TABLES

Table 1

Newmark and Muscoy Plume Front Extraction Well Network Aquifer Testing Chronology

Newmark Groundwater Superfund Site - San Bernardino, California

Testing Phase	Date (Approximate Time)	Description of Event(s)
Background	11/26-11/27/02	Transducer/Data Loggers were installed in monitoring wells (MW-128 through MW-130, MW-135 through MW-139, by INW/URS staff). Configured to record water-level elevation on 15-min intervals
	12/18-12/19/02	All INW instruments were downloaded, manual water-levels taken, and set to log on 10-min intervals by SECOR.
	1/6/2003 (13:00)	Pre-Testing System Shutdown; All extractions wells are shutdown
EW-5	1/13/2003 (15:00)	EW-5 start
	1/17/2003 (14:00)	EW-5 shutdown (average discharge rate=2,112 gpm)
WD#15	1/20/2003 (15:00)	West District #15 start; EW-4 start; EW-4 pump shut down automatically due to incoming voltage drop. Continued with WD#15 test only. EW-4 test postponed.
	1/22/03 (15:00)	Several monitoring wells on the Newmark side exhibit a drawdown response from the start of Cooley H & I.
	1/24/2003 (15:00)	West District #15 shutdown
EW-4	1/27/2003 (15:00)	EW-4 start
	1/29/03 (9:40)	EW-4 flow rate increased from approximately 1,934 gpm to approximately 2,005 gpm
	1/30/03 (10:00)	On 1/30/03 the flow rate in the Perris St well is increased by SBVMWD staff; nearby wells show drawdown response. On 2/1/03 the flow rate is further increased, and again nearby wells exhibit additional drawdown. Perris St well automatically shuts down and is restarted on 2/2/03; nearby wells show sharp water-level increases corresponding to the well's shutdown period.
	1/31/2003 (14:00)	EW-4 shutdown (time-weighted average discharge rate=1,973 gpm)
EW-3	2/3/2003 (15:00)	EW-3 start
		Perris St well automatically shuts down again and is restarted on 2/5/03; nearby wells show sharp water-level increases corresponding to shutdown period.
	2/7/2003 (14:00)	EW-3 shutdown (average discharge rate=1,752 gpm)
EW-2	2/10/2003 (15:00)	EW-2 started
	2/10/03 (15:00)	EW-2 automatically shut down due to voltage drop
	2/10/03 (15:45)	EW-2 restarted by Mike Lowe (SBMWD)
	2/10/03 (16:00)	EW-2 shutdown manually by Mike Lowe; because the data loggers were collecting samples at 2-min intervals at the time of restart, the decision was made to shut down the well, and reprogram reprogram the dataloggers for a restart at 15:00 the following day (2/11).
	2/11/2003 (15:00)	EW-2 start
	2/11/03 (14:00) through 2/13/03 (20:00)	Over this period 9.75 in of rain was recorded in the aquifer testing focus area (at the Lytle Creek weather station).
	2/15/2003 (14:00)	EW-2 shutdown (average discharge rate=1,977 gpm)

SECOR

Table 1

Newmark and Muscoy Plume Front Extraction Well Network Aquifer Testing Chronology

Newmark Groundwater Superfund Site - San Bernardino, California

Testing Phase	Date (Approximate Time)	Description of Event(s)
EW-1	2/18/03	Start of EW-1 test is postponed due to sharp increases in water levels in several wells on the Newmark side (most pronounced in 7th St, 16th St, Gilbert, and EW-1 through EW-5).
	2/21/2003 (15:00)	EW-1 start
	2/23/03 (07:30)	EW-1 automatically shut down due to voltage drop
	2/23/03 (08:50)	EW-1 restarted by SBMWD staff
	2/24/03 (07:00) through 2/27/03 (14:00)	Over this period 3.75 in of rain was recorded in the aquifer testing focus area (at the Lytle Creek weather station).
	2/26/2003 (14:00)	EW-1 shutdown (average discharge rate=2,052 gpm)
EW-108	3/6/2003 (15:00)	EW-108 start
	3/10/2003 (14:00)	EW-108 shutdown (average discharge rate=2,290 gpm)
EW-112	3/13/2003 (15:00)	EW-112 start
	3/15/03 (05:00) through 3/17/03 (01:00)	Over this period 7.49 in of rain was recorded in the aquifer testing focus area (at the Lytle Creek weather station).
	3/17/2003 (14:00)	EW-112 shutdown (average discharge rate=2,220 gpm)
Combined #1	3/24/2003 (15:00)	Combined Well Test #1 Start
Combined #2	4/7/2003 (16:00)	Combined Well Test #2 Start
EW-112 (Test 2)	4/21/2003 (07:00)	EW-112 start
	4/24/2003 (07:00)	EW-112 shutdown (average discharge rate=2,200 gpm)

SECOR

Table 2

Well Completion Information for Aquifer Test Pumping Wells and Monitoring Wells

Newmark Groundwater Superfund Site - San Bernardino, California

Well Name	Well Design	Surface or Casing Elevation (ft MSL)	Screen Interval(s)		Interpreted Hydrostratigraphic Unit Designation[4]	Well Operator
			Depth (feet bgs)	Elevation (feet above MSL)		
Aquifer Testing Pumping Wells						
EW-1 [2]	Extraction	1093.90	600 - 990	494 - 104	Newmark LWBM	SBMWD
EW-2 [2]	Extraction	1091.70	500 - 870	592 - 222	Newmark LWBM	
EW-3 [3]	Extraction	1090.22	240 - 280	850 - 810	Newmark UWBM	
			320 - 400	770 - 690	Newmark UWBM	
			500 - 800	590 - 290	Newmark LWBM	
EW-4 [2]	Extraction	1086.27	490 - 980	596 - 106	Newmark LWBM	
EW-5 [2]	Extraction	1083.27	400 - 930	683 - 153	Newmark LWBM	
EW-108	Extraction	1119.26	510 - 590	609 - 529	Newmark LWBM	
			670 - 1000	449 - 119	Newmark LWBM	
EW-112	Extraction	1181.79	280 - 740	902 - 442	Muscoy	
			800 - 890	382 - 292	Muscoy	
10th & J Street	Production	1065.10	280 - 1160	785 - -95	Muscoy	
9th Street	Production	1121.00	270 - 830	851 - 291	Muscoy	SBVMWD
			850 - 970	271 - 151	Muscoy	
			1000 - 1030	121 - 91	Muscoy	
Perris	Production	1110.00	240 - 640	870 - 470	Muscoy	
			690 - 950	420 - 160	Muscoy	
WD #15 [1]	Production	1090.00	140 - 1015	950 - 75	NA	WSBCWD
Newmark Groundwater Contamination Superfund Remedial Action Monitoring Wells:						
EW-1 PA	Piezometer	1093.90	380 - 400	714 - 694	Newmark MCM	EPA
EW-1 PB			980 - 1000	114 - 94	Newmark LWBM	
EW-2 PA	Piezometer	1091.70	230 - 250	862 - 842	Newmark UWBM	
EW-2 PB			880 - 900	212 - 192	Newmark LWBM	
EW-3 PA	Piezometer	1090.22	230 - 250	860 - 840	Newmark UWBM	
EW-3 PB			760 - 780	330 - 310	Newmark LWBM	
EW-4 PA	Piezometer	1086.27	310 - 330	776 - 756	Newmark UWBM	
EW-4 PB			980 - 1000	106 - 86	Newmark LWBM	
EW-5 PA	Piezometer	1083.27	230 - 250	853 - 833	Newmark UWBM	
EW-5 PB			880 - 900	203 - 183	Newmark LWBM	
EW-108 PA	Piezometer	1119.26	370 - 390	749 - 729	Newmark UWBM or Muscoy(?)	
EW-108 PB			740 - 760	379 - 359	Newmark LWBM	
EW-112 PA	Piezometer	1181.79	300 - 320	882 - 862	Muscoy	
EW-112 PB			660 - 680	522 - 502	Muscoy	
MW-10A	Monitoring	1127.42	350 - 380	777 - 747	Newmark UWBM	
MW-10B			490 - 520	637 - 607	Newmark LWBM	
MW-10C			750 - 780	377 - 347	Newmark LWBM	
MW-11A	Monitoring	1100.52	500 - 530	601 - 571	Newmark LWBM	
MW-11B			770 - 800	331 - 301	Newmark LWBM	
MW-11C			1070 - 1100	31 - 1	Newmark LWBM	

Table 2

Well Completion Information for Aquifer Test Pumping Wells and Monitoring Wells

Newmark Groundwater Superfund Site - San Bernardino, California

Well Name	Well Design	Surface or Casing Elevation (ft MSL)	Screen Interval(s)		Interpreted Hydrostratigraphic Unit Designation[4]	Well Operator
			Depth (feet bgs)	Elevation (feet above MSL)		
Newmark Groundwater Contamination Superfund Remedial Action Monitoring Wells:						
MW-12A	Monitoring	1088.51	240 - 270	849 - 819	Newmark UWBM	EPA
MW-12B			670 - 700	419 - 389	Newmark LWBM	
MW-12C			1040 - 1070	49 - 19	Newmark LWBM	
MW-13A	Monitoring	1078.36	365 - 395	713 - 683	Newmark UWBM	
MW-13B			525 - 555	553 - 523	Newmark LWBM	
MW-13C			815 - 845	263 - 233	Newmark LWBM	
MW-14A	Monitoring	1075.73	270 - 300	806 - 776	Newmark UWBM	
MW-14B			570 - 600	506 - 476	Newmark LWBM	
MW-14C			1060 - 1070	16 - 6	Newmark LWBM	
MW-15A	Monitoring	1069.38	520 - 550	549 - 519	Newmark LWBM	
MW-15B			690 - 720	379 - 349	Newmark LWBM	
MW-15C			1020 - 1050	49 - 19	Newmark LWBM	
MW-128A	Monitoring	1215.04	410 - 440	805 - 775	Muscoy	
MW-128B			690 - 720	525 - 495	Muscoy	
MW-128C			860 - 890	355 - 325	Muscoy	
MW-129A	Monitoring	1199.32	443 - 473	756 - 726	Muscoy	
MW-129B			730 - 760	469 - 439	Muscoy	
MW-129C			851 - 881	348 - 318	Muscoy	
MW-130A	Monitoring	1175.22	340 - 370	835 - 805	Muscoy (?)	
MW-130B			550 - 580	625 - 595	Muscoy (?)	
MW-130C			890 - 920	285 - 255	Newmark LWBM (?)	
MW-135A	Monitoring	1111.28	360 - 380	751 - 731	Muscoy	
MW-135B			620 - 640	491 - 471	Muscoy	
MW-135C			842 - 862	269 - 249	Newmark LWBM (?)	
MW-136A	Monitoring	1121.67	420 - 440	702 - 682	Muscoy	
MW-136B			500 - 520	622 - 602	Muscoy	
MW-136C			730 - 750	392 - 372	Muscoy	
MW-137A	Monitoring	1144.05	330 - 350	814 - 794	Muscoy	
MW-137B			520 - 540	624 - 604	Muscoy	
MW-137C			790 - 810	354 - 334	Muscoy	
MW-138A	Monitoring	1156.87	320 - 340	837 - 817	Muscoy	
MW-138B			550 - 570	607 - 587	Muscoy	
MW-138C			960 - 980	197 - 177	Muscoy	
MW-139A	Monitoring	1168.76	360 - 380	809 - 789	Muscoy	
MW-139B			540 - 560	629 - 609	Muscoy	
MW-139C			795 - 855	374 - 314	Muscoy	

Table 2

Well Completion Information for Aquifer Test Pumping Wells and Monitoring Wells

Newmark Groundwater Superfund Site - San Bernardino, California

Well Name	Well Design	Surface or Casing Elevation (ft MSL)	Screen Interval(s)		Interpreted Hydrostratigraphic Unit Designation[4]	Well Operator
			Depth (feet bgs)	Elevation (feet above MSL)		
SBMWD Observation Wells:						
Antil #1[1]	Old Production	1005.00	NA	NA	NA	SBMWD
Baseline & California (MUNI 102)	Production	1185.56	350 - 1050	836 - 136	Muscoy	
Gilbert Street (MUNI 24)	Production	1123.33	480 - 603	643 - 520	Newmark	
			625 - 685	498 - 438	Newmark	
Olive & Garner (MUNI 101)	Production	1130.00	350 - 1050	780 - 80	Muscoy	SBMWD
7th Street	Production	1056.48	552 - 830	504 - 226	Newmark LWBM	
			861 - 938	195 - 118	Newmark LWBM	
10th & J Street	Production	1065.10	280 - 1160	785 - -95	Muscoy	
11th & E Street	Production	NA	NA	NA	NA	
16th Street (MUNI 22)	Old Production	1082.57	490 - 680	593 - 403	Newmark LWBM	
19th Street #2 (MUNI 104B)	Production	1236.25	470 - 512	766 - 724	Muscoy	
			554 - 563	682 - 673	Muscoy	
			575 - 611	661 - 625	Muscoy	
			646 - 658	590 - 578	Muscoy	
Other Observation Wells:						
Garner Park-A[1]	Multi-level Monitoring	1120.00	160 - 174	960 - 946	Muscoy	USGS
Garner Park-B[1]			241 - 256	879 - 864	Muscoy	
Garner Park-C[1]			536 - 550	584 - 570	Muscoy	
Meadowbrook Park-A[1]	Multi-level Monitoring	1015.00	100 - 120	915 - 895	Newmark UWBM	
Meadowbrook Park-B[1]			300 - 320	715 - 695	Newmark UWBM	
Meadowbrook Park-C[1]			680 - 700	335 - 315	Newmark LWBM	
Sierra High School-A[1]	Multi-level Monitoring	1077.00	170 - 190	907 - 887	Newmark (?)WBM	
Sierra High School-B[1]			340 - 400	737 - 677	Newmark (?)WBM	
Sierra High School-C[1]			520 - 530	557 - 547	Newmark (?)WBM	
Rialto #4	Production	NA	NA	NA	NA	City of Railto
Rialto #5	Production	NA	NA	NA	NA	

Notes:

NA - not available

(1) - Casing Elevation estimated from map coverage.

