

**City of Tarpon Springs
Disston Avenue Wellfield
Well Performance Test; February 6, 2003 – February 10, 2003**



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February 2003**

Pumping Test Summary

A pumping test of the Disston Avenue production wells was conducted by City staff to determine well production, drawdown impacts and water quality data. Approval of this test was obtained from the Southwest Florida Water Management District (SWFWMD) prior to starting the test. The Florida Department of Environmental Protection (FDEP) and the County Health Department was also notified in advance of the test. Test waters were discharged to the ground for percolation and surplus water was discharged to an onsite retention pond controlled and owned by the City. The public surrounding the area was notified during the test and water levels were monitored daily to ensure drainage function was not temporally impaired in the adjacent subdivision.

The test was started at 9:50AM on 2/6/03 and concluded at 11:36 AM on 2/10/03. This test involved the simultaneous pumping of 3 production wells located in a power line easement along South Disston Avenue. The City identification for these production wells is 5B, 5C, and 5D. The remaining production well, 5A, is not equipped with a pump capable of producing sufficient water to test the well (in addition, well 5A will require repermitting by the SWFWMD prior to its use as a public supply well). The wells were pumped through temporary meters and discharge piping to record the total gallons pumped from each well. The configuration of the discharge piping and the existing pump capacity limited the pumping rates of each well. Pumping rates were not varied for the extent of the test.

Water level data was collected in all monitoring wells and those production wells permitting access of the water level probe. Production well and monitoring well data is summarized in the attached Table 1.

Depths shown are informal field measurements as a result of hand sounding, original depths from well drilling reports are also included for comparison. The locations of the wells are summarized in the attached Figure 1.

Table 1. Summary of Production Well and Monitoring Well Data

Well ID	Ground or pad elevation (ft. NGVD)	TOC (MP) elev. (ft. NGVD)	stick-up height (ft)	Total Depth (ft)	Total Depth (ft. NGVD)	Static WL (ft. NGVD)	Original driller's reports
Well 5A	34.16	37.70	3.54	135.00	-100.84	4.45	135 cased to 68 ft
Well 5B	29.10	32.68	3.58	101.00	-71.90	4.46	cased to 61
Well 5C	31.54	34.62	3.08	130.00	-98.46	4.27	cased to 74 ft
Well 5D	33.74	37.45	3.71	130.00	-96.26	4.18	126 cased to 83; lost circ. @ 126'
MW-50	22.94	25.44	2.50	30.82	-7.88	4.04	30'
MW-51	28.35	30.85	2.50	107.60	-79.25	4.41	188 cased to 170
MW-52	28.39	30.14	1.75	96.10	-67.71	4.37	140 cased to 130
MW-53	28.92	31.32	2.40	36.60	-7.68	4.42	36 cased to 28
MW-54	21.19	24.97	3.78	175.58	-154.39	4.27	170 cased to 160
MW-55	33.37	35.32	1.95	40.30	-6.93	4.57	38' cased to 28
MW-56	29.04	30.80	1.76	30.75	-1.71	4.47	30 cased to 20
MW-57	41.52	43.35	1.78	133.00	-91.43	4.45	140 cased to 56
MW-58	40.45	43.14	3.90	86.00	-46.76	4.44	
temp staff gage		2.85				4.40	

production well

surficial aquifer monitor well

Results of Testing

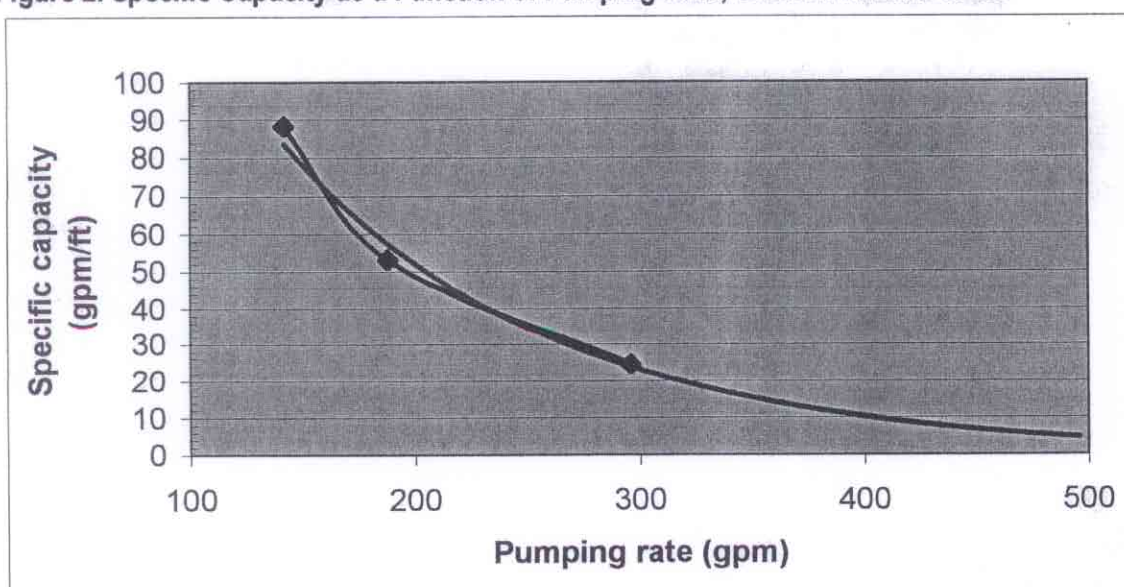
Well Capacity and Water Level Response

Specific capacity, drawdown, and test flow rates for pumped wells 5B, 5C, and 5D are summarized in Table 2. The average pumping rates for the wells ranged from 142 gpm to 296 gpm. Maximum drawdown in the wells ranged from 1.61 feet to 12.15 feet. As anticipated, the specific capacity is inversely proportional to the rate in which the water is pumped. A graph of this relationship as observed in the test is shown in Figure 2. It should be noted that if the wells were pumped individually the drawdowns would have been less and resulting specific capacities would have been higher. For this test, it was important to get an understanding of how the wells would perform as a group – similar to how they may be operated in the future should it prove feasible.

Table 2. Specific Capacity, Drawdown, and Test Flow rates for Pumped Wells 5B, 5C, and 5D

Well	Average Test Pumping Rate (gpm)	Maximum Drawdown (feet)	Specific Capacity (gpm/ft)
5B	142	1.61	88.2
5C	296	12.15	24.4
5D	188	3.54	53.1

Figure 2. Specific Capacity as a Function of Pumping Rate; Disston Avenue Wells



Monitor well water level response is summarized in the table below. The maximum observed drawdown in the surficial aquifer was 0.9 feet at monitor well MW-53, which is closest to the center of pumpage. The maximum drawdown in the Floridan aquifer was 12.15 feet at production well 5C, which was pumped at approximately 300 gpm for this test. Of the Floridan monitoring wells, well MW-54 exhibited a maximum drawdown of 1.16 feet. This well is considered an interface well and appears to be located at the bottom of a semi-confining unit underlying the production zone. MW-57, in the same zone as the production wells and representing the nearest property line, showed a drawdown of 1.06 feet.

Water Quality Data

Water quality data was collected during the test and at the conclusion of the pumping test from each of the production wells 5B, 5C, and 5D. Field parameters including chloride, nitrite, pH, temperature, total dissolved solids (TDS), and total alkalinity were collected during initial pumping. Chloride as a primary parameter of interest was collected throughout the test. A complete suite of regulated parameters was collected at the end of the test and submitted for analysis by a certified laboratory. Results of the analysis are pending and will be forwarded to the District upon completion.

