EDISON OPERATING COMPANY LLC

Scale 1:240 Imperial

Well Name: Red Raider #1-26
Surface Location: Sec. 26 - T32S - R19W
Bottom Location:
API: 15-033-21787-0000
License Number: 34434
Spud Date: 7/19/2019 Time: 7:30 PM
Region: Comanche County
Drilling Completed: 8/3/2019 Time: 1:10 PM
Surface Coordinates: 843' FSL & 485' FWL
Bottom Hole Coordinates:
Ground Elevation: 1952.00ft
K.B. Elevation: 1962.00ft
Logged Interval: 3600.00ft To: 5990.00ft
Total Depth: 5990.00ft
Formation:
Drilling Fluid Type: Chemical/Fresh Water Gel

OPERATOR

Company: Edison Operating Company LLC
Address: 8100 E. 22nd St. North
Building 1900
Wichita, KS 67226
Contact Geologist: David Withrow
Contact Phone Nbr: 316.613.1544
Well Name: Red Raider #1-26
Location: Sec. 26 - T32S - R19W
API: 15-033-21787-0000
Pool: Field: Bird East
State: Kansas Country: USA

LOGGED BY

EDISON OPERATING COMPANY LLC

Company: Edison Operating Company LLC
Address: 8100 E. 22nd St. North
Building 1900
Wichita, KS 67226
Phone Nbr: 316.655.3550
Logged By: Geologist Name: Derek W. Patterson

REMARKS

After review of the geologic log, DST results, and open hole logs for the Red Raider #1-26, it was decided upon by operator to plug and abandon said well as it was deemed incapable to produce commercial quantities of oil and/or gas. The Red Raider #1-26 was plugged and abandoned on August 4, 2019.

Note: the ROP, DST intervals, and all other pertinent data has been shifted 10' shallow to correspond with the electric log data

The well samples were saved, submitted, and will be available for review at the Kansas Geologic Survey's Well Sample Library located in Wichita, KS.

Respectfully Submitted,

Derek W. Patterson

GENERAL INFORMATION

Service Companies

Drilling Contractor: Southwind Drilling - Rig #1
Tool Pusher: Cecil Farmer
Daylight Driller: Kevin Delcher
Evening Driller: John Frazier
Morning Driller: Ryan Hamly

Gas Detector: Bluestem Environmental
Engineer: Keith Reavis
Unit: 5279
Operational By: 2900'

Drilling Fluid: Mud-Co/Service Mud Inc.
Engineers: Brad Bortz
Matt Smith

Logging Company: Eli Wireline
Engineer: Jason Cappellucci
Logs Ran: DI, CDNL, Micro, Sonic

Testing Company: Eagle Testers
Tester: Gene Budig

Deviation Survey

Depth	Survey
737'	3/4°
4965'	3/4°
RTD - 5990'	3/4°

Pipe Strap

Depth	Pipe Strap
4965'	2.63' Long to Board

Bit Record

Bit #	Size	Make	Type	Serial Number	Depth In	Depth Out	Feet	Hours
1			Conductor		0'	84'	84'	n/a
2	12 1/4"	PDC	PDC	508637	84'	737'	3721'	8
3	7 7/8"	JZ	PDC	RR	737'	3063'	2326'	35.5
4	7 7/8"	JZ	RX30	10008	3063'	5200'	2137'	100.75
5	7 7/8"	JZ	HF-41	K01508	5200'	5990'	790'	69.25

Conductor Casing

7.18.2019 Ran 84' of 20" conductor casing.
Cemented with 9 yards of 8 sacks grout type 12.
Plug down @ 1700 hrs 7.18.19. By Koda Services.

Surface Casing

7.20.2019 Ran 17 joints of new 24#, 8 5/8" surface casing, tallying 724.25', set @ 737' KB.
Cemented with 200 sacks A-Con followed 150 sacks 60/40 Poz, 3% cc, 1/4 #/sx flocell.
Cement did circulate.
Plug down @ 1100 hrs 7.20.19. By Basic Energy Services.

DAILY DRILLING REPORT

Date	0700 Hrs Depth	Previous 24 Hours of Operations
7.25.2019	4122'	Drilling and connections upper Pennsylvanian beds. Geologist Derek W. Patterson on location Derek W. Patterson on location 2050 hrs 7.24.19. Drilling and connections Topeka. Made 466' over past 24 hrs of operations. WOB: 36k RPM: 75 PP: 800 SPM: 60 DMC: $2,383.89 CMC: $9,326.66
7.26.2019	4580'	Drilling and connections Topeka, Heebner, Toronto, Douglas, Brown Lime and Lansing-Kansas City. Drilling and connections Lansing-Kansas City. Made 458' over past 24 hrs of operations. WOB: 36k RPM: 75 PP: 850 SPM: 60 DMC: $1,886.86 CMC: $11,213.52
7.27.2019	4925'	Drilling and connections Lansing-Kansas City. CFS @ 4710' (LKC 'J'). Resume drilling and connections Lansing-Kansas City, Base Kansas City, and into Marmaton. Drilling and connections Marmaton. Made 345' over past 24 hrs of operations. WOB: 36k RPM: 70 PP: 879 SPM: 60 DMC: $1,180.00 CMC: $12,393.52
7.28.2019	4965'	Drilling and connections Marmaton and into Altamont. CFS @ 4965' (Altamont). Shows warrant test. Conduct 15 stand short trip, CTCH. TOH for DST #1 1415 hrs 7.28.19. Rig up tester, make up tool. TIH with tool, conduct DST #1, test successful. TIH with bit. TOH for plugged jet on bit. Made 40' over past 24 hrs of operations. WOB: 35k RPM: 70 PP: 850 SPM: 60 DMC: $2,153.24 CMC: $14,546.76
7.29.2019	5179'	TOH with bit, TIH with bit, CTCH. Resume drilling following DST #1 1345 hrs 7.29.19. Drilling and connections Altamont, Pawnee, Fort Scott, Cherokee, and into Mississippian. CFS @ 5176' (Miss), Resume drilling Mississippian. Made 214' over past 24 hrs of operations. WOB: 36k RPM: 65 PP: 877 SPM: 60 DMC: $85.55 CMC: $14,632.31
7.30.2019	5246'	Drilling Mississippian. CFS @ 5185' (Miss). CFS @ 5200' (Miss). Shows warrant test. CTCH, TOH for DST #2 1200 hrs 7.29.19. TIH with tool, conduct DST #2, test successful. TIH with bit, CTCH. Resume drilling following DST #2 0330 hrs 7.30.19. Drilling and connections Mississippian. Made 67' over past 24 hrs of operations. WOB: 38k RPM: 65 PP: 816 SPM: 60 DMC: $1,799.18 CMC: $16,431.49
7.31.2019	5574'	Drilling and connections Mississippian. Made 328' over past 24 hrs of operations. WOB: 36k RPM: 65 PP: 835 SPM: 60 DMC: $714.07 CMC: $17,145.56
8.1.2019	5761'	Drilling and connections Mississippian. Lost circulation @ 5761' 0500 hrs 8.1.19. Work on getting circulation back. Made 187' over past 24 hrs of operations. WOB: 38k RPM: 65 PP: 800 SPM: 60 DMC: $2,007.83 CMC: $19,153.39
8.2.2019	5887'	Work on getting circulation back. Drilling resumed 1325 hrs 8.1.19. Drilling and connections Mississippian, Kinderhook, Maquoketa, and into Viola. CFS @ 5878' (Viola), CFS @ 5887' (Viola). Made 126' over past 24 hrs of operations. WOB: 38k RPM: 65 PP: 800 SPM: 60 DMC: $4,446.04 CMC: $23,599.43
8.3.2019	5921'	CFS @ 5887' (Viola). Shows warrant test. CTCH, TOH for DST #3 0830 hrs 8.2.19. TIH with tool, conduct DST #3, test successful. TIH with bit, CTCH. Resume drilling following DST #3 0200 hrs 8.2.19. Drilling and connections Viola. Made 34' over past 24 hrs of operations. WOB: 39k RPM: 65 PP: 800 SPM: 60 DMC: $1,826.56 CMC: $25,425.99
8.4.2019	RTD - 5990' LTD - 5982'	Drilling and connections Viola and into Simpson Dolomite ahead to RTD of 5990'. RTD reached 1310 hrs 8.3.19. CTCH, drop survey, TOH for open hole logging operations. Geologist Derek W. Patterson off location 1430 hrs 8.3.19. Rig up Eli Wireline. Conduct open hole logging operations. Orders received to plug and abandon well as a dry hole. Made 69' over past 24 hrs of operations. WOB: 38k RPM: 65 PP: 785 SPM: 60 DMC: $1,688.12 CMC: $27,114.11 FMC: $27,786.22