(2) - The lower 200 feet of extraction wells EW-1, EW-2, EW-4 and EW-5 were backfilled with gravel. The Screen interval listed is the effective screen interval and excludes the backfilled interval.

(3) - A packer is installed in EW-3 between the second and third screen interval. Therefore the effective screen interval is 500 to 800 feet bgs (590 to 290 feet above MSL)

(4) Hydrostratigraphic designiations are discussed in Section 2.2. UWBM = upper water bearing Member, MCM = middle confining Unit, LWBM = lower water bearing member

Table 3

Observation Well Instrumentation and Water-Level Monitoring During Aquifer Testing

Newmark Groundwater Contamination Superfund Site - San Bernardino, California

Monitored Observation Wells	Transducer psi range - Relative (R) Absolute (A)	Data Logging Instrument Type	Water-Level Measurement Logging Interval									
			EW-5 Test	WD #15 Test	EW-4 Test	EW-3 Test	EW-2 Test	EW-1 Test	EW-108 Test	EW-112 Test	Combined Test #1	Combined Test #2
EW-1 A/B	100 - R [1]	SCADA	10-min	10-min	log	log	log	log	log	log	log	log
EW-2 A/B	100 - R	SCADA	10-min	10-min	log	log	log	log	log	log	log	log
EW-3 A/B	100 - R	SCADA	10-min	log	log	log	log	log	log	log	log	log
EW-4 A/B	100 - R	SCADA	10-min	log	log	log	log	log	log	log	log	log
EW-5 A/B	100 - R	SCADA	log	log	log	log	log	log	log	log	log	log
EW-108 A/B	100 - R	SCADA	10-min	log	log	log	log	log	log	log	log	log
EW-112 A/B	100 - R	SCADA	10-min	log	log	log	log	10-min	log	log	log	log
MW-10 A/B/C	30 - R [2]	Hermit	log	log	log	log	log	log	log	10-min	log	log
MW-11 A/B/C	30 - R	Hermit	log	log	log	log	log	log	log	10-min	log	log
MW-12 A/B/C	30 - R	Hermit	log	log	log	log	log	log	log	10-min	log	log
MW-13 A/B/C	30 - R	Hermit	log	log	log	log	log	log	log	10-min	log	log
MW-14 A/B/C	30 - R	Hermit	log	log	log	log	log	log	log	10-min	log	log
MW-15 A/B/C	30 - R	Hermit	log	log	log	log	log	10-min	log	10-min	log	log
MW-128 A/B/C	100 - A [3]	INW	10-min	log	10-min	10-min	10-min	log	10-min	log	log	log
MW-129 A/B/C	100 - A	INW	10-min	log	10-min	10-min	10-min	log	10-min	log	log	log
MW-130 A/B/C	100 - A	INW	10-min	log	10-min	10-min	log	log	log	log	log	log
MW-135 A/B/C	100 - A	INW	10-min	log	log	log	log	log	log	log	log	log
MW-136 A/B/C	100 - A	INW	10-min	log	log	log	log	log	log	log	log	log
MW-137 A/B/C	100 - A	INW	10-min	log	log	log	log	log	log	log	log	log
MW-138 A/B/C	100 - A	INW	10-min	No Data	log	log	log	log	10-min	log	log	log
MW-139 A/B/C	100 - A	INW	10-min	log	10-min	log	10-min	log	10-min	log	log	log
Garner Park A/B/C	USGS [4]	USGS	15-min	15-min	15-min	15-min	15-min	15-min	15-min	15-min	15-min	15-min
Meadowbrook A/B/C	USGS	USGS	15-min	15-min	15-min	15-min	15-min	15-min	15-min	15-min	15-min	15-min
Sierra School A/B/C	USGS	USGS	15-min	15-min	15-min	15-min	15-min	15-min	15-min	15-min	15-min	15-min

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Table 3

Observation Well Instrumentation and Water-Level Monitoring During Aquifer Testing

Newmark Groundwater Contamination Superfund Site - San Bernardino, California

Monitored Observation Wells	Transducer psi range - Relative (R) Absolute (A)	Data Logging Instrument Type	Water-Level Measurement Logging Interval									
			EW-5 Test	WD #15 Test	EW-4 Test	EW-3 Test	EW-2 Test	EW-1 Test	EW-108 Test	EW-112 Test	Combined Test #1	Combined Test #2
Antil #1	30 - R [5]	Mini Troll	log	log	log	log	log	log	10-min	10-min	log	log
Baseline & California	100 - R [6]	Mini Troll	log	log	log	10-min	log	log	10-min	log	log	log
Gilbert Street	30 - R	Hermit	NM [7]	log	log	log	log	log	10-min	10-min	log	log
Olive and Garner	100 - A	INW	NM	NM	NM	NM	log	log	log	NM	log	log
7th Street	30 - R	Mini Troll	log	log	log	log	log	log	NM	NM	NM	NM
10th and J	100 - A	INW	NM	NM	NM	log	log	log	log	log	NM	NM
11th and E	30 - R	Mini Troll	log	log	log	log	log	log	log	10-min	log	log
16th Street	30 - R	Mini Troll	log	log	log	log	log	log	10-min	10-min	log	log
19th Street #2	30 - R	Mini Troll	NM	NM	NM	NM	NM	NM	10-min	log	log	log
Rialto #5	100 - A	INW	NM	10-min	NM	NM	NM	NM	NM	10-sec	log	log

NOTES: (Instrument Descriptions)

(1) In-Situ® PXD 100 PSI Relative Transducer SCADA System Datalogging

(2) In-Situ® Druck PTX-1830 30 PSI Relative Transducer Hermit 3000 Data Logger

(3) Instrumentation Northwest (INW®) Aquistar PT2X 100 PSI Smart Sensor Absolute Pressure Transducer/Individual Data Logger

(4) USGS Transducer/Datalogger with 15 min logging Interval (details unknown)

(5) In-Situ® Mini Troll 30 PSI Realative Pressure Transducer/Individual Data Logger

(6) In-Situ® Mini Troll 100 PSI Relative Pressure Transducer/Individual Data Logger

(7) NM=Not Measured

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Table 4

Summary of Constant Rate Aquifer Test Results - EW-5 Pumping Test - *Trend-Corrected* Data

Newmark Plume Front Extraction Well Network

Newmark Groundwater Contamination Superfund Site - San Bernardino, California

Pumping Well and Pumping Parameters	Observation Well	Screen Elevation: Above(A); Within(W); Below (B); Pumping Well Screen	Hydrostratigraphic Unit Designation	Distance from Pumping Well (ft)	Drawdown Response Observed (Y/N)	Water-Level Trend Correction Performed (Y/N)	Maximum Drawdown (ft) [1]	Drawdown Data Suitable for Parameter Analysis (Y/N)	Method of Pumping Phase Analysis	Transmissivity Pumping Phase (ft^2/day)	Hydraulic Conductivity Pumping Phase (ft/day)	Storativity Pumping Phase	Recovery Data Suitable for Parameter Analysis (Y/N)	Transmissivity Recovery Phase (ft^2/day) [2]	Hydraulic Conductivity Recovery Phase ft/day)
	EW-1 PA	A	Newmark MCM	3,477	Y	Y	0.33	N	--	--	--	--	--	--	--
	EW-1 PB	B	Newmark LWBM	3,477	Y	Y	2.21	Y	Theis	61,900	79	0.00071	Y	49,600	64
Pumping Well:	EW-2 PA	A	Newmark UWBM	2,535	Y	Y	0.13	N	--	--	--	--	--	--	--
EW-5	EW-2 PB	W	Newmark LWBM	2,535	Y	Y	2.62	Y	Theis	57,600	74	0.00082	Y	52,700	68
	EW-3 PA	A	Newmark UWBM	1,862	Y	Y	0.4	N	--	--	--	--	--	--	--
Screen Interval:	EW-3 PB	W	Newmark LWBM	1,862	Y	Y	3.06	Y	Theis	51,700	66	0.00085	Y	49,300	63
Depth (ft bgs): 400-930	EW-4 PA	A	Newmark UWBM	1,041	Y	Y	0.62	N	--	--	--	--	--	--	--
Elevation (ft msl): 683-153	EW-4 PB	B	Newmark LWBM	1,041	Y	Y	3.61	Y	Theis (P)	55,100	71	0.00092	Y	45,500	58
	EW-5 PA	A	Newmark UWBM	1	Y	N	0.3	N	--	--	--	--	--	--	--
	EW-5 PB	W	Newmark LWBM	1	Y	N	15.29	Y	Cooper-Jacob	58,800	75	--	N	--	--
	EW-108 PA	A	Newmark UWBM or Muscoy(?)	5,437	Y	N	--	N	--	--	--	--	--	--	--
Test Start Date: January 13, 2003	EW-108 PB	W	Newmark LWBM	5,437	Y	Y	1.24	Y	Theis	78,800	101	0.0013	Y	62,400	80
	EW-112 PA	A	Muscoy	12,220	N	N	--	N	--	--	--	--	--	--	--
Average Discharge Rate(Q):	EW-112 PB	W	Muscoy	12,220	N	N	--	N	--	--	--	--	--	--	--
2,110 gpm	MW-10A	A	Newmark UWBM	3,500	Y	Y	0.65	N	--	--	--	--	--	--	--
	MW-10B	W	Newmark LWBM	3,500	Y	Y	1.81	Y	Theis	59,900	77	0.00068	Y	64,600	83
Pump On: 1/13/03 15:00	MW-10C	W	Newmark LWBM	3,500	Y	Y	2.01	Y	Theis	62,300	80	0.00061	Y	64,400	83
Pump Off: 1/17/03 14:00	MW-11A	W	Newmark LWBM	1,679	Y	Y	2.99	Y	Theis	55,700	71	0.00065	Y	57,200	73
	MW-11B	W	Newmark LWBM	1,679	--[3]	--	--	--	--	--	--	--	--	--	--
Duration Pumped:	MW-11C	B	Newmark LWBM	1,679	Y	Y	3.06	Y	Theis	71,100	91	0.00025	N	--	--
95 hrs.	MW-12A	A	Newmark UWBM	4,143	N	--	--	--	--	--	--	--	--	--	--
	MW-12B	W	Newmark LWBM	4,143	Y	Y	1.75	Y	Theis	59,600	76	0.00091	Y	49,700	64
Estimated	MW-12C	B	Newmark LWBM	4,143	Y	Y	1.86	Y	Theis	56,000	72	0.00085	Y	48,000	62
Saturated Thickness (ft):	MW-13A	A	Newmark UWBM	2,108	Y	Y	0.69	N	--	--	--	--	--	--	--
780	MW-13B	W	Newmark LWBM	2,108	Y	Y	2.98	Y	Theis	53,300	68	0.00075	N	--	--
	MW-13C	W	Newmark LWBM	2,108	Y	Y	3.00	Y	Theis	54,600	70	0.00074	N	--	--
	MW-14A	A	Newmark UWBM	906	Y	Y	0.15	N	--	--	--	--	--	--	--
	MW-14B	W	Newmark LWBM	906	Y	Y	2.94	Y	Theis (P)	45,600	58	0.0020	Y	30,600	39
	MW-14C	B	Newmark LWBM	906	Y	Y	3.48	Y	Theis (P)	49,600	64	0.0014	Y	42,800	55
	MW-15A	W	Newmark LWBM	1,204	Y	Y	3.65	Y	Theis (P)	59,000	76	0.00054	Y	47,500	61
	MW-15B	W	Newmark LWBM	1,204	Y	Y	3.75	Y	Theis (P)	52,700	68	0.00082	Y	46,600	60
	MW-15C	B	Newmark LWBM	1,204	Y	Y	3.89	Y	Theis (P)	51,300	66	0.00076	Y	44,100	57
	MW-128A	A	Muscoy	12,853	N	--	--	--	--	--	--	--	--	--	--
	MW-128B	W	Muscoy	12,853	N	--	--	--	--	--	--	--	--	--	--
	MW-128C	W	Muscoy	12,853	N	--	--	--	--	--	--	--	--	--	--
	MW-129A	A	Muscoy	13,036	N	--	--	--	--	--	--	--	--	--	--
	MW-129B	W	Muscoy	13,036	N	--	--	--	--	--	--	--	--	--	--
	MW-129C	W	Muscoy	13,036	N	--	--	--	--	--	--	--	--	--	--
	MW-130A	A	Muscoy (?)	10,118	N	--	--	--	--	--	--	--	--	--	--
	MW-130B	W	Muscoy (?)	10,118	N	--	--	--	--	--	--	--	--	--	--
	MW-130C	W	Newmark LWBM (?)	10,118	Y	Y	0.53	N	--	--	--	--	--	--	--

