

CITY OF HOUSTON**PUBLIC WORKS AND
ENGINEERING
PLANNING & DEVELOPMENT
DIVISION**

EXECUTIVE SUMMARY

Project Overview

The subject site consists of the Rummel Creek Village Shopping Center and West Office Shopping Center located in the 13100 block of Memorial Drive in west Houston, Texas. SRS Shopping Centers, Ltd. (owner of the Rummel Creek Village Shopping Center) retained InControl Technologies, Inc. in 1998 to provide environmental consulting services at the site. At that time, the shopping center contained a variety of stores including retail merchandising, restaurants, small business offices and former dry cleaning facilities. Dry Clean Plus operated at the Rummel Creek Village Shopping Center (13152 Memorial Drive) from 1986 through 1997. Another dry cleaning facility (Dapper Dan) occupied this space from 1972 through 1977. Immediately adjacent to the Rummel Creek Village Shopping Center is the West Office Plaza. Another dry cleaning facility (Omni Cleaners) was located in the West Office Shopping Center at 13134 Memorial Drive. Omni Cleaners began dry cleaning operations in approximately 1994 but ceased using tetrachloroethene (PCE) as a dry cleaning solvent by 2001. The two properties are separated by a narrow utility easement. Approximately 90% of the subject property is covered with parking spaces, walkways and retail space. The remaining 10% is covered with decorative landscaped areas. The combined properties (the Site) comprise approximately 8.06 acres of land located west of downtown.

Historical site investigations discovered a release of dry cleaning related chemicals (perchloroethylene and its breakdown products) to shallow soil and groundwater. An area of groundwater impact was discovered beneath both the Rummel Creek Village and West Office Shopping Centers. The actual source of the release(s) was debated; however, it was apparent that the dry cleaning facilities on each of the properties contributed to the release. An agreement was reached between the two properties, and SRS Shopping Centers, Ltd. took the lead in addressing the environmental release. Substantial remediation of soil and groundwater contamination was performed over several years, and the site has a lengthy history of groundwater monitoring.

Historical Environmental Condition

To date, SRS Shopping Centers, Ltd. has undertaken extensive site investigation activities designed to define the nature and extent of the environmental impact from historical releases at the Site and monitor groundwater plume degradation as a result of active response actions. The Site has been listed as a trading zone since approximately 1962; however, individual commercial listings were not added to the

InControl Technologies, Inc.

City of Houston directory until 1972. Historically, the Rummel Creek Village Shopping center has had two dry cleaning tenants who operated tetrachloroethene dry cleaning equipment, Dapper Dan and Dry Clean Plus. Both operations were conducted in the same retail space. The West Office Plaza currently has one tenant who is a dry cleaner, Omni Cleaners which has operated at this location since 1994 but which ceased using PCE by 2001. There are numerous other dry cleaning facilities in the area including one west of a large utility easement that borders the western edge of the Rummel Creek Village Shopping Center. Information gained from a City Directory search identified several other tenants of West Office Plaza that could have been potential sources. For example, a former commercial painting contractor leased space in the West Office Plaza center, and other former tenants of West Office Plaza operated under names such as "Vernitron Washers," "Contamination Control," and "Hamilton Lab Furniture."

Soil contamination was identified in an alley between the two facilities during a Phase I Environmental Site Assessment performed for the owners of the West Office Plaza. Once these findings were made known to the owners of the Rummel Creek Village Shopping Center, a comprehensive site investigation was conducted on behalf of SRS Shopping Centers, Ltd.

Shallow groundwater impact in excess of the TRRP Tier 1 Groundwater Protective Concentration Levels (PCLs) was identified on both properties, as well as off-site residential properties to the south along East Gaywood Street. The layout of the shallow groundwater monitoring well network is shown on **Figure 6B**. Three historical plume sources were identified at the site: one originating in the alleyway between West Office Plaza and Rummel Creek Village; another originating near the lint trap associated with the dry cleaner at West Office Plaza; and a third originating from the sewer line that runs parallel to Memorial Drive. Elevated levels of PCE were also detected in the groundwater within the residential subdivision to the south along East Gaywood Street (near MW-15).

A Groundwater Sampling and Analysis Plan was submitted to the Texas Commission on Environmental Quality (TCEQ) in March 1999 pursuant to the Voluntary Cleanup Program (VCP). The basic objectives of the Groundwater Sampling and Analysis Plan were (1) to determine if the identified groundwater plume(s) were stable; (2) to determine if the concentrations of PCE, TCE and their breakdown products are naturally attenuating in groundwater; and (3) to verify that the plume(s) were not expanding further into the adjacent residential subdivision. An additional and important goal of the groundwater monitoring and sampling program has been to monitor ongoing groundwater response actions and verify that the contaminants are subject to natural attenuation processes.

A review of the most recent groundwater sampling data (March 2008) indicates that PCE, TCE, cis-1,2-DCE and VC currently exceed the Tier 1 ^{GW}GW_{ing} PCLs in a small portion of the original plume area. The most recent groundwater sampling data indicates that the PCL exceedence (PCLE) zone extends from the subject property south across Memorial Drive to the first residence at the intersection with East Gaywood Street (**Figure 4B**).

Soil samples collected on the subject property were also historically reported to contain PCE and TCE concentrations in excess of the most conservative TRRP Tier 1 ^{GW}Soil_{ing} PCLs. Four of the soil sample locations reporting PCE concentrations above the Tier 1 ^{GW}Soil_{ing} PCL were located inside the former dry

cleaning space, beneath the concrete slab. A second area of elevated PCE and TCE concentrations was located in the alley between the two shopping centers, at the rear of both of the subject dry cleaning tenants. None of the soil samples reported VOC concentrations above the TRRP Tier 1 ^{Air}Soil_{Inh-V} PCL which will be the new critical PCL after the MSD is issued.

The lateral extent of groundwater impact has been horizontally delineated in all directions. After a period of quarterly groundwater monitoring, it was confirmed impacted groundwater had migrated off-site and that there is no off-site source contributing to the groundwater impacts. Groundwater monitoring well MW-4 is the upgradient delineation point and off-site groundwater monitoring well P-6 (among others) is the current downgradient delineation point. Several monitoring wells were installed in the surrounding residential neighborhood to delineate the groundwater plume.

A comparison of the sampling results from 1998 through 2008 indicates that the area of impact has significantly reduced over time. COC concentrations in the source area wells (MW-2 and MW-6) have been stable to decreasing over the sampling history of the site. However, based on the results of historical and recent groundwater sampling results, InControl Technologies anticipates some impact to off-site areas from the subject property may continue, though off-site impacts have been reduced dramatically as a result of several years of treatment activities performed by InControl Technologies under the oversight of the VCP.

Six (6) water wells were identified within a ½-mile radius of the proposed MSD boundary. Two (2) of these water wells are listed as domestic use and two (2) are listed as public supply wells. One public supply well owned by the City of Houston is listed as plugged in the water well report. The nearest domestic well is located approximately 1,200-feet cross-gradient (east) of the proposed MSD boundary, and the other domestic well is located almost ½-mile up-gradient (north) from the proposed MSD boundary. Both of these wells are completed at depths greater than 240-feet bgs (245-ft and 293-ft) and draw water from a zone much deeper than the impacted zone at the Rummel Creek Village Shopping Center. The public water supply well is located approximately 1,600-feet east (cross-gradient) from the proposed MSD boundary. The public water supply well is owned by the City of Houston and is screened in various zones between 597 and 758-feet bgs. The nearest receptor is Rummel Creek located adjacent and upgradient of the proposed MSD boundary.

This site represents an ideal candidate for the City of Houston MSD, as the original soil and groundwater contamination has been reduced substantially through years of active, aggressive treatment activities but a small area of residual groundwater impact that is not responding to further treatment remains. The applicant has taken all measures reasonably necessary to address the contaminants of concern and further monitoring of groundwater conditions will not be productive. Approval of a MSD for this site will allow the TCEQ to grand final closure after more than a decade of comprehensive investigation, remediation and monitoring.

Appendix B – Site Maps

The figures set out in this section provide information required under **Item 2**. The site maps depict the property location and topography, the area of groundwater contamination, the location of all soil sampling points and groundwater monitoring wells, the groundwater gradient, and the soil and groundwater PCL exceedence zones.

The following is a listing of figures included in **Appendix B**.

Figure 1B – Site Location and Topographic Map

Figure 2B – Watershed Map

Figure 3B – Floodplain Map

Figure 4B – Groundwater PCLE Zone

Figure 5B-1 – Soil Sampling Locations

Figure 5B-2 – Soil Sampling Locations

Figure 6B – Groundwater Sampling Locations

Figure 7B – Groundwater Gradient Map (March 2008)

Figure 8B– Soil PCL Exceedence Zone Map

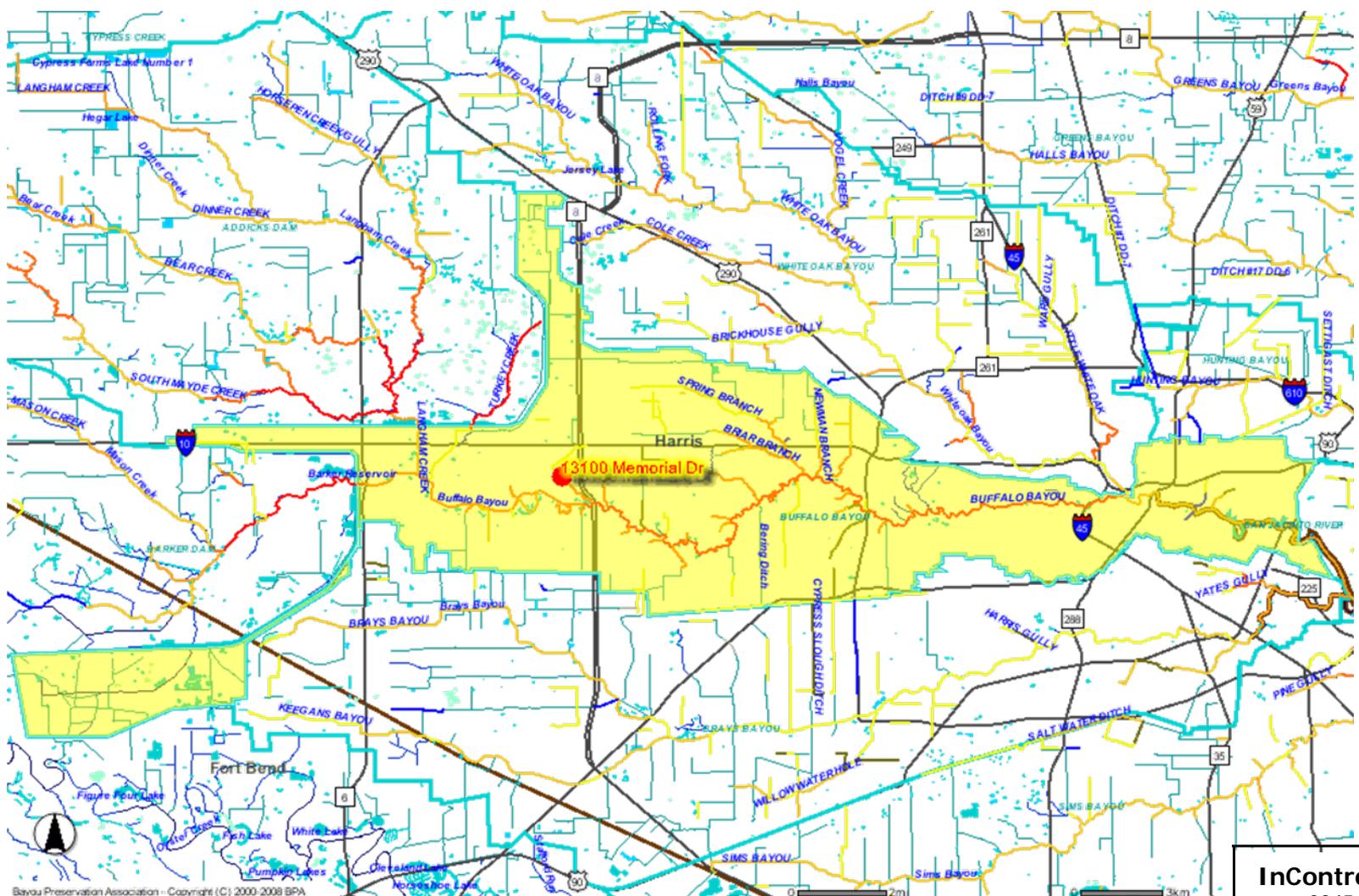
Figure 9B-1 – Groundwater PCL Exceedence Zone Map (PCE)

Figure 9B-2 – Groundwater PCL Exceedence Zone Map (TCE)

Figure 9B-3 – Groundwater PCL Exceedence Zone Map (cis-1,2-DCE)

Figure 9B-4 – Groundwater PCL Exceedence Zone Map (VC)

The subject property is located within the Buffalo Bayou watershed (**Figure 2B**). The site is not located in the 100-year floodplain (**Figure 3B**).



Bayou Preservation Association - Copyright (C) 2000-2008 BPA

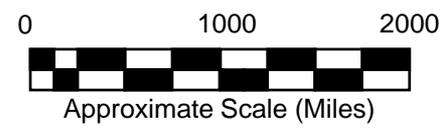
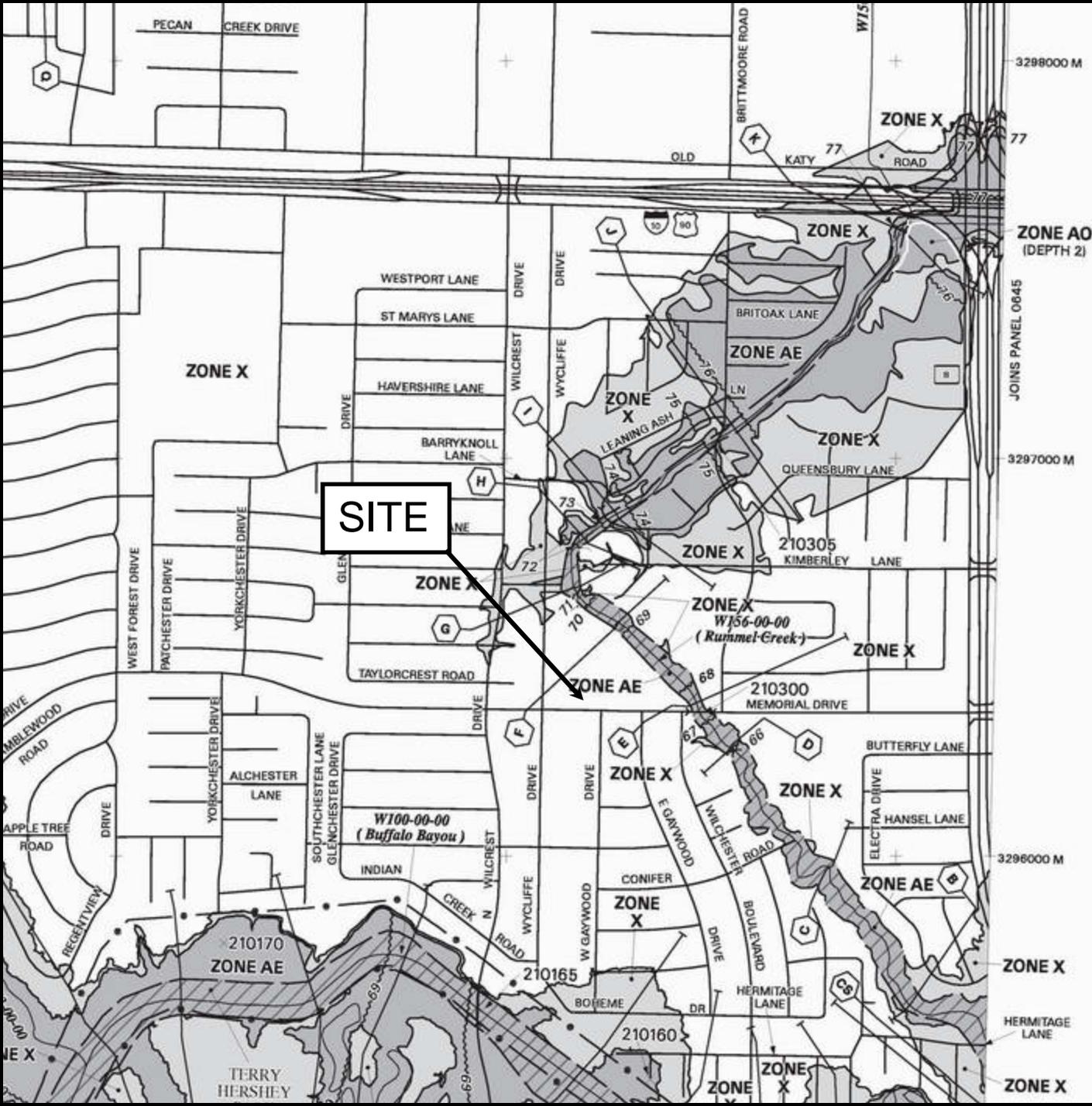
0 2m 3km