Table 3. Water Quality Data; Production Wells 5B, 5C, and 5D

Well: 5B									Well: 5C								
Date/ Time	Totalizer Volume (gallons)	Pumped Volume (gallons)	NO2	Tot.Alk. (mg/L)	pH	Temp (°C)	TDS (mg/L)	Cl ⁻ (mg/L)	Date/ Time	Totalizer Volume (gallons)	Pumped Volume (gallons)	NO2	Tot.Alk. (mg/L)	pH	Temp (°C)	TDS (mg/L)	Cl ⁻ (mg/L)
2/6/03 9:55 AM	00149110	0							2/6/03 9:55 AM	3425390	0						
2/6/03 12:40 PM	00175700	26,590	0.0	60	8.1	25.0	150	40	2/6/03 10:15 AM	3471400	46,010	0.2	80	8.0	25.1	210	80
2/6/03 3:20 PM	00198567	49,457	0.0	80	7.9	25.4	150	40	2/6/03 3:18 PM	3519360	93,970	0.1	80	7.8	25.4	220	60
2/7/03 9:24 AM	00364400	215,290			7.7			40	2/7/03 9:09 AM	3838700	413,310			7.7			60
2/7/03 4:10 PM	00424800	275,690			7.8			40	2/7/03 3:59 PM	3960700	535,310			7.7			80
2/8/03 12:52 PM	00611800	462,690						40	2/8/03 12:46 PM	4331500	906,110						80
2/9/03 10:40 AM	00805400	656,290						40	2/9/03 10:35 AM	4719900	1,294,510						80
2/10/03 10:20 AM	00973700	824,590						40	2/10/03 10:15 AM	5137800	1,712,410						70

Well: 5D									Surface Water (Pond)				
Date/ Time	Totalizer Volume (gallons)	Pumped Volume (gallons)	NO2	Tot.Alk. (mg/L)	pH	Temp (°C)	TDS (mg/L)	Cl ⁻ (mg/L)	Date/ Time	Pumped Volume (gallons)	TDS (mg/L)	pH	Cl ⁻ (mg/L)
2/6/03 9:55 AM	1027568	0							2/6/03 10:20 AM	9,430	70	8.2	40
2/6/03 10:15 AM	1047900	20,332	0.0	60	7.9	25.2	140	60	2/7/03 9:34 AM	901,718		7.7	40
2/6/03 3:15 PM	1087222	59,654	0.0	60	7.9	25.5	140	40					
2/7/03 9:00 AM	1288200	260,632			7.9			40					
2/7/03 3:50 PM	1365700	338,132			8.0			40					
2/8/03 12:36 PM	1599900	572,332						50					
2/9/03 10:25 AM	1846500	818,932						50					
2/10/03 10:10 AM	2115100	1,087,532						50					

Water quality data indicate that the wells are capable of producing freshwater of consistent quality. Pumping rates would need to be optimized to sustain this quality throughout the year as water levels and aquifer recharge fluctuates.

Conclusions

The results of the test indicate the existing production wells are capable of producing freshwater with minimal impact to surrounding property owners and the overlying surficial aquifer. Test data indicates an optimum pumping rate of 150 gpm to 200 gpm for this area and specific production zone. Pumping rates of 150 to 200 gpm would allow water levels to remain near or above sea level as an additional precaution against upconing or other forms of saltwater intrusion.

Attachments

DeSton Avenue Well Performance Test: Production Wells 5A thru 5D

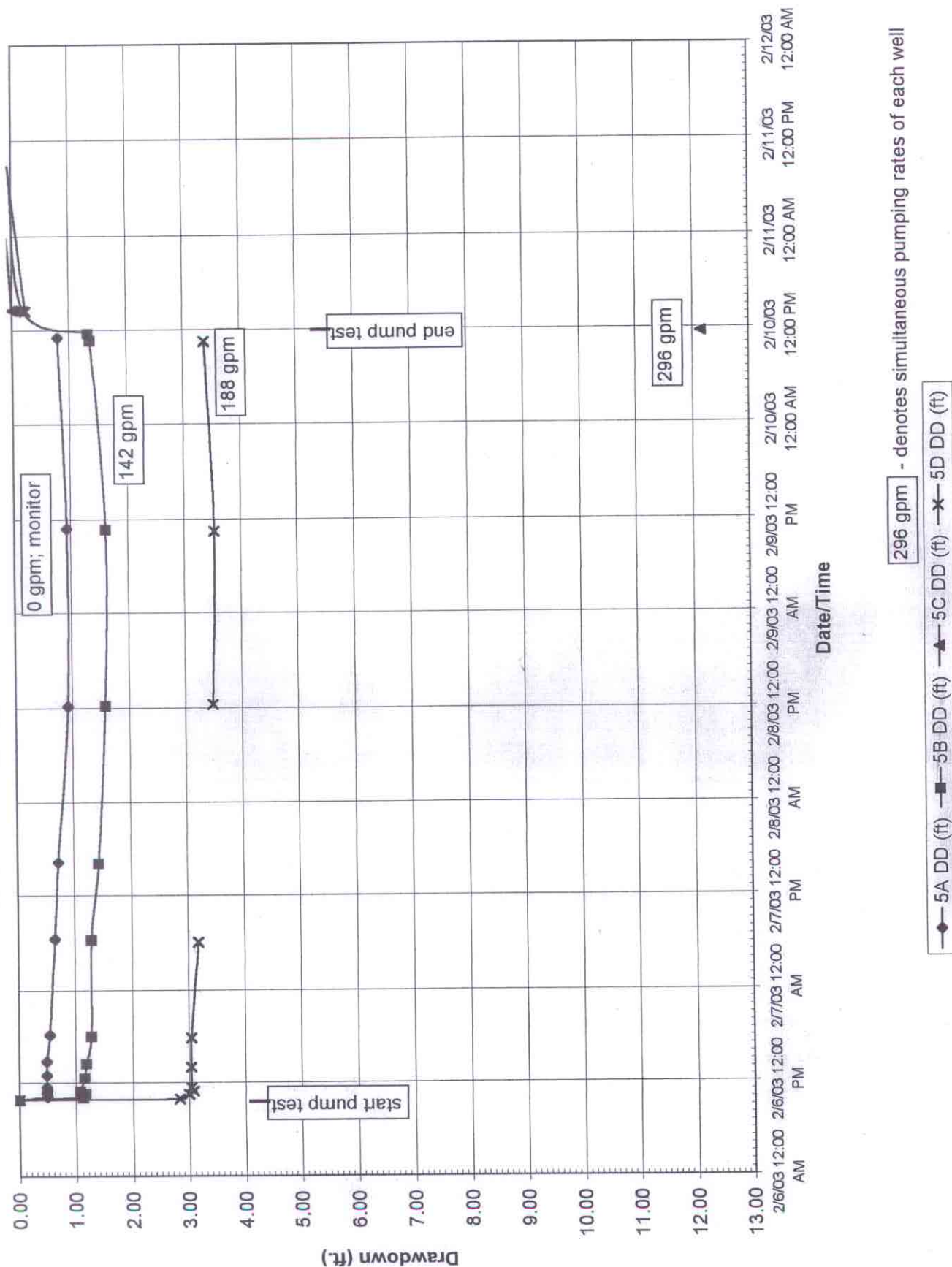
Well: 5A				Well: 5B				Well: 5C				Well: 5D				Notes
Date/Time	Totalizer (gallons)	5A WL Elev (NGVD)	5A DD (ft)	Date/Time	Totalizer (gallons)	5B WL Elev (NGVD)	5B DD (ft)	Date/Time	Totalizer (gallons)	5C WL Elev (NGVD)	5C DD (ft)	Date/Time	Totalizer (gallons)	5D WL Elev (NGVD)	5D DD (ft)	
2/6/03 8:50 AM	07878340	0.00	4.45	2/6/03 9:50 AM	00149110	0.00	4.46	2/6/03 9:15 AM	0	0.00	4.27	2/6/03 9:50 AM	1027568	4.18	33.27	Start Test: Static
2/6/03 10:12 AM	07878340	0.50	3.85	2/6/03 10:07 AM		1.13	3.33	2/6/03 9:50 AM	3425190	0		2/6/03 9:55 AM		1.35	36.10	
2/6/03 10:41 AM	07878340	0.49	3.98	2/6/03 10:38 AM	00156100	1.52	3.29	2/6/03 10:33 AM	3437900	291		2/6/03 10:30 AM	1035000	1.18	36.27	
2/6/03 11:01 AM	07878340	0.50	3.65	2/6/03 10:56 AM	00159600	1.52	1.08	2/6/03 10:54 AM	3443800	286		2/6/03 10:53 AM	1039200	1.10	36.35	
2/6/03 11:27 AM	07878340	0.49	3.98	2/6/03 12:40 PM	00175700	1.59	1.15	2/6/03 11:24 AM	3452200	277		2/6/03 11:21 AM	1044500	1.14	36.31	
2/6/03 12:57 PM	07878340	0.49	3.98	2/6/03 2:35 PM	00163900	1.58	1.19	2/6/03 12:29 PM	3471400	295		2/6/03 2:03 PM	1074700	1.14	36.31	
2/6/03 2:47 PM	07878340	0.49	3.98	2/6/03 6:09 PM	00226700	1.55	1.28	2/6/03 5:58 PM	3568100	297		2/6/03 5:50 PM	1118000	1.13	36.32	
2/6/03 8:14 PM	07878340	0.65	3.90	2/7/03 6:27 AM	00337800	1.51	1.29	2/7/03 6:14 AM	3787800	287		2/7/03 6:08 AM	1265300	1.00	36.45	
2/7/03 8:31 AM	07878340	0.65	3.80	2/7/03 4:08 PM	00425000	1.50	1.43	2/7/03 3:59 PM	3980700	286		2/7/03 4:08 PM				
2/7/03 4:14 PM	07878340	0.72	3.73	2/8/03 12:20 PM	00807100	1.50	1.58	2/8/03 12:20 PM				2/8/03 12:30 PM	1588600	0.69	38.76	
2/8/03 12:16 PM	07878340	0.92	3.53	2/9/03 10:45 AM		1.61	2.85	2/9/03 10:45 AM				2/9/03 10:28 AM	1847100	0.64	38.81	
2/8/03 10:50 AM	07878340	0.93	3.52	2/10/03 10:40 AM		1.36	3.10	2/10/03 11:32 AM	5180800	296	12.15	2/10/03 10:27 AM		0.80	38.65	
2/10/03 11:00 AM	07878340	0.80	3.65	2/10/03 11:36 AM	00983610	1.42	1.33	2/10/03 11:36 AM	5181600	296		2/10/03 11:36 AM	2132184			End Test
				2/10/03 2:37 PM	00983610	0	0.19	4.27	5181800	0	0.00	4.27	2132184	0.23	3.95	RECOVERY DATA
2/12/03 2:10 PM	07878340	-0.18	4.84	2/11/03 8:36 AM	00983610	0	-0.06	4.52	5181800	0	-0.19	4.48	211103 8:57 AM	-0.07	4.25	TOTAL PUMPED (gal)
	000000				00834600				1736410							3 875 529
																TOTAL TIME (hours)
																87.8
																Overall Flow per Day (gal)
																802.277

