SDMS DOCID# 1121049

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REPORT

SECOND SEMIANNUAL 2007 GROUNDWATER MONITORING REPORT

FORMER ASHLAND CHEMICAL COMPANY
10505 SOUTH PAINTER AVENUE
SANTA FE SPRINGS, CALIFORNIA

Prepared for

ASHLAND.

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January 15, 2008

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data since methylene chloride is a common laboratory contaminant and it was not detected in the corresponding samples. Tert-amyl methyl ether (TAME), chloroform, ethyl t-butyl ether (ETBE), p-isopropyl toluene, vinyl chloride, and xylenes were detected in one equipment blank sample. TAME, ETBE, and chloroform are common contaminants in potable water in California. TAME and ETBE are oxygenates used in gasoline and chloroform is a trihalomethane commonly found in water that has been disinfected with chlorine. P-isopropyl toluene, vinyl chloride and xylene could be carry-over from another analysis. Vinyl chloride detected in MW-17B maybe the result of blank contamination. No action was taken on the other sample data based on these findings.

A complete data QA/QC report for the August 2007 sampling event is provided in Appendix F.

5.0 GROUNDWATER REMEDIATION

The GWTS consists of a biological reactor, an air stripper, ozone/hydrogen peroxide injection, and liquid phase granular activated carbon (GAC) prior to discharge to the storm drain under a National Pollution Discharge Elimination System (NPDES) permit. The GWTS was relocated and commissioned in November 2003. Extraction well EX-6 was installed in January 2005. Groundwater is extracted from wells EX-1, EX-2, EX-4, EX-5, and EX-6 located in the vicinity and downgradient to the former UST/AST north farm area. The GWTS schematic flow diagram is shown on Figure 9.

GWTS upgrades, including the addition of ozone and hydrogen peroxide were completed in 2006. Adjustments to the system modifications continued during the first half of 2007. During this reporting period, the GWTS operations were periodically suspended based on results of 1-4-dioxane testing. System optimization and replacement of liquid Granular Activated Carbon (GAC) was initiated as a part of corrective action. Following additional system performance testing during the 2007 second quarter, normal system operations resumed in April 2007. The system was shut down September 10, 2007, due to exceedance of 1,4-dioxane. Performance testing occurred in early October and the system has remained shut down while evaluating different treatment technologies.

Since commissioning in November 2003, approximately 39.1 million gallons of groundwater have been pumped at a rate of approximately 50 gpm with influent total VOC concentrations ranging from 287 to 2,941 µg/L. Pumping at rates from extraction wells EX-1, EX-2, EX-4, EX-5, and EX-6 vary from 1 gpm to 17 gpm.

The total VOC mass removal for this reporting period was approximately 145 pounds (at a rate of approximately 24 pounds per month). Total VOC mass removal and cumulative total flow data are summarized on Figure 10. Mass removal calculations for the groundwater treatment system are included in Appendix G.

6.0 SUMMARY OF RESULTS

6.1 GROUNDWATER CONDITIONS

The groundwater condition summary is as follows:

- Groundwater elevations during this reporting period ranged from approximately 80 to 104 feet above msl. On average, the groundwater elevations have decreased 0.26 feet between the Third and Fourth Quarter gauging events. The interpreted groundwater potentiometric surface is somewhat flat with a southwesterly gradient of approximately 0.006 feet/foot (0.6 foot vertical drop per 100 feet horizontal). This is generally consistent with measurements of the potentiometric surface completed during recent groundwater monitoring events.

- Groundwater samples were collected from 28 screened intervals this quarter. Predominate detected constituents were BTEX and halogenated compounds. The highest concentrations were detected in groundwater wells located in the vicinity of the former UST/AST north farm area, and wells located downgradient and off-site from the property.

- Monitoring wells located upgradient to the property (MW-14A/B, MW-22, MW-23, MW-24) contained low concentrations of halogenated compounds (less than 100µg/L) during this sampling event. The highest concentration of halogenated compounds was detected in MW-23, located cross-gradient and east of the property. BTEX was not detected above laboratory reporting limits in any of the upgradient wells. Concentrations detected in the upgradient well samples were similar to concentrations detected in previous sampling events.

- Monitoring and extraction wells located on the property (MW-1R, MW-2R, MW-4R, MW-5, MW-6R, MW-7, MW-12R, MW-13R, MW-21A/B, MW-25, MW-26, MW-27, EX-1, EX-2, EX-4, EX-5, EX-6) contained the highest concentrations of both BTEX and halogenated compounds. The highest concentration of halogenated compounds was detected in EX-1 (10,971 µg/L). The highest concentration of BTEX was also detected in EX-1 (8,340 µg/L). Concentrations detected in the property well samples were generally similar to concentrations detected in previous sampling events.

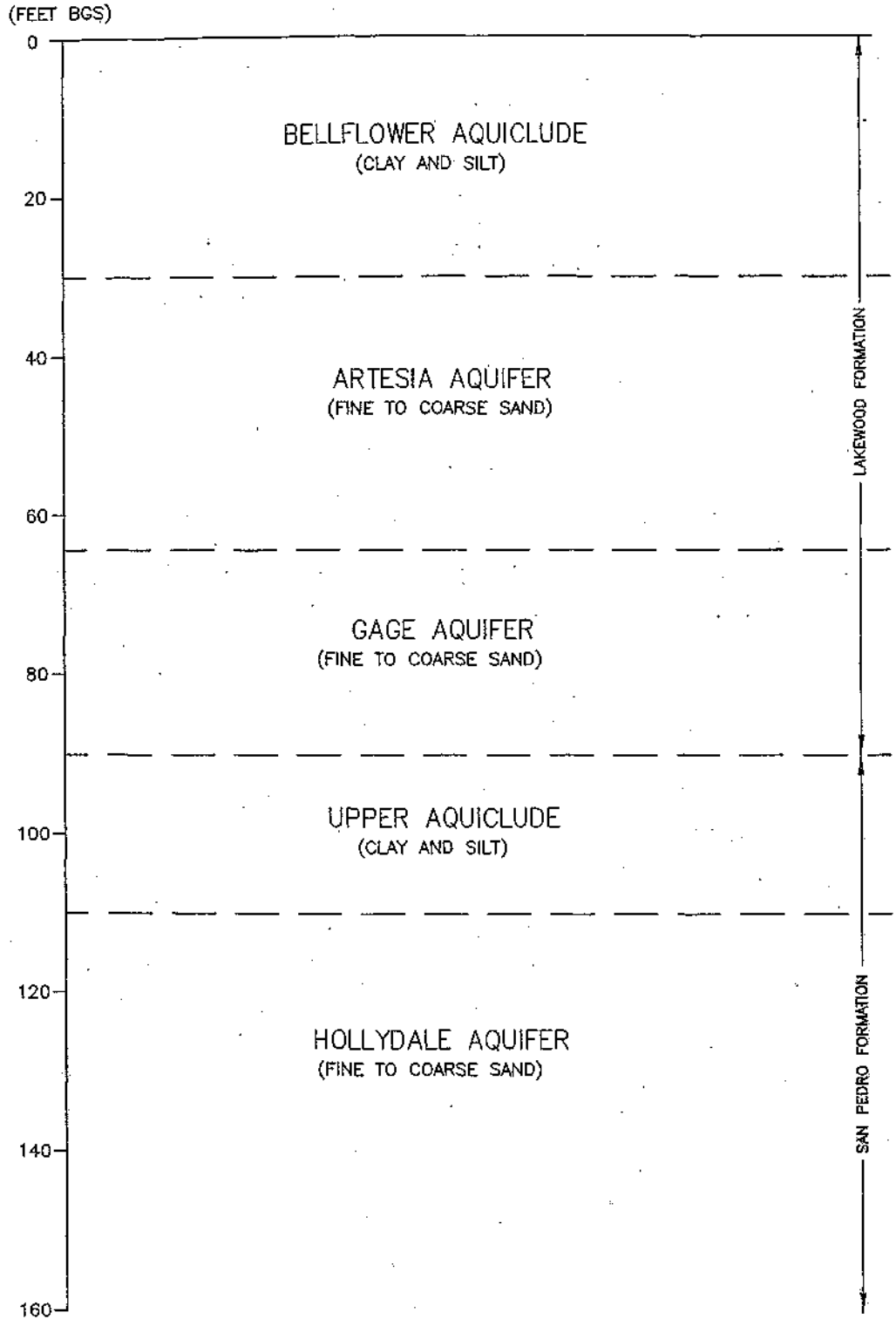
- Monitoring wells located downgradient to the property (MW-15A/B, MW-16A/B, and MW-17A/B) contained concentrations of halogenated compounds less than 1000 µg/L during this sampling event. The highest concentration of halogenated compounds was detected in MW-16B (614.4 µg/L), located downgradient and south of the property. BTEX was detected above laboratory reporting limits in three of the five downgradient wells sampled, MW-16B (7.2 µg/L), MW-17A (2.4 µg/L) and MW-17B (0.5 µg/L). It should be noted that downgradient monitoring wells have historically contained greater concentrations of halogenated compounds than BTEX and total ketone compounds. Samples collected from the downgradient monitoring wells during this monitoring event contained similar concentrations of halogenated compounds and BTEX compared to previous events.