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Buffalo Bayou Watershed Map



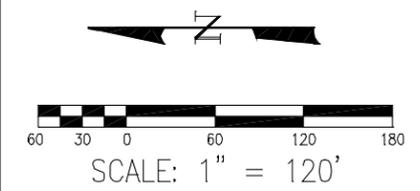
CLIENT:		PM:	
SRS Shopping Centers, Ltd.		JB	
LOCATION:		CHECKED:	
Memorial Drive Houston, Texas			
DETAILED:	DESIGNED:	PROJECT NO.:	FIGURE:
6/25/02	JB		2B



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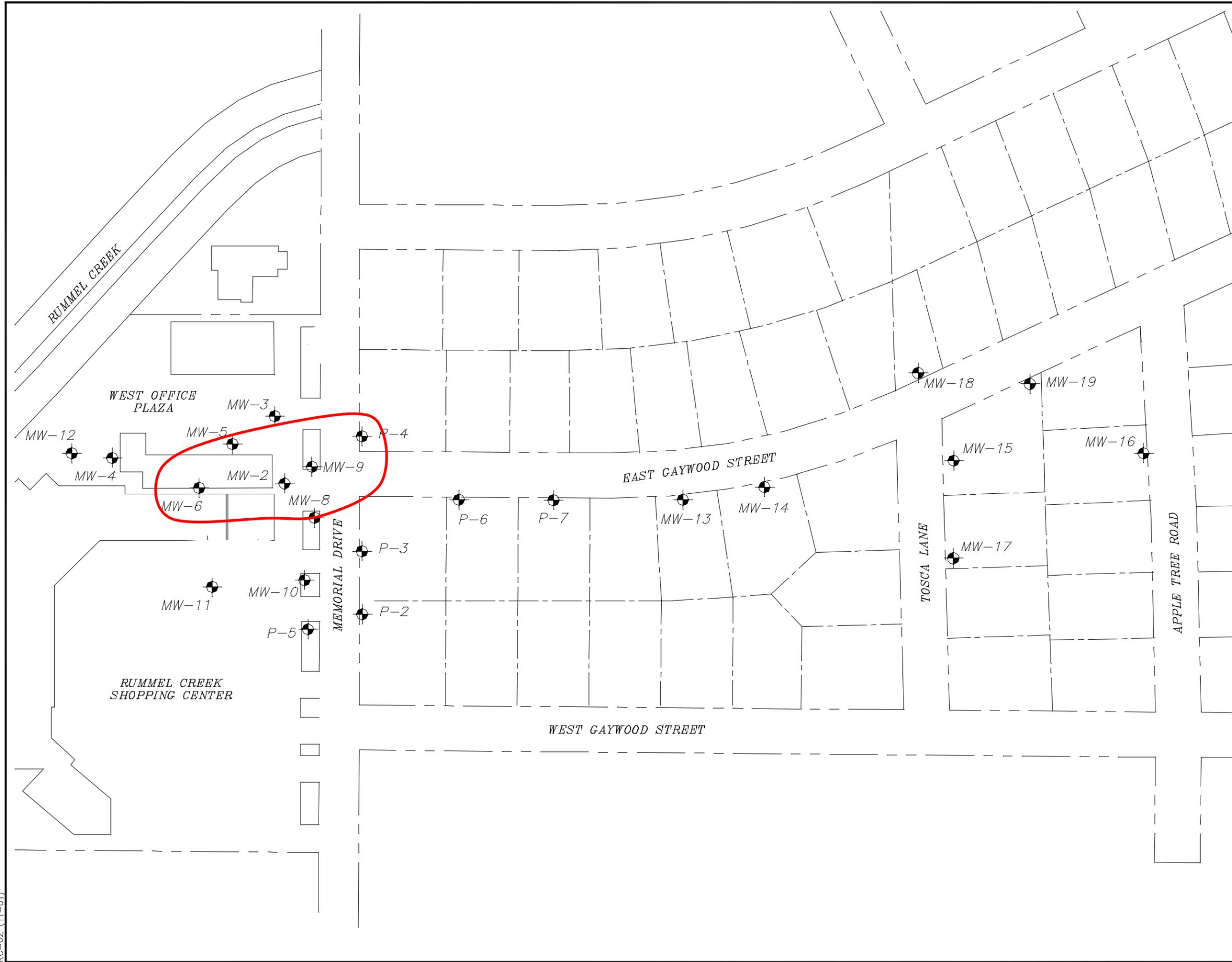
Floodplain Map

CLIENT:	SRS Shopping Centers, Ltd.	PM:	JB
LOCATION:	Memorial Drive Houston, Texas	CHECKED:	
DETAILED:	6/25/02	DESIGNED:	JB
PROJECT NO.:		FIGURE:	3B



LEGEND:
 GROUNDWATER MONITORING WELL

 PCLE Zone

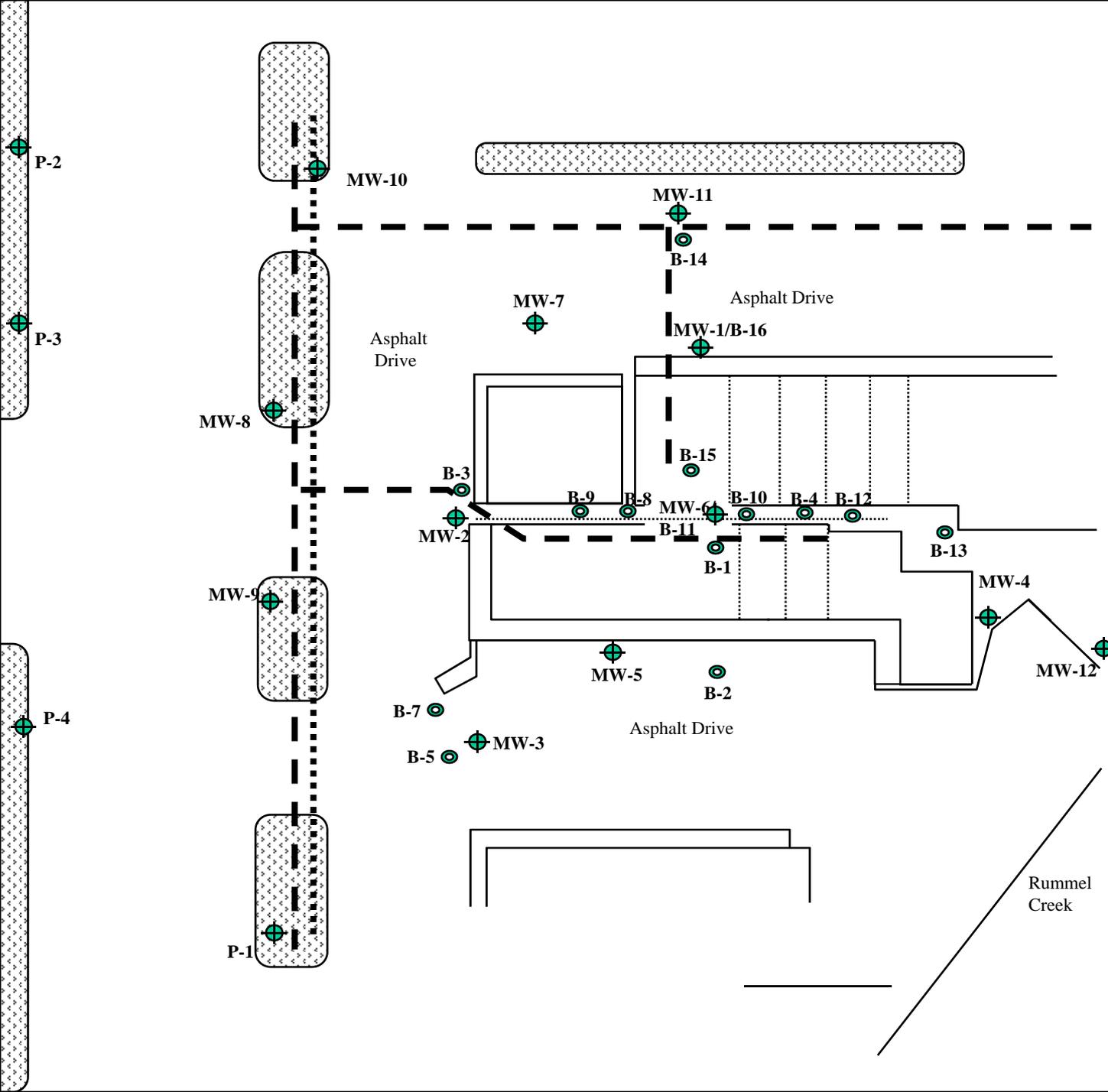


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Groundwater PCLE Zone

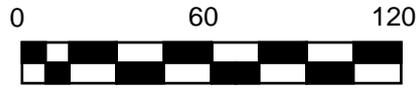
CLIENT: SRS SHOPPING CENTER HOUSTON, TEXAS		P.N.: JB	
LOCATION: HOUSTON, TEXAS		CHECKED:	
DETAILED: 4/9/08	DESIGNED:	PROJECT NO: 123-102	FIGURE: 4B

RC-02 (11-01)



LEGEND

- Soil Boring Location
- Groundwater Monitoring Well
- Sanitary Sewer Line
- Storm Water Sewer Lines
- Abandoned Sewer Line

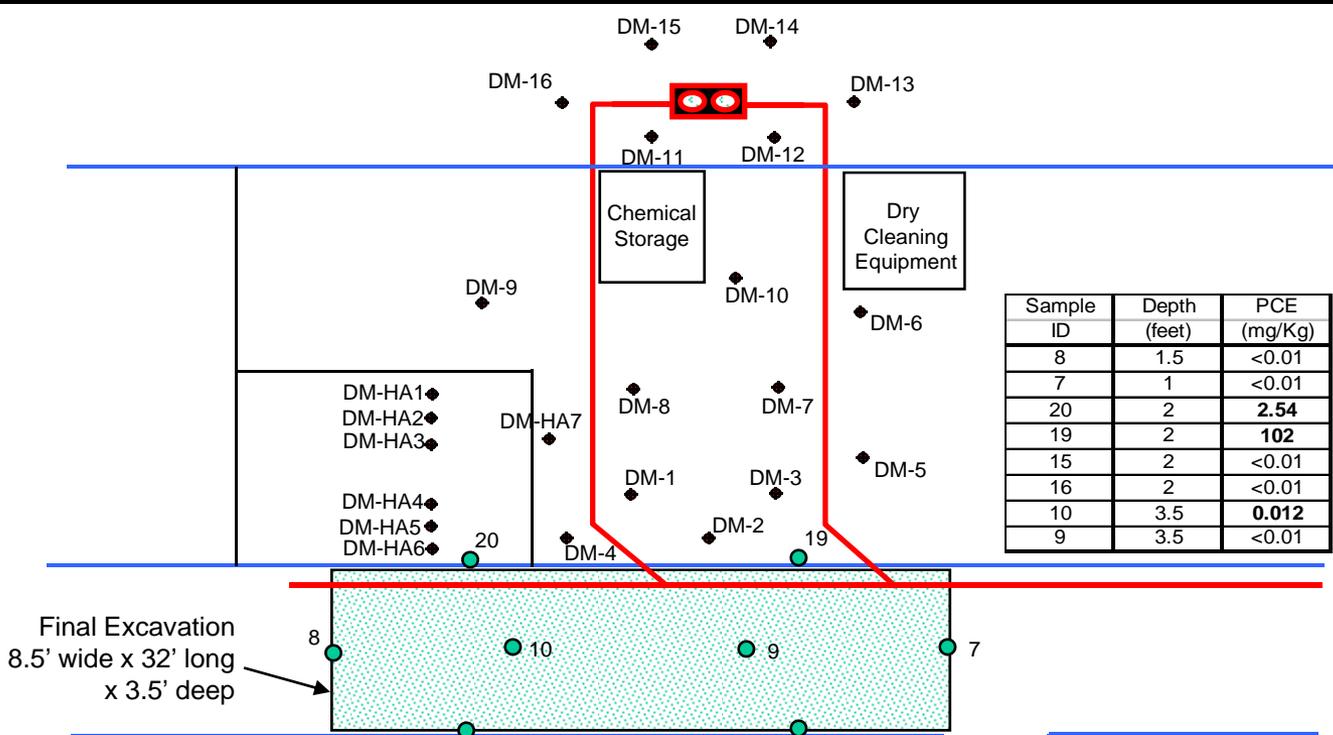


Approximate Scale

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Soil Boring Locations

CLIENT:		SRS Shopping Centers, Ltd.		PM:	JB
LOCATION:		Memorial Drive Houston, Texas		CHECKED:	
DETAILED:	DESIGNED:	PROJECT NO.:	FIGURE:		
6/25/02	JB		5B-1		

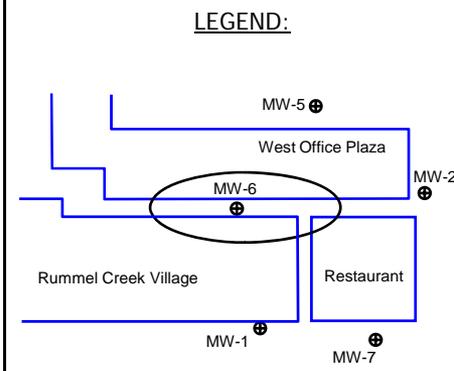


Sample ID	Depth (feet)	PCE (mg/Kg)
8	1.5	<0.01
7	1	<0.01
20	2	2.54
19	2	102
15	2	<0.01
16	2	<0.01
10	3.5	0.012
9	3.5	<0.01

Sample ID	Depth (feet)	PCE (mg/Kg)
DM-1	4-5	0.051
DM-2	4-5	0.026
DM-2	8-9	0.036
DM-3	0-1	0.0066
DM-3	1-2	0.067
DM-3	2-3	0.020
DM-3	3-4	0.027
DM-3	4-5	0.018
DM-3	5-6	0.018
DM-3	6-7	0.014
DM-3	7-8	0.0039
DM-3	8-9	0.042
DM-4	4-5	0.017
DM-4	8-9	0.023
DM-5	4-5	0.012
DM-5	8-9	0.029
DM-6	4-5	0.0058
DM-6	8-9	0.0056
DM-7	4-5	0.0084
DM-7	8-9	0.018
DM-8	4-5	0.056
DM-8	8-9	0.026

Sample ID	Depth (feet)	PCE (mg/Kg)
DM-9	4-5	0.0049
DM-9	8-9	0.0047
DM-10	0-1	0.067
DM-10	3-4	0.018
DM-10	5-6	<0.001
DM-10	8-9	0.004
DM-11	2-3	<0.001
DM-11	4-5	<0.001
DM-11	6-7	<0.001
DM-11	8-9	<0.001
DM-12	2-3	<0.001
DM-12	6-7	<0.001
DM-12	8-9	<0.001
DM-13	2-3	<0.001
DM-13	6-7	<0.001
DM-13	8-9	<0.001
DM-14	2-3	<0.001
DM-14	6-7	<0.001
DM-14	8-9	<0.001

Sample ID	Depth (feet)	PCE (mg/Kg)
DM-15	2-3	<0.001
DM-15	6-7	<0.001
DM-15	8-9	<0.001
DM-16	2-3	<0.001
DM-16	6-7	<0.001
DM-16	8-9	<0.001
DMHA1	1-2	0.013
DMHA2	4-5	0.0025
DMHA2	5-6	<0.001
DMHA3	2-3	0.015
DMHA3	4-5	0.0034
DMHA4	1-2	0.013
DMHA4	5-6	0.0073
DMHA5	2-3	0.0033
DMHA5	4-5	0.0034
DMHA6	2-3	0.011
DMHA6	4-5	<0.001
DMHA7	2-3	0.044
DMHA7	4-5	0.020



Approx. Scale
1"=10'

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Soil Sampling Locations and Results

