

33-23S.-23W

FORMATION TEST DATA

WANCAS

33-235-236

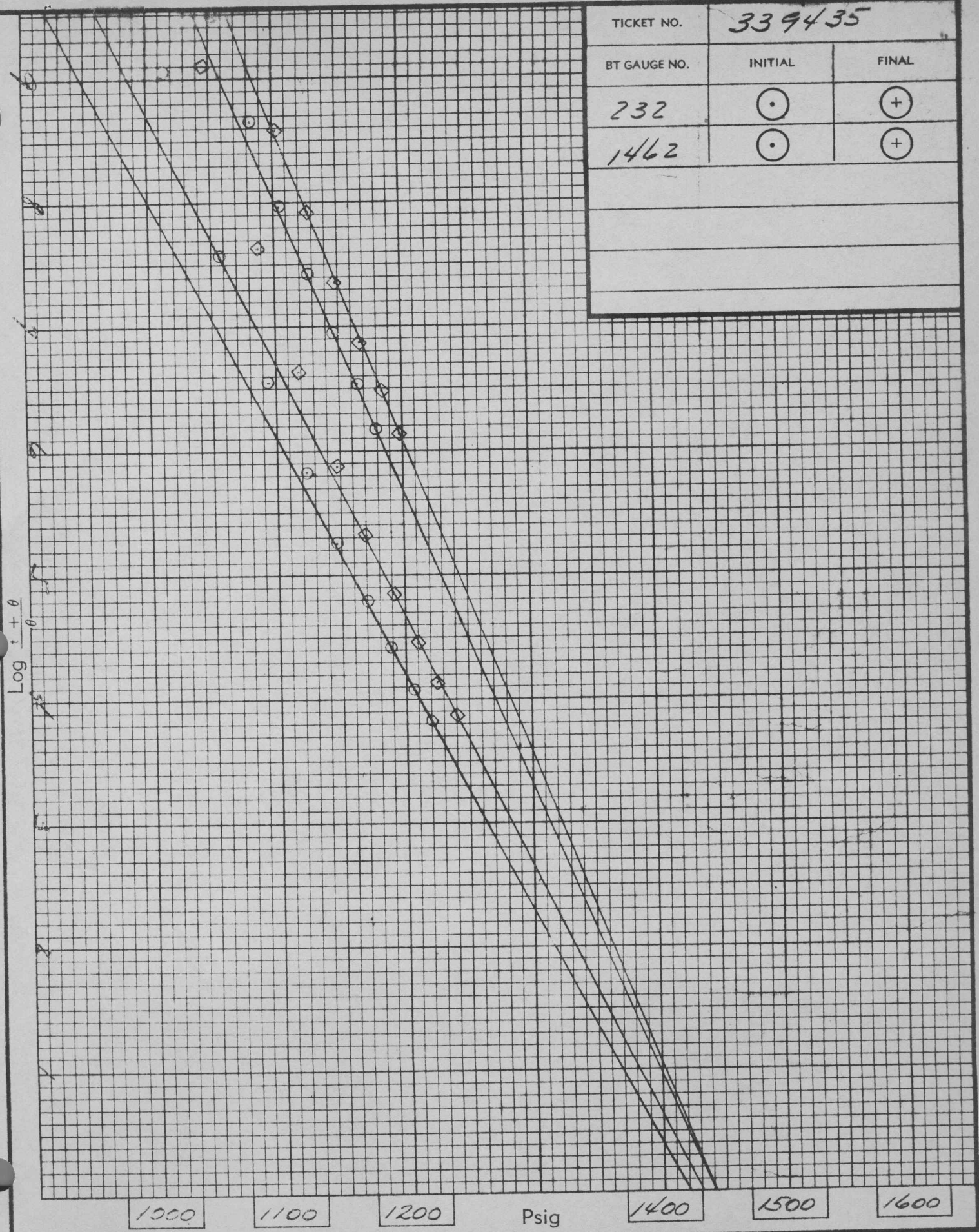
Gauge No. 232						Depth 4660		Clock 12 hour		Ticket No. 339435	
	First Flow Period		Initial Closed in Pressure			Second Flow Period		Final Closed in Pressure			
	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	Time Defl. .000"	PSIG Temp. Corr.	Time Defl. .000"	Log $\frac{t+\theta}{\theta}$	PSIG Temp. Corr.	
P ₀	.000	19	.000	-	187	.000	197	.000	-	406	
P ₁	.021	76	.0149	1.179	954	.1055	257	.020	1.513	916	
P ₂	.042	85	.0298	.906	1014	.2110	310	.040	1.225	974	
P ₃	.063	99	.0447	.756	1057	.3165	360	.060	1.062	1016	
P ₄	.084	112	.0596	.655	1093	.4220	406	.080	.949	1051	
P ₅	.105	126	.0745	.582	1123			.100	.865	1081	
P ₆	.126	138	.0894	.525	1147			.120	.797	1105	
P ₇	.147	151	.1043	.479	1170			.140	.741	1127	
P ₈	.168	165	.1192	.441	1189			.160	.695	1147	
P ₉	.189	175	.1341	.409	1206			.180	.654	1164	
P ₁₀	.210	187	.1490	.382	1220			.200	.619	1179	

