

Appendix B

Core Analysis

**Whitetail Operating, LLC
Louisiana Green Fuels No. 1 (SN975841)
Stratigraphic Test Well**



Geostock Sandia



Helical CT Scan Report of 1" samples

Client: Strategic Biofuels LLC

Well: Louisiana Green Fuels Well 001

Project: HH-108056

October 4, 2021



Well: Louisiana Green Fuels Well 001

All plugs were helical CT-scanned using a single energy of 135 kV and 400mA. Each plug has 10 equal distanced longitudinal oblique images and 10 cross-sectional images.

Spatial Resolutuion of .300 mm per voxel

Sample List



Click on plug number to go to sample overview

Well: Louisiana Green Fuels Well 001

Client: Strategic Biofuels LLC

Project: HH-108056

Well: Louisiana Green Fuels Well 001

Number of Plugs: 1

Sample Diameter: 1"

Plug N°	Core N°	Depth [ft]
5-14-2		5913.40

Sample overview



Click on images to view sample slide

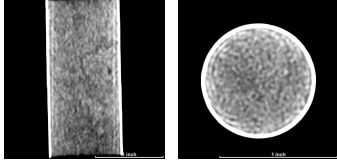
Well: Louisiana Green Fuels Well 001

 [Back to Sample list of Field](#)

Sample 5-14-2

Longitudinal

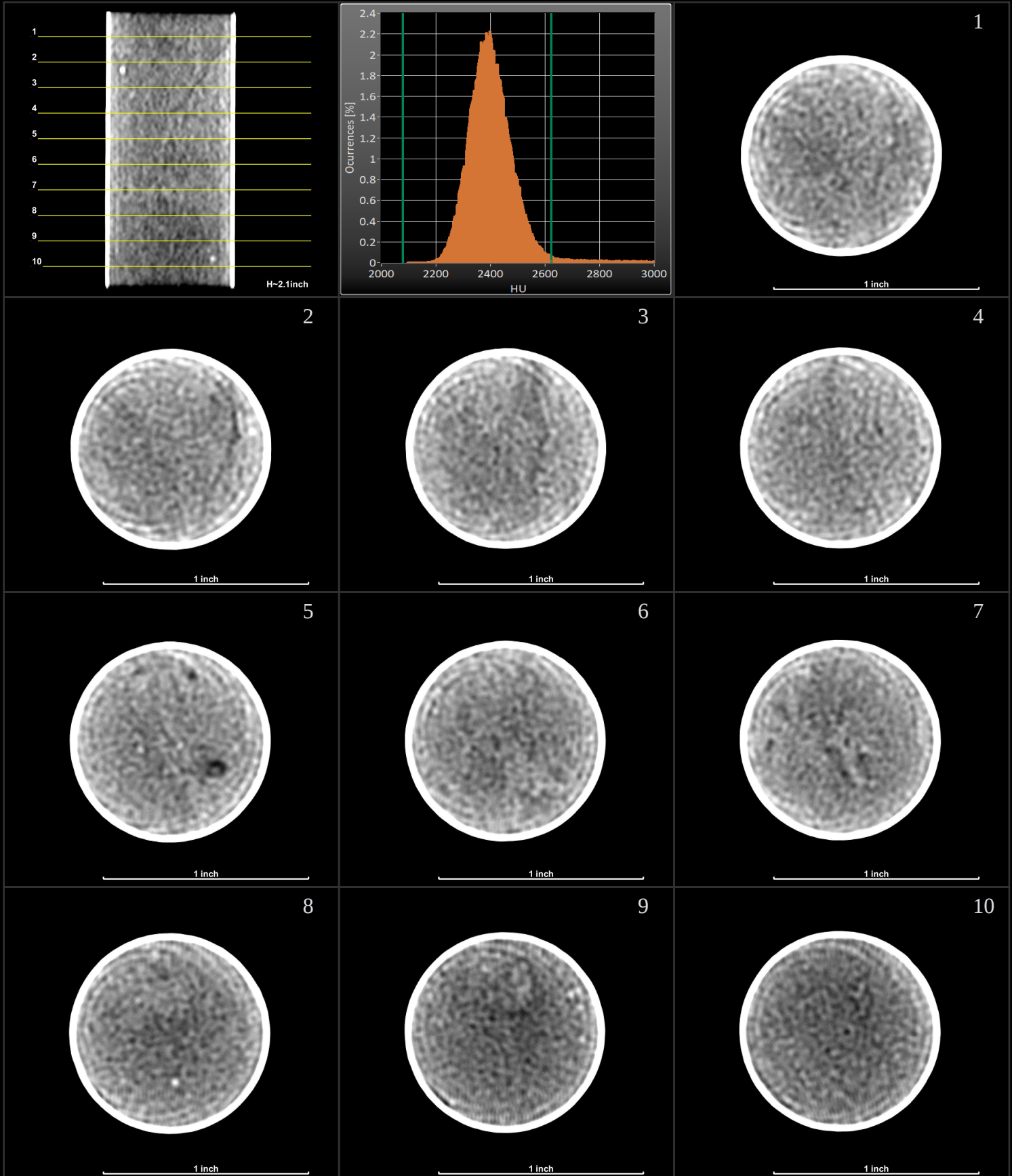
Cross Sectional





[← Back to Sample Overview](#)

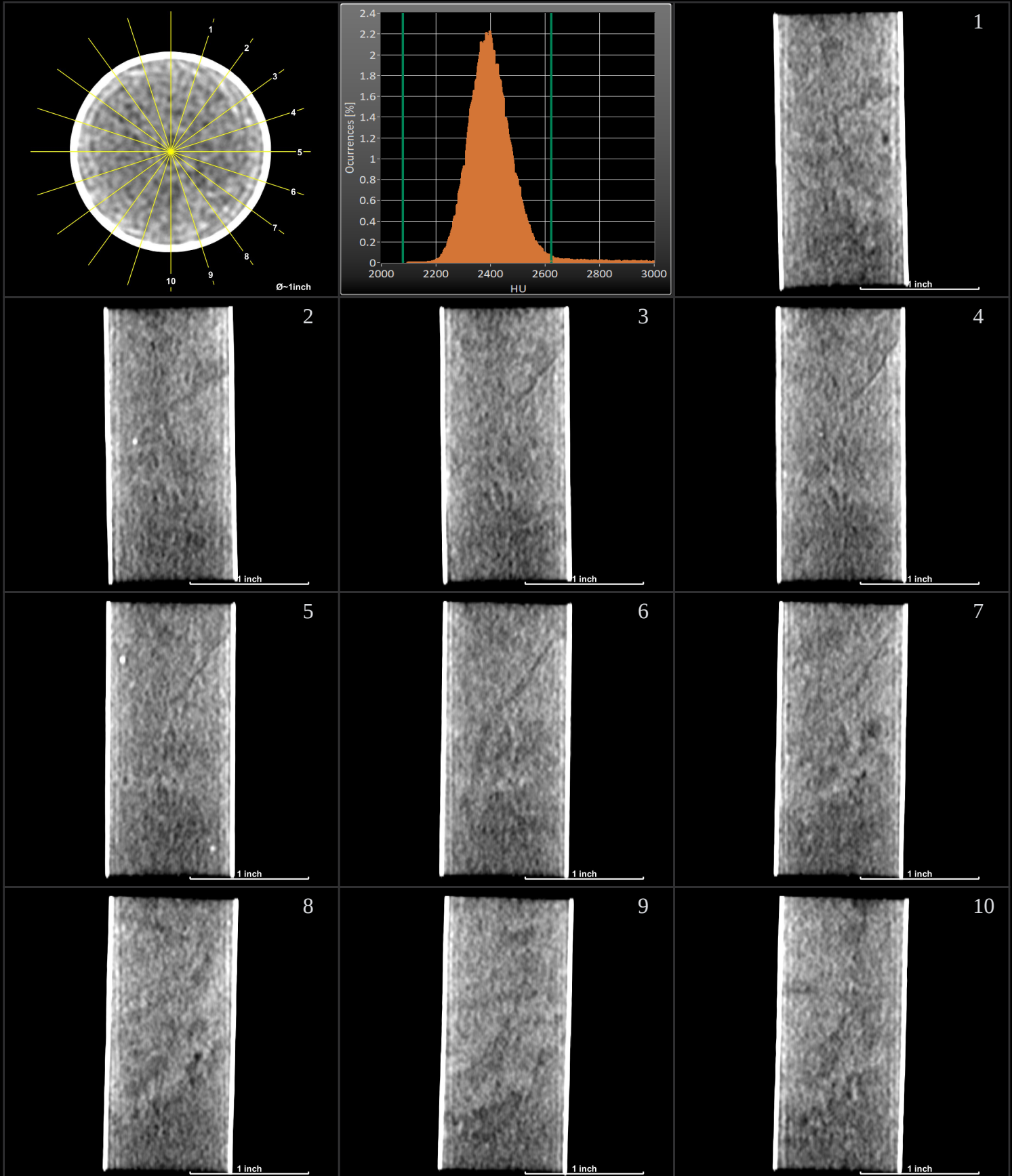
Cross Sectional 1 of 1





[← Back to Sample Overview](#)

Longitudinal 1 of 1





Disclaimer

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SUMMARY OF CONVENTIONAL CORE ANALYSES RESULTS

Whole Core Section

Convection Dried at 140°F

Strategic Biofuels LLC
Louisiana Green Fuels Well 001

Caldwell Parish, Louisiana
File: HH-108056

Core Number	Sample Number	Sample Depth, feet		Net Confining Stress, psi	Permeability, millidarcys		Porosity, percent		Grain Density, gm/cc
		Top	Bottom		to Air	Klinkenberg	Ambient	NCS	
2	2-5 W/C	4694.15	4694.60	2000	0.0044	0.0016		7.6	2.74

SUMMARY OF CONVENTIONAL CORE ANALYSES RESULTS

Convection Dried at 140°F

Strategic Biofuels LLC
Louisiana Green Fuels Well 001

Caldwell Parish, Louisiana
File: HH-108056

Core Number	Sample Number	Sample Depth, feet	Net Confining Stress, psi	Permeability, millidarcys		Porosity, percent		Grain Density, gm/cc
				to Air	Klinkenberg	Ambient	NCS	
3	3-1H	4911.50	1900	110.	98.2	17.4	17.2	2.67
3	3-2H	4912.85	1900		+	5.8		2.67
3	3-3H	4913.20	1900		+	5.7		2.66
3	3-4H	4914.65	1900	94.0	83.0	19.6	19.4	2.67
3	3-5H	4915.30	1900	139.	125.	20.2	20.0	2.67
3	3-6H-1	4916.50	1900	207.	189.	20.5	20.3	2.68
3	3-7H	4917.50	1900	148.	133.	21.0	20.9	2.67
3	3-8H-1	4918.40	1900	42.2	35.8	20.1	19.9	2.72
3	3-9H	4919.50	1900	0.032	0.015	5.9	5.8	2.72
3	3-10H	4920.90	1900	1.95	1.42	16.6	16.4	2.68
3	3-11H	4921.70	1900	0.419	0.295	13.5	13.4	2.74
3	3-12H (pf)	4922.80	1900	0.796	0.569	6.8	6.6	2.68
3	3-13H	4923.50	1900	0.536	0.384	13.5	13.3	2.67
3	3-14H	4924.50	1900	2.63	1.93	16.5	16.3	2.66
3	3-15H	4925.50	1900	4.79	3.61	17.1	16.9	2.69
3	3-17H	4927.50	1900	23.5	19.3		20.9	2.75
3	3-18H	4928.50	1900	0.021	0.0088	7.6	7.4	2.70
3	3-19H	4929.50	1900	9.15	7.12	18.4	18.2	2.73
3	3-20H	4930.50	1900	8.51	6.59		21.5	2.67
3	3-21H	4931.50	1900	1.45	1.05	17.1	16.9	2.68
3	3-22H	4932.50	1900	41.4	35.1		21.2	2.68
3	3-23H	4933.50	1900	0.476	0.342	15.1	14.9	2.71
3	3-24H	4934.50	1900	2.53	1.86	16.8	16.6	2.68
3	3-25H	4935.50	1900	14.0	11.1		21.2	2.66
3	3-26H	4936.50	1900	3.65	2.71	18.2	18.0	2.70
3	3-27H	4937.50	1900	13.7	10.9	19.5	19.2	2.72
4	4-1H	5250.50	2000	3.79	2.82		21.7	2.80
4	4-2H-1	5251.50	2000	27.3	22.6	21.8	21.6	2.73
4	4-3H	5252.35	2000	20.1	16.3		19.7	2.79
4	4-4H-1	5253.50	2000	0.023	0.010	9.0	8.9	2.67
4	4-5H	5254.50	2000	0.131	0.079	16.1	15.9	3.08
4	4-6H	5255.20	2000	0.022	0.0095	8.2	8.1	2.67
4	4-7H	5256.55	2000	0.019	0.0081	15.6	15.4	3.13
4	4-8H (pf)	5257.50	2000	0.179	0.113	8.4	8.2	2.90
4	4-9H	5258.50	2000	0.0079	0.0026	4.5	4.3	2.72
4	4-10H	5259.55	2000	0.062	0.033	5.5	5.3	2.80
4	4-11H (pf)	5260.50	2000	0.371	0.258	4.5	4.3	2.75
4	4-12H	5261.50	2000	0.02	0.0085	8.1	7.9	2.66
4	4-13H	5262.50	2000	9.52	7.42	15.0	14.8	2.65

SUMMARY OF CONVENTIONAL CORE ANALYSES RESULTS

Convection Dried at 140°F

Strategic Biofuels LLC
 Louisiana Green Fuels Well 001

Caldwell Parish, Louisiana
 File: HH-108056

Core Number	Sample Number	Sample Depth, feet	Net Confining Stress, psi	Permeability, millidarcys		Porosity, percent		Grain Density, gm/cc
				to Air	Klinkenberg	Ambient	NCS	
4	4-14H	5263.50	2000	781.	739.		22.6	2.65
4	4-15H	5264.50	2000	1080.	1020.	22.7	22.5	2.67
4	4-16H	5265.50	2000	0.017	0.0071	6.7	6.5	2.87
4	4-17H	5266.50	2000	0.017	0.0069	4.5	4.4	2.91
4	4-18H	5267.55	2000	0.195	0.125	12.3	12.1	2.67
4	4-19H	5268.50	2000	0.0080	0.0027	5.9	5.8	2.88
4	4-20H	5269.65	2000	0.010	0.0036	7.0	6.8	2.77
4	4-21H	5270.70	2000	0.043	0.021	7.2	7.1	2.70
4	4-22H	5271.35	2000	0.029	0.013	6.2	6.0	2.74
4	4-23H	5272.20	2000	0.044	0.022	6.9	6.7	2.88
4	4-24H	5273.80	2000	0.026	0.012	8.2	8.1	2.67
4	4-25H (pf)	5274.50	2000	0.229	0.150	6.2	6.0	2.76
4	4-26H	5275.65	2000		+	5.9		2.72
4	4-27H	5276.45	2000		+	7.4		2.73
4	4-28H	5277.70	2000	0.129	0.078	9.3	9.1	2.73
4	4-29H	5278.60	2000		+	6.3		2.75
4	4-30H	5279.65	2000	0.027	0.012	7.1	7.0	2.70
Average values:				54.8	50.5	11.8	13.5	2.73

+ Indicates the sample is fractured and unsuitable for this type of analysis



SUMMARY OF ROTARY CORE ANALYSES RESULTS

Convection Dried at 140°F

Strategic Biofuels LLC

Louisiana Green Fuels Well 001

Core Number	Sample Number	Sample Depth, feet	Net Confining Stress, psi	Permeability, millidarcys		Porosity, percent		Grain Density, gm/cc
				to Air	Klinkenberg	Ambient	NCS	
25	1-1R	4154.0	1500	125.	112.		28.8	2.67
24	1-2R	4160.0	1500	86.7	76.3		26.8	2.65
23	1-3R	4177.0	1500	66.9	58.4		27.9	2.66
22	1-4R	4915.0	1900	673.	635.		24.3	2.65
21	1-5R	5056.0	1900	1.95	1.52	17.0	16.8	2.68
20	1-6R	5070.0	1900	694.	655.0		27.0	2.65
19	1-7R	5078.0	1900	633.	596.		25.7	2.66
18	1-8R	5143.0	1900	129.	115.		24.6	2.68
17	1-9R	5158.0	1900	0.0078	0.0026	5.7	5.5	2.67
16	1-10R	5175.0	2000	6.68	5.32	14.2	14.0	2.76
15	1-11R	5183.0	2000	232.	213.		24.5	2.65
14	1-12R	5190.0	2000	502.	470.		21.8	2.67
13	1-13R	5252.0	2000	71.2	62.4		22.2	2.66
12	1-14R	5299.0	2000	294.	271.		21.9	2.66
11	1-15R	5314.0	2000	425.	396.		26.6	2.66
10	1-16R	5316.0	2000	718.	678.		25.8	2.75
9	1-17R	5336.0	2000	505.	473.		25.5	2.74
8	1-18R	5341.0	2000	403.	376.		24.3	2.67
7	1-19R	5421.0	2000	16.2	13.4		22.3	2.74
6	1-20R	5449.0	2000	604.	568.		22.8	2.64
5	1-21R	5453.0	2000	627.	590.	23.9	23.7	2.66
4	1-22R	5468.0	2000	3.18	2.40	14.6	14.4	2.67
3	1-23R	5482.0	2000	0.398	0.279	18.6	18.4	2.66
2	1-24R	5599.0	2000	1.25	0.971	18.4	18.1	2.67
1	1-25R	5608.0	2000	2.92	2.31	19.8	19.5	2.70
Average values:				273.	255.	16.5	22.1	2.68



Crushed Rock Analysis Summary of Routine Crushed Core Analyses Results

As-Received and Vacuum Dried at 212°F

Strategic Biofuels LLC
Louisiana Green Fuels Well 001
Caldwell Parish, LA
Riverton Field

HH-108056
11/4/2021

Sample ID	Top Depth, feet	Bottom Depth, feet	A-R Bulk Density, gm/cc	A-R Grain Density, gms/cc	A-R Gas Saturation, % of BV	A-R Press Decay Permeability, md	Dry Bulk Density, gm/cc	Dry Grain Density, gm/cc	Dry Helium Porosity, % of BV
1-10 CRA	3609.20	3609.45	2.33	2.35	0.9	4.60E-05	2.10	2.73	23.2
1-20 CRA	3619.00	3619.25	2.30	2.36	2.3	9.77E-05	2.07	2.74	24.3
1-28 CRA	3627.50	3627.75	2.34	2.36	0.6	2.62E-05	2.11	2.73	22.9
2-4 CRA	4693.00	4693.25	2.51	2.54	0.9	4.03E-05	2.39	2.74	12.8
5-1 CRA	5900.45	5900.80	2.61	2.62	0.6	3.90E-05	2.51	2.77	9.4
5-11 CRA	5910.05	5910.35	2.57	2.58	0.5	2.40E-05	2.46	2.75	10.5
5-21 CRA	5920.55	5920.85	2.60	2.60	0.1	4.48E-06	2.50	2.75	9.0
5-29 CRA	5928.55	5928.85	2.60	2.60	0.3	1.36E-05	2.50	2.75	9.2
Average values:			2.48	2.50	0.8	3.64E-05	2.33	2.75	15.2

As-received bulk volumes and bulk densities were determined on intact bulk sample material.

The bulk material was crushed and all other analysis reported herein were conducted on the crushed material.

Mud/Fluid type: WBM

Permeabilities calculated using CSM mathematics.



SUMMARY OF MERCURY INJECTION TEST RESULTS

Strategic Biofuels LLC
Louisiana Green Fuels Well 001

Caldwell Parish, Louisiana
HH-108056

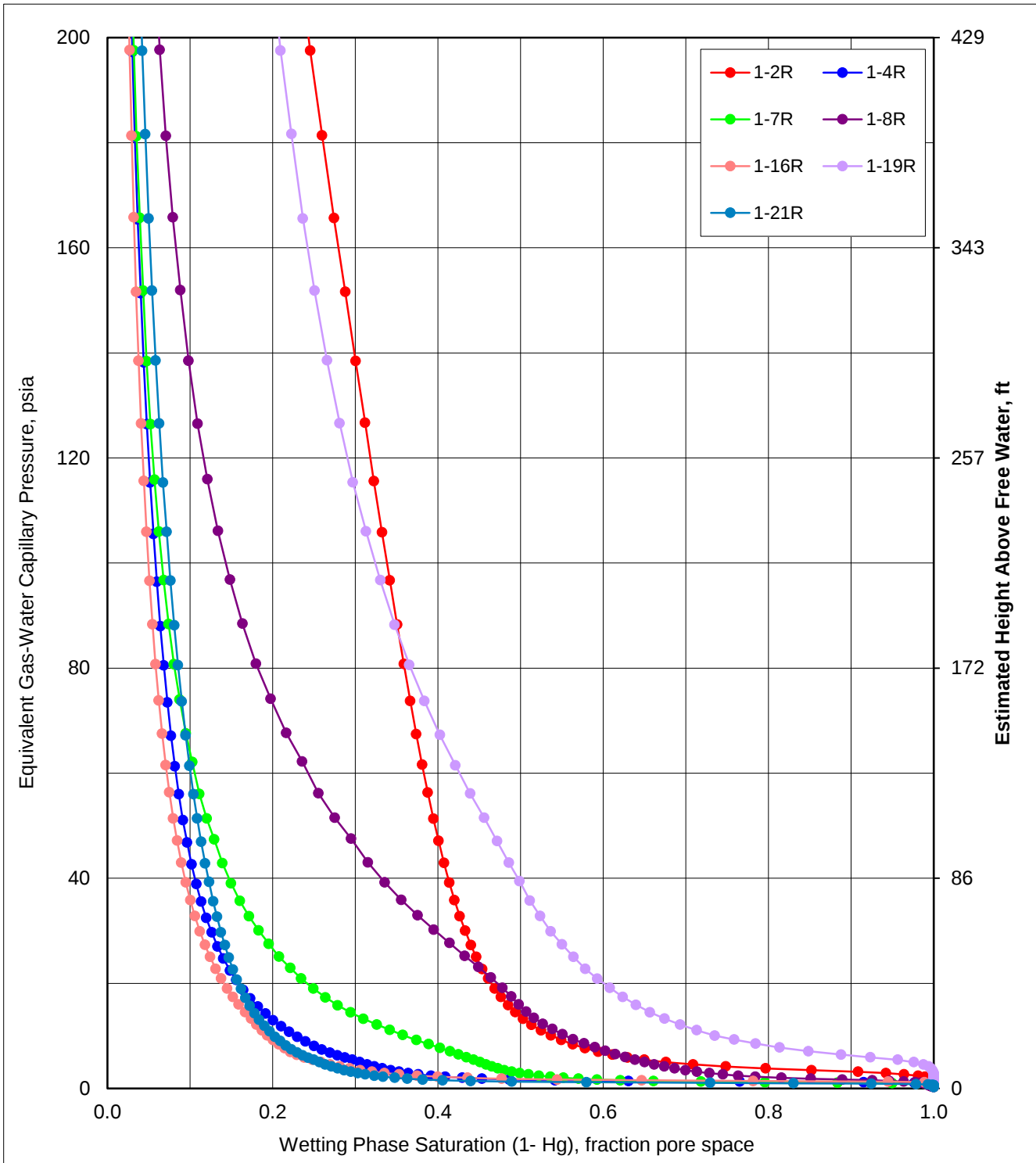
Sample Number	Sample Depth, feet	Mercury Injection			
		Permeability to Air, millidarcys	Porosity, fraction	Grain Density, grams/cc	Fluid Saturation at 200 psi Equivalent Gas-Water Capillary Pressure, fraction pore space
1-2R	4160.00	61.5	0.272	2.64	0.243



EQUIVALENT GAS - WATER CAPILLARY PRESSURE

Strategic Biofuels LLC
Louisiana Green Fuels Well 001

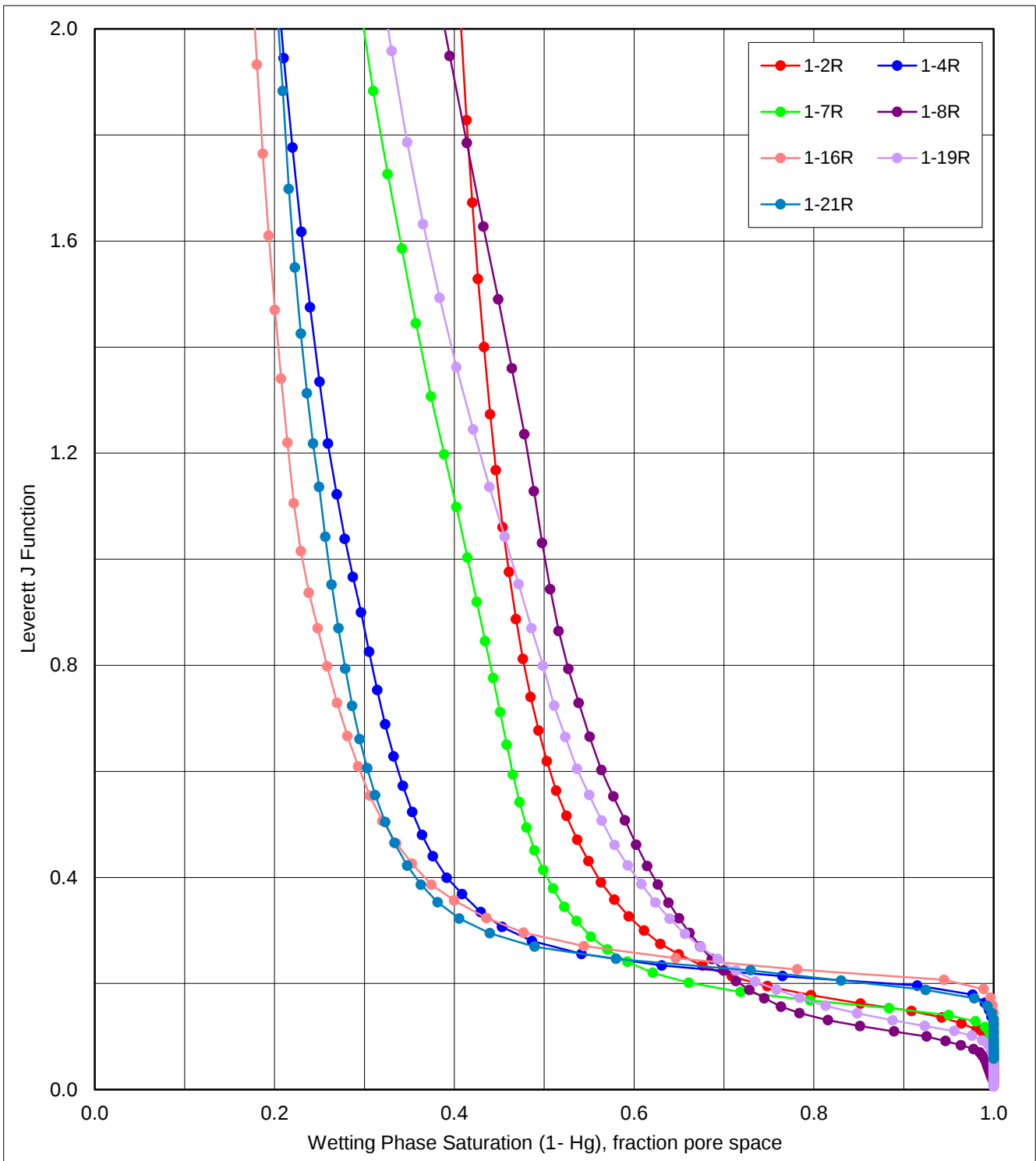
Composite of All Samples
Caldwell Parish, Louisiana
HH-108056



LEVERETT J FUNCTION

Strategic Biofuels LLC
Louisiana Green Fuels Well 001

Composite of All Samples
Caldwell Parish, Louisiana
HH-108056

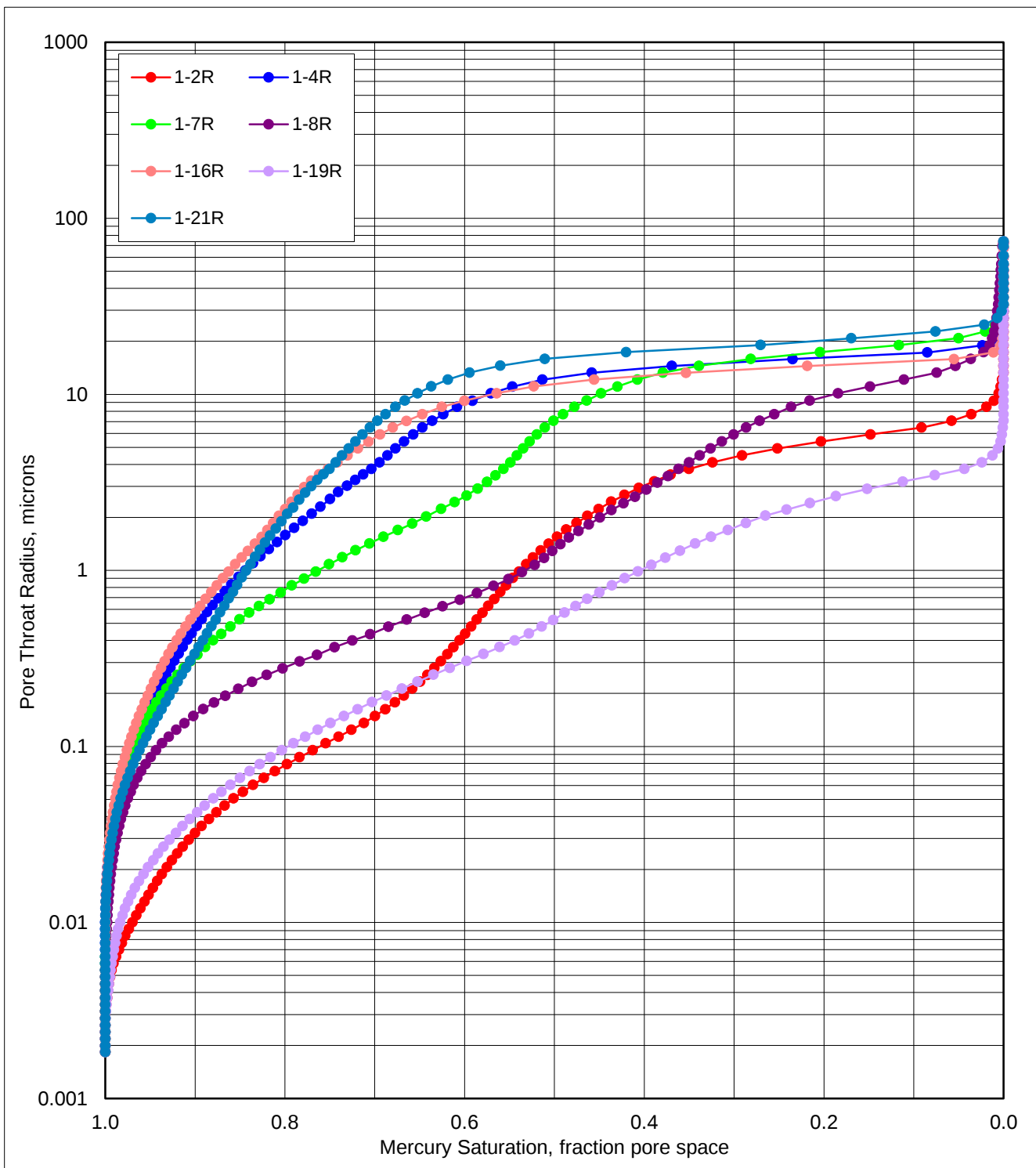




PORE THROAT RADII

Strategic Biofuels LLC
Louisiana Green Fuels Well 001

Composite of All Samples
Caldwell Parish, Louisiana
HH-108056

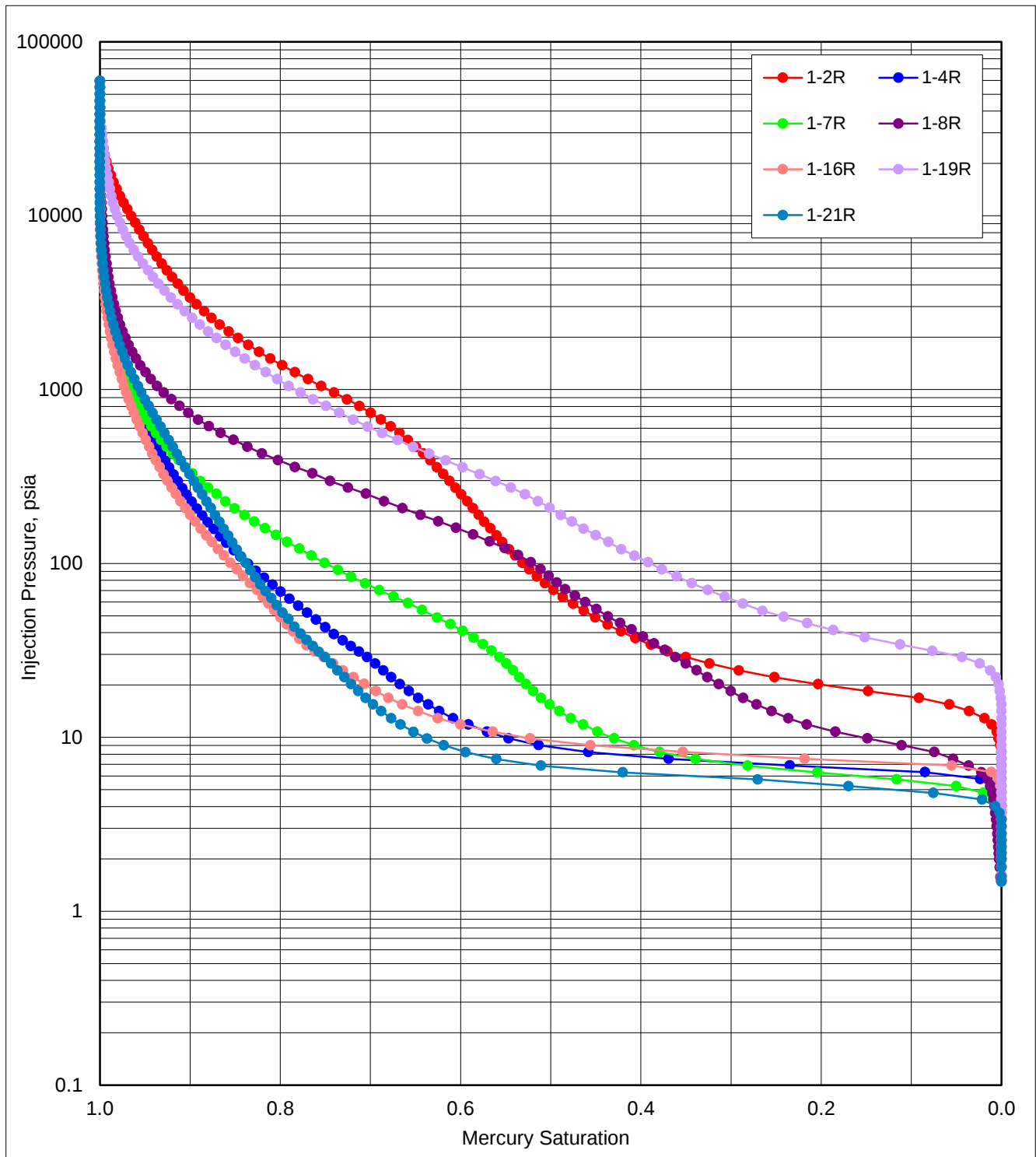




MERCURY INJECTION CAPILLARY PRESSURE

Strategic Biofuels LLC
Louisiana Green Fuels Well 001

Composite of All Samples
Caldwell Parish, Louisiana
HH-108056





MERCURY INJECTION CAPILLARY PRESSURE

Strategic Biofuels LLC
Louisiana Green Fuels Well 001

Composite of All Samples
Caldwell Parish, Louisiana
HH-108056

Injection Pressure, psia	Mercury Saturation, fraction	1.0-Mercury Saturation, fraction	Pore Radius, microns	J Function	Other Laboratory Systems			Estimated Height Above Free Water, ft	
					Gas-Water, psia	Gas-Oil, psia	Oil-Water, psia	G-W	O-W
1.52	0.000	1.000	72.0	0.013	0.29	0.10	0.12	0.61	1.02
1.61	0.000	1.000	68.0	0.014	0.30	0.10	0.13	0.65	1.08
1.81	0.000	1.000	60.3	0.016	0.34	0.12	0.15	0.73	1.21
2.01	0.000	1.000	54.3	0.018	0.38	0.13	0.16	0.81	1.35
2.17	0.000	1.000	50.2	0.019	0.41	0.14	0.18	0.88	1.46
2.37	0.000	1.000	46.1	0.021	0.45	0.15	0.19	0.96	1.59
2.57	0.000	1.000	42.4	0.023	0.48	0.17	0.21	1.04	1.72
2.81	0.000	1.000	38.9	0.025	0.53	0.18	0.23	1.13	1.88
3.08	0.000	1.000	35.4	0.027	0.58	0.20	0.25	1.25	2.07
3.40	0.000	1.000	32.2	0.030	0.64	0.22	0.28	1.37	2.28
3.70	0.000	1.000	29.5	0.032	0.70	0.24	0.30	1.49	2.48
4.04	0.000	1.000	27.0	0.036	0.76	0.26	0.33	1.63	2.71

Appendix C

Pressure Falloff Analysis

**Whitetail Operating, LLC
Louisiana Green Fuels No. 1 (SN:975841)
Stratigraphic Test Well**



Geostock Sandia

Annona Sand Formation



Geostock Sandia

Louisiana Green Fuels

Stratigraphic Test Well 1 - Annona Injection Test

Caldwell Parish, Louisiana

Report Number

Annona_Falloff

Test Date

Jun-09-21

Interpretation Results

Model of Behavior

Homogeneous

Permeability (to Simulated Br 56.137 md

Transmissibility 2643 md-ft/cp

Skin -1.52

Delta P Skin (psi) - 183

Pi (at 4149 ft) 1917 psia

Total Delta P (Pinj - Pi) (2702 - 1917) = 785

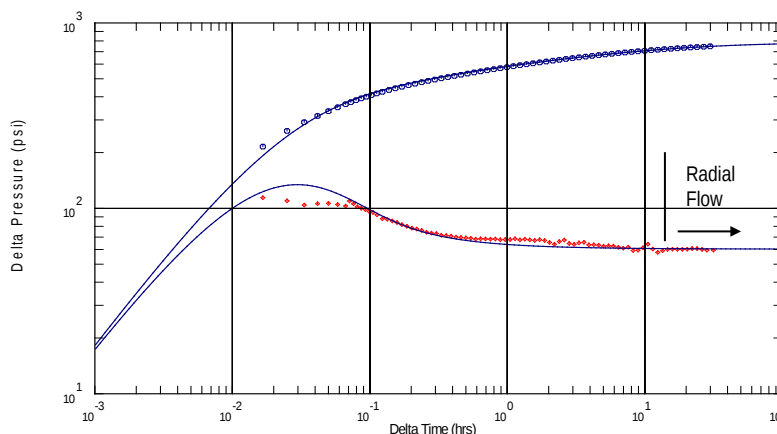
Last SI Pressure (psia) 1953.82

Radius of Investigation 1211 ft

Input Data: Qlast = -2256 bpd, B = 1.000 rbl/stb

rw = 0.27, h = 30, u = 0.637, ct = 7.33E-6, phi = 0.27

Figure A - Log-log Plot of Analysis Period



Executive Summary

Test Overview

This report contains the interpretation of a falloff test on the Louisiana Green Fuels Stratigraphic Test Well 1 completed in the Annona Sand. The gauge was placed at a depth of 4,149 feet RKB feet. A step-rate test was conducted and then constant rate injection was maintained for approximately 24 hours. The step rate test analysis (Section 2 Page 2.3) shows that the well was not fractured even though bottomhole pressure exceeded 80% of the estimated fracture gradient (Eaton, 1969). The shape of the falloff curve confirms that the interval was not fractured during injection. The well was shut-in at surface for a 31.6 hour falloff test. The final rate prior to shut-in is 2,256 bpd. Section 2 provides a detailed listing of the rate history used in the analysis. A static gradient survey was performed following completion of the falloff test (Section 2 Page 2.2).

