

DRAFT TECHNICAL MEMORANDUM

To: John Hamrick, Jim Cain, Cotter Corporation
From: Errol Lawrence, Hydrosolutions
Date: December 17, 2008
Subject: Aquifer Testing in Support of Corrective Action Plan for Groundwater North
and West of the Canyon City Milling Facility

An aquifer testing program was conducted to assess hydrogeologic conditions at the Cotter Corporation Milling Facility in Canon City, Colorado. The purpose of the testing was to estimate aquifer properties and to identify potential preferential groundwater flowpaths for migration of site-derived constituents onto the Shadow Hills Golf Course located adjacent to and directly north of the Milling Facility. The aquifer testing is one of the initial steps identified in the Corrective Action Plan for Groundwater North and West of the Canon City Milling Facility. Results of the tests will be used to support further investigation, including siting of additional monitor well locations.

The testing was performed on October 13, 14th and 15th, 2008. The testing program included short-term, single well tests at seven locations. The well locations that were tested and the rationale for selecting those locations include the following:

- 338-Farthest downgradient location with uranium levels that exceed Colorado regulatory standards
- 804-Highest offsite uranium levels in the golf course area
- 802-Potential source area based on uranium levels and inferred groundwater flow direction
- 346 – Potential pathway based on uranium levels and location downgradient from CCD tanks which are a potential source area
- 348 – Potential source area based on uranium levels and proximity to historic ore pad areas
- 368 – Potential source area based on uranium levels and proximity to historic ore pad areas
- 344 -Potential pathway based on uranium levels and proximity to OPA, a potential source area

Aquifer testing was attempted at locations 803 and 035, but the water levels were too low to run a sustained test. Figure 1 shows the location of the pumping tests. Information regarding the construction and completion details for the pump test wells is provided in Table 1.

The tests were designed to run for less than one hour and at relatively low flow rates, usually one to two gallons per minute. Pumping was accomplished using a submersible Grundfos pump, lowered to within a few feet of the bottom of each well tested. Pressure transducers were placed in the pumped well to record changes in water levels in response to pumping. No observation wells, (other than the wells being pumped) were used in the testing because of the short duration of the tests. A hand-held water level meter was used to periodically measure water levels in the pumped well to confirm the readings recorded

from the transducers. An attempt was made to maintain a constant pumping rate throughout each test (with the exception of the test at location 802 which was run as a step test). However, rapid drawdown in some of the test locations resulted in a reduction in pumping rate during many of the tests. The pumping setup was unable to sustain a consistent rate below 1 gpm. An average pumping rate was calculated for each test, but for most of the tests the initial rate was considerably higher than the rate at the end of the test. Pumped water was discharged into a water truck for onsite disposal. Information regarding each of the tests is provided in Table 2.

The data collected from the transducers were downloaded onto a computer. The pump test data were analyzed using Aquifer Test (version 3.5), software developed by Waterloo Hydrologic Inc. The drawdown data for each test are provided in Attachment A. Water table (unconfined) conditions were encountered in each of the pump tests. The drawdown data were corrected for unconfined conditions using the method of Jacob (1944). Plots of the drawdown data vs time and discharge rate are provided in Attachment B.

Several analytical methods were attempted for each test. Analytical methods included Theis (1935), Cooper Jacob (1946), and Neuman (for unconfined aquifers, 1975). In some cases the Theis analysis was applied separately to early and late time data. Plots of the curve matching for each of the tests are provided in Attachment C. A summary of the analyses results are provide in Table 3. No storativity was calculated because all of the tests were single well tests.

Because of the large drawdown observed in many of the test locations, pumping rates generally became lower during the tests. This decrease in pumping rate is a reflection of the reduction in aquifer transmissivity as dewatering was occurring in the vicinity of the pumping well. The decreasing pumping rates resulted in significant deviation from type curves for the analytical methods. This deviation resulted in a poor fit to the type curves. Although the pump tests were impacted by irregular flow rates, and the curve matching was less than optimum, the analytical results provide a semi-quantitative estimate of aquifer properties in the area of interest.

Figure 2 presents the average aquifer transmissivity and hydraulic conductivity estimated from the test analyses. The transmissivity calculated at location 802 was significantly higher than any of the other test locations with an average value of 139 ft²/d. The average hydraulic conductivity for location 802 was 5.6 ft/d. Location 346 had the next highest transmissivity at 14.2 ft²/d. The other five locations had transmissivity values ranging from 2 to 5.1 ft²/d. Locations 346 and 348 had average hydraulic conductivity of 0.59 and 0.34 ft/d, respectively. Locations 338, 344, 368 and 804 had very low hydraulic conductivity, ranging from 0.04 to 0.10 ft/d.

Results of the short-term pump test indicate that aquifer transmissivity is generally low along much of the boundary between the Canon City Milling Facility and the Shadow Hills Golf Course. In most cases, pumping rates of less than 2 gpm resulted in rapid drawdown within the wells, such that the pump test had to be terminated in less than an hour. Location 802 is interesting in that the high transmissivity calculated for this site

indicates that this area maybe a preferential flowpath for groundwater. Additional evaluation will be performed.

Table 1. Short Term Pump Test Well Data, Cotter Corporation, Canyon City, Colorado

Location I.D.	Easting ^a	Northing ^a	MP Elevation	TD	Casing Diam	Top of Screen	Bottom Screen	Completion Formation	Lithology
	(ft)	(ft)	(ft amsl)	(ft bgs)	(in)	(ft bgs)	(ft bgs)		
338	2076695	210309	5520.32	100	4	30.00	100.00	Raton	clayey sandstone/claystone
344	2077978	207329	5553.94	60	4	40.0	60.0	Poison Canyon	claystone/sandy claystone
346	2076403	207301	5588.28	60	4	40 _e	60 _e	Poison Canyon	silty sand/sandy clay
348	2076988	207319	5568.66	35	4	20 _e	35 _e	Poison Canyon	sandy clay
368	2077502	207320	5568.27	78	4	?	?	Poison Canyon	?
802	2075240	206724	5622.20	70	4	40.0	70.0	Poison Canyon	sandstone/claystone
804	2076958	207975	5554.21	50	4	15.0	45.0	Poison Canyon	conglomeritic sandstone/sandstone

^a - NAD27-Colorado Central

_e - screen interval estimated-no well construction log available

? - Unknown, no boring log or well construction log available

Table 2. Short-Term Pump Test Results, Cotter Corporation, Canyon City, Colorado

Well ID	Test Date	Test Duration	Average Pump Rate	Initial Saturated Thickness	Max Drawdown
		(min)	(gpm)	(ft)	(ft)
338	10/14/08	59	2.65	70	55.06
344	10/15/08	18	1.24	32	23.68
346	10/14/08	50	1.59	24	9.70
348	10/15/08	13	1.51	15	11.74
368	10/15/08	62	0.83	49	13.03
804	10/14/08	28	1.17	25	17.75
802a	10/14/08	12	2	25	0.49
802b	10/14/08	19	4	25	0.85
802c	10/14/08	5	6	25	1.02

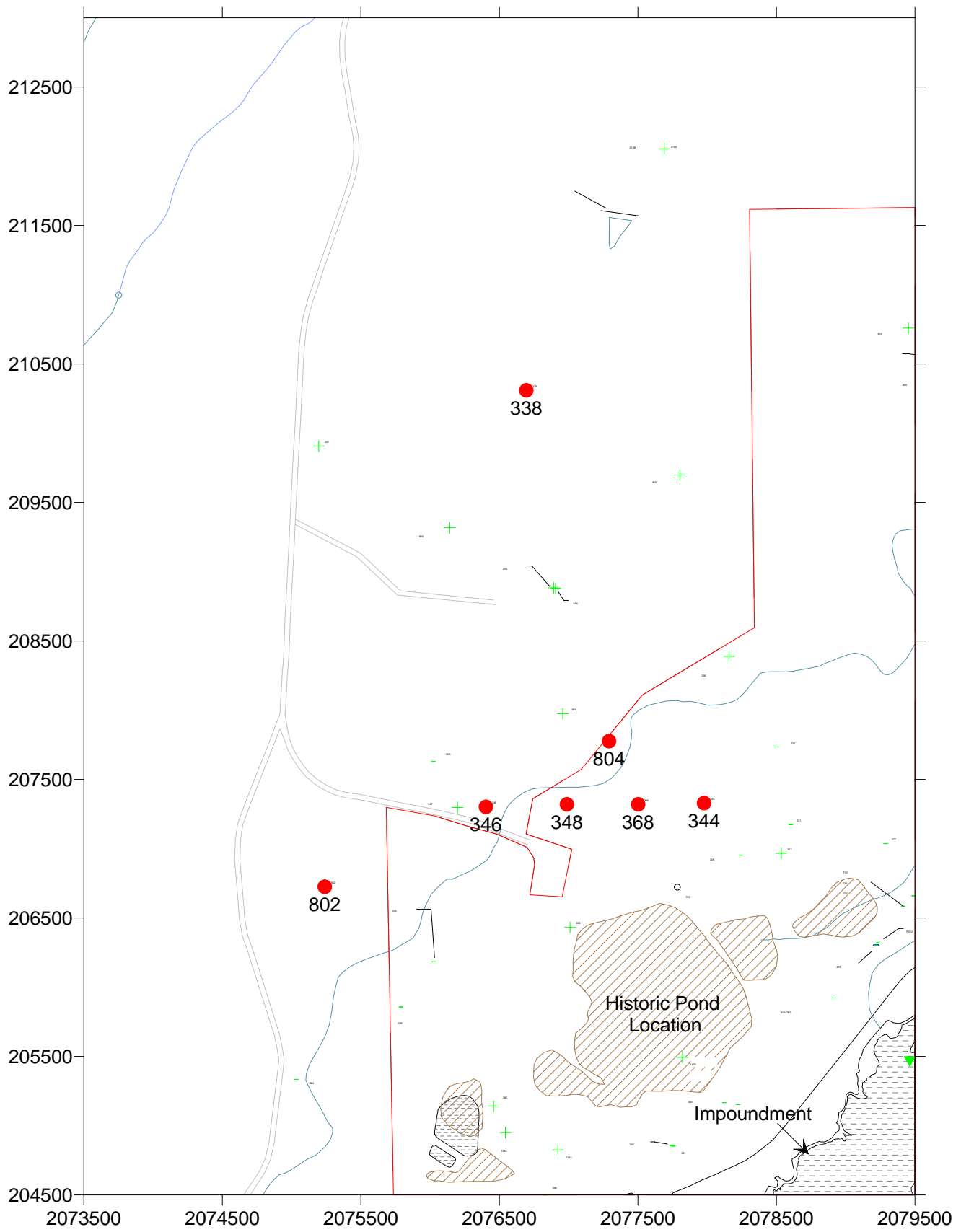
802 pump test was run as a step test at 2, 4 and 6 gpm.

Table 3. Summary of Aquifer Properties Estimated from Short Term Pump Tests, Cotter Corporation, Canyon City, Colorado

Location I.D.	Parameter	Analytical Method					
		Theis	Theis (early)	Theis (late)	Cooper Jacobs	Neuman	Average
338.00	T (ft²/d)	2.0	-	-	3.3	-	2.65
	K (ft/d)	0.03	-	-	0.05	-	0.04
344.00	T (ft²/d)	-	7.1	1.7	2.2	1.4	3.10
	K (ft/d)	-	0.22	0.05	0.07	0.04	0.10
346.00	T (ft²/d)	14.5	-	-	13.1	14.9	14.17
	K (ft/d)	0.60	-	-	0.55	0.62	0.59
348.00	T (ft²/d)	6.6	-	-	7.2	1.5	5.11
	K (ft/d)	0.44	-	-	0.48	0.10	0.34
368.00	T (ft²/d)	-	5.7	1.7	3.0	4.7	3.79
	K (ft/d)	-	0.12	0.03	0.06	0.10	0.08
802.00	T (ft²/d)	91.6	-	-	213.0	113.0	139.20
	K (ft/d)	3.66	-	-	8.52	4.52	5.57
804.00	T (ft²/d)	-	-	-	2.8	1.4	2.09
	K (ft/d)	-	-	-	0.11	0.05	0.08