WELL COMPARISON SHEET

	Drilling Well				Comparison Well				Comparison Well				Comparison Well			
	Edison Operating - Red Raider #1-26 Sec. 26 - T32S - R19W 843' FSL & 485' FWL (SE NW SW SW) 1952 GL 1962 KB				Edison Operating - Brass #1-35 SWD Sec. 35 - T32S - R19W 4620' FEL & 4620' FSL (C NW NW) Oil/Gas - Altamont 1964 KB		Structural Relationship		Edison Operating - Pierce #1-27 Sec. 27 - T32S - R19W 1320' FSL & 3300' FEL (E/2 SW) Oil/Gas - Miss 1952 KB		Structural Relationship		American Warrior - Gillet #3-34 Sec. 34 - T32S - R19W 330' FNL & 830' FEL (NW NE NE) Gas - Altamont 1956 KB		Structural Relationship	
Formation	Sample	Sub-Sea	Log	Sub-Sea	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log	Log	Sub-Sea	Sample	Log
Heebner	4215	-2253	4212	-2250	4227	-2263	10	13	4201	-2249	-4	-1	4210	-2254	1	4
Toronto	4226	-2264	4223	-2261	4237	-2273	9	12	4213	-2261	-3	0	4220	-2264	0	3
Douglas	4242	-2280	4244	-2282	4255	-2291	11	9	4231	-2279	-1	-3	4242	-2286	6	4
Brown Lime	4387	-2425	4385	-2423	4396	-2432	7	9	4382	-2430	5	7	4398	-2442	17	19
Lansing-Kansas City	4407	-2445	4404	-2442	4410	-2446	1	4	4396	-2444	-1	2	4412	-2456	11	14
LKC 'B'	4447	-2485	4447	-2485	4458	-2494	9	9	4429	-2477	-8	-8	4440	-2484	-1	-1
LKC 'D'	4481	-2519	4482	-2520	4494	-2530	11	10	4463	-2511	-8	-9	4476	-2520	1	0
LKC 'F'	4544	-2582	4552	-2590	4560	-2596	14	6	4531	-2579	-3	-11	4545	-2589	7	-1
LKC 'G'	4577	-2615	4580	-2618	4586	-2622	7	4	4555	-2603	-12	-15	4574	-2618	3	0
Muncie Creek	4620	-2658	4620	-2658	4633	-2669	11	11	4603	-2651	-7	-7	4613	-2657	-1	-1
LKC 'H'	4626	-2664	4627	-2665	4640	-2676	12	11	4610	-2658	-6	-7	4628	-2672	8	7
LKC 'I'	4642	-2680	4646	-2684	4662	-2698	18	14	4632	-2680	0	-4	4643	-2687	7	3
LKC 'J'	4670	-2708	4680	-2718	4694	-2730	22	12	4664	-2712	4	-6	4676	-2720	12	2
Stark	4730	-2768	4730	-2768	4740	-2776	8	8	4712	-2760	-8	-8	4725	-2769	1	1
LKC 'K'	4736	-2774	4737	-2775	4749	-2785	11	10	4726	-2774	0	-1	4734	-2778	4	3
Hushpuckney	4780	-2818	4781	-2819	4791	-2827	9	8	4768	-2816	-2	-3	4776	-2820	2	1
LKC 'L'	4799	-2837	4799	-2837	4810	-2846	9	9	4786	-2834	-3	-3	4792	-2836	-1	-1
Base Kansas City	4841	-2879	4840	-2878	4851	-2887	8	9	4826	-2874	-5	-4	4836	-2880	1	2
Marmaton	4897	-2935	4894	-2932	4906	-2942	7	10	4878	-2926	-9	-6	4891	-2935	0	3
Altamont	4944	-2982	4946	-2984	4953	-2989	7	5	4929	-2977	-5	-7	4935	-2979	-3	-5
Pawnee	4991	-3029	4990	-3028	5004	-3040	11	12	4973	-3021	-8	-7	4980	-3024	-5	-4
Fort Scott	5026	-3064	5028	-3066	5037	-3073	9	7	5008	-3056	-8	-10	5013	-3057	-7	-9
Cherokee	5038	-3076	5037	-3075	5049	-3085	9	10	5021	-3069	-7	-6	5026	-3070	-6	-5
Mississippian	5117	-3155	5120	-3158	5128	-3164	9	6	5114	-3162	7	4	5118	-3162	7	4
Kinderhook	5762	-3800	5762	-3800	5776	-3812	12	12	5753	-3801	1	1	5758	-3802	2	2
Maquoketa	5824	-3862	5820	-3858	5837	-3873	11	15	5811	-3859	-3	1	5830	-3874	12	16
Viola	5856	-3894	5850	-3888	5866	-3902	8	14	5827	-3875	-19	-13	5846	-3890	-4	2
Simpson Dolomite	5966	-4004	No Log Coverage		5978	-4014	10	n/a	5982	-4030	26	n/a	6020	-4064	60	n/a
Simpson Shale	DNP				6088	-4124	n/a		6068	-4116	n/a		6103	-4147	n/a	
Simpson Sand					6134	-4170			6114	-4162			6150	-4194		
Arbuckle					6160	-4196			6142	-4190			6176	-4220		
Total Depth	5990	-4028	5982	-4020	6300	-4336	308	316	6160	-4208	180	188	6550	-4594	566	574

Note: Data shifted 10' shallow to correspond to e-log curves

Brass #1-35 SWD	Pierce #1-27	Gillet #3-34
Altamont : 4954-4958	Miss : 5120-5148	Altamont : 4935-4942
(-2990)-(-2994)	(-3168)-(-3196)	(-2979)-(-2986)
IP: 15 bopd/5 mcfgd (1990)	IP: 1524 mcfgd (1980)	IP: 50 mcfgd (2003)

ROCK TYPES

DOL1	LMST2	Ss	SHALE GRN
DOL3	LMST3	SILTSTONE	SHALE GRA
DOL4	LMST4	SHALE BRN	SHALE RED
LMST1	LMST5	SHALE CAR	

ACCESSORIES

MINERAL	FOSSIL	STRINGER	TEXTURE
▲ Chert, dark	F Fossils < 20%	Shale Brown	C Chalky
Dolomitic	Oolite	Shale Green	L Lithogr
Glauconite	Oomoldic	Shale Gray	
P Pyrite	Sponge Spicules	Shale Red	
Silty			
△ Chert White			

OTHER SYMBOLS

MISC
- Daily Report
- Digital Photo
- Document
- Folder
- Link
- Vertical Log File
- Horizontal Log File
- Core Log File
- Drill Cuttings file

DST
- DST1
- DST2
- DST3
- Core
- tail pipe

Printed by GEOstrip VC Striplog version 4.0.8.15 (www.grsi.ca)

Mud-Co Mud Ck @ 4151' 0830 hrs 7.25.19 Vis: 58 Wt: 8.9 PV: 16 YP: 16 WL: 9.6 Cake: 1/32nd pH: 10.5 CHL: 6,500 ppm Cal: 80 Solids: 3.8 LCM: trc

Start 10' Wet & Dry Samples

Shale: gray lt gray, most very silty, firm.