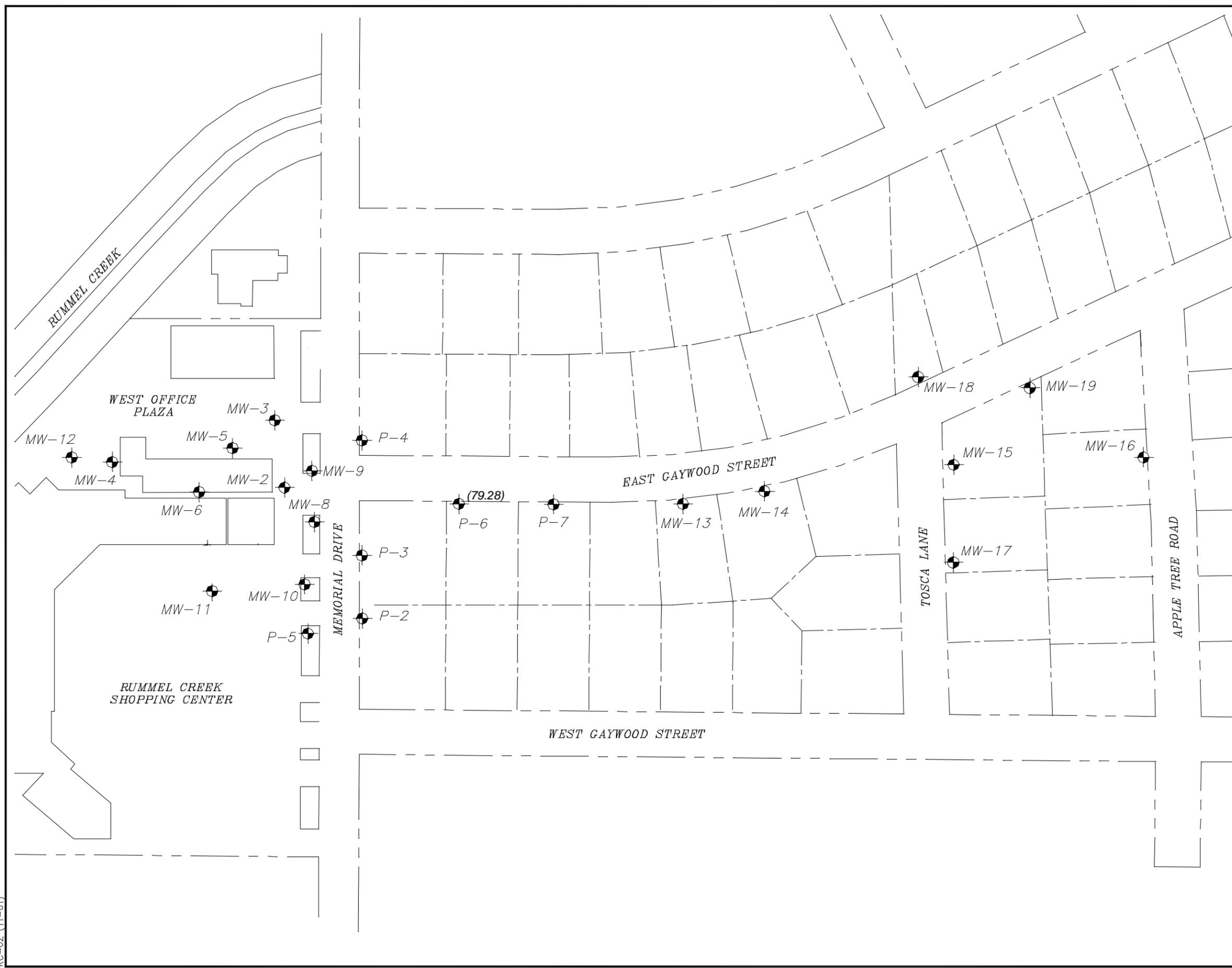
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LOCATION:	Memorial Drive Houston, Texas	CHECKED:	
DETAILED:	7/28/03	DESIGNED:	JB
PROJECT NO.:		FIGURE:	5B-2



SCALE: 1" = 120'

LEGEND:

 GROUNDWATER MONITORING WELL

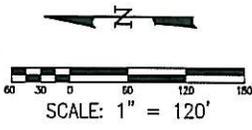
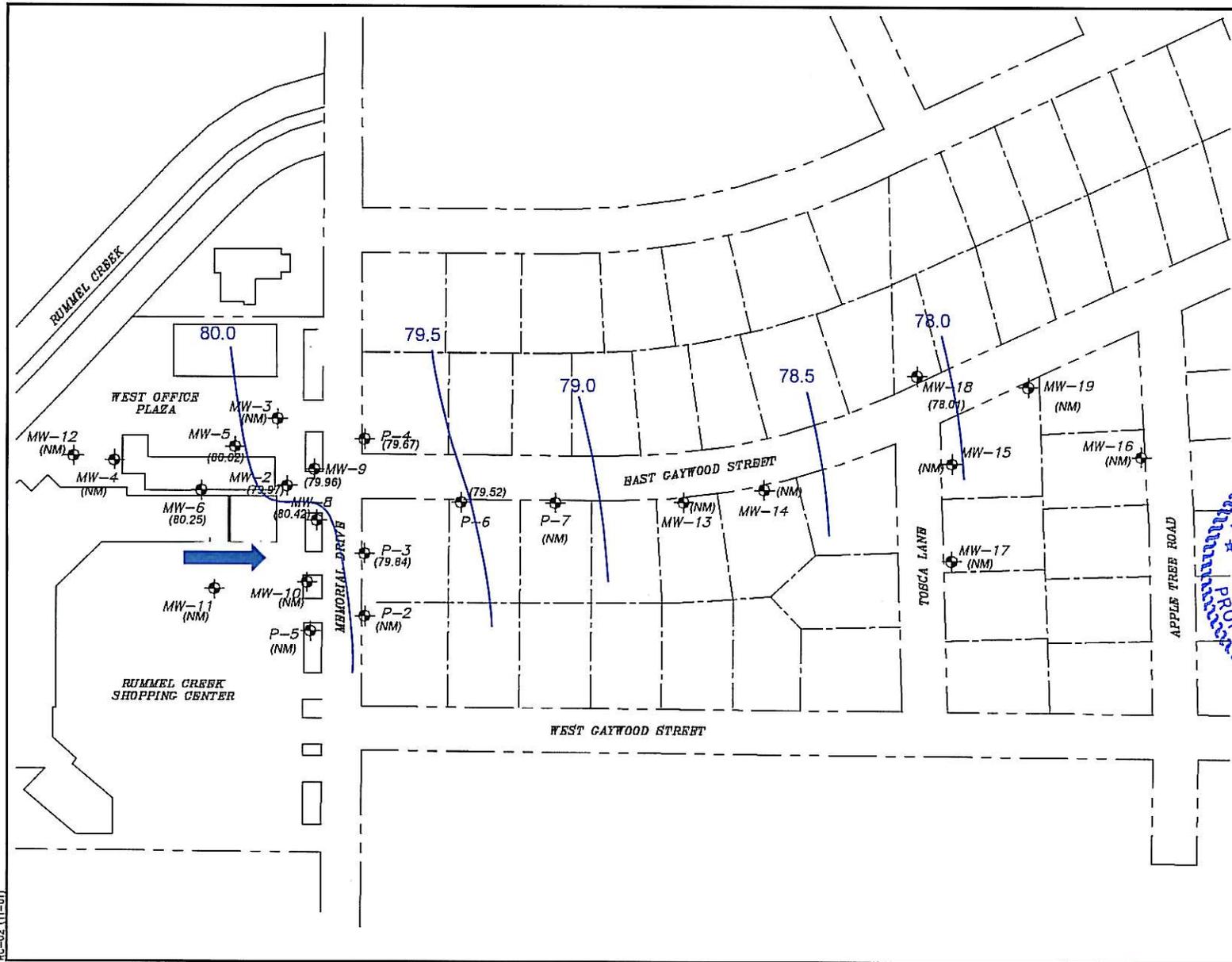


RC-02 (11-01)

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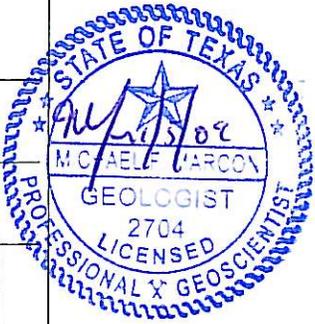
Groundwater Sampling Locations

CLIENT: SRS SHOPPING CENTER HOUSTON, TEXAS		P.N.: JB	
LOCATION: HOUSTON, TEXAS		CHECKED:	
DETAILED: 12/10/07	DESIGNED:	PROJECT NO: 123-102	FIGURE: 6B



LEGEND:

 GROUNDWATER MONITORING WELL

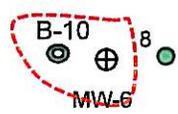
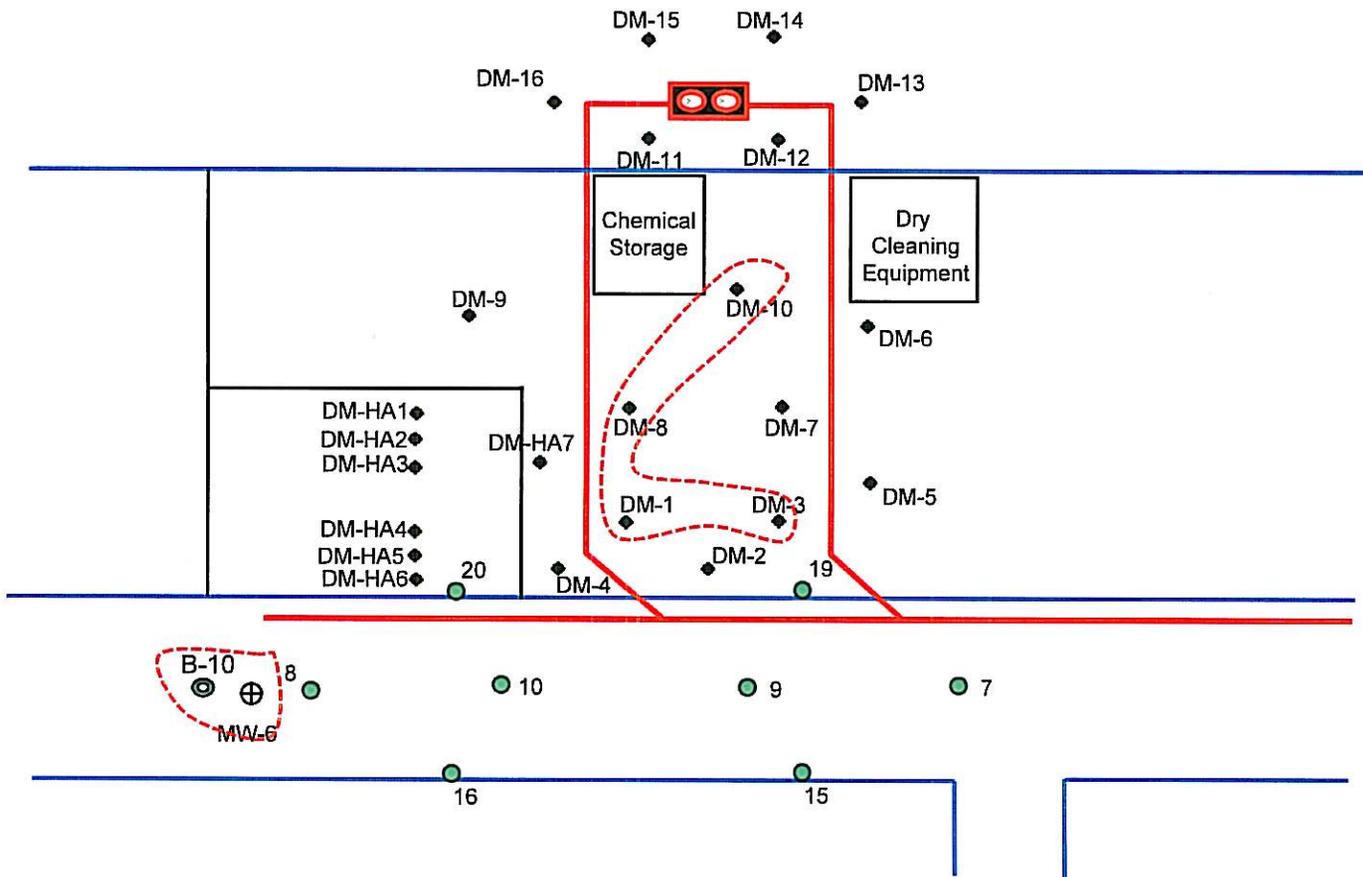


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Potentiometric Surface Map
 March 2008

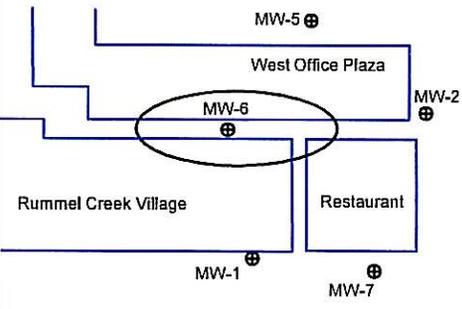
CLIENT	SRS SHOPPING CENTER HOUSTON, TEXAS	P.L.	JB
LOCATION	HOUSTON, TEXAS	CHECKED	
DATE	12/10/07	PROJECT NO.	123-102
		SCALE	7B

EC-02 (11-01)



LEGEND

 PCLE Zone - PCE



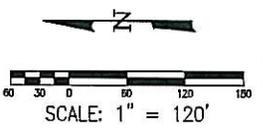
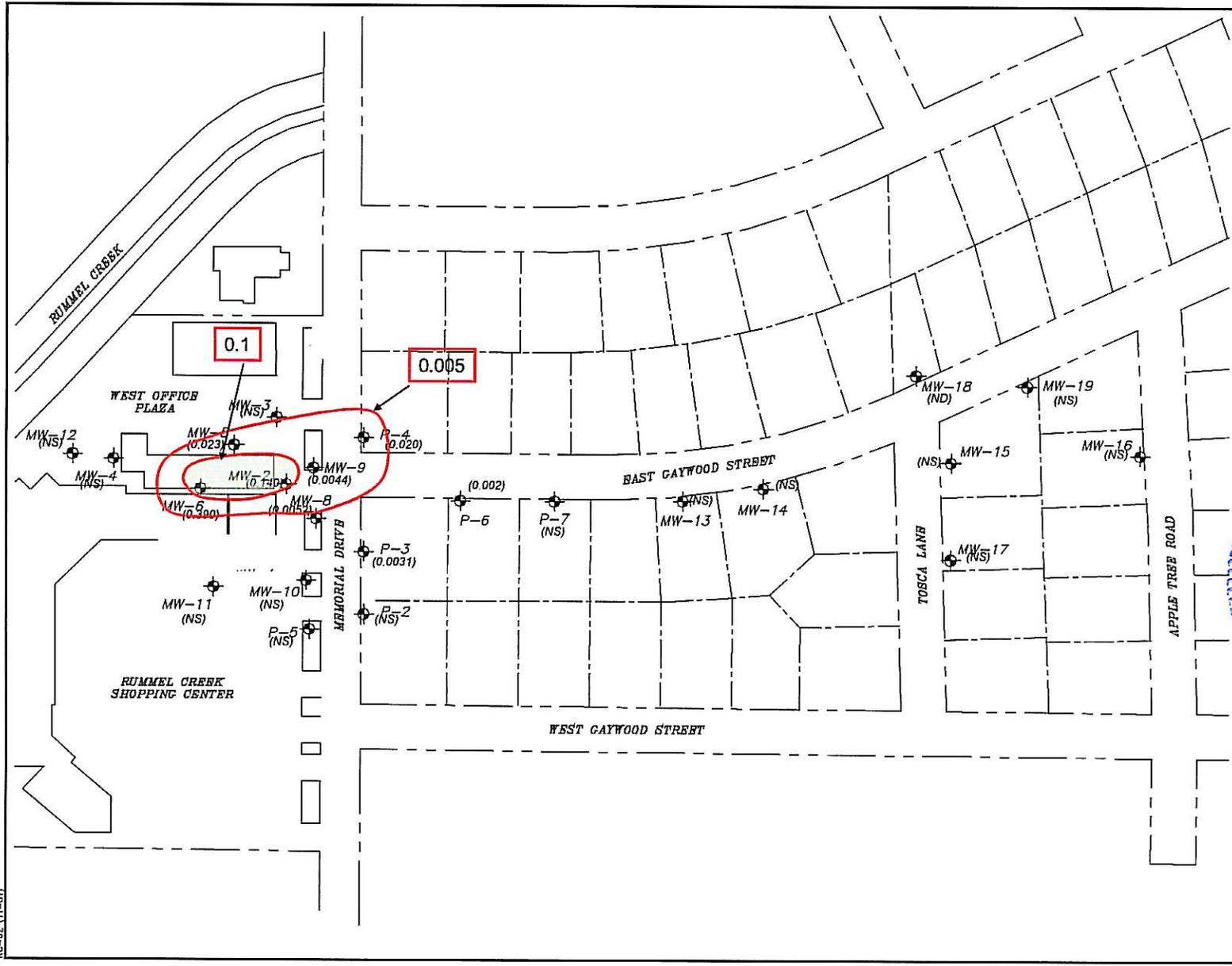


Approx. Scale
 1"=10'

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Soil PCLE Zone Map			
CLIENT:		PM:	
SRS Shopping Centers, Ltd.		JB	
LOCATION:		CHECKED:	
Memorial Drive Houston, Texas			
DETAILED:	DESIGNED:	PROJECT NO:	FIGURE:
7/28/03	JB		8B

Restaurant





- LEGEND:**
- GROUNDWATER MONITORING WELL
 - (ND)* PCE Concentration (mg/L)
 - PCE Isoconcentration Contour