Diston Avenue Well Performance Test Wells MW-50 thru MW-54

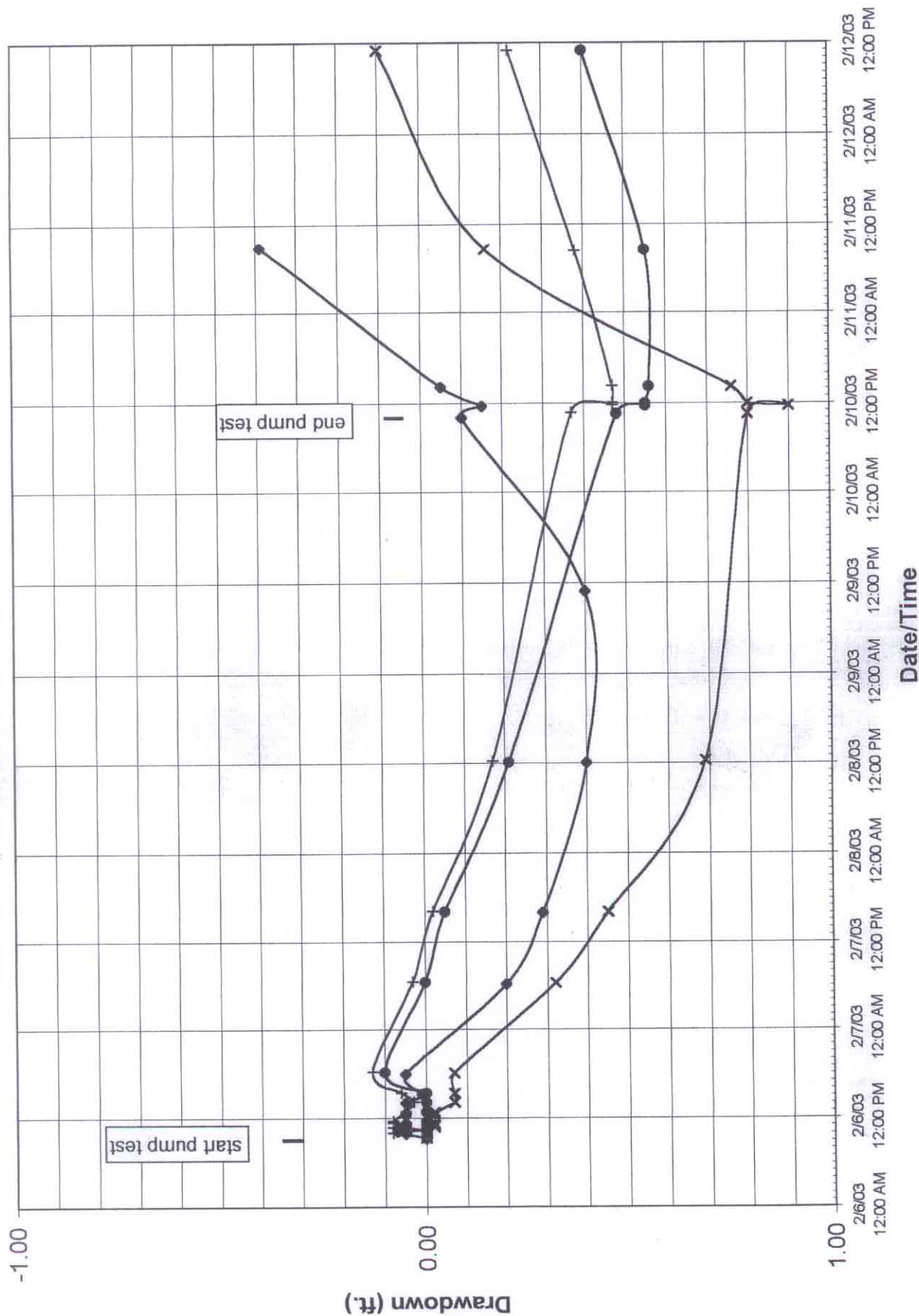
Well: MW-50				Well: MW-51				Well: MW-52				Well: MW-53				Well: MW-54				Notes
Date/Time	MW50 WL Elev (NGVD)	MW50 DD (ft)	DTW	Date/Time	MW51 WL Elev (NGVD)	MW51D D (ft)	DTW	Date/Time	MW52D D (ft)	MW52 WL Elev (NGVD)	DTW	Date/Time	MW53 DD (ft)	MW53 WL Elev (NGVD)	DTW	Date/Time	MW54 DD (ft)	MW54 WL Elev (NGVD)	DTW	
2/6/03 9:17 AM	4.04	0.00	21.40	2/6/03 9:21 AM	4.41	0.00	26.44	3/6/58 39	0.00	4.37	25.77	2/6/03 9:24 AM	0.00	4.42	26.90	2/6/03 9:20 AM	0.00	4.27	20.70	
2/6/03 9:55 AM	4.09	-0.05	21.35	2/6/03 9:57 AM	3.75	0.65	27.10	2/6/03 9:58 AM	0.73	3.64	26.50	2/6/03 9:56 AM	0.00	4.42	26.90	2/6/03 9:55 AM	0.00	4.27	20.70	
2/6/03 10:15 AM	4.11	-0.07	21.33	2/6/03 10:21 AM	3.55	0.66	27.30	2/6/03 10:23 AM	0.83	3.54	26.60	2/6/03 10:21 AM	0.00	4.42	26.90	2/6/03 10:18 AM	0.93	3.34	21.83	
2/6/03 10:35 AM	4.11	-0.07	21.33	2/6/03 10:41 AM	3.50	0.91	27.35	2/6/03 10:43 AM	0.83	3.54	26.60	2/6/03 10:40 AM	0.00	4.42	26.90	2/6/03 10:37 AM	0.95	3.32	21.65	
2/6/03 10:52 AM	4.09	-0.05	21.35	2/6/03 10:58 AM	3.50	0.91	27.35	2/6/03 10:57 AM	0.83	3.54	26.60	2/6/03 10:55 AM	0.02	4.40	26.92	2/6/03 10:54 AM	0.95	3.32	21.85	
2/6/03 11:15 AM	4.09	-0.05	21.35	2/6/03 11:20 AM	3.50	0.91	27.35	2/6/03 11:21 AM	0.85	3.52	26.62	2/6/03 11:18 AM	0.02	4.40	26.92	2/6/03 11:17 AM	0.95	3.32	21.65	
2/6/03 12:22 PM	4.09	-0.05	21.35	2/6/03 12:28 PM	3.58	0.83	27.27	2/6/03 12:29 PM	0.85	3.52	26.62	2/6/03 12:27 PM	0.02	4.40	26.92	2/6/03 12:26 PM	0.95	3.32	21.85	
2/6/03 12:42 PM	4.09	-0.05	21.35	2/6/03 12:49 PM	3.58	0.83	27.27	2/6/03 12:50 PM	0.85	3.52	26.62	2/6/03 12:47 PM	0.02	4.40	26.92	2/6/03 12:45 PM	0.90	3.37	21.60	
2/6/03 2:00 PM	4.09	-0.05	21.35	2/6/03 2:04 PM	3.65	0.76	27.20	2/6/03 2:05 PM	0.83	3.54	26.60	2/6/03 2:08 PM	0.07	4.35	26.97	2/6/03 2:03 PM	0.85	3.42	21.55	
2/6/03 3:14 PM	4.05	-0.01	21.39	2/6/03 3:19 PM	3.70	0.71	27.15	2/6/03 3:18 PM	0.83	3.54	26.60	2/6/03 3:20 PM	0.07	4.35	26.97	2/6/03 3:17 PM	0.80	3.47	21.50	
2/6/03 5:53 PM	4.09	-0.05	21.35	2/6/03 6:01 PM	3.63	0.78	27.22	2/6/03 6:00 PM	0.83	3.54	26.60	2/6/03 6:04 PM	0.07	4.35	26.97	2/6/03 6:05 PM	0.78	3.49	21.48	
2/7/03 6:09 AM	3.84	0.20	21.60	2/7/03 6:19 AM	3.63	0.76	27.22	2/7/03 6:17 AM	0.93	3.44	26.70	2/7/03 6:21 AM	0.32	4.10	27.22	2/7/03 6:24 AM	0.85	3.42	21.55	
2/7/03 4:00 PM	3.75	0.28	21.69	2/7/03 4:06 PM	3.61	0.80	27.24	2/7/03 4:05 PM	0.95	3.42	26.72	2/7/03 4:08 PM	0.45	3.97	27.35	2/7/03 4:11 PM	0.85	3.42	21.55	
2/8/03 12:02 PM	3.64	0.40	21.80	2/8/03 12:24 PM	3.30	1.11	27.55	2/8/03 12:25 PM	1.13	3.24	26.80	2/8/03 12:23 PM	0.69	3.73	27.59	2/8/03 12:07 PM	1.16	3.11	21.86	
2/8/03 10:55 AM	3.64	0.40	21.80	2/10/03 10:36 AM	3.60	0.81	27.25	2/10/03 10:36 AM	0.98	3.39	26.75	2/10/03 10:35 AM	0.80	3.62	27.70	2/10/03 10:38 AM	0.80	3.47	21.50	2/9 - rain most of day
2/10/03 10:03 AM	3.94	0.10	21.50	2/10/03 11:43 AM	4.00	0.41	26.85	2/10/03 11:44 AM	0.38	3.99	26.15	2/10/03 11:42 AM	0.90	3.52	27.80	2/10/03 11:40 AM	0.60	3.67	21.30	2/10 - rain most of day
2/10/03 11:38 AM	3.89	0.15	21.55	2/10/03 12:00 PM	4.27	0.14	26.58	2/10/03 12:01 PM	0.28	4.09	26.05	2/10/03 11:59 AM	0.80	3.62	27.70	2/10/03 11:57 AM	0.02	4.25	20.72	
2/10/03 2:14 PM	3.99	0.05	21.45	2/11/03 8:40 AM	4.54	-0.13	26.31	2/10/03 2:15 PM	0.16	4.21	25.93	2/10/03 2:18 PM	0.76	3.66	27.68	2/11/03 8:44 AM	-0.20	4.47	20.50	
2/11/03 8:54 AM	4.43	-0.39	21.01					3/6/63 36	-0.06	4.43	25.71	2/11/03 8:39 AM	0.16	4.26	27.06	2/12/03 10:57 AM	-0.33	4.60	20.37	
												2/12/03 10:59 AM	-0.10	4.52	26.80					