Limestone: lt gray, dense and tight, microxln, barren, some silty/arenaceous, no shows, no fluorescence, with abundant Shale as above.

Shale: gray dk gray, block to rounded, some silty in part, mostly firm, with increase in black carbonaceous material with depth, no gas shows.

Mixed Shale and Limestone, no shows.

HEEBNER 4212' (-2250')

Shale: black dk gray, abundant carbonaceous, blocky to rounded, most softer, very poor gas show in few pieces upon break.

TORONTO 4223' (-2261')

Limestone: off white cream, mostly dense, micro-vfxln, barren, poor visible porosity, no shows, no fluorescence.

DOUGLAS 4244' (-2282')

Shale: gray dk gray, blocky to rounded, mostly soft, sample washes dk gray.

Limestone: cream tan, dense, microxln, barren.

Shale: gray dk gray, blocky and firm, some silty in part, some scattered Limestone: cream tan, dense, microxln, barren.

Shale: gray dk gray, blocky and firm, scattered silty material.

Limestone: cream tan, dense, microxln, barren.

Shale: gray dk gray with influx red, blocky to rounded, most becoming softer, some dense and limey in part.

Shale: gray dk gray with red pale green, blocky to rounded, most softer, some dense and limey in part.

Shale: gray dk gray some pale green, blocky to rounded, most dense, some silty in part, with influx Siltstone: lt gray, dense, no shows, and Sandstone: clear gray, dense matrix, vfgrained, poorly sorted, angular to rounded grains, heavily micaceous, fair-good intergranular porosity, no shows, no fluorescence.

Sandstone: clear gray, dense matrix, vfgrained, poorly sorted, angular to rounded grains, heavily micaceous, fair-good intergranular porosity, no shows, no fluorescence, with Shale: gray dk gray some pale green, blocky to rounded, most dense, some silty in part.

Sandstone: clear gray, dense matrix, vfgrained, poorly sorted, angular to rounded grains, heavily micaceous, fair-good intergranular porosity, no shows, no fluorescence, with Shale: gray dk gray some pale green, blocky to rounded, most dense, some silty in part, and influx Siltstone: lt gray, dense, no shows.

BROWN LIME 4385' (-2423')

Limestone: tan brown, dense matrix, microxln, barren, poor-no visible porosity, no shows, no fluorescence.

Shale: gray dk gray, blocky to rounded, mostly soft, abundant silty material.

LANSING-KANSAS CITY 4404' (-2442')

Limestone: cream tan, dense matrix, micro-vfxln, fossiliferous in part, poor interxln porosity, no shows, no fluorescence.

Limestone: cream lt cream, dense matrix, micro-vfxln, fossiliferous in part, poor interxln porosity, no shows, no fluorescence.

Limestone: cream lt cream gray mottled, dense matrix, micro-vfxln, fossiliferous in part, poor interxln porosity, no shows, no fluorescence.

Shale: gray dk gray, blocky and dense.

Limestone: off white lt cream, softer chalky matrix, micro-vfxln, barren, fair interxln porosity, no shows, no fluorescence, with abundant loose soft Chalk.

Limestone: off white lt cream, softer chalky matrix, micro-vfxln, barren, fair interxln porosity, no shows, no fluorescence, with continued loose Chalk.

Shale: gray dk gray, blocky and dense.

Limestone: cream gray, dense matrix, microxln, barren, no visible porosity, no shows, no fluorescence.

Shale: gray dk gray, blocky and dense.

Limestone: lt cream, dense to sub-friable xln matrix, vfxln, scattered oolitic, fair interxln porosity, no shows, no fluorescence.

Limestone: cream off white, dense xln matrix, vf-fxln, scattered sub-fossiliferous, fair-poor interxln porosity, no shows, no fluorescence.

Limestone: cream off white, dense xln matrix, vf-fxln, scattered sub-fossiliferous, fair-poor interxln porosity, no shows, no fluorescence.

Shale: gray dk gray, blocky and dense.

Limestone: cream off white, dense xln matrix, micro-vfxln, poor-no visible porosity, no shows, no fluorescence, with some scattered cherty material.

Shale: gray dk gray, blocky to rounded, most dense.

Limestone: off white cream gray, sub-friable matrix, vf-fxln, oolitic in part, fair-good interxln porosity, no shows, no fluorescence.

Mud-Co Mud Ck @ 4561' 0645 hrs 7.26.19 Vis: 68 Wt: 9.3 PV: 16 YP: 16 WL: 10.3 Cake: 1/32nd pH: 10.5 CHL: 7,000 ppm Cal: 80 Solids: 6.7 LCM: trc

Shale: gray dk gray, blocky to rounded, most dense.

Limestone: cream off white, sub-friable chalky matrix, vfxln, trace fossiliferous/oolitic, fair-good visible porosity, no shows, no fluorescence, with scattered Chalk, and Chert: tan gray, fresh and sharp, opaque.

Limestone: cream off white, sub-friable chalky matrix, vfxln, trace fossiliferous/oolitic, fair-good visible porosity, no shows, no fluorescence, with scattered Chalk, and Chert: tan gray, fresh and sharp, opaque.

Shale: gray dk gray some pale green, dense and blocky.

MUNCIE CREEK 4620' (-2658')

Shale: gray dk gray some black carbonaceous, blocky to rounded, most firm.

Limestone: cream, friable matrix, vfxln, excellent oomoldic development and associated porosity, oolitic in part, no shows, no fluorescence.

Limestone: cream tan, dense matrix, vfxln, most barren, poor interxln porosity, no shows, no fluorescence.

Shale: gray dk gray, blocky and dense.

Limestone: cream off white, dense chalky matrix, vfxln, barren, fair visible porosity, no shows, no fluorescence.

Limestone: cream, brittle matrix, vfxln, barren, poor visible porosity, no shows, no fluorescence, with influx Chert: gray cream, fresh and sharp, opaque.

Limestone: cream lt cream, sub-friable matrix, vf-fxln, oolitic, fair interoolitic/vuggy porosity, no shows, scattered lt yellow mineral fluorescence.

4700' cfs 40"/60" - Limestone: lt cream off white, mostly friable matrix, vfxln, oolitic with fair-good oomoldic development and associated porosity, no shows, scattered lt yellow mineral fluorescence, with abundant Chert: gray white clear, fresh and sharp, opaque, some oolitic.

Limestone: cream lt cream, dense cherty matrix, micro-vfxln, barren, poor-no visible porosity, no shows, no fluorescence, with continued abundant Chert.

Limestone: cream lt cream, dense chalky matrix, microxln, barren, poor visible porosity, no shows, no fluorescence, most Chert drops out.

STARK 4730' (-2768')

Shale: black carbonaceous with gray dk gray, most blocky and firm, pyritic in part, good gas show from carbonaceous pieces.