6.2 GROUNDWATER REMEDIATION

Since the commissioning of the new GWTS on November 21, 2003, approximately 39.1 million gallons of groundwater have been pumped at a rate of about 50 gpm with influent total VOC concentrations ranging from 287 to 2,941 µg/L. The total VOC mass removal for this reporting period was approximately 145 pounds (at a rate of approximately 24 pounds per month, not including April when the system was off).

GWTS upgrades, including the addition of ozone and hydrogen peroxide were completed in 2006. Adjustments to the system modifications continued during the first half of 2007. During this reporting period, the GWTS operations were periodically suspended based on results of 1-4-dioxane testing. System optimization and replacement of liquid GAC was initiated as a part of corrective action. Following additional system performance testing during the 2007 second quarter, normal system

operations resumed in April 2007. The system shut down September 10, 2007, due to exceedance of 1,4-dioxane. Performance testing occurred in early October and the system has remained shut down while evaluating different treatment technologies.



T:\2006\ASHLAND ALLIANCE\37679492 SFS\REPORTS\GROUNDWATER\S2 2007\FIGURES\FIGURE 3.DWG

GENERALIZED PROPERTY STRATIGRAPHY

Project No.: 37680106	Date: December 2007	Project: FORMER ASHLAND CHEMICAL COMPANY	Fig. 3

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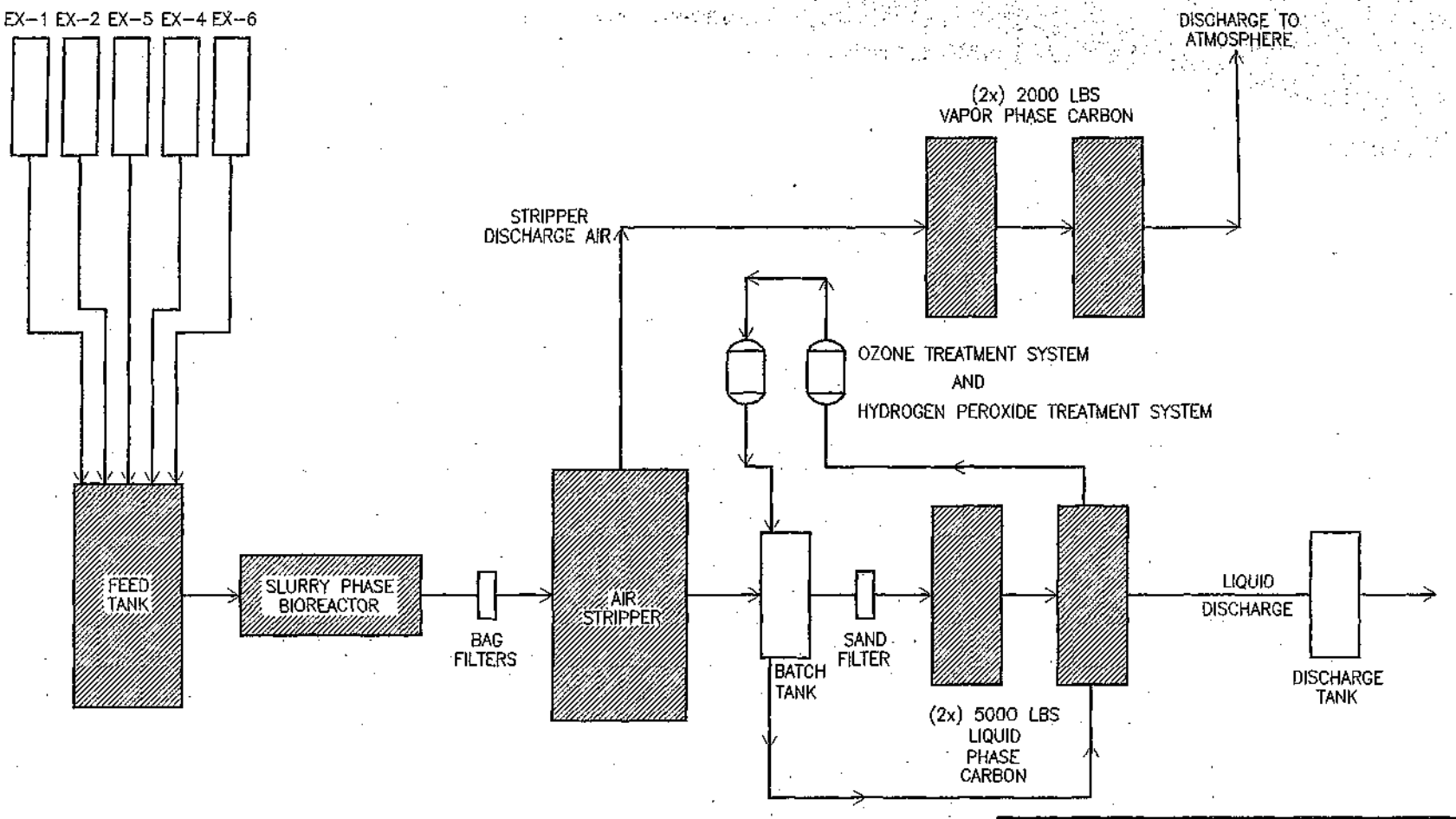


URS Corporation

FLOW SCHEMATIC OF
ASHLAND SANTA FE SPRINGS
REMEDIAL SYSTEM

Proj. No.:	37679241	Date:	02-27-2007
Project:	FORMER ASHLAND CHEMICAL SANTA FE SPRINGS	CAD ID.:	
		Figure:	9

Table 1
Summary of Groundwater Wells
Former Ashland Chemical Company
Santa Fe Springs, California

WELL	SCREENED INTERVAL	WELL ELEVATION (feet MSL)	GROUNDWATER MONITORING WELL STATUS
Groundwater Monitoring Wells			
MW-1	30 to 60/45 to 65*	162.54	Abandoned (property re-development)
MW-1R	49.8 to 84.8	163.88	Existing, MW-1 replacement
MW-2	30 to 60/45 to 65*	162.26	Abandoned (property re-development)
MW-2R	49.4 to 84.4	163.30	Existing, MW-2 replacement
MW-3	30 to 60	161.48	Abandoned (property re-development)
MW-IT-3	84 to 94	161.37	Abandoned (property re-development)
MW-4	60 to 85	165.13	Abandoned (property re-development)
MW-4R	50.1 to 85.1	163.74	Existing, MW-4 replacement
MW-5	60 to 85	162.60	Existing
MW-6	60 to 80	161.36	Abandoned (property re-development)
MW-6R	49.6 to 84.6	161.83	Existing, MW-6 replacement
MW-7	60 to 80	162.65	Existing
MW-8	80 to 95	160.26	Abandoned (property re-development)
MW-9	80 to 90	161.75	Abandoned (property re-development)
MW-IT-9	55 to 75	161.64	Abandoned (property re-development)
MW-10	120 to 140	160.86	Abandoned (property re-development)
MW-11	120 to 160	165.07	Abandoned (property re-development)
MW-12a	55 to 75	162.44	Abandoned (property re-development)
MW-12b	80 to 90	162.47	Abandoned (property re-development)
MW-12R	49.5 to 84.5	163.22	Existing, MW-12A/B replacement
MW-13a	55 to 75	162.96	Abandoned (property re-development)
MW-13b	80 to 90	162.95	Abandoned (property re-development)
MW-13R	50.7 to 85.7	163.09	Existing, MW-13A/B replacement
MW-14a	53 to 73	162.99	Existing
MW-14b	76 to 86	162.82	Existing
MW-15a	54 to 74	159.72	Existing
MW-15b	80 to 90	159.71	Existing
MW-16a	50 to 70	157.34	Existing
MW-16b	80 to 90	157.20	Existing
MW-17a	57 to 77	159.10	Existing
MW-17b	76 to 86	159.23	Existing
MW-18	55 to 85	161.75	Abandoned (property re-development)
MW-19	55 to 85	161.90	Abandoned (property re-development)
MW-20	55 to 85	161.73	Abandoned (property re-development)
MW-21a	60 to 80	159.99	Existing
MW-21b	90 to 100	159.97	Existing
MW-22	47 to 87	159.87	Existing
MW-23	50 to 75	162.65	Existing
MW-24	50 to 75	161.97	Existing
MW-25	49.6 to 84.6	163.23	Existing
MW-26	50.7 to 85.7	162.78	Existing
MW-27	50.5 to 85.5	163.04	Existing
Groundwater Extraction Wells			
EX-1	48 to 88	161.07	Existing
EX-2	48 to 88	163.65	Existing
EX-3	50 to 80	NA	Abandoned (property re-development)
EX-4	55 to 85	162.77	Existing
EX-5	72 to 102	163.10	Existing
EX-6	87 to 107	159.96	Existing
R-1	25 to 54 and 73 to 83	NA	Abandoned (property re-development)

Notes:
feet MSL = feet above Mean Sea Level
Depth to water recorded in feet below top of well casing.
Elevations recorded in feet above MSL.
" * " = Monitoring wells MW-1 and MW-2 were re-installed in April 1999 with screened intervals from 45 to 65 feet below ground surface.

