

## K F R O G E N   A N A L Y S I S

FOR

THE CLEVELAND CLIFFS IRON COMPANY-WELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
60	2.555	0.0	0.0					
61	2.505	0.9	0.9					
62	2.410	7.6	8.5					
63	2.290	16.7	25.2					
64	2.250	19.9	45.2					
65	2.250	19.9	65.1					
66	2.210	23.2	88.3					
67	2.210	23.2	111.6					
68	2.215	22.8	134.4					
69	2.210	23.2	157.6					
70	2.205	23.7	181.3					
71	2.210	23.2	204.5					
72	2.210	23.2	227.8					
73	2.200	24.1	251.8					
74	2.205	23.7	275.5					
75	2.225	22.0	297.5					
76	2.225	22.0	319.5					
77	2.240	20.8	340.2					
78	2.265	18.7	358.9					
79	2.225	22.0	380.9					
80	2.225	22.0	402.9					
81	2.255	19.5	422.4					
82	2.260	19.1	441.6					
83	2.235	21.2	462.7					
84	2.210	23.2	486.0					
85	2.215	22.8	508.8					
86	2.190	24.9	533.7					
87	2.220	22.4	556.1					
88	2.170	26.6	582.7					
89	2.150	28.4	611.1					
90	2.145	28.8	639.9					
91	2.145	28.8	668.7					
92	2.155	27.9	696.7					
93	2.160	27.5	724.2					
94	2.130	30.1	754.3					
95	2.125	30.6	784.9					
96	2.090	33.7	818.6					
97	2.075	35.1	853.7					
98	2.100	32.8	886.6					
99	2.160	27.5	914.1					
100	2.090	33.7	947.8					
101	2.075	35.1	982.9					
102	2.030	39.4	1022.3					
103	2.025	39.8	1062.1					
104	2.020	40.3	1102.5					
105	2.015	40.8	1143.3					
106	2.045	37.0	1181.2					
107	2.075	35.1	1216.3					
108	2.08	35.1	1251.4					
109	1.760	66.0	1322.2					

## K E R O G E N   A N A L Y S I S

FOR

THE CLEVELAND CLIFFS IRON COMPANY-WELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCUM. YIELD	RHC-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
110	1.615	87.1	1409.3					
111	1.520	100.9	1510.2					
112	1.815	61.9	1572.1					
113	2.050	37.5	1609.5					
114	2.185	25.3	1634.9					
115	2.225	22.0	1656.9					
116	2.235	21.2	1678.0					
117	2.235	21.2	1699.2					
118	2.230	21.6	1720.8					
119	2.230	21.6	1742.3					
120	2.245	20.3	1762.7					
121	2.255	19.5	1782.2					
122	2.260	19.1	1801.3					
123	2.225	22.0	1823.3					
124	2.225	22.0	1845.3					
125	2.230	21.6	1866.9					
126	2.235	21.2	1888.0					
127	2.250	19.9	1908.0					
128	2.260	19.1	1927.1					
129	2.260	19.1	1946.2					
130	2.255	19.5	1965.8					
131	2.255	19.5	1985.3					
132	2.260	19.1	2004.4					
133	2.275	17.9	2022.3					
134	2.265	18.7	2041.0					
135	2.275	17.9	2059.0					
136	2.260	19.1	2078.1					
137	2.230	21.6	2099.7					
138	2.230	21.6	2121.2					
139	2.240	20.8	2142.0					
140	2.265	18.7	2160.7					
141	2.240	20.8	2181.4					
142	2.230	21.6	2203.0					
143	2.230	21.6	2224.6					
144	2.225	22.0	2246.6					
145	2.230	21.6	2268.2					
146	2.230	21.6	2289.7					
147	2.235	21.2	2310.9					
148	2.260	19.1	2330.0					
149	2.260	19.1	2349.1					
150	2.230	21.6	2370.7					
151	2.260	19.1	2385.8					
152	2.280	17.5	2407.4					
153	2.275	17.9	2425.3					
154	2.275	17.9	2443.2					
155	2.275	17.9	2461.1					
156	2.275	17.9	2479.0					
157	2.275	17.9	2496.9					
158	2.275	17.9	2514.8					
159	2.275	17.9	2532.7					

## K E R O G E N   A N A L Y S I S

FOR

THE CLEVELAND CLIFFS IRON COMPANY-KELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
160	2.250	18.9	2564.5					
161	2.150	28.4	2592.8					
162	2.140	29.2	2622.1					
163	2.135	29.7	2651.8					
164	2.100	32.8	2684.6					
165	2.090	33.7	2718.4					
166	2.130	30.1	2748.5					
167	2.150	28.4	2776.9					
168	2.220	22.4	2799.3					
169	2.225	22.0	2821.3					
170	2.220	22.4	2843.7					
171	2.215	22.8	2866.5					
172	2.215	22.8	2889.3					
173	2.115	31.5	2920.8					
174	2.245	20.3	2941.1					
175	2.285	17.1	2958.2					
176	2.310	15.2	2973.4					
177	2.315	14.8	2988.1					
178	2.320	14.4	3002.5					
179	2.320	14.4	3016.9					
180	2.290	16.7	3033.6					
181	2.275	17.9	3051.5					
182	2.285	17.1	3068.7					
183	2.280	17.5	3086.2					
184	2.275	17.9	3104.1					
185	2.300	15.9	3120.0					
186	2.280	17.5	3137.6					
187	2.275	17.9	3155.5					
188	2.260	19.1	3174.6					
189	2.245	20.3	3194.9					
190	2.230	21.6	3216.5					
191	2.250	19.9	3236.5					
192	2.270	18.3	3254.8					
193	2.260	19.1	3273.9					
194	2.235	21.2	3295.1					
195	2.205	23.7	3318.7					
196	2.235	21.2	3339.9					
197	2.230	21.6	3361.4					
198	2.280	17.5	3379.0					
199	2.280	17.5	3396.5					
200	2.265	18.7	3415.2					
201	2.260	19.1	3434.3					
202	2.270	18.3	3452.6					
203	2.300	15.9	3468.6					
204	2.290	16.7	3485.3					
205	2.285	17.1	3502.4					
206	2.280	17.5	3519.2					
207	2.280	17.5	3536.5					
208	2.280	17.5	3553.8					
209	2.280	17.5	3571.1					

## K E R O G E N   A N A L Y S I S

F O R

T H E   C L E V E L A N D   C L I F F S   I R O N   C O M P A N Y - W E L L   X - 4

DEPTH	D E N S I T Y   L O G			V E L O C I T Y   L O G			D E N S I T Y   A N D   V E L O C I T Y	
	R H O - B	G A L / T O N	A C C U M .   Y I E L D	R H O - B	G A L / T O N	A C C U M .   Y I E L D	G A L / T O N	A C C U M .   Y I E L D
210	2.305		3587.7					
211	2.285		3604.8					
212	2.255		3624.3					
213	2.265		3643.0					
214	2.240	20.8	3663.8					
215	2.245	20.3	3684.1					
216	2.260	19.1	3703.2					
217	2.275	17.9	3721.2					
218	2.195	24.5	3745.7					
219	2.245	20.3	3766.0					
220	2.230	21.6	3787.6					
221	2.230	21.6	3809.2					
222	2.230	21.6	3830.7					
223	2.220	22.4	3853.1					
224	2.215	22.8	3875.9					
225	2.230	21.6	3897.5					
226	2.215	22.8	3920.3					
227	2.220	22.4	3942.7					
228	2.220	22.4	3965.1					
229	2.265	18.7	3983.9					
230	2.230	21.6	4005.4					
231	2.235	21.2	4026.6					
232	2.270	18.3	4044.9					
233	2.250	19.9	4064.8					
234	2.200	24.1	4088.9					
235	2.215	22.8	4111.7					
236	2.230	21.6	4133.3					
237	2.190	24.9	4158.2					
238	2.260	19.1	4177.4					
239	2.285	17.1	4194.5					
240	2.230	21.6	4216.0					
241	2.225	22.0	4238.0					
242	2.225	22.0	4260.0					
243	2.210	23.2	4283.2					
244	2.210	23.2	4306.5					
245	2.240	20.8	4327.2					
246	2.245	20.3	4347.6					
247	2.230	21.6	4369.1					
248	2.270	18.3	4387.5					
249	2.265	18.7	4406.2					
250	2.225	22.0	4428.2					
251	2.225	22.0	4450.1					
252	2.220	22.4	4472.5					
253	2.190	24.9	4497.5					
254	2.220	22.4	4519.9					
255	2.260	19.1	4539.0					
256	2.225	22.0	4561.0					
257	2.225	21.6	4582.5					
258	2.225	21.6	4604.1					
259	2.225	21.6	4625.7					

## K E R O G E N   A N A L Y S I S

FOR

THE CLEVELAND CLIFFS IRON COMPANY-WELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
260	2.225	17.0	4647.7					
261	2.280	17.5	4665.2					
262	2.280	17.5	4682.7					
263	2.285	17.1	4699.8					
264	2.270	18.3	4718.1					
265	2.270	18.3	4736.4					
266	2.245	20.3	4756.8					
267	2.250	19.9	4776.7					
268	2.280	17.5	4794.2					
269	2.255	19.5	4813.8					
270	2.255	19.5	4833.3					
271	2.255	19.5	4852.8					
272	2.230	21.6	4874.4					
273	2.185	25.3	4899.7					
274	2.285	17.1	4916.9					
275	2.320	14.4	4931.2					
276	2.305	15.5	4946.8					
277	2.300	15.9	4962.7					
278	2.305	15.5	4978.3					
279	2.290	16.7	4995.0					
280	2.275	17.9	5012.9					
281	2.295	16.3	5029.2					
282	2.305	15.5	5044.8					
283	2.265	18.7	5063.5					
284	2.255	19.5	5083.0					
285	2.235	21.2	5104.2					
286	2.200	24.1	5128.2					
287	2.190	24.9	5153.2					
288	2.280	17.5	5170.7					
289	2.280	17.5	5188.2					
290	2.210	23.2	5211.4					
291	2.165	27.1	5238.5					
292	2.170	26.6	5265.1					
293	2.160	27.5	5292.6					
294	2.225	22.0	5314.6					
295	2.245	20.3	5334.9					
296	2.200	24.1	5359.0					
297	2.155	27.9	5387.0					
298	2.135	29.7	5416.6					
299	2.115	31.5	5448.1					
300	2.165	27.1	5475.2					
301	2.230	21.6	5496.8					
302	2.220	22.4	5519.2					
303	2.240	20.8	5539.9					
304	2.210	23.2	5563.1					
305	2.180	25.8	5588.9					
306	2.220	14.0	5622.5					
307	2.220	14.0	5636.5					
308	2.220	14.0	5650.5					
309	2.220	14.0	5664.5					

## K E R O G E N   A N A L Y S I S

FOR

THE CLEVELAND CLIFFS IRON COMPANY-WELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
310	2.190	25.9	5670.0					
311	2.240	20.8	5690.8					
312	2.375	10.2	5701.0					
313	2.365	10.9	5711.9					
314	2.345	12.5	5724.4					
315	2.335	13.2	5737.6					
316	2.250	19.9	5757.5					
317	2.210	23.2	5780.8					
318	2.350	12.1	5792.8					
319	2.420	6.9	5799.7					
320	2.420	6.9	5806.6					
321	2.390	9.1	5815.7					
322	2.380	9.8	5825.5					
323	2.300	15.5	5841.4					
324	2.365	10.9	5852.4					
325	2.410	7.6	5860.0					
326	2.420	6.9	5866.9					
327	2.395	8.7	5875.6					
328	2.375	10.2	5885.8					
329	2.335	13.2	5899.0					
330	2.305	15.5	5914.5					
331	2.380	9.8	5924.4					
332	2.445	5.1	5929.5					
333	2.425	6.5	5936.0					
334	2.460	4.0	5940.0					
335	2.470	3.3	5943.3					
336	2.445	5.1	5948.4					
337	2.490	1.9	5950.3					
338	2.515	0.2	5950.6					
339	2.530	0.0	5950.6					
340	2.520	0.0	5950.6					
341	2.515	0.2	5950.8					
342	2.505	0.9	5951.7					
343	2.530	0.0	5951.7					
344	2.535	0.0	5951.7					
345	2.530	0.0	5951.7					
346	2.540	0.0	5951.7					
347	2.550	0.0	5951.7					
348	2.540	0.0	5951.7					
349	2.510	0.6	5952.2					

## K E R O G E N   A N A L Y S I S

FOR

THE CLEVELAND CLIFFS IRON COMPANY-WELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
350	2.535	0.0	0.0	60.6	0.0	0.0	0.0	0.0
351	2.530	0.0	0.0	60.6	0.0	0.0	0.0	0.0
352	2.545	0.0	0.0	60.6	0.0	0.0	0.0	0.0
353	2.565	0.0	0.0	61.0	0.0	0.0	0.0	0.0
354	2.560	0.0	0.0	60.6	0.0	0.0	0.0	0.0
355	2.520	0.0	0.0	61.0	0.0	0.0	0.0	0.0
356	2.495	1.6	1.6	61.0	0.0	0.0	0.8	0.8
357	2.490	1.9	3.5	63.2	0.0	0.0	1.0	1.8
358	2.515	0.2	3.7	64.1	0.0	0.0	0.1	1.9
359	2.545	0.0	3.7	64.9	0.0	0.0	0.0	1.9
360	2.530	0.0	3.7	64.9	0.0	0.0	0.0	1.9
361	2.485	2.3	6.0	64.9	0.0	0.0	1.1	3.0
362	2.465	3.7	9.7	64.0	0.0	0.0	1.8	4.8
363	2.480	2.6	12.3	64.4	0.0	0.0	1.3	6.2
364	2.500	1.2	13.6	70.5	4.1	4.1	2.7	8.8
365	2.475	3.0	16.5	74.4	7.5	11.6	5.2	14.1
366	2.415	7.3	23.8	75.7	8.6	20.2	7.9	22.0
367	2.305	15.5	39.3	76.1	9.0	29.2	12.3	34.3
368	2.330	13.6	52.9	73.9	7.0	36.3	10.3	44.6
369	2.490	1.9	54.9	71.3	4.8	41.0	3.4	48.0
370	2.500	1.2	56.1	67.0	1.2	42.2	1.2	49.2
371	2.530	0.0	56.1	63.6	0.0	42.2	0.0	49.2
372	2.530	0.0	56.1	64.0	0.0	42.2	0.0	49.2
373	2.490	1.9	58.0	64.0	0.0	42.2	1.0	50.1
374	2.460	4.0	62.1	64.9	0.0	42.2	2.0	52.1
375	2.405	8.0	70.1	69.1	2.9	45.1	5.4	57.6
376	2.390	9.1	79.1	75.6	8.6	53.7	8.8	66.4
377	2.345	12.5	91.6	79.9	12.5	66.2	12.5	78.9
378	2.300	15.9	107.5	81.7	14.2	80.4	15.1	94.0
379	2.235	21.2	128.7	79.9	12.5	92.9	16.8	110.8
380	2.385	9.5	138.1	76.9	9.7	102.6	9.6	120.4
381	2.455	4.4	142.5	72.5	5.8	108.4	5.1	125.5
382	2.480	2.6	145.2	67.7	1.8	110.2	2.2	127.7
383	2.505	0.9	146.1	65.6	0.0	110.2	0.5	128.1
384	2.530	0.0	146.1	65.6	0.0	110.2	0.0	128.2
385	2.525	0.0	146.1	65.6	0.0	110.2	0.0	128.2
386	2.515	0.2	146.3	65.6	0.0	110.2	0.1	128.3
387	2.480	2.6	148.9	66.4	0.7	111.1	1.7	130.0
388	2.415	7.3	156.1	70.3	3.9	115.0	5.6	135.6
389	2.360	11.3	167.5	72.5	5.8	120.8	8.6	144.1
390	2.300	15.9	183.4	77.2	10.0	130.8	13.0	157.1
391	2.265	18.7	202.1	79.8	12.4	143.2	15.6	172.7
392	2.315	14.8	216.9	81.1	13.6	156.9	14.2	186.9
393	2.330	13.6	230.5	77.2	10.0	166.9	11.8	198.7
394	2.355	11.7	242.2	75.0	8.0	174.9	9.9	208.5
395	2.365	10.9	253.1	76.3	9.2	184.1	10.1	218.6
396	2.320	9.1	262.2	75.4	8.4	192.4	8.7	227.3
397	2.340	11.2	273.5	72.4	5.7	198.2	8.5	235.8
398	2.340	11.2	284.5	68.1	2.1	200.2	5.0	240.8
399	2.340	11.2	295.5	64.6	0.0	200.2	0.5	241.3