Interpretation Results

Figure A, above, is a log-log plot of the falloff period with the pressure derivative function. The solid line in Figure A is the multi-rate type-curve response generated using a changing wellbore storage and skin model with no boundaries. There is good agreement between the measured data and model response. Superposition and Pressure History Simulation analysis also provide results consistent with the log-log analysis presented above. Based on the model response radial flow occurs from 13 hours into the falloff.

Skin Damage

The estimated skin damage (-1.52) represents an enhancement in the near well area from the well stimulation. The pressure drop due to skin is -183 psi.

Boundaries

No boundaries were observed during the falloff. The radius of investigation at the end of the falloff period is 1,211 feet using input and modeled parameters.

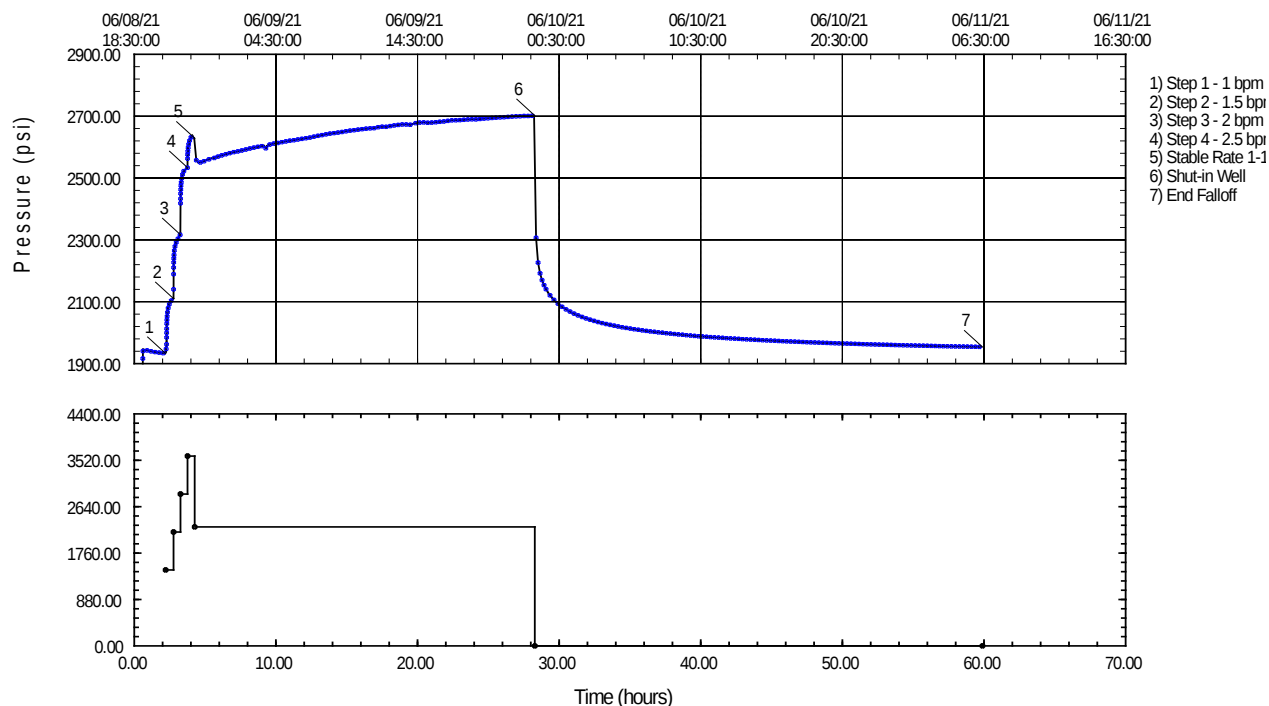
Report Contents

Section 2 - Sequence of Events; Section 3 - Analysis Plots; Section 4 - Pressure Data; Section 5 - Distribution List

Sequence of Events
Louisiana Green Fuels
Stratigraphic Test Well 1 -- Annona Injection Test

State Louisiana
Parish Caldwell
Field Riverton

Test Date June 9, 2021
Interpretation Date June 22, 2021
Report Number Annona_Falloff



Label Point / Comments	Date (dd-mm-yy)	Time (hh:mm:ss)	Gauge ET (hours)	BHP (psia)	Rate (bwpd)
Production History Used in the Analysis					
Step Rate 1	8-Jun-21	20:42:52	2.214	1933.01	-1440
Step Rate 2	8-Jun-21	21:16:22	2.773	2110.23	-2160
Step Rate 3	8-Jun-21	21:45:52	3.264	2316.76	-2880
Step Rate 4	8-Jun-21	22:15:42	3.762	2533.58	-3600
Constant Injection	8-Jun-21	22:45:52	4.264	2628.99	-2256
Shut-in Well	9-Jun-21	22:46:52	28.281	2701.80	0

State Louisiana

Parish Caldwell

Field Riverton

Louisiana Green Fuels

Stratigraphic Test Well 1

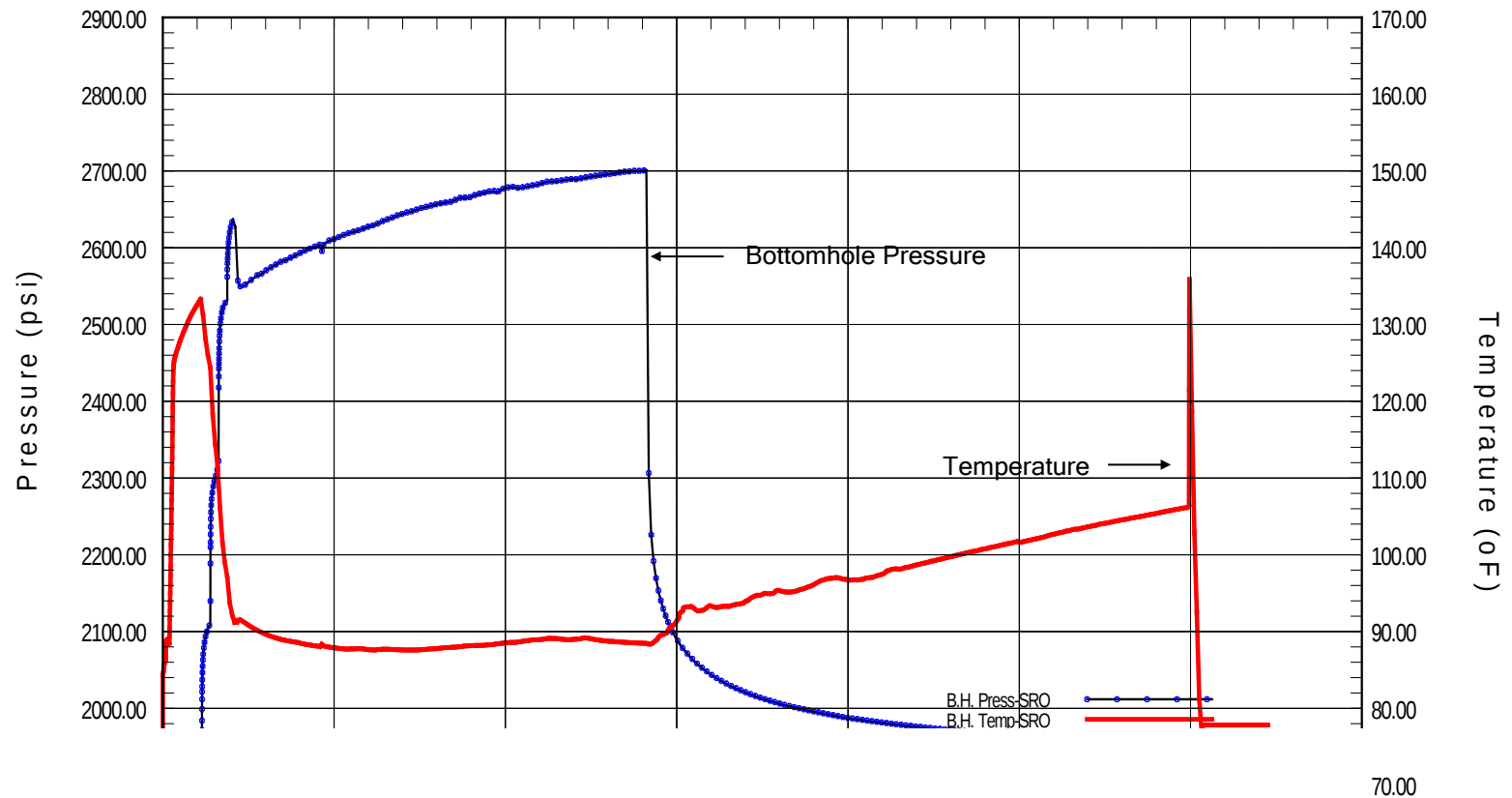
Annona Injection Test

Test Date 9-Jun-21

Analysis Date 22-Jun-21

Report Number Annona_Falloff

Bottomhole Pressure and Temperature Log



State Louisiana

Parish Caldwell

Field Riverton

Louisiana Green Fuels

Stratigraphic Test Well 1

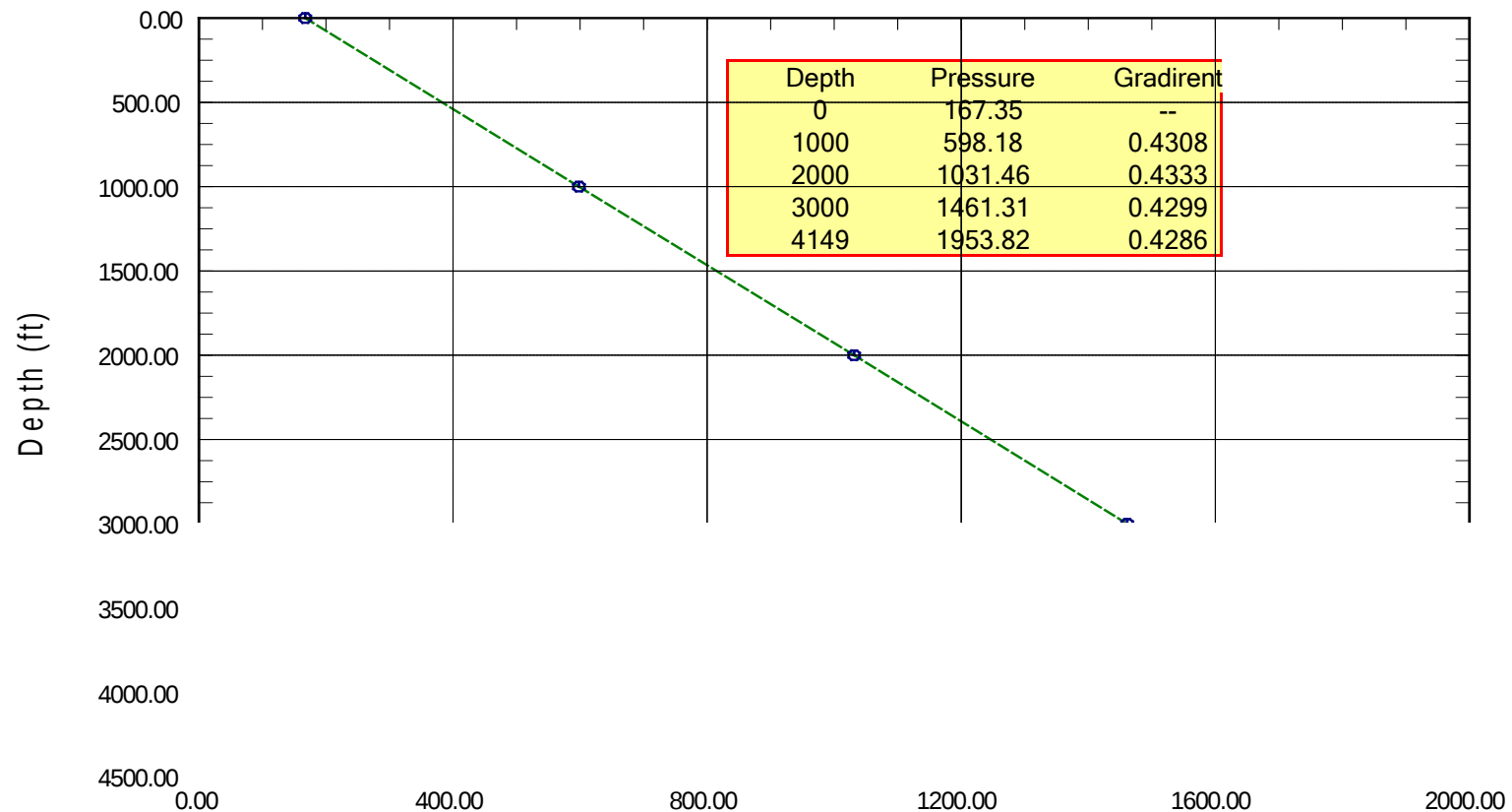
Annona Injection Test

Test Date 9-Jun-21

Analysis Date 22-Jun-21

Report Number Annona_Falloff

Static Gradient Survey



State Louisiana

Parish Caldwell

Field Riverton

Louisiana Green Fuels

Stratigraphic Test Well 1

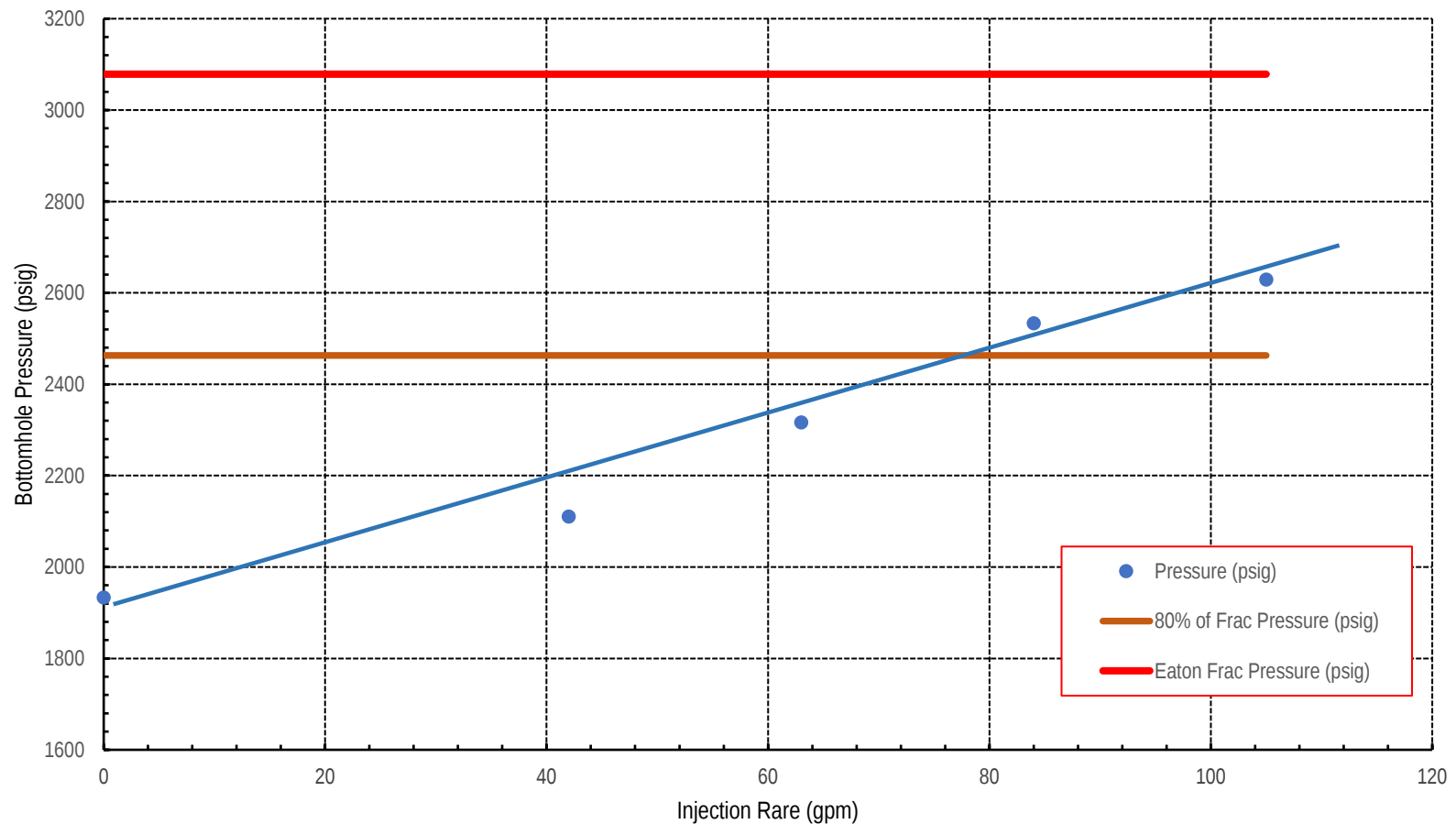
Annona Injection Test

Test Date 9-Jun-21

Analysis Date 22-Jun-21

Report Number Annona_Falloff

Step Rate Injection Test



State Louisiana

Parish Caldwell

Field Riverton

Louisiana Green Fuels

Stratigraphic Test Well 1

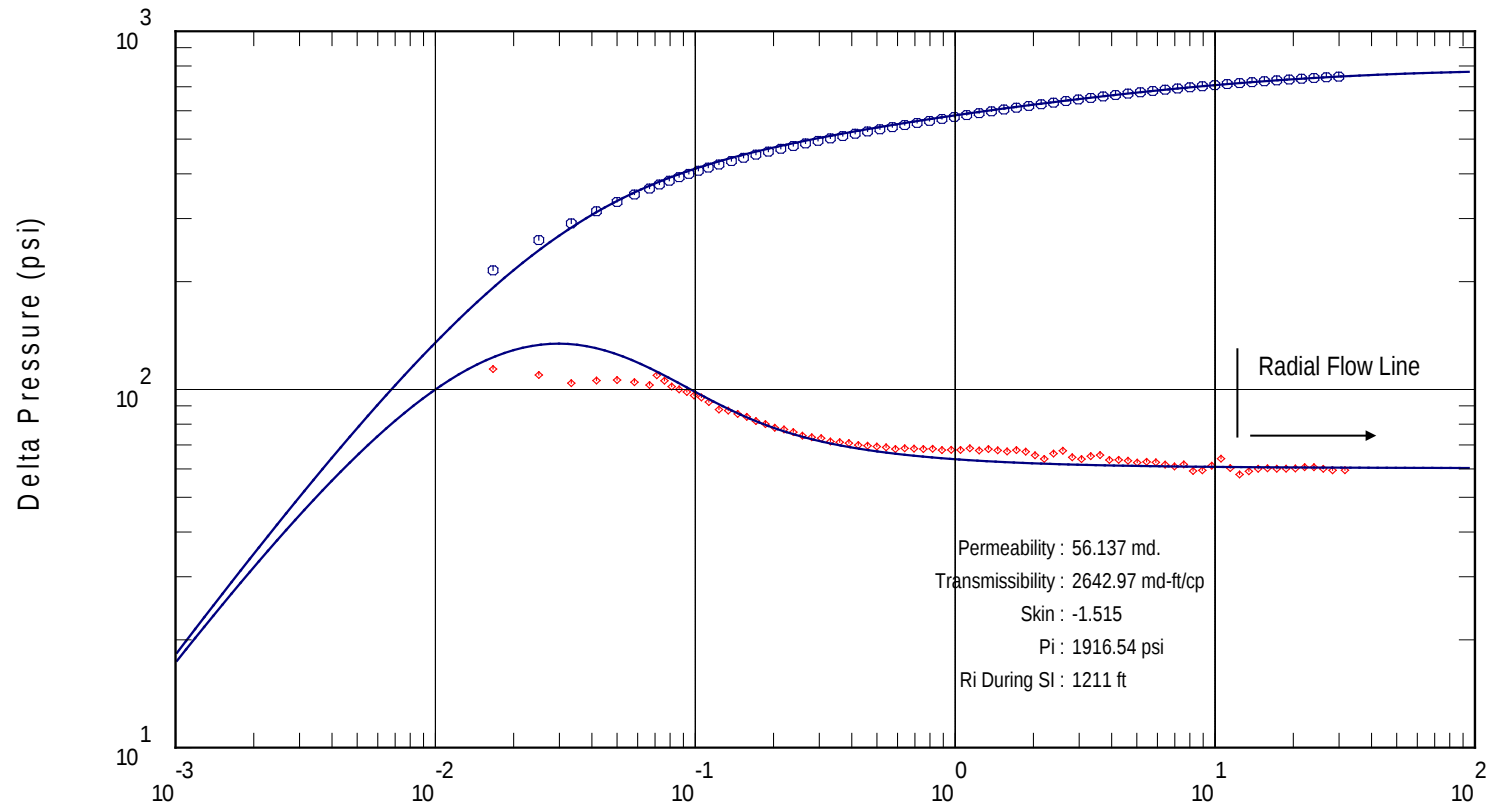
Annona Injection Test

Test Date 9-Jun-21

Analysis Date 22-Jun-21

Report Number Annona_Falloff

Log-Log Match



State Louisiana

Parish Caldwell

Field Riverton

Louisiana Green Fuels

Stratigraphic Test Well 1

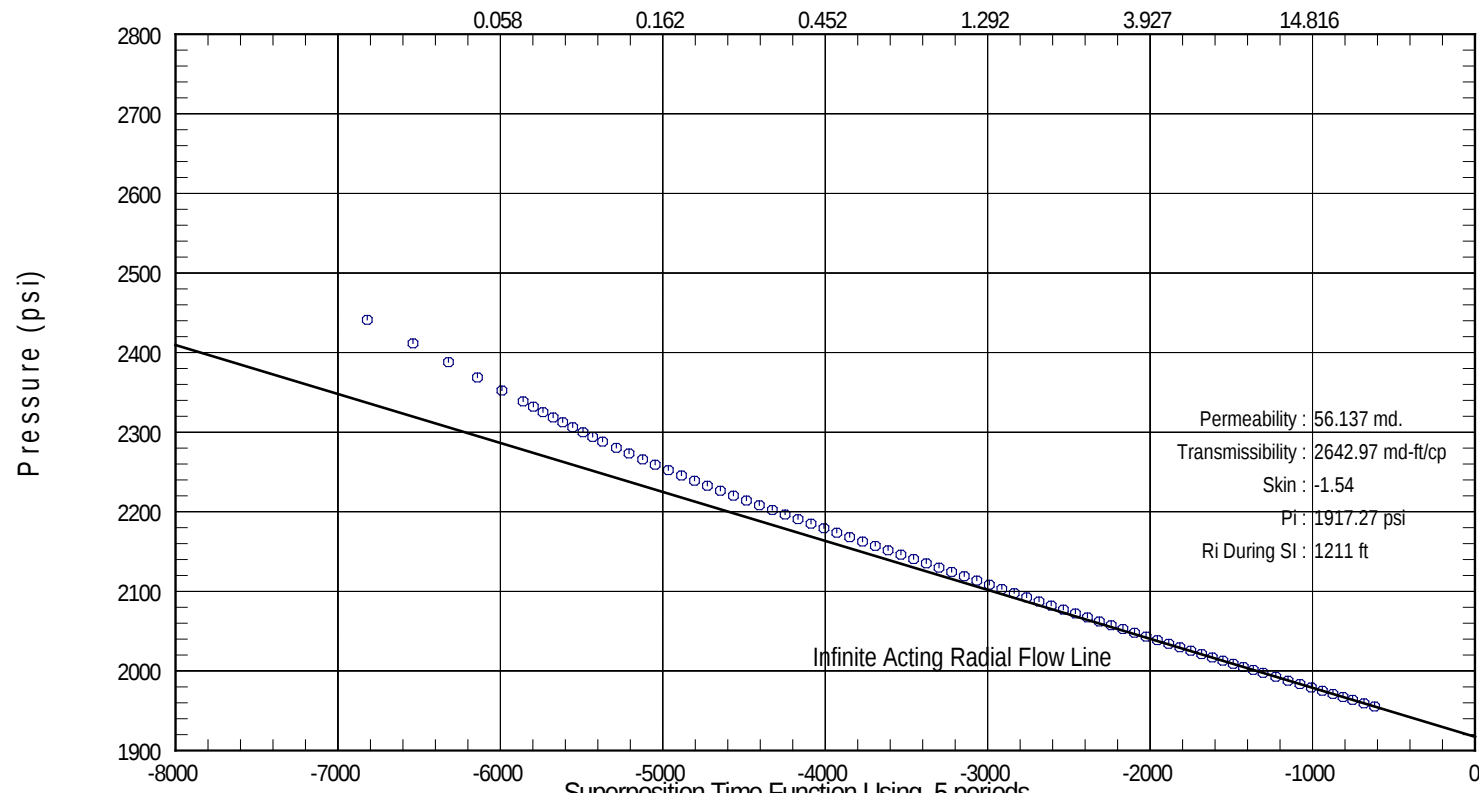
Annona Injection Test

Test Date 9-Jun-21

Analysis Date 22-Jun-21

Report Number Annona_Falloff

Superposition Analysis



State Louisiana

Parish Caldwell

Field Riverton

Louisiana Green Fuels

Stratigraphic Test Well 1

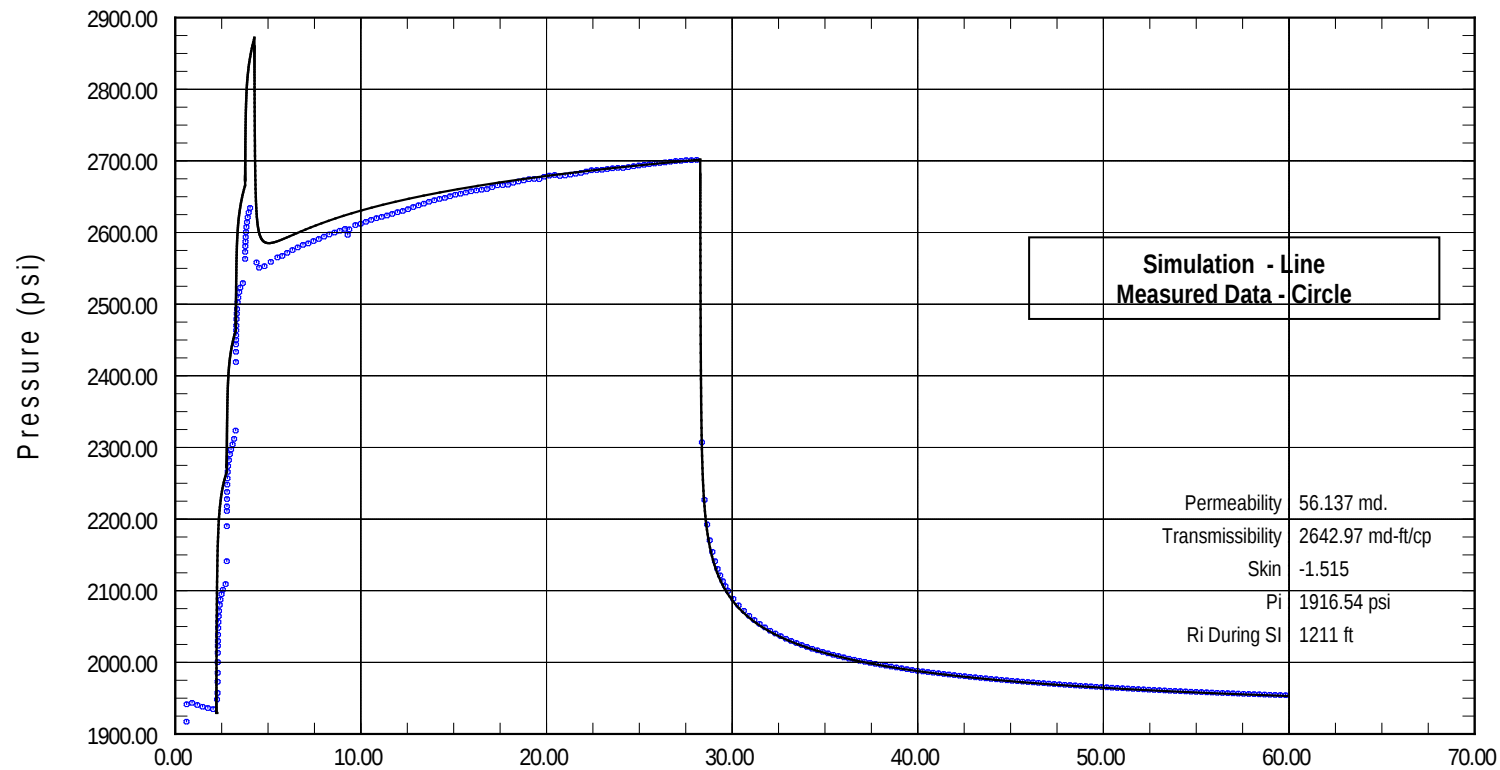
Annona Injection Test

Test Date 9-Jun-21

Analysis Date 22-Jun-21

Report Number Annona_Falloff

Pressure History Simulation



State Louisiana

Parish Caldwell

Field Riverton

Louisiana Green Fuels

Stratigraphic Test Well 1

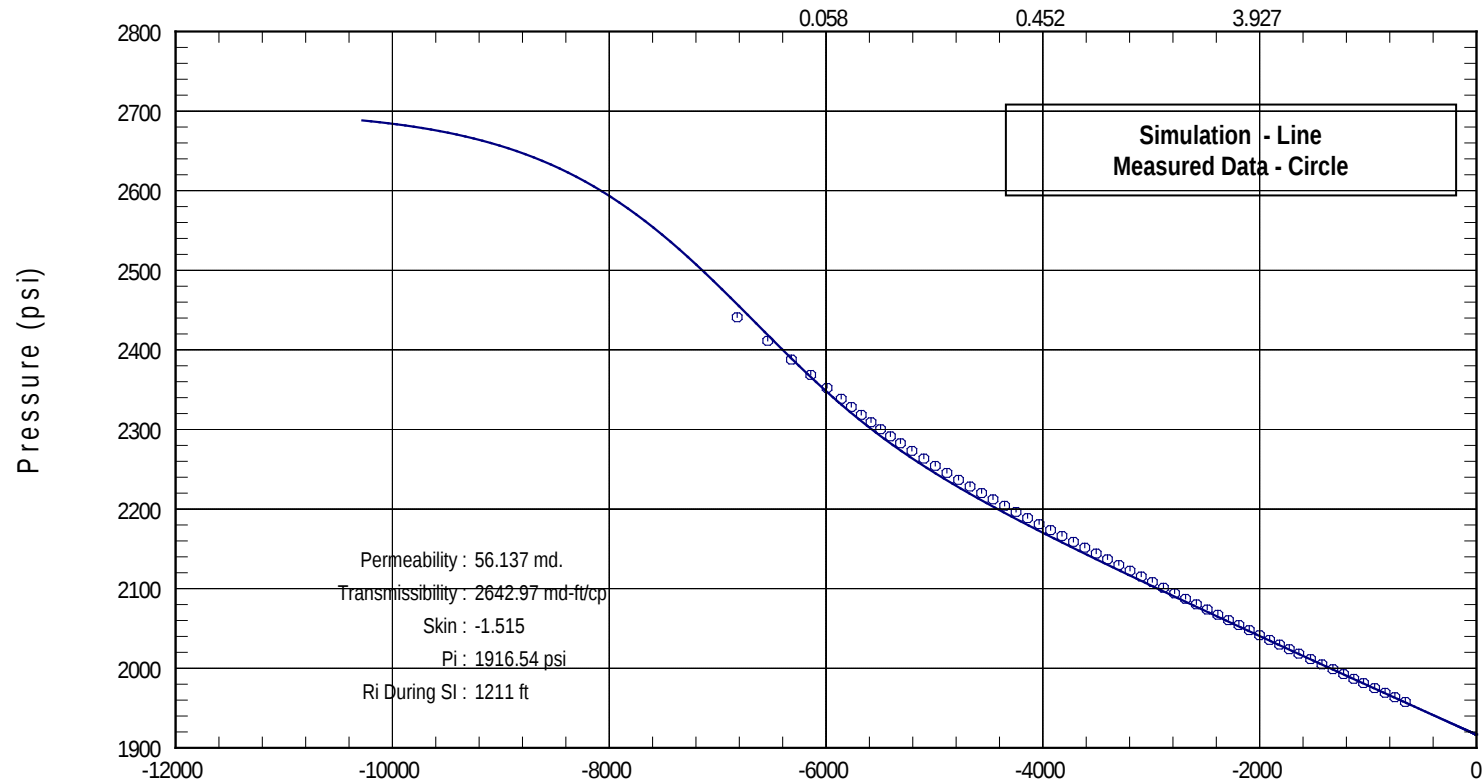
Annona Injection Test

Test Date 9-Jun-21

Analysis Date 22-Jun-21

Report Number Annona_Falloff

Superposition Simulation



State Louisiana Parish Caldwell Field Riverton	Louisiana Green Fuels Stratigraphic Test Well 1 Annona Injection Test	Test Date 9-Jun-21 Analysis Date 22-Jun-21 Report Number Annona_Falloff
Input Data		
Porosity (%) [phi]: 27.0% Viscosity (cp) [u]: 0.637 FVF (Rbl/Scf) [B]: 1.000 Total Compressibility (1/psi) [ct]: 7.330E-06	Open Hole Radius (ft) [rw]: 0.271 Net Zone Thickness (ft) [h]: 30 Rate During Period (mscfd) [qn]: 0 ABS(Rate Prior to Period (mscfd)) [qn-1]: 2256	Gauge Depth (ft): 4149 Top of Perforations: 4149 Bottom of Perforations: 4184 BHT (F): 108
Log - Log Analysis		
Permeability $kh = 141.2 (\Delta q) (u) (B) (Pd/dp)$ $kh = 141.2 * (2256.206) * (0.637) * (1.000) * (8.30E-3)$ $kh = 1684.101 \text{ md-ft}$ $k = 56.137 \text{ md-ft}$		
Wellbore Storage Coefficient $C(1) = 0.000295 (kh) / (u * [TD/CD]/dt)$ $C(1) = 0.000295 * (1684.10) / (0.637 * 162.487)$ $C(1) = 0.005$ $CD = 0.8936 C(1) / (\phi * ct * h * rw^2)$ $CD = 0.8936 * 4.8E-3 / (0.27000 * 7.33E-6 * 30 * 0.271^2)$ $CD = 983$		
Skin $S = 1/2 \ln (CDe2s \text{ match} / CD)$ $S = 1/2 \ln (4.76E+01 / (983.36))$ $S = -1.5$		
Radius of Investigation $ri = ((k * SI \text{ time}) / (960 \phi u ct))^{.5}$ $ri = ((56.14 * 31.61) / (960 * 0.270 * 0.64 * 7.33E-6))^{.5}$ $ri = 1211 \text{ ft}$		