Table 2
Groundwater Elevation Data
August 7, 2007 and November 5 , 2007
Former Ashland Chemical Company
Santa Fe Springs, California

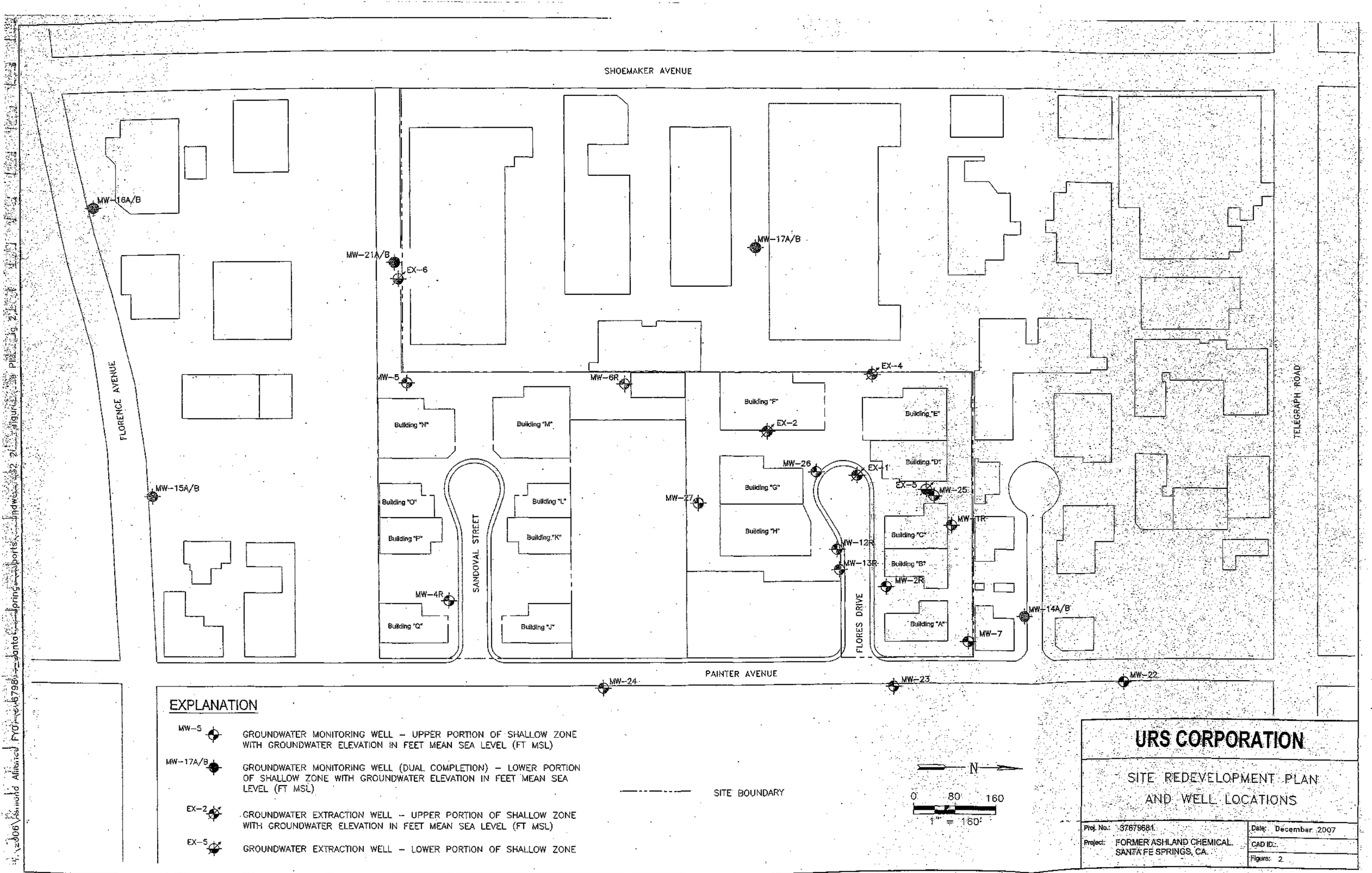
WELL	DATE MEASURED	CASING ELEVATION (feet MSL)	DEPTH TO WATER (feet BTOC)	GROUNDWATER ELEVATION (feet MSL)
MW-1R	8/7/2007	163.88	62.25	101.63
	11/5/2007		62.58	101.30
MW-2R	8/7/2007	163.30	61.47	101.83
	11/5/2007		61.72	101.58
MW-4R	8/7/2007	163.74	64.08	99.66
	11/5/2007		64.16	99.58
MW-5	8/7/2007	162.60	66.24	96.36
	11/5/2007		66.31	96.29
MW-6R	8/7/2007	161.83	64.12	97.71
	11/5/2007		64.25	97.58
MW-7	8/7/2007	162.65	60.15	102.50
	11/5/2007		60.52	102.13
MW-12R	8/7/2007	163.22	62.08	101.14
	11/5/2007		62.25	100.97
MW-13R	8/7/2007	163.09	61.75	101.34
	11/5/2007		61.94	101.15
MW-14a	8/7/2007	162.99	60.64	102.35
	11/5/2007		60.08	102.91
MW-14b	8/7/2007	162.82	60.44	102.38
	11/5/2007		59.82	103.00
MW-15a	8/7/2007	159.72	61.76	97.96
	11/5/2007		62.00	97.72
MW-15b	8/7/2007	159.71	67.33	92.38
	11/5/2007		67.95	91.76
MW-16a	8/7/2007	157.34	Dry	--
	11/5/2007		Dry	--
MW-16b	8/7/2007	157.20	70.84	86.36
	11/5/2007		71.61	85.59
MW-17a	8/7/2007	159.10	61.20	97.90
	11/5/2007		61.45	97.65
MW-17b	8/7/2007	159.23	61.42	97.81
	11/5/2007		61.68	97.55
MW-21a	8/7/2007	159.99	68.33	91.66
	11/5/2007		68.80	91.19
MW-21b	8/7/2007	159.97	78.81	81.16
	11/5/2007		80.80	79.17
MW-22	8/7/2007	159.87	55.58	104.29
	11/5/2007		56.05	103.82
MW-23	8/7/2007	162.65	60.15	102.50
	11/5/2007		60.45	102.20
MW-24	8/7/2007	161.97	61.35	100.62
	11/5/2007		61.42	100.55
MW-25	8/7/2007	163.23	61.86	101.37
	11/5/2007		62.17	101.06
MW-26	8/7/2007	162.78	62.26	100.52
	11/5/2007		62.42	100.36
MW-27	8/7/2007	163.04	62.99	100.05
	11/5/2007		63.05	99.99
EX-1	8/7/2007	161.07	60.36	100.71
	11/5/2007		60.51	100.56
EX-2	8/7/2007	163.65	63.85	99.80
	11/5/2007		63.93	99.72
EX-4	8/7/2007	162.77	62.73	100.04
	11/5/2007		62.85	99.92
EX-5	8/7/2007	163.10	62.04	101.06
	11/5/2007		62.30	100.80
EX-6	8/7/2007	159.96	NM	NM
	11/5/2007		80.70	79.26