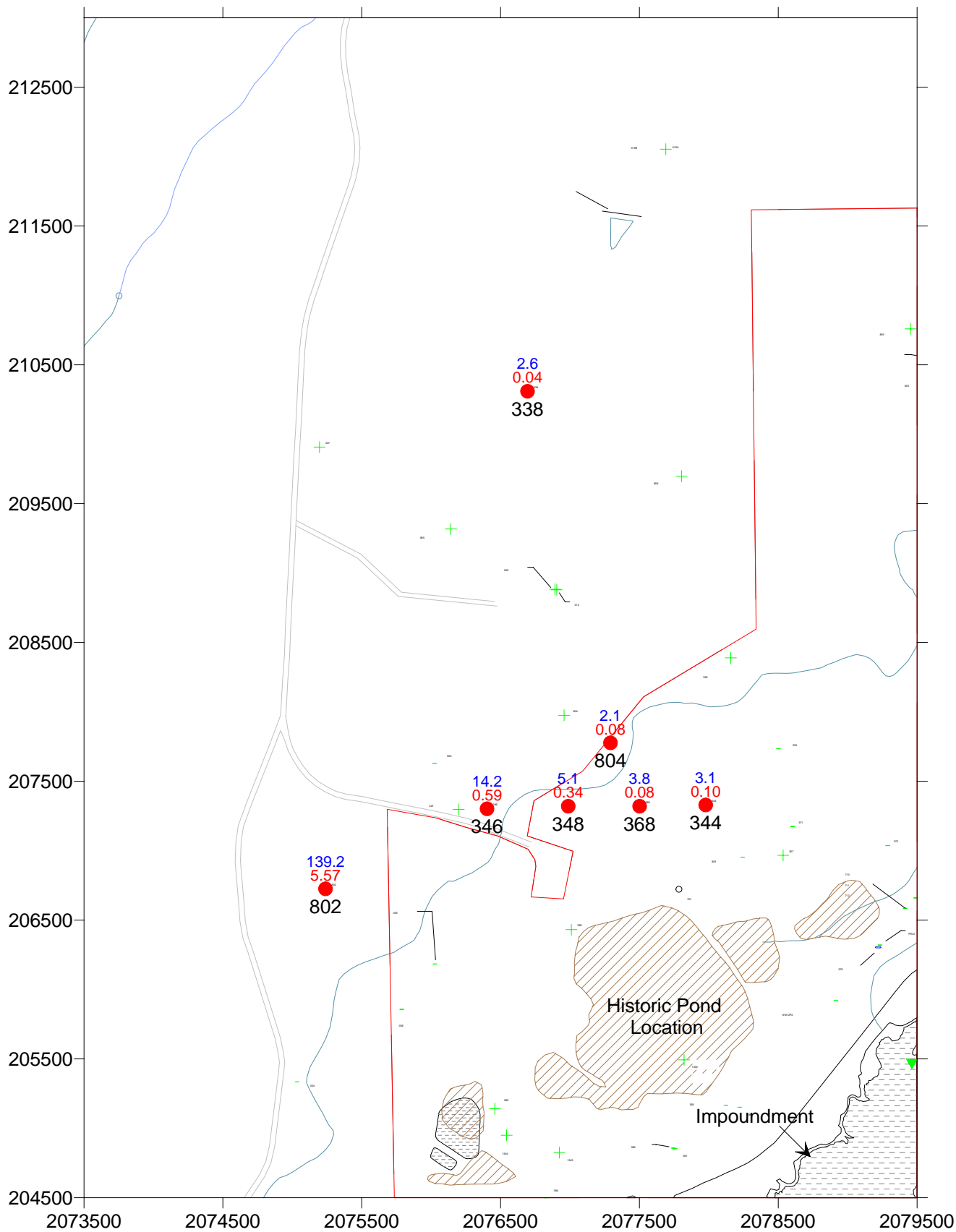
T - transmissivity

K - hydraulic conductivity



● Pump Test Location
802 Location ID

**Figure 1. Location of Short Term Pump Tests
 Canon City Milling Facility, Colorado
 Cotter Corporation**



**Figure 2. Results of Short Term Pump Tests
Canon City Milling Facility, Colorado
Cotter Corporation**

139.2 Transmissivity (ft²/d)
5.57 Hydraulic Conductivity (ft/d)
● Pump Test Location
802 Location ID

ATTACHMENT A

**DRAWDOWN DATA FOR SHORT TERM PUMPING TESTS
CANON CITY MILLING FACILITY, COLORADO
COTTER CORPORATION**



Hydrosolutions
PO Box 17450
Golden, Colorado 80402
303-880-9175

Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

Data observed at: 338a

Pumping Test: 338 Pumping Test

Distance from PW: 1 [ft]

Pumping Well: 338

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

Recorded by: EPL

Screen length: 70 [ft]

Date: 10/22/2008

Aquifer Thickness: 70 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
1	0	0.01	0.01
2	0.72	0.00	0.00
3	1.5	0.13	0.13
4	2.28	0.10	0.10
5	3.12	0.13	0.13
6	4.02	0.13	0.13
7	4.98	0.20	0.20
8	5.94	0.23	0.23
9	7.02	0.31	0.31
10	8.16	0.27	0.27
11	9.36	0.28	0.28
12	10.62	0.35	0.35
13	11.94	0.37	0.37
14	13.38	0.38	0.38
15	14.88	0.41	0.41
16	16.44	0.42	0.42
17	18.12	0.46	0.46
18	19.92	0.49	0.49
19	21.78	0.53	0.53
20	23.82	0.56	0.56
21	25.92	0.61	0.61
22	28.14	0.66	0.66
23	30.54	0.73	0.73
24	33.06	0.78	0.78
25	35.7	0.85	0.85
26	38.52	0.91	0.91
27	41.52	1.00	1.00
28	44.7	1.07	1.07
29	48.06	1.15	1.15
30	51.66	1.23	1.23
31	55.259	1.31	1.31



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Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

Data observed at: 338a

Pumping Test: 338 Pumping Test

Distance from PW: 1 [ft]

Pumping Well: 338

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

Recorded by: EPL

Screen length: 70 [ft]

Date: 10/22/2008

Aquifer Thickness: 70 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
32	59.46	1.40	1.40
33	63.66	1.51	1.51
34	67.86	1.60	1.60
35	72.66	1.71	1.71
36	78.06	1.85	1.85
37	82.86	1.95	1.95
38	88.86	2.09	2.09
39	94.86	2.23	2.23
40	100.86	2.39	2.39
41	107.459	2.57	2.57
42	114.662	2.76	2.76
43	122.459	2.95	2.95
44	130.259	3.13	3.13
45	138.66	3.31	3.31
46	147.66	3.51	3.51
47	157.259	3.76	3.76
48	166.86	3.99	3.99
49	177.659	4.27	4.27
50	189.06	4.53	4.53
51	201.06	4.82	4.82
52	213.659	5.12	5.12
53	226.86	5.43	5.43
54	241.259	5.74	5.74
55	256.259	6.09	6.09
56	271.859	6.41	6.41
57	288.659	6.73	6.73
58	306.659	7.10	7.10
59	325.259	7.51	7.51
60	345.659	7.95	7.95
61	366.659	8.44	8.44
62	388.859	8.96	8.96

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Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

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Data observed at: 338a**Pumping Test: 338 Pumping Test**

Distance from PW: 1 [ft]

Pumping Well: 338

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

Recorded by: EPL

Screen length: 70 [ft]

Date: 10/22/2008

Aquifer Thickness: 70 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
63	412.859	9.52	9.52
64	438.06	10.13	10.13
65	464.459	10.73	10.73
66	492.659	11.35	11.35
67	522.659	12.08	12.08
68	554.472	12.84	12.84
69	588.059	13.60	13.60
70	624.059	14.38	14.38
71	660.059	15.19	15.19
72	702.059	16.13	16.13
73	744.059	17.05	17.05
74	786.07	17.92	17.92
75	834.199	18.92	18.92
76	888.059	20.02	20.02
77	936.059	20.99	20.99
78	996.059	22.20	22.20
79	1056.059	23.38	23.38
80	1116.059	24.54	24.54
81	1176.059	25.67	25.67
82	1236.059	26.82	26.82
83	1296.059	28.01	28.01
84	1356.059	29.04	29.04
85	1416.059	30.07	30.07
86	1476.059	31.08	31.08
87	1536.059	32.17	32.17
88	1596.059	33.15	33.15
89	1656.059	34.10	34.10
90	1716.059	34.92	34.92
91	1776.059	35.91	35.91
92	1836.059	37.13	37.13
93	1896.059	38.19	38.19

**Hydrosolutions**PO Box 17450
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Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

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Data observed at: 338a**Pumping Test: 338 Pumping Test**

Distance from PW: 1 [ft]

Pumping Well: 338

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

Recorded by: EPL

Screen length: 70 [ft]

Date: 10/22/2008

Aquifer Thickness: 70 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
94	1956.059	39.27	39.27
95	2016.059	40.29	40.29
96	2076.059	41.19	41.19
97	2136.059	41.82	41.82
98	2196.059	42.50	42.50
99	2256.059	43.17	43.17
100	2316.059	43.84	43.84
101	2376.059	44.49	44.49
102	2436.059	45.25	45.25
103	2496.059	45.91	45.91
104	2556.059	46.52	46.52
105	2616.059	47.16	47.16
106	2676.059	47.71	47.71
107	2736.059	48.24	48.24
108	2796.059	48.82	48.82
109	2856.059	49.39	49.39
110	2916.059	50.10	50.10
111	2976.059	50.77	50.77
112	3036.059	51.47	51.47
113	3096.059	51.95	51.95
114	3156.059	52.43	52.43
115	3216.059	52.86	52.86
116	3276.059	53.32	53.32
117	3336.059	53.86	53.86
118	3396.059	54.22	54.22
119	3456.059	54.67	54.67
120	3516.059	55.09	55.09
121	3576.059	53.99	53.99
122	3636.059	53.17	53.17
123	3696.059	52.49	52.49
124	3756.059	51.73	51.73



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Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

Data observed at: 344a

Pumping Test: 344 Pumping Test

Distance from PW: 1 [ft]

Pumping Well: 344

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

Recorded by: EPL

Screen length: 20 [ft]

Date: 10/23/2008

Aquifer Thickness: 32 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
1	0	0.01	0.01
2	0.96	0.01	0.01
3	2.04	0.03	0.03
4	3.18	0.06	0.06
5	4.38	0.09	0.09
6	5.64	0.20	0.20
7	6.96	0.33	0.33
8	8.4	0.49	0.49
9	9.9	0.66	0.66
10	11.46	0.83	0.83
11	13.14	0.99	0.99
12	14.94	1.17	1.17
13	16.8	1.35	1.35
14	18.84	1.53	1.53
15	20.94	1.70	1.70
16	23.16	1.85	1.85
17	25.56	2.03	2.03
18	28.08	2.16	2.16
19	30.72	2.22	2.22
20	33.54	2.26	2.26
21	36.54	2.31	2.31
22	39.72	2.35	2.35
23	43.08	2.36	2.36
24	46.68	2.36	2.36
25	50.28	2.36	2.36
26	54.481	2.35	2.35
27	58.68	2.37	2.37
28	62.88	2.37	2.37
29	67.68	2.39	2.39
30	73.08	2.42	2.42
31	77.88	2.46	2.46



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Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

Data observed at: 344a

Pumping Test: 344 Pumping Test

Distance from PW: 1 [ft]

Pumping Well: 344

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

Recorded by: EPL

Screen length: 20 [ft]

Date: 10/23/2008

Aquifer Thickness: 32 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
32	83.88	2.51	2.51
33	89.88	2.67	2.67
34	95.88	2.85	2.85
35	102.48	3.05	3.05
36	109.68	3.26	3.26
37	117.48	3.48	3.48
38	125.28	3.70	3.70
39	133.68	3.93	3.93
40	142.68	4.18	4.18
41	152.28	4.42	4.42
42	161.88	4.67	4.67
43	172.68	4.94	4.94
44	184.08	5.21	5.21
45	196.08	5.49	5.49
46	208.68	5.77	5.77
47	221.88	6.06	6.06
48	236.28	6.35	6.35
49	251.28	6.65	6.65
50	266.88	6.95	6.95
51	283.68	7.25	7.25
52	301.68	7.56	7.56
53	320.28	7.87	7.87
54	340.68	8.19	8.19
55	361.68	8.50	8.50
56	383.88	8.80	8.80
57	407.88	9.10	9.10
58	433.08	9.40	9.40
59	459.48	9.73	9.73
60	487.798	10.03	10.03
61	517.703	10.92	10.92
62	549.48	11.80	11.80



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Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

Data observed at: 344a

Pumping Test: 344 Pumping Test

Distance from PW: 1 [ft]

Pumping Well: 344

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

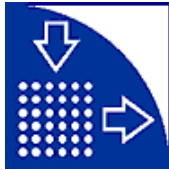
Recorded by: EPL

Screen length: 20 [ft]

Date: 10/23/2008

Aquifer Thickness: 32 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
63	583.08	12.65	12.65
64	619.08	13.49	13.49
65	655.08	14.24	14.24
66	697.08	15.03	15.03
67	739.08	15.74	15.74
68	781.08	16.60	16.60
69	829.08	18.18	18.18
70	883.08	19.78	19.78
71	931.08	21.07	21.07
72	991.08	22.50	22.50
73	1051.08	23.68	23.68
74	1111.08	22.60	22.60
75	1171.08	22.39	22.39
76	1231.08	22.18	22.18
77	1291.08	21.99	21.99
78	1351.08	21.81	21.81
79	1411.08	21.64	21.64
80	1471.08	21.47	21.47
81	1531.08	21.30	21.30
82	1591.08	21.14	21.14
83	1651.08	20.99	20.99
84	1711.08	20.84	20.84
85	1771.08	20.70	20.70
86	1831.08	20.56	20.56
87	1891.08	20.42	20.42
88	1951.08	20.30	20.30
89	2011.08	20.17	20.17
90	2071.08	20.05	20.05
91	2131.08	19.93	19.93
92	2191.08	19.81	19.81
93	2251.08	19.70	19.70



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Number:

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Data observed at: 344a

Pumping Test: 344 Pumping Test

Distance from PW: 1 [ft]

Pumping Well: 344

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

Recorded by: EPL

Screen length: 20 [ft]

Date: 10/23/2008

Aquifer Thickness: 32 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
94	2311.08	19.59	19.59
95	2371.08	19.48	19.48
96	2431.266	19.38	19.38
97	2491.268	19.27	19.27
98	2551.08	19.17	19.17
99	2611.091	19.07	19.07
100	2671.093	18.98	18.98
101	2731.094	18.88	18.88
102	2791.096	18.79	18.79
103	2851.098	18.70	18.70



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Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

Data observed at: 346a

Pumping Test: 346 Pump Test

Distance from PW: 1 [ft]

Pumping Well: 346

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

Recorded by: EPL

Screen length: 24 [ft]

Date: 10/22/2008

Aquifer Thickness: 24 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
1	0	0.00	0.00
2	1.14	0.02	0.02
3	2.34	0.04	0.04
4	3.6	0.06	0.06
5	4.92	0.07	0.07
6	6.36	0.09	0.09
7	7.86	0.10	0.10
8	9.42	0.12	0.12
9	11.1	0.15	0.15
10	12.9	0.28	0.28
11	14.76	0.33	0.33
12	16.8	0.44	0.44
13	18.9	0.54	0.54
14	21.12	0.62	0.62
15	23.52	0.68	0.68
16	26.04	0.74	0.74
17	28.68	0.83	0.83
18	31.5	0.92	0.92
19	34.5	1.02	1.02
20	37.68	1.15	1.15
21	41.04	1.24	1.24
22	44.64	1.33	1.33
23	48.24	1.41	1.41
24	52.44	1.49	1.49
25	56.64	1.56	1.56
26	60.84	1.64	1.64
27	65.64	1.71	1.71
28	71.04	1.81	1.81
29	75.84	1.90	1.90
30	81.84	2.01	2.01
31	87.84	2.10	2.10