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Table 4

Summary of Constant Rate Aquifer Test Results - EW-5 Pumping Test - *Trend-Corrected* Data

Newmark Plume Front Extraction Well Network

Newmark Groundwater Contamination Superfund Site - San Bernardino, California

Pumping Well and Pumping Parameters	Observation Well	Screen Elevation: Above(A); Within(W); Below (B); Pumping Well Screen	Hydrostratigraphic Unit Designation	Distance from Pumping Well (ft)	Drawdown Response Observed (Y/N)	Water-Level Trend Correction Performed (Y/N)	Maximum Drawdown (ft) [1]	Drawdown Data Suitable for Parameter Analysis (Y/N)	Method of Pumping Phase Analysis	Transmissivity Pumping Phase (ft^2/day)	Hydraulic Conductivity Pumping Phase (ft/day)	Storativity Pumping Phase	Recovery Data Suitable for Parameter Analysis (Y/N)	Transmissivity Recovery Phase (ft^2/day) [2]	Hydraulic Conductivity Recovery Phase ft/day)
	MW-135A	A	Muscoy	5,966	N	--	--	--	--	--	--	--	--	--	--
	MW-135B	W	Muscoy	5,966	Y	Y	0.7	N	--	--	--	--	--	--	--
Pumping Well:	MW-135C	W	Newmark LWBM (?)	5,966	Y	Y	1.37	Y	Theis	77,200	99	0.00075	Y	61,200	78
EW-5	MW-136A	A	Muscoy	7,803	N	--	--	--	--	--	--	--	--	--	--
	MW-136B	W	Muscoy	7,803	N	--	--	--	--	--	--	--	--	--	--
Screen Interval:	MW-136C	W	Muscoy	7,803	Y	Y	0.52	--	--	--	--	--	--	--	--
Depth (ft bgs): 400-930	MW-137A	A	Muscoy	10,001	N	--	--	--	--	--	--	--	--	--	--
Elevation (ft msl): 683-153	MW-137B	W	Muscoy	10,001	N	--	--	--	--	--	--	--	--	--	--
	MW-137C	W	Muscoy	10,001	N	--	--	--	--	--	--	--	--	--	--
	MW-138A	A	Muscoy	11,237	N	--	--	--	--	--	--	--	--	--	--
Test Start Date:	MW-138B	W	Muscoy	11,237	N	--	--	--	--	--	--	--	--	--	--
January 13, 2003	MW-138C	W	Muscoy	11,237	N	--	--	--	--	--	--	--	--	--	--
	MW-139A	A	Muscoy	12,885	N	--	--	--	--	--	--	--	--	--	--
Average Discharge Rate(Q):	MW-139B	W	Muscoy	12,885	N	--	--	--	--	--	--	--	--	--	--
2,110 gpm	MW-139C	W	Muscoy	12,885	N	--	--	--	--	--	--	--	--	--	--
	Garner Park-A (4S)	A	Muscoy	9,137	N	--	--	--	--	--	--	--	--	--	--
Pump On: 1/13/03 15:00	Garner Park-B (5S)	A	Muscoy	9,137	N	--	--	--	--	--	--	--	--	--	--
Pump Off: 1/17/03 14:00	Garner Park-C (6S)	W	Muscoy	9,137	N	--	--	--	--	--	--	--	--	--	--
	Meadowbrook Park-A (2S)	A	Newmark UWBM	5,642	N	--	--	--	--	--	--	--	--	--	--
Duration Pumped:	Meadowbrook Park-B (3S)	A	Newmark UWBM	5,642	N	--	--	--	--	--	--	--	--	--	--
95 hrs.	Meadowbrook Park-C (4S)	W	Newmark LWBM	5,642	Y	Y	2.63	Y	Theis	40,500	52	0.00047	Y	37,300	48
	Sierra High School-A (8S)	A	Newmark (?) WBM	2,299	N	--	--	--	--	--	--	--	--	--	--
Estimated	Sierra High School-B (7S)	W	Newmark (?) WBM	2,299	Y	N	2.74	Y	Cooper-Jacob	46,600	60	0.0017	N	--	--
Saturated Thickness (ft):	Sierra High School-C (6S)	W	Newmark (?) WBM	2,299	Y	N	3.07	Y	Cooper-Jacob	44,900	58	0.0013	N	--	--
780	Antil #1	NA	NA	4,885	N	--	--	--	--	--	--	--	--	--	--
	Baseline & California	W	Muscoy	14,748	N	--	--	--	--	--	--	--	--	--	--
	Gilbert Street	W	Newmark	2,924	NM	--	--	--	--	--	--	--	--	--	--
	Olive and Garner	W	Muscoy	9,169	NM	--	--	--	--	--	--	--	--	--	--
	7th Street	W	Newmark LWBM	2,015	Y	Y	3.27	Y	Theis	53,700	69	0.00070	Y	46,200	59
	10th and J	W	Muscoy	7,207	N	--	--	--	--	--	--	--	--	--	--
	11th and E	NA	NA	3,994	NM	--	--	--	--	--	--	--	--	--	--
	16th Street	W	Newmark LWBM	3,662	Y	Y	1.44	Y	Theis	66,000	85	0.00066	Y	64,900	83
	19th Street #2	W	Muscoy	14,873	NM	--	--	--	--	--	--	--	--	--	--
	Rialto #5	NA	NA	15,204	NM	--	--	--	--	--	--	--	--	--	--
									Distance versus Drawdown	49,600	64	0.0014	--	--	--
									Count	25	25	24	--	19	19
									Minimum	40,500	52	0.00025	--	30,600	39
									Maximum	78,800	101	0.0020	--	64,900	83
									Average	56,700	73	0.00091	--	50,800	65
									Geometric Mean	55,900	72	0.00083	--	49,900	64
									Standard Deviation	9,210	12	0.00041	--	9,580	12

NM - Not Monitored; NA - Not Available

(1) Maximum drawdown values were calculated from trend-corrected data for those wells where trend corrections were applied.

(2) All recovery phase analysis was performed using the Theis residual drawdown method

(3) Datalogger Malfunction; data currupted

(P) Hantush modification to the Theis method used to correct drawdown for partial penetration effects (Hantush, 1961a)

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Table 5

Summary of Constant Rate Aquifer Test Results - EW-4 Pumping Test - *Trend-Corrected* Data

Newmark Plume Front Extraction Well Network

Newmark Groundwater Contamination Superfund Site - San Bernardino, California

Pumping Well and Pumping Parameters	Observation Well	Screen Elevation: Above(A); Within(W); Below (B); Pumping Well Screen	Hydrostratigraphic Unit Designation	Distance from Pumping Well (ft)	Drawdown Response Observed (Y/N)	Water-Level Trend Correction Performed (Y/N)	Maximum Drawdown (ft) [1]	Drawdown Data Suitable for Parameter Analysis (Y/N)	Method of Pumping Phase Analysis	Transmissivity Pumping Phase (ft^2/day)	Hydraulic Conductivity Pumping Phase (ft/day)	Storativity Pumping Phase	Recovery Data Suitable for Analysis (Y/N)	Transmissivity Recovery Phase (ft^2/day) [2]	Hydraulic Conductivity Recovery Phase ft/day)
	EW-1 PA	A	Newmark MCM	2,435	Y	Y	0.55	N	--	--	--	--	N	--	--
	EW-1 PB	W	Newmark LWBM	2,435	Y	Y	2.46	Y	Theis	51,000	65	0.00080	Y	57,800	74
Pumping Well:	EW-2 PA	A	Newmark UWBM	1,496	Y	Y	0.22	N	--	--	--	--	N	--	--
EW-4	EW-2 PB	W	Newmark LWBM	1,496	Y	Y	3.08	Y	Theis (P)	57,000	73	0.00058	Y	57,800	74
	EW-3 PA	A	Newmark UWBM	832	Y	Y	0.4	N	--	--	--	--	N	--	--
Screen Interval:	EW-3 PB	W	Newmark LWBM	832	Y	Y	3.68	Y	Theis (P)	61,500	79	0.00092	Y	51,400	66
Depth (ft bgs): 490-980	EW-4 PA	A	Newmark UWBM	1	Y	Y	0.73	N	--	--	--	--	N	--	--
Elevation (ft msl): 106-596	EW-4 PB	B	Newmark LWBM	1	Y	Y	5.95	Y	Cooper-Jacob	54,700	70	--	Y	52,200	67
	EW-5 PA	A	Newmark UWBM	1,041	Y	N	0.33	N	--	--	--	--	N	--	--
	EW-5 PB	W	Newmark LWBM	1,041	Y	N	3.45	Y	Theis (P)	50,800	65	0.00096	Y	49,000	63
Test Start Date:	EW-108 PA	A	Newmark UWBM or Muscoy(?)	4,439	Y	N	--	N	--	--	--	--	--	--	--
January 27, 2003	EW-108 PB	W	Newmark LWBM	4,439	Y	Y	1.51	Y	Theis	63,000	81	0.00094	Y	71,300	91
	EW-112 PA	A	Muscoy	11,188	N	--	--	--	--	--	--	--	--	--	--
Discharge (Q):	EW-112 PB	W	Muscoy	11,188	N	--	--	--	--	--	--	--	--	--	--
Q_1=1,930 gpm	MW-10A	A	Newmark UWBM	2,912	Y	Y	0.81	N	--	--	--	--	N	--	--
Q2=2,010 gpm	MW-10B	A	Newmark LWBM	2,912	Y	Y	1.92	Y	Theis	64,500	83	0.00064	Y	71,500	92
Pump On: 1/27/03 15:00	MW-10C	W	Newmark LWBM	2,912	Y	Y	1.89	Y	Theis	58,100	74	0.00062	Y	72,000	92
Pump Off: 1/31/03 14:00	MW-11A	W	Newmark LWBM	987	Y	Y	3.55	Y	Theis (P)	50,300	64	0.00088	Y	50,600	65
	MW-11B	W	Newmark LWBM	987	Y	Y	3.73	Y	Theis (P)	47,400	61	0.00069	Y	51,000	65
Duration Pumped:	MW-11C	B	Newmark LWBM	987	Y	Y	4.18	Y	Theis (P)	59,600	76	0.00014	Y	50,400	65
95 hrs.	MW-12A	A	Newmark UWBM	3,121	N	--	--	--	--	--	--	--	--	--	--
	MW-12B	W	Newmark LWBM	3,121	Y	Y	2.02	Y	Theis	50,200	64	0.00088	Y	52,700	68
Estimated	MW-12C	B	Newmark LWBM	3,121	Y	Y	2.13	Y	Theis	48,500	62	0.00081	Y	51,300	66
Saturated Thickness (ft):	MW-13A	A	Newmark UWBM	1,146	Y	Y	0.68	N	--	--	--	--	Y	89,500	115
780	MW-13B	W	Newmark LWBM	1,146	Y	Y	3.67	Y	Theis (P)	53,600	69	0.00072	Y	47,600	61
	MW-13C	W	Newmark LWBM	1,146	Y	Y	3.52	Y	Theis (P)	56,200	72	0.00067	Y	43,600	56
	MW-14A	A	Newmark UWBM	710	N	--	--	--	--	--	--	--	--	--	--
	MW-14B	W	Newmark LWBM	710	Y	Y	4.15	Y	Theis (P)	51,800	66	0.00081	Y	43,700	56
	MW-14C	B	Newmark LWBM	710	Y	Y	3.99	Y	Theis (P)	41,400	53	0.00090	Y	46,200	59
	MW-15A	W	Newmark LWBM	2,163	Y	Y	2.87	Y	Theis	50,700	65	0.00066	Y	53,300	68
	MW-15B	W	Newmark LWBM	2,163	Y	Y	2.97	Y	Theis	61,600	79	0.00062	Y	48,700	62
	MW-15C	B	Newmark LWBM	2,163	Y	Y	2.96	Y	Theis	50,700	65	0.00064	Y	48,600	62
	MW-128A	A	Muscoy	11,959	N	--	--	--	--	--	--	--	--	--	--
	MW-128B	W	Muscoy	11,959	N	--	--	--	--	--	--	--	--	--	--
	MW-128C	W	Muscoy	11,959	N	--	--	--	--	--	--	--	--	--	--
	MW-129A	A	Muscoy	12,026	N	--	--	--	--	--	--	--	--	--	--
	MW-129B	W	Muscoy	12,026	N	--	--	--	--	--	--	--	--	--	--
	MW-129C	W	Muscoy	12,026	N	--	--	--	--	--	--	--	--	--	--
	MW-130A	A	Muscoy (?)	9,213	N	--	--	--	--	--	--	--	--	--	--
	MW-130B	A	Muscoy (?)	9,213	N	--	--	--	--	--	--	--	--	--	--
	MW-130C	W	Newmark LWBM (?)	9,213	Y	Y	0.86	N	--	--	--	--	N	--	--