Limestone: off white lt cream, sub-friable matrix, vf-fxln, oolitic/fossiliferous in part, fair-good interxln porosity, no shows, even lt yellow mineral fluorescence, with scattered Chert: white cream, fresh and sharp, opaque.

Limestone: lt cream off white, dense matrix, vfxln, some compact fossiliferous, poor visible porosity, no shows, poor mineral fluorescence.

Limestone: lt cream gray cream, dense matrix, vfxln, barren, poor visible porosity, no shows, poor mineral fluorescence.

HUSHPUCKNEY 4781' (-2819')

Shale: gray dk gray some green, blocky and firm, platy, pyritic in part, with Shale: black carbonaceous, blocky and firm, pyritic in part, slight gas show.

Mixed Shales as above.

Shale: black carbonaceous, blocky and firm, slight gas show.

Vis: 58 Wt: 9.3 LCM: 1/2 #/bbl

Limestone: cream tan, dense matrix, micro-vfxln, scattered sub-oolitic to barren, poor visible porosity, no shows, no fluorescence.

Limestone: cream lt cream, sub-friable matrix, vf-fxln, most oolitic, fair-good interoolitic/interxln porosity throughout, no shows, no fluorescence.

Shale: gray dk gray, blocky and dense.

Limestone: cream tan, dense matrix, micro-vfxln, scattered sub-oolitic to barren, poor visible porosity, no shows, no fluorescence, with abundant Shale as above.

BASE KANSAS CITY 4840' (-2878')

Shale: gray dk brown, blocky and dense, limey in part.

Limestone: gray lt gray off white cream, scattered mottled material with depth, dense to sub-chalky matrix, vfxln, barren, poor visible porosity, no shows, no fluorescence, with interbedded Shale as above.

Limestone: gray dk gray, very dense and hard, vfxln, barren, poor visible porosity, no shows, no fluorescence, with fair amount of Shale: dk gray, blocky and hard, limey in part.

Limestone: gray dk gray, very dense and hard, vfxln, barren, poor visible porosity, no shows, no fluorescence, with fair amount of Shale: dk gray, blocky and hard, limey in part.

Mud-Co Mud Ck @ 4940' 0645 hrs 7.27.19 Vis: 48 Wt: 9.3 PV: 15 YP: 15 WL: 10.4 Cake: 1/32nd pH: 10.5 CHL: 5,500 ppm Cal: 80 Solids: 6.8 LCM: 2 #/bbl

Shale: gray dk gray, blocky to rounded, most becoming softer.

MARMATON 4894' (-2932')

Limestone: gray off white cream, dense matrix, vf-fxln, glauconitic in part, scattered fossiliferous, overall poor visible porosity, no shows, no fluorescence.

Limestone: cream tan, dense sub-friable matrix, vfxln, oolitic in part, scattered pieces with fair-good oomoldic/vug development and associated porosity, some 2ndary xln fill, fair lt brown saturated stain, poor gas show upon break, little-no fluorescence, no cut, no odor.

Limestone: off white lt cream lt gray, dense matrix, vfxln, most fossiliferous, poor visible porosity, no shows, no fluorescence.

Shale: gray dk gray dk green, blocky and firm.

Limestone: lt cream tan, dense matrix, vf-fxln, barren, poor visible porosity, no shows, no fluorescence.

ALTAMONT 4946' (-2984')

4955' cfs 40"/60" - Limestone: lt cream, friable matrix, vfxln, heavily oolitic with good-excellent oomoldic development and associated porosity, very good interoolitic/vuggy porosity, couple pieces with golden brown saturated stain, good show free oil and moderate gas show in few pieces, even dull yellow fluorescence, fair bluish-white cut fluorescence, moderate odor.

Limestone: cream lt cream, dense matrix, vfxln, some scattered compact oolitic, fair interoolitic porosity, some scattered vuggy porosity, 2ndary xln fill around oolites, no shows, no fluorescence.

Mud-Co Mud Ck @ 4965' 0600 hrs 7.28.19 Vis: 42 Wt: 9.3 PV: 10 YP: 12 WL: 10.4 Cake: 1/32nd pH: 10.0 CHL: 6,000 ppm Cal: 80 Solids: 6.7 LCM: 2 #/bbl

Limestone: cream tan, dense tight matrix, micro-vfxln, barren, poor visible porosity, no shows, no fluorescence.

Shale: gray dk gray dk green, blocky and firm, grading to Shale: black, carbonaceous, block to rounded, most waxy, slight gas show.

PAWNEE 4990' (-3028')

Limestone: white off white, chalky matrix, vfxln, fair interxln porosity, no shows, no fluorescence, with abundant Chert: white gray, fresh and sharp, opaque.

Limestone: white off white, chalky matrix, vfxln, fair interxln porosity, no shows, no fluorescence, with continued abundant Chert: white gray dk gray, fresh and sharp, opaque.

Shale: black dk gray, carbonaceous, blocky to rounded, slight gas show.

FORT SCOTT 5028' (-3066')

Limestone: lt cream tan, dense matrix, vfxln, most compact oolitic, fair interoolitic/interxln porosity, no shows, no fluorescence.

CHEROKEE 5037' (-3075')

Shale: black dk gray, carbonaceous, blocky and waxy, fair gas show.

Limestone: cream gray tan mottled, dense matrix, vfxln, barren, poor interxln porosity, no shows, no fluorescence, with interbedded Shale: gray dk gray lt green, blocky to rounded, most soft.

Limestone: cream gray tan, dense matrix, vfxln, barren, poor interxln porosity, no shows, no fluorescence, with interbedded Shale: gray dk gray lt green, blocky to rounded, most soft.

Shale: gray dk gray lt green, blocky to rounded, most soft.

Limestone: off white lt cream, most dense matrix, vfxln, barren, poor visible porosity, no shows, no fluorescence, with abundant loose Chalk, and interbedded Shale.

Shale: gray dk gray, blocky to rounded, mostly soft.

MISSISSIPPIAN 5120' (-3158')

Limestone: white off white, vf-fxln, good amount of 2ndary xln fill in apparent interxln porosity, scattered cherty pieces, sub-fossiliferous, poor questionable stain in few pieces, no live oil shows, scattered gas bubbles, even dull yellow fluorescence, poor cut, with Chert: gray white clear, most fresh and sharp, trace sub-weathered with poor-fair saturated stain, poor cut, no odor.

Limestone: off white, vf-fxln, most becoming chalky, abundant fossiliferous material, scattered glauconitic, fair-poor visible porosity, no shows, poor mineral fluorescence, with scattered Chert: gray clear, opaque, fresh and sharp, no shows, no odor, sample washes white.

Limestone: lt cream off white, dense crystalline matrix, micro-vfxln, dolomitic, good vuggy porosity, couple of pieces with good show golden brown oil upon break, scattered saturated staining, even lt yellow fluorescence, fair bluish-white cut in live show rocks, no odor.

5166' cfs - Limestone/Dolomite: off white lt cream, heavily dolomitic, fxln, abundant 2ndary xln fill in porosity, overall good interxln/vuggy porosity, most even lt brown saturated stain, few pieces fair-good show golden brown oil/gas bubbles upon break, even lt yellow fluorescence, streaming bluish-white cut in show rocks, very faint odor.

5175' cfs - Limestone: off white lt cream, fxln, abundant 2ndary xln fill in porosity, overall good interxln/vuggy porosity, scattered lt brown saturated stain/dead staining, trace poor show golden brown oil/gas bubbles upon break, even lt yellow fluorescence, fair bluish-white cut in show rocks, no odor.