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Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

Data observed at: 346a

Pumping Test: 346 Pump Test

Distance from PW: 1 [ft]

Pumping Well: 346

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

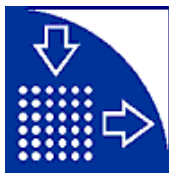
Recorded by: EPL

Screen length: 24 [ft]

Date: 10/22/2008

Aquifer Thickness: 24 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
32	93.84	2.21	2.21
33	100.44	2.31	2.31
34	107.64	2.42	2.42
35	115.44	2.54	2.54
36	123.24	2.65	2.65
37	131.64	2.77	2.77
38	140.64	2.87	2.87
39	150.24	2.96	2.96
40	159.84	3.05	3.05
41	725.369	5.59	5.59
42	736.769	5.63	5.63
43	748.902	5.67	5.67
44	761.369	5.70	5.70
45	774.569	5.75	5.75
46	788.969	5.80	5.80
47	803.969	5.85	5.85
48	819.569	5.89	5.89
49	836.369	5.94	5.94
50	854.477	6.00	6.00
51	872.969	6.05	6.05
52	893.369	6.10	6.10
53	914.369	6.15	6.15
54	936.569	6.21	6.21
55	960.569	6.27	6.27
56	985.769	6.34	6.34
57	1012.169	6.41	6.41
58	1040.372	6.48	6.48
59	1070.369	6.55	6.55
60	1102.169	6.73	6.73
61	1135.769	6.93	6.93
62	1171.769	7.09	7.09



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Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

Data observed at: 346a

Pumping Test: 346 Pump Test

Distance from PW: 1 [ft]

Pumping Well: 346

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

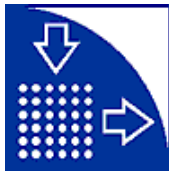
Recorded by: EPL

Screen length: 24 [ft]

Date: 10/22/2008

Aquifer Thickness: 24 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
63	1207.769	7.13	7.13
64	1249.881	7.20	7.20
65	1291.769	7.27	7.27
66	1333.769	7.35	7.35
67	1381.769	7.43	7.43
68	1435.769	7.53	7.53
69	1483.769	7.61	7.61
70	1543.769	7.71	7.71
71	1603.769	7.81	7.81
72	1663.769	7.90	7.90
73	1723.769	8.00	8.00
74	1783.769	8.19	8.19
75	1843.769	8.44	8.44
76	1903.769	8.49	8.49
77	1963.769	8.55	8.55
78	2023.769	8.61	8.61
79	2083.769	8.67	8.67
80	2143.769	8.73	8.73
81	2203.769	8.78	8.78
82	2263.769	8.85	8.85
83	2323.769	8.90	8.90
84	2383.769	8.97	8.97
85	2443.769	9.02	9.02
86	2503.769	9.08	9.08
87	2563.769	9.13	9.13
88	2623.769	9.18	9.18
89	2683.769	9.22	9.22
90	2743.769	9.27	9.27
91	2803.769	9.31	9.31
92	2863.769	9.35	9.35
93	2923.769	9.61	9.61



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Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

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Data observed at: 346a

Pumping Test: 346 Pump Test

Distance from PW: 1 [ft]

Pumping Well: 346

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

Recorded by: EPL

Screen length: 24 [ft]

Date: 10/22/2008

Aquifer Thickness: 24 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
94	2983.769	9.70	9.70
95	3043.769	9.68	9.68
96	3103.769	6.94	6.94
97	3163.769	5.73	5.73
98	3223.769	4.61	4.61
99	3283.769	3.67	3.67
100	3343.77	2.92	2.92
101	3403.769	2.32	2.32
102	3463.769	1.83	1.83
103	3523.769	1.44	1.44
104	3583.769	1.15	1.15
105	3643.769	0.91	0.91
106	3703.769	0.76	0.76
107	3763.769	0.63	0.63
108	3823.77	0.54	0.54
109	3883.77	0.46	0.46
110	3943.77	0.39	0.39
111	4003.77	0.33	0.33
112	4063.77	0.28	0.28
113	4123.77	0.24	0.24
114	4183.77	0.21	0.21
115	4243.77	0.18	0.18
116	4303.77	0.16	0.16



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Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

Data observed at: 348a

Pumping Test: 348 Pumping Test

Distance from PW: 1 [ft]

Pumping Well: 348

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

Recorded by: EPL

Screen length: 15 [ft]

Date: 10/22/2008

Aquifer Thickness: 15 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
1	0	0.02	0.02
2	0.84	0.03	0.03
3	1.74	0.05	0.05
4	2.7	0.06	0.06
5	3.66	0.07	0.07
6	4.74	0.07	0.07
7	5.88	0.08	0.08
8	7.08	0.16	0.16
9	8.34	0.24	0.24
10	9.66	0.33	0.33
11	11.1	0.45	0.45
12	12.6	0.55	0.55
13	14.16	0.61	0.61
14	15.84	0.65	0.65
15	17.64	0.68	0.68
16	19.5	0.72	0.72
17	21.54	0.77	0.77
18	23.64	0.82	0.82
19	25.86	0.87	0.87
20	28.26	0.93	0.93
21	30.78	0.99	0.99
22	33.42	1.05	1.05
23	36.24	1.13	1.13
24	39.24	1.21	1.21
25	42.42	1.30	1.30
26	45.78	1.39	1.39
27	49.38	1.49	1.49
28	52.98	1.58	1.58
29	57.18	1.69	1.69
30	61.38	1.81	1.81
31	65.58	1.92	1.92



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Pumping Test Data Report

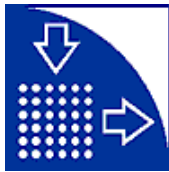
Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

Data observed at: 348a	Pumping Test: 348 Pumping Test
Distance from PW: 1 [ft]	Pumping Well: 348
Depth to Static WL: 0 [ft]	Casing radius: 0.167 [ft]
Location: Canon City Mill Site_Golf Course	Boring radius: 0.4 [ft]
Recorded by: EPL	Screen length: 15 [ft]
Date: 10/22/2008	Aquifer Thickness: 15 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
32	70.38	2.05	2.05
33	75.78	2.21	2.21
34	80.58	2.33	2.33
35	86.58	2.48	2.48
36	92.58	2.63	2.63
37	98.58	2.77	2.77
38	105.18	2.93	2.93
39	112.38	3.10	3.10
40	120.18	3.28	3.28
41	127.98	3.46	3.46
42	136.38	3.67	3.67
43	145.38	3.88	3.88
44	155.141	4.11	4.11
45	164.63	4.32	4.32
46	175.436	4.56	4.56
47	186.78	4.82	4.82
48	198.78	5.11	5.11
49	211.38	5.37	5.37
50	224.631	5.67	5.67
51	238.982	6.00	6.00
52	253.98	6.33	6.33
53	269.632	6.68	6.68
54	286.38	7.05	7.05
55	304.38	7.49	7.49
56	322.98	7.94	7.94
57	343.38	8.41	8.41
58	364.38	8.84	8.84
59	386.58	9.30	9.30
60	410.58	9.76	9.76
61	435.78	10.20	10.20
62	462.18	10.35	10.35



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Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

Data observed at: 348a

Pumping Test: 348 Pumping Test

Distance from PW: 1 [ft]

Pumping Well: 348

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

Recorded by: EPL

Screen length: 15 [ft]

Date: 10/22/2008

Aquifer Thickness: 15 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
63	490.38	10.34	10.34
64	520.38	10.42	10.42
65	552.18	10.69	10.69
66	585.78	10.97	10.97
67	621.78	11.22	11.22
68	657.78	11.47	11.47
69	699.931	11.70	11.70
70	741.78	11.68	11.68
71	783.78	11.74	11.74
72	831.78	11.69	11.69
73	885.78	11.22	11.22
74	933.78	11.18	11.18
75	993.78	11.14	11.14
76	1053.78	11.10	11.10
77	1113.78	11.06	11.06
78	1173.78	11.02	11.02
79	1233.78	10.99	10.99
80	1293.78	10.95	10.95
81	1353.78	10.92	10.92
82	1413.78	10.89	10.89
83	1473.78	10.80	10.80
84	1533.78	10.77	10.77



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Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

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Data observed at: 368a

Pumping Test: 368 Pumping Test

Distance from PW: 1 [ft]

Pumping Well: 368

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

Recorded by: EPL

Screen length: 49 [ft]

Date: 10/23/2008

Aquifer Thickness: 49 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
1	0	0.01	0.01
2	0.899	0.03	0.03
3	1.859	0.02	0.02
4	2.819	0.05	0.05
5	3.899	0.07	0.07
6	5.04	0.10	0.10
7	6.24	0.11	0.11
8	7.5	0.12	0.12
9	8.819	0.15	0.15
10	10.26	0.15	0.15
11	11.76	0.13	0.13
12	13.32	0.15	0.15
13	15	0.16	0.16
14	16.799	0.16	0.16
15	18.659	0.18	0.18
16	20.699	0.18	0.18
17	22.799	0.21	0.21
18	25.019	0.22	0.22
19	27.419	0.24	0.24
20	29.939	0.27	0.27
21	32.579	0.29	0.29
22	35.399	0.31	0.31
23	38.399	0.33	0.33
24	41.579	0.35	0.35
25	44.939	0.37	0.37
26	48.539	0.38	0.38
27	52.139	0.39	0.39
28	56.339	0.41	0.41
29	60.539	0.42	0.42
30	64.739	0.43	0.43
31	69.539	0.45	0.45



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Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

Data observed at: 368a

Pumping Test: 368 Pumping Test

Distance from PW: 1 [ft]

Pumping Well: 368

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

Recorded by: EPL

Screen length: 49 [ft]

Date: 10/23/2008

Aquifer Thickness: 49 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
32	74.939	0.48	0.48
33	79.739	0.50	0.50
34	85.739	0.52	0.52
35	91.739	0.55	0.55
36	97.739	0.57	0.57
37	104.339	0.59	0.59
38	111.539	0.62	0.62
39	119.339	0.64	0.64
40	127.139	0.67	0.67
41	135.539	0.69	0.69
42	144.539	0.71	0.71
43	154.139	0.74	0.74
44	163.739	0.75	0.75
45	174.539	0.77	0.77
46	185.939	0.78	0.78
47	197.939	0.80	0.80
48	210.539	0.83	0.83
49	223.739	0.85	0.85
50	238.139	0.87	0.87
51	253.139	0.90	0.90
52	268.739	0.92	0.92
53	285.679	0.96	0.96
54	303.539	1.00	1.00
55	322.139	1.05	1.05
56	342.539	1.10	1.10
57	363.539	1.16	1.16
58	385.805	1.23	1.23
59	409.739	1.30	1.30
60	434.939	1.40	1.40
61	461.339	1.55	1.55
62	489.539	1.69	1.69



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Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

Data observed at: 368a

Pumping Test: 368 Pumping Test

Distance from PW: 1 [ft]

Pumping Well: 368

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

Recorded by: EPL

Screen length: 49 [ft]

Date: 10/23/2008

Aquifer Thickness: 49 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
63	519.939	1.82	1.82
64	551.939	1.95	1.95
65	584.939	2.10	2.10
66	620.939	2.27	2.27
67	656.939	2.45	2.45
68	698.939	2.68	2.68
69	740.939	2.89	2.89
70	782.939	3.09	3.09
71	830.939	3.30	3.30
72	884.939	3.54	3.54
73	932.939	3.90	3.90
74	992.939	4.26	4.26
75	1052.939	4.48	4.48
76	1112.939	4.72	4.72
77	1172.939	4.96	4.96
78	1232.939	5.17	5.17
79	1292.939	5.36	5.36
80	1352.939	5.54	5.54
81	1412.939	5.75	5.75
82	1472.939	5.95	5.95
83	1532.939	6.13	6.13
84	1592.939	6.28	6.28
85	1652.939	6.42	6.42
86	1712.939	6.54	6.54
87	1772.939	6.65	6.65
88	1832.939	6.74	6.74
89	1892.939	6.83	6.83
90	1952.939	6.94	6.94
91	2012.939	7.25	7.25
92	2072.939	7.55	7.55
93	2132.939	7.81	7.81



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Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

Data observed at: 368a	Pumping Test: 368 Pumping Test
Distance from PW: 1 [ft]	Pumping Well: 368
Depth to Static WL: 0 [ft]	Casing radius: 0.167 [ft]
Location: Canon City Mill Site_Golf Course	Boring radius: 0.4 [ft]
Recorded by: EPL	Screen length: 49 [ft]
Date: 10/23/2008	Aquifer Thickness: 49 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
94	2192.939	7.97	7.97
95	2252.939	8.22	8.22
96	2312.939	8.54	8.54
97	2372.939	8.82	8.82
98	2432.939	9.07	9.07
99	2492.939	9.29	9.29
100	2552.939	9.48	9.48
101	2612.939	9.67	9.67
102	2672.939	9.82	9.82
103	2732.939	9.97	9.97
104	2792.939	10.12	10.12
105	2852.939	10.26	10.26
106	2912.939	10.41	10.41
107	2972.939	10.55	10.55
108	3032.939	10.68	10.68
109	3092.939	10.82	10.82
110	3152.953	11.09	11.09
111	3212.939	11.37	11.37
112	3272.939	11.61	11.61
113	3332.939	11.84	11.84
114	3392.939	12.07	12.07
115	3452.939	12.28	12.28
116	3512.939	12.48	12.48
117	3572.939	12.69	12.69
118	3632.939	12.89	12.89
119	3692.939	13.03	13.03
120	3753.136	12.92	12.92
121	3812.939	12.90	12.90
122	3872.939	12.88	12.88
123	3932.939	12.86	12.86
124	3992.939	12.84	12.84



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Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

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Data observed at: 368a

Pumping Test: 368 Pumping Test

Distance from PW: 1 [ft]