## K E R O G E N   A N A L Y S I S

FOR

THE CLEVELAND CLIFFS IRON COMPANY-WELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
400	2.560	0.0	282.4	60.7	0.0	200.2	0.0	241.3
401	2.555	0.0	282.4	59.0	0.0	200.2	0.0	241.3
402	2.520	0.0	282.4	59.9	0.0	200.2	0.0	241.3
403	2.455	4.4	286.8	58.2	0.0	200.2	2.2	243.5
404	2.420	6.9	293.7	56.4	0.0	200.2	3.4	247.0
405	2.410	7.6	301.3	62.5	0.0	200.2	3.8	250.8
406	2.475	3.0	304.3	68.1	2.1	202.3	2.5	253.3
407	2.470	3.3	307.6	64.5	0.0	202.3	1.7	255.0
408	2.390	9.1	316.7	67.4	1.5	203.8	5.3	260.3
409	2.270	18.3	335.0	76.6	9.5	213.3	13.9	274.1
410	2.195	24.5	359.5	86.7	19.1	232.4	21.8	295.9
411	2.120	31.0	390.5	85.4	17.8	250.2	24.4	320.4
412	2.110	31.9	422.5	80.8	13.3	263.5	22.6	343.0
413	2.300	15.9	438.4	75.0	8.0	271.6	12.0	355.0
414	2.455	4.4	442.8	72.9	6.2	277.7	5.3	360.2
415	2.450	4.7	447.5	74.4	7.5	285.2	6.1	366.4
416	2.365	10.9	458.4	75.3	8.3	293.5	9.6	376.0
417	2.330	13.6	472.1	81.8	14.3	307.8	14.0	389.9
418	2.285	17.1	489.2	84.7	17.1	324.9	17.1	407.0
419	2.185	25.3	514.5	87.8	20.2	345.1	22.8	429.8
420	2.255	19.5	534.1	86.1	18.5	363.6	19.0	448.8
421	2.280	17.5	551.6	81.8	14.3	377.9	15.9	464.7
422	2.175	26.2	577.8	78.9	11.6	389.5	18.9	483.6
423	2.085	34.2	612.0	77.4	10.2	399.7	22.2	505.8
424	1.950	47.3	659.3	76.7	9.5	409.2	28.4	534.2
425	1.900	52.5	711.8	80.1	12.7	421.9	32.6	566.8
426	1.875	55.2	767.0	84.4	16.8	438.7	36.0	602.8
427	2.075	35.1	802.1	89.3	21.7	460.5	28.4	631.3
428	2.065	36.1	838.2	88.9	21.3	481.8	28.7	660.0
429	2.060	36.5	874.7	86.4	18.8	500.8	27.7	687.6
430	2.025	39.8	914.5	84.6	17.0	517.6	28.4	716.1
431	1.930	49.4	963.9	83.7	16.1	533.7	32.7	748.8
432	2.185	25.3	989.2	76.0	8.9	542.1	17.1	765.9
433	2.310	15.2	1004.4	70.5	4.1	546.1	9.6	775.6
434	2.240	20.8	1025.1	64.7	0.0	546.1	10.4	785.9
435	2.115	31.5	1056.6	61.2	0.0	546.1	15.7	801.7
436	2.035	38.9	1095.5	59.5	0.0	546.1	19.4	821.1
437	1.930	49.4	1144.8	59.2	0.0	546.1	24.7	845.8
438	2.220	22.4	1167.2	61.8	0.0	546.7	11.2	857.0
439	2.360	11.3	1178.6	60.9	0.0	546.7	5.7	862.6
440	2.270	18.3	1196.9	58.3	0.0	546.7	9.2	871.8
441	2.305	15.5	1212.4	61.6	0.0	546.7	7.8	879.6
442	2.315	14.8	1227.2	71.5	4.9	551.7	9.9	889.4
443	2.355	11.7	1238.9	81.5	14.0	565.7	12.9	902.3
444	2.310	15.2	1254.0	89.8	22.3	588.0	18.7	921.0
445	2.245	20.3	1274.4	90.2	22.7	610.6	21.5	942.5
446	2.255	19.5	1293.9	86.2	18.6	629.2	19.1	961.6
447	2.346	12.2	1306.7	83.1	15.6	644.8	14.2	975.8
448	2.346	12.2	1318.9	80.3	12.9	657.6	6.2	982.0
449	2.346	12.2	1318.9	78.2	10.9	668.6	6.6	988.6



## K E R O G E N   A N A L Y S I S

FOR

THE CLEVELAND CLIFFS IRON COMPANY-WELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
450	2.430	6.2	1318.9	78.3	11.0	679.6	8.6	999.2
451	2.385	9.5	1328.3	83.8	16.2	695.8	12.8	1012.1
452	2.330	13.6	1341.9	84.1	16.5	712.3	15.1	1027.1
453	2.240	20.8	1362.7	87.5	19.9	732.2	20.3	1047.5
454	2.220	22.4	1385.1	106.7	41.0	773.2	31.7	1079.1
455	2.260	19.1	1404.2	107.7	42.2	815.4	30.6	1109.8
456	2.250	19.9	1424.1	107.2	41.6	856.9	30.7	1140.5
457	2.165	27.1	1451.2	100.6	33.9	890.8	30.5	1171.0
458	2.140	29.2	1480.5	95.0	27.7	918.6	28.5	1199.5
459	2.150	28.4	1508.8	92.0	24.5	943.1	26.5	1226.0
460	2.195	24.5	1533.3	90.0	22.5	965.6	23.5	1249.4
461	2.290	16.7	1550.0	90.9	23.4	989.0	20.1	1269.5
462	2.255	19.5	1569.6	96.0	28.8	1017.8	24.2	1293.7
463	2.200	24.1	1593.7	96.9	29.8	1047.6	26.9	1320.6
464	2.135	25.7	1623.3	97.2	30.1	1077.7	29.9	1350.5
465	2.075	35.1	1658.5	96.6	29.5	1107.2	32.3	1382.8
466	1.950	47.3	1705.8	96.7	29.6	1136.8	38.4	1421.3
467	2.015	40.8	1746.6	96.5	29.4	1166.1	35.1	1456.3
468	2.195	24.5	1771.1	95.6	28.4	1194.5	26.4	1482.8
469	2.280	17.5	1788.6	92.4	25.0	1219.5	21.2	1504.0
470	2.320	14.4	1803.0	88.4	20.8	1240.3	17.6	1521.6
471	2.310	15.2	1818.1	82.5	15.0	1255.3	15.1	1536.7
472	2.255	19.5	1837.6	77.1	9.9	1265.2	14.7	1551.4
473	2.145	28.8	1866.5	74.0	7.1	1272.3	18.0	1569.4
474	2.055	37.0	1903.4	73.0	6.2	1278.5	21.6	1591.0
475	1.990	43.3	1946.7	72.9	6.2	1284.7	24.7	1615.7
476	2.045	37.9	1984.6	73.0	6.2	1291.0	22.1	1637.8
477	2.305	15.5	2000.2	73.3	6.5	1297.5	11.0	1648.8
478	2.390	9.1	2009.3	73.2	6.4	1303.9	7.8	1656.6
479	2.375	10.2	2019.5	73.2	6.4	1310.3	8.3	1664.9
480	2.390	9.1	2028.5	72.0	5.4	1315.7	7.2	1672.1
481	2.325	14.0	2042.5	68.5	2.4	1318.1	8.2	1680.3
482	2.315	14.8	2057.3	68.6	2.5	1320.4	8.6	1688.9
483	2.290	16.7	2074.0	72.3	5.6	1326.7	11.2	1700.1
484	2.265	18.7	2092.7	78.2	10.9	1337.4	14.8	1715.0
485	2.220	22.4	2115.1	80.7	13.3	1350.1	17.8	1732.8
486	2.185	25.3	2140.5	79.4	12.0	1362.5	18.7	1751.5
487	2.100	32.8	2173.3	74.7	7.7	1370.2	20.3	1771.8
488	2.090	33.7	2207.1	71.9	5.3	1375.5	19.5	1791.3
489	2.330	13.6	2220.7	71.0	4.5	1380.0	9.1	1800.3
490	2.360	11.3	2232.0	71.2	4.7	1384.7	8.0	1808.3
491	2.420	6.9	2238.9	69.9	3.6	1388.3	5.2	1813.6
492	2.405	8.0	2246.9	66.9	1.1	1389.4	4.5	1818.1
493	2.400	8.3	2255.2	66.0	0.4	1389.8	4.4	1822.5
494	2.400	8.3	2263.5	65.6	0.0	1389.8	4.2	1825.7
495	2.440	5.4	2269.0	63.9	0.0	1389.8	2.7	1829.4
496	2.420	6.9	2275.9	64.4	0.0	1389.8	3.4	1832.8
497	2.425	6.5	2282.4	63.9	0.0	1389.8	3.3	1836.1
498	2.430	6.2	2288.6	66.6	0.9	1390.7	3.5	1839.4
499	2.430	6.2	2294.8	68.7	2.6	1393.3	6.6	1846.2

## K E R O G E N   A N A L Y S I S

FOR

THE CLEVELAND CLIFFS IRON COMPANY-WELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
500	2.370	10.6	2309.7	68.3	2.2	1395.5	6.4	1852.6
501	2.390	9.1	2318.8	68.1	2.1	1397.6	5.6	1858.2
502	2.365	10.9	2329.7	69.0	2.8	1400.4	6.9	1865.1
503	2.385	9.5	2339.2	72.2	5.6	1406.0	7.5	1872.6
504	2.370	10.6	2349.8	74.8	7.8	1413.8	9.2	1881.8
505	2.315	14.8	2364.5	76.9	9.7	1423.5	12.2	1894.0
506	2.300	15.9	2380.5	76.7	9.5	1433.1	12.7	1906.8
507	2.350	12.1	2392.5	74.9	7.9	1441.0	10.0	1916.8
508	2.365	10.9	2403.5	74.5	7.6	1448.6	9.3	1926.0
509	2.385	9.5	2412.9	75.0	8.0	1456.6	8.7	1934.8
510	2.335	13.2	2426.2	69.8	3.5	1460.1	8.4	1943.1
511	2.270	18.3	2444.5	67.2	1.3	1461.4	9.8	1952.9
512	2.235	21.2	2465.6	68.4	2.3	1463.8	11.7	1964.7
513	2.105	32.4	2498.0	73.8	7.0	1470.7	19.7	1984.4
514	2.175	26.2	2524.2	79.8	12.4	1483.1	19.3	2003.7
515	2.135	29.7	2553.9	84.4	16.8	1499.9	23.3	2026.9
516	2.220	22.4	2576.3	90.7	23.2	1523.1	22.8	2049.7
517	2.240	20.8	2597.1	97.1	30.0	1553.1	25.4	2075.1
518	2.235	21.2	2618.2	98.4	31.5	1584.6	26.3	2101.4
519	2.250	19.9	2638.2	93.9	26.6	1611.2	23.2	2124.6
520	2.265	18.7	2656.9	85.6	18.0	1629.2	18.4	2143.0
521	2.385	9.5	2666.3	77.4	10.2	1639.3	9.8	2152.8
522	2.465	3.7	2670.0	71.6	5.0	1644.4	4.4	2157.2
523	2.450	4.7	2674.7	62.2	0.0	1644.4	2.4	2159.6
524	2.480	2.6	2677.4	64.9	0.0	1644.4	1.3	2160.9
525	2.495	1.6	2678.9	64.9	0.0	1644.4	0.8	2161.7
526	2.435	5.8	2684.8	65.3	0.0	1644.4	2.9	2164.6
527	2.470	3.3	2688.1	67.0	1.2	1645.6	2.3	2166.8
528	2.500	1.2	2689.3	69.2	3.0	1648.6	2.1	2168.9
529	2.495	1.6	2690.9	68.9	2.7	1651.1	2.2	2171.1
530	2.475	3.0	2693.9	68.9	2.7	1654.1	2.9	2174.0
531	2.455	4.4	2698.3	68.5	2.4	1656.1	3.4	2177.4
532	2.495	1.6	2699.9	68.5	2.4	1658.1	2.0	2179.4
533	2.550	0.0	2699.9	68.1	2.1	1661.1	1.0	2180.4
534	2.570	0.0	2699.9	67.6	1.7	1662.1	0.8	2181.2
535	2.580	0.0	2699.9	66.8	1.0	1663.1	0.5	2181.8
536	2.590	0.0	2699.9	64.6	0.0	1663.1	0.0	2181.8
537	2.595	0.0	2699.9	62.9	0.0	1663.7	0.0	2181.8
538	2.585	0.0	2699.9	62.4	0.0	1663.7	0.0	2181.8
539	2.600	0.0	2699.9	62.9	0.0	1663.7	0.0	2181.8
540	2.615	0.0	2699.9	63.7	0.0	1663.7	0.0	2181.8
541	2.610	0.0	2699.9	65.5	0.0	1663.7	0.0	2181.8
542	2.610	0.0	2699.9	67.6	1.7	1665.3	0.8	2182.6
543	2.600	0.0	2699.9	69.4	3.2	1668.5	1.6	2184.2
544	2.575	0.0	2699.9	71.5	4.9	1673.5	2.5	2186.6
545	2.545	0.0	2699.9	74.1	7.2	1680.7	3.6	2190.3
546	2.510	0.6	2700.4	75.5	8.5	1689.1	4.5	2196.8
547	2.475	2.0	2701.4	75.9	8.8	1698.0	5.9	2200.7
548	2.435	3.0	2703.4	73.7	6.9	1704.9	3.4	2204.1
549	2.405	0.0	2703.4	70.7	4.3	1709.1	2.1	2206.2