Well: MW-55				Well: MW-56				Well: MW-57				Well: MW-58				Well: MW-59			
Date/Time	MW55 DD (ft)	MW55 WL Elev (NGVD)	DTW	Date/Time	MW56 DD (ft)	MW56 WL Elev (NGVD)	DTW	Date/Time	MW57 DD (ft)	MW57 WL Elev (NGVD)	DTW	Date/Time	MW58 DD (ft)	MW58 WL Elev (NGVD)	DTW	Date/Time	Pond Elev (NGVD)	Staff Gage Change WL	
2/6/03 9:25 AM	0.00	4.57	30.75	2/6/03 9:26 AM	0.00	4.47	26.33	2/6/03 9:29 AM	0.00	4.45	38.80	2/6/03 9:30 AM	0.00	4.44	38.70	2/6/03 9:18 AM	4.40	0.00	
2/6/03 10:00 AM	0.00	4.57	30.75	2/6/03 10:02 AM	-0.08	4.55	28.25	2/6/03 10:04 AM	0.65	3.80	39.55	2/6/03 10:06 AM	0.85	3.59	39.55	2/6/03 9:54 AM	4.40	0.00	
2/6/03 10:24 AM	0.00	4.57	30.75	2/6/03 10:26 AM	-0.01	4.48	26.32	2/6/03 10:29 AM	0.75	3.70	39.65	2/6/03 10:30 AM	0.80	3.64	39.50	2/6/03 10:16 AM	4.46	0.06	
2/6/03 10:44 AM	0.00	4.57	30.75	2/6/03 10:46 AM	-0.08	4.55	28.25	2/6/03 10:48 AM	0.75	3.70	39.65	2/6/03 10:50 AM	0.80	3.64	39.50	2/6/03 10:35 AM	4.50	0.10	
2/6/03 10:59 AM	0.00	4.57	30.75	2/6/03 11:00 AM	-0.05	4.52	26.28	2/6/03 11:02 AM	0.70	3.75	39.80	2/6/03 11:04 AM	0.80	3.64	39.50	2/6/03 10:52 AM	4.53	0.13	
2/6/03 11:22 AM	0.00	4.57	30.75	2/6/03 11:23 AM	-0.08	4.55	26.25	2/6/03 11:26 AM	0.75	3.70	39.65	2/6/03 11:27 AM	0.80	3.64	39.50	2/6/03 11:16 AM	4.57	0.17	
2/6/03 11:31 AM	0.00	4.57	30.75	2/6/03 11:34 AM	-0.08	4.55	26.25	2/6/03 12:36 PM	0.72	3.73	39.62	2/6/03 12:37 PM	0.82	3.82	39.52	2/6/03 12:24 PM	4.66	0.26	
2/6/03 12:52 PM	0.00	4.57	30.75	2/6/03 12:54 PM	-0.05	4.52	26.28	2/6/03 12:56 PM	0.75	3.70	39.65	2/6/03 12:58 PM	0.80	3.64	39.50	2/6/03 12:44 PM	4.70	0.30	
2/6/03 2:10 PM	0.00	4.57	30.75	2/6/03 2:12 PM	-0.03	4.50	26.30	2/6/03 2:14 PM	0.75	3.70	39.65	2/6/03 2:15 PM	0.80	3.64	39.50	2/6/03 2:02 PM	4.86	0.46	
2/6/03 3:23 PM	0.00	4.57	30.75	2/6/03 3:25 PM	-0.08	4.53	26.27	2/6/03 3:28 PM	0.72	3.73	39.62	2/6/03 3:30 PM	0.80	3.64	39.50	2/6/03 3:15 PM	4.95	0.55	
2/6/03 6:11 PM	-0.10	4.67	30.65	2/6/03 6:16 PM	-0.13	4.60	26.20	2/6/03 6:18 PM	0.70	3.75	39.80	2/6/03 6:22 PM	0.78	3.66	39.48	2/6/03 3:32 PM	5.00	0.60	
2/7/03 6:29 AM	0.00	4.57	30.75	2/7/03 6:34 AM	-0.03	4.50	26.30	2/7/03 6:38 AM	0.85	3.60	39.75	2/7/03 6:41 AM	0.92	3.52	39.62	2/6/03 3:32 PM	5.00	0.60	
2/7/03 4:12 PM	0.05	4.52	30.80	2/7/03 4:15 PM	0.02	4.45	26.35	2/7/03 4:22 PM	0.90	3.55	39.80	2/7/03 4:21 PM	0.98	3.48	39.68	2/6/03 5:55 PM	5.23	0.83	
2/8/03 12:10 PM	0.21	4.36	30.86	2/8/03 12:18 PM	0.17	4.30	26.50	2/8/03 1:02 PM	1.06	3.39	39.66	2/8/03 1:00 PM	1.15	3.29	39.85	2/7/03 6:11 AM	5.85	1.45	
2/10/03 10:40 AM	0.48	4.08	31.23	2/10/03 10:45 AM	0.37	4.10	26.70	2/10/03 11:22 AM	0.93	3.52	38.83	2/10/03 11:20 AM	0.95	3.49	39.65	water level above top of temp. gage			
2/10/03 11:46 AM	0.55	4.02	31.30	2/10/03 11:48 AM	0.47														