State Louisiana Parish Caldwell Field Riverton	Louisiana Green Fuels Stratigraphic Test Well 1 Annona Injection Test	Test Date 9-Jun-21 Analysis Date 22-Jun-21 Report Number Annona_Falloff												
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Total Compressibility (1/psi) [ct]: 7.330E-06	ABS(Rate Prior to Period (mscfd)) [qn-1]: 2256	BHT (F): 108												
Superposition Analysis Permeability $kh = 162.6 (u) (B) / m'$ $kh = 162.6 * (0.637 * (1.000)) / (6.15E-02)$ $kh = 1684.09 \text{ md-ft}$ $k = 56.14 \text{ md}$ Skin $S = 1.1513 ((P1hr - Pwf) / (m' \Delta q) - \log(k / (\phi u ct rw^2))) + 3.227$ $S = 1.1513 ((585.2 / (6.15E-02 * 2256.206)) - \log(56.137 / (0.270 * 0.637 * 7.33E-06 * 0.271^2))) + 3.227$ $S = -1.54$ Radial Flow Line Parameters (Superposition Plot) <table> <tr> <td>Start Radial Flow Line (hrs): 14.651</td> <td>RSqr: 1.000</td> </tr> <tr> <td>End Radial Flow Line (hrs): 29.926</td> <td>Number of Points: 26</td> </tr> <tr> <td>Start Radial Flow Line (SF): -1007.108</td> <td>P* (psi): 1917.27</td> </tr> <tr> <td>End Radial Flow Line (SF): -617.825</td> <td></td> </tr> </table>			Start Radial Flow Line (hrs): 14.651	RSqr: 1.000	End Radial Flow Line (hrs): 29.926	Number of Points: 26	Start Radial Flow Line (SF): -1007.108	P* (psi): 1917.27	End Radial Flow Line (SF): -617.825					
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Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psia)	Delta Time (Hours)	Delta Press. (psi)
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Gauge at 4149 ft

1)	9-Jun-21	22:47:52	28.2978	2487.09	0.01667	214.71000
2)	9-Jun-21	22:48:22	28.3061	2440.93	0.02500	260.87010
3)	9-Jun-21	22:48:52	28.3144	2411.36	0.03333	290.43990
4)	9-Jun-21	22:49:22	28.3228	2387.81	0.04167	313.99000
5)	9-Jun-21	22:49:52	28.3311	2368.52	0.05000	333.28000
6)	9-Jun-21	22:50:22	28.3394	2352.16	0.05833	349.64010
7)	9-Jun-21	22:50:52	28.3478	2338.48	0.06667	363.32010
8)	9-Jun-21	22:50:54	28.3483	2337.55	0.06722	364.25000
9)	9-Jun-21	22:50:56	28.3489	2336.79	0.06778	365.01000
10)	9-Jun-21	22:50:58	28.3494	2335.90	0.06833	365.90010
11)	9-Jun-21	22:51:00	28.3500	2335.15	0.06889	366.65010
12)	9-Jun-21	22:51:02	28.3506	2334.28	0.06944	367.52000
13)	9-Jun-21	22:51:04	28.3511	2333.46	0.07000	368.34010
14)	9-Jun-21	22:51:06	28.3517	2332.62	0.07056	369.17990
15)	9-Jun-21	22:51:08	28.3522	2331.85	0.07111	369.95000
16)	9-Jun-21	22:51:10	28.3528	2330.74	0.07167	371.06010
17)	9-Jun-21	22:51:12	28.3533	2329.86	0.07222	371.93990
18)	9-Jun-21	22:51:14	28.3539	2328.89	0.07278	372.91020
19)	9-Jun-21	22:51:16	28.3544	2328.24	0.07333	373.56010
20)	9-Jun-21	22:51:18	28.3550	2327.26	0.07389	374.54000
21)	9-Jun-21	22:51:20	28.3556	2326.58	0.07445	375.22000
22)	9-Jun-21	22:51:22	28.3561	2325.73	0.07500	376.07010
23)	9-Jun-21	22:51:24	28.3567	2324.95	0.07556	376.85010
24)	9-Jun-21	22:51:26	28.3572	2324.15	0.07611	377.65010
25)	9-Jun-21	22:51:28	28.3578	2323.42	0.07667	378.38010
26)	9-Jun-21	22:51:30	28.3583	2322.66	0.07722	379.14010
27)	9-Jun-21	22:51:32	28.3589	2321.90	0.07778	379.90010
28)	9-Jun-21	22:51:34	28.3594	2321.19	0.07833	380.61010
29)	9-Jun-21	22:51:36	28.3600	2320.45	0.07889	381.35010
30)	9-Jun-21	22:51:38	28.3606	2319.71	0.07944	382.09010
31)	9-Jun-21	22:51:40	28.3611	2319.05	0.08000	382.75000
32)	9-Jun-21	22:51:42	28.3617	2318.32	0.08056	383.48000
33)	9-Jun-21	22:51:44	28.3622	2317.65	0.08111	384.15010
34)	9-Jun-21	22:51:46	28.3628	2316.92	0.08167	384.88010
35)	9-Jun-21	22:51:48	28.3633	2316.24	0.08222	385.56010

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	Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psia)	Delta Time (Hours)	Delta Press. (psi)
36)	9-Jun-21	22:51:50	28.3639	2315.59	0.08278	386.21000
37)	9-Jun-21	22:51:52	28.3644	2314.91	0.08333	386.89010
38)	9-Jun-21	22:51:54	28.3650	2314.23	0.08389	387.57010
39)	9-Jun-21	22:51:56	28.3656	2313.58	0.08445	388.22000
40)	9-Jun-21	22:51:58	28.3661	2312.91	0.08500	388.89010
41)	9-Jun-21	22:52:00	28.3667	2312.27	0.08556	389.53000
42)	9-Jun-21	22:52:02	28.3672	2311.62	0.08611	390.17990
43)	9-Jun-21	22:52:04	28.3678	2310.89	0.08667	390.91020
44)	9-Jun-21	22:52:06	28.3683	2310.35	0.08722	391.45000
45)	9-Jun-21	22:52:08	28.3689	2309.68	0.08778	392.12010
46)	9-Jun-21	22:52:10	28.3694	2309.07	0.08833	392.73000
47)	9-Jun-21	22:52:12	28.3700	2308.50	0.08889	393.30000
48)	9-Jun-21	22:52:14	28.3706	2307.80	0.08945	394.00000
49)	9-Jun-21	22:52:16	28.3711	2307.28	0.09000	394.52000
50)	9-Jun-21	22:52:18	28.3717	2306.69	0.09056	395.11010
51)	9-Jun-21	22:52:20	28.3722	2306.02	0.09111	395.78000
52)	9-Jun-21	22:52:22	28.3728	2305.41	0.09167	396.39010
53)	9-Jun-21	22:52:24	28.3733	2304.76	0.09222	397.04000
54)	9-Jun-21	22:52:26	28.3739	2304.24	0.09278	397.56010
55)	9-Jun-21	22:52:28	28.3744	2303.62	0.09333	398.17990
56)	9-Jun-21	22:52:30	28.3750	2303.05	0.09389	398.75000
57)	9-Jun-21	22:52:32	28.3756	2302.52	0.09445	399.28000
58)	9-Jun-21	22:52:34	28.3761	2301.94	0.09500	399.86010
59)	9-Jun-21	22:52:36	28.3767	2301.35	0.09556	400.45000
60)	9-Jun-21	22:52:38	28.3772	2300.80	0.09611	401.00000
61)	9-Jun-21	22:52:40	28.3778	2300.29	0.09667	401.51000
62)	9-Jun-21	22:52:42	28.3783	2299.68	0.09722	402.12010
63)	9-Jun-21	22:52:44	28.3789	2299.13	0.09778	402.67020
64)	9-Jun-21	22:52:46	28.3794	2298.60	0.09833	403.20000
65)	9-Jun-21	22:52:48	28.3800	2298.04	0.09889	403.76000
66)	9-Jun-21	22:52:50	28.3806	2297.50	0.09945	404.30000
67)	9-Jun-21	22:52:52	28.3811	2297.00	0.10000	404.80000
68)	9-Jun-21	22:52:54	28.3817	2296.53	0.10056	405.27000
69)	9-Jun-21	22:52:56	28.3822	2295.95	0.10111	405.85010
70)	9-Jun-21	22:52:58	28.3828	2295.47	0.10167	406.33010
71)	9-Jun-21	22:53:00	28.3833	2294.93	0.10222	406.87010

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72)	9-Jun-21	22:53:02	28.3839	2294.40	0.10278	407.40010
73)	9-Jun-21	22:53:04	28.3844	2293.86	0.10333	407.93990
74)	9-Jun-21	22:53:06	28.3850	2293.30	0.10389	408.50000
75)	9-Jun-21	22:53:08	28.3856	2292.83	0.10444	408.97000
76)	9-Jun-21	22:53:10	28.3861	2292.38	0.10500	409.42020
77)	9-Jun-21	22:53:12	28.3867	2291.82	0.10556	409.98000
78)	9-Jun-21	22:53:14	28.3872	2291.37	0.10611	410.42990
79)	9-Jun-21	22:53:16	28.3878	2290.85	0.10667	410.95000
80)	9-Jun-21	22:53:18	28.3883	2290.44	0.10722	411.36010
81)	9-Jun-21	22:53:20	28.3889	2289.85	0.10778	411.95000
82)	9-Jun-21	22:53:22	28.3894	2289.35	0.10833	412.45000
83)	9-Jun-21	22:53:24	28.3900	2288.90	0.10889	412.90010
84)	9-Jun-21	22:53:26	28.3906	2288.48	0.10945	413.32010
85)	9-Jun-21	22:53:28	28.3911	2287.95	0.11000	413.85010
86)	9-Jun-21	22:53:30	28.3917	2287.52	0.11056	414.28000
87)	9-Jun-21	22:53:32	28.3922	2287.09	0.11111	414.71000
88)	9-Jun-21	22:53:34	28.3928	2286.60	0.11167	415.20000
89)	9-Jun-21	22:53:36	28.3933	2286.11	0.11222	415.68990
90)	9-Jun-21	22:53:38	28.3939	2285.77	0.11278	416.03000
91)	9-Jun-21	22:53:40	28.3944	2285.31	0.11333	416.49000
92)	9-Jun-21	22:53:42	28.3950	2284.76	0.11389	417.04000
93)	9-Jun-21	22:53:44	28.3956	2284.33	0.11444	417.47000
94)	9-Jun-21	22:53:46	28.3961	2283.89	0.11500	417.91020
95)	9-Jun-21	22:53:48	28.3967	2283.46	0.11556	418.34010
96)	9-Jun-21	22:53:50	28.3972	2282.95	0.11611	418.85010
97)	9-Jun-21	22:53:52	28.3978	2282.62	0.11667	419.17990
98)	9-Jun-21	22:54:04	28.4011	2280.15	0.12000	421.65010
99)	9-Jun-21	22:54:16	28.4044	2277.76	0.12333	424.04000
100)	9-Jun-21	22:54:28	28.4078	2275.40	0.12667	426.40010
101)	9-Jun-21	22:54:40	28.4111	2273.10	0.13000	428.70000
102)	9-Jun-21	22:54:54	28.4150	2270.56	0.13389	431.24000
103)	9-Jun-21	22:55:08	28.4189	2268.12	0.13778	433.67990
104)	9-Jun-21	22:55:22	28.4228	2265.62	0.14167	436.17990
105)	9-Jun-21	22:55:36	28.4267	2263.41	0.14556	438.39010
106)	9-Jun-21	22:55:50	28.4306	2261.19	0.14944	440.61010
107)	9-Jun-21	22:56:04	28.4344	2258.97	0.15333	442.83010

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108)	9-Jun-21	22:56:20	28.4389	2256.63	0.15778	445.17020
109)	9-Jun-21	22:56:36	28.4433	2254.23	0.16222	447.57010
110)	9-Jun-21	22:56:52	28.4478	2252.12	0.16667	449.67990
111)	9-Jun-21	22:57:08	28.4522	2249.94	0.17111	451.86010
112)	9-Jun-21	22:57:26	28.4572	2247.57	0.17611	454.23000
113)	9-Jun-21	22:57:44	28.4622	2245.42	0.18111	456.38010
114)	9-Jun-21	22:58:02	28.4672	2243.20	0.18611	458.60010
115)	9-Jun-21	22:58:20	28.4722	2241.11	0.19111	460.68990
116)	9-Jun-21	22:58:40	28.4778	2238.83	0.19667	462.97000
117)	9-Jun-21	22:59:00	28.4833	2236.67	0.20222	465.13010
118)	9-Jun-21	22:59:20	28.4889	2234.60	0.20778	467.20000
119)	9-Jun-21	22:59:40	28.4944	2232.56	0.21333	469.24000
120)	9-Jun-21	23:00:02	28.5006	2230.43	0.21945	471.37010
121)	9-Jun-21	23:00:24	28.5067	2228.30	0.22556	473.50000
122)	9-Jun-21	23:00:46	28.5128	2226.24	0.23167	475.56010
123)	9-Jun-21	23:01:10	28.5194	2224.09	0.23833	477.71000
124)	9-Jun-21	23:01:34	28.5261	2222.09	0.24500	479.71000
125)	9-Jun-21	23:01:58	28.5328	2220.08	0.25167	481.72000
126)	9-Jun-21	23:02:22	28.5394	2218.11	0.25833	483.68990
127)	9-Jun-21	23:02:48	28.5467	2216.09	0.26556	485.71000
128)	9-Jun-21	23:03:16	28.5544	2213.97	0.27333	487.83010
129)	9-Jun-21	23:03:42	28.5617	2212.16	0.28056	489.64010
130)	9-Jun-21	23:04:10	28.5694	2210.08	0.28833	491.72000
131)	9-Jun-21	23:04:40	28.5778	2208.02	0.29667	493.78000
132)	9-Jun-21	23:05:10	28.5861	2206.05	0.30500	495.75000
133)	9-Jun-21	23:05:40	28.5944	2204.09	0.31333	497.71000
134)	9-Jun-21	23:06:12	28.6033	2202.12	0.32222	499.67990
135)	9-Jun-21	23:06:44	28.6122	2200.15	0.33111	501.65010
136)	9-Jun-21	23:07:16	28.6211	2198.32	0.34000	503.48000
137)	9-Jun-21	23:07:50	28.6306	2196.39	0.34945	505.41020
138)	9-Jun-21	23:08:26	28.6406	2194.45	0.35945	507.35010
139)	9-Jun-21	23:09:02	28.6506	2192.53	0.36945	509.27000
140)	9-Jun-21	23:09:38	28.6606	2190.59	0.37945	511.21000
141)	9-Jun-21	23:10:16	28.6711	2188.65	0.39000	513.15010
142)	9-Jun-21	23:10:56	28.6822	2186.71	0.40111	515.09010
143)	9-Jun-21	23:11:36	28.6933	2184.89	0.41222	516.91020

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144)	9-Jun-21	23:12:18	28.7050	2182.95	0.42389	518.85010
145)	9-Jun-21	23:13:00	28.7167	2181.03	0.43556	520.77000
146)	9-Jun-21	23:13:44	28.7289	2179.17	0.44778	522.63010
147)	9-Jun-21	23:14:28	28.7411	2177.30	0.46000	524.50000
148)	9-Jun-21	23:15:14	28.7539	2175.49	0.47278	526.31010
149)	9-Jun-21	23:16:02	28.7672	2173.53	0.48611	528.27000
150)	9-Jun-21	23:16:50	28.7806	2171.71	0.49945	530.09010
151)	9-Jun-21	23:17:40	28.7944	2169.89	0.51333	531.91020
152)	9-Jun-21	23:18:32	28.8089	2167.95	0.52778	533.85010
153)	9-Jun-21	23:19:24	28.8233	2166.15	0.54222	535.65010
154)	9-Jun-21	23:20:20	28.8389	2164.21	0.55778	537.59010
155)	9-Jun-21	23:21:16	28.8544	2162.44	0.57333	539.36010
156)	9-Jun-21	23:22:12	28.8700	2160.59	0.58889	541.21000
157)	9-Jun-21	23:23:12	28.8867	2158.76	0.60556	543.04000
158)	9-Jun-21	23:24:12	28.9033	2157.00	0.62222	544.80000
159)	9-Jun-21	23:25:14	28.9206	2155.12	0.63944	546.67990
160)	9-Jun-21	23:26:18	28.9383	2153.29	0.65722	548.51000
161)	9-Jun-21	23:27:24	28.9567	2151.46	0.67556	550.34010
162)	9-Jun-21	23:28:32	28.9756	2149.58	0.69444	552.22000
163)	9-Jun-21	23:29:42	28.9950	2147.77	0.71389	554.03000
164)	9-Jun-21	23:30:54	29.0150	2145.96	0.73389	555.84010
165)	9-Jun-21	23:32:08	29.0356	2144.11	0.75445	557.68990
166)	9-Jun-21	23:33:22	29.0561	2142.39	0.77500	559.41020
167)	9-Jun-21	23:34:40	29.0778	2140.50	0.79667	561.30000
168)	9-Jun-21	23:36:00	29.1000	2138.65	0.81889	563.15010
169)	9-Jun-21	23:37:22	29.1228	2136.86	0.84167	564.93990
170)	9-Jun-21	23:38:46	29.1461	2135.05	0.86500	566.75000
171)	9-Jun-21	23:40:14	29.1706	2133.26	0.88944	568.54000
172)	9-Jun-21	23:41:42	29.1950	2131.48	0.91389	570.32010
173)	9-Jun-21	23:43:14	29.2206	2129.66	0.93945	572.14010
174)	9-Jun-21	23:44:48	29.2467	2127.86	0.96556	573.93990
175)	9-Jun-21	23:46:26	29.2739	2126.08	0.99278	575.72000
176)	9-Jun-21	23:48:04	29.3011	2124.28	1.02000	577.52000
177)	9-Jun-21	23:49:46	29.3294	2122.51	1.04833	579.29000
178)	9-Jun-21	23:51:32	29.3589	2120.72	1.07778	581.08010
179)	9-Jun-21	23:53:20	29.3889	2118.90	1.10778	582.90010

Falloff Test Data	
Louisiana Green Fuels	
Stratigraphic Test Well 1 - Annona Injection Test	
State Louisiana	Test Date June 9, 2021
Parish Caldwell	Interpretation Date June 22, 2021
Field Riverton	Report Number Annona_Falloff

	Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psia)	Delta Time (Hours)	Delta Press. (psi)
180)	9-Jun-21	23:55:12	29.4200	2117.12	1.13889	584.67990
181)	9-Jun-21	23:57:06	29.4517	2115.26	1.17056	586.54000
182)	9-Jun-21	23:59:02	29.4839	2113.47	1.20278	588.33010
183)	10-Jun-21	0:01:04	29.5178	2111.71	1.23667	590.09010
184)	10-Jun-21	0:03:08	29.5522	2109.97	1.27111	591.83010
185)	10-Jun-21	0:05:14	29.5872	2108.26	1.30611	593.54000
186)	10-Jun-21	0:07:26	29.6239	2106.44	1.34278	595.36010
187)	10-Jun-21	0:09:40	29.6611	2104.71	1.38000	597.09010
188)	10-Jun-21	0:11:58	29.6994	2102.81	1.41833	598.99000
189)	10-Jun-21	0:14:20	29.7389	2101.08	1.45778	600.72000
190)	10-Jun-21	0:16:46	29.7794	2099.38	1.49833	602.42020
191)	10-Jun-21	0:19:16	29.8211	2097.64	1.54000	604.16020
192)	10-Jun-21	0:21:56	29.8656	2095.85	1.58445	605.95000
193)	10-Jun-21	0:24:36	29.9100	2094.05	1.62889	607.75000
194)	10-Jun-21	0:27:16	29.9544	2092.37	1.67333	609.42990
195)	10-Jun-21	0:30:06	30.0017	2090.62	1.72056	611.17990
196)	10-Jun-21	0:32:56	30.0489	2088.86	1.76778	612.93990
197)	10-Jun-21	0:35:56	30.0989	2087.18	1.81778	614.62010
198)	10-Jun-21	0:38:56	30.1489	2085.34	1.86778	616.46000
199)	10-Jun-21	0:42:06	30.2017	2083.66	1.92056	618.14010
200)	10-Jun-21	0:45:16	30.2544	2082.03	1.97333	619.77000
201)	10-Jun-21	0:48:36	30.3100	2080.30	2.02889	621.50000
202)	10-Jun-21	0:51:56	30.3656	2078.52	2.08445	623.28000
203)	10-Jun-21	0:55:26	30.4239	2076.91	2.14278	624.89010
204)	10-Jun-21	0:58:56	30.4822	2075.49	2.20111	626.31010
205)	10-Jun-21	1:02:46	30.5461	2073.76	2.26500	628.04000
206)	10-Jun-21	1:06:26	30.6072	2072.14	2.32611	629.66020
207)	10-Jun-21	1:10:16	30.6711	2070.53	2.39000	631.27000
208)	10-Jun-21	1:14:16	30.7378	2068.89	2.45667	632.91020
209)	10-Jun-21	1:18:26	30.8072	2067.17	2.52611	634.63010
210)	10-Jun-21	1:22:36	30.8767	2065.45	2.59556	636.35010
211)	10-Jun-21	1:26:56	30.9489	2063.76	2.66778	638.04000
212)	10-Jun-21	1:31:26	31.0239	2062.07	2.74278	639.73000
213)	10-Jun-21	1:36:06	31.1017	2060.43	2.82056	641.37010
214)	10-Jun-21	1:40:46	31.1794	2058.89	2.89833	642.91020
215)	10-Jun-21	1:45:36	31.2600	2057.35	2.97889	644.45000

Falloff Test Data	
Louisiana Green Fuels	
Stratigraphic Test Well 1 - Annona Injection Test	
State Louisiana	Test Date June 9, 2021
Parish Caldwell	Interpretation Date June 22, 2021
Field Riverton	Report Number Annona_Falloff

	Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psia)	Delta Time (Hours)	Delta Press. (psi)
216)	10-Jun-21	1:50:36	31.3433	2055.77	3.06222	646.03000
217)	10-Jun-21	1:55:36	31.4267	2054.28	3.14556	647.52000
218)	10-Jun-21	2:00:56	31.5156	2052.61	3.23445	649.18990
219)	10-Jun-21	2:06:16	31.6044	2051.03	3.32333	650.77000
220)	10-Jun-21	2:11:56	31.6989	2049.42	3.41778	652.38010
221)	10-Jun-21	2:17:36	31.7933	2047.88	3.51222	653.92000
222)	10-Jun-21	2:23:26	31.8906	2046.29	3.60945	655.51000
223)	10-Jun-21	2:29:26	31.9906	2044.68	3.70945	657.12000
224)	10-Jun-21	2:35:46	32.0961	2043.07	3.81500	658.73010
225)	10-Jun-21	2:42:06	32.2017	2041.53	3.92056	660.27000
226)	10-Jun-21	2:48:36	32.3100	2040.11	4.02889	661.69010
227)	10-Jun-21	2:55:16	32.4211	2038.63	4.14000	663.17000
228)	10-Jun-21	3:02:16	32.5378	2037.14	4.25667	664.66000
229)	10-Jun-21	3:09:26	32.6572	2035.58	4.37611	666.22010
230)	10-Jun-21	3:16:46	32.7795	2034.04	4.49834	667.76000
231)	10-Jun-21	3:24:16	32.9045	2032.54	4.62334	669.26000
232)	10-Jun-21	3:31:56	33.0322	2031.12	4.75111	670.68010
233)	10-Jun-21	3:39:56	33.1656	2029.70	4.88445	672.10010
234)	10-Jun-21	3:47:56	33.2989	2028.27	5.01778	673.53000
235)	10-Jun-21	3:56:26	33.4406	2026.79	5.15945	675.01000
236)	10-Jun-21	4:04:56	33.5822	2025.35	5.30111	676.45010
237)	10-Jun-21	4:13:56	33.7322	2023.93	5.45111	677.87000
238)	10-Jun-21	4:22:56	33.8822	2022.52	5.60111	679.28000
239)	10-Jun-21	4:32:16	34.0378	2021.11	5.75667	680.69010
240)	10-Jun-21	4:41:56	34.1989	2019.67	5.91778	682.13000
241)	10-Jun-21	4:51:46	34.3628	2018.31	6.08167	683.49000
242)	10-Jun-21	5:01:56	34.5322	2016.92	6.25111	684.88000
243)	10-Jun-21	5:12:26	34.7072	2015.52	6.42611	686.28000
244)	10-Jun-21	5:23:16	34.8878	2014.17	6.60667	687.63000
245)	10-Jun-21	5:34:16	35.0711	2012.84	6.79000	688.96010
246)	10-Jun-21	5:45:36	35.2600	2011.51	6.97889	690.29000
247)	10-Jun-21	5:57:16	35.4544	2010.19	7.17333	691.61010
248)	10-Jun-21	6:09:16	35.6545	2008.91	7.37334	692.89000
249)	10-Jun-21	6:21:36	35.8600	2007.56	7.57889	694.24000
250)	10-Jun-21	6:34:16	36.0711	2006.19	7.79000	695.61010
251)	10-Jun-21	6:47:16	36.2878	2004.87	8.00667	696.93010

Falloff Test Data	
Louisiana Green Fuels	
Stratigraphic Test Well 1 - Annona Injection Test	
State Louisiana	Test Date June 9, 2021
Parish Caldwell	Interpretation Date June 22, 2021
Field Riverton	Report Number Annona_Falloff

	Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psia)	Delta Time (Hours)	Delta Press. (psi)
252)	10-Jun-21	7:00:36	36.5100	2003.68	8.22889	698.12000
253)	10-Jun-21	7:14:16	36.7378	2002.51	8.45667	699.29000
254)	10-Jun-21	7:28:26	36.9739	2001.29	8.69278	700.51000
255)	10-Jun-21	7:42:56	37.2156	2000.08	8.93445	701.72010
256)	10-Jun-21	7:57:56	37.4656	1998.84	9.18445	702.96010
257)	10-Jun-21	8:13:26	37.7239	1997.59	9.44278	704.21010
258)	10-Jun-21	8:29:26	37.9906	1996.36	9.70944	705.44010
259)	10-Jun-21	8:45:26	38.2572	1995.19	9.97611	706.61010
260)	10-Jun-21	9:01:56	38.5322	1993.92	10.25111	707.88000
261)	10-Jun-21	9:19:26	38.8239	1992.66	10.54278	709.14000
262)	10-Jun-21	9:36:56	39.1156	1991.37	10.83444	710.43010
263)	10-Jun-21	9:54:56	39.4156	1990.11	11.13445	711.69010
264)	10-Jun-21	10:13:26	39.7239	1988.89	11.44278	712.91000
265)	10-Jun-21	10:32:26	40.0406	1987.69	11.75945	714.11010
266)	10-Jun-21	10:52:26	40.3739	1986.68	12.09278	715.12000
267)	10-Jun-21	11:12:26	40.7072	1985.68	12.42611	716.12000
268)	10-Jun-21	11:33:26	41.0572	1984.59	12.77611	717.21010
269)	10-Jun-21	11:54:26	41.4072	1983.51	13.12611	718.29000
270)	10-Jun-21	12:16:26	41.7739	1982.46	13.49278	719.34010
271)	10-Jun-21	12:38:56	42.1489	1981.36	13.86778	720.44010
272)	10-Jun-21	13:01:56	42.5322	1980.29	14.25111	721.51000
273)	10-Jun-21	13:25:56	42.9322	1979.20	14.65111	722.60010
274)	10-Jun-21	13:50:26	43.3406	1978.17	15.05945	723.63000
275)	10-Jun-21	14:15:26	43.7572	1977.13	15.47611	724.67000
276)	10-Jun-21	14:41:26	44.1906	1976.09	15.90944	725.71010
277)	10-Jun-21	15:07:56	44.6322	1975.05	16.35111	726.75000
278)	10-Jun-21	15:35:26	45.0906	1974.01	16.80945	727.79000
279)	10-Jun-21	16:03:26	45.5572	1973.05	17.27611	728.75000
280)	10-Jun-21	16:32:26	46.0406	1972.03	17.75945	729.77000
281)	10-Jun-21	17:01:56	46.5322	1971.09	18.25111	730.71010
282)	10-Jun-21	17:32:26	47.0406	1970.12	18.75945	731.68010
283)	10-Jun-21	18:03:56	47.5656	1969.14	19.28444	732.66000
284)	10-Jun-21	18:35:56	48.0989	1968.18	19.81778	733.62000
285)	10-Jun-21	19:08:56	48.6489	1967.25	20.36778	734.55000
286)	10-Jun-21	19:43:26	49.2239	1966.33	20.94278	735.47010
287)	10-Jun-21	20:17:56	49.7989	1965.39	21.51778	736.41000

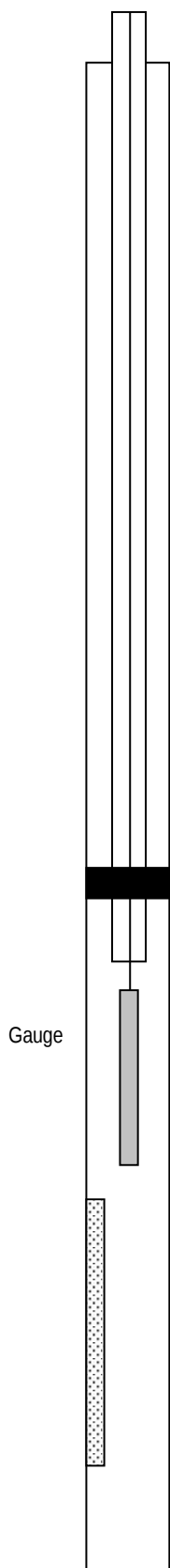
Falloff Test Data Louisiana Green Fuels Stratigraphic Test Well 1 - Annona Injection Test	
State Louisiana	Test Date June 9, 2021
Parish Caldwell	Interpretation Date June 22, 2021
Field Riverton	Report Number Annona_Falloff

	Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psia)	Delta Time (Hours)	Delta Press. (psi)
288)	10-Jun-21	20:53:56	50.3989	1964.56	22.11778	737.24000
289)	10-Jun-21	21:30:56	51.0156	1963.64	22.73445	738.16000
290)	10-Jun-21	22:08:56	51.6489	1962.69	23.36778	739.11010
291)	10-Jun-21	22:47:56	52.2989	1961.81	24.01778	739.99000
292)	10-Jun-21	23:28:26	52.9739	1960.94	24.69278	740.86010
293)	11-Jun-21	0:09:26	53.6572	1960.10	25.37611	741.70010
294)	11-Jun-21	0:51:56	54.3656	1959.28	26.08444	742.52000
295)	11-Jun-21	1:35:26	55.0906	1958.45	26.80945	743.35010
296)	11-Jun-21	2:20:26	55.8406	1957.66	27.55945	744.14000
297)	11-Jun-21	3:06:26	56.6072	1956.87	28.32611	744.93010
298)	11-Jun-21	3:53:26	57.3906	1956.09	29.10945	745.71010
299)	11-Jun-21	4:42:26	58.2072	1955.31	29.92611	746.49000
300)	11-Jun-21	6:23:26	59.8906	1953.82	31.60945	747.98010

Well Test Schematic
Louisiana Green Fuels
Stratigraphic Test Well 1 - Annona Injection Test

State Louisiana
Parish Caldwell
Field Riverton

Test Date June 9, 2021
Interpretation Date June 22, 2021
Report Number Annona Falloff



Net Zone Height (ft) 30
Formation Volume Factor (rbt/mscf) 1.0000
Viscosity (cp) 0.6372
Total Compressibility (1/psi) 7.3300E-06
Oil Gravity (API) 0.00
GOR (Scf/Stbl) 0.00
Saturations (Gas, Oil, Water) frac 0.000 / 0.000 / 1.000
Gas Specific Gravity (dim) 0.00
Bottomhole Temperature (F) 108
Porosity (Frac) 0.27
Open Hole Diameter (ft) 0.27

	1	2	3	
Tubing Outside Diameter				
Tubing Inside Diameter	1.995			
Tubing Length	4063			
Tubing Volume (bbls)	15.71			15.71

Packer Depth	4063			
Gauge Depth	4149			
Top of Perforations	4149	0 ft		
Mid of Perforations	4167		17.5 ft	
Bottom of Perforations	4184			35 ft
PBTD	4250			

Perforation Detail

	Top (ft-md)	Btm (ft-md)	Net (ft)	SPF	Diam (inches)
1	4149	4164	15		
2	4172	4184	12		
3					
4					
5					
6					
			27		

Tuscaloosa - Paluxy Sands



Geostock Sandia

Louisiana Green Fuels

Stratigraphic Test Well 1 - Tusc-Paluxy Injection Test
Caldwell Parish, Louisiana

Report Number
 Tusc_Paluxy Falloff

Test Date
 Jun-01-21

Interpretation Results

Model of Behavior

Homogeneous

Permeability (to Simula 102.900 md

Transmissibility 12941 md-ft/cp

Skin 1.24

Delta P Skin (psi) 58

Pi (at 5250 ft) 2377 psig

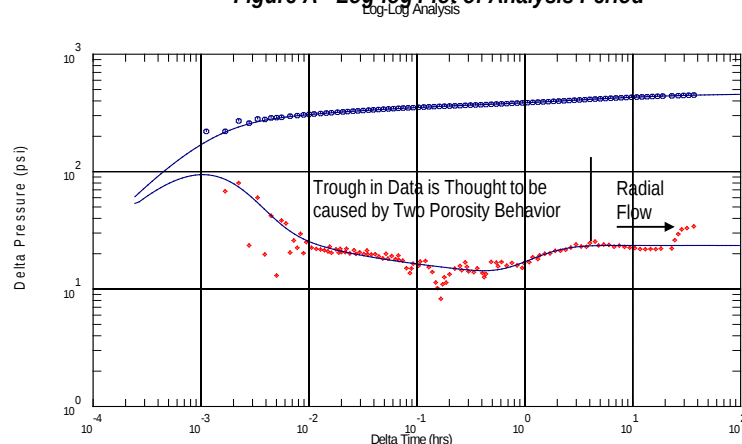
Total Delta P (Pinj - Pi) (2838 - 2377) = 461

Last SI Pressure (psia) ..2389.62

Radius of Investigation . 2273 ft

Input Data: Qlast = -4308 bpd, B = 1.000 rbl/stb
rw =0.28, h = 66 ,u = 0.525 , ct = 6.62E-6 , phi = 0.22

Figure A - Log-log Plot of Analysis Period



Executive Summary

Test Overview

This report contains the interpretation of a falloff test on the Louisiana Green Fuels Stratigraphic Test Well 1 completed in Tuscaloosa and Paluxy Zones 5 to 8. The gauge was placed at a depth of 5,250 feet RKB feet. A step-rate test was conducted and then constant rate injection was maintained for approximately 24 hours. The step rate test analysis (Section 2 Page 2.3) shows that the well was not fractured and the bottomhole pressure did not exceed 80% of the estimated fracture gradient (Eaton, 1969). The shape of the falloff curve confirms that the interval was not fractured during injection. The well was shut-in at surface for a 36.8 hour falloff test. The final rate prior to shut-in is 4,308 bpd. Section 2 provides a detailed listing of the rate history used in the analysis. A static gradient survey was performed following completion of the falloff test (Section 2 Page 2.2).