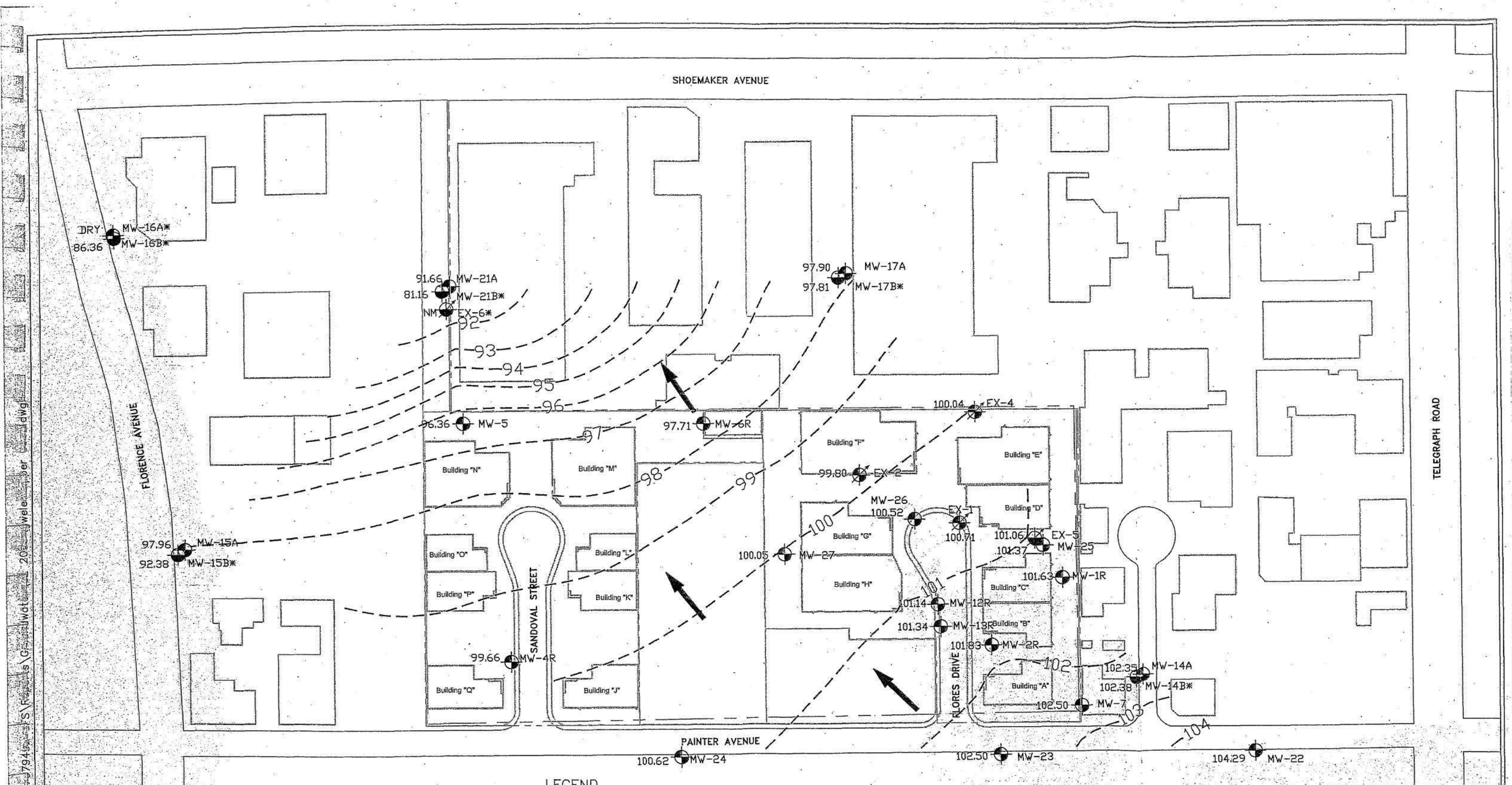
Notes:
feet MSL = feet above Mean Sea Level
ft BTOC = feet Below Top of Casing.
" - " = monitoring well was dry when measured
NM = Not Measured
NA = Not Applicable
August 7 and November 5, 2007 gauging data measured after treatment system was shut off.

Table 3
Groundwater Sample Analytical Results
August 2007
Former Ashland Chemical Company
Santa Fe Springs, California

WELL	MW-1R	MW-2R	MW-4R	MW-5	MW-6R	MW-7	MW-7 (dup)	MW-12R	MW-13R	MW-14a	MW-14b	MW-15a	MW-15b	MW-15b (dup)	MW-16a	MW-16b	MW-17a	MW-17b	MW-21a	MW-21b	MW-21b (dup)	MW-22	MW-23	MW-24	MW-25	MW-26	MW-27	EX-1	EX-2	EX-4	EX-5	EX-6
DATE SAMPLED	8/9/2007	8/9/2007	8/8/2007	8/9/2007	8/9/2007	8/8/2007	8/8/2007	8/8/2007	8/8/2007	8/8/2007	8/8/2007	8/8/2007	8/8/2007	8/8/2007	8/9/2007	8/9/2007	8/9/2007	8/9/2007	8/9/2007	8/9/2007	8/9/2007	8/7/2007	8/8/2007	8/8/2007	8/9/2007	8/8/2007	8/8/2007	8/10/2007	8/10/2007	8/10/2007	8/10/2007	8/10/2007
COMPOUND (µg/L)																																
ACETONE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	9.5	<5.0	<5.0	<5.0	<5.0	11	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<5.0	<10	<5.0	<5.0
BENZENE	11	19	<0.5	23	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	6.4	2.4	0.62	120	180	180	<0.5	<0.5	<0.5	15	0.72	<0.5	160	<0.5	2.8	1.0	93
2-BUTANONE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<5.0	<10	<5.0	<5.0
n-BUTYLBENZENE	9.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.6	<0.5	<0.5	<50	<0.5	<1.0	<0.5	<0.5
sec-BUTYLBENZENE	20	<0.5	<0.5	0.66	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	3.1	<0.5	<0.5	<0.5	<0.5	<0.5	1.9	<0.5	<0.5	<50	<0.5	<1.0	<0.5	<0.5
tert-BUTYLBENZENE	1.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	0.55	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<1.0	<0.5	<0.5
CARBON TETRACHLORIDE	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<1.0	<0.5	<0.5
CHLOROBENZENE	20	46	<0.5	210	0.70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	86	13	1.6	200	220	220	<0.5	<0.5	<0.5	14	4.6	<0.5	1000	3.4	14	<0.5	67
CHLOROETHANE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<1.0	<2.0	<1.0	<1.0
CHLOROFORM	<0.5	<0.5	<0.5	<0.5	<0.5	0.67	0.91	<0.5	<0.5	0.55	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.3	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<1.0	<0.5	<0.5
2-CHLOROTOLUENE	<0.5	1.0	<0.5	0.59	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	5.0	0.85	<0.5	<0.5	0.53	0.51	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	0.82	<1.0	<0.5	0.71
1,2-DICHLOROBENZENE	3.0	4.2	<0.5	4.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.78	-	19	15	2.3	<0.5	1.2	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	200	1.8	1.4	<0.5	2.1
1,3-DICHLOROBENZENE	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<1.0	<0.5	<0.5
1,4-DICHLOROBENZENE	1.0	1.9	<0.5	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	4.0	<0.5	0.54	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	85	0.9	1.4	0.52	0.82
1,1-DICHLOROETHANE	19	67	2.2	150	57	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	1.9	2.2	2.0	-	48	6.9	0.66	860	460	490	<0.5	1.4	<0.5	10	9.6	27	300	7.0	1.7	1.1	180
1,2-DICHLOROETHANE	10	4.6	1.3	3.4	0.82	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	4.2	7.2	4.1	-	34	<0.5	<0.5	9.4	12	11	<0.5	<0.5	1.0	1.4	<0.5	1.5	52	1.3	<1.0	0.58	2.6
1,1-DICHLOROETHENE	6.0	20	1.6	1.5	8.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.7	1.8	2.0	-	9.8	<0.5	<0.5	27	1.2	1.2	<0.5	0.51	<0.5	3.4	0.68	5.2	65	0.58	<1.0	<0.5	6.9
1,2-DICHLOROETHENES (total)	1106.8	1103.1	0.59	72	113	<1.0	<1.0	7.1	5.0	<1.0	<1.0	46.2	39.3	38.5	-	366	8.57	3.2	1491	209	206	<1.0	<1.0	0.55	814	21.1	2.0	8379	19.9	22	112.2	167
1,2-DICHLOROPROPANE	2.3	10	<0.5	3.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.4	-	1.6	3.4	1.1	17	5.9	5.8	<0.5	<0.5	<0.5	0.59	<0.5	<0.5	<50	<0.5	9.4	<0.5	3.0
ETHYLBENZENE	120	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	2.4	2.4	<0.5	<0.5	<0.5	64	<0.5	<0.5	1800	<0.5	7.5	<0.5	0.74
2-HEXANONE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<5.0	6.1	<5.0	<5.0
ISOPROPYLBENZENE	77	2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	2.2	0.73	0.74	<0.5	<0.5	<0.5	13	<0.5	<0.5	63	<0.5	<1.0	<0.5	<0.5
P-ISOPROPYLTOLUENE	0.96	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	0.84	<0.5	<0.5	<50	<0.5	1.2	<0.5	<0.5
METHYLENE CHLORIDE	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<100	<1.0	<1.0	<1.0	<1.0
4-METHYL-2-PENTANONE	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<500	<5.0	<5.0	<5.0	<5.0
NAPHTHALENE	<0.5	<0.5	<0.5	0.70	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	72	<0.5	<0.5	79	<0.5	5.8	<0.5	<0.5
N-PROPYLBENZENE	78	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	7.4	<0.5	<0.5	130	<0.5	12	<0.5	<0.5
STYRENE	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<1.0	<0.5	<0.5
TETRACHLOROETHANE (total)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<1.0	<0.5	<0.5
TETRACHLOROETHENE (PCE)	<0.5	18	6.7	<0.5	<0.5	11	11	<0.5	<0.5	3.3	1.3	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.4	21	<0.5	4.1	<0.5	20	<50	<0.5	3.3	1.2	<0.5
TOLUENE	3.6	1.2	<0.5	2.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	0.78	<0.5	<0.5	6.3	7.5	7.5	<0.5	<0.5	<0.5	23	<0.5	<0.5	2600	<0.5	<1.0	<0.5	1.9
1,2,4-TRICHLOROBENZENE	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<1.0	<0.5	<0.5
1,1,1-TRICHLOROETHANE	<0.5	82	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	210	<0.5	<1.0	<0.5	<0.5
1,1,2-TRICHLOROETHANE	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<1.0	<0.5	<0.5
TRICHLOROETHENE (TCE)	17	31	20	1.2	5.3	7.5	7.7	5.7	4.6	2.4	<0.5	43	60	54	-	<0.5	<0.5	<0.5	1.3	<0.5	<0.5	<0.5	19	13	3.1	1.5	52	250	1.9	4.1	5.3	20
TRICHLOROTRIFLUOROETHANE	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	-	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<250	<2.5	<5.0	<2.5	<2.5
1,2,4-TRIMETHYLBENZENE	1.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.0	<0.5	<0.5	300	<0.5	140	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	90	0.73	110	<0.5	<0.5
VINYL CHLORIDE	24	44	<0.5	130	4.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	39	16	1.2 (B)	1100	900	850	<0.5	<0.5	<0.5	32	24	<0.5	430	14	4.0	3.1	120
XYLENES	7.2	1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	0.57	2.0	1.9	<1.0	<1.0	<1.0	19	<1.0	<1.0	3760	<1.0	13	<1.0	<1.0
METHYL TERT-BUTYL ETHER (MTBE)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.55	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<50	<0.5	<1.0	<0.5	<0.5
TERT-BUTYL ALCOHOL (TBA)	17	<10	<10	11	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<10	<10	<10	<10	12	<10	<10	<10	<10	<10	<10	<1000	<10	<20	<10	<10
TOTAL HALOGENS	1209	1433	32.4	577.9	189.6	19.2	19.6	14.0	9.6	6.3	1.3	97.0	110.5	103.8	-	614.4	63.8	9.4	3705.7	1809.8	1785.6	1.4	43.2	14.6	882.6	61.5	107.7	10971.0	51.6	61.3	124.0	570.1
TOTAL BTEX	141.8	21.4	0.0	25.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	7.2	2.4	0.5	126.9	191.9	191.8	0.0	0.0	0.0	121.0	0.7	0.0	8340.0	0.0	23.3	1.0	95.6
TOTAL KETONES	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-DIOXANE	1.2	0.73	<0.47	64	0.89	<0.47	<0.48	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	<0.47	-	4.2	12	0.63	14	26	25	<0.47	<0.48	<0.47	<0.48	<0.47	<0.48	33	0.61	<0.50	<0.50	8.7
Screened Interval	Upper	Upper	Upper	Upper	Upper	Upper	Upper	Upper	Upper	Lower	Upper	Upper	Lower	Lower	Upper	Lower	Upper	Lower	Upper	Lower	Lower	Upper	Upper	Upper	Upper	Upper	Upper	Upper	Upper	Upper	Lower	Lower