## K E R O G E N   A N A L Y S I S

FOR

THE CLEVELAND CLIFFS IRON COMPANY-WELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
550	2.630	0.0	2703.4	68.1	2.1	1711.2	1.0	2207.3
551	2.630	0.0	2703.4	68.1	2.1	1713.2	1.0	2208.3
552	2.630	0.0	2703.4	68.1	2.1	1715.3	1.0	2209.4
553	2.650	0.0	2703.4	67.6	1.7	1717.0	0.8	2210.2
554	2.660	0.0	2703.4	67.6	1.7	1718.7	0.8	2211.0
555	2.655	0.0	2703.4	67.6	1.7	1720.3	0.8	2211.9
556	2.655	0.0	2703.4	67.2	1.3	1721.7	0.7	2212.5
557	2.655	0.0	2703.4	66.8	1.0	1722.7	0.5	2213.0
558	2.655	0.0	2703.4	67.2	1.3	1724.1	0.7	2213.7
559	2.660	0.0	2703.4	67.3	1.4	1725.5	0.7	2214.4
560	2.655	0.0	2703.4	67.3	1.4	1726.9	0.7	2215.1
561	2.645	0.0	2703.4	66.4	0.7	1727.6	0.3	2215.5
562	2.625	0.0	2703.4	66.0	0.4	1728.0	0.2	2215.7
563	2.610	0.0	2703.4	66.4	0.7	1728.7	0.3	2216.0
564	2.620	0.0	2703.4	70.7	4.3	1732.9	2.1	2218.2
565	2.610	0.0	2703.4	73.7	6.9	1739.8	3.4	2221.6
566	2.560	0.0	2703.4	74.2	7.3	1747.1	3.7	2225.2
567	2.505	0.9	2704.3	74.2	7.3	1754.4	4.1	2229.3
568	2.570	0.0	2704.3	72.4	5.7	1760.1	2.9	2232.2
569	2.630	0.0	2704.3	70.7	4.3	1764.4	2.1	2234.3
570	2.625	0.0	2704.3	69.4	3.2	1767.6	1.6	2235.9
571	2.590	0.0	2704.3	70.3	3.9	1771.5	2.0	2237.9
572	2.570	0.0	2704.3	71.6	5.0	1776.5	2.5	2240.4
573	2.525	0.0	2704.3	73.3	6.5	1783.0	3.3	2243.7
574	2.485	2.3	2706.6	72.9	6.2	1789.2	4.2	2247.9
575	2.590	0.0	2706.6	71.1	4.6	1793.8	2.3	2250.2
576	2.645	0.0	2706.6	69.0	2.8	1796.6	1.4	2251.6
577	2.645	0.0	2706.6	66.0	0.4	1797.0	0.2	2251.8
578	2.645	0.0	2706.6	64.7	0.0	1797.0	0.0	2251.8
579	2.625	0.0	2706.6	65.1	0.0	1797.0	0.0	2251.8
580	2.595	0.0	2706.6	66.0	0.4	1797.4	0.2	2252.0
581	2.600	0.0	2706.6	65.5	0.0	1797.4	0.0	2252.0
582	2.600	0.0	2706.6	65.1	0.0	1797.4	0.0	2252.0
583	2.635	0.0	2706.6	66.4	0.7	1798.0	0.3	2252.3
584	2.650	0.0	2706.6	66.4	0.7	1798.0	0.3	2252.7
585	2.645	0.0	2706.6	66.4	0.7	1798.0	0.3	2253.0
586	2.630	0.0	2706.6	65.5	0.0	1798.0	0.0	2253.0
587	2.645	0.0	2706.6	65.1	0.0	1798.0	0.0	2253.0
588	2.645	0.0	2706.6	65.5	0.0	1799.5	0.0	2253.0
589	2.620	0.0	2706.6	70.3	3.9	1803.4	2.0	2255.0
590	2.605	0.0	2706.6	71.6	5.0	1808.4	2.5	2257.5
591	2.550	0.0	2706.6	72.0	5.4	1813.8	2.7	2260.2
592	2.555	0.0	2706.6	72.0	5.4	1819.2	2.7	2262.9
593	2.615	0.0	2706.6	70.3	3.9	1823.1	2.0	2264.8
594	2.640	0.0	2706.6	69.0	2.8	1825.9	1.4	2265.2
595	2.620	0.0	2706.6	67.3	1.4	1827.4	0.7	2267.0
596	2.605	0.0	2706.6	66.4	0.7	1828.1	0.3	2267.3
597	2.600	0.0	2706.6	67.3	1.4	1829.5	0.7	2267.5
598	2.575	0.0	2706.6	70.7	4.3	1833.7	2.1	2267.7
599	2.575	0.0	2706.6	74.2	7.3	1841.1	3.7	2267.7

## K E R O G E N   A N A L Y S I S

F O R

T H E   C L E V E L A N D   C L I F F S   I R O N   C O M P A N Y - W E L L   X - 4

DEPTH	D E N S I T Y   L O G			V E L O C I T Y   L O G			D E N S I T Y   A N D   V E L O C I T Y	
	R H O - B	G A L / T O N	A C C U M .   Y I E L D	R H O - B	G A L / T O N	A C C U M .   Y I E L D	G A L / T O N	A C C U M .   Y I E L D
600	2.525	0.0	2706.6	76.3	9.2	1850.2	4.6	2278.4
601	2.560	0.0	2706.6	75.9	8.8	1859.1	4.4	2282.8
602	2.595	0.0	2706.6	72.9	6.2	1865.2	3.1	2285.9
603	2.585	0.0	2706.6	75.5	8.5	1873.7	4.2	2290.1
604	2.555	0.0	2706.6	77.6	10.4	1884.0	5.2	2295.3
605	2.510	0.6	2707.1	78.1	10.8	1894.9	5.7	2301.0
606	2.450	4.7	2711.9	78.1	10.8	1905.7	7.8	2308.8
607	2.555	0.0	2711.9	78.5	11.2	1916.9	5.6	2314.4
608	2.615	0.0	2711.9	77.6	10.4	1927.3	5.2	2319.6
609	2.620	0.0	2711.9	70.7	4.3	1931.5	2.1	2321.7
610	2.595	0.0	2711.9	68.6	2.5	1934.0	1.2	2322.9
611	2.575	0.0	2711.9	69.4	3.2	1937.2	1.6	2324.5
612	2.555	0.0	2711.9	72.9	6.2	1943.3	3.1	2327.6
613	2.525	0.0	2711.9	75.5	8.5	1951.8	4.2	2331.8
614	2.505	0.9	2712.8	76.8	9.6	1961.4	5.3	2337.1
615	2.535	0.0	2712.8	73.7	6.9	1968.3	3.4	2340.5
616	2.560	0.0	2712.8	74.2	7.3	1975.6	3.7	2344.2
617	2.545	0.0	2712.8	78.1	10.8	1986.4	5.4	2349.6
618	2.500	1.2	2714.0	79.4	12.0	1998.5	6.6	2356.2
619	2.440	5.4	2719.5	79.0	11.7	2010.1	8.6	2364.8
620	2.515	0.2	2719.7	76.4	9.3	2019.4	4.7	2369.5
621	2.575	0.0	2719.7	72.5	5.8	2025.2	2.9	2372.4
622	2.580	0.0	2719.7	69.5	3.3	2028.5	1.6	2374.1
623	2.570	0.0	2719.7	69.0	2.8	2031.3	1.4	2375.5
624	2.575	0.0	2719.7	72.5	5.8	2037.1	2.9	2378.4
625	2.535	0.0	2719.7	75.1	8.1	2045.2	4.1	2382.4
626	2.515	0.2	2719.9	76.8	9.6	2054.9	4.9	2387.4
627	2.500	1.2	2721.1	77.3	10.1	2064.9	5.7	2393.0
628	2.495	1.6	2722.7	77.3	10.1	2075.0	5.8	2398.9
629	2.515	0.2	2722.9	75.5	8.5	2083.5	4.3	2403.2
630	2.535	0.0	2722.9	72.9	6.2	2089.7	3.1	2406.3
631	2.535	0.0	2722.9	71.2	4.7	2094.4	2.3	2408.6
632	2.570	0.0	2722.9	70.3	3.9	2098.4	2.0	2410.6
633	2.570	0.0	2722.9	69.0	2.8	2102.4	1.4	2412.0
634	2.570	0.0	2722.9	68.2	2.2	2106.4	1.1	2413.1
635	2.545	0.0	2722.9	67.8	1.8	2110.4	0.9	2414.0
636	2.540	0.0	2722.9	70.0	3.7	2114.4	1.8	2415.8
637	2.550	0.0	2722.9	72.6	5.9	2118.4	2.9	2418.8
638	2.555	0.0	2722.9	74.7	7.7	2122.4	3.9	2422.7
639	2.540	0.0	2722.9	77.4	10.2	2132.6	5.1	2427.8
640	2.545	0.0	2722.9	80.4	13.0	2145.6	6.5	2434.3
641	2.525	0.0	2722.9	80.8	13.3	2158.9	6.7	2440.9
642	2.520	0.0	2722.9	80.4	13.0	2171.9	6.5	2447.4
643	2.520	0.0	2722.9	80.4	13.0	2184.9	6.5	2453.9
644	2.530	0.0	2722.9	79.5	12.1	2197.0	6.1	2460.0
645	2.515	0.2	2723.2	79.5	12.1	2209.1	6.2	2466.1
646	2.485	2.3	2725.4	81.3	13.8	2223.0	8.1	2472.2
647	2.450	4.7	2730.2	86.0	18.4	2241.4	11.6	2478.3
648	2.450	5.1	2735.6	85.5	21.9	2263.3	12.7	2484.4
649	2.425	6.5	2742.1	91.7	24.2	2287.5	15.4	2514.8

## K E R O G E N   A N A L Y S I S

FOR

THE CLEVELAND CLIFFS IRON COMPANY-WELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
650	2.385	9.5	2751.6	93.5	26.1	2313.7	17.8	2532.6
651	2.320	14.4	2766.0	95.7	28.5	2342.1	21.4	2554.0
652	2.340	12.8	2778.8	97.2	30.1	2372.3	21.5	2575.5
653	2.380	9.8	2788.6	93.1	25.7	2398.0	17.8	2593.3
654	2.410	7.6	2796.3	89.9	22.4	2420.3	15.0	2608.3
655	2.460	4.0	2800.3	86.4	18.8	2439.1	11.4	2619.7
656	2.520	0.0	2800.3	83.0	15.5	2454.6	7.7	2627.4
657	2.545	0.0	2800.3	80.2	12.8	2467.4	6.4	2633.8
658	2.575	0.0	2800.3	78.4	11.1	2478.5	5.6	2639.4
659	2.560	0.0	2800.3	76.6	9.5	2487.9	4.7	2644.1
660	2.530	0.0	2800.3	75.7	8.6	2496.6	4.3	2648.4
661	2.525	0.0	2800.3	75.7	8.6	2505.2	4.3	2652.7
662	2.535	0.0	2800.3	78.7	11.4	2516.6	5.7	2658.4
663	2.525	0.0	2800.3	81.4	13.9	2530.5	7.0	2665.4
664	2.480	2.6	2802.9	81.9	14.4	2544.9	8.5	2673.9
665	2.400	8.3	2811.3	82.8	15.3	2560.2	11.8	2685.7
666	2.450	4.7	2816.0	81.5	14.0	2574.2	9.4	2695.1
667	2.540	0.0	2816.0	78.1	10.8	2585.0	5.4	2700.5
668	2.545	0.0	2816.0	75.4	8.4	2593.4	4.2	2704.7
669	2.550	0.0	2816.0	76.7	9.5	2602.9	4.8	2709.4
670	2.530	0.0	2816.0	75.9	8.8	2611.8	4.4	2713.9
671	2.510	0.6	2816.5	74.6	7.7	2619.4	4.1	2718.0
672	2.530	0.0	2816.5	75.1	8.1	2627.5	4.1	2722.0
673	2.555	0.0	2816.5	79.3	11.9	2639.5	6.0	2728.0
674	2.555	0.0	2816.5	78.4	11.1	2650.6	5.6	2733.5
675	2.545	0.0	2816.5	75.9	8.8	2659.4	4.4	2737.9
676	2.545	0.0	2816.5	79.3	11.9	2671.3	6.0	2743.3
677	2.530	0.0	2816.5	80.6	13.2	2683.3	6.6	2750.5
678	2.490	1.9	2818.5	78.0	10.7	2695.3	6.3	2756.8
679	2.420	6.9	2825.4	77.5	10.3	2707.3	8.6	2765.4
680	2.495	1.6	2827.0	81.0	13.5	2719.3	7.6	2773.0
681	2.540	0.0	2827.0	81.4	13.9	2731.3	7.0	2779.9
682	2.540	0.0	2827.0	76.2	9.1	2743.3	4.5	2784.5
683	2.540	0.0	2827.0	75.3	8.3	2755.3	4.1	2788.6
684	2.530	0.0	2827.0	80.9	13.4	2767.3	6.7	2795.3
685	2.505	0.9	2827.9	81.4	13.9	2779.3	7.4	2802.8
686	2.470	3.3	2831.2	80.9	13.4	2791.3	8.4	2811.1
687	2.420	6.9	2838.1	80.5	13.1	2803.3	10.0	2821.1
688	2.470	3.3	2841.4	80.9	13.4	2815.3	8.4	2829.5
689	2.530	0.0	2841.4	76.6	9.5	2827.1	4.7	2834.2
690	2.510	0.6	2842.0	77.5	10.3	2837.4	5.4	2839.6
691	2.490	1.9	2843.9	80.1	12.7	2850.1	7.3	2847.0
692	2.470	3.3	2847.2	78.8	11.5	2861.5	7.4	2854.4
693	2.405	8.0	2855.2	79.3	11.9	2873.5	10.0	2864.3
694	2.375	10.2	2865.4	79.7	12.3	2885.8	11.3	2875.6
695	2.450	4.7	2870.1	81.9	14.4	2900.2	9.6	2886.1
696	2.470	3.3	2873.4	80.2	12.8	2913.0	8.1	2897.2
697	2.440	5.4	2878.5	83.7	16.1	2929.1	10.8	2908.3
698	2.410	7.6	2887.2	86.3	18.7	2947.8	13.5	2919.4
699	2.355	11.7	2898.5	87.1	19.5	2967.3	15.6	2933.1

## K E R O G E N   A N A L Y S I S

FOR

THE CLEVELAND CLIFFS IRON COMPANY-WELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-8	GAL/TON	ACCUM. YIELD	RHO-8	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
700	2.290	16.7	2915.7	83.7	16.1	2983.4	16.4	2949.5
701	2.375	10.2	2925.9	80.7	13.3	2996.7	11.7	2961.3
702	2.555	0.0	2925.9	76.0	8.9	3005.6	4.5	2965.7
703	2.595	0.0	2925.9	72.1	5.5	3011.1	2.7	2968.4
704	2.610	0.0	2925.9	71.6	5.0	3016.1	2.5	2971.0
705	2.610	0.0	2925.9	70.7	4.3	3020.4	2.1	2973.1
706	2.560	0.0	2925.9	72.9	6.2	3026.5	3.1	2976.2
707	2.525	0.0	2925.9	73.3	6.5	3033.0	3.3	2979.4
708	2.525	0.0	2925.9	72.5	5.8	3038.9	2.9	2982.3
709	2.520	0.0	2925.9	72.9	6.2	3045.0	3.1	2985.4
710	2.515	0.2	2926.1	78.9	11.6	3056.6	5.9	2991.3
711	2.470	3.3	2929.4	82.0	14.5	3071.1	8.9	3000.2
712	2.430	6.2	2935.6	83.7	16.1	3087.2	11.2	3011.4
713	2.345	12.5	2948.0	83.3	15.7	3103.0	14.1	3025.5
714	2.415	7.3	2955.3	83.7	16.1	3119.1	11.7	3037.2
715	2.550	0.0	2955.3	80.7	13.3	3132.3	6.6	3043.8
716	2.575	0.0	2955.3	73.8	7.0	3139.3	3.5	3047.3
717	2.575	0.0	2955.3	76.8	9.6	3148.9	4.8	3052.1
718	2.535	0.0	2955.3	76.8	9.6	3158.6	4.8	3056.9
719	2.455	4.4	2959.7	75.9	8.8	3167.4	6.6	3063.5
720	2.445	5.1	2964.7	74.6	7.7	3175.0	6.4	3069.9
721	2.535	0.0	2964.7	77.2	10.0	3185.0	5.0	3074.9
722	2.550	0.0	2964.7	73.7	6.9	3191.9	3.4	3078.3
723	2.520	0.0	2964.7	72.4	5.7	3197.6	2.9	3081.2
724	2.520	0.0	2964.7	72.4	5.7	3203.4	2.9	3084.0
725	2.475	3.0	2967.7	72.4	5.7	3209.1	4.4	3088.4
726	2.475	3.0	2970.7	72.0	5.4	3214.5	4.2	3092.6
727	2.550	0.0	2970.7	71.1	4.6	3219.1	2.3	3094.9
728	2.565	0.0	2970.7	69.0	2.8	3221.9	1.4	3096.3
729	2.565	0.0	2970.7	66.8	1.0	3222.9	0.5	3096.8
730	2.560	0.0	2970.7	69.4	3.2	3226.1	1.6	3098.4
731	2.550	0.0	2970.7	70.3	3.9	3230.0	2.0	3100.3
732	2.510	0.6	2971.3	70.3	3.9	3231.9	2.2	3102.6
733	2.485	2.3	2973.5	70.3	3.9	3232.9	3.1	3105.7
734	2.465	3.7	2977.2	69.9	3.6	3234.9	3.6	3109.3
735	2.530	0.0	2977.2	68.6	2.5	3236.9	1.2	3110.6
736	2.590	0.0	2977.2	67.3	1.4	3238.9	0.7	3111.3
737	2.595	0.0	2977.2	66.9	1.1	3246.5	0.6	3111.8
738	2.590	0.0	2977.2	66.0	0.4	3246.9	0.2	3112.0
739	2.575	0.0	2977.2	66.0	0.4	3247.2	0.2	3112.2
740	2.575	0.0	2977.2	66.9	1.1	3248.3	0.6	3112.8
741	2.575	0.0	2977.2	68.6	2.5	3250.8	1.2	3114.0
742	2.555	0.0	2977.2	68.6	2.5	3253.3	1.2	3115.2
743	2.545	0.0	2977.2	68.2	2.2	3255.5	1.1	3116.3
744	2.530	0.0	2977.2	67.4	1.5	3257.0	0.8	3117.1
745	2.560	0.0	2977.2	68.6	2.5	3259.5	1.2	3119.3
746	2.565	0.0	2977.2	69.1	2.9	3262.4	1.5	3119.8
747	2.565	0.0	2977.2	69.9	3.6	3266.0	1.8	3121.6
748	2.570	0.0	2977.2	69.9	3.6	3269.6	1.8	3123.4
749	2.570	0.0	2977.2	71.2	4.7	3274.3	2.3	3125.7