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Table 5

Summary of Constant Rate Aquifer Test Results - EW-4 Pumping Test - *Trend-Corrected* Data

Newmark Plume Front Extraction Well Network

Newmark Groundwater Contamination Superfund Site - San Bernardino, California

Pumping Well and Pumping Parameters	Observation Well	Screen Elevation: Above(A); Within(W); Below (B); Pumping Well Screen	Hydrostratigraphic Unit Designation	Distance from Pumping Well (ft)	Drawdown Response Observed (Y/N)	Water-Level Trend Correction Performed (Y/N)	Maximum Drawdown (ft) [1]	Drawdown Data Suitable for Parameter Analysis (Y/N)	Method of Pumping Phase Analysis	Transmissivity Pumping Phase (ft^2/day)	Hydraulic Conductivity Pumping Phase (ft/day)	Storativity Pumping Phase	Recovery Data Suitable for Analysis (Y/N)	Transmissivity Recovery Phase (ft^2/day) [2]	Hydraulic Conductivity Recovery Phase ft/day)
	MW-135A	A	Muscoy	4,925	U[3]	--	--	--	--	--	--	--	--	--	--
	MW-135B	W	Muscoy	4,925	U	--	--	--	--	--	--	--	--	--	--
Pumping Well:	MW-135C	W	Newmark LWBM (?)	4,925	Y	Y	1.66	Y	Theis	64,200	82	0.00073	Y	49,700	64
EW-4	MW-136A	A	Muscoy	6,761	U	--	--	--	--	--	--	--	--	--	--
	MW-136B	A	Muscoy	6,761	U	--	--	--	--	--	--	--	--	--	--
Screen Interval:	MW-136C	W	Muscoy	6,761	U	--	--	--	--	--	--	--	--	--	--
Depth (ft bgs): 490-980	MW-137A	A	Muscoy	8,960	U	--	--	--	--	--	--	--	--	--	--
Elevation (ft msl): 106-596	MW-137B	A	Muscoy	8,960	U	--	--	--	--	--	--	--	--	--	--
	MW-137C	W	Muscoy	8,960	U	--	--	--	--	--	--	--	--	--	--
	MW-138A	A	Muscoy	10,196	U	--	--	--	--	--	--	--	--	--	--
Test Start Date:	MW-138B	W	Muscoy	10,196	U	--	--	--	--	--	--	--	--	--	--
January 27, 2003	MW-138C	W	Muscoy	10,196	U	--	--	--	--	--	--	--	--	--	--
	MW-139A	A	Muscoy	11,843	N	--	--	--	--	--	--	--	--	--	--
Discharge (Q):	MW-139B	A	Muscoy	11,843	N	--	--	--	--	--	--	--	--	--	--
Q_1=1,930 gpm	MW-139C	W	Muscoy	11,843	N	--	--	--	--	--	--	--	--	--	--
Q2=2,010 gpm	Garner Park-A (4S)	A	Muscoy	8,118	N	--	--	--	--	--	--	--	--	--	--
Pump On: 1/27/03 15:00	Garner Park-B (5S)	A	Muscoy	8,118	N	--	--	--	--	--	--	--	--	--	--
Pump Off: 1/31/03 14:00	Garner Park-C (6S)	W	Muscoy	8,118	N	--	--	--	--	--	--	--	--	--	--
	Meadowbrook Park-A (2S)	A	Newmark UWBM	5,522	N	--	--	--	--	--	--	--	--	--	--
Duration Pumped:	Meadowbrook Park-B (3S)	A	Newmark UWBM	5,522	N	--	--	--	--	--	--	--	--	--	--
95 hrs.	Meadowbrook Park-C (4S)	W	Newmark LWBM	5,522	Y	Y	2.04	Y	Theis	40,000	51	0.00039	Y	43,200	55
	Sierra High School-A (8S)	A	Newmark (?) WBM	3,338	N	--	--	--	--	--	--	--	--	--	--
Estimated	Sierra High School-B (7S)	A	Newmark (?) WBM	3,338	Y	N	2.16	N	--	--	--	--	N	--	--
Saturated Thickness (ft):	Sierra High School-C (6S)	W	Newmark (?) WBM	3,338	Y	N	2.32	N	--	--	--	--	N	--	--
780	Antil #1	NA	NA	5,774	N	--	--	--	--	--	--	--	--	--	--
	Baseline & California	W	Muscoy	13,708	N	--	--	--	--	--	--	--	--	--	--
	Gilbert Street	W	Newmark	3,378	Y	Y	2.09	Y	Theis	67,800	87	0.00061	Y	61,000	78
	Olive and Garner	W	Muscoy	8,129	NM	--	--	--	--	--	--	--	--	--	--
	7th Street	W	Newmark LWBM	2,392	Y	Y	2.99	Y	Theis	63,100	81	0.00047	Y	50,900	65
	10th and J	W	Muscoy	6,171	NM	--	--	--	--	--	--	--	--	--	--
	11th and E	NA	NA	2,953	N	--	--	--	--	--	--	--	--	--	--
	16th Street	W	Newmark LWBM	3,317	Y	Y	1.55	Y	Theis	75,600	97	0.00058	Y	92,300	118
	19th Street #2	W	Muscoy	13,884	NM	--	--	--	--	--	--	--	--	--	--
	Rialto #5	NA	NA	16,825	NM	--	--	--	--	--	--	--	--	--	--
									Distance versus Drawdown	47,800	61	0.0014	--	--	--
									Count	25	25	24	--	26	26
									Minimum	40,000	51	0.00014	--	43,200	55
									Maximum	75,600	97	0.0014	--	92,300	118
									Average	55,400	71	0.00072	--	56,100	72
									Geometric Mean	54,800	70	0.00068	--	54,800	70
									Standard Deviation	8,250	11	0.00023	--	13,000	17

Notes:

NM - Not Monitored; NA - Not Available

(1) Maximum drawdown values were calculated from trend-corrected data for those wells where trend corrections were applied.

(2) All recovery phase analysis was performed using the Theis residual drawdown method

(3) Undetermined; unable to determine the presence or absence of a drawdown response due to interference caused by the start and stop of SBMWD Perris street well

(P) Hantush modification to the Theis method used to correct drawdown for partial penetration effects (Hantush, 1961a)

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Table 6

Summary of Constant Rate Aquifer Test Results - EW-3 Pumping Test - *Uncorrected* Data

Newmark Plume Front Extraction Well Network

Newmark Groundwater Contamination Superfund Site - San Bernardino, California

Pumping Well and Pumping Parameters	Observation Well	Screen Elevation: Above(A); Within(W); Below (B); Pumping Well Screen	Hydrostratigraphic Unit Designation	Distance from Pumping Well (ft)	Drawdown Response Observed (Y/N)	Water-Level Trend Correction Performed (Y/N)	Maximum Drawdown (ft) [1]	Drawdown Data Suitable for Parameter Analysis (Y/N)	Method of Pumping Phase Analysis	Transmissivity Pumping Phase (ft^2/day)	Hydraulic Conductivity Pumping Phase (ft/day)	Storativity Pumping Phase	Recovery Data Suitable for Analysis (Y/N)	Transmissivity Recovery Phase (ft^2/day) [2]	Hydraulic Conductivity Recovery Phase ft/day)
	EW-1 PA	A	Newmark MCM	1,640	N	--	--	--	--	--	--	--	--	--	--
	EW-1 PB	B	Newmark LWBM	1,640	Y	N	4.29	Y	Theis	43,800	56	0.00072	N	--	--
Pumping Well:	EW-2 PA	A	Newmark UWBM	681	N	--	--	--	--	--	--	--	--	--	--
EW-3	EW-2 PB	B	Newmark LWBM	681	Y	N	4.06	Y	Theis (P)	48,300	62	0.00037	N	--	--
	EW-3 PA	A	Newmark UWBM	1	Y	N	0.85	N	--	--	--	--	--	--	--
Screen Interval:	EW-3 PB	W	Newmark LWBM	1	Y	N	30.24	Y	Cooper-Jacob	42,200	54	--	--	--	--
Depth (ft bgs): 500-800	EW-4 PA	A	Newmark UWBM	832	Y	N	0.68	N	--	--	--	--	--	--	--
Elevation (ft msl): 290-590	EW-4 PB	B	Newmark LWBM	832	Y	N	3.78	Y	Theis (P)	47,300	61	0.00049	N	--	--
	EW-5 PA	A	Newmark UWBM	1,862	N	--	--	--	--	--	--	--	--	--	--
	EW-5 PB	B	Newmark LWBM	1,862	Y	N	2.93	Y	Theis	43,400	56	0.00082	N	--	--
Test Start Date:	EW-108 PA	A	Newmark UWBM or Muscoy(?)	3,611	Y	N	0.28	N	--	--	--	--	--	--	--
February 3, 2003	EW-108 PB	W	Newmark LWBM	3,611	Y	N	2.03	N	--	--	--	--	--	--	--
	EW-112 PA	A	Muscoy	10,359	N	--	--	--	--	--	--	--	--	--	--
Discharge (Q):	EW-112 PB	W	Muscoy	10,359	N	--	--	--	--	--	--	--	--	--	--
1,750 gpm	MW-10A	A	Newmark UWBM	2,471	Y	N	1.14	N	--	--	--	--	--	--	--
	MW-10B	A	Newmark LWBM	2,471	Y	N	2.05	Y	Theis	47,500	61	0.00088	N	--	--
Pump On: 2/3/03 15:00	MW-10C	W	Newmark LWBM	2,471	Y	N	2.38	Y	Theis	48,700	62	0.00057	N	--	--
Pump Off: 2/7/03 14:00	MW-11A	W	Newmark LWBM	856	Y	N	2.84	Y	Theis (P)	60,200	77	0.00088	N	--	--
	MW-11B	W	Newmark LWBM	856	Y	N	2.84	Y	Theis (P)	68,700	88	0.00085	N	--	--
Duration Pumped:	MW-11C	B	Newmark LWBM	856	Y	N	4.22	Y	Theis (P)	40,200	52	0.00058	N	--	--
95 hrs.	MW-12A	A	Newmark UWBM	2,397	N	--	--	--	--	--	--	--	--	--	--
	MW-12B	W	Newmark LWBM	2,397	Y	N	2.85	Y	Theis	32,500	42	0.00104	N	--	--
Estimated	MW-12C	B	Newmark LWBM	2,397	Y	N	2.96	Y	Theis	34,800	45	0.00090	N	--	--
Saturated Thickness (ft):	MW-13A	A	Newmark UWBM	795	Y	N	1.00	N	--	--	--	--	--	--	--
780	MW-13B	W	Newmark LWBM	795	Y	N	4.61	Y	Theis (P)	46,200	59	0.00093	N	--	--
	MW-13C	B	Newmark LWBM	795	Y	N	4.34	Y	Theis (P)	37,600	48	0.00068	N	--	--
	MW-14A	A	Newmark UWBM	1,421	N	--	--	--	--	--	--	--	--	--	--
	MW-14B	W	Newmark LWBM	1,421	Y	N	3.43	Y	Theis (P)	38,000	49	0.0010	N	--	--
	MW-14C	B	Newmark LWBM	1,421	Y	N	3.55	Y	Theis (P)	37,600	48	0.00114	N	--	--
	MW-15A	W	Newmark LWBM	2,994	Y	N	2.63	Y	Theis	42,900	55	0.00065	N	--	--
	MW-15B	W	Newmark LWBM	2,994	Y	N	2.69	Y	Theis	41,800	54	0.00063	N	--	--
	MW-15C	B	Newmark LWBM	2,994	Y	N	2.67	Y	Theis	46,400	59	0.00056	N	--	--
	MW-128A	A	Muscoy	11,176	N	--	--	--	--	--	--	--	--	--	--
	MW-128B	W	Muscoy	11,176	N	--	--	--	--	--	--	--	--	--	--
	MW-128C	W	Muscoy	11,176	N	--	--	--	--	--	--	--	--	--	--
	MW-129A	A	Muscoy	11,194	N	--	--	--	--	--	--	--	--	--	--
	MW-129B	W	Muscoy	11,194	N	--	--	--	--	--	--	--	--	--	--
	MW-129C	W	Muscoy	11,194	N	--	--	--	--	--	--	--	--	--	--
	MW-130A	A	Muscoy (?)	8,427	N	--	--	--	--	--	--	--	--	--	--
	MW-130B	A	Muscoy (?)	8,427	N	--	--	--	--	--	--	--	--	--	--
	MW-130C	B	Newmark LWBM (?)	8,427	N	--	--	--	--	--	--	--	--	--	--