Limestone: off white cream, dense matrix, vfxln, chalky in part, poor visible porosity, no shows, no fluorescence.

5190' cfs - Limestone: lt cream, fxln, abundant 2ndary xln fill in porosity, overall fair-good interxln/vuggy porosity, few pieces with golden stain and very slight show oil/gas bubbles upon break, even lt yellow fluorescence, fair bluish-white cut in show rocks, with Limestone: chalky, no shows, no odor.

Mud-Co Mud Ck @ 5185' 0830 hrs 7.29.19 Vis: 52 Wt: 9.2 PV: 15 YP: 13 WL: 10.4 Cake: 1/32nd pH: 10.0 CHL: 6,000 ppm Cal: 60 Solids: 6.0 LCM: 2 #/bbl

Limestone: off white lt cream, vf-fxln, abundant chalky material, barren, fair interxln porosity, no shows, no fluorescence, with scattered loose Chalk, no odor.

Limestone: off white lt cream, chalky matrix, vf-fxln, brittle, fair interxln porosity, no shows, poor white mineral fluorescence, with Limestone: white cream, soft chalky matrix, vf-microxln, poor-no visible porosity, no shows, no fluorescence, with abundant loose Chalk, no odor.

Limestone: lt cream off white, dense xln matrix, vf-fxln, brittle, sub-fossiliferous, increase in glauconitic material, fair interxln porosity, no shows, little-no fluorescence, with decrease in loose Chalk.

Limestone: off white lt cream, dense matrix, vf-fxln, becoming dolomitic, scattered sub-fossiliferous, fair-good interxln porosity with abundant 2ndary xln fill, no shows, no fluorescence, no odor.

Mud-Co Mud Ck @ 5256' 0800 hrs 7.30.19 Vis: 49 Wt: 9.2 PV: 12 YP: 14 WL: 10.8 Cake: 1/32nd pH: 10.5 CHL: 8,000 ppm Cal: 80 Solids: 5.2 LCM: 2.5 #/bbl

Limestone: off white lt cream, dense matrix, vf-fxln, some dolomitic in part, overall fair interxln porosity, no shows, no fluorescence, with Limestone: cream lt cream, softer matrix vf-microxln, very chalky, poor visible porosity, no shows, no fluorescence, some loose Chalk as well, no odor.

Limestone: off white lt cream, dense matrix, sub-chalky, vf-fxln, most fossiliferous, fair interxln/interfossiliferous porosity, some compact with poor visible porosity, no shows, no fluorescence, with abundant loose Chalk.

Limestone: off white, dense matrix, sub-chalky, vf-fxln, most fossiliferous, fair interxln/interfossiliferous porosity, some compact with poor visible porosity, no shows, no fluorescence, with some loose Chalk.

Limestone: cream off white, dense matrix, vf-fxln, scattered fossiliferous to barren, poor visible porosity with good amount of 2ndary xln fill, no shows, no fluorescence.

Dolomite: lt gray, limey, tight matrix, vfxln, fair interxln porosity, no shows, even bright lt yellow mineral fluorescence, no cut.

Influx Limestone: cream gray, mottled, becoming very dolomitic, vfxln, glauconitic, fair interxln porosity, no shows, no fluorescence, with scattered Dolomite: dk gray, dense matrix, micro-vfxln, poor visible porosity, no shows, no fluorescence.

Limestone: cream gray, mottled, becoming very dolomitic, vfxln, glauconitic, fair interxln porosity, no shows, no fluorescence, with scattered Dolomite: dk gray, dense matrix, micro-vfxln, poor visible porosity, no shows, no fluorescence.

Dolomite: off white gray, mottled, very dense matrix, vf-fxln, heavily glauconitic, pyritic in part, fair interxln porosity, no shows, no fluorescence, with increasing altered Chert: white gray cream, weathered, and fair amount of Shale: gray dk gray some dk green, blocky and dense, platy.

Dolomite: off white gray, mottled, very dense matrix, vf-fxln, heavily glauconitic, pyritic in part, fair interxln porosity, no shows, no fluorescence, with increasing altered Chert: white gray cream, weathered, and fair amount of Shale: gray dk gray some dk green, blocky and dense, platy.

Dolomite: off white gray, mottled, very dense matrix, vf-fxln, heavily glauconitic, pyritic in part, fair interxln porosity, no shows, no fluorescence, with scattered altered Chert: white gray cream, weathered, and flood of Shale: gray dk gray some dk green, blocky and dense, platy.

Dolomite: gray lt gray, dense matrix, micro-vfxln, poor visible porosity, no shows, no fluorescence, with Shale: gray dk gray dk green, blocky and dense, platy.

Dolomite: gray lt gray, dense matrix, micro-vfxln, poor visible porosity, no shows, no fluorescence, with Shale: gray dk gray dk green, blocky and dense, platy.

Dolomite: gray lt gray, dense matrix, micro-vfxln, poor visible porosity, no shows, no fluorescence, with Shale: gray dk gray dk green, blocky and dense, platy.

Dolomite: gray lt gray, dense matrix, micro-vfxln, poor visible porosity, no shows, no fluorescence, with Shale: gray dk gray dk green, blocky and dense, platy.

Mud-Co Mud Ck @ 5592' 0845 hrs 7.31.19 Vis: 58 Wt: 9.4 PV: 8 YP: 22 WL: 11.0 Cake: 1/32nd pH: 10.0 CHL: 9,000 ppm Cal: 80 Solids: 7.3 LCM: 4 #/bbl

Dolomite: off white lt gray dk gray, dense matrix, micro-vfxln, pyritic in part, influx of spiculitic material, overall poor interxln porosity, no shows, no fluorescence, with continued Shale: gray dk gray dk green, blocky and dense, platy.

Dolomite: gray lt gray some off white, dense matrix, micro-vfxln, some cherty inclusions, spiculitic in part, overall poor-no visible porosity, no shows, no fluorescence, with scattered Shale: gray dk gray dk green, blocky and dense, platy.

Dolomite: gray lt gray some off white, dense matrix, micro-vfxln, some cherty inclusions, spiculitic in part, overall poor-no visible porosity, no shows, no fluorescence, with scattered Shale: gray dk gray dk green, blocky and dense, platy.

Dolomite: gray lt gray some off white, dense matrix, micro-vfxln, spiculitic in part, overall poor-no visible porosity, no shows, no fluorescence, with scattered Shale: gray dk gray dk green some pale green brown, blocky and dense, platy.

Dolomite: gray lt gray some off white, dense matrix, micro-vfxln, spiculitic in part, overall poor-no visible porosity, no shows, no fluorescence, with abundant Shale: gray dk gray dk green pale green brown, blocky and dense, platy.

Dolomite: gray lt gray some off white, dense matrix, micro-vfxln, spiculitic in part, overall poor-no visible porosity, no shows, no fluorescence, with scattered Shale: gray dk gray dk green pale green brown, blocky and dense, platy.

Mud-Co Mud Ck @ 5775' 1500 hrs 8.1.19 Vis: 51 Wt: 8.9 PV: 12 YP: 14 WL: 11.2 Cake: 1/32nd pH: 9.5 CHL: 6,000 ppm Cal: 60 Solids: 3.9 LCM: 8 #/bbl

Dolomitic Limestone: gray lt gray some off white, dense matrix, micro-vfxln, spiculitic in part, overall poor-no visible porosity, no shows, no fluorescence, with influx Shale: gray dk gray dk green pale green brown some red, blocky and dense, platy.