Pumping Well: 368

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

Recorded by: EPL

Screen length: 49 [ft]

Date: 10/23/2008

Aquifer Thickness: 49 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
125	4052.939	12.82	12.82
126	4112.939	12.80	12.80
127	4172.939	12.78	12.78
128	4232.939	12.76	12.76
129	4292.939	12.74	12.74
130	4352.939	12.72	12.72
131	4412.939	12.71	12.71
132	4472.939	12.68	12.68
133	4532.939	12.66	12.66
134	4592.939	12.64	12.64
135	4652.939	12.63	12.63
136	4712.939	12.60	12.60
137	4772.939	12.58	12.58
138	4832.939	12.57	12.57
139	4892.939	12.55	12.55
140	4952.939	12.52	12.52
141	5012.939	12.51	12.51
142	5072.939	12.48	12.48
143	5132.939	12.47	12.47
144	5192.939	12.45	12.45
145	5252.939	12.42	12.42
146	5312.939	12.41	12.41
147	5372.939	12.40	12.40
148	5432.939	12.38	12.38
149	5492.939	12.36	12.36
150	5552.939	12.34	12.34
151	5612.939	12.33	12.33



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Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

Data observed at: 802a

Pumping Test: 802 Pump Test

Distance from PW: 1 [ft]

Pumping Well: 802

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

Recorded by: EPL

Screen length: 30 [ft]

Date: 10/22/2008

Aquifer Thickness: 25 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
1	0.25	0.01	0.01
2	0.5	0.01	0.01
3	0.86	0.01	0.01
4	1.22	0.04	0.04
5	1.64	0.05	0.05
6	2.06	0.11	0.11
7	2.48	0.13	0.13
8	2.96	0.09	0.09
9	3.5	0.14	0.14
10	3.98	0.16	0.16
11	4.58	0.19	0.19
12	5.18	0.21	0.21
13	5.78	0.23	0.23
14	6.44	0.26	0.26
15	7.16	0.28	0.28
16	7.94	0.29	0.29
17	8.72	0.31	0.31
18	9.56	0.32	0.32
19	10.46	0.34	0.34
20	11.42	0.35	0.35
21	12.38	0.34	0.34
22	13.46	0.37	0.37
23	14.6	0.37	0.37
24	15.8	0.38	0.38
25	17.06	0.38	0.38
26	18.38	0.40	0.40
27	19.82	0.40	0.40
28	21.32	0.41	0.41
29	22.88	0.42	0.42
30	24.56	0.43	0.43
31	26.36	0.44	0.44



Hydrosolutions
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303-880-9175

Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

Data observed at: 802a

Pumping Test: 802 Pump Test

Distance from PW: 1 [ft]

Pumping Well: 802

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

Recorded by: EPL

Screen length: 30 [ft]

Date: 10/22/2008

Aquifer Thickness: 25 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
32	28.22	0.44	0.44
33	30.26	0.45	0.45
34	32.36	0.45	0.45
35	34.58	0.45	0.45
36	36.98	0.46	0.46
37	39.5	0.47	0.47
38	42.14	0.48	0.48
39	45.139	0.47	0.47
40	47.96	0.47	0.47
41	51.14	0.48	0.48
42	54.5	0.47	0.47
43	58.1	0.47	0.47
44	61.7	0.48	0.48
45	65.9	0.48	0.48
46	70.108	0.49	0.49
47	74.3	0.49	0.49
48	79.1	0.48	0.48
49	84.5	0.49	0.49
50	89.3	0.49	0.49
51	95.36	0.49	0.49
52	101.3	0.48	0.48
53	107.3	0.49	0.49
54	113.9	0.49	0.49
55	121.1	0.49	0.49
56	128.9	0.47	0.47
57	136.7	0.47	0.47
58	145.109	0.47	0.47
59	154.1	0.47	0.47
60	163.7	0.47	0.47
61	173.3	0.47	0.47
62	184.1	0.47	0.47



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Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

Data observed at: 802a

Pumping Test: 802 Pump Test

Distance from PW: 1 [ft]

Pumping Well: 802

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

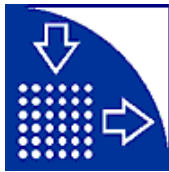
Recorded by: EPL

Screen length: 30 [ft]

Date: 10/22/2008

Aquifer Thickness: 25 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
63	195.5	0.47	0.47
64	207.5	0.47	0.47
65	220.1	0.46	0.46
66	233.3	0.46	0.46
67	247.722	0.45	0.45
68	262.721	0.46	0.46
69	278.299	0.46	0.46
70	295.1	0.45	0.45
71	313.1	0.45	0.45
72	331.7	0.46	0.46
73	352.1	0.45	0.45
74	373.255	0.47	0.47
75	395.299	0.46	0.46
76	419.299	0.45	0.45
77	444.5	0.47	0.47
78	470.9	0.47	0.47
79	499.1	0.47	0.47
80	529.1	0.46	0.46
81	560.9	0.47	0.47
82	594.499	0.47	0.47
83	630.499	0.49	0.49
84	666.499	0.49	0.49
85	708.499	0.47	0.47
86	750.499	0.48	0.48
87	792.499	0.36	0.36
88	840.499	0.01	0.01
89	894.5	0.01	0.01
90	942.5	0.01	0.01
91	1002.5	0.01	0.01
92	1062.5	0.01	0.01
93	1122.5	0.73	0.73



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Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

Page 4

Data observed at: 802a

Pumping Test: 802 Pump Test

Distance from PW: 1 [ft]

Pumping Well: 802

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

Recorded by: EPL

Screen length: 30 [ft]

Date: 10/22/2008

Aquifer Thickness: 25 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
94	1182.5	0.83	0.83
95	1242.5	0.83	0.83
96	1302.5	0.83	0.83
97	1362.5	0.83	0.83
98	1422.5	0.85	0.85
99	1482.5	0.84	0.84
100	1542.5	0.84	0.84
101	1602.5	0.84	0.84
102	1662.5	0.85	0.85
103	1722.567	0.85	0.85
104	1782.499	0.84	0.84
105	1842.499	0.86	0.86
106	1902.499	0.95	0.95
107	1962.499	1.01	1.01
108	2022.499	1.02	1.02
109	2082.499	1.02	1.02
110	2142.499	1.02	1.02
111	2202.499	-0.15	-0.15



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Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

Page 1

Data observed at: 804a

Pumping Test: 804 Pump Test

Distance from PW: 899640 [ft]

Pumping Well: 804

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

Recorded by: EPL

Screen length: 30 [ft]

Date: 10/14/2008

Aquifer Thickness: 25 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
1	0	0.00	0.00
2	0.78	0.02	0.02
3	1.621	0.04	0.04
4	2.52	0.11	0.11
5	3.48	0.17	0.17
6	4.44	0.24	0.24
7	5.52	0.35	0.35
8	6.661	0.43	0.43
9	7.861	0.50	0.50
10	9.121	0.59	0.59
11	10.44	0.66	0.66
12	11.881	0.72	0.72
13	13.381	0.76	0.76
14	14.94	0.76	0.76
15	16.621	0.77	0.77
16	18.42	0.79	0.79
17	20.28	0.80	0.80
18	22.32	0.82	0.82
19	24.42	0.84	0.84
20	26.64	0.86	0.86
21	29.04	0.88	0.88
22	31.56	0.90	0.90
23	34.2	0.93	0.93
24	37.02	0.96	0.96
25	40.02	0.99	0.99
26	43.2	1.02	1.02
27	46.56	1.04	1.04
28	50.16	1.09	1.09
29	53.76	1.12	1.12
30	57.96	1.15	1.15
31	62.16	1.20	1.20



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Pumping Test Data Report

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

Data observed at: 804a

Pumping Test: 804 Pump Test

Distance from PW: 899640 [ft]

Pumping Well: 804

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

Recorded by: EPL

Screen length: 30 [ft]

Date: 10/14/2008

Aquifer Thickness: 25 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
32	66.36	1.24	1.24
33	71.16	1.29	1.29
34	76.56	1.35	1.35
35	81.36	1.40	1.40
36	87.36	1.46	1.46
37	93.36	1.51	1.51
38	99.36	1.58	1.58
39	105.96	1.64	1.64
40	113.16	1.71	1.71
41	120.96	1.78	1.78
42	128.76	1.86	1.86
43	137.16	1.93	1.93
44	146.16	2.02	2.02
45	155.76	2.11	2.11
46	165.36	2.19	2.19
47	176.16	2.29	2.29
48	187.56	2.37	2.37
49	199.56	2.49	2.49
50	212.16	2.58	2.58
51	225.36	2.69	2.69
52	239.76	2.75	2.75
53	254.76	2.77	2.77
54	270.36	2.78	2.78
55	287.16	2.78	2.78
56	305.16	2.80	2.80
57	323.76	2.89	2.89
58	344.16	3.00	3.00
59	365.16	3.35	3.35
60	387.36	3.84	3.84
61	411.36	4.35	4.35
62	436.56	4.87	4.87

**Hydrosolutions**PO Box 17450
Golden, Colorado 80402
303-880-9175**Pumping Test Data Report**

Project: ShortTermPumpTests

Number:

Client: Cotter Corporation

Page 3

Data observed at: 804a**Pumping Test: 804 Pump Test**

Distance from PW: 899640 [ft]

Pumping Well: 804

Depth to Static WL: 0 [ft]

Casing radius: 0.167 [ft]

Location: Canon City Mill Site_Golf Course

Boring radius: 0.4 [ft]

Recorded by: EPL

Screen length: 30 [ft]

Date: 10/14/2008

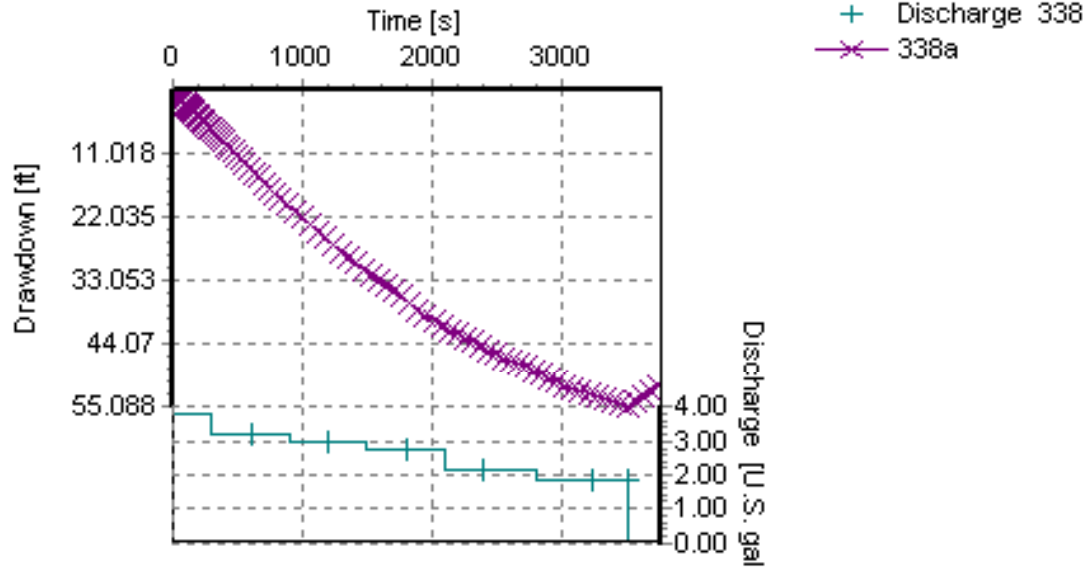
Aquifer Thickness: 25 [ft]

	Time [s]	Depth to WL [ft]	Drawdown [ft]
63	462.96	5.38	5.38
64	491.16	5.87	5.87
65	521.16	6.39	6.39
66	552.96	6.93	6.93
67	586.56	7.49	7.49
68	622.56	8.06	8.06
69	658.56	8.69	8.69
70	700.562	9.62	9.62
71	742.56	10.23	10.23
72	784.56	10.78	10.78
73	832.56	11.39	11.39
74	886.56	12.05	12.05
75	934.56	12.59	12.59
76	994.56	13.24	13.24
77	1054.56	13.84	13.84
78	1114.56	14.39	14.39
79	1174.56	14.91	14.91
80	1234.674	15.40	15.40
81	1294.56	15.97	15.97
82	1354.56	16.66	16.66
83	1414.56	17.24	17.24
84	1474.56	17.48	17.48
85	1534.56	17.67	17.67
86	1594.56	17.75	17.75
87	1654.56	17.73	17.73
88	1714.56	17.55	17.55
89	1774.56	16.72	16.72
90	1834.56	16.70	16.70
91	1894.56	16.69	16.69
92	1954.56	16.67	16.67
93	2014.56	16.26	16.26