Notes:
(B) = Maybe the result of blank contamination
EPA Method 8260B for all except 1,4-Dioxane by EPA Method 8270C
Ug/L = micrograms per liter
Upper = upper portion of shallow zone
Lower = lower portion of shallow zone
Total Halogens = Total Volatile Halogenated Compounds (VHCs)
Total BTEX = Total Benzene, Toluene, Ethylbenzene, and Xylene Compounds
Total Ketones = Total Ketone Compounds
"-" = monitoring well was dry when measured (well not sampled)
ND = not detected at or above laboratory reporting limits.
MW-7 (dup) reported as DUP-1 in laboratory reports
MW-15b (dup) reported as DUP-2 in laboratory reports
MW-21b (dup) reported as DUP-3 in laboratory report
The analytes listed in the table represent concentrations of primary VOCs. See analytical report for complete list of VOCs analyzed.


SHOEMAKER AVENUE
FLORENCE AVENUE
TELEGRAPH ROAD
PAINTER AVENUE
SANDOVAL STREET
FLORES DRIVE
MW-16A/B
MW-21A/B
EX-6
MW-17A/B
MW-5
MW-6R
EX-4
EX-2
MW-15A/B
MW-26
EX-1
EX-5
MW-25
MW-27
MW-1R
MW-12R
MW-13R
MW-2R
MW-4R
MW-14A/B
MW-7
MW-24
MW-23
MW-22
Building "N"
Building "M"
Building "F"
Building "E"
Building "D"
Building "G"
Building "H"
Building "C"
Building "B"
Building "A"
Building "O"
Building "P"
Building "Q"
Building "L"
Building "K"
Building "J"
EXPLANATION
MW-5 GROUNDWATER MONITORING WELL – UPPER PORTION OF SHALLOW ZONE WITH GROUNDWATER ELEVATION IN FEET MEAN SEA LEVEL (FT MSL)
MW-17A/B GROUNDWATER MONITORING WELL (DUAL COMPLETION) – LOWER PORTION OF SHALLOW ZONE WITH GROUNDWATER ELEVATION IN FEET MEAN SEA LEVEL (FT MSL)
EX-2 GROUNDWATER EXTRACTION WELL – UPPER PORTION OF SHALLOW ZONE WITH GROUNDWATER ELEVATION IN FEET MEAN SEA LEVEL (FT MSL)
EX-5 GROUNDWATER EXTRACTION WELL – LOWER PORTION OF SHALLOW ZONE
SITE BOUNDARY
N
0 80 160
1" = 160'
URS CORPORATION
SITE REDEVELOPMENT PLAN AND WELL LOCATIONS
Proj. No.: 37679681
Date: December 2007
Project: FORMER ASHLAND CHEMICAL SANTA FE SPRINGS, CA.
CAD ID:
Figure: 2



LEGEND

INDICATES DIRECTION OF GROUNDWATER FLOW

* WELL ELEVATION EXCLUDED FROM CONTOURING

SITE BOUNDARY

97.90 MW-17A — GROUNDWATER MONITORING WELL – UPPER PORTION OF SHALLOW ZONE WITH GROUNDWATER ELEVATION IN FEET MEAN SEA LEVEL (FT MSL)

99.80 EX-2 — GROUNDWATER EXTRACTION WELL – UPPER PORTION OF SHALLOW ZONE WITH GROUNDWATER ELEVATION IN FEET MEAN SEA LEVEL (FT MSL)