Drawdown Summary; Production Wells 5A through 5D

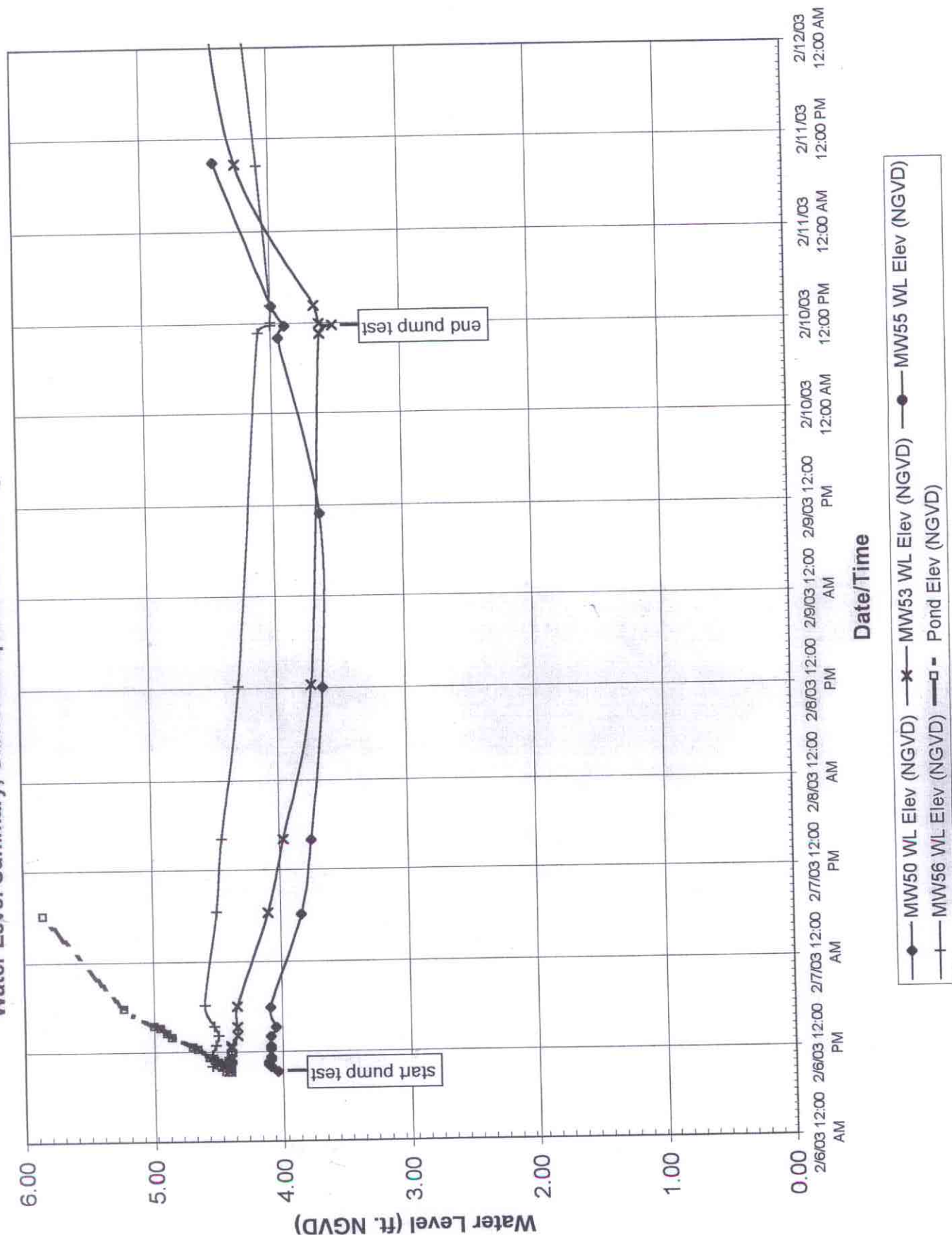


Drawdown Summary; Surficial Aquifer Monitoring Wells

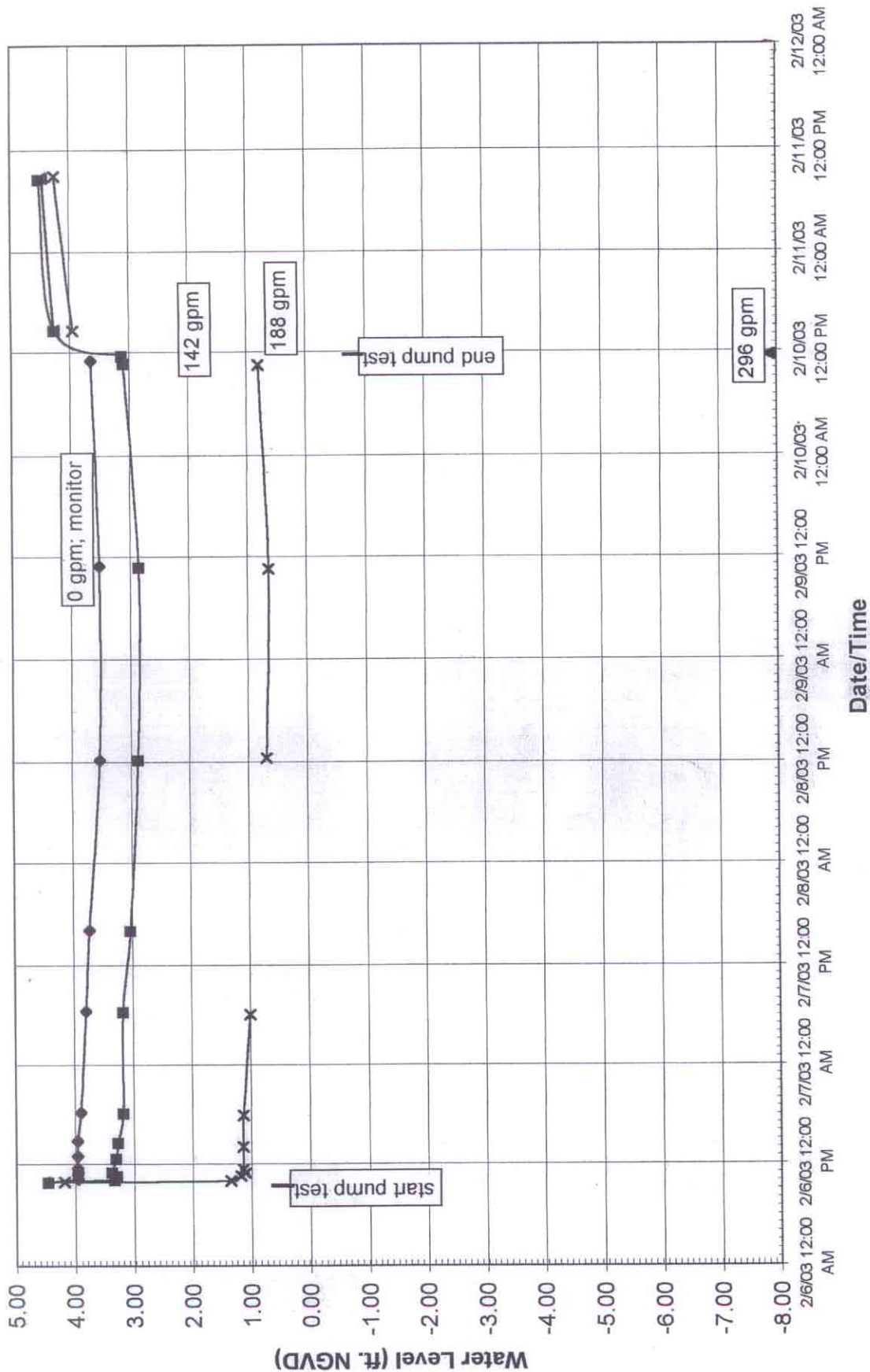


—◆— MW50 DD (ft) —×— MW53 DD (ft) —●— MW56 DD (ft) —+— MW56 DD (ft)

