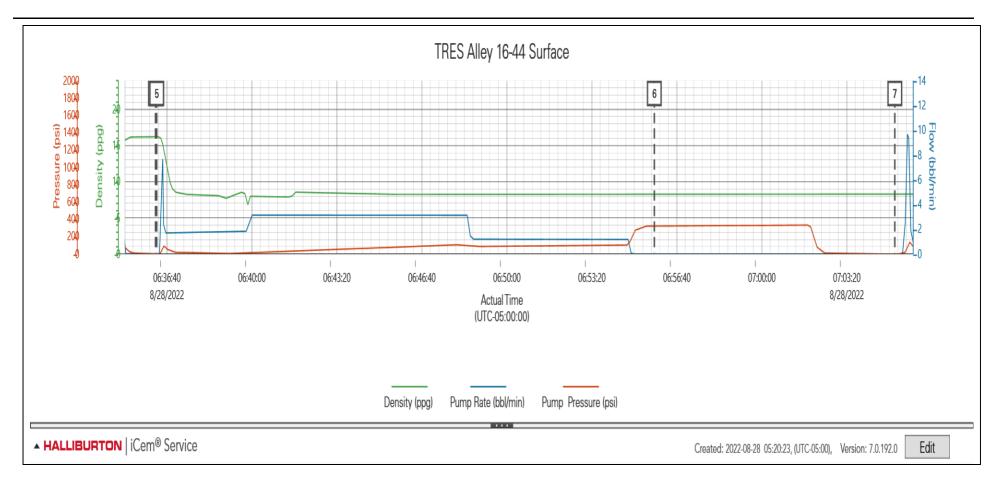
#### 2.1 Job Summary.png



#### 2.2 Spacer and Cement Summary.png



#### 2.3 Displacement Summary.png



Customer: TRES MANAGEMENT INC Job: TRES ALLEY 16-44 SURFACE Case: Post Job report



Butch's Rat Hole & Anchor Service, Inc. P.O. Box 1323 Levelland, TX 79336 806-894-6294

# Invoice #INBR019114R 08/15/2022

Bill To TRES MANAGEMENT, INC. 15304 NORTH MAY AVE Edmond, OK 73013 PO / AFE: Service Location: County/State: Kingman, KS Cost Center: Shawnee Rat Hole

FieldTicket Ref#	Те	rms	Invoice Group	Sales Rep	
FTBR018258	N	30	Email	Smith, Michael V	/
Company Man	Ri	g	Lease	Well	
JOHN PREJEAN			ALLEY	16-44	
Job Start	Job End	Item	Quantity	Unit Price	Amount
07/25/2022	07/26/2022	Description DRILL & SET 110' X 24 CONDUCTOR AND 6' 〉			
07/25/2022	07/26/2022	Bid Price, Rat Hole	1		
07/25/2022	07/26/2022	Tier 5 Fuel Surcharge Fuel Surcharge where diesel is between (\$5.0	price of		

Subtotal Discount Tax Total (9%) Payments/Credits Applied Amount Due



Please make payment within 30 days to **Butch's Rat Hole & Anchor Service, Inc.** at P.O. Box 1323, Levelland, Hockley County, TX 79336. No claims or adjustment allowed after 15 days from invoice date. Overdue accounts are subject to a service charge of 1.5% per month. Please contact <u>AR@BRHAS.com</u>/806-894-6294 with questions.





射動時種的上点

Butch's Rat Hole & Anchor Service, Inc. P.O. Box 1323 Levelland, TX 79336 806-894-6294

# Field Ticket #FTBR018258R 07/25/2022

Bill To TRES MANAGEMENT, INC. 15304 NORTH MAY AVE Edmond, OK 73013

#### PO / AFE: Service Location: County/State: Kingman, KS Cost Center: Shawnee Rat Hole

<b>Terms</b> N30		Invoice Group Email	Sales R Smith,	e <b>p</b> Michael V	
<b>Company Man</b> JOHN PREJEAN	Rig	Lease ALLEY		<b>Well</b> 16-44	
Job Start	Job End	Item	Quantity	Rate	Amount
07/25/2022	07/26/2022	<b>Description</b> DRILL & SET 110' X 24" CONDUCTOR AND 6' X 6' CELLAR			
07/25/2022	07/26/2022	Bid Price, Rat Hole	1	\$26,990.00	\$26,990.00
07/25/2022	07/26/2022	Tier 5 Fuel Surcharge (\$5.01-5.50) Fuel Surcharge where price of diesel is between (\$5.01-5.50)		3.25%	\$877.18

Subtotal	\$27,867.18
Discount	\$0.00
Tax Total (9%)	\$0.00
Total	\$27,867.18

Well Name:	Alley 16-44	
------------	-------------	--

AFE Number: 1022432

Acct Code: 9103

Amount: \$27,867.18

Date: 8/15/22

Prejean Signature:

Please make payment within 30 days to **Butch's Rat Hole & Anchor Service**, **Inc.** at P.O. Box 1323, Levelland, Hockley County, TX 79336. No claims or adjustment allowed after 15 days from invoice date. Overdue accounts are subject to a service charge of 1.5% per month. Please contact <u>AR@BRHAS.com</u>/806-894-6294 with questions.