DRAFT

SECOR

Table 6

Summary of Constant Rate Aquifer Test Results - EW-3 Pumping Test - *Uncorrected* Data

Newmark Plume Front Extraction Well Network

Newmark Groundwater Contamination Superfund Site - San Bernardino, California

Pumping Well and Pumping Parameters	Observation Well	Screen Elevation: Above(A); Within(W); Below (B); Pumping Well Screen	Hydrostratigraphic Unit Designation	Distance from Pumping Well (ft)	Drawdown Response Observed (Y/N)	Water-Level Trend Correction Performed (Y/N)	Maximum Drawdown (ft) [1]	Drawdown Data Suitable for Parameter Analysis (Y/N)	Method of Pumping Phase Analysis	Transmissivity Pumping Phase (ft^2/day)	Hydraulic Conductivity Pumping Phase (ft/day)	Storativity Pumping Phase	Recovery Data Suitable for Analysis (Y/N)	Transmissivity Recovery Phase (ft^2/day) [2]	Hydraulic Conductivity Recovery Phase ft/day)
	MW-135A	A	Muscoy	4,110	U[3]	--	--	--	--	--	--	--	--	--	--
	MW-135B	W	Muscoy	4,110	U	--	--	--	--	--	--	--	--	--	--
Pumping Well:	MW-135C	B	Newmark LWBM (?)	4,110	U	--	--	--	--	--	--	--	--	--	--
EW-3	MW-136A	A	Muscoy	5,957	U	--	--	--	--	--	--	--	--	--	--
	MW-136B	A	Muscoy	5,957	U	--	--	--	--	--	--	--	--	--	--
Screen Interval:	MW-136C	W	Muscoy	5,957	U	--	--	--	--	--	--	--	--	--	--
Depth (ft bgs): 240-800	MW-137A	A	Muscoy	8,145	U	--	--	--	--	--	--	--	--	--	--
Elevation (ft msl): 290-850	MW-137B	A	Muscoy	8,145	U	--	--	--	--	--	--	--	--	--	--
	MW-137C	W	Muscoy	8,145	U	--	--	--	--	--	--	--	--	--	--
	MW-138A	A	Muscoy	9,382	U	--	--	--	--	--	--	--	--	--	--
Test Start Date:	MW-138B	W	Muscoy	9,382	U	--	--	--	--	--	--	--	--	--	--
February 3, 2003	MW-138C	B	Muscoy	9,382	U	--	--	--	--	--	--	--	--	--	--
	MW-139A	A	Muscoy	11,033	N	--	--	--	--	--	--	--	--	--	--
Discharge (Q):	MW-139B	W	Muscoy	11,033	N	--	--	--	--	--	--	--	--	--	--
1,750 gpm	MW-139C	W	Muscoy	11,033	N	--	--	--	--	--	--	--	--	--	--
	Garner Park-A (4S)	A	Muscoy	7,378	N	--	--	--	--	--	--	--	--	--	--
Pump On: 2/3/03 15:00	Garner Park-B (5S)	A	Muscoy	7,378	N	--	--	--	--	--	--	--	--	--	--
Pump Off: 2/7/03 14:00	Garner Park-C (6S)	W	Muscoy	7,378	N	--	--	--	--	--	--	--	--	--	--
	Meadowbrook Park-A (2S)	A	Newmark UWBM	5,748	N	--	--	--	--	--	--	--	--	--	--
Duration Pumped:	Meadowbrook Park-B (3S)	A	Newmark UWBM	5,748	N	--	--	--	--	--	--	--	--	--	--
95 hrs.	Meadowbrook Park-C (4S)	W	Newmark LWBM	5,748	Y	N	4.18	Y	Theis	18,600	24	0.00020	N	--	--
	Sierra High School-A (8S)	A	Newmark (?) WBM	4,160	N	--	--	--	--	--	--	--	--	--	--
Estimated	Sierra High School-B (7S)	A	Newmark (?) WBM	4,160	Y	N	2.04	N	--	--	--	--	--	--	--
Saturated Thickness (ft):	Sierra High School-C (6S)	W	Newmark (?) WBM	4,160	Y	N	2.19	N	--	--	--	--	--	--	--
780	Antil #1	NA	NA	6,579	N	--	--	--	--	--	--	--	--	--	--
	Baseline & California	W	Muscoy	12,889	N	--	--	--	--	--	--	--	--	--	--
	Gilbert Street	W	Newmark	3,760	Y	N	1.82	N	--	--	--	--	--	--	--
	Olive and Garner	W	Muscoy	7,332	NM	--	--	--	--	--	--	--	--	--	--
	7th Street	W	Newmark LWBM	3,049	Y	N	2.53	Y	Theis	38,000	49	0.00051	N	--	--
	10th and J	W	Muscoy	5,393	U	--	--	--	--	--	--	--	--	--	--
	11th and E	NA	NA	2,143	N	--	--	--	--	--	--	--	--	--	--
	16th Street	W	Newmark LWBM	3,075	Y	N	1.58	Y	Theis	73,500	94	0.00069	N	--	--
	19th Street #2	W	Muscoy	13,056	NM	--	--	--	--	--	--	--	--	--	--
									Distance versus Drawdown	62,700	80	0.00015	--	--	--
									Count	22	22	22	--	--	--
									Minimum	18,600	24	0.00015	--	--	--
									Maximum	73,500	94	0.0011	--	--	--
									Average	45,300	58	0.00069	--	--	--
									Geometric Mean	43,700	56	0.00063	--	--	--
									Standard Deviation	12,100	15	0.00026	--	--	--

Notes:

NM - Not Monitored; NA - Not Available

(1) Maximum drawdown values were calculated from trend-corrected data for those wells where trend corrections were applied.

(2) All recovery phase analysis was performed using the Theis residual drawdown method

(3) Undetermined; unable to determine the presence or absence of a drawdown response due to interference caused by the start and stop of SBMWD Perris street well

(P) Hantush modification to the Theis method used to correct drawdown for partial penetration effects (Hantush, 1961a)

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Table 7

Summary of Constant Rate Aquifer Test Results - EW-2 Pumping Test - *Trend-Corrected* Data

Newmark Plume Front Extraction Well Network

Newmark Groundwater Contamination Superfund Site - San Bernardino, California

Pumping Well and Pumping Parameters	Observation Well	Screen Elevation: Above(A); Within(W); Below (B); Pumping Well Screen	Hydrostratigraphic Unit Designation	Distance from Pumping Well (ft)	Drawdown Response Observed (Y/N)	Water-Level Trend Correction Performed (Y/N)	Maximum Drawdown (ft) [1]	Drawdown Data Suitable for Parameter Analysis (Y/N)	Method of Pumping Phase Analysis	Transmissivity Pumping Phase (ft^2/day)	Hydraulic Conductivity Pumping Phase (ft/day)	Storativity Pumping Phase	Recovery Data Suitable for Analysis (Y/N)	Transmissivity Recovery Phase (ft^2/day) [2]	Hydraulic Conductivity Recovery Phase ft/day)
	EW-1 PA	A	Newmark MCM	961	N	--	--	--	--	--	--	--	--	--	--
	EW-1 PB	B	Newmark LWBM	961	Y	Y	4.24	Y	Theis (P)	49,300	63	0.00075	N	--	--
Pumping Well:	EW-2 PA	A	Newmark UWBM	1	Y	N	0.40	N	--	--	--	--	--	--	--
EW-2	EW-2 PB	B	Newmark LWBM	1	Y	Y	15.95	Y	Cooper-Jacob	54,300	70	--	--	--	--
	EW-3 PA	A	Newmark UWBM	681	N	--	--	--	--	--	--	--	--	--	--
Screen Interval:	EW-3 PB	W	Newmark LWBM	681	Y	Y	4.47	Y	Theis (P)	49,300	63	0.00075	N	--	--
Depth (ft bgs): 500-870	EW-4 PA	A	Newmark UWBM	1,496	N	--	--	--	--	--	--	--	--	--	--
Elevation (ft msl): 222-592	EW-4 PB	B	Newmark LWBM	1,496	Y	Y	3.59	Y	Theis (P)	49,300	63	0.00075	N	--	--
	EW-5 PA	A	Newmark UWBM	2,535	N	--	--	--	--	--	--	--	--	--	--
Test Start Date:	EW-5 PB	B	Newmark LWBM	2,535	Y	Y	2.86	Y	Theis	49,300	63	0.00075	N	--	--
February 11, 2003	EW-108 PA	A	Newmark UWBM or Muscoy(?)	3,003	N	--	--	--	--	--	--	--	--	--	--
	EW-108 PB	W	Newmark LWBM	3,003	Y	Y	2.39	Y	Theis	48,700	62	0.0011	N	--	--
Discharge (Q):	EW-112 PA	A	Muscoy	9,696	N	--	--	--	--	--	--	--	--	--	--
1,970 gpm	EW-112 PB	W	Muscoy	9,696	N	--	--	--	--	--	--	--	--	--	--
	MW-10A	A	Newmark UWBM	2,486	N	--	--	--	--	--	--	--	--	--	--
Pump On: 2/11/03 15:00	MW-10B	A	Newmark LWBM	2,486	Y	Y	2.44	Y	Theis	53,400	68	0.00060	N	--	--
Pump Off: 2/15/03 14:00	MW-10C	W	Newmark LWBM	2,486	Y	Y	2.68	Y	Theis	53,400	68	0.00060	N	--	--
	MW-11A	W	Newmark LWBM	1,371	Y	Y	3.54	Y	Theis (P)	52,400	67	0.00093	N	--	--
Duration Pumped:	MW-11B	W	Newmark LWBM	1,371	Y	Y	3.58	Y	Theis (P)	53,400	68	0.00081	N	--	--
95 hrs.	MW-11C	B	Newmark LWBM	1,371	Y	Y	3.91	Y	Theis (P)	31,800	41	0.00297	N	--	--
	MW-12A	A	Newmark UWBM	1,757	N	--	--	--	--	--	--	--	--	--	--
Estimated	MW-12B	W	Newmark LWBM	1,757	Y	Y	3.08	Y	Theis	47,400	61	0.0016	N	--	--
Saturated Thickness (ft):	MW-12C	B	Newmark LWBM	1,757	Y	Y	3.31	Y	Theis	52,400	67	0.00079	N	--	--
780	MW-13A	A	Newmark UWBM	883	Y	Y	1.14	N	--	--	--	--	--	--	--
	MW-13B	W	Newmark LWBM	883	Y	Y	4.65	Y	Theis (P)	48,900	63	0.0011	N	--	--
	MW-13C	W	Newmark LWBM	883	Y	Y	4.29	Y	Theis (P)	48,900	63	0.00084	N	--	--
	MW-14A	A	Newmark UWBM	2,000	N	--	--	--	--	--	--	--	--	--	--
	MW-14B	W	Newmark LWBM	2,000	Y	Y	3.51	Y	Theis	55,100	71	0.00048	N	--	--
	MW-14C	B	Newmark LWBM	2,000	Y	Y	3.41	Y	Theis	44,800	57	0.00078	N	--	--
	MW-15A	W	Newmark LWBM	3,641	Y	Y	2.57	Y	Theis	51,200	66	0.00050	N	--	--
	MW-15B	W	Newmark LWBM	3,641	Y	Y	2.66	Y	Theis	51,200	66	0.00050	N	--	--
	MW-15C	B	Newmark LWBM	3,641	Y	Y	2.69	Y	Theis	51,200	66	0.00050	N	--	--
	MW-128A	A	Muscoy	10,647	N	--	--	--	--	--	--	--	--	--	--
	MW-128B	W	Muscoy	10,647	N	--	--	--	--	--	--	--	--	--	--
	MW-128C	W	Muscoy	10,647	N	--	--	--	--	--	--	--	--	--	--
	MW-129A	A	Muscoy	10,553	N	--	--	--	--	--	--	--	--	--	--
	MW-129B	W	Muscoy	10,553	N	--	--	--	--	--	--	--	--	--	--
	MW-129C	W	Muscoy	10,553	N	--	--	--	--	--	--	--	--	--	--
	MW-130A	A	Muscoy (?)	7,898	N	--	--	--	--	--	--	--	--	--	--
	MW-130B	A	Muscoy (?)	7,898	N	--	--	--	--	--	--	--	--	--	--
	MW-130C	W	Newmark LWBM (?)	7,898	N	--	--	--	--	--	--	--	--	--	--