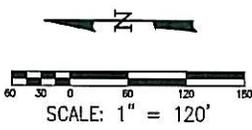
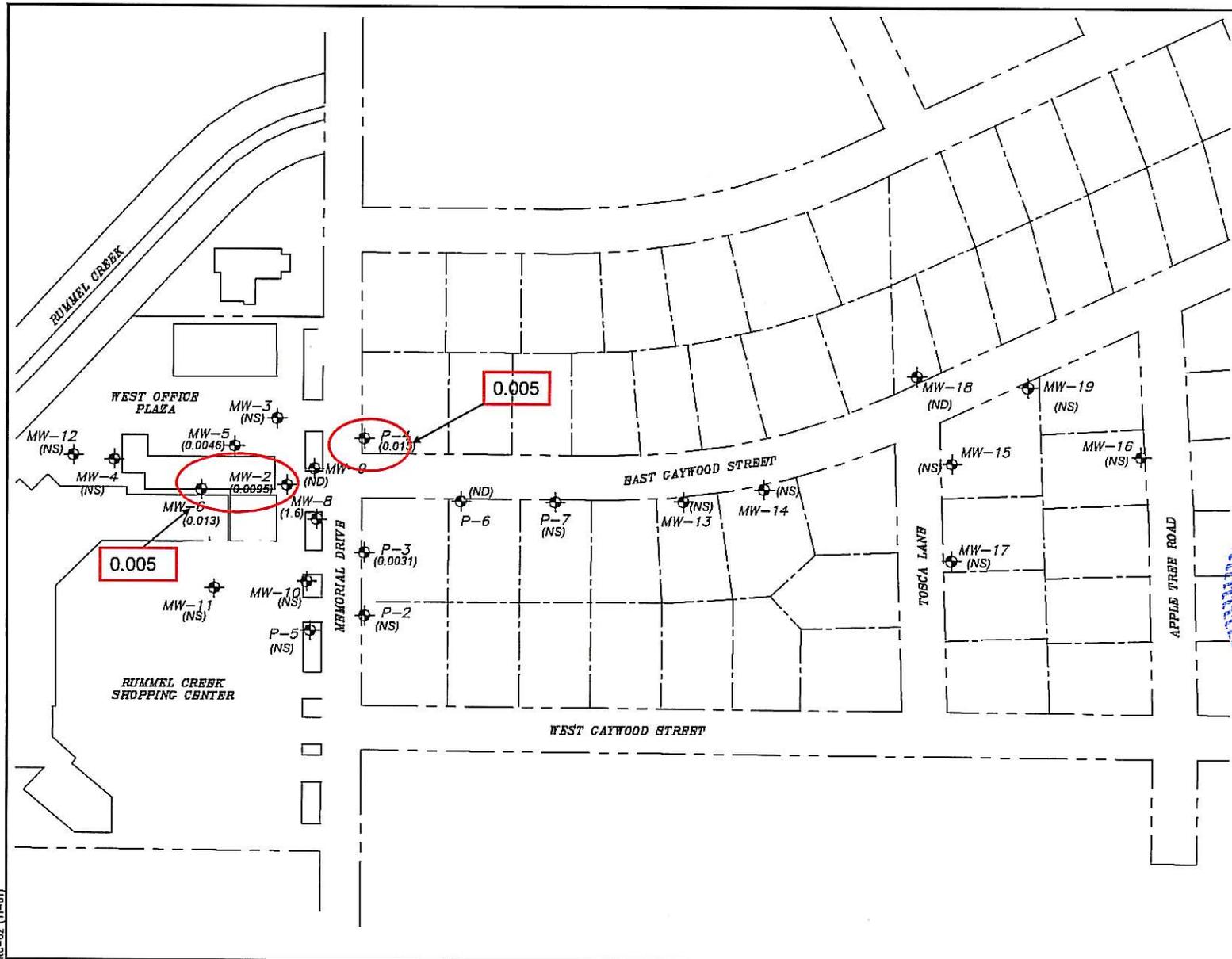


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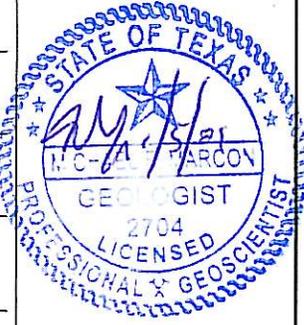
**PCE Concentration Map
 (March 2008)**

CLIENT	SRS SHOPPING CENTER HOUSTON, TEXAS	P.I.	JB
LOCATION	HOUSTON, TEXAS	CHECKED	
DATE	4/9/08	PROJECT NO.	123-102
		FILE NO.	9B-1

PC-02 (11-01)



- LEGEND:**
- GROUNDWATER MONITORING WELL
 - (ND)* TCE Concentration (mg/L)
 - TCE Isoconcentration Contour

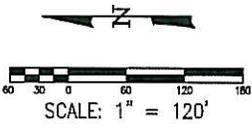
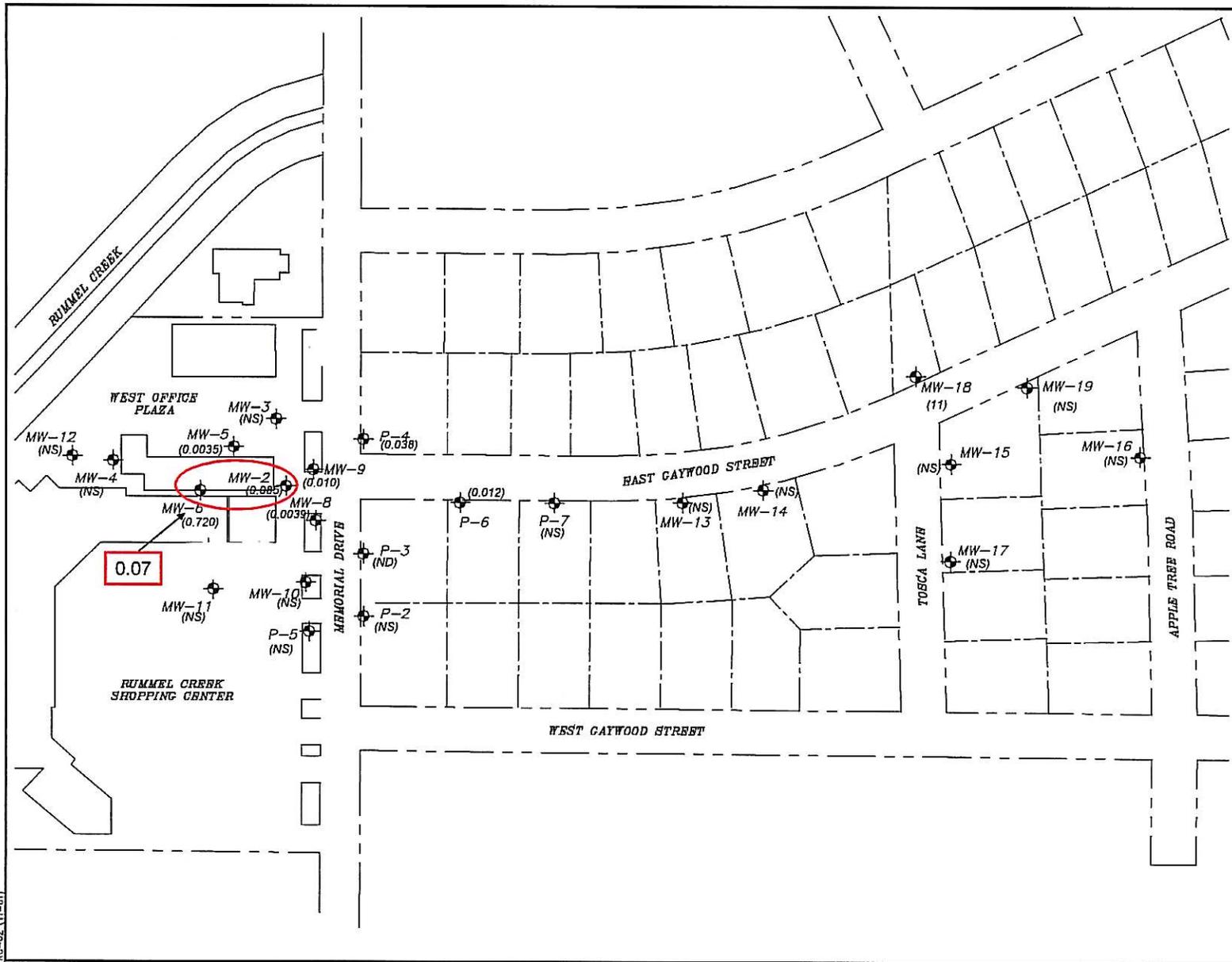


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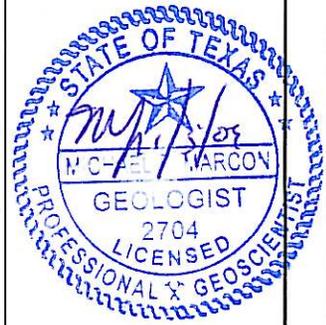
**TCE Concentration Map
 (March 2008)**

CLIENT	SRS SHOPPING CENTER HOUSTON, TEXAS	FILE	JB
LOCATION	HOUSTON, TEXAS	CREATOR	
DATE	4/9/08	PROJECT NO.	123-102
REVISION		FIGURE	9B-2

EC-02 (11-01)



- LEGEND:**
- GROUNDWATER MONITORING WELL
 - (ND)* cis-1,2-DCE Concentration (mg/L)
 - Cis-1,2-DCE Isoconcentration Contour

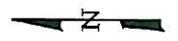
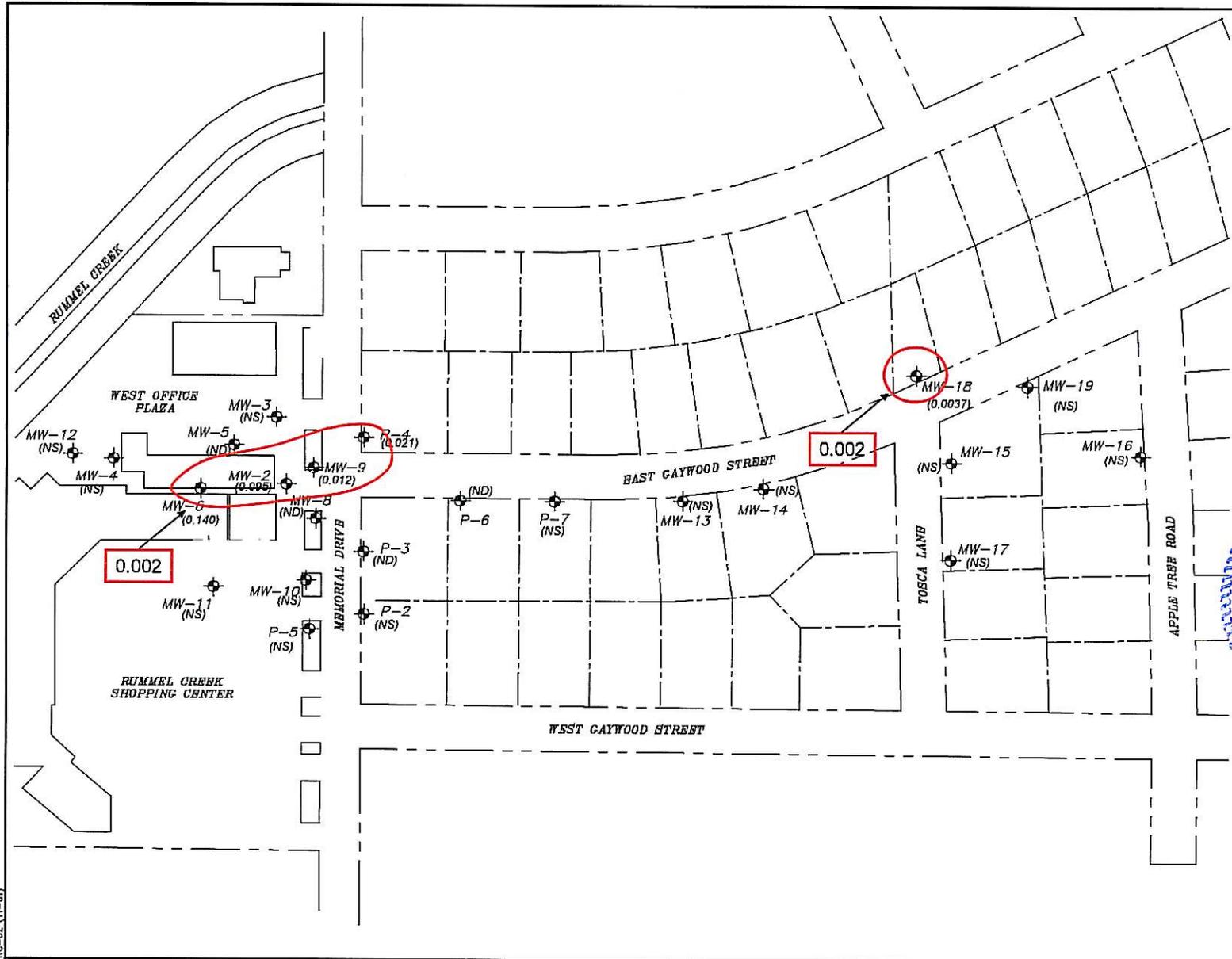


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Cis-1,2-DCE Concentration Map (March 2008)

CLIENT	SRS SHOPPING CENTER HOUSTON, TEXAS	DRAWN BY	JB
LOCATION	HOUSTON, TEXAS	CHECKED BY	
DATE	4/9/08	PROJECT NO.	123-102
		FIGURE NO.	9B-3

IC-02 (11-01)



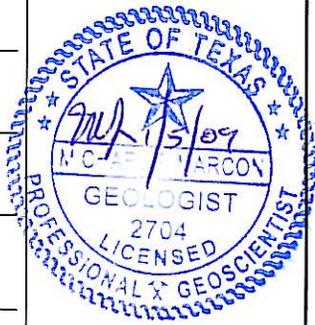
SCALE: 1" = 120'

LEGEND:

⊕ GROUNDWATER MONITORING WELL

(ND) VC Concentration (mg/L)

— VC Isoconcentration Contour



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**VC Concentration Map
 (March 2008)**

CLIENT:	SRS SHOPPING CENTER HOUSTON, TEXAS	P.L.:	JB
LOCATION:	HOUSTON, TEXAS	CHECKED:	
DATE:	4/9/08	PROJECT NO.:	123-102
		FIGURE NO.:	9B-4

EG-02 (11-01)

Appendix C – Property Use

The subject properties (Site) consists of approximately 8.06 acres of land located in west Houston, Harris County, Texas. The affected property is located in a primarily residential area with some commercial land use. The property has been listed as a trading zone since approximately 1962; however, individual commercial listings were not added to the city directory until 1972. Historically, the Rummel Creek Village Shopping Center has had two dry cleaning tenants whom operated tetrachloroethene dry cleaning equipment, Dapper Dan and Dry Clean Plus. Both operations were conducted in the same retail space. The West Office Plaza has one historical tenant who is a dry cleaner, Omni Cleaners. Omni Cleaners continues to operate in its tenant space. Dry cleaning operations in the Rummel Creek Village Shopping Center ceased approximately 5 years ago.

Approximately 90% of the subject property is covered with parking spaces, walkways and retail space (**Figure 1C**). The remaining 10% is covered with decorative landscaped areas. Future use of the subject property is anticipated to remain commercial.

Figure 1C (found in **Appendix C**) provides a description of the surrounding land use within 500-feet of the site.

- North - The Site is bounded to the north by Rummel Creek followed by residential development.
- East - The Site is bounded to the east by Rummel Creek followed by residential development.
- South – The Site is bounded to the south by Memorial Drive followed by residential development.
- West – The Site is bounded to the west by a utility easement followed by commercial development.



Proposed MSD Boundary

Rummel Creek Shopping Center

West Office



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Surrounding Property Map

CLIENT: SRS Shopping Centers, Ltd.		PM: JB
LOCATION: Memorial Drive Houston, Texas		CHECKED:
DETAILED: 6/25/02	DESIGNED: JB	PROJECT NO:
		FIGURE: 1C

9°46'23.21" N 95°34'17.21" W elev 76 ft

© 2008 Tele Atlas Streaming 100%

Appendix D – PCLE Zone Discussion

A) A review of recent groundwater sampling data (March 2008) indicates that the COCs that currently exceed the Tier 1 ^{GW}GW_{ing} PCLs are tetrachloroethene (PCE), trichloroethene (TCE) cis-1,2-dichloroethene (cis-1,2-DCE) and vinyl chloride (VC). Monitor wells located on the surrounding properties indicate the groundwater PCLE zone extends off-site to the south. The area of groundwater impact is delineated in all directions (**Figure 4B**).

Based on a review of boring logs, the shallow groundwater on the subject property is first encountered at a depth of approximately 18- to 23-feet below ground surface (ft bgs) (UTZ). The bottom of the UTZ is estimated at approximately 33-ft bgs.

A comparison of the recent groundwater sampling results (March 2008) with applicable non-ingestion protective concentration levels (^{Air}GW_{Inh-V}) indicates that none of the detected COC concentrations exceeded an ^{Air}GW_{Inh-V} PCL. Therefore, based on the recent groundwater monitoring results, there is no indication that there is a non-ingestion protective concentration level exceedance zone on the subject property.