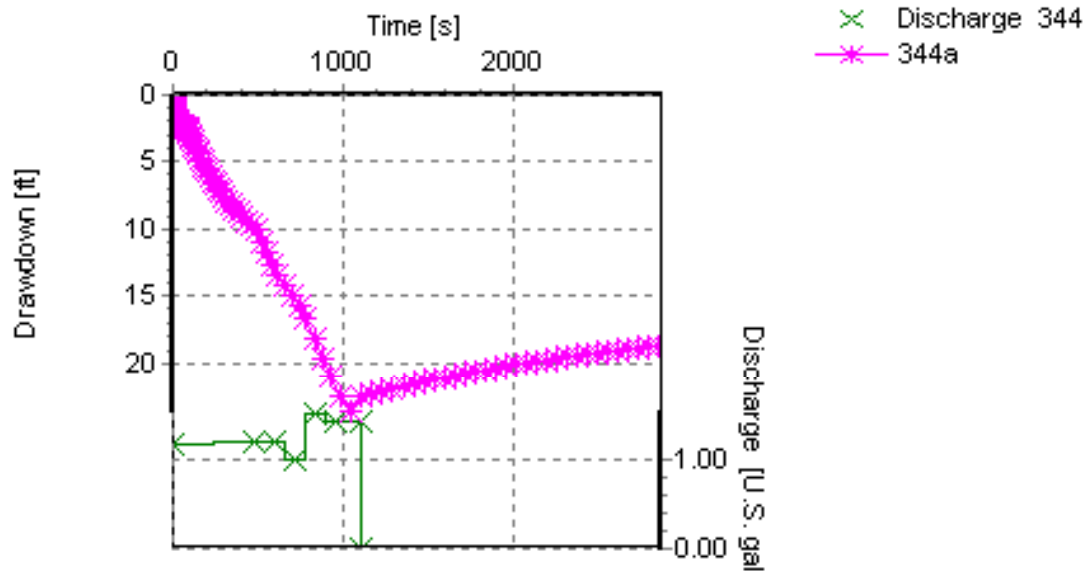
ATTACHMENT B

**DRAWDOWN vs TIME AND DISCHARGE
SHORT TERM PUMPING TESTS
CANON CITY MILLING FACILITY, COLORADO
COTTER CORPORATION**

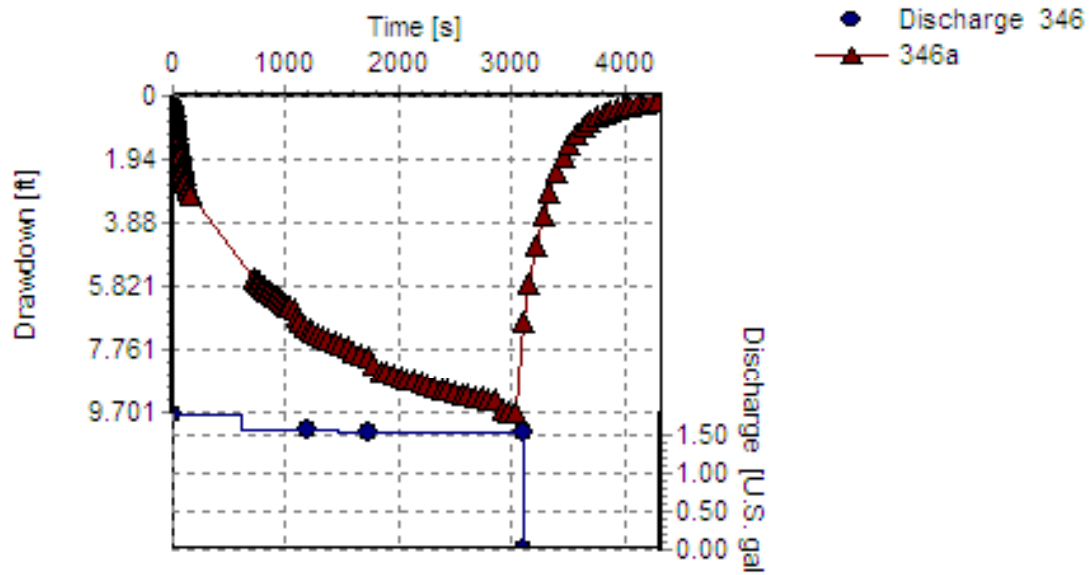
338 Pumping Test [Drawdown vs. Time with Discharge]



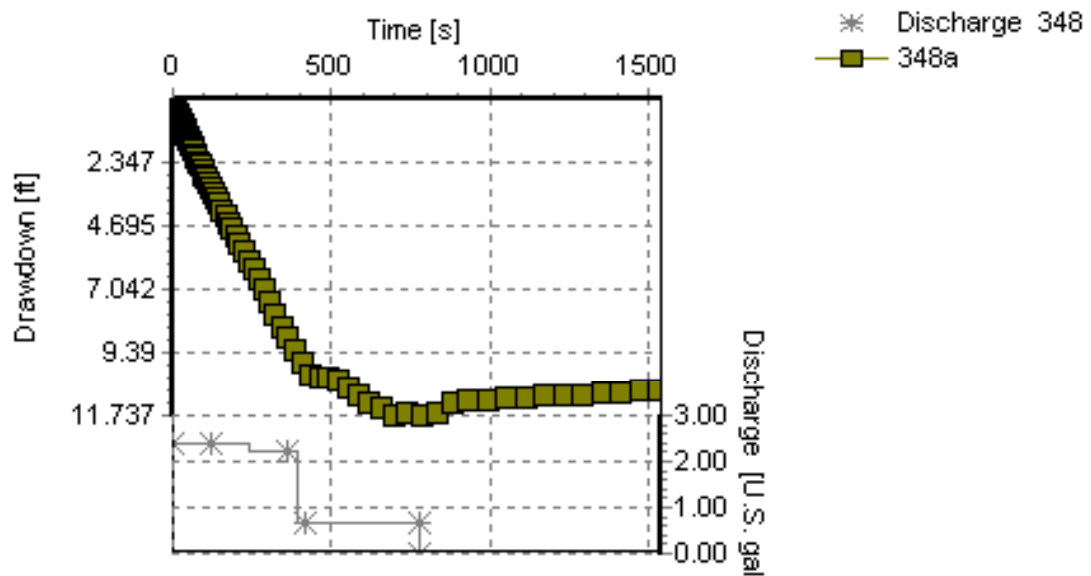
344 Pumping Test [Drawdown vs. Time with Discharge]



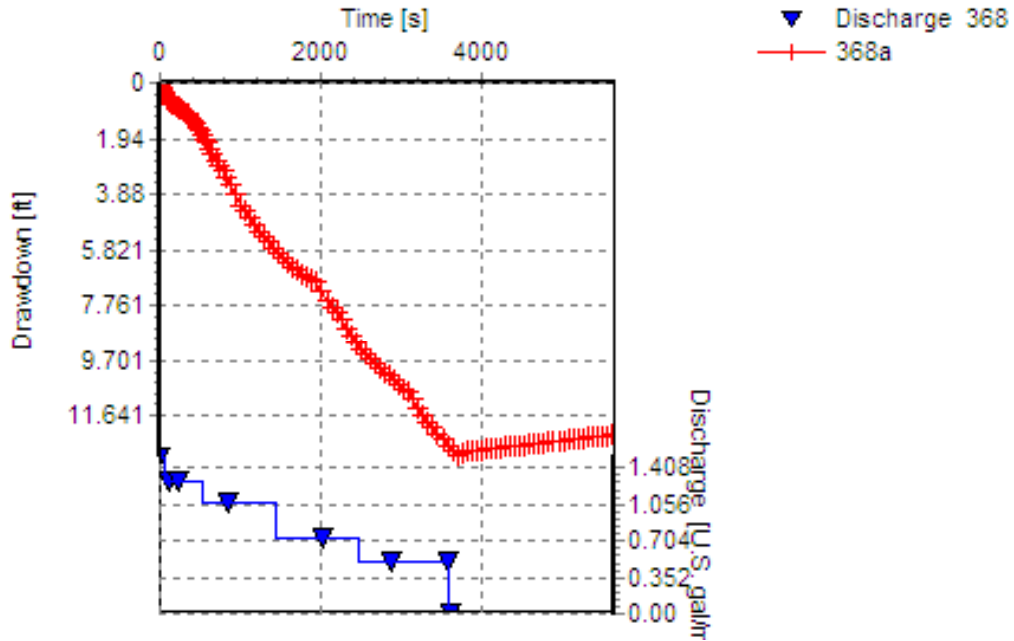
346 Pump Test [Drawdown vs. Time with Discharge]



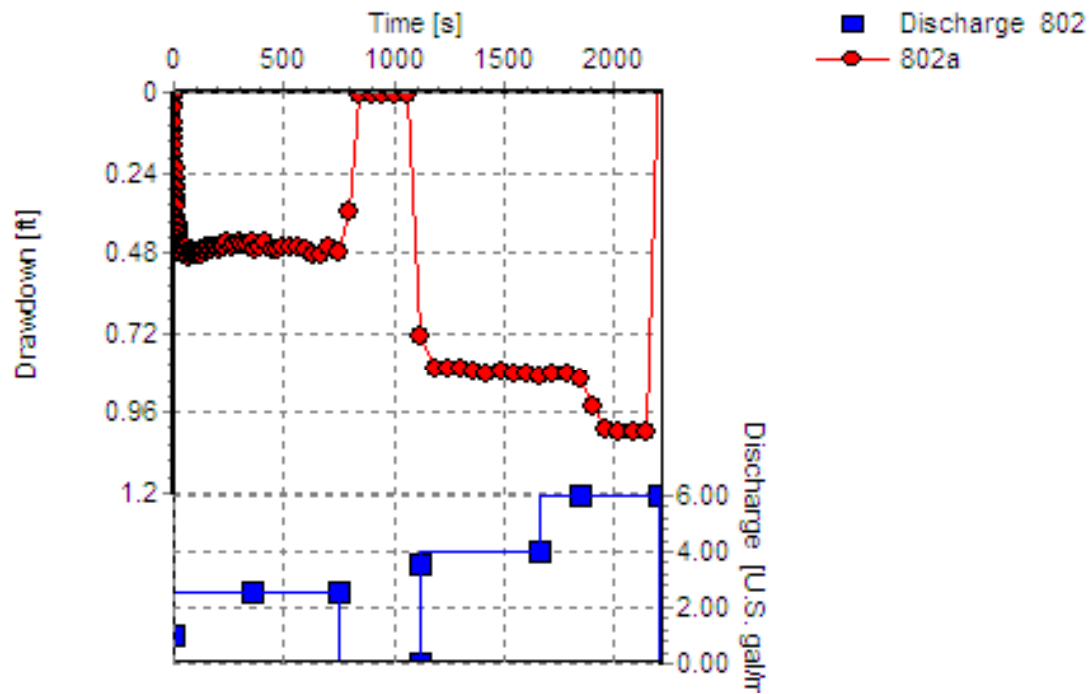
348 Pumping Test [Drawdown vs. Time with Discharge]



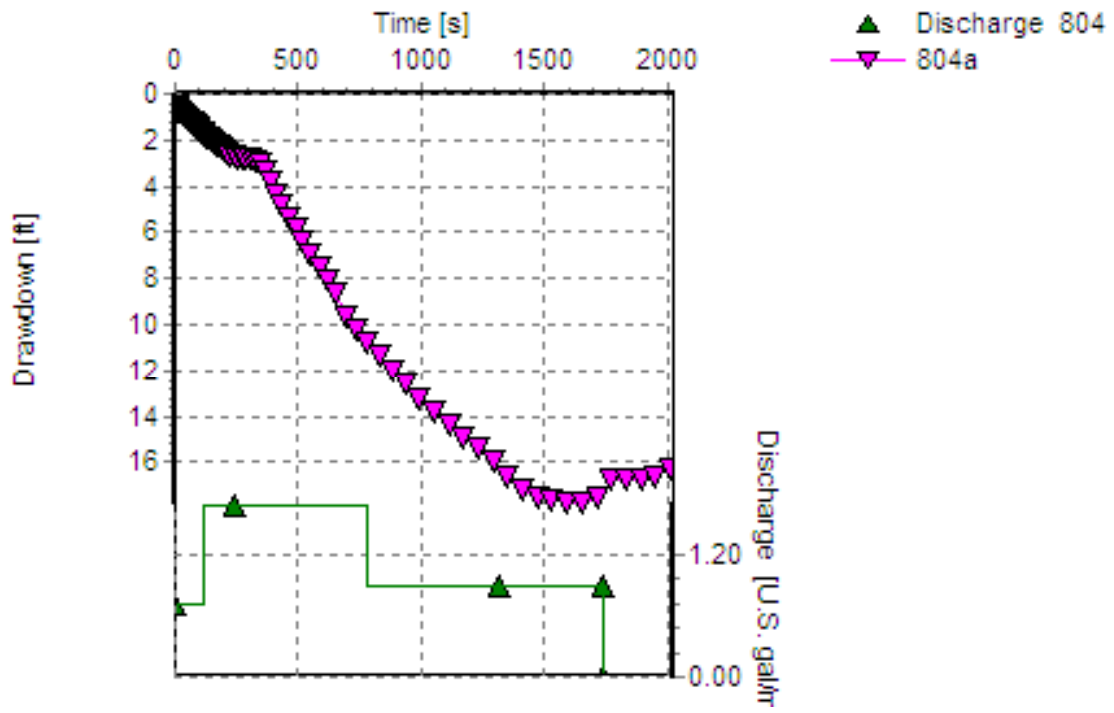
368 Pumping Test [Drawdown vs. Time with Discharge]



802 Pump Test [Drawdown vs. Time with Discharge]



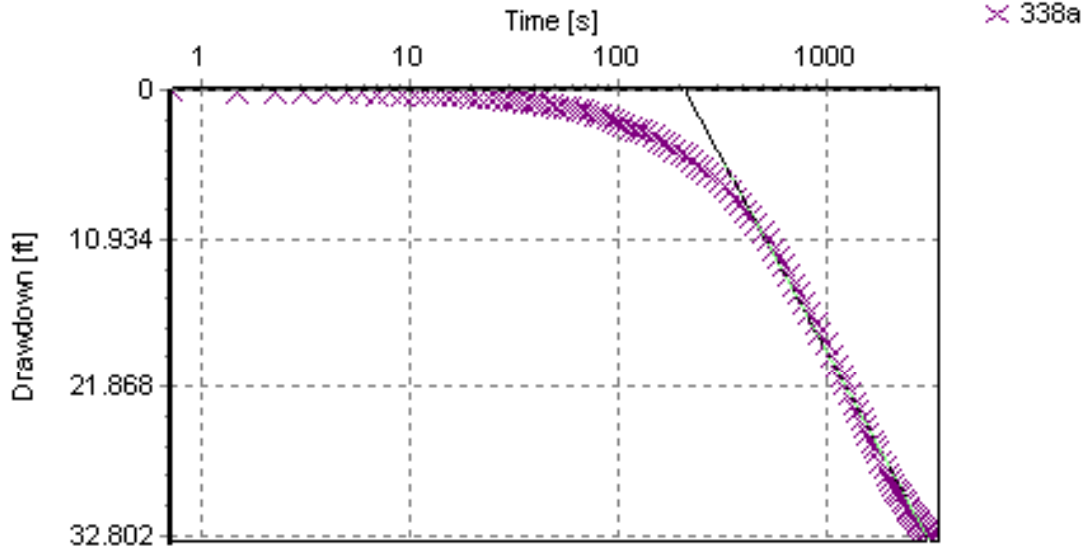
804 Pump Test [Drawdown vs. Time with Discharge]