KINDERHOOK 5762' (-3800')

Shale: gray dk gray green brown red, blocky to rounded, all firm and dense.

Shale: gray dk gray green brown red, blocky to rounded, all firm and dense.

Shale: gray dk gray green, blocky and firm, some limey in part.

Limestone: gray grayish green, dense matrix, microxln, barren, no visible porosity, no shows, no fluorescence.

MAQUOKETA 5820' (-3858')

Limestone: gray dk gray greenish gray, dense matrix, microxln, some lithographic non-descript, barren, no visible porosity, no shows, no fluorescence.

Mud-Co Mud Ck @ 5887' 0845 hrs 8.2.19 Vis: 54 Wt: 8.9 PV: 10 YP: 10 WL: 10.4 Cake: 1/32nd pH: 9.5 CHL: 7,000 ppm Cal: 60 Solids: 3.9 LCM: 8 #/bbl

Limestone: gray lt gray lt cream, dense matrix, microxln, some lithographic non-descript, barren, no visible porosity, no shows, no fluorescence.

VIOLA 5850' (-3888')

Dolomite: lt gray lt cream, dense and tight, f-vfxln, poor interxln porosity, no shows, no fluorescence, no odor.

5868' cfs - Dolomite: lt gray clear, f-crsxln, good rhombic development and associated porosity, slight golden stain, good-excellent show golden oil upon break, with Chert: white, fresh and sharp with abundant weathered dolomitic, saturated stain in weathered portions, fair show oil upon break, even bright lt yellow fluorescence throughout, bluish-white cut, good odor in 90" circ sample.

5877' cfs - Dolomite: lt gray lt cream, dense and tight, f-vfxln, poor interxln porosity, no shows, no fluorescence, no odor.

Dolomite: lt gray lt cream, dense and tight, vf-fxln, poor interxln porosity, no shows, no fluorescence, no odor.

Mud-Co Mud Ck @ 5950' 1045 hrs 8.3.19 Vis: 51 Wt: 9.0 PV: 13 YP: 14 WL: 9.6 Cake: 1/32nd pH: 10.5 CHL: 9,000 ppm Cal: 60 Solids: 4.5 LCM: 6 #/bbl

Dolomite: lt gray lt cream, dense matrix, fxln, sucrosic texture in part, scattered pyrite inclusions, fair-poor interxln porosity, no shows, no fluorescence, with increase in Chert: tan brown, opaque to translucent.

Dolomite: tan brown, dense matrix, f-vfxln, poor interxln porosity, no shows, no fluorescence, with scattered Chert: tan brown, opaque to translucent.

Dolomitic Limestone: tan brown gray, dense matrix, fxln, sucrosic texture in part, poor interxln porosity, no shows, no fluorescence, with scattered Chert: tan brown, opaque to translucent.

Dolomite: lt cream off white, softer matrix, fxln, chalky, large imbedded dolomite crystals, fair-good interxln porosity, no shows, no fluorescence, with continued Chert.

SIMPSON DOLOMITE 5966' (-4004')

Dolomite: lt gray tan, friable in part, vf-fxln, some excellent rhombic development, fair-good interxln porosity, no shows, no fluorescence, no odor.

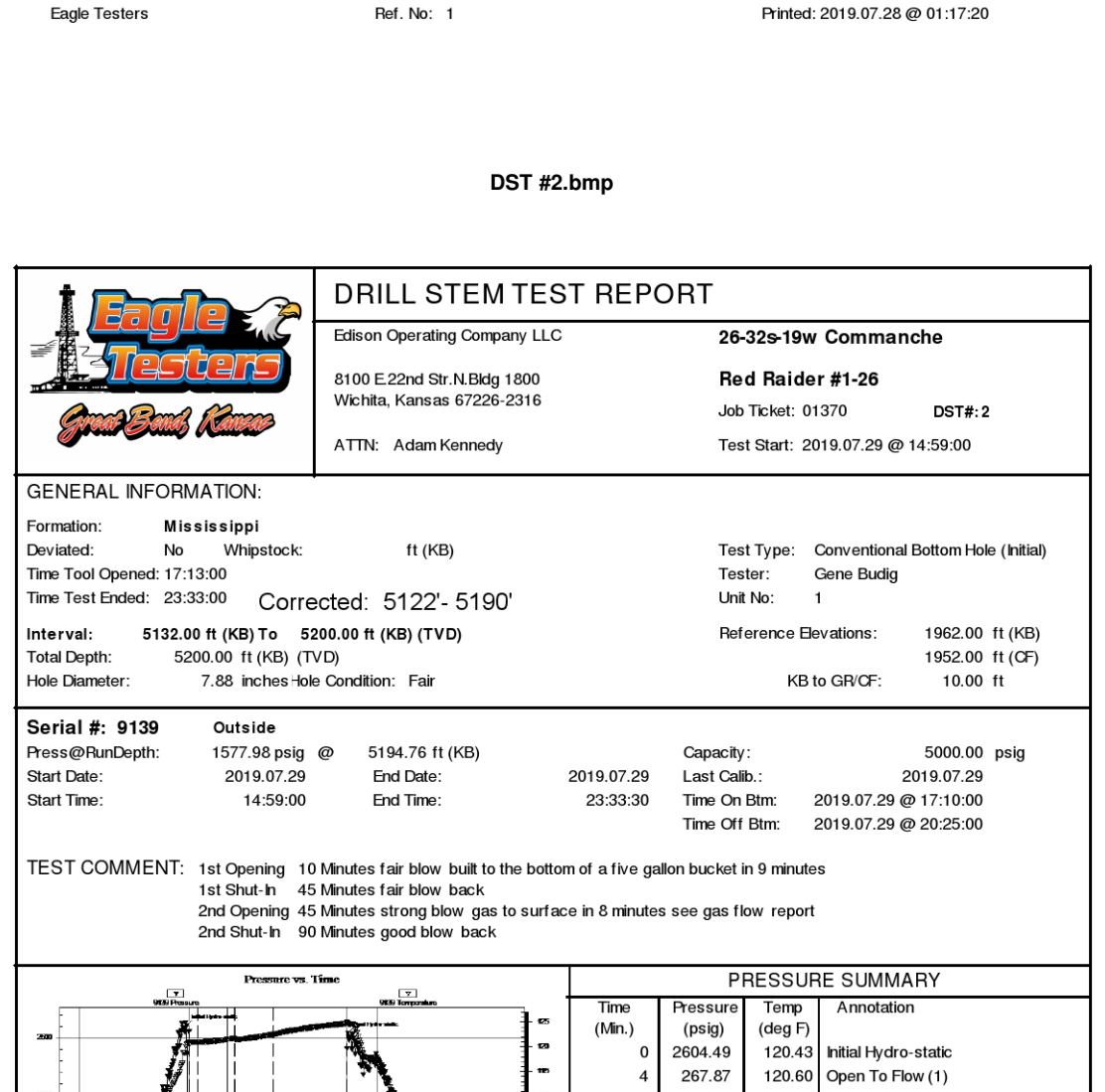
LTD 5982' (-4020')
RTD 5990' (-4028')

Geologist Derek W. Patterson Off Location 1430 hrs 8.3.19

Orders Received to Plug & Abandon Well As A Dry Hole

Respectfully Submitted,
Derek W. Patterson

DST #1.bmp



Pressure vs. Time
Pressure (psig)
Temperature (deg F)
Time (Hours)

DRILL STEM TEST REPORT

Eagle Testers
Great Bend, Kansas

Edison Operating Company LLC
8100 E.22nd Str.N.Bldg 1800
Wichita, Kansas 67226-2316
ATTN: Adam Kennedy