Water Level Summary; Surficial Aquifer Monitoring Wells and Staff Gage

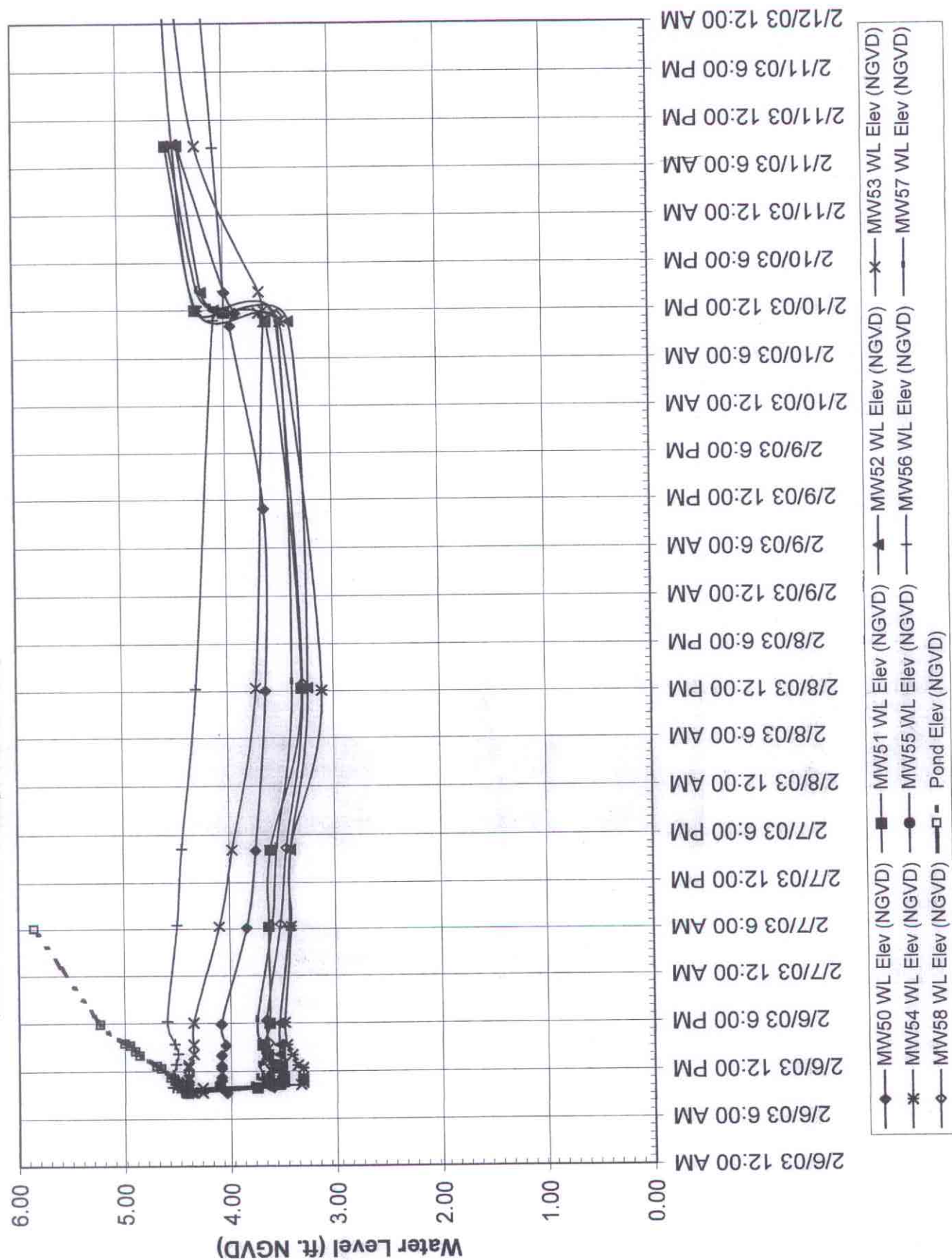


Water Level Summary; Production Wells 5A through 5D

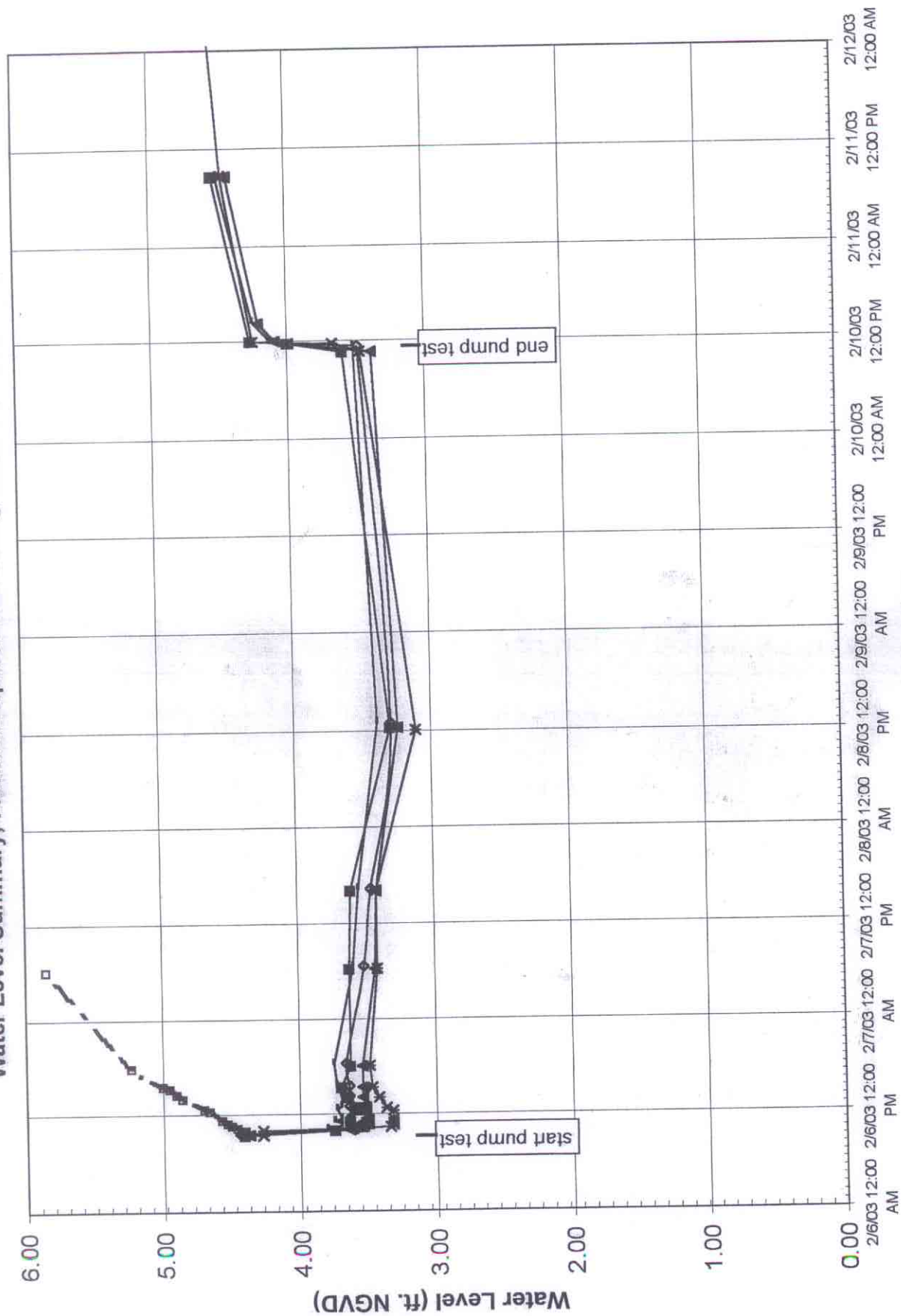


Legend: 5A WL Elev (NGVD) (diamonds), 5B WL Elev (NGVD) (squares), 5C WL Elev (NGVD) (crosses). Annotations: start pump test, end pump test, 0 gpm; monitor, 142 gpm, 188 gpm, 296 gpm.

Water Level Summary; Monitoring Wells MW50 - MW58 and Staff Gage



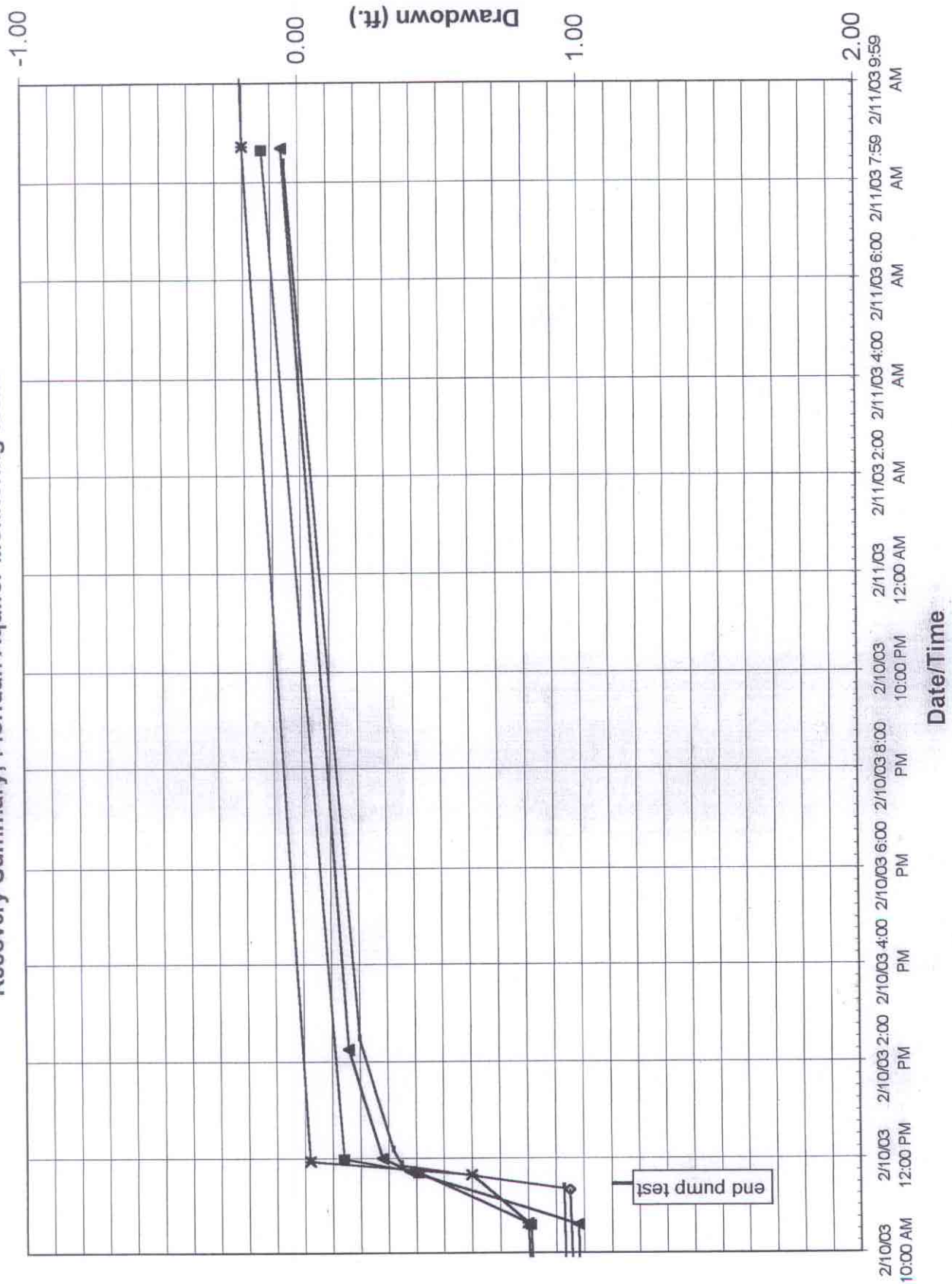
Water Level Summary; Floridan Aquifer Monitoring Wells and Staff Gage