SECOR

Table 7

Summary of Constant Rate Aquifer Test Results - EW-2 Pumping Test - *Trend-Corrected* Data

Newmark Plume Front Extraction Well Network

Newmark Groundwater Contamination Superfund Site - San Bernardino, California

Pumping Well and Pumping Parameters	Observation Well	Screen Elevation: Above(A); Within(W); Below (B); Pumping Well Screen	Hydrostratigraphic Unit Designation	Distance from Pumping Well (ft)	Drawdown Response Observed (Y/N)	Water-Level Trend Correction Performed (Y/N)	Maximum Drawdown (ft) [1]	Drawdown Data Suitable for Parameter Analysis (Y/N)	Method of Pumping Phase Analysis	Transmissivity Pumping Phase (ft^2/day)	Hydraulic Conductivity Pumping Phase (ft/day)	Storativity Pumping Phase	Recovery Data Suitable for Analysis (Y/N)	Transmissivity Recovery Phase (ft^2/day) [2]	Hydraulic Conductivity Recovery Phase ft/day)
	MW-135A	A	Muscoy	3,432	N	--	--	--	--	--	--	--	--	--	--
	MW-135B	W	Muscoy	3,432	Y	Y	1.96	Y	Theis	47,800	61	0.0020	N	--	--
Pumping Well:	MW-135C	W	Newmark LWBM (?)	3,432	Y	Y	2.56	Y	Theis	45,500	58	0.00080	N	--	--
EW-2	MW-136A	A	Muscoy	5,277	N	--	--	--	--	--	--	--	--	--	--
	MW-136B	A	Muscoy	5,277	N	--	--	--	--	--	--	--	--	--	--
Screen Interval:	MW-136C	W	Muscoy	5,277	N	--	--	--	--	--	--	--	--	--	--
Depth (ft bgs): 500-870	MW-137A	A	Muscoy	7,467	N	--	--	--	--	--	--	--	--	--	--
Elevation (ft msl): 222-592	MW-137B	A	Muscoy	7,467	N	--	--	--	--	--	--	--	--	--	--
	MW-137C	W	Muscoy	7,467	N	--	--	--	--	--	--	--	--	--	--
Test Start Date:	MW-138A	A	Muscoy	8,704	N	--	--	--	--	--	--	--	--	--	--
February 11, 2003	MW-138B	W	Muscoy	8,704	N	--	--	--	--	--	--	--	--	--	--
	MW-138C	B	Muscoy	8,704	N	--	--	--	--	--	--	--	--	--	--
Discharge (Q):	MW-139A	A	Muscoy	10,354	N	--	--	--	--	--	--	--	--	--	--
1,970 gpm	MW-139B	A	Muscoy	10,354	N	--	--	--	--	--	--	--	--	--	--
	MW-139C	W	Muscoy	10,354	N	--	--	--	--	--	--	--	--	--	--
Pump On: 2/11/03 15:00	Garner Park-A (4S)	A	Muscoy	6,711	N	--	--	--	--	--	--	--	--	--	--
Pump Off: 2/15/03 14:00	Garner Park-B (5S)	A	Muscoy	6,711	N	--	--	--	--	--	--	--	--	--	--
	Garner Park-C (6S)	W	Muscoy	6,711	N	--	--	--	--	--	--	--	--	--	--
Duration Pumped:	Meadowbrook Park-A (2S)	A	Newmark UWBM	5,816	N	--	--	--	--	--	--	--	--	--	--
95 hrs.	Meadowbrook Park-B (3S)	A	Newmark UWBM	5,816	N	--	--	--	--	--	--	--	--	--	--
	Meadowbrook Park-C (4S)	W	Newmark LWBM	5,816	N	--	--	--	--	--	--	--	--	--	--
Estimated	Sierra High School-A (8S)	A	Newmark (?) WBM	4,833	N	--	--	--	--	--	--	--	--	--	--
Saturated Thickness (ft):	Sierra High School-B (7S)	A	Newmark (?) WBM	4,833	Y	Y	2.02	Y	Theis	46,900	60	0.00072	N	--	--
780	Sierra High School-C (6S)	W	Newmark (?) WBM	4,833	Y	Y	2.31	Y	Theis	57,700	74	0.00045	N	--	--
	Antil #1	NA	NA	7,171	N	--	--	--	--	--	--	--	--	--	--
	Baseline & California	W	Muscoy	12,214	N	--	--	--	--	--	--	--	--	--	--
	Gilbert Street	W	Newmark	4,307	Y	Y	1.90	Y	Theis	81,400	104	0.00067	N	--	--
	Olive and Garner	W	Muscoy	6,652	N	--	--	--	--	--	--	--	--	--	--
	7th Street	W	Newmark LWBM	3,524	Y	Y	2.84	Y	Theis	51,300	66	0.00043	N	--	--
	10th and J	W	Muscoy	4,715	N	--	--	--	--	--	--	--	--	--	--
	11th and E	NA	NA	1,463	N	--	--	--	--	--	--	--	--	--	--
	16th Street	W	Newmark LWBM	3,238	Y	Y	1.79	Y	Theis	69,500	89	0.00065	N	--	--
	19th Street #2	W	Muscoy	12,437	NM	--	--	--	--	--	--	--	--	--	--
	Rialto #5	NA	NA	15,333	NM	--	--	--	--	--	--	--	--	--	--
									Distance versus Drawdown	44,500	57	0.00093	--	--	--
									Count	27	27	27	--	--	--
									Minimum	31,800	41	0.00043	--	--	--
									Maximum	81,400	104	0.0030	--	--	--
									Average	51,400	66	0.00088	--	--	--
									Geometric Mean	50,800	65	0.00078	--	--	--
									Standard Deviation	8,380	11	0.00054	--	--	--

Notes:

NM - Not Monitored; NA - Not Available

(1) Maximum drawdown values were calculated from trend-corrected data for those wells where trend corrections were applied.

(2) All recovery phase analysis was performed using the Theis residual drawdown method

(P) Hantush modification to the Theis method used to correct drawdown for partial penetration effects (Hantush, 1961a)

SECOR

Table 8

Summary of Constant Rate Aquifer Test Results - EW-1 Pumping Test - *Uncorrected* Data

Newmark Plume Front Extraction Well Network

Newmark Groundwater Contamination Superfund Site - San Bernardino, California

Pumping Well and Pumping Parameters	Observation Well	Screen Elevation: Above(A); Within(W); Below (B); Pumping Well Screen	Hydrostratigraphic Unit Designation	Distance from Pumping Well (ft)	Drawdown Response Observed (Y/N)	Water-Level Trend Correction Performed (Y/N)	Maximum Drawdown (ft) [1]	Drawdown Data Suitable for Parameter Analysis (Y/N)	Method of Pumping Phase Analysis	Transmissivity Pumping Phase (ft^2/day)	Hydraulic Conductivity Pumping Phase (ft/day)	Storativity Pumping Phase	Recovery Data Suitable for Analysis (Y/N)	Transmissivity Recovery Phase (ft^2/day) [2]	Hydraulic Conductivity Recovery Phase ft/day)
	EW-1 PA	A	Newmark MCM	1	Y	N	1.47	N	--	--	--	--	--	--	--
	EW-1 PB	W	Newmark LWBM	1	Y	N	11.28	Y	Cooper-Jacob	47,800	61	--	--	--	--
Pumping Well:	EW-2 PA	A	Newmark UWBM	961	N	--	--	--	--	--	--	--	--	--	--
EW-1	EW-2 PB	W	Newmark LWBM	961	Y	N	5.13	Y	Theis (P)	45,200	58	0.00053	N	--	--
	EW-3 PA	A	Newmark UWBM	1,640	N	--	--	--	--	--	--	--	--	--	--
Screen Interval:	EW-3 PB	W	Newmark LWBM	1,640	Y	N	4.46	Y	Theis	47,200	61	0.00052	N	--	--
Depth (ft bgs): 600-990	EW-4 PA	A	Newmark UWBM	2,435	Y	--	0.62	N	--	--	--	--	--	--	--
Elevation (ft msl): 104-494	EW-4 PB	W	Newmark LWBM	2,435	Y	N	4.00	Y	Theis	44,700	57	0.00056	N	--	--
	EW-5 PA	A	Newmark UWBM	3,477	N	--	--	--	--	--	--	--	--	--	--
Test Start Date:	EW-5 PB	W	Newmark LWBM	3,477	Y	N	3.33	Y	Theis	43,300	56	0.00063	N	--	--
February 21, 2003	EW-108 PA	A	Newmark UWBM or Muscoy(?)	2,290	N	--	--	--	--	--	--	--	--	--	--
	EW-108 PB	W	Newmark LWBM	2,290	Y	N	3.10	Y	Theis	49,100	63	0.0012	N	--	--
Discharge (Q):	EW-112 PA	A	Muscoy	8,794	N	--	--	--	--	--	--	--	--	--	--
2,050 gpm	EW-112 PB	A	Muscoy	8,794	N	--	--	--	--	--	--	--	--	--	--
	MW-10A	A	Newmark UWBM	2,890	Y	N	1.06	N	--	--	--	--	--	--	--
Pump On: 2/21/03 15:00	MW-10B	A	Newmark LWBM	2,890	Y	N	2.75	Y	Theis	54,500	70	0.00061	N	--	--
Pump Off: 2/26/03 14:00	MW-10C	W	Newmark LWBM	2,890	Y	N	3.10	Y	Theis	58,600	75	0.00049	N	--	--
	MW-11A	A	Newmark LWBM	2,282	Y	N	3.72	Y	Theis	54,100	69	0.00045	N	--	--
Duration Pumped:	MW-11B	W	Newmark LWBM	2,282	Y	N	3.83	Y	Theis	46,700	60	0.00057	N	--	--
119 hrs.	MW-11C	B	Newmark LWBM	2,282	Y	N	4.32	Y	Theis	38,600	49	0.00045	N	--	--
	MW-12A	A	Newmark UWBM	886	N	--	--	--	--	--	--	--	--	--	--
Estimated	MW-12B	W	Newmark LWBM	886	Y	N	4.42	Y	Cooper-Jacob	39,900	51	0.0024	N	--	--
Saturated Thickness (ft):	MW-12C	B	Newmark LWBM	886	Y	N	4.82	Y	Theis (P)	57,100	73	0.00073	N	--	--
780	MW-13A	A	Newmark UWBM	1,553	Y	N	0.78	N	--	--	--	--	--	--	--
	MW-13B	A	Newmark LWBM	1,553	Y	N	4.97	Y	Theis	38,400	49	0.00051	N	--	--
	MW-13C	W	Newmark LWBM	1,553	Y	N	4.89	Y	Theis	47,200	61	0.00059	N	--	--
	MW-14A	A	Newmark UWBM	2,859	N	--	--	--	--	--	--	--	--	--	--
	MW-14B	W	Newmark LWBM	2,859	Y	N	4.08	Y	Theis	39,300	50	0.00060	N	--	--
	MW-14C	B	Newmark LWBM	2,859	Y	N	3.83	Y	Theis	37,300	48	0.00072	N	--	--
	MW-15A	A	Newmark LWBM	4,544	Y	N	3.09	Y	Theis	49,200	63	0.00057	N	--	--
	MW-15B	W	Newmark LWBM	4,544	Y	N	3.22	Y	Theis	46,600	60	0.00054	N	--	--
	MW-15C	B	Newmark LWBM	4,544	Y	N	3.24	Y	Theis	48,100	62	0.00059	N	--	--
	MW-128A	A	Muscoy	10,006	N	--	--	--	--	--	--	--	--	--	--
	MW-128B	A	Muscoy	10,006	N	--	--	--	--	--	--	--	--	--	--
	MW-128C	W	Muscoy	10,006	Y	N	1.30	Y	Theis	57,700	74	0.00083	N	--	--
	MW-129A	A	Muscoy	9,702	N	--	--	--	--	--	--	--	--	--	--
	MW-129B	W	Muscoy	9,702	N	--	--	--	--	--	--	--	--	--	--
	MW-129C	W	Muscoy	9,702	N	--	--	--	--	--	--	--	--	--	--
	MW-130A	A	Muscoy (?)	7,270	N	--	--	--	--	--	--	--	--	--	--
	MW-130B	A	Muscoy (?)	7,270	N	--	--	--	--	--	--	--	--	--	--
	MW-130C	W	Newmark LWBM (?)	7,270	Y	N	1.74	Y	Theis	57,700	74	0.00083	N	--	--