## K E R O G E N   A N A L Y S I S

FOR

THE CLEVELAND CLIFFS IRON COMPANY-WELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
750	2.545	0.0	2977.2	71.3	4.8	3279.1	2.4	3128.1
751	2.570	0.0	2977.2	69.6	3.3	3282.4	1.7	3129.8
752	2.600	0.0	2977.2	68.2	2.2	3284.6	1.1	3130.9
753	2.615	0.0	2977.2	67.8	1.8	3286.4	0.9	3131.8
754	2.615	0.0	2977.2	68.6	2.5	3288.9	1.2	3133.0
755	2.590	0.0	2977.2	69.5	3.3	3292.1	1.6	3134.7
756	2.545	0.0	2977.2	69.5	3.3	3295.4	1.6	3136.3
757	2.525	0.0	2977.2	69.1	2.9	3298.3	1.5	3137.7
758	2.560	0.0	2977.2	69.1	2.9	3301.2	1.5	3139.2
759	2.570	0.0	2977.2	69.1	2.9	3304.1	1.5	3140.7
760	2.545	0.0	2977.2	68.6	2.5	3306.6	1.2	3141.9
761	2.505	0.9	2978.1	69.0	2.8	3309.5	1.9	3143.8
762	2.435	5.8	2983.9	69.9	3.6	3313.1	4.7	3148.5
763	2.405	8.0	2991.9	69.9	3.6	3316.6	5.8	3154.3
764	2.470	3.3	2995.2	69.9	3.6	3320.2	3.5	3157.7
765	2.520	0.0	2995.2	69.0	2.8	3323.1	1.4	3159.1
766	2.495	1.6	2996.8	69.4	3.2	3326.2	2.4	3161.5
767	2.475	3.0	2999.8	71.2	4.7	3330.9	3.8	3165.3
768	2.465	3.7	3003.5	74.2	7.3	3338.2	5.5	3170.8
769	2.465	3.7	3007.1	76.8	9.6	3347.9	6.7	3177.5
770	2.465	3.7	3010.8	76.8	9.6	3357.5	6.7	3184.1
771	2.490	1.9	3012.7	74.6	7.7	3365.2	4.8	3188.9
772	2.530	0.0	3012.7	72.5	5.8	3371.0	2.9	3191.8
773	2.560	0.0	3012.7	70.7	4.3	3375.2	2.1	3194.0
774	2.575	0.0	3012.7	68.2	2.2	3377.4	1.1	3195.1
775	2.575	0.0	3012.7	67.7	1.8	3379.2	0.9	3195.9
776	2.545	0.0	3012.7	68.6	2.5	3381.7	1.2	3197.2
777	2.530	0.0	3012.7	69.9	3.6	3385.1	1.8	3199.0
778	2.550	0.0	3012.7	70.3	3.9	3388.5	2.0	3200.9
779	2.550	0.0	3012.7	69.9	3.6	3391.9	1.8	3202.7
780	2.555	0.0	3012.7	69.4	3.2	3395.3	1.6	3204.3
781	2.540	0.0	3012.7	69.9	3.6	3398.7	1.8	3206.1
782	2.525	0.0	3012.7	72.0	5.4	3402.1	2.7	3208.8
783	2.505	0.9	3013.6	72.5	5.8	3405.5	3.4	3212.2
784	2.470	3.3	3017.0	72.5	5.8	3408.9	4.6	3216.7
785	2.460	4.0	3021.0	72.5	5.8	3412.3	4.9	3221.6
786	2.455	4.4	3025.4	74.6	7.7	3415.7	6.0	3227.7
787	2.440	5.4	3030.8	78.1	10.8	3419.1	8.1	3235.8
788	2.390	9.1	3039.9	81.1	13.6	3422.5	11.4	3247.2
789	2.300	15.9	3055.9	80.7	13.3	3425.9	14.6	3261.8
790	2.300	15.9	3071.8	81.1	13.6	3429.3	14.8	3276.5
791	2.445	5.1	3076.9	81.5	14.0	3432.7	9.6	3286.1
792	2.450	4.7	3081.6	81.1	13.6	3436.1	9.2	3295.3
793	2.430	6.2	3087.8	76.3	9.2	3439.5	7.7	3303.0
794	2.405	8.0	3095.8	77.6	10.4	3442.9	9.2	3312.1
795	2.380	9.8	3105.6	81.5	14.0	3446.3	11.9	3324.0
796	2.320	14.4	3120.0	82.4	14.9	3449.7	14.6	3332.7
797	2.265	18.7	3138.7	83.7	16.1	3453.1	17.4	3341.4
798	2.365	10.9	3149.6	88.9	21.3	3456.5	16.1	3349.2
799	2.395	8.7	3158.3	84.5	16.9	3459.9	12.8	3355.1



## K E R O G E N   A N A L Y S I S

F O R

T H E   C L E V E L A N D   C L I F F S   I R O N   C O M P A N Y - W E L L   X - 4

DEPTH	D E N S I T Y   L O G			V E L O C I T Y   L O G			D E N S I T Y   A N D   V E L O C I T Y	
	R H O - B	G A L / T O N	A C C U M .   Y I E L D	R H O - B	G A L / T O N	A C C U M .   Y I E L D	G A L / T O N	A C C U M .   Y I E L D
800	2.365	10.9	3169.3	80.7	13.3	3625.1	12.1	3397.1
801	2.360	11.3	3180.6	78.9	11.6	3636.6	11.4	3408.6
802	2.490	1.9	3182.5	77.2	10.0	3646.6	6.0	3414.6
803	2.560	0.0	3182.5	72.0	5.4	3652.0	2.7	3417.2
804	2.540	0.0	3182.5	67.7	1.8	3653.8	0.9	3418.1
805	2.550	0.0	3182.5	66.0	0.4	3654.1	0.2	3418.3
806	2.550	0.0	3182.5	65.6	0.0	3654.2	0.0	3418.3
807	2.525	0.0	3182.5	63.4	0.0	3654.2	0.0	3418.3
808	2.555	0.0	3182.5	64.3	0.0	3654.2	0.0	3418.3
809	2.610	0.0	3182.5	65.1	0.0	3654.2	0.0	3418.3
810	2.595	0.0	3182.5	62.6	0.0	3654.2	0.0	3418.3
811	2.550	0.0	3182.5	63.4	0.0	3654.2	0.0	3418.3
812	2.540	0.0	3182.5	70.3	3.9	3658.1	2.0	3420.3
813	2.495	1.6	3184.1	76.0	8.9	3667.0	5.2	3425.5
814	2.440	5.4	3189.6	84.2	16.6	3683.6	11.0	3436.6
815	2.390	9.1	3198.7	88.9	21.3	3705.0	15.2	3451.8
816	2.365	10.9	3209.6	91.1	23.6	3728.6	17.3	3469.1
817	2.310	15.2	3224.8	88.1	20.5	3749.1	17.8	3486.9
818	2.370	10.6	3235.3	88.5	20.9	3770.0	15.7	3502.6
819	2.415	7.3	3242.6	84.6	17.0	3787.0	12.1	3514.8
820	2.395	8.7	3251.3	85.9	18.3	3805.3	13.5	3528.3
821	2.280	17.5	3268.8	88.1	20.5	3825.8	19.0	3547.3
822	2.210	23.2	3292.0	91.5	24.0	3849.9	23.6	3570.9
823	2.185	25.3	3317.4	98.0	31.0	3880.9	28.2	3599.1
824	2.185	25.3	3342.7	103.2	36.9	3917.7	31.1	3630.2
825	2.185	25.3	3368.1	106.2	40.4	3958.1	32.9	3663.1
826	2.160	27.5	3395.6	104.5	38.4	3998.1	32.9	3696.0
827	2.120	31.0	3426.6	104.5	38.4	4038.1	34.7	3730.7
828	2.220	22.4	3449.0	98.9	32.0	4078.1	27.2	3757.9
829	2.380	9.8	3458.8	88.9	21.3	4118.1	15.6	3773.5
830	2.415	7.3	3466.1	84.6	17.0	4158.1	12.1	3785.6
831	2.445	5.1	3471.2	81.6	14.1	4198.1	9.6	3795.2
832	2.440	5.4	3476.6	79.4	12.0	4238.1	8.7	3804.0
833	2.405	8.0	3484.6	79.4	12.0	4278.1	10.0	3814.0
834	2.455	4.4	3489.0	79.0	11.7	4318.1	8.0	3822.0
835	2.460	4.0	3493.0	78.1	10.8	4358.1	7.4	3829.4
836	2.460	4.0	3497.0	75.1	8.1	4398.1	6.1	3835.5
837	2.430	6.2	3503.2	72.1	5.5	4438.1	5.8	3841.3
838	2.445	5.1	3508.3	71.2	4.7	4478.1	4.9	3846.2
839	2.440	5.4	3513.7	75.1	8.1	4518.1	6.8	3853.0
840	2.385	9.5	3523.2	82.0	14.5	4558.1	12.0	3865.0
841	2.290	16.7	3539.9	87.6	20.0	4598.1	18.4	3883.3
842	2.175	26.2	3566.1	92.4	25.0	4638.1	25.6	3908.9
843	2.195	24.5	3590.6	95.8	28.6	4678.1	26.5	3935.5
844	2.280	17.5	3608.1	97.6	30.6	4718.1	24.0	3959.5
845	2.285	17.1	3625.3	94.5	27.2	4758.1	22.2	3981.7
846	2.240	20.8	3646.0	93.2	25.8	4798.1	23.3	4004.9
847	2.145	28.8	3674.8	98.4	31.5	4838.1	30.1	4030.1
848	2.100	37.7	3708.6	111.0	46.1	4878.1	39.2	4058.2
849	2.030	39.4	3747.9	117.5	54.3	4955.7	46.8	4121.8



# K E R O G E N   A N A L Y S I S

FOR

THE CLEVELAND CLIFFS IRON COMPANY-WELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
850	1.940	48.3	3796.3	122.3	60.5	4556.2	54.4	4176.2
851	1.865	56.3	3852.5	128.1	68.3	4624.5	62.3	4238.5
852	1.790	64.8	3917.4	129.6	70.4	4694.9	67.6	4306.1
853	1.765	67.8	3985.1	123.5	62.1	4756.9	64.9	4371.0
854	1.865	56.3	4041.4	111.0	46.1	4803.1	51.2	4422.2
855	1.885	54.1	4095.6	103.2	36.9	4839.9	45.5	4467.7
856	2.060	36.5	4132.1	96.5	29.4	4869.3	32.9	4500.7
857	2.230	21.6	4153.7	99.7	32.9	4902.2	27.2	4527.9
858	2.335	13.2	4166.9	98.0	31.0	4933.2	22.1	4550.0
859	2.305	15.5	4182.4	89.8	22.3	4955.5	18.9	4568.9
860	2.275	17.9	4200.3	87.2	19.6	4975.1	18.8	4587.7
861	2.330	13.6	4213.9	85.5	17.9	4993.0	15.8	4603.4
862	2.440	5.4	4219.4	81.6	14.1	5007.1	9.8	4613.2
863	2.445	5.1	4224.5	79.0	11.7	5018.7	8.4	4621.6
864	2.395	8.7	4233.2	79.5	12.1	5030.9	10.4	4632.0
865	2.385	9.5	4242.6	79.9	12.5	5043.4	11.0	4643.0
866	2.345	12.5	4255.1	91.5	24.0	5067.4	18.2	4661.2
867	2.285	17.1	4272.2	95.4	28.2	5095.5	22.6	4683.9
868	2.200	24.1	4296.3	95.4	28.2	5123.7	26.1	4710.0
869	2.095	33.3	4329.6	98.4	31.5	5155.2	32.4	4742.3
870	2.055	37.0	4366.5	101.9	35.4	5190.5	36.2	4778.5
871	2.265	18.7	4385.3	101.5	34.9	5225.5	26.8	4805.4
872	2.310	15.2	4400.4	96.3	29.1	5254.6	22.1	4827.5
873	2.315	14.8	4415.2	89.4	21.8	5276.5	18.3	4845.8
874	2.400	8.3	4423.5	88.6	21.0	5297.5	14.7	4860.5
875	2.455	4.4	4427.9	85.1	17.5	5319.0	10.9	4871.4
876	2.425	6.5	4434.4	82.5	15.0	5340.5	10.7	4882.2
877	2.415	7.3	4441.7	82.5	15.0	5362.0	11.1	4893.3
878	2.395	8.7	4450.4	80.4	13.0	5383.5	10.8	4904.1
879	2.435	5.8	4456.2	81.3	13.8	5405.0	9.8	4913.9
880	2.455	4.4	4460.6	78.7	11.4	5426.5	7.9	4921.8
881	2.450	4.7	4465.3	81.3	13.8	5448.0	9.3	4931.1
882	2.415	7.3	4472.6	86.9	19.3	5469.5	13.3	4944.4
883	2.370	10.6	4483.1	91.6	24.1	5491.0	17.3	4961.7
884	2.295	16.3	4499.4	95.5	28.3	5512.5	22.3	4984.0
885	2.240	20.8	4520.2	98.1	31.1	5534.0	25.9	5009.9
886	2.325	14.0	4534.2	100.7	34.0	5555.5	24.0	5034.0
887	2.335	13.2	4547.4	100.7	34.0	5577.0	23.6	5057.6
888	2.325	14.0	4561.4	96.0	28.8	5598.5	21.4	5079.0
889	2.305	15.5	4576.9	94.2	26.9	5620.0	21.2	5100.2
890	2.330	13.6	4590.5	92.5	25.1	5641.5	19.3	5119.5
891	2.435	5.8	4596.3	88.6	21.0	5663.0	13.4	5132.9
892	2.475	3.0	4599.3	83.5	15.9	5684.5	9.5	5142.4
893	2.500	1.2	4600.6	82.2	14.7	5706.0	8.0	5150.4
894	2.515	0.2	4600.8	82.2	14.7	5727.5	7.5	5157.8
895	2.470	3.3	4604.1	76.6	9.5	5749.0	6.4	5164.2
896	2.445	5.1	4609.2	74.5	7.6	5770.5	6.3	5170.5
897	2.475	3.0	4612.2	75.8	8.7	5792.0	5.9	5176.4
898	2.505	0.0	4613.1	74.0	7.1	5813.5	4.0	5182.9
899	2.530	0.0	4613.1	71.5	4.9	5835.0	2.5	5182.9