Date/Time

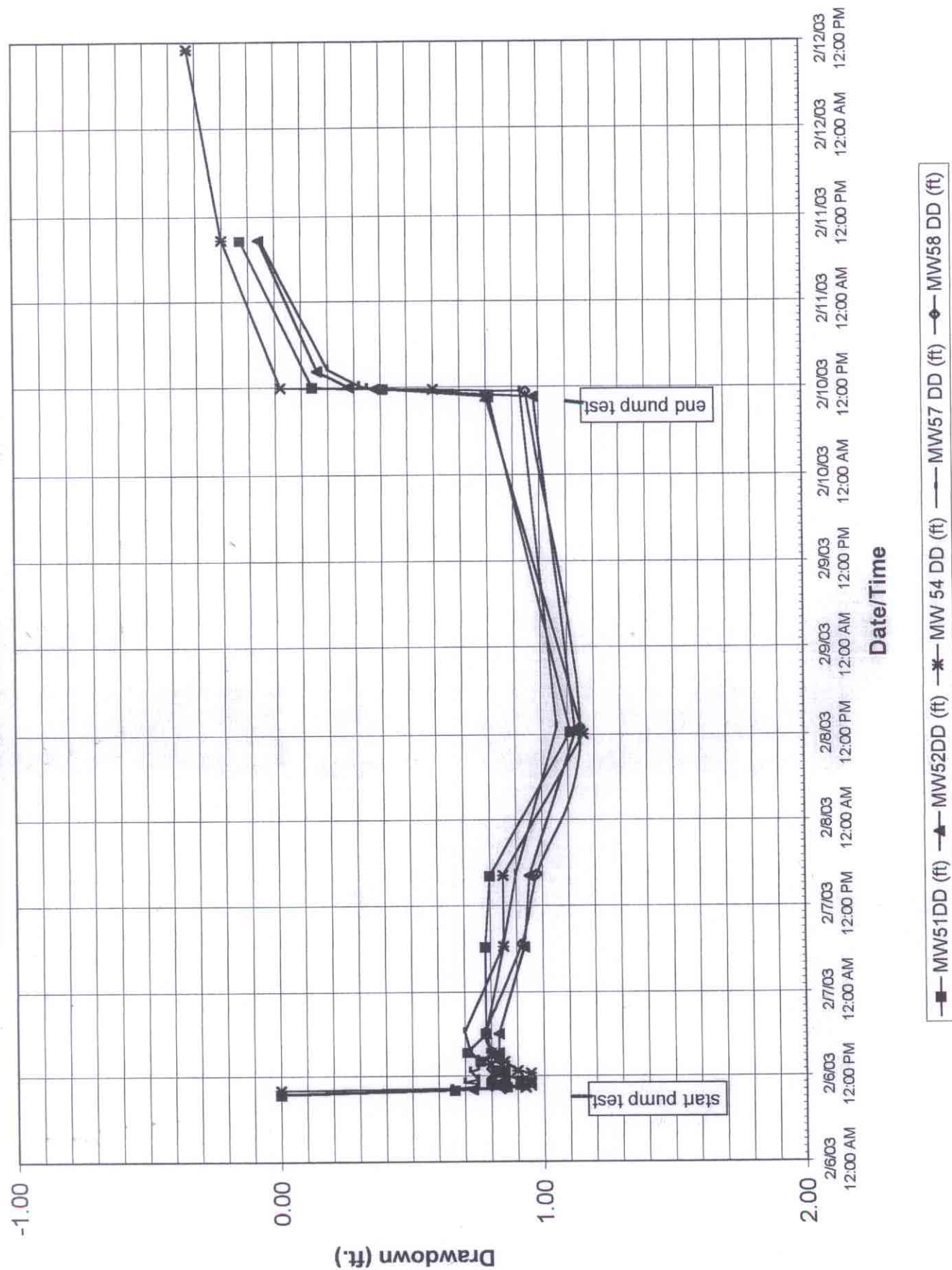
- MW51 WL Elev (NGVD)
- ▲— MW52 WL Elev (NGVD)
- *— MW54 WL Elev (NGVD)
- MW57 WL Elev (NGVD)
- ◇— MW58 WL Elev (NGVD)
- Pond Elev (NGVD)

Recovery Summary; Floridan Aquifer Monitoring Wells



—■— MW51DD (ft) —▲— MW52DD (ft) —*— MW 54 DD (ft) —◆— MW58 DD (ft)

Drawdown Summary; Floridan Aquifer Monitoring Wells



RECOVERY DATA	t (minutes)	
2/10/03 11:36:00	0.01	29.55
2/10/03 11:36:10	0.17	28.90
2/10/03 11:36:30	0.50	28.90
2/10/03 11:37:00	1.00	28.80
2/10/03 11:37:30	1.50	28.80
2/10/03 11:37:45	1.75	28.76
2/10/03 11:38:00	2.00	28.74
2/10/03 11:38:15	2.25	28.73
2/10/03 11:38:45	2.75	28.71
2/10/03 11:39 AM	3.00	28.70
2/10/03 11:40 AM	4.00	28.67
2/10/03 11:41 AM	5.00	28.64
2/10/03 11:42 AM	6.00	28.63
2/10/03 11:43 AM	7.00	28.62
2/10/03 11:45 AM	9.00	28.61
2/10/03 11:46 AM	10.00	28.60
2/10/03 11:48 AM	12.00	28.59
2/10/03 11:50 AM	14.00	28.58

2/10/03 11:54 AM	18.00	28.57
2/10/03 11:59 AM	23.00	28.55
2/10/03 12:13 PM	37.00	28.53
2/10/03 12:31 PM	55.00	28.53
2/10/03 2:37 PM	181.00	28.41

Water Quality Data

Water Quality Data															
Well: 5B								Well: 5C							
Date/ Time	Pumped Volume (gallons)	NO2	Tot.Alk. (mg/L)	pH	Temp (°C)	TDS (mg/L)	Cl ⁻ (mg/L)	Date/ Time	Pumped Volume (gallons)	NO2	Tot.Alk. (mg/L)	pH	Temp (°C)	TDS (mg/L)	Cl ⁻ (mg/L)
2/6/03 9:55 AM	0							2/6/03 9:55 AM	0						
2/6/03 12:40 PM	26,590	0.0	60	8.1	25.0	150	40	2/6/03 10:15 AM	46,010	0.2	80	8.0	25.1	210	80
2/6/03 3:20 PM	49,457	0.0	80	7.9	25.4	150	40	2/6/03 3:18 PM	93,970	0.1	80	7.8	25.4	220	60
2/7/03 9:24 AM	215,290			7.7			40	2/7/03 9:09 AM	413,310			7.7			60
2/7/03 4:10 PM	275,690			7.8			40	2/7/03 3:59 PM	535,310			7.7			80
2/8/03 12:52 PM	462,690						40	2/8/03 12:46 PM	906,110						80
2/9/03 10:40 AM	656,290						40	2/9/03 10:35 AM	1,294,510						80
2/10/03 10:20 AM	824,590						40	2/10/03 10:15 AM	1,712,410						70

Well: 5D								Surface Water (Pond)			
Date/ Time	Pumped Volume (gallons)	NO2	Tot. Alk. (mg/L)	pH	Temp (°C)	TDS (mg/L)	Cl ⁻ (mg/L)	Date/ Time	pH	TDS (mg/L)	Cl ⁻ (mg/L)
2/6/03 9:55 AM	0							2/6/03 10:20 AM	8.2	70	40
2/6/03 10:15 AM	20,332	0.0	60	7.9	25.2	140	60	2/7/03 9:34 AM	7.7		40
2/6/03 3:15 PM	59,654	0.0	60	7.9	25.5	140	40				
2/7/03 9:00 AM	260,632			7.9			40				
2/7/03 3:50 PM	338,132			8.0			40				
2/8/03 12:36 PM	572,332						50				
2/9/03 10:25 AM	818,932						50				
2/10/03 10:10 AM	1,087,532						50				

Disston Avenue Production Wells
Well 5C -Recovery Data