Gauge No. 1462			Depth 4691			Clock 12		hour		
P ₀	.000	52	.000	-	208	.000	224	.000	-	424
P ₁	.020	95	.0139	1.187	990	.101	275	.0194	1.507	931
P ₂	.040	104	.0278	.914	1045	.202	330	.0388	1.219	991
P ₃	.060	120	.0417	.763	1086	.303	379	.0582	1.056	1037
P ₄	.080	133	.0556	.662	1119	.404	424	.0776	.943	1071
P ₅	.100	146	.0695	.589	1147			.0970	.859	1101
P ₆	.120	160	.0834	.531	1170			.1164	.792	1127
P ₇	.140	174	.0973	.485	1191			.1358	.736	1148
P ₈	.160	186	.1112	.447	1210			.1552	.689	1167
P ₉	.180	196	.1251	.415	1225			.1746	.649	1184
P ₁₀	.200	208	.1390	.387	1240			.1940	.614	1198
Reading Interval 3.5			2			15		3 Minutes		

REMARKS:

SPECIAL PRESSURE DATA

TICKET NO.	339435	
BT GAUGE NO.	INITIAL	FINAL
232	⊙	⊕
1462	⊙	⊕



EXTRAPOLATED PRESSURE GRAPH

Liquid Production

B.T. Gauge Numbers			232	1462	Ticket Number	339435
Initial Hydrostatic			2462	2489	Elevation	2429 ft.
Final Hydrostatic			2443	2465	Indicated Production	1st Flow 200.9 bbls. day
1st Flow	Initial	Time	19	52	Total Flow	212.7 bbls. day
	Final	35	187	208	Drill Collar Length	171 ft.
Initial Closed In Pressure			20	1220	Drill Collar I.D.	2.25 in.
2nd Flow	Initial	---	197	224	Drill Pipe Factor	.0142 bbls. ft.
	Final	60	406	424	Hole Size	7.875-6 in.
Final Closed In Pressure			30	1179	Footage Tested	28 ft.
Extrapolated Static Pressure	Initial		1420	1430	Mud Weight	9.7 lbs. gal.
	Final		1440	1410	Viscosity, Oil or Water	3.6 cp
Slope per cycle P10	Initial		896	938	Oil API Gravity	36.3
	Final		1020	1048	Water Specific Gravity	—

Remarks:

SUMMARY		Gauge No. 232 Depth 4660'		Gauge No. 1462 Depth 4695'		Units
Product	Equation	Initial	Final	Initial	Final	
Production	$Q = \frac{1440 R}{t}$	197.4	212.7	200.9	212.7	bbls. day
Transmissibility	$\frac{Kh}{\mu} = \frac{162.6 Q}{m}$	61.3	82.3	66.4	88.2	md. ft. cp
Indicated Flow Capacity	$Kh = \frac{Kh}{\mu} \mu$	220.5	296.5	239.1	317.6	md. ft.
Average Effective Permeability	$K = \frac{Kh}{h}$	7.9	10.6	8.5	11.3 ✓	md.
	$K_i = \frac{Kh}{h_i}$					md.
Damage Ratio	$DR = .183 \frac{P_s - P_f}{m}$	0.4	0.5	0.5	0.5 ✓	—
Theoretical Potential w/Damage Removed	$Q_1 = Q DR$	197.4	212.7	200.9	212.7	bbls. day
Approx. Radius of Investigation	$b \approx \sqrt{Kt}$ or $\sqrt{Kt_0}$	16.6	31.7	17.3	32.8	ft.
	$b_1 \approx \sqrt{K_1 t}$ or $\sqrt{K_1 t_0}$					ft.
Potentiometric Surface *	$Pot. = EI - GD + 2.319 P_s$	1062.0	1108.4	1054.2	1077.4	ft.

NOTICE. These calculations are based upon information furnished by you and taken from Drill Stem Test pressure charts, and are furnished you for your information. In furnishing such calculations and evaluations based thereon, Halliburton is merely expressing its opinion. You agree that Halliburton makes no warranty express or implied as to the accuracy of such calculations or opinions, and that Halliburton shall not be liable for any loss or damage, whether due to negligence or otherwise, in connection with such calculations and opinions.

INTERPRETATIONS AND CALCULATIONS