## K E R O G E N   A N A L Y S I S

FOR

THE CLEVELAND CLIFFS IRON COMPANY-WELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
900	2.520	0.0	4613.1	71.5	4.9	5757.7	2.5	5185.3
901	2.505	0.9	4614.0	74.1	7.2	5764.9	4.1	5189.4
902	2.470	3.3	4617.3	72.4	5.7	5770.6	4.5	5193.9
903	2.460	4.0	4621.3	75.4	8.4	5779.0	6.2	5200.1
904	2.460	4.0	4625.3	78.4	11.1	5790.1	7.6	5207.7
905	2.435	5.8	4631.1	79.7	12.3	5802.4	9.1	5216.7
906	2.360	11.3	4642.5	77.5	10.3	5812.7	10.8	5227.5
907	2.470	3.3	4645.8	79.3	11.9	5824.6	7.6	5235.1
908	2.470	3.3	4649.1	84.4	16.8	5841.4	10.1	5245.2
909	2.415	7.3	4656.4	85.3	17.7	5859.1	12.5	5257.7
910	2.310	15.2	4671.5	81.0	13.5	5872.7	14.3	5272.0
911	2.270	18.3	4689.8	82.3	14.8	5887.4	16.5	5288.6
912	2.480	2.6	4692.5	81.4	13.9	5901.3	8.3	5296.9
913	2.555	0.0	4692.5	76.7	9.5	5910.9	4.8	5301.6
914	2.535	0.0	4692.5	70.3	3.9	5914.8	2.0	5303.6
915	2.535	0.0	4692.5	69.0	2.8	5917.6	1.4	5305.0
916	2.515	0.2	4692.7	72.9	6.2	5923.8	3.2	5308.2
917	2.455	4.4	4697.0	73.8	7.0	5930.8	5.7	5313.9
918	2.355	11.7	4708.7	74.3	7.4	5938.1	9.5	5323.4
919	2.365	10.9	4719.7	76.4	9.3	5947.4	10.1	5333.5
920	2.450	4.7	4724.4	78.6	11.3	5958.7	8.0	5341.5
921	2.545	0.0	4724.4	76.5	9.4	5968.1	4.7	5346.2
922	2.580	0.0	4724.4	71.7	5.1	5973.2	2.6	5348.8
923	2.625	0.0	4724.4	70.0	3.7	5976.8	1.8	5350.6
924	2.630	0.0	4724.4	67.9	1.9	5978.8	1.0	5351.5
925	2.635	0.0	4724.4	65.7	0.1	5978.8	0.1	5351.6
926	2.625	0.0	4724.4	64.9	0.0	5978.8	0.0	5351.6
927	2.590	0.0	4724.4	64.6	0.0	5978.8	0.0	5351.6
928	2.580	0.0	4724.4	65.5	0.0	5978.8	0.0	5351.6
929	2.585	0.0	4724.4	67.2	1.3	5978.8	0.7	5352.3
930	2.575	0.0	4724.4	68.0	2.0	5978.8	1.0	5353.3
931	2.580	0.0	4724.4	68.0	2.0	5978.8	1.0	5354.3
932	2.570	0.0	4724.4	67.7	1.8	5978.8	0.9	5355.1
933	2.555	0.0	4724.4	66.0	0.4	5978.8	0.2	5355.3
934	2.545	0.0	4724.4	66.4	0.7	5978.8	0.3	5355.7
935	2.525	0.0	4724.4	67.7	1.8	5978.8	0.9	5356.6
936	2.495	1.6	4726.0	67.2	1.3	5978.8	1.5	5358.0
937	2.480	2.6	4728.6	64.2	0.0	5978.8	1.3	5359.3
938	2.490	1.9	4730.6	64.2	0.0	5978.8	1.0	5360.3
939	2.515	0.2	4730.8	64.7	0.0	5978.8	0.1	5360.4
940	2.520	0.0	4730.8	64.7	0.0	5978.8	0.0	5360.4
941	2.535	0.0	4730.8	64.7	0.0	5978.8	0.0	5360.4
942	2.525	0.0	4730.8	65.1	0.0	5978.8	0.0	5360.4
943	2.535	0.0	4730.8	64.7	0.0	5978.8	0.0	5360.4
944	2.565	0.0	4730.8	63.4	0.0	5978.8	0.0	5360.4
945	2.580	0.0	4730.8	63.0	0.0	5978.8	0.0	5360.4
946	2.585	0.0	4730.8	63.4	0.0	5978.8	0.0	5360.4
947	2.610	0.0	4730.8	63.0	0.0	5978.8	0.0	5360.4
948	2.610	0.0	4730.8	63.0	0.0	5978.8	0.0	5360.4
949	2.605	0.0	4730.8	62.1	0.0	5978.8	0.0	5360.4

## K E R O G E N   A N A L Y S I S

FOR

THE CLEVELAND CLIFFS IRON COMPANY - WELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
950	2.610	0.0	4730.8	62.1	0.0	5990.2	0.0	5360.4

FOR

THE CLEVELAND CLIFFS IRON CO. HANY-WELL X-4

14

DENSITY LOG

VELOCITY LOG

DENSITY AND VELOCITY

DEPTH	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
350	2.535	2.1	2.1	2.634	0.0	0.0	1.1	1.1
351	2.530	2.7	4.8	2.634	0.0	0.0	1.4	2.4
352	2.545	1.0	5.9	2.634	0.0	0.0	0.5	2.9
353	2.565	0.0	5.9	2.630	0.0	0.0	0.0	2.9
354	2.560	0.0	5.9	2.634	0.0	0.0	0.0	2.9
355	2.520	3.3	9.7	2.630	0.0	0.0	1.9	4.8
356	2.495	6.6	16.3	2.630	0.0	0.0	3.3	8.2
357	2.490	7.2	23.5	2.608	0.0	0.0	3.6	11.7
358	2.515	4.4	27.9	2.599	0.0	0.0	2.2	13.9
359	2.545	1.0	28.9	2.591	0.0	0.0	0.5	14.4
360	2.530	2.7	31.6	2.591	0.0	0.0	1.4	15.8
361	2.485	7.7	39.3	2.591	0.0	0.0	3.9	19.7
362	2.465	9.9	49.3	2.600	0.0	0.0	5.0	24.6
363	2.480	8.3	57.5	2.595	0.0	0.0	4.1	28.8
364	2.500	6.1	63.6	2.535	2.1	2.1	4.1	32.9
365	2.475	8.8	72.4	2.496	6.5	8.7	7.7	40.5
366	2.415	15.3	87.8	2.483	7.9	16.6	11.6	52.2
367	2.305	26.9	114.7	2.479	8.4	25.0	17.6	69.8
368	2.330	24.3	139.0	2.501	6.0	30.9	15.1	85.0
369	2.490	7.2	146.1	2.527	3.0	34.0	5.1	90.1
370	2.500	6.1	152.2	2.570	0.0	34.0	3.0	93.1
371	2.530	2.7	154.9	2.604	0.0	34.0	1.4	94.4
372	2.530	2.7	157.6	2.600	0.0	34.0	1.4	95.8
373	2.490	7.2	164.8	2.600	0.0	34.0	3.6	99.4
374	2.460	10.5	175.3	2.591	0.0	34.0	5.2	104.6
375	2.405	16.4	191.7	2.549	0.6	34.5	8.5	113.1
376	2.390	18.0	209.7	2.484	7.8	42.4	12.9	126.0
377	2.345	22.8	232.5	2.441	12.5	54.9	17.6	143.7
378	2.300	27.4	259.9	2.423	14.5	69.4	20.9	164.6
379	2.235	34.0	293.8	2.441	12.5	81.9	23.2	187.9
380	2.385	18.5	312.4	2.471	9.3	91.2	13.9	201.8
381	2.455	11.0	323.4	2.515	4.4	95.6	7.7	209.5
382	2.480	8.3	331.7	2.563	0.0	95.6	4.1	213.6
383	2.505	5.5	337.2	2.584	0.0	95.6	2.8	216.4
384	2.530	2.7	339.9	2.584	0.0	95.6	1.4	217.7
385	2.525	3.3	343.1	2.584	0.0	95.6	1.6	219.4
386	2.515	4.4	347.5	2.584	0.0	95.6	2.2	221.6
387	2.480	8.3	355.8	2.575	0.0	95.6	4.1	225.7
388	2.415	15.3	371.1	2.537	1.9	97.5	8.6	234.3
389	2.360	21.2	392.3	2.515	4.4	101.9	12.8	247.1
390	2.300	27.4	419.7	2.468	9.6	111.5	18.5	265.6
391	2.265	31.0	450.7	2.442	12.4	123.9	21.7	287.3
392	2.315	25.0	475.7	2.429	13.8	137.3	19.9	307.2
393	2.330	24.0	500.0	2.469	9.6	147.4	17.0	324.1
394	2.385	21.7	521.7	2.490	7.2	154.6	14.4	338.6
395	2.405	20.7	542.4	2.477	8.6	163.2	16.6	355.2
396	2.415	15.3	557.7	2.464	7.6	170.8	12.8	368.0
397	2.360	21.2	578.9	2.446	4.3	175.1	12.7	380.7
398	2.300	27.4	606.3	2.400	0.0	175.1	10.0	390.7
399	2.265	31.0	637.3	2.386	0.0	175.1	10.0	400.7

FOR

THE CLEVELAND CLIFFS IRON CO WANY-WELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
400	2.560	0.0	604.4	2.633	0.0	175.0	0.0	389.7
401	2.555	0.0	604.4	2.650	0.0	175.0	0.0	389.7
402	2.520	3.8	608.2	2.641	0.0	175.0	1.9	391.6
403	2.455	11.0	619.2	2.658	0.0	175.0	5.5	397.1
404	2.420	14.8	634.0	2.676	0.0	175.0	7.4	404.5
405	2.410	15.9	649.9	2.615	0.0	175.0	7.9	412.5
406	2.475	8.8	658.7	2.559	0.0	175.0	4.4	416.9
407	2.470	9.4	668.1	2.595	0.0	175.0	4.7	421.6
408	2.390	18.0	686.1	2.566	0.0	175.0	9.0	430.6
409	2.270	30.4	716.6	2.474	8.9	184.0	19.7	450.3
410	2.195	37.9	754.5	2.373	19.8	203.8	28.9	479.1
411	2.120	45.1	799.6	2.386	18.4	222.2	31.8	510.9
412	2.110	46.0	845.6	2.432	13.5	235.8	29.8	540.7
413	2.300	27.4	873.0	2.490	7.2	242.9	17.3	558.0
414	2.455	11.0	884.0	2.511	4.8	247.8	7.9	565.9
415	2.450	11.6	895.6	2.496	6.5	254.3	9.0	574.9
416	2.365	20.7	916.2	2.487	7.5	261.8	14.1	589.0
417	2.330	24.3	940.5	2.422	14.6	276.4	19.5	608.5
418	2.285	28.9	969.5	2.393	17.7	294.1	23.3	631.8
419	2.185	38.9	1008.3	2.362	21.0	315.1	29.9	661.7
420	2.255	32.0	1040.3	2.379	19.2	334.2	25.6	687.3
421	2.280	29.4	1069.7	2.422	14.6	348.8	22.0	709.3
422	2.175	39.8	1109.6	2.451	11.5	360.3	25.6	734.9
423	2.085	48.4	1157.9	2.466	9.8	370.1	29.1	764.0
424	1.950	60.5	1218.4	2.473	9.0	379.1	34.8	798.8
425	1.900	64.7	1283.1	2.439	12.8	391.9	38.8	837.5
426	1.875	66.8	1350.0	2.396	17.4	409.3	42.1	879.6
427	2.075	49.3	1399.3	2.347	22.5	431.8	35.9	915.5
428	2.065	50.2	1449.5	2.351	22.1	454.0	36.2	951.7
429	2.060	50.7	1500.1	2.376	19.5	473.5	35.1	986.8
430	2.025	53.8	1554.0	2.394	17.6	491.1	35.7	1022.5
431	1.930	62.2	1616.1	2.403	16.6	507.7	39.4	1061.9
432	2.185	38.9	1655.0	2.480	8.3	516.0	23.6	1085.5
433	2.310	26.4	1681.4	2.535	2.1	518.1	14.3	1099.7
434	2.240	33.5	1714.8	2.593	0.0	518.1	16.7	1116.5
435	2.115	45.6	1760.4	2.628	0.0	518.1	22.8	1139.3
436	2.035	52.9	1813.3	2.645	0.0	518.1	26.5	1165.7
437	1.930	62.2	1875.5	2.648	0.0	518.1	26.1	1196.8
438	2.220	35.4	1911.0	2.622	0.0	518.1	22.1	1214.5
439	2.360	21.2	1932.1	2.631	0.0	518.1	10.6	1225.1
440	2.270	30.4	1962.6	2.657	0.0	518.1	15.2	1240.3
441	2.305	26.9	1989.5	2.624	0.0	518.1	13.4	1253.8
442	2.315	25.0	2015.3	2.525	3.3	521.4	14.6	1268.4
443	2.355	21.7	2037.1	2.425	14.3	535.7	18.0	1286.4
444	2.310	26.4	2063.4	2.342	23.1	558.7	24.7	1311.1
445	2.245	32.0	2095.3	2.333	23.5	582.2	20.2	1339.3
446	2.250	32.0	2128.3	2.378	19.3	601.5	25.6	1364.9
447	2.345	22.2	2151.5	2.406	16.0	617.5	10.6	1384.6
448	2.465	0.9	2181.5	2.437	13.0	640.5	11.5	1396.0
449	2.485	7.7	2209.3	2.458	10.7	641.2	9.2	1405.2