B) The following table represents the groundwater ingestion PCL exceedences that were reported from the March 2008 monitoring event:

Table D1 – Groundwater ingestion PCL Exceedences

Monitoring Well ID	Sample Date	PCE (mg/L)	TCE (mg/L)	Cis-1,2-DCE (mg/L)	VC (mg/L)
Tier 1 ^{GW} GW _{ing} PCLs		0.005	0.005	0.07	0.002
Tier 1 ^{Air} GW _{Inh-V} PCLs		330	160	16,000	3.6
MW-2	3/28/08	0.140	0.0095	0.085	0.095
MW-5	3/28/08	0.023	0.0046	0.0035	ND
MW-6	3/28/08	0.390	0.013	0.720	0.140
MW-8	3/28/08	0.0052	0.0016	0.0039	ND
MW-9	3/28/08	0.0044	ND	0.010	0.012
MW-18	3/28/08	ND	ND	0.011	0.0037
P-4R	3/28/08	0.020	0.015	0.038	0.021

Notes – Values in **Bold** exceed the ^{GW}GW_{ing} PCL (ingestion PCLE)

Values in **Bold Italics** exceed the ^{Air}GW_{Inh-V} PCL (non-ingestion PCLE)

Groundwater COC concentrations tabulated above are less than the ^{Air}GW_{Inh-V} non-ingestion PCL, therefore there is no non-ingestion PCLE zone based on the March 2008 monitoring data.

C) The chlorinated solvents (PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE and VC) detected in groundwater samples are associated with the current and former dry cleaning operations at the Rummel Creek Village Shopping Center and West Office Plaza.

Chlorinated solvents are characterized by their high volatilities, high densities, low viscosities, low interfacial tension, low absolute solubilities, high relative solubilities, low partitioning to soil materials and low degradability. Chlorinated solvents will dissolve in water at low concentrations but once the groundwater has reached the saturation limit for that compound, the chlorinated solvent will form a separate phase in equilibrium with the water. Because chlorinated solvents have higher densities relative to water, the separate phase will “sink”. These compounds are referred to as “dense non-aqueous phase liquids” (DNAPLs). In high concentrations DNAPLs will be able to penetrate the water table and form “pools” on the top of less permeable layers. Historically, DNAPL has not been identified in any of the monitor wells within the groundwater monitor well network.

The rate of flow of a DNAPL through a geologic medium is dependent on the density and viscosity of the DNAPL, the pressure driving the DNAPL, the intrinsic permeability of the geologic medium and the degree of DNAPL saturation of the pore spaces of the medium. Dissolved phase chlorinated solvents will move with groundwater flow. Chlorinated solvents will weakly bind to soil and rock meaning that sorption to soils will not significantly retard the movement of a chlorinated solvent.

Based on the field observations and laboratory results, it appears that the groundwater contaminants on the subject property have been in the dissolved phase only. A review of the off-site groundwater sampling results indicates that the dissolved phase COCs have migrated off-site in the southern direction.

Appendix E – COCs in Designated Groundwater Discussion

- A) Refer to **Appendix D** for a discussion of the contaminants of concern (COC) in the ingestion protective concentration level (PCL) exceedence zone. Current groundwater sampling results indicate that there are four identified COCs (PCE, TCE, cis-1,2-DCE and VC) that exceed the ingestion protective concentration levels on the subject property.
- B) Refer to **Table D1** for a tabulated comparison of COC concentrations with the respective TRRP Protective Concentration Levels (PCLs)
- C) Refer to **Appendix D** for a discussion of the basic geochemical properties of the contaminants of concern (COCs) in the ingestion PCL exceedence zone.

Appendix F – Summary of Soil and Groundwater Concentration Data

Appendix F contains tables summarizing the concentration levels for the primary chemicals of concern in soil and groundwater. The tables include the concentration level, the ingestion protective concentration limits ($^{GW}Soil_{Ing}$ for soil and $^{GW}GW_{Ing}$ for groundwater), the non-ingestion protective concentration limits for soil ($^{Tot}Soil_{Comb}$ and $^{Air}Soil_{Inh-V}$) and groundwater ($^{Air}GW_{Inh-V}$), the critical protective concentration limits assuming no MSD is in place ($^{GW}Soil_{Ing}$ for soil and $^{GW}Soil_{Ing}$ for groundwater), and the critical PCLs assuming that an MSD is in place ($^{Tot}Soil_{Comb}$ for soil and $^{Air}GW_{Inh-V}$ for groundwater).

Table F-1
Summary of Halogenated Organic Compounds Detected in Groundwater
Rummel Creek Village Shopping Center
Houston, Texas

Monitoring Well	Date	PCE (mg/L)	TCE (mg/L)	1,1-DCE (mg/L)	cis-1,2 DCE (mg/L)	trans-1,2 DCE (mg/L)	VC (mg/L)
Tier 1^{GW} Critical PCL without MSD		0.005	0.005	0.007	0.07	0.1	0.002
Tier 1^{Air} Critical PCL with MSD		330	160	980	16,000	10,000	3.6
MW-1	1/27/98	0.069	0.012	ND	NR	ND	ND
	9/14/98	0.031	0.0049	ND	NR	ND	ND
	12/7/98	0.02	0.0042	ND	NR	ND	ND
	3/29/99	0.035	0.0064	ND	ND	ND	ND
	6/17/99	0.0095	0.0026	ND	ND	ND	ND
	9/12/99	0.071	0.01	ND	0.0017	ND	ND
	12/5/99	0.026	0.0037	ND	ND	ND	ND
	3/20/00	0.013	0.0022	ND	ND	ND	ND
	6/29/00	0.049	0.006	ND	ND	ND	ND
	12/20/00	0.016	0.0044	ND	ND	ND	ND
	6/26/01	0.027	0.0038	ND	ND	ND	ND
	8/8/01	0.02	0.0039	ND	ND	ND	ND
	10/4/01	0.0011	ND	ND	ND	ND	ND
	12/4/01	0.068	0.0066	ND	ND	ND	ND
	2/20/02	0.041	0.005	ND	ND	ND	ND
	4/17/02	ND	ND	ND	ND	ND	ND
	6/11/02	0.024	0.0043	ND	ND	ND	ND
	9/20/02	0.016	0.003	ND	ND	ND	ND
12/11/02	0.02	0.0023	ND	ND	ND	ND	
6/4/03	0.07	0.0056	ND	ND	ND	ND	
4/6/04	0.0077	0.0019	ND	ND	ND	ND	
MW-2	1/27/98	ND	ND	ND	NR	ND	ND
	2/6/98	ND	0.0023	0.0023	NR	0.0041	0.0035
	2/19/98	ND	0.0016	0.0022	NR	0.0033	0.012
	4/29/98	0.059	0.039	ND	NR	0.012	0.011
	9/14/98	0.023	0.028	0.0048	NR	0.01	0.012
	12/7/98	0.011	0.015	0.0097	NR	0.02	0.012
	3/31/99	1.3	0.37	0.0067	1.9	0.013	0.0031
	6/17/99	1.2	0.47	0.0047	2.3	0.008	0.0039
	9/12/99	1.4	0.41	0.0038	1.5	0.0062	0.0037
	12/5/99	2.1	0.52	0.0051	NR	0.0056	0.0041
	3/20/00	1.5	0.24	0.0032	0.76	0.0023	0.0034
	6/29/00	1.4	0.26	ND	0.91	ND	ND
	12/20/00	0.78	0.13	0.0011	0.40	0.0012	0.0012
	6/26/01	1.7	0.29	ND	0.78	ND	ND
	8/8/01	0.0011	ND	ND	ND	ND	ND
	10/4/01	ND	ND	ND	ND	ND	ND
	12/4/01	ND	ND	ND	ND	ND	ND
	2/20/02	0.18	ND	ND	ND	ND	ND
4/17/02	ND	ND	ND	ND	ND	ND	
6/11/02	ND	ND	ND	ND	ND	ND	
9/20/02	0.99	0.22	ND	0.52	0.002	ND	
12/11/02	0.63	0.1	ND	0.30	ND	ND	

Table F-1
Summary of Halogenated Organic Compounds Detected in Groundwater
Rummel Creek Village Shopping Center
Houston, Texas

Monitoring Well	Date	PCE (mg/L)	TCE (mg/L)	1,1-DCE (mg/L)	cis-1,2 DCE (mg/L)	trans-1,2 DCE (mg/L)	VC (mg/L)
Tier 1^{GW}GW_{ing} Critical PCL without MSD		0.005	0.005	0.007	0.07	0.1	0.002
Tier 1^{Air}GW_{Inh-v} Critical PCL with MSD		330	160	980	16,000	10,000	3.6
MW-2 (Continued)	2/10/03	0.35	0.083	ND	0.21	ND	ND
	2/24/03	0.087	ND	ND	0.55	ND	ND
	3/10/03	0.014	0.0051	ND	0.59	0.0012	ND
	3/26/03	0.017	0.0064	ND	0.5	0.0013	ND
	4/11/03	0.0088	0.0055	ND	0.64	0.0013	ND
	6/4/03	0.016	0.005	ND	0.64	ND	ND
	9/9/03	ND	ND	ND	0.48	ND	ND
	12/22/03	ND	ND	ND	0.12	ND	ND
	4/6/04	0.038	0.0022	ND	0.017	ND	0.017
	6/10/04	ND	ND	ND	0.0021	ND	0.036
	12/22/04	0.0019	0.0057	ND	0.024	ND	0.012
	8/23/05	ND	ND	ND	0.022	0.0012	0.0081
	12/7/05	0.011	ND	ND	0.059	ND	0.015
	3/17/06	0.022	ND	ND	ND	ND	ND
	6/6/06	ND	ND	ND	0.045	ND	0.05
	9/14/06	ND	ND	ND	ND	ND	ND
	1/8/07	0.61	0.067	0.0011	0.19	0.0017	0.061
	4/2/07	ND	ND	ND	ND	ND	ND
	6/29/07	ND	ND	ND	ND	ND	ND
	9/13/07	0.05	0.017	0.0012	0.037	ND	0.093
11/30/07	0.08	0.01	ND	0.04	ND	0.078	
3/28/08	0.14	0.0095	ND	0.085	0.0013	0.095	
MW-3	2/6/98	0.004	ND	ND	NR	ND	ND
	9/14/98	ND	ND	ND	NR	ND	ND
	12/7/98	ND	0.0061	ND	NR	ND	ND
	3/31/99	0.0042	0.0021	0.0010	0.26	0.0022	ND
	6/17/99	0.0029	0.0015	0.0032	1.3	0.0066	ND
	9/12/99	0.01	0.012	0.0060	1.8	0.014	0.0024
	12/5/99	ND	0.0013	0.0066	1.8	0.011	0.0016
	3/20/00	ND	ND	0.0024	0.87	0.0049	0.0013
	6/29/00	0.001	0.032	0.0018	0.44	0.0054	0.0014
	12/20/00	0.0092	0.0031	ND	0.063	0.0022	ND
	6/26/01	0.0094	0.0041	ND	0.059	0.0031	ND
	8/8/01	0.01	ND	ND	0.019	ND	ND
	10/4/01	0.02	0.0038	ND	0.0038	ND	ND
	12/4/01	0.0028	0.0012	ND	0.026	0.0014	ND
	2/20/02	0.014	0.0018	ND	0.0021	ND	ND
	4/17/02	ND	ND	ND	ND	ND	ND
	6/11/02	ND	ND	ND	ND	ND	ND
	9/20/02	0.008	0.004	ND	0.02	ND	ND
	12/11/02	ND	ND	ND	0.0067	ND	ND
	6/4/03	0.0053	0.0064	ND	0.012	ND	ND
	12/22/03	ND	ND	ND	0.014	ND	ND
	6/10/04	0.0029	0.0015	ND	0.0032	ND	ND
	12/22/04	ND	ND	ND	ND	ND	ND
8/22/05	0.0021	0.0027	ND	0.017	0.0013	ND	

Table F-1
Summary of Halogenated Organic Compounds Detected in Groundwater
Rummel Creek Village Shopping Center
Houston, Texas

Monitoring Well	Date	PCE (mg/L)	TCE (mg/L)	1,1-DCE (mg/L)	cis-1,2 DCE (mg/L)	trans-1,2 DCE (mg/L)	VC (mg/L)
Tier 1^{GW}GW_{ing} Critical PCL without MSD		0.005	0.005	0.007	0.07	0.1	0.002
Tier 1^{Air}GW_{Inh-v} Critical PCL with MSD		330	160	980	16,000	10,000	3.6
MW-4	2/6/98	ND	0.0014	ND	NR	0.0029	ND
	9/14/98	ND	ND	ND	NR	ND	ND
	12/7/98	ND	0.0022	ND	NR	0.0028	ND
	6/17/99	ND	ND	ND	0.0082	ND	ND
	12/5/99	ND	ND	ND	0.0034	ND	ND
	3/20/00	ND	ND	ND	0.0036	ND	ND
	6/29/00	ND	ND	ND	0.0035	ND	ND
	12/20/00	ND	ND	ND	0.0078	ND	ND
	6/26/01	ND	ND	ND	0.0073	ND	ND
	12/4/01	ND	ND	ND	0.008	ND	ND
	6/11/02	ND	ND	ND	0.017	ND	ND
	12/11/02	ND	ND	ND	0.008	ND	ND
	6/4/03	ND	ND	ND	0.014	ND	ND
	12/22/03	ND	ND	ND	0.016	ND	ND
	6/11/04	ND	ND	ND	0.0073	ND	ND
12/22/04	ND	ND	ND	0.016	ND	ND	
8/23/05	ND	ND	ND	0.0085	ND	ND	
MW-5	2/6/98	0.0095	0.012	ND	NR	ND	ND
	9/14/98	0.27	0.056	ND	NR	ND	ND
	12/7/98	0.23	0.076	ND	NR	0.0017	0.003
	3/29/99	0.17	0.048	ND	0.16	0.0017	0.0014
	6/17/99	0.065	0.032	ND	0.1	0.0016	0.0037
	9/12/99	0.072	0.034	ND	0.063	0.0029	0.0044
	12/5/99	0.013	0.017	ND	NR	ND	0.0061
	3/20/00	0.065	0.035	ND	0.073	ND	0.0013
	6/29/00	0.12	0.05	ND	0.065	ND	ND
	12/20/00	0.0059	0.0093	ND	0.0081	ND	ND
	6/26/01	0.096	0.033	ND	0.032	ND	ND
	8/8/01	0.057	0.018	ND	0.018	ND	ND
	10/4/01	0.056	0.019	ND	0.019	ND	ND
	12/4/01	0.07	0.015	ND	0.014	ND	ND
	2/20/02	0.053	0.016	ND	0.039	ND	ND
	4/17/02	ND	ND	ND	ND	ND	ND
	6/11/02	0.031	0.0089	ND	0.01	ND	ND
	9/20/02	0.081	0.022	ND	0.028	ND	ND
	12/11/02	0.027	0.0072	ND	0.0079	ND	ND
	6/4/03	0.033	0.012	ND	0.019	ND	ND
	12/22/03	0.0065	0.0027	ND	0.084	ND	ND
	6/10/04	ND	ND	ND	0.0099	ND	ND
	12/22/04	0.0056	0.0037	ND	0.032	ND	ND
	8/24/05	0.068	0.036	ND	0.1	0.0059	ND
	3/17/06	0.0079	0.01	ND	0.25	0.0061	ND
	4/2/07	0.031	0.015	ND	0.031	ND	ND
	6/29/07	0.027	0.0032	ND	0.002	ND	ND
9/13/07	0.036	0.015	ND	0.01	ND	ND	
11/30/07	0.086	0.035	ND	0.035	ND	ND	
3/28/08	0.023	0.0046	ND	0.0035	ND	ND	

Table F-1
Summary of Halogenated Organic Compounds Detected in Groundwater
Rummel Creek Village Shopping Center
Houston, Texas