MW-17B — GROUNDWATER MONITORING WELL – LOWER PORTION OF SHALLOW ZONE

EX-5 — GROUNDWATER EXTRACTION WELL – LOWER PORTION OF SHALLOW ZONE

N

0 80 160

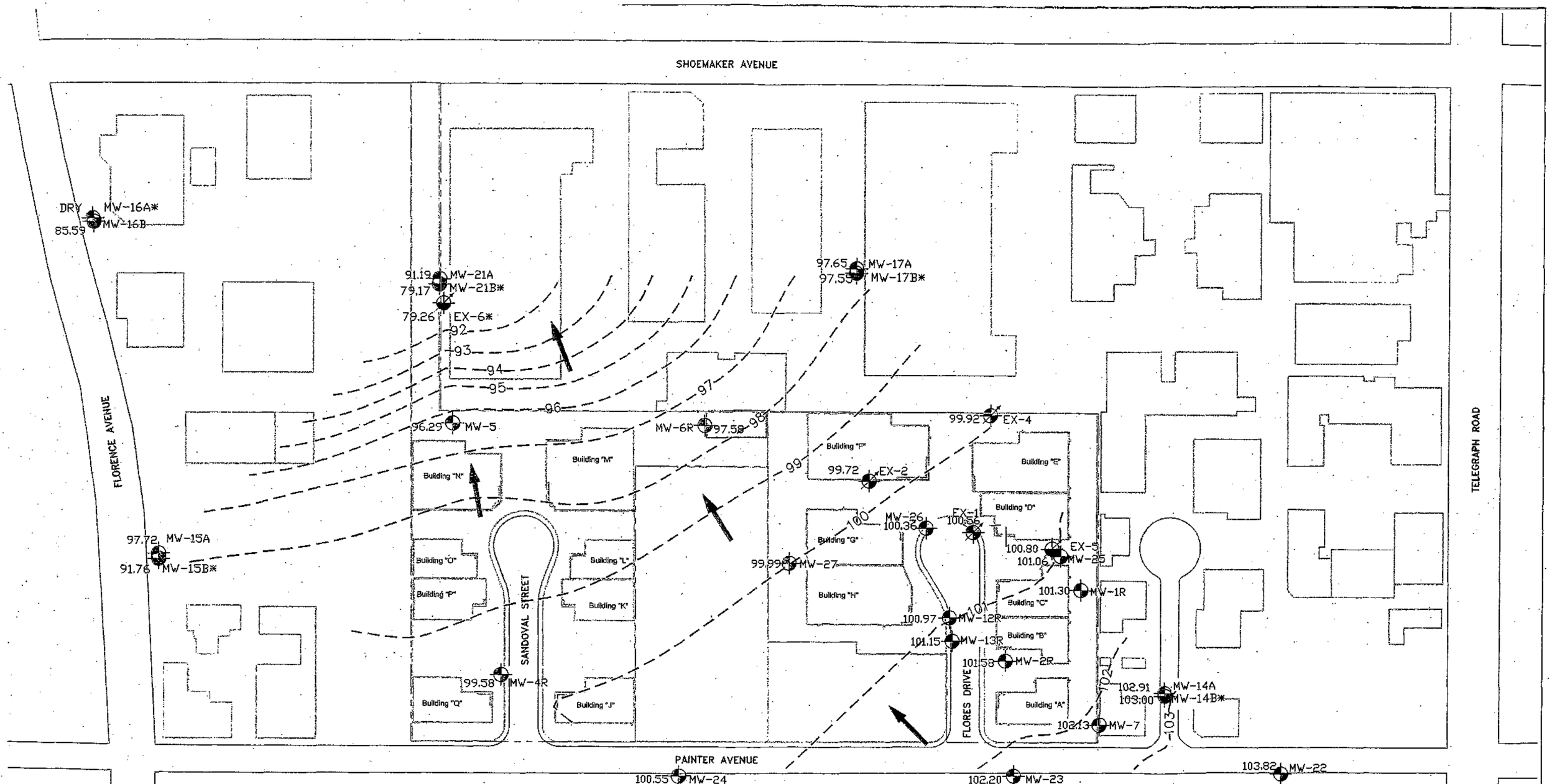
1" = 160'

URS CORPORATION

GROUNDWATER EQUIPOTENTIAL MAP

AUGUST 7, 2007

Proj. No.: 37680106	Date: NOVEMBER 2007
Project: FORMER ASHLAND CHEMICAL SANTA FE SPRINGS, CA	CAD ID.:
	Figure: 4A



LEGEND

INDICATES DIRECTION OF GROUNDWATER FLOW

* WELL ELEVATION EXCLUDED FROM CONTOURING

SITE BOUNDARY

99.72 EX-2 — GROUNDWATER EXTRACTION WELL – UPPER PORTION OF SHALLOW ZONE WITH GROUNDWATER ELEVATION IN FEET MEAN SEA LEVEL (FT MSL)

GROUNDWATER EXTRACTION WELL – UPPER PORTION OF SHALLOW ZONE WITH GROUNDWATER ELEVATION IN FEET MEAN SEA LEVEL (FT MSL)

MW-17B — GROUNDWATER MONITORING WELL – LOWER PORTION OF SHALLOW ZONE

EX-5 — GROUNDWATER EXTRACTION WELL – LOWER PORTION OF SHALLOW ZONE

URS CORPORATION

GROUNDWATER EQUIPOTENTIAL MAP

NOVEMBER 5, 2007

Proj. No.: 37680106	Date: DECEMBER 2007
Project: FORMER ASHLAND CHEMICAL SANTA FE SPRINGS, CA	CAD ID.:
	Figure: 4B

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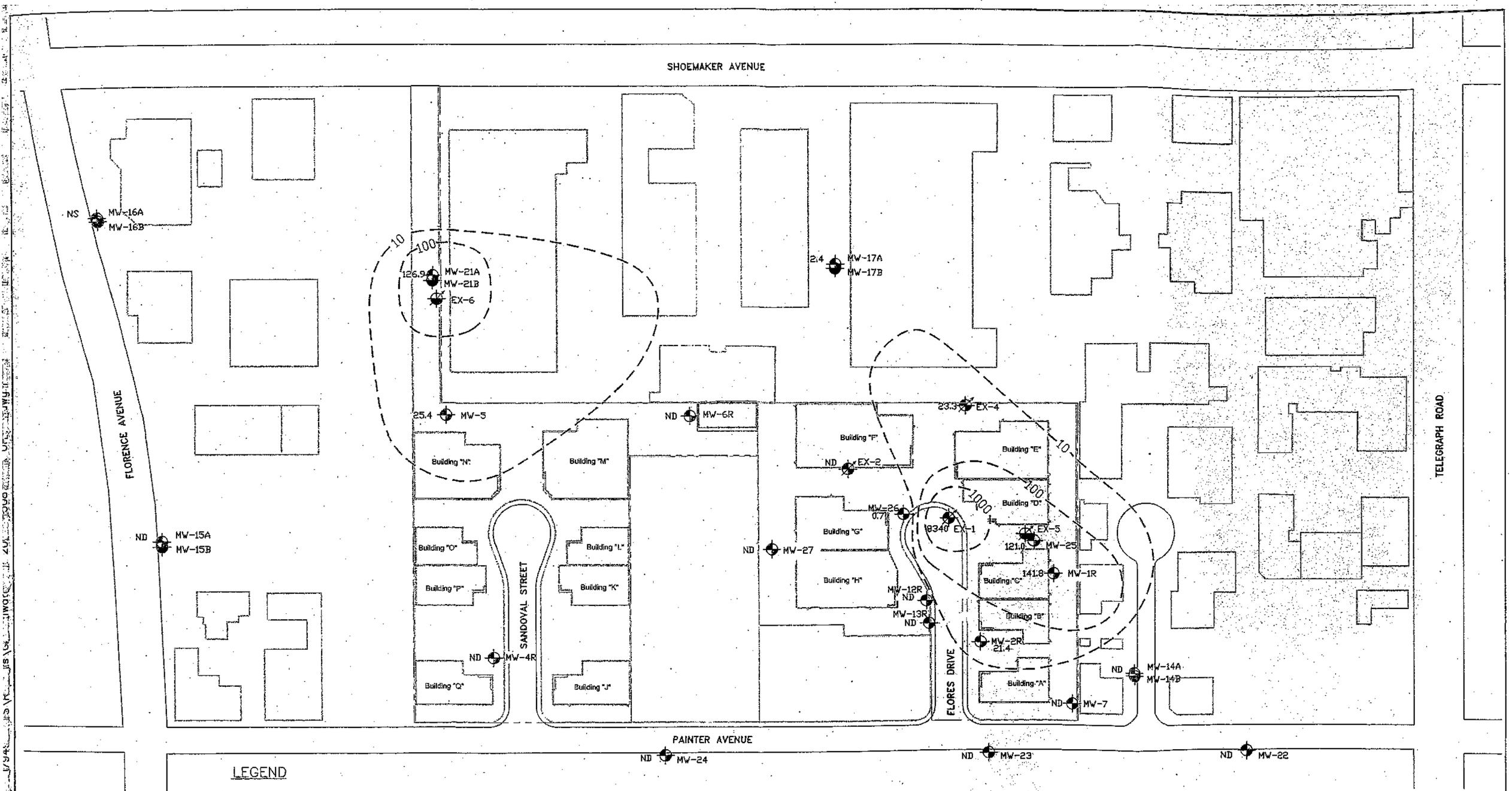