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Table 8

Summary of Constant Rate Aquifer Test Results - EW-1 Pumping Test - *Uncorrected* Data

Newmark Plume Front Extraction Well Network

Newmark Groundwater Contamination Superfund Site - San Bernardino, California

Pumping Well and Pumping Parameters	Observation Well	Screen Elevation: Above(A); Within(W); Below (B); Pumping Well Screen	Hydrostratigraphic Unit Designation	Distance from Pumping Well (ft)	Drawdown Response Observed (Y/N)	Water-Level Trend Correction Performed (Y/N)	Maximum Drawdown (ft) [1]	Drawdown Data Suitable for Parameter Analysis (Y/N)	Method of Pumping Phase Analysis	Transmissivity Pumping Phase (ft^2/day)	Hydraulic Conductivity Pumping Phase (ft/day)	Storativity Pumping Phase	Recovery Data Suitable for Analysis (Y/N)	Transmissivity Recovery Phase (ft^2/day) [2]	Hydraulic Conductivity Recovery Phase ft/day)
	MW-135A	A	Muscoy	2,497	N	--	--	--	--	--	--	--	--	--	--
	MW-135B	W	Muscoy	2,497	Y	N	1.84	Y	Theis	48,900	63	0.00545	N	--	--
Pumping Well:	MW-135C	W	Newmark LWBM (?)	2,497	Y	N	3.41	Y	Theis	45,400	58	0.0011	N	--	--
EW-1	MW-136A	A	Muscoy	4,326	N	--	--	--	--	--	--	--	--	--	--
	MW-136B	A	Muscoy	4,326	N	--	--	--	--	--	--	--	--	--	--
Screen Interval:	MW-136C	W	Muscoy	4,326	Y	N	1.44	Y	Theis	48,200	62	0.0038	N	--	--
Depth (ft bgs): 600-990	MW-137A	A	Muscoy	6,529	N	--	--	--	--	--	--	--	--	--	--
Elevation (ft msl): 104-494	MW-137B	A	Muscoy	6,529	N	--	--	--	--	--	--	--	--	--	--
	MW-137C	W	Muscoy	6,529	N	--	--	--	--	--	--	--	--	--	--
Test Start Date:	MW-138A	A	Muscoy	7,764	N	--	--	--	--	--	--	--	--	--	--
February 21, 2003	MW-138B	A	Muscoy	7,764	N	--	--	--	--	--	--	--	--	--	--
	MW-138C	W	Muscoy	7,764	Y	N	1.40	N	--	--	--	--	--	--	--
Discharge (Q):	MW-139A	A	Muscoy	9,409	N	--	--	--	--	--	--	--	--	--	--
2,050 gpm	MW-139B	A	Muscoy	9,409	N	--	--	--	--	--	--	--	--	--	--
	MW-139C	W	Muscoy	9,409	N	--	--	--	--	--	--	--	--	--	--
Pump On: 2/21/03 15:00	Garner Park-A (4S)	A	Muscoy	5,756	N	--	--	--	--	--	--	--	--	--	--
Pump Off: 2/26/03 14:00	Garner Park-B (5S)	A	Muscoy	5,756	N	--	--	--	--	--	--	--	--	--	--
	Garner Park-C (6S)	A	Muscoy	5,756	N	--	--	--	--	--	--	--	--	--	--
Duration Pumped:	Meadowbrook Park-A (2S)	A	Newmark UWBM	5,946	N	--	--	--	--	--	--	--	--	--	--
119 hrs.	Meadowbrook Park-B (3S)	A	Newmark UWBM	5,946	N	--	--	--	--	--	--	--	--	--	--
	Meadowbrook Park-C (4S)	W	Newmark LWBM	5,946	N	--	--	--	--	--	--	--	--	--	--
Estimated	Sierra High School-A (8S)	A	Newmark (?) WBM	5,771	N	--	--	--	--	--	--	--	--	--	--
Saturated Thickness (ft):	Sierra High School-B (7S)	A	Newmark (?) WBM	5,771	Y	N	2.30	Y	Theis	35,600	46	0.00084	N	--	--
780	Sierra High School-C (6S)	A	Newmark (?) WBM	5,771	Y	N	2.63	Y	Theis	33,100	42	0.00061	N	--	--
	Antil #1	NA	NA	7,983	N	--	--	--	--	--	--	--	--	--	--
	Baseline & California	W	Muscoy	11,281	N	--	--	--	--	--	--	--	--	--	--
	Gilbert Street	W	Newmark	5,178	Y	N	1.91	Y	Theis	55,100	71	0.00096	N	--	--
	Olive and Garner	W	Muscoy	5,696	N	--	--	--	--	--	--	--	--	--	--
	7th Street	W	Newmark LWBM	4,231	Y	N	3.65	Y	Theis	43,300	56	0.00048	N	--	--
	10th and J	W	Muscoy	3,754	Y	N	1.96	Y	Theis	68,000	87	0.0022		--	--
	11th and E	NA	NA	533	N	--	--	--	--	--	--	--	--	--	--
	16th Street	W	Newmark LWBM	3,758	Y	N	1.92	Y	Theis	67,000	86	0.00081	N	--	--
	19th Street #2	W	Muscoy	11,623	NM	--	--	--	--	--	--	--	--	--	--
	Rialto #5	NA	NA	14,392	NM	--	--	--	--	--	--	--	--	--	--
									Distance versus Drawdown	40,300	52	0.00080	--	--	--
									Count	31	31	31	--	--	--
									Minimum	33,100	42	0.00045	--	--	--
									Maximum	68,000	87	0.0054	--	--	--
									Average	48,000	61	0.0010	--	--	--
									Geometric Mean	47,200	61	0.00080	--	--	--
									Standard Deviation	8,470	11	0.00108	--	--	--

Notes:

NM - Not Monitored; NA - Not Available

(1) Maximum drawdown values were calculated from trend-corrected data for those wells where trend corrections were applied.

(2) All recovery phase analysis was performed using the Theis residual drawdown method

(P) Hantush modification to the Theis method used to correct drawdown for partial penetration effects (Hantush, 1961a)

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Table 9

Summary of Constant Rate Aquifer Test Results - WD #15 Pumping Test - Uncorrected Data

Newmark Plume Front Extraction Well Network

Newmark Groundwater Contamination Superfund Site - San Bernardino, California

Pumping Well and Pumping Parameters	Observation Well	Screen Elevation: Above(A); Within(W); Below (B); Pumping Well	Hydrostratigraphic Unit Designation	Distance from Pumping Well (ft)	Drawdown Response Observed (Y/N)	Water-Level Trend Correction Performed (Y/N)	Maximum Drawdown (ft)	Drawdown Data Suitable for Parameter Analysis (Y/N)	Method of Pumping Phase Analysis	Transmissivity Pumping Phase (ft^2/day)	Hydraulic Conductivity Pumping Phase (ft/day)	Storativity Pumping Phase	Recovery Data Suitable for Parameter Analysis (Y/N)	Transmissivity Recovery Phase ($(ft^2/day)^2$)	Hydraulic Conductivity Recovery Phase ft/day)
	EW-1 PA	W	Newmark MCM	11,156	N	--	--	--	--	--	--	--	--	--	--
	EW-1 PB	W	Newmark LWBM	11,156	N	--	--	--	--	--	--	--	--	--	--
Pumping Well:	EW-2 PA	W	Newmark UWBM	12,118	N	--	--	--	--	--	--	--	--	--	--
WD#15	EW-2 PB	W	Newmark LWBM	12,118	N	--	--	--	--	--	--	--	--	--	--
	EW-3 PA	W	Newmark UWBM	12,794	N	--	--	--	--	--	--	--	--	--	--
Screen Interval:	EW-3 PB	W	Newmark LWBM	12,794	N	--	--	--	--	--	--	--	--	--	--
Depth (ft bgs): 140-1015	EW-4 PA	W	Newmark UWBM	13,562	N	--	--	--	--	--	--	--	--	--	--
Elevation (ft msl): 75-950	EW-4 PB	W	Newmark LWBM	13,562	N	--	--	--	--	--	--	--	--	--	--
	EW-5 PA	W	Newmark UWBM	14,591	N	--	--	--	--	--	--	--	--	--	--
	EW-5 PB	W	Newmark LWBM	14,591	N	--	--	--	--	--	--	--	--	--	--
Test Start Date:	EW-108 PA	W	Newmark UWBM or Muscoy(?)	9,841	N	--	--	--	--	--	--	--	--	--	--
1/20/2003	EW-108 PB	W	Newmark LWBM	9,841	N	--	--	--	--	--	--	--	--	--	--
	EW-112 PA	W	Muscoy	4,421	Y	N	0.56	N	--	--	--	--	--	--	--
Discharge (Q):	EW-112 PB	W	Muscoy	4,421	Y	N	0.56	N	--	--	--	--	--	--	--
1,900 gpm	MW-10A	W	Newmark UWBM	13,003	N	--	--	--	--	--	--	--	--	--	--
	MW-10B	W	Newmark LWBM	13,003	N	--	--	--	--	--	--	--	--	--	--
Pump On: 1/20/2003 15:00	MW-10C	W	Newmark LWBM	13,003	N	--	--	--	--	--	--	--	--	--	--
Pump Off: 1/24/03 15:00	MW-11A	W	Newmark LWBM	13,382	N	--	--	--	--	--	--	--	--	--	--
	MW-11B	W	Newmark LWBM	13,382	N	--	--	--	--	--	--	--	--	--	--
Duration Pumped:	MW-11C	B	Newmark LWBM	13,382	N	--	--	--	--	--	--	--	--	--	--
96 hrs.	MW-12A	W	Newmark UWBM	10,449	N	--	--	--	--	--	--	--	--	--	--
	MW-12B	W	Newmark LWBM	10,449	N	--	--	--	--	--	--	--	--	--	--
Estimated	MW-12C	B	Newmark LWBM	10,449	N	--	--	--	--	--	--	--	--	--	--
Saturated Thickness (ft):	MW-13A	W	Newmark UWBM	12,507	N	--	--	--	--	--	--	--	--	--	--
780	MW-13B	W	Newmark LWBM	12,507	N	--	--	--	--	--	--	--	--	--	--
	MW-13C	W	Newmark LWBM	12,507	N	--	--	--	--	--	--	--	--	--	--
	MW-14A	W	Newmark UWBM	13,846	N	--	--	--	--	--	--	--	--	--	--
	MW-14B	W	Newmark LWBM	13,846	N	--	--	--	--	--	--	--	--	--	--
	MW-14C	B	Newmark LWBM	13,846	N	--	--	--	--	--	--	--	--	--	--
	MW-15A	W	Newmark LWBM	15,538	N	--	--	--	--	--	--	--	--	--	--
	MW-15B	W	Newmark LWBM	15,538	N	--	--	--	--	--	--	--	--	--	--
	MW-15C	B	Newmark LWBM	15,538	N	--	--	--	--	--	--	--	--	--	--
	MW-128A	W	Muscoy	9,095	N	--	--	--	--	--	--	--	--	--	--
	MW-128B	W	Muscoy	9,095	N	--	--	--	--	--	--	--	--	--	--
	MW-128C	W	Muscoy	9,095	N	--	--	--	--	--	--	--	--	--	--
	MW-129A	W	Muscoy	5,456	N	--	--	--	--	--	--	--	--	--	--
	MW-129B	W	Muscoy	5,456	N	--	--	--	--	--	--	--	--	--	--
	MW-129C	W	Muscoy	5,456	N	--	--	--	--	--	--	--	--	--	--
	MW-130A	W	Muscoy (?)	8,846	N	--	--	--	--	--	--	--	--	--	--
	MW-130B	W	Muscoy (?)	8,846	N	--	--	--	--	--	--	--	--	--	--
	MW-130C	W	Newmark LWBM (?)	8,846	N	--	--	--	--	--	--	--	--	--	--