FOR

THE CLEVELAND CLIFFS IRON COMPANY-WELL X-4

## DENSITY LOG

## VELOCITY LOG

## DENSITY AND VELOCITY

DEPTH	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	DENSITY	VELOCITY
450	2.430	13.7	2193.0	2.457	10.8	652.3	12.3	1417.5
451	2.385	18.5	2201.6	2.402	16.7	668.7	17.6	1435.1
452	2.330	24.3	2225.9	2.399	17.1	685.3	20.7	1455.8
453	2.240	33.5	2259.3	2.365	20.7	706.5	27.1	1482.9
454	2.220	35.4	2294.8	2.126	44.5	751.0	40.0	1522.9
455	2.260	31.5	2326.2	2.112	45.8	796.8	38.6	1561.5
456	2.250	32.5	2358.7	2.119	45.2	841.9	38.8	1600.3
457	2.165	40.8	2399.5	2.212	36.3	878.2	38.5	1638.8
458	2.140	43.2	2442.7	2.280	29.4	907.6	36.3	1675.1
459	2.150	42.2	2484.9	2.316	25.8	933.4	34.0	1709.1
460	2.195	37.9	2522.8	2.340	23.3	956.7	30.6	1739.7
461	2.290	28.4	2551.2	2.329	24.4	981.1	26.4	1766.1
462	2.255	32.0	2583.2	2.268	30.7	1011.7	31.3	1797.4
463	2.200	37.4	2620.6	2.257	31.7	1043.5	34.6	1832.0
464	2.135	43.7	2664.2	2.254	32.1	1075.6	37.9	1869.9
465	2.075	49.3	2713.5	2.261	31.4	1106.9	40.3	1910.2
466	1.950	60.5	2774.0	2.260	31.5	1138.4	46.0	1956.2
467	2.015	54.7	2828.7	2.262	31.3	1169.7	43.0	1999.2
468	2.195	37.9	2866.6	2.273	30.2	1199.8	34.0	2033.2
469	2.280	29.4	2896.1	2.311	26.3	1226.1	27.8	2061.1
470	2.320	25.3	2921.4	2.356	21.6	1247.7	23.5	2084.5
471	2.310	26.4	2947.8	2.415	15.3	1263.0	20.9	2105.4
472	2.255	32.0	2979.7	2.469	9.5	1272.5	20.7	2126.1
473	2.145	42.7	3022.4	2.500	6.1	1278.6	24.4	2150.5
474	2.055	51.1	3073.6	2.510	4.9	1283.5	20.0	2178.6
475	1.990	57.0	3130.5	2.511	4.8	1288.4	30.9	2209.5
476	2.045	52.0	3182.6	2.510	4.9	1293.3	28.5	2237.9
477	2.305	26.9	3209.4	2.507	5.3	1298.6	16.1	2254.0
478	2.390	18.0	3227.5	2.508	5.2	1303.8	11.6	2265.6
479	2.375	19.6	3247.1	2.508	5.2	1309.0	12.4	2278.0
480	2.390	18.0	3265.1	2.520	3.8	1312.8	10.9	2289.9
481	2.325	24.8	3289.9	2.555	0.0	1312.8	12.4	2301.3
482	2.315	25.9	3315.8	2.554	0.0	1312.8	12.9	2314.3
483	2.290	28.4	3344.2	2.517	4.2	1316.9	16.3	2330.6
484	2.265	31.0	3375.2	2.458	10.7	1327.6	20.8	2351.4
485	2.220	35.4	3410.6	2.433	13.4	1341.0	24.4	2375.8
486	2.185	38.9	3449.5	2.446	12.0	1353.0	25.4	2401.3
487	2.100	47.0	3498.4	2.493	6.8	1359.9	26.9	2428.2
488	2.090	47.9	3547.3	2.521	3.7	1363.6	25.8	2456.0
489	2.330	24.3	3586.6	2.530	2.7	1366.3	13.5	2467.5
490	2.360	21.2	3625.9	2.528	2.9	1369.2	12.1	2479.5
491	2.420	14.8	3664.9	2.531	1.5	1370.7	8.1	2487.7
492	2.415	14.4	3699.0	2.571	0.0	1370.7	8.2	2495.6
493	2.420	17.0	3738.0	2.580	0.0	1370.7	8.5	2504.4
494	2.420	17.0	3777.0	2.584	0.0	1370.7	8.5	2512.8
495	2.420	17.0	3816.0	2.584	0.0	1370.7	6.3	2521.2
496	2.420	17.0	3855.0	2.584	0.0	1370.7	7.4	2529.6
497	2.420	17.0	3894.0	2.584	0.0	1370.7	7.1	2538.0
498	2.420	17.0	3933.0	2.584	0.0	1370.7	6.4	2546.4
499	2.420	17.0	3972.0	2.584	0.0	1370.7	6.4	2554.8
500	2.420	17.0	4011.0	2.584	0.0	1370.7	6.4	2563.2

TOP

THE CLEVELAND CLIFFS IRON COMPANY - WELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
500	2.370	20.1	3750.7	2.557	0.0	1370.8	10.1	2560.8
501	2.390	18.0	3768.7	2.559	0.0	1370.8	9.0	2569.8
502	2.365	20.7	3780.4	2.550	0.4	1371.3	10.6	2580.3
503	2.385	18.5	3807.9	2.518	4.1	1375.3	11.3	2591.6
504	2.370	20.1	3828.1	2.492	6.9	1382.3	13.5	2605.2
505	2.315	25.9	3853.9	2.471	9.3	1391.5	17.6	2622.7
506	2.300	27.4	3881.3	2.473	9.0	1400.6	18.2	2640.9
507	2.350	22.2	3903.3	2.491	7.1	1407.6	14.6	2655.6
508	2.365	20.7	3924.2	2.495	6.6	1414.3	13.6	2669.2
509	2.385	18.5	3942.8	2.490	7.2	1421.4	12.9	2682.1
510	2.335	23.8	3966.6	2.542	1.4	1422.8	12.6	2694.7
511	2.270	30.4	3997.0	2.568	0.0	1422.8	15.2	2709.9
512	2.235	34.0	4031.0	2.556	0.0	1422.8	17.0	2726.9
513	2.105	46.5	4077.4	2.502	5.8	1428.6	26.2	2753.0
514	2.175	39.8	4117.3	2.442	12.4	1441.1	26.1	2779.2
515	2.135	43.7	4160.9	2.396	17.4	1458.4	30.5	2809.7
516	2.220	35.4	4196.4	2.332	24.1	1482.6	29.8	2839.5
517	2.240	33.5	4229.8	2.255	32.0	1514.6	32.7	2872.2
518	2.235	34.0	4253.5	2.239	33.5	1548.1	33.7	2905.9
519	2.250	32.5	4290.2	2.293	28.1	1576.2	30.3	2936.2
520	2.265	31.0	4327.2	2.384	18.7	1594.9	24.8	2961.0
521	2.385	18.5	4345.7	2.466	9.8	1604.7	14.2	2975.2
522	2.465	9.9	4355.7	2.524	3.4	1608.1	6.7	2981.9
523	2.450	11.6	4367.2	2.618	0.0	1608.1	5.8	2987.6
524	2.480	8.3	4375.3	2.591	0.0	1608.1	4.1	2991.8
525	2.495	6.6	4382.4	2.591	0.0	1608.1	3.3	2995.1
526	2.435	13.2	4395.3	2.587	0.0	1608.1	6.6	3001.7
527	2.470	9.4	4404.7	2.570	0.0	1608.1	4.7	3006.4
528	2.500	6.1	4410.7	2.548	0.7	1608.7	3.4	3009.7
529	2.495	6.6	4417.4	2.551	0.3	1609.1	3.5	3013.2
530	2.475	8.8	4426.2	2.551	0.3	1609.4	4.6	3017.8
531	2.455	11.0	4437.2	2.555	0.0	1609.4	5.5	3023.3
532	2.495	6.6	4443.8	2.555	0.0	1609.4	3.3	3026.6
533	2.550	0.4	4444.3	2.559	0.0	1609.4	0.2	3026.8
534	2.570	0.0	4444.3	2.564	0.0	1609.4	0.0	3026.8
535	2.580	0.0	4444.3	2.572	0.0	1609.4	0.0	3026.8
536	2.590	0.0	4444.3	2.594	0.0	1609.4	0.0	3026.8
537	2.595	0.0	4444.3	2.611	0.0	1609.4	0.0	3026.8
538	2.585	0.0	4444.3	2.616	0.0	1609.4	0.0	3026.8
539	2.600	0.0	4444.3	2.611	0.0	1609.4	0.0	3026.8
540	2.615	0.0	4444.3	2.603	0.0	1609.4	0.0	3026.8
541	2.610	0.0	4444.3	2.585	0.0	1609.4	0.0	3026.8
542	2.610	0.0	4444.3	2.564	0.0	1609.4	0.0	3026.8
543	2.610	0.0	4444.3	2.546	0.4	1610.3	0.5	3027.3
544	2.575	0.0	4444.3	2.525	3.3	1613.6	1.6	3028.9
545	2.565	1.0	4444.3	2.599	6.2	1619.7	3.6	3032.5
546	2.515	4.9	4444.3	2.485	7.7	1627.5	6.3	3038.9
547	2.515	4.9	4444.3	2.461	8.2	1635.6	8.5	3047.4
548	2.515	4.9	4444.3	2.503	5.7	1641.4	2.9	3050.2
549	2.515	4.9	4444.3	2.533	2.4	1643.7	1.2	3051.4

FDR

## THE CLEVELAND CLIFFS IRON COMPANY-WELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY:	
	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
550	2.630	0.0	4459.1	2.559	0.0	1643.7	0.0	3051.4
551	2.630	0.0	4459.1	2.559	0.0	1643.7	0.0	3051.4
552	2.630	0.0	4459.1	2.559	0.0	1643.7	0.0	3051.4
553	2.650	0.0	4459.1	2.564	0.0	1643.7	0.0	3051.4
554	2.660	0.0	4459.1	2.564	0.0	1643.7	0.0	3051.4
555	2.655	0.0	4459.1	2.564	0.0	1643.7	0.0	3051.4
556	2.655	0.0	4459.1	2.568	0.0	1643.7	0.0	3051.4
557	2.655	0.0	4459.1	2.572	0.0	1643.7	0.0	3051.4
558	2.655	0.0	4459.1	2.568	0.0	1643.7	0.0	3051.4
559	2.660	0.0	4459.1	2.567	0.0	1643.7	0.0	3051.4
560	2.655	0.0	4459.1	2.567	0.0	1643.7	0.0	3051.4
561	2.645	0.0	4459.1	2.576	0.0	1643.7	0.0	3051.4
562	2.625	0.0	4459.1	2.580	0.0	1643.7	0.0	3051.4
563	2.610	0.0	4459.1	2.576	0.0	1643.7	0.0	3051.4
564	2.620	0.0	4459.1	2.533	2.4	1646.1	1.2	3052.6
565	2.610	0.0	4459.1	2.503	5.7	1651.8	2.9	3055.5
566	2.560	0.0	4459.1	2.498	6.3	1658.1	3.1	3058.6
567	2.505	5.5	4464.6	2.498	6.3	1664.4	5.9	3064.5
568	2.570	0.0	4464.6	2.516	4.3	1668.7	2.1	3066.6
569	2.630	0.0	4464.6	2.533	2.4	1671.0	1.2	3067.8
570	2.625	0.0	4464.6	2.546	0.9	1671.9	0.5	3068.3
571	2.590	0.0	4464.6	2.537	1.9	1673.9	1.0	3069.2
572	2.570	0.0	4464.6	2.524	3.4	1677.3	1.7	3070.9
573	2.525	3.3	4467.5	2.507	5.3	1682.5	4.3	3075.2
574	2.485	7.7	4473.5	2.511	4.8	1687.4	6.3	3081.5
575	2.590	0.0	4473.5	2.524	2.8	1690.2	1.4	3082.9
576	2.645	0.0	4473.5	2.550	0.4	1690.6	0.2	3083.1
577	2.645	0.0	4473.5	2.580	0.0	1690.6	0.0	3083.1
578	2.645	0.0	4473.5	2.593	0.0	1690.6	0.0	3083.1
579	2.625	0.0	4473.5	2.589	0.0	1690.6	0.0	3083.1
580	2.595	0.0	4473.5	2.580	0.0	1690.6	0.0	3083.1
581	2.600	0.0	4473.5	2.585	0.0	1690.6	0.0	3083.1
582	2.600	0.0	4473.5	2.589	0.0	1690.6	0.0	3083.1
583	2.635	0.0	4473.5	2.576	0.0	1690.6	0.0	3083.1
584	2.650	0.0	4473.5	2.576	0.0	1690.6	0.0	3083.1
585	2.645	0.0	4473.5	2.575	0.0	1690.6	0.0	3083.1
586	2.630	0.0	4473.5	2.585	0.0	1690.6	0.0	3083.1
587	2.645	0.0	4473.5	2.589	0.0	1690.6	0.0	3083.1
588	2.645	0.0	4473.5	2.589	0.0	1690.6	0.0	3083.1
589	2.620	0.0	4473.5	2.597	1.9	1692.6	1.0	3084.1
590	2.605	0.0	4473.5	2.594	3.4	1695.9	1.7	3085.8
591	2.590	0.4	4473.5	2.590	3.8	1699.8	2.1	3087.9
592	2.595	0.0	4473.5	2.590	3.6	1703.6	1.9	3089.8
593	2.595	0.0	4473.5	2.597	1.9	1705.5	1.0	3090.8
594	2.640	0.0	4473.5	2.590	0.4	1706.0	0.2	3091.0
595	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
596	2.640	0.0	4473.5	2.596	0.0	1706.0	0.0	3091.0
597	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
598	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
599	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
600	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
601	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
602	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
603	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
604	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
605	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
606	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
607	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
608	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
609	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
610	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
611	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
612	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
613	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
614	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
615	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
616	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
617	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
618	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
619	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
620	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
621	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
622	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
623	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
624	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
625	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
626	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
627	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
628	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
629	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
630	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
631	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
632	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
633	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
634	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
635	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
636	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
637	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
638	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
639	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
640	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
641	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
642	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
643	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
644	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
645	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
646	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
647	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
648	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
649	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
650	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
651	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
652	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
653	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
654	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
655	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
656	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
657	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
658	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
659	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
660	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
661	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
662	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
663	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
664	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
665	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
666	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
667	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
668	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
669	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
670	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
671	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
672	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
673	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
674	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
675	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
676	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
677	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
678	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
679	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
680	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
681	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
682	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
683	2.640	0.0	4473.5	2.597	0.0	1706.0	0.0	3091.0
684	2.640							