LEGEND

2.4 MW-17A	GROUNDWATER MONITORING WELL – UPPER PORTION OF SHALLOW ZONE TOTAL BENZENE, TOLUENE, ETHYLBEZENE, AND XYLENES (BTEX) CONCENTRATION IN MICROGRAMS PER LITER (ug/L)
ND EX-2	GROUNDWATER EXTRACTION WELL – UPPER PORTION OF SHALLOW ZONE TOTAL BTEX CONCENTRATION IN ug/L
MW-17B	GROUNDWATER MONITORING WELL – LOWER PORTION OF SHALLOW ZONE
EX-5	GROUNDWATER EXTRACTION WELL – LOWER PORTION OF SHALLOW ZONE

ND	NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMITS
NS	NOT SAMPLED (WELL DRY)
— — 100 — —	TOTAL BTEX ISO-CONCENTRATION CONTOUR IN MICROGRAMS PER LITER
— · — · —	SITE BOUNDARY

N

0 80 160

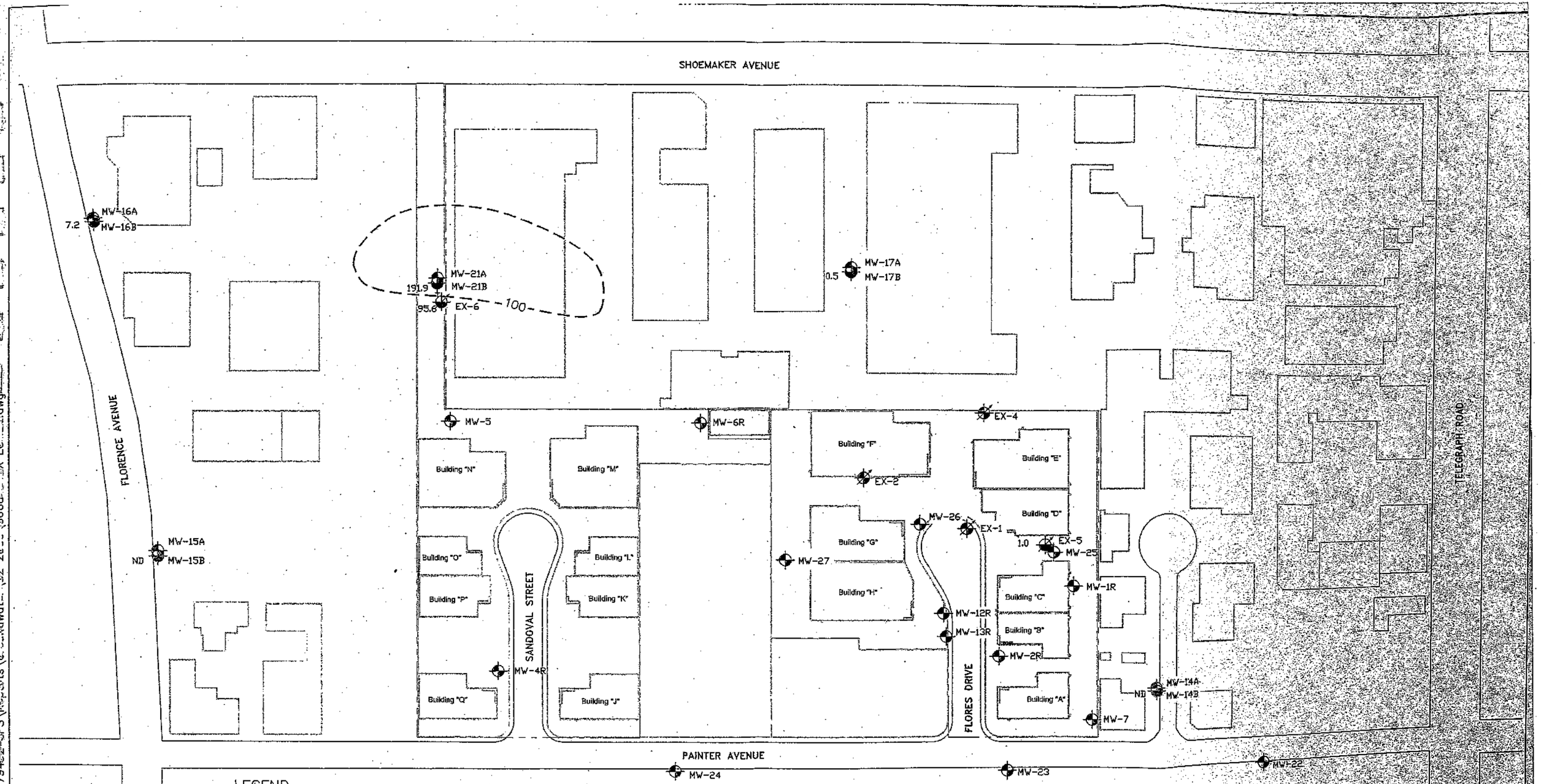
1" = 160'

URS CORPORATION

TOTAL BTEX CONCENTRATIONS UPPER PORTION OF SHALLOW ZONE

AUGUST 2007

Proj. No.: 37680106	Date: NOVEMBER 2007
Project: FORMER ASHLAND CHEMICAL SANTA FE SPRINGS, CA	CAD ID.:
	Figure: 6A