Interpretation Results

Figure A, above, is a log-log plot of the falloff period with the pressure derivative function. The solid line in Figure A is the multi-rate type-curve response generated using a storage and skin model with two-porosity slabs and no boundaries. There is good agreement between the measured data and model response. Model match parameters to describe the two-porosity behavior for Omega is 0.148 and Lamda is 2.827E-6. Superposition and Pressure History Simulation analysis also provide results consistent with the log-log analysis presented above. Based on the model response radial flow occurs from 3 hours into the falloff.

Skin Damage

The estimated skin damage (1.24) represents 14% of the total pressure drop required to inject 4,308 bpd into the test interval. The pressure drop due to skin is -183 psi.

Boundaries

No boundaries were observed during the falloff. The radius of investigation at the end of the falloff period is 2,273 feet using input and model parameters.

Report Contents

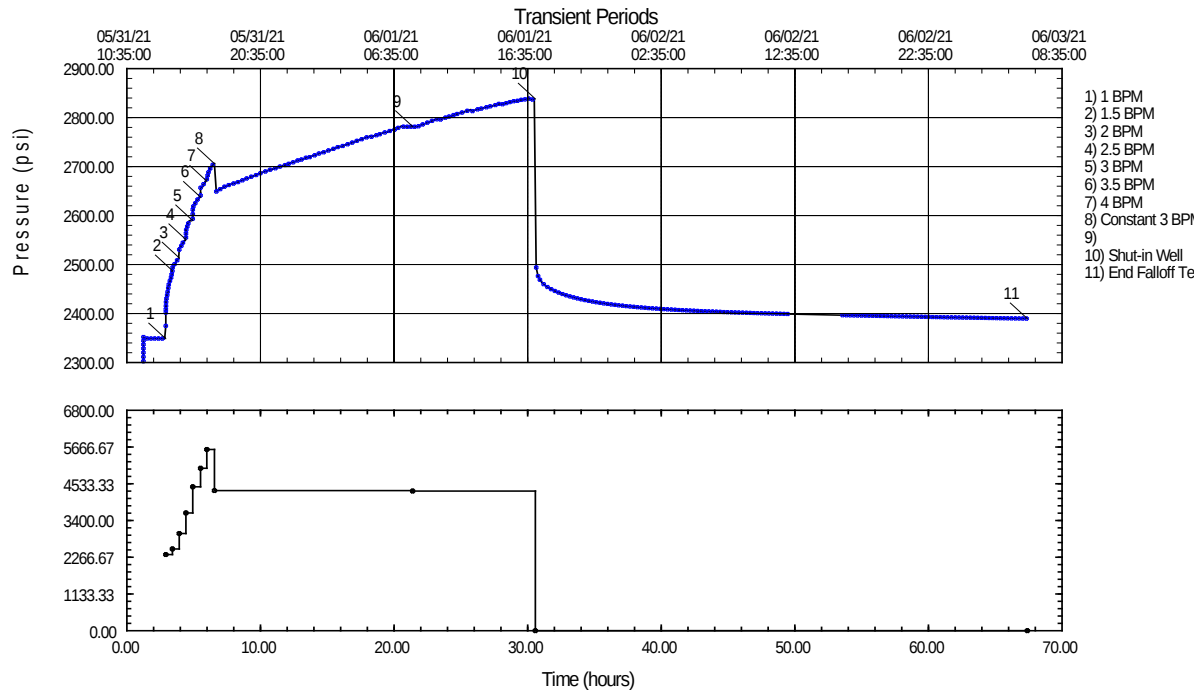
Section 2 - Sequence of Events; Section 3 - Analysis Plots; Section 4 - Pressure Data; Section 5 - Distribution List

Sequence of Events Louisiana Green Fuels

Stratigraphic Test Well 1 -- Tusc-Paluxy Injection Test

State Louisiana
Parish Caldwell
Field Riverton

Test Date June 1, 2021
Interpretation Date June 23, 2021
Report Number Tusc_Paluxy Falloff



Label Point / Comments	Date (dd-mm-yy)	Time (hh:mm:ss)	Gauge ET (hours)	BHP (psig)	Rate (bwpd)
Production History Used in the Analysis					
1.6 BPM	31-May-21	13:29:44	2.912	2348.47	-2349
1.75 BPM	31-May-21	13:59:28	3.408	2487.51	-2522
2.1 BPM	31-May-21	14:30:10	3.919	2513.67	-2999
2.5 BPM	31-May-21	15:00:08	4.419	2551.06	-3633
3.1 BPM	31-May-21	15:30:46	4.929	2589.69	-4439
3.5 BPM	31-May-21	16:05:48	5.513	2637.57	-5011
3.9 BPM	31-May-21	16:34:02	5.984	2670.23	-5591
3.0 BPM	31-May-21	17:08:14	6.554	2705.97	-4322
2.99 BPM	1-Jun-21	7:58:14	21.387	2781.92	-4308
Shut-in Well	1-Jun-21	17:09:28	30.574	2838.19	0