Monitoring Well	Date	PCE (mg/L)	TCE (mg/L)	1,1-DCE (mg/L)	cis-1,2 DCE (mg/L)	trans-1,2 DCE (mg/L)	VC (mg/L)
Tier 1^{GW} Critical PCL without MSD		0.005	0.005	0.007	0.07	0.1	0.002
Tier 1^{Air} Critical PCL with MSD		330	160	980	16,000	10,000	3.6
MW-6	1/27/98	0.22	0.11	0.0022	NR	0.004	0.0025
	9/14/98	0.024	0.0046	ND	NR	ND	ND
	12/7/98	0.75	0.4	0.0032	NR	0.0058	0.014
	3/29/99	0.53	0.35	ND	0.74	ND	ND
	6/17/99	0.97	0.45	0.0024	1.2	0.012	0.0069
	9/12/99	0.75	0.44	0.0022	1.1	0.0037	0.0044
	12/5/99	0.29	0.17	0.0015	0.37	0.0017	0.0026
	3/20/00	0.56	0.31	0.0010	0.68	0.0014	0.0016
	6/29/00	0.49	0.26	0.0012	0.49	0.0013	0.0016
	12/20/00	0.5	0.25	0.0011	0.5	0.0013	0.0015
	6/26/01	0.68	0.29	ND	0.62	ND	ND
	8/8/01	0.52	0.22	ND	0.44	ND	ND
	10/4/01	0.87	0.31	ND	0.68	ND	ND
	3/6/02	0.39	0.2	ND	0.32	ND	ND
	4/17/02	ND	ND	ND	ND	ND	ND
	6/11/02	0.0031	ND	ND	ND	ND	ND
	9/20/02	0.68	0.32	ND	0.32	0.002	ND
	12/11/02	0.33	0.17	ND	0.16	ND	ND
	2/10/03	0.19	ND	ND	0.098	ND	ND
	2/24/03	0.12	ND	ND	0.2	ND	ND
	3/10/03	0.018	0.0093	ND	0.33	ND	ND
	3/26/03	0.013	0.0061	ND	0.55	0.0016	ND
	4/11/03	0.0061	ND	ND	0.53	0.0025	ND
	6/4/03	0.041	0.042	ND	0.33	ND	0.0015
	9/9/03	0.011	0.01	0.0019	1.6	0.0034	0.085
	12/22/03	ND	ND	ND	0.29	ND	0.13
	4/6/04	ND	ND	ND	1.0	ND	0.25
	6/10/04	0.0062	0.006	ND	2.3	0.0053	0.26
	9/27/04	0.004	0.0016	ND	0.0024	ND	0.0031
	12/22/04	0.045	0.004	ND	0.053	ND	0.041
8/23/05	0.0014	0.0015	ND	0.17	0.0013	0.045	
12/8/05	0.72	0.03	ND	0.66	ND	0.49	
3/17/06	0.33	0.0092	0.0011	1.2	0.034	0.19	
6/6/06	0.44	0.034	ND	0.11	ND	0.011	
9/14/06	0.14	0.047	ND	0.70	0.0084	0.23	
1/8/07	0.72	0.042	0.0069	1.00	0.023	0.2	
4/2/07	0.028	ND	ND	ND	ND	ND	
6/29/07	1.70	0.072	ND	0.052	ND	ND	
9/13/07	3.40	0.28	0.005	0.7	0.0061	0.0094	
11/30/07	2.00	0.1	0.0028	0.31	0.0039	0.01	
3/28/08	0.39	0.013	ND	0.72	0.013	0.14	
MW-7	1/27/98	0.1	0.025	ND	NR	ND	ND
	9/14/98	0.033	0.011	ND	NR	ND	ND
	12/7/98	0.026	0.0077	ND	NR	ND	ND
	3/30/99	0.031	0.0094	ND	0.0036	ND	ND
	6/17/99	0.014	0.0048	ND	0.0028	ND	ND
	9/12/99	0.01	0.0029	ND	ND	ND	ND
	12/5/99	0.0091	0.0023	ND	ND	ND	ND
	3/20/00	0.0047	0.0013	ND	ND	ND	ND

Table F-1
Summary of Halogenated Organic Compounds Detected in Groundwater
Rummel Creek Village Shopping Center
Houston, Texas

Monitoring Well	Date	PCE (mg/L)	TCE (mg/L)	1,1-DCE (mg/L)	cis-1,2 DCE (mg/L)	trans-1,2 DCE (mg/L)	VC (mg/L)	
Tier 1^{GW} Critical PCL without MSD		0.005	0.005	0.007	0.07	0.1	0.002	
Tier 1^{Air} Critical PCL with MSD		330	160	980	16,000	10,000	3.6	
MW-7 (Continued)	6/29/00	0.0028	ND	ND	ND	ND	ND	
	12/20/00	0.0011	ND	ND	ND	ND	ND	
	6/26/01	0.0057	0.0027	ND	ND	ND	ND	
	12/4/01	ND	ND	ND	ND	ND	ND	
	4/17/02	ND	ND	ND	ND	ND	ND	
	6/11/02	0.0077	0.0012	ND	ND	ND	ND	
	9/20/02	ND	ND	ND	ND	ND	ND	
	12/11/02	0.015	0.0025	ND	ND	ND	ND	
	6/4/03	0.013	0.0028	ND	0.0076	ND	ND	
MW-8	1/27/98	0.1	0.029	ND	NR	ND	0.0014	
	2/19/98	0.23	0.078	ND	NR	0.0012	0.0042	
	4/29/98	0.48	0.14	ND	NR	ND	0.0056	
	9/14/98	0.24	0.061	ND	NR	ND	ND	
	3/29/99	0.085	0.03	ND	0.035	ND	ND	
	6/16/99	0.085	0.03	ND	0.035	ND	ND	
	9/12/99	0.071	0.02	ND	0.021	ND	ND	
	12/5/99	0.071	0.027	ND	NR	ND	ND	
	3/20/00	0.097	0.041	ND	0.069	ND	ND	
	6/29/00	0.035	0.02	ND	0.022	ND	ND	
	12/20/00	0.11	0.066	ND	0.025	ND	ND	
	6/26/01	0.11	0.032	ND	0.02	ND	ND	
	8/8/01	0.11	0.021	ND	0.0041	ND	ND	
	10/4/01	0.022	ND	ND	ND	ND	ND	
	12/4/01	0.012	0.044	ND	0.0063	ND	ND	
	2/20/02	0.052	0.014	ND	0.0053	ND	ND	
	4/17/02	0.043	0.0073	ND	0.0011	ND	ND	
	6/11/02	0.022	0.0072	ND	0.001	ND	ND	
	9/20/02	0.14	0.093	ND	0.015	ND	ND	
	12/11/02	0.033	0.0099	ND	0.0021	ND	ND	
	2/10/03	0.02	0.0087	ND	0.0014	ND	ND	
	3/10/03	0.037	0.012	ND	0.0027	ND	ND	
	4/11/03	0.097	0.038	ND	ND	ND	ND	
		6/4/03	ND	ND	ND	0.11	ND	ND
		9/9/03	ND	ND	ND	0.052	ND	ND
		12/22/03	ND	ND	ND	0.068	ND	ND
		6/10/04	0.0013	ND	ND	0.094	ND	ND
		12/22/04	ND	ND	ND	0.089	ND	ND
		5/9/05	0.0015	0.0019	ND	0.079	ND	ND
		8/23/05	ND	0.0025	ND	0.017	ND	ND
		9/14/06	0.011	0.0042	ND	0.041	ND	ND
		1/8/07	0.0088	0.0011	ND	0.024	ND	ND
	4/2/07	0.0077	0.0012	ND	0.0095	ND	ND	
	6/29/07	0.0061	ND	ND	ND	ND	ND	
	9/13/07	0.011	0.0039	ND	0.099	0.0034	0.001	
	11/30/07	0.0092	0.0049	ND	0.038	ND	0.0017	
	3/28/08	0.0052	0.0016	ND	0.0039	ND	ND	

Table F-1
Summary of Halogenated Organic Compounds Detected in Groundwater
Rummel Creek Village Shopping Center
Houston, Texas

Monitoring Well	Date	PCE (mg/L)	TCE (mg/L)	1,1-DCE (mg/L)	cis-1,2 DCE (mg/L)	trans-1,2 DCE (mg/L)	VC (mg/L)
Tier 1^{GW} Critical PCL without MSD		0.005	0.005	0.007	0.07	0.1	0.002
Tier 1^{Air} Critical PCL with MSD		330	160	980	16,000	10,000	3.6
MW-9	1/27/98	0.071	0.015	ND	NR	ND	ND
	2/19/98	0.039	0.02	0.0021	NR	0.0035	ND
	4/29/98	0.1	0.09	0.0015	NR	0.0028	ND
	9/14/98	0.65	0.24	ND	NR	ND	ND
	12/7/98	0.44	0.13	ND	NR	0.0015	0.004
	3/30/99	0.76	0.19	0.0018	0.5	0.0025	0.0025
	6/16/99	0.31	0.087	0.0014	0.33	0.0024	0.0037
	9/12/99	0.74	0.17	0.0024	0.69	0.0045	0.0033
	12/5/99	1.7	0.42	0.0053	NR	0.012	0.0038
	3/20/00	1.9	0.39	0.0057	2.1	0.011	0.0024
	6/29/00	0.97	0.38	0.0042	1.7	0.01	0.0029
	12/20/00	2.2	0.61	0.0056	2.6	0.0045	0.0049
	6/26/01	1.1	0.21	ND	1.1	ND	ND
	10/4/01	1.2	0.15	ND	0.43	0.0064	ND
	12/4/01	0.14	0.12	ND	0.16	0.0051	ND
	2/20/02	0.54	0.049	ND	0.40	ND	ND
	4/17/02	0.57	0.049	ND	0.17	ND	ND
	6/11/02	0.70	0.25	ND	0.65	0.015	ND
	9/20/02	0.20	0.097	0.003	0.95	0.004	ND
	12/11/02	0.06	0.036	0.0036	2.40	0.0085	ND
	2/10/03	0.07	0.066	0.0032	1.40	0.0083	ND
	3/10/03	0.35	0.13	0.0017	1.00	0.0057	ND
	4/11/03	0.25	0.825	0.0041	2.50	0.0074	ND
	6/4/03	0.04	0.043	0.0046	2.30	0.015	0.0012
	9/9/03	0.11	0.092	0.0025	1.70	0.015	ND
	12/22/03	0.04	0.021	0.0025	1.50	0.0069	0.001
	4/6/04	0.01	0.0049	ND	0.550	0.004	ND
	6/10/04	0.0018	0.0029	ND	0.200	0.0029	0.16
	9/27/04	ND	ND	ND	0.050	0.0011	0.046
	12/22/04	0.062	0.015	ND	0.270	0.0029	0.01
	5/9/05	0.0076	0.0051	ND	0.059	0.002	0.021
8/23/05	0.032	0.011	ND	0.110	0.0057	0.019	
12/7/05	0.023	0.0029	ND	0.220	0.0053	0.1	
3/17/06	0.016	ND	ND	0.180	0.0071	0.067	
6/6/06	0.019	0.0015	ND	0.069	0.0019	0.022	
9/14/06	0.260	0.16	0.002	0.590	0.0046	0.065	
1/8/07	0.016	0.064	ND	0.400	0.0063	0.091	
4/2/07	0.022	0.002	ND	0.017	0.0013	0.029	
6/29/07	0.010	0.0011	ND	0.073	0.0016	0.056	
9/13/07	0.012	ND	ND	0.0070	0.0025	0.02	
11/30/07	0.015	0.0016	ND	0.0010	ND	0.0059	
3/28/08	0.0044	ND	ND	0.0100	ND	0.012	
MW-10	1/27/98	0.0078	0.0026	ND	NR	ND	ND
	4/29/98	0.0098	0.0036	ND	NR	ND	ND
	9/14/98	0.0016	ND	ND	NR	ND	ND
	12/7/98	0.001	ND	ND	NR	ND	ND
	3/30/99	0.002	ND	ND	ND	ND	ND
	6/16/99	0.0013	ND	ND	ND	ND	ND
	9/12/99	ND	ND	ND	ND	ND	ND

Table F-1
Summary of Halogenated Organic Compounds Detected in Groundwater
Rummel Creek Village Shopping Center
Houston, Texas

Monitoring Well	Date	PCE (mg/L)	TCE (mg/L)	1,1-DCE (mg/L)	cis-1,2 DCE (mg/L)	trans-1,2 DCE (mg/L)	VC (mg/L)
Tier 1^{GW} Critical PCL without MSD		0.005	0.005	0.007	0.07	0.1	0.002
Tier 1^{Air} Critical PCL with MSD		330	160	980	16,000	10,000	3.6
MW-10 (Continued)	12/5/99	ND	ND	ND	NR	ND	ND
	3/20/00	0.003	ND	ND	0.0038	ND	ND
	6/29/00	0.0018	0.0011	ND	ND	ND	ND
	12/20/00	ND	ND	ND	ND	ND	ND
	6/26/01	0.001	ND	ND	ND	ND	ND
	10/4/01	ND	ND	ND	ND	ND	ND
	12/4/01	ND	ND	ND	ND	ND	ND
	6/11/02	ND	ND	ND	ND	ND	ND
	12/11/02	ND	ND	ND	ND	ND	ND
	6/4/03	ND	ND	ND	ND	ND	ND
	12/22/03	ND	ND	ND	ND	ND	ND
	6/10/04	0.0013	ND	ND	ND	ND	ND
	12/22/04	0.0011	ND	ND	ND	ND	ND
8/23/05	ND	ND	ND	ND	ND	ND	
MW-11	1/27/98	0.012	0.0037	ND	NR	ND	ND
	9/14/98	0.0035	0.0011	ND	NR	ND	ND
	12/7/98	0.0082	0.0042	ND	NR	ND	ND
	3/30/99	0.0034	0.0018	ND	ND	ND	ND
	6/17/99	0.0042	0.0022	ND	ND	ND	ND
	9/12/99	0.008	0.0039	ND	0.0014	ND	ND
	12/5/99	0.0028	0.0013	ND	0.0028	ND	ND
	3/20/00	0.0054	0.002	ND	ND	ND	ND
	6/29/00	0.002	ND	ND	ND	ND	ND
	12/20/00	0.0045	0.0013	ND	ND	ND	ND
	6/26/01	0.0029	ND	ND	ND	ND	ND
	10/4/01	ND	ND	ND	ND	ND	ND
	12/4/01	ND	ND	ND	ND	ND	ND
	6/11/02	0.0045	0.0012	ND	ND	ND	ND
	12/11/02	ND	ND	ND	ND	ND	ND
	6/5/03	0.0031	ND	ND	ND	ND	ND
	6/11/04	0.0038	0.001	ND	ND	ND	ND
12/22/04	0.0016	ND	ND	ND	ND	ND	
8/22/05	ND	ND	ND	ND	ND	ND	
MW-12	1/27/98	ND	0.0052	ND	NR	ND	ND
	9/14/98	ND	ND	ND	NR	0.0037	ND
	12/7/98	ND	ND	ND	NR	0.0013	ND
	3/30/99	ND	ND	ND	0.017	0.0012	ND
	6/17/99	ND	ND	ND	0.019	0.0011	ND
	9/12/99	ND	ND	ND	0.015	ND	ND
	12/5/99	ND	ND	ND	0.016	ND	ND
	3/20/00	ND	ND	ND	0.016	ND	ND
	6/29/00	ND	ND	ND	0.014	ND	ND
	12/20/00	ND	ND	ND	0.03	0.0014	ND
	6/26/01	ND	ND	ND	0.029	0.0014	ND
	12/4/01	ND	ND	ND	0.0035	ND	ND
	6/11/02	ND	ND	ND	0.0036	ND	ND
	12/11/02	ND	ND	ND	0.0024	ND	ND
	6/4/03	ND	ND	ND	0.014	ND	ND

Table F-1
Summary of Halogenated Organic Compounds Detected in Groundwater
Rummel Creek Village Shopping Center
Houston, Texas

Monitoring Well	Date	PCE (mg/L)	TCE (mg/L)	1,1-DCE (mg/L)	cis-1,2 DCE (mg/L)	trans-1,2 DCE (mg/L)	VC (mg/L)
Tier 1^{GW} GW_{ing} Critical PCL without MSD		0.005	0.005	0.007	0.07	0.1	0.002
Tier 1^{Air} GW_{Inh-v} Critical PCL with MSD		330	160	980	16,000	10,000	3.6
MW-12 (Continued)	12/22/03	ND	ND	ND	0.0038	ND	ND
	6/11/04	ND	ND	ND	0.0015	ND	ND
	12/22/04	ND	ND	ND	0.0058	ND	ND
	8/23/05	ND	ND	ND	ND	ND	ND
MW-13	7/3/01	0.028	0.0093	ND	0.006	ND	ND
	7/16/01	0.034	0.012	ND	0.0068	ND	ND
	10/4/01	0.023	0.0085	ND	0.0032	ND	ND
	12/4/01	0.015	0.0062	ND	0.0023	ND	ND
	2/20/02	0.0061	ND	ND	ND	ND	ND
	4/17/02	0.012	0.001	ND	ND	ND	ND
	6/11/02	0.013	0.0039	ND	ND	ND	ND
	9/20/02	0.009	0.004	ND	ND	ND	ND
	12/11/02	0.0072	0.002	ND	ND	ND	ND
	3/10/03	0.0059	0.0014	ND	ND	ND	ND
	4/11/03	0.0072	0.0015	ND	ND	ND	ND
	6/4/03	0.0055	0.001	ND	ND	ND	ND
	12/22/03	ND	ND	ND	0.0069	ND	ND
	4/6/04	0.0021	ND	ND	0.0047	ND	ND
	6/14/04	0.0025	ND	ND	0.0063	ND	ND
	9/27/04	0.0012	ND	ND	0.0025	ND	ND
	12/22/04	0.0032	ND	ND	0.0013	ND	ND
8/23/05	0.0017	0.0015	ND	ND	ND	ND	
MW-14	7/3/01	0.19	0.04	ND	0.077	ND	ND
	7/16/01	0.22	0.045	ND	0.078	ND	ND
	10/4/01	0.16	0.038	ND	0.055	ND	ND
	12/4/01	0.094	0.025	ND	0.031	ND	ND
	2/20/02	0.067	0.028	ND	0.026	ND	ND
	4/17/02	0.057	0.024	ND	0.018	ND	ND
	6/11/02	0.041	0.028	ND	0.012	ND	ND
	9/20/02	0.051	0.023	ND	0.014	ND	ND
	12/11/02	0.024	0.013	ND	0.0059	ND	ND
	2/10/03	0.023	0.016	ND	0.0061	ND	ND
	2/24/03	0.016	ND	ND	ND	ND	ND
	3/10/03	0.014	0.023	ND	0.011	ND	ND
	3/26/03	0.011	0.021	ND	0.019	ND	ND
	4/11/03	0.0092	0.012	ND	0.015	ND	ND
	6/4/03	0.0066	0.0025	ND	0.022	ND	ND
	12/22/03	ND	ND	ND	0.026	ND	ND
	4/6/04	ND	ND	ND	0.019	ND	ND
6/15/04	ND	0.0013	ND	0.014	ND	ND	
9/27/04	ND	ND	ND	0.015	ND	ND	
12/22/04	ND	0.001	ND	0.011	ND	ND	
8/23/05	ND	0.0016	ND	0.0077	ND	ND	
MW-15	7/3/01	0.49	0.048	ND	0.09	ND	ND
	7/16/01	0.51	0.057	ND	0.096	ND	ND
	8/16/01	0.63	0.062	ND	0.079	ND	ND
	10/4/01	0.42	0.04	ND	0.078	ND	ND
	12/4/01	0.3	0.041	ND	0.064	ND	ND