ATTACHMENT C

**ANALYSIS PLOTS
SHORT TERM PUMPING TESTS
CANON CITY MILLING FACILITY, COLORADO
COTTER CORPORATION**

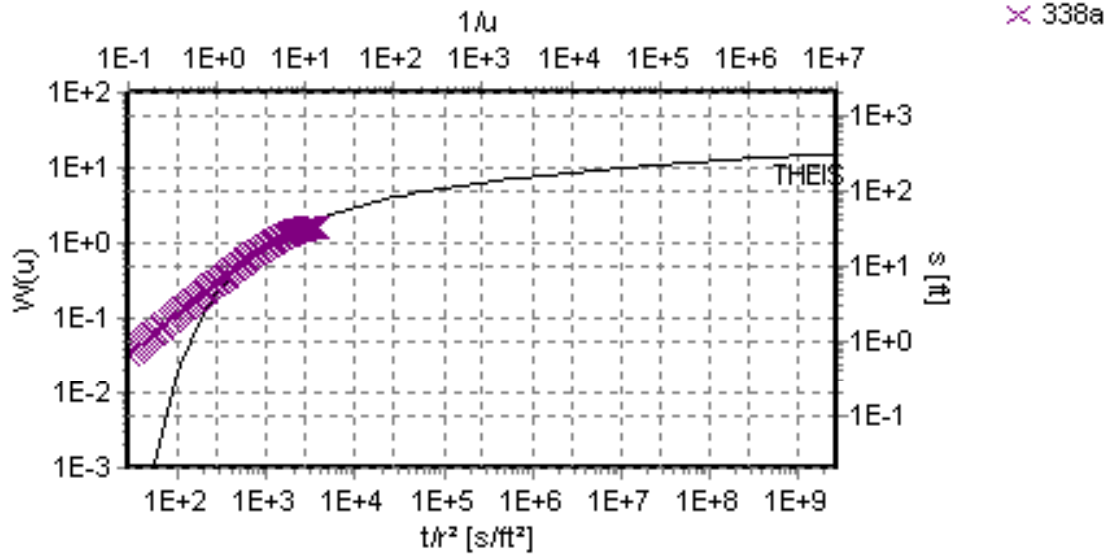
338 Pumping Test [Cooper-Jacob Time-Drawdown]



Transmissivity: $3.30E+0 \text{ ft}^2/\text{d}$

Conductivity: $4.71E-2 \text{ ft}/\text{d}$

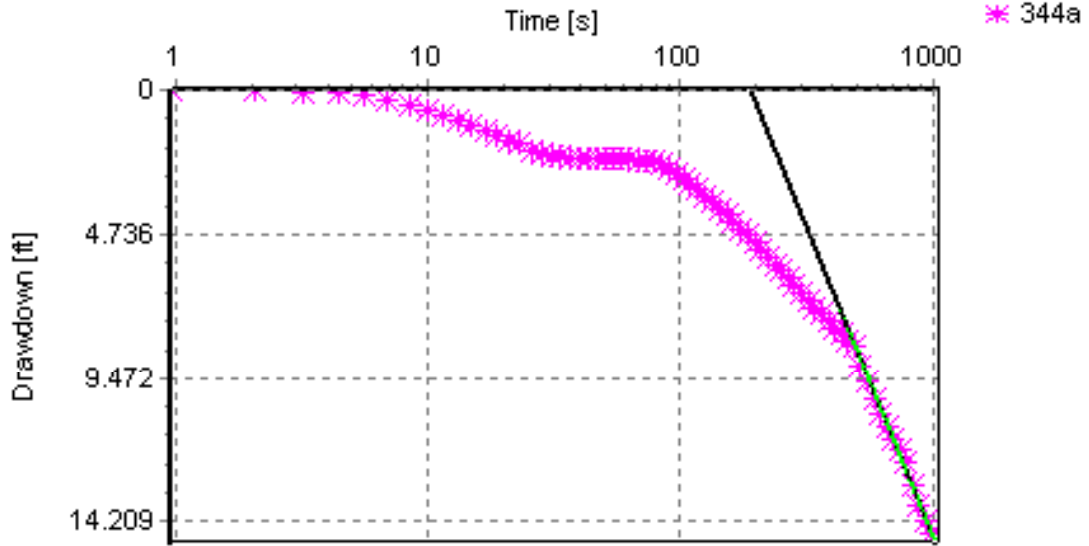
338 Pumping Test [Theis]



Transmissivity: $2.00E+0 \text{ ft}^2/\text{d}$

Conductivity: $2.85E-2 \text{ ft}/\text{d}$

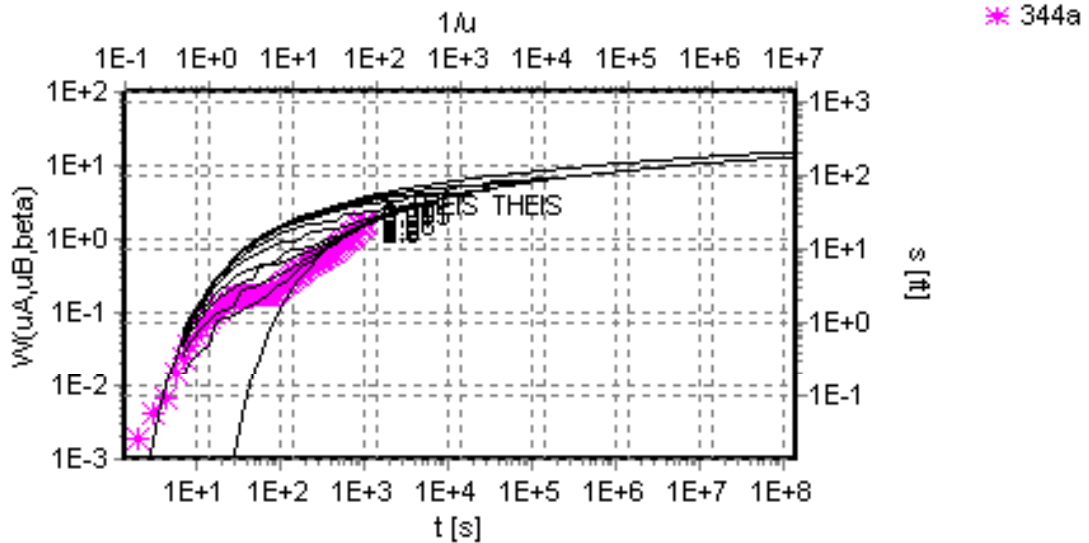
344 Pumping Test [Cooper-Jacob Time-Drawdown]



Transmissivity: $2.18E+0 \text{ ft}^2/\text{d}$

Conductivity: $6.80E-2 \text{ ft/d}$

344 Pumping Test [Neuman]



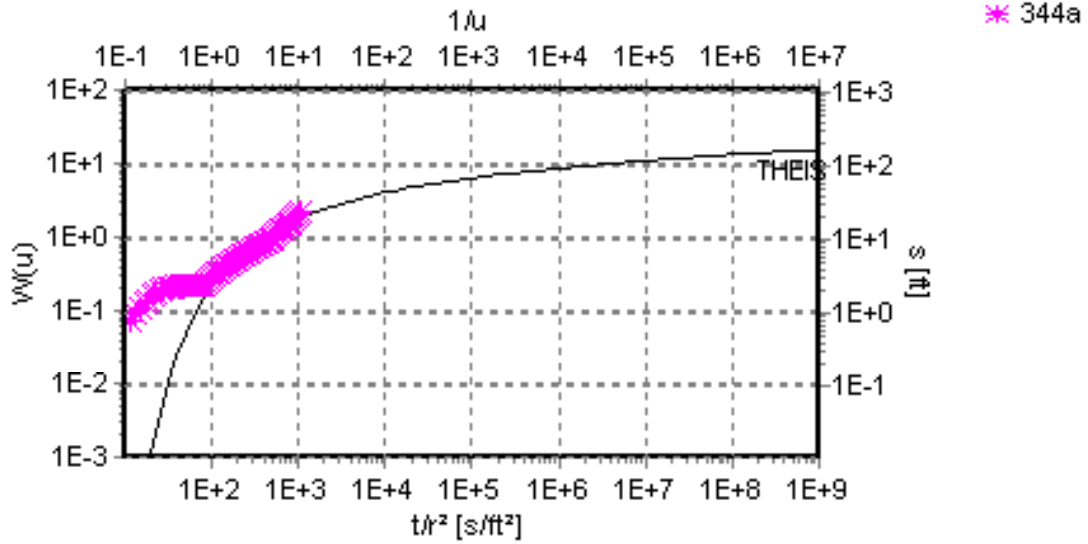
Transmissivity: $1.38E+0 \text{ ft}^2/\text{d}$

Conductivity: $4.31E-2 \text{ ft/d}$

Storativity: $9.23E-4$

Specific Yield: $9.23E-3$

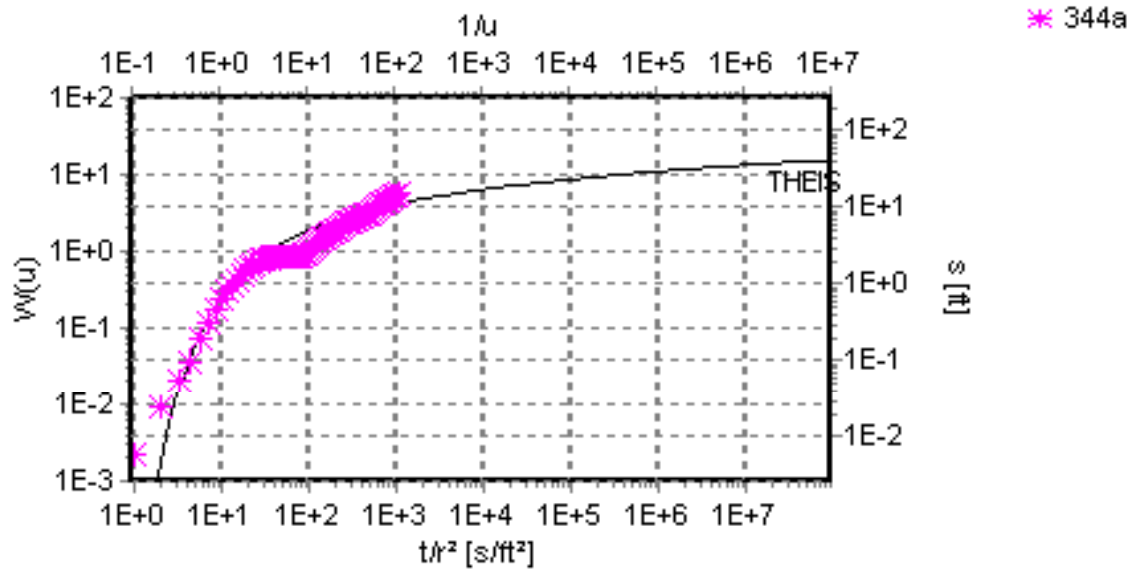
344 Pumping Test [Theis]



Transmissivity: $1.74E+0 \text{ ft}^2/\text{d}$
 Conductivity: $5.43E-2 \text{ ft/d}$

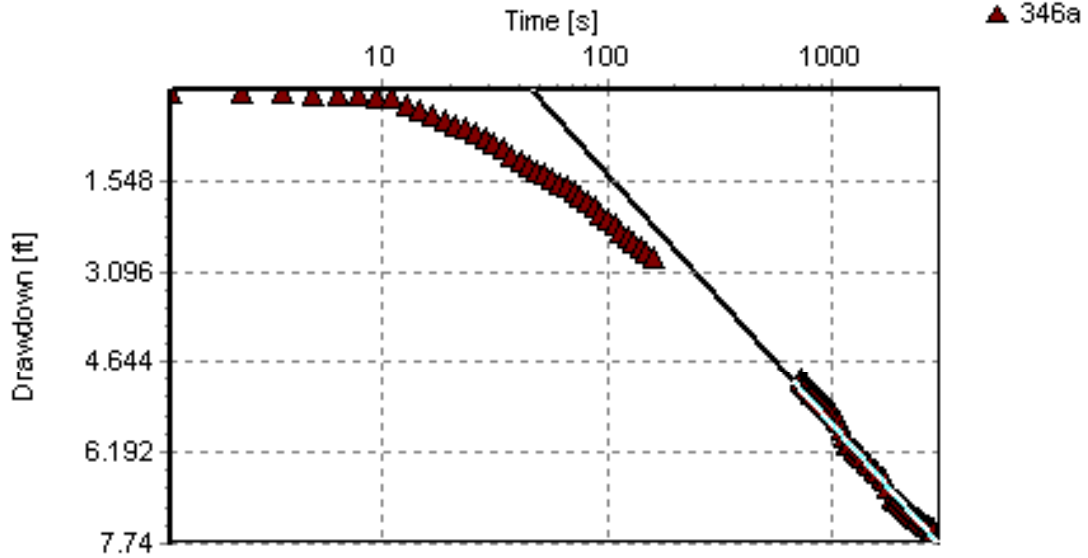
Storativity: $8.08E-3$

344 Pumping Test [Theis]



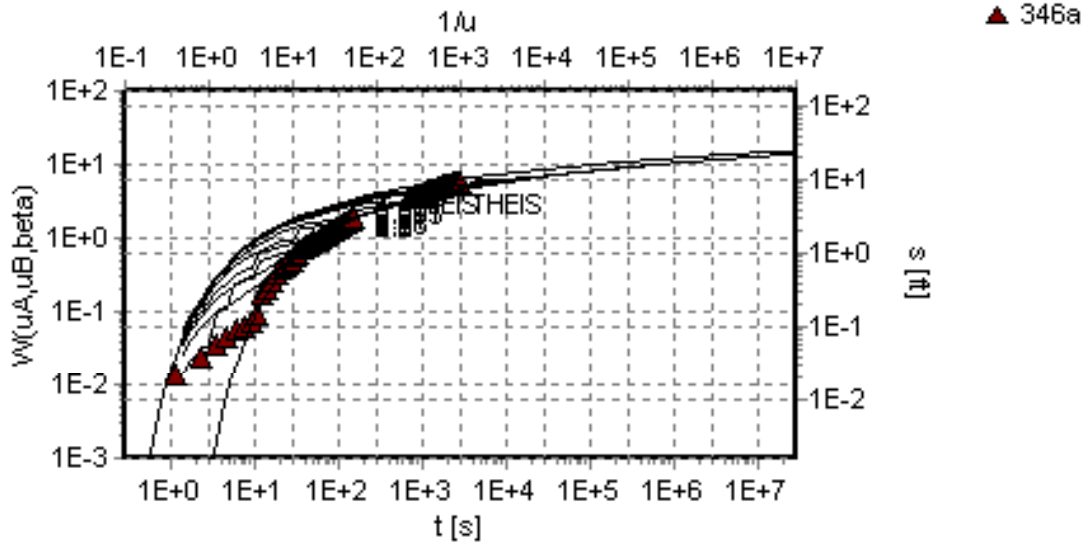
Transmissivity: $7.08E+0 \text{ ft}^2/\text{d}$
 Conductivity: $2.21E-1 \text{ ft/d}$