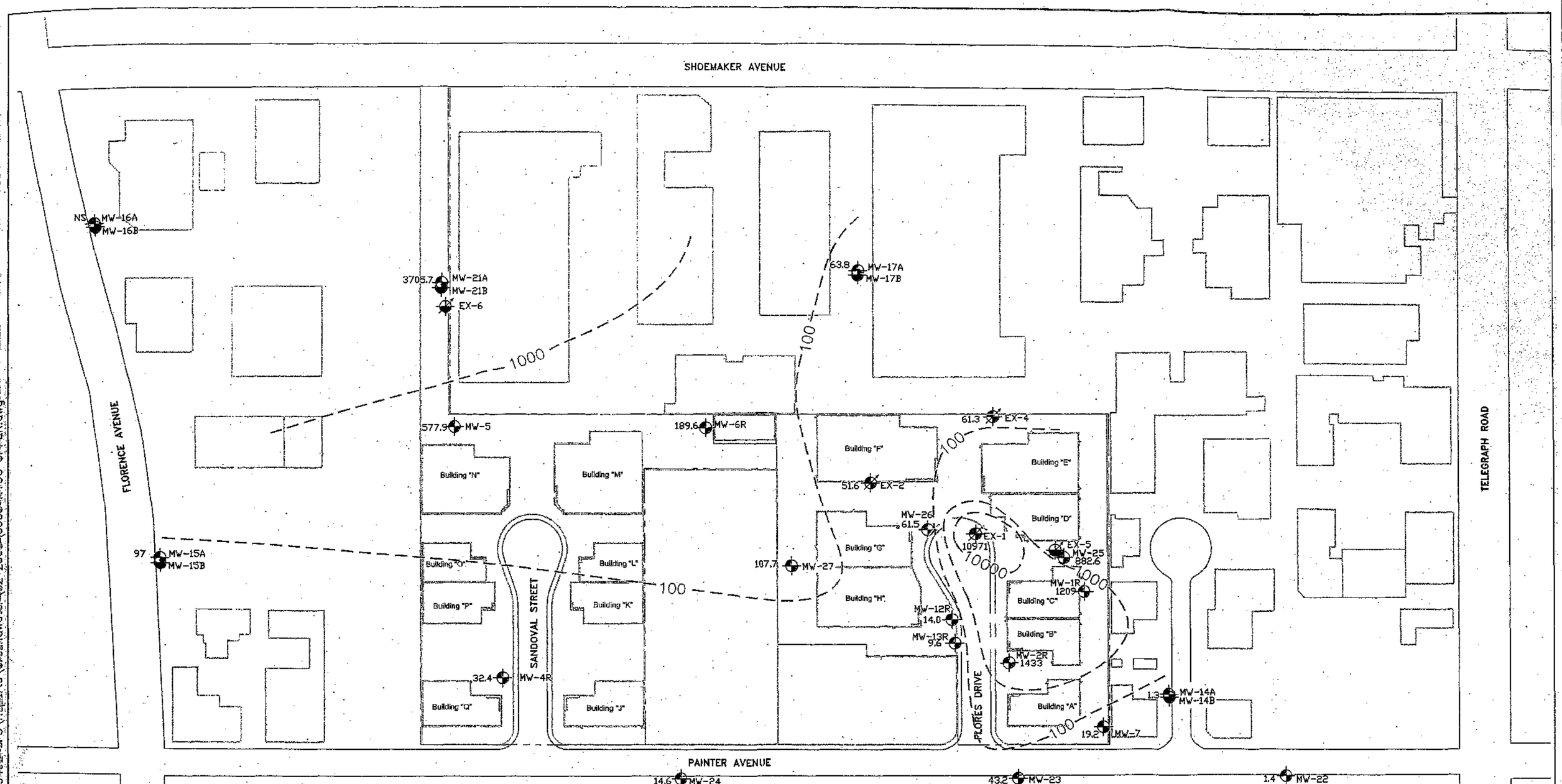
LEGEND

MW-17A	GROUNDWATER MONITORING WELL – UPPER PORTION OF SHALLOW ZONE
EX-2	GROUNDWATER EXTRACTION WELL – UPPER PORTION OF SHALLOW ZONE
0.5 MW-17B	GROUNDWATER MONITORING WELL – LOWER PORTION OF SHALLOW ZONE TOTAL BENZENE, TOLUENE, ETHYLBEZENE, AND XYLENES (BTEX) CONCENTRATION IN MICROGRAMS PER LITER (ug/L)
1.0 EX-5	GROUNDWATER EXTRACTION WELL – LOWER PORTION OF SHALLOW ZONE TOTAL BTEX CONCENTRATION IN ug/L
ND	NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMITS
NS	NOT SAMPLED (WELL DRY)
— — 100 — —	TOTAL BTEX ISO-CONCENTRATION CONTOUR IN MICROGRAMS PER LITER
— - —	SITE BOUNDARY

URS CORPORATION

TOTAL BTEX CONCENTRATIONS
LOWER PORTION OF SHALLOW ZONE
AUGUST 2007

Proj. No.: 37680106
Project: FORMER ASHLAND CHEMICAL SANTA FE SPRINGS, CA
Date: NOVEMBER 2007
CAD ID:
Figure: 6B



LEGEND

63.8 MW-17A — GROUNDWATER MONITORING WELL – UPPER PORTION OF SHALLOW ZONE
TOTAL HALOGENATED VOLATILE ORGANIC COMPOUNDS (HVOCs) CONCENTRATION IN MICROGRAMS PER LITER (ug/L)

51.6 EX-2 — GROUNDWATER EXTRACTION WELL – UPPER PORTION OF SHALLOW ZONE
TOTAL HVOC CONCENTRATION IN ug/L

MW-17B — GROUNDWATER MONITORING WELL – LOWER PORTION OF SHALLOW ZONE

EX-5 — GROUNDWATER EXTRACTION WELL – LOWER PORTION OF SHALLOW ZONE

ND — NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMITS

NS — NOT SAMPLED (WELL DRY)

— — 100 — — TOTAL HVOC ISO-CONCENTRATION CONTOUR IN MICROGRAMS PER LITER

SITE BOUNDARY

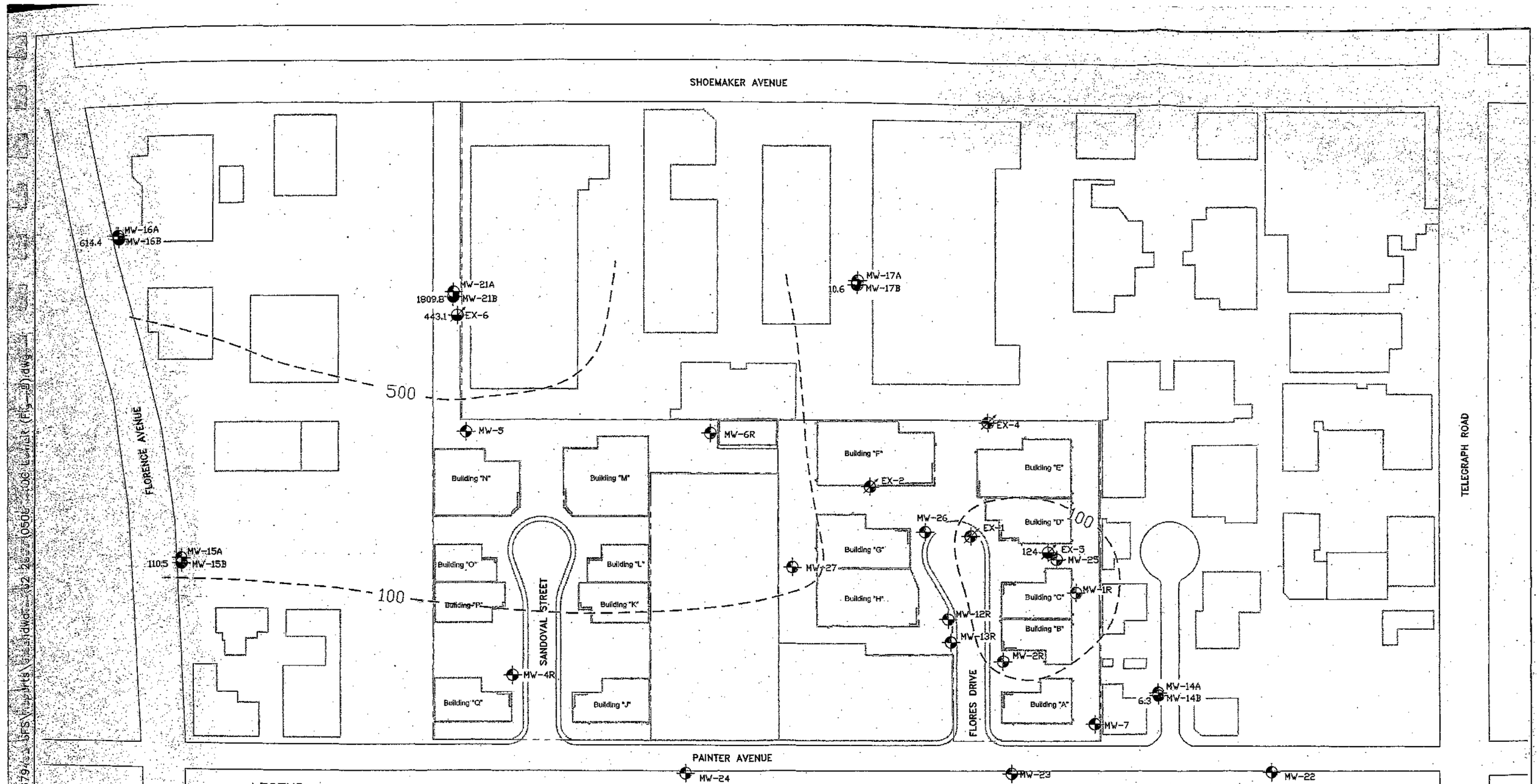
N

0 80 160
1" = 160'

URS CORPORATION

TOTAL HVOC CONCENTRATIONS
UPPER PORTION OF SHALLOW ZONE
AUGUST 2007

Proj. No.: 37680106	Date: NOVEMBER 2007
Project: FORMER ASHLAND CHEMICAL SANTA FE SPRINGS, CA	CAD ID.:
	Figure: 7A



LEGEND

MW-17A	GROUNDWATER MONITORING WELL – UPPER PORTION OF SHALLOW ZONE
EX-2	GROUNDWATER EXTRACTION WELL – UPPER PORTION OF SHALLOW ZONE
10.6 MW-17B	GROUNDWATER MONITORING WELL – LOWER PORTION OF SHALLOW ZONE TOTAL HALOGENATED VOLATILE ORGANIC COMPOUNDS (HVOCs) CONCENTRATION IN MICROGRAMS PER LITER (ug/L)
124 EX-5	GROUNDWATER EXTRACTION WELL – LOWER PORTION OF SHALLOW ZONE TOTAL HVOC CONCENTRATION IN ug/L
ND	NOT DETECTED AT OR ABOVE LABORATORY REPORTING LIMITS
NS	NOT SAMPLED (WELL DRY)
— — 100 — —	TOTAL HVOC ISO-CONCENTRATION CONTOUR IN MICROGRAMS PER LITER
— · — · —	SITE BOUNDARY

N

0 80 160

1" = 160'

URS CORPORATION

TOTAL HVOC CONCENTRATIONS
LOWER PORTION OF SHALLOW ZONE
AUGUST 2007

Proj. No.: 37680106	Date: NOVEMBER 2007
Project: FORMER ASHLAND CHEMICAL SANTA FE SPRINGS, CA	CAD ID.:
	Figure: 7B