26-32s-19w Commanche
Red Raider #1-26
Job Ticket: 1 DST#: 1
Test Start: 2019.07.27 @ 05:31:00

GENERAL INFORMATION:
Formation: Altamont
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 07:48:00
Time Test Ended: 12:56:00 Corrected: 4925'- 4955'
Interval: 4935.00 ft (KB) To 4965.00 ft (KB) (TVD)
Total Depth: 4965.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Gene Budig
Unit No: 1
Reference Elevations: 1962.00 ft (KB)
1952.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 9139 Outside
Press@RunDepth: 1332.21 psig @ 4960.00 ft (KB)
Start Date: 2019.07.27 End Date: 2019.07.27
Start Time: 05:31:00 End Time: 12:54:00
Capacity: 5000.00 psig
Last Calib.: 2019.07.28
Time On Btm: 2019.07.27 @ 07:44:30
Time Off Btm: 2019.07.27 @ 10:41:30

TEST COMMENT: 1st Openiong 10 Minutes strong blow built to the bottom of the bucket in 1 minute
1st Shut-In 45 Minutes no blow back
2nd Opening 30 Minutes strong blow built to the bottom of the bucket in 1 minute
2nd Shut-In 9i0 Minutes good blow back

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2472.90	116.66	Initial Hydro-static
1	83.48	116.12	Open To Flow (1)
13	63.73	116.19	Shut-In(1)
56	1162.34	117.30	End Shut-In(1)
57	63.75	117.04	Open To Flow (2)
87	75.32	117.76	Shut-In(2)
177	1332.21	119.66	End Shut-In(2)
177	2374.27	119.87	Final Hydro-static

Recovery

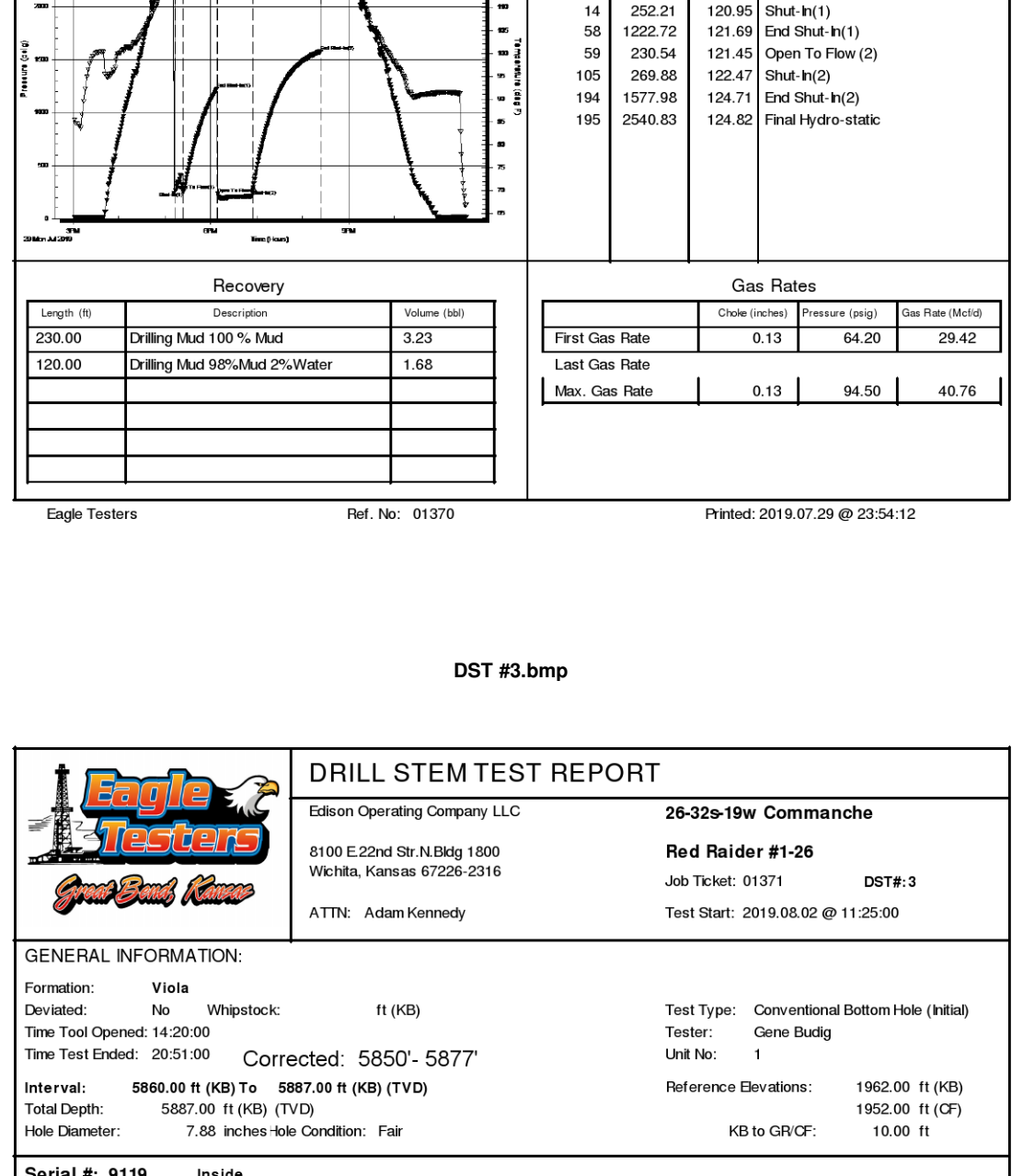
Length (ft)	Description	Volume (bbl)
0.00	3750 Gas in the pipe	0.00
30.00	Drilling Mud	0.42
60.00	slighty oil and gas cut mud	0.84
0.00	22% Gas 20% Oil 48% Mud 20% Water	0.00

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

Eagle Testers Ref. No: 1 Printed: 2019.07.28 @ 01:17:20

DST #2.bmp



Pressure vs. Time
Pressure (psig)
Temperature (deg F)
Time (Hours)

DRILL STEM TEST REPORT

Eagle Testers
Great Bend, Kansas

Edison Operating Company LLC
8100 E.22nd Str.N.Bldg 1800
Wichita, Kansas 67226-2316
ATTN: Adam Kennedy

26-32s-19w Commanche
Red Raider #1-26
Job Ticket: 01370 DST#: 2
Test Start: 2019.07.29 @ 14:59:00

GENERAL INFORMATION:
Formation: Mississippi
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 17:13:00
Time Test Ended: 23:33:00 Corrected: 5122'- 5190'
Interval: 5132.00 ft (KB) To 5200.00 ft (KB) (TVD)
Total Depth: 5200.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Gene Budig
Unit No: 1
Reference Elevations: 1962.00 ft (KB)
1952.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 9139 Outside
Press@RunDepth: 1577.98 psig @ 5194.76 ft (KB)
Start Date: 2019.07.29 End Date: 2019.07.29
Start Time: 14:59:00 End Time: 23:33:30
Capacity: 5000.00 psig
Last Calib.: 2019.07.29
Time On Btm: 2019.07.29 @ 17:10:00
Time Off Btm: 2019.07.29 @ 20:25:00

TEST COMMENT: 1st Opening 10 Minutes fair blow built to the bottom of a five gallon bucket in 9 minutes
1st Shut-In 45 Minutes fair blow back
2nd Opening 45 Minutes strong blow gas to surface in 8 minutes see gas flow report
2nd Shut-In 90 Minutes good blow back