State Louisiana

Parish Caldwell

Field Riverton

Louisiana Green Fuels

Stratigraphic Test Well 1

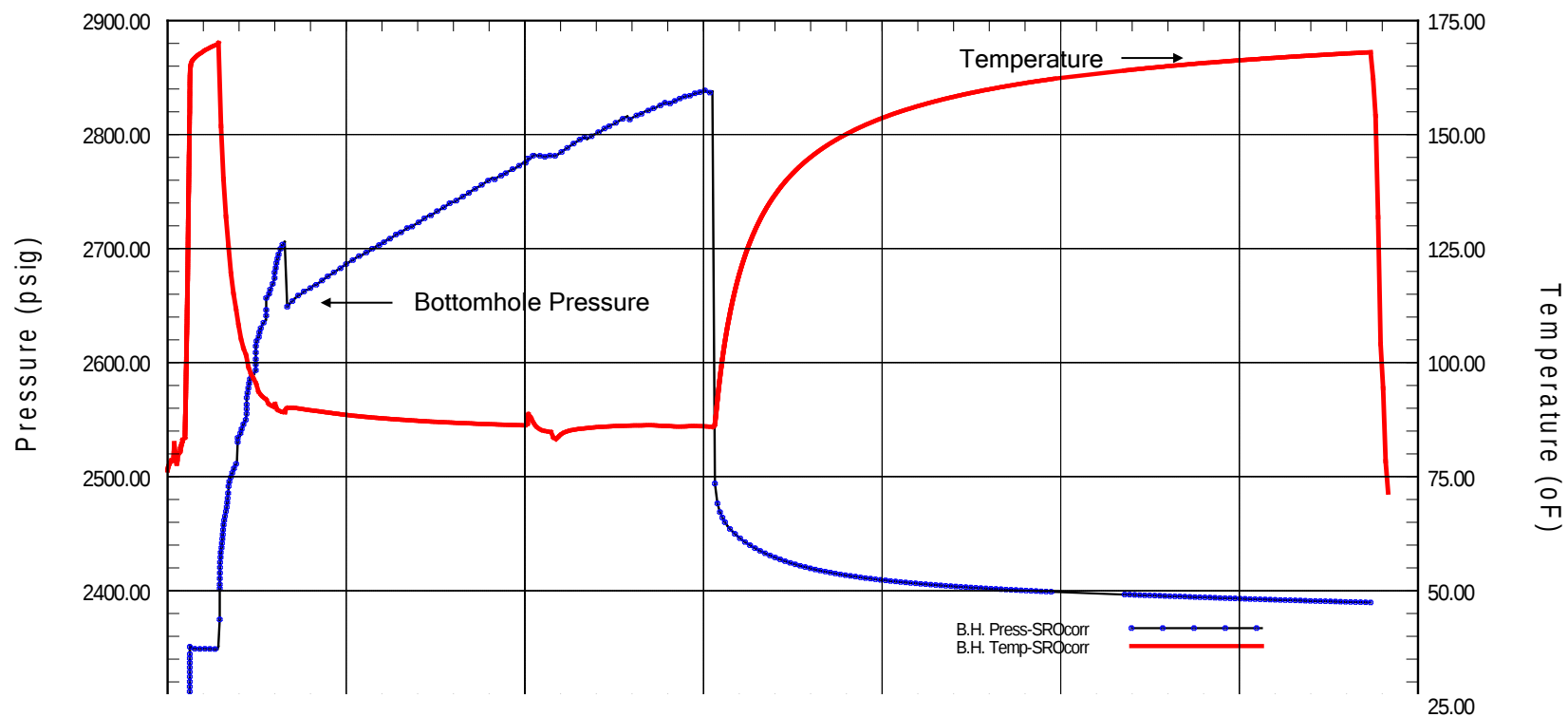
Tusc-Paluxy Injection Test

Test Date 1-Jun-21

Analysis Date 23-Jun-21

Report Number Tusc_Paluxy Falloff

Bottomhole Pressure and Temperature Log



State Louisiana

Parish Caldwell

Field Riverton

Louisiana Green Fuels

Stratigraphic Test Well 1

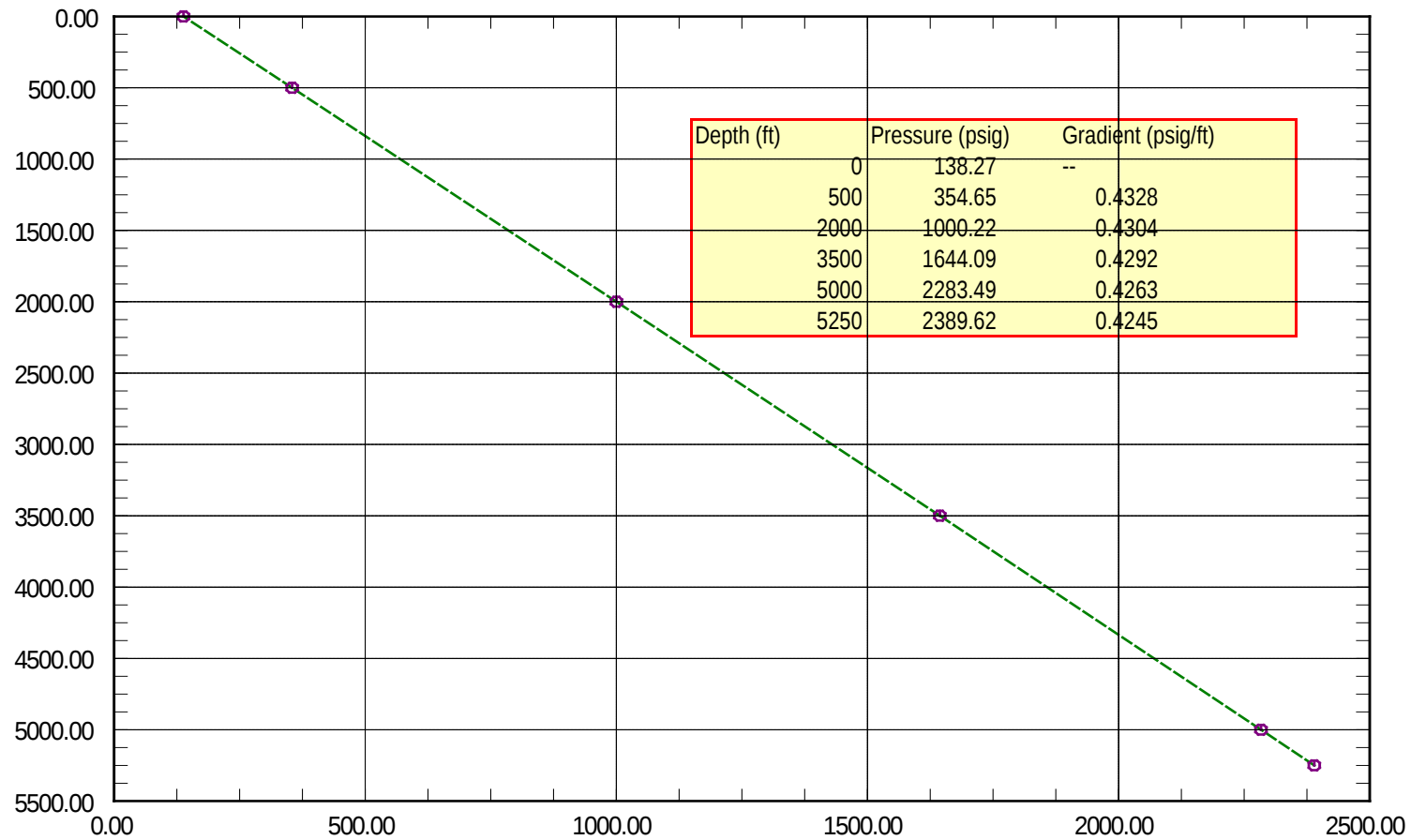
Tusc-Paluxy Injection Test

Test Date 1-Jun-21

Analysis Date 23-Jun-21

Report Number Tusc_Paluxy Falloff

Static Gradient Survey



State Louisiana

Parish Caldwell

Field Riverton

Louisiana Green Fuels

Stratigraphic Test Well 1

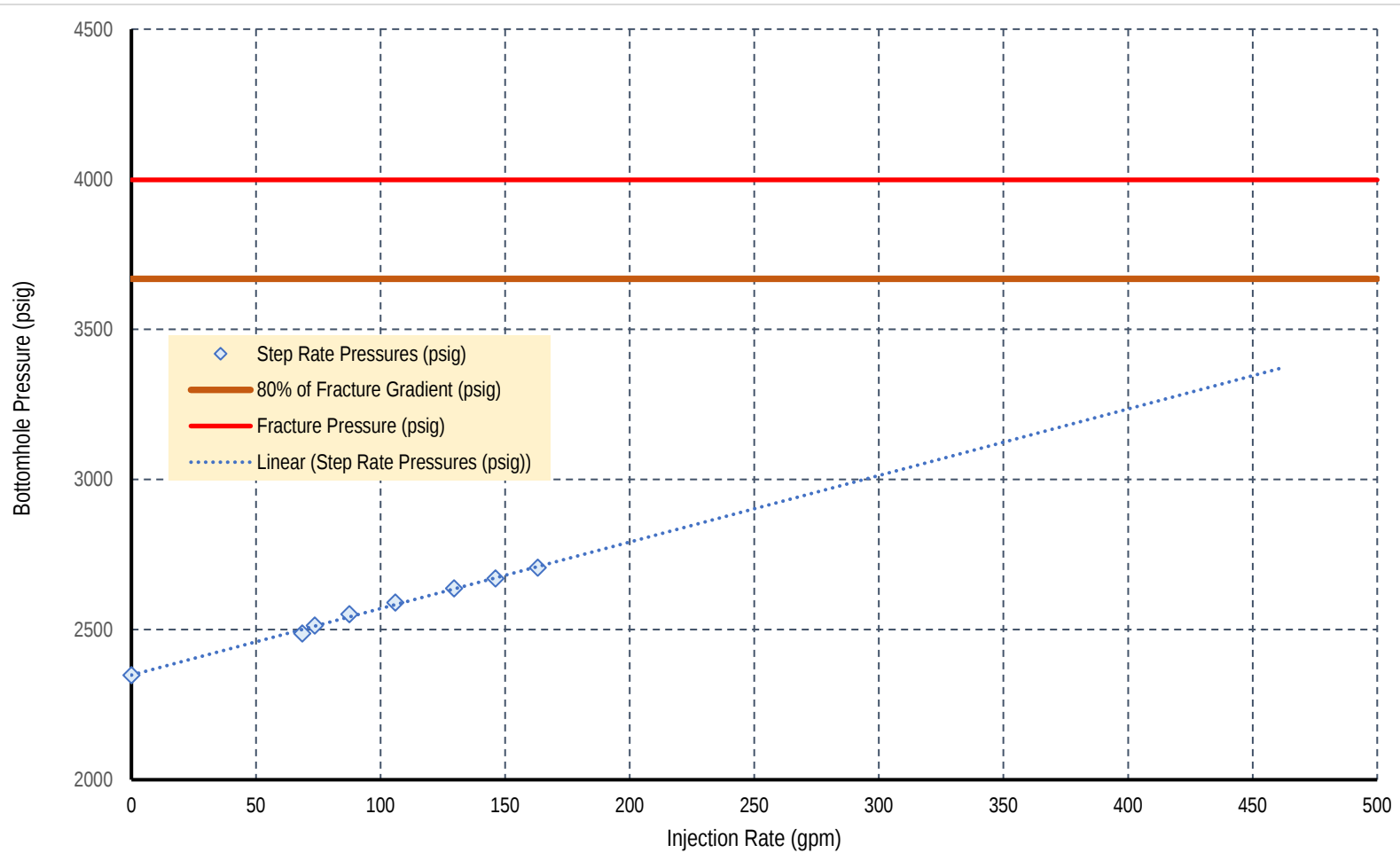
Tusc-Paluxy Injection Test

Test Date 1-Jun-21

Analysis Date 23-Jun-21

Report Number Tusc_Paluxy Falloff

Step Rate Test Graph - Zones 5 - 8



State Louisiana

Parish Caldwell

Field Riverton

Louisiana Green Fuels

Stratigraphic Test Well 1

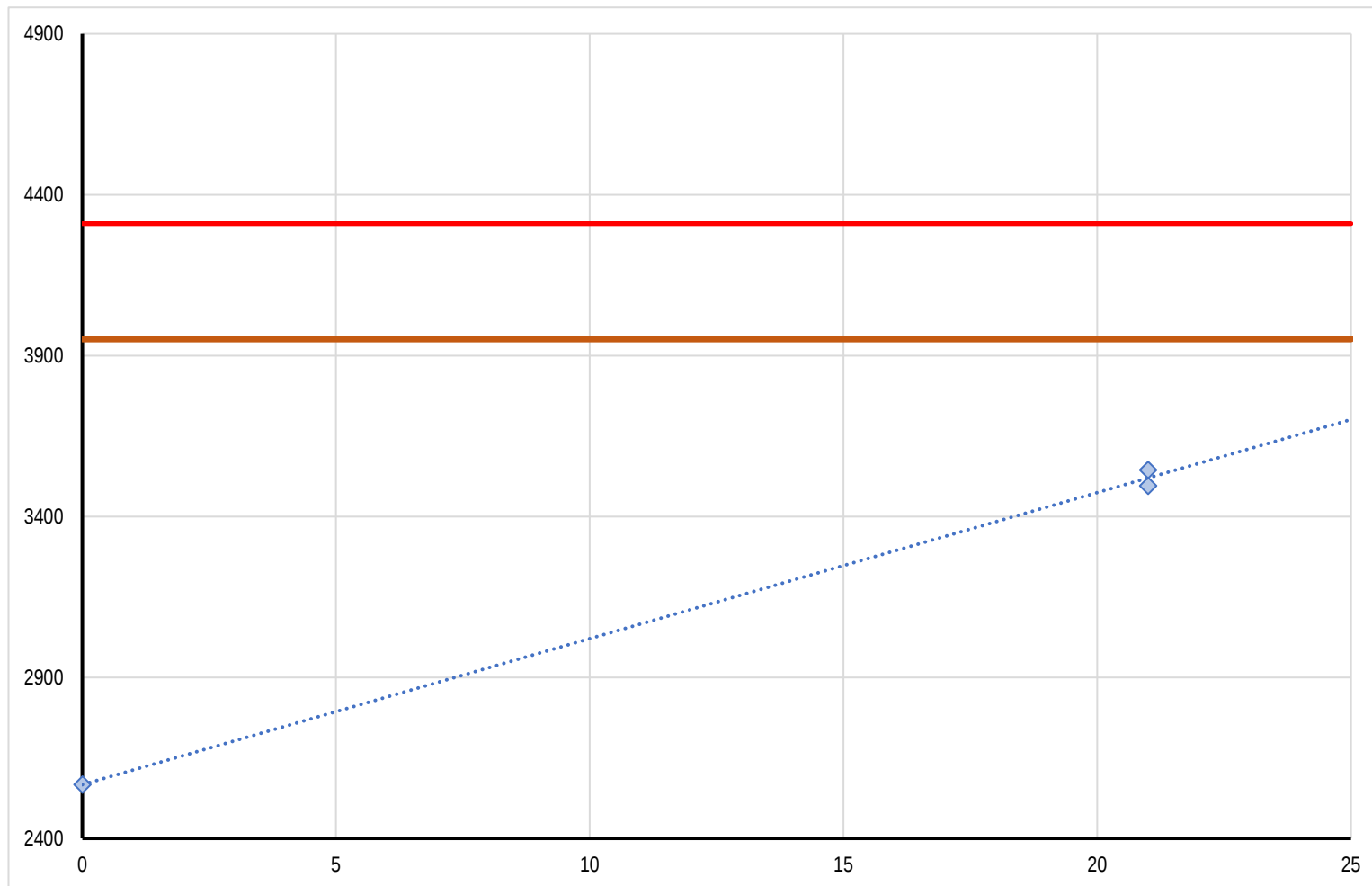
Tusc-Paluxy Injection Test

Test Date 1-Jun-21

Analysis Date 23-Jun-21

Report Number Tusc_Paluxy Falloff

Lower Tuscaloosa Sand Injection Test



State Louisiana

Parish Caldwell

Field Riverton

Louisiana Green Fuels

Stratigraphic Test Well 1

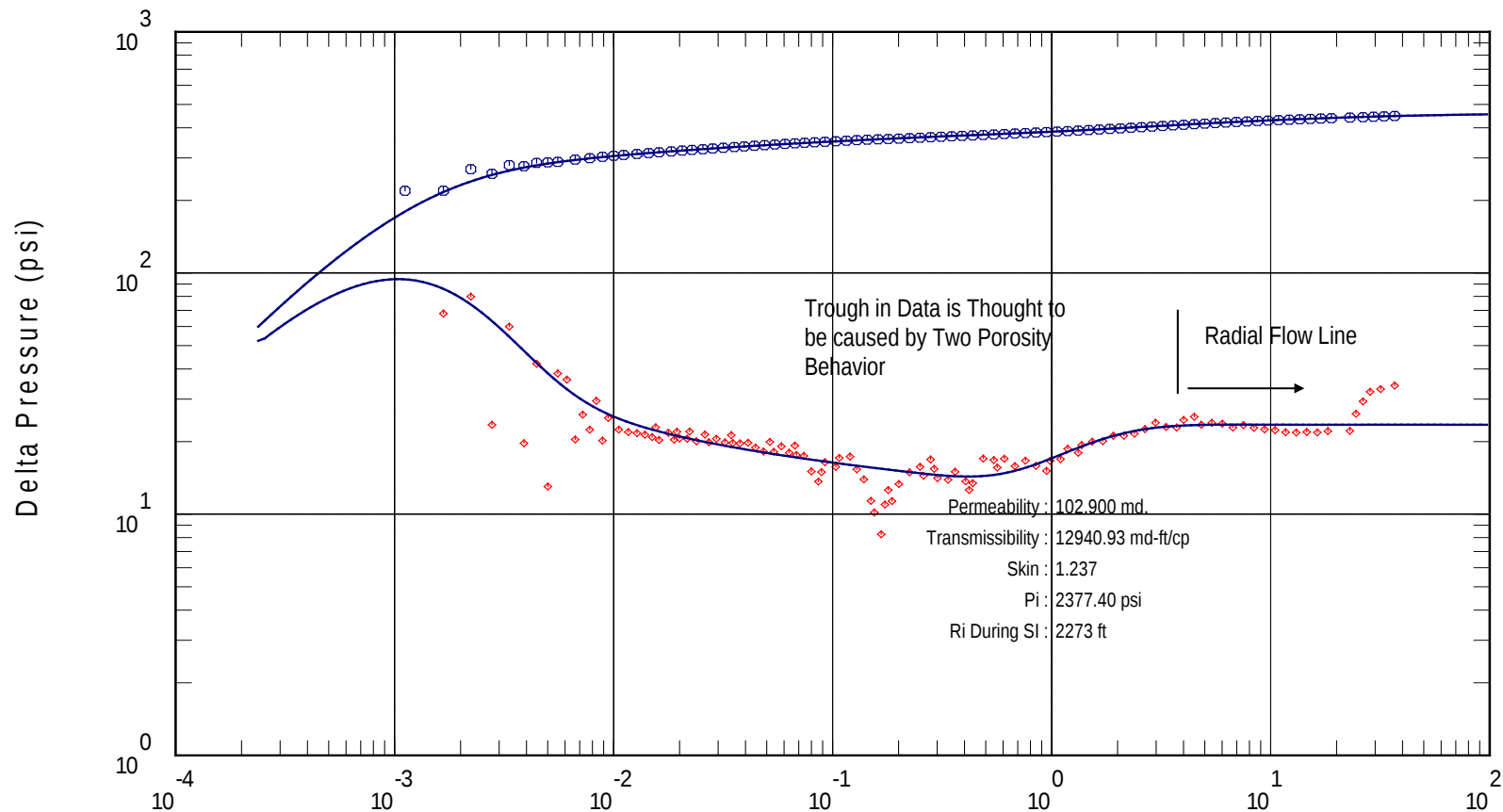
Tusc-Paluxy Injection Test

Test Date 1-Jun-21

Analysis Date 23-Jun-21

Report Number Tusc_Paluxy F

Log-Log Match



State Louisiana

Parish Caldwell

Field Riverton

Louisiana Green Fuels

Stratigraphic Test Well 1

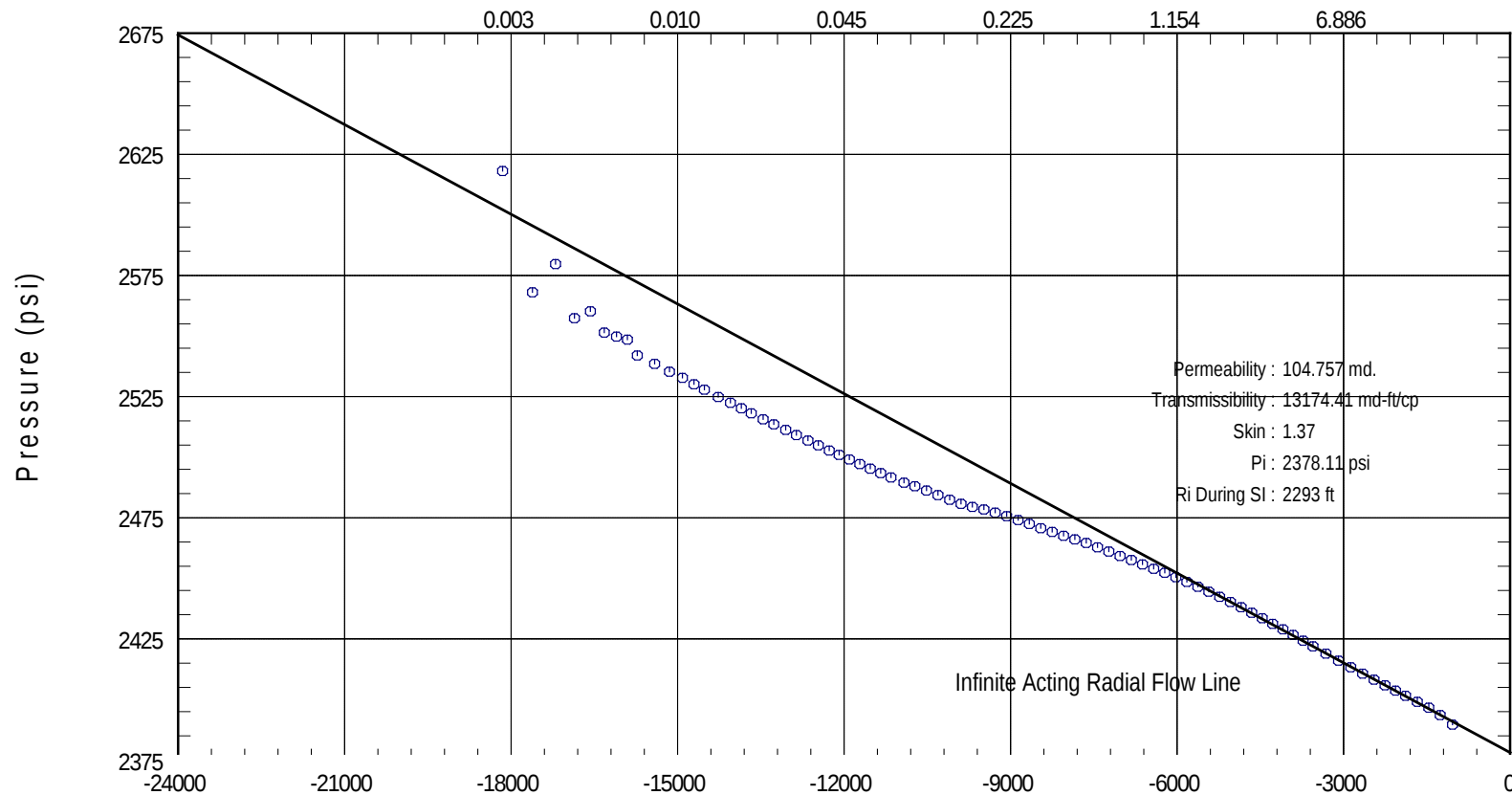
Tusc-Paluxy Injection Test

Test Date 1-Jun-21

Analysis Date 23-Jun-21

Report Number Tusc_Paluxy F

Superposition Analysis



State Louisiana

Parish Caldwell

Field Riverton

Louisiana Green Fuels

Stratigraphic Test Well 1

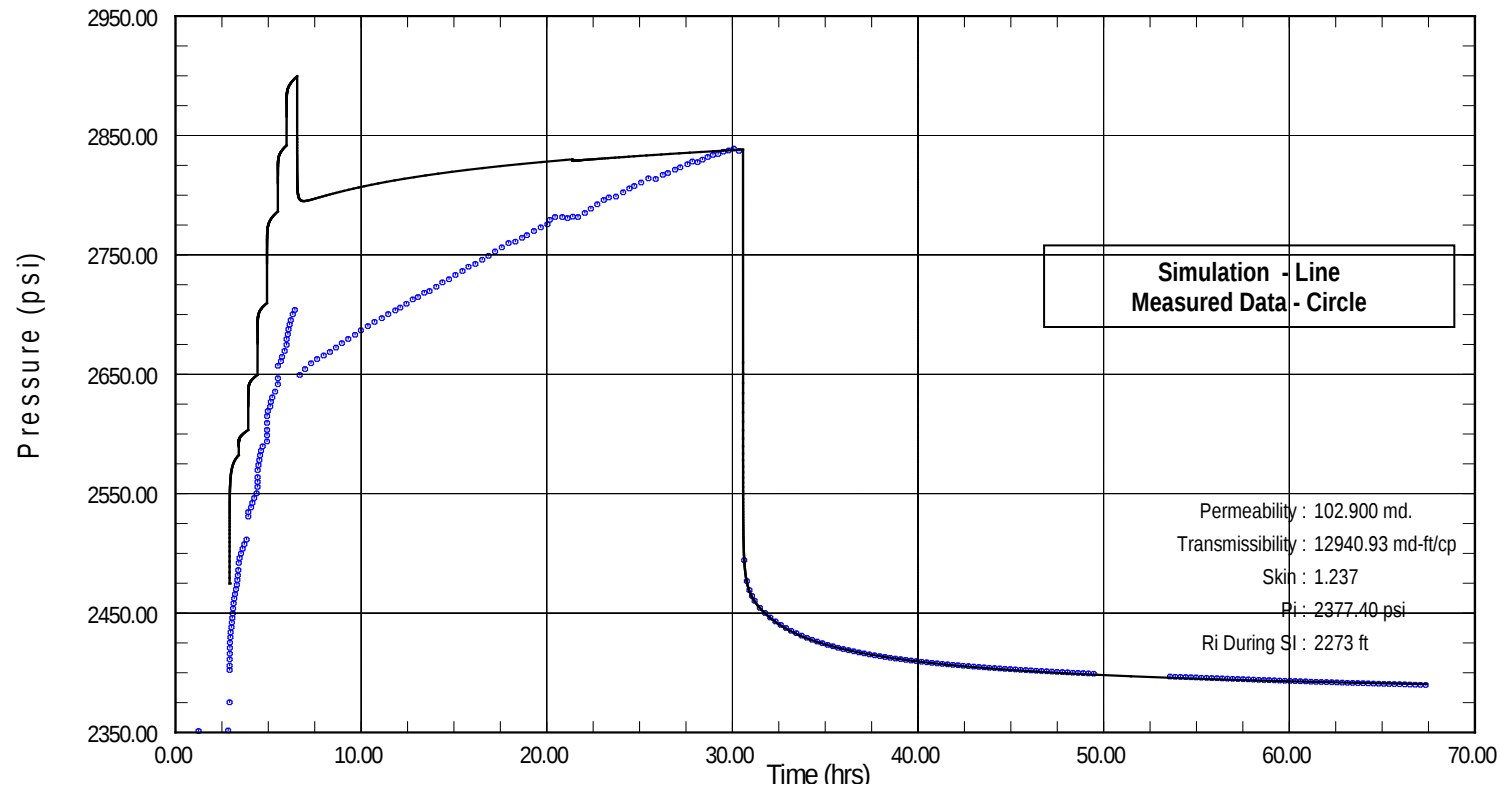
Tusc-Paluxy Injection Test

Test Date 1-Jun-21

Analysis Date 23-Jun-21

Report Number Tusc_Paluxy F

Pressure History Simulation



State Louisiana

Parish Caldwell

Field Riverton

Louisiana Green Fuels

Stratigraphic Test Well 1

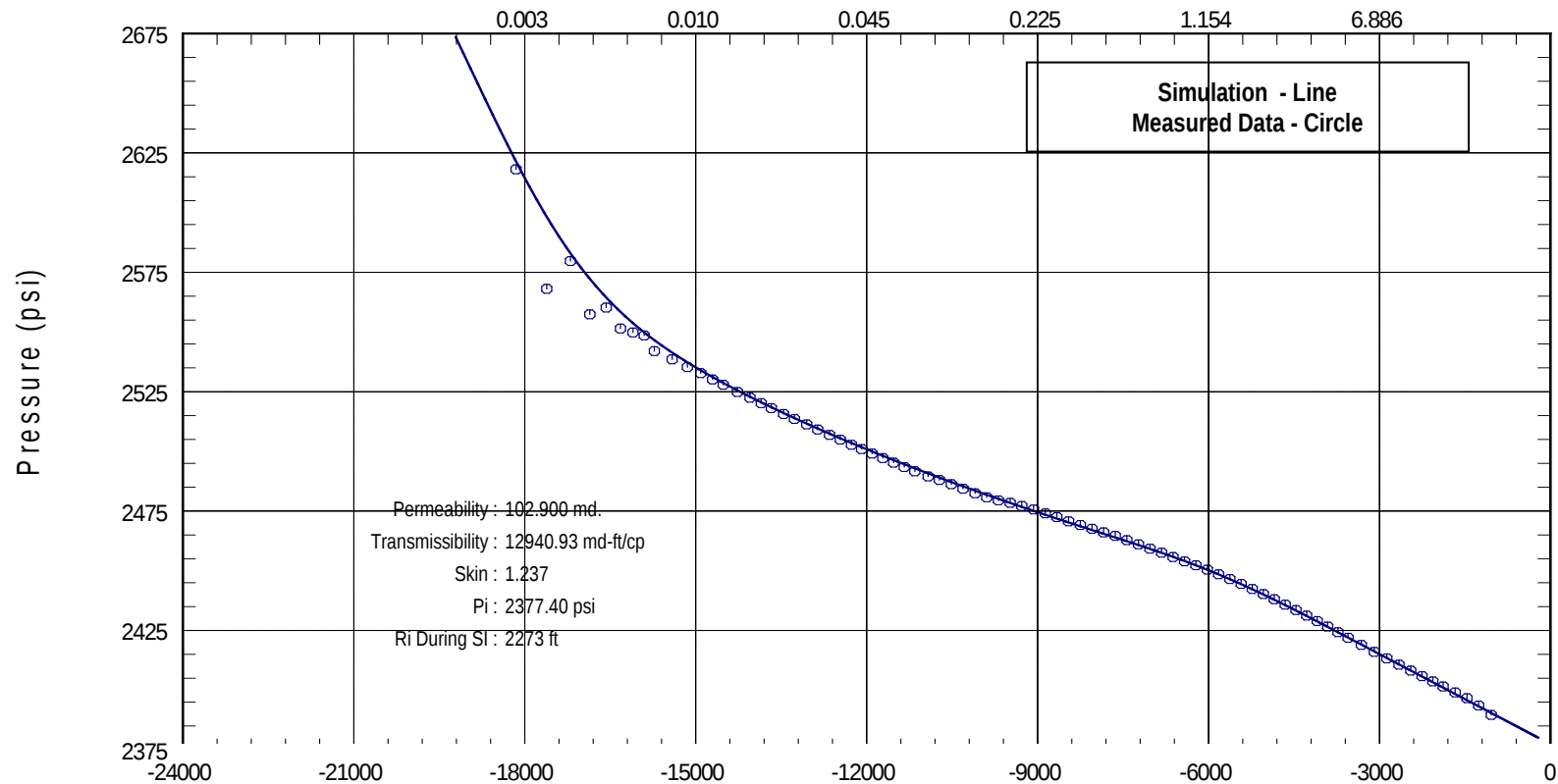
Tusc-Paluxy Injection Test

Test Date 1-Jun-21

Analysis Date 23-Jun-21

Report Number Tusc_Paluxy F

Superposition Simulation



State Louisiana Parish Caldwell Field Riverton	Louisiana Green Fuels Stratigraphic Test Well 1 Tusc-Paluxy Injection Test	Test Date 1-Jun-21 Analysis Date 23-Jun-21 Report Number Tusc_Paluxy F
Input Data		
Porosity (%) [phi]: 22.0% Viscosity (cp) [u] : 0.525 FVF (Rbl/Scf) [B] : 1.000 Total Compressibility (1/psi) [ct] : 6.620E-06	Open Hole Radius (ft) [rw] : 0.281 Net Zone Thickness (ft) [h] : 66 Rate During Period (mscfd) [qn] : 0 ABS(Rate Prior to Period (mscfd)) [qn-1] : 4308	Gauge Depth (ft) : 5250 Top of Perforations : 5250 Bottom of Perforations : 5846 BHT (F) : 170
Log - Log Analysis		
Permeability $kh = 141.2 (\Delta q) (u) (B) (Pd/dp)$ $kh = 141.2 * (4307.528) * (0.525) * (1.000) * (2.13E-2)$ $kh = 6792.478 \text{ md-ft}$ $k = 102.916 \text{ md-ft}$		
Wellbore Storage Coefficient $C(1) = 0.000295 (kh) / (u * [TD/CD]/dt)$ $C(1) = 0.000295 * (6791.40) / (0.525 * 6364.570)$ $C(1) = 0.001$ $CD = 0.8936 C(1) / (\phi * ct * h * rw^2)$ $CD = 0.8936 * 6.0E-4 / (0.22000 * 6.62E-6 * 66 * 0.281^2)$ $CD = 71$		
Skin $S = 1/2 \ln (CDe2s \text{ match} / CD)$ $S = 1/2 \ln (8.38E+02 / (70.62))$ $S = 1.2$		
Radius of Investigation $ri = ((k * SI \text{ time}) / (960 \phi u ct))^{.5}$ $ri = ((102.90 * 36.83) / (960 * 0.220 * 0.52 * 6.62E-6))^{.5}$ $ri = 2273 \text{ ft}$		

State Louisiana Parish Caldwell Field Riverton	Louisiana Green Fuels Stratigraphic Test Well 1 Tusc-Paluxy Injection Test	Test Date 1-Jun-21 Analysis Date 23-Jun-21 Report Number Tusc_Paluxy F												
Input Data <table> <tr> <td>Porosity (%) [phi]: 22.0%</td> <td>Open Hole Radius (ft) [rw]: 0.281</td> <td>Gauge Depth (ft): 5250</td> </tr> <tr> <td>Viscosity (cp) [u]: 0.525</td> <td>Net Zone Thickness (ft) [h]: 66</td> <td>Top of Perforations: 5250</td> </tr> <tr> <td>FVF (Rbl/Scf) [B]: 1.000</td> <td>Rate During Period (mscfd) [qn]: 0</td> <td>Bottom of Perforations: 5846</td> </tr> <tr> <td>Total Compressibility (1/psi) [ct]: 6.620E-06</td> <td>ABS(Rate Prior to Period (mscfd)) [qn-1]: 4308</td> <td>BHT (F): 170</td> </tr> </table>			Porosity (%) [phi]: 22.0%	Open Hole Radius (ft) [rw]: 0.281	Gauge Depth (ft): 5250	Viscosity (cp) [u]: 0.525	Net Zone Thickness (ft) [h]: 66	Top of Perforations: 5250	FVF (Rbl/Scf) [B]: 1.000	Rate During Period (mscfd) [qn]: 0	Bottom of Perforations: 5846	Total Compressibility (1/psi) [ct]: 6.620E-06	ABS(Rate Prior to Period (mscfd)) [qn-1]: 4308	BHT (F): 170
Porosity (%) [phi]: 22.0%	Open Hole Radius (ft) [rw]: 0.281	Gauge Depth (ft): 5250												
Viscosity (cp) [u]: 0.525	Net Zone Thickness (ft) [h]: 66	Top of Perforations: 5250												
FVF (Rbl/Scf) [B]: 1.000	Rate During Period (mscfd) [qn]: 0	Bottom of Perforations: 5846												
Total Compressibility (1/psi) [ct]: 6.620E-06	ABS(Rate Prior to Period (mscfd)) [qn-1]: 4308	BHT (F): 170												
Superposition Analysis Permeability kh = 162.6 (u) (B) / m' kh = 162.6 * (0.525* (1.000) / (1.23E-02) kh = 6913.99 md-ft k = 104.76 md Skin S = 1.1513((P1hr - Pwf / (m' delta q) - log(k / (phi u ct rw^2)) + 3.227) S = 1.1513((382.8 / (1.23E-02 * 4307.528) - log(104.757 / (0.220 * 0.525 * 6.62E-06 * 0.281^2)) + 3.227) S = 1.37 Radial Flow Line Parameters (Superposition Plot) <table> <tr> <td>Start Radial Flow Line (hrs): 3.093</td> <td>RSqr: 1.000</td> </tr> <tr> <td>End Radial Flow Line (hrs): 23.002</td> <td>Number of Points: 50</td> </tr> <tr> <td>Start Radial Flow Line (SF): -4278.201</td> <td>P* (psi): 2378.11</td> </tr> <tr> <td>End Radial Flow Line (SF): -1464.93</td> <td></td> </tr> </table>			Start Radial Flow Line (hrs): 3.093	RSqr: 1.000	End Radial Flow Line (hrs): 23.002	Number of Points: 50	Start Radial Flow Line (SF): -4278.201	P* (psi): 2378.11	End Radial Flow Line (SF): -1464.93					
Start Radial Flow Line (hrs): 3.093	RSqr: 1.000													
End Radial Flow Line (hrs): 23.002	Number of Points: 50													
Start Radial Flow Line (SF): -4278.201	P* (psi): 2378.11													
End Radial Flow Line (SF): -1464.93														

SRO Gauge Falloff Test Data**Louisiana Green Fuels****Stratigraphic Test Well 1 - Tusc-Paluxy Injection Test****State** Louisiana**Test Date** June 1, 2021**Parish** Caldwell**Interpretation Date** June 23, 2021**Field** Riverton**Report Number** Tusc_Paluxy Falloff

Date	Time	Elapsed	Meas. Press.	Delta Time	Delta Press.
(mm-dd-yy)	(hh:mm:ss)	Time (hrs)	(psig)	(Hours)	(psi)

Gauge at 5250 ft

1)	1-Jun-21	17:09:32	30.5756	2618.32	0.00112	219.86990
2)	1-Jun-21	17:09:34	30.5761	2618.11	0.00167	220.07980
3)	1-Jun-21	17:09:36	30.5767	2568.05	0.00223	270.13990
4)	1-Jun-21	17:09:38	30.5772	2579.71	0.00278	258.48000
5)	1-Jun-21	17:09:40	30.5778	2557.37	0.00334	280.81980
6)	1-Jun-21	17:09:42	30.5783	2560.21	0.00389	277.98000
7)	1-Jun-21	17:09:44	30.5789	2551.42	0.00445	286.77000
8)	1-Jun-21	17:09:46	30.5794	2549.77	0.00500	288.41990
9)	1-Jun-21	17:09:48	30.5800	2548.52	0.00556	289.66990
10)	1-Jun-21	17:09:50	30.5806	2541.98	0.00612	296.21000
11)	1-Jun-21	17:09:52	30.5811	2542.02	0.00667	296.16990
12)	1-Jun-21	17:09:54	30.5817	2538.52	0.00723	299.66990
13)	1-Jun-21	17:09:56	30.5822	2538.07	0.00778	300.11990
14)	1-Jun-21	17:09:58	30.5828	2535.28	0.00834	302.90990
15)	1-Jun-21	17:10:00	30.5833	2534.15	0.00889	304.04000
16)	1-Jun-21	17:10:02	30.5839	2532.75	0.00945	305.43990
17)	1-Jun-21	17:10:04	30.5844	2531.19	0.01000	307.00000
18)	1-Jun-21	17:10:06	30.5850	2530.09	0.01056	308.09990
19)	1-Jun-21	17:10:08	30.5856	2528.82	0.01112	309.36990
20)	1-Jun-21	17:10:10	30.5861	2527.86	0.01167	310.32980
21)	1-Jun-21	17:10:12	30.5867	2526.73	0.01223	311.46000
22)	1-Jun-21	17:10:14	30.5872	2525.83	0.01278	312.35990
23)	1-Jun-21	17:10:16	30.5878	2524.84	0.01334	313.34990
24)	1-Jun-21	17:10:18	30.5883	2524.06	0.01389	314.12990
25)	1-Jun-21	17:10:20	30.5889	2523.13	0.01445	315.06010
26)	1-Jun-21	17:10:22	30.5894	2522.45	0.01500	315.74000
27)	1-Jun-21	17:10:24	30.5900	2521.58	0.01556	316.60990
28)	1-Jun-21	17:10:26	30.5906	2520.81	0.01612	317.37990
29)	1-Jun-21	17:10:28	30.5911	2520.18	0.01667	318.01000
30)	1-Jun-21	17:10:30	30.5917	2519.47	0.01723	318.72000
31)	1-Jun-21	17:10:32	30.5922	2518.81	0.01778	319.37990
32)	1-Jun-21	17:10:34	30.5928	2518.11	0.01834	320.07980
33)	1-Jun-21	17:10:36	30.5933	2517.50	0.01889	320.68990
34)	1-Jun-21	17:10:38	30.5939	2516.91	0.01945	321.28000
35)	1-Jun-21	17:10:40	30.5944	2516.29	0.02000	321.89990
36)	1-Jun-21	17:10:42	30.5950	2515.64	0.02056	322.55000

SRO Gauge Falloff Test Data**Louisiana Green Fuels****Stratigraphic Test Well 1 - Tusc-Paluxy Injection Test****State** Louisiana**Test Date** June 1, 2021**Parish** Caldwell**Interpretation Date** June 23, 2021**Field** Riverton**Report Number** Tusc_Paluxy Falloff

	Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psig)	Delta Time (Hours)	Delta Press. (psi)
37)	1-Jun-21	17:10:44	30.5956	2515.27	0.02112	322.91990
38)	1-Jun-21	17:10:46	30.5961	2514.66	0.02167	323.53000
39)	1-Jun-21	17:10:48	30.5967	2514.17	0.02223	324.02000
40)	1-Jun-21	17:10:50	30.5972	2513.55	0.02278	324.63990
41)	1-Jun-21	17:10:52	30.5978	2513.07	0.02334	325.11990
42)	1-Jun-21	17:10:54	30.5983	2512.64	0.02389	325.55000
43)	1-Jun-21	17:10:56	30.5989	2512.16	0.02445	326.03000
44)	1-Jun-21	17:10:58	30.5994	2511.67	0.02500	326.52000
45)	1-Jun-21	17:11:00	30.6000	2511.27	0.02556	326.91990
46)	1-Jun-21	17:11:02	30.6006	2510.77	0.02612	327.41990
47)	1-Jun-21	17:11:04	30.6011	2510.31	0.02667	327.87990
48)	1-Jun-21	17:11:06	30.6017	2509.87	0.02723	328.31980
49)	1-Jun-21	17:11:08	30.6022	2509.55	0.02778	328.63990
50)	1-Jun-21	17:11:10	30.6028	2509.12	0.02834	329.06980
51)	1-Jun-21	17:11:12	30.6033	2508.73	0.02889	329.46000
52)	1-Jun-21	17:11:14	30.6039	2508.34	0.02945	329.84990
53)	1-Jun-21	17:11:16	30.6044	2507.99	0.03000	330.20000
54)	1-Jun-21	17:11:18	30.6050	2507.55	0.03056	330.63990
55)	1-Jun-21	17:11:20	30.6056	2507.29	0.03112	330.89990
56)	1-Jun-21	17:11:22	30.6061	2506.88	0.03167	331.31010
57)	1-Jun-21	17:11:24	30.6067	2506.51	0.03223	331.67990
58)	1-Jun-21	17:11:26	30.6072	2506.20	0.03278	331.99000
59)	1-Jun-21	17:11:28	30.6078	2505.92	0.03334	332.27000
60)	1-Jun-21	17:11:30	30.6083	2505.56	0.03389	332.62990
61)	1-Jun-21	17:11:32	30.6089	2505.13	0.03445	333.06010
62)	1-Jun-21	17:11:34	30.6094	2504.89	0.03500	333.30000
63)	1-Jun-21	17:11:36	30.6100	2504.54	0.03556	333.64990
64)	1-Jun-21	17:11:38	30.6106	2504.29	0.03612	333.89990
65)	1-Jun-21	17:11:40	30.6111	2503.94	0.03667	334.25000
66)	1-Jun-21	17:11:42	30.6117	2503.59	0.03723	334.59990
67)	1-Jun-21	17:11:44	30.6122	2503.36	0.03778	334.82980
68)	1-Jun-21	17:11:46	30.6128	2503.08	0.03834	335.10990
69)	1-Jun-21	17:11:48	30.6133	2502.75	0.03889	335.43990
70)	1-Jun-21	17:11:50	30.6139	2502.58	0.03945	335.60990
71)	1-Jun-21	17:11:52	30.6144	2502.25	0.04000	335.93990
72)	1-Jun-21	17:11:54	30.6150	2501.95	0.04056	336.24000
73)	1-Jun-21	17:11:56	30.6156	2501.69	0.04112	336.50000

SRO Gauge Falloff Test Data**Louisiana Green Fuels****Stratigraphic Test Well 1 - Tusc-Paluxy Injection Test****State** Louisiana**Test Date** June 1, 2021**Parish** Caldwell**Interpretation Date** June 23, 2021**Field** Riverton**Report Number** Tusc_Paluxy Falloff

	Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psig)	Delta Time (Hours)	Delta Press. (psi)
74)	1-Jun-21	17:11:58	30.6161	2501.46	0.04167	336.73000
75)	1-Jun-21	17:12:00	30.6167	2501.20	0.04223	336.99000
76)	1-Jun-21	17:12:02	30.6172	2500.95	0.04278	337.24000
77)	1-Jun-21	17:12:04	30.6178	2500.67	0.04334	337.52000
78)	1-Jun-21	17:12:06	30.6183	2500.44	0.04389	337.75000
79)	1-Jun-21	17:12:08	30.6189	2500.21	0.04445	337.98000
80)	1-Jun-21	17:12:10	30.6194	2499.93	0.04500	338.26000
81)	1-Jun-21	17:12:12	30.6200	2499.72	0.04556	338.47000
82)	1-Jun-21	17:12:14	30.6206	2499.55	0.04612	338.63990
83)	1-Jun-21	17:12:16	30.6211	2499.23	0.04667	338.96000
84)	1-Jun-21	17:12:18	30.6217	2499.06	0.04723	339.12990
85)	1-Jun-21	17:12:20	30.6222	2498.78	0.04778	339.40990
86)	1-Jun-21	17:12:22	30.6228	2498.58	0.04834	339.60990
87)	1-Jun-21	17:12:24	30.6233	2498.47	0.04889	339.72000
88)	1-Jun-21	17:12:26	30.6239	2498.12	0.04945	340.06980
89)	1-Jun-21	17:12:28	30.6244	2498.01	0.05000	340.17990
90)	1-Jun-21	17:12:30	30.6250	2497.80	0.05056	340.38990
91)	1-Jun-21	17:12:32	30.6256	2497.56	0.05112	340.62990
92)	1-Jun-21	17:12:34	30.6261	2497.37	0.05167	340.81980
93)	1-Jun-21	17:12:36	30.6267	2497.16	0.05223	341.03000
94)	1-Jun-21	17:12:38	30.6272	2496.95	0.05278	341.24000
95)	1-Jun-21	17:12:40	30.6278	2496.71	0.05334	341.48000
96)	1-Jun-21	17:12:42	30.6283	2496.54	0.05389	341.64990
97)	1-Jun-21	17:12:44	30.6289	2496.36	0.05445	341.82980
98)	1-Jun-21	17:12:46	30.6294	2496.22	0.05500	341.97000
99)	1-Jun-21	17:12:48	30.6300	2496.02	0.05556	342.16990
100)	1-Jun-21	17:12:50	30.6306	2495.83	0.05612	342.35990
101)	1-Jun-21	17:12:52	30.6311	2495.66	0.05667	342.53000
102)	1-Jun-21	17:12:54	30.6317	2495.49	0.05723	342.70000
103)	1-Jun-21	17:12:56	30.6322	2495.26	0.05778	342.92990
104)	1-Jun-21	17:12:58	30.6328	2495.09	0.05834	343.09990
105)	1-Jun-21	17:13:00	30.6333	2494.95	0.05889	343.24000
106)	1-Jun-21	17:13:02	30.6339	2494.72	0.05945	343.47000
107)	1-Jun-21	17:13:04	30.6344	2494.58	0.06000	343.60990
108)	1-Jun-21	17:13:06	30.6350	2494.39	0.06056	343.80000
109)	1-Jun-21	17:13:08	30.6356	2494.23	0.06112	343.96000
110)	1-Jun-21	17:13:10	30.6361	2494.07	0.06167	344.11990

SRO Gauge Falloff Test Data**Louisiana Green Fuels****Stratigraphic Test Well 1 - Tusc-Paluxy Injection Test****State** Louisiana**Test Date** June 1, 2021**Parish** Caldwell**Interpretation Date** June 23, 2021**Field** Riverton**Report Number** Tusc_Paluxy Falloff

	Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psig)	Delta Time (Hours)	Delta Press. (psi)
111)	1-Jun-21	17:13:12	30.6367	2493.96	0.06223	344.23000
112)	1-Jun-21	17:13:14	30.6372	2493.73	0.06278	344.46000
113)	1-Jun-21	17:13:16	30.6378	2493.51	0.06334	344.67990
114)	1-Jun-21	17:13:18	30.6383	2493.42	0.06389	344.77000
115)	1-Jun-21	17:13:20	30.6389	2493.25	0.06445	344.93990
116)	1-Jun-21	17:13:22	30.6394	2493.15	0.06500	345.04000
117)	1-Jun-21	17:13:24	30.6400	2492.99	0.06556	345.20000
118)	1-Jun-21	17:13:26	30.6406	2492.76	0.06612	345.42990
119)	1-Jun-21	17:13:28	30.6411	2492.66	0.06667	345.53000
120)	1-Jun-21	17:13:30	30.6417	2492.46	0.06723	345.73000
121)	1-Jun-21	17:13:32	30.6422	2492.30	0.06778	345.88990
122)	1-Jun-21	17:13:34	30.6428	2492.18	0.06834	346.01000
123)	1-Jun-21	17:13:36	30.6433	2492.01	0.06889	346.17990
124)	1-Jun-21	17:13:38	30.6439	2491.88	0.06945	346.31010
125)	1-Jun-21	17:13:40	30.6444	2491.78	0.07000	346.40990
126)	1-Jun-21	17:13:42	30.6450	2491.64	0.07056	346.55000
127)	1-Jun-21	17:13:44	30.6456	2491.46	0.07112	346.73000
128)	1-Jun-21	17:13:46	30.6461	2491.35	0.07167	346.83980
129)	1-Jun-21	17:13:48	30.6467	2491.17	0.07223	347.02000
130)	1-Jun-21	17:13:50	30.6472	2491.00	0.07278	347.18990
131)	1-Jun-21	17:13:52	30.6478	2490.98	0.07334	347.21000
132)	1-Jun-21	17:13:54	30.6483	2490.78	0.07389	347.40990
133)	1-Jun-21	17:13:56	30.6489	2490.69	0.07445	347.50000
134)	1-Jun-21	17:14:04	30.6511	2490.14	0.07667	348.05000
135)	1-Jun-21	17:14:16	30.6544	2489.48	0.08000	348.71000
136)	1-Jun-21	17:14:26	30.6572	2488.99	0.08278	349.20000
137)	1-Jun-21	17:14:38	30.6606	2488.44	0.08612	349.75000
138)	1-Jun-21	17:14:48	30.6633	2488.02	0.08889	350.16990
139)	1-Jun-21	17:15:00	30.6667	2487.42	0.09223	350.77000
140)	1-Jun-21	17:15:14	30.6706	2486.74	0.09612	351.45000
141)	1-Jun-21	17:15:26	30.6739	2486.24	0.09945	351.95000
142)	1-Jun-21	17:15:40	30.6778	2485.59	0.10334	352.59990
143)	1-Jun-21	17:15:54	30.6817	2485.06	0.10723	353.12990
144)	1-Jun-21	17:16:08	30.6856	2484.35	0.11112	353.83980
145)	1-Jun-21	17:16:24	30.6900	2483.71	0.11556	354.48000
146)	1-Jun-21	17:16:40	30.6944	2483.05	0.12000	355.13990
147)	1-Jun-21	17:16:56	30.6989	2482.43	0.12445	355.76000

SRO Gauge Falloff Test Data**Louisiana Green Fuels****Stratigraphic Test Well 1 - Tusc-Paluxy Injection Test****State** Louisiana**Test Date** June 1, 2021**Parish** Caldwell**Interpretation Date** June 23, 2021**Field** Riverton**Report Number** Tusc_Paluxy Falloff

	Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psig)	Delta Time (Hours)	Delta Press. (psi)
148)	1-Jun-21	17:17:12	30.7033	2481.85	0.12889	356.33980
149)	1-Jun-21	17:17:30	30.7083	2481.31	0.13389	356.87990
150)	1-Jun-21	17:17:48	30.7133	2480.75	0.13889	357.43990
151)	1-Jun-21	17:18:06	30.7183	2480.31	0.14389	357.87990
152)	1-Jun-21	17:18:26	30.7239	2479.79	0.14945	358.39990
153)	1-Jun-21	17:18:46	30.7294	2479.47	0.15500	358.72000
154)	1-Jun-21	17:19:08	30.7356	2479.03	0.16112	359.15990
155)	1-Jun-21	17:19:28	30.7411	2478.76	0.16667	359.42990
156)	1-Jun-21	17:19:52	30.7478	2478.43	0.17334	359.76000
157)	1-Jun-21	17:20:14	30.7539	2477.95	0.17945	360.24000
158)	1-Jun-21	17:20:40	30.7611	2477.50	0.18667	360.68990
159)	1-Jun-21	17:21:04	30.7678	2477.11	0.19334	361.07980
160)	1-Jun-21	17:21:30	30.7750	2476.68	0.20056	361.51000
161)	1-Jun-21	17:21:58	30.7828	2476.12	0.20834	362.06980
162)	1-Jun-21	17:22:26	30.7906	2475.66	0.21612	362.53000
163)	1-Jun-21	17:22:56	30.7989	2475.12	0.22445	363.06980
164)	1-Jun-21	17:23:26	30.8072	2474.56	0.23278	363.62990
165)	1-Jun-21	17:23:58	30.8161	2474.05	0.24167	364.13990
166)	1-Jun-21	17:24:30	30.8250	2473.50	0.25056	364.68990
167)	1-Jun-21	17:25:04	30.8344	2472.91	0.26000	365.28000
168)	1-Jun-21	17:25:38	30.8439	2472.46	0.26945	365.73000
169)	1-Jun-21	17:26:16	30.8544	2471.80	0.28000	366.38990
170)	1-Jun-21	17:26:54	30.8650	2471.20	0.29056	366.99000
171)	1-Jun-21	17:27:32	30.8756	2470.69	0.30112	367.50000
172)	1-Jun-21	17:28:14	30.8872	2470.17	0.31278	368.02000
173)	1-Jun-21	17:28:56	30.8989	2469.67	0.32445	368.52000
174)	1-Jun-21	17:29:40	30.9111	2469.16	0.33667	369.03000
175)	1-Jun-21	17:30:26	30.9239	2468.65	0.34945	369.54000
176)	1-Jun-21	17:31:12	30.9367	2468.10	0.36223	370.08980
177)	1-Jun-21	17:32:02	30.9506	2467.56	0.37612	370.62990
178)	1-Jun-21	17:32:52	30.9644	2467.07	0.39000	371.11990
179)	1-Jun-21	17:33:46	30.9794	2466.53	0.40500	371.65990
180)	1-Jun-21	17:34:40	30.9944	2466.07	0.42000	372.11990
181)	1-Jun-21	17:35:38	31.0106	2465.61	0.43612	372.57980
182)	1-Jun-21	17:36:36	31.0267	2465.09	0.45223	373.09990
183)	1-Jun-21	17:37:38	31.0439	2464.60	0.46945	373.58980
184)	1-Jun-21	17:38:42	31.0617	2464.05	0.48723	374.13990

SRO Gauge Falloff Test Data**Louisiana Green Fuels****Stratigraphic Test Well 1 - Tusc-Paluxy Injection Test****State** Louisiana**Test Date** June 1, 2021**Parish** Caldwell**Interpretation Date** June 23, 2021**Field** Riverton**Report Number** Tusc_Paluxy Falloff

	Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psig)	Delta Time (Hours)	Delta Press. (psi)
185)	1-Jun-21	17:39:48	31.0800	2463.36	0.50556	374.82980
186)	1-Jun-21	17:40:56	31.0989	2462.80	0.52445	375.38990
187)	1-Jun-21	17:42:08	31.1189	2462.19	0.54445	376.00000
188)	1-Jun-21	17:43:20	31.1389	2461.59	0.56445	376.59990
189)	1-Jun-21	17:44:38	31.1606	2461.06	0.58612	377.12990
190)	1-Jun-21	17:45:56	31.1822	2460.49	0.60778	377.70000
191)	1-Jun-21	17:47:20	31.2056	2459.83	0.63112	378.35990
192)	1-Jun-21	17:48:44	31.2289	2459.22	0.65445	378.97000
193)	1-Jun-21	17:50:14	31.2539	2458.65	0.67945	379.54000
194)	1-Jun-21	17:51:46	31.2794	2458.07	0.70500	380.11990
195)	1-Jun-21	17:53:22	31.3061	2457.56	0.73167	380.62990
196)	1-Jun-21	17:55:00	31.3333	2456.99	0.75889	381.20000
197)	1-Jun-21	17:56:44	31.3622	2456.36	0.78778	381.82980
198)	1-Jun-21	17:58:30	31.3917	2455.74	0.81723	382.45000
199)	1-Jun-21	18:00:20	31.4222	2455.13	0.84778	383.06010
200)	1-Jun-21	18:02:16	31.4544	2454.60	0.88000	383.58980
201)	1-Jun-21	18:04:16	31.4878	2453.93	0.91334	384.26000
202)	1-Jun-21	18:06:18	31.5217	2453.49	0.94723	384.70000
203)	1-Jun-21	18:08:28	31.5578	2452.85	0.98334	385.33980
204)	1-Jun-21	18:10:40	31.5944	2452.30	1.02000	385.88990
205)	1-Jun-21	18:12:58	31.6328	2451.67	1.05834	386.52000
206)	1-Jun-21	18:15:22	31.6728	2451.06	1.09834	387.12990
207)	1-Jun-21	18:17:52	31.7144	2450.46	1.14000	387.73000
208)	1-Jun-21	18:20:26	31.7572	2449.79	1.18278	388.39990
209)	1-Jun-21	18:23:06	31.8017	2449.14	1.22723	389.05000
210)	1-Jun-21	18:25:52	31.8478	2448.53	1.27334	389.65990
211)	1-Jun-21	18:28:46	31.8961	2447.89	1.32167	390.30000
212)	1-Jun-21	18:31:44	31.9456	2447.26	1.37112	390.92990
213)	1-Jun-21	18:34:50	31.9972	2446.53	1.42278	391.65990
214)	1-Jun-21	18:38:04	32.0511	2445.88	1.47667	392.31010
215)	1-Jun-21	18:41:24	32.1067	2445.12	1.53223	393.06980
216)	1-Jun-21	18:44:52	32.1644	2444.48	1.59000	393.71000
217)	1-Jun-21	18:48:26	32.2239	2443.77	1.64945	394.41990
218)	1-Jun-21	18:52:10	32.2861	2443.12	1.71167	395.06980
219)	1-Jun-21	18:56:02	32.3506	2442.37	1.77612	395.81980
220)	1-Jun-21	19:00:04	32.4178	2441.70	1.84334	396.49000
221)	1-Jun-21	19:04:12	32.4867	2440.95	1.91223	397.24000

SRO Gauge Falloff Test Data**Louisiana Green Fuels****Stratigraphic Test Well 1 - Tusc-Paluxy Injection Test****State** Louisiana**Test Date** June 1, 2021**Parish** Caldwell**Interpretation Date** June 23, 2021**Field** Riverton**Report Number** Tusc_Paluxy Falloff

	Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psig)	Delta Time (Hours)	Delta Press. (psi)
222)	1-Jun-21	19:08:32	32.5589	2440.24	1.98445	397.95000
223)	1-Jun-21	19:13:02	32.6339	2439.52	2.05945	398.66990
224)	1-Jun-21	19:17:40	32.7111	2438.78	2.13667	399.40990
225)	1-Jun-21	19:22:30	32.7917	2438.07	2.21723	400.11990
226)	1-Jun-21	19:27:30	32.8750	2437.26	2.30056	400.92990
227)	1-Jun-21	19:32:42	32.9617	2436.54	2.38723	401.64990
228)	1-Jun-21	19:38:06	33.0517	2435.79	2.47723	402.39990
229)	1-Jun-21	19:43:42	33.1450	2435.06	2.57056	403.12990
230)	1-Jun-21	19:49:30	33.2417	2434.35	2.66723	403.83980
231)	1-Jun-21	19:55:32	33.3422	2433.54	2.76778	404.64990
232)	1-Jun-21	20:01:48	33.4467	2432.82	2.87223	405.36990
233)	1-Jun-21	20:08:18	33.5550	2432.04	2.98056	406.14990
234)	1-Jun-21	20:15:02	33.6672	2431.22	3.09278	406.97000
235)	1-Jun-21	20:22:00	33.7833	2430.47	3.20889	407.72000
236)	1-Jun-21	20:29:16	33.9045	2429.63	3.33001	408.56010
237)	1-Jun-21	20:36:48	34.0300	2428.95	3.45556	409.24000
238)	1-Jun-21	20:44:36	34.1600	2428.12	3.58556	410.06980
239)	1-Jun-21	20:52:42	34.2950	2427.35	3.72056	410.83980
240)	1-Jun-21	21:01:06	34.4350	2426.63	3.86056	411.56010
241)	1-Jun-21	21:09:50	34.5806	2425.81	4.00612	412.37990
242)	1-Jun-21	21:18:54	34.7317	2425.04	4.15723	413.14990
243)	1-Jun-21	21:28:18	34.8883	2424.28	4.31389	413.90990
244)	1-Jun-21	21:38:02	35.0506	2423.46	4.47612	414.73000
245)	1-Jun-21	21:48:08	35.2189	2422.67	4.64445	415.52000
246)	1-Jun-21	21:58:38	35.3939	2421.93	4.81945	416.26000
247)	1-Jun-21	22:09:32	35.5756	2421.19	5.00112	417.00000
248)	1-Jun-21	22:20:50	35.7639	2420.42	5.18945	417.77000
249)	1-Jun-21	22:32:34	35.9594	2419.67	5.38500	418.52000
250)	1-Jun-21	22:44:44	36.1622	2418.94	5.58778	419.25000
251)	1-Jun-21	22:57:22	36.3728	2418.21	5.79834	419.98000
252)	1-Jun-21	23:10:28	36.5911	2417.42	6.01667	420.77000
253)	1-Jun-21	23:24:04	36.8178	2416.77	6.24334	421.41990
254)	1-Jun-21	23:38:10	37.0528	2416.02	6.47834	422.16990
255)	1-Jun-21	23:52:48	37.2967	2415.33	6.72223	422.85990
256)	2-Jun-21	0:08:00	37.5500	2414.66	6.97556	423.53000
257)	2-Jun-21	0:23:46	37.8128	2413.96	7.23834	424.23000
258)	2-Jun-21	0:40:08	38.0856	2413.29	7.51112	424.89990

SRO Gauge Falloff Test Data**Louisiana Green Fuels****Stratigraphic Test Well 1 - Tusc-Paluxy Injection Test****State** Louisiana**Test Date** June 1, 2021**Parish** Caldwell**Interpretation Date** June 23, 2021**Field** Riverton**Report Number** Tusc_Paluxy Falloff

	Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psig)	Delta Time (Hours)	Delta Press. (psi)
259)	2-Jun-21	0:57:06	38.3683	2412.60	7.79389	425.58980
260)	2-Jun-21	1:14:44	38.6622	2411.97	8.08778	426.22000
261)	2-Jun-21	1:33:00	38.9667	2411.29	8.39223	426.89990
262)	2-Jun-21	1:51:58	39.2828	2410.67	8.70834	427.52000
263)	2-Jun-21	2:11:38	39.6106	2410.02	9.03612	428.16990
264)	2-Jun-21	2:32:04	39.9511	2409.37	9.37667	428.81980
265)	2-Jun-21	2:53:16	40.3044	2408.80	9.73000	429.38990
266)	2-Jun-21	3:15:14	40.6706	2408.18	10.09612	430.01000
267)	2-Jun-21	3:38:04	41.0511	2407.60	10.47667	430.58980
268)	2-Jun-21	4:01:44	41.4456	2407.01	10.87112	431.17990
269)	2-Jun-21	4:26:18	41.8550	2406.40	11.28056	431.79000
270)	2-Jun-21	4:51:48	42.2800	2405.86	11.70556	432.32980
271)	2-Jun-21	5:18:16	42.7211	2405.31	12.14667	432.87990
272)	2-Jun-21	5:45:42	43.1783	2404.72	12.60389	433.47000
273)	2-Jun-21	6:14:12	43.6533	2404.18	13.07889	434.01000
274)	2-Jun-21	6:43:44	44.1456	2403.66	13.57112	434.53000
275)	2-Jun-21	7:14:24	44.6567	2403.11	14.08223	435.07980
276)	2-Jun-21	7:46:14	45.1872	2402.57	14.61278	435.61990
277)	2-Jun-21	8:19:16	45.7378	2402.08	15.16334	436.10990
278)	2-Jun-21	8:53:32	46.3089	2401.53	15.73445	436.65990
279)	2-Jun-21	9:29:06	46.9017	2401.03	16.32723	437.15990
280)	2-Jun-21	10:06:00	47.5167	2400.55	16.94223	437.63990
281)	2-Jun-21	10:44:16	48.1545	2400.04	17.58001	438.14990
282)	2-Jun-21	11:24:00	48.8167	2399.55	18.24223	438.63990
283)	2-Jun-21	12:05:14	49.5039	2399.03	18.92945	439.15990
284)	2-Jun-21	16:09:35	53.5764	2396.62	23.00191	441.56980
285)	2-Jun-21	16:09:37	53.5769	2396.62	23.00247	441.56980
286)	2-Jun-21	16:09:39	53.5775	2396.63	23.00303	441.56010
287)	2-Jun-21	16:09:41	53.5780	2396.64	23.00358	441.55000
288)	2-Jun-21	16:09:43	53.5786	2396.63	23.00414	441.56010
289)	2-Jun-21	16:47:21	54.2058	2396.26	23.63136	441.92990
290)	2-Jun-21	17:40:45	55.0958	2395.77	24.52136	442.41990
291)	2-Jun-21	18:36:11	56.0197	2395.30	25.44525	442.88990
292)	2-Jun-21	19:33:41	56.9780	2394.71	26.40358	443.48000
293)	2-Jun-21	20:33:21	57.9725	2394.17	27.39803	444.02000
294)	2-Jun-21	21:35:17	59.0047	2393.57	28.43025	444.61990
295)	2-Jun-21	22:39:31	60.0752	2392.99	29.50080	445.20000

SRO Gauge Falloff Test Data Louisiana Green Fuels Stratigraphic Test Well 1 - Tusc-Paluxy Injection Test	
State Louisiana	Test Date June 1, 2021
Parish Caldwell	Interpretation Date June 23, 2021
Field Riverton	Report Number Tusc_Paluxy Falloff

	Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psig)	Delta Time (Hours)	Delta Press. (psi)
296)	2-Jun-21	23:46:11	61.1864	2392.38	30.61192	445.81010
297)	3-Jun-21	0:55:23	62.3397	2391.85	31.76525	446.33980
298)	3-Jun-21	2:07:09	63.5358	2391.27	32.96136	446.91990
299)	3-Jun-21	3:21:39	64.7775	2390.72	34.20303	447.47000
300)	3-Jun-21	5:59:09	67.4025	2389.62	36.82803	448.56980

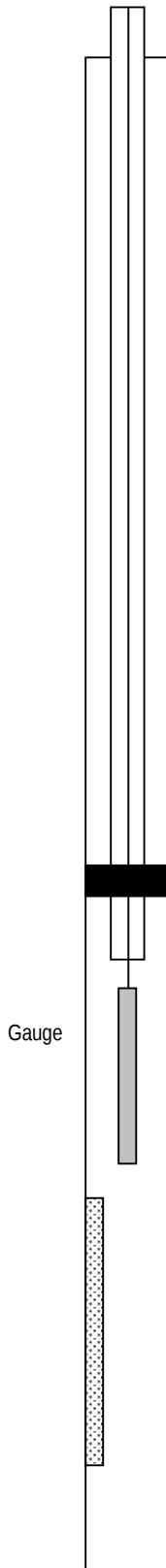
Well Test Schematic

Louisiana Green Fuels

Stratigraphic Test Well 1 - Tusc-Paluxy Injection Test

State Louisiana
 Parish Caldwell
 Field Riverton

Test Date June 1, 2021
 Interpretation Date June 23, 2021
 Report Number Tusc_Paluxy Falloff



Net Zone Height (ft) 66
 Formation Volume Factor (rbt/mscf) 1.0000
 Viscosity (cp) 0.5248
 Total Compressibility (1/psi) 6.6200E-06
 Oil Gravity (API) 0.00
 GOR (Scf/Stbl) 0.00
 Saturations (Gas, Oil, Water) frac 0.000 / 0.000 / 1.000
 Gas Specific Gravity (dim) 0.00
 Bottomhole Temperature (F) 170
 Porosity (Frac) 0.22
 Open Hole Diameter (ft) 0.28

	1	2	3	
Tubing Outside Diameter	2.875			
Tubing Inside Diameter	1.998			
Tubing Length	5230			
Tubing Volume (bbls)	20.28			20.28

Packer Depth	5230			
Gauge Depth	5250			
Top of Perforations	5250	0 ft		
Mid of Perforations	5548		298 ft	
Bottom of Perforations	5846			596 ft
PBTD	6150			

Perforation Detail

	Top (ft-md)	Btm (ft-md)	Net (ft)	SPF	Diam (inches)
1					
2					
3					
4					
5					
6					

5,050-Foot Sand



Geostock Sandia

Well Test Interpretation
 for
Louisiana Green Fuels
Stratigraphic Test Well 1 - 5050' Sand Falloff
Caldwell Parish, Louisiana

Report Number

5050' Sand_Fall

Test Date

Jun-07-21

Interpretation Results

Model of Behavior

Homogeneous

Permeability (to Simulated Br 255.200 md

Transmissibility 11346 md-ft/cp

Skin 22.50

Delta P Skin (psi) 404

Pi (at 5052 ft) 2172 psia

Total Delta P (Pinj - Pi) (2850 - 2172) = 678

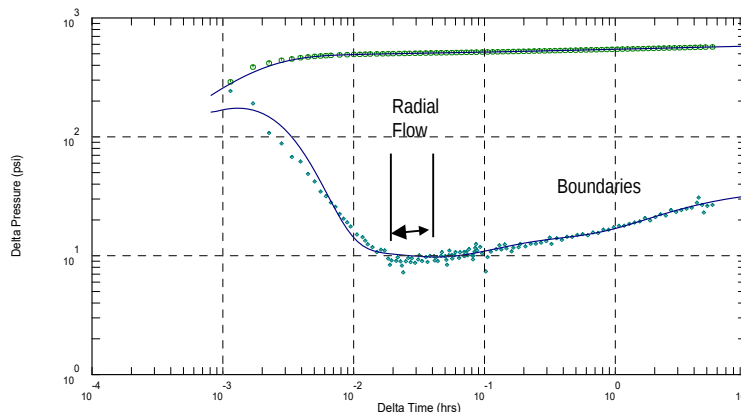
Last SI Pressure (psia) 2280.19

Radius of Investigation 1265 ft

Input Data: Qlast = -1440 bpd, B = 1.000 rbl/stb

rw = 0.23, h = 25, u = 0.562, ct = 6.81E-6, phi = 0.24

Figure A - Log-log Plot of Analysis Period



Executive Summary

Test Overview

This report contains the interpretation of a falloff test on the Louisiana Green Fuels Stratigraphic Test Well 1 completed in the 5,050-Foot Sand of the Tuscaloosa (Zone 3). The gauge was placed at a depth of 5,052 feet RKB feet. A four hour constant injection period was maintained and the well was shut-in at surface for a 4 hour falloff test. The final rate prior to shut-in is 1,440 bpd. Section 2 provides a detailed listing of the rate history used in the analysis. A static gradient survey was performed following completion of the falloff test (Section 2 Page 2.2).

Interpretation Results

Figure A, above, is a log-log plot of the falloff period with the pressure derivative function. The solid line in Figure A is the multi-rate type-curve response generated using a constant storage and skin model with perpendicular boundaries. There is good agreement between the measured data and model response. Model match indicates the boundaries are located 103 feet and 375.1 feet from the well. Superposition and Pressure History Simulation analysis also provide results consistent with the log-log analysis presented above. Based on the model response radial flow occurs from 0.02 to 0.04 hours into the falloff. The shape of the falloff curve confirms that the interval was not fractured during injection.

Skin Damage

The estimated skin damage (22.5) represents 40% of the total pressure drop required to inject 1,440 bpd into the 5,050-Foot Sand interval. The pressure drop due to skin is 404 psi.

Boundaries

The Log-Log plot indicates potential boundary effects during the falloff test. The model match boundaries were observed at 103 and 375.1 feet from the test well. The radius of investigation at the end of the falloff period is 1,265 feet using input and modeled parameters.

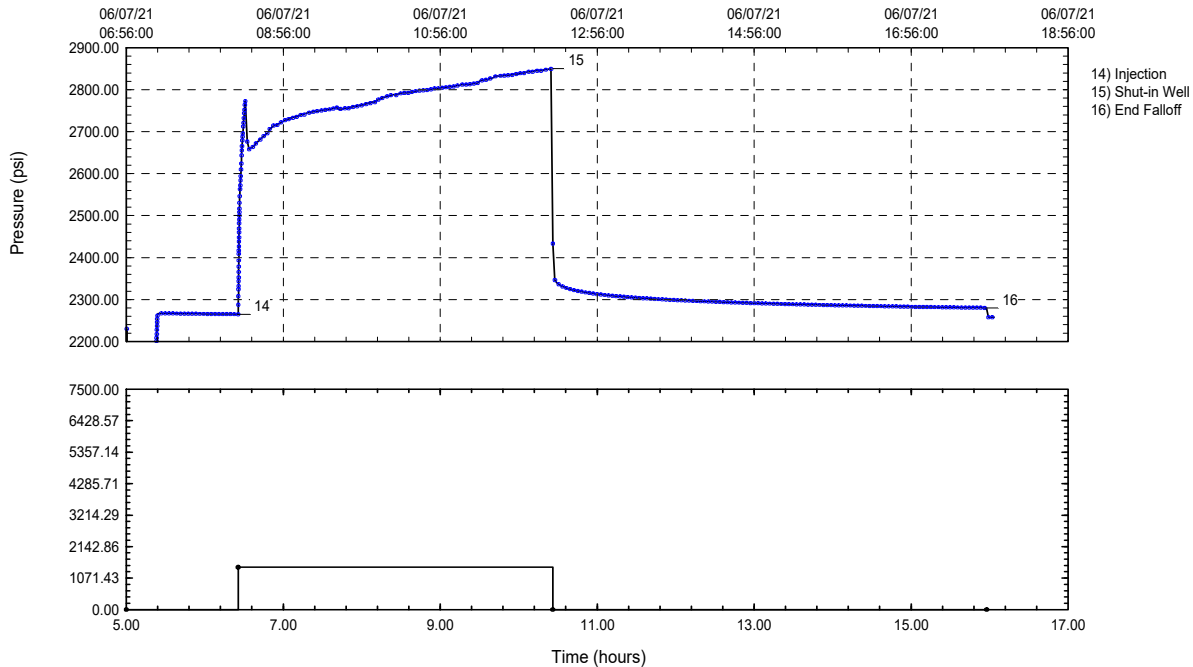
Report Contents

Section 2 - Sequence of Events; Section 3 - Analysis Plots; Section 4 - Pressure Data; Section 5 - Distribution List

Sequence of Events
Louisiana Green Fuels
Stratigraphic Test Well 1 -- 5050' Sand Falloff

State Louisiana
Parish Caldwell
Field Riverton

Test Date June 7, 2021
Interpretation Date June 25, 2021
Report Number 5050' Sand Fall



Label Point / Comments	Date (dd-mm-yy)	Time (hh:mm:ss)	Gauge ET (hours)	BHP (psig)	Rate (bwpd)
Production History Used in the Analysis					
1	4-Jun-21	4:57:46	-68.971	0.00	-2362
2	4-Jun-21	6:01:36	-67.907	0.00	-2514
3	4-Jun-21	7:03:46	-66.871	0.00	-2999
4	4-Jun-21	8:03:46	-65.871	0.00	-3810
5	4-Jun-21	9:03:26	-64.876	0.00	-4694
6	4-Jun-21	10:04:16	-63.862	0.00	-5423
7	4-Jun-21	11:05:46	-62.837	0.00	-6171
8	4-Jun-21	12:05:16	-61.846	0.00	-4501
9	4-Jun-21	14:08:06	-59.798	0.00	-2991
10	5-Jun-21	8:07:26	-41.809	0.00	-3003
No Flow	11	5-Jun-21	12:00:10	-37.931	0
Injection	12	7-Jun-21	8:21:34	6.426	2265.05
Shut-in Well	13	7-Jun-21	12:22:00	10.433	2850.48