3

## DENSITY AND VELOCITY

PH	PH-P	GAL/TEN	ACCU. YIELD	RHC-R	GAL/TEN	ACCU. YIELD	GAL/TEN	ACCU. YIELD
600	2.525	3.3	4475.3	2.477	8.6	1723.2	5.9	3101.3
601	2.535	0.0	4479.3	2.481	8.2	1731.4	4.1	3105.3
602	2.535	0.0	4479.3	2.511	4.8	1736.2	2.4	3107.8
603	2.535	0.0	4479.3	2.485	7.7	1744.0	3.9	3111.6
604	2.555	0.0	4479.3	2.464	10.0	1754.0	5.0	3116.6
605	2.510	4.9	4484.2	2.459	10.6	1764.6	7.8	3124.4
606	2.450	11.6	4495.8	2.459	10.6	1775.2	11.1	3135.5
607	2.555	0.0	4495.8	2.455	11.0	1786.2	5.5	3141.0
608	2.615	0.0	4495.8	2.464	10.0	1796.2	5.0	3146.0
609	2.620	0.0	4495.8	2.533	2.4	1798.6	1.2	3147.2
610	2.595	0.0	4495.8	2.554	0.0	1798.6	0.0	3147.2
611	2.575	0.0	4495.8	2.546	0.9	1799.5	0.5	3147.6
612	2.555	0.0	4495.8	2.511	4.8	1804.3	2.4	3150.1
613	2.525	3.3	4499.0	2.485	7.7	1812.0	5.5	3155.6
614	2.505	5.5	4504.5	2.472	9.2	1821.2	7.3	3162.9
615	2.535	2.1	4506.7	2.503	5.7	1826.9	3.9	3166.8
616	2.550	0.0	4506.7	2.498	6.3	1833.2	3.1	3170.0
617	2.545	1.0	4507.7	2.459	10.6	1843.8	5.8	3175.8
618	2.500	6.1	4513.6	2.446	12.0	1855.8	9.0	3184.8
619	2.440	12.7	4526.4	2.450	11.6	1867.4	12.1	3196.9
620	2.515	4.4	4530.8	2.476	8.7	1876.1	6.6	3203.5
621	2.575	0.0	4530.8	2.515	4.4	1880.5	2.2	3205.7
622	2.580	0.0	4530.8	2.545	1.0	1881.5	0.5	3206.2
623	2.570	0.0	4530.8	2.550	0.4	1881.9	0.2	3206.4
624	2.575	0.0	4530.8	2.515	4.4	1886.3	2.2	3208.6
625	2.535	2.1	4532.9	2.489	7.3	1893.6	4.7	3213.3
626	2.515	4.4	4537.3	2.472	9.2	1902.8	6.8	3220.1
627	2.500	6.1	4543.4	2.467	9.7	1912.5	7.9	3228.0
628	2.495	6.6	4550.0	2.467	9.7	1922.2	8.2	3236.1
629	2.515	4.4	4554.4	2.485	7.7	1929.9	6.1	3242.2
630	2.535	2.1	4556.5	2.511	4.8	1934.7	3.5	3245.7
631	2.535	2.1	4558.7	2.528	2.9	1937.7	2.5	3248.2
632	2.570	0.0	4558.7	2.537	1.9	1939.6	1.0	3249.2
633	2.570	0.0	4558.7	2.550	0.4	1940.0	0.2	3249.4
634	2.570	0.0	4558.7	2.558	0.0	1940.0	0.0	3249.4
635	2.545	1.0	4558.7	2.562	0.0	1940.0	0.5	3249.9
636	2.540	1.6	4561.3	2.540	1.6	1941.6	1.6	3251.5
637	2.550	0.4	4561.7	2.514	4.5	1946.1	3.5	3253.9
638	2.555	0.0	4561.7	2.493	6.8	1952.9	3.4	3257.4
639	2.540	1.6	4563.3	2.466	9.8	1962.8	5.7	3263.1
640	2.545	1.0	4564.3	2.436	13.1	1975.8	7.0	3270.1
641	2.525	3.3	4567.6	2.432	13.5	1989.4	8.4	3278.5
642	2.520	3.4	4571.0	2.436	13.1	2002.4	8.5	3287.0
643	2.520	3.4	4575.4	2.436	13.1	2015.5	8.5	3295.4
644	2.530	2.7	4579.8	2.445	12.1	2027.6	7.4	3303.3
645	2.515	4.4	4584.2	2.445	12.1	2039.7	3.2	3311.1
646	2.495	7.7	4588.6	2.427	15.1	2053.8	10.9	3320.0
647	2.495	7.7	4588.6	2.427	15.1	2053.8	10.9	3320.0
648	2.495	7.7	4588.6	2.427	15.1	2053.8	10.9	3320.0
649	2.495	7.7	4588.6	2.427	15.1	2053.8	10.9	3320.0
650	2.495	7.7	4588.6	2.427	15.1	2053.8	10.9	3320.0

# ANALYSIS

FOR

THE CLEVELAND CLIFFS IRON COMPANY-WELL X-4

## DENSITY LOG

## VELOCITY LOG

## DENSITY AND VELOCITY

H	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
0	2.335	18.5	4647.1	2.298	27.6	2148.6	23.1	3397.9
1	2.320	25.3	4672.4	2.272	30.3	2178.9	27.8	3425.7
2	2.340	23.3	4695.7	2.254	32.1	2211.0	27.7	3452.4
3	2.380	19.1	4714.8	2.303	27.1	2238.1	23.1	3476.5
4	2.410	15.9	4730.7	2.341	23.2	2261.3	19.5	3496.0
5	2.460	10.5	4741.1	2.376	19.5	2280.8	15.0	3511.0
6	2.520	3.8	4745.0	2.410	15.9	2296.7	9.9	3520.9
7	2.545	1.0	4746.0	2.438	12.9	2309.6	6.9	3527.8
8	2.575	0.0	4746.0	2.456	10.9	2320.5	5.5	3533.3
9	2.560	0.0	4746.0	2.474	8.9	2329.4	4.5	3537.7
0	2.530	2.7	4748.7	2.483	7.9	2337.3	5.3	3543.1
1	2.525	3.3	4752.0	2.483	7.9	2345.3	5.6	3548.7
2	2.535	2.1	4754.1	2.453	11.2	2356.5	6.7	3555.4
3	2.525	3.3	4757.4	2.426	14.2	2370.7	8.7	3564.1
4	2.430	8.3	4765.6	2.421	14.7	2385.4	11.5	3575.6
5	2.400	17.0	4782.6	2.412	15.7	2401.1	16.3	3591.9
6	2.450	11.6	4794.2	2.425	14.3	2415.3	12.9	3604.8
7	2.340	1.6	4795.7	2.455	10.6	2425.9	6.1	3610.9
8	2.545	1.0	4796.8	2.486	7.6	2433.5	4.3	3615.2
9	2.550	0.4	4797.2	2.473	9.0	2442.6	4.7	3619.9
0	2.530	2.7	4799.9	2.481	8.2	2450.7	5.4	3625.4
1	2.510	4.9	4804.9	2.494	6.7	2457.5	5.8	3631.2
2	2.530	2.7	4807.6	2.489	7.3	2464.8	5.0	3636.2
3	2.555	0.0	4807.6	2.447	11.9	2476.6	5.9	3642.2
4	2.555	0.0	4807.6	2.456	10.9	2487.5	5.5	3647.6
5	2.545	1.0	4808.6	2.481	8.2	2495.7	4.6	3652.2
6	2.545	1.0	4809.6	2.447	11.9	2507.6	6.5	3658.7
7	2.530	2.7	4812.3	2.434	13.3	2520.9	8.0	3666.7
8	2.490	7.2	4819.5	2.460	10.5	2531.4	8.8	3675.5
9	2.420	14.8	4834.3	2.465	9.9	2541.3	12.4	3687.8
0	2.495	6.6	4840.9	2.430	13.7	2555.0	10.2	3698.0
1	2.540	1.6	4842.5	2.426	14.2	2569.2	7.9	3705.9
2	2.540	1.6	4844.1	2.478	8.5	2577.7	5.0	3710.9
3	2.540	1.6	4845.6	2.487	7.5	2585.2	4.5	3715.5
4	2.530	2.7	4848.3	2.431	13.6	2598.8	8.2	3723.6
5	2.505	5.5	4853.8	2.426	14.2	2613.0	9.8	3733.5
6	2.470	9.4	4863.2	2.431	13.6	2626.6	11.5	3745.0
7	2.420	14.8	4878.0	2.435	13.2	2639.8	14.2	3759.0
8	2.470	9.4	4887.4	2.431	13.6	2653.4	11.5	3770.5
9	2.530	2.7	4890.1	2.474	8.9	2662.4	5.8	3776.3
0	2.510	4.9	4895.1	2.465	9.9	2672.3	7.4	3783.7
1	2.490	7.2	4902.2	2.439	12.8	2685.0	10.0	3793.7
2	2.470	9.4	4911.6	2.452	11.3	2696.4	10.4	3804.1
3	2.405	16.4	4928.0	2.447	11.9	2708.3	14.2	3818.2
4	2.375	19.6	4947.6	2.443	12.3	2720.6	16.0	3834.2
5	2.470	11.6	4959.2	2.421	14.7	2735.3	13.1	3847.3
6	2.470	9.4	4968.6	2.435	12.9	2748.2	11.1	3858.4
7	2.440	12.7	4981.2	2.403	16.6	2764.8	14.6	3872.1
8	2.400	17.0	4998.2	2.377	19.4	2784.2	18.2	3891.3
9	2.355	21.7	5019.9	2.359	20.2	2804.4	21.0	3912.2

FOR

THE CLEVELAND CLIFFS IRON COMPANY-WELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	SFG-B	GAL/TON	ACCU. YIELD	RHO-B	GAL/TON	ACCU. YIELD	GAL/TON	ACCU. YIELD
700	2.290	28.4	5048.3	2.403	16.6	2821.1	22.5	3924.8
701	2.375	19.5	5067.9	2.433	13.4	2834.5	16.5	3951.3
702	2.555	0.0	5067.9	2.480	8.3	2842.8	4.1	3959.4
703	2.595	0.0	5067.9	2.519	3.9	2846.7	2.0	3957.4
704	2.610	0.0	5067.9	2.524	3.4	2850.1	1.7	3959.1
705	2.610	0.0	5067.9	2.533	2.4	2852.5	1.2	3960.2
706	2.560	0.0	5067.9	2.511	4.8	2857.3	2.4	3962.7
707	2.525	3.3	5071.2	2.507	5.3	2862.6	4.3	3966.9
708	2.525	3.3	5074.4	2.515	4.4	2867.0	3.8	3970.8
709	2.520	3.8	5078.3	2.511	4.8	2871.8	4.3	3975.1
710	2.515	4.4	5082.6	2.451	11.5	2833.3	7.9	3983.0
711	2.470	9.4	5092.0	2.420	14.8	2898.1	12.1	3995.1
712	2.430	13.7	5105.7	2.403	16.6	2914.7	15.2	4010.3
713	2.345	22.8	5128.5	2.407	16.2	2930.9	19.5	4029.8
714	2.415	15.2	5143.8	2.403	16.6	2947.5	16.0	4045.8
715	2.550	0.4	5144.3	2.433	13.4	2961.0	6.9	4052.7
716	2.575	0.0	5144.3	2.502	5.8	2966.8	2.9	4055.6
717	2.575	0.0	5144.3	2.472	9.2	2975.9	4.6	4060.2
718	2.535	2.1	5146.4	2.472	9.2	2985.1	5.7	4065.9
719	2.455	11.0	5157.5	2.481	8.2	2993.3	9.6	4075.4
720	2.445	12.1	5169.6	2.494	6.7	3000.0	9.4	4084.9
721	2.535	2.1	5171.7	2.468	9.6	3009.6	5.9	4090.7
722	2.550	0.4	5172.2	2.503	5.7	3015.3	3.1	4093.8
723	2.520	3.8	5176.0	2.516	4.3	3019.6	4.1	4097.9
724	2.520	3.8	5179.8	2.516	4.3	3023.9	4.1	4101.9
725	2.475	8.8	5188.6	2.516	4.3	3028.2	6.6	4108.5
726	2.475	8.8	5197.9	2.520	3.8	3032.0	6.3	4114.8
727	2.550	0.4	5197.9	2.529	2.8	3034.8	1.6	4116.4
728	2.565	0.0	5197.9	2.550	0.4	3035.3	0.2	4116.7
729	2.565	0.0	5197.9	2.572	0.0	3035.3	0.0	4116.7
730	2.560	0.0	5197.9	2.546	0.9	3036.2	0.5	4117.1
731	2.550	0.4	5198.4	2.537	1.9	3038.1	1.2	4118.3
732	2.510	4.9	5203.3	2.537	1.9	3040.0	3.4	4121.7
733	2.485	7.7	5211.0	2.537	1.9	3041.9	4.8	4126.5
734	2.465	9.9	5220.9	2.541	1.5	3043.4	5.7	4132.2
735	2.530	2.7	5223.7	2.554	0.0	3043.4	1.4	4133.6
736	2.590	0.0	5223.7	2.567	0.0	3043.4	0.0	4133.6
737	2.595	0.0	5223.7	2.571	0.0	3043.4	0.0	4133.6
738	2.590	0.0	5223.7	2.580	0.0	3043.4	0.0	4133.6
739	2.575	0.0	5223.7	2.580	0.0	3043.4	0.0	4133.6
740	2.575	0.0	5223.7	2.571	0.0	3043.4	0.0	4133.6
741	2.575	0.0	5223.7	2.554	0.0	3043.4	0.0	4133.6
742	2.555	0.0	5223.7	2.554	0.0	3043.4	0.0	4133.6
743	2.545	1.0	5223.7	2.558	0.0	3043.4	0.5	4134.1
744	2.550	2.7	5227.4	2.566	0.0	3043.4	1.4	4135.5
745	2.550	0.0	5227.4	2.554	0.0	3043.4	0.0	4135.5
746	2.550	0.0	5227.4	2.554	0.0	3043.4	0.0	4135.5
747	2.550	0.0	5227.4	2.554	0.0	3043.4	0.0	4135.5
748	2.550	0.0	5227.4	2.554	0.0	3043.4	0.0	4135.5
749	2.550	0.0	5227.4	2.554	0.0	3043.4	0.0	4135.5
750	2.550	0.0	5227.4	2.554	0.0	3043.4	0.0	4135.5

# 144 CUMULATIVE CLIPED TON CO. ONLY-YIELD X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-S	GAL/TON	ACCUM. YIELD	RHO-S	GAL/TON	ACCUM. YIELD	CAL/TON	ACCUM. YIELD
750	2.545	1.0	5228.4	2.527	3.0	3052.9	2.0	4140.7
751	2.570	0.0	5228.4	2.544	1.1	3054.0	0.6	4141.3
752	2.600	0.0	5228.4	2.558	0.0	3054.0	0.0	4141.3
753	2.615	0.0	5228.4	2.562	0.0	3054.0	0.0	4141.3
754	2.615	0.0	5228.4	2.554	0.0	3054.0	0.0	4141.3
755	2.590	0.0	5228.4	2.545	1.0	3055.0	0.5	4141.8
756	2.545	1.0	5229.4	2.545	1.0	3056.0	1.0	4142.8
757	2.525	3.3	5232.7	2.549	0.6	3056.6	1.9	4144.7
758	2.560	0.0	5232.7	2.549	0.6	3057.1	0.3	4145.0
759	2.570	0.0	5232.7	2.549	0.6	3057.7	0.3	4145.3
760	2.545	1.0	5233.7	2.554	0.0	3057.7	0.5	4145.8
761	2.505	5.5	5239.2	2.550	0.4	3058.2	3.0	4148.7
762	2.435	13.2	5252.4	2.541	1.5	3059.6	7.3	4156.1
763	2.405	16.4	5268.8	2.541	1.5	3061.1	8.9	4165.0
764	2.470	9.4	5278.2	2.541	1.5	3062.6	5.4	4170.4
765	2.520	3.8	5282.0	2.550	0.4	3063.0	2.1	4172.6
766	2.495	6.6	5288.6	2.546	0.9	3063.9	3.8	4176.3
767	2.475	8.8	5297.5	2.528	2.9	3066.8	5.9	4182.2
768	2.465	9.9	5307.4	2.498	6.3	3073.1	8.1	4190.3
769	2.465	9.5	5317.3	2.472	9.2	3082.3	9.5	4199.8
770	2.465	9.9	5327.2	2.472	9.2	3091.4	9.5	4209.4
771	2.490	7.2	5334.4	2.494	6.7	3098.2	6.9	4216.3
772	2.530	2.7	5337.1	2.515	4.4	3102.6	3.5	4219.9
773	2.560	0.0	5337.1	2.533	2.4	3104.9	1.2	4221.1
774	2.575	0.0	5337.1	2.558	0.0	3104.9	0.0	4221.1
775	2.575	0.0	5337.1	2.563	0.0	3104.9	0.0	4221.1
776	2.545	1.0	5338.1	2.554	0.0	3104.9	0.5	4221.6
777	2.530	2.7	5340.8	2.541	1.5	3106.4	2.1	4223.7
778	2.550	0.4	5341.3	2.537	1.9	3108.3	1.2	4224.8
779	2.550	0.4	5341.7	2.541	1.5	3109.8	1.0	4225.8
780	2.555	0.0	5341.7	2.546	0.9	3110.7	0.5	4226.2
781	2.540	1.6	5343.3	2.541	1.5	3112.2	1.5	4227.8
782	2.525	3.3	5346.6	2.520	3.8	3116.0	3.6	4231.3
783	2.505	5.5	5352.1	2.515	4.4	3120.4	4.9	4235.3
784	2.470	9.4	5361.4	2.515	4.4	3124.8	6.9	4243.1
785	2.460	10.5	5371.9	2.515	4.4	3129.2	7.4	4250.6
786	2.455	11.0	5382.9	2.494	6.7	3135.9	8.9	4259.4
787	2.440	12.7	5395.6	2.455	10.6	3146.5	11.6	4271.1
788	2.390	16.0	5413.6	2.429	13.6	3160.3	15.9	4287.0
789	2.300	27.4	5441.0	2.433	13.4	3173.7	20.4	4307.4
790	2.300	27.4	5446.4	2.429	13.8	3187.6	20.6	4328.0
791	2.445	12.1	5460.3	2.425	14.3	3201.9	13.2	4341.2
792	2.450	11.6	5452.1	2.429	13.8	3215.7	12.7	4353.9
793	2.430	13.7	5455.8	2.477	8.6	3224.3	11.2	4366.1
794	2.405	16.4	5452.2	2.464	10.0	3234.3	13.2	4378.3
795	2.330	29.1	5461.3	2.425	14.3	3246.6	16.7	4395.0
796	2.325	28.3	5461.3	2.416	15.2	3252.3	20.3	4415.3
797	2.315	31.0	5461.3	2.403	16.6	3260.5	23.3	4439.0
798	2.315	31.0	5461.3	2.381	22.1	3272.6	21.4	4460.4
799	2.315	31.0	5461.3	2.381	22.1	3272.6	17.5	4477.0