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2604.49	120.43	Initial Hydro-static
4	267.87	120.60	Open To Flow (1)
14	252.21	120.95	Shut-In(1)
58	1222.72	121.69	End Shut-In(1)
59	230.54	121.45	Open To Flow (2)
105	269.88	122.47	Shut-In(2)
194	1577.98	124.71	End Shut-In(2)
195	2540.83	124.82	Final Hydro-static

Recovery

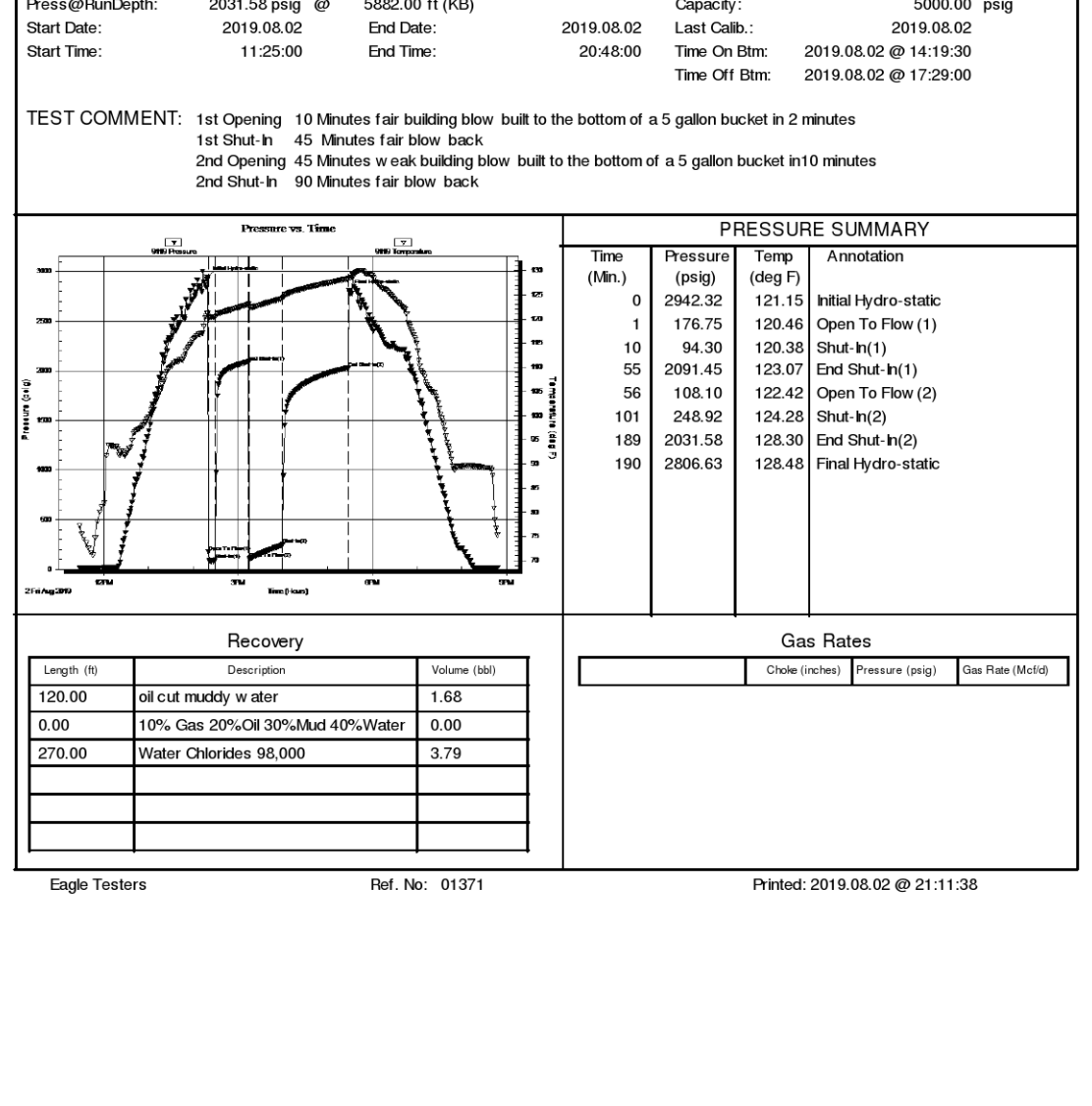
Length (ft)	Description	Volume (bbl)
230.00	Drilling Mud 100 % Mud	3.23
120.00	Drilling Mud 98%Mud 2%Water	1.68

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)
First Gas Rate	0.13	64.20	29.42
Last Gas Rate			
Max. Gas Rate	0.13	94.50	40.76

Eagle Testers Ref. No: 01370 Printed: 2019.07.29 @ 23:54:12

DST #3.bmp



Pressure vs. Time
Pressure (psig)
Temperature (deg F)
Time (Hours)

DRILL STEM TEST REPORT

Eagle Testers
Great Bend, Kansas

Edison Operating Company LLC
8100 E.22nd Str.N.Bldg 1800
Wichita, Kansas 67226-2316
ATTN: Adam Kennedy

26-32s-19w Commanche
Red Raider #1-26
Job Ticket: 01371 DST#: 3
Test Start: 2019.08.02 @ 11:25:00

GENERAL INFORMATION:
Formation: Viola
Deviated: No Whipstock: ft (KB)
Time Tool Opened: 14:20:00
Time Test Ended: 20:51:00 Corrected: 5850'- 5877'
Interval: 5860.00 ft (KB) To 5887.00 ft (KB) (TVD)
Total Depth: 5887.00 ft (KB) (TVD)
Hole Diameter: 7.88 inches Hole Condition: Fair
Test Type: Conventional Bottom Hole (Initial)
Tester: Gene Budig
Unit No: 1
Reference Elevations: 1962.00 ft (KB)
1952.00 ft (CF)
KB to GR/CF: 10.00 ft

Serial #: 9119 Inside
Press@RunDepth: 2031.58 psig @ 5882.00 ft (KB)
Start Date: 2019.08.02 End Date: 2019.08.02
Start Time: 11:25:00 End Time: 20:48:00
Capacity: 5000.00 psig
Last Calib.: 2019.08.02
Time On Btm: 2019.08.02 @ 14:19:30
Time Off Btm: 2019.08.02 @ 17:29:00

TEST COMMENT: 1st Opening 10 Minutes fair building blow built to the bottom of a 5 gallon bucket in 2 minutes
1st Shut-In 45 Minutes fair blow back
2nd Opening 45 Minutes weak building blow built to the bottom of a 5 gallon bucket in10 minutes
2nd Shut-In 90 Minutes fair blow back

PRESSURE SUMMARY

Time (Min.)	Pressure (psig)	Temp (deg F)	Annotation
0	2942.32	121.15	Initial Hydro-static
1	176.75	120.46	Open To Flow (1)
10	94.30	120.38	Shut-In(1)
55	2091.45	123.07	End Shut-In(1)
56	108.10	122.42	Open To Flow (2)
101	248.92	124.28	Shut-In(2)
189	2031.58	128.30	End Shut-In(2)
190	2806.63	128.48	Final Hydro-static

Recovery

Length (ft)	Description	Volume (bbl)
120.00	oil cut muddy water	1.68
0.00	10% Gas 20%Oil 30%Mud 40%Water	0.00
270.00	Water Chlorides 98,000	3.79

Gas Rates

	Choke (inches)	Pressure (psig)	Gas Rate (Mcf/d)

Eagle Testers Ref. No: 01371 Printed: 2019.08.02 @ 21:11:38