346 Pump Test [Cooper-Jacob Time-Drawdown]



Transmissivity: $1.31E+1 \text{ ft}^2/\text{d}$
 Conductivity: $5.45E-1 \text{ ft}/\text{d}$

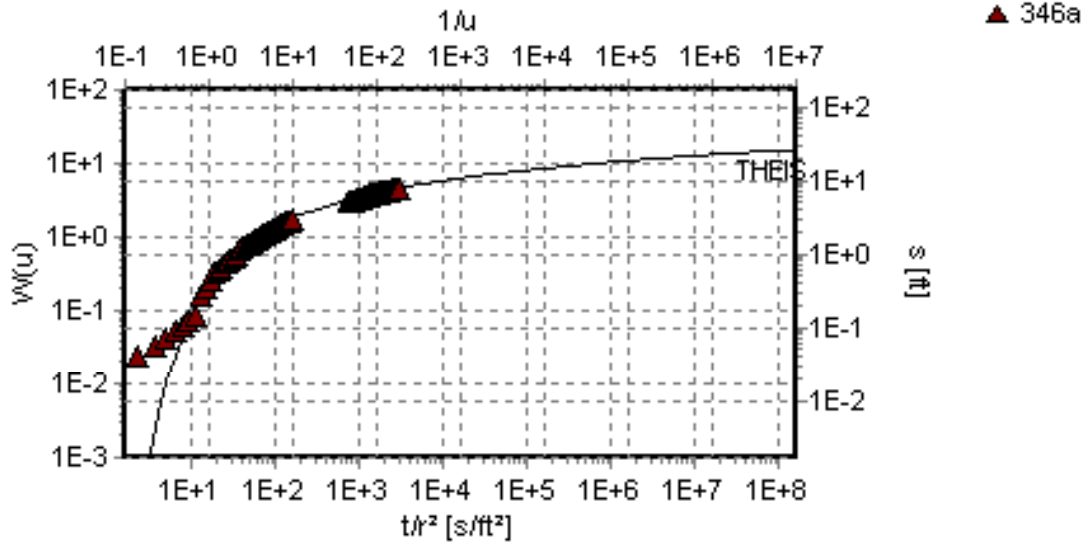
346 Pump Test [Neuman]



Transmissivity: $1.49E+1 \text{ ft}^2/\text{d}$
 Conductivity: $6.20E-1 \text{ ft}/\text{d}$

Storativity: $2.01E-3$
 Specific Yield: $1.13E-2$

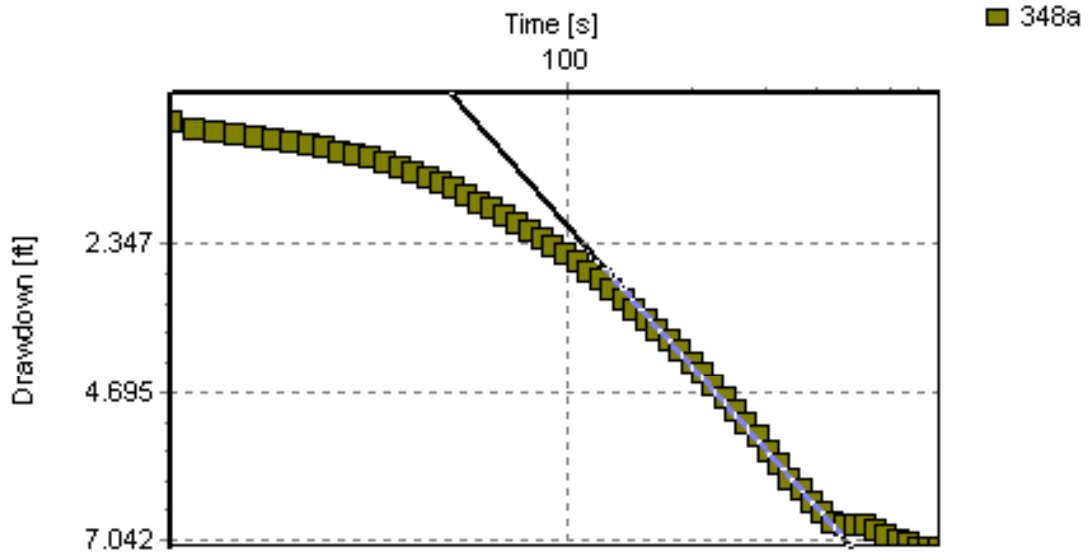
346 Pump Test [Theis]



Transmissivity: $1.45E+1 \text{ ft}^2/\text{d}$

Conductivity: $6.03E-1 \text{ ft/d}$

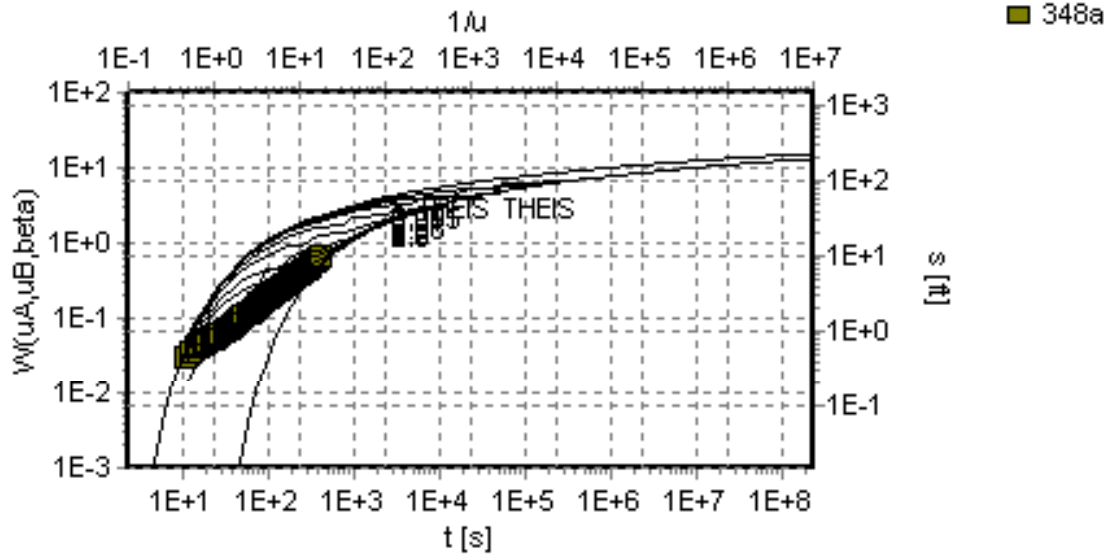
348 Pumping Test [Cooper-Jacob Time-Drawdown]



Transmissivity: $7.21E+0 \text{ ft}^2/\text{d}$

Conductivity: $4.81E-1 \text{ ft/d}$

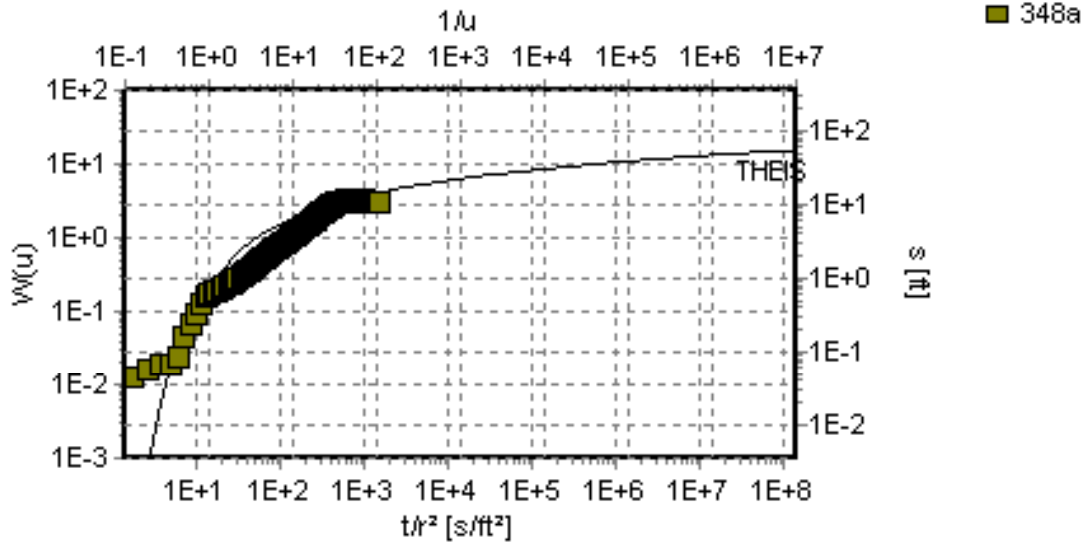
348 Pumping Test [Neuman]



Transmissivity: $1.54E+0 \text{ ft}^2/\text{d}$
 Conductivity: $1.03E-1 \text{ ft/d}$

Storativity: $1.70E-3$
 Specific Yield: $1.70E-2$

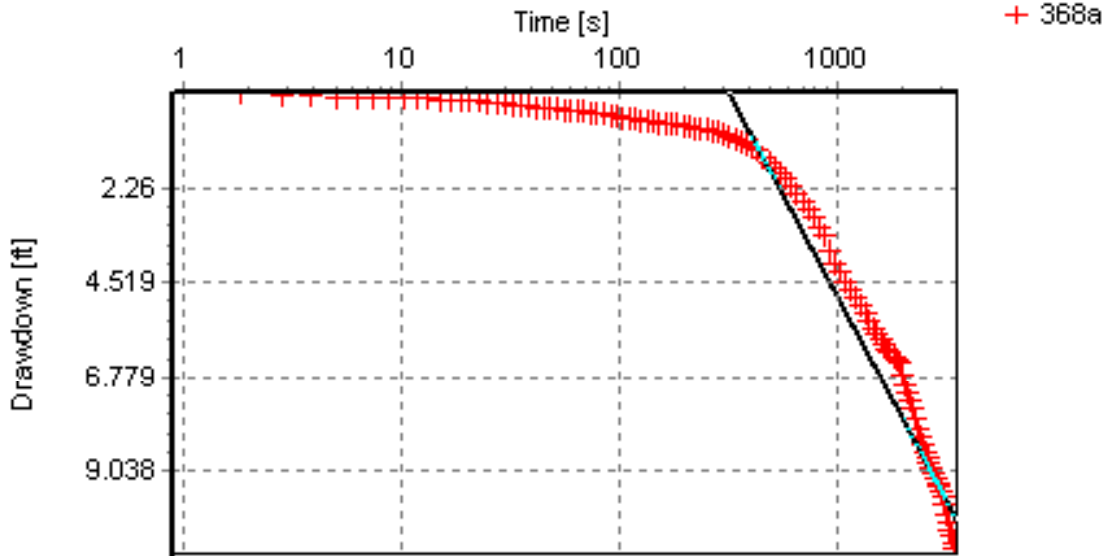
348 Pumping Test [Theis]



Transmissivity: $6.58E+0 \text{ ft}^2/\text{d}$
 Conductivity: $4.38E-1 \text{ ft/d}$

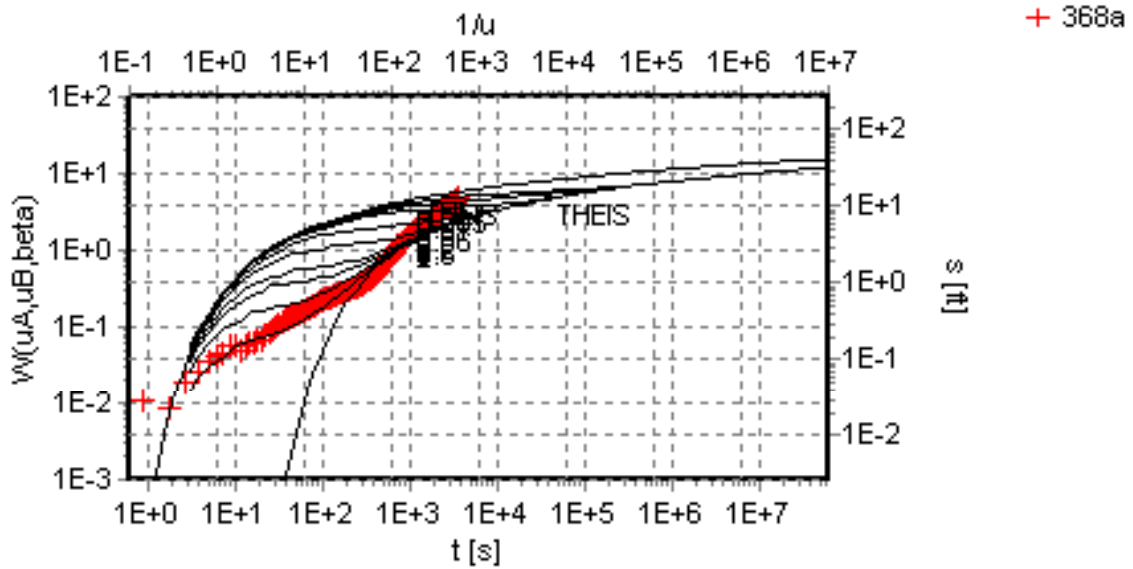
Storativity: $4.25E-3$

368 Pumping Test [Cooper-Jacob Time-Drawdown]



Transmissivity: $3.00E+0 \text{ ft}^2/\text{d}$
 Conductivity: $6.12E-2 \text{ ft}/\text{d}$