Table F-1
Summary of Halogenated Organic Compounds Detected in Groundwater
Rummel Creek Village Shopping Center
Houston, Texas

Monitoring Well	Date	PCE (mg/L)	TCE (mg/L)	1,1-DCE (mg/L)	cis-1,2 DCE (mg/L)	trans-1,2 DCE (mg/L)	VC (mg/L)
Tier 1^{GW} Critical PCL without MSD		0.005	0.005	0.007	0.07	0.1	0.002
Tier 1^{Air} Critical PCL with MSD		330	160	980	16,000	10,000	3.6
MW-15 (Continued)	2/20/02	0.33	0.045	ND	0.076	ND	ND
	4/17/02	0.24	0.012	ND	0.013	ND	ND
	6/11/02	0.32	0.058	ND	0.11	ND	ND
	9/20/02	0.29	0.079	ND	0.098	ND	ND
	12/11/02	0.16	0.034	ND	0.064	ND	ND
	2/10/03	0.068	0.046	ND	0.073	ND	ND
	2/24/03	0.07	ND	ND	0.071	ND	ND
	3/10/03	0.017	ND	ND	0.17	ND	ND
	3/26/03	0.017	0.0089	ND	0.17	ND	ND
	4/11/03	0.04	0.014	ND	0.084	ND	ND
	6/4/03	0.047	0.01	ND	0.052	ND	ND
	9/9/03	ND	ND	ND	0.071	ND	ND
	12/22/03	ND	ND	ND	0.065	ND	ND
	4/6/04	ND	ND	ND	0.091	ND	ND
	6/17/04	0.0013	0.0012	ND	0.081	ND	ND
	9/27/04	ND	ND	ND	0.078	ND	ND
	12/22/04	ND	ND	ND	0.048	ND	ND
	5/9/05	ND	ND	ND	0.0054	ND	0.0073
	8/22/05	ND	ND	ND	0.0049	ND	0.002
	12/8/05	ND	ND	ND	0.0042	ND	0.0039
3/17/06	ND	ND	ND	0.0028	ND	ND	
6/6/06	ND	ND	ND	0.0033	ND	ND	
MW-16	9/21/01	0.0013	ND	ND	ND	ND	ND
	10/4/01	ND	ND	ND	ND	ND	ND
	12/4/01	0.0013	ND	ND	ND	ND	ND
	4/17/02	0.0024	0.0011	ND	ND	ND	ND
	6/11/02	0.0019	0.0015	ND	ND	ND	ND
	12/11/02	0.0012	ND	ND	ND	ND	ND
	6/4/03	0.0024	0.001	ND	ND	ND	ND
	12/22/03	0.0025	0.001	ND	ND	ND	ND
	6/17/04	0.0017	ND	ND	ND	ND	ND
12/22/04	ND	ND	ND	ND	ND	ND	
8/22/05	ND	ND	ND	ND	ND	ND	
MW-17	12/4/01	ND	ND	ND	ND	ND	ND
	4/17/02	ND	ND	ND	ND	ND	ND
	6/11/02	ND	ND	ND	ND	ND	ND
	12/11/02	ND	ND	ND	ND	ND	ND
	6/4/03	ND	ND	ND	ND	ND	ND
	12/22/03	ND	ND	ND	ND	ND	ND
	6/17/04	ND	ND	ND	ND	ND	ND
	12/22/04	ND	ND	ND	ND	ND	ND
8/22/05	ND	ND	ND	ND	ND	ND	

Table F-1
Summary of Halogenated Organic Compounds Detected in Groundwater
Rummel Creek Village Shopping Center
Houston, Texas

Monitoring Well	Date	PCE (mg/L)	TCE (mg/L)	1,1-DCE (mg/L)	cis-1,2 DCE (mg/L)	trans-1,2 DCE (mg/L)	VC (mg/L)
Tier 1^{GW}GW_{ing} Critical PCL without MSD		0.005	0.005	0.007	0.07	0.1	0.002
Tier 1^{Air}GW_{Inh-v} Critical PCL with MSD		330	160	980	16,000	10,000	3.6
MW-18	12/4/01	ND	ND	ND	ND	ND	ND
	4/17/02	0.0012	ND	ND	ND	ND	ND
	6/11/02	ND	ND	ND	ND	ND	ND
	12/11/02	ND	ND	ND	ND	ND	ND
	6/4/03	0.022	0.006	ND	0.0042	ND	ND
	9/9/03	0.013	0.0025	ND	0.0026	ND	ND
	12/22/03	ND	ND	ND	0.026	ND	ND
	4/6/04	ND	ND	ND	0.061	ND	ND
	6/16/04	0.002	0.0011	ND	0.082	ND	ND
	12/22/04	0.0038	0.013	ND	0.093	0.0032	0.027
	5/9/05	ND	ND	ND	0.052	ND	0.022
	8/22/05	ND	0.0034	ND	0.0032	ND	ND
	12/8/05	ND	ND	ND	0.0029	ND	0.0078
	3/17/06	ND	0.0073	0.0011	0.023	0.0015	0.0097
	6/6/06	ND	0.0013	ND	0.05	0.0017	0.041
	9/14/06	0.052	0.018	ND	0.025	ND	0.0065
	1/8/07	ND	0.001	ND	0.019	ND	0.0042
	4/2/07	ND	ND	ND	ND	ND	ND
11/30/07	ND	ND	ND	0.013	ND	0.01	
3/28/08	ND	ND	ND	0.011	ND	0.0037	
MW-19	12/4/01	ND	ND	ND	ND	ND	ND
	4/17/02	ND	ND	ND	ND	ND	ND
	6/11/02	ND	ND	ND	ND	ND	ND
	12/11/02	ND	ND	ND	ND	ND	ND
	6/4/03	ND	ND	ND	ND	ND	ND
	12/22/03	ND	ND	ND	ND	ND	ND
	6/17/04	ND	ND	ND	ND	ND	ND
	12/22/04	ND	ND	ND	ND	ND	ND
8/22/05	ND	ND	ND	ND	ND	ND	
P-1	4/29/98	0.0015	ND	ND	NR	ND	ND
	9/14/98	ND	ND	ND	NR	ND	ND
	12/7/98	ND	ND	ND	NR	ND	ND
	3/30/99	ND	ND	ND	ND	ND	ND
	6/16/99	ND	ND	ND	ND	ND	ND
	9/11/99	ND	ND	ND	ND	ND	ND
	12/4/99	ND	ND	ND	ND	ND	ND
	3/20/00	ND	ND	ND	ND	ND	ND
	6/29/00	ND	ND	ND	ND	ND	ND
	12/20/00	ND	ND	ND	0.13	ND	ND
	6/26/01	ND	ND	ND	0.082	ND	ND
	10/4/01	ND	ND	ND	0.44	0.0026	ND
12/4/01	ND	ND	0.0016	0.65	0.0046	ND	

Table F-1
Summary of Halogenated Organic Compounds Detected in Groundwater
Rummel Creek Village Shopping Center
Houston, Texas

Monitoring Well	Date	PCE (mg/L)	TCE (mg/L)	1,1-DCE (mg/L)	cis-1,2 DCE (mg/L)	trans-1,2 DCE (mg/L)	VC (mg/L)
Tier 1 ^{GW}GW_{ing} Critical PCL without MSD		0.005	0.005	0.007	0.07	0.1	0.002
Tier 1 ^{Air}GW_{Inh-v} Critical PCL with MSD		330	160	980	16,000	10,000	3.6
P-1 (Continued)	2/20/02	ND	0.0013	ND	0.97	0.017	ND
	4/17/02	0.0025	ND	0.0029	1.30	0.0075	ND
	6/11/02	ND	0.0014	0.0039	1.40	0.018	0.0018
	12/11/02	ND	ND	ND	0.94	ND	ND
	6/4/03	0.016	0.021	0.003	0.79	0.0059	ND
	12/23/03	0.0018	0.0011	0.0019	0.84	0.0035	ND
	4/6/04	0.0025	0.003	0.0012	0.33	0.0021	ND
P-2	4/29/98	ND	ND	ND	NR	ND	ND
	9/14/98	ND	ND	ND	NR	ND	ND
	12/7/98	ND	ND	ND	NR	ND	ND
	3/31/99	ND	ND	ND	ND	ND	ND
	6/16/99	0.0023	0.0018	ND	ND	ND	ND
	9/11/99	ND	ND	ND	ND	ND	ND
	12/4/99	ND	ND	ND	NR	ND	ND
	3/20/00	ND	ND	ND	ND	ND	ND
	6/29/00	ND	ND	ND	ND	ND	ND
	12/20/00	ND	ND	ND	ND	ND	ND
	6/26/01	ND	ND	ND	ND	ND	ND
	12/4/01	ND	ND	ND	ND	ND	ND
	6/11/02	ND	ND	ND	ND	ND	ND
	12/11/02	ND	ND	ND	ND	ND	ND
	6/4/03	ND	ND	ND	ND	ND	ND
12/23/03	ND	ND	ND	ND	ND	ND	
6/14/04	ND	ND	ND	ND	ND	ND	
12/22/04	ND	ND	ND	ND	ND	ND	
8/23/05	ND	ND	ND	ND	ND	ND	
P-3	4/29/98	ND	ND	ND	NR	ND	ND
	9/14/98	0.014	0.007	ND	NR	ND	ND
	12/7/98	0.0064	0.0043	ND	NR	ND	ND
	3/31/99	0.03	0.015	ND	0.011	ND	ND
	6/16/99	ND	ND	ND	ND	ND	ND
	9/11/99	0.0027	0.0018	ND	ND	ND	ND
	12/4/99	0.0094	0.0032	ND	NR	ND	ND
	3/20/00	0.007	0.0016	ND	0.0014	ND	ND
	6/29/00	0.006	0.0025	ND	0.0024	ND	ND
	12/20/00	0.0055	0.0026	ND	0.0022	ND	ND
	6/26/01	0.004	0.0016	ND	0.0014	ND	ND
	12/4/01	0.0029	0.0014	ND	0.0015	ND	ND
	4/17/02	0.0038	0.0016	ND	0.0012	ND	ND
	6/11/02	0.011	0.0048	ND	0.0044	ND	ND
	12/11/02	0.001	ND	ND	ND	ND	ND
	6/4/03	0.013	0.0039	ND	0.0033	ND	ND
	12/23/03	0.0023	ND	ND	ND	ND	ND
	6/14/04	0.019	0.0061	ND	0.0063	ND	ND
	9/27/04	0.0054	0.0022	ND	0.0018	ND	ND
	12/22/04	0.0091	0.0024	ND	ND	ND	ND
5/9/05	0.0064	0.002	ND	0.0021	ND	ND	
8/22/05	ND	ND	ND	ND	ND	ND	

Table F-1
Summary of Halogenated Organic Compounds Detected in Groundwater
Rummel Creek Village Shopping Center
Houston, Texas

Monitoring Well	Date	PCE (mg/L)	TCE (mg/L)	1,1-DCE (mg/L)	cis-1,2 DCE (mg/L)	trans-1,2 DCE (mg/L)	VC (mg/L)
Tier 1^{GW} Critical PCL without MSD		0.005	0.005	0.007	0.07	0.1	0.002
Tier 1^{Air} Critical PCL with MSD		330	160	980	16,000	10,000	3.6
P-3 (Continued)	12/8/05	0.0052	ND	ND	0.0011	ND	ND
	3/17/06	0.0039	ND	ND	ND	ND	ND
	6/6/06	0.0033	ND	ND	ND	ND	ND
	9/14/06	0.0074	0.0022	ND	ND	ND	ND
	1/8/07	ND	ND	ND	ND	ND	ND
	4/2/07	0.0024	ND	ND	ND	ND	ND
	6/29/07	0.0028	ND	ND	ND	ND	ND
	9/13/07	0.0038	ND	ND	ND	ND	ND
	11/30/07	0.0028	0.0017	ND	ND	ND	ND
	3/28/08	0.0031	0.0016	ND	ND	ND	ND
P-4	4/29/98	0.04	0.011	ND	NR	ND	ND
	9/14/98	0.033	0.0061	ND	NR	ND	ND
	12/7/98	0.014	0.0054	ND	NR	ND	ND
	3/31/99	0.033	0.018	ND	0.011	ND	ND
	6/16/99	0.065	0.044	ND	0.069	ND	ND
	9/11/99	0.082	0.049	ND	0.17	ND	ND
	12/4/99	0.11	0.043	ND	NR	ND	ND
	3/20/00	0.086	0.032	ND	0.051	ND	ND
	6/29/00	0.21	0.095	ND	0.33	0.0017	0.0019
	12/20/00	0.25	0.18	ND	0.18	0.0022	0.0029
	6/26/01	0.055	0.045	ND	0.3	ND	ND
	8/8/01	0.079	0.074	ND	0.26	ND	ND
	10/4/01	0.043	0.068	ND	0.24	0.0018	0.007
	12/4/01	0.063	0.069	ND	0.15	0.0016	0.0089
	2/20/02	0.12	0.12	ND	0.2	0.0016	0.0044
	4/17/02	0.087	0.099	ND	0.15	ND	ND
	6/11/02	0.13	0.14	ND	0.24	ND	ND
	9/20/02	0.076	0.21	ND	0.26	0.001	ND
	12/11/02	0.088	0.12	ND	0.12	ND	ND
	4/14/03	0.15	0.11	ND	0.17	ND	ND
	6/4/03	0.096	0.033	ND	0.25	ND	ND
	9/9/03	0.15	0.064	ND	0.27	0.001	ND
	12/23/03	0.026	0.008	ND	0.19	ND	ND
	4/6/04	0.0028	0.0019	0.0012	0.41	0.0019	0.028
	6/14/04	0.019	0.015	ND	0.25	0.0017	0.0097

Table F-1
Summary of Halogenated Organic Compounds Detected in Groundwater
Rummel Creek Village Shopping Center
Houston, Texas

Monitoring Well	Date	PCE (mg/L)	TCE (mg/L)	1,1-DCE (mg/L)	cis-1,2 DCE (mg/L)	trans-1,2 DCE (mg/L)	VC (mg/L)
Tier 1^{GW}GW_{ing} Critical PCL without MSD		0.005	0.005	0.007	0.07	0.1	0.002
Tier 1^{Air}GW_{Inh-v} Critical PCL with MSD		330	160	980	16,000	10,000	3.6
P-4 (Continued)	9/27/04	0.12	0.048	ND	0.23	0.0014	0.026
	12/22/04	0.082	0.072	ND	0.17	ND	ND
	5/10/05	0.0082	0.0028	ND	0.16	0.0059	ND
P-4R	10/3/05	0.25	0.032	ND	0.033	ND	ND
	12/8/05	0.35	0.047	ND	0.029	ND	ND
	3/17/06	0.14	0.026	ND	0.15	ND	ND
	6/6/06	0.11	0.026	ND	0.082	ND	ND
	9/14/06	0.15	0.032	ND	0.032	ND	ND
	1/8/07	0.079	0.023	ND	0.12	ND	ND
	4/2/07	0.064	0.016	ND	0.11	ND	0.013
	6/29/07	0.14	0.034	ND	0.078	ND	0.024
	9/13/07	0.13	0.041	ND	0.17	ND	0.035
	11/30/07	0.011	0.0065	ND	0.027	ND	0.022
3/28/08	0.02	0.015	ND	0.038	ND	0.021	
P-5	9/14/98	ND	ND	ND	NR	ND	ND
	12/7/98	ND	ND	ND	NR	ND	ND
	3/30/99	ND	ND	ND	ND	ND	ND
	6/16/99	ND	ND	ND	ND	ND	ND
	9/11/99	ND	ND	ND	ND	ND	ND
	12/4/99	ND	ND	ND	ND	ND	ND
	3/20/00	ND	ND	ND	ND	ND	ND
	6/29/00	ND	ND	ND	ND	ND	ND
	12/20/00	ND	ND	ND	ND	ND	ND
	6/26/01	ND	ND	ND	ND	ND	ND
	12/4/01	ND	ND	ND	ND	ND	ND
	6/11/02	ND	ND	ND	ND	ND	ND
	12/11/02	ND	ND	ND	ND	ND	ND
	6/4/03	ND	ND	ND	ND	ND	ND
	12/23/03	ND	ND	ND	ND	ND	ND
6/10/04	ND	ND	ND	ND	ND	ND	
12/22/04	ND	ND	ND	ND	ND	ND	
8/23/05	ND	ND	ND	ND	ND	ND	
P-6	9/14/98	0.38	0.082	ND	NR	ND	ND
	12/7/98	0.59	0.098	ND	NR	ND	ND
	3/31/99	0.33	0.07	ND	0.3	ND	ND
	6/16/99	0.26	0.11	ND	0.35	0.0014	0.0046
	9/11/99	0.2	0.059	ND	0.098	ND	0.0023
	12/4/99	0.3	0.088	ND	0.14	ND	0.0031
	3/20/00	0.19	0.054	ND	0.069	ND	0.0012
6/29/00	0.083	0.035	ND	0.044	ND	ND	

Table F-1
Summary of Halogenated Organic Compounds Detected in Groundwater
Rummel Creek Village Shopping Center
Houston, Texas

Monitoring Well	Date	PCE (mg/L)	TCE (mg/L)	1,1-DCE (mg/L)	cis-1,2 DCE (mg/L)	trans-1,2 DCE (mg/L)	VC (mg/L)
Tier 1^{GW} Critical PCL without MSD		0.005	0.005	0.007	0.07	0.1	0.002
Tier 1^{Air} Critical PCL with MSD		330	160	980	16,000	10,000	3.6
P-6 (Continued)	12/20/00	0.12	0.029	ND	0.035	ND	ND
	6/26/01	0.12	0.036	ND	0.042	ND	ND
	8/8/01	0.18	0.035	ND	0.055	ND	ND
	10/4/01	0.079	0.041	ND	0.031	ND	ND
	12/4/01	0.1	0.03	ND	0.044	ND	ND
	2/20/02	0.11	0.03	ND	0.033	0.0039	ND
	4/17/02	0.09	0.028	ND	0.035	ND	ND
	6/11/02	0.063	0.026	ND	0.016	ND	ND
	9/20/02	0.096	0.03	ND	0.019	ND	ND
	12/11/02	0.1	0.029	ND	0.024	ND	ND
	4/14/03	0.065	0.016	ND	0.0096	ND	ND
	6/4/03	0.054	0.017	ND	0.013	ND	ND
	9/9/03	0.028	0.013	ND	0.0075	ND	ND
	12/23/03	0.0043	0.0065	ND	0.026	ND	ND
	4/6/04	0.0035	0.0063	ND	0.047	ND	ND
	6/14/04	0.0013	0.01	ND	0.0285	ND	ND
	9/27/04	0.0014	0.0096	ND	0.04	ND	ND
	12/22/04	NS	NS	NS	NS	NS	NS
	5/9/05	0.025	0.0065	ND	0.012	ND	ND
	8/23/05	0.0057	0.0013	ND	0.003	ND	ND
	12/6/05	0.0041	0.001	ND	0.023	ND	ND
	3/17/06	0.001	ND	ND	0.0055	ND	ND
	1/8/07	0.018	0.0042	ND	0.0024	ND	ND
4/2/07	0.011	0.0033	ND	0.0058	ND	ND	
6/29/07	0.0058	0.0019	ND	0.0026	ND	ND	
9/13/07	0.016	0.0031	ND	0.0045	ND	ND	
11/30/07	0.014	0.003	ND	0.0038	ND	ND	
3/28/08	0.002	ND	ND	0.012	ND	ND	
P-7	9/14/98	0.12	0.038	ND	NR	ND	ND
	12/7/98	0.19	0.047	ND	NR	ND	0.0019
	3/31/99	0.14	0.039	ND	0.045	ND	0.0012
	6/16/99	0.08	0.024	ND	0.021	ND	ND
	9/11/99	0.055	0.017	ND	0.012	ND	ND
	12/4/99	0.036	0.013	ND	NR	ND	ND
	3/20/00	0.037	0.012	ND	0.0042	ND	ND
	6/29/00	0.021	0.0071	ND	0.0022	ND	ND
	12/20/00	0.012	0.0044	ND	0.0014	ND	ND
	6/26/01	0.011	0.0033	ND	ND	ND	ND
	10/4/01	0.01	0.0027	ND	ND	ND	ND
	11/2/01	0.0023	ND	ND	ND	ND	ND
	12/4/01	0.02	0.003	ND	ND	ND	ND
	2/20/02	0.017	0.0038	ND	ND	ND	ND
	4/17/02	0.016	0.0036	ND	ND	ND	ND

Table F-1
Summary of Halogenated Organic Compounds Detected in Groundwater
Rummel Creek Village Shopping Center
Houston, Texas

Monitoring Well	Date	PCE (mg/L)	TCE (mg/L)	1,1-DCE (mg/L)	cis-1,2 DCE (mg/L)	trans-1,2 DCE (mg/L)	VC (mg/L)
Tier 1 ^{GW}GW_{ing} Critical PCL without MSD		0.005	0.005	0.007	0.07	0.1	0.002
Tier 1 ^{Air}GW_{Inh-v} Critical PCL with MSD		330	160	980	16,000	10,000	3.6
P-7 (Continued)	6/11/02	0.013	0.0039	ND	ND	ND	ND
	9/20/02	0.022	0.005	ND	ND	ND	ND
	12/11/02	0.018	0.0022	ND	ND	ND	ND
	4/14/03	0.014	0.002	ND	ND	ND	ND
	6/4/03	0.019	0.0023	ND	ND	ND	ND
	9/9/03	0.014	0.0024	ND	ND	ND	ND
	12/23/03	0.0068	0.0019	ND	0.0098	ND	ND
	4/6/04	0.0026	ND	ND	0.021	ND	ND
	6/15/04	0.011	0.0028	ND	0.0046	ND	ND
	9/27/04	0.0056	0.0036	ND	0.0027	ND	ND
	12/22/04	0.0019	ND	ND	ND	ND	ND
	5/9/05	ND	ND	ND	ND	ND	ND
	8/23/05	0.0031	ND	ND	ND	ND	ND
	3/17/06	0.001	ND	ND	0.0061	ND	ND

Original MW-6 was plugged and abandoned on November 19, 2001 and replaced on March 6, 2002.
Monitoring wells MW-1 and MW-7 were destroyed during site renovation activities between June and October 2003.
Monitoring well P-1 was destroyed during right-of-way construction activities in June 2004.
Original P-6 was plugged and abandoned on March 9, 2005.
Original P-4 was plugged and abandoned on October 3, 2005.
Original MW-5 was plugged and abandoned on March 15, 2007.

Table F-2
Summary of Halogenated Organic Compounds Detected in Soil
Rummel Creek Village Shopping Center
Houston, Texas

Sample ID	Sample Depth	Date	PCE (mg/kg)	TCE (mg/kg)	1,1-DCE (mg/kg)	cis-1,2 DCE (mg/kg)	VC (mg/kg)	TCFM (mg/kg)
Tier 1^{GW}Soil_{Ing} Critical PCL without MSD			0.05	0.034	0.05	0.25	0.022	130
Tier 1^{Tot}Soil_{Comb} PCL with MSD			98	150	1,800	770	4	16,000
Tier 1^{Air}Soil_{Inh-v} Critical PCL with MSD			620	210	3,100	12,000	41	43,000
B-1	18-20	3/25/1996	<0.001	<0.001	<0.001	NR	<0.001	<0.001
	20-22	3/25/1996	<0.001	<0.001	<0.001	NR	<0.001	<0.001
B-2	12-14	3/22/1996	<0.001	<0.001	<0.001	NR	<0.001	<0.001
	14-16	3/22/1996	<0.001	<0.001	<0.001	NR	<0.001	<0.001
B-3	22-24	3/25/1996	0.002	<0.001	<0.001	NR	<0.001	<0.001
	24-26	3/25/1996	0.011	0.002	<0.001	NR	<0.001	<0.001
B-4	4-6	3/21/1996	0.014	0.001	<0.001	NR	<0.001	<0.001
	20-22	3/25/1996	0.002	0.001	<0.001	NR	<0.001	<0.001
B-8	2-4	11/3/1997	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	18-20	11/3/1997	0.0054	0.0014	<0.001	<0.001	<0.001	<0.001
B-9	2-4	11/3/1997	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	18-20	11/3/1997	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B-10	2-4	10/29/1997	<0.001	0.002	<0.001	<0.001	<0.001	<0.001
	4-6	10/29/1997	0.091	0.015	<0.001	<0.001	0.0037	<0.001
	18-20	10/29/1997	0.0038	0.0025	<0.001	<0.001	<0.001	<0.001
B-11/ MW-6	2-4	11/3/1997	<0.001	<0.001	0.0014	<0.001	0.0012	<0.001
	14-16	11/3/1997	0.0055	0.0024	<0.001	<0.001	<0.001	<0.001
	18-20	11/3/1997	0.052	0.035	<0.001	<0.001	<0.001	<0.001
B-12	2-4	10/29/1997	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	16-18	10/29/1997	0.032	0.0049	<0.001	<0.001	<0.001	<0.001
	18-20	10/29/1997	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B-13	2-4	10/29/1997	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	18-20	10/29/1997	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B-14	2-4	10/29/1997	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	12-14	10/29/1997	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	18-20	10/29/1997	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B-15	2-4	10/29/1997	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	13-14	10/29/1997	0.0056	0.0022	<0.001	<0.001	<0.001	<0.001
	18-20	10/29/1997	0.0067	<0.001	<0.001	<0.001	<0.001	<0.001
B-16/ MW-1	2-4	10/30/1997	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	18-20	10/30/1997	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Table F-2
Summary of Halogenated Organic Compounds Detected in Soil
Rummel Creek Village Shopping Center
Houston, Texas

Sample ID	Sample Depth	Date	PCE (mg/kg)	TCE (mg/kg)	1,1-DCE (mg/kg)	cis-1,2 DCE (mg/kg)	VC (mg/kg)	TCFM (mg/kg)
Tier 1^{GW}Soil_{Ing} Critical PCL without MSD			0.05	0.034	0.05	0.25	0.022	130
Tier 1^{Tot}Soil_{Comb} PCL with MSD			98	150	1,800	770	4	16,000
Tier 1^{Air}Soil_{Inh-v} Critical PCL with MSD			620	210	3,100	12,000	41	43,000
DM-1	4-5	Mar-99	0.051	<0.001	<0.001	<0.001	<0.001	<0.001
DM-2	4-5	Mar-99	0.026	<0.001	<0.001	<0.001	<0.001	<0.001
	8-9	Mar-99	0.036	0.0022	0.0042	<0.001	<0.001	<0.001
DM-3	0-1	Mar-99	0.0066	<0.001	<0.001	<0.001	<0.001	<0.001
	1-2	Mar-99	0.067	<0.001	<0.001	<0.001	<0.001	<0.001
	2-3	Mar-99	0.02	<0.001	<0.001	<0.001	<0.001	<0.001
	3-4	Mar-99	0.027	<0.001	<0.001	<0.001	<0.001	0.002
	4-5	Mar-99	0.018	<0.001	<0.001	<0.001	<0.001	<0.001
	5-6	Mar-99	0.018	<0.001	<0.001	<0.001	<0.001	<0.001
	6-7	Mar-99	0.014	<0.001	<0.001	<0.001	<0.001	<0.001
	7-8	Mar-99	0.0039	<0.001	<0.001	<0.001	<0.001	<0.001
8-9	Mar-99	0.042	0.0029	0.007	<0.001	<0.001	<0.001	
DM-4	4-5	Mar-99	0.017	<0.001	<0.001	<0.001	<0.001	<0.001
	8-9	Mar-99	0.023	<0.001	<0.001	<0.001	<0.001	<0.001
DM-5	4-5	Mar-99	0.012	<0.001	<0.001	<0.001	<0.001	<0.001
	8-9	Mar-99	0.029	0.0025	0.0087	<0.001	<0.001	<0.001
DM-6	4-5	Mar-99	0.0058	<0.001	0.0012	<0.001	<0.001	<0.001
	8-9	Mar-99	0.0056	<0.001	0.0021	<0.001	<0.001	<0.001
DM-7	4-5	Mar-99	0.0084	<0.001	<0.001	<0.001	<0.001	<0.001
	8-9	Mar-99	0.018	0.0013	0.0047	<0.001	<0.001	<0.001
DM-8	4-5	Mar-99	0.056	<0.001	<0.001	<0.001	<0.001	<0.001
	8-9	Mar-99	0.026	0.0024	0.0071	<0.001	<0.001	<0.001
DM-9	4-5	Mar-99	0.0049	<0.001	<0.001	<0.001	<0.001	<0.001
	8-9	Mar-99	0.0047	<0.001	0.0016	<0.001	<0.001	<0.001
DM-10	0-1	Mar-99	0.067	<0.001	<0.001	<0.001	<0.001	<0.001
	3-4	Mar-99	0.018	<0.001	<0.001	<0.001	<0.001	<0.001
	5-6	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	8-9	Mar-99	0.004	<0.001	<0.001	<0.001	<0.001	<0.001
DM-11	2-3	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	4-5	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	6-7	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	8-9	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

Table F-2
Summary of Halogenated Organic Compounds Detected in Soil
Rummel Creek Village Shopping Center
Houston, Texas

Sample ID	Sample Depth	Date	PCE (mg/kg)	TCE (mg/kg)	1,1-DCE (mg/kg)	cis-1,2 DCE (mg/kg)	VC (mg/kg)	TCFM (mg/kg)
Tier 1 ^{GW} Soil _{Ing} Critical PCL without MSD			0.05	0.034	0.05	0.25	0.022	130
Tier 1 ^{Tot} Soil _{Comb} PCL with MSD			98	150	1,800	770	4	16,000
Tier 1 ^{Air} Soil _{Inh-v} Critical PCL with MSD			620	210	3,100	12,000	41	43,000
DM-12	2-3	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	6-7	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	8-9	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DM-13	2-3	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	6-7	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	0.0077
	8-9	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	0.0011
DM-14	2-3	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	6-7	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	8-9	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DM-15	2-3	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	6-7	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	8-9	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DM-16	2-3	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	6-7	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	8-9	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DMHA1	1-2	Mar-99	0.013	<0.001	<0.001	<0.001	<0.001	<0.001
DMHA2	4-5	Mar-99	0.0025	<0.001	<0.001	<0.001	<0.001	<0.001
	5-6	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DMHA3	2-3	Mar-99	0.015	<0.001	<0.001	<0.001	<0.001	<0.001
	4-5	Mar-99	0.0034	<0.001	<0.001	<0.001	<0.001	<0.001
DMHA4	1-2	Mar-99	0.013	<0.001	<0.001	<0.001	<0.001	<0.001
	5-6	Mar-99	0.0073	<0.001	<0.001	<0.001	<0.001	<0.001
DMHA5	2-3	Mar-99	0.0033	<0.001	<0.001	<0.001	<0.001	<0.001
	4-5	Mar-99	0.0034	0.0026	0.0014	<0.001	<0.001	<0.001
DMHA6	2-3	Mar-99	0.011	<0.001	<0.001	<0.001	<0.001	<0.001
	4-5	Mar-99	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
DMHA7	2-3	Mar-99	0.044	<0.001	<0.001	<0.001	<0.001	<0.001
	4-5	Mar-99	0.02	<0.001	<0.001	<0.001	<0.001	<0.001
DMHA8	2-3	Mar-99	0.02	<0.001	<0.001	<0.001	<0.001	<0.001
	4-5	Mar-99	0.0078	<0.001	<0.001	<0.001	<0.001	<0.001

Appendix G – Plume Stability

The Rummel Creek Village Shopping Center and West Office Plaza (Site) has been affected by dissolved phase contaminants (one or more of PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, 1,1-DCE and VC) in the soil and groundwater. These contaminants are believed to be associated with the historic operations conducted in the former Dapper Dan/ Dry Clean Plus dry cleaning facilities at the Rummel Creek Shopping Center and the Omni Cleaners tenant at the West Office Plaza Shopping Center, which ceased using PCE by 2001.

The groundwater impact in the shallow groundwater bearing unit has been delineated in all directions. Groundwater monitoring well MW-4 is the upgradient delineation point and groundwater monitoring well P-6 is the downgradient delineation point. Several monitor wells have been installed to determine the extent impacted groundwater has migrated off-site. The results of several years of consecutive monitoring events confirm impacted groundwater has migrated off-site. The area of impacted groundwater is not expanding and there is no off-site source contributing to the groundwater impacts.

A comparison of the sampling results from January 1998 through March 2008 indicates that the area of impact has decreased significantly over time. COC concentrations in the source area wells (MW-2 and MW-6) have been stable to decreasing over the sampling history of the site. Based on the results of historical and recent groundwater sampling results, InControl Technologies anticipates continued impact to off-site areas from the subject property but does not expect any significant growth in the lateral distribution of impacted groundwater.