State Louisiana

Parish Caldwell

Field Riverton

Louisiana Green Fuels

Stratigraphic Test Well 1

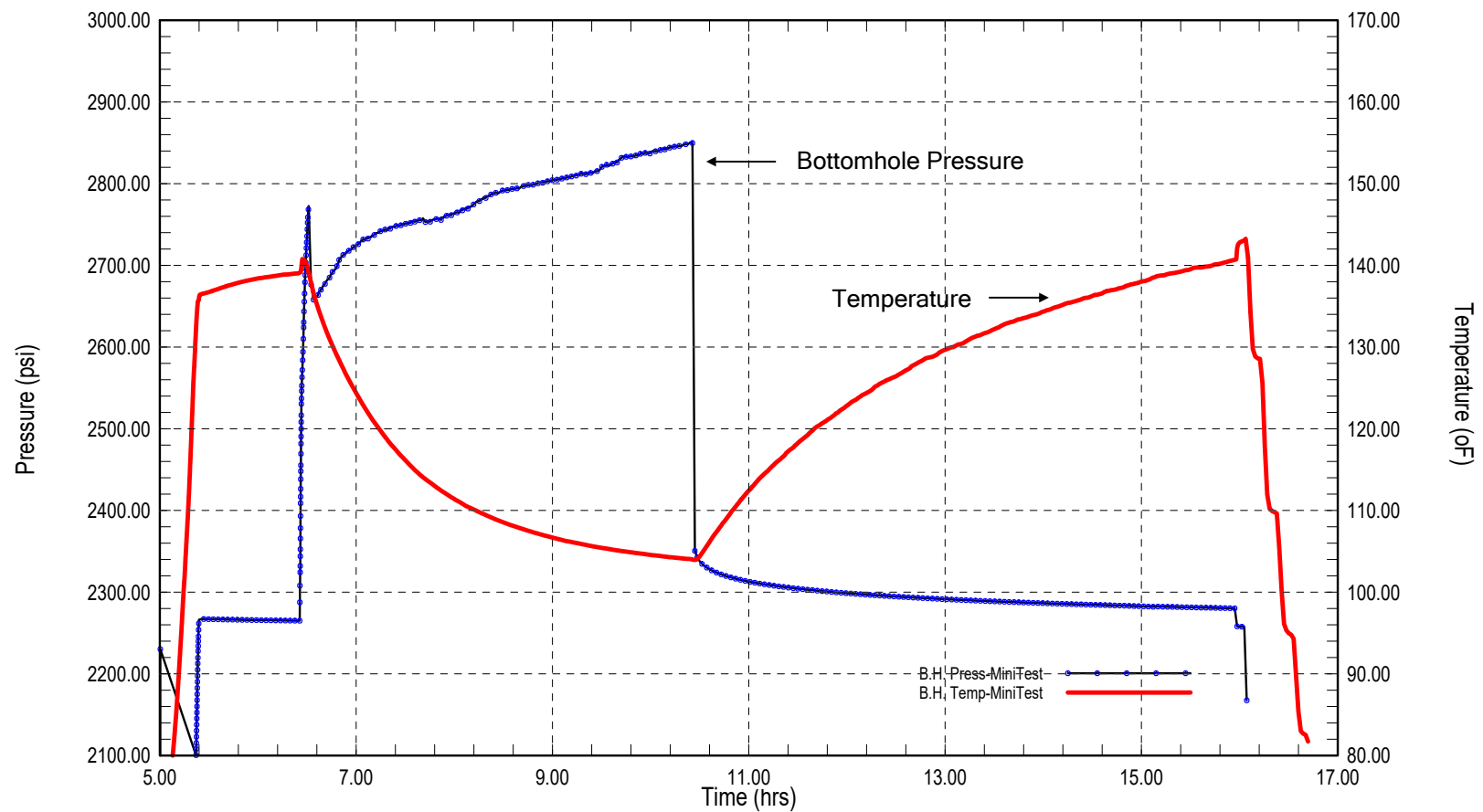
5050' Sand Falloff

Test Date 7-Jun-21

Analysis Date 25-Jun-21

Report Number 5050' Sand_Fall

Bottomhole Pressure and Temperature Log



State Louisiana

Parish Caldwell

Field Riverton

Louisiana Green Fuels

Stratigraphic Test Well 1

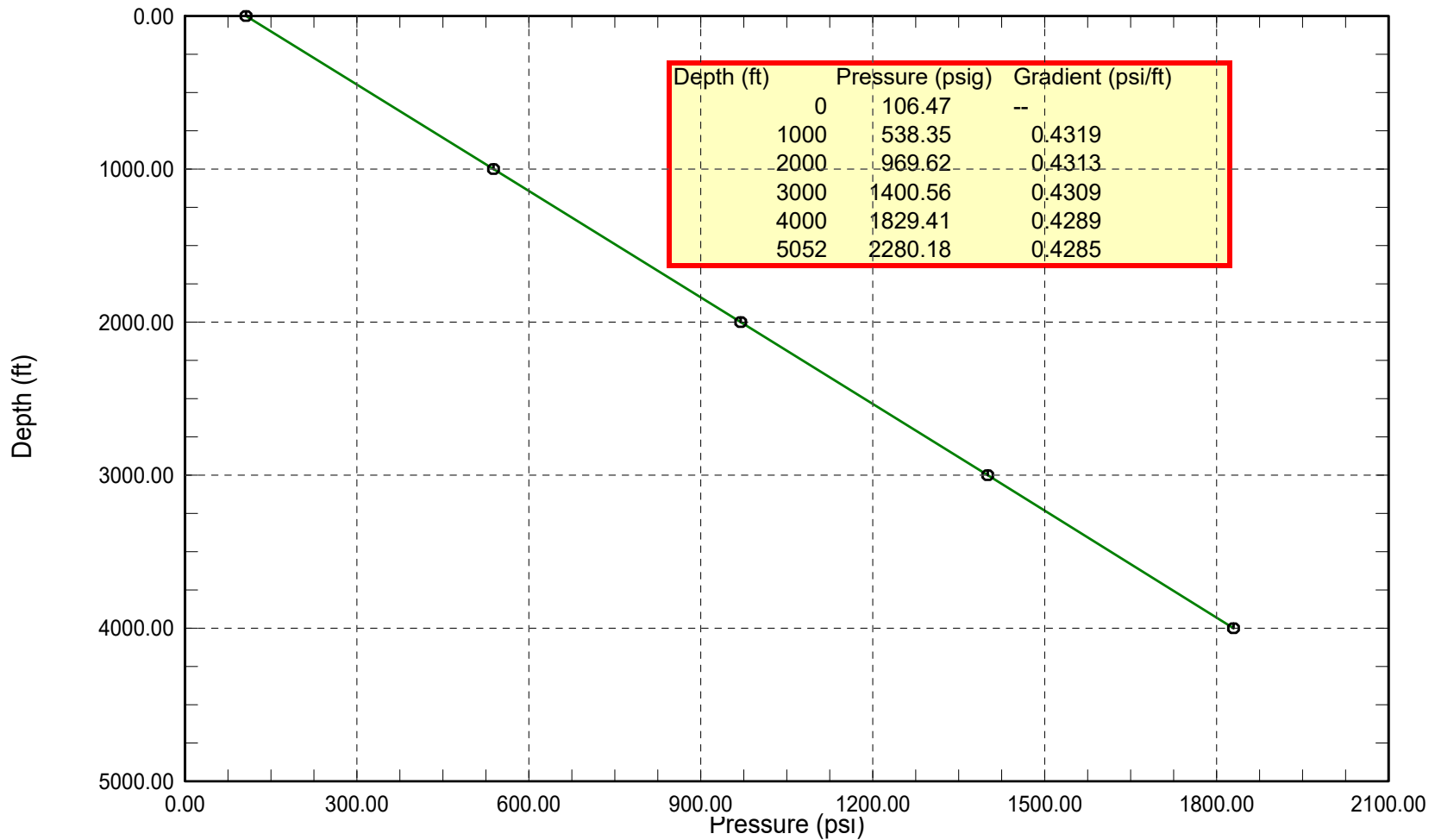
5050' Sand Falloff

Test Date 7-Jun-21

Analysis Date 25-Jun-21

Report Number 5050' Sand_Fall

Static Gradient Survey



State Louisiana

Parish Caldwell

Field Riverton

Louisiana Green Fuels

Stratigraphic Test Well 1

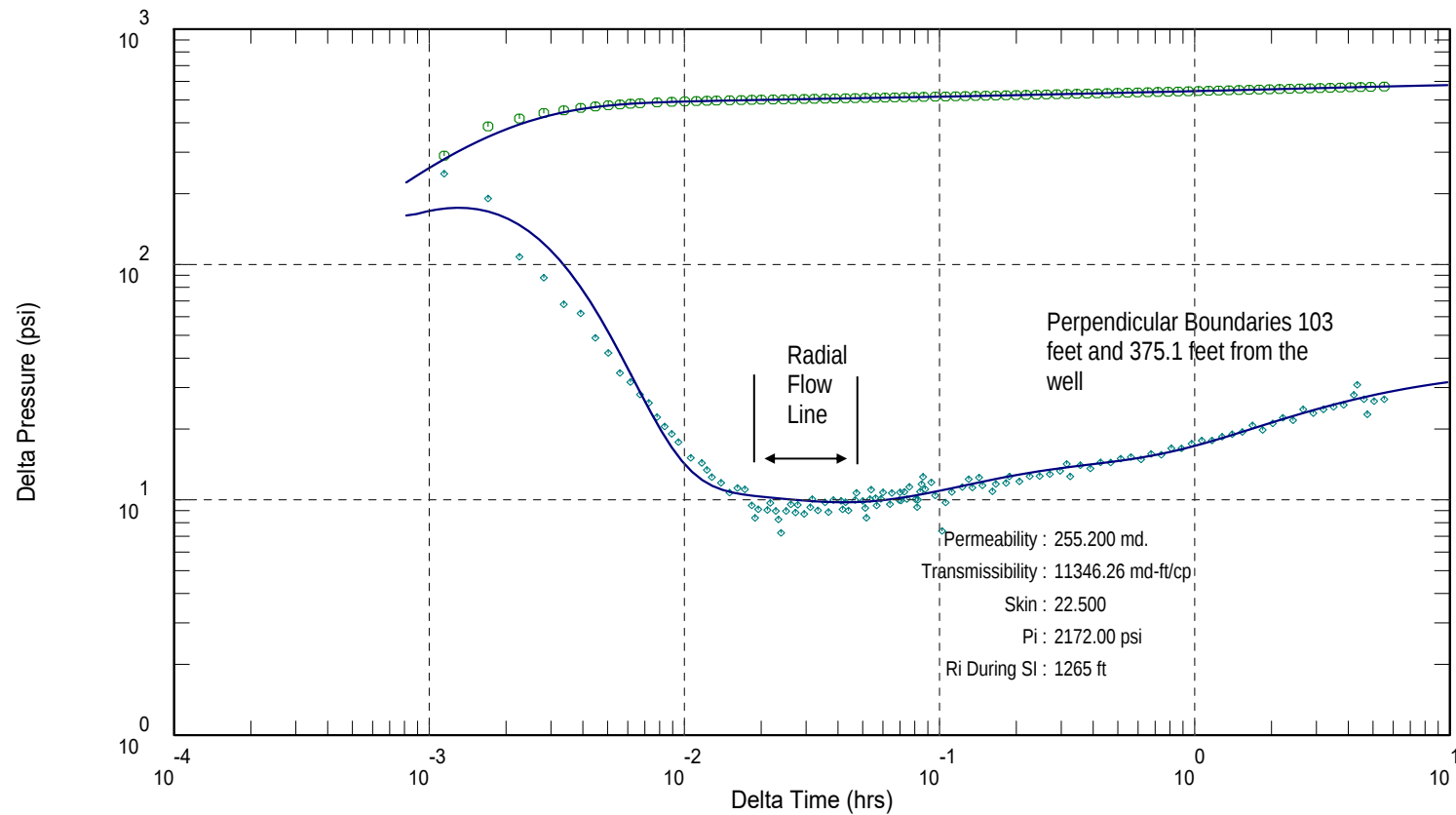
5050' Sand Falloff

Test Date 7-Jun-21

Analysis Date 25-Jun-21

Report Number 5050' Sand_Fa

Log-Log Match



State Louisiana

Parish Caldwell

Field Riverton

Louisiana Green Fuels

Stratigraphic Test Well 1

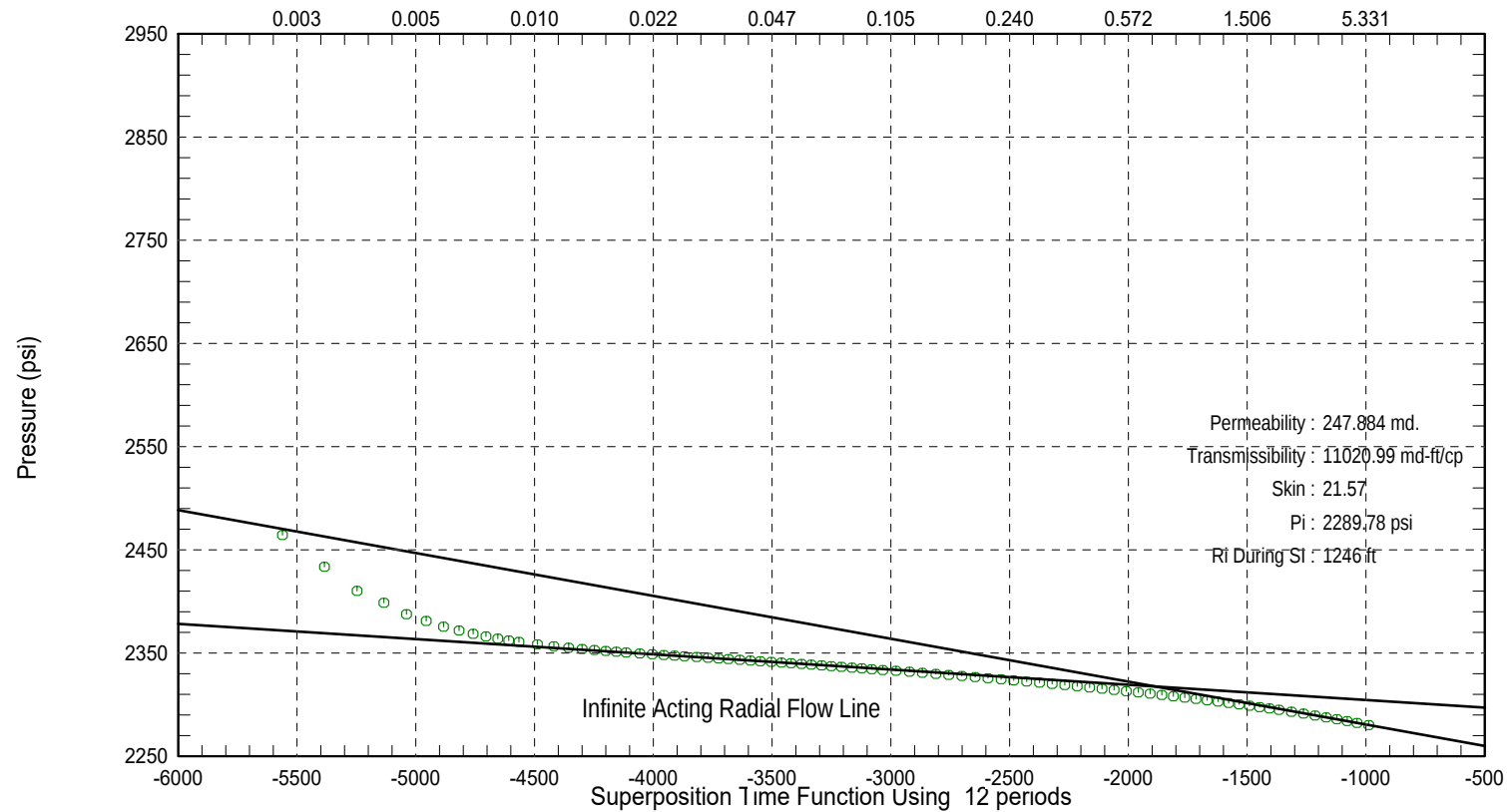
5050' Sand Falloff

Test Date 7-Jun-21

Analysis Date 25-Jun-21

Report Number 5050' Sand_Fa

Superposition Analysis



State Louisiana

Parish Caldwell

Field Riverton

Louisiana Green Fuels

Stratigraphic Test Well 1

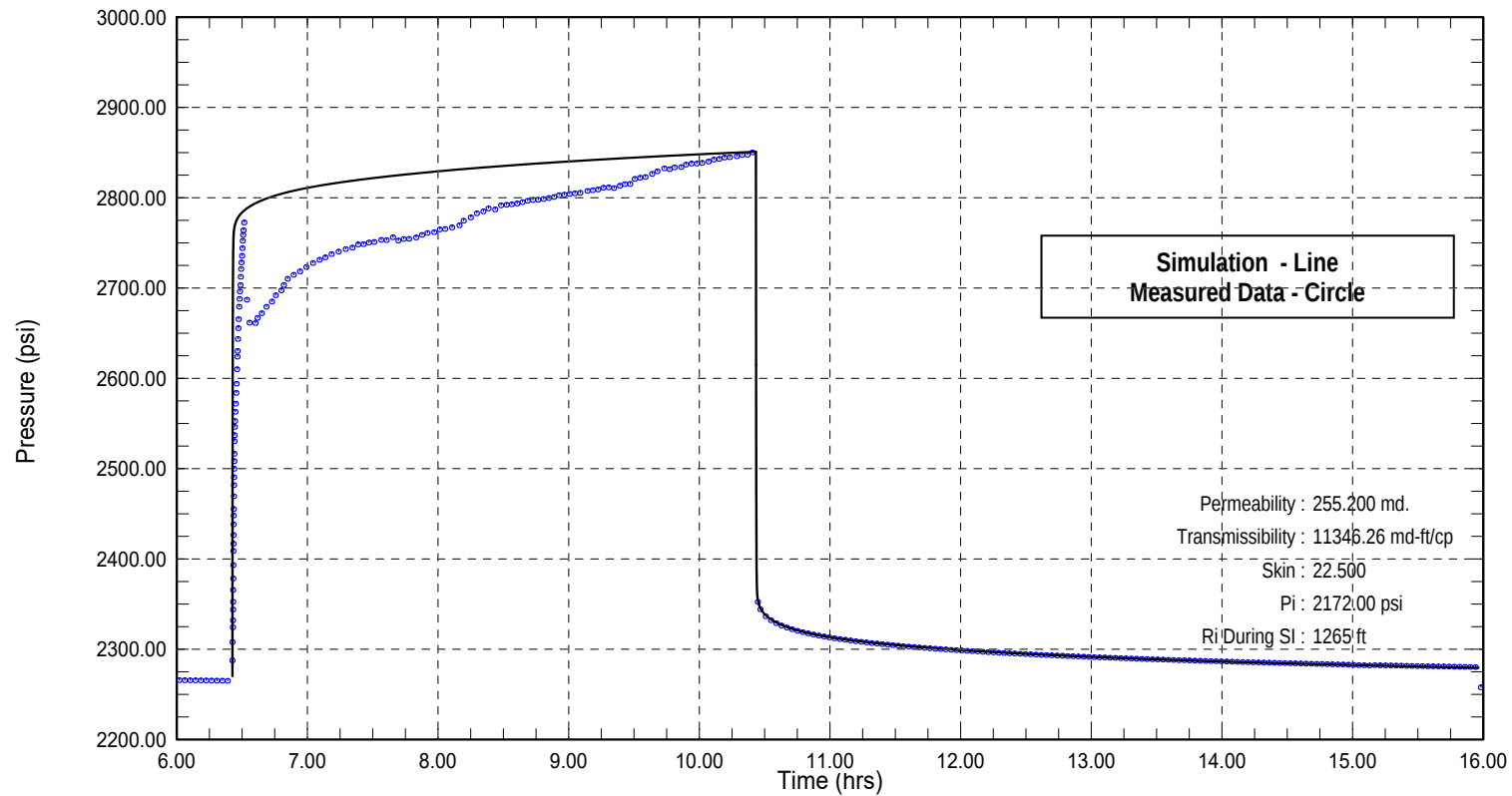
5050' Sand Falloff

Test Date 7-Jun-21

Analysis Date 25-Jun-21

Report Number 5050' Sand_Fa

Pressure History Simulation



State Louisiana

Parish Caldwell

Field Riverton

Louisiana Green Fuels

Stratigraphic Test Well 1

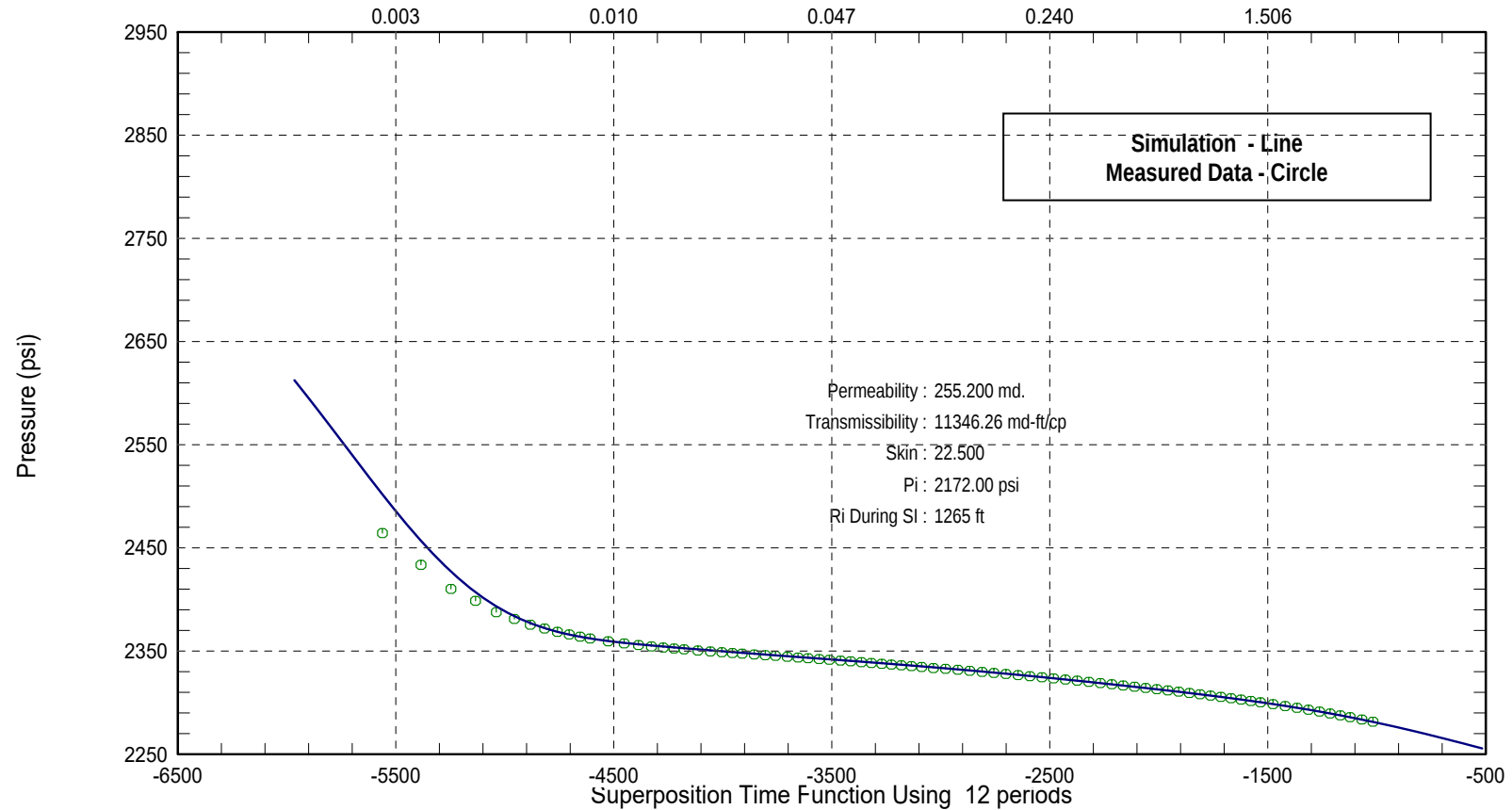
5050' Sand Falloff

Test Date 7-Jun-21

Analysis Date 25-Jun-21

Report Number 5050' Sand_Fa

Superposition Simulation



State Louisiana Parish Caldwell Field Riverton	Louisiana Green Fuels Stratigraphic Test Well 1 5050' Sand Falloff	Test Date 7-Jun-21 Analysis Date 25-Jun-21 Report Number 5050' Sand_Fa
Input Data		
Porosity (%) [phi]: 24.0% Viscosity (cp) [u]: 0.562 FVF (Rbl/Scf) [B]: 1.000 Total Compressibility (1/psi) [ct]: 6.810E-06	Open Hole Radius (ft) [rw]: 0.233 Net Zone Thickness (ft) [h]: 25 Rate During Period (mscfd) [qn]: 0 ABS(Rate Prior to Period (mscfd)) [qn-1]: 1440	Gauge Depth (ft): 5052 Top of Perforations: 5052 Bottom of Perforations: 5086 BHT (F): 140
Log - Log Analysis		
Permeability $kh = 141.2 (\Delta q)(u)(B)(Pd/dp)$ $kh = 141.2 * (1440) * (0.562) * (1.000) * (5.58E-2)$ $kh = 6379.999 \text{ md-ft}$ $k = 255.200 \text{ md-ft}$		
Wellbore Storage Coefficient $C(1) = 0.000295 (kh) / (u * [TD/CD]/dt)$ $C(1) = 0.000295 * (6380.00) / (0.562 * 16741.320)$ $C(1) = 0.000$ $CD = 0.8936 C(1) / (\phi * ct * h * rw^2)$ $CD = 0.8936 * 2.0E-4 / (0.24000 * 6.81E-6 * 25 * 0.233^2)$ $CD = 81$		
Skin $S = 1/2 \ln (CDe2s \text{ match} / CD)$ $S = 1/2 \ln (2.81E+21 / (80.54))$ $S = 22.5$		
Radius of Investigation $ri = ((k * SI \text{ time}) / (960 \phi u ct))^{.5}$ $ri = ((255.20 * 5.53) / (960 * 0.240 * 0.56 * 6.81E-6))^{.5}$ $ri = 1265 \text{ ft}$		

State Louisiana Parish Caldwell Field Riverton	Louisiana Green Fuels Stratigraphic Test Well 1 5050' Sand Falloff	Test Date 7-Jun-21 Analysis Date 25-Jun-21 Report Number 5050' Sand_Fa
Input Data		
Porosity (%) [phi]: 24.0% Viscosity (cp) [u] : 0.562 FVF (Rbl/Scf) [B] : 1.000 Total Compressibility (1/psi) [ct] : 6.810E-06	Open Hole Radius (ft) [rw] : 0.233 Net Zone Thickness (ft) [h] : 25 Rate During Period (mscfd) [qn] : 0 ABS(Rate Prior to Period (mscfd)) [qn-1] : 1440	Gauge Depth (ft) : 5052 Top of Perforations : 5052 Bottom of Perforations : 5086 BHT (F) : 140
Superposition Analysis		
Permeability		
$kh = 162.6 (u) (B) / m'$ $kh = 162.6 * (0.562 * (1.000) / (1.48E-02)$ $kh = 6196.96 \text{ md-ft}$ $k = 247.88 \text{ md}$		
Skin		
$S = 1.1513 ((P1hr - Pwf / (m' \text{ delta } q) - \log(k / (phi \text{ u } ct \text{ rw}^2)) + 3.227$ $S = 1.1513 ((535.6 / (1.48E-02 * 1440) - \log(247.884 / (0.240 * 0.562 * 6.81E-06 * 0.233^2)) + 3.227$ $S = 21.58$		
Radial Flow Line Parameters (Superposition Plot)		
Start Radial Flow Line (hrs) : 0.021 End Radial Flow Line (hrs) : 0.046 Start Radial Flow Line (SF) : -4004.511 End Radial Flow Line (SF) : -3503.488	RSqr : 0.999 Number of Points : 46 P* (psi) : 2289.78	
Section 3 - Page 6		

SRO Gauge Falloff Test Data
Louisiana Green Fuels
Stratigraphic Test Well 1 - 5050' Sand Falloff

State Louisiana	Test Date June 7, 2021
Parish Caldwell	Interpretation Date June 25, 2021
Field Riverton	Report Number 5050' Sand_Fall

Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psig)	Delta Time (Hours)	Delta Press. (psi)
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Gauge at 5052 ft

1)	7-Jun-21	12:22:04	10.4344	2560.53	0.00114	289.95000
2)	7-Jun-21	12:22:06	10.4350	2464.36	0.00170	386.11990
3)	7-Jun-21	12:22:08	10.4356	2433.55	0.00226	416.92990
4)	7-Jun-21	12:22:10	10.4361	2410.20	0.00281	440.28000
5)	7-Jun-21	12:22:12	10.4367	2398.68	0.00337	451.80000
6)	7-Jun-21	12:22:14	10.4372	2387.65	0.00392	462.83010
7)	7-Jun-21	12:22:16	10.4378	2381.11	0.00448	469.36990
8)	7-Jun-21	12:22:18	10.4383	2375.50	0.00503	474.98000
9)	7-Jun-21	12:22:20	10.4389	2371.83	0.00559	478.64990
10)	7-Jun-21	12:22:22	10.4394	2368.61	0.00614	481.86990
11)	7-Jun-21	12:22:24	10.4400	2366.11	0.00670	484.36990
12)	7-Jun-21	12:22:26	10.4406	2363.96	0.00726	486.52000
13)	7-Jun-21	12:22:28	10.4411	2362.16	0.00781	488.32010
14)	7-Jun-21	12:22:30	10.4417	2360.77	0.00837	489.71000
15)	7-Jun-21	12:22:32	10.4422	2359.44	0.00892	491.04000
16)	7-Jun-21	12:22:34	10.4428	2358.40	0.00948	492.08010
17)	7-Jun-21	12:22:36	10.4433	2357.38	0.01003	493.10010
18)	7-Jun-21	12:22:38	10.4439	2356.56	0.01059	493.91990
19)	7-Jun-21	12:22:40	10.4444	2355.80	0.01114	494.67990
20)	7-Jun-21	12:22:42	10.4450	2355.11	0.01170	495.36990
21)	7-Jun-21	12:22:44	10.4456	2354.44	0.01226	496.04000
22)	7-Jun-21	12:22:46	10.4461	2353.90	0.01281	496.58010
23)	7-Jun-21	12:22:48	10.4467	2353.36	0.01337	497.11990
24)	7-Jun-21	12:22:50	10.4472	2352.92	0.01392	497.56010
25)	7-Jun-21	12:22:52	10.4478	2352.42	0.01448	498.06010
26)	7-Jun-21	12:22:54	10.4483	2352.02	0.01503	498.46000
27)	7-Jun-21	12:22:56	10.4489	2351.63	0.01559	498.85010
28)	7-Jun-21	12:22:58	10.4494	2351.24	0.01614	499.24000
29)	7-Jun-21	12:23:00	10.4500	2350.86	0.01670	499.61990
30)	7-Jun-21	12:23:02	10.4506	2350.50	0.01726	499.98000
31)	7-Jun-21	12:23:04	10.4511	2350.15	0.01781	500.33010
32)	7-Jun-21	12:23:06	10.4517	2349.81	0.01837	500.66990
33)	7-Jun-21	12:23:08	10.4522	2349.58	0.01892	500.89990
34)	7-Jun-21	12:23:10	10.4528	2349.32	0.01948	501.15990
35)	7-Jun-21	12:23:12	10.4533	2348.99	0.02003	501.49000

SRO Gauge Falloff Test Data
Louisiana Green Fuels
Stratigraphic Test Well 1 - 5050' Sand Falloff

State Louisiana	Test Date June 7, 2021
Parish Caldwell	Interpretation Date June 25, 2021
Field Riverton	Report Number 5050' Sand_Fall

	Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psig)	Delta Time (Hours)	Delta Press. (psi)
36)	7-Jun-21	12:23:14	10.4539	2348.84	0.02059	501.63990
37)	7-Jun-21	12:23:16	10.4544	2348.52	0.02114	501.96000
38)	7-Jun-21	12:23:18	10.4550	2348.31	0.02170	502.16990
39)	7-Jun-21	12:23:20	10.4556	2348.07	0.02226	502.40990
40)	7-Jun-21	12:23:22	10.4561	2347.83	0.02281	502.64990
41)	7-Jun-21	12:23:24	10.4567	2347.56	0.02337	502.91990
42)	7-Jun-21	12:23:26	10.4572	2347.48	0.02392	503.00000
43)	7-Jun-21	12:23:28	10.4578	2347.27	0.02448	503.21000
44)	7-Jun-21	12:23:30	10.4583	2347.14	0.02503	503.34010
45)	7-Jun-21	12:23:32	10.4589	2346.91	0.02559	503.57010
46)	7-Jun-21	12:23:34	10.4594	2346.67	0.02614	503.81010
47)	7-Jun-21	12:23:36	10.4600	2346.51	0.02670	503.97000
48)	7-Jun-21	12:23:38	10.4606	2346.33	0.02726	504.14990
49)	7-Jun-21	12:23:40	10.4611	2346.14	0.02781	504.34010
50)	7-Jun-21	12:23:42	10.4617	2345.96	0.02837	504.52000
51)	7-Jun-21	12:23:44	10.4622	2345.75	0.02892	504.73000
52)	7-Jun-21	12:23:46	10.4628	2345.65	0.02948	504.83010
53)	7-Jun-21	12:23:48	10.4633	2345.40	0.03003	505.08010
54)	7-Jun-21	12:23:50	10.4639	2345.32	0.03059	505.15990
55)	7-Jun-21	12:23:52	10.4644	2345.12	0.03114	505.35990
56)	7-Jun-21	12:23:54	10.4650	2344.97	0.03170	505.51000
57)	7-Jun-21	12:23:56	10.4656	2344.75	0.03226	505.73000
58)	7-Jun-21	12:23:58	10.4661	2344.63	0.03281	505.85010
59)	7-Jun-21	12:24:00	10.4667	2344.43	0.03337	506.05000
60)	7-Jun-21	12:24:02	10.4672	2344.32	0.03392	506.15990
61)	7-Jun-21	12:24:04	10.4678	2344.16	0.03448	506.32010
62)	7-Jun-21	12:24:06	10.4683	2344.04	0.03503	506.43990
63)	7-Jun-21	12:24:08	10.4689	2343.85	0.03559	506.62990
64)	7-Jun-21	12:24:10	10.4694	2343.73	0.03614	506.75000
65)	7-Jun-21	12:24:12	10.4700	2343.56	0.03670	506.91990
66)	7-Jun-21	12:24:14	10.4706	2343.40	0.03726	507.08010
67)	7-Jun-21	12:24:16	10.4711	2343.35	0.03781	507.12990
68)	7-Jun-21	12:24:18	10.4717	2343.18	0.03837	507.30000
69)	7-Jun-21	12:24:20	10.4722	2343.07	0.03892	507.40990
70)	7-Jun-21	12:24:22	10.4728	2342.91	0.03948	507.57010
71)	7-Jun-21	12:24:24	10.4733	2342.69	0.04003	507.79000

SRO Gauge Falloff Test Data
Louisiana Green Fuels
Stratigraphic Test Well 1 - 5050' Sand Falloff

State Louisiana	Test Date June 7, 2021
Parish Caldwell	Interpretation Date June 25, 2021
Field Riverton	Report Number 5050' Sand_Fall

	Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psig)	Delta Time (Hours)	Delta Press. (psi)
72)	7-Jun-21	12:24:26	10.4739	2342.60	0.04059	507.87990
73)	7-Jun-21	12:24:28	10.4744	2342.51	0.04114	507.97000
74)	7-Jun-21	12:24:30	10.4750	2342.41	0.04170	508.07010
75)	7-Jun-21	12:24:32	10.4756	2342.22	0.04226	508.26000
76)	7-Jun-21	12:24:34	10.4761	2342.05	0.04281	508.42990
77)	7-Jun-21	12:24:36	10.4767	2342.03	0.04337	508.45000
78)	7-Jun-21	12:24:38	10.4772	2341.89	0.04392	508.59010
79)	7-Jun-21	12:24:40	10.4778	2341.75	0.04448	508.73000
80)	7-Jun-21	12:24:42	10.4783	2341.66	0.04503	508.82010
81)	7-Jun-21	12:24:44	10.4789	2341.52	0.04559	508.96000
82)	7-Jun-21	12:24:46	10.4794	2341.43	0.04614	509.05000
83)	7-Jun-21	12:24:48	10.4800	2341.34	0.04670	509.13990
84)	7-Jun-21	12:24:50	10.4806	2341.23	0.04726	509.25000
85)	7-Jun-21	12:24:52	10.4811	2341.07	0.04781	509.40990
86)	7-Jun-21	12:24:54	10.4817	2340.93	0.04837	509.55000
87)	7-Jun-21	12:24:56	10.4822	2340.78	0.04892	509.70000
88)	7-Jun-21	12:24:58	10.4828	2340.73	0.04948	509.75000
89)	7-Jun-21	12:25:00	10.4833	2340.62	0.05003	509.85990
90)	7-Jun-21	12:25:02	10.4839	2340.48	0.05059	510.00000
91)	7-Jun-21	12:25:04	10.4844	2340.36	0.05114	510.11990
92)	7-Jun-21	12:25:06	10.4850	2340.28	0.05170	510.20000
93)	7-Jun-21	12:25:08	10.4856	2340.19	0.05226	510.29000
94)	7-Jun-21	12:25:10	10.4861	2340.16	0.05281	510.32010
95)	7-Jun-21	12:25:12	10.4867	2340.06	0.05337	510.41990
96)	7-Jun-21	12:25:14	10.4872	2339.89	0.05392	510.59010
97)	7-Jun-21	12:25:16	10.4878	2339.82	0.05448	510.65990
98)	7-Jun-21	12:25:18	10.4883	2339.65	0.05503	510.83010
99)	7-Jun-21	12:25:20	10.4889	2339.56	0.05559	510.91990
100)	7-Jun-21	12:25:22	10.4894	2339.47	0.05614	511.01000
101)	7-Jun-21	12:25:24	10.4900	2339.43	0.05670	511.05000
102)	7-Jun-21	12:25:26	10.4906	2339.24	0.05726	511.24000
103)	7-Jun-21	12:25:28	10.4911	2339.21	0.05781	511.27000
104)	7-Jun-21	12:25:30	10.4917	2339.12	0.05837	511.35990
105)	7-Jun-21	12:25:32	10.4922	2339.01	0.05892	511.47000
106)	7-Jun-21	12:25:34	10.4928	2338.90	0.05948	511.58010
107)	7-Jun-21	12:25:36	10.4933	2338.83	0.06003	511.64990

SRO Gauge Falloff Test Data
Louisiana Green Fuels
Stratigraphic Test Well 1 - 5050' Sand Falloff

State Louisiana	Test Date June 7, 2021
Parish Caldwell	Interpretation Date June 25, 2021
Field Riverton	Report Number 5050' Sand_Fall

	Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psig)	Delta Time (Hours)	Delta Press. (psi)
108)	7-Jun-21	12:25:38	10.4939	2338.73	0.06059	511.75000
109)	7-Jun-21	12:25:40	10.4944	2338.65	0.06114	511.83010
110)	7-Jun-21	12:25:42	10.4950	2338.52	0.06170	511.96000
111)	7-Jun-21	12:25:44	10.4956	2338.41	0.06226	512.07010
112)	7-Jun-21	12:25:46	10.4961	2338.37	0.06281	512.10990
113)	7-Jun-21	12:25:48	10.4967	2338.28	0.06337	512.20000
114)	7-Jun-21	12:25:50	10.4972	2338.17	0.06392	512.31010
115)	7-Jun-21	12:25:52	10.4978	2338.08	0.06448	512.39990
116)	7-Jun-21	12:25:54	10.4983	2338.01	0.06503	512.47000
117)	7-Jun-21	12:25:56	10.4989	2337.89	0.06559	512.59010
118)	7-Jun-21	12:25:58	10.4994	2337.91	0.06614	512.57010
119)	7-Jun-21	12:26:00	10.5000	2337.73	0.06670	512.75000
120)	7-Jun-21	12:26:02	10.5006	2337.61	0.06726	512.86990
121)	7-Jun-21	12:26:04	10.5011	2337.60	0.06781	512.87990
122)	7-Jun-21	12:26:06	10.5017	2337.46	0.06837	513.02000
123)	7-Jun-21	12:26:08	10.5022	2337.43	0.06892	513.05000
124)	7-Jun-21	12:26:10	10.5028	2337.31	0.06948	513.16990
125)	7-Jun-21	12:26:12	10.5033	2337.22	0.07003	513.26000
126)	7-Jun-21	12:26:14	10.5039	2337.18	0.07059	513.30000
127)	7-Jun-21	12:26:16	10.5044	2337.06	0.07114	513.41990
128)	7-Jun-21	12:26:18	10.5050	2337.03	0.07170	513.45000
129)	7-Jun-21	12:26:20	10.5056	2336.88	0.07226	513.60010
130)	7-Jun-21	12:26:22	10.5061	2336.90	0.07281	513.58010
131)	7-Jun-21	12:26:24	10.5067	2336.77	0.07337	513.71000
132)	7-Jun-21	12:26:26	10.5072	2336.67	0.07392	513.81010
133)	7-Jun-21	12:26:28	10.5078	2336.62	0.07448	513.85990
134)	7-Jun-21	12:26:30	10.5083	2336.50	0.07503	513.98000
135)	7-Jun-21	12:26:32	10.5089	2336.47	0.07559	514.01000
136)	7-Jun-21	12:26:34	10.5094	2336.44	0.07614	514.04000
137)	7-Jun-21	12:26:36	10.5100	2336.31	0.07670	514.16990
138)	7-Jun-21	12:26:38	10.5106	2336.27	0.07726	514.21000
139)	7-Jun-21	12:26:40	10.5111	2336.16	0.07781	514.32010
140)	7-Jun-21	12:26:42	10.5117	2336.03	0.07837	514.45000
141)	7-Jun-21	12:26:44	10.5122	2335.91	0.07892	514.57010
142)	7-Jun-21	12:26:46	10.5128	2335.93	0.07948	514.55000
143)	7-Jun-21	12:26:48	10.5133	2335.80	0.08003	514.67990

SRO Gauge Falloff Test Data
Louisiana Green Fuels
Stratigraphic Test Well 1 - 5050' Sand Falloff

State Louisiana	Test Date June 7, 2021
Parish Caldwell	Interpretation Date June 25, 2021
Field Riverton	Report Number 5050' Sand_Fall

	Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psig)	Delta Time (Hours)	Delta Press. (psi)
144)	7-Jun-21	12:26:50	10.5139	2335.74	0.08059	514.74000
145)	7-Jun-21	12:26:52	10.5144	2335.70	0.08114	514.78000
146)	7-Jun-21	12:26:54	10.5150	2335.59	0.08170	514.88990
147)	7-Jun-21	12:26:56	10.5156	2335.55	0.08226	514.92990
148)	7-Jun-21	12:26:58	10.5161	2335.50	0.08281	514.98000
149)	7-Jun-21	12:27:00	10.5167	2335.46	0.08337	515.02000
150)	7-Jun-21	12:27:02	10.5172	2335.37	0.08392	515.10990
151)	7-Jun-21	12:27:04	10.5178	2335.32	0.08448	515.15990
152)	7-Jun-21	12:27:06	10.5183	2335.19	0.08503	515.29000
153)	7-Jun-21	12:27:08	10.5189	2335.19	0.08559	515.29000
154)	7-Jun-21	12:27:10	10.5194	2335.05	0.08614	515.42990
155)	7-Jun-21	12:27:12	10.5200	2334.95	0.08670	515.53000
156)	7-Jun-21	12:27:14	10.5206	2334.92	0.08726	515.56010
157)	7-Jun-21	12:27:16	10.5211	2334.83	0.08781	515.64990
158)	7-Jun-21	12:27:18	10.5217	2334.73	0.08837	515.75000
159)	7-Jun-21	12:27:20	10.5222	2334.68	0.08892	515.80000
160)	7-Jun-21	12:27:22	10.5228	2334.61	0.08948	515.86990
161)	7-Jun-21	12:27:24	10.5233	2334.61	0.09003	515.86990
162)	7-Jun-21	12:27:26	10.5239	2334.55	0.09059	515.92990
163)	7-Jun-21	12:27:28	10.5244	2334.39	0.09114	516.09010
164)	7-Jun-21	12:27:30	10.5250	2334.33	0.09170	516.14990
165)	7-Jun-21	12:27:32	10.5256	2334.34	0.09226	516.13990
166)	7-Jun-21	12:27:34	10.5261	2334.23	0.09281	516.25000
167)	7-Jun-21	12:27:36	10.5267	2334.17	0.09337	516.31010
168)	7-Jun-21	12:27:46	10.5294	2333.83	0.09614	516.64990
169)	7-Jun-21	12:27:56	10.5322	2333.50	0.09892	516.98000
170)	7-Jun-21	12:28:08	10.5356	2333.27	0.10226	517.21000
171)	7-Jun-21	12:28:20	10.5389	2333.03	0.10559	517.45000
172)	7-Jun-21	12:28:30	10.5417	2332.78	0.10837	517.70000
173)	7-Jun-21	12:28:42	10.5450	2332.43	0.11170	518.05000
174)	7-Jun-21	12:28:56	10.5489	2332.10	0.11559	518.37990
175)	7-Jun-21	12:29:08	10.5522	2331.82	0.11892	518.65990
176)	7-Jun-21	12:29:22	10.5561	2331.42	0.12281	519.06010
177)	7-Jun-21	12:29:34	10.5594	2331.18	0.12614	519.30000
178)	7-Jun-21	12:29:48	10.5633	2330.82	0.13003	519.65990
179)	7-Jun-21	12:30:04	10.5678	2330.42	0.13448	520.06010

SRO Gauge Falloff Test Data
Louisiana Green Fuels
Stratigraphic Test Well 1 - 5050' Sand Falloff

State Louisiana	Test Date June 7, 2021
Parish Caldwell	Interpretation Date June 25, 2021
Field Riverton	Report Number 5050' Sand_Fall

	Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psig)	Delta Time (Hours)	Delta Press. (psi)
180)	7-Jun-21	12:30:18	10.5717	2330.16	0.13837	520.32010
181)	7-Jun-21	12:30:34	10.5761	2329.78	0.14281	520.70000
182)	7-Jun-21	12:30:50	10.5806	2329.41	0.14726	521.07010
183)	7-Jun-21	12:31:06	10.5850	2329.10	0.15170	521.37990
184)	7-Jun-21	12:31:22	10.5894	2328.78	0.15614	521.70000
185)	7-Jun-21	12:31:40	10.5944	2328.43	0.16114	522.05000
186)	7-Jun-21	12:31:58	10.5994	2328.13	0.16614	522.35010
187)	7-Jun-21	12:32:16	10.6044	2327.78	0.17114	522.70000
188)	7-Jun-21	12:32:36	10.6100	2327.40	0.17670	523.08010
189)	7-Jun-21	12:32:56	10.6156	2327.06	0.18226	523.41990
190)	7-Jun-21	12:33:16	10.6211	2326.71	0.18781	523.77000
191)	7-Jun-21	12:33:36	10.6267	2326.37	0.19337	524.10990
192)	7-Jun-21	12:33:58	10.6328	2325.97	0.19948	524.51000
193)	7-Jun-21	12:34:20	10.6389	2325.63	0.20559	524.85010
194)	7-Jun-21	12:34:44	10.6456	2325.26	0.21226	525.22000
195)	7-Jun-21	12:35:06	10.6517	2324.97	0.21837	525.51000
196)	7-Jun-21	12:35:32	10.6589	2324.59	0.22559	525.88990
197)	7-Jun-21	12:35:56	10.6656	2324.20	0.23226	526.28000
198)	7-Jun-21	12:36:22	10.6728	2323.88	0.23948	526.60010
199)	7-Jun-21	12:36:48	10.6800	2323.49	0.24670	526.99000
200)	7-Jun-21	12:37:16	10.6878	2323.12	0.25448	527.35990
201)	7-Jun-21	12:37:44	10.6956	2322.76	0.26226	527.72000
202)	7-Jun-21	12:38:14	10.7039	2322.37	0.27059	528.10990
203)	7-Jun-21	12:38:44	10.7122	2322.02	0.27892	528.46000
204)	7-Jun-21	12:39:16	10.7211	2321.63	0.28781	528.85010
205)	7-Jun-21	12:39:48	10.7300	2321.29	0.29670	529.18990
206)	7-Jun-21	12:40:20	10.7389	2320.92	0.30559	529.56010
207)	7-Jun-21	12:40:54	10.7483	2320.49	0.31503	529.99000
208)	7-Jun-21	12:41:30	10.7583	2320.09	0.32503	530.38990
209)	7-Jun-21	12:42:06	10.7683	2319.76	0.33503	530.72000
210)	7-Jun-21	12:42:42	10.7783	2319.42	0.34503	531.06010
211)	7-Jun-21	12:43:22	10.7894	2318.96	0.35614	531.52000
212)	7-Jun-21	12:44:00	10.8000	2318.60	0.36670	531.87990
213)	7-Jun-21	12:44:42	10.8117	2318.22	0.37837	532.26000
214)	7-Jun-21	12:45:24	10.8233	2317.82	0.39003	532.65990
215)	7-Jun-21	12:46:08	10.8356	2317.44	0.40226	533.04000

SRO Gauge Falloff Test Data
Louisiana Green Fuels
Stratigraphic Test Well 1 - 5050' Sand Falloff

State Louisiana	Test Date June 7, 2021
Parish Caldwell	Interpretation Date June 25, 2021
Field Riverton	Report Number 5050' Sand_Fall

	Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psig)	Delta Time (Hours)	Delta Press. (psi)
216)	7-Jun-21	12:46:52	10.8478	2317.08	0.41448	533.39990
217)	7-Jun-21	12:47:38	10.8606	2316.61	0.42726	533.86990
218)	7-Jun-21	12:48:26	10.8739	2316.26	0.44059	534.22000
219)	7-Jun-21	12:49:14	10.8872	2315.86	0.45392	534.61990
220)	7-Jun-21	12:50:06	10.9017	2315.42	0.46837	535.06010
221)	7-Jun-21	12:50:58	10.9161	2315.08	0.48281	535.39990
222)	7-Jun-21	12:51:52	10.9311	2314.66	0.49781	535.82010
223)	7-Jun-21	12:52:46	10.9461	2314.25	0.51281	536.23000
224)	7-Jun-21	12:53:44	10.9622	2313.86	0.52892	536.61990
225)	7-Jun-21	12:54:42	10.9783	2313.45	0.54503	537.03000
226)	7-Jun-21	12:55:44	10.9956	2313.01	0.56226	537.47000
227)	7-Jun-21	12:56:46	11.0128	2312.61	0.57948	537.86990
228)	7-Jun-21	12:57:50	11.0306	2312.23	0.59726	538.25000
229)	7-Jun-21	12:58:58	11.0494	2311.86	0.61614	538.61990
230)	7-Jun-21	13:00:06	11.0683	2311.40	0.63503	539.08010
231)	7-Jun-21	13:01:16	11.0878	2311.04	0.65448	539.43990
232)	7-Jun-21	13:02:30	11.1083	2310.62	0.67503	539.85990
233)	7-Jun-21	13:03:44	11.1289	2310.16	0.69559	540.32010
234)	7-Jun-21	13:05:02	11.1506	2309.77	0.71726	540.71000
235)	7-Jun-21	13:06:22	11.1728	2309.34	0.73948	541.13990
236)	7-Jun-21	13:07:44	11.1956	2308.96	0.76226	541.52000
237)	7-Jun-21	13:09:10	11.2194	2308.53	0.78614	541.95000
238)	7-Jun-21	13:10:36	11.2433	2308.08	0.81003	542.39990
239)	7-Jun-21	13:12:08	11.2689	2307.66	0.83559	542.82010
240)	7-Jun-21	13:13:40	11.2944	2307.26	0.86114	543.22000
241)	7-Jun-21	13:15:16	11.3211	2306.81	0.88781	543.66990
242)	7-Jun-21	13:16:56	11.3489	2306.37	0.91559	544.10990
243)	7-Jun-21	13:18:38	11.3772	2306.00	0.94392	544.48000
244)	7-Jun-21	13:20:22	11.4061	2305.55	0.97281	544.92990
245)	7-Jun-21	13:22:10	11.4361	2305.12	1.00281	545.35990
246)	7-Jun-21	13:24:02	11.4672	2304.65	1.03392	545.83010
247)	7-Jun-21	13:25:58	11.4994	2304.24	1.06614	546.24000
248)	7-Jun-21	13:27:56	11.5322	2303.81	1.09892	546.66990
249)	7-Jun-21	13:29:58	11.5661	2303.34	1.13281	547.13990
250)	7-Jun-21	13:32:06	11.6017	2302.95	1.16837	547.53000
251)	7-Jun-21	13:34:16	11.6378	2302.46	1.20448	548.02000

SRO Gauge Falloff Test Data
Louisiana Green Fuels
Stratigraphic Test Well 1 - 5050' Sand Falloff

State Louisiana	Test Date June 7, 2021
Parish Caldwell	Interpretation Date June 25, 2021
Field Riverton	Report Number 5050' Sand_Fall

	Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psig)	Delta Time (Hours)	Delta Press. (psi)
252)	7-Jun-21	13:36:30	11.6750	2302.08	1.24170	548.39990
253)	7-Jun-21	13:38:48	11.7133	2301.60	1.28003	548.87990
254)	7-Jun-21	13:41:10	11.7528	2301.16	1.31948	549.32010
255)	7-Jun-21	13:43:38	11.7939	2300.72	1.36059	549.76000
256)	7-Jun-21	13:46:10	11.8361	2300.30	1.40281	550.17990
257)	7-Jun-21	13:48:46	11.8794	2299.85	1.44614	550.62990
258)	7-Jun-21	13:51:26	11.9239	2299.38	1.49059	551.10010
259)	7-Jun-21	13:54:12	11.9700	2298.94	1.53670	551.54000
260)	7-Jun-21	13:57:04	12.0178	2298.51	1.58448	551.97000
261)	7-Jun-21	14:00:00	12.0667	2298.07	1.63337	552.40990
262)	7-Jun-21	14:03:02	12.1172	2297.59	1.68392	552.88990
263)	7-Jun-21	14:06:10	12.1694	2297.14	1.73614	553.34010
264)	7-Jun-21	14:09:24	12.2233	2296.66	1.79003	553.82010
265)	7-Jun-21	14:12:44	12.2789	2296.29	1.84559	554.18990
266)	7-Jun-21	14:16:08	12.3356	2295.82	1.90226	554.65990
267)	7-Jun-21	14:19:40	12.3944	2295.40	1.96114	555.08010
268)	7-Jun-21	14:23:20	12.4556	2294.94	2.02226	555.54000
269)	7-Jun-21	14:27:04	12.5178	2294.50	2.08448	555.98000
270)	7-Jun-21	14:30:56	12.5822	2294.02	2.14892	556.46000
271)	7-Jun-21	14:34:56	12.6489	2293.61	2.21559	556.86990
272)	7-Jun-21	14:39:04	12.7178	2293.10	2.28448	557.37990
273)	7-Jun-21	14:43:18	12.7883	2292.64	2.35503	557.84010
274)	7-Jun-21	14:47:40	12.8611	2292.18	2.42781	558.30000
275)	7-Jun-21	14:52:10	12.9361	2291.78	2.50281	558.70000
276)	7-Jun-21	14:56:50	13.0139	2291.33	2.58059	559.14990
277)	7-Jun-21	15:01:38	13.0939	2290.86	2.66059	559.61990
278)	7-Jun-21	15:06:34	13.1761	2290.36	2.74281	560.11990
279)	7-Jun-21	15:11:40	13.2611	2289.88	2.82781	560.60010
280)	7-Jun-21	15:16:54	13.3483	2289.46	2.91503	561.02000
281)	7-Jun-21	15:22:20	13.4389	2289.00	3.00559	561.48000
282)	7-Jun-21	15:27:54	13.5317	2288.57	3.09837	561.90990
283)	7-Jun-21	15:33:40	13.6278	2288.10	3.19448	562.37990
284)	7-Jun-21	15:39:36	13.7267	2287.66	3.29337	562.82010
285)	7-Jun-21	15:45:42	13.8283	2287.21	3.39503	563.27000
286)	7-Jun-21	15:52:00	13.9333	2286.78	3.50003	563.70000
287)	7-Jun-21	15:58:30	14.0417	2286.28	3.60837	564.20000

SRO Gauge Falloff Test Data
Louisiana Green Fuels
Stratigraphic Test Well 1 - 5050' Sand Falloff

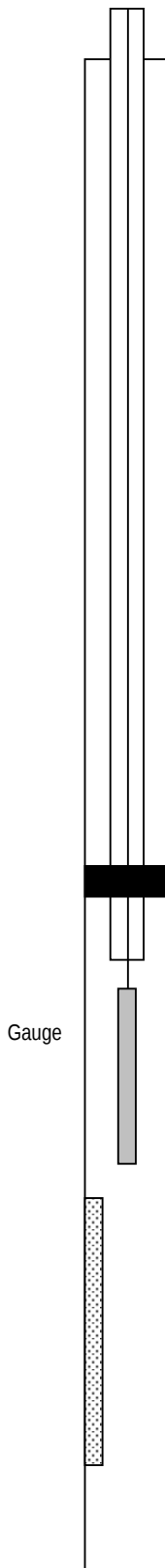
State Louisiana	Test Date June 7, 2021
Parish Caldwell	Interpretation Date June 25, 2021
Field Riverton	Report Number 5050' Sand_Fall

	Date (mm-dd-yy)	Time (hh:mm:ss)	Elapsed Time (hrs)	Meas. Press. (psig)	Delta Time (Hours)	Delta Press. (psi)
288)	7-Jun-21	16:05:14	14.1539	2285.89	3.72059	564.59010
289)	7-Jun-21	16:12:08	14.2689	2285.40	3.83559	565.08010
290)	7-Jun-21	16:19:16	14.3878	2284.97	3.95448	565.51000
291)	7-Jun-21	16:26:36	14.5100	2284.53	4.07670	565.95000
292)	7-Jun-21	16:34:10	14.6361	2284.08	4.20281	566.39990
293)	7-Jun-21	16:41:58	14.7661	2283.63	4.33281	566.85010
294)	7-Jun-21	16:50:02	14.9006	2283.06	4.46726	567.41990
295)	7-Jun-21	16:58:20	15.0389	2282.46	4.60559	568.02000
296)	7-Jun-21	17:06:52	15.1811	2282.26	4.74781	568.22000
297)	7-Jun-21	17:15:42	15.3283	2281.84	4.89503	568.63990
298)	7-Jun-21	17:24:48	15.4800	2281.50	5.04670	568.98000
299)	7-Jun-21	17:34:10	15.6361	2281.02	5.20281	569.46000
300)	7-Jun-21	17:53:46	15.9628	2280.19	5.52948	570.29000

Well Test Schematic
Louisiana Green Fuels
Stratigraphic Test Well 1 - 5050' Sand Falloff

State Louisiana
Parish Caldwell
Field Riverton

Test Date June 7, 2021
Interpretation Date June 25, 2021
Report Number 5050' Sand_Fall



Net Zone Height (ft) 25
 Formation Volume Factor (rbt/mscf) 1.0000
 Viscosity (cp) 0.5623
 Total Compressibility (1/psi) 6.8100E-06
 Oil Gravity (API) 0.00
 GOR (Scf/Stbl) 0.00
 Saturations (Gas, Oil, Water) frac 0.000 / 1.000 / 0.000
 Gas Specific Gravity (dim) 0.00
 Bottomhole Temperature (F) 140
 Porosity (Frac) 0.24
 Open Hole Diameter (ft) 0.23

	1	2	3	
Tubing Outside Diameter	2.875			
Tubing Inside Diameter	1.992			
Tubing Length	4970			
Tubing Volume (bbls)	19.16			19.16

Packer Depth	4970			
Gauge Depth	5052			
Top of Perforations	5052	0 ft		
Mid of Perforations	5069		17 ft	
Bottom of Perforations	5086			34 ft
PBTD	5125			

Perforation Detail

	Top (ft-md)	Btm (ft-md)	Net (ft)	SPF	Diam (inches)
1	5052	5061	9		
2	5066	5086	20		
3					
4					
5					
6					
			29		

Appendix D

Stress Calculations of the Injection Well Tubulars



Geostock Sandia

APPENDIX D
Strategic Biofuels
Louisiana Green Fuels Site
Plant Wells -1, 2 & 3
Tubular Design Calculations

1 Potable Water String

The greatest burst, collapse and tension stresses induced over the life of the 24-inch potable water casing occur during its installation.

- A. **Burst:** The burst pressure of the casing is governed by conditions present at the casing shoe and at surface. The shoe scenario (*Option 1*) assumes that the formation will fracture before the casing ruptures, while the surface scenario assumes that a kick has occurred, and the casing contains only gas. The second option is during normal two plug cementing if the shoe were to become plugged. For this option, the maximum burst pressure at the shoe and surface will occur if the float shoe plugs during cementing resulting in a sudden pressure increase in the casing during cementing. The greater of the two anticipated pressures will dictate the required burst strength of the casing.

Option 1

$$P_{shoe} = (FG + SF) \times 0.052 \times D_{csg} - MW \times 0.052 \times D_{csg}$$

and

$$P_{surf} = P_{shoe} - (G_g \times D_{csg})$$

where,

P_{shoe}	=	Maximum anticipated shoe pressure, psi
P_{surf}	=	Maximum anticipated surface pressure, psi
FG	=	Estimated fracture pressure at shoe, lb/gal
SF	=	Burst loading safety factor, (1.5 lb/gal)
D_{csg}	=	Casing setting depth, feet
MW	=	Mud Weight of drilling fluid, lb/gal
0.052	=	Conversion factor, psi-gal/ft-lb
G_g	=	Gas gradient, (0.115 psi/ft)

$$P_{shoe} = (12.5 + 1.5) \times 0.052 \times 300 - 9.0 \times 0.052 \times 300$$

$$P_{shoe} = 78 \text{ psi}$$

$$P_{surf} = 78 - (0.115 \times 300)$$

$$P_{surf} = 43.5 \text{ psi}$$

Option 2

$$P_{shoe} = P_{pump} + CD_{lead} \times 0.052 \times D_{cmtl} + CD_{tail} \times 0.052 \times D_{cmtt} + (FG + SF) \times 0.052 \times D_{csg} - MW \times 0.052 \times D_{csg}$$

and

$$P_{surf} = P_{pump} - (0)$$

where,

P_{shoe}	=	Maximum anticipated shoe pressure, psi
P_{surf}	=	Maximum anticipated surface pressure, psi,
P_{pump}	=	Maximum anticipated pump applied pressure, psi, assume 500 psi
CD_{lead}	=	Estimated density of lead cement slurry, lb/gal
CD_{tail}	=	Estimated density of tail cement slurry, lb/gal
FG	=	Estimated fracture pressure at shoe, lb/gal
SF	=	Burst loading safety factor, (1.5 lb/gal)
D_{csg}	=	Casing setting depth, feet
D_{cmtl}	=	Estimated height of lead cement column in casing, feet
D_{cmtt}	=	Estimate height of tail cement column in casing, feet
D_{csg}	=	Estimate height of drilling mud column in casing cementing, feet
MW	=	Mud Weight of drilling fluid, lb/gal
0.052	=	Conversion factor, psi-gal/ft-lb
Gg	=	Gas gradient, (0.115 psi/ft)

$$P_{shoe} = 500 + (12.5 \times 0.052 \times 200 + 14.8 \times 0.052 \times 83 + 9.0 \times 0.052 \times 17) - 9.0 \times 0.052 \times 300$$

$$P_{shoe} = 561.8 \text{ psi}$$

$$P_{surf} = 500 - (0)$$

$$P_{surf} = 500 \text{ psi}$$

For Plant Well 1, 2, & 3:

The burst pressure rating of the 24-inch O.D., 174 lb/ft, Grade K-55 surface casing is 2,760 psi, which results in a safety factor of 4.91 (2760/561.8) for Option 2.

- B. Collapse:** The collapse pressure of the casing is governed by conditions present at the shoe during cementing of the casing with an inner string job. The scenario assumes that the casing is field with freshwater inside and plug or blockage occurs at surface when the cement reaches surface resulting a 500-psi pressure spike at the shoe. The anticipated pressure will dictate the required collapse strength of the casing.

$$P_{shoe} = P_{pump} + (MW_{lead} \times 0.052 \times D_{lead}) + (MW_{tail} \times 0.052 \times D_{tail}) - (MW_{FW} \times 0.052 \times D_{FW})$$

where,

P_{shoe}	=	Maximum anticipated external shoe pressure, psi
P_{pump}	=	Maximum pump pressure at surface, psi
MW_{lead}	=	Mud Weight of lead cement, lb/gal
MW_{tail}	=	Mud Weight of tail cement, lb/gal
MW_{FW}	=	Mud Weight of Freshwater, lb/gal
D_{lead}	=	Height of Lead Cement, feet
D_{tail}	=	Height of tail slurry, feet
D_{FW}	=	Height of freshwater in casing, feet
0.052	=	Conversion factor, psi-gal/ft-lb

$$P_{shoe} = 500 + (12.5 \times 0.052 \times 200) + (14.8 \times 0.052 \times 100) - (8.34 \times 0.052 \times 300)$$

$$P_{shoe} = 577 \text{ psi}$$

For Plant Well 1, 2, & 3:

The collapse pressure rating of the 24-inch O.D., 174 lb/ft, Grade K-55 surface casing is 1,160 psi, which results in a safety factor of 2.0 (1160/577)

- C. Tension:** The tensile strength of the casing is governed by the unit tubular weight and buoyancy effects.

$$W_{max} = W_{csg} \times D_{csg} - MW \times A_{csg} \times 0.052 \times D_{csg}$$

where,

W_{max}	=	Maximum tensile weight at worst case, lbs
W_{csg}	=	Unit casing weight, lb/ft
D_{csg}	=	Casing setting depth, feet
MW	=	Mud Weight of drilling fluid, lb/gal
A_{csg}	=	Cross-sectional area of casing, sq. in.
0.052	=	Conversion factor, psi-gal/ft-lb

For Plant Well 1, 2, & 3:

$$W_{max} = 174 \times 300 - 9.0 \times 50.39 \times 0.052 \times 300$$

$$W_{max} = 45,125 \text{ lbs}$$

The tensile rating of the 24-inch O.D., 174.0 lb/ft, Grade K-55 casing is 2,771,000 lbs, which results in a safety factor of 61.4 (2,771,000/45,125).

The tensile rating of the Tenaris ER connection on the 24-inch O.D., 174.0 lb/ft, Grade K-55 casing is 2,771,000 lbs, which results in a safety factor of 61.4 (2,771,000/45,125).

2 Surface Casing

The greatest burst, collapse and tension stresses induced over the life of the surface casing occur during its installation.

A. Burst: The burst pressure of the casing is governed by conditions present at the casing shoe and at surface. The maximum burst pressure at the shoe and surface will occur if the float shoe plugs during cementing resulting in a sudden pressure increase in the casing during cementing. The greater of the two anticipated pressure at surface or the shoe will dictate the required burst strength of the casing.

$$P_{shoe} = P_{pump} + CD_{lead} \times 0.052 \times D_{cmtl} + CD_{tail} \times 0.052 \times D_{cmtt} + (FG + SF) \times 0.052 \times D_{csg} - MW \times 0.052 \times D_{csg}$$

and

$$P_{surf} = P_{pump} - (0)$$

where,

P_{shoe}	=	Maximum anticipated shoe pressure, psi
P_{surf}	=	Maximum anticipated surface pressure, psi,
P_{pump}	=	Maximum anticipated pump applied pressure, psi, assume 500 psi
CD_{lead}	=	Estimated density of lead cement slurry, lb/gal
CD_{tail}	=	Estimated density of tail cement slurry, lb/gal
FG	=	Estimated fracture pressure at shoe, lb/gal
SF	=	Burst loading safety factor, (1.5 lb/gal)
D_{csg}	=	Casing setting depth, feet
D_{cmtl}	=	Estimated height of lead cement column in casing, feet
D_{cmtt}	=	Estimate height of tail cement column in casing, feet
D_{csg}	=	Estimate height of drilling mud column in casing cementing, feet
MW	=	Mud Weight of drilling fluid, lb/gal
0.052	=	Conversion factor, psi-gal/ft-lb
Gg	=	Gas gradient, (0.115 psi/ft)

$$P_{shoe} = 500 + (12.5 \times 0.052 \times 681 + 14.8 \times 0.052 \times 306 + 9.0 \times 0.052 \times 213) - 9.0 \times 0.052 \times 1200$$

$$P_{shoe} = 616.5 \text{ psi}$$

$$P_{surf} = 500 - (0)$$

$$P_{surf} = 500 \text{ psi}$$

For Plant Well 1, 2, & 3:

The burst pressure rating of the 18-5/8-inch O.D., 87.5 lb/ft, Grade K-55 surface casing is 2,250 psi, which results in a safety factor of 3.65 (2250/616.5).

B. Collapse: The collapse pressure of the casing is governed by conditions present at the shoe during cementing of the casing. The scenario assumes that the casing is field with freshwater following the cementing. The anticipated pressure will dictate the required collapse strength of the casing.

$$P_{shoe} = (MW_{lead} \times 0.052 \times D_{lead}) + (MW_{tail} \times 0.052 \times D_{tail}) - (MW_{FW} \times 0.052 \times D_{shoe})$$

where,

P_{shoe}	=	Maximum anticipated external shoe pressure, psi
MW_{FW}	=	Mud Weight of freshwater, lb/gal
MW_{lead}	=	Mud Weight of lead cement, lb/gal
MW_{tail}	=	Mud Weight of tail cement, lb/gal
D_{shoe}	=	Depth of casing shoe, feet
D_{lead}	=	Depth of Lead Cement, feet
D_{tail}	=	Height of tail slurry, feet
0.052	=	Conversion factor, psi-gal/ft-lb

$$P_{shoe} = (12.5 \times 0.052 \times 900) + (14.8 \times 0.052 \times 300) - (8.34 \times 0.052 \times 1200)$$

$$P_{shoe} = 295.5 \text{ psi}$$

For Plant Well 1, 2, & 3:

The collapse pressure rating of the 18-5/8-inch O.D., 87.5 lb/ft, Grade K-55 surface casing is 630 psi, which results in a safety factor of 2.2 (630/295.5).

C. Tension: The tensile strength of the casing is governed by the unit tubular weight and buoyancy effects.

$$W_{max} = W_{csg} \times D_{csg} - MW \times A_{csg} \times 0.052 \times D_{csg}$$

where,

W_{max}	=	Maximum tensile weight at worst case, lbs
W_{csg}	=	Unit casing weight, lb/ft
D_{csg}	=	Casing setting depth, feet
MW	=	Mud Weight of drilling fluid, lb/gal
A_{csg}	=	Cross-sectional area of casing, sq. in. 18-5/8" = 24.86 sq inches
0.052	=	Conversion factor, psi-gal/ft-lb

For Plant Well 1, 2, & 3:

$$W_{max} = 87.5 \times 1200 - 9.0 \times 24.86 \times 0.052 \times 1200$$

$$W_{max} = 91,038.6 \text{ lbs}$$

The tensile rating of the 18-5/8-inch O.D., 87.5 lb/ft, Grade K-55 surface casing is 1,367,000 lbs, which results in a safety factor of 15.0 (1,367,000/91,039).

The tensile rating of the buttress connection on the 18-5/8-inch O.D., 87.5 lb/ft, Grade K-55 surface casing is 1,427,000 lbs, which results in a safety factor of 15.7 (1,427,000/91,039).

3 Intermediate Casing

The greatest burst, collapse and tension stresses induced over the life of the intermediate casing occur during its installation.

- A. **Burst:** The greatest rupture stresses induced over the life of the protection casing occur during the cementing of the casing. This scenario assumes that lost circulation occurs, and the float equipment plugs up with all the cement inside the casing. The drilling fluid is used as the displacement fluid, and the maximum allowable surface pressure during this operation is 1,000 psig.

$$P_{shoe} = MW_{lead} \times 0.052 \times H_{lead} + MW_{tail} \times 0.052 \times H_{tail} - MW \times 0.052 \times L_{csg} + MASP_{cmt}$$

where,

P_{shoe}	=	Maximum anticipated shoe pressure, psi
MW_{lead}	=	Mud Weight of Lead Cement, lb/gal
H_{lead}	=	Height of lead cement, feet
MW_{tail}	=	Mud Weight of Tail Cement, lb/gal
H_{tail}	=	Height of tail cement, feet
MW	=	Mud Weight of drilling fluid, lb/gal
L_{csg}	=	Affected length of casing, feet
Cap_{csg}	=	Casing capacity (13-3/8" = 0.1521 bbl/ft)
V_{lead}	=	Volume of lead cement from cementing recommendation
V_{tail}	=	Volume of tail cement from cementing recommendation
0.052	=	Conversion factor, psi-gal/ft-lb
$MASP_{cmt}$	=	Maximum allowable surface pressure during cementing, psig

For Plant Well 1, 2, & 3:

The highest collapse pressure will occur during the second stage cementing for the 13-3/8-inch intermediate casing. Using the cementing volume calculations, the lead cement volume is 232.1 bbl and the density is 13.5 lb/gal. The tail cement volume is 56.6 bbl and the density is 14.5 lb/gal.

$$H_{lead} = \text{Volume of lead cement} / \text{Casing capacity}$$

$$H_{lead} = 232.1 / 0.1521$$

$$H_{lead} = 1,526 \text{ feet}$$

$$H_{tail} = \text{Volume of tail cement} / \text{Casing capacity}$$

$$H_{tail} = 56.6 / 0.1521$$

$$H_{tail} = 272 \text{ feet}$$

Since the density of the drilling fluid inside the casing equals the drilling fluid density in the casing annulus, the affected length of casing is the total length of the lead and tail cements (1,526 + 272), or 1,798 feet (total depth for this stage is 3,000 ft). Inserting these values into the master equation:

$$P_{shoe} = (13.5 \times 0.052 \times 1,526) + (14.5 \times 0.052 \times 272) - (9.0 \times 0.052 \times 1,798) + 1,000$$

$$P_{shoe} = 1,071.3 + 205.1 - 841.5 + 1,000$$

$$P_{shoe} = 1,434.9 \text{ psi}$$

The burst pressure rating of the 13-3/8-inch O.D., 61.0 lb/ft, Grade K-55 intermediate casing is 3,090 psi, which results in a safety factor of 2.15 (3,090/1,434.9).

- B. **Collapse:** The collapse pressure of the casing is governed by conditions present at the shoe and at the top of tail cement during cementing of the casing. Highest collapse pressure from the cementing will be during the second stage cementing at 3,000 feet. The other possibility is if the wellbore were to bridge in the annulus above the top of the stage cement pumping resulting in an estimated 800 psi pressure surge over the hydrostatic pressure difference at the shoe. Both scenarios assume that the casing is filled with fresh water inside as the

displacement fluid. The greater of the two anticipated pressures will dictate the required collapse strength of the casing.

$$P_{DV1} = (MW_{lead} \times 0.052 \times D_{lead}) + (MW_{tail} \times 0.052 \times L_{tail}) + (MW_M \times 0.052 \times D_M) - (MW_{fw} \times 0.052 \times D_{DV1})$$

and

$$P_{shoe} = (MW_{lead} \times 0.052 \times D_{tail}) + (MW_M \times 0.052 \times D_{shoe}) - (MW_{fw} \times 0.052 \times D_{shoe}) + 1,000 \text{ psi}$$

where,

P_{shoe}	=	Maximum anticipated external shoe pressure, psi
P_{DV1}	=	Maximum anticipated external pressure at the stage tool at 3,000 ft, psi
MW_{lead}	=	Mud Weight of lead cement, lb/gal
MW_{tail}	=	Mud Weight of tail cement, lb/gal
MW_M	=	Mud Weight of drilling mud, lb/gal
MW_{fw}	=	Mud Weight of freshwater, lb/gal
D_{lead}	=	Height of Lead Cement, feet
D_{tail}	=	Height of Tail cement, feet
D_M	=	Height of drilling fluid, feet
D_{fw}	=	Height of fresh water, feet
D_{DV1}	=	Depth of 1 st cementing stage tool, feet
D_{shoe}	=	Depth of casing shoe, feet
0.052	=	Conversion factor, psi-gal/ft-lb

$$P_{DV1} = (13.5 \times 0.052 \times 1,250) + (14.5 \times 0.052 \times 300) + (9.0 \times 0.052 \times 1,450) - (8.33 \times 0.052 \times 3,000)$$

$$P_{DV1} = 482.8 \text{ psi}$$

$$P_{shoe} = (16.02 \times 0.052 \times 900) + (9.0 \times 0.052 \times 3,000) - (8.33 \times 0.052 \times 3,900) + 800$$

$$P_{shoe} = 1,264.4 \text{ psi}$$

For Plant Well 1, 2, & 3:

The collapse pressure rating of the 13-3/8-inch O.D., 61.0 lb/ft, Grade K-55 intermediate casing 3,000 feet is 1,540 psi during second stage cementing, which results in a safety factor of 3.19 (1,540/482.8).

The collapse pressure rating of the 13-3/8-inch O.D., 61.0 lb/ft, 13CR65 intermediate casing 3,900 feet is 1,620 psi during first stage cementing, which results in a safety factor of 1.28 (1,620/1,264.4).

C. **Tension:** The tensile strength of the casing is governed by the unit tubular weight and buoyancy effects.

$$W_{max} = W_{csg} \times D_{csg} - MW \times A_{csg} \times 0.052 \times D_{csg}$$

where,

W_{max}	=	Maximum tensile weight at worst case, lbs
W_{csg}	=	Unit casing weight, lb/ft
D_{csg}	=	Casing setting depth, feet
MW	=	Mud Weight of drilling fluid, lb/gal
A_{csg}	=	Cross-sectional area of casing, sq. in. 13-3/8" = 17.487
0.052	=	Conversion factor, psi-gal/ft-lb

For Plant Well 1, 2, & 3:

$$W_{max} = 61.0 \times 3,900 - 9.4 \times 17.487 \times 0.052 \times 3,900$$

$$W_{max} = 204,564 \text{ lbs}$$

The tensile rating of the 13-3/8-inch O.D., 61.0 lb/ft, Grade K-55 intermediate casing is 962,000 lbs, which results in a safety factor of 4.7 (962,000/204,564).

The tensile rating of the Buttress connection on the 13-3/8-inch O.D., 61.0 lb/ft, Grade K-55 intermediate casing is 1,169,000 lbs, which results in a safety factor of 5.71 (1,169,000/204,564).

4 Completion Casing

The greatest burst, collapse and tension stresses induced over the life of the intermediate casing occur during its installation.

- A. **Burst:** The greatest rupture stresses induced over the life of the protection casing occur during the cementing of the casing. This scenario assumes that lost circulation occurs, and the float equipment plugs up with all the cement inside the casing. The drilling fluid is used as the displacement fluid, and the maximum allowable surface pressure during this operation is 1,000 psig.

$$P_{shoe} = MW_{lead} \times 0.052 \times H_{lead} + MW_{tail} \times 0.052 \times H_{tail} - MW \times 0.052 \times L_{csg} + MASP_{cmt}$$

where,

P_{shoe}	=	Maximum anticipated shoe pressure, psi
MW_{lead}	=	Mud Weight of Lead Cement, lb/gal
H_{lead}	=	Height of lead cement, feet
MW_{tail}	=	Mud Weight of Tail Cement, lb/gal
H_{tail}	=	Height of tail cement, feet
MW	=	Mud Weight of drilling fluid, lb/gal
L_{csg}	=	Affected length of casing, feet
Cap_{csg}	=	Casing capacity (9-5/8" = 0.0773 bbl/ft)
V_{lead}	=	Volume of lead cement from calculations
V_{tail}	=	Volume of tail cement from calculations
0.052	=	Conversion factor, psi-gal/ft-lb
$MASP_{cmt}$	=	Maximum allowable surface pressure during cementing, psig

For Plant Well 1, 2, & 3:

As there is not a lead cement, its' volume is zero bbls. The tail cement volume is 295.6 bbl and the density is 16.02 lb/gal.

$$H_{lead} = \text{Volume of lead cement} / \text{Casing capacity}$$

$$H_{lead} = 0/0.0773$$

$$H_{lead} = 0$$

$$H_{tail} = \text{Volume of tail cement} / \text{Casing capacity}$$

$$H_{tail} = 174 / 0.0773$$

$$H_{tail} = 2,251 \text{ feet}$$

Since the density of the drilling fluid inside the casing equals the drilling fluid density in the casing annulus, the affected length of casing is the total length of the lead and tail cements (0 + 2,251), or 2,251 feet. Inserting these values into the master equation:

$$P_{shoe} = (0) + (16.02 \times 0.052 \times 2,251) - (9.6 \times 0.052 \times 2,251) + 1,000$$

$$P_{shoe} = 0 + 1,875.2 - 1,123.7 + 1,000 \text{ psi}$$

$$P_{shoe} = 1,751.5 \text{ psi}$$

The burst pressure rating of the 9-5/8-inch O.D., 36.0 lb/ft, Grade 22CR65 completion casing is 4,160 psi, which results in a safety factor of 2.38 (4,160/1,751.5).

The burst rating of the 9-5/8-inch O.D., 36.0 lb/ft, Grade K-55 completion casing (upper section of hole) is 3,520 psi. With the bottom of the Grade K-55 casing located at 3,000 feet, assumed hydrostatic pressure gradient inside and outside the casing should both be equal due to both being filled with 9.6 lb/gal drilling mud. The pressure at 3,000 feet is approximately 1,000 psi which results in a safety factor of 3.52 (3,520/1,000).

- B. Collapse:** The collapse pressure of the casing is governed by conditions present at the shoe during cementing of the casing. The scenario assumes that the casing is filled with drilling mud or water inside as the displacement fluid. The anticipated pressure will dictate the required collapse strength of the casing.

$$P_{shoe} = (MW_{lead} \times 0.052 \times D_{lead}) + (MW_{tail} \times 0.052 \times L_{tail}) - (MW \times 0.052 \times TD_{Casing})$$

where,

P_{shoe}	=	Maximum anticipated external shoe pressure, psi
MW_{lead}	=	Mud Weight of lead cement, lb/gal (Drilling Mud, Mud Flush)
MW_{tail}	=	Mud Weight of tail cement, lb/gal
D_{lead}	=	Depth of Lead Cement, feet
L_{tail}	=	Height of tail slurry, feet
0.052	=	Conversion factor, psi-gal/ft-lb

Stage 1

$$\begin{aligned} P_{shoe} &= (9.6 \times 0.052 \times 3,000) + (16.02 \times 0.052 \times 3,920) - (9.6 \times 0.052 \times 6,920) \\ P_{shoe} &= 1,497.6 + 3,265.5 - 3,454.5 \text{ psi} \\ P_{shoe} &= 1,308.6 \text{ psi} \end{aligned}$$

For Plant Well 1, 2, & 3:

The collapse pressure rating of the 9-5/8-inch O.D., 36.0 lb/ft, Grade 22CR65 completion casing is 2,190 psi, which results in a safety factor of 1.67 (2,190/1,309).

The collapse pressure rating of the 9-5/8-inch O.D., 36.0 lb/ft, Grade K-55 completion casing (upper section of hole) is 2,020 psi. With the bottom of the Grade K-55 casing located at 3,000 feet, the pressure on the casing at 3,000 feet is:

$$\begin{aligned} P_{3000} &= (12.5 \times 0.052 \times 2,500) + (15.6 \times 0.052 \times 500) - (8.33 \times 0.052 \times 3,000) \\ P_{3000} &= 2,030.6 - 1,299.5 \text{ psi} \\ P_{3000} &= 731.1 \text{ psi} \end{aligned}$$

Pressure at 3,000 feet is 731.1 psi which results in a safety factor of 2.76 (2,020/731.1).

- C. **Tension:** The tensile strength of the casing is governed by the unit tubular weight and buoyancy effects.

$$W_{max} = W_{csg} \times D_{csg} - MW \times A_{csg} \times 0.052 \times D_{csg}$$

where,

W_{max}	=	Maximum tensile weight at worst case, lbs
W_{csg}	=	Unit weight of casing, lb/ft
D_{csg}	=	Setting depth of casing, feet
MW	=	Mud Weight of drilling fluid, lb/gal
A_{csg}	=	Cross-sectional area of casing (10.25 sq. in.)
D_{csg}	=	Casing setting depth, feet
0.052	=	Conversion factor, psi-gal/ft-lb

For Plant Well 1, 2, & 3:

$$W_{max} = (36 \times 7000) - (9.6 \times 10.25 \times .052 \times 7000)$$

$$W_{max} = 252,000 - 35,817.6$$

$$W_{max} = 216,182.4 \text{ lbs.}$$

The tensile rating of the 9-5/8-inch O.D., 36.0 lb/ft, Grade K-55 completion casing tube is 564,000 lbs, which results in a safety factor of 2.6 (564,000/216,182.4).

The tensile rating of an API LTC connection on the 9-5/8-inch O.D., 36.0 lb/ft, Grade K-55 completion casing is 489,000 lbs, which results in a safety factor of 2.26 (489,000/216,182.4).

Injection Tubing

- A. **Burst:** The greatest rupture stresses induced over the life of the injection tubing occur during injection operations. This scenario assumes that the maximum injection pressure is realized while injecting waste fluids at the maximum permitted specific gravity. The annular fluid is used as a backup.

$$P_{max} = P_{max\ inj} + (0.433 \times SG_{infl} \times D) - (0.433 \times SG_{afl} \times D)$$

where,

P_{max}	=	Maximum internal pressure, psia
$P_{max\ inj}$	=	Maximum injection pressure, psia
SG_{infl}	=	Maximum specific gravity of injection fluid (0.86)
D	=	Depth of tubing, feet
0.433	=	Pressure gradient, psi/ft
SG_{afl}	=	Specific gravity of annular fluid (1.08)

For Plant Well 1, 2, & 3:

$$\begin{aligned} P_{max} &= 2,500 + (0.433 \times 0.86 \times 4,800) - (0.433 \times 1.08 \times 4,800) \\ P_{max} &= 2,500 + 1,787.4 - 2,244.7 \\ P_{max} &= 2,042.7 \end{aligned}$$

The burst pressure rating of the 5-1/2-inch O.D., 20.0 lb/ft, 22CR65 tubing is 7,680 psi, which results in a design safety factor of 3.76 (7,680/2,042.7).

- B. Collapse:** The maximum loading condition for collapse pressure of the injection tubing is governed by conditions present during annular pressure testing of the well. This scenario assumes that the waste fluid inside the tubing is at its minimum specific gravity and the surface injection pressure is zero.

$$P_{max} = P_{maxan} + (0.433 \times SG_{afl} \times D) - (0.433 \times SG_{infl} \times D) - P_{swht}$$

where,

P_{max}	=	Maximum external pressure, psi
P_{maxan}	=	Maximum annular pressure, psi
P_{swht}	=	Shut in wellhead tubing pressure, psi
SG_{afl}	=	Specific gravity of annular fluid (1.02)
D	=	Depth of tubing, feet
0.433	=	Pressure gradient, psi/ft
SG_{infl}	=	Minimum specific gravity of injection fluid (0.84)

For Plant Wells 1, 2 and 3:

Since collapse pressure is calculated based on the annulus testing data, all three wells will be at the same test pressure and packer setting depth for annulus pressure testing. Therefore, the maximum pressure encountered by the wells will be the same. Plant wells 1 and 2 will have the max pressure on the 5.5-inch tubing and plant well 3 will have the pressure on the 7.0-inch tubing. The Plant well 3 inner tubing (4.5-inch) will encounter the maximum collapse pressure during a time when injection is being conducted down the outer injection tubing and no injection down the inner tubing.

$$P_{max} = 2,600 + (0.433 \times 1.08 \times 4,800) - (0.433 \times 0.84 \times 4800) - 1,100$$

$$P_{max} = 2,600 + 2,244.7 - 1,745.9 - 1,100$$

$$P_{max} = 1,998.8 \text{ psi}$$

The collapse pressure rating of the 5-1/2-inch O.D., 20.0 lb/ft, 22CR65 tubing is 7,540 psi, which results in a design safety factor of 3.77 (7,540/1,998.8) at the shoe. If a casing pressure test was performed with the tubing filled with brine that balanced the bottom hole pressure, then the

maximum collapse pressure would be at surface with a P_{max} of the test pressure of 2,600 psi, which results in a design safety factor of 2.9 (7,540/2,600) at the shoe.

C. Tension: The tensile strength of the injection tubing is governed by the unit tubular weight, with effects from buoyancy included. The maximum tensile weight will be just prior to setting the tubing into the packer. Calculations assume the well is filled with 1.02 specific gravity annular fluid prior to setting each tubing string.

$$W_{max} = W_{ta} \times D \times K_b$$

where,

W_{max}	=	Maximum tensile weight at worst case, lbs
W_{ta}	=	Unit weight of injection tubing, lb/ft
D	=	Depth of tubing, feet
K_b	=	Bouyancy Factor

and,

$$K_b = \left(1 - \frac{SG_{afl} * 8.33}{65.44} \right)$$

where,

SG_{afl}	=	Specific gravity of annular fluid (1.08)
8.33	=	Conversion Factor
65.44	=	Conversion Factor

For Plant Wells 1, 2 and 3:

$$\begin{aligned} W_{max} &= (20.0 \times 4,800) \times (1 - (1.08 \times 8.33)/65.44) \\ W_{max} &= 96,000 \times 0.8625 \\ W_{max} &= 82,802 \text{ lbs.} \end{aligned}$$

The tensile rating of the body of the 5.5-inch O.D., 20.0 lb/ft, Grade 22CR65 injection tubing body is 379,000 lbs, which results in a safety factor of 4.58 (379,000 /82,802).

The tensile rating of the Tenaris Blue connection on the 5.5-inch O.D., 20.0 lb/ft, Grade 22CR65 injection tubing is 379,000 lbs, which results in a safety factor of 4.58 (379,000 /82,802).