FOR

THE CLEVELAND CLIFFS IRON COMPANY-BELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
800	2.365	20.7	5656.4	2.433	13.4	3333.5	17.0	4495.0
801	2.360	21.2	5677.6	2.451	11.5	3344.9	16.3	4511.3
802	2.490	7.2	5684.7	2.468	9.6	3354.5	8.4	4519.7
803	2.560	0.0	5684.7	2.520	3.8	3358.4	1.9	4521.6
804	2.540	1.6	5686.3	2.563	0.0	3358.4	0.8	4522.4
805	2.550	0.4	5686.6	2.580	0.0	3358.4	0.2	4522.6
806	2.550	0.4	5687.2	2.584	0.0	3358.4	0.2	4522.8
807	2.525	3.3	5690.5	2.606	0.0	3358.4	1.6	4524.4
808	2.555	0.0	5690.5	2.597	0.0	3358.4	0.0	4524.4
809	2.610	0.0	5690.5	2.585	0.0	3358.4	0.0	4524.4
810	2.595	0.0	5690.5	2.614	0.0	3358.4	0.0	4524.4
811	2.550	0.4	5690.9	2.606	0.0	3358.4	0.2	4524.7
812	2.540	1.6	5692.5	2.537	1.9	3360.3	1.8	4526.4
813	2.495	6.6	5699.1	2.480	8.3	3368.6	7.4	4533.9
814	2.440	12.7	5711.8	2.398	17.2	3385.7	14.9	4548.8
815	2.390	18.0	5729.8	2.351	22.1	3407.9	20.1	4568.8
816	2.365	20.7	5750.4	2.327	24.6	3432.5	22.7	4591.5
817	2.310	26.4	5776.8	2.359	21.3	3453.8	23.8	4615.3
818	2.370	20.1	5797.0	2.355	21.7	3475.5	20.9	4636.2
819	2.415	15.3	5812.3	2.394	17.6	3493.1	16.5	4652.7
820	2.395	17.5	5825.8	2.381	19.0	3512.1	18.2	4670.9
821	2.260	29.4	5855.2	2.359	21.3	3533.4	25.4	4696.3
822	2.210	36.4	5895.6	2.322	25.1	3558.5	30.8	4727.1
823	2.185	38.9	5934.5	2.244	33.1	3591.6	36.0	4763.0
824	2.185	38.9	5973.4	2.175	39.8	3631.4	39.3	4802.4
825	2.185	38.9	6012.2	2.133	43.8	3675.2	41.4	4843.7
826	2.160	41.3	6053.5	2.157	41.6	3716.8	41.4	4885.1
827	2.120	45.1	6098.6	2.157	41.6	3758.3	43.3	4928.5
828	2.220	35.4	6134.0	2.233	34.1	3792.5	34.8	4963.3
829	2.380	19.1	6153.1	2.351	22.1	3814.6	20.6	4983.9
830	2.415	15.3	6168.5	2.394	17.6	3832.2	16.5	5000.3
831	2.445	12.1	6180.6	2.424	14.4	3846.6	13.2	5013.6
832	2.440	12.7	6193.2	2.446	12.0	3858.6	12.3	5025.9
833	2.405	16.4	6209.6	2.446	12.0	3870.6	14.2	5040.1
834	2.455	11.0	6220.6	2.450	11.6	3882.1	11.3	5051.4
835	2.460	10.5	6231.1	2.459	10.6	3892.7	10.5	5061.9
836	2.460	10.5	6241.6	2.489	7.3	3900.0	8.9	5070.8
837	2.430	13.7	6255.3	2.519	3.9	3903.9	8.8	5079.6
838	2.445	12.1	6267.4	2.528	2.9	3906.9	7.5	5087.1
839	2.440	12.7	6280.1	2.489	7.3	3914.2	10.0	5097.1
840	2.385	18.5	6298.6	2.420	14.8	3929.0	16.7	5113.8
841	2.290	28.4	6327.0	2.364	20.8	3949.7	24.6	5138.4
842	2.175	39.6	6366.4	2.311	26.3	3976.0	33.0	5171.4
843	2.195	37.9	6404.8	2.270	30.4	4006.4	34.2	5205.6
844	2.280	29.4	6436.2	2.249	32.6	4039.0	31.0	5236.6
845	2.285	28.0	6463.1	2.286	28.8	4067.8	28.9	5265.4
846	2.280	33.5	6487.6	2.302	27.2	4095.0	30.3	5295.0
847	2.245	42.7	6517.4	2.289	33.5	4128.6	38.1	5333.0
848	2.090	47.0	6550.2	2.069	50.3	4178.9	49.1	5383.0
849	2.070	51.4	6580.2	1.960	59.6	4238.5	56.6	5439.5

FOR

THE CLEVELAND CLIFFS IRON COMPANY-WELL X-4

DENSITY LOG

VELOCITY LOG

DENSITY AND VELOCITY

PTH	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
850	1.940	61.3	6701.9	1.876	66.7	4305.2	64.0	5503.5
851	1.865	67.7	6769.6	1.766	75.7	4380.3	71.7	5575.2
852	1.790	73.8	6843.3	1.738	77.9	4458.7	75.8	5651.0
853	1.765	75.7	6919.1	1.854	68.6	4527.3	72.2	5723.2
854	1.865	67.7	6986.7	2.064	50.3	4577.6	59.0	5782.2
855	1.885	66.0	7052.7	2.175	39.8	4617.4	52.9	5835.1
856	2.060	50.7	7103.4	2.262	31.3	4648.7	41.0	5876.0
857	2.230	34.4	7137.8	2.224	35.1	4683.8	34.8	5910.8
858	2.335	23.8	7161.6	2.244	33.1	4716.8	28.4	5939.2
859	2.305	26.9	7188.5	2.342	23.1	4739.9	25.0	5964.2
860	2.275	29.9	7218.5	2.368	20.3	4760.2	25.1	5989.3
861	2.330	24.3	7242.8	2.385	18.5	4778.8	21.4	6010.8
862	2.440	12.7	7255.4	2.424	14.4	4793.2	13.5	6024.3
863	2.445	12.1	7267.5	2.450	11.6	4804.7	11.8	6036.1
864	2.395	17.5	7285.0	2.445	12.1	4816.8	14.8	6050.9
865	2.385	18.5	7303.6	2.441	12.5	4829.4	15.5	6066.5
866	2.345	22.8	7326.3	2.322	25.1	4854.5	23.9	6090.4
867	2.285	28.9	7355.3	2.275	29.9	4884.4	29.4	6119.8
868	2.200	37.4	7392.7	2.275	29.9	4914.4	33.7	6153.5
869	2.095	47.4	7440.1	2.239	33.5	4947.9	40.5	6194.0
870	2.055	51.1	7491.2	2.193	38.0	4985.9	44.6	6238.6
871	2.265	21.0	7522.1	2.199	37.5	5023.4	34.2	6272.8
872	2.310	26.4	7548.5	2.264	31.0	5054.4	28.7	6301.5
873	2.315	25.9	7574.4	2.346	22.7	5077.1	24.3	6325.7
874	2.400	17.0	7591.3	2.354	21.8	5098.9	19.4	6345.1
875	2.455	11.0	7602.3	2.389	18.1	5117.0	14.6	6359.7
876	2.425	14.2	7616.6	2.415	15.3	5132.4	14.8	6374.5
877	2.415	15.3	7632.0	2.415	15.3	5147.7	15.3	6389.8
878	2.395	17.5	7649.4	2.436	13.1	5160.8	15.3	6405.1
879	2.435	13.2	7662.6	2.427	14.1	5174.9	13.6	6418.7
880	2.455	11.0	7673.7	2.453	11.2	5186.1	11.1	6429.9
881	2.450	11.6	7685.2	2.427	14.1	5200.1	12.8	6442.7
882	2.415	15.3	7700.6	2.371	20.0	5220.2	17.7	6460.4
883	2.370	20.1	7720.7	2.321	25.3	5245.4	22.7	6483.1
884	2.295	27.9	7748.6	2.274	30.0	5275.5	29.0	6512.0
885	2.240	33.5	7782.1	2.243	33.2	5308.7	32.0	6545.4
886	2.325	24.8	7806.9	2.210	36.4	5345.1	35.0	6576.0
887	2.335	23.8	7830.7	2.210	36.4	5381.5	37.0	6606.1
888	2.325	24.8	7855.5	2.260	30.7	5412.1	39.0	6633.8
889	2.305	26.6	7882.4	2.290	29.5	5440.5	41.0	6661.5
890	2.330	24.2	7906.7	2.310	26.4	5466.9	43.0	6686.8
891	2.435	13.2	7914.9	2.394	21.8	5488.3	45.0	6704.3
892	2.475	8.8	7928.7	2.405	16.4	5505.2	47.0	6716.9
893	2.500	6.1	7934.8	2.418	15.0	5520.2	49.0	6727.5
894	2.515	4.4	7939.2	2.418	15.0	5535.2	51.0	6737.2
895	2.475	8.8	7946.0	2.474	8.9	5544.2	53.0	6746.3
896	2.475	8.8	7946.0	2.474	8.9	5544.2	55.0	6755.7
897	2.475	8.8	7946.0	2.474	8.9	5544.2	57.0	6764.1
898	2.475	8.8	7946.0	2.474	8.9	5544.2	59.0	6772.5
899	2.475	8.8	7946.0	2.474	8.9	5544.2	61.0	6780.9
900	2.475	8.8	7946.0	2.474	8.9	5544.2	63.0	6789.3

FOR

THE CLEVELAND CLIFFS IRON COMPANY-Well X-4

DENSITY LOG

VELOCITY LOG

DENSITY AND VELOCITY

PTH	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
900	2.520	3.8	7981.5	2.525	3.3	5571.4	3.6	6776.5
901	2.505	5.5	7987.0	2.499	6.2	5577.6	5.8	6782.3
902	2.470	9.4	7996.4	2.516	4.3	5581.9	6.8	6789.1
903	2.460	10.5	8006.9	2.486	7.6	5589.5	9.0	6798.2
904	2.460	10.5	8017.3	2.456	10.9	5600.4	10.7	6808.8
905	2.435	13.2	8030.5	2.443	12.3	5612.7	12.8	6821.6
906	2.360	21.2	8051.7	2.465	9.9	5622.6	15.6	6837.2
907	2.470	9.4	8061.1	2.447	11.9	5634.5	10.6	6847.8
908	2.470	9.4	8070.5	2.396	17.4	5651.9	13.4	6861.2
909	2.415	15.3	8085.8	2.387	18.3	5670.2	16.8	6878.0
910	2.310	26.4	8112.2	2.430	13.7	5684.0	20.1	6898.1
911	2.270	30.4	8142.6	2.417	15.1	5699.1	22.8	6920.8
912	2.480	8.3	8150.9	2.426	14.2	5713.3	11.2	6932.1
913	2.555	0.0	8150.9	2.473	9.0	5722.3	4.5	6936.6
914	2.535	2.1	8153.0	2.537	1.9	5724.2	2.0	6938.6
915	2.535	2.1	8155.2	2.550	0.4	5724.7	1.3	6939.9
916	2.515	4.4	8159.6	2.511	4.8	5729.5	4.6	6944.5
917	2.455	11.0	8170.6	2.502	5.8	5735.4	8.4	6953.0
918	2.355	21.7	8192.3	2.497	6.4	5741.7	14.1	6967.0
919	2.365	20.7	8213.0	2.476	8.7	5750.5	14.7	6981.7
920	2.450	11.6	8224.5	2.454	11.1	5761.6	11.3	6993.0
921	2.545	1.0	8225.5	2.475	8.8	5770.4	4.9	6998.0
922	2.580	0.0	8225.5	2.523	3.5	5773.9	1.7	6999.7
923	2.625	0.0	8225.5	2.540	1.6	5775.5	0.8	7000.5
924	2.630	0.0	8225.5	2.561	0.0	5775.5	0.0	7000.5
925	2.635	0.0	8225.5	2.583	0.0	5775.5	0.0	7000.5
926	2.625	0.0	8225.5	2.591	0.0	5775.5	0.0	7000.5
927	2.590	0.0	8225.5	2.594	0.0	5775.5	0.0	7000.5
928	2.580	0.0	8225.5	2.585	0.0	5775.5	0.0	7000.5
929	2.585	0.0	8225.5	2.568	0.0	5775.5	0.0	7000.5
930	2.575	0.0	8225.5	2.560	0.0	5775.5	0.0	7000.5
931	2.580	0.0	8225.5	2.560	0.0	5775.5	0.0	7000.5
932	2.570	0.0	8225.5	2.563	0.0	5775.5	0.0	7000.5
933	2.555	0.0	8225.5	2.580	0.0	5775.5	0.0	7000.5
934	2.545	1.0	8226.6	2.576	0.0	5775.5	0.5	7001.0
935	2.525	3.3	8229.8	2.563	0.0	5775.5	1.2	7002.6
936	2.495	6.6	8236.4	2.568	0.0	5775.5	2.0	7005.9
937	2.480	8.3	8244.7	2.598	0.0	5775.5	3.0	7010.1
938	2.490	7.2	8251.9	2.598	0.0	5775.5	4.0	7013.7
939	2.515	4.4	8256.3	2.593	0.0	5775.5	5.0	7015.8
940	2.520	3.8	8260.1	2.593	0.0	5775.5	6.0	7017.8
941	2.535	2.1	8262.2	2.593	0.0	5775.5	7.0	7018.8
942	2.525	3.3	8265.5	2.585	0.0	5775.5	8.0	7020.5
943	2.535	2.1	8267.7	2.593	0.0	5775.5	9.0	7021.5
944	2.565	0.0	8267.7	2.606	0.0	5775.5	10.0	7021.5
945	2.580	0.0	8267.7	2.610	0.0	5775.5	11.0	7021.5
946	2.585	0.0	8267.7	2.606	0.0	5775.5	12.0	7021.5
947	2.610	0.0	8267.7	2.610	0.0	5775.5	13.0	7021.5
948	2.615	0.0	8267.7	2.610	0.0	5775.5	14.0	7021.5
949	2.605	0.0	8267.7	2.619	0.0	5775.5	15.0	7021.5

FOR

THE CLEVELAND CLIFFS IRON COMPANY-WELL X-4

DEPTH	DENSITY LOG			VELOCITY LOG			DENSITY AND VELOCITY	
	RHO-B	GAL/TON	ACCUM. YIELD	RHO-B	GAL/TON	ACCUM. YIELD	GAL/TON	ACCUM. YIELD
950	2.610	0.0	8267.7	2.619	0.0	5775.5	0.0	7021.5