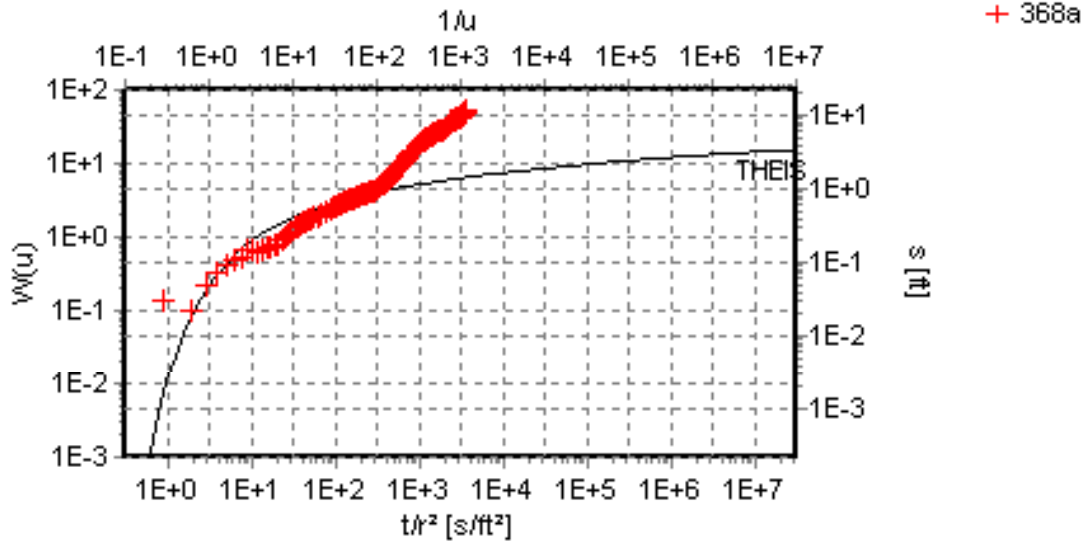
368 Pumping Test [Neuman]



Transmissivity: $4.73E+0 \text{ ft}^2/\text{d}$
 Conductivity: $9.66E-2 \text{ ft}/\text{d}$

Storativity: $1.39E-3$
 Specific Yield: $4.39E-2$

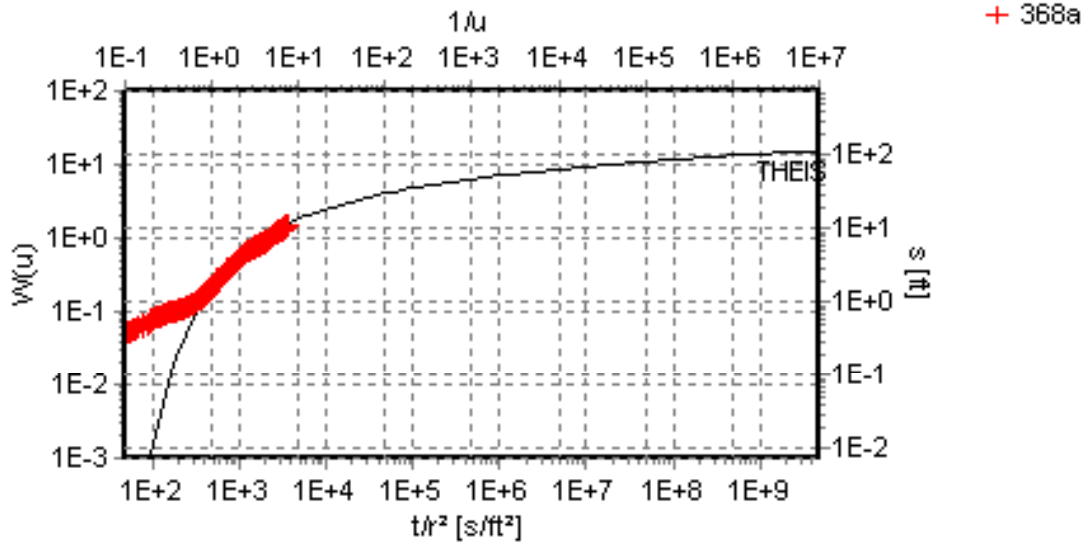
368 Pumping Test [Theis]



Transmissivity: $5.74E+1 \text{ ft}^2/\text{d}$

Conductivity: $1.17E+0 \text{ ft/d}$

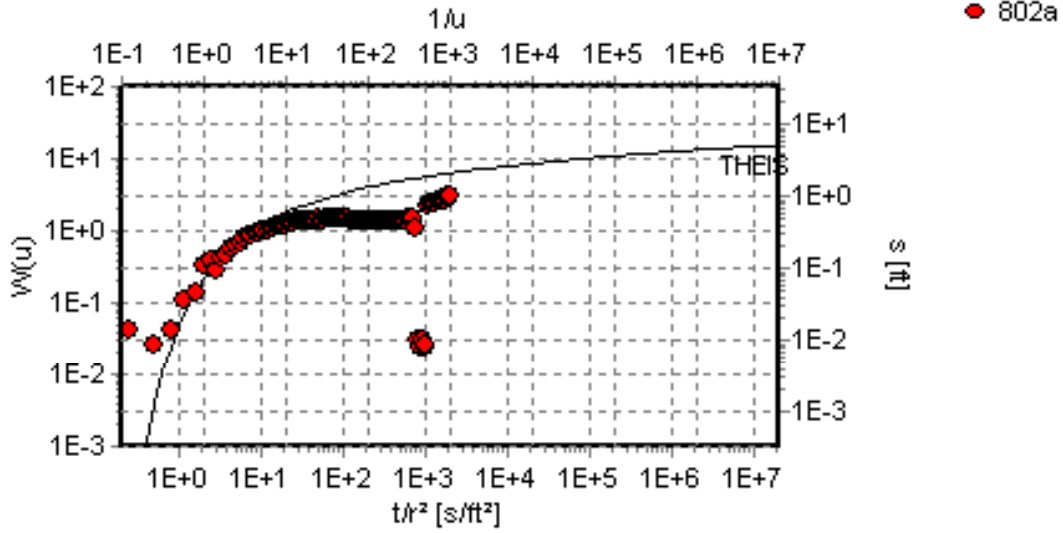
368 Pumping Test [Theis]



Transmissivity: $1.69E+0 \text{ ft}^2/\text{d}$

Conductivity: $3.46E-2 \text{ ft/d}$

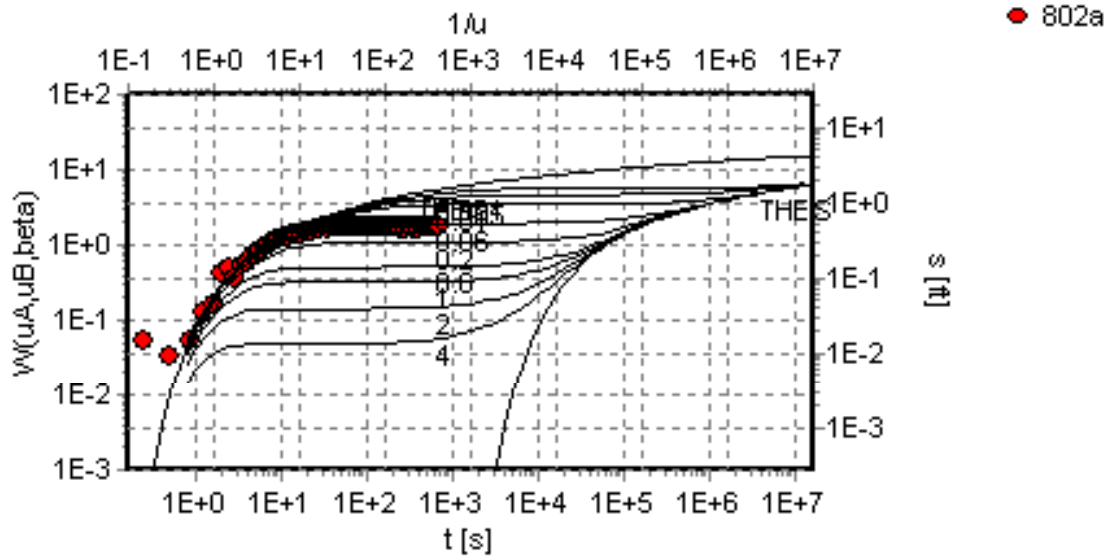
802 Pump Test [Theis]



Transmissivity: $9.16E+1 \text{ ft}^2/\text{d}$
 Conductivity: $3.67E+0 \text{ ft}/\text{d}$

Storativity: $8.82E-3$

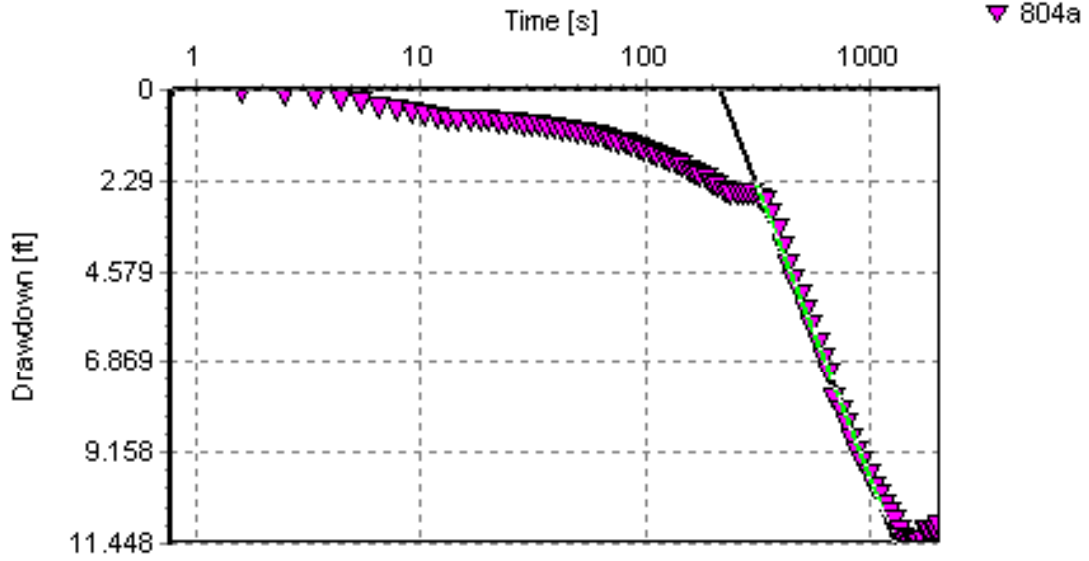
802 Pump Test [Neuman]



Transmissivity: $1.13E+2 \text{ ft}^2/\text{d}$
 Conductivity: $4.54E+0 \text{ ft}/\text{d}$

Storativity: $8.59E-3$
 Specific Yield: $8.59E+1$

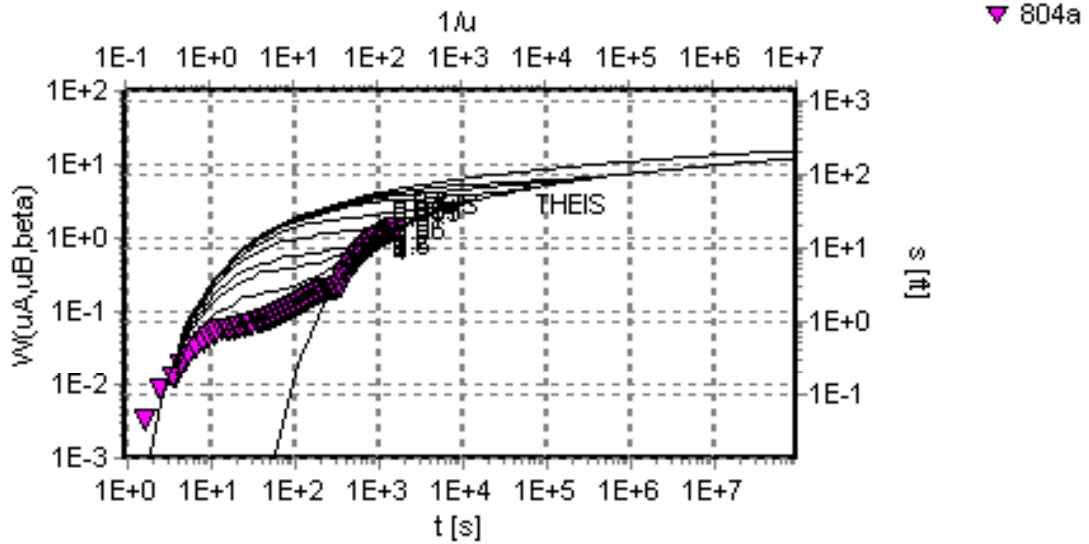
804 Pump Test [Cooper-Jacob Time-Drawdown]



Transmissivity: $2.82E+0 \text{ ft}^2/\text{d}$

Conductivity: $1.13E-1 \text{ ft/d}$

804 Pump Test [Neuman]



Transmissivity: $1.35E+0 \text{ ft}^2/\text{d}$

Conductivity: $5.40E-2 \text{ ft/d}$

Storativity: $7.21E-16$

Specific Yield: $2.28E-14$