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Table 9

Summary of Constant Rate Aquifer Test Results - WD #15 Pumping Test - Uncorrected Data

Newmark Plume Front Extraction Well Network

Newmark Groundwater Contamination Superfund Site - San Bernardino, California

Pumping Well and Pumping Parameters	Observation Well	Screen Elevation: Above(A); Within(W); Below (B); Pumping Well	Hydrostratigraphic Unit Designation	Distance from Pumping Well (ft)	Drawdown Response Observed (Y/N)	Water-Level Trend Correction Performed (Y/N)	Maximum Drawdown (ft)	Drawdown Data Suitable for Parameter Analysis (Y/N)	Method of Pumping Phase Analysis	Transmissivity Pumping Phase (ft^2/day)	Hydraulic Conductivity Pumping Phase (ft/day)	Storativity Pumping Phase	Recovery Data Suitable for Parameter Analysis (Y/N)	Transmissivity Recovery Phase (ft^2/day) [2]	Hydraulic Conductivity Recovery Phase ft/day)
	MW-135A	W	Muscoy	8,788	N	--	--	--	--	--	--	--	--	--	--
	MW-135B	W	Muscoy	8,788	N	--	--	--	--	--	--	--	--	--	--
Pumping Well:	MW-135C	W	Newmark LWBM (?)	8,788	N	--	--	--	--	--	--	--	--	--	--
WD#15	MW-136A	W	Muscoy	6,932	N	--	--	--	--	--	--	--	--	--	--
	MW-136B	W	Muscoy	6,932	N	--	--	--	--	--	--	--	--	--	--
Screen Interval:	MW-136C	W	Muscoy	6,932	N	--	--	--	--	--	--	--	--	--	--
Depth (ft bgs): 140-1015	MW-137A	W	Muscoy	5,056	Y	N	0.54	N	--	--	--	--	--	--	--
Elevation (ft msl): 75-950	MW-137B	W	Muscoy	5,056	Y	N	0.30	N	--	--	--	--	--	--	--
	MW-137C	W	Muscoy	5,056	N	--	--	--	--	--	--	--	--	--	--
	MW-138A	W	Muscoy	4,009	Y	N	0.61	N	--	--	--	--	--	--	--
Test Start Date:	MW-138B	W	Muscoy	4,009	Y	N	0.48	N	--	--	--	--	--	--	--
1/20/2003	MW-138C	W	Muscoy	4,009	N	--	--	--	--	--	--	--	--	--	--
	MW-139A	W	Muscoy	2,663	Y	Y	1.85	Y	Hantush-Jacob	36,100	46	0.0018	Y	53,100	68
Discharge (Q):	MW-139B	W	Muscoy	2,663	Y	Y	1.95	Y	Hantush-Jacob	29,800	38	0.0021	Y	46,000	59
1,900 gpm	MW-139C	W	Muscoy	2,663	N	--	--	--	--	--	--	--	--	--	--
	Garner Park-A (4S)	A	Muscoy	5,487	N	--	--	--	--	--	--	--	--	--	--
Pump On: 1/20/2003 15:00	Garner Park-B (5S)	W	Muscoy	5,487	N	--	--	--	--	--	--	--	--	--	--
Pump Off: 1/24/03 15:00	Garner Park-C (6S)	W	Muscoy	5,487	N	--	--	--	--	--	--	--	--	--	--
	Meadowbrook Park-A (2S)	W	Newmark UWBM	13,693	N	--	--	--	--	--	--	--	--	--	--
Duration Pumped:	Meadowbrook Park-B (3S)	W	Newmark UWBM	13,693	N	--	--	--	--	--	--	--	--	--	--
96 hrs.	Meadowbrook Park-C (4S)	W	Newmark LWBM	13,693	N	--	--	--	--	--	--	--	--	--	--
	Sierra High School-A (8S)	W	Newmark (?) WBM	16,843	N	--	--	--	--	--	--	--	--	--	--
Estimated	Sierra High School-B (7S)	W	Newmark (?) WBM	16,843	N	--	--	--	--	--	--	--	--	--	--
Saturated Thickness (ft):	Sierra High School-C (6S)	W	Newmark (?) WBM	16,843	N	--	--	--	--	--	--	--	--	--	--
780	Baseline & California	W	Muscoy	2,898	Y	N	1.32	Y	Hantush-Jacob	75,600	97	0.0015	Y	72,800	93
	Gilbert Street	W	Newmark	16,065	N	--	--	--	--	--	--	--	--	--	--
	Olive and Garner	W	Muscoy	5,543	NM	--	--	--	--	--	--	--	--	--	--
	7th Street	W	Newmark LWBM	14,711	N	--	--	--	--	--	--	--	--	--	--
	10th and J	W	Muscoy	7,404	NM	--	--	--	--	--	--	--	--	--	--
	11th and E	NA	NA	10,676	N	--	--	--	--	--	--	--	--	--	--
	16th Street	W	Newmark LWBM	13,852	N	--	--	--	--	--	--	--	--	--	--
	19th Street #2	W	Muscoy	6,641	NM	--	--	--	--	--	--	--	--	--	--
	Rialto #5	NA	NA	4,282	Y	N	0.4	N	--	--	--	--	--	--	--
	Rialto #4	NA	NA	619	Y [1]	--	4.94	--	--	--	--	--	--	--	--
									Distance versus Drawdown	26,000	33	0.0072	--	--	--
									Count	3	3	3	--	3	3
									Minimum	26,000	33	0.0015	--	46,000	59
									Maximum	75,600	97	0.0072	--	72,800	93
									Average	41,900	54	0.0031	--	57,300	73
									Geometric Mean	38,100	49	0.0025	--	56,200	72
									Standard Deviation	22,900	29	0.0027	--	13,900	18

Notes:

(1) Maximum drawdown value was calculated from hand measurements; unable to install a transducer in this well.

(2) All recovery phase analysis was performed using the Theis residual drawdown method

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Table 10

Summary Aquifer Parameter Estimates
Newmark Plume Front Extraction Well Network
Newmark Groundwater Contamination Superfund Site
San Bernardino, California

	EW-5					EW-4					EW-3		
	Pumping Phase Trend Corrected Data			Recovery Phase Trend Corrected Data		Pumping Phase Trend Corrected Data			Recovery Phase Trend Corrected Data		Pumping Phase Uncorrected Data		
	T (ft^2/day)	K (ft/s)	S	T (ft^2/day)	K (ft/s)	T (ft^2/day)	K (ft/s)	S	T (ft^2/day)	K (ft/s)	T (ft^2/day)	K (ft/s)	S
Number of Wells Analyzed	25	25	24	19	19	25	25	24	26	26	22	22	22
Minimum	40,500	52	0.00025	30,600	39	40,000	51	0.00014	43,200	55	18,600	24	0.00015
Maximum	78,800	101	0.0020	64,900	83	75,600	97	0.0014	92,300	118	73,500	94	0.0011
Arithmetic Mean	56,700	73	0.00091	50,800	65	55,400	71	0.00072	56,100	72	45,300	58	0.00069
Standard Deviation	9,210	12	0.00041	9,580	12	8,250	11	0.00023	13,000	17	12,100	15	0.00026
Arithmetic Mean (+) one STDEV	65,910	84	0.0013	60,380	77	63,650	82	0.00095	69,100	89	57,400	73	0.00095
Arithmetic Mean (-) one STDEV	47,490	61	0.00050	41,220	53	47,150	60	0.00049	43,100	55	33,200	43	0.00043

	EW-2			EW-1			EW-1 through EW-5 Composite		
	Pumping Phase Trend Corrected Data			Pumping Phase Uncorrected Data					
	T (ft^2/day)	K (ft/s)	S	T (ft^2/day)	K (ft/s)	S	T (ft^2/day)	K (ft/s)	S
Number of Wells Analyzed	27	27	27	31	31	31	130	130	128
Minimum	31,800	41	0.00043	33,100	42	0.00045	18,600	24	0.00014
Maximum	81,400	104	0.0030	68,000	87	0.00545	92,300	118	0.0054
Arithmetic Mean	51,400	66	0.00088	48,000	61	0.0010	51,900	67	0.00086
Standard Deviation	8,380	11	0.00054	8,470	11	0.0011	10,540	14	0.00063
Arithmetic Mean (+) one STDEV	59,780	77	0.0014	56,470	72	0.0021	62,440	80	0.0015
Arithmetic Mean (-) one STDEV	43,020	55	0.00034	39,530	51	0.00000	41,360	53	0.00023

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Table 11

Summary of Pumping Well Flow Rates During the Combined Well Aquifer Test

Pumping Test	Pumping Well(s)	Average Flow Rate (gpm)
Combined Well (Phase I)	EW-1	1,250
	EW-2	1,260
	EW-3	1,700
	EW-4	1,340
	EW-5	1,300
	EW-108[(1)]	2,200
	EW112	2,230
	Perris Street	1,350
	Combined-Well Flow Rate	*12,630*
Combined Well (Phase II)	EW-1	1,250
	EW-2	1,360
	EW-3	1,670
	EW-4	1,400
	EW-5	1,430
	EW-108	2,190
	EW112	2,220
	Perris Street	2,240
	9th Street	2,240
	10th & J	2,340
	Combined-Well Flow Rate	*18,340*

NOTE:

(1) Flow sensor malfunctioned between 3/24/03 and 4/1/03; flow rate indicated in table is based on measurements recorded between 4/1/03 and 4/7/03

Table 12

Analytical Results for Groundwater Samples Collected From the Newmark Plume Front Extraction Wells Following Startup of the Combined Aquifer Test - Selected VOCs

Newmark Groundwater Superfund Site - San Bernardino, California

Well	Date	Time	PCE	TCE
EW-1	3/24/03	15:06	1.9	0.7
EW-2	3/24/03	15:14	0.6	<0.5
EW-3	3/24/03	15:21	<0.5	<0.5
EW-4	3/24/03	15:30	<0.5	<0.5
EW-5	3/24/03	15:40	2.3	<0.5

Notes:
The extraction wells were started at 14:00 on 3/24/03
PCE - Perchloroethene
TCE - Trichloroethene
PCE and TCE concentrations reported in mg/L

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Table 13

Drawdown Ratios Between the UWBM and LWBM

Newmark Groundwater Contamination Superfund Site - San Bernardino, California

Observation Well	EW-5 Test		EW-4 Test		EW-3 Test		EW-1 Test	
	Maximum Obseved Drawdown (feet)	Drawdown Ratio of UWBM to LWBM(1)	Maximum Obseved Drawdown (feet)	Drawdown Ratio of UWBM to LWBM(1)	Maximum Obseved Drawdown (feet)	Drawdown Ratio of UWBM to LWBM(1)	Maximum Obseved Drawdown (feet)	Drawdown Ratio of UWBM to LWBM(1)
EW-1 PA	0.33	0.15	0.55	0.22	0.00	0.00	1.47	0.13
EW-1PB	2.21		2.46		4.29		11.28	
EW-2PA	0.13	0.05	0.22	0.07	0.00	0.00	0.00	0.00
EW-2 PB	2.62		3.08		4.06		5.13	
EW-3 PA	0.40	0.13	0.40	0.11	0.85	0.03	0.00	0.00
EW-3PB	3.06		3.68		30.24		4.46	
EW-4PA	0.62	0.17	0.73	0.12	0.68	0.18	0.62	0.16
EW-4 PB	3.61		5.95		3.78		4.00	
EW-5 PA	0.30	0.02	0.33	0.10	0.00	0.00	0.00	0.00
EW-5PB	15.29		3.45		2.93		3.33	
EW-108 PA	0.00	0.00	0.00	0.00	0.28	0.14	0.00	0.00
EW-108 PB	1.24		1.51		2.03		3.10	
MW-10A	0.65	0.36	0.81	0.42	1.14	0.56	1.06	0.39
MW-10B	1.81		1.92		2.05		2.75	
MW-12A	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
MW-12B	1.75		2.02		2.85		4.42	
MW-13A	0.69	0.23	0.68	0.19	1.00	0.22	0.78	0.16
MW-13B	2.98		3.67		4.61		4.97	
MW-14A	0.15	0.05	0.00	0.00	0.00	0.00	0.00	0.00
MW-14B	2.94		4.15		3.43		4.08	
Minimum		0.00		0.00		0.00		0.00
Maximum		0.36		0.42		0.56		0.39
Average		0.12		0.12		0.11		0.08

Notes:

(1) - Drawdown ratios are the maximum UWBM drawdown divided by the maximum LWBM drawdown observed during the subject aquifer